

FCC Test Report

Equipment : 802.11a/b/g/n/ac 2Tx2R USB Combo Module
Brand Name : LITE-ON
Model No. : WN4519L
FCC ID : PPQ-WN4519L
Standard : 47 CFR FCC Part 15.407
Operating Band : 5150 MHz – 5250 MHz
5250 MHz – 5350 MHz
5470 MHz – 5725 MHz
5725 MHz – 5850 MHz
Applicant : Lite-On Technology Corp.
Bldg. C, 90, Chien 1 Road, Chung Ho, New Taipei City
23585, Taiwan, R.O.C
Manufacturer : LITE-ON TECHNOLOGY (Changzhou) CO., LTD
A9 Building, No.88 Yanghu Road, Wujin Hi-Tech
Industrial Development Zone, Changzhou City, Jiangsu
Province 213100 China
Function : ☐ Outdoor; ☐ Indoor; ☐ Fixed P2P
☒ Client
TPC Function : TPC

The product sample received on Dec. 28, 2016 and completely tested on Feb. 06, 2017. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

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

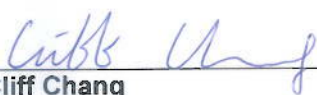

Cliff Chang
SPORTON INTERNATIONAL INC.





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Summary of Test Result

Conformance Test Specifications			
Report Clause	Ref. Std. Clause	Description	Result
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	Complied
3.3	15.407(a)	Maximum Conducted Output Power	Complied
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



SPORTON INTERNATIONAL INC.
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FCC ID: PPQ-WN4519L

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]
5250-5350		5260-5320	52-64 [4]
5470-5725		5500-5720	100-144[12]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40)	5190-5230	38-46 [2]
5250-5350		5270-5310	54-62 [2]
5470-5725		5510-5710	102-142 [6]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80)	5210	42 [1]
5250-5350		5290	58 [1]
5470-5725		5530-5690	106-138 [3]
5725-5850		5775	155 [1]

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	2TX
5.15-5.25GHz	802.11n HT20	20	2TX
5.15-5.25GHz	802.11ac VHT20	20	2TX
5.15-5.25GHz	802.11n HT40	40	2TX
5.15-5.25GHz	802.11ac VHT40	40	2TX
5.15-5.25GHz	802.11ac VHT80	80	2TX
5.25-5.35GHz	802.11a	20	2TX
5.25-5.35GHz	802.11n HT20	20	2TX
5.25-5.35GHz	802.11ac VHT20	20	2TX
5.25-5.35GHz	802.11n HT40	40	2TX
5.25-5.35GHz	802.11ac VHT40	40	2TX
5.25-5.35GHz	802.11ac VHT80	80	2TX
5.47-5.725GHz	802.11a	20	2TX
5.47-5.725GHz	802.11n HT20	20	2TX
5.47-5.725GHz	802.11ac VHT20	20	2TX
5.47-5.725GHz	802.11n HT40	40	2TX
5.47-5.725GHz	802.11ac VHT40	40	2TX
5.47-5.725GHz	802.11ac VHT80	80	2TX
5.725-5.85GHz	802.11a	20	2TX
5.725-5.85GHz	802.11n HT20	20	2TX
5.725-5.85GHz	802.11ac VHT20	20	2TX
5.725-5.85GHz	802.11n HT40	40	2TX
5.725-5.85GHz	802.11ac VHT40	40	2TX
5.725-5.85GHz	802.11ac VHT80	80	2TX

Note:

- ♦ 5.2G/5.2G-I(IC) is the 5.2GHz Band (5.15-5.25GHz).
- ♦ 5.3G/5.3G-I(IC) is the 5.3GHz Band (5.25-5.35GHz).
- ♦ 5.6G-I(IC) is the 5.6GHz IC Band w/o TDWR (5.47-5.6GHz and 5.65-5.725GHz).
- ♦ 5.8G/5.8G-I(IC) is the 5.8GHz Band (5.725-5.850GHz).
- ♦ 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.
- ♦ 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.	Port	Brand	P/N	Antenna Type	Connector	Gain (dBi)	Cable Length (mm)	Remark
						5GHz		
1	1	PSA	RFMTA401029IMLB701	PIFA Antenna	I-PEX	3.16	300	External Antenna
2	1	PSA	RFMTA401040IMLB701	PIFA Antenna	I-PEX	2.90	400	
3	1	PSA	RFMTA401045IMLB701	PIFA Antenna	I-PEX	1.99	450	
4	1	PSA	RFMTA401050IMLB701	PIFA Antenna	I-PEX	1.97	500	
5	1	PSA	RFMTA401055IMLB701	PIFA Antenna	I-PEX	1.85	550	
6	1	PSA	RFMTA401060IMLB701	PIFA Antenna	I-PEX	1.72	600	
7	2	PSA	RFMTA100600NNLB001	PIFA Antenna	N/A	2.66	-	On board Antenna

Note 1: The EUT has seven antennas.

Note 2: The difference for Ant. 1~6 is cable length. Only cable length: 300mm was tested because it has highest gain.

<For 5GHz Band>

For IEEE 802.11a/n/ac mode <2TX/2RX>:

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

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

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11a	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT20	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT40	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT80	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)

1.1.4 EUT Operational Condition

EUT Power Type	From Host System			
Beamforming Function	☐	With beamforming	☒	Without beamforming
Weather Band	☒	With 5600~5650MHz	☐	Without 5600~5650MHz

1.2 Testing Applied Standards

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

- ◆ 47 CFR FCC Part 15
- ◆ ANSI C63.10-2013
- ◆ FCC KDB 789033 D02 v01r03
- ◆ FCC KDB 644545 D03 v01
- ◆ FCC KDB 662911 D01 v02r01

1.3 Testing Location Information

Testing Location		
☐	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-318-0055
☒	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-CB	Gino Huang	22°C / 58%	Jan. 23, 2017
Radiated	03CH01-CB	DK Chang 、Justin Lin	20.7°C / 63%	Jan. 06, 2017~ Feb. 06, 2017
AC Conduction	CO01-CB	Deven Huang	23°C / 60%	Jan. 10, 2017

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086D with Industry Canada.

1.4 Measurement Uncertainty

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

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%
Output Power Measurement	1.33 dB	Confidence levels of 95%
Power Density Measurement	1.27 dB	Confidence levels of 95%
Bandwidth Measurement	9.74×10^{-8}	Confidence levels of 95%
Frequency Stability	6.06×10^{-8}	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
802.11a_Nss1_2TX	-
5180MHz	60/57
5200MHz	63/60
5240MHz	63/58
5260MHz	63/57
5300MHz	63/60
5320MHz	63/54
5500MHz	57/56
5580MHz	63/59
5700MHz	63/58
5720MHz Straddle 5.47-5.725GHz	63/59
5720MHz Straddle 5.725-5.85GHz	63/59
5745MHz	63/58
5785MHz	63/60
5825MHz	63/58
802.11ac VHT20_Nss1,(MCS0)_2TX	-
5180MHz	56/54
5200MHz	63/58
5240MHz	63/56
5260MHz	63/56
5300MHz	63/60
5320MHz	63/57
5500MHz	62/63
5580MHz	63/60
5700MHz	47/44
5720MHz Straddle 5.47-5.725GHz	63/59
5720MHz Straddle 5.725-5.85GHz	63/59
5745MHz	63/58
5785MHz	63/60
5825MHz	63/58
802.11ac VHT40_Nss1,(MCS0)_2TX	-
5190MHz	41/34
5230MHz	63/55
5270MHz	63/58
5310MHz	40/37
5510MHz	37/33
5550MHz	63/59
5670MHz	58/54



Mode	Power Setting
5710MHz Straddle 5.47-5.725GHz	63/57
5710MHz Straddle 5.725-5.85GHz	63/57
5755MHz	63/58
5795MHz	63/59
802.11ac VHT80_Nss1,(MCS0)_2TX	-
5210MHz	38/33
5290MHz	38/32
5530MHz	33/32
5610MHz	63/58
5690MHz Straddle 5.47-5.725GHz	63/62
5690MHz Straddle 5.725-5.85GHz	63/62
5775MHz	58/52

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.

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

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 9kHz~30MHz	CTX
The EUT was performed at X axis, Y axis and Z axis position. The worst case was found at X axis, so it was selected to perform test and its test result was written in the report.	
Operating Mode 30MHz~1GHz	CTX
The EUT was performed at X axis, Y axis and Z axis position. The worst case was found at Z axis, so it was selected to perform test and its test result was written in the report.	
Operating Mode > 1GHz	CTX
The EUT was performed at X axis, Y axis and Z axis position. The worst case was found at Y axis, so it was selected to perform test and its test result was written in the report.	

2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.4 Accessories

N/A

2.5 Support Equipment

For Test Site No: CO01-CB

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB	DELL	E6430	DoC
2	Test fixture	LiteOn	TB006	DoC

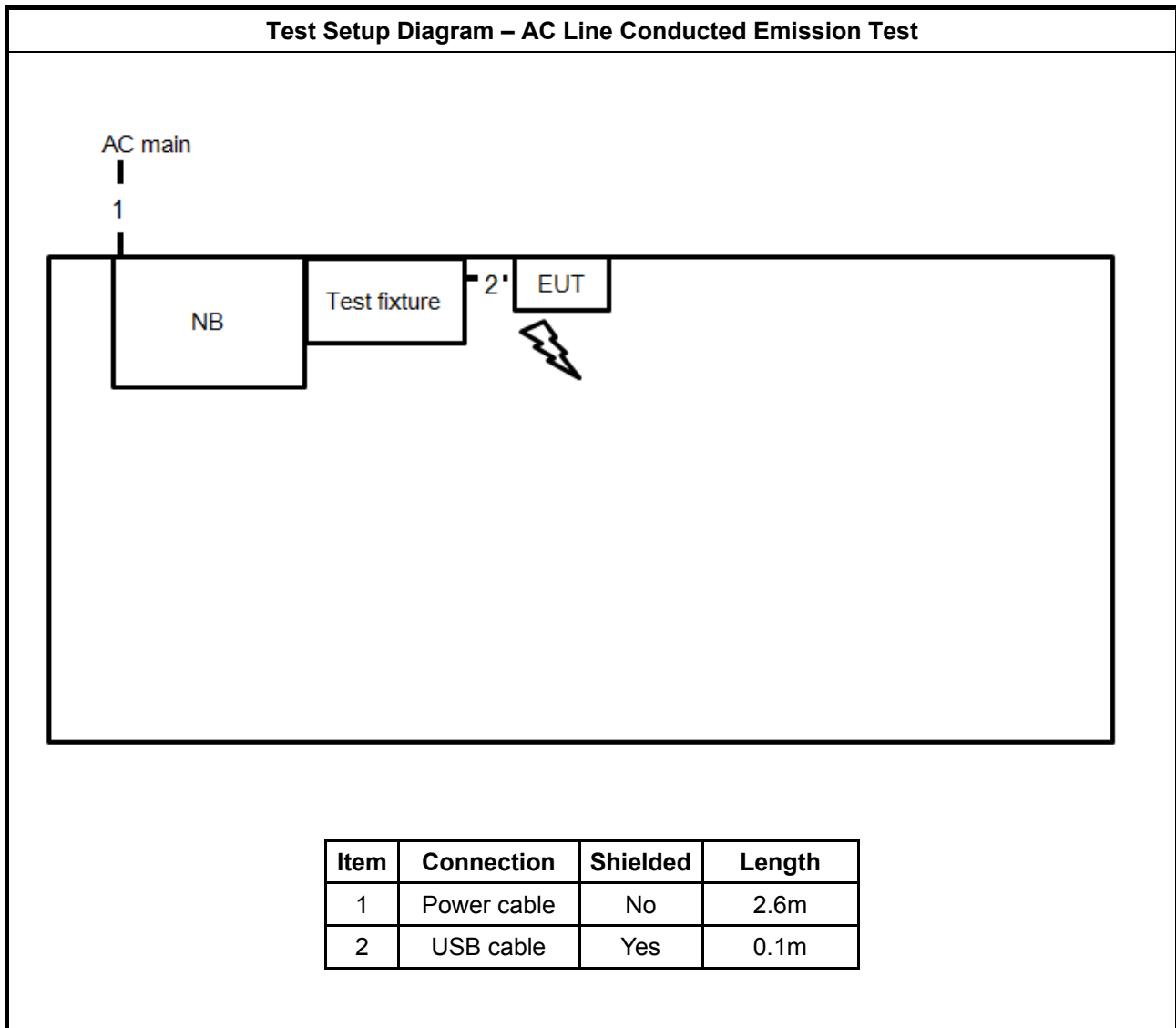
For Test Site No: 03CH01-CB

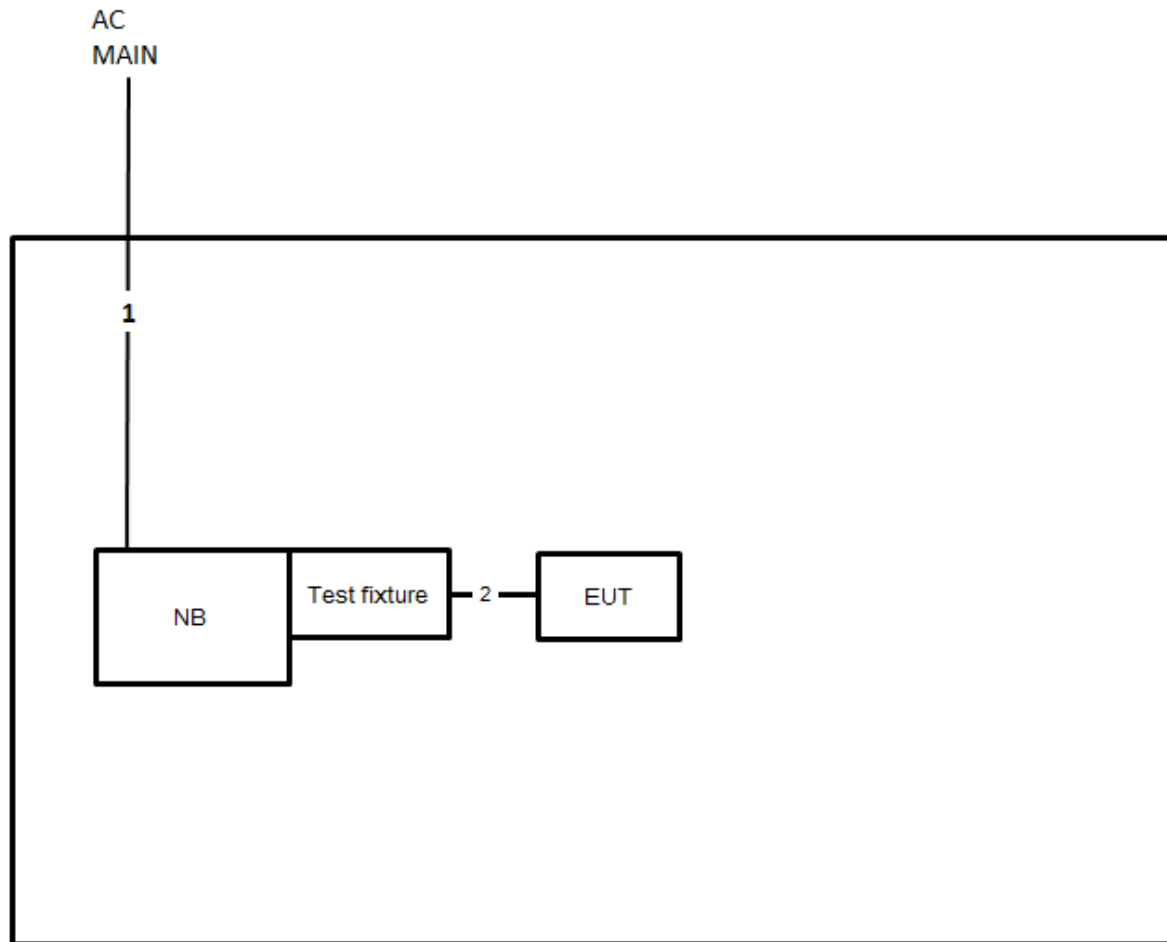
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E4300	DoC
2	Test fixture	Liteon	TB006	DoC

For Test Site No: TH01-CB

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E4300	DoC
2	Test fixture	Liteon	TB006	DoC

2.6 Test Setup Diagram



Test Setup Diagram - Radiated Test


Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	USB cable	Yes	0.1m

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

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

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

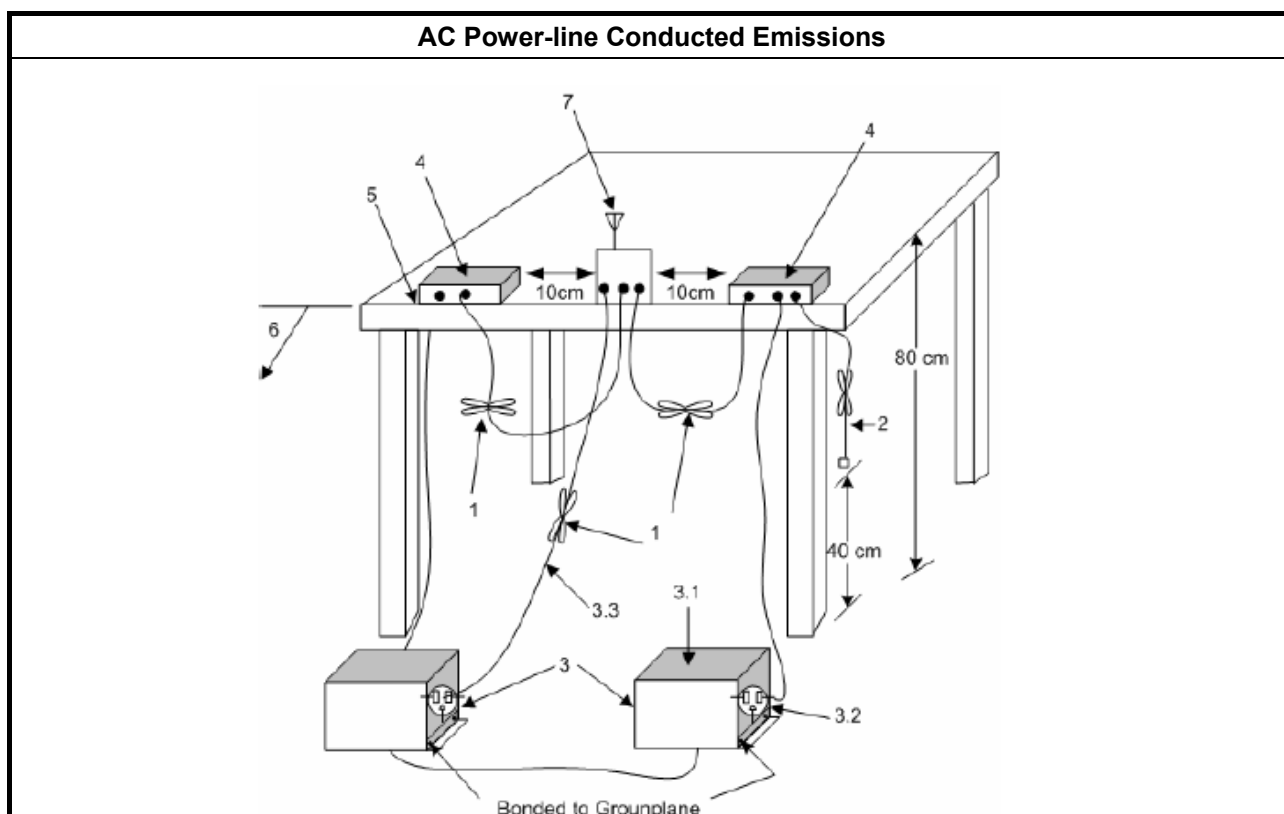
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup





3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 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 $\geq$ 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 $\geq$ 500kHz.

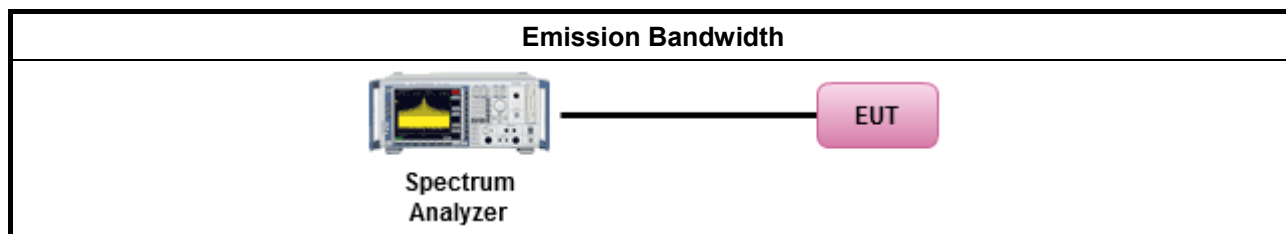
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
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



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 $11 \text{ dBm} + 10 \log B$, 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 $11 \text{ dBm} + 10 \log B$, 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

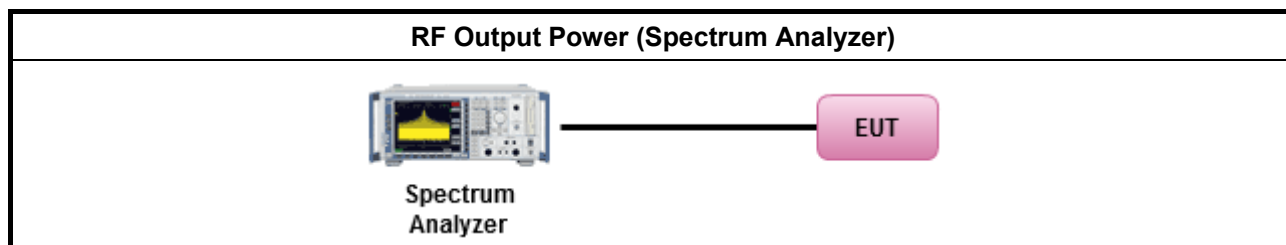
Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

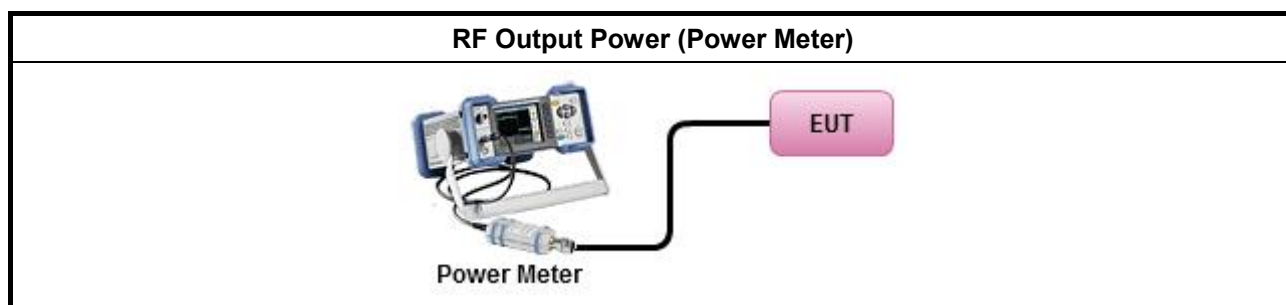
Test Method	
Maximum Conducted Output Power	
Average over on/off periods with duty factor	
☒	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
☐	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
Wideband RF power meter and average over on/off 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: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$	

3.3.4 Test Setup

For Straddle Channel test:



For Other Test:



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 and the e.i.r.p. peak power spectral density (PPSD) ≤ 17 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 $0^\circ \leq \theta < 8^\circ$; -13 - 0.716 (θ-8) dBW/MHz for $8^\circ \leq \theta < 40^\circ$ -35.9 - 1.22 (θ-40) dBW/MHz for $40^\circ \leq \theta \leq 45^\circ$; -42 dBW/MHz for $\theta > 45^\circ$
☐ For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 17 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

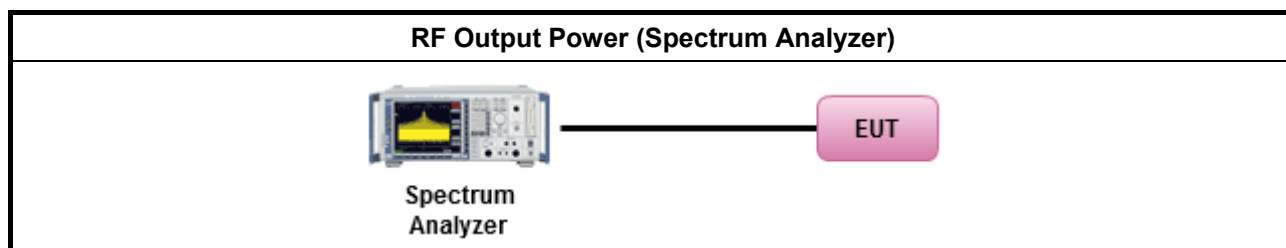
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

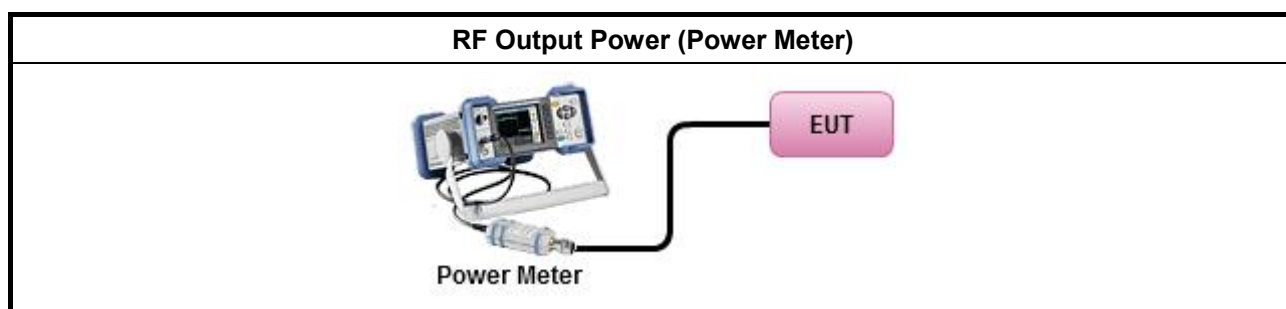
Test Method	
Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density 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: $PPSD_{total} = PPSD_1 + PPSD_2 + \dots + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = PPSD_{total} + DG$	

3.4.4 Test Setup

For Straddle Channel test:



For Other Test:



3.4.5 Test Result of Peak Power Spectral Density

Refer as Appendix D

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.

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).

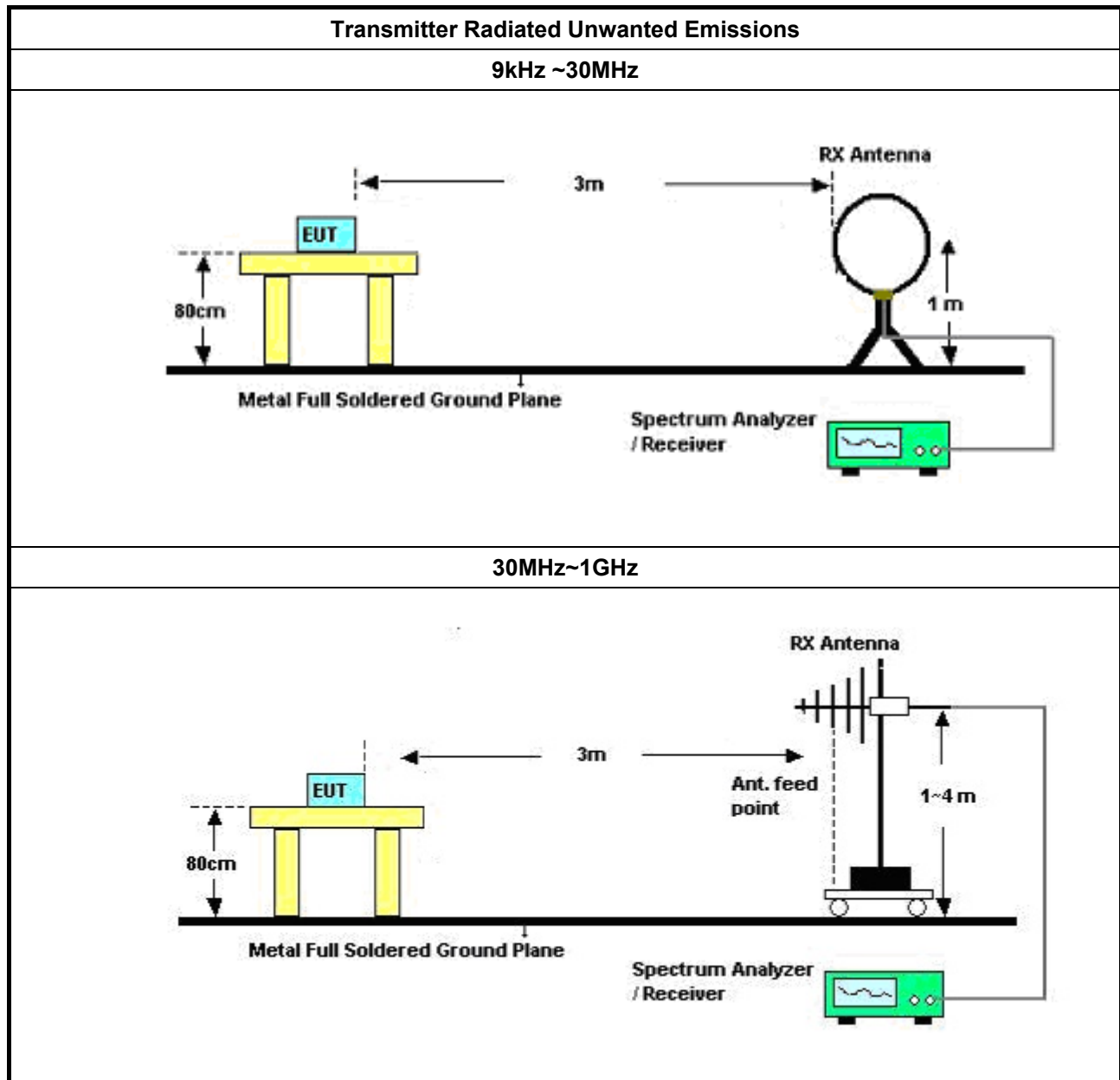
3.5.2 Measuring Instruments

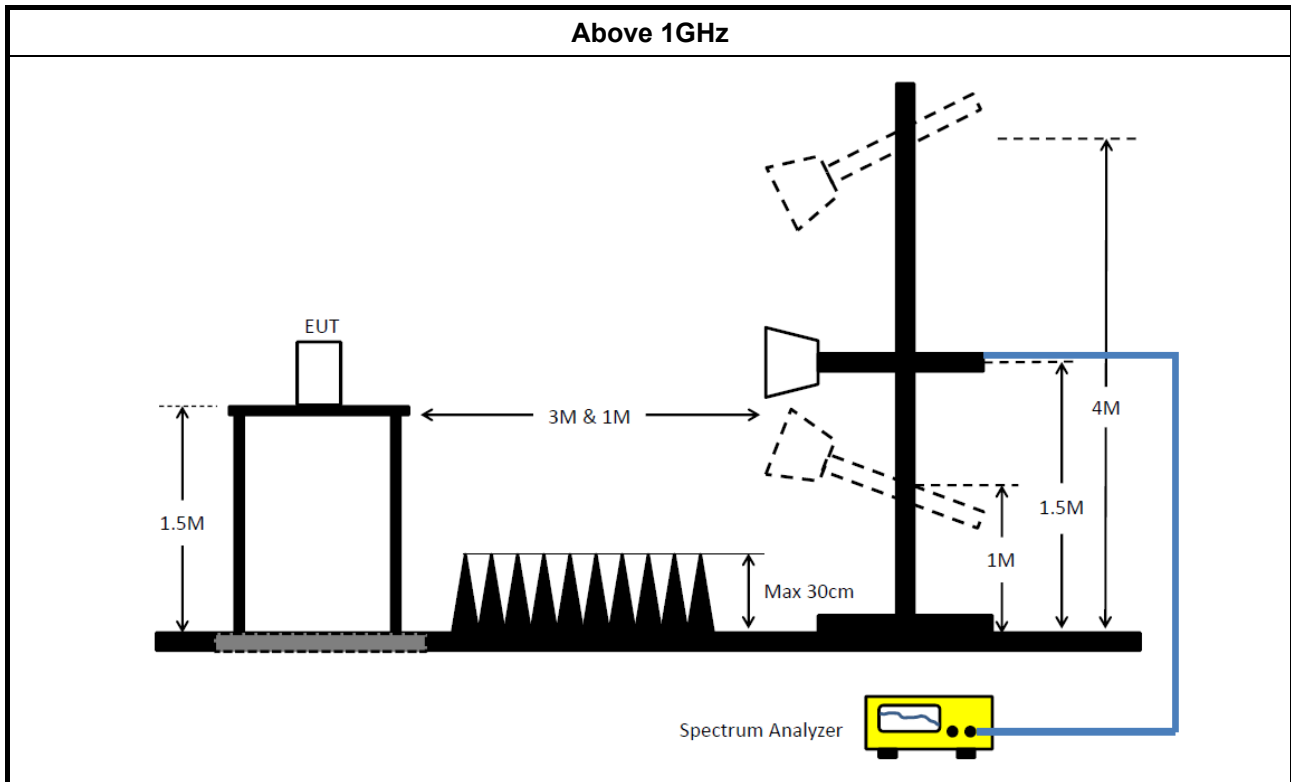
Refer a test equipment and calibration data table in this test report.

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 H)2) for unwanted emissions into non-restricted bands.
	Refer as FCC KDB 789033, clause H)1) for unwanted emissions into restricted bands.
	☐ Refer as FCC KDB 789033, H)6) Method AD (Trace Averaging).
	☒ Refer as FCC KDB 789033, H)6) Method VB (Reduced VBW).
	☐ Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW $\geq 1/T$, where T is pulse time.
	☐ Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
	☒ Refer as FCC KDB 789033, clause H)5) measurement procedure peak limit.
	☐ Refer as ANSI C63.10, clause 4.2.3.2.2 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





3.5.5 Transmitter Unwanted Emissions (Below 30MHz)

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

3.5.6 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E

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.	
LE-LAN Devices	
N/A	
IEEE Std. 802.11	
The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band and ± 25 ppm maximum for the 2.4 GHz band.	

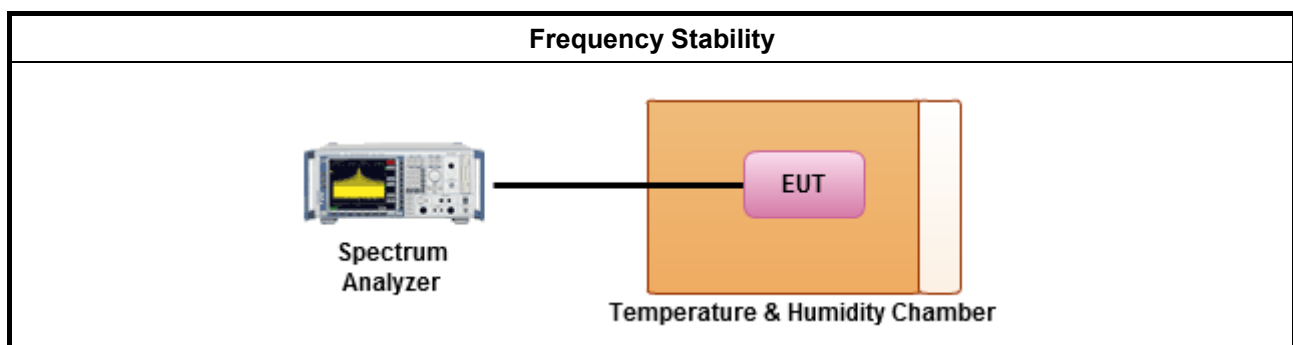
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

Test Method	
Refer as ANSI C63.10, clause 6.8 for frequency stability tests	
	Frequency stability with respect to ambient temperature
	Frequency stability when varying supply voltage
	Extreme temperature is 0°C~70°C.

3.6.4 Test Setup



3.6.5 Test Result of Frequency Stability

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 27, 2016	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 14, 2016	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 21, 2016	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	May 24, 2016	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMC	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 30, 2016	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2016*	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 10, 2016	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 25, 2016	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Mar. 15, 2016	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 18, 2016	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 16, 2017	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jun. 28, 2016	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 21, 2016	Radiation (03CH01-CB)
EMI Test	R&S	ESCS	100355	9kHz ~ 2.75GHz	May 16, 2016	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
Test Software	Audix	E3	6.2009-I0-7	N/A	N/A	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 26, 2016	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 03, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz ~ 26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
RF Cable-high	Woken	RG402	High Cable-7	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 22, 2016	Conducted (TH01-CB)

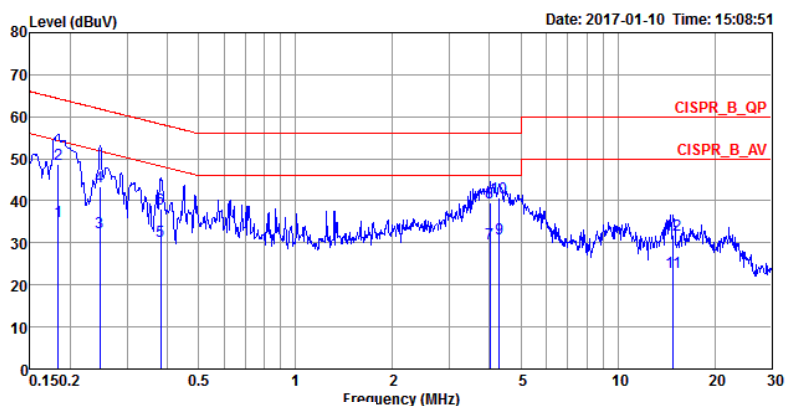
Note: Calibration Interval of instruments listed above is one year.

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

NCR means Non-Calibration required.

AC Power-line Conducted Emissions Result

Operating Mode	1	Power Phase	Neutral
Operating Function	CTX		



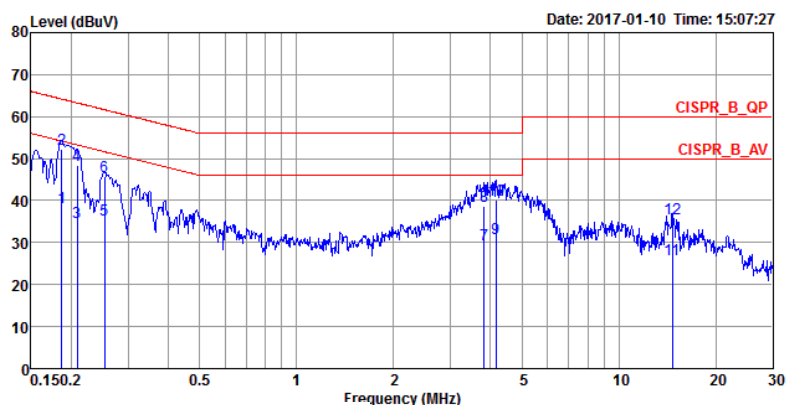
	Freq	Level	Over	Limit	Read	LISN	Cable	Remark	Pol/Phase
	MHz	dBuV	Limit	Line	Level	Factor	Loss		
			dB	dBuV	dBuV	dB	dB		
1	0.1835	35.22	-19.11	54.33	25.20	9.97	0.05	Average	NEUTRAL
2	0.1835	48.68	-15.65	64.33	38.66	9.97	0.05	QP	NEUTRAL
3	0.2468	32.43	-19.43	51.86	22.41	9.97	0.05	Average	NEUTRAL
4	0.2468	43.27	-18.59	61.86	33.25	9.97	0.05	QP	NEUTRAL
5	0.3811	30.46	-17.79	48.25	20.46	9.96	0.04	Average	NEUTRAL
6	0.3811	38.21	-20.04	58.25	28.21	9.96	0.04	QP	NEUTRAL
7	4.0062	29.84	-16.16	46.00	19.63	10.08	0.13	Average	NEUTRAL
8	4.0062	39.50	-16.50	56.00	29.29	10.08	0.13	QP	NEUTRAL
9	4.2918	30.96	-15.04	46.00	20.74	10.09	0.13	Average	NEUTRAL
10	4.2918	40.79	-15.21	56.00	30.57	10.09	0.13	QP	NEUTRAL
11	14.8281	22.95	-27.05	50.00	12.50	10.23	0.22	Average	NEUTRAL
12	14.8281	31.76	-28.24	60.00	21.31	10.23	0.22	QP	NEUTRAL

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	1	Power Phase	Line
Operating Function	CTX		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1864	38.27	-15.93	54.20	28.29	9.93	0.05	Average	LINE
2	0.1864	52.17	-12.03	64.20	42.19	9.93	0.05	QP	LINE
3	0.2083	34.75	-18.52	53.27	24.77	9.93	0.05	Average	LINE
4	0.2083	48.40	-14.87	63.27	38.42	9.93	0.05	QP	LINE
5	0.2535	35.48	-16.16	51.64	25.51	9.92	0.05	Average	LINE
6	0.2535	45.75	-15.89	61.64	35.78	9.92	0.05	QP	LINE
7	3.8196	29.48	-16.52	46.00	19.40	9.95	0.13	Average	LINE
8	3.8196	38.70	-17.30	56.00	28.62	9.95	0.13	QP	LINE
9	4.1575	30.85	-15.15	46.00	20.77	9.95	0.13	Average	LINE
10	4.1575	40.17	-15.83	56.00	30.09	9.95	0.13	QP	LINE
11	14.6718	25.85	-24.15	50.00	15.48	10.15	0.22	Average	LINE
12	14.6718	35.66	-24.34	60.00	25.29	10.15	0.22	QP	LINE

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
802.11a_Nss1_2TX	-	-	-	-	-
5.15-5.25GHz	38.375M	17.291M	17M3D1D	35.55M	16.617M
5.25-5.35GHz	40M	17.016M	17M0D1D	34.275M	16.642M
5.47-5.725GHz	38.4M	17.041M	17M0D1D	17.55M	13.268M
5.725-5.85GHz	16.525M	17.066M	17M1D1D	3.22M	4.478M
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-
5.15-5.25GHz	43.15M	18.016M	18M0D1D	37.125M	17.716M
5.25-5.35GHz	42.825M	17.841M	17M8D1D	37.875M	17.691M
5.47-5.725GHz	42.925M	17.941M	17M9D1D	18.87M	13.868M
5.725-5.85GHz	17.675M	17.791M	17M8D1D	3.78M	4.958M
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-
5.15-5.25GHz	78.55M	36.582M	36M6D1D	42.95M	36.132M
5.25-5.35GHz	81.45M	36.582M	36M6D1D	42.65M	36.132M
5.47-5.725GHz	86.05M	36.882M	36M9D1D	42.8M	33.093M
5.725-5.85GHz	36.45M	36.482M	36M5D1D	3.22M	17.011M
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-
5.15-5.25GHz	83.3M	75.662M	75M7D1D	83.3M	75.562M
5.25-5.35GHz	83.5M	75.662M	75M7D1D	82.9M	75.662M
5.47-5.725GHz	147.9M	76.262M	76M3D1D	81.6M	72.639M
5.725-5.85GHz	76.3M	76.362M	76M4D1D	3.14M	31.964M

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

Max-OBW = Maximum 99% occupied bandwidth;

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

Min-OBW = Minimum 99% occupied bandwidth;

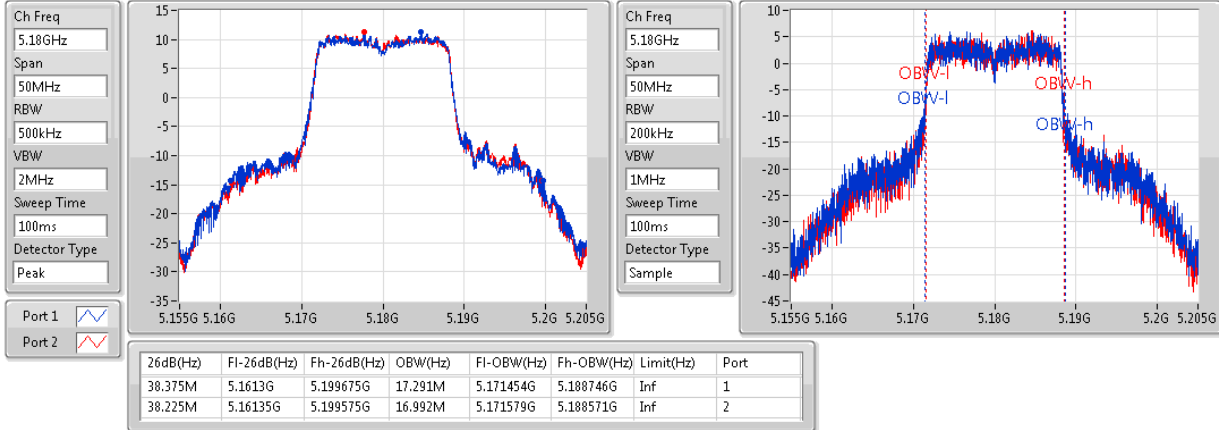
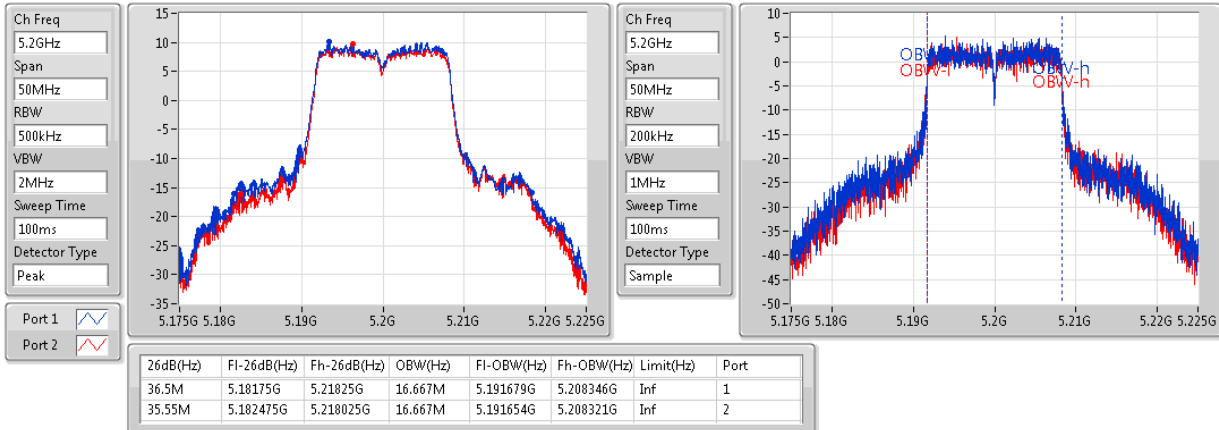
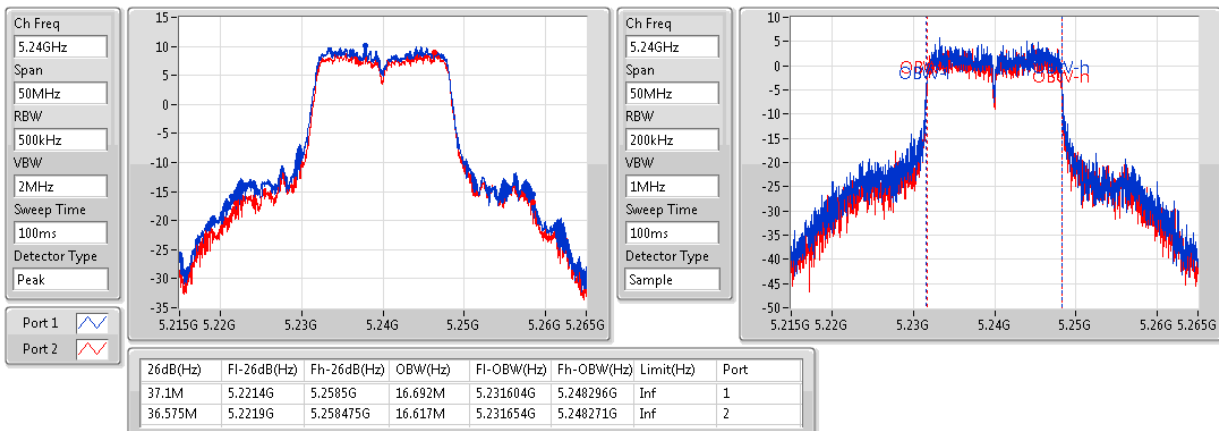
Result

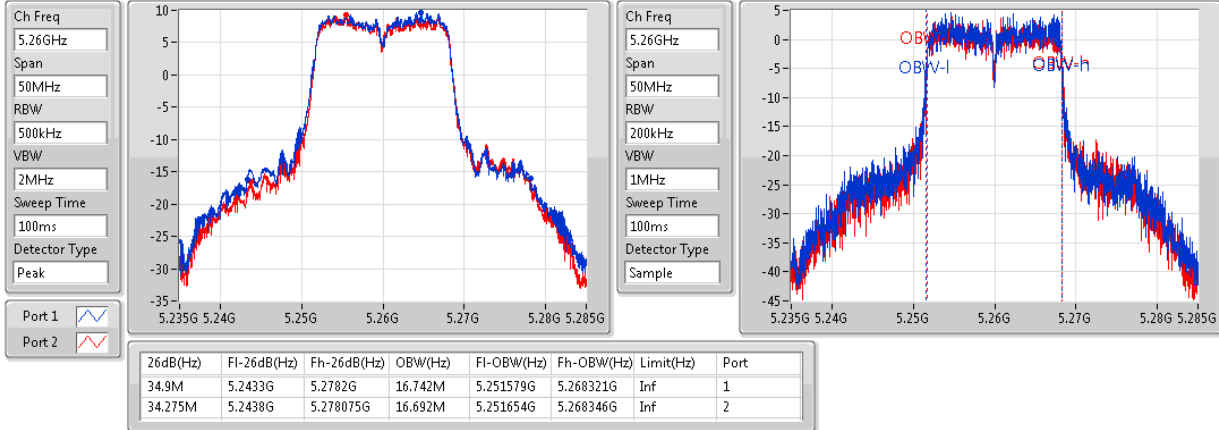
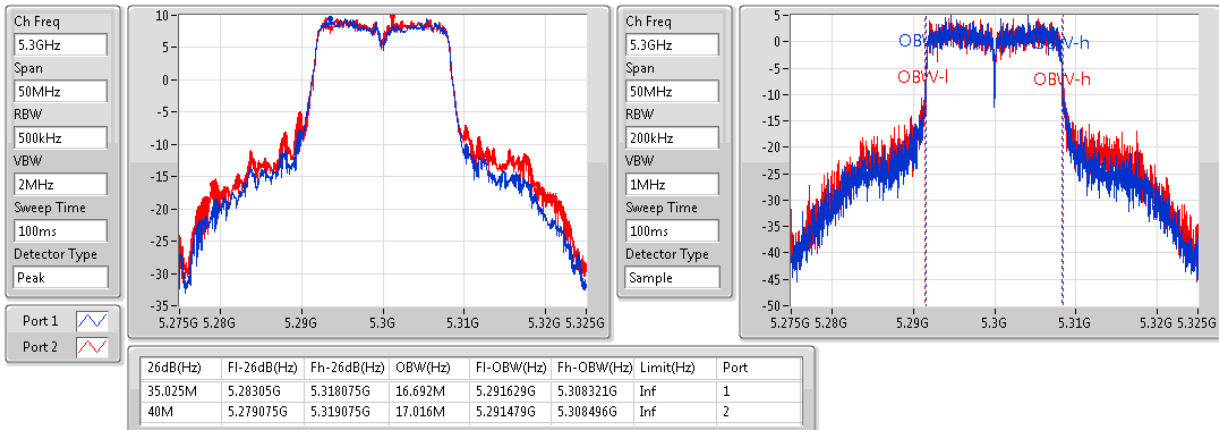
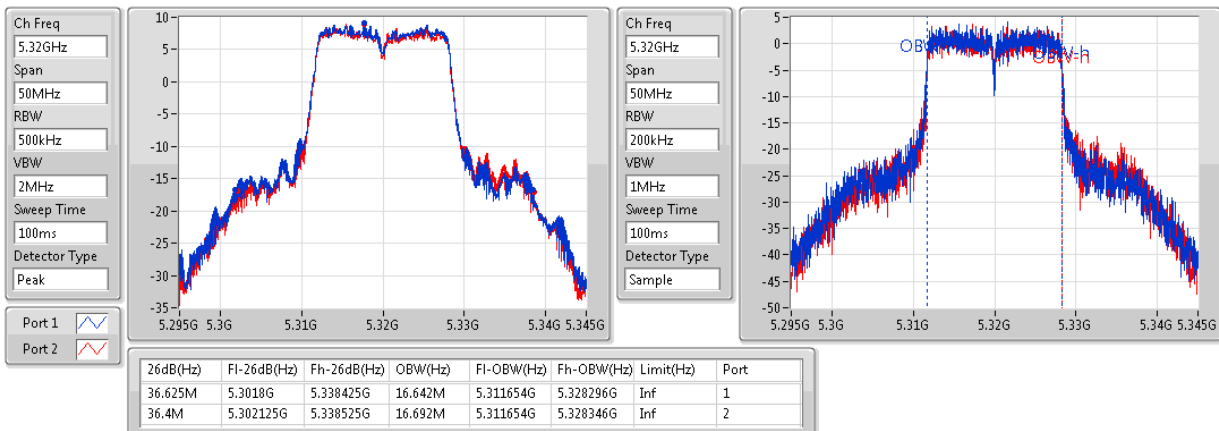
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11a_Nss1_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	38.375M	17.291M	38.225M	16.992M
5200MHz	Pass	Inf	36.5M	16.667M	35.55M	16.667M
5240MHz	Pass	Inf	37.1M	16.692M	36.575M	16.617M
5260MHz	Pass	Inf	34.9M	16.742M	34.275M	16.692M
5300MHz	Pass	Inf	35.025M	16.692M	40M	17.016M
5320MHz	Pass	Inf	36.625M	16.642M	36.4M	16.692M
5500MHz	Pass	Inf	37.9M	16.992M	37.05M	17.041M
5580MHz	Pass	Inf	38.4M	16.892M	35.55M	16.592M
5700MHz	Pass	Inf	34.675M	16.642M	24.45M	16.517M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	17.55M	13.343M	17.7M	13.268M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.22M	4.758M	3.22M	4.478M
5745MHz	Pass	500k	16.475M	17.066M	16.4M	16.642M
5785MHz	Pass	500k	16.525M	16.742M	16.475M	16.617M
5825MHz	Pass	500k	16.45M	16.692M	16.45M	16.642M
802.11ac_VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	39.975M	17.766M	38.225M	17.766M
5200MHz	Pass	Inf	38.975M	17.741M	37.125M	17.716M
5240MHz	Pass	Inf	43.15M	17.991M	42.625M	18.016M
5260MHz	Pass	Inf	39.075M	17.741M	37.875M	17.691M
5300MHz	Pass	Inf	42.825M	17.841M	42.75M	17.791M
5320MHz	Pass	Inf	38.7M	17.791M	38.325M	17.691M
5500MHz	Pass	Inf	42.925M	17.916M	39.575M	17.941M
5580MHz	Pass	Inf	38.55M	17.816M	39.1M	17.741M
5700MHz	Pass	Inf	25.925M	17.641M	26.125M	17.691M
5720MHz Straddle 5.47-5.725GHz	Pass	Inf	18.87M	13.868M	19.395M	13.868M
5720MHz Straddle 5.725-5.85GHz	Pass	500k	3.78M	4.958M	3.78M	6.097M
5745MHz	Pass	500k	17.6M	17.716M	17.6M	17.691M
5785MHz	Pass	500k	17.675M	17.791M	17.675M	17.741M
5825MHz	Pass	500k	17.675M	17.791M	17.6M	17.741M
802.11ac_VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	42.95M	36.282M	43.45M	36.132M
5230MHz	Pass	Inf	78.55M	36.582M	74.75M	36.432M
5270MHz	Pass	Inf	81.45M	36.582M	73.7M	36.482M
5310MHz	Pass	Inf	42.65M	36.132M	43M	36.182M
5510MHz	Pass	Inf	42.8M	36.232M	43.35M	36.132M
5550MHz	Pass	Inf	86.05M	36.882M	73.3M	36.482M
5670MHz	Pass	Inf	74.55M	36.432M	72.6M	36.332M
5710MHz Straddle 5.47-5.725GHz	Pass	Inf	51.415M	33.093M	51.415M	33.163M
5710MHz Straddle 5.725-5.85GHz	Pass	500k	3.22M	20.23M	3.22M	17.011M
5755MHz	Pass	500k	36.45M	36.382M	36.35M	36.282M
5795MHz	Pass	500k	36.45M	36.482M	36.35M	36.482M
802.11ac_VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	83.3M	75.662M	83.3M	75.562M

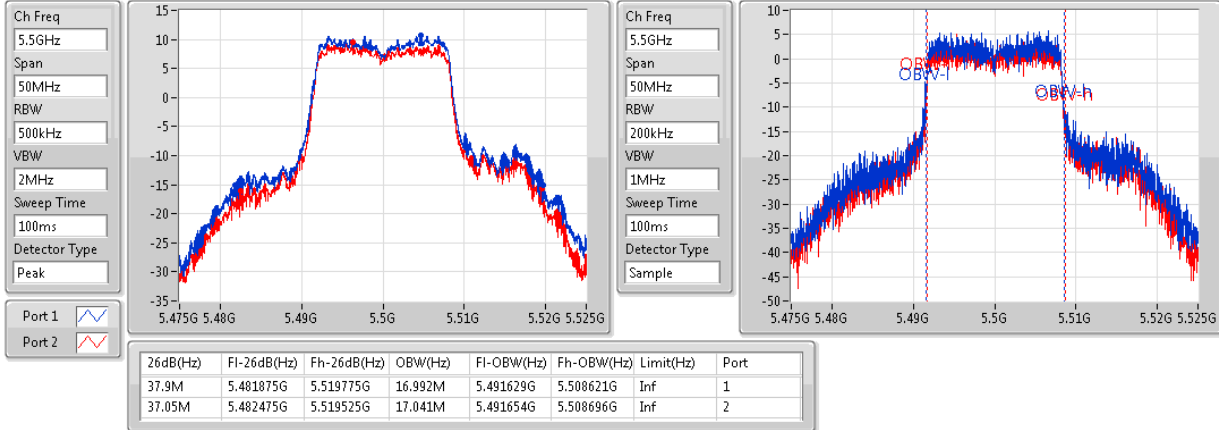
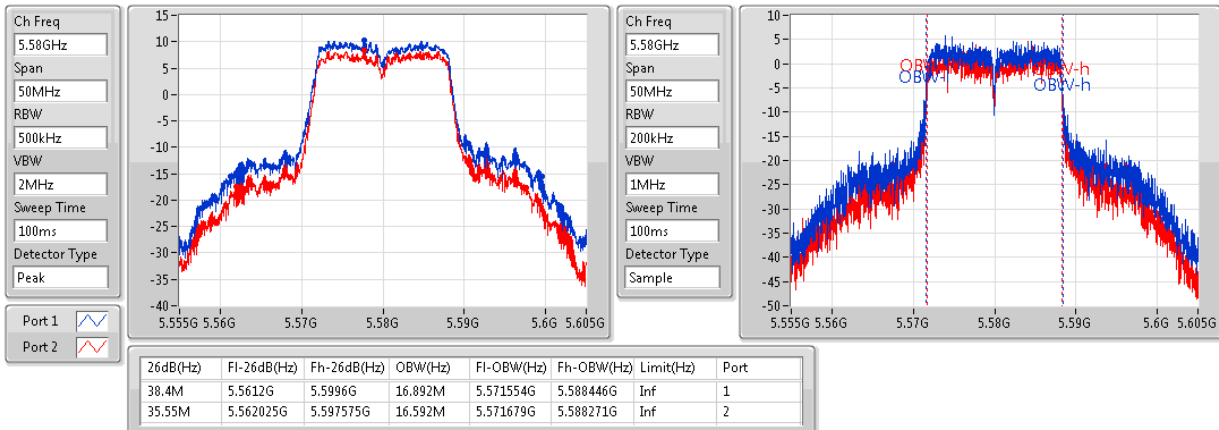
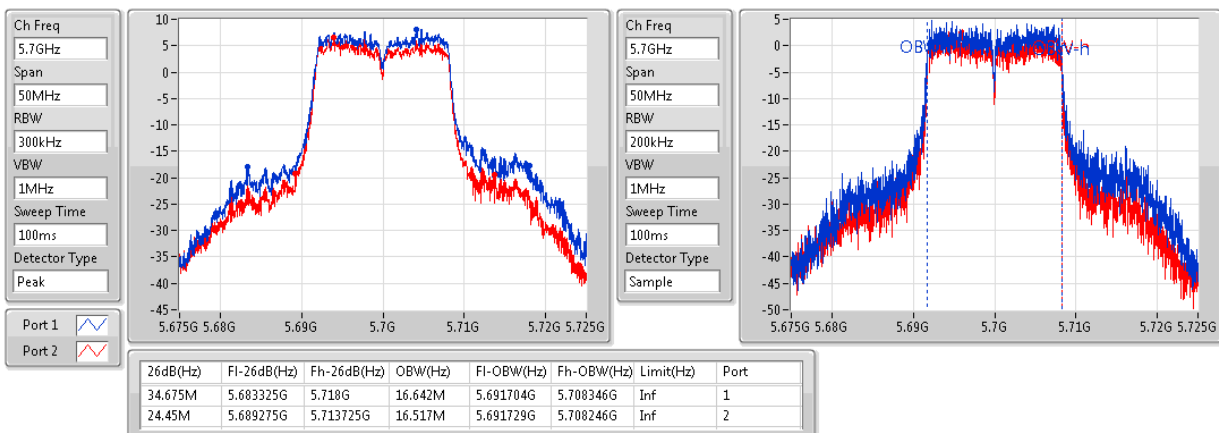
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
5290MHz	Pass	Inf	83.5M	75.662M	82.9M	75.662M
5530MHz	Pass	Inf	82.5M	75.562M	81.6M	75.562M
5610MHz	Pass	Inf	147.9M	76.262M	121.6M	75.962M
5690MHz Straddle 5.47-5.725GHz	Pass	Inf	88.8M	72.864M	88.575M	72.639M
5690MHz Straddle 5.725-5.85GHz	Pass	500k	3.16M	33.923M	3.14M	31.964M
5775MHz	Pass	500k	76.3M	76.362M	76.3M	75.962M

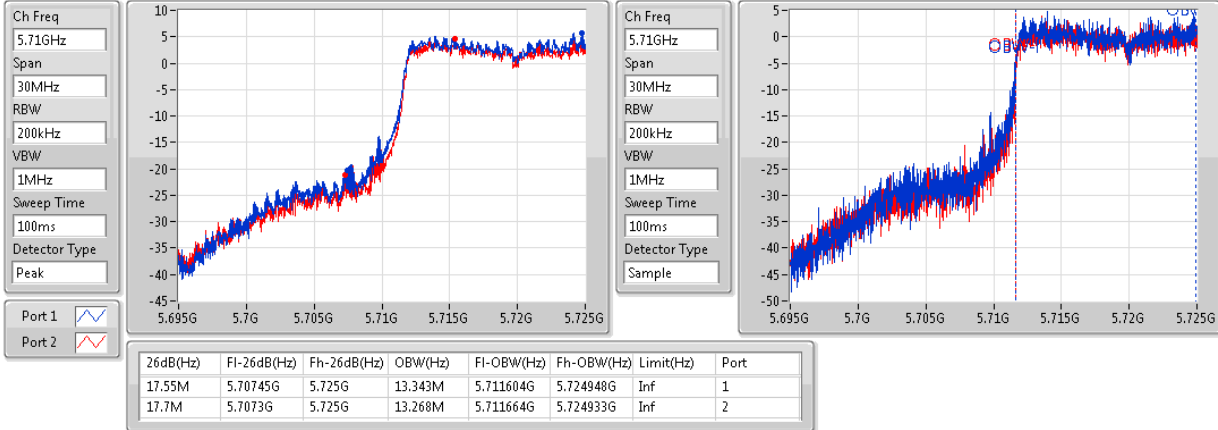
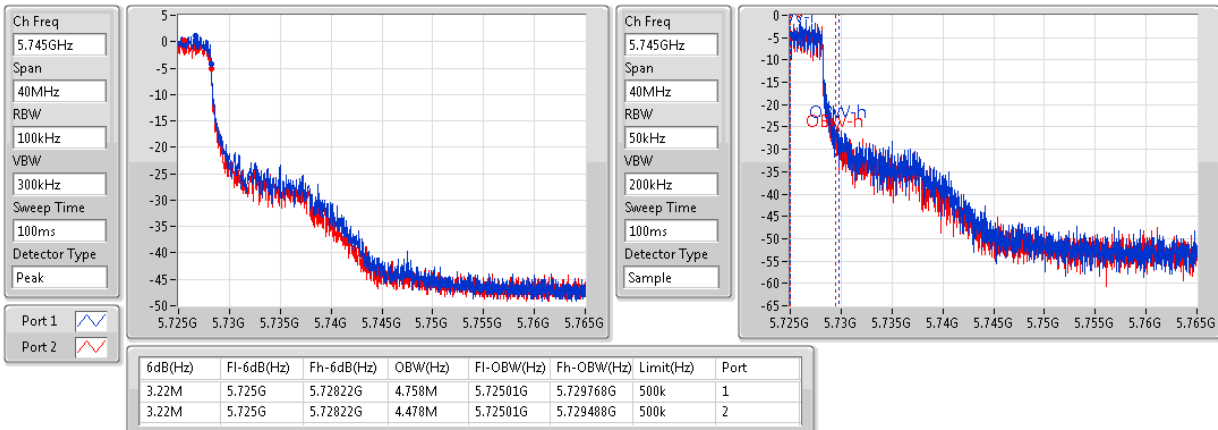
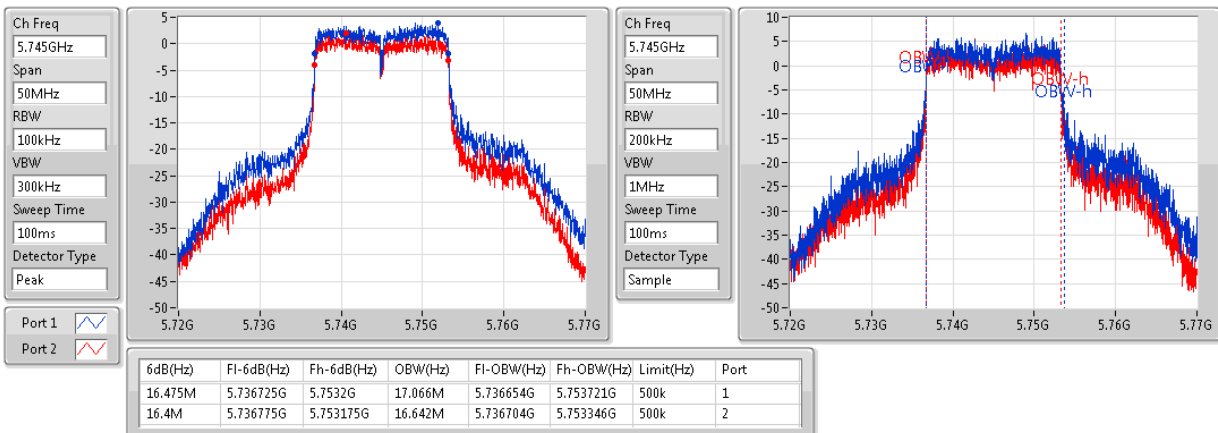
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

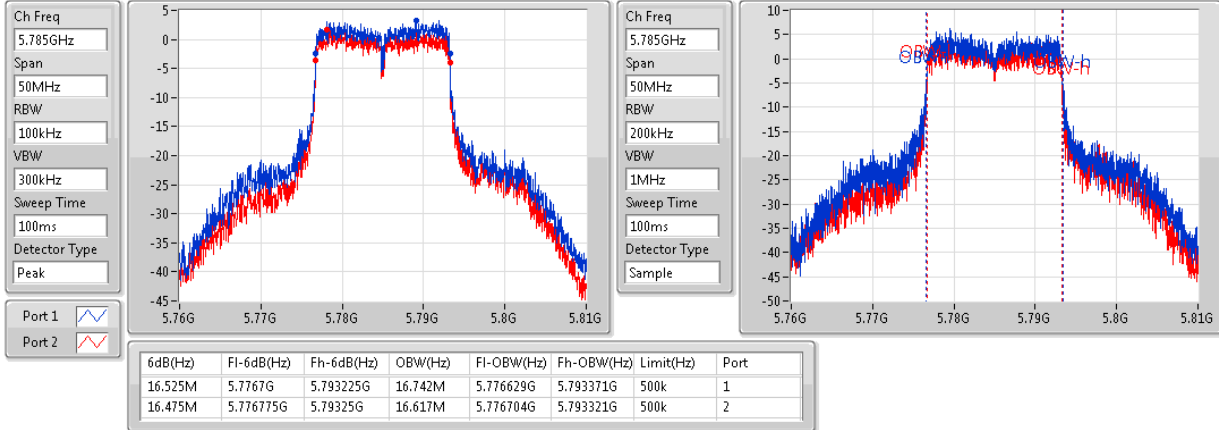
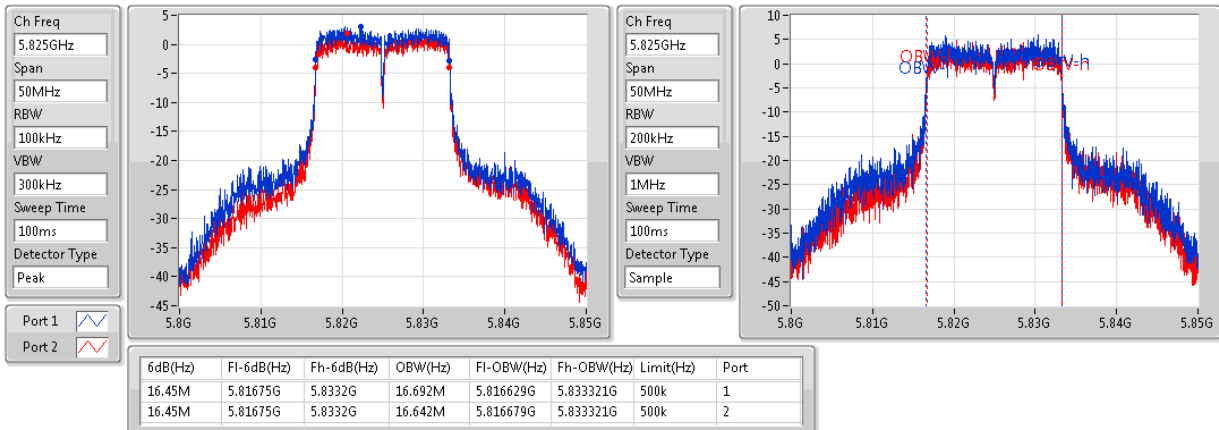
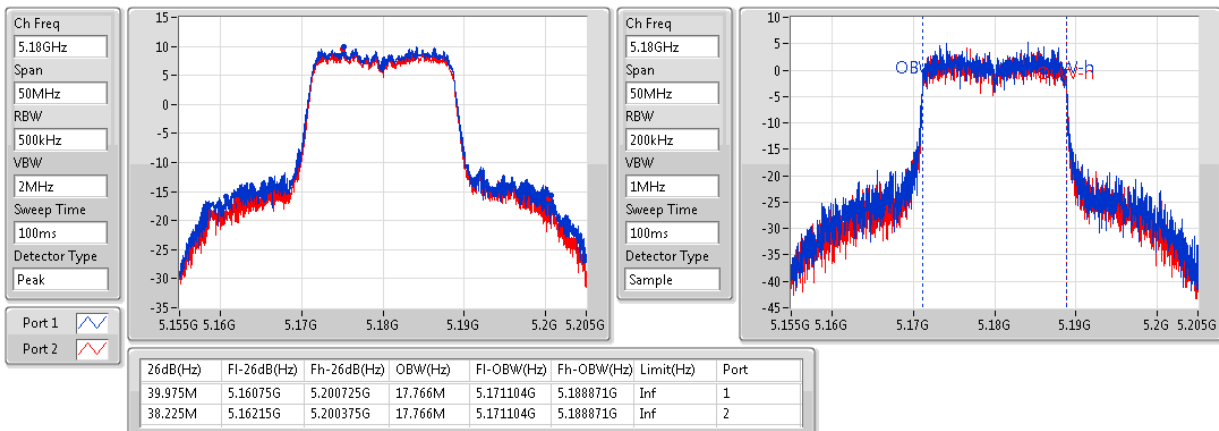
Port X-OBW = Port X 99% occupied bandwidth;

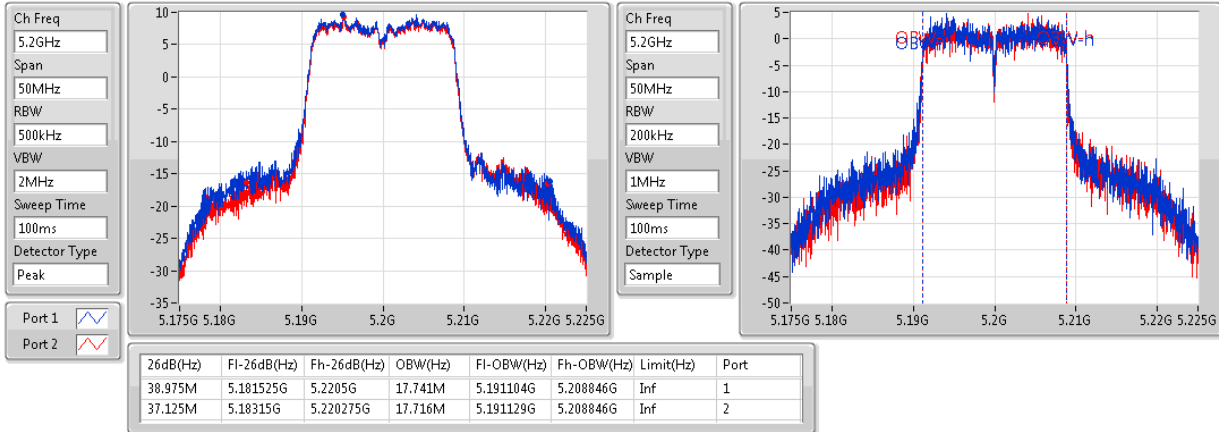
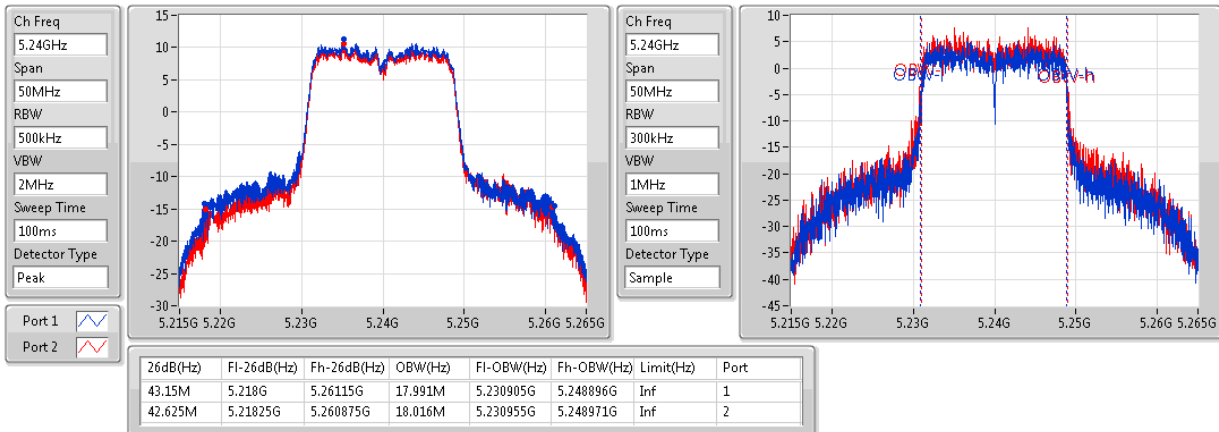
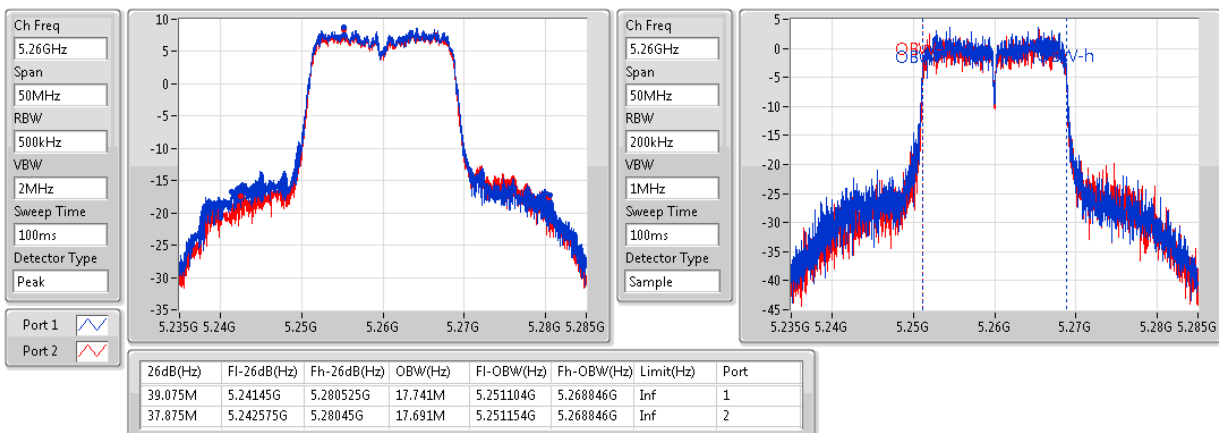
802.11a_Nss1_2TX
EBW
5180MHz

802.11a_Nss1_2TX
EBW
5200MHz

802.11a_Nss1_2TX
EBW
5240MHz


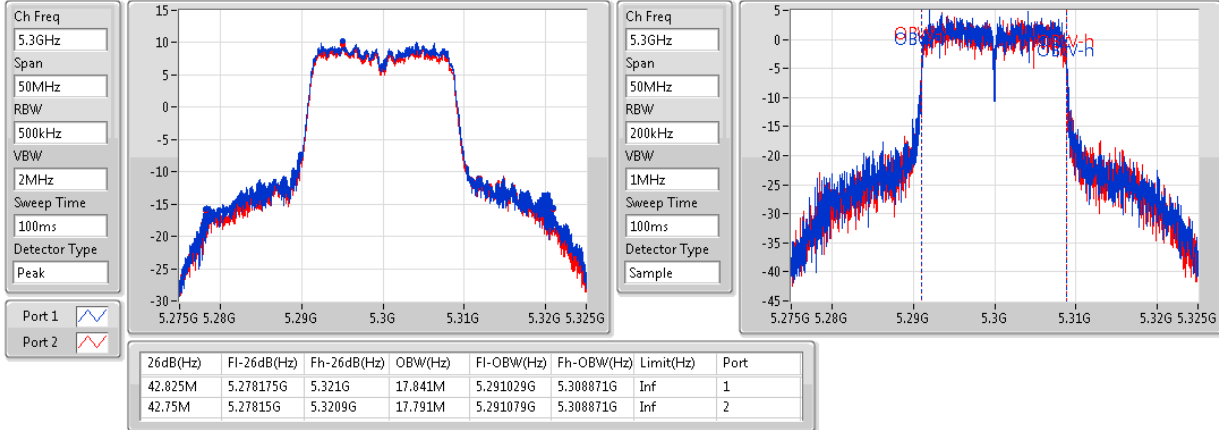
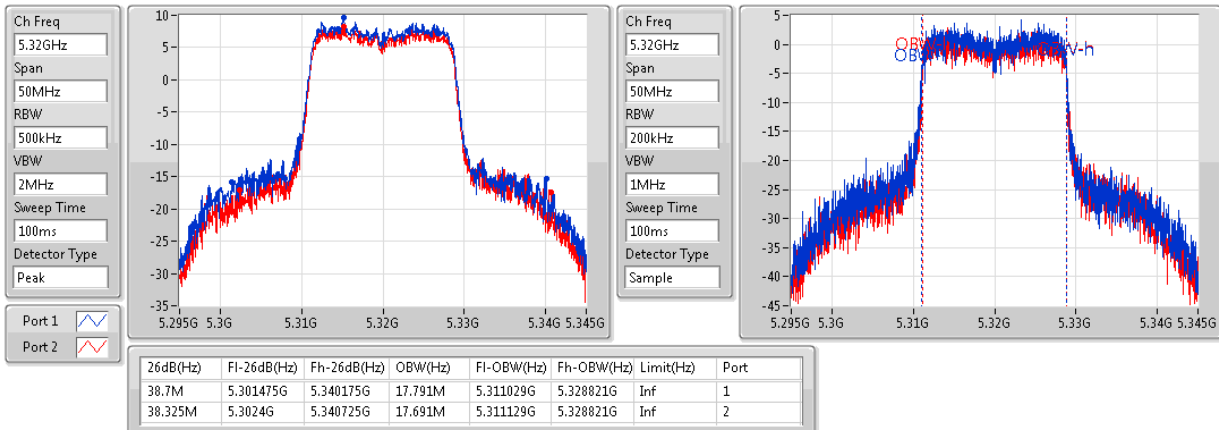
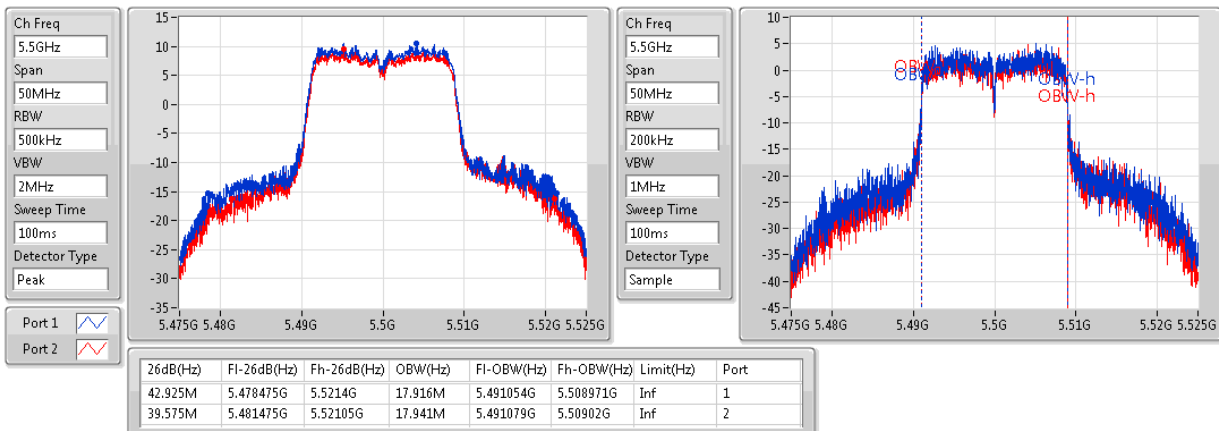
802.11a_Nss1_2TX
EBW
5260MHz

802.11a_Nss1_2TX
EBW
5300MHz

802.11a_Nss1_2TX
EBW
5320MHz


802.11a_Nss1_2TX
EBW
5500MHz

802.11a_Nss1_2TX
EBW
5580MHz

802.11a_Nss1_2TX
EBW
5700MHz


802.11a_Nss1_2TX
EBW
5720MHz Straddle 5.47-5.725GHz

802.11a_Nss1_2TX
EBW
5720MHz Straddle 5.725-5.85GHz

802.11a_Nss1_2TX
EBW
5745MHz


802.11a_Nss1_2TX
EBW
5785MHz

802.11a_Nss1_2TX
EBW
5825MHz

802.11ac VHT20_Nss1.(MCS0)_2TX
EBW
5180MHz


802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5200MHz

802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5240MHz

802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5260MHz


802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5300MHz

802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5320MHz

802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5500MHz


802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5580MHz

Ch Freq
5.58GHz

Span
50MHz

RBW
500kHz

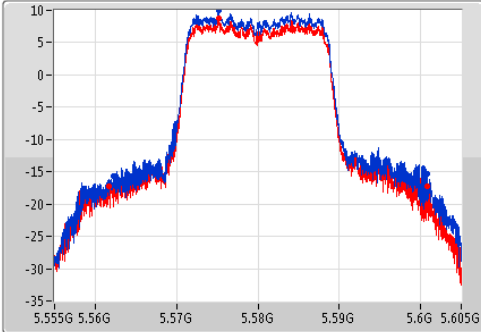
VBW
2MHz

Sweep Time
100ms

Detector Type
Peak

Port 1 

Port 2 



Ch Freq
5.58GHz

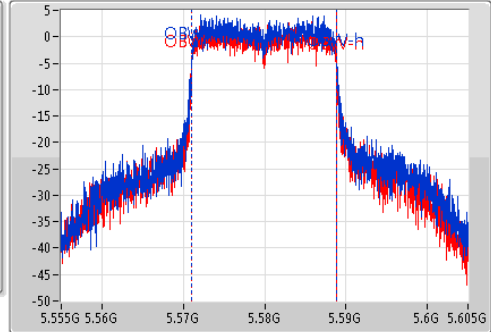
Span
50MHz

RBW
200kHz

VBW
1MHz

Sweep Time
100ms

Detector Type
Sample



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
38.55M	5.5623G	5.60085G	17.816M	5.571054G	5.588871G	Inf	1
39.1M	5.56175G	5.60085G	17.741M	5.571079G	5.588821G	Inf	2

802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5700MHz

Ch Freq
5.7GHz

Span
50MHz

RBW
300kHz

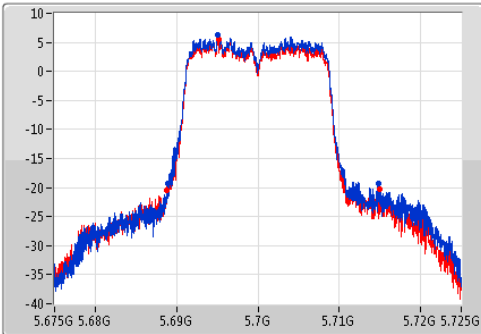
VBW
1MHz

Sweep Time
100ms

Detector Type
Peak

Port 1 

Port 2 



Ch Freq
5.7GHz

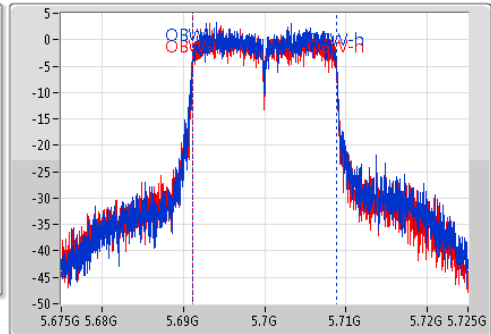
Span
50MHz

RBW
200kHz

VBW
1MHz

Sweep Time
100ms

Detector Type
Sample



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
25.925M	5.6889G	5.714825G	17.641M	5.691154G	5.708796G	Inf	1
26.125M	5.6888G	5.714925G	17.691M	5.691104G	5.708796G	Inf	2

802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5720MHz Straddle 5.47-5.725GHz

Ch Freq
5.71GHz

Span
30MHz

RBW
200kHz

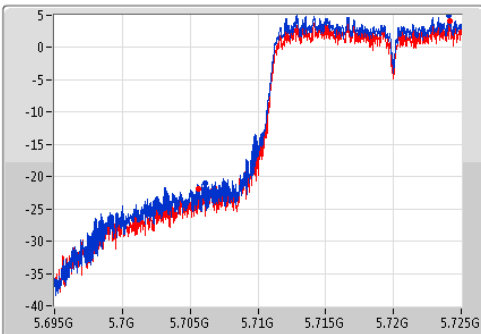
VBW
1MHz

Sweep Time
100ms

Detector Type
Peak

Port 1 

Port 2 



Ch Freq
5.71GHz

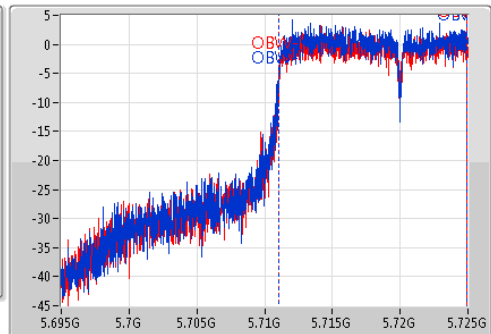
Span
30MHz

RBW
200kHz

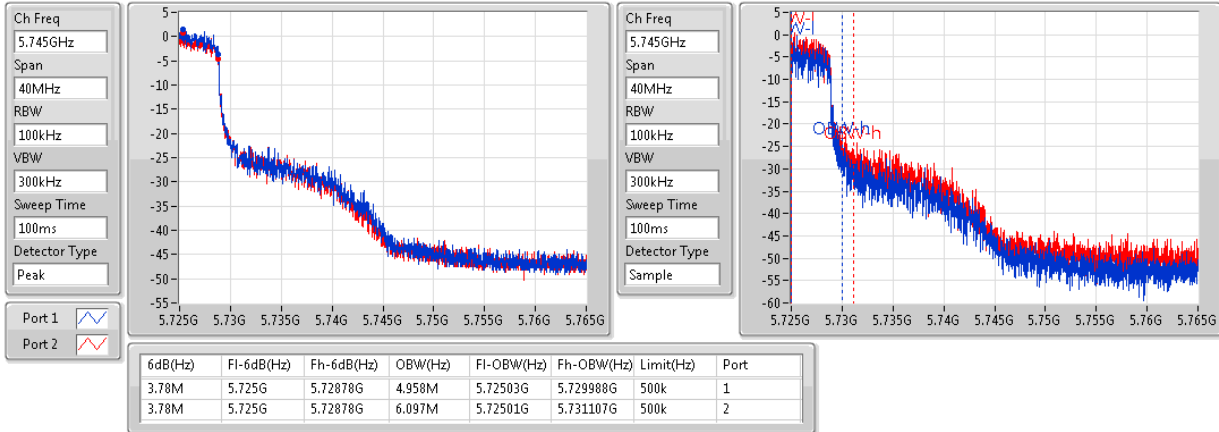
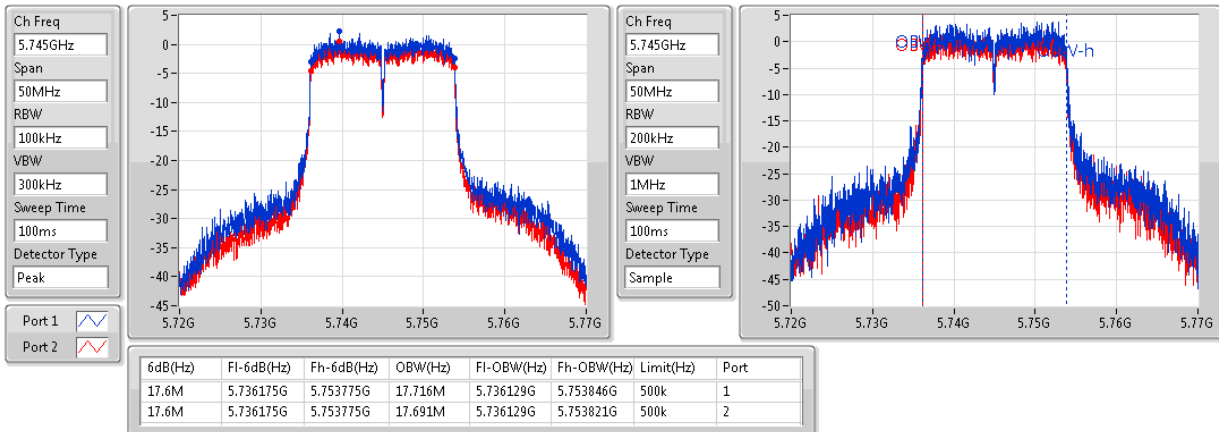
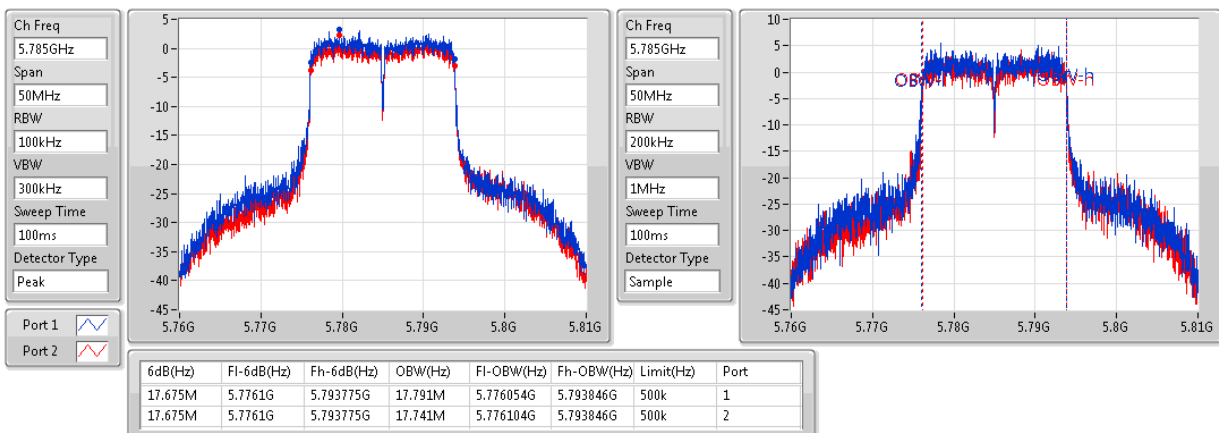
VBW
1MHz

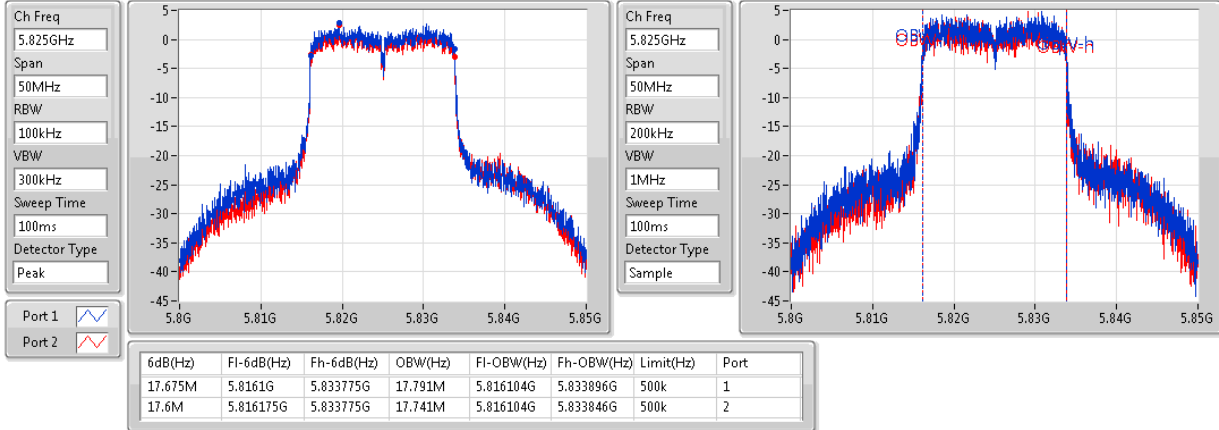
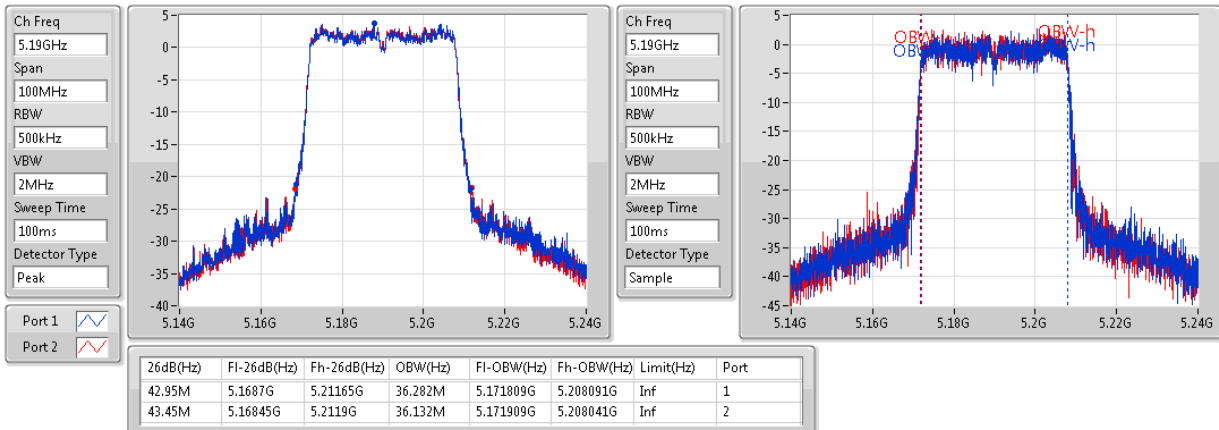
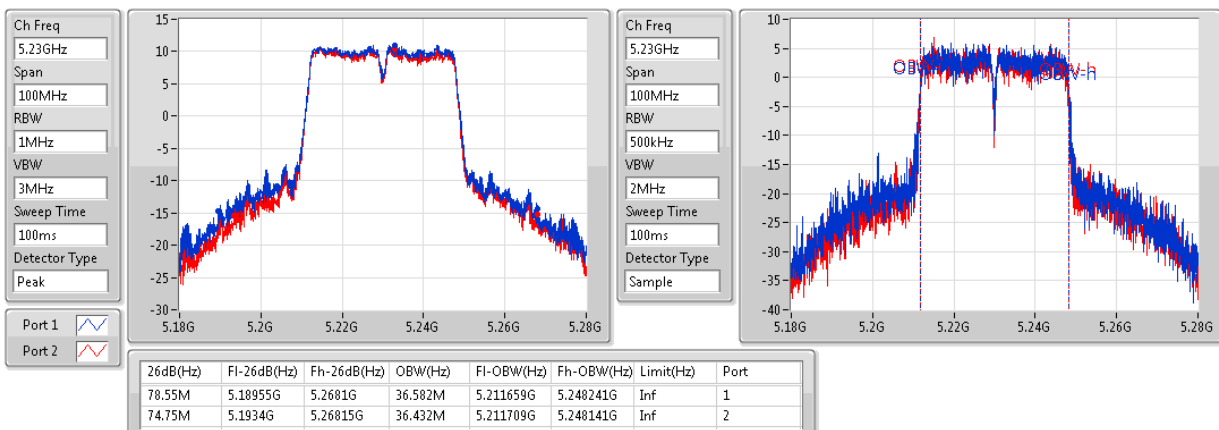
Sweep Time
100ms

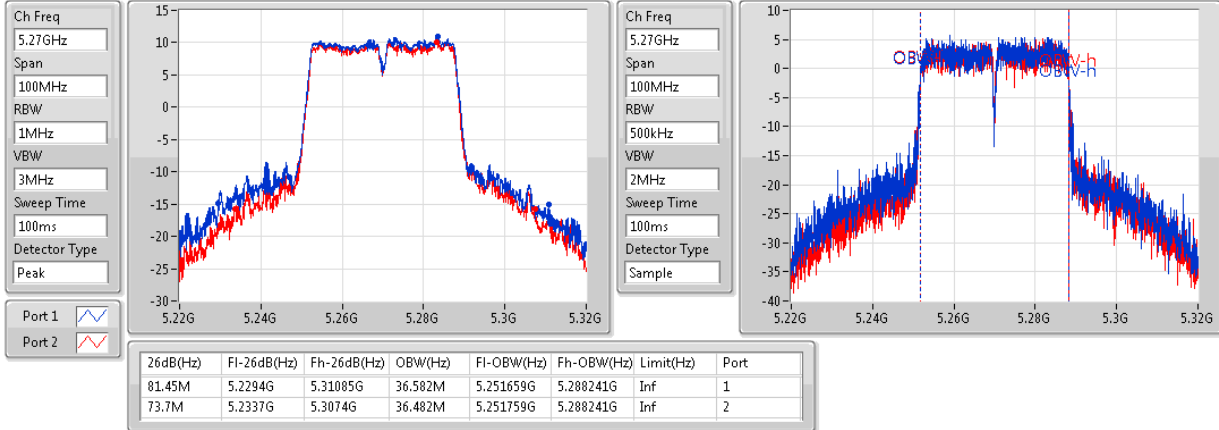
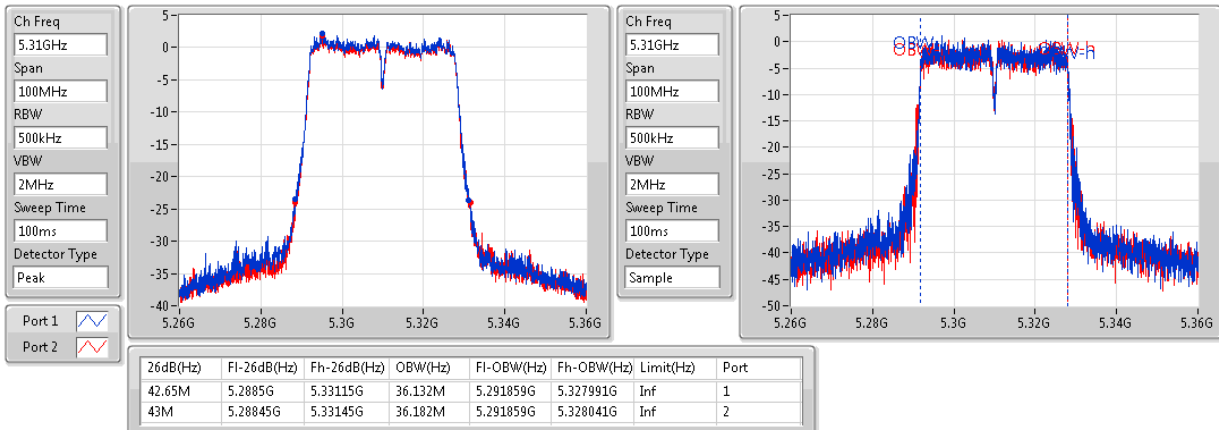
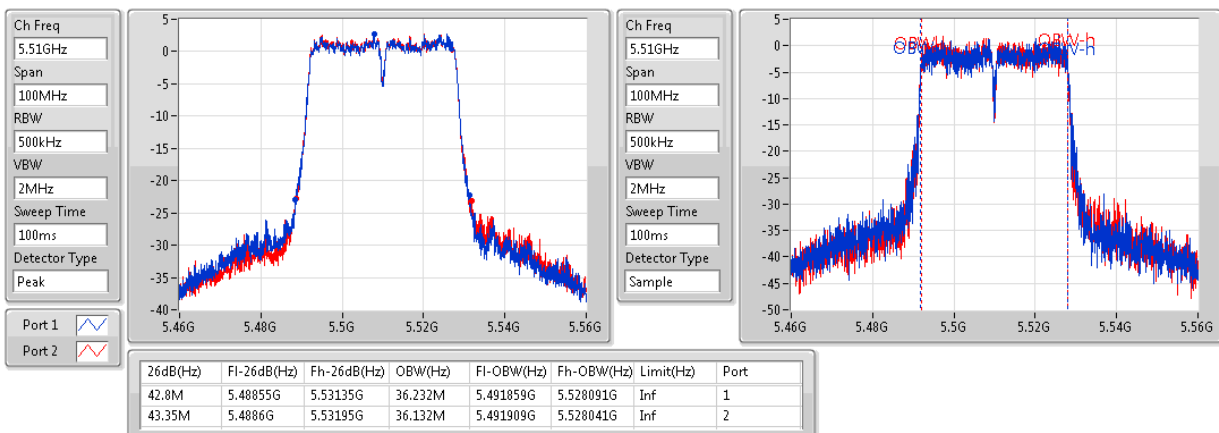
Detector Type
Sample



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
18.87M	5.70613G	5.725G	13.868M	5.711064G	5.724933G	Inf	1
19.395M	5.705605G	5.725G	13.868M	5.711064G	5.724933G	Inf	2

802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5720MHz Straddle 5.725-5.85GHz

802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5745MHz

802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5785MHz


802.11ac VHT20_Nss1,(MCS0)_2TX
EBW
5825MHz

802.11ac VHT40_Nss1,(MCS0)_2TX
EBW
5190MHz

802.11ac VHT40_Nss1,(MCS0)_2TX
EBW
5230MHz


802.11ac VHT40_Nss1,(MCS0)_2TX
EBW
5270MHz

802.11ac VHT40_Nss1,(MCS0)_2TX
EBW
5310MHz

802.11ac VHT40_Nss1,(MCS0)_2TX
EBW
5510MHz


802.11ac VHT40_Nss1,(MCS0)_2TX
EBW
5550MHz

Ch Freq
5.55GHz

Span
100MHz

RBW
1MHz

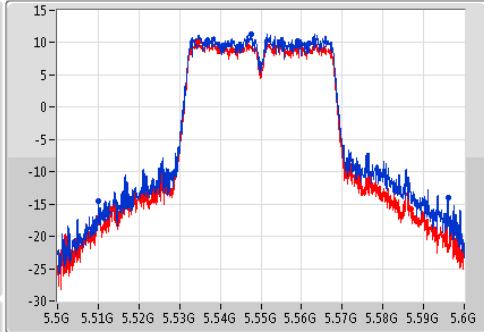
VBW
3MHz

Sweep Time
100ms

Detector Type
Peak

Port 1 

Port 2 



Ch Freq
5.55GHz

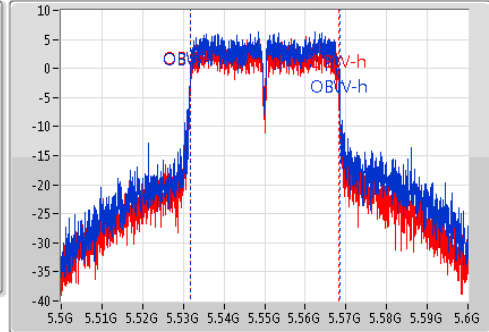
Span
100MHz

RBW
500kHz

VBW
2MHz

Sweep Time
100ms

Detector Type
Sample



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
86.05M	5.51005G	5.5961G	36.882M	5.531659G	5.568541G	Inf	1
73.3M	5.5135G	5.5868G	36.482M	5.531759G	5.568241G	Inf	2

802.11ac VHT40_Nss1,(MCS0)_2TX
EBW
5670MHz

Ch Freq
5.67GHz

Span
100MHz

RBW
1MHz

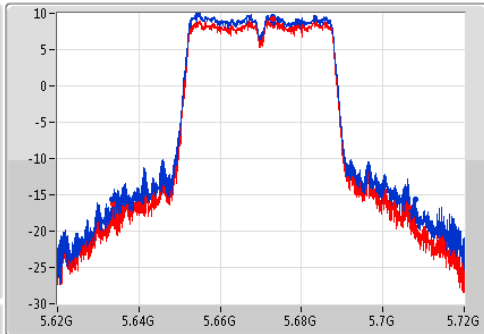
VBW
3MHz

Sweep Time
100ms

Detector Type
Peak

Port 1 

Port 2 



Ch Freq
5.67GHz

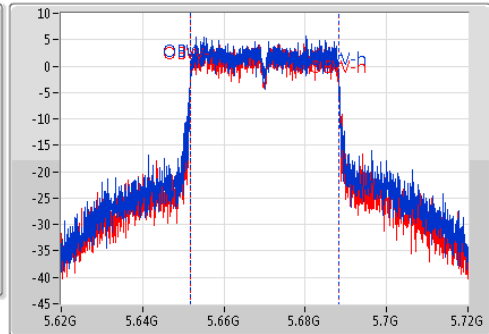
Span
100MHz

RBW
500kHz

VBW
2MHz

Sweep Time
100ms

Detector Type
Sample



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
74.55M	5.6335G	5.70805G	36.432M	5.651759G	5.688191G	Inf	1
72.6M	5.63375G	5.70635G	36.332M	5.651809G	5.688141G	Inf	2

802.11ac VHT40_Nss1,(MCS0)_2TX
EBW
5710MHz Straddle 5.47-5.725GHz

Ch Freq
5.69GHz

Span
70MHz

RBW
1MHz

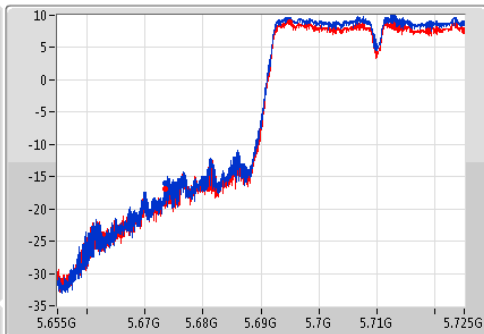
VBW
3MHz

Sweep Time
100ms

Detector Type
Peak

Port 1 

Port 2 



Ch Freq
5.69GHz

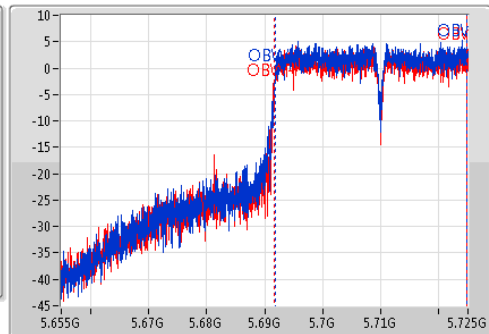
Span
70MHz

RBW
500kHz

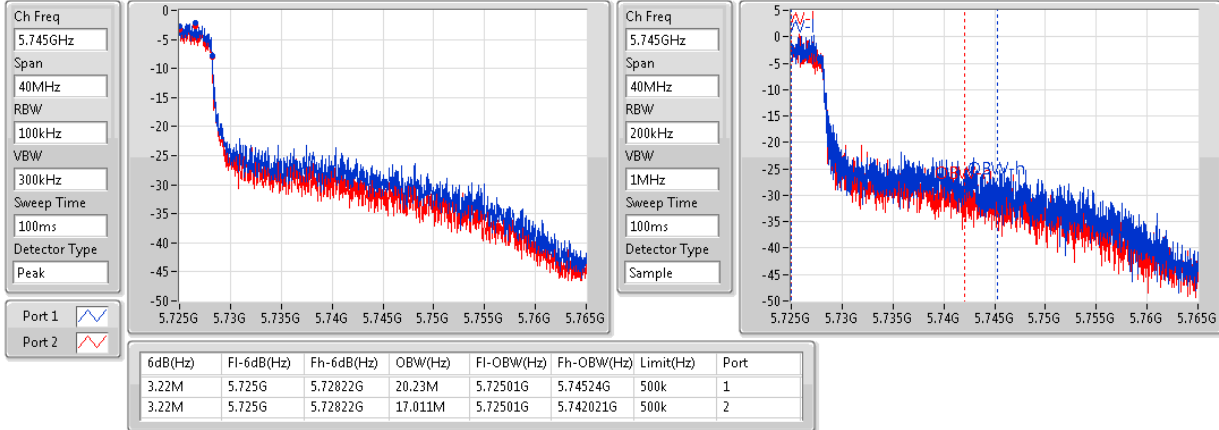
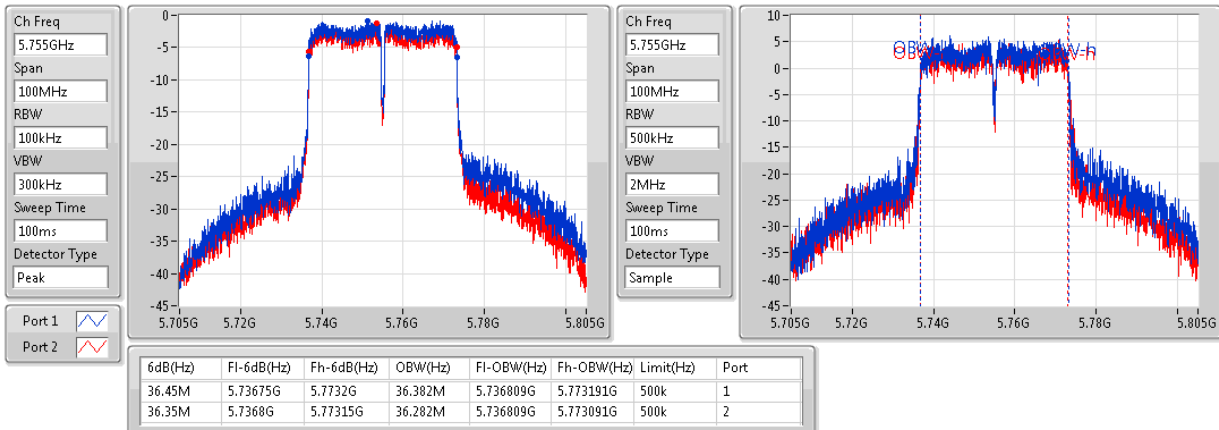
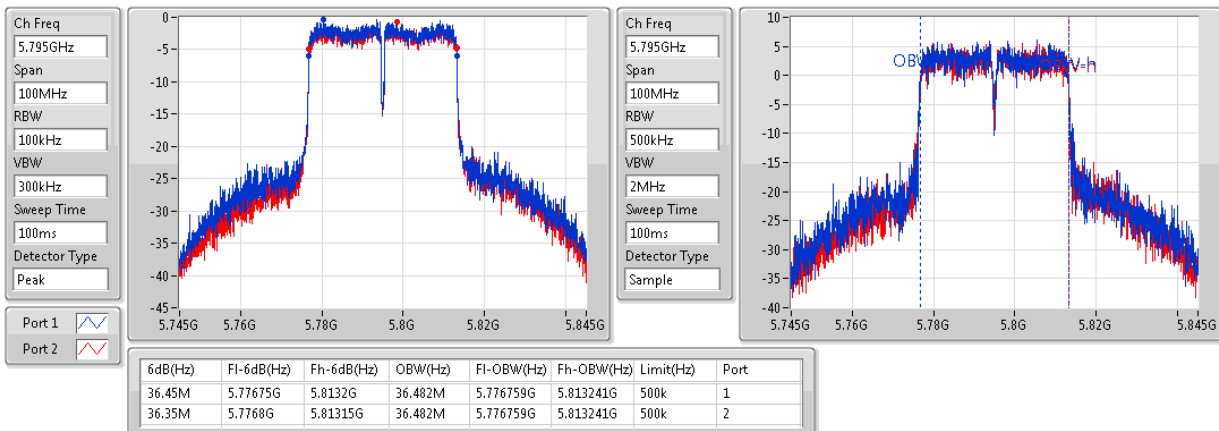
VBW
2MHz

Sweep Time
100ms

Detector Type
Sample



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
51.415M	5.673585G	5.725G	33.093M	5.691784G	5.724878G	Inf	1
51.415M	5.673585G	5.725G	33.163M	5.691679G	5.724843G	Inf	2

802.11ac VHT40_Nss1,(MCS0)_2TX
EBW
5710MHz Straddle 5.725-5.85GHz

802.11ac VHT40_Nss1,(MCS0)_2TX
EBW
5755MHz

802.11ac VHT40_Nss1,(MCS0)_2TX
EBW
5795MHz


802.11ac VHT80_Nss1,(MCS0)_2TX
EBW
5210MHz

Ch Freq
5.21GHz

Span
200MHz

RBW
1MHz

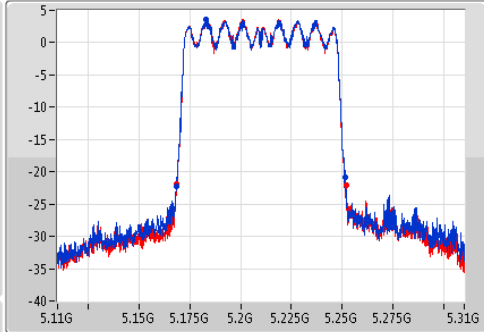
VBW
3MHz

Sweep Time
100ms

Detector Type
Peak

Port 1 

Port 2 



Ch Freq
5.21GHz

Span
200MHz

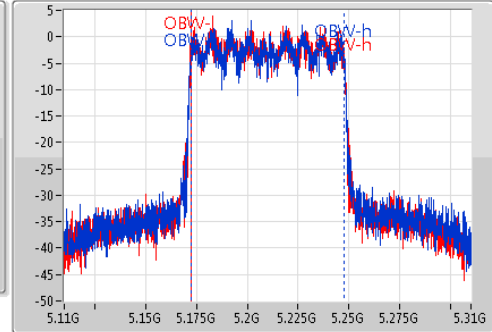
RBW
1MHz

VBW
3MHz

Sweep Time
100ms

Detector Type
Peak

Sample



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
83.3M	5.1684G	5.2517G	75.662M	5.172119G	5.247781G	Inf	1
83.3M	5.1685G	5.2518G	75.562M	5.172119G	5.247681G	Inf	2

802.11ac VHT80_Nss1,(MCS0)_2TX
EBW
5290MHz

Ch Freq
5.29GHz

Span
200MHz

RBW
1MHz

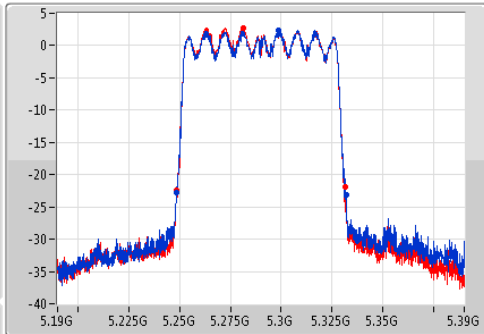
VBW
3MHz

Sweep Time
100ms

Detector Type
Peak

Port 1 

Port 2 



Ch Freq
5.29GHz

Span
200MHz

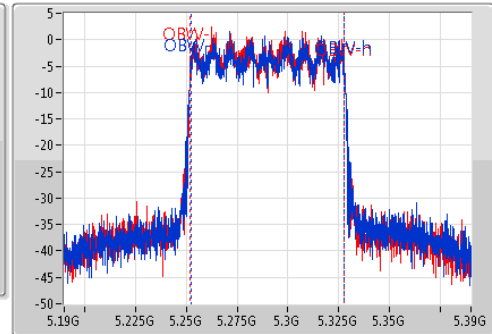
RBW
1MHz

VBW
3MHz

Sweep Time
100ms

Detector Type
Peak

Sample



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
83.5M	5.2484G	5.3319G	75.662M	5.252119G	5.327781G	Inf	1
82.9M	5.2486G	5.3315G	75.662M	5.252019G	5.327681G	Inf	2

802.11ac VHT80_Nss1,(MCS0)_2TX
EBW
5530MHz

Ch Freq
5.53GHz

Span
200MHz

RBW
1MHz

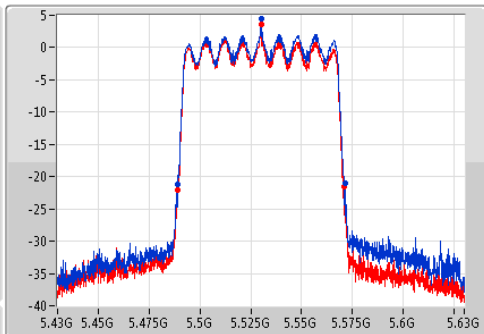
VBW
3MHz

Sweep Time
100ms

Detector Type
Peak

Port 1 

Port 2 



Ch Freq
5.53GHz

Span
200MHz

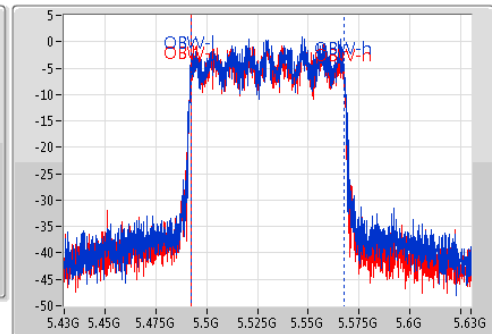
RBW
1MHz

VBW
3MHz

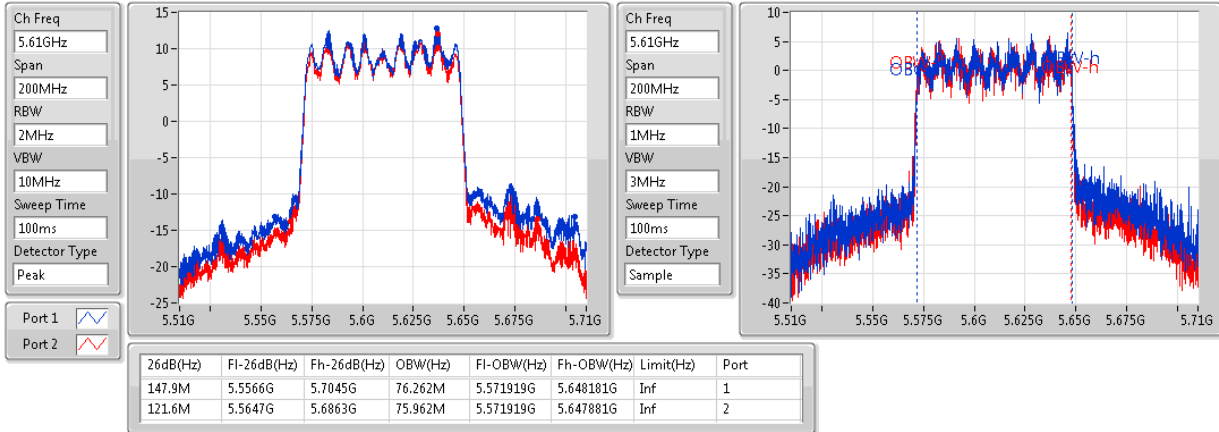
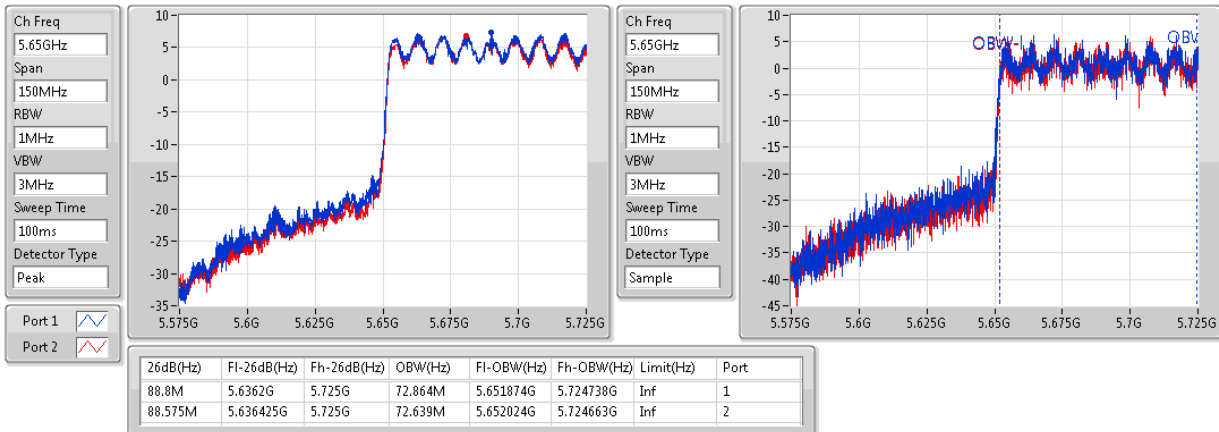
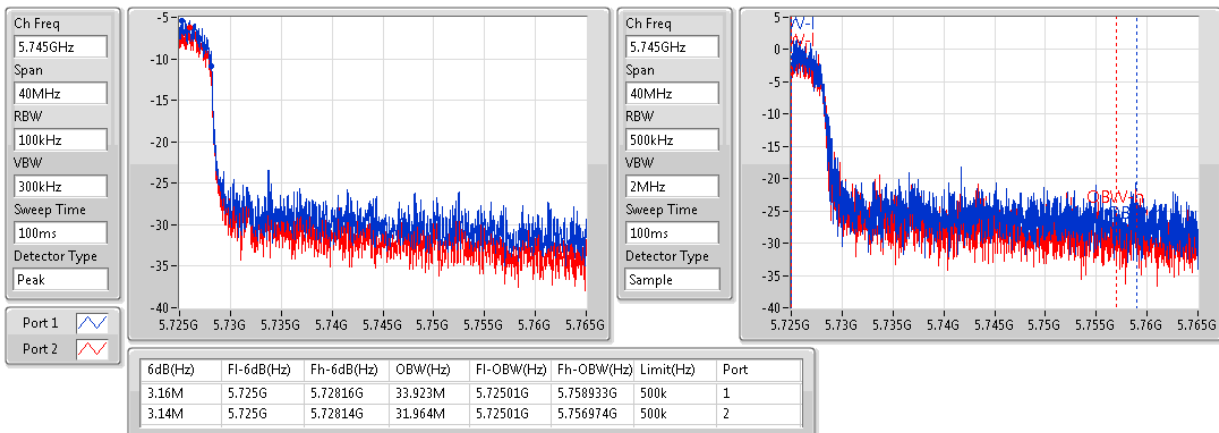
Sweep Time
100ms

Detector Type
Peak

Sample



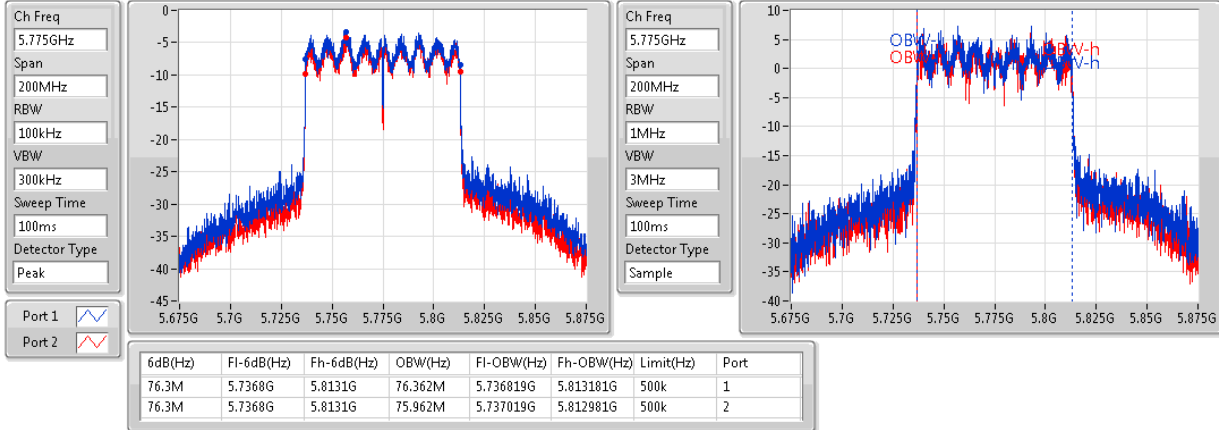
26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
82.5M	5.489G	5.5715G	75.562M	5.492119G	5.567681G	Inf	1
81.6M	5.4892G	5.5708G	75.562M	5.492119G	5.567681G	Inf	2

802.11ac VHT80_Nss1,(MCS0)_2TX
EBW
5610MHz

802.11ac VHT80_Nss1,(MCS0)_2TX
EBW
5690MHz Straddle 5.47-5.725GHz

802.11ac VHT80_Nss1,(MCS0)_2TX
EBW
5690MHz Straddle 5.725-5.85GHz


802.11ac VHT80_Nss1,(MCS0)_2TX

EBW

5775MHz



Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
802.11a_Nss1_2TX	-	-	-	-
5.15-5.25GHz	21.86	0.15346	25.02	0.31769
5.25-5.35GHz	21.58	0.14388	24.74	0.29785
5.47-5.725GHz	22.74	0.18793	25.90	0.38905
5.725-5.85GHz	21.91	0.15524	25.07	0.32137
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-
5.15-5.25GHz	21.75	0.14962	24.91	0.30974
5.25-5.35GHz	21.73	0.14894	24.89	0.30832
5.47-5.725GHz	22.59	0.18155	25.75	0.37584
5.725-5.85GHz	21.73	0.14894	24.89	0.30832
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-
5.15-5.25GHz	21.89	0.15453	25.05	0.31989
5.25-5.35GHz	21.44	0.13932	24.60	0.28840
5.47-5.725GHz	22.67	0.18493	25.83	0.38282
5.725-5.85GHz	21.74	0.14928	24.90	0.30903
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-
5.15-5.25GHz	13.95	0.02483	17.11	0.05140
5.25-5.35GHz	15.78	0.03784	18.94	0.07834
5.47-5.725GHz	22.04	0.15996	25.20	0.33113
5.725-5.85GHz	21.29	0.13459	24.45	0.27861

Result

Mode	Result	DG (dBi)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)	Port 1 (dBm)	Port 2 (dBm)
802.11a_Nss1_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	3.16	21.86	23.98	25.02	30.00	18.97	18.72
5200MHz	Pass	3.16	21.79	23.98	24.95	30.00	18.79	18.76
5240MHz	Pass	3.16	21.63	23.98	24.79	30.00	18.75	18.49
5260MHz	Pass	3.16	21.39	23.98	24.55	30.00	18.59	18.15
5300MHz	Pass	3.16	21.58	23.98	24.74	30.00	18.84	18.28
5320MHz	Pass	3.16	21.45	23.98	24.61	30.00	18.56	18.31
5500MHz	Pass	3.16	22.74	23.98	25.90	30.00	19.75	19.71
5580MHz	Pass	3.16	22.29	23.98	25.45	30.00	19.25	19.31
5700MHz	Pass	3.16	21.79	23.98	24.95	30.00	18.81	18.75
5720MHz Straddle 5.47-5.725GHz	Pass	3.16	19.93	23.44	23.09	29.44	17.11	16.72
5720MHz Straddle 5.725-5.85GHz	Pass	3.16	14.30	30.00	17.46	36.00	11.63	10.91
5745MHz	Pass	3.16	21.91	30.00	25.07	36.00	18.95	18.85
5785MHz	Pass	3.16	21.86	30.00	25.02	36.00	18.88	18.81
5825MHz	Pass	3.16	21.53	30.00	24.69	36.00	18.50	18.54
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	3.16	21.64	23.98	24.80	30.00	18.74	18.51
5200MHz	Pass	3.16	21.75	23.98	24.91	30.00	18.90	18.57
5240MHz	Pass	3.16	21.65	23.98	24.81	30.00	18.72	18.56
5260MHz	Pass	3.16	21.73	23.98	24.89	30.00	18.95	18.47
5300MHz	Pass	3.16	21.49	23.98	24.65	30.00	18.73	18.21
5320MHz	Pass	3.16	21.41	23.98	24.57	30.00	18.49	18.30
5500MHz	Pass	3.16	22.59	23.98	25.75	30.00	19.63	19.52
5580MHz	Pass	3.16	22.34	23.98	25.50	30.00	19.42	19.24
5700MHz	Pass	3.16	20.38	23.98	23.54	30.00	17.55	17.18
5720MHz Straddle 5.47-5.725GHz	Pass	3.16	20.03	23.76	23.19	29.76	17.21	16.83
5720MHz Straddle 5.725-5.85GHz	Pass	3.16	14.48	30.00	17.64	36.00	11.67	11.26
5745MHz	Pass	3.16	21.73	30.00	24.89	36.00	18.78	18.65
5785MHz	Pass	3.16	21.65	30.00	24.81	36.00	18.74	18.53
5825MHz	Pass	3.16	21.40	30.00	24.56	36.00	18.35	18.42
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	3.16	16.59	23.98	19.75	30.00	13.65	13.51
5230MHz	Pass	3.16	21.89	23.98	25.05	30.00	19.06	18.69
5270MHz	Pass	3.16	21.44	23.98	24.60	30.00	18.62	18.24
5310MHz	Pass	3.16	17.72	23.98	20.88	30.00	14.59	14.83
5510MHz	Pass	3.16	17.18	23.98	20.34	30.00	14.22	14.12
5550MHz	Pass	3.16	22.67	23.98	25.83	30.00	19.81	19.51
5670MHz	Pass	3.16	21.86	23.98	25.02	30.00	18.95	18.75
5710MHz Straddle 5.47-5.725GHz	Pass	3.16	21.00	23.98	24.16	30.00	18.13	17.84
5710MHz Straddle 5.725-5.85GHz	Pass	3.16	10.68	30.00	13.84	36.00	7.87	7.45
5755MHz	Pass	3.16	21.62	30.00	24.78	36.00	18.71	18.51
5795MHz	Pass	3.16	21.74	30.00	24.90	36.00	18.93	18.52
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz	Pass	3.16	13.95	23.98	17.11	30.00	11.02	10.85



Power Result

Appendix C

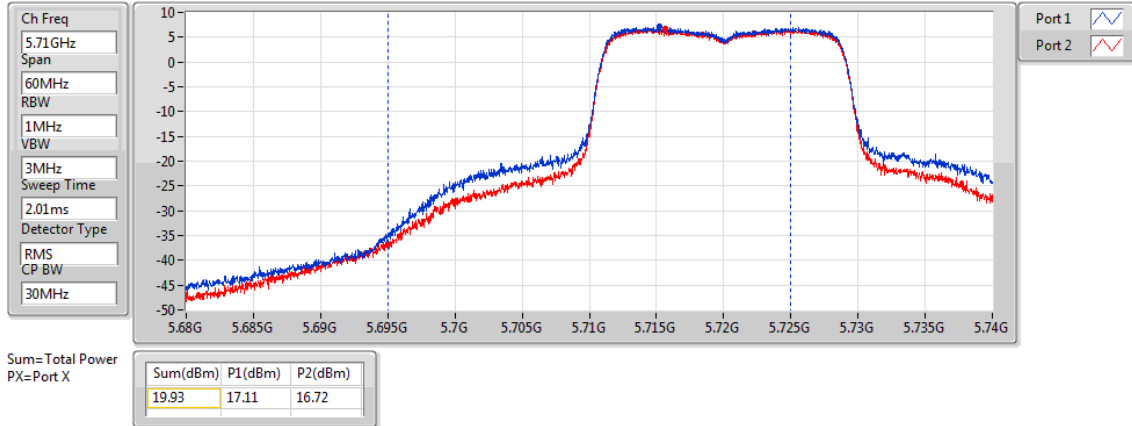
Mode	Result	DG (dBi)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)	Port 1 (dBm)	Port 2 (dBm)
5290MHz	Pass	3.16	15.78	23.98	18.94	30.00	12.96	12.58
5530MHz	Pass	3.16	15.69	23.98	18.85	30.00	12.82	12.54
5610MHz	Pass	3.16	22.04	23.98	25.20	30.00	19.05	19.01
5690MHz Straddle 5.47-5.725GHz	Pass	3.16	20.98	23.98	24.14	30.00	18.08	17.85
5690MHz Straddle 5.725-5.85GHz	Pass	3.16	7.48	30.00	10.64	36.00	4.81	4.09
5775MHz	Pass	3.16	21.29	30.00	24.45	36.00	18.53	18.01

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

802.11a_Nss1_2TX

AV Power

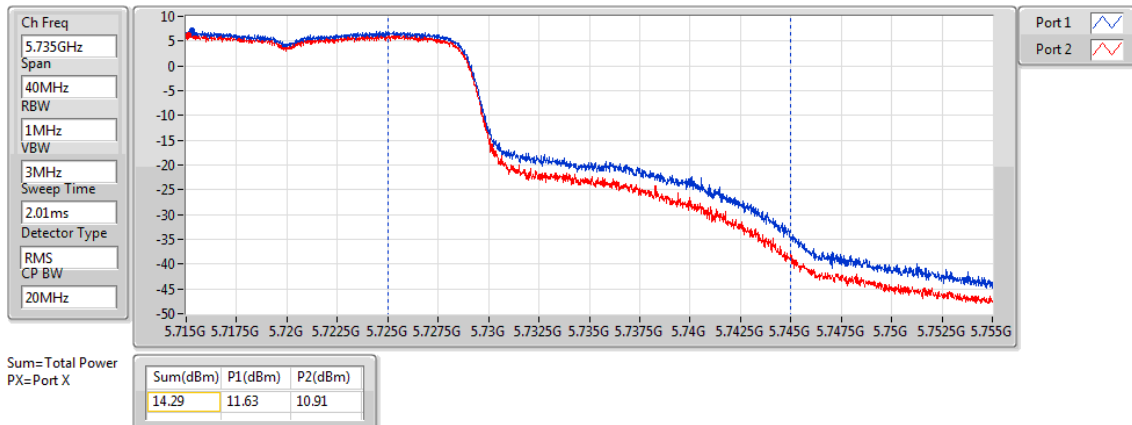
5720MHz Straddle 5.47-5.725GHz



802.11a_Nss1_2TX

AV Power

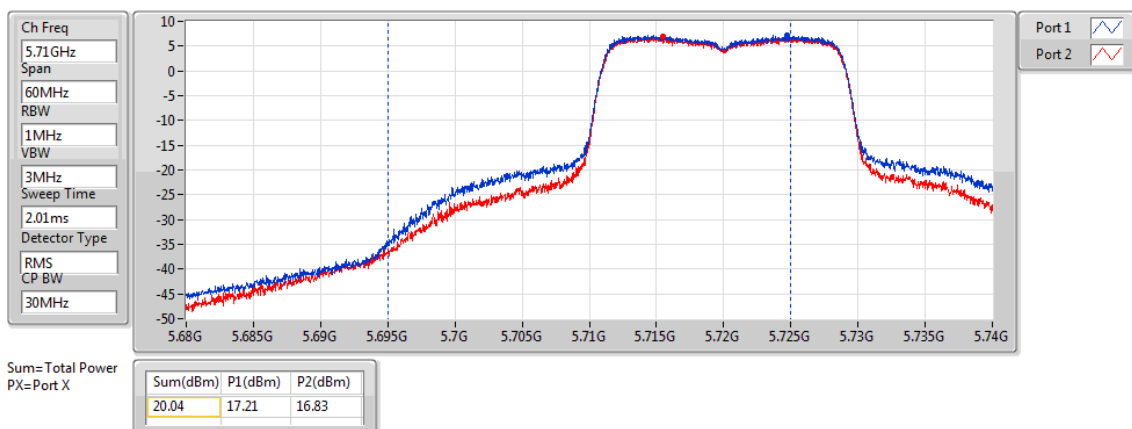
5720MHz Straddle 5.725-5.85GHz



802.11ac VHT20_Nss1,(MCS0)_2TX

AV Power

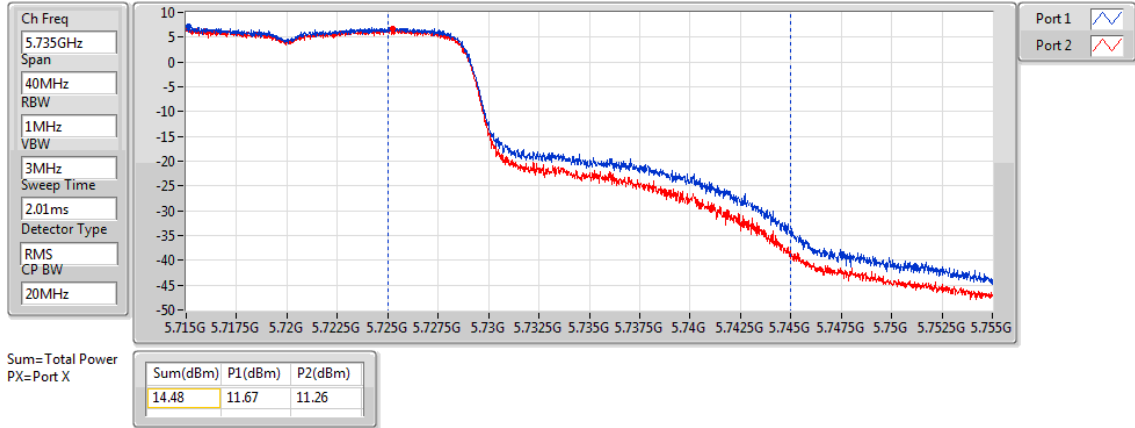
5720MHz Straddle 5.47-5.725GHz



802.11ac VHT20_Nss1,(MCS0)_2TX

AV Power

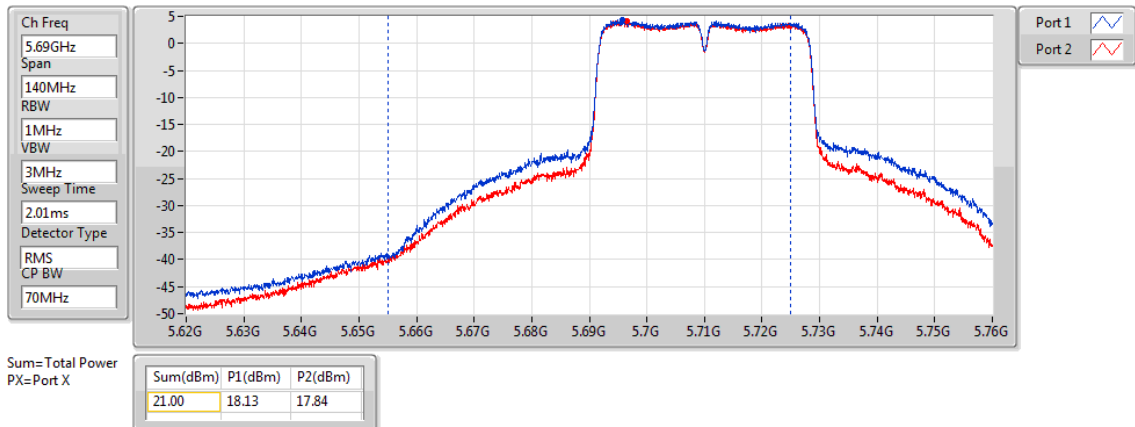
5720MHz Straddle 5.725-5.85GHz



802.11ac VHT40_Nss1,(MCS0)_2TX

AV Power

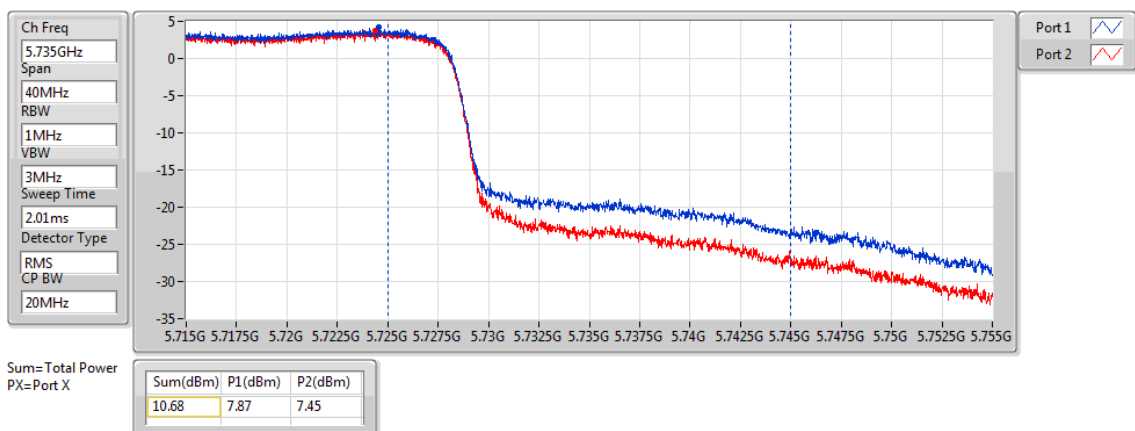
5710MHz Straddle 5.47-5.725GHz



802.11ac VHT40_Nss1,(MCS0)_2TX

AV Power

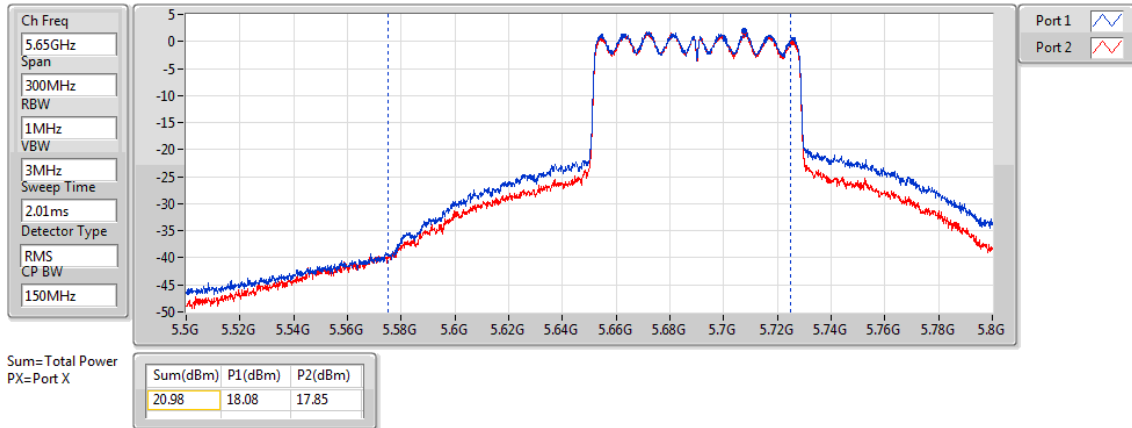
5710MHz Straddle 5.725-5.85GHz



802.11ac VHT80_Nss1,(MCS0)_2TX

AV Power

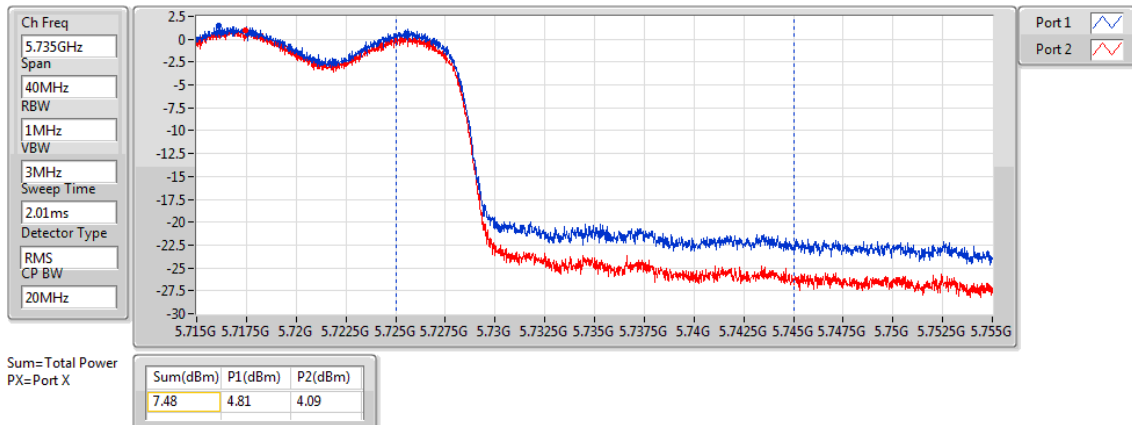
5690MHz Straddle 5.47-5.725GHz



802.11ac VHT80_Nss1,(MCS0)_2TX

AV Power

5690MHz Straddle 5.725-5.85GHz



Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
802.11a_Nss1_2TX	-	-
5.15-5.25GHz	8.81	14.74
5.25-5.35GHz	8.65	14.58
5.47-5.725GHz	9.69	15.61
5.725-5.85GHz	9.03	14.95
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-
5.15-5.25GHz	10.35	16.28
5.25-5.35GHz	8.33	14.25
5.47-5.725GHz	9.84	15.76
5.725-5.85GHz	8.16	14.08
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-
5.15-5.25GHz	6.34	12.26
5.25-5.35GHz	5.25	11.18
5.47-5.725GHz	5.80	11.72
5.725-5.85GHz	4.11	10.03
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-
5.15-5.25GHz	-5.09	0.84
5.25-5.35GHz	-3.68	2.24
5.47-5.725GHz	4.16	10.09
5.725-5.85GHz	2.57	8.49

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

Result

Mode	Result	DG (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)	EIRP PD (dBm/RBW)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)
802.11a_Nss1_2TX	-	-	-	-	-	-	-
5180MHz	Pass	5.92	8.81	11.00	14.74	6.09	5.57
5200MHz	Pass	5.92	8.40	11.00	14.33	5.62	5.24
5240MHz	Pass	5.92	8.74	11.00	14.66	6.05	5.49
5260MHz	Pass	5.92	8.42	11.00	14.34	5.53	5.37
5300MHz	Pass	5.92	8.65	11.00	14.58	6.15	5.19
5320MHz	Pass	5.92	8.39	11.00	14.31	5.84	5.21
5500MHz	Pass	5.92	9.69	11.00	15.61	6.91	6.62
5580MHz	Pass	5.92	9.11	11.00	15.03	6.18	6.07
5700MHz	Pass	5.92	8.05	11.00	13.97	5.12	5.13
5720MHz Straddle 5.47-5.725GHz	Pass	5.92	5.78	11.00	11.70	2.88	2.76
5720MHz Straddle 5.725-5.85GHz	Pass	5.92	6.16	30.00	12.08	3.19	3.18
5745MHz	Pass	5.92	8.69	30.00	14.62	5.83	5.82
5785MHz	Pass	5.92	9.03	30.00	14.95	6.21	5.86
5825MHz	Pass	5.92	8.74	30.00	14.66	6.09	5.85
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-
5180MHz	Pass	5.92	8.41	11.00	14.33	5.34	5.56
5200MHz	Pass	5.92	8.69	11.00	14.62	5.36	6.03
5240MHz	Pass	5.92	10.35	11.00	16.28	7.40	7.31
5260MHz	Pass	5.92	8.18	11.00	14.10	5.26	5.14
5300MHz	Pass	5.92	8.33	11.00	14.25	5.40	5.28
5320MHz	Pass	5.92	8.13	11.00	14.05	5.21	5.04
5500MHz	Pass	5.92	9.58	11.00	15.51	6.63	6.53
5580MHz	Pass	5.92	9.84	11.00	15.76	6.95	6.74
5700MHz	Pass	5.92	7.33	11.00	13.25	4.46	4.27
5720MHz Straddle 5.47-5.725GHz	Pass	5.92	9.16	11.00	15.08	6.24	6.08
5720MHz Straddle 5.725-5.85GHz	Pass	5.92	7.28	30.00	13.21	4.29	4.26
5745MHz	Pass	5.92	8.16	30.00	14.08	5.31	5.08
5785MHz	Pass	5.92	7.87	30.00	13.80	4.97	4.81
5825MHz	Pass	5.92	7.45	30.00	13.37	4.57	4.36
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-
5190MHz	Pass	5.92	1.61	11.00	7.53	-1.24	-1.57
5230MHz	Pass	5.92	6.34	11.00	12.26	3.43	3.26
5270MHz	Pass	5.92	5.25	11.00	11.18	2.34	2.21
5310MHz	Pass	5.92	2.03	11.00	7.96	-0.95	-0.96
5510MHz	Pass	5.92	1.60	11.00	7.52	-1.40	-1.39
5550MHz	Pass	5.92	5.80	11.00	11.72	2.93	2.71
5670MHz	Pass	5.92	5.68	11.00	11.60	2.77	2.62
5710MHz Straddle 5.47-5.725GHz	Pass	5.92	5.59	11.00	11.51	2.65	2.55
5710MHz Straddle 5.725-5.85GHz	Pass	5.92	2.95	30.00	8.88	0.02	-0.05
5755MHz	Pass	5.92	4.11	30.00	10.03	1.15	1.13
5795MHz	Pass	5.92	4.04	30.00	9.96	1.06	1.01
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-
5210MHz	Pass	5.92	-5.09	11.00	0.84	-8.03	-8.16



PSD Result

Appendix D

Mode	Result	DG (dBi)	PD (dBm/RBW)	PD Limit (dBm/RBW)	EIRP PD (dBm/RBW)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)
5290MHz	Pass	5.92	-3.68	11.00	2.24	-6.69	-6.67
5530MHz	Pass	5.92	-3.00	11.00	2.92	-5.96	-6.05
5610MHz	Pass	5.92	4.16	11.00	10.09	1.24	1.09
5690MHz Straddle 5.47-5.725GHz	Pass	5.92	2.12	11.00	8.04	-0.87	-0.92
5690MHz Straddle 5.725-5.85GHz	Pass	5.92	-0.46	30.00	5.46	-3.44	-3.49
5775MHz	Pass	5.92	2.57	30.00	8.49	-0.30	-0.54

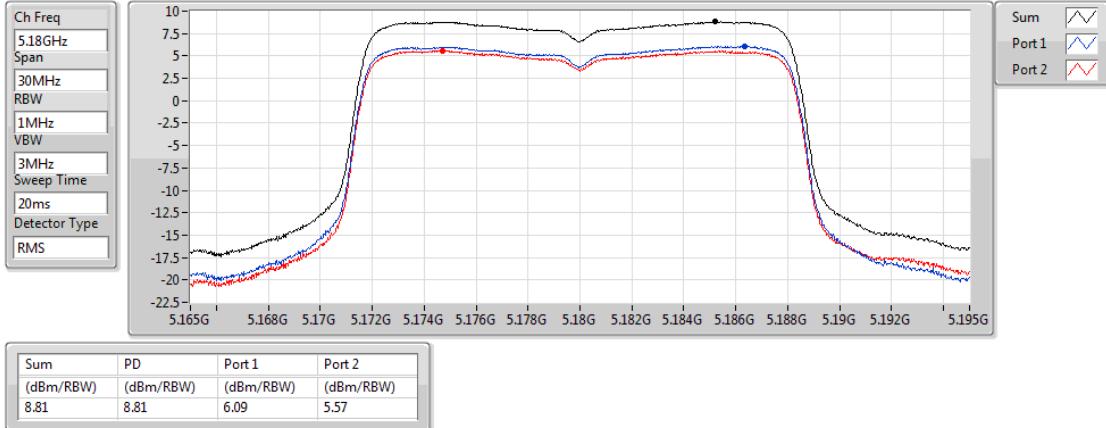
DG = Directional Gain; **RBW** = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

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

802.11a_Nss1_2TX

PSD

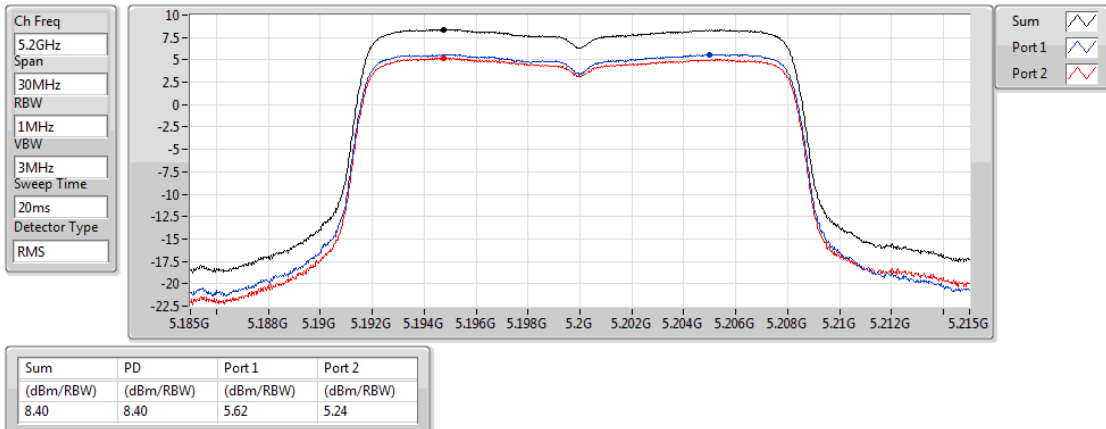
5180MHz



802.11a_Nss1_2TX

PSD

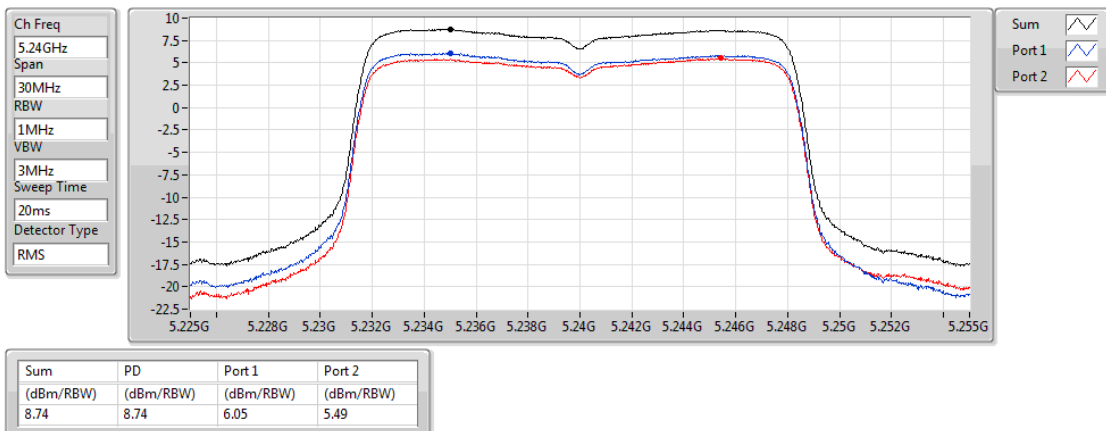
5200MHz



802.11a_Nss1_2TX

PSD

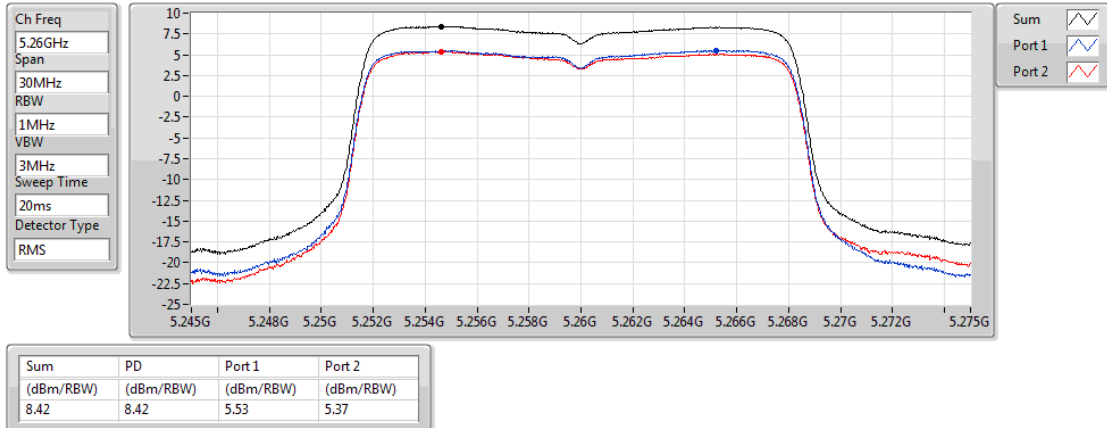
5240MHz



802.11a_Nss1_2TX

PSD

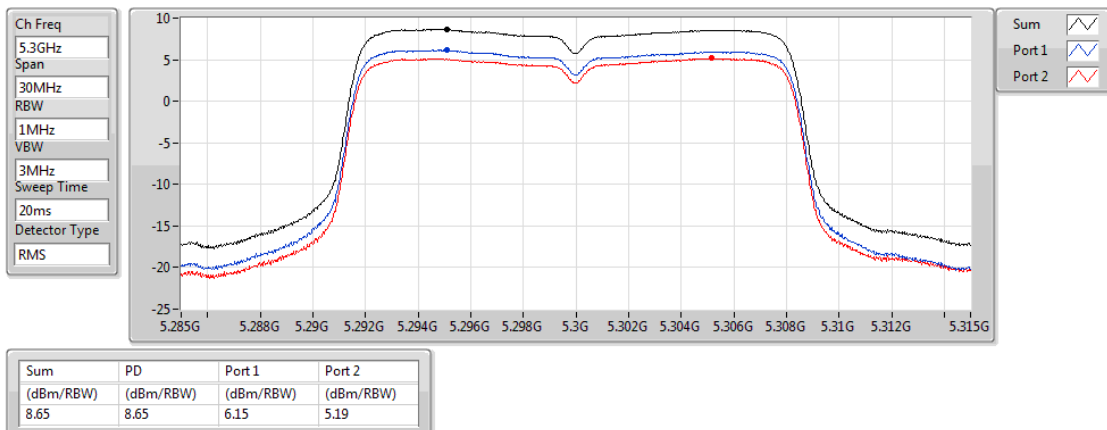
5260MHz



802.11a_Nss1_2TX

PSD

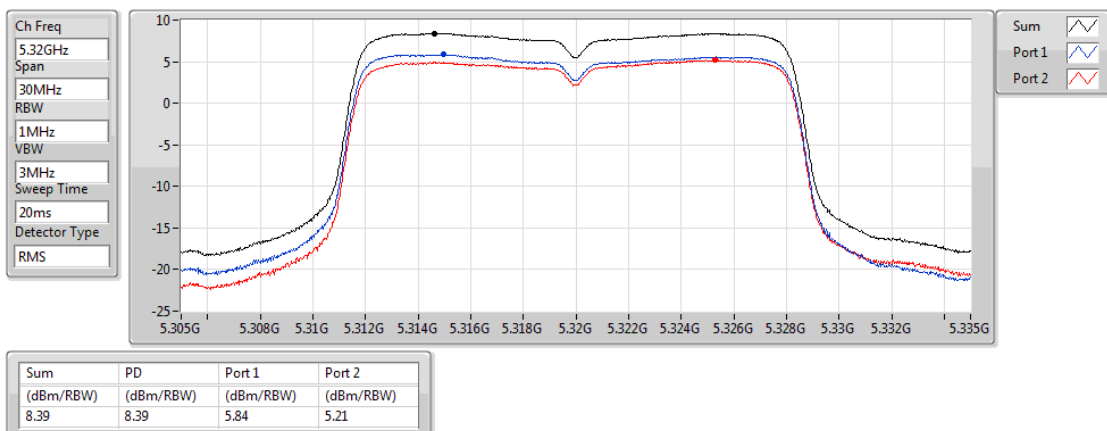
5300MHz



802.11a_Nss1_2TX

PSD

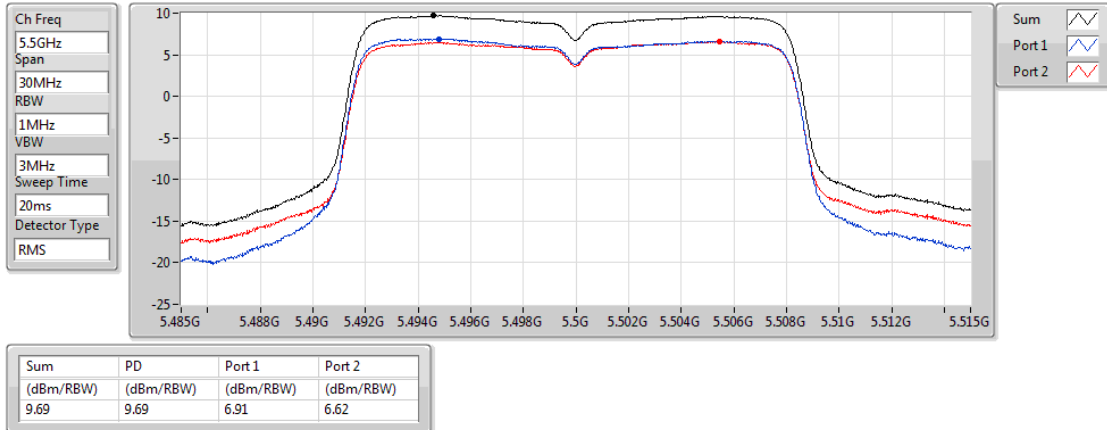
5320MHz



802.11a_Nss1_2TX

PSD

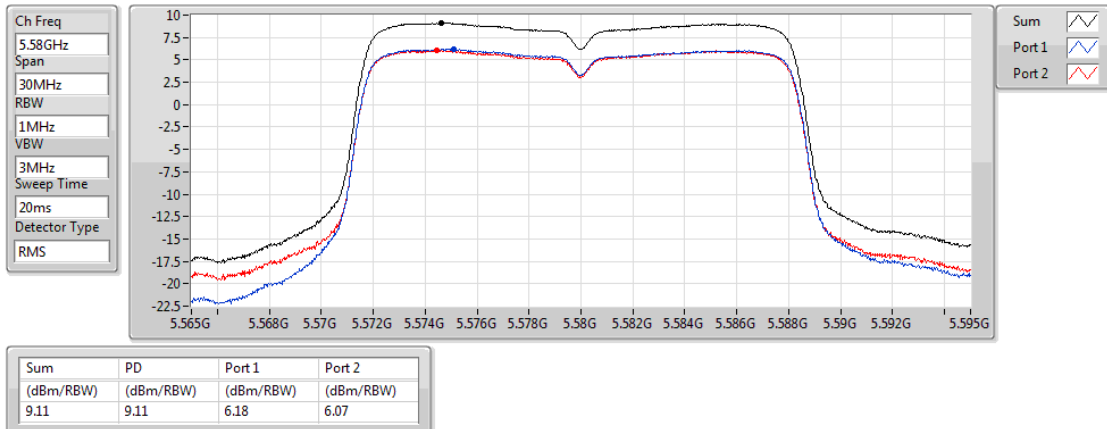
5500MHz



802.11a_Nss1_2TX

PSD

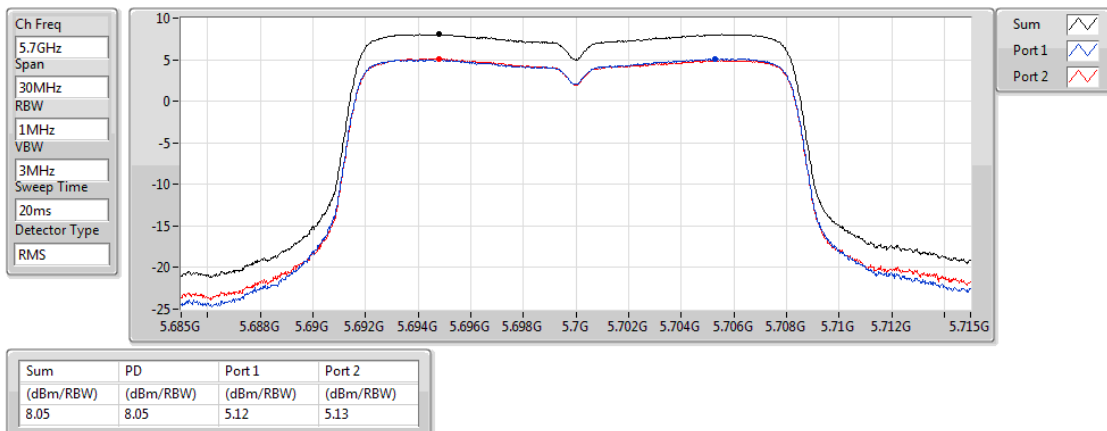
5580MHz



802.11a_Nss1_2TX

PSD

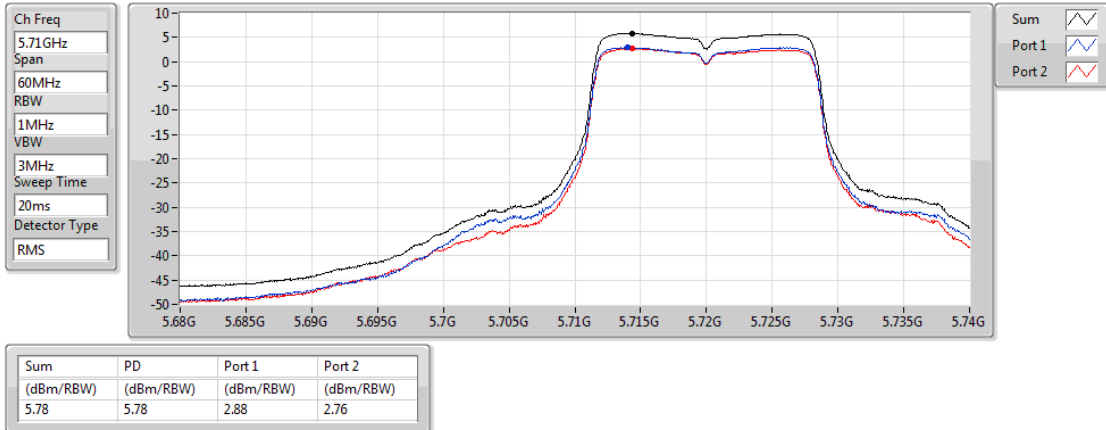
5700MHz



802.11a_Nss1_2TX

PSD

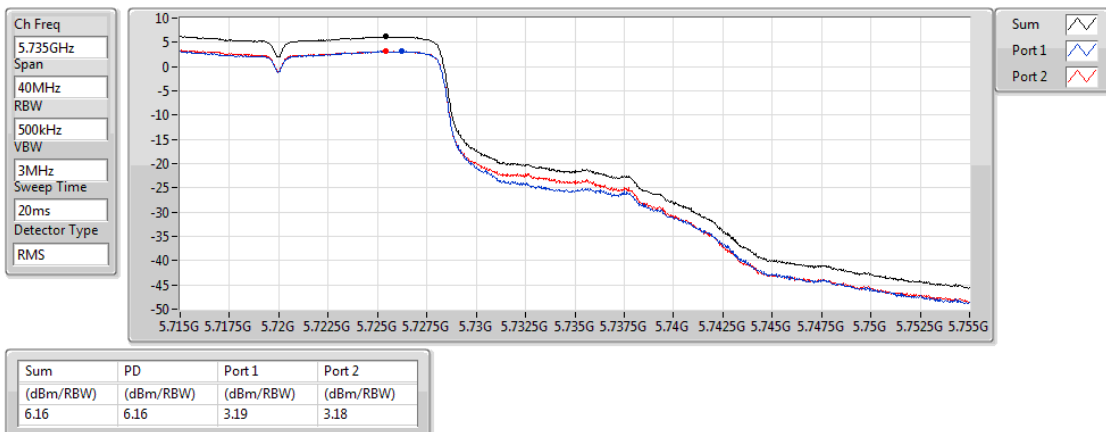
5720MHz Straddle 5.47-5.725GHz



802.11a_Nss1_2TX

PSD

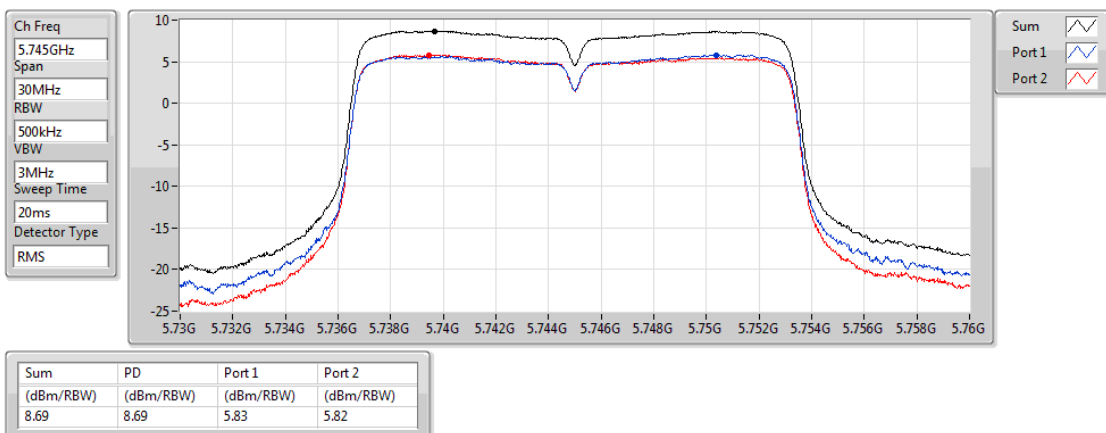
5720MHz Straddle 5.725-5.85GHz



802.11a_Nss1_2TX

PSD

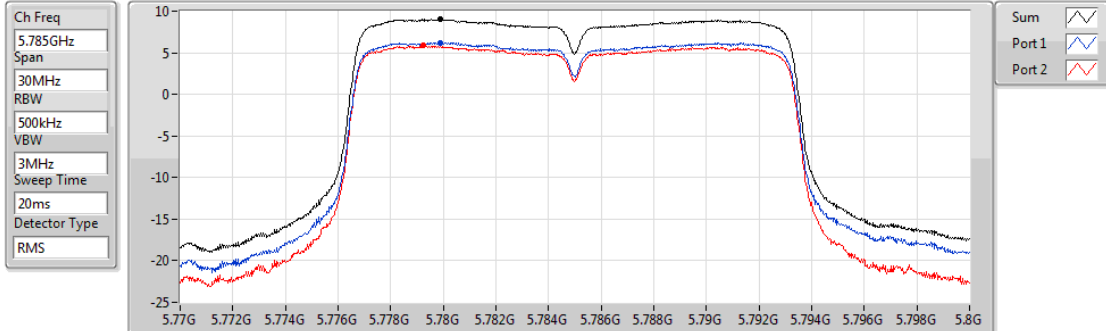
5745MHz



802.11a_Nss1_2TX

PSD

5785MHz

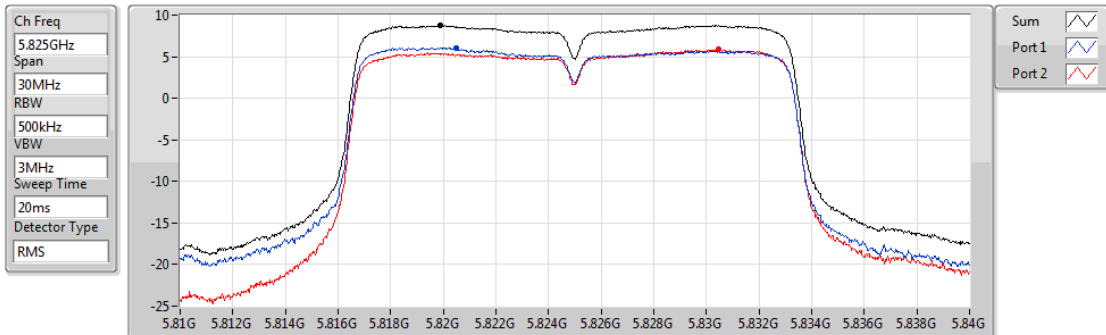


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.03	9.03	6.21	5.86

802.11a_Nss1_2TX

PSD

5825MHz

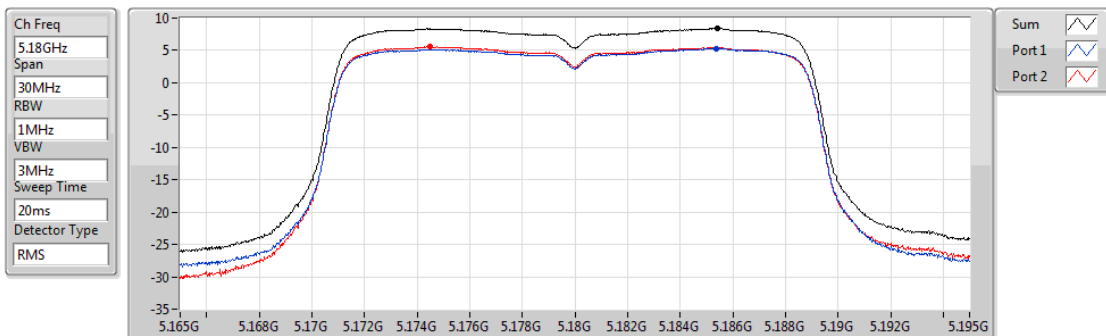


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
8.74	8.74	6.09	5.85

802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

5180MHz

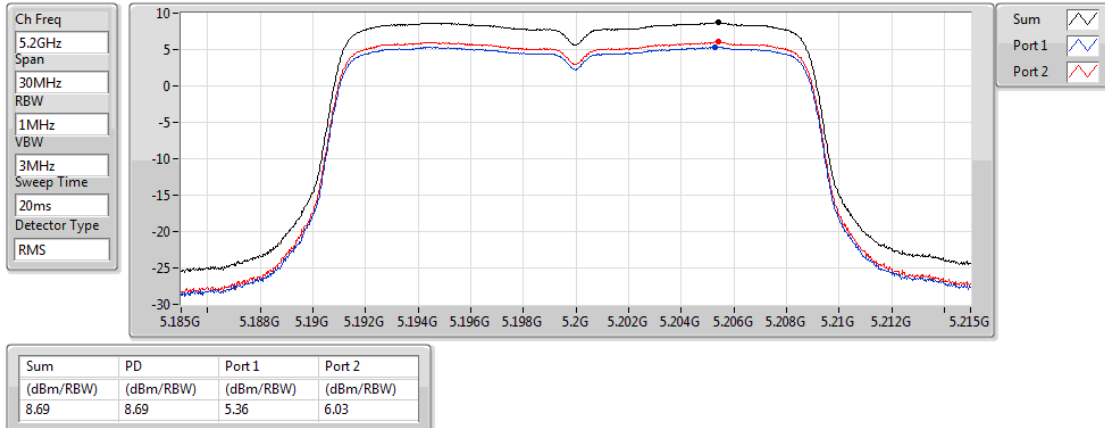


Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
8.41	8.41	5.34	5.56

802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

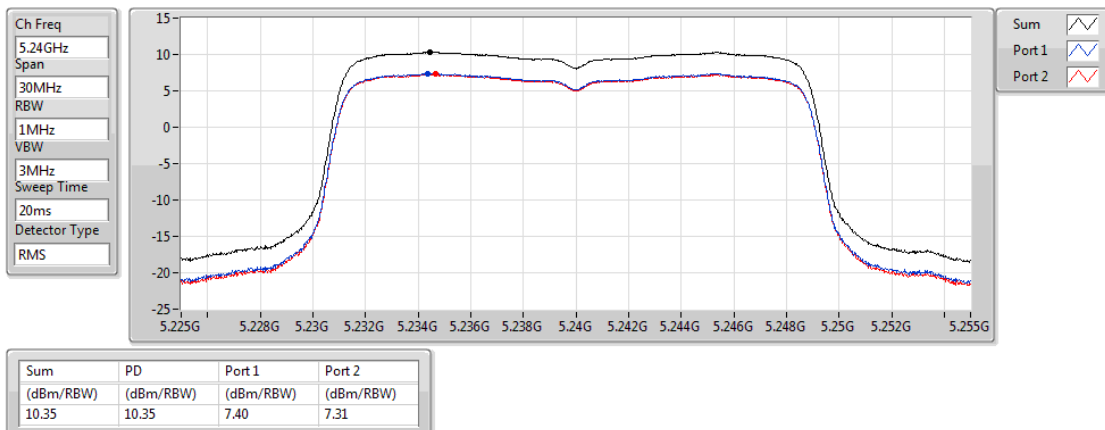
5200MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

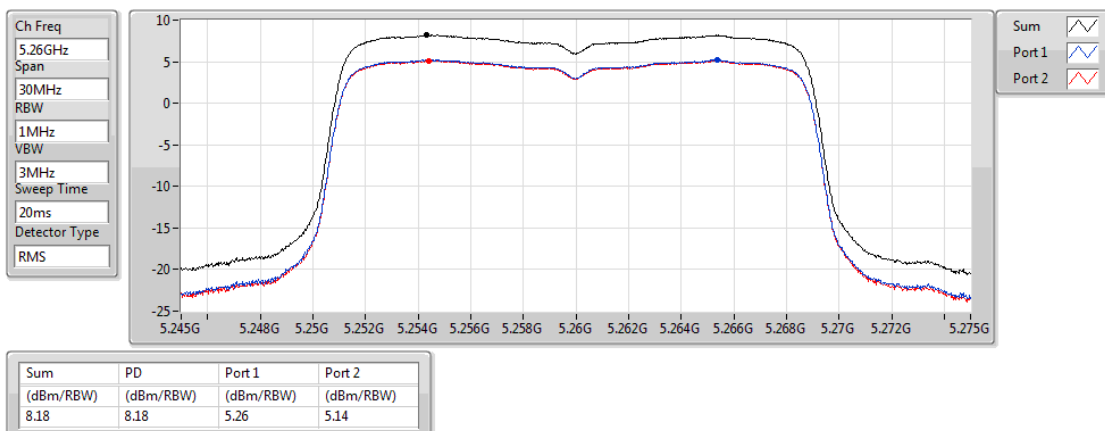
5240MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

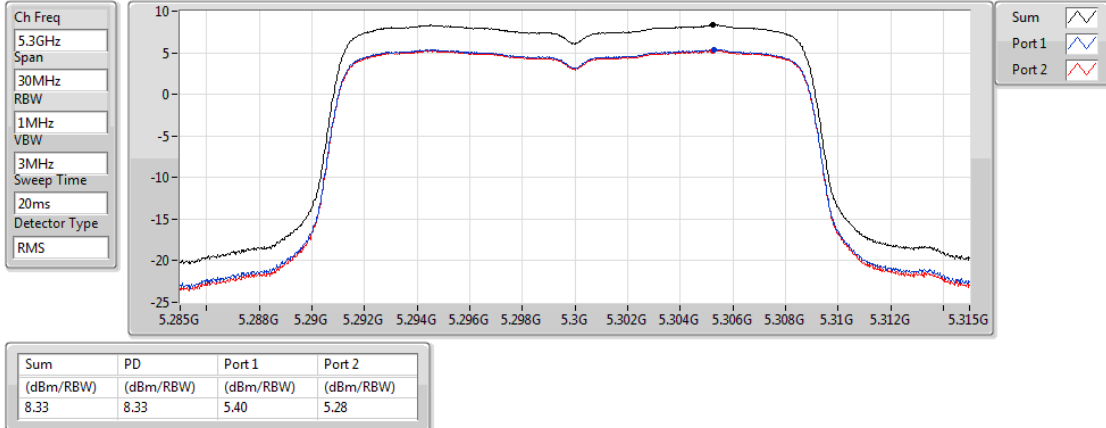
5260MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

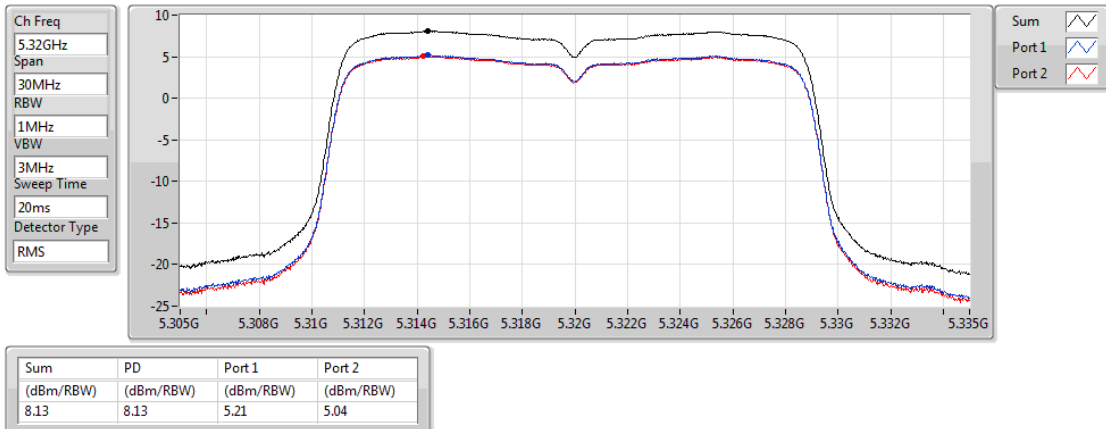
5300MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

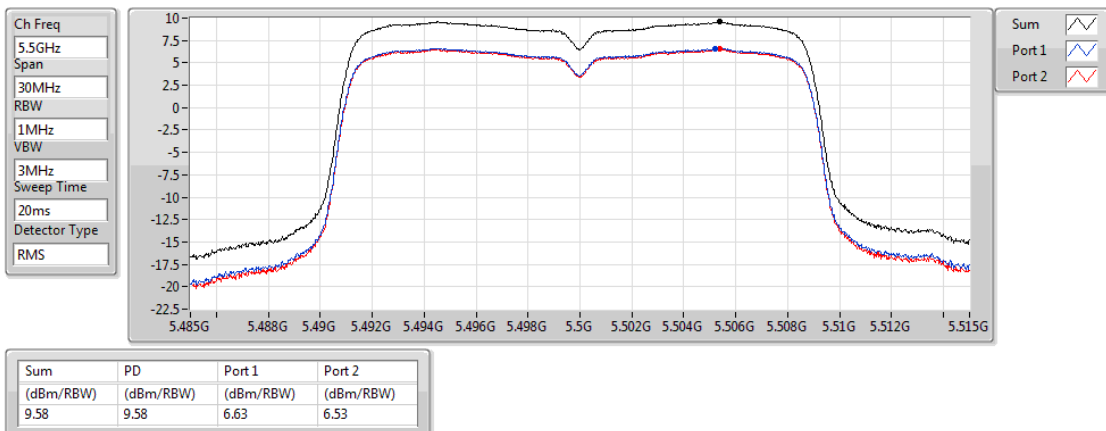
5320MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

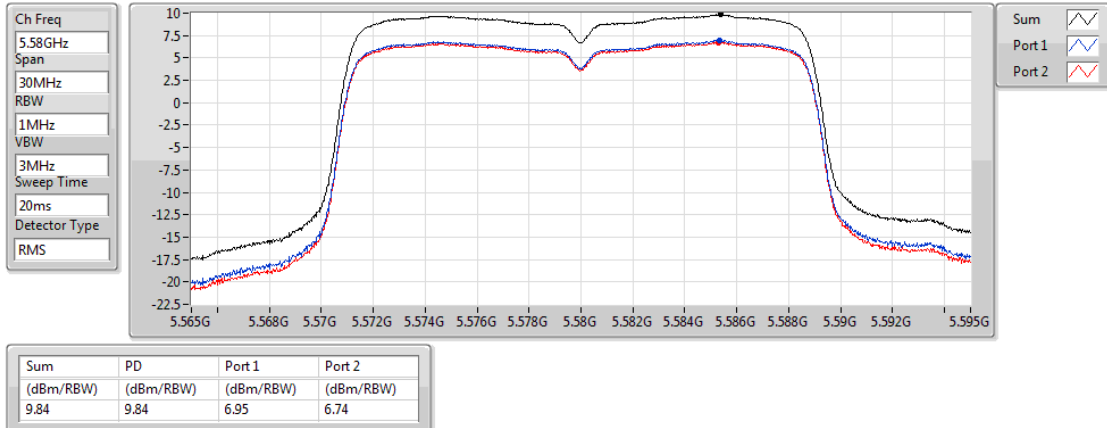
5500MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

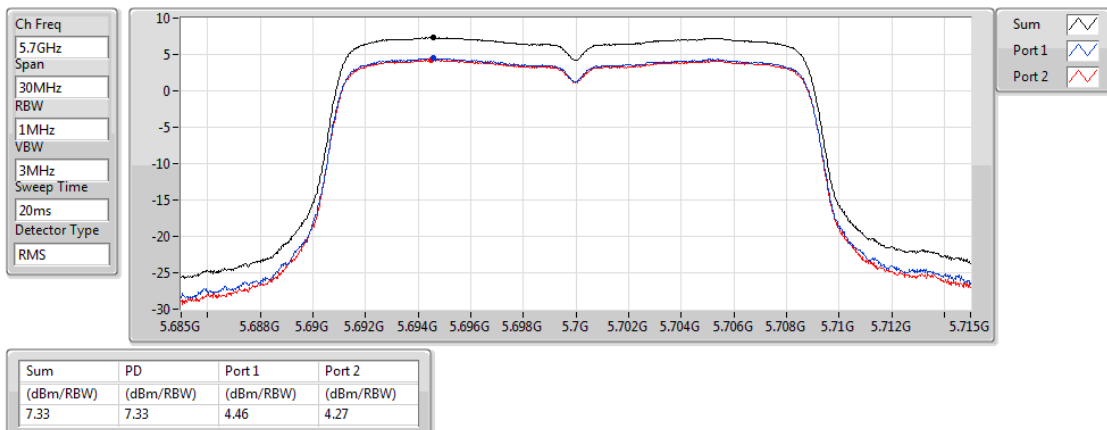
5580MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

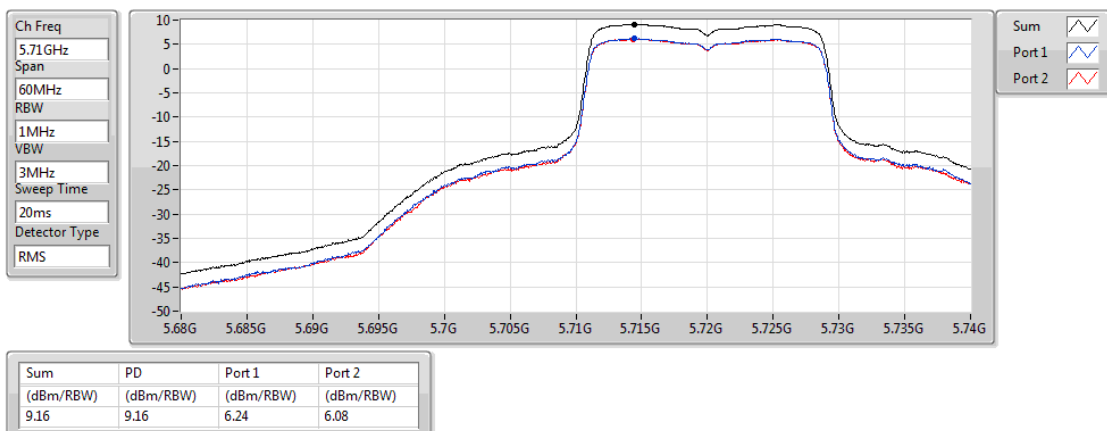
5700MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

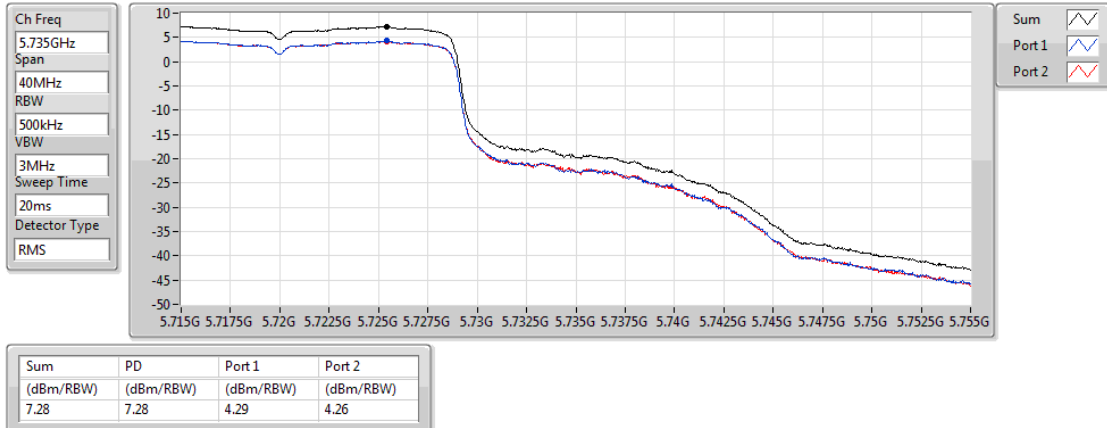
5720MHz Straddle 5.47-5.725GHz



802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

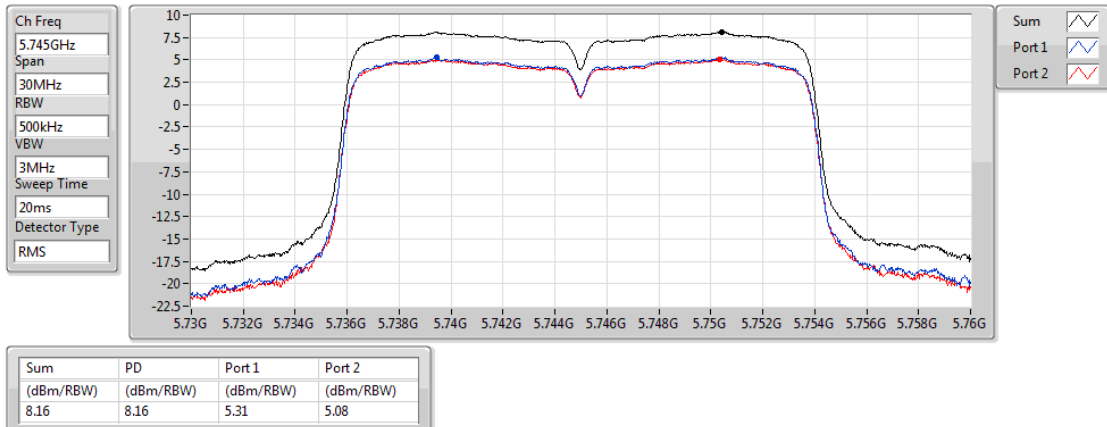
5720MHz Straddle 5.725-5.85GHz



802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

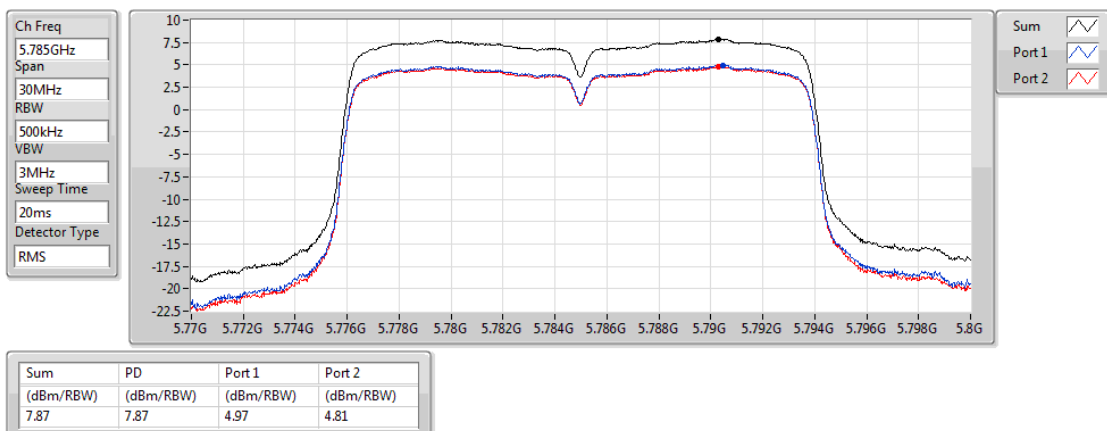
5745MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

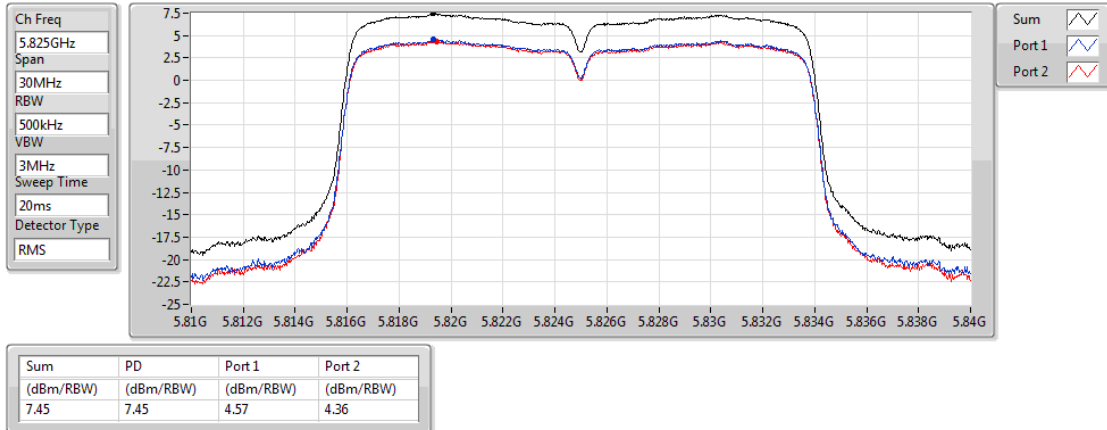
5785MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

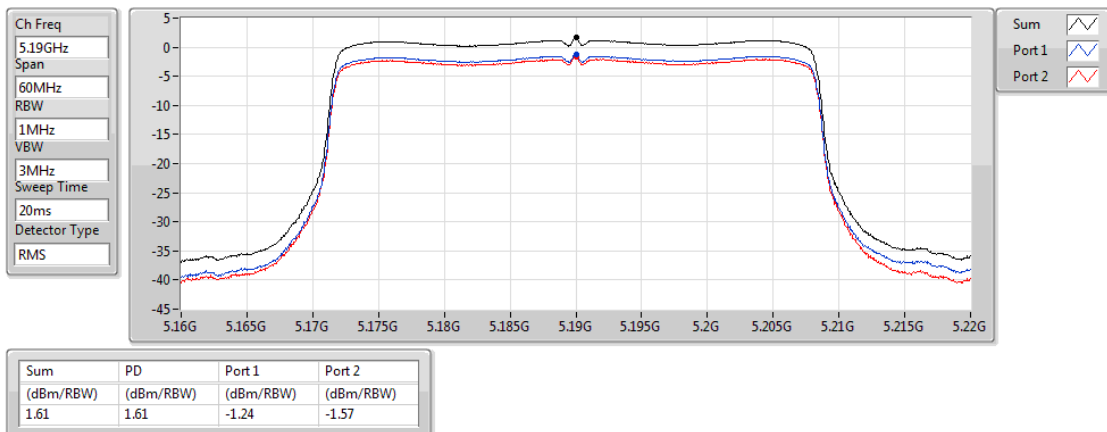
5825MHz



802.11ac VHT40_Nss1,(MCS0)_2TX

PSD

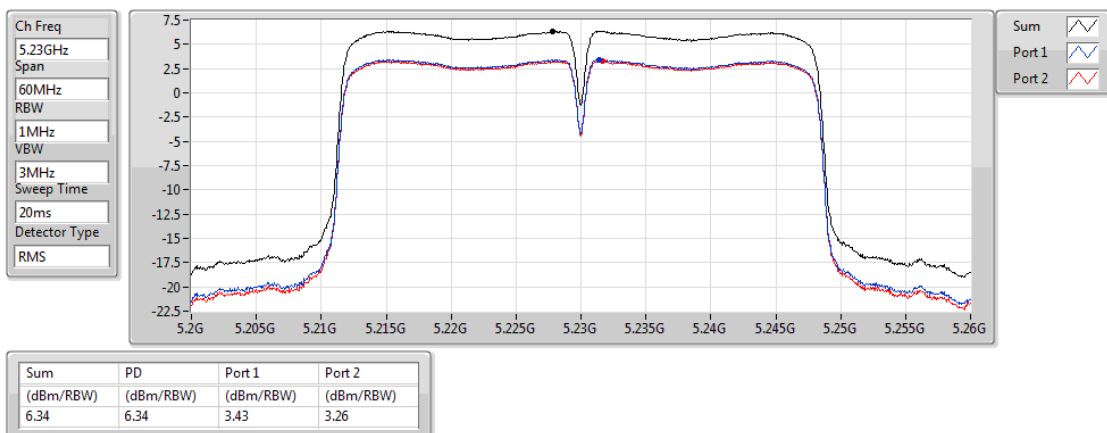
5190MHz



802.11ac VHT40_Nss1,(MCS0)_2TX

PSD

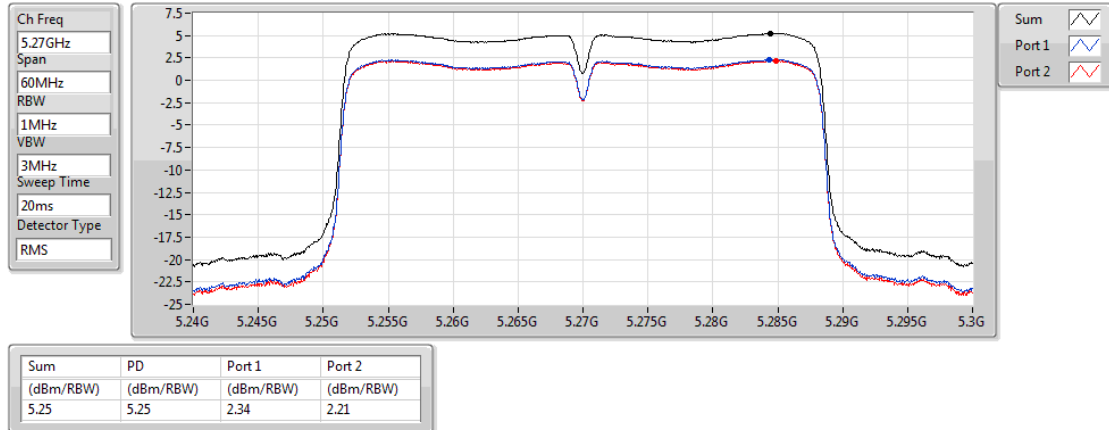
5230MHz



802.11ac VHT40_Nss1,(MCS0)_2TX

PSD

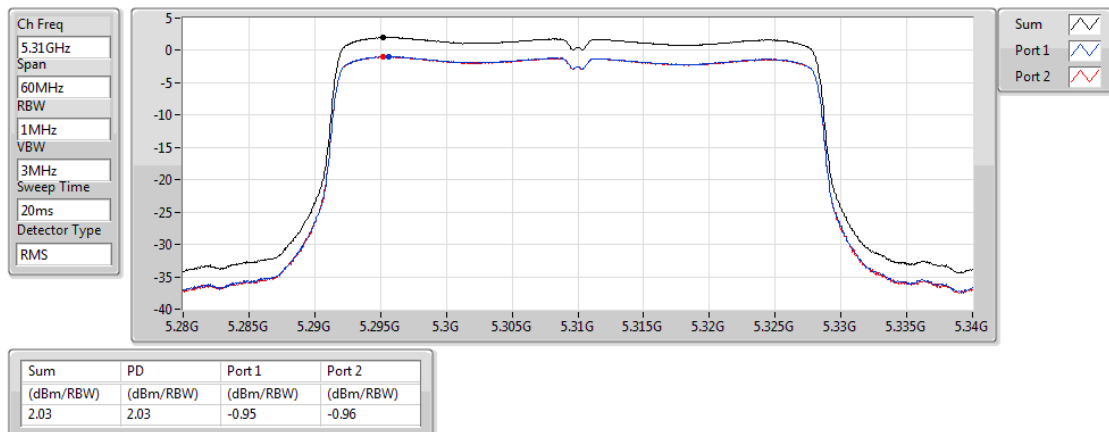
5270MHz



802.11ac VHT40_Nss1,(MCS0)_2TX

PSD

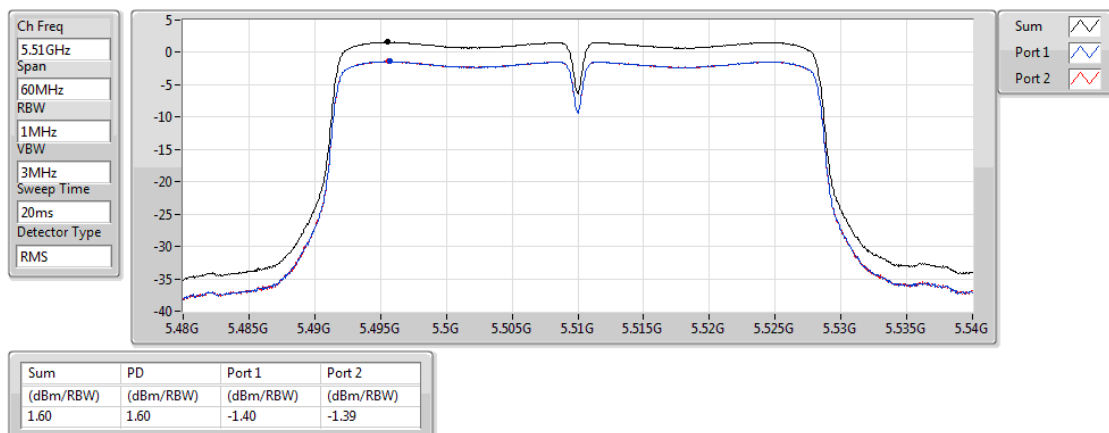
5310MHz



802.11ac VHT40_Nss1,(MCS0)_2TX

PSD

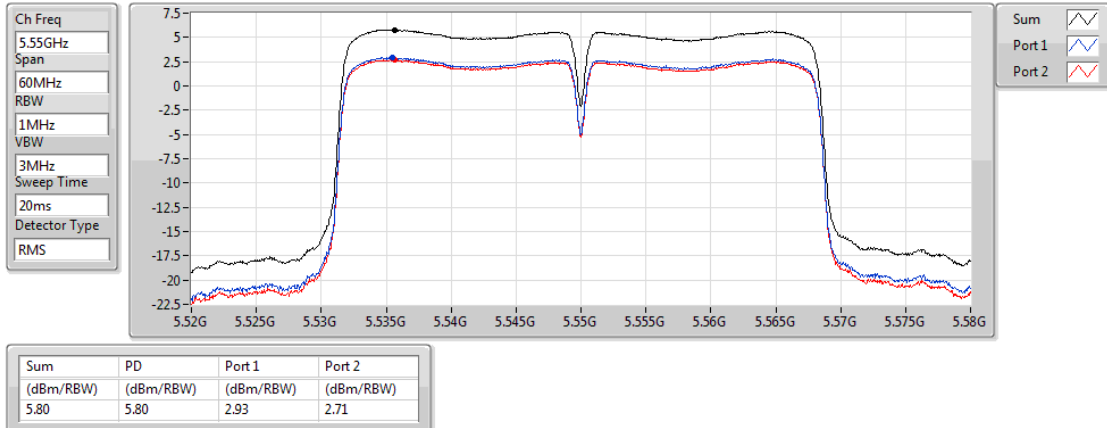
5510MHz



802.11ac VHT40_Nss1,(MCS0)_2TX

PSD

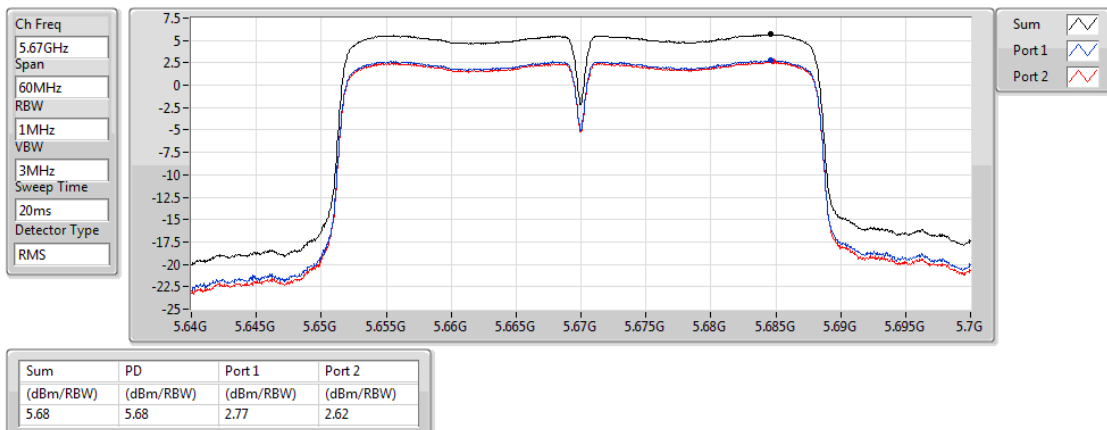
5550MHz



802.11ac VHT40_Nss1,(MCS0)_2TX

PSD

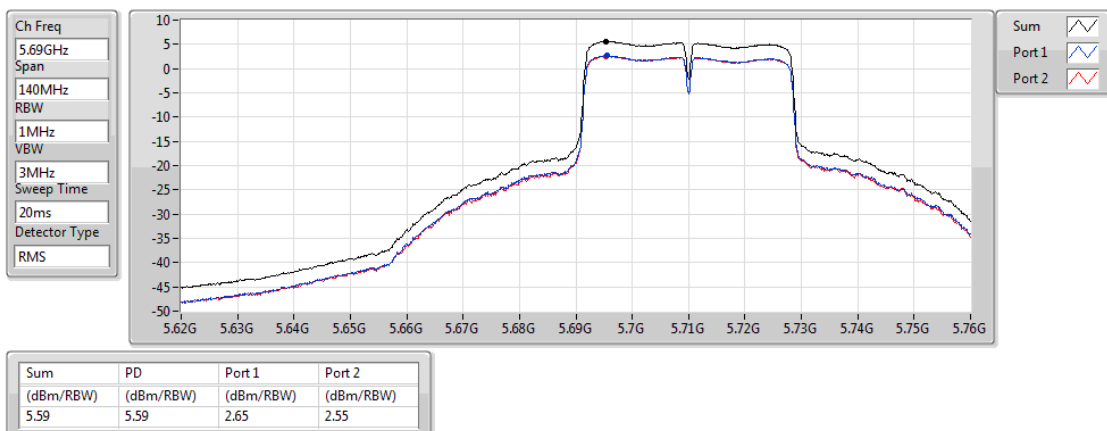
5670MHz



802.11ac VHT40_Nss1,(MCS0)_2TX

PSD

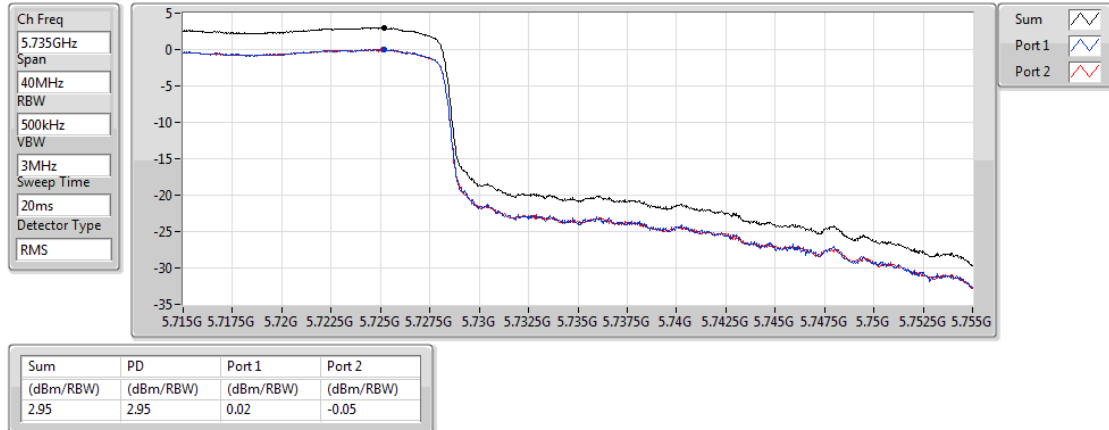
5710MHz Straddle 5.47-5.725GHz



802.11ac VHT40_Nss1,(MCS0)_2TX

PSD

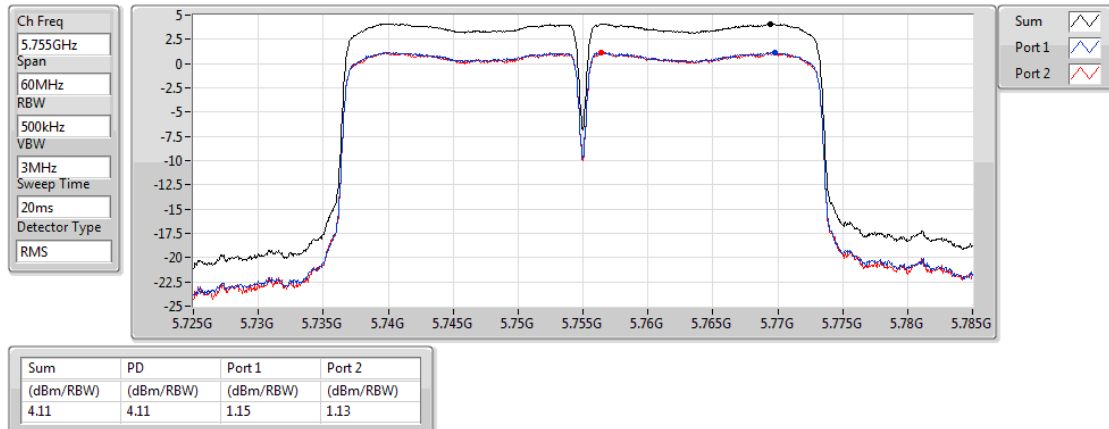
5710MHz Straddle 5.725-5.85GHz



802.11ac VHT40_Nss1,(MCS0)_2TX

PSD

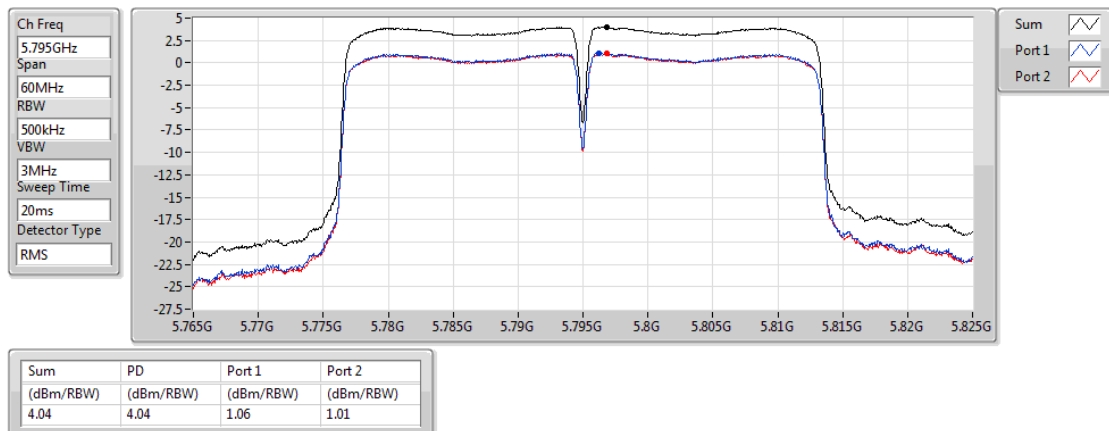
5755MHz



802.11ac VHT40_Nss1,(MCS0)_2TX

PSD

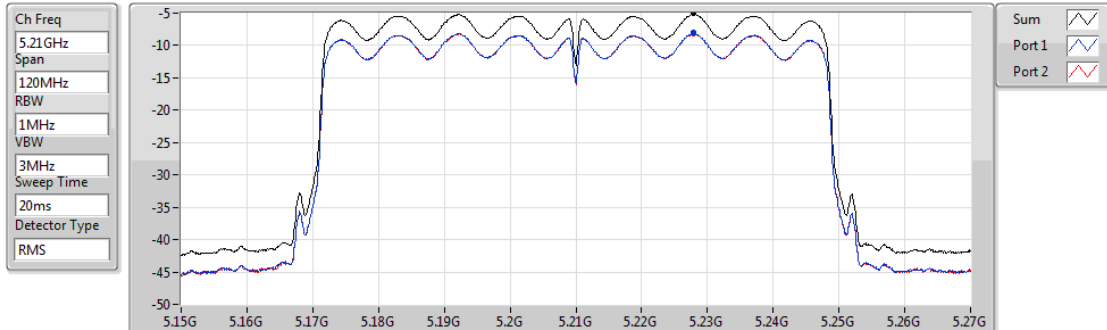
5795MHz



802.11ac VHT80_Nss1,(MCS0)_2TX

PSD

5210MHz

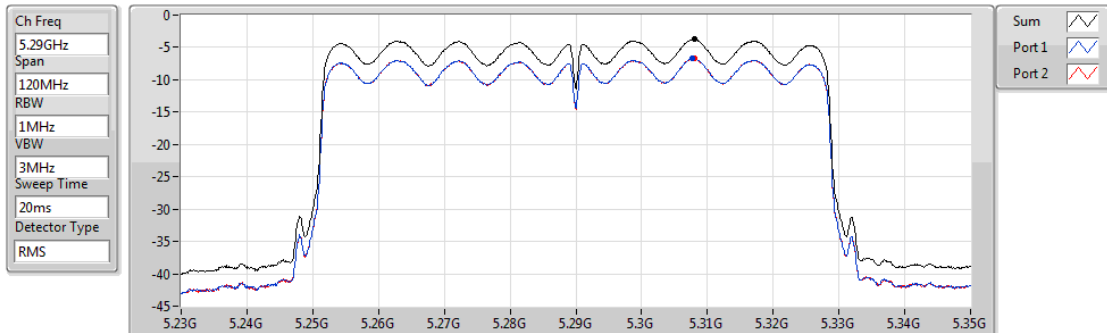


Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-5.09	-5.09	-8.03	-8.16

802.11ac VHT80_Nss1,(MCS0)_2TX

PSD

5290MHz

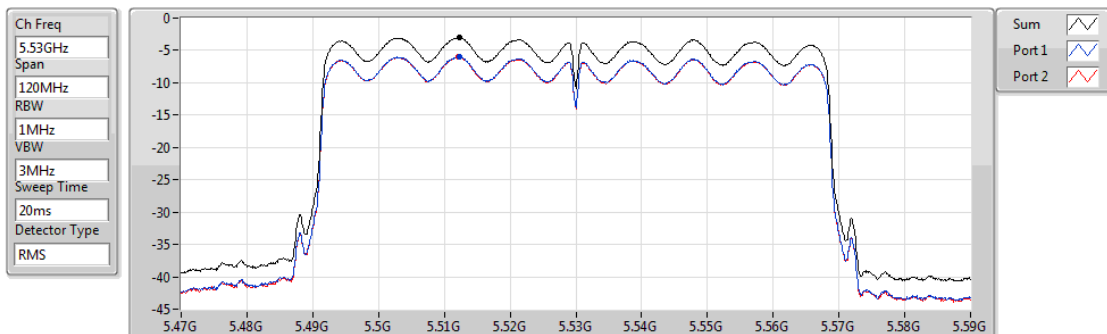


Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-3.68	-3.68	-6.69	-6.67

802.11ac VHT80_Nss1,(MCS0)_2TX

PSD

5530MHz

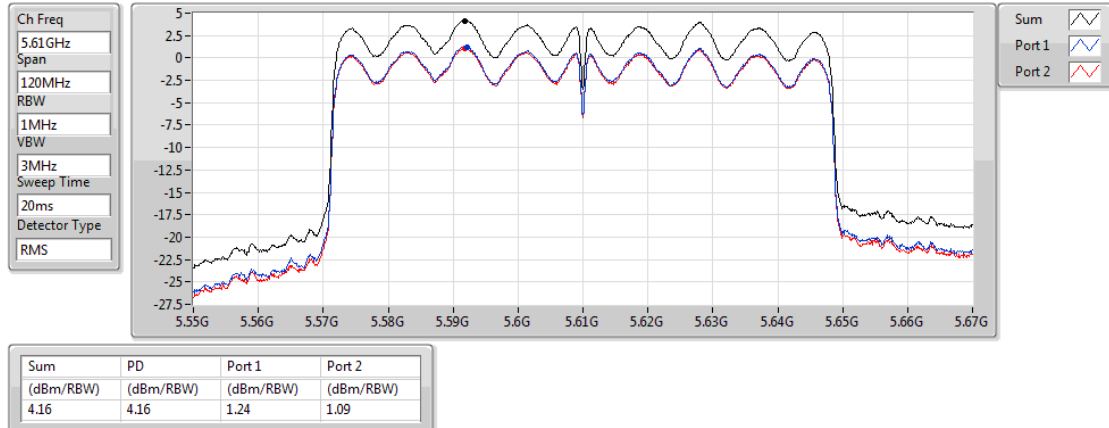


Sum	PD	Port 1	Port 2
(dBm/Hz)	(dBm/Hz)	(dBm/Hz)	(dBm/Hz)
-3.00	-3.00	-5.96	-6.05

802.11ac VHT80_Nss1,(MCS0)_2TX

PSD

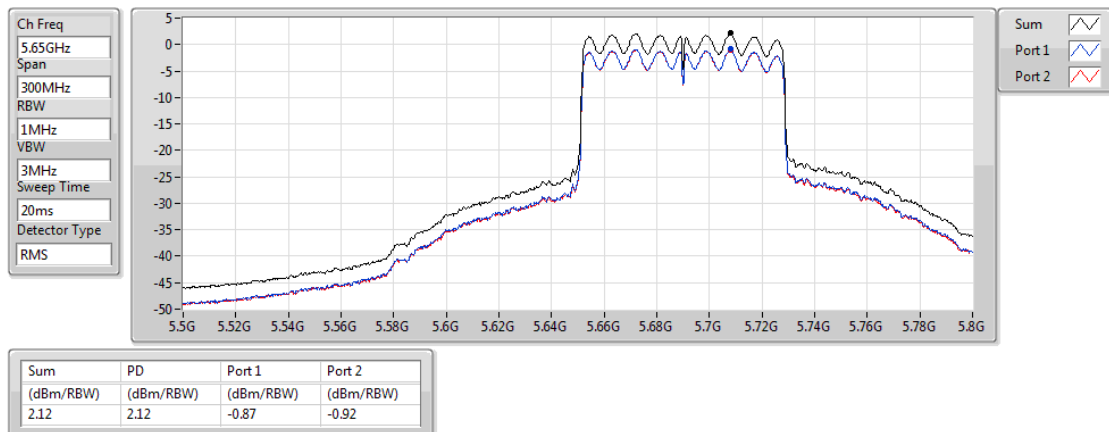
5610MHz



802.11ac VHT80_Nss1,(MCS0)_2TX

PSD

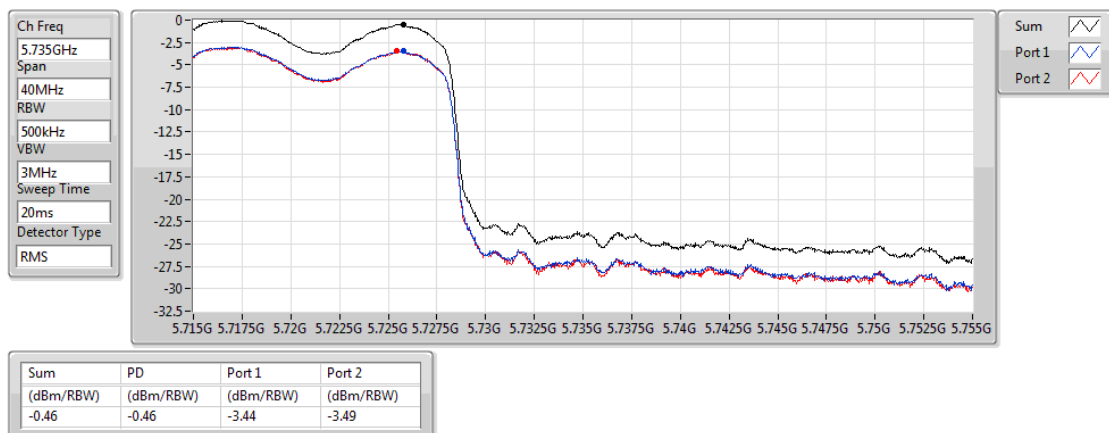
5690MHz Straddle 5.47-5.725GHz

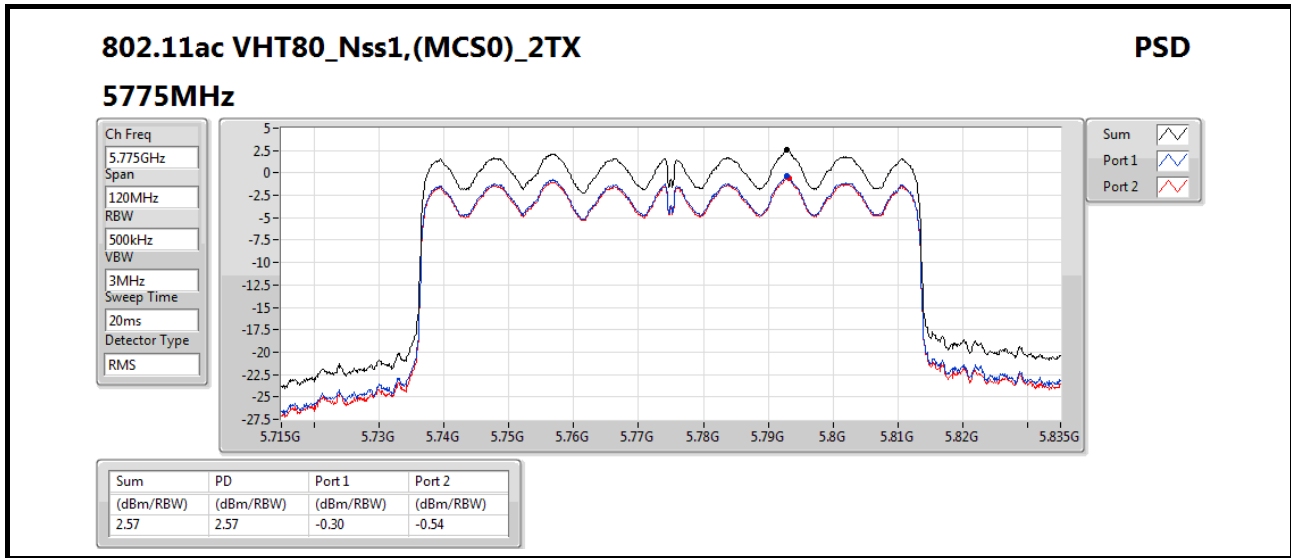


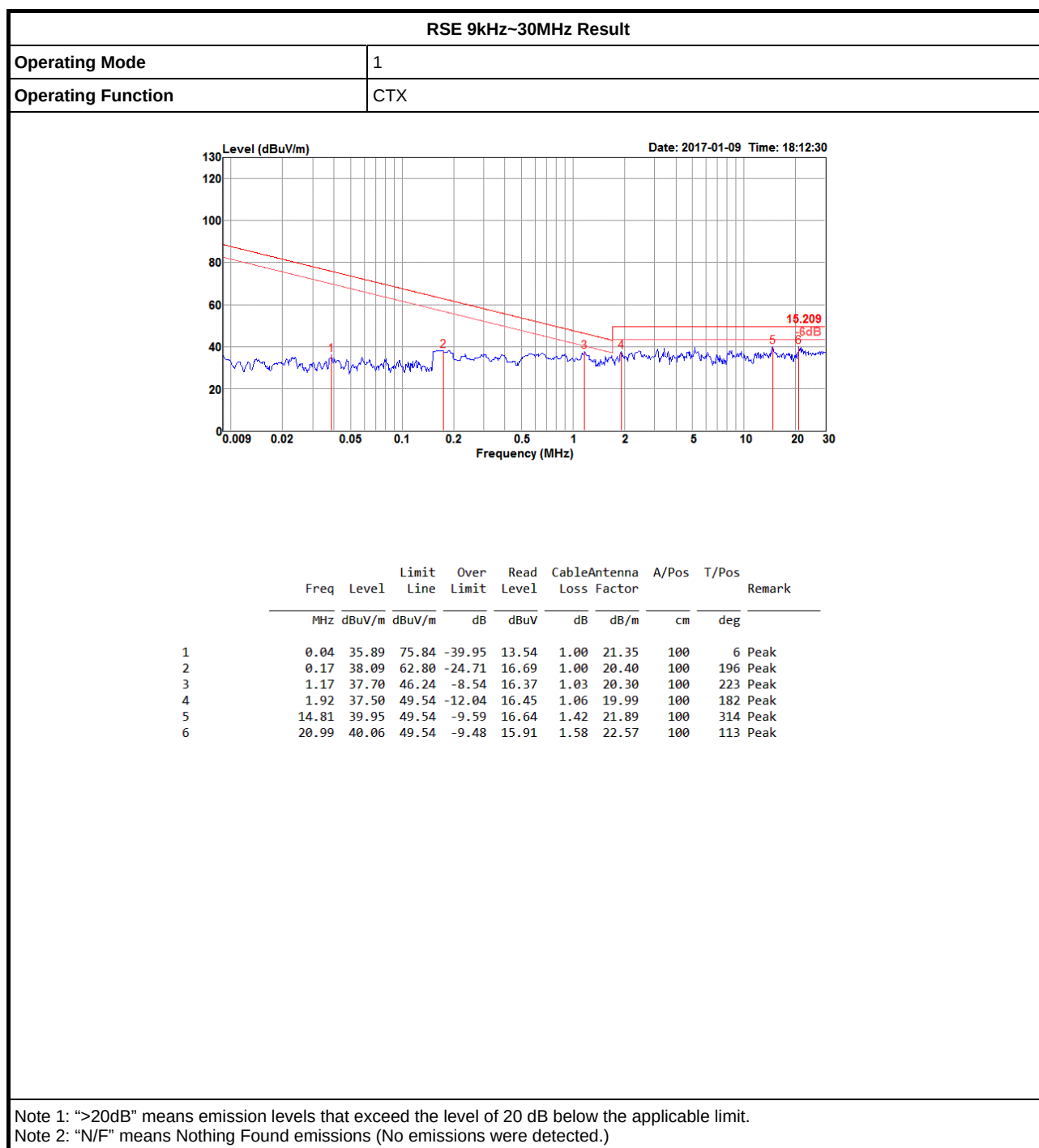
802.11ac VHT80_Nss1,(MCS0)_2TX

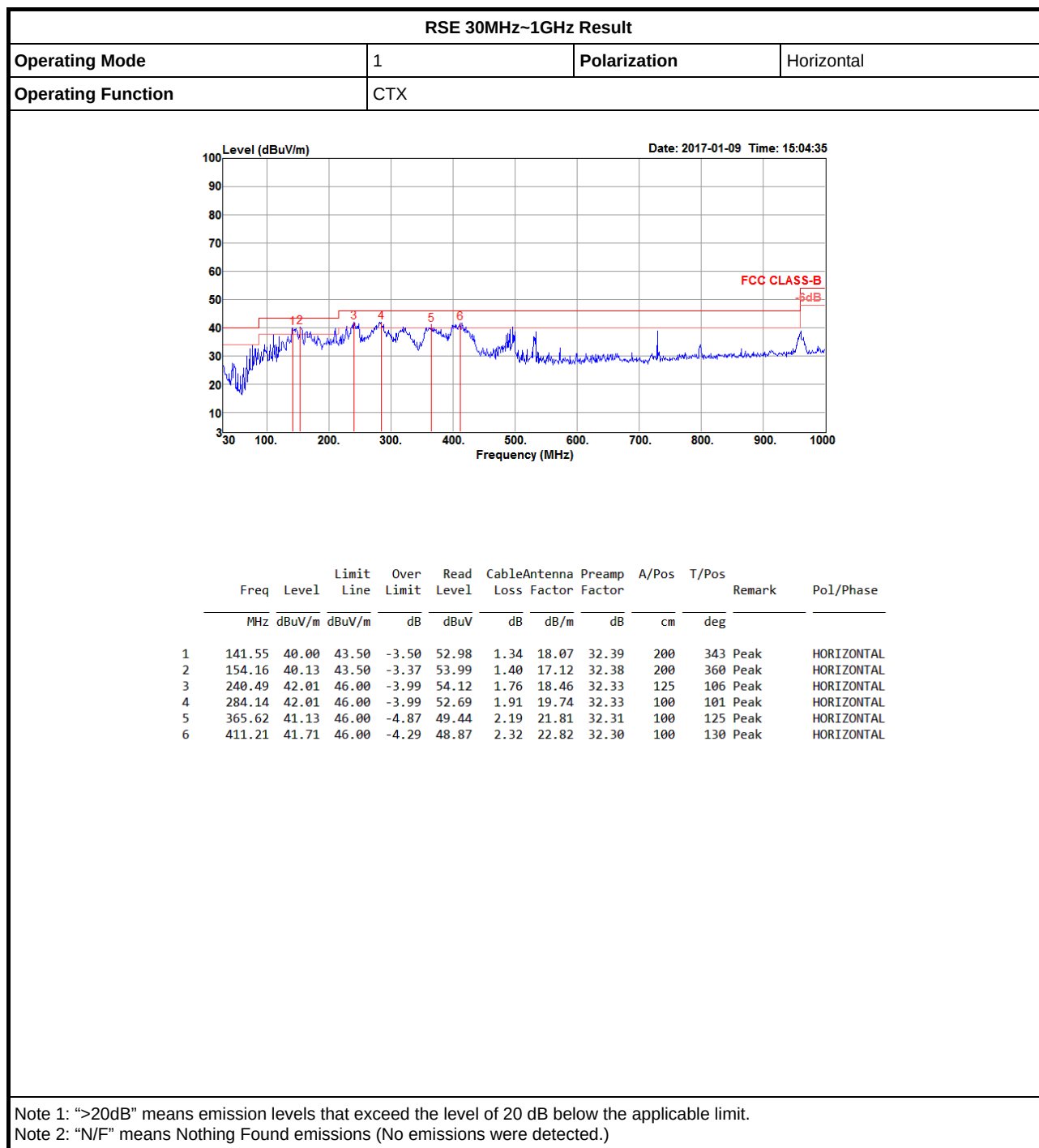
PSD

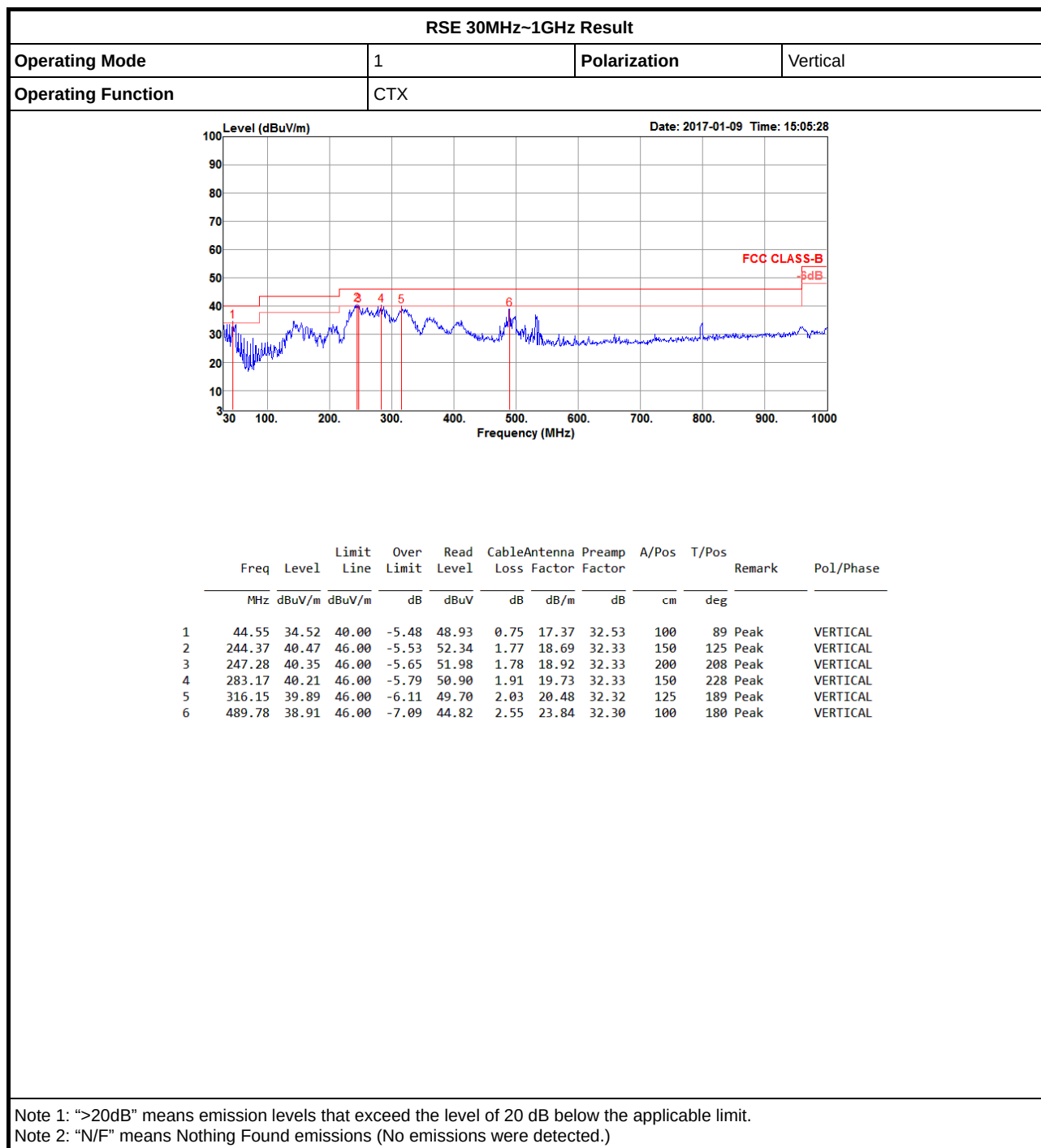
5690MHz Straddle 5.725-5.85GHz







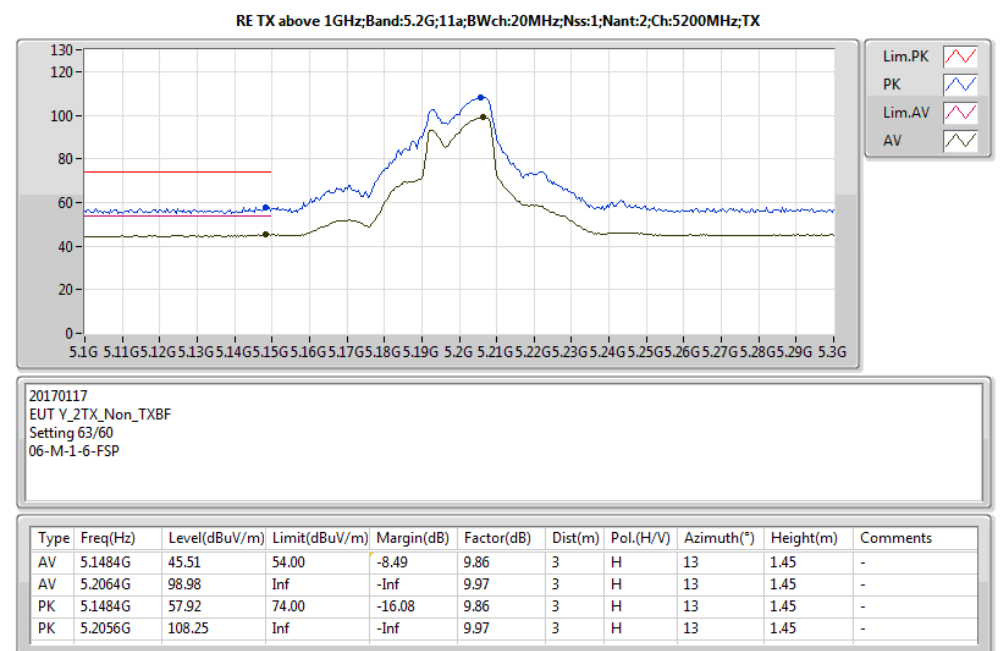
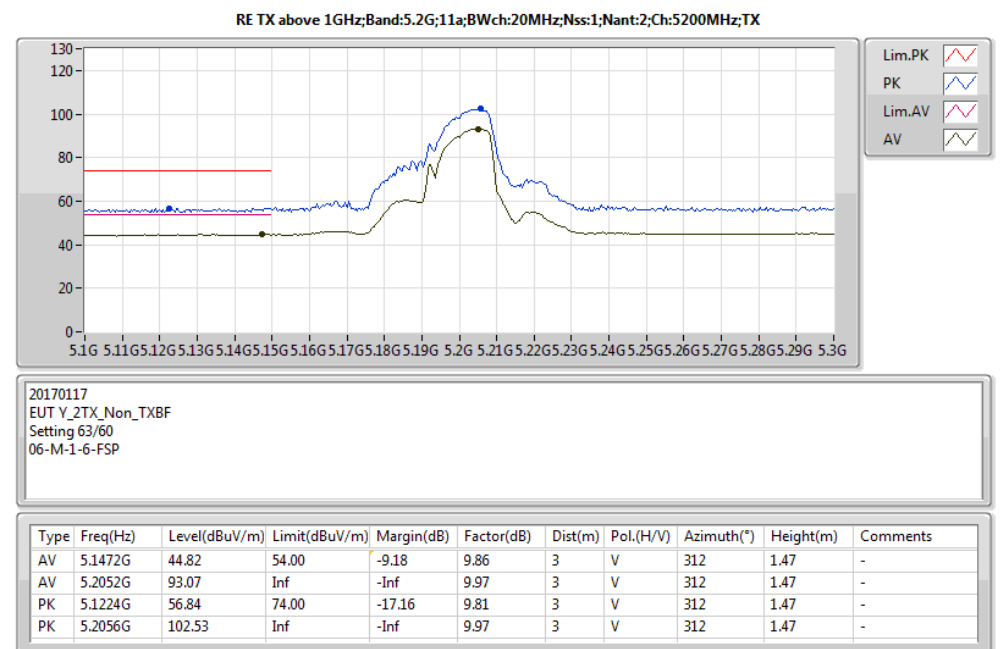
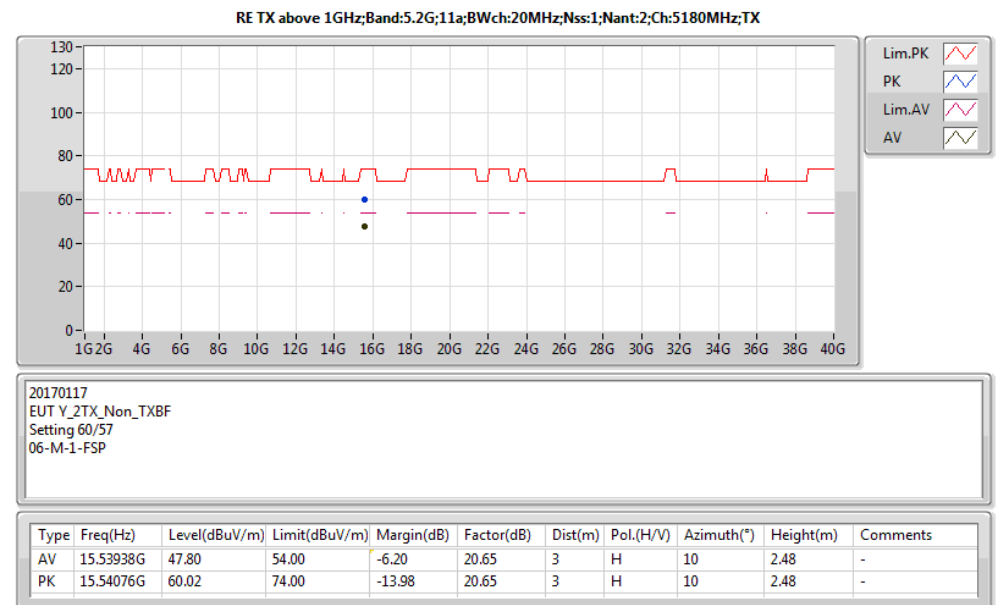
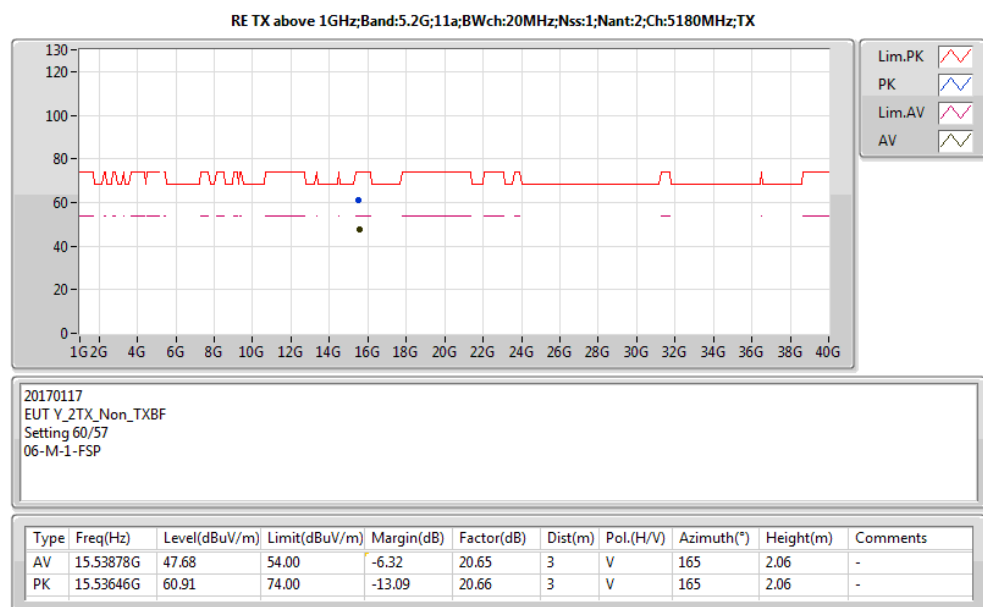
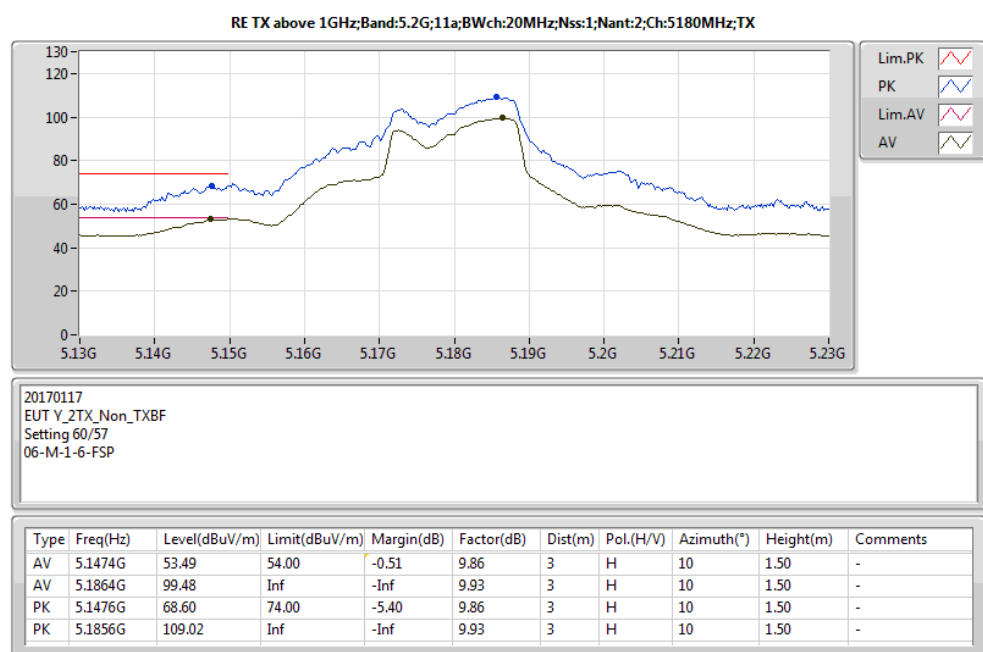
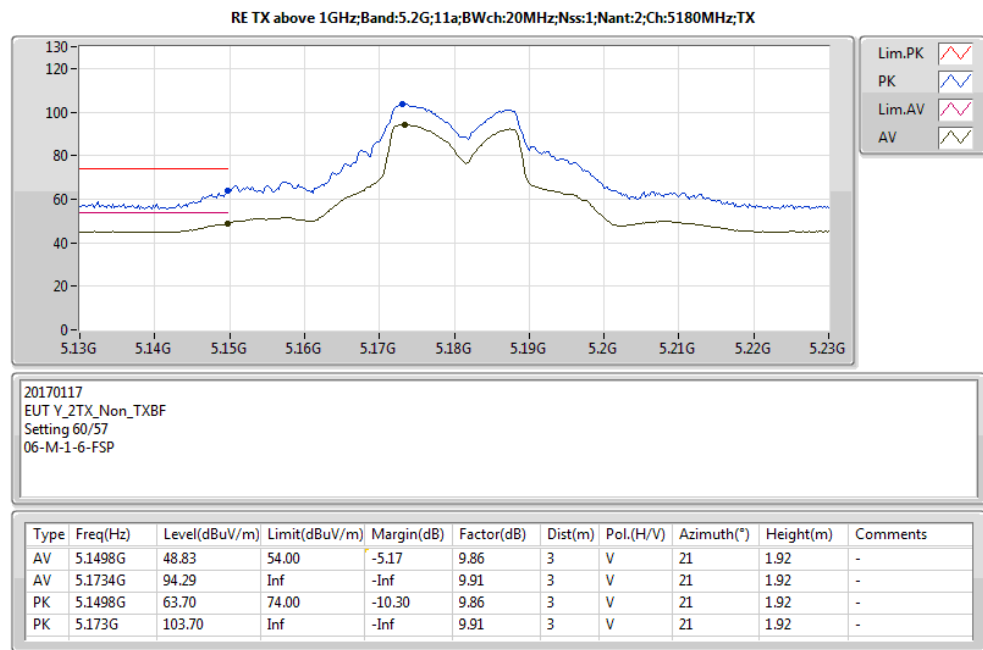


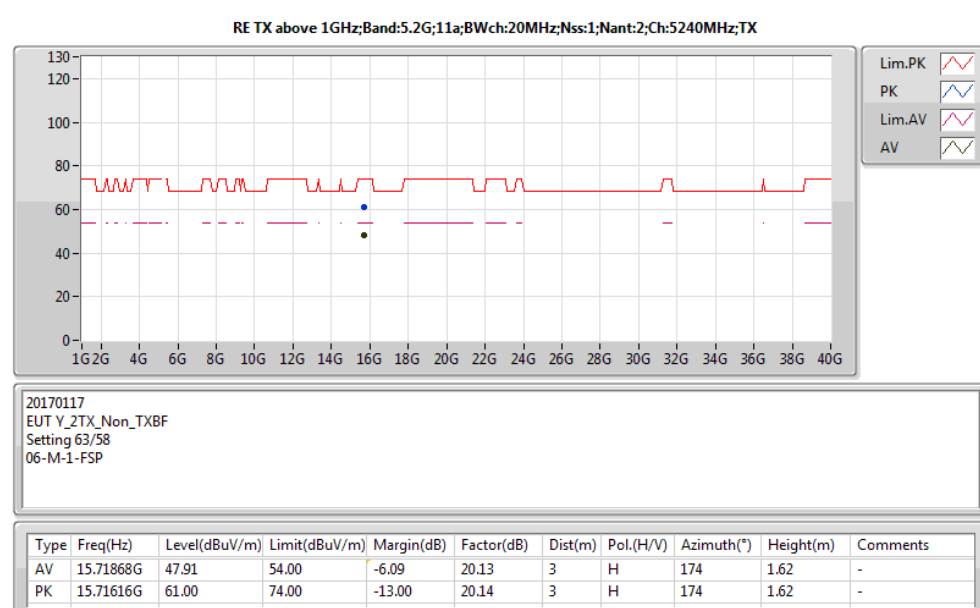
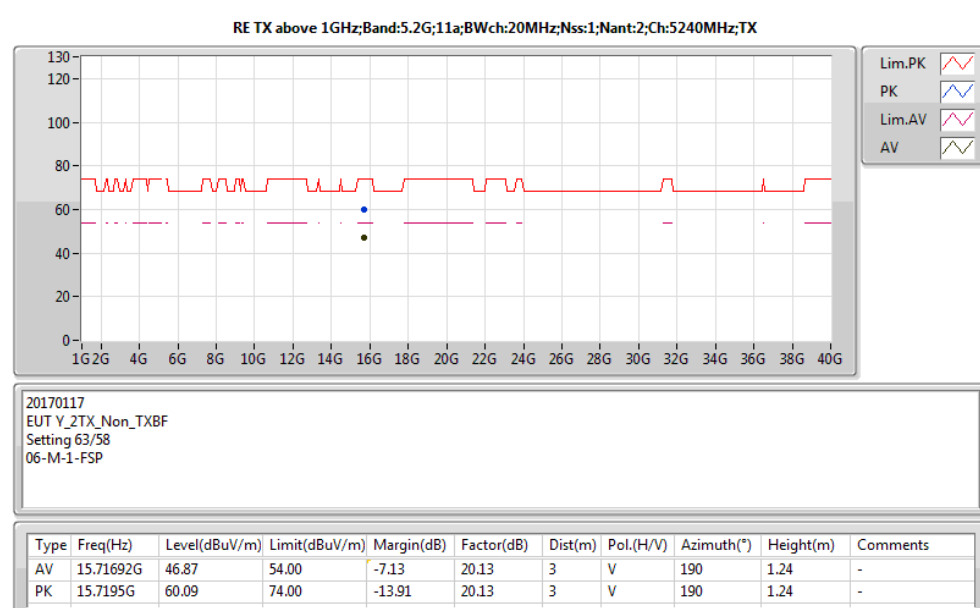
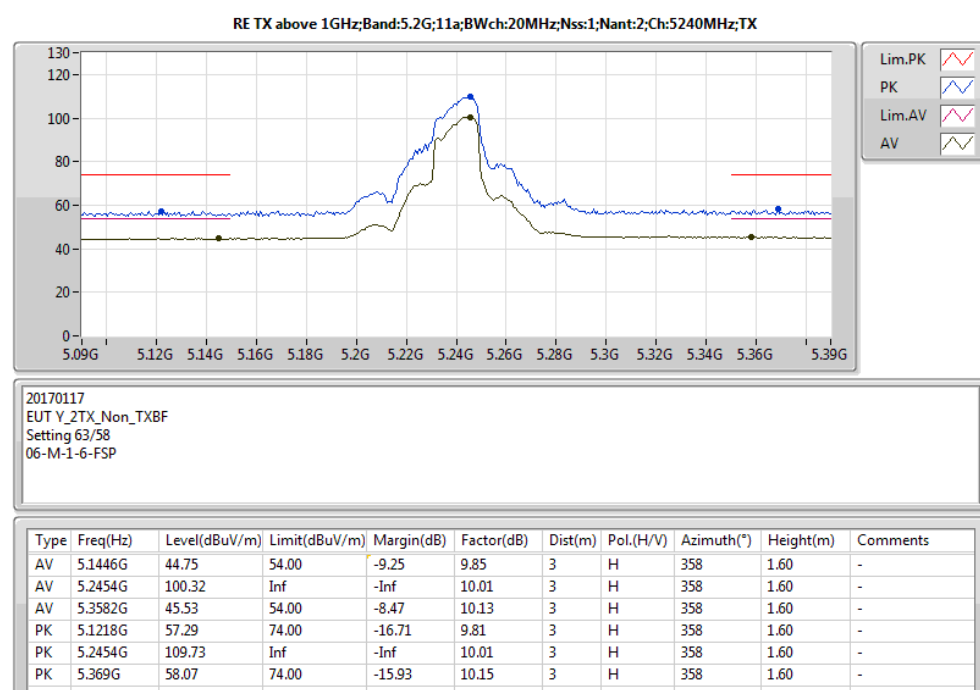
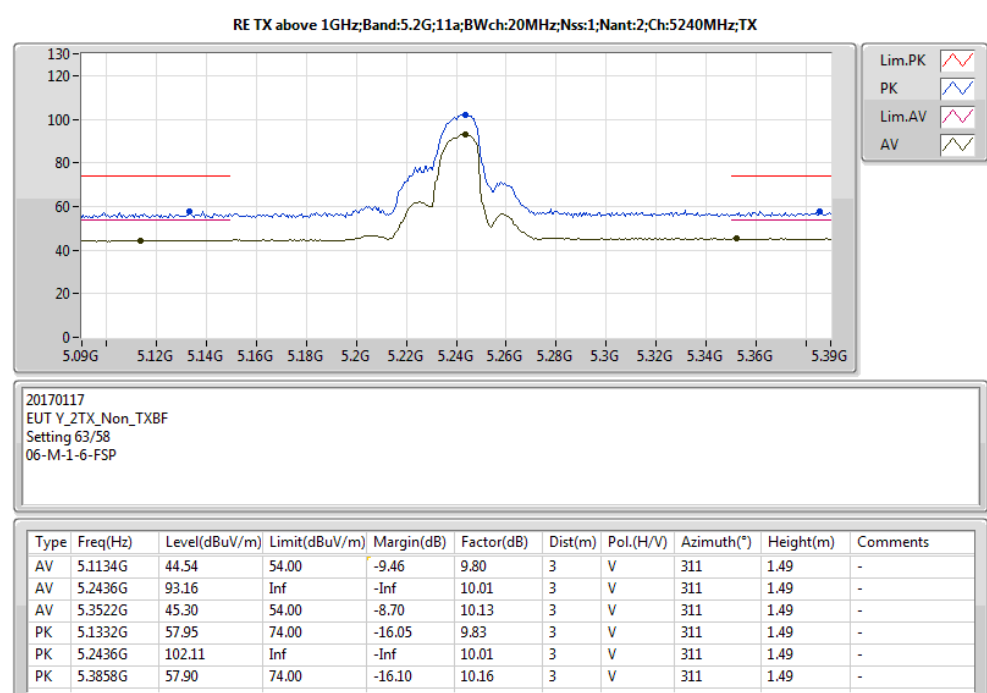
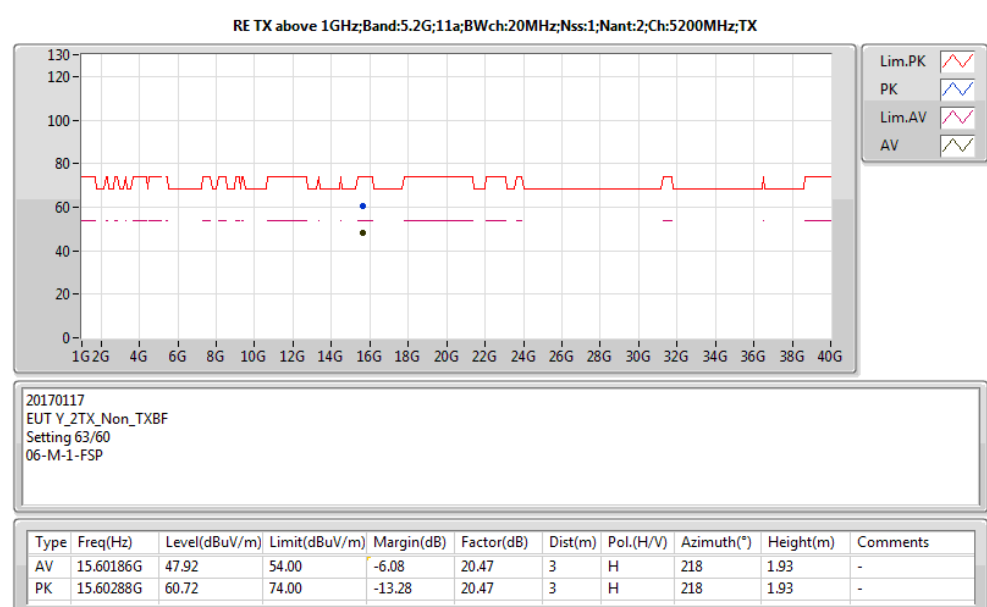
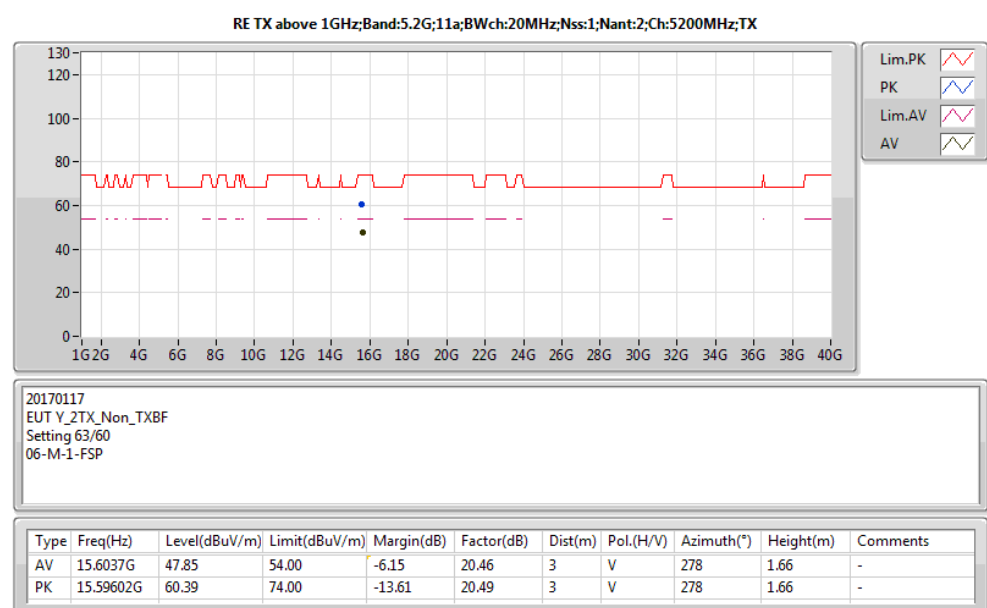


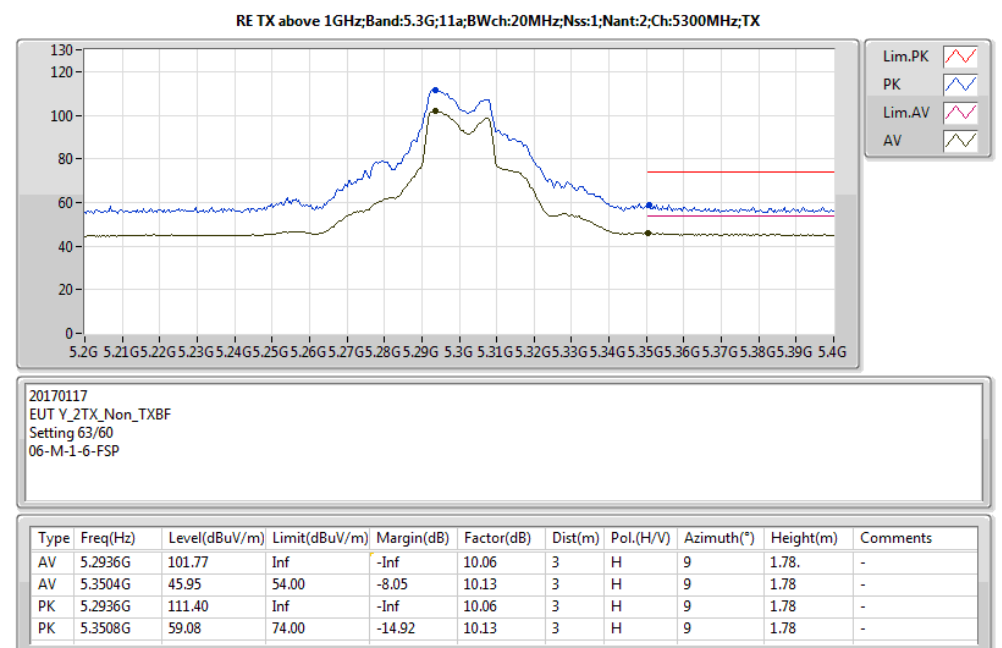
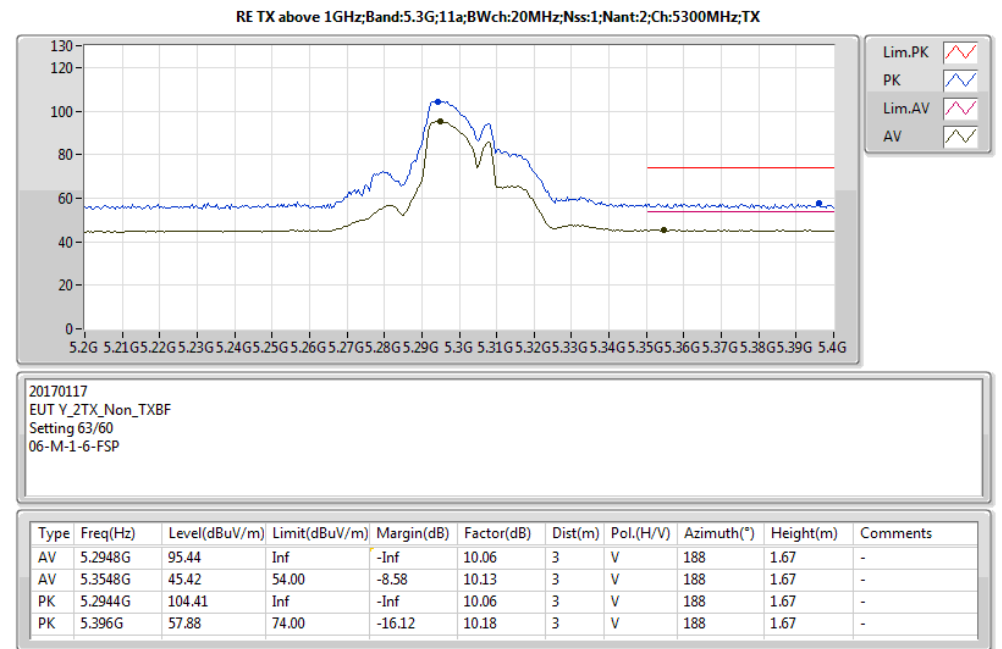
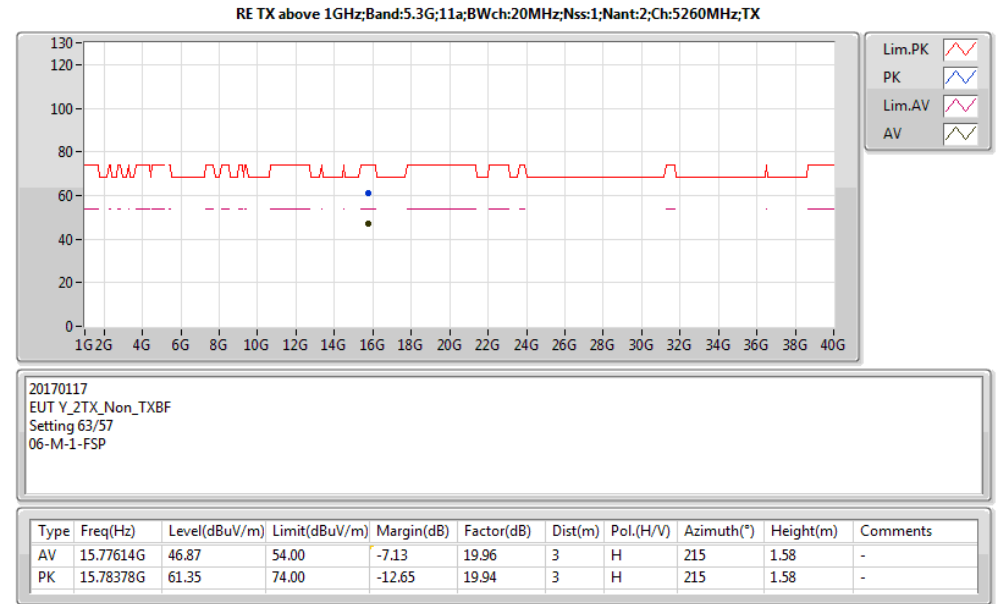
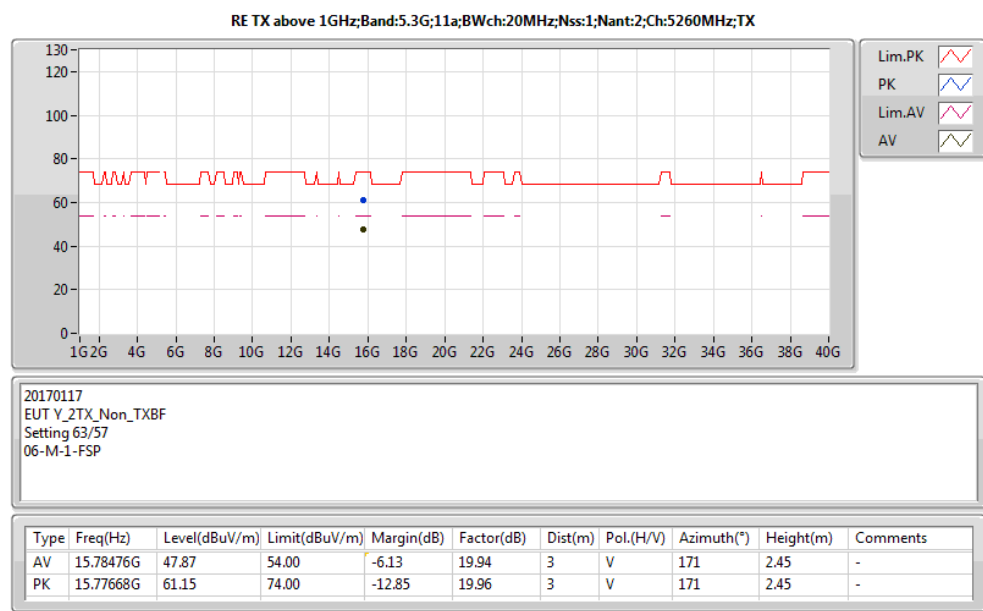
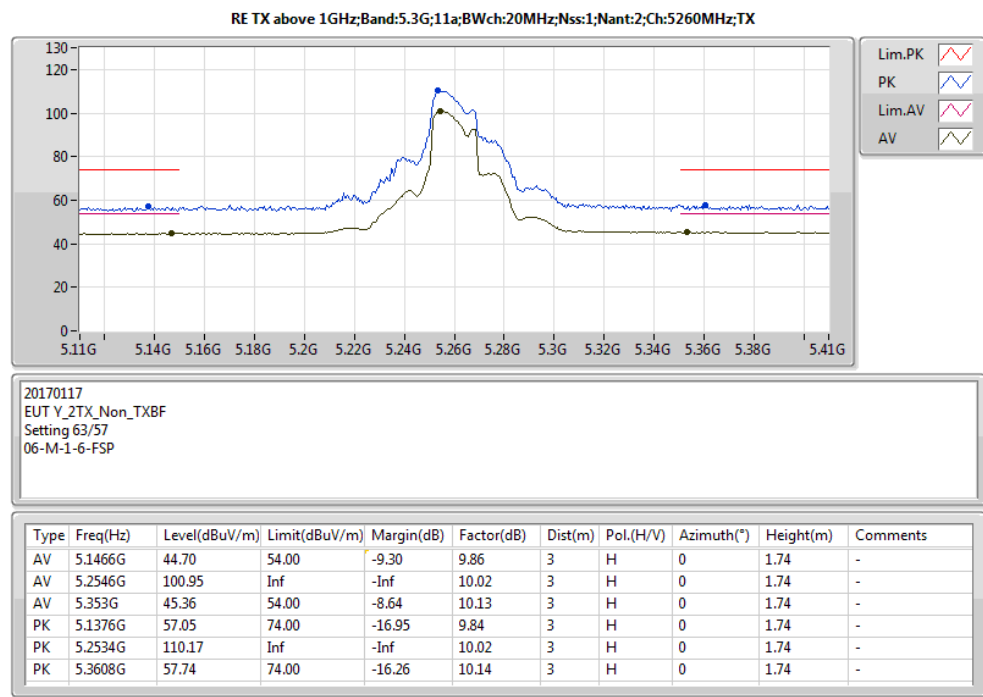
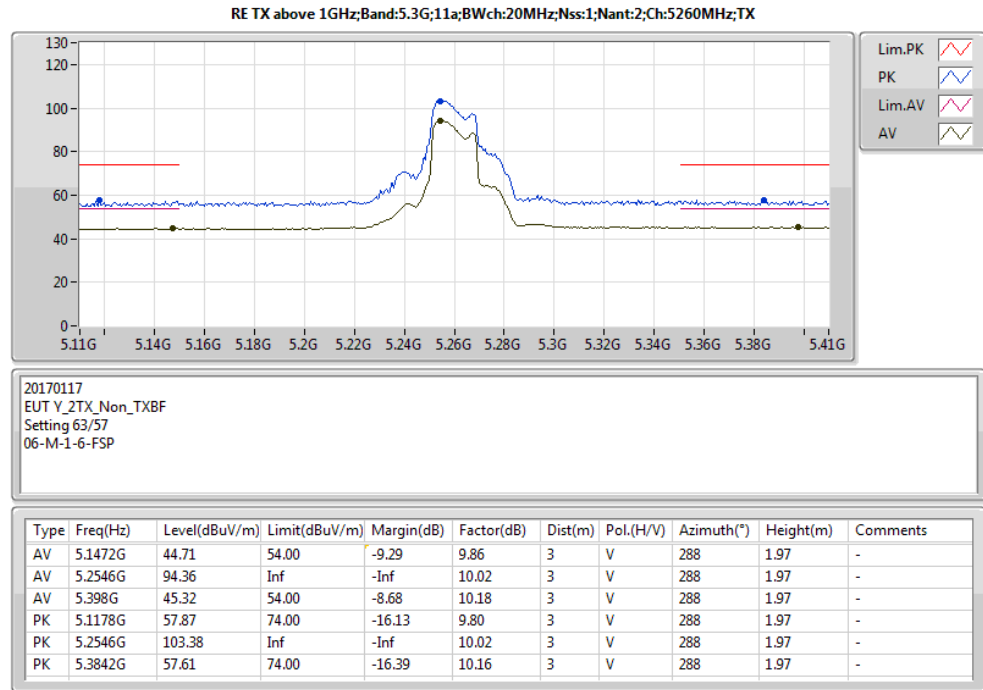


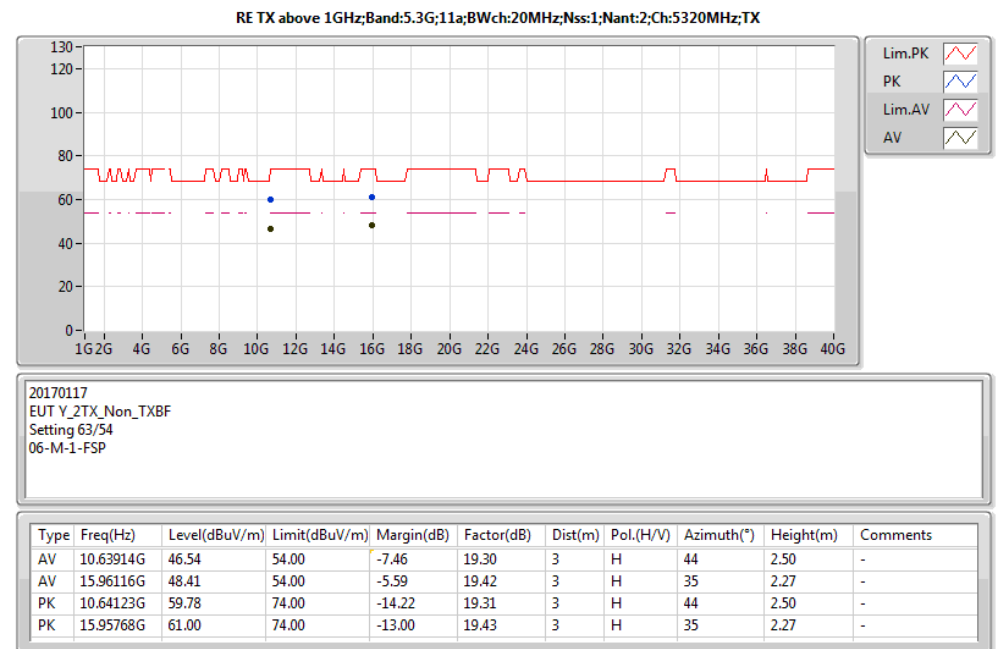
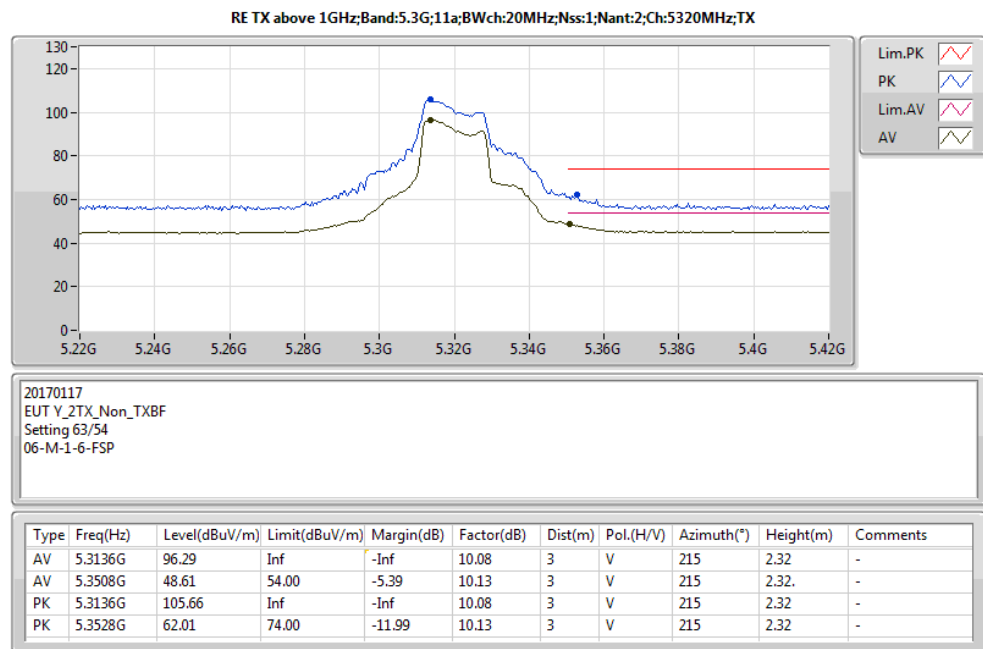
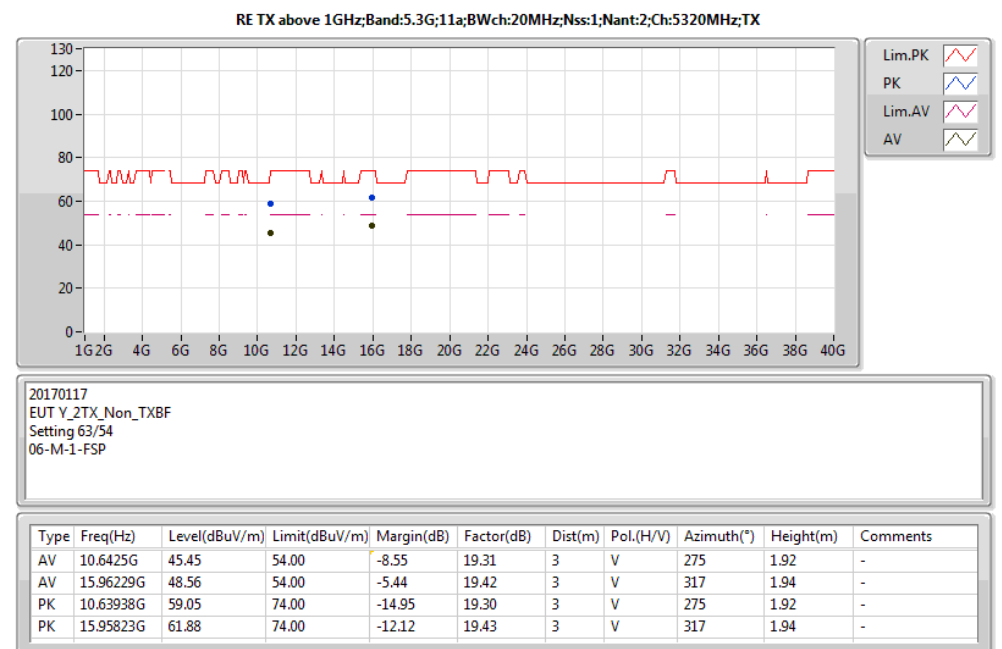
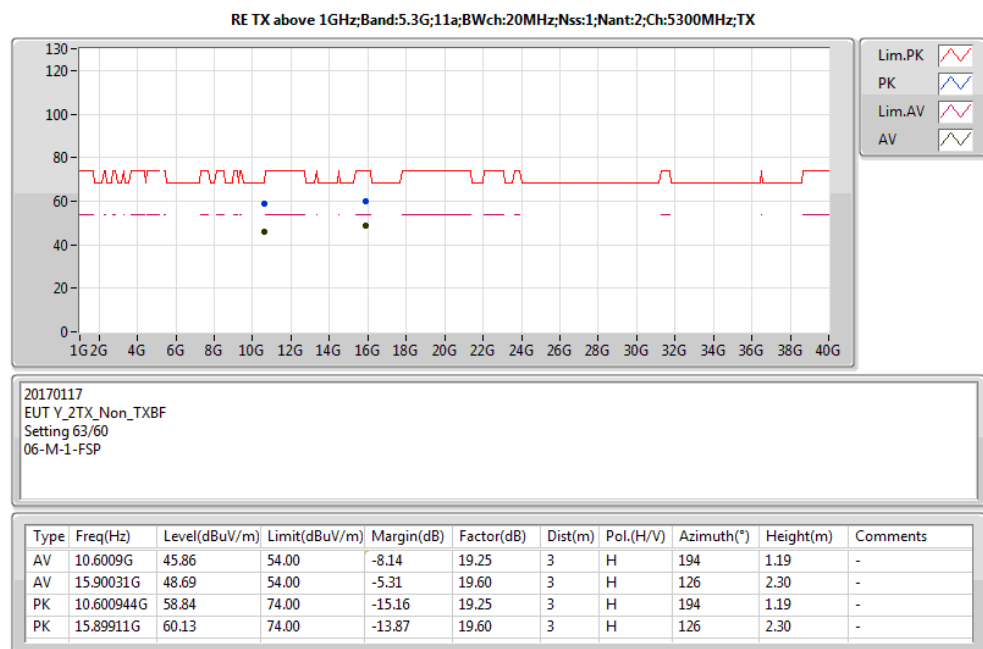
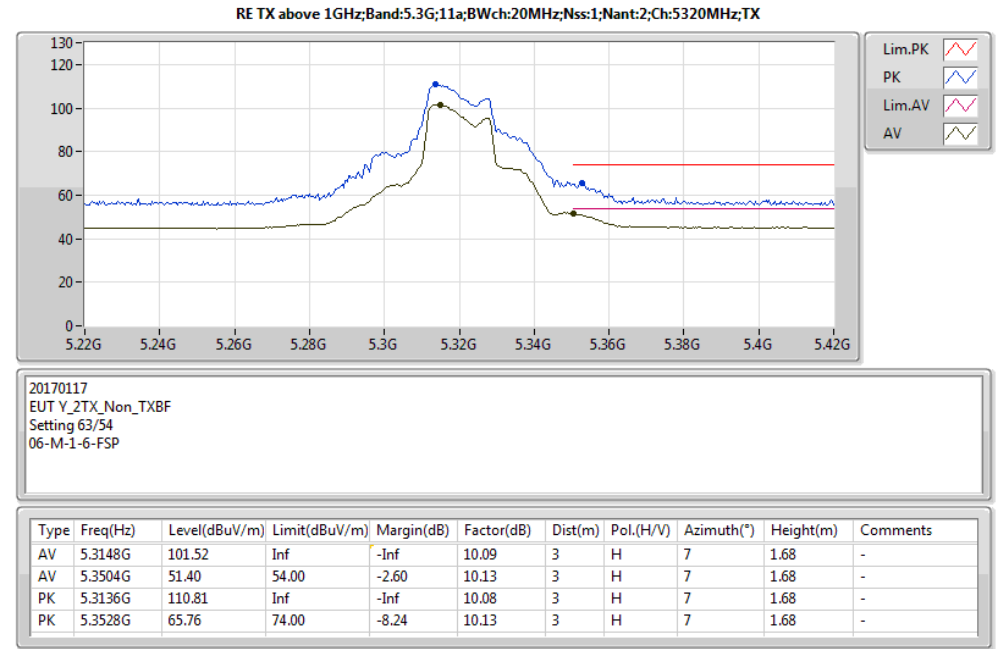
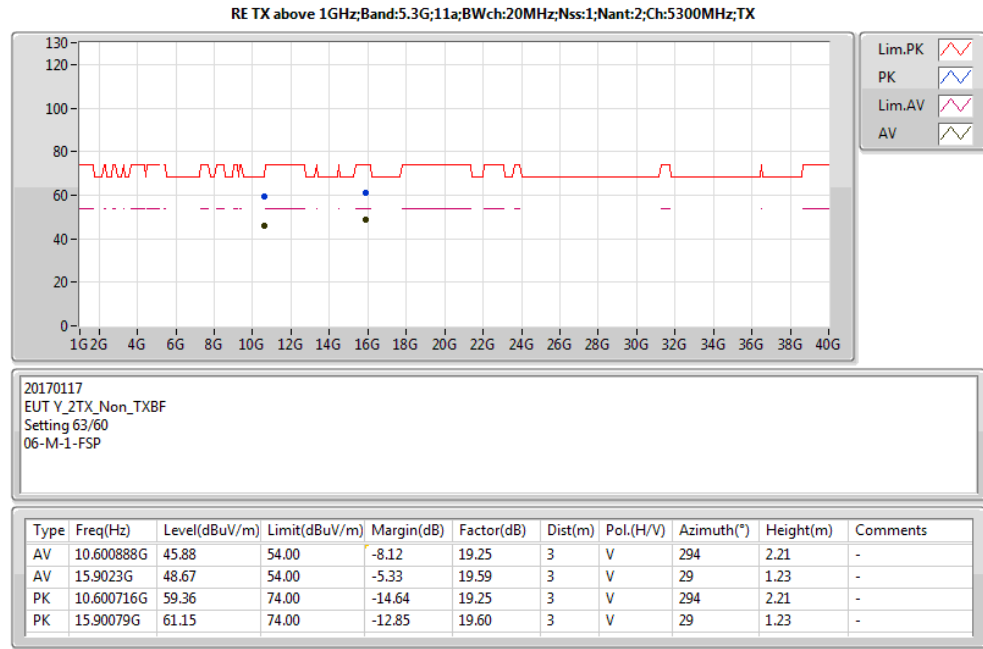
Summary

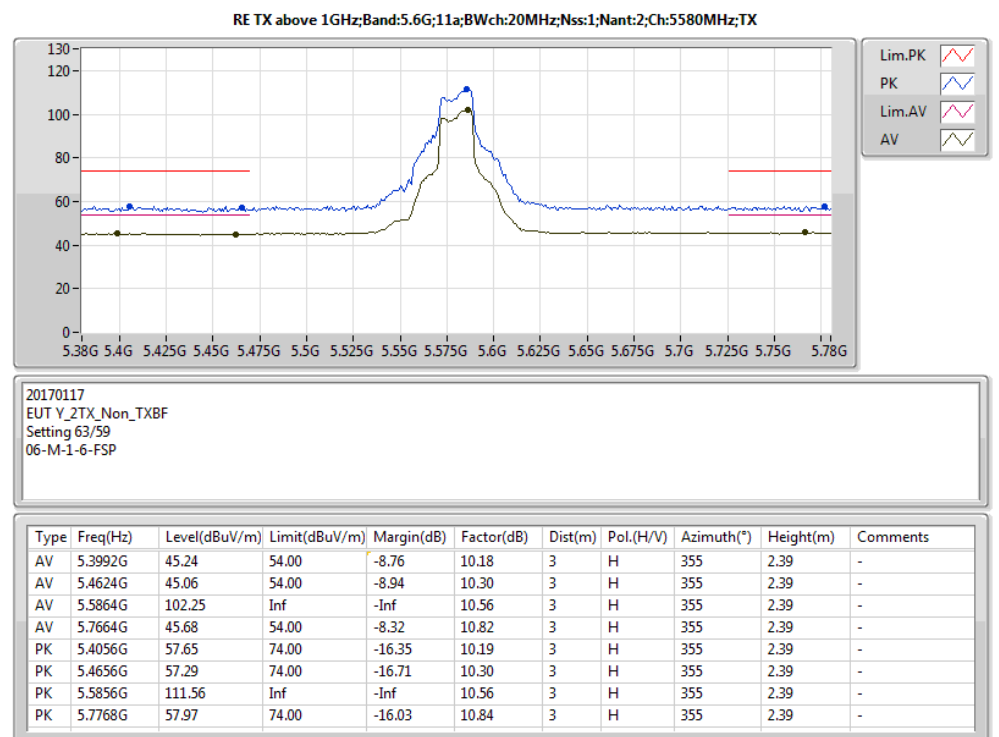
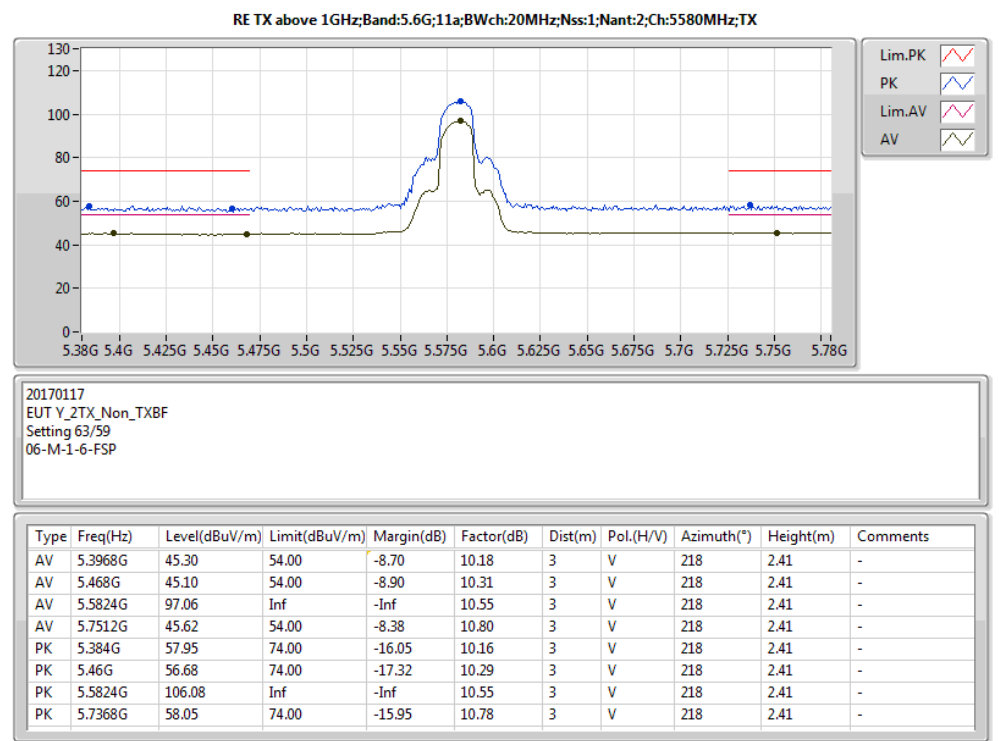
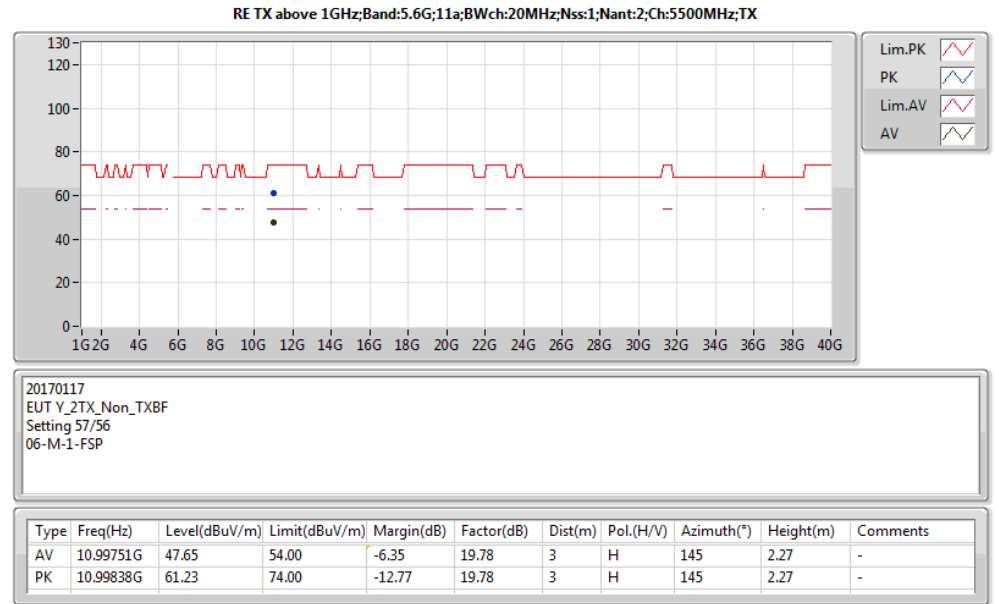
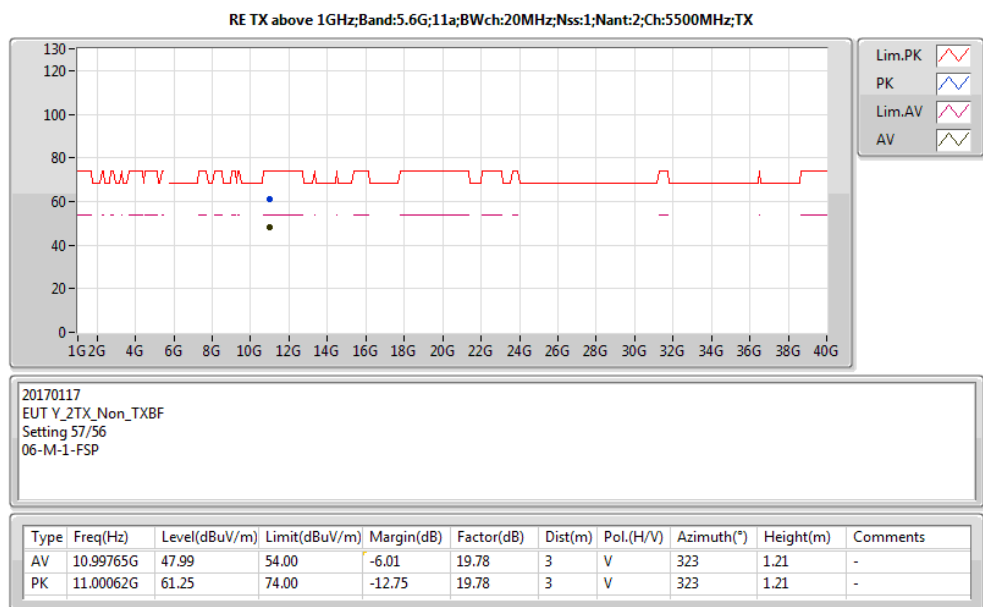
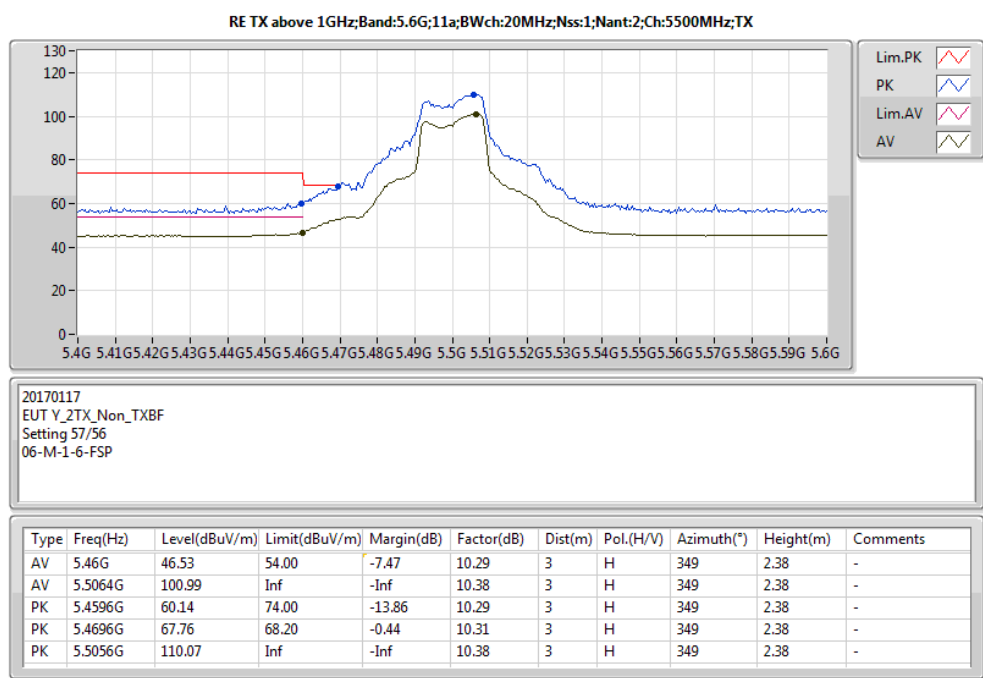
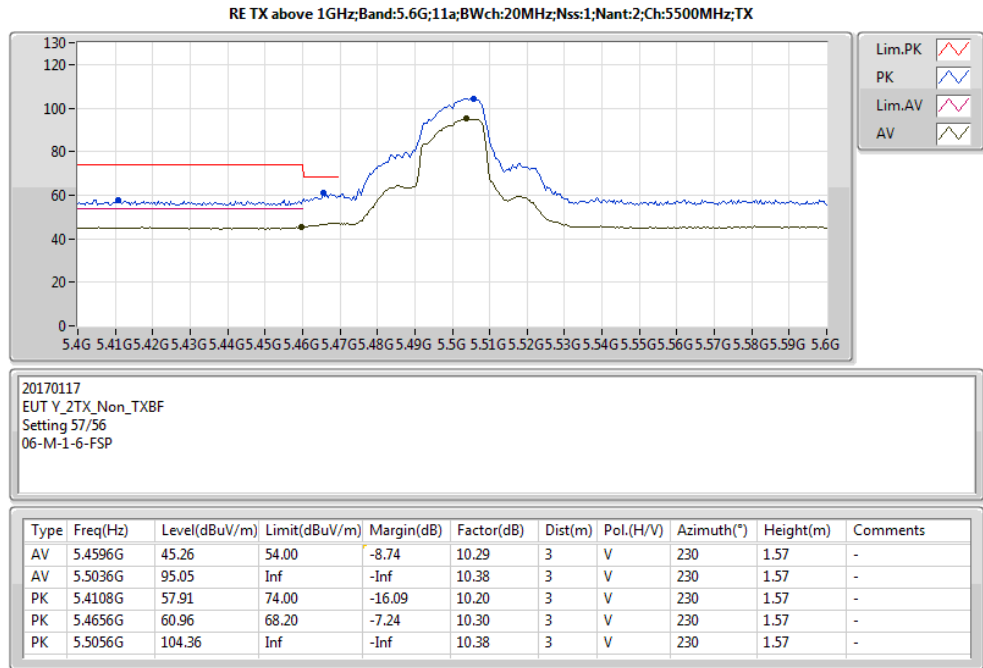
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Pol. (H/V)	Azimuth (°)	Height (m)	Comments
5.6G;VHT80;Nss1,(M0);Ntx2;5530;TX	Pass	AV	5.465G	53.98	54.00	-0.02	10.30	3	H	355	2.42	-

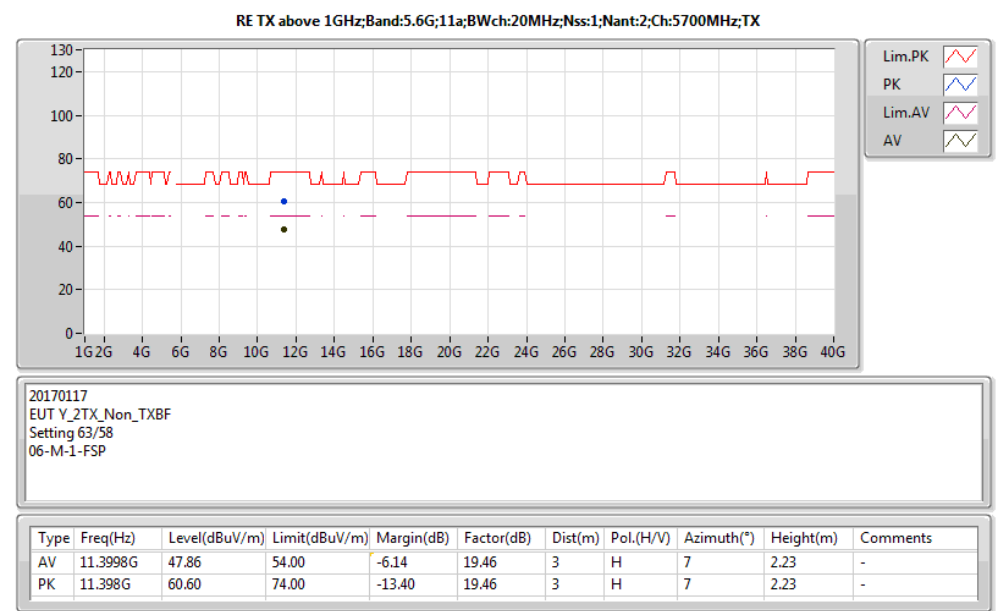
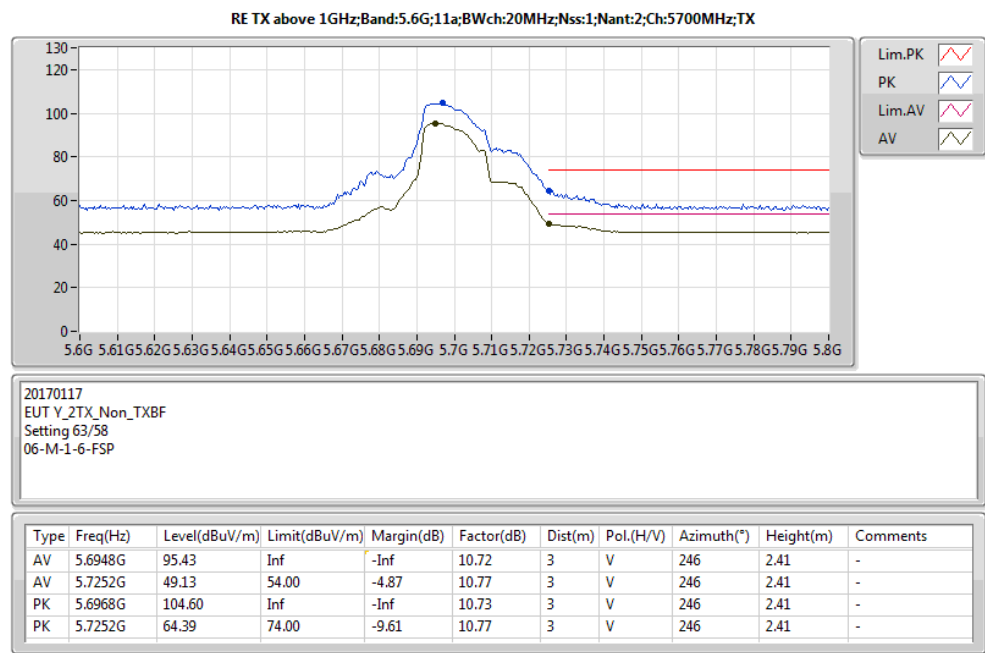
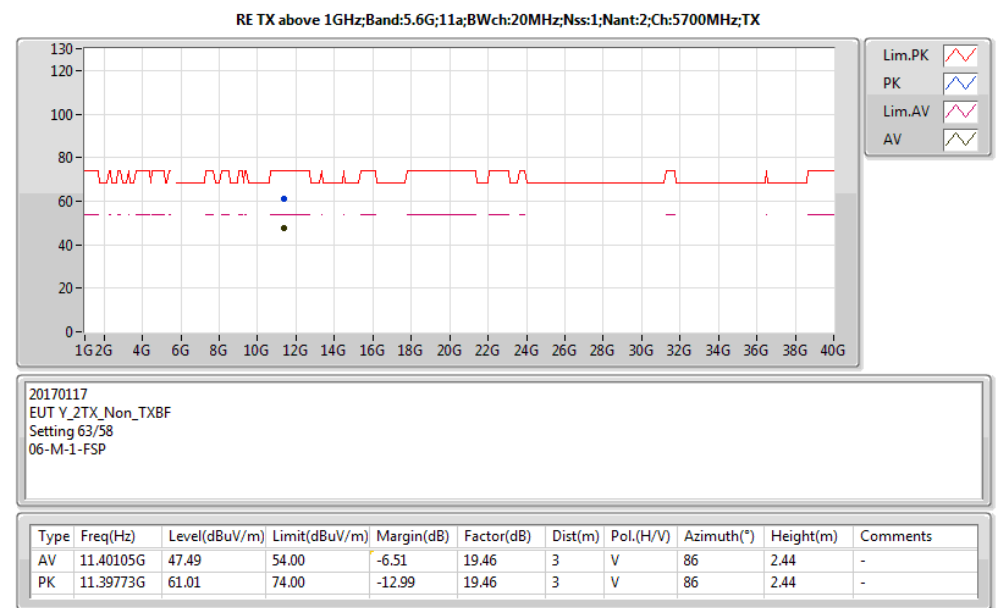
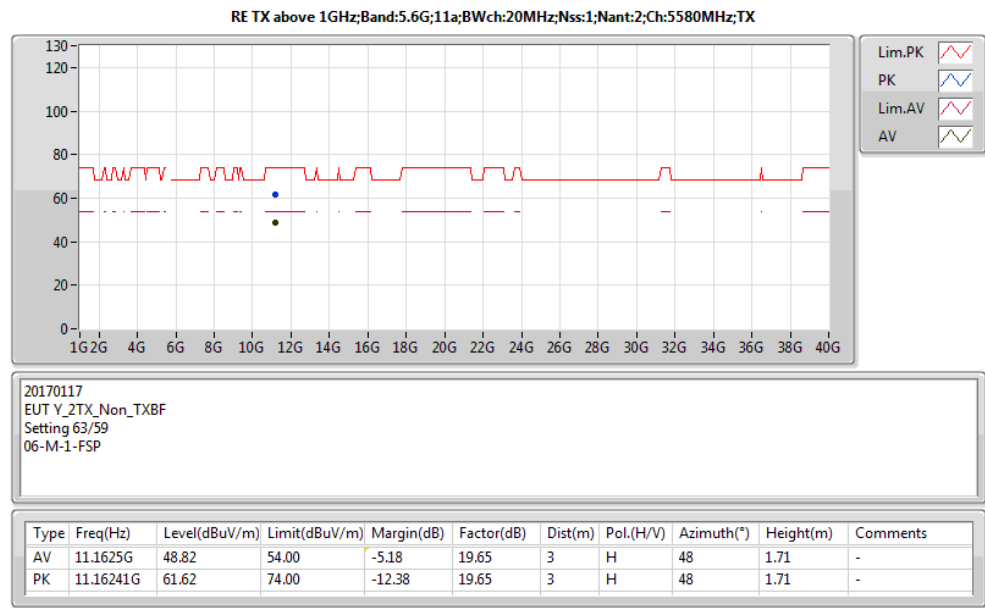
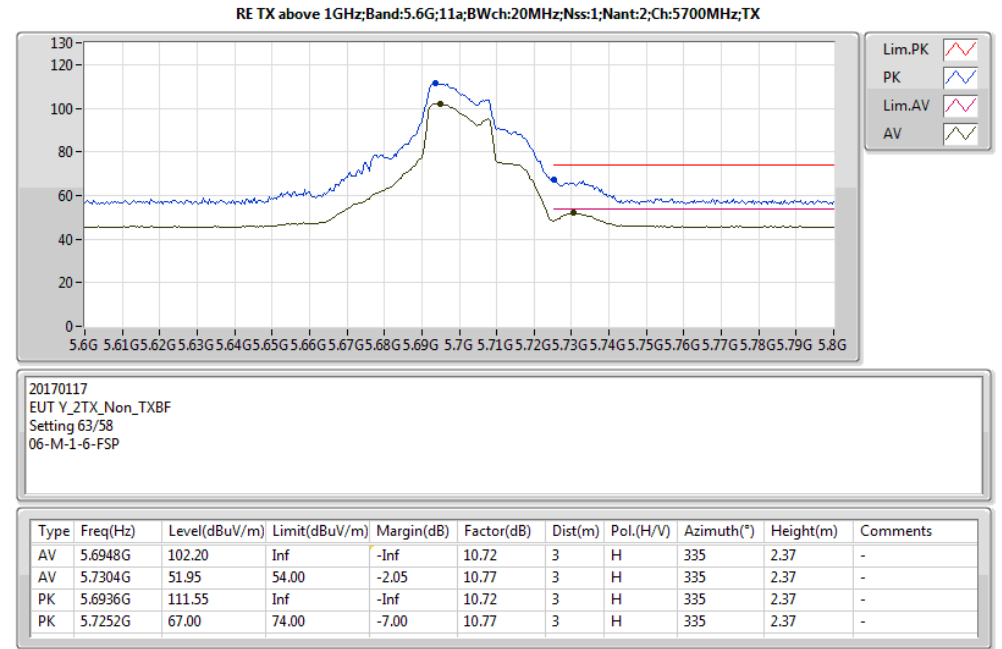
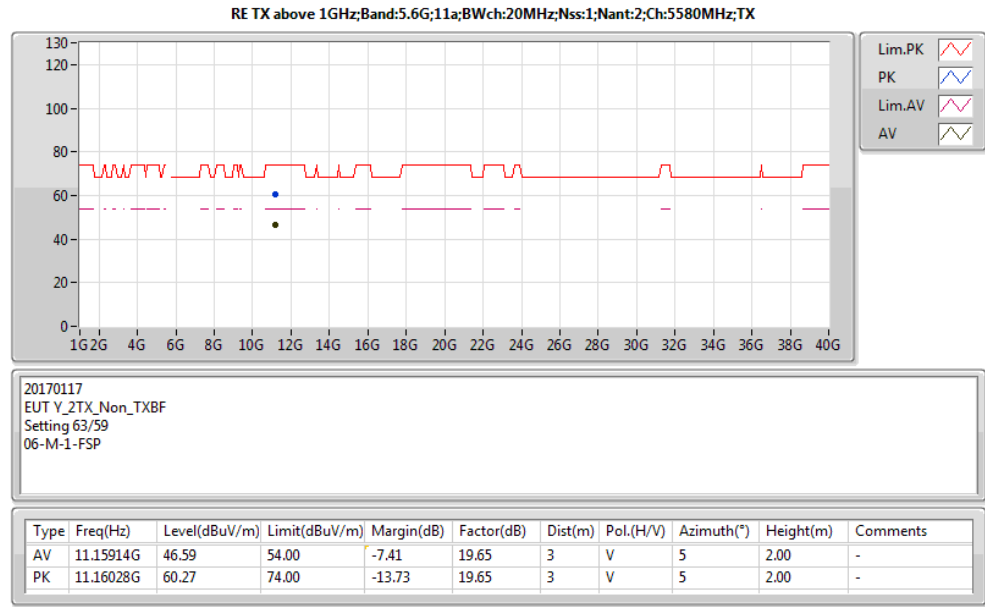


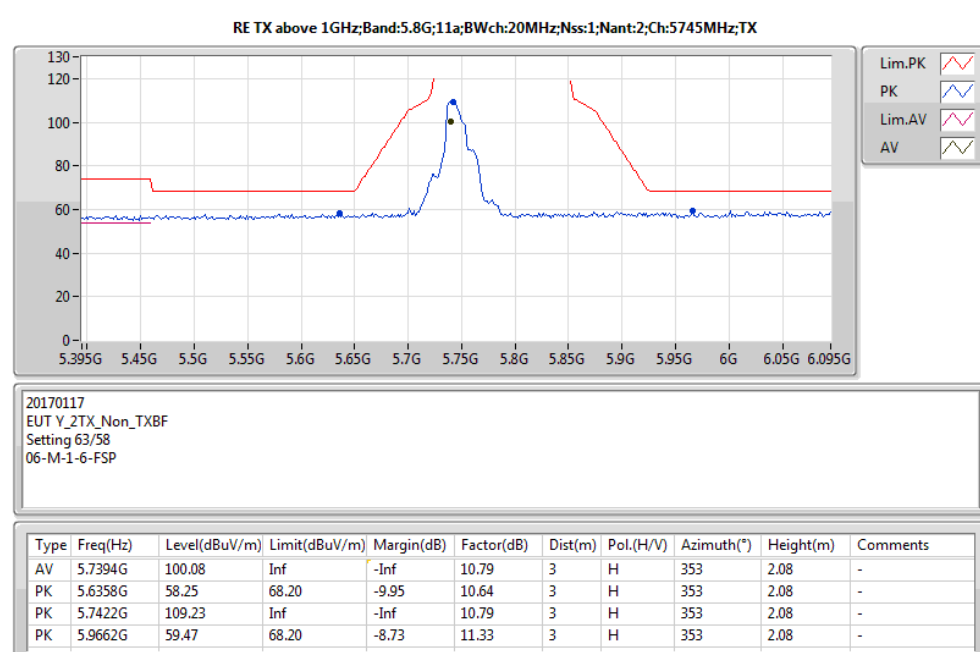
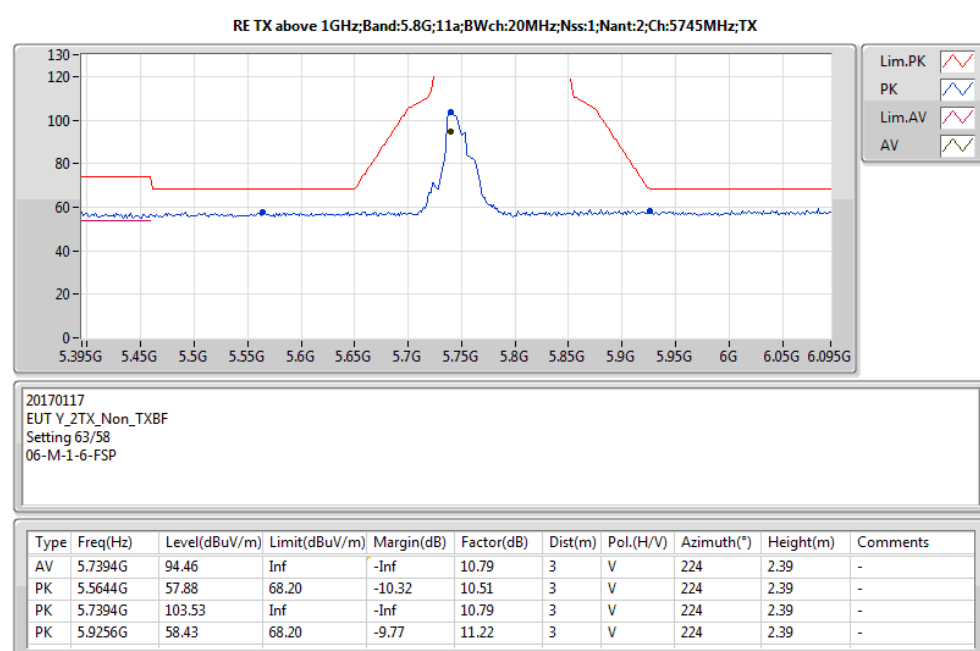
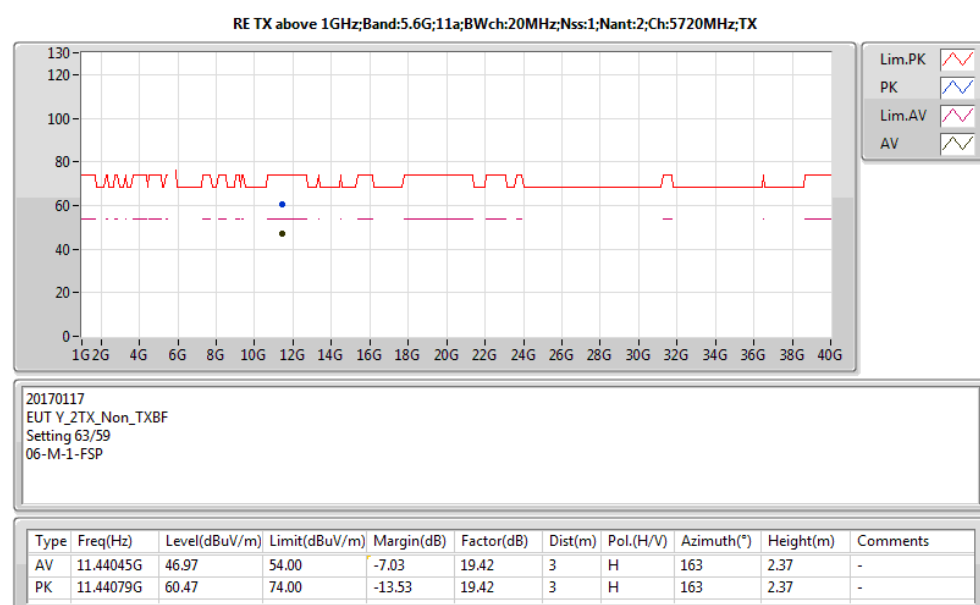
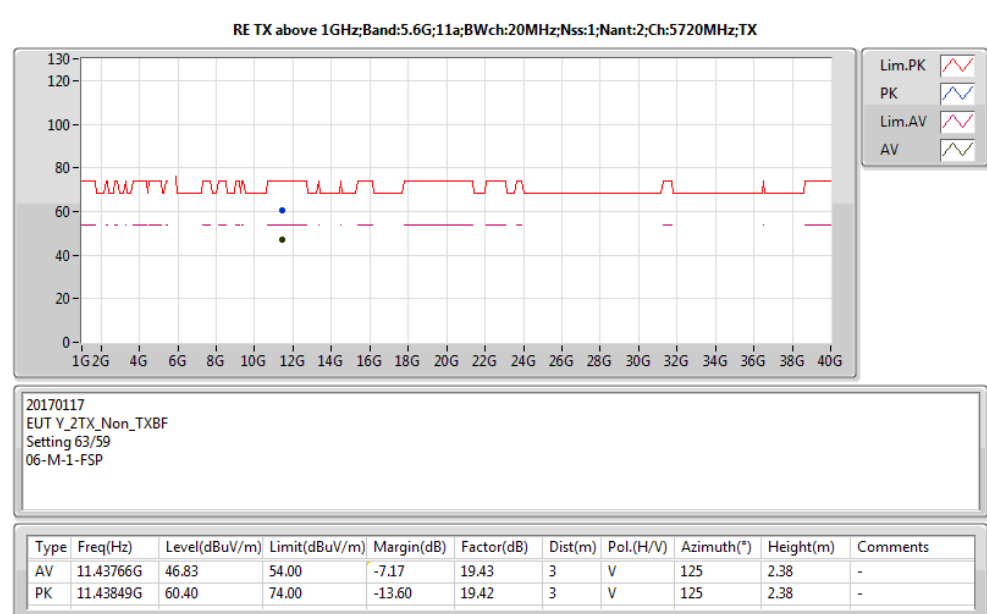
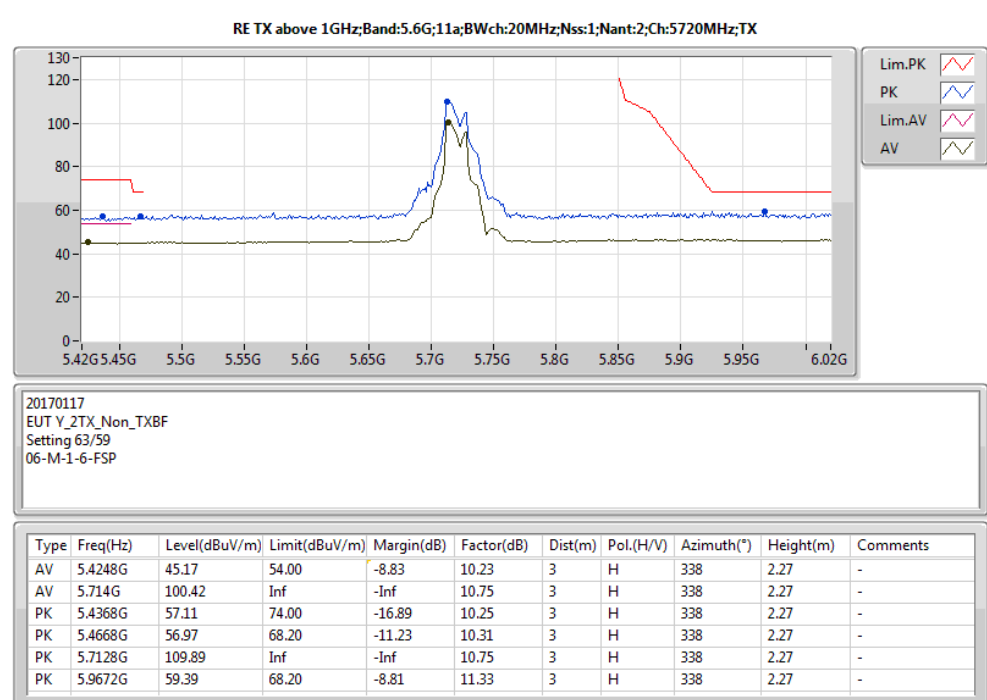
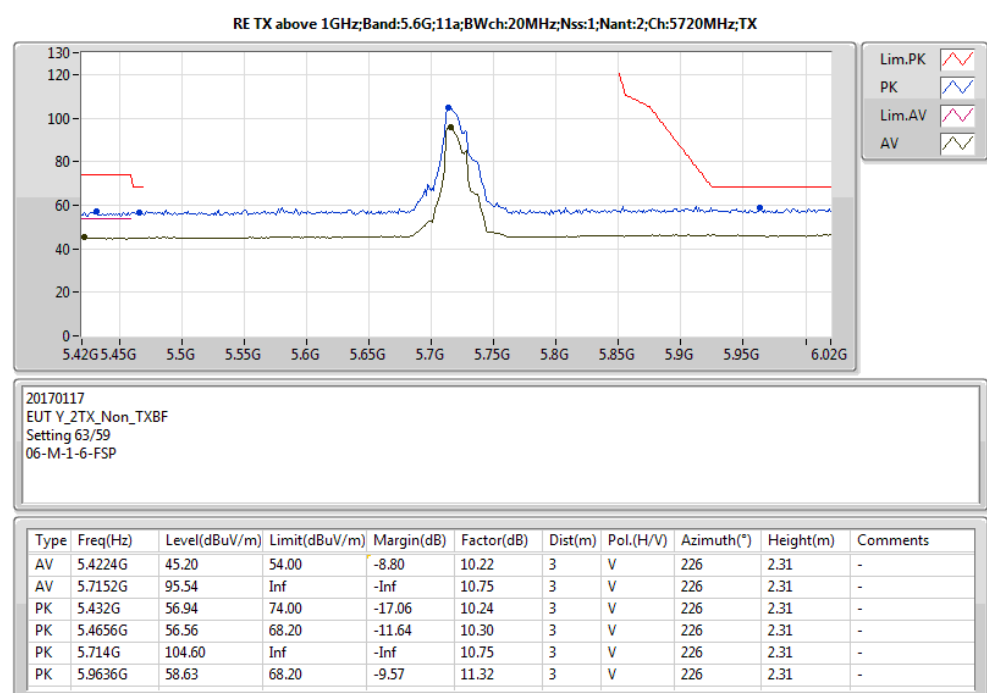


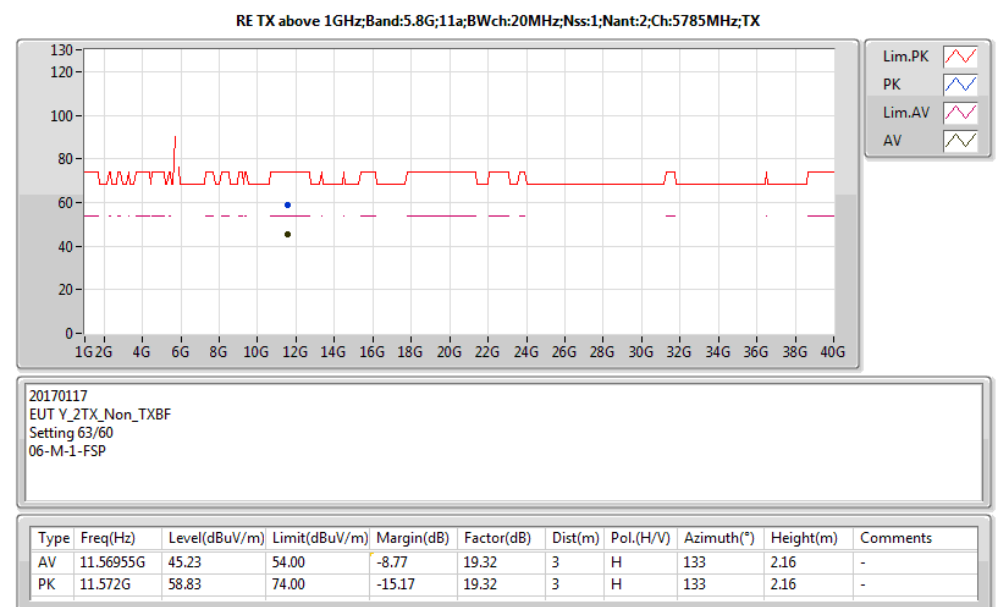
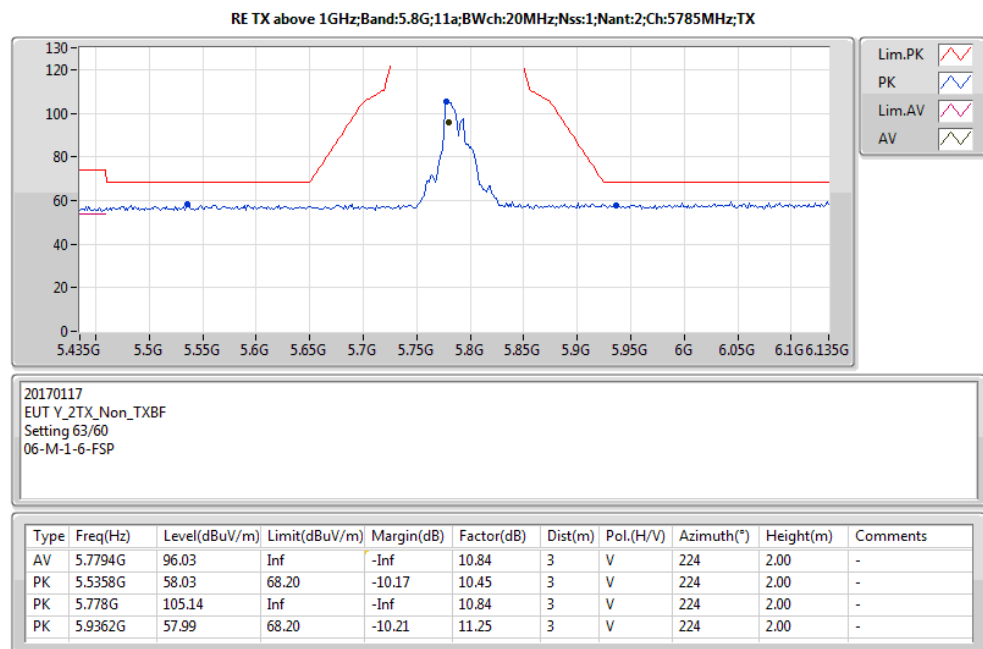
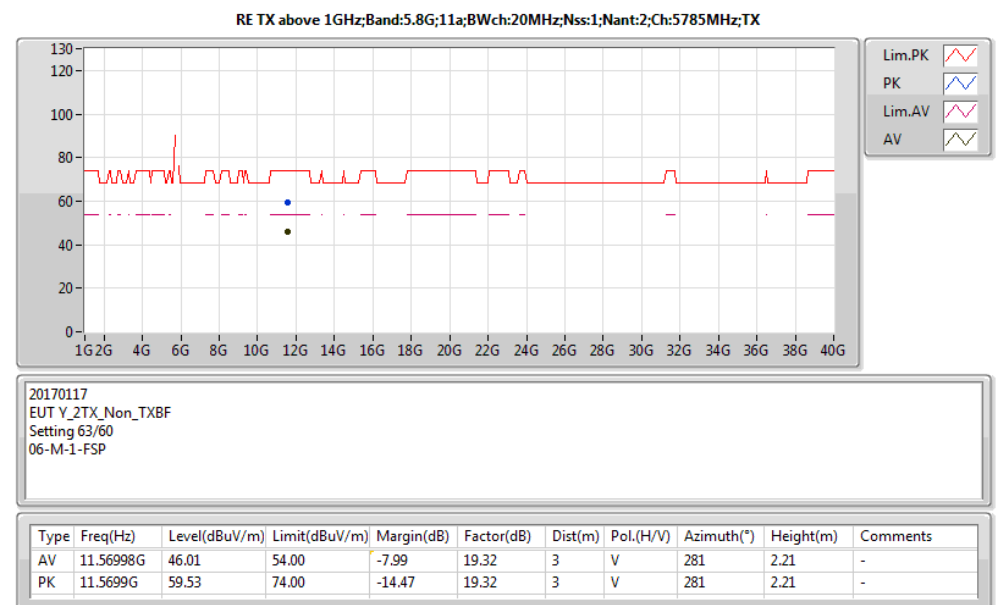
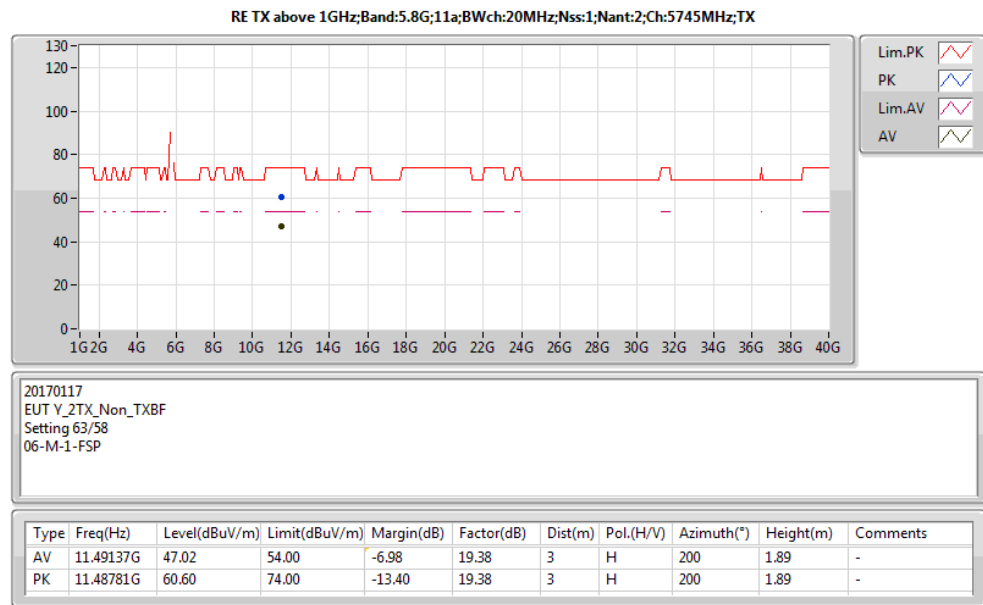
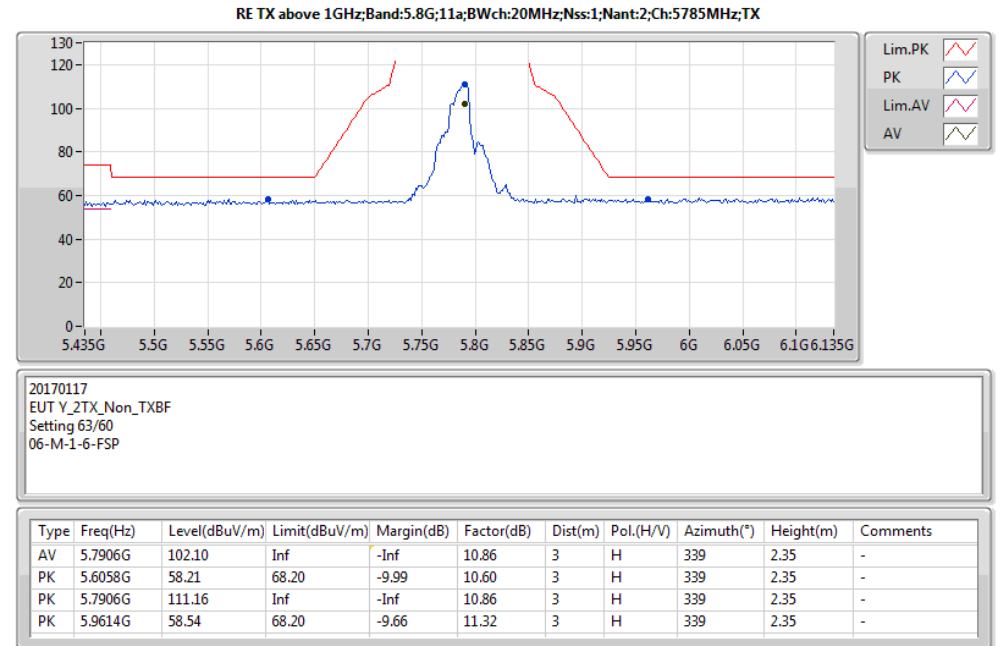
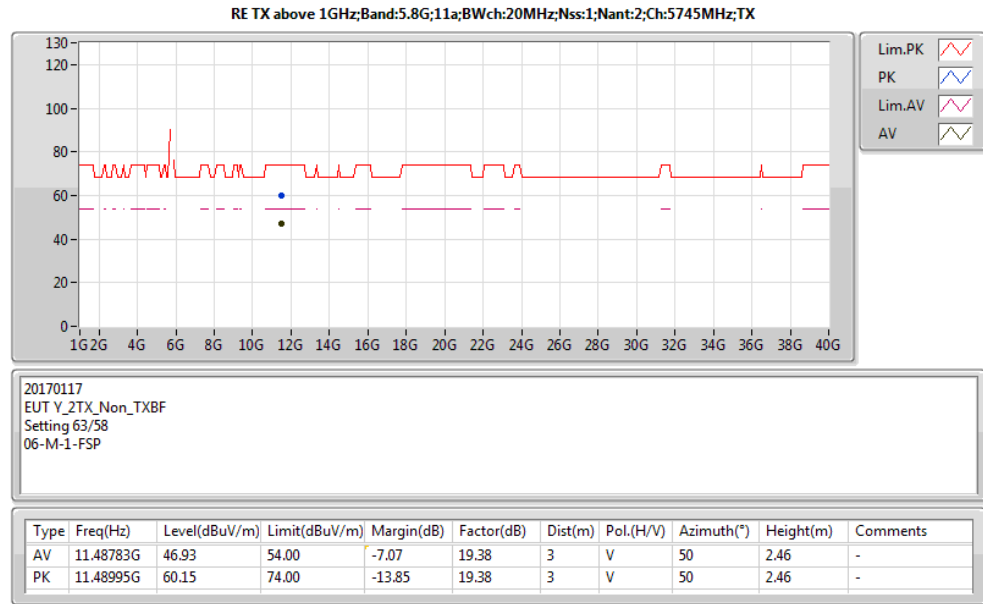


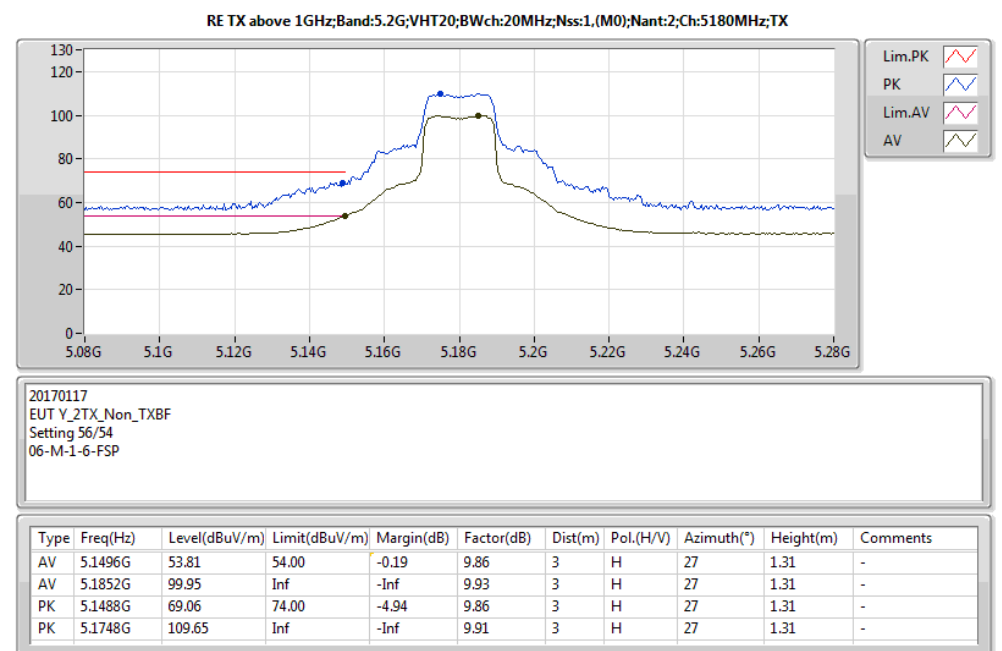
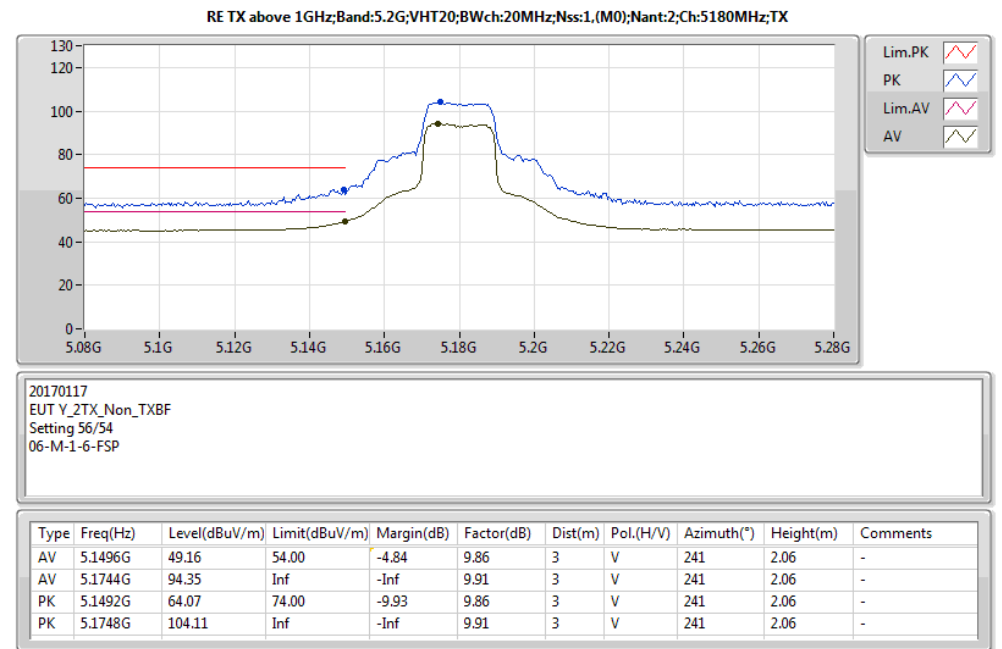
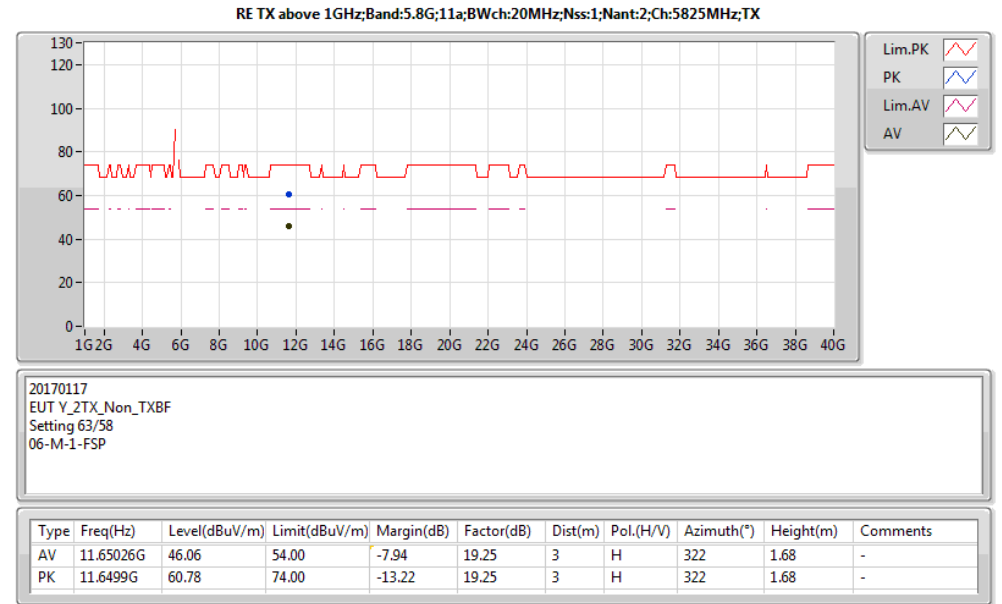
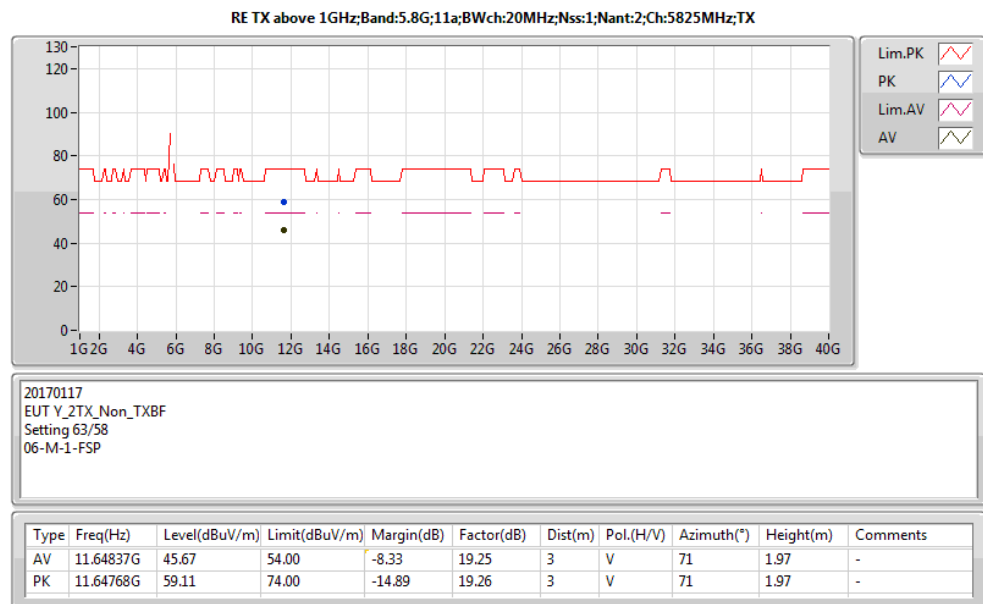
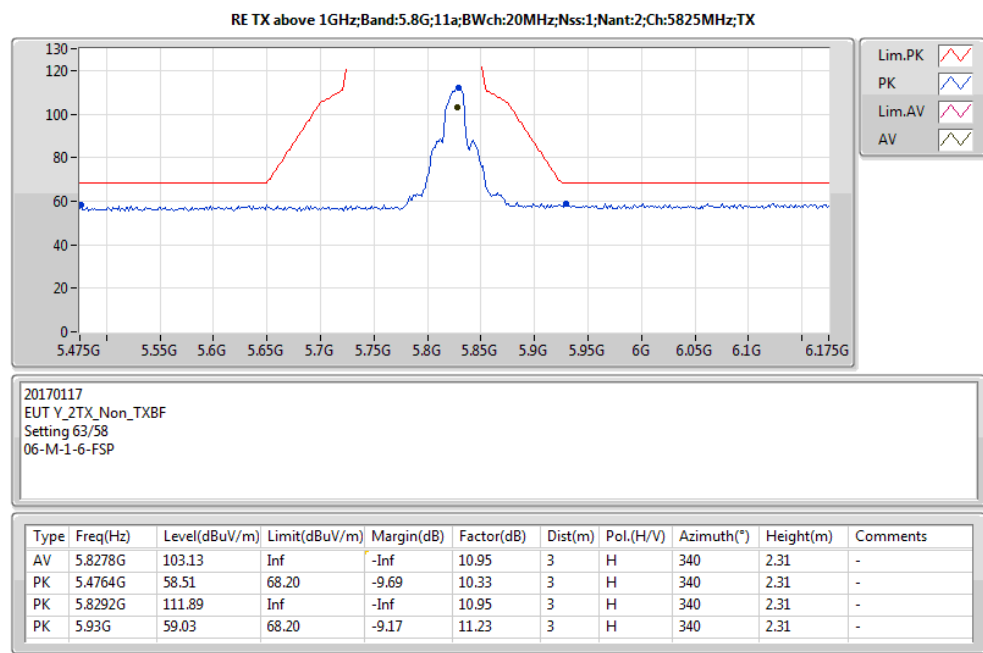
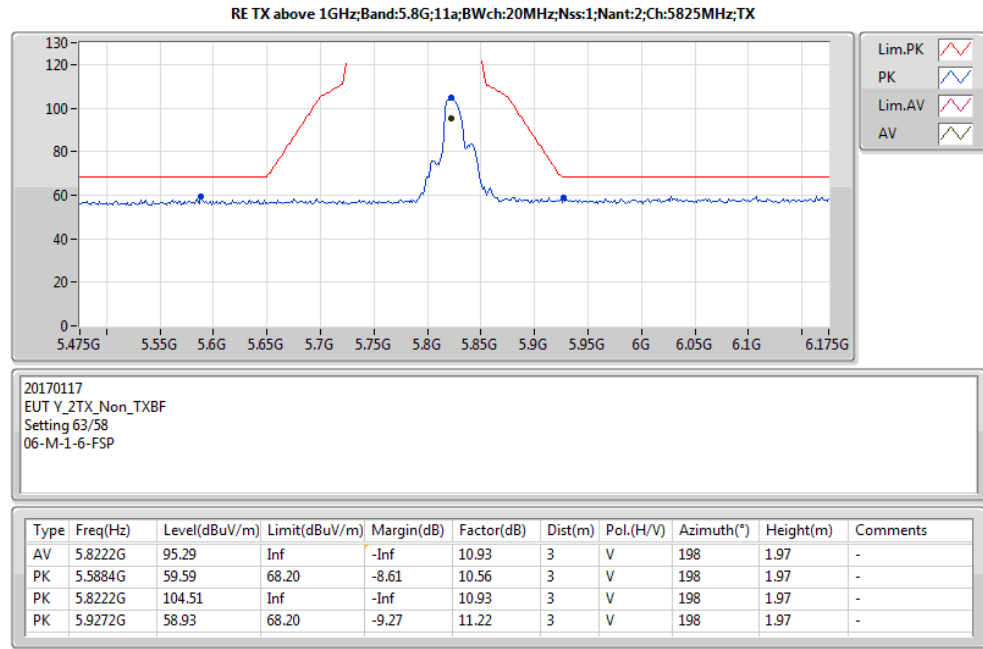


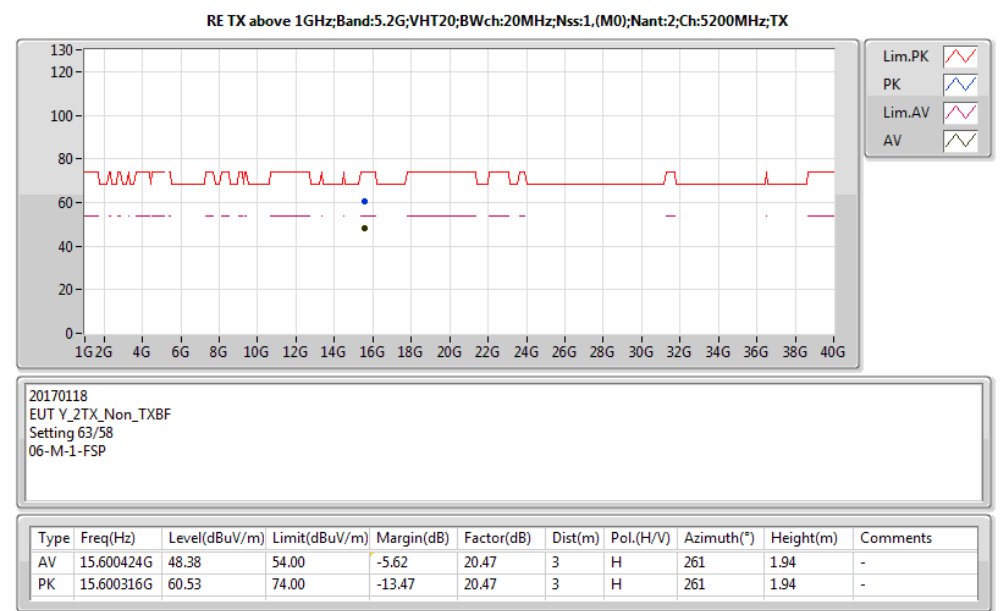
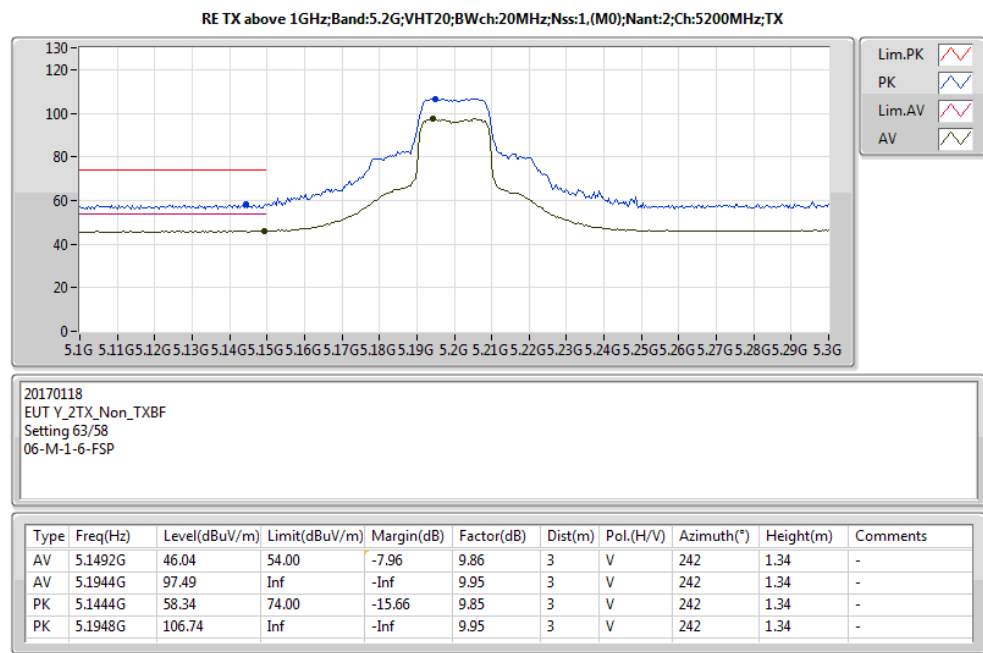
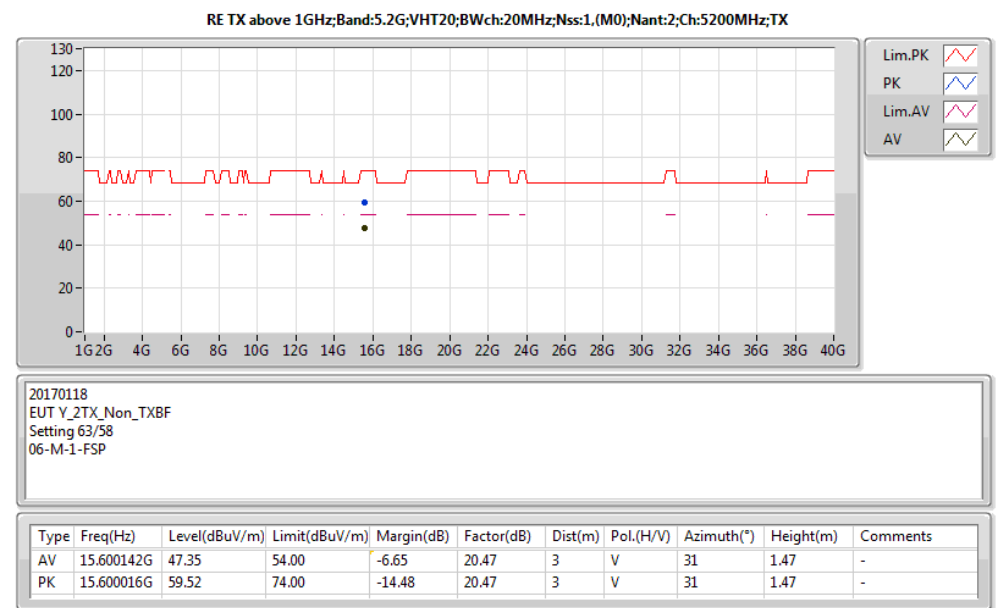
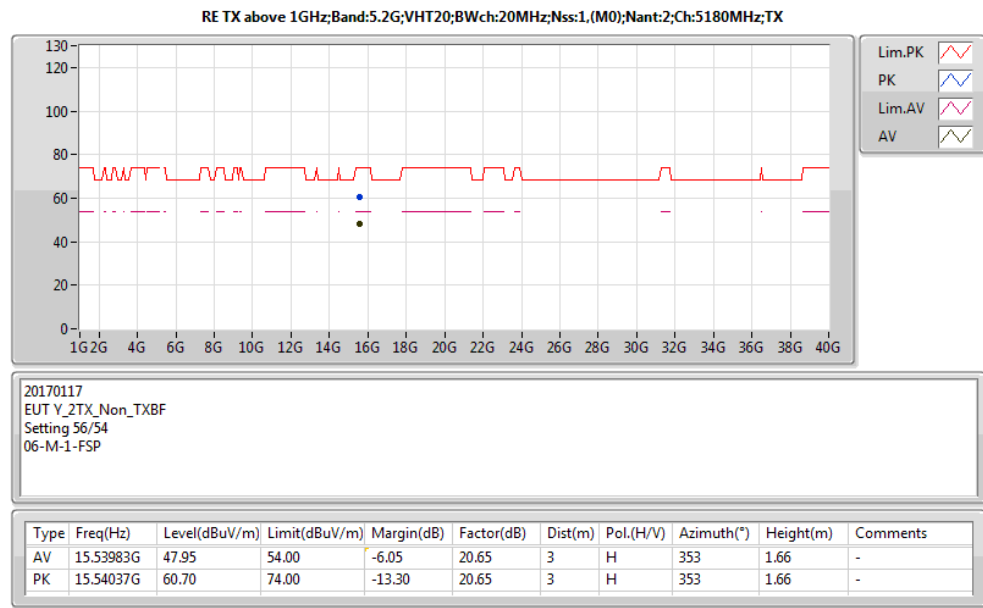
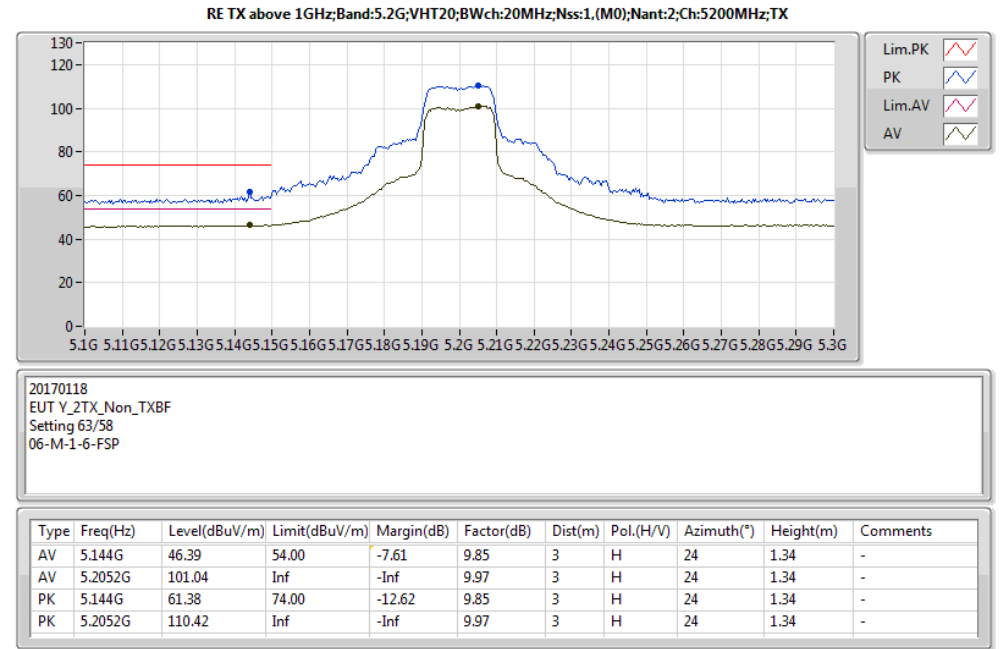
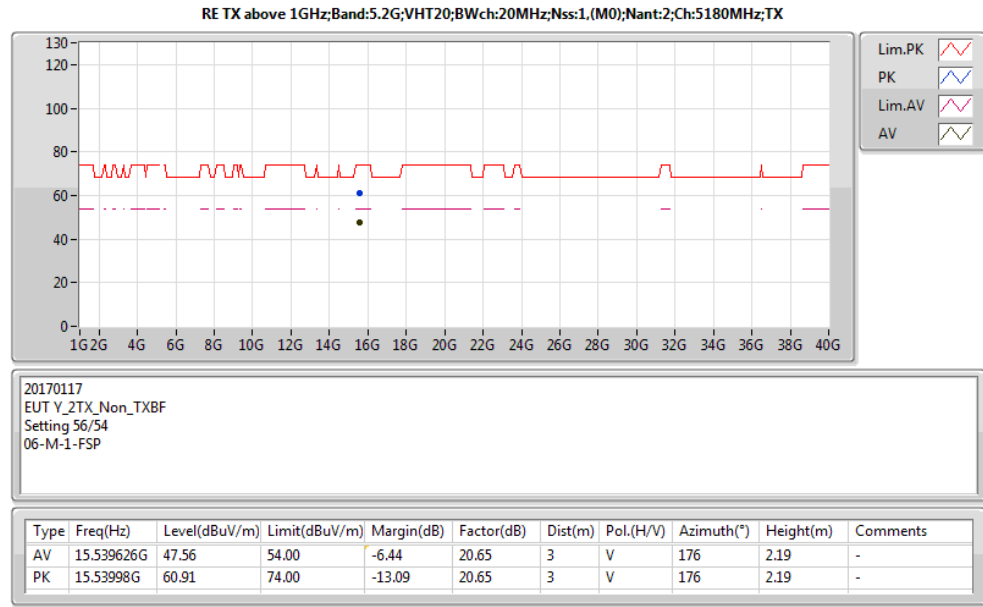


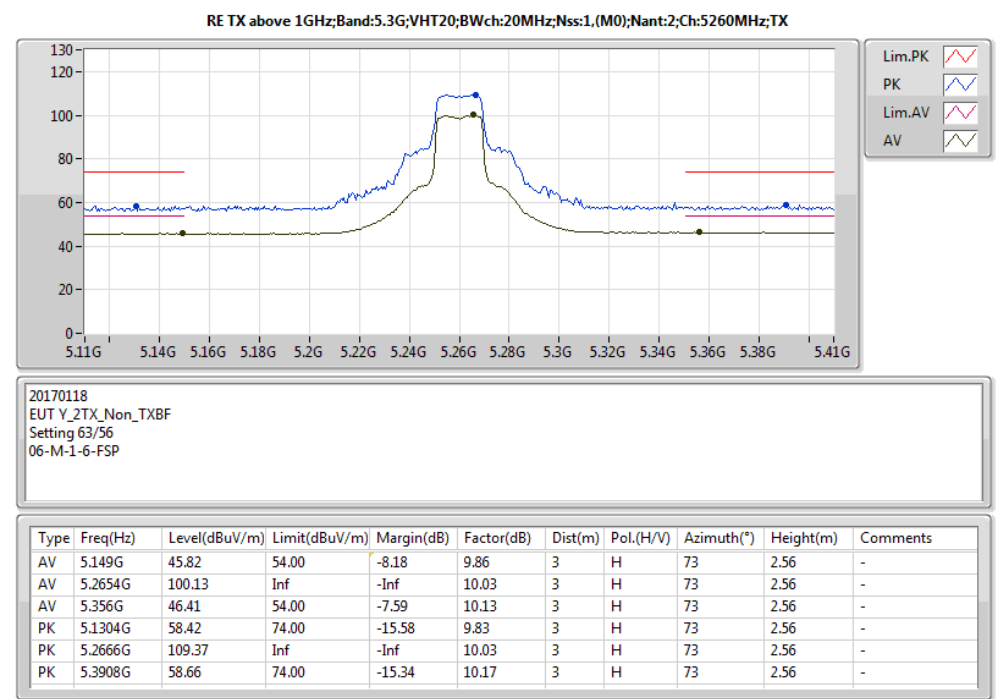
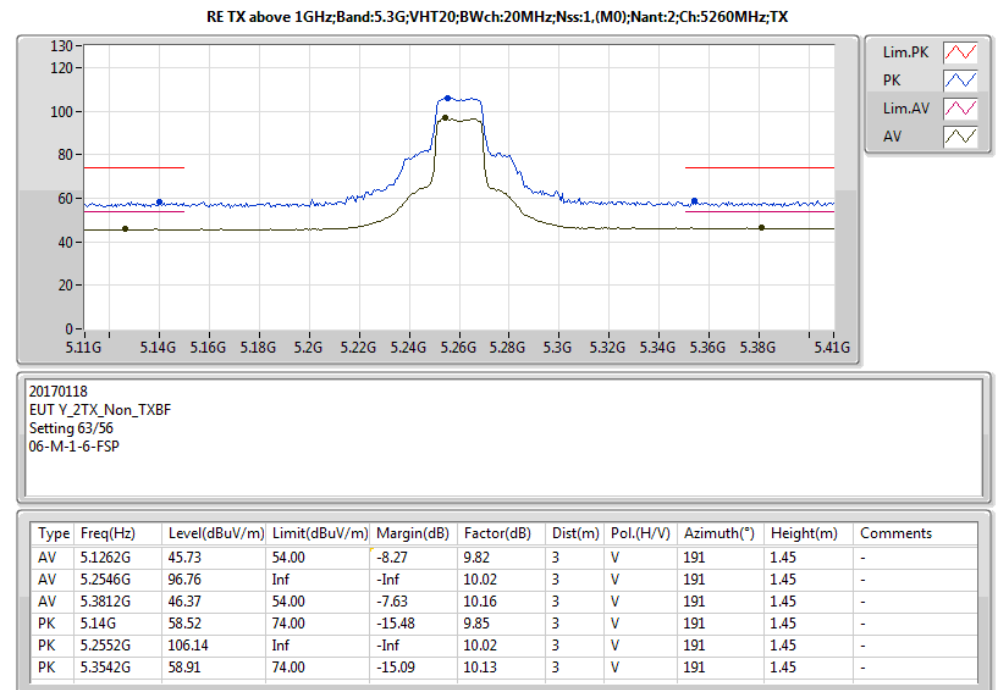
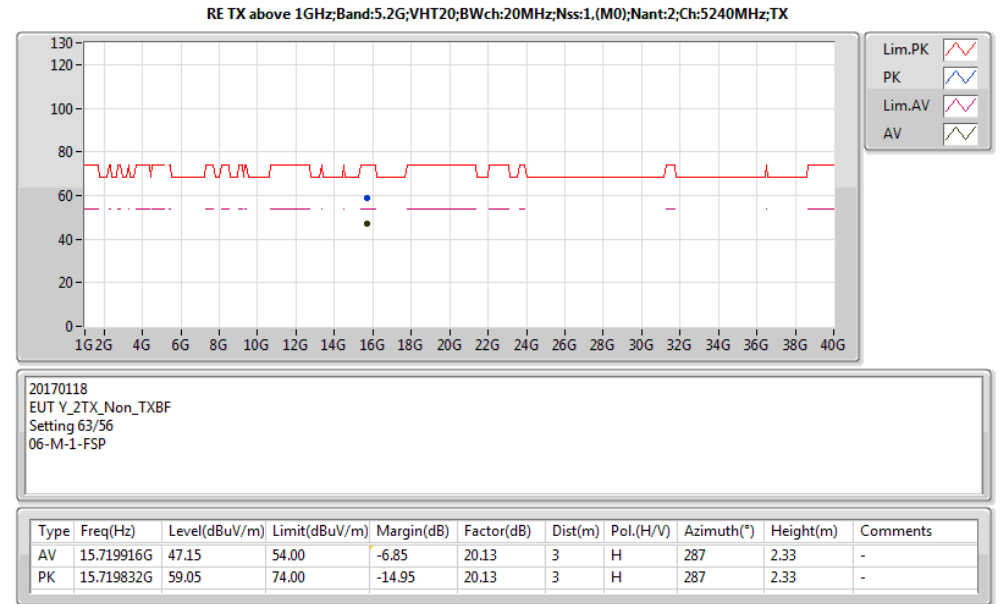
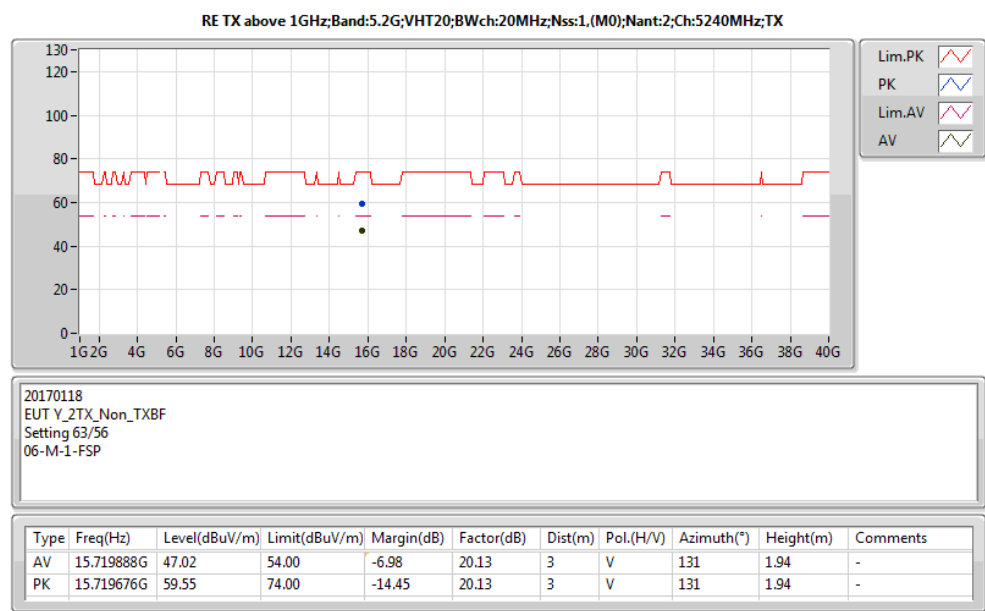
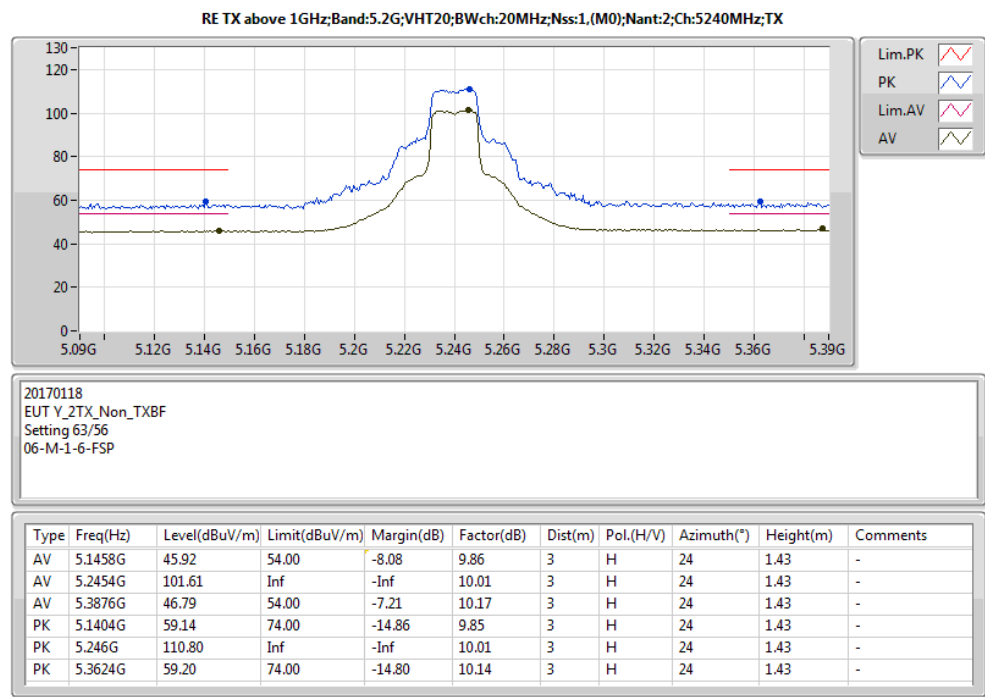
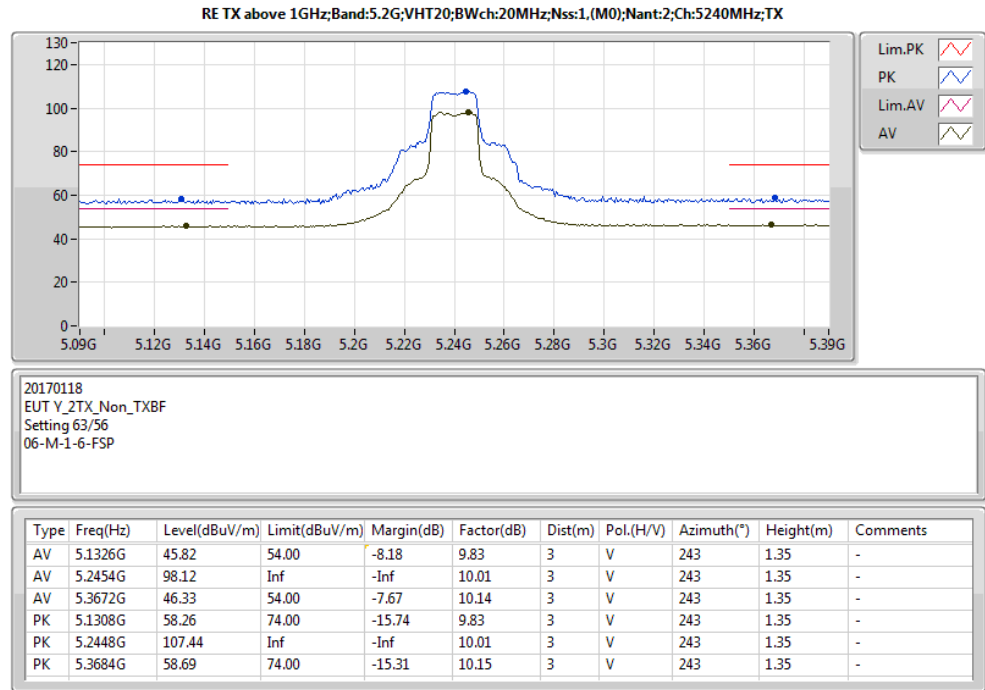


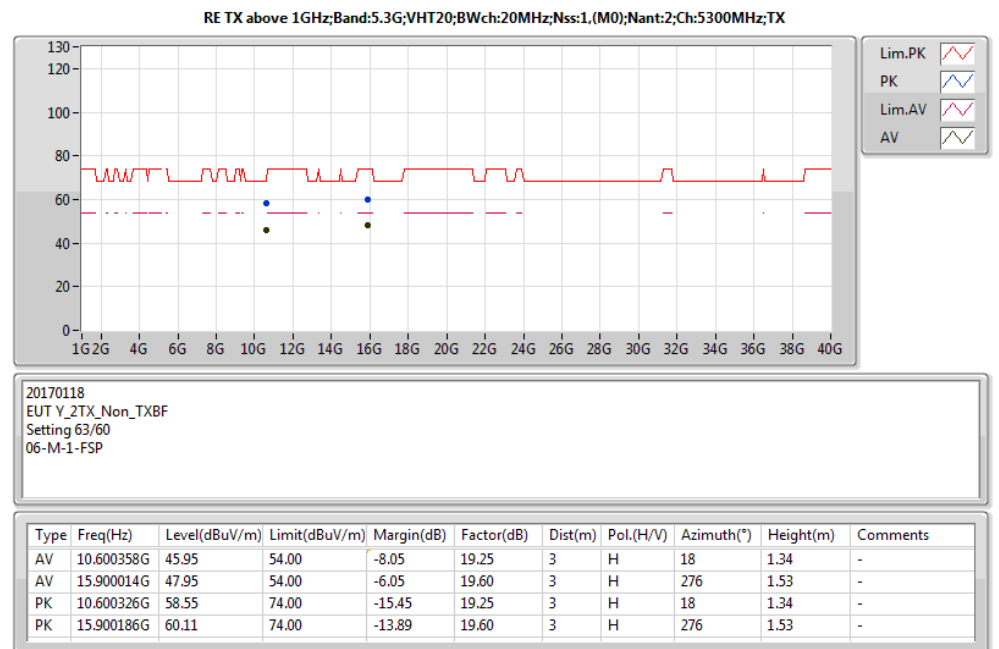
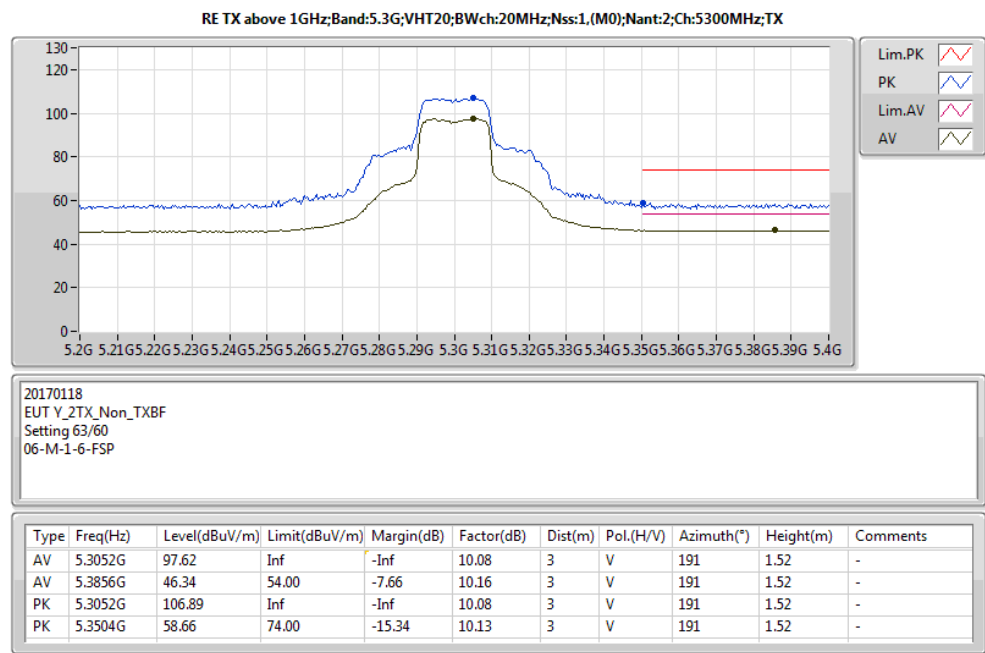
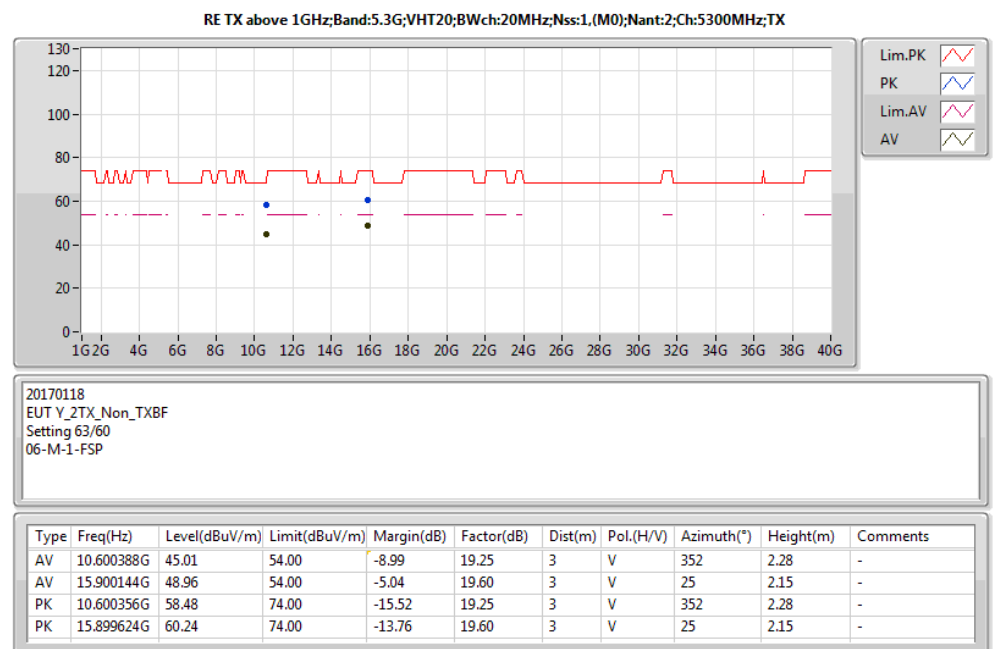
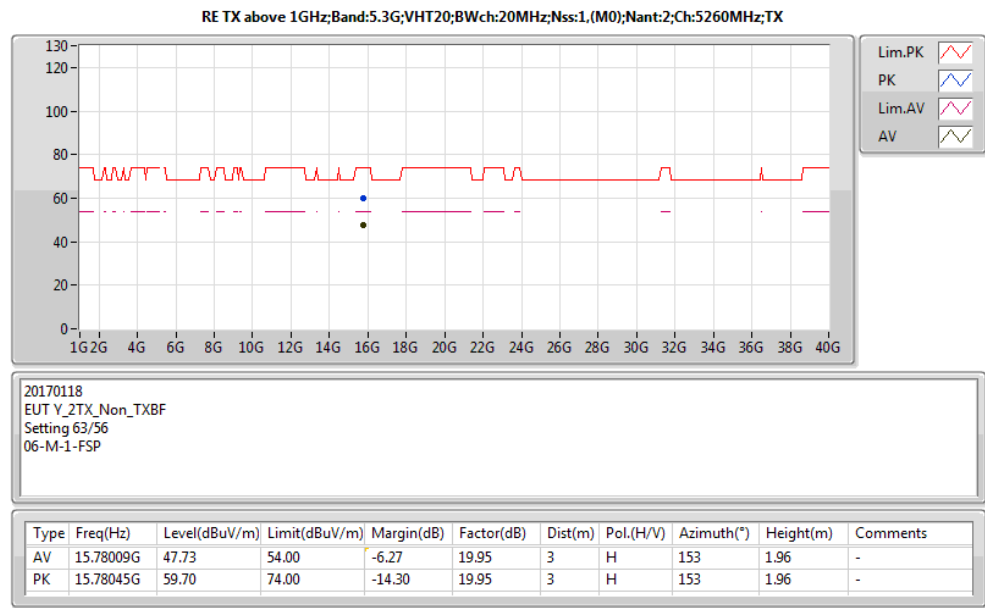
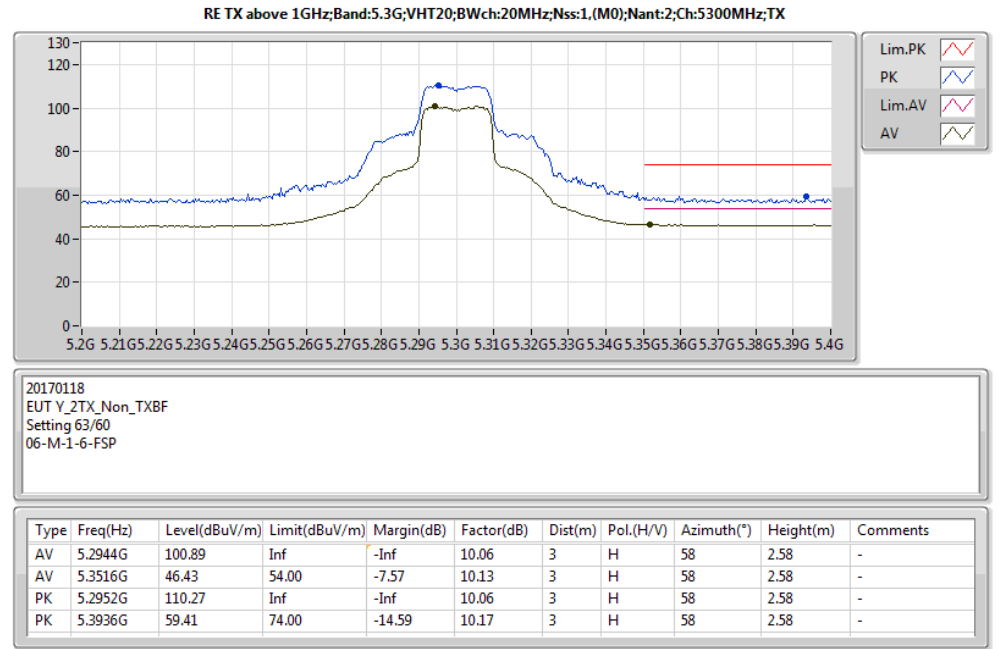
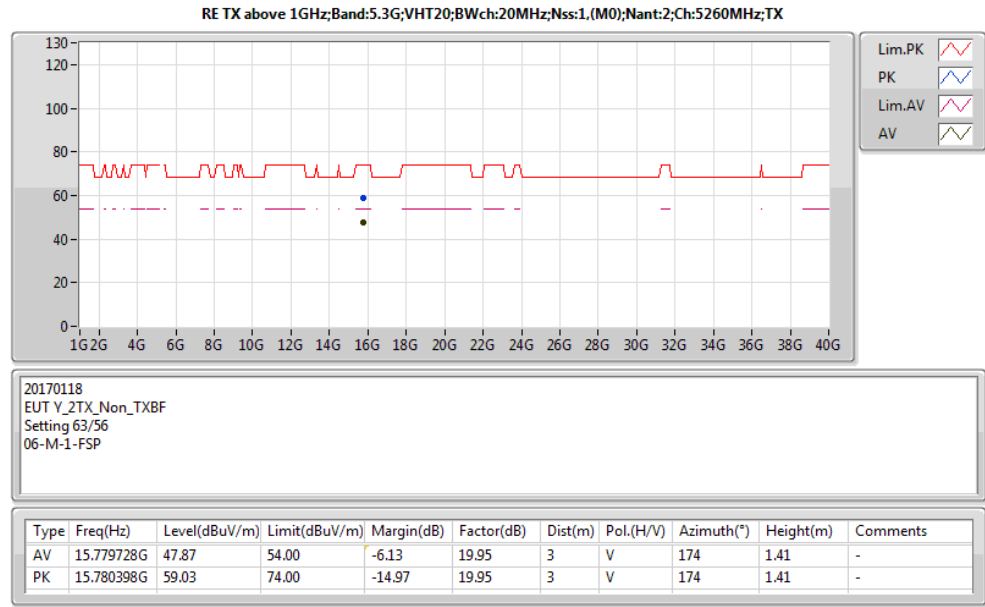


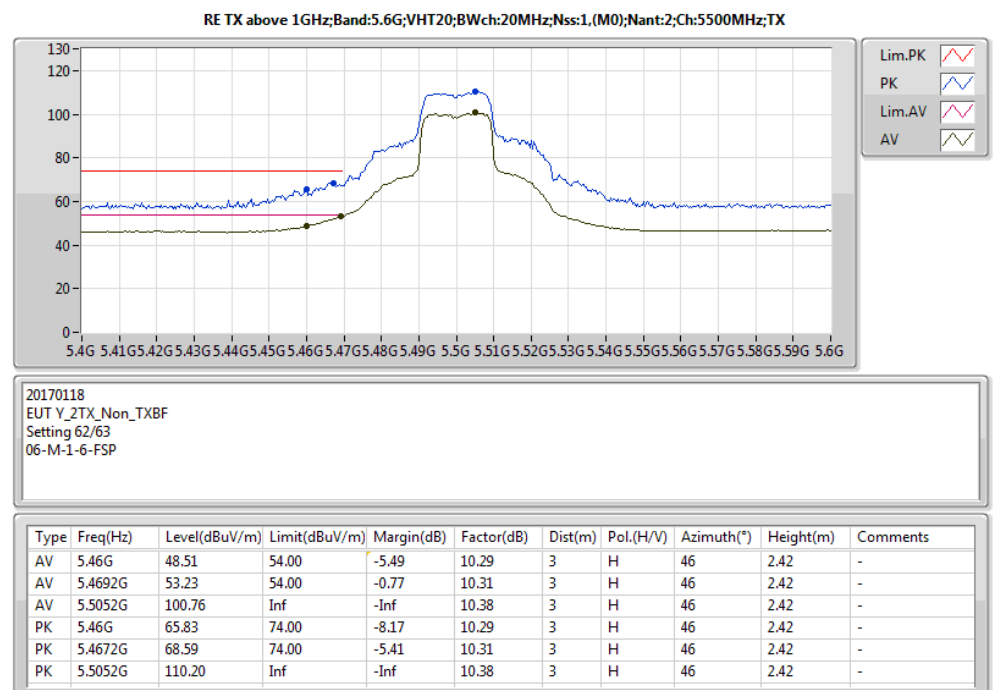
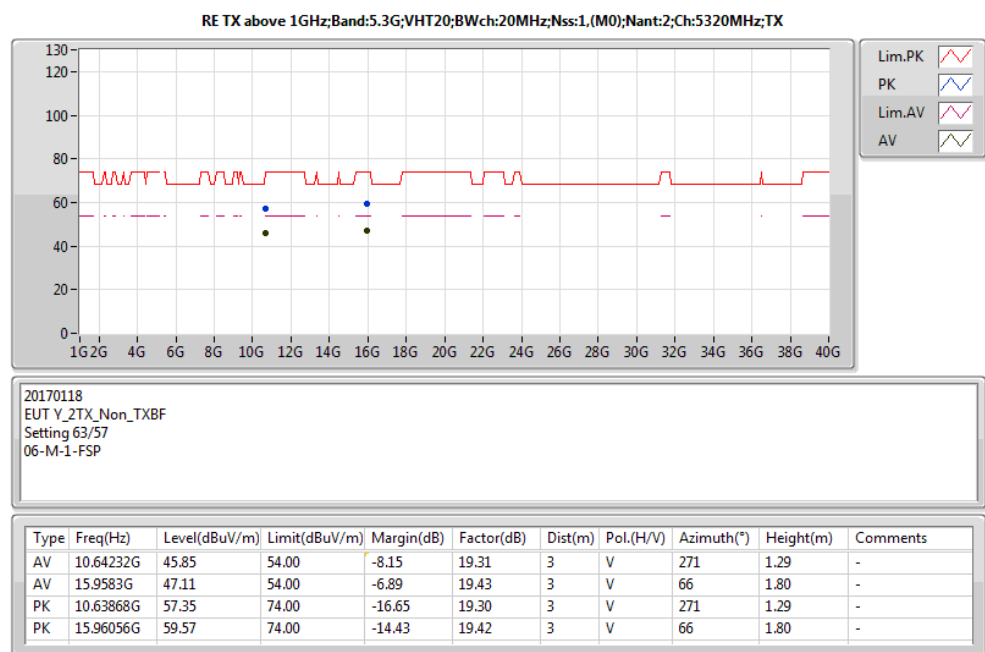
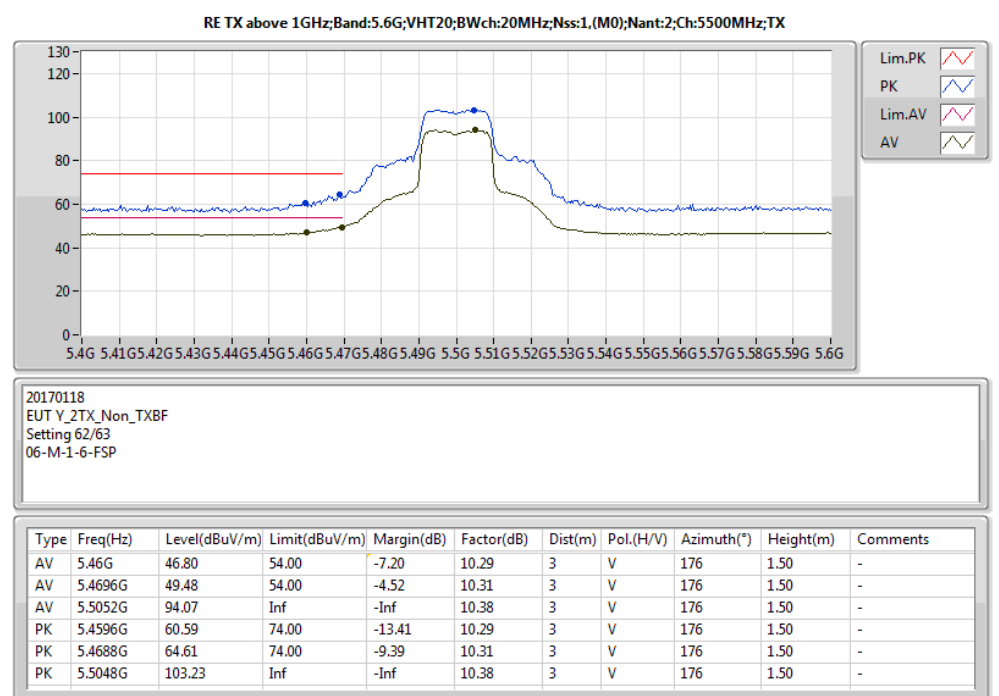
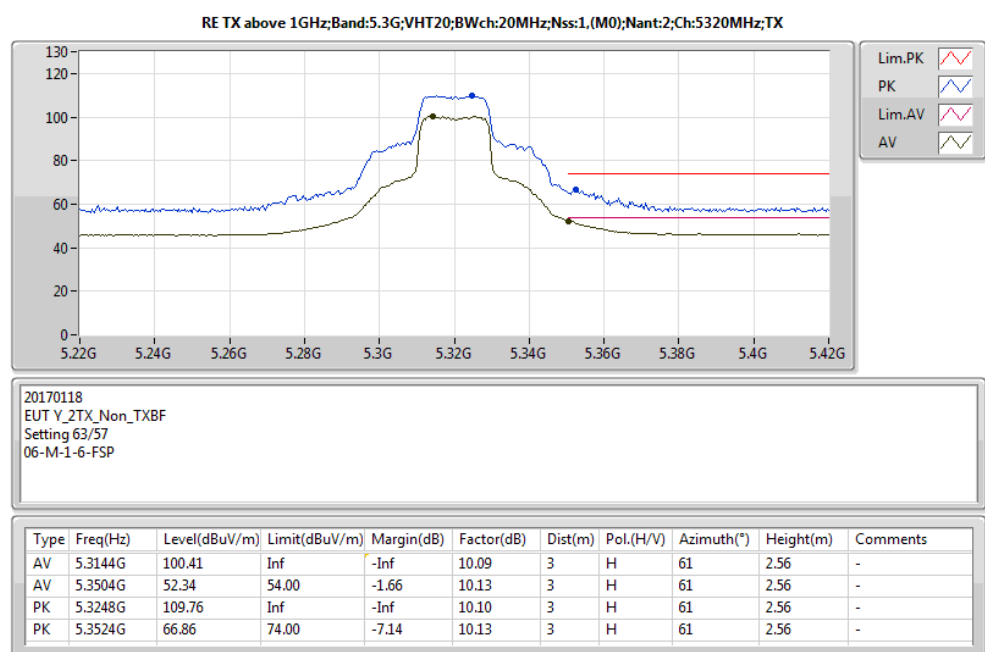
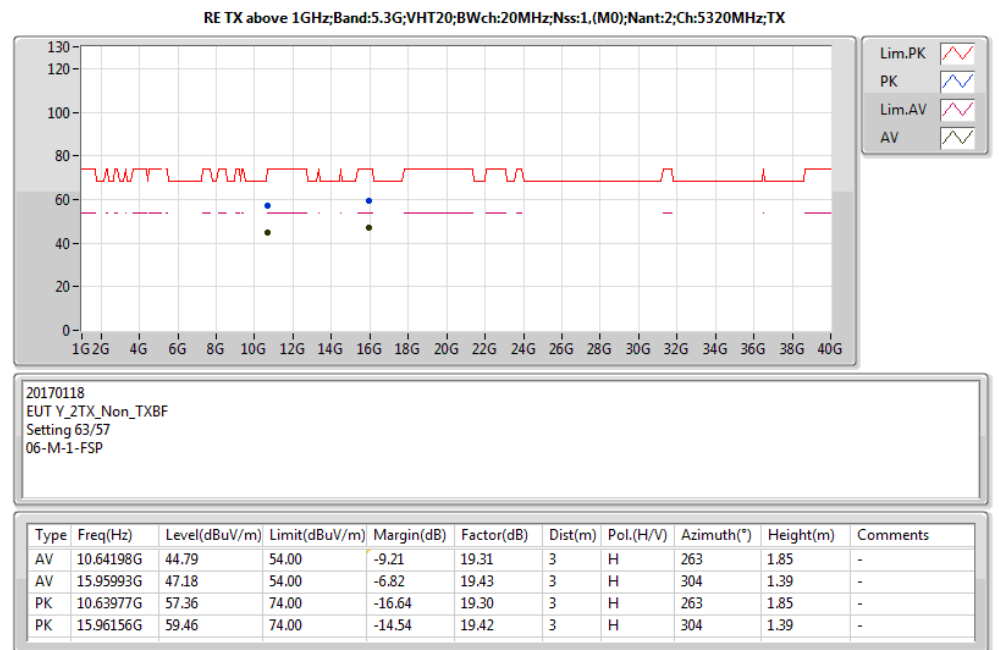
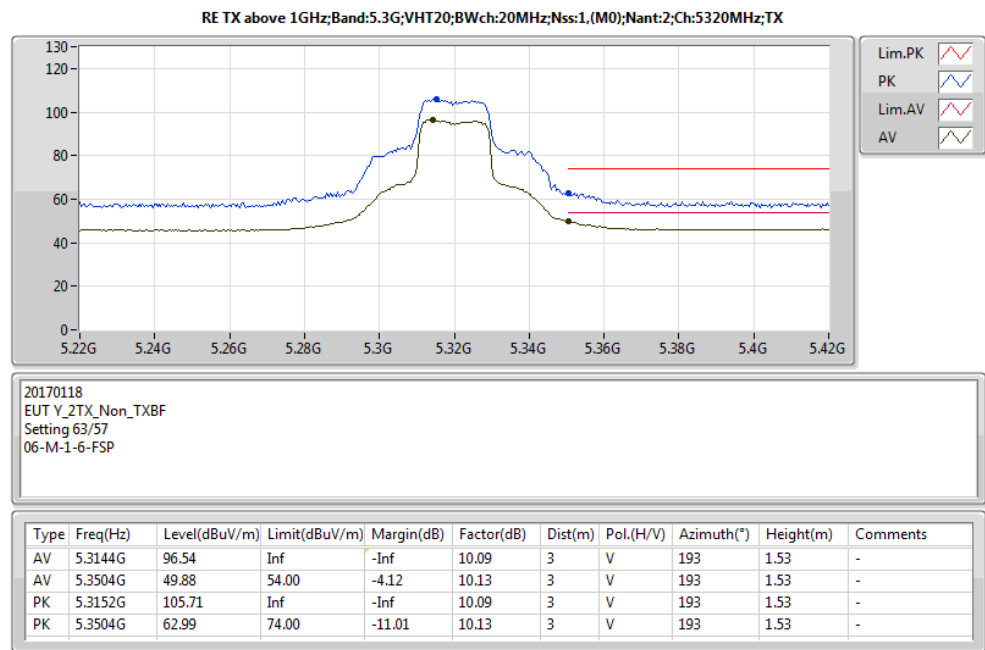


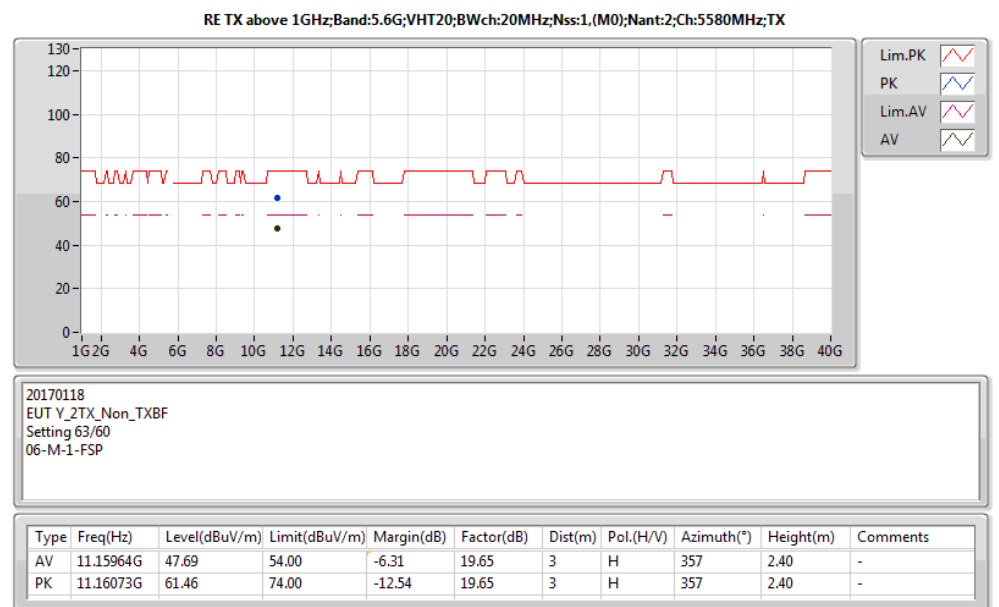
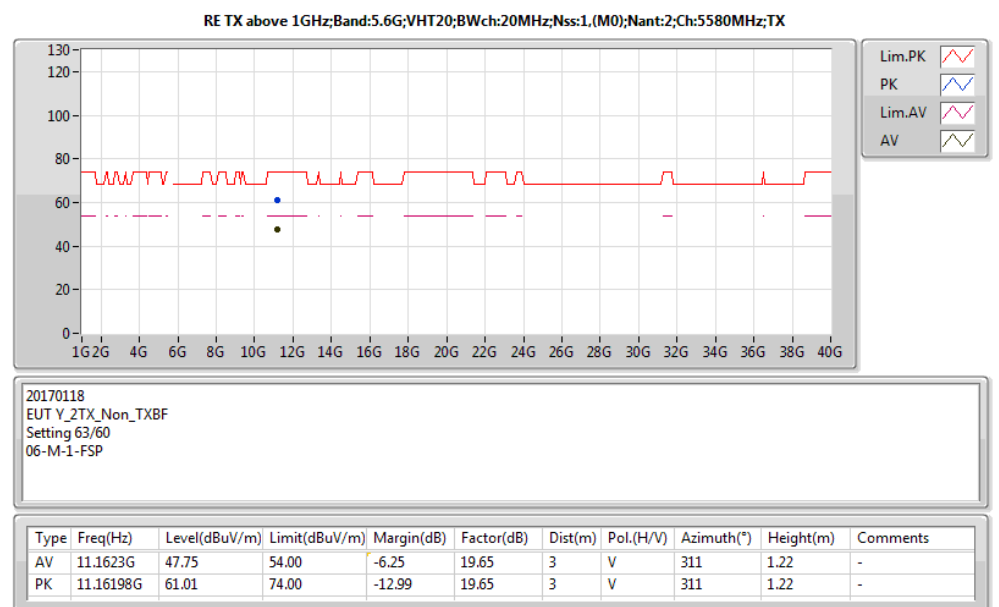
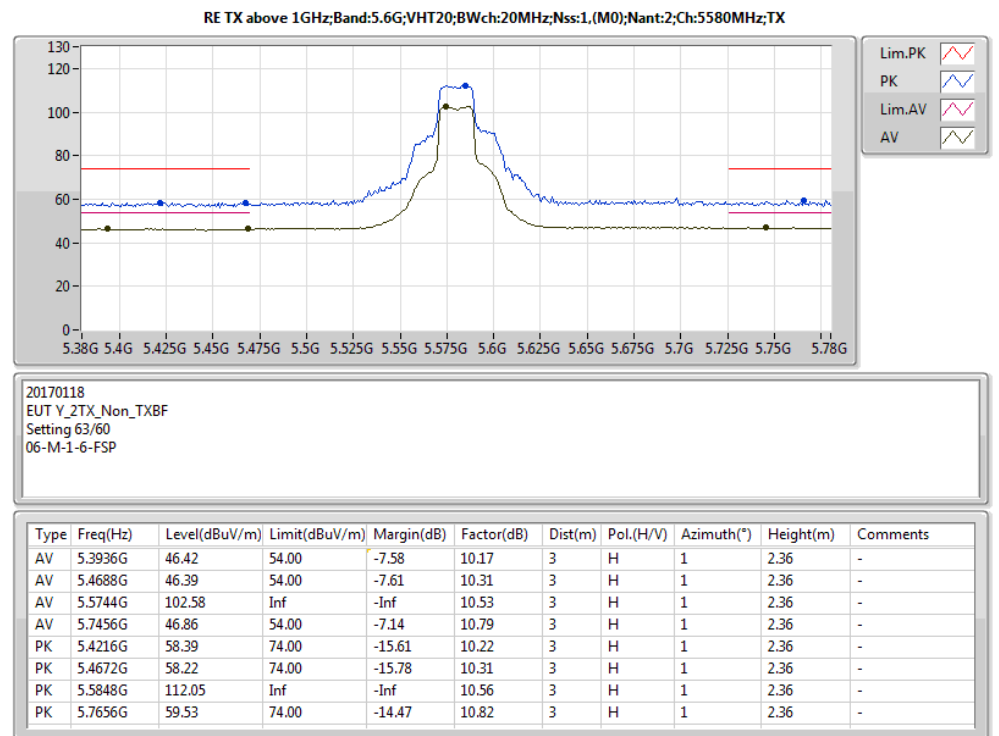
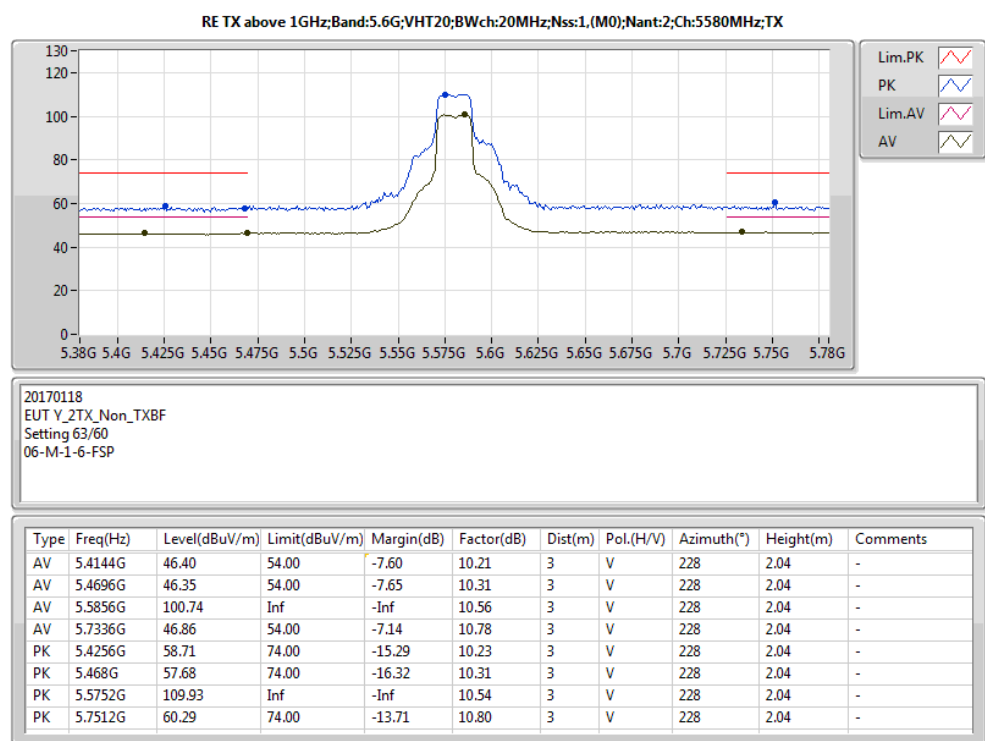
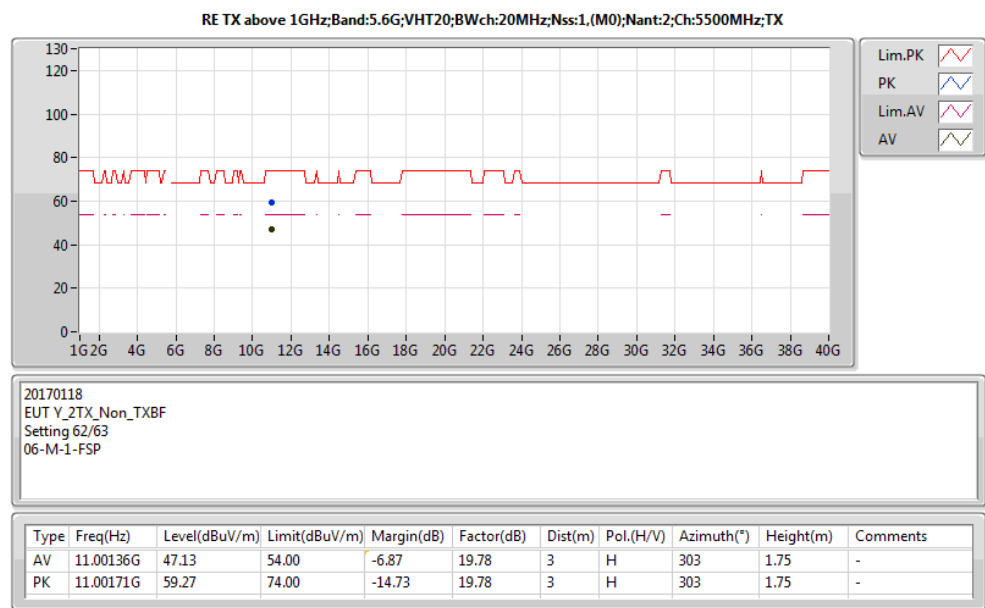
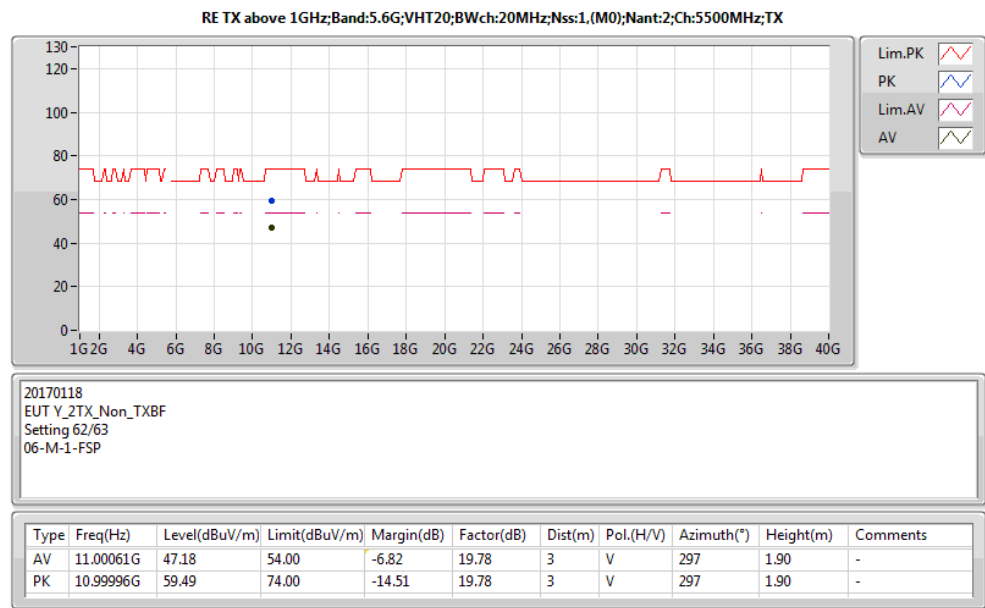


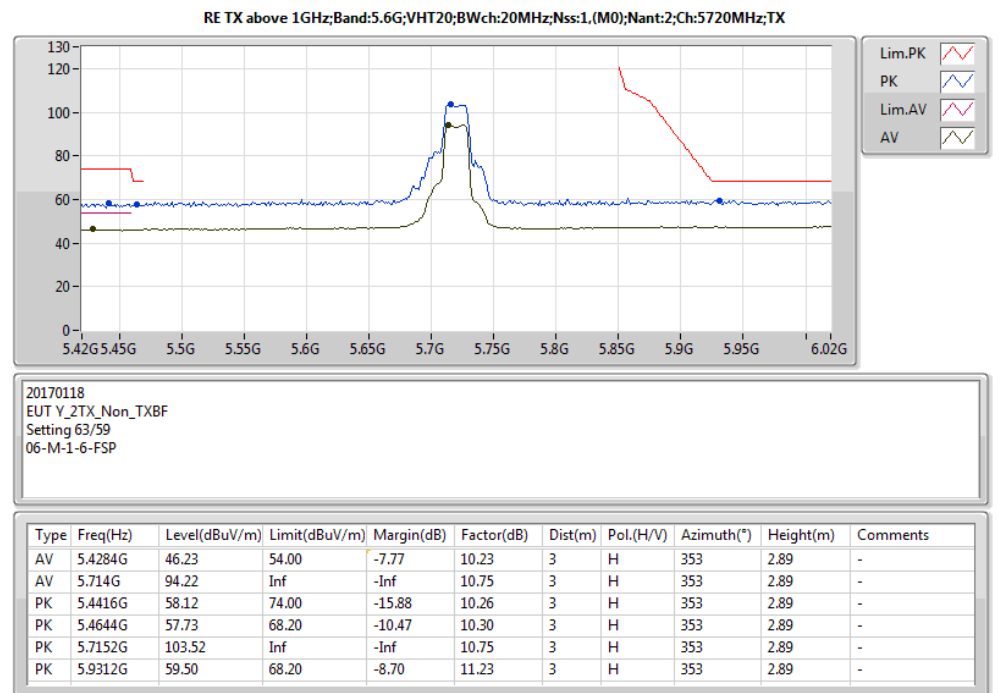
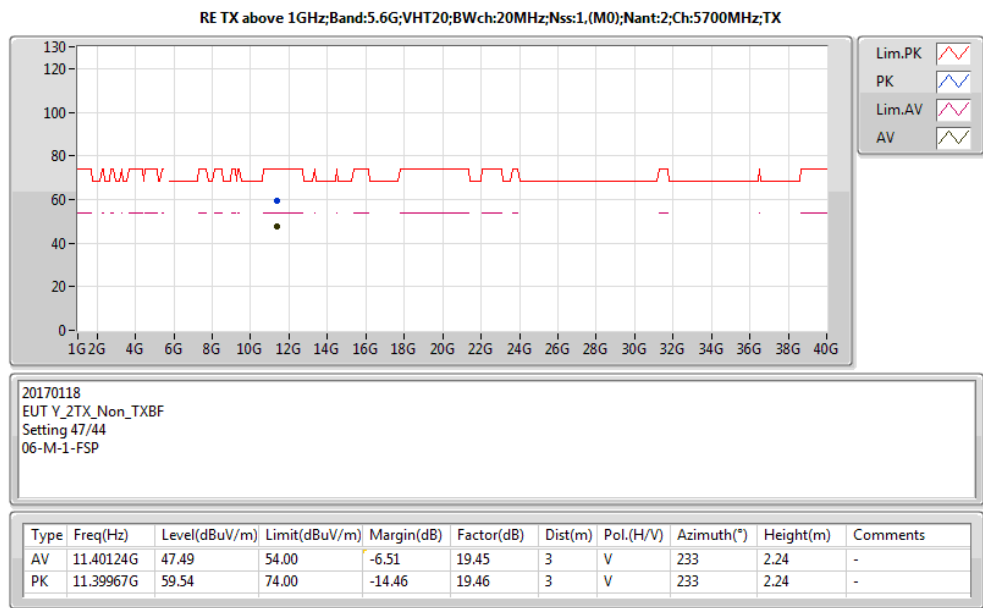
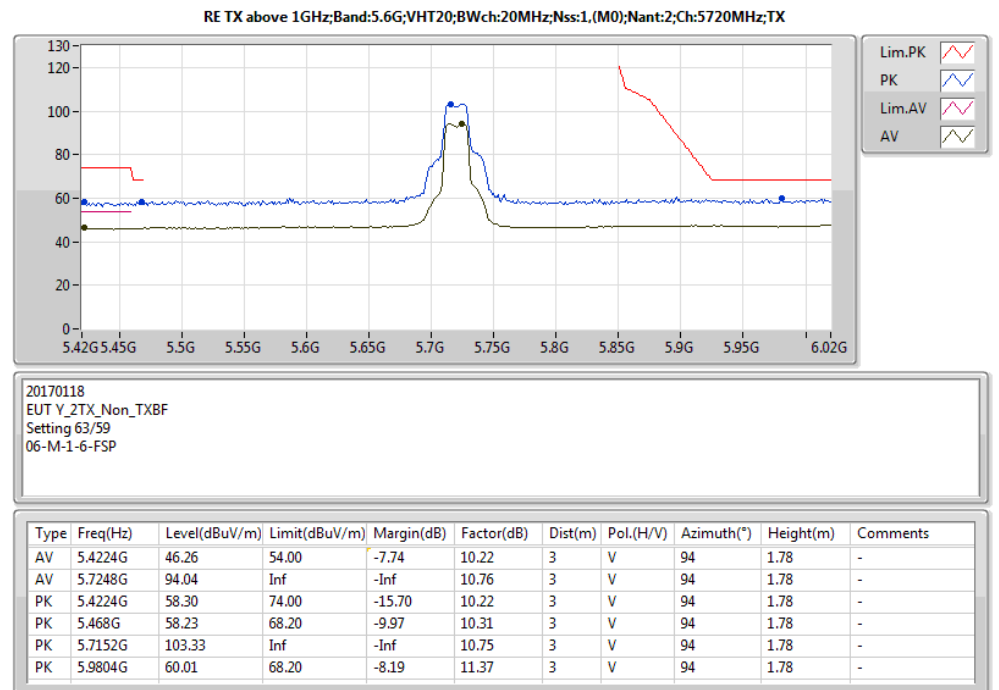
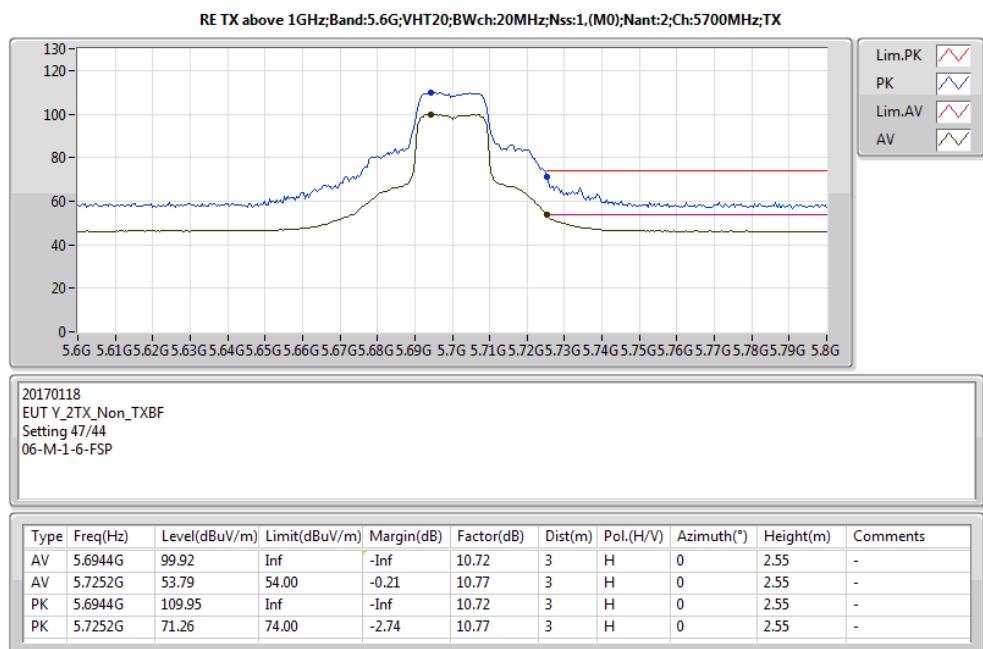
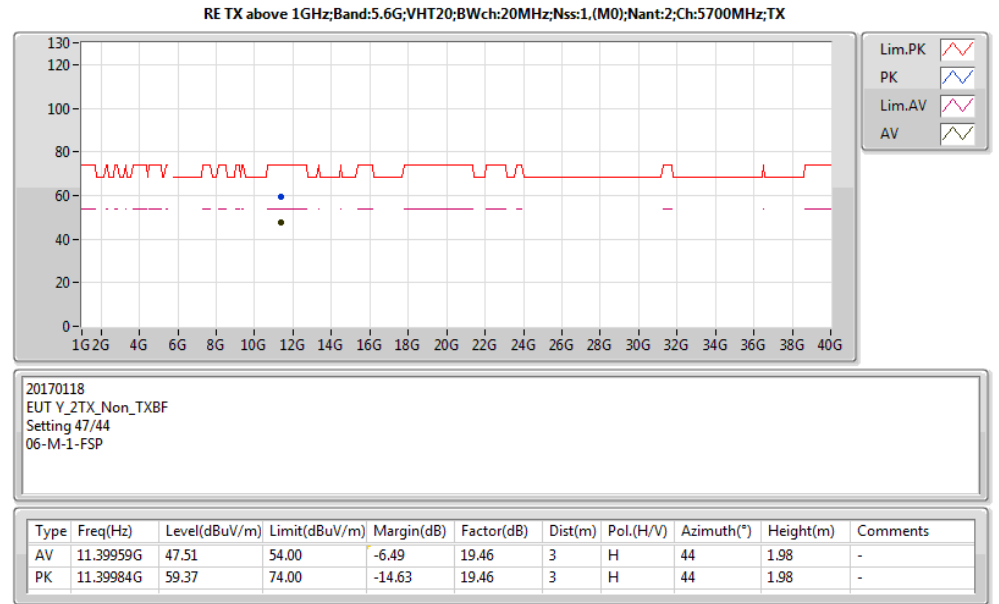
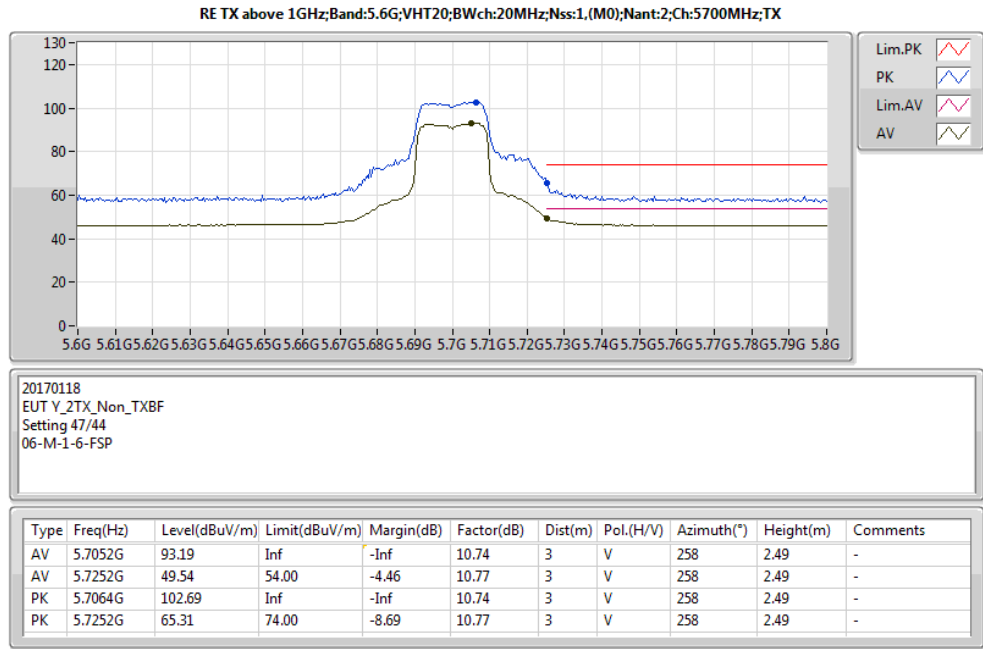


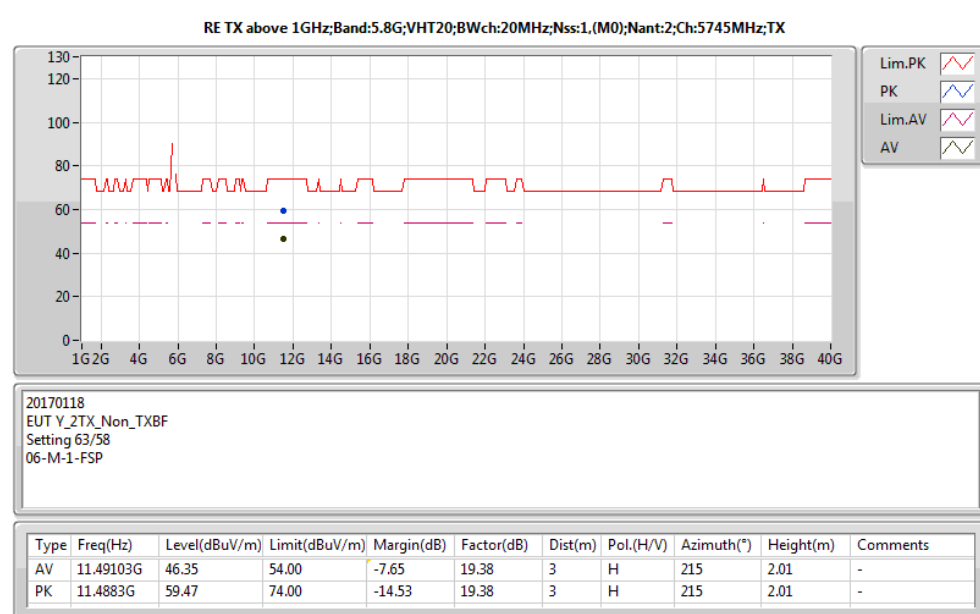
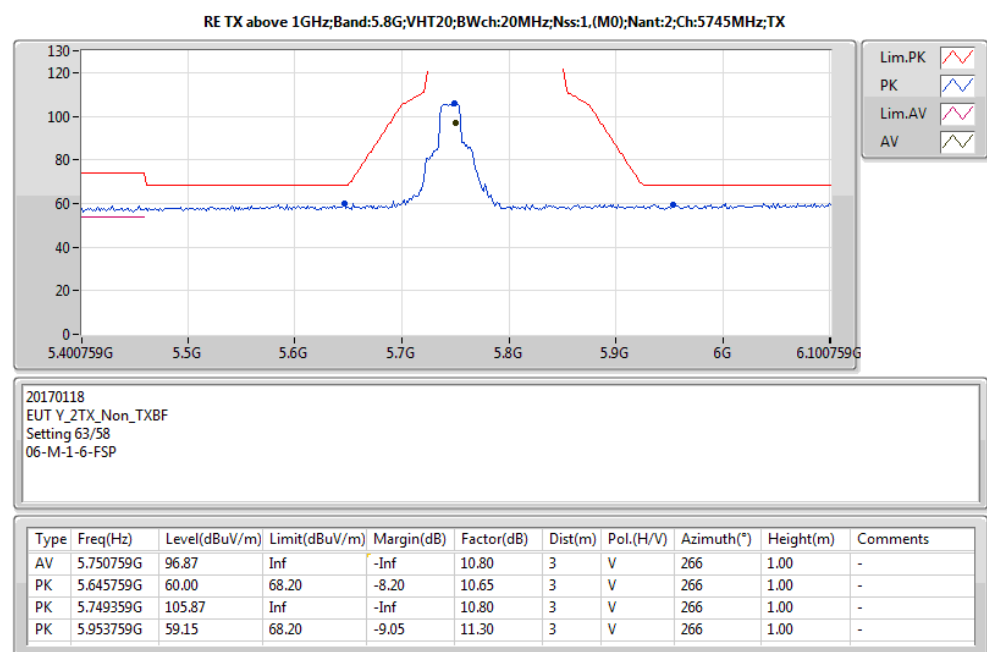
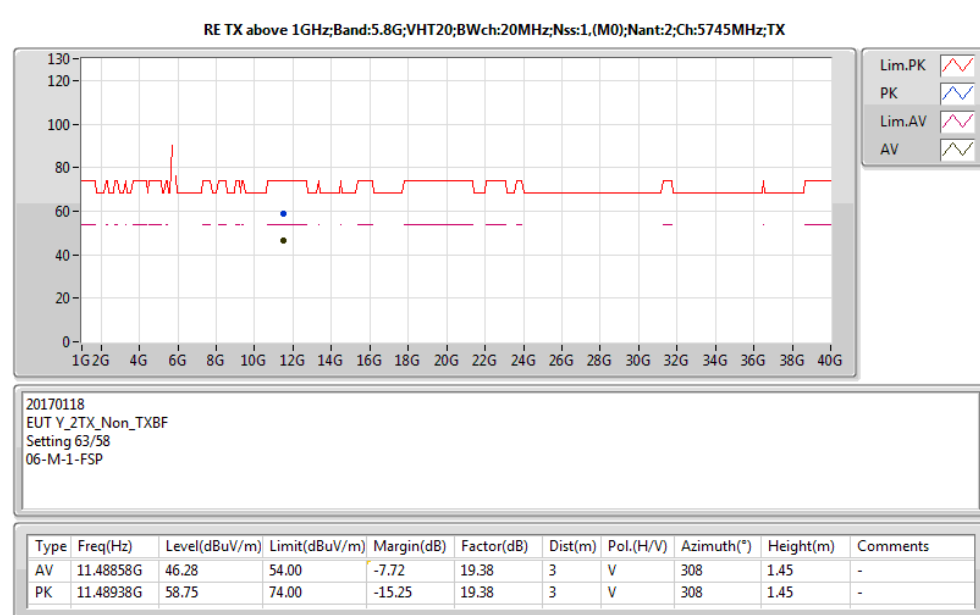
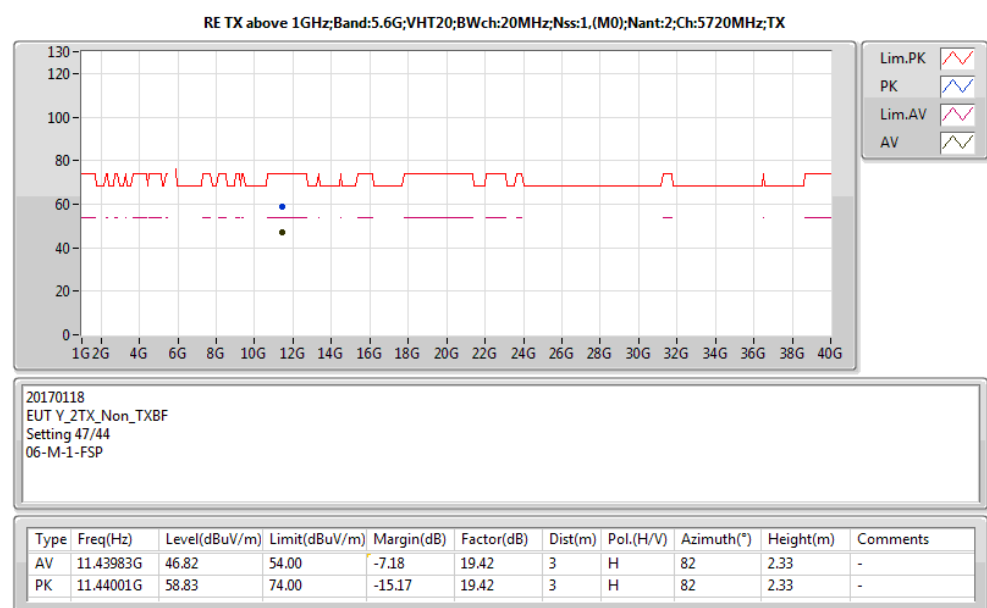
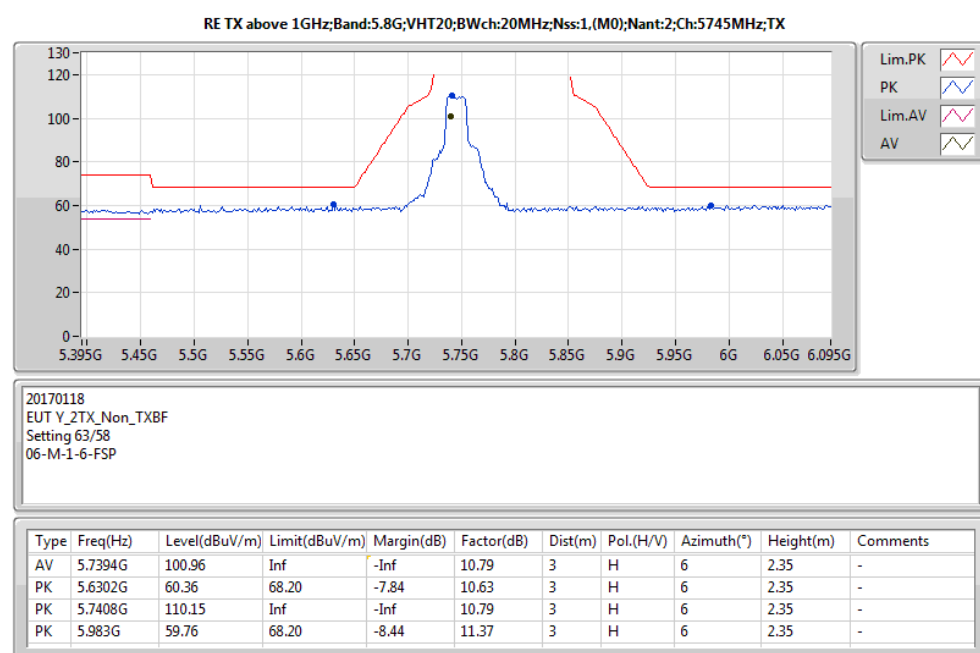
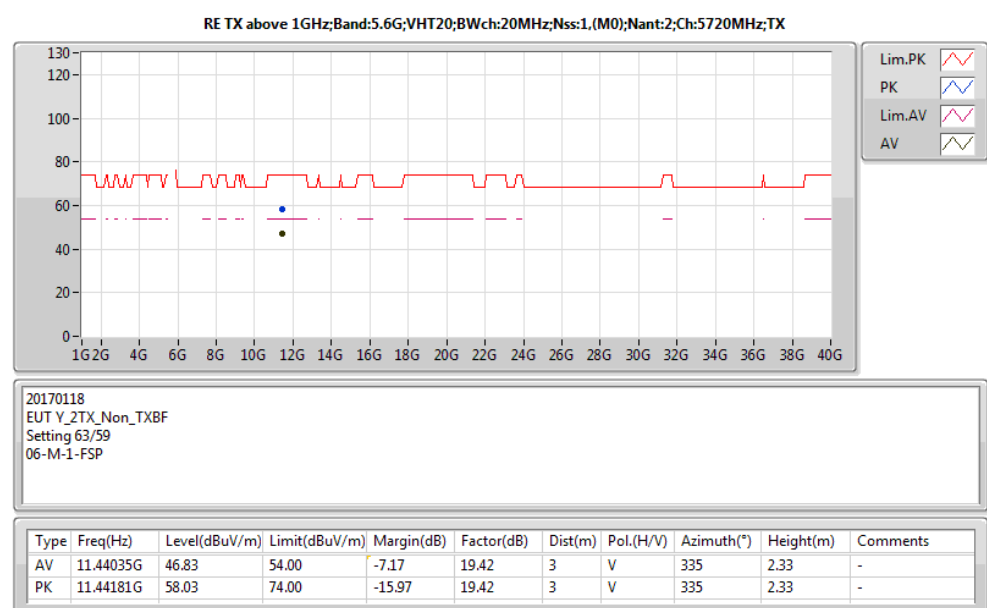


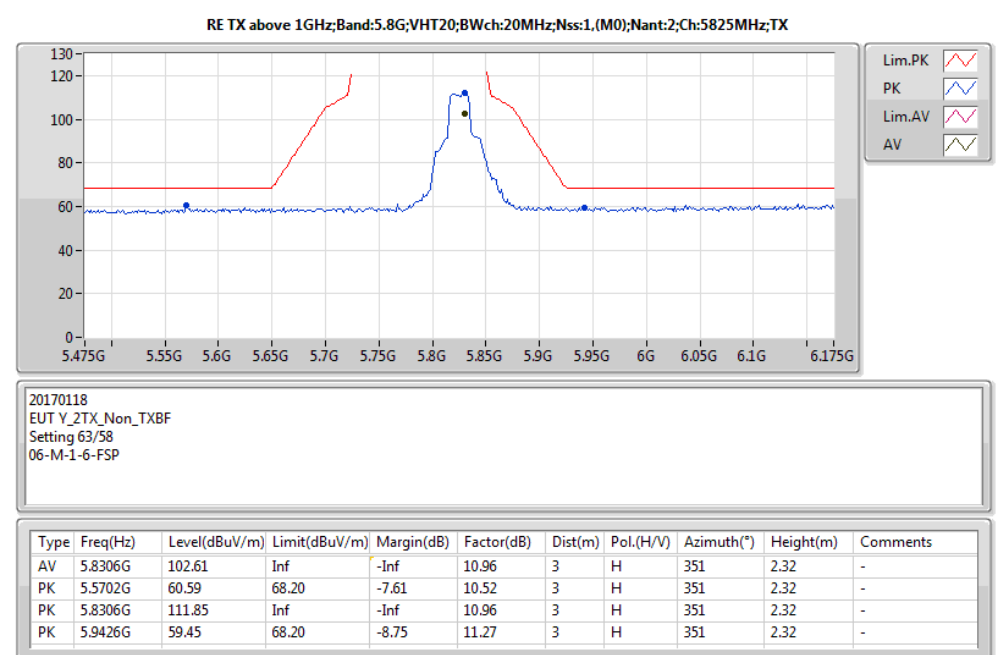
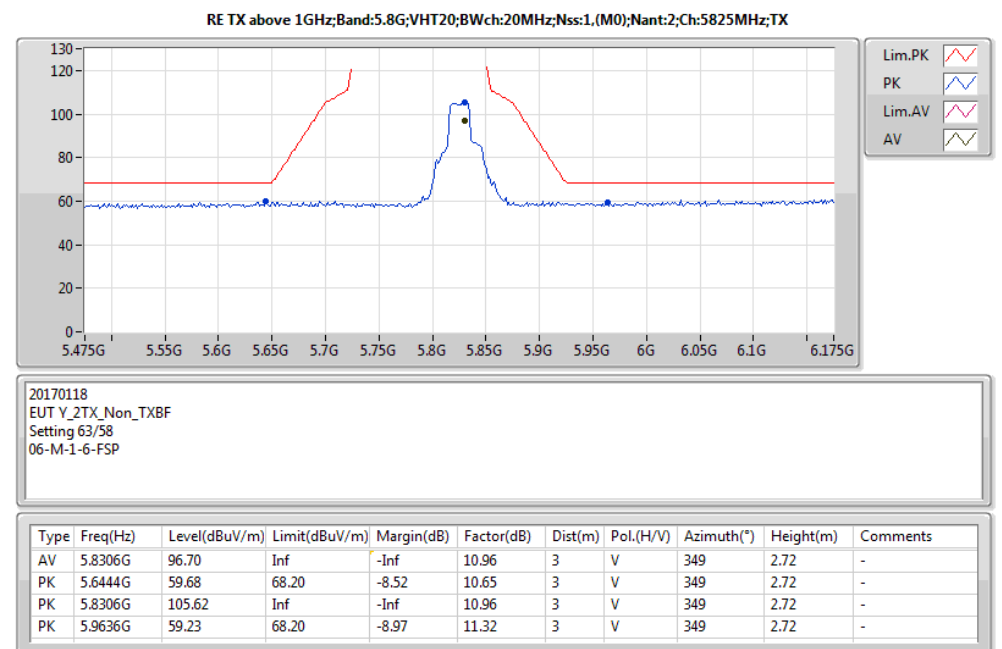
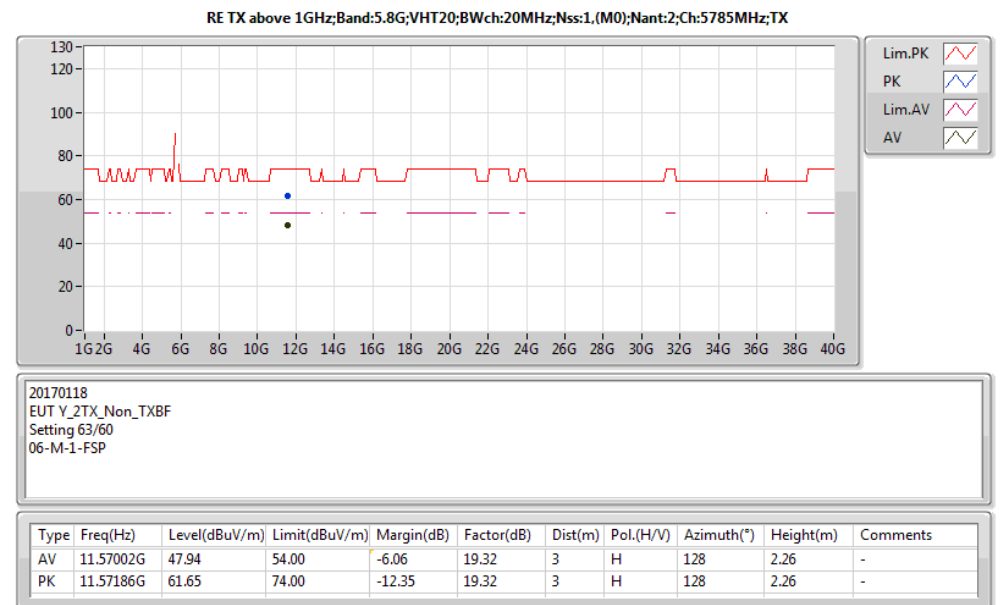
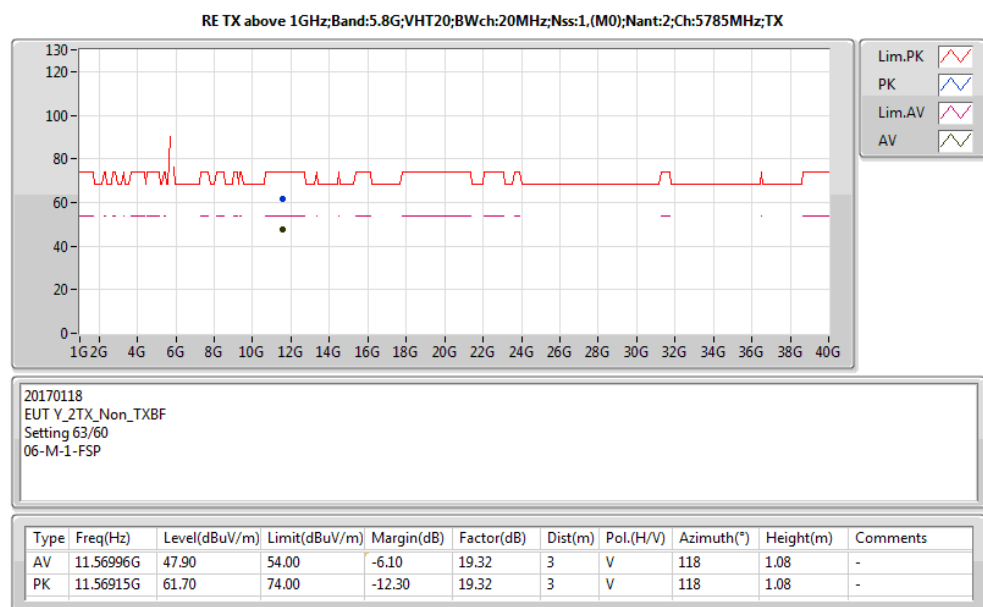
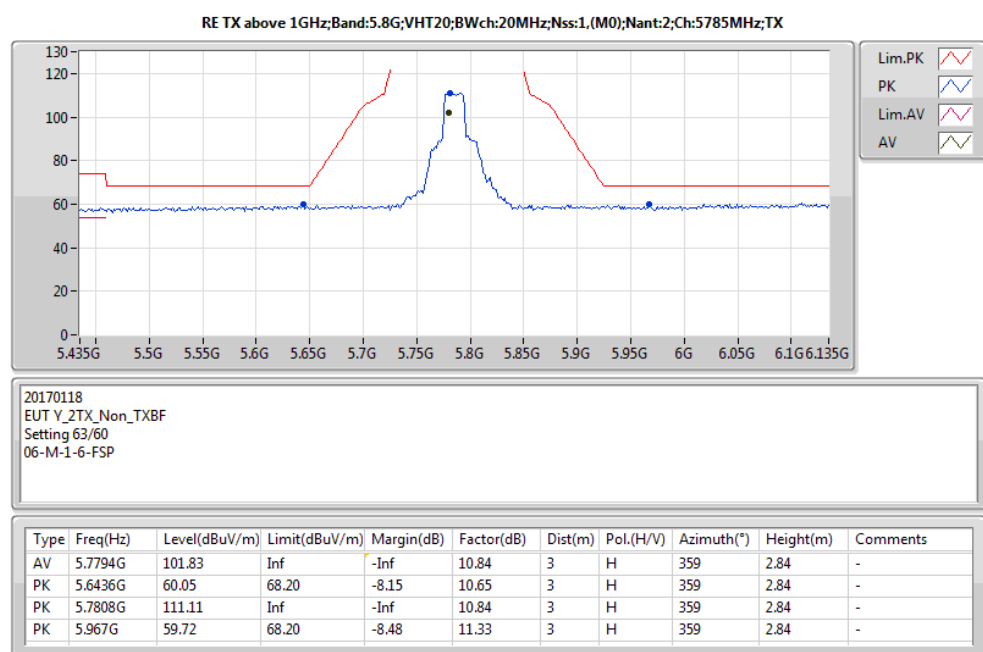
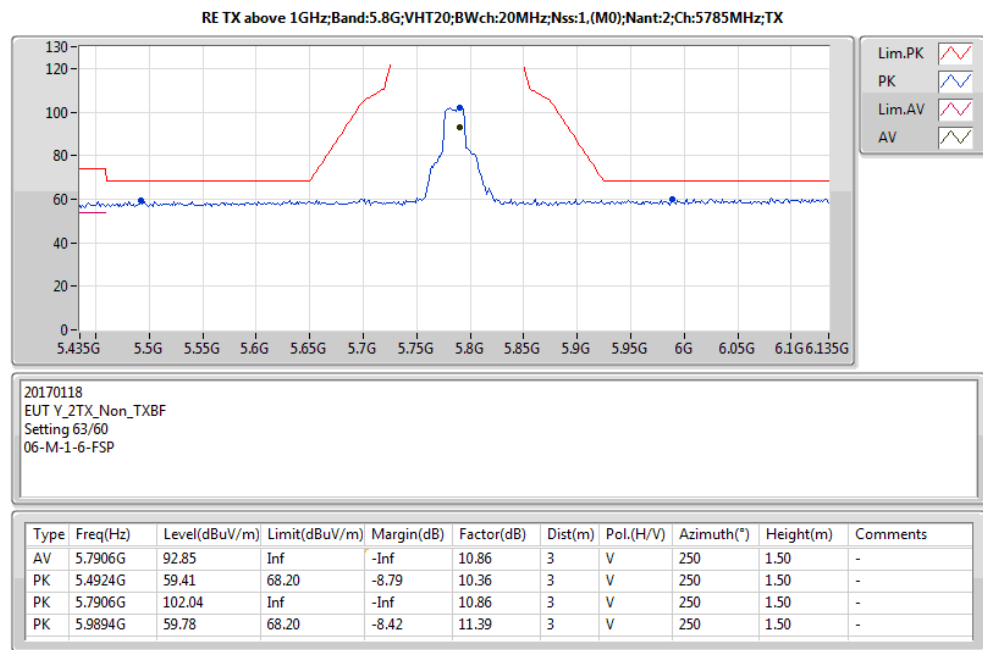


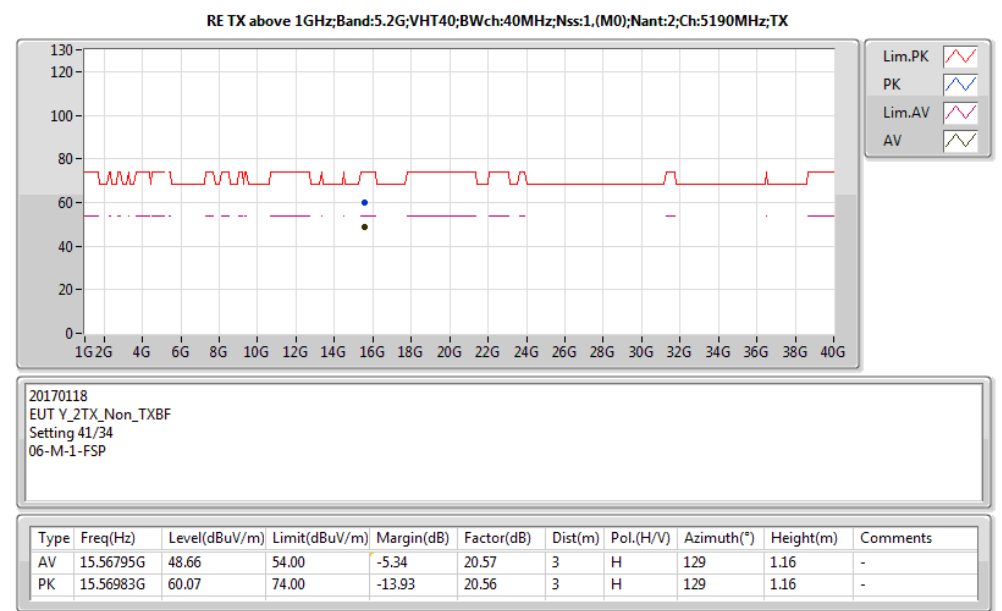
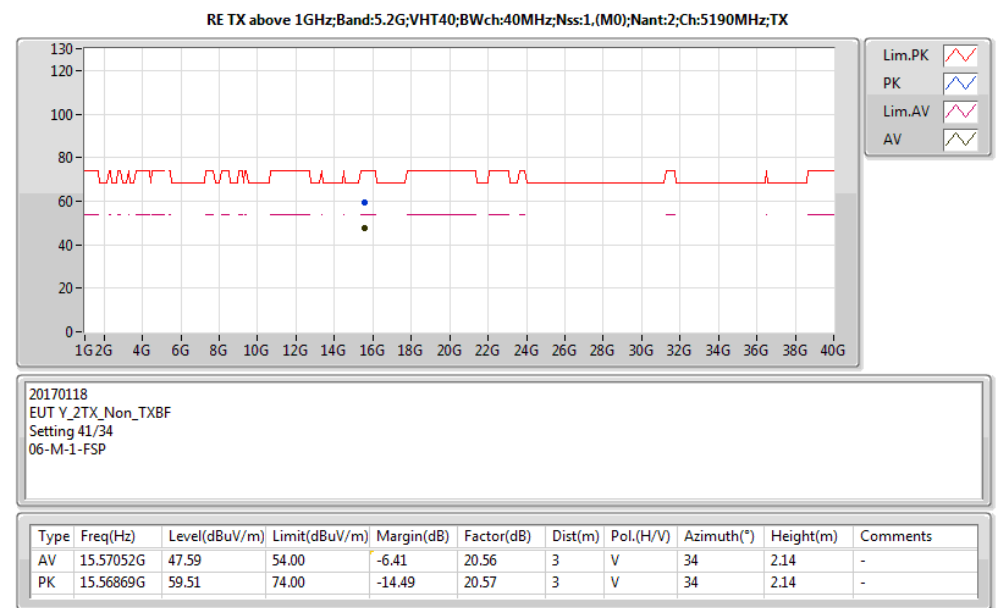
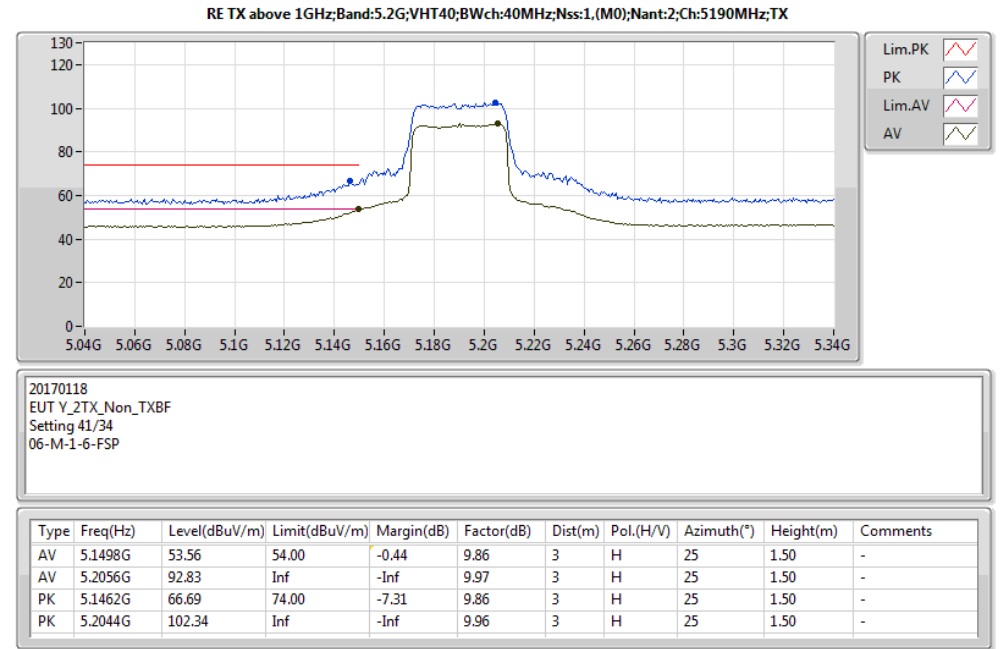
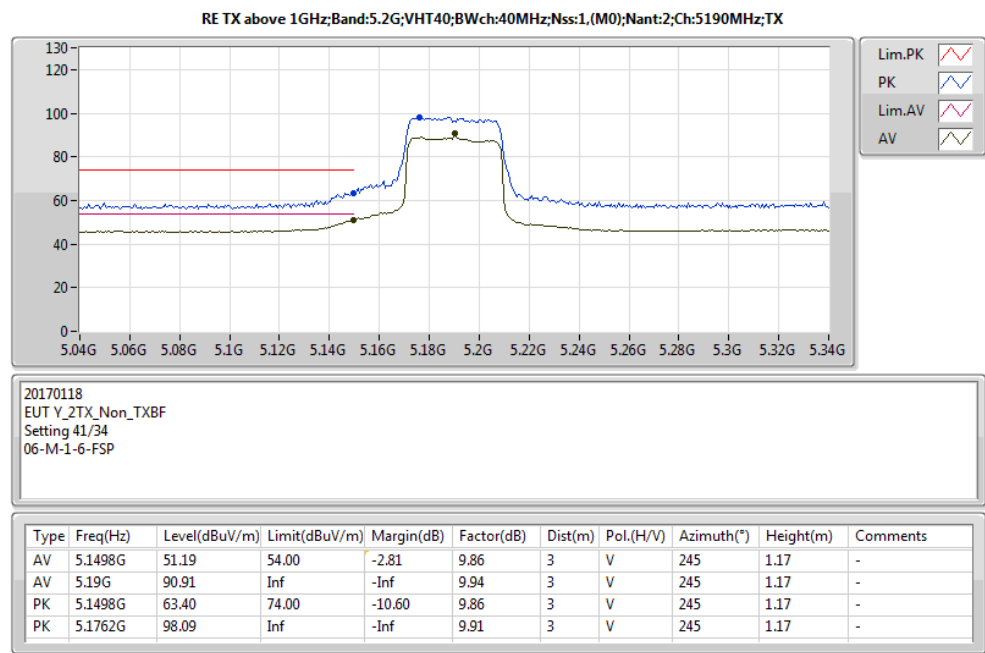
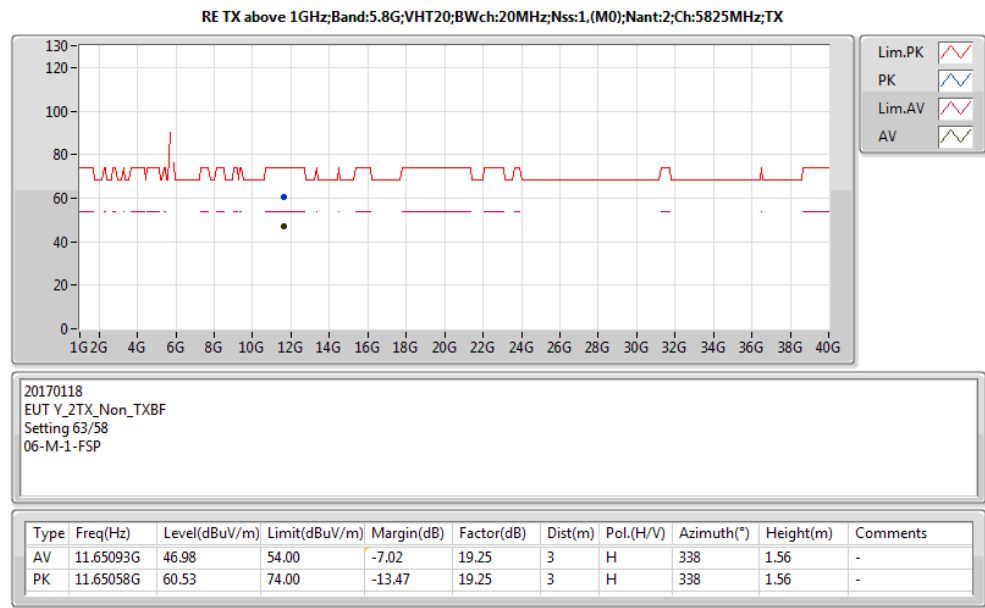
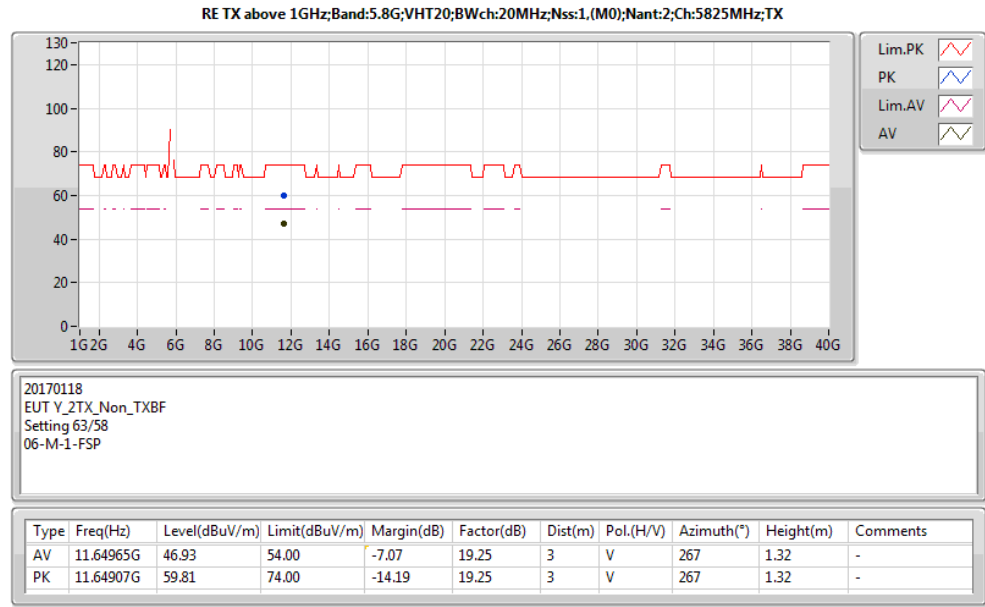


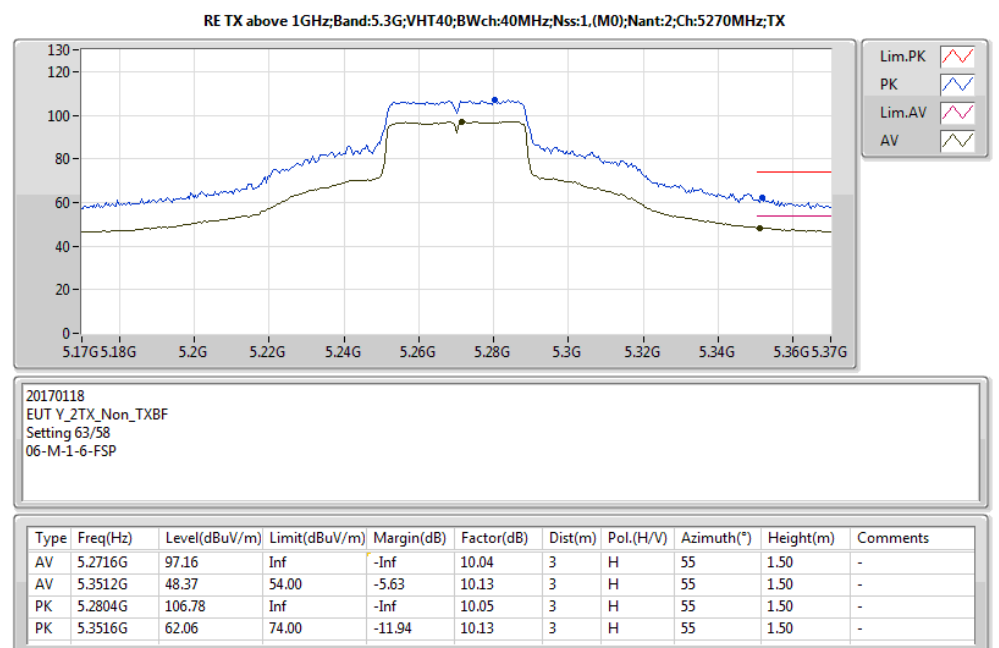
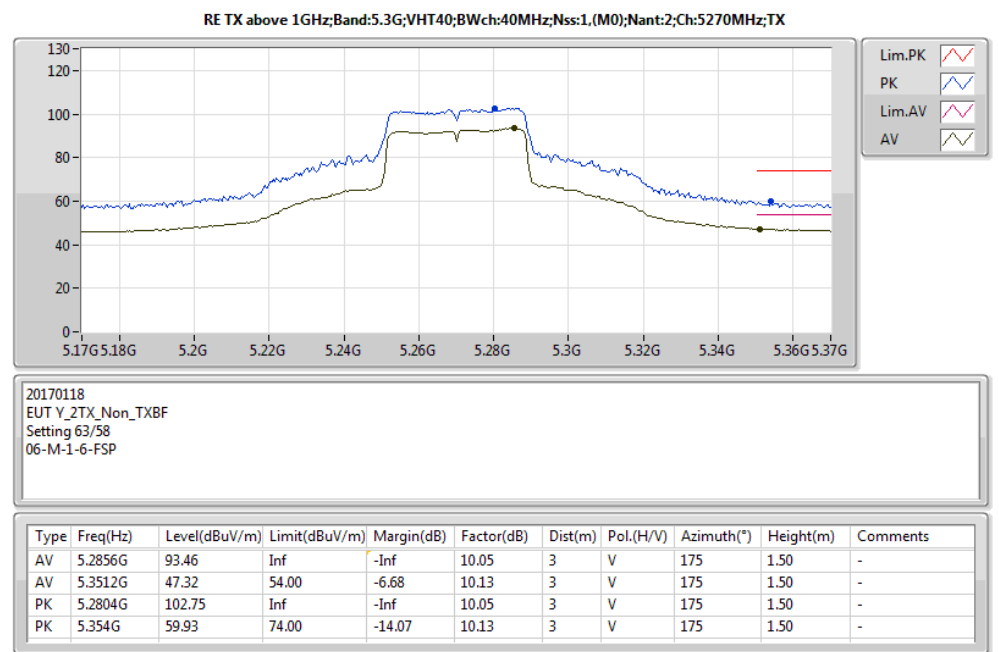
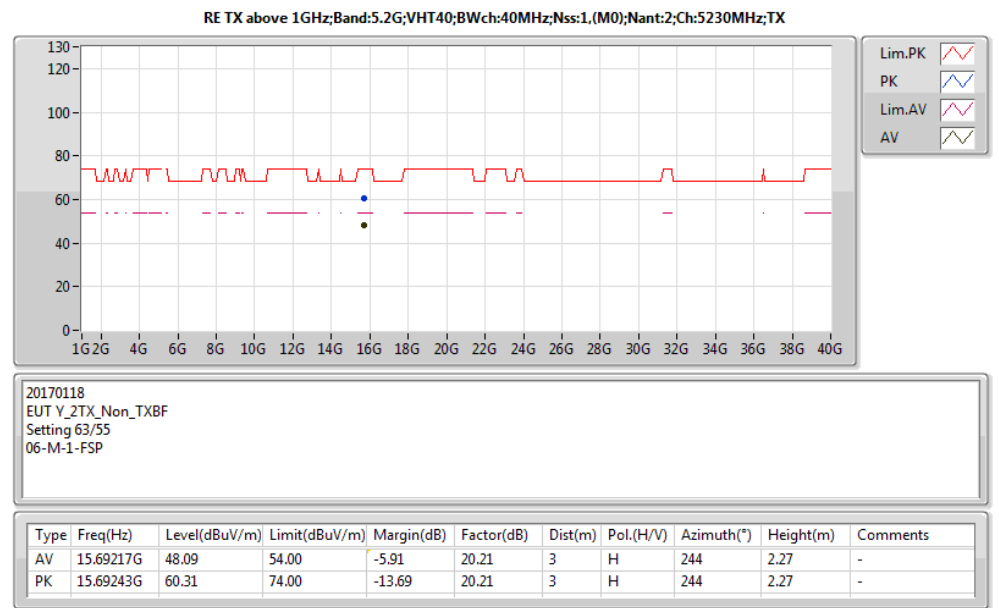
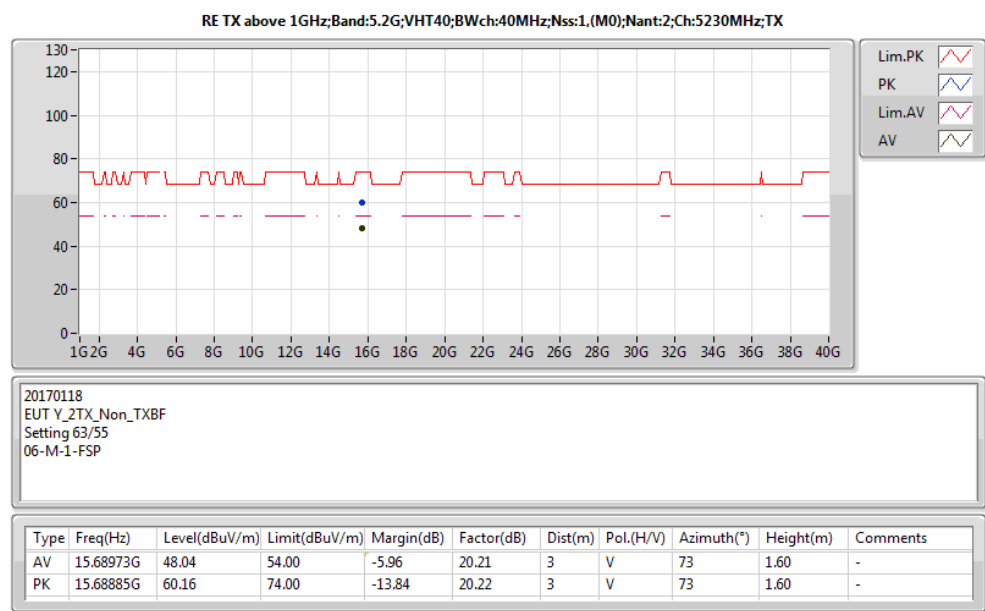
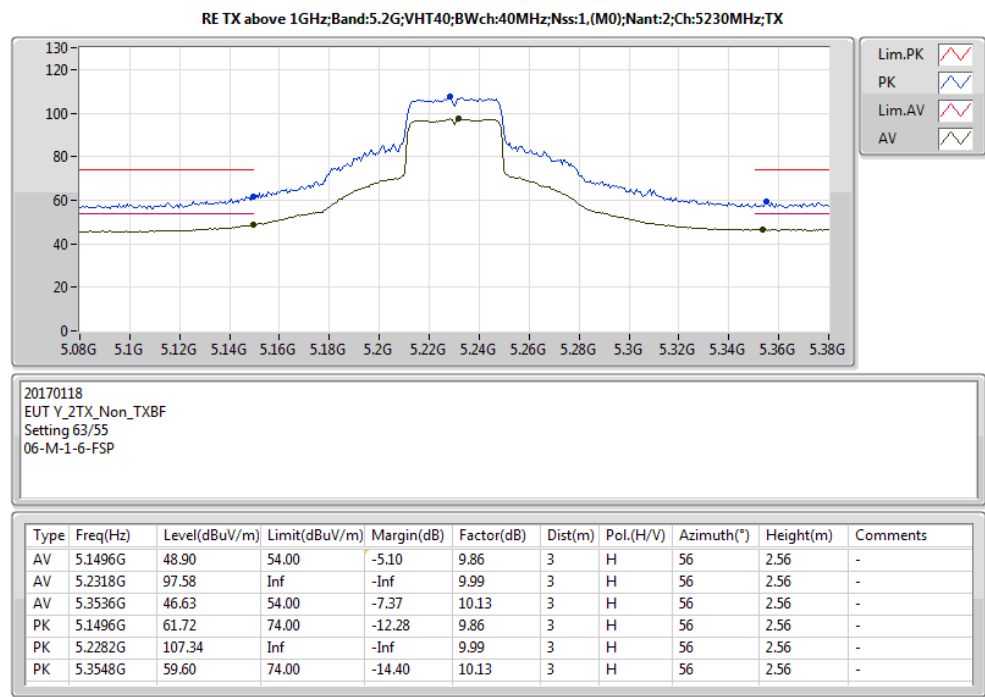
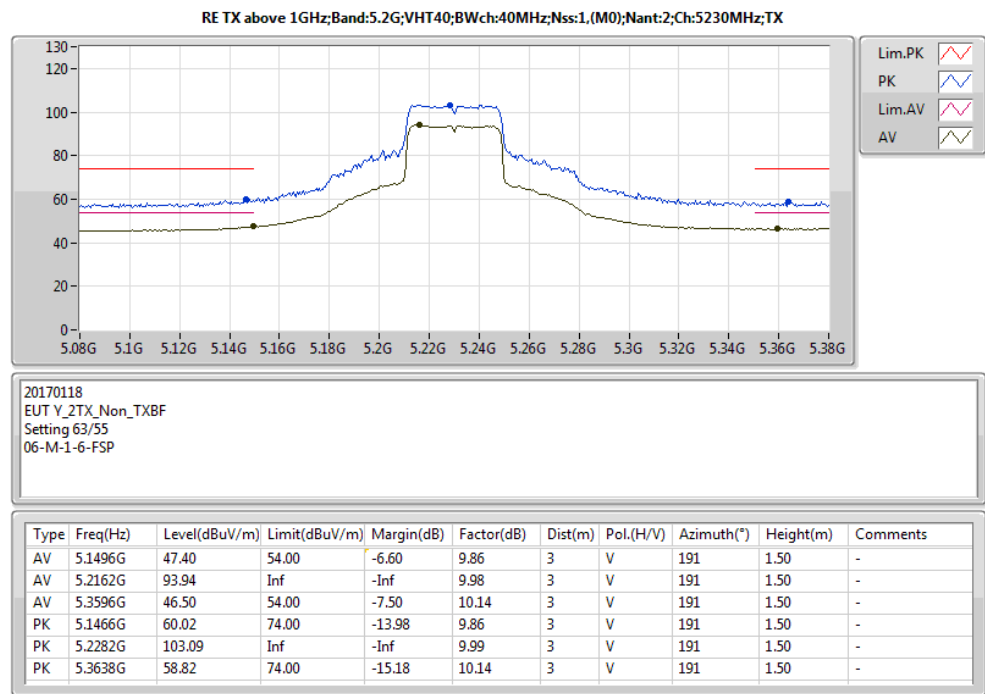


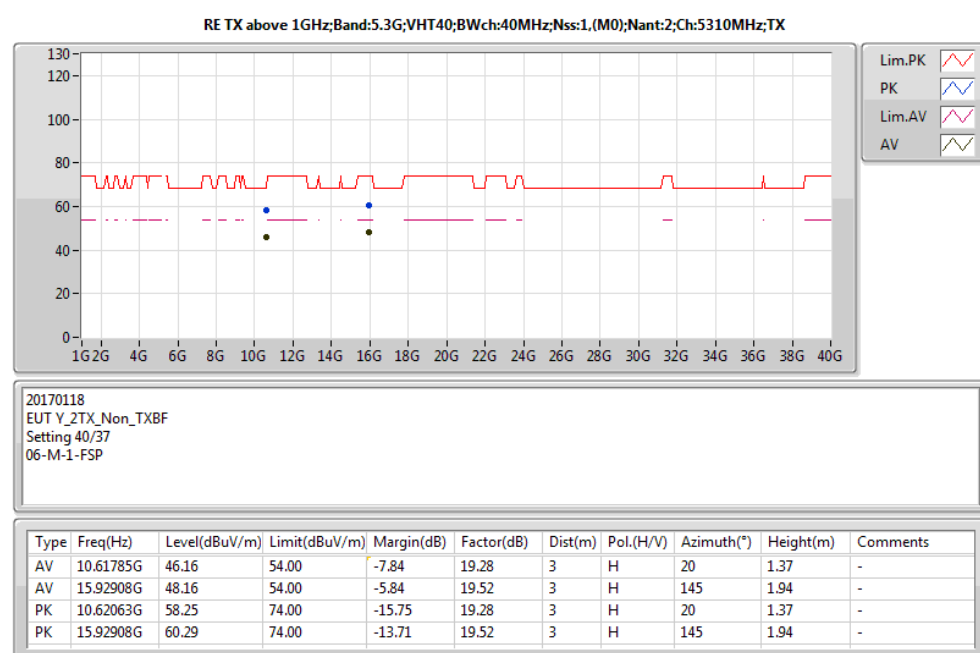
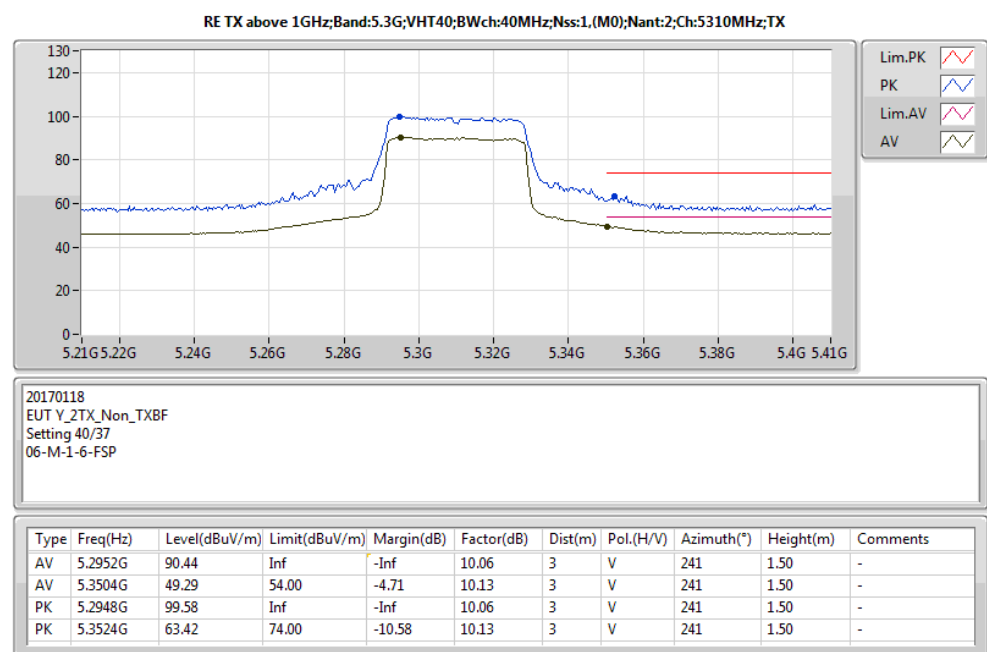
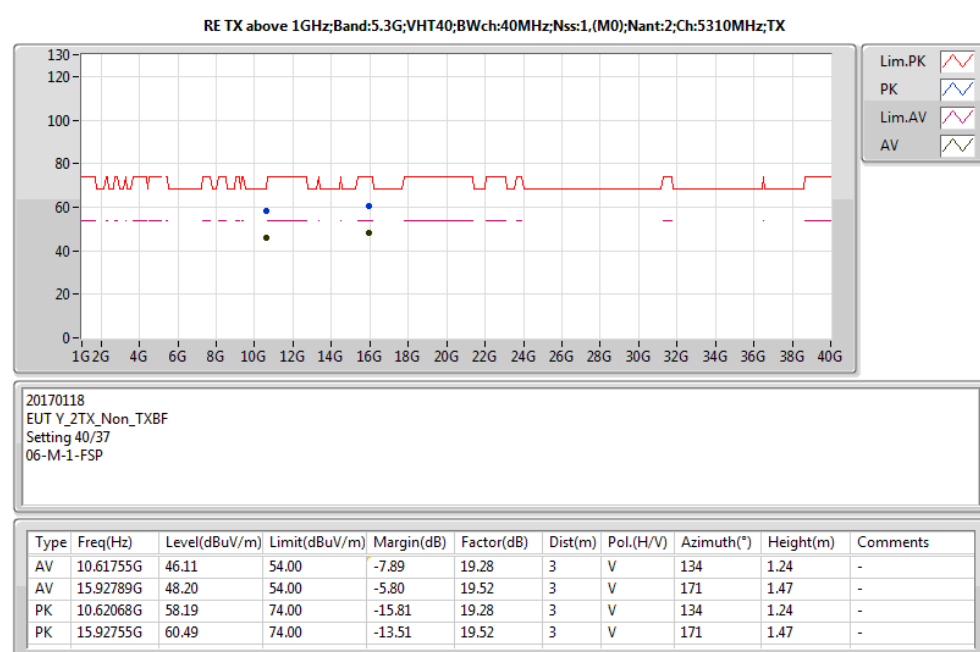
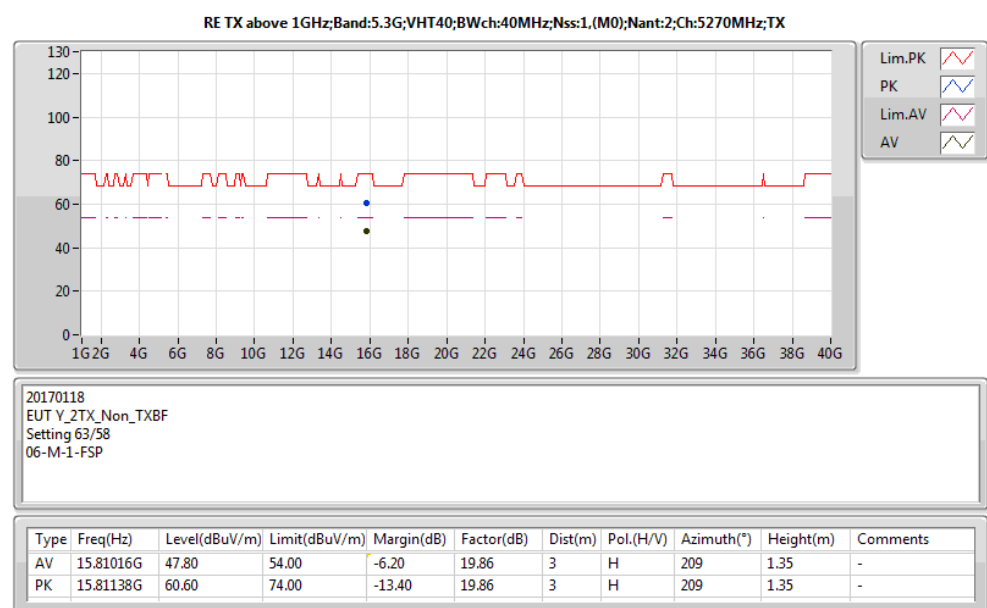
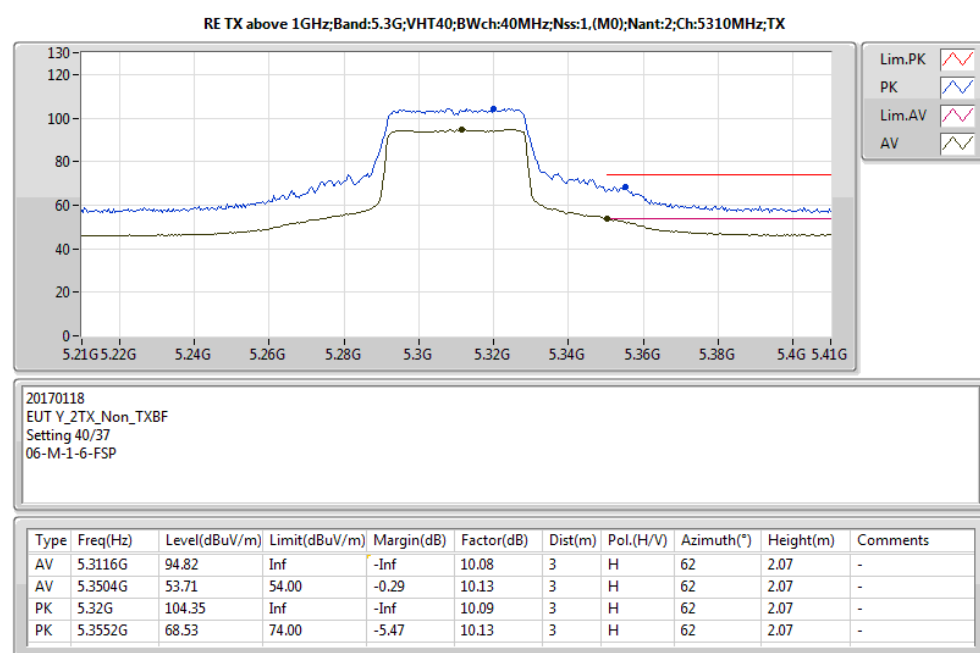
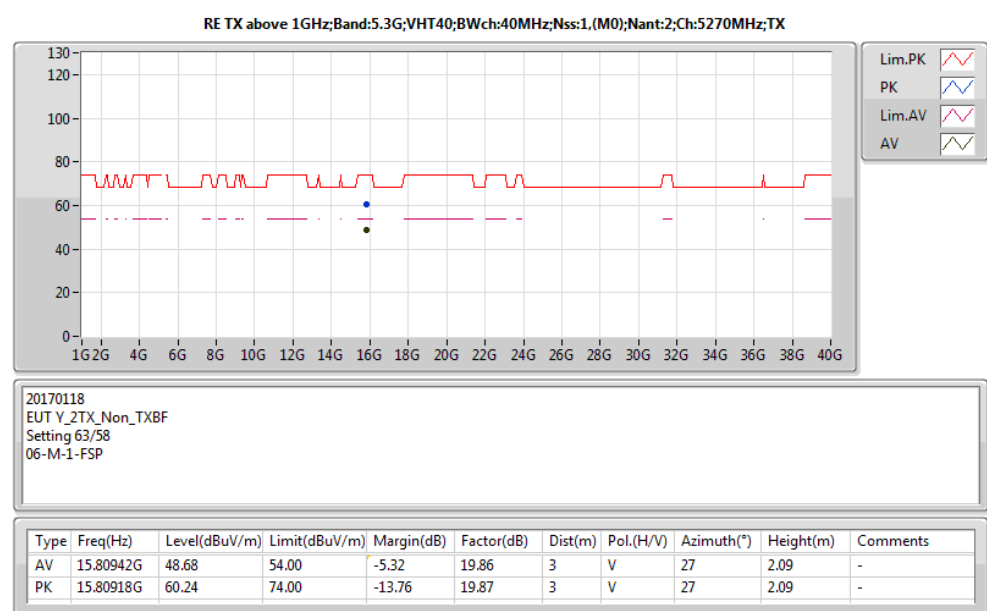


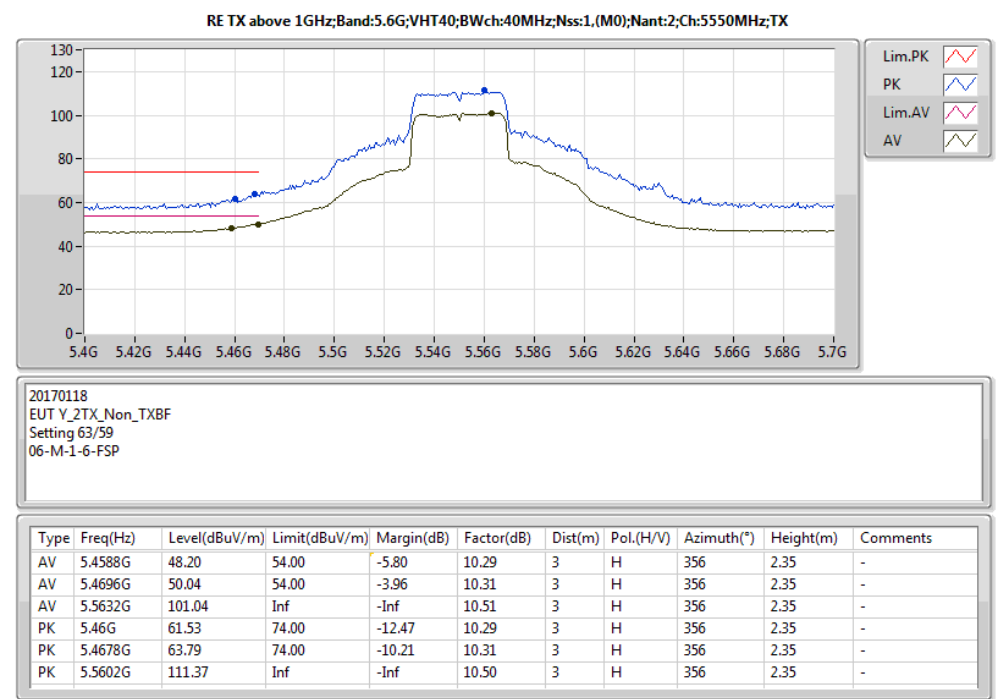
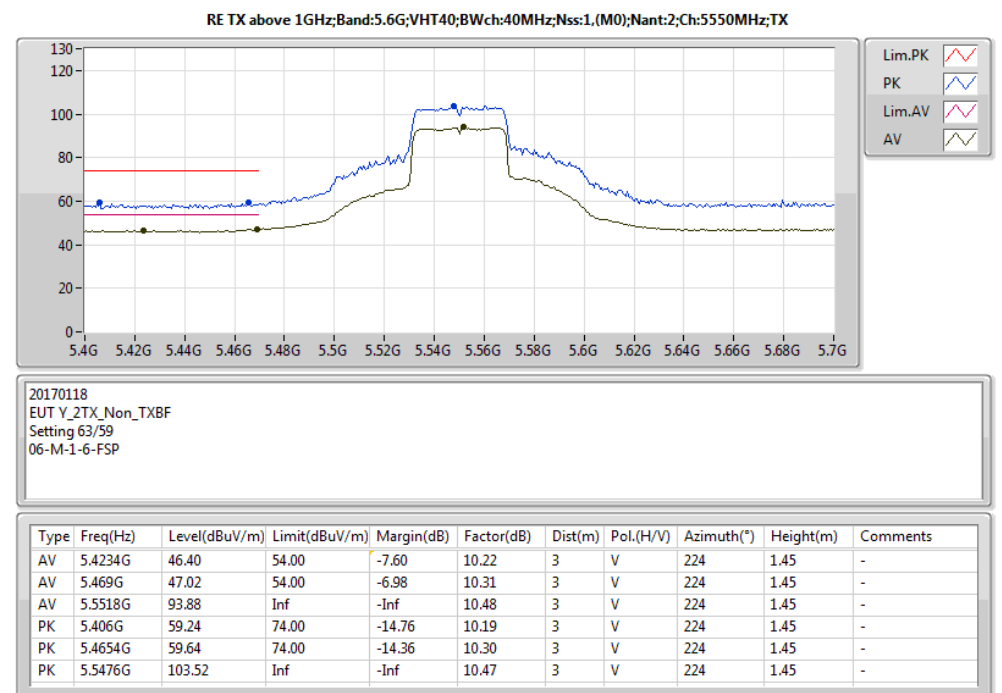
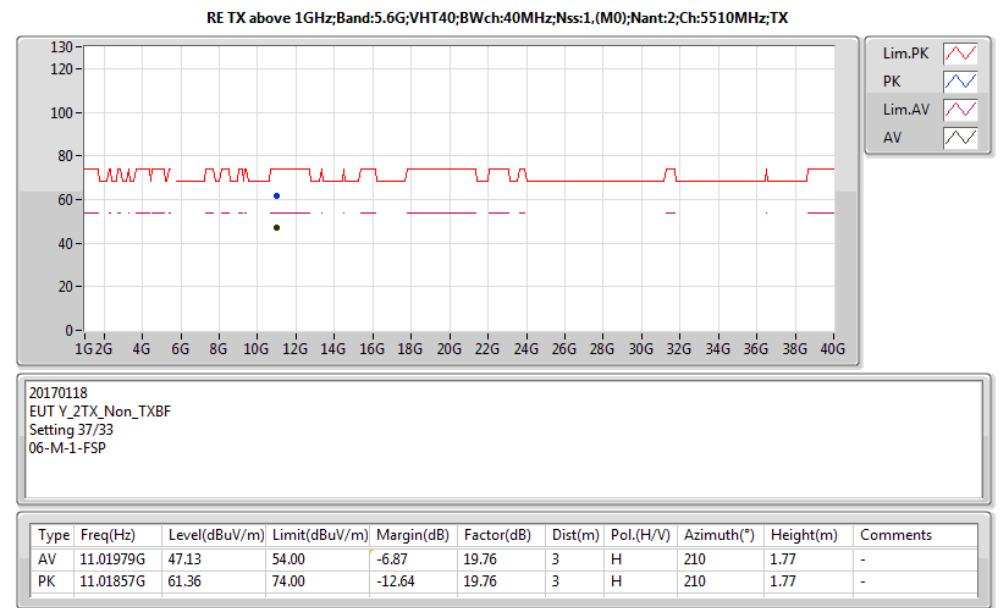
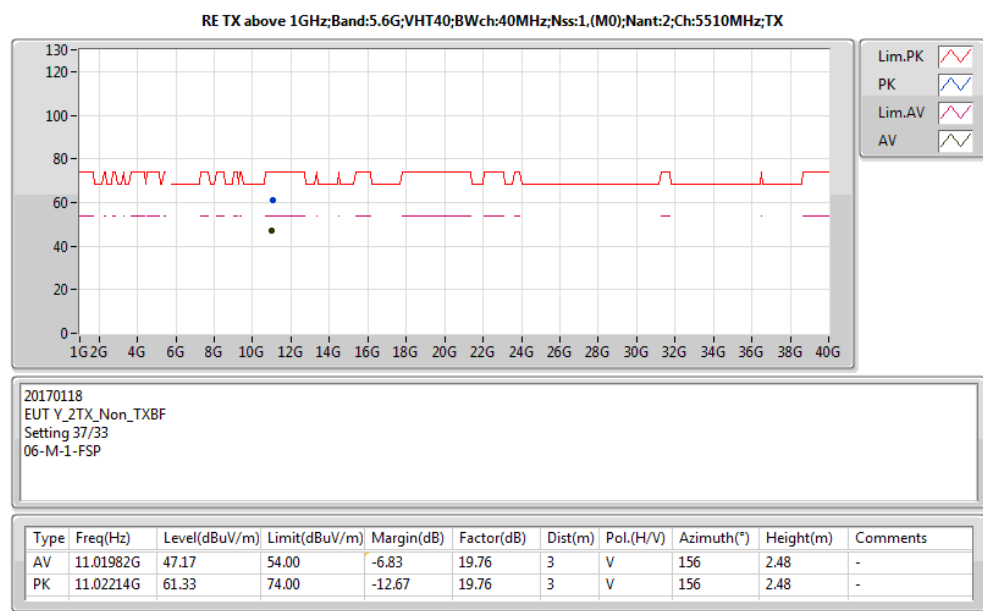
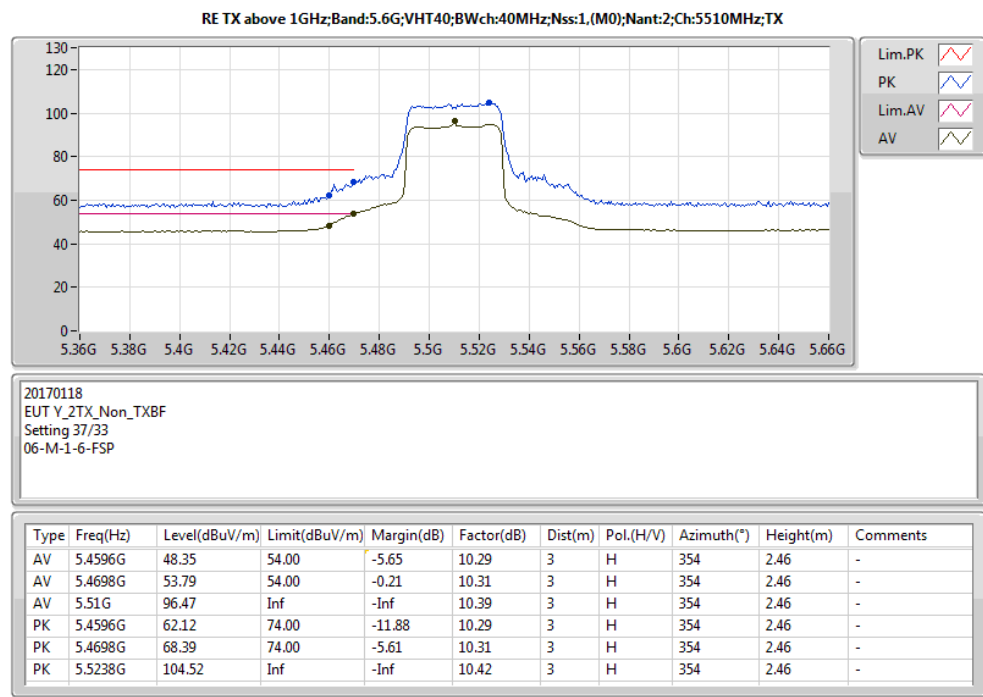
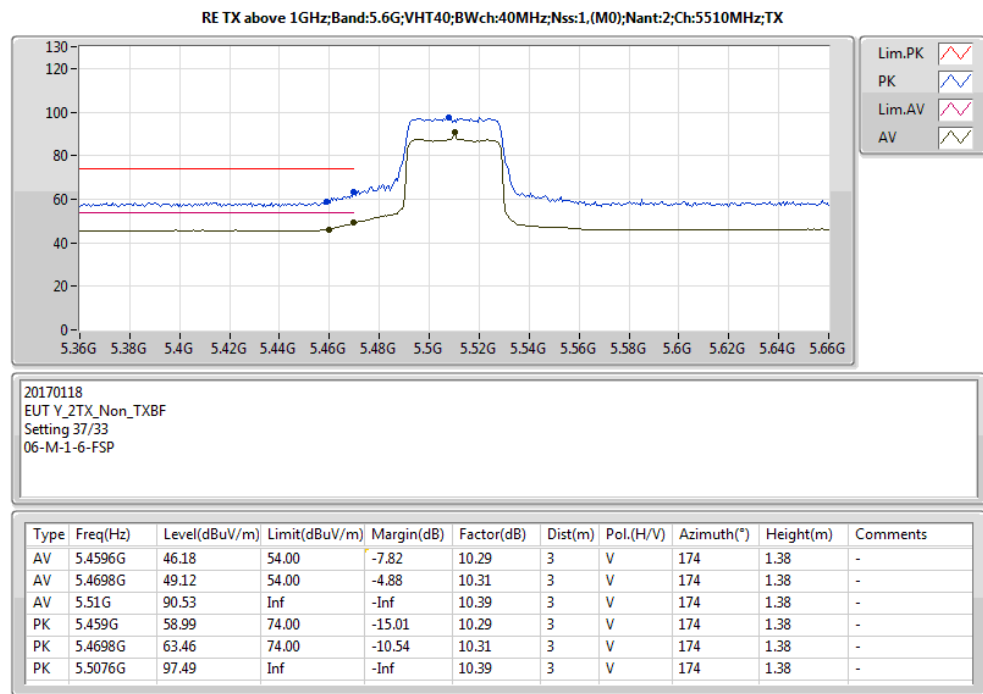


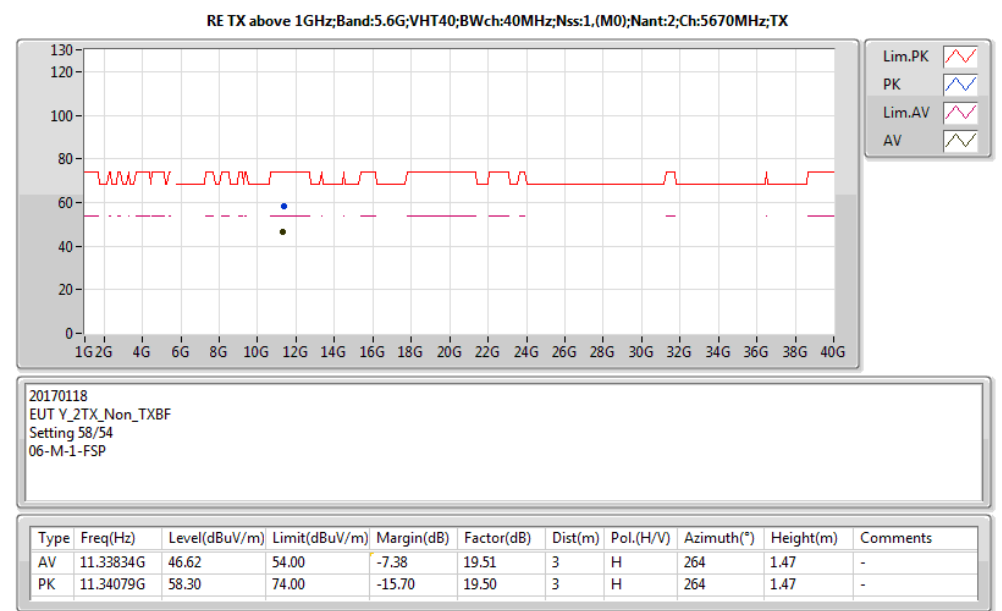
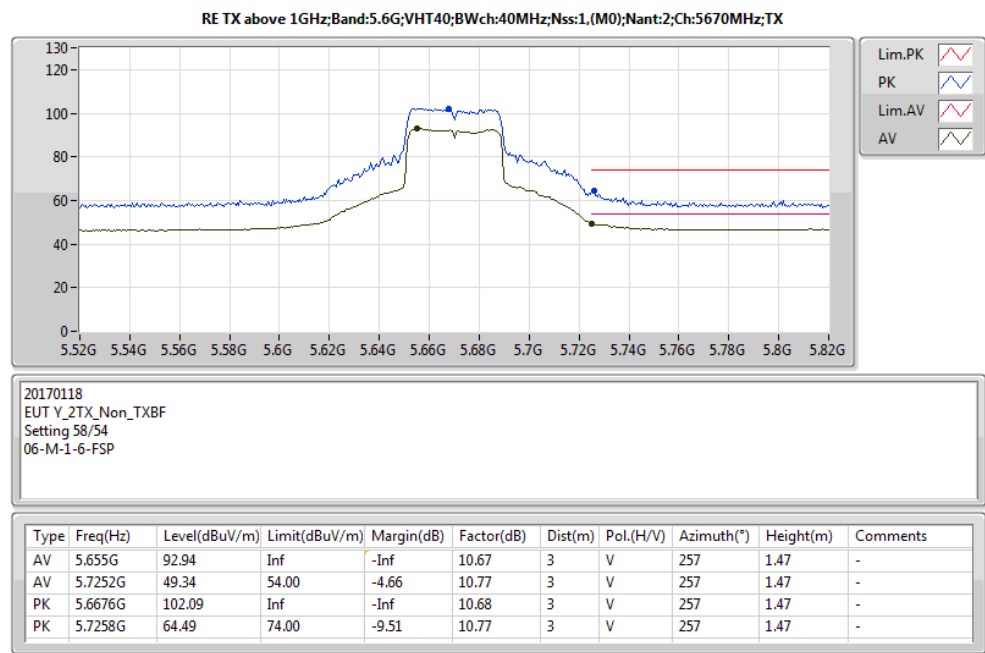
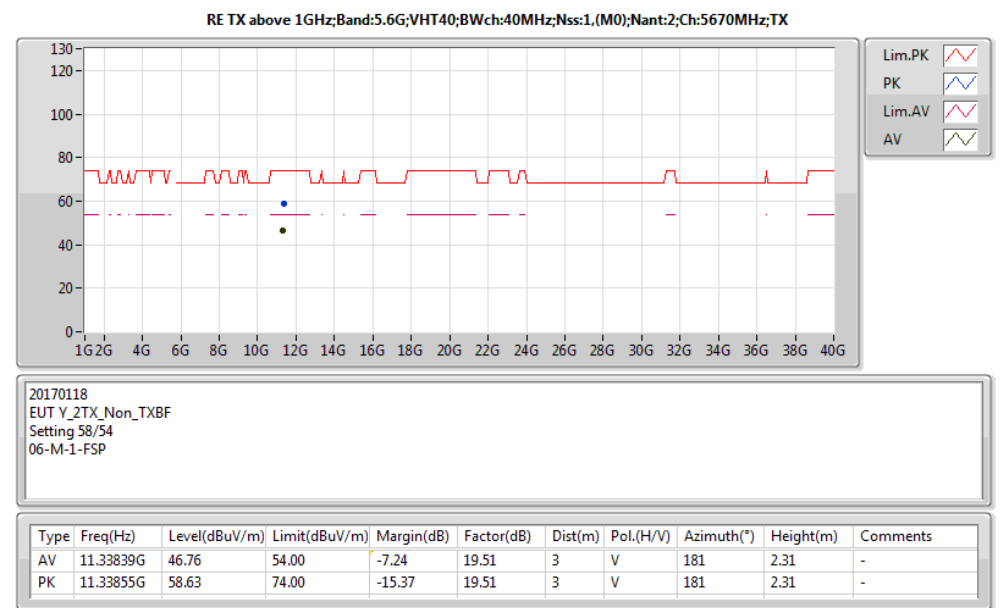
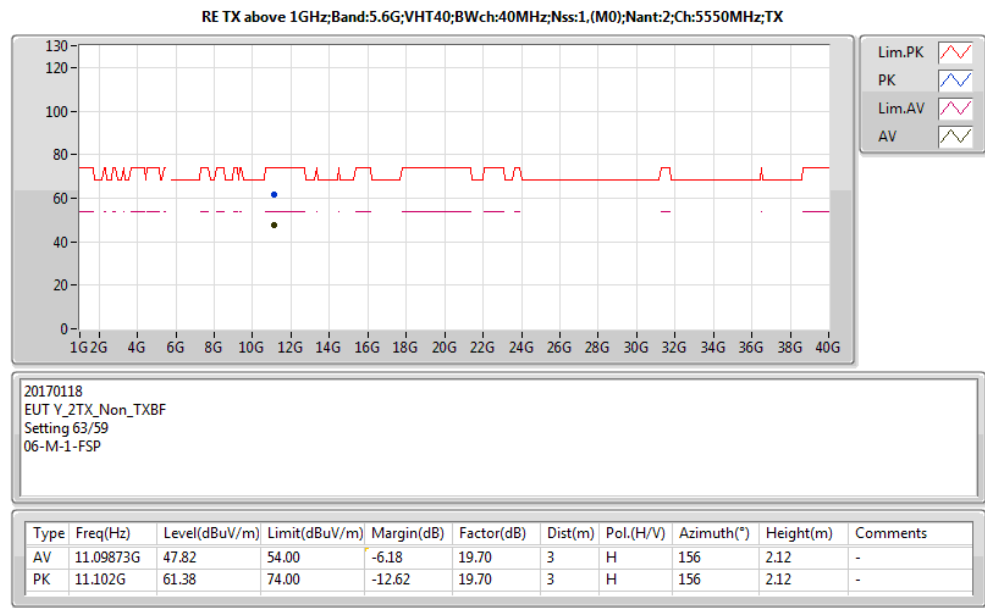
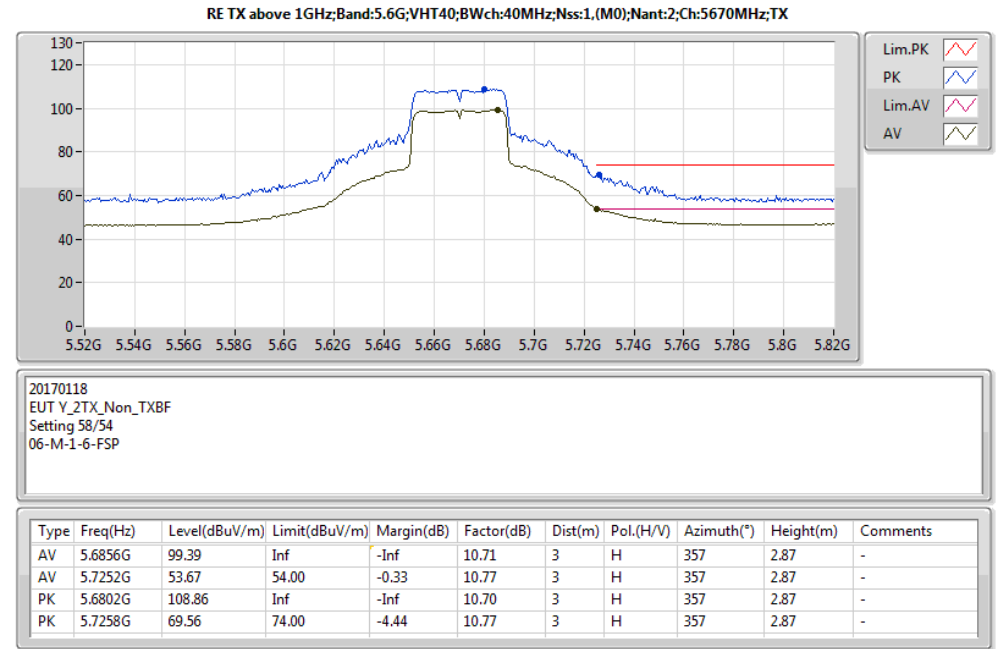
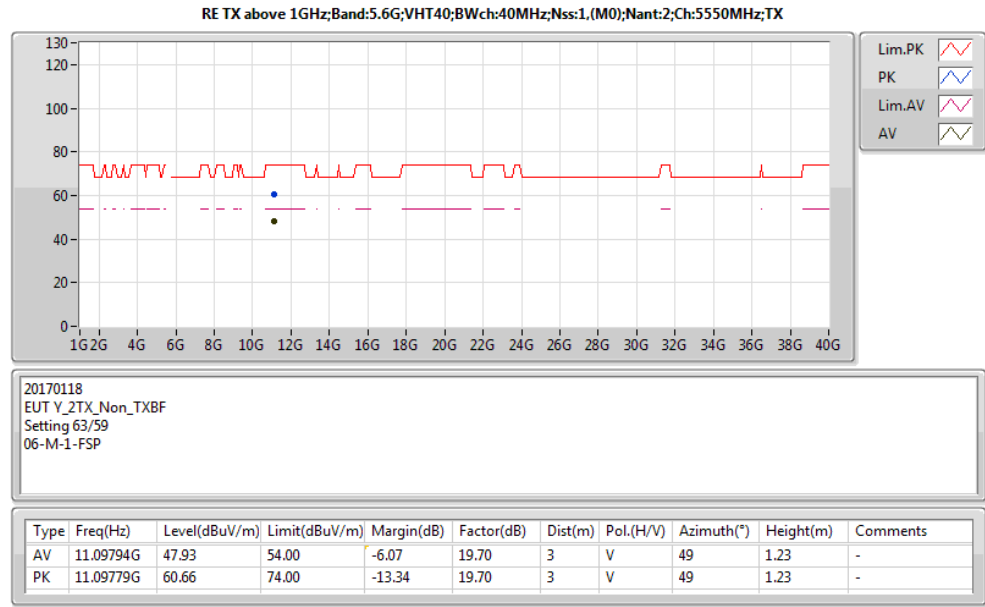


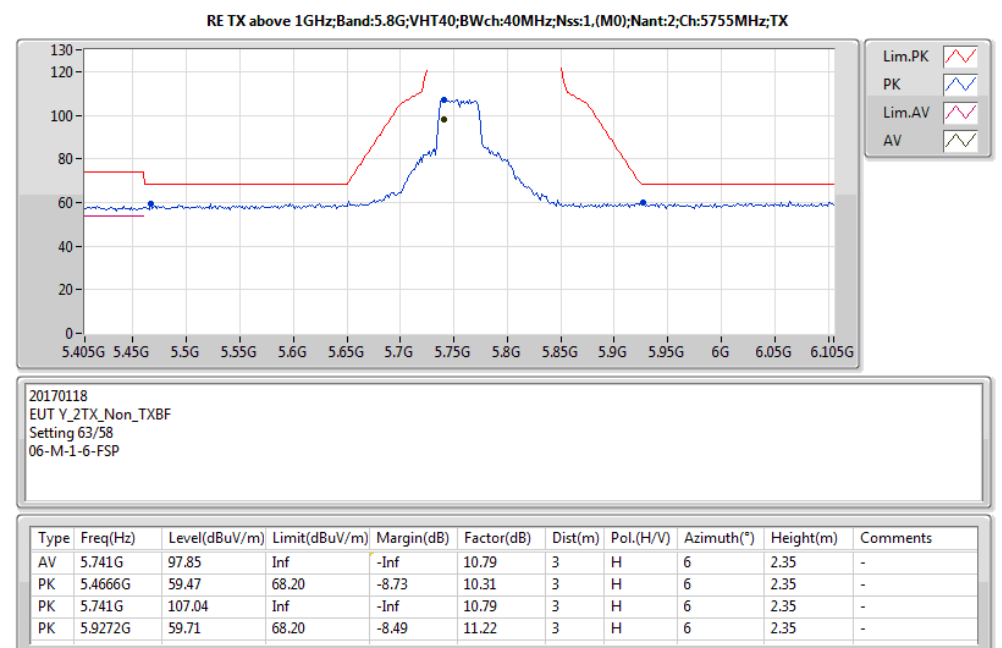
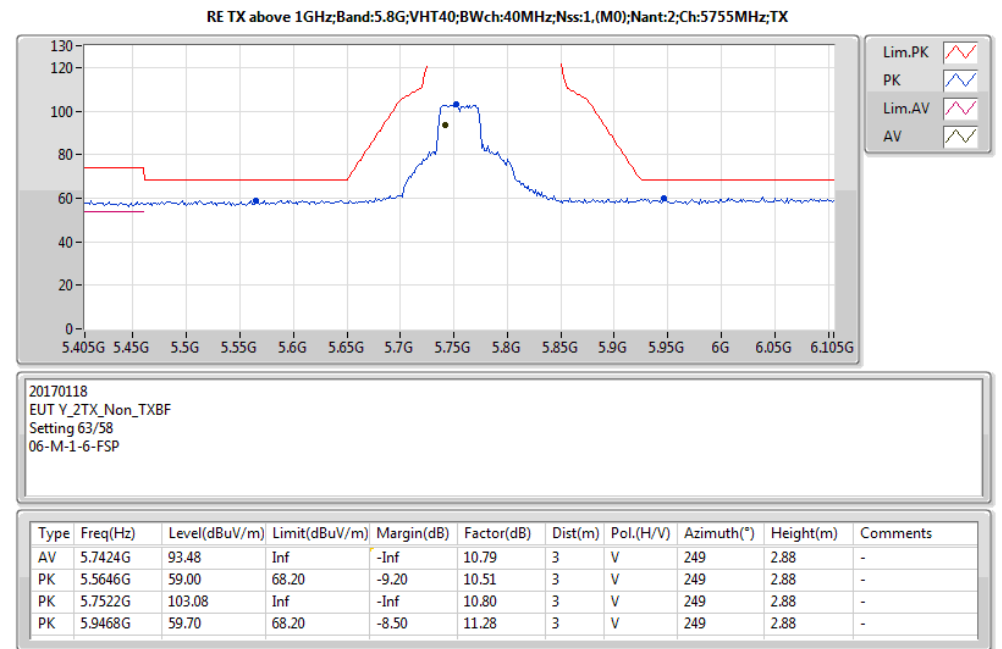
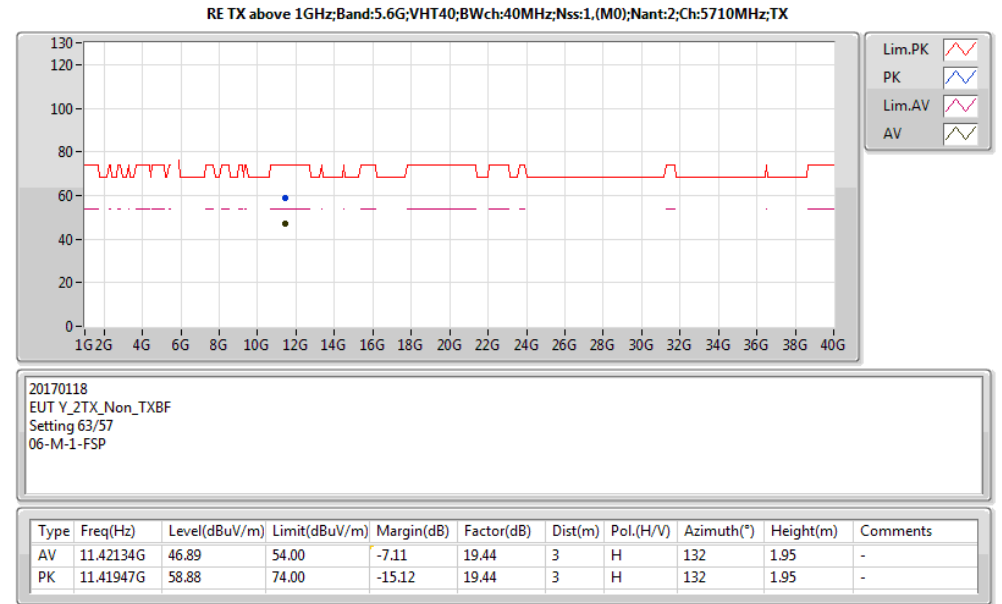
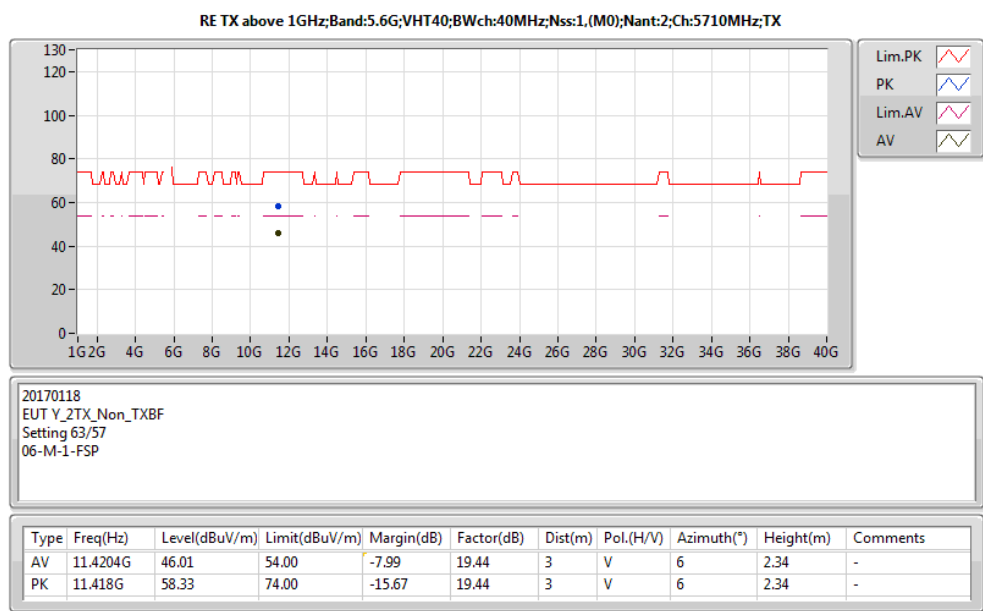
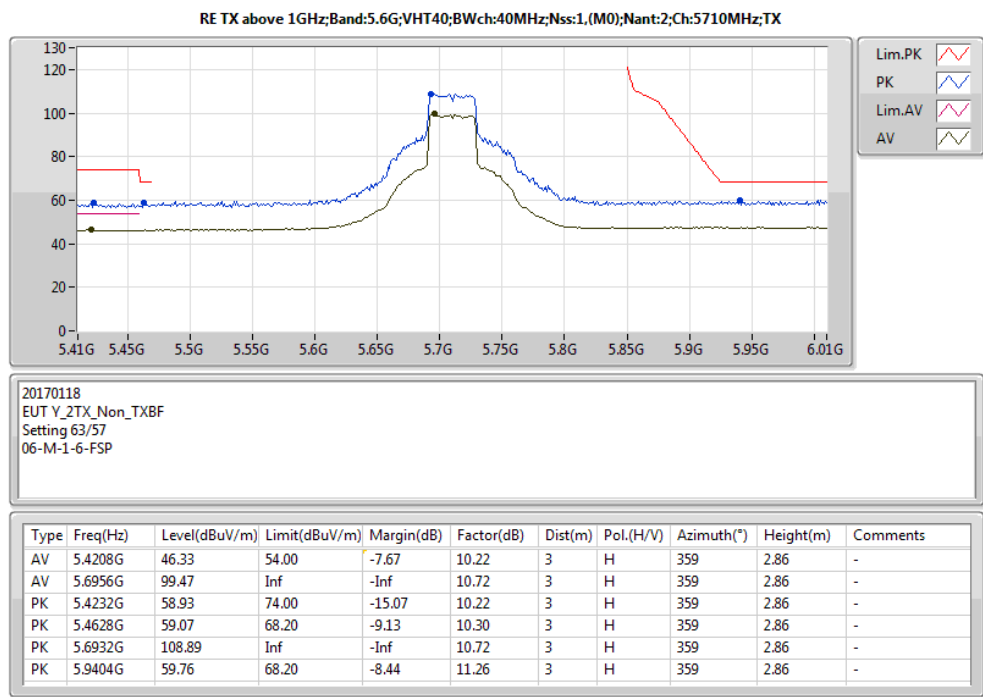
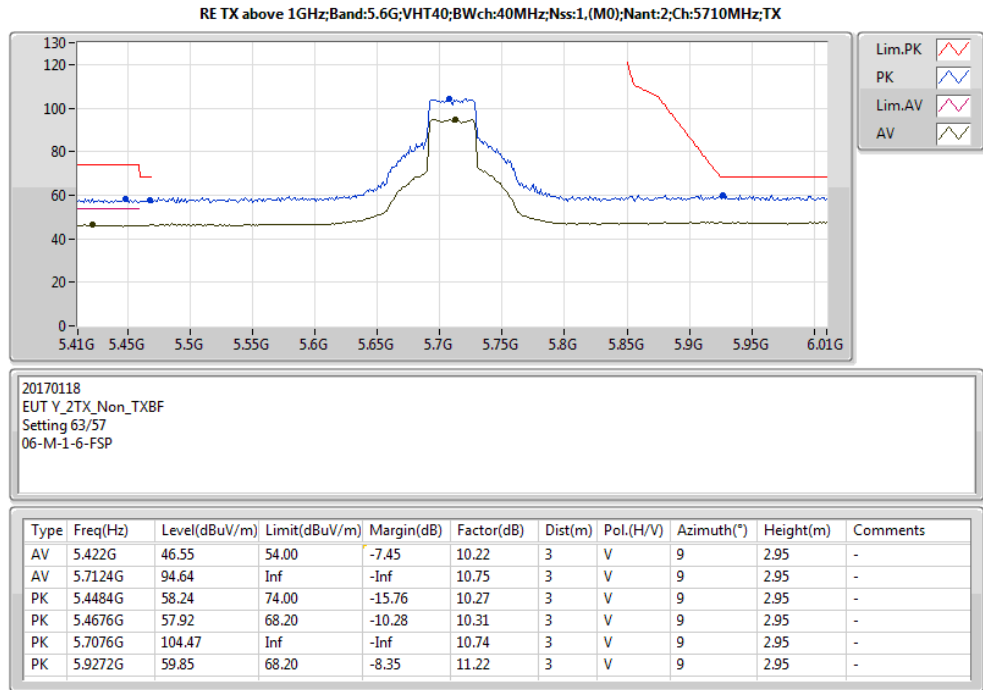


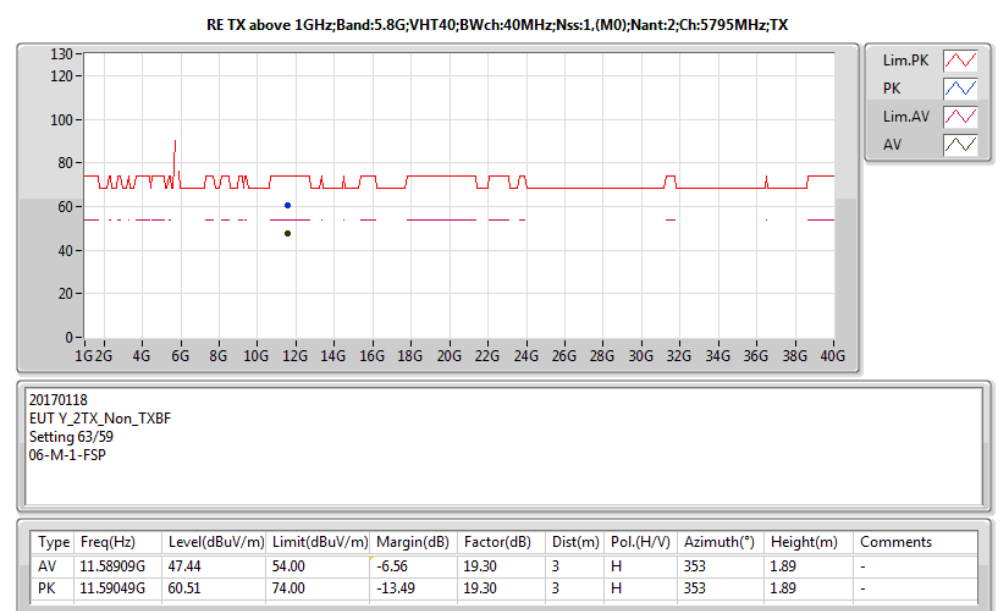
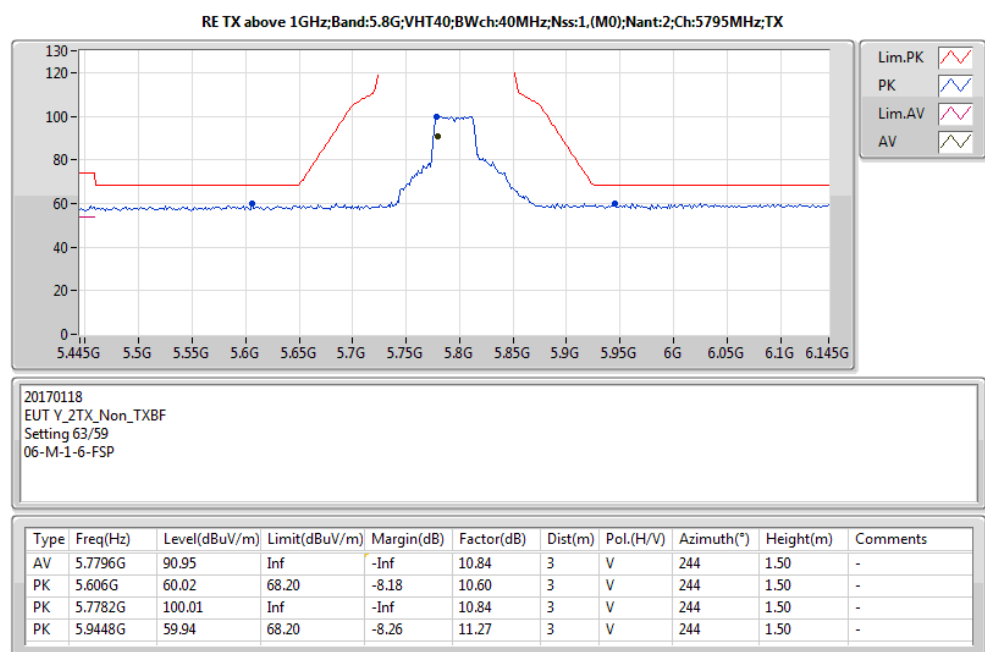
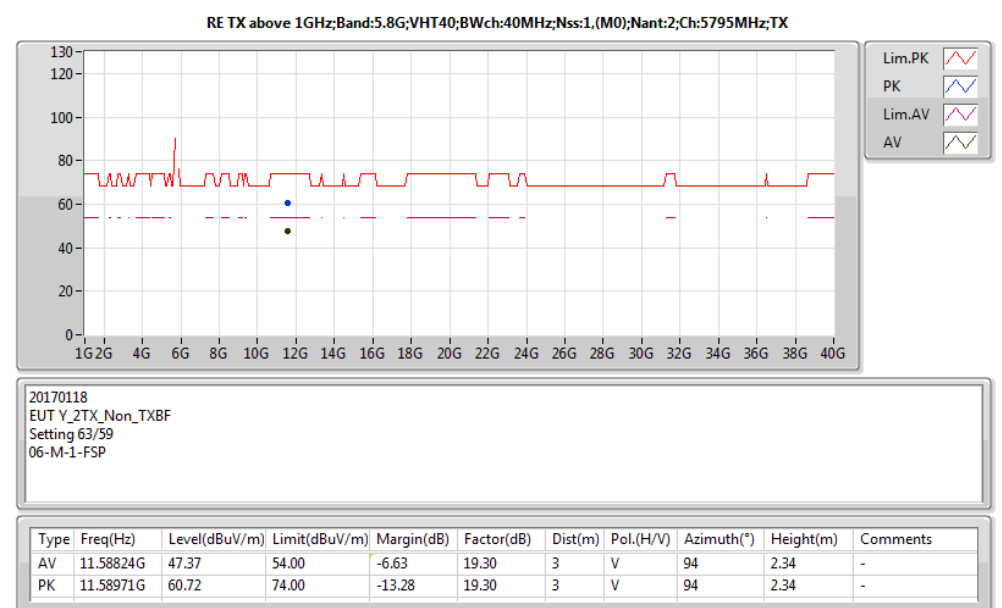
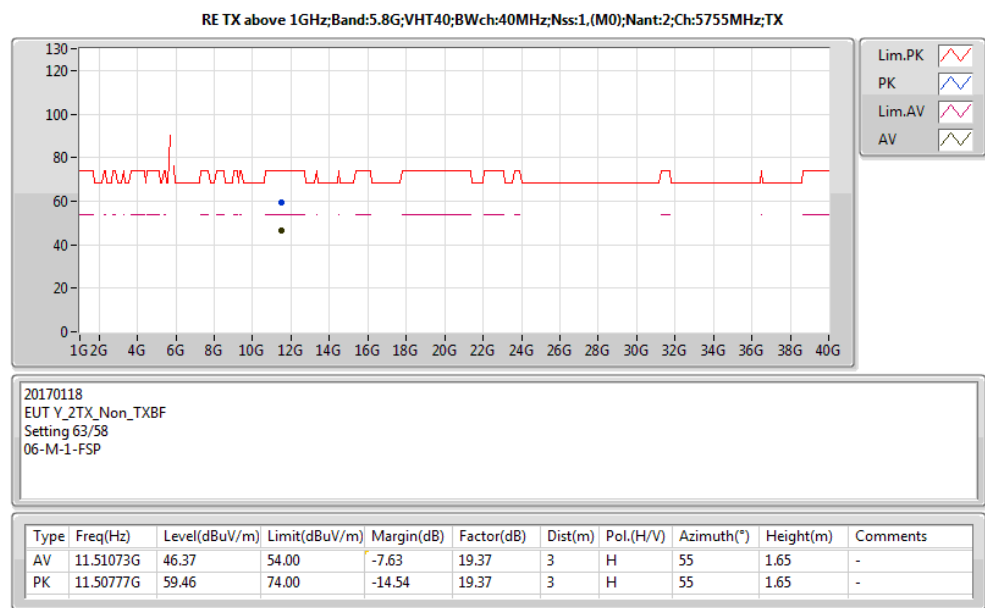
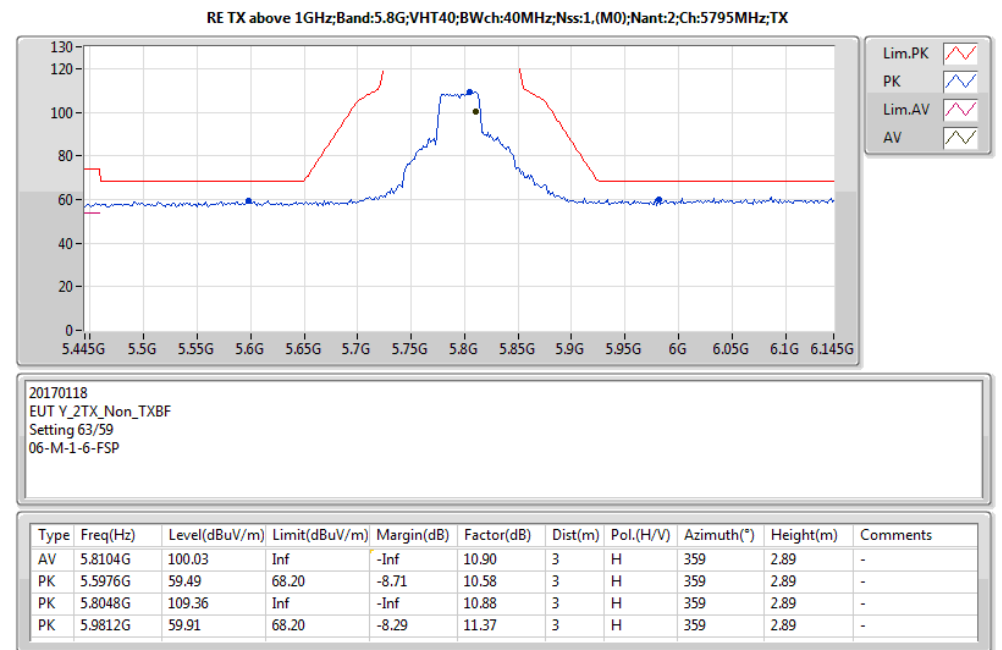
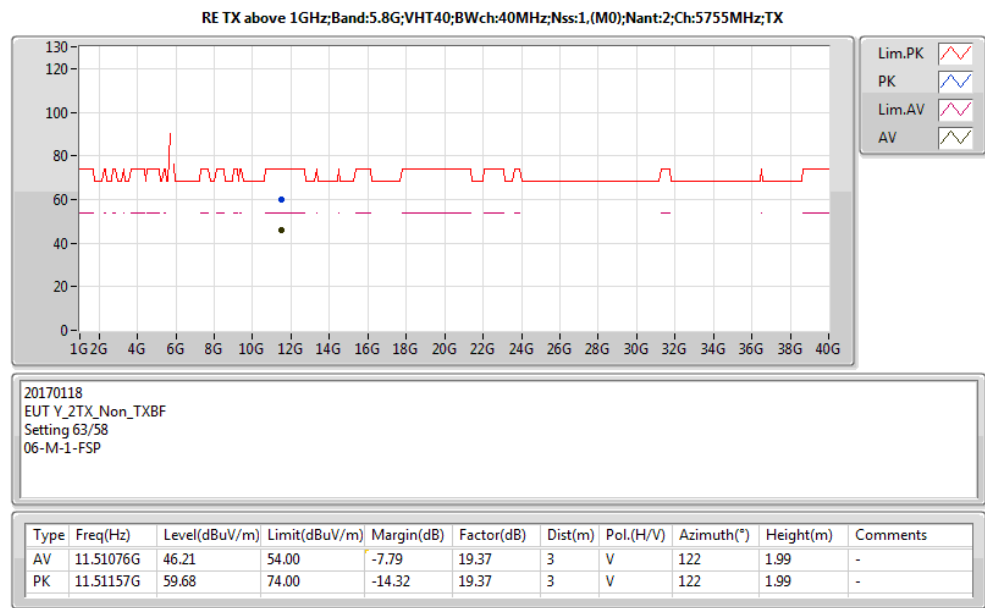


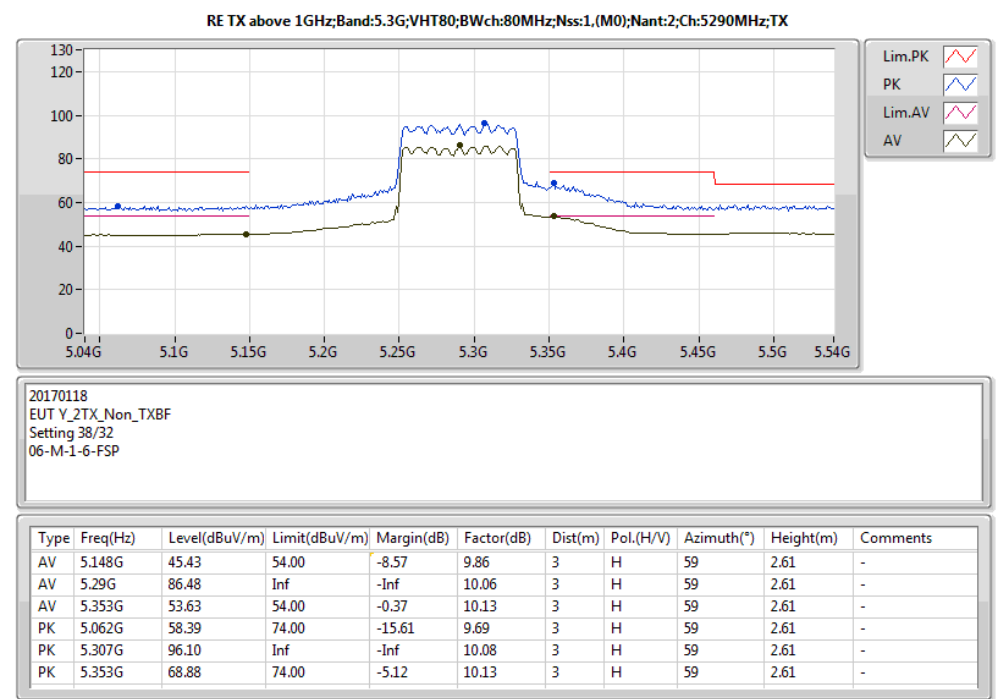
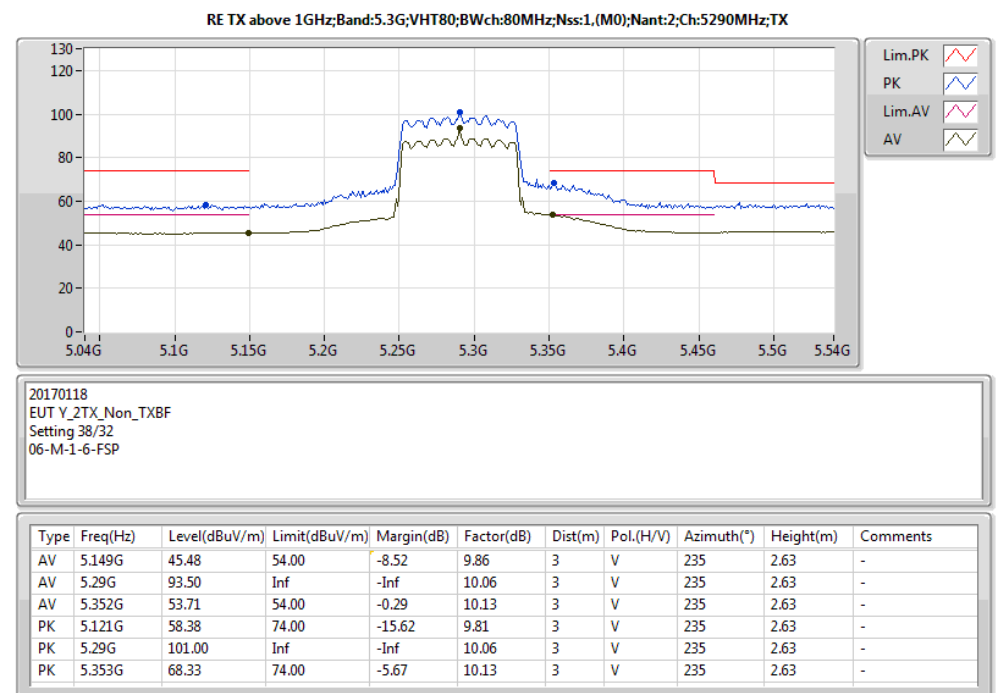
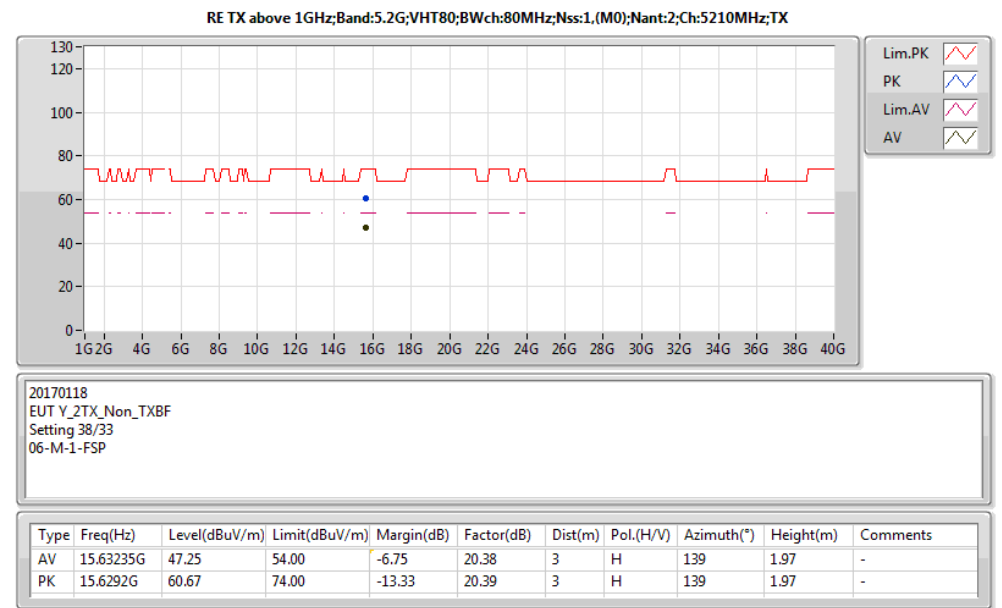
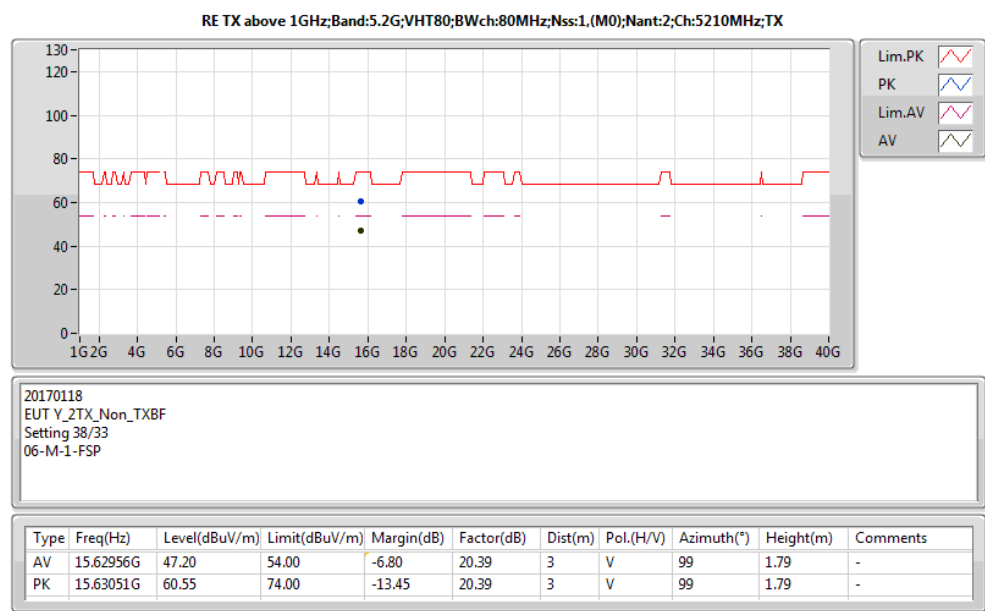
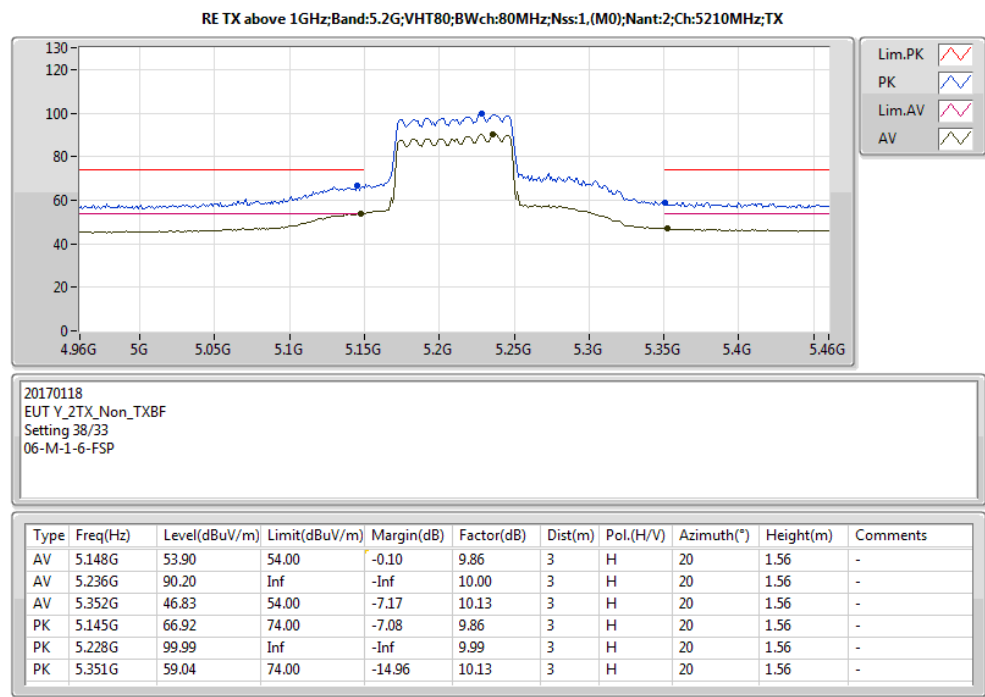
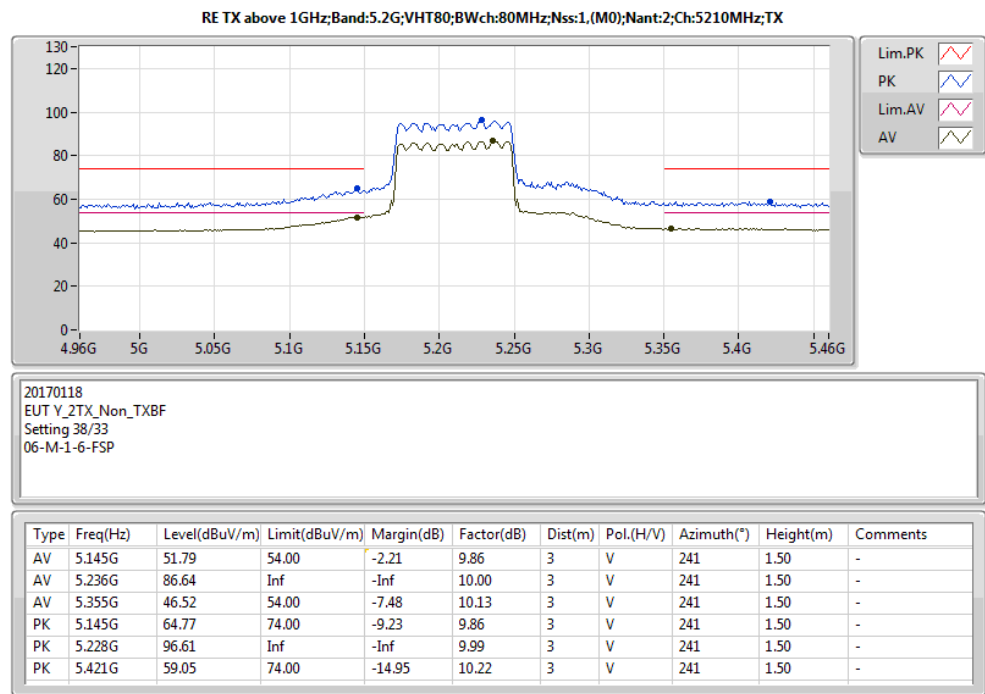


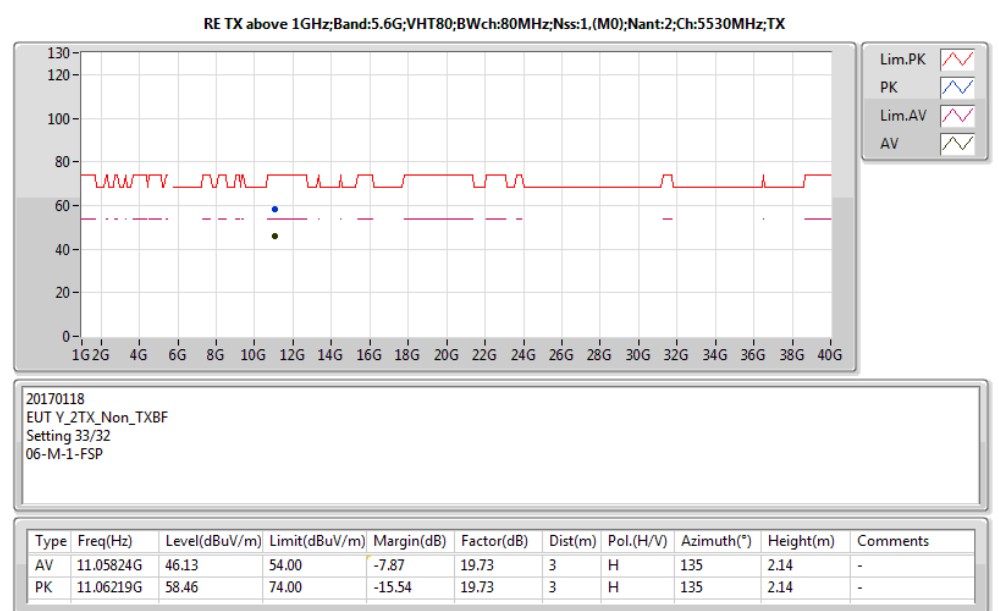
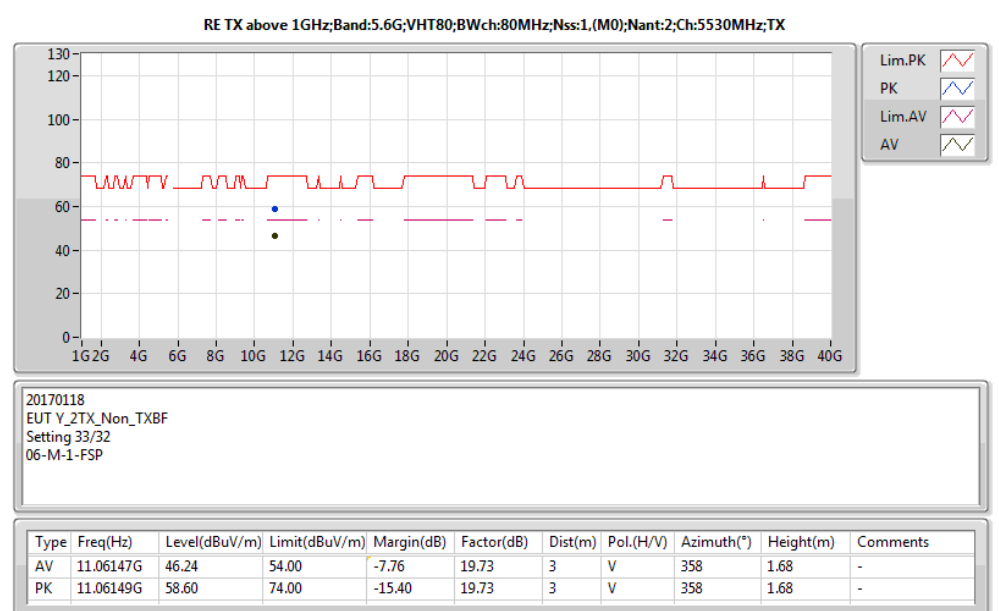
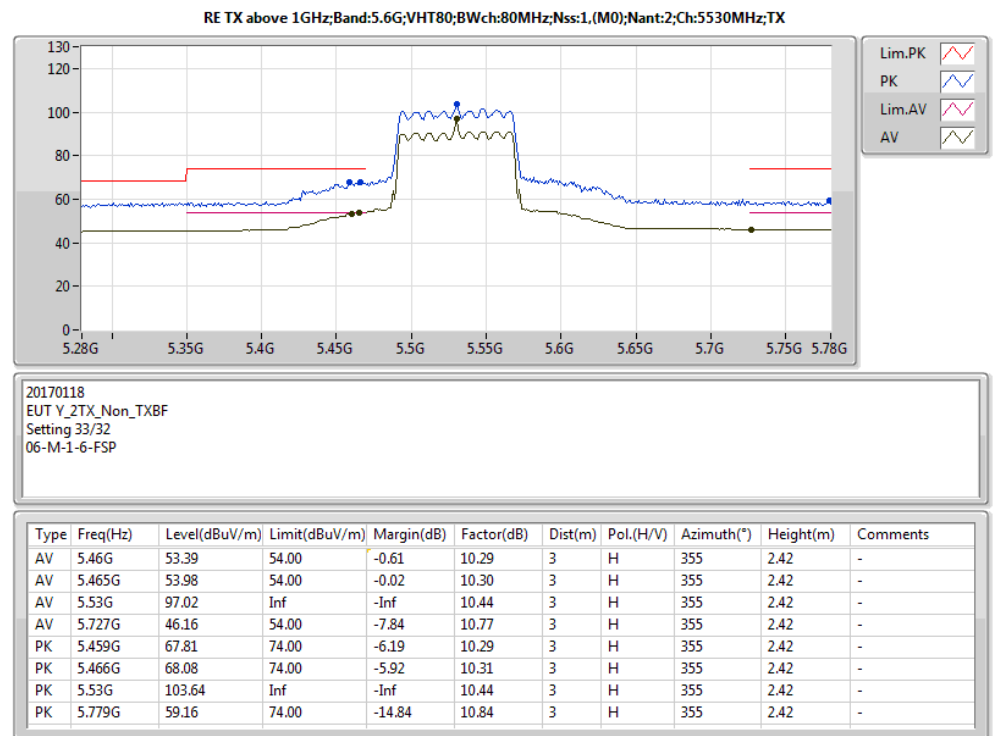
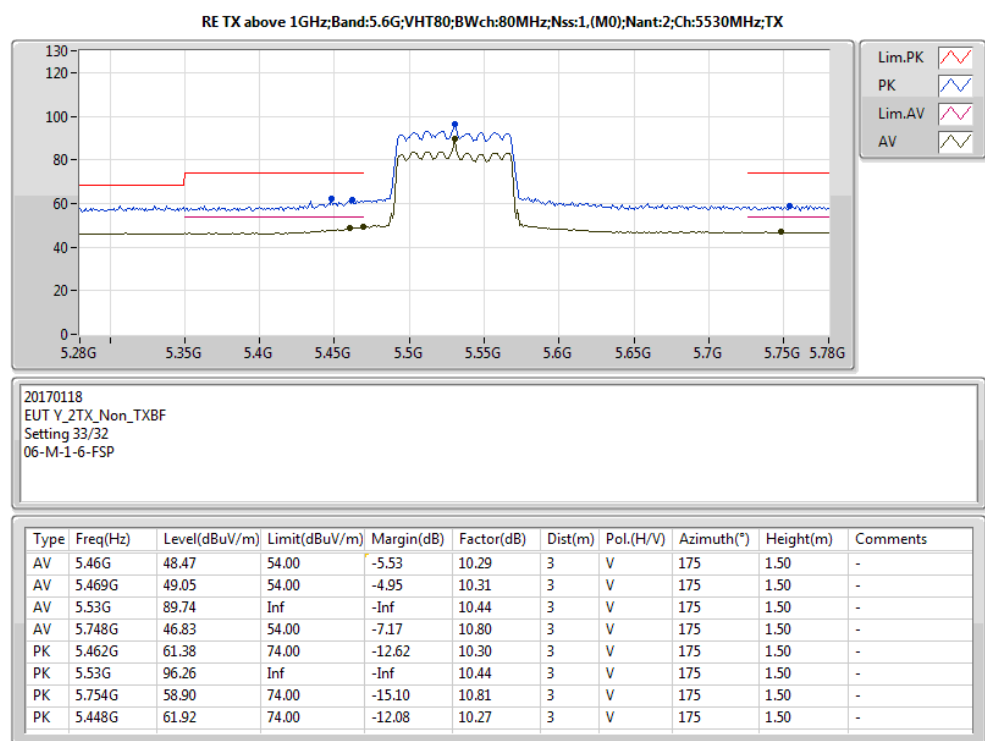
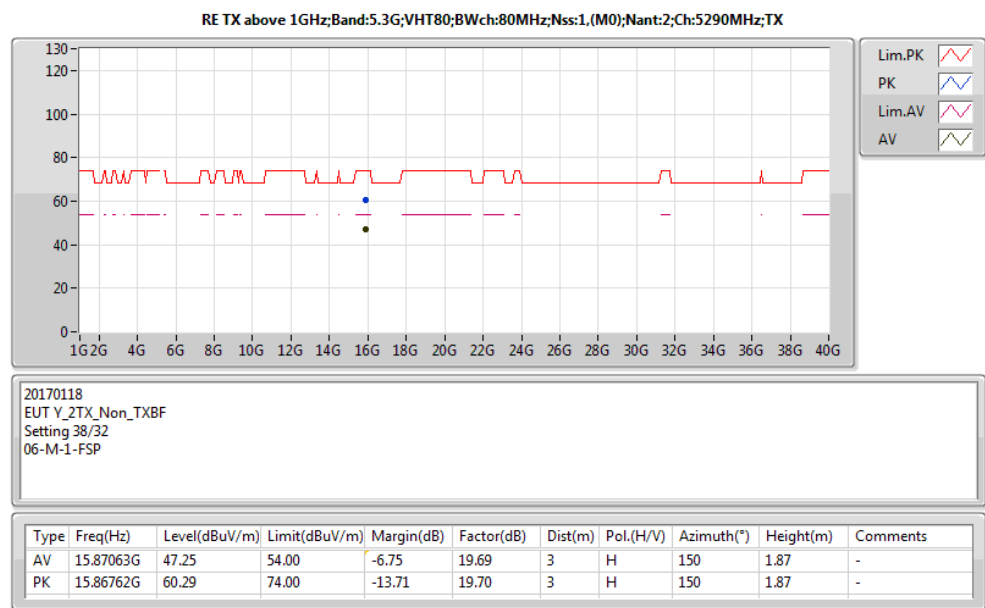
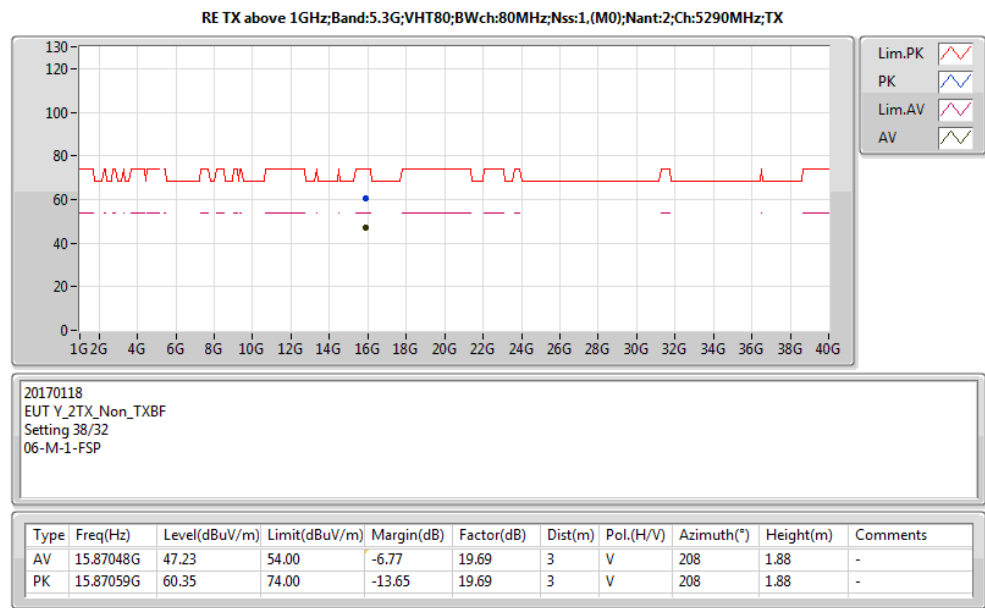


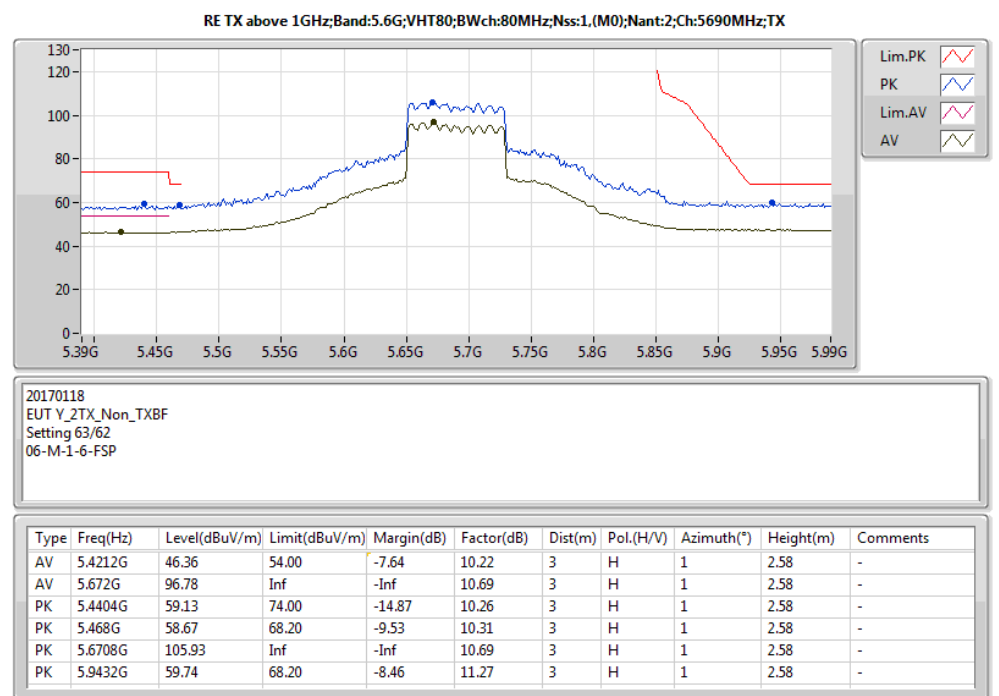
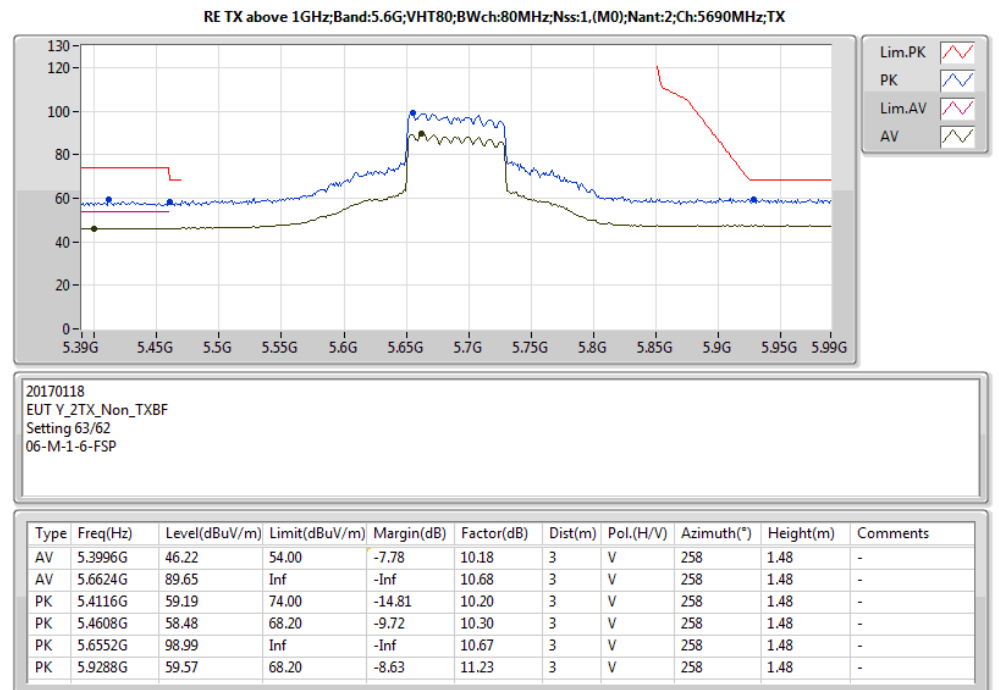
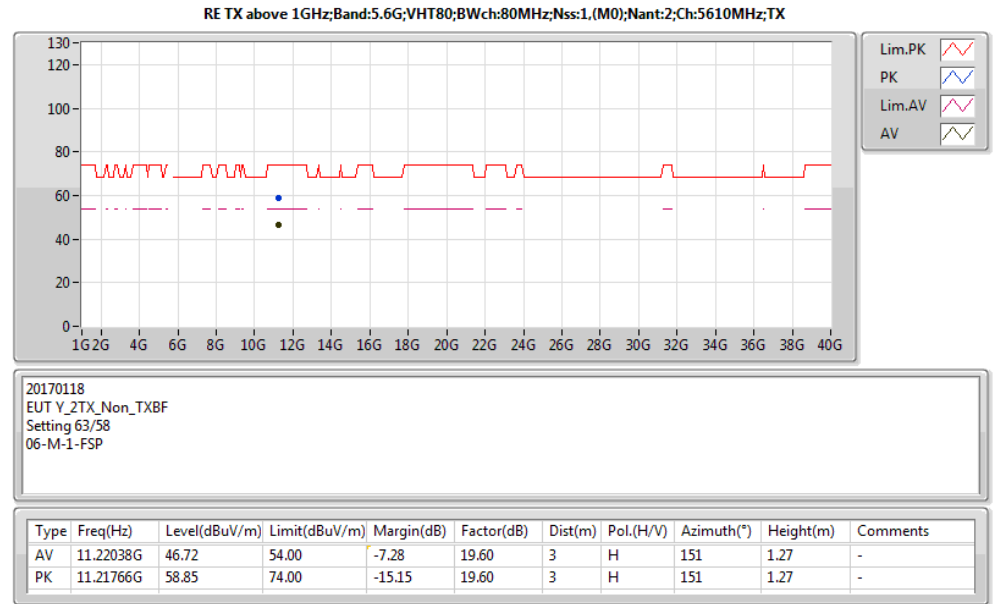
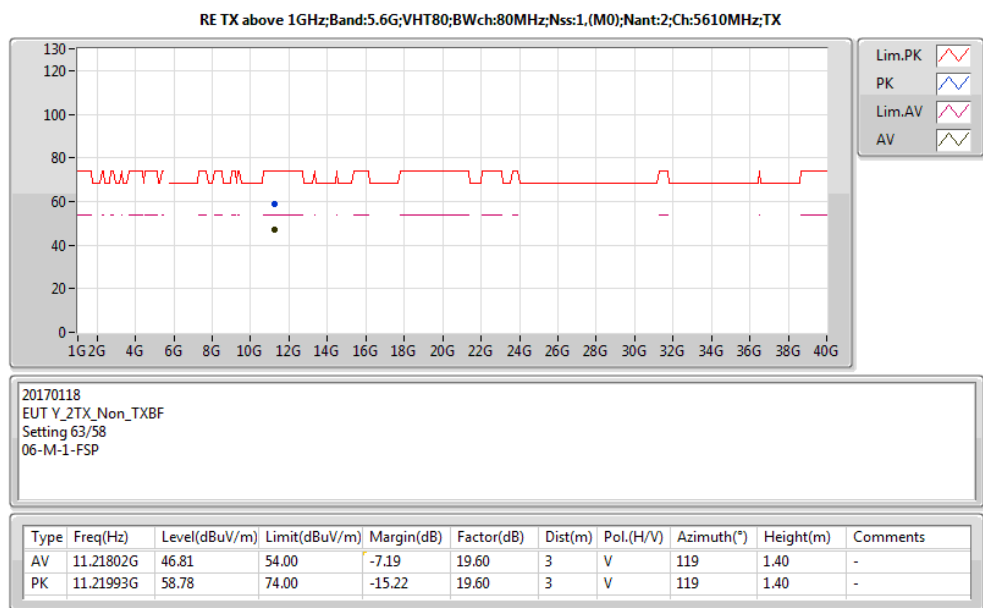
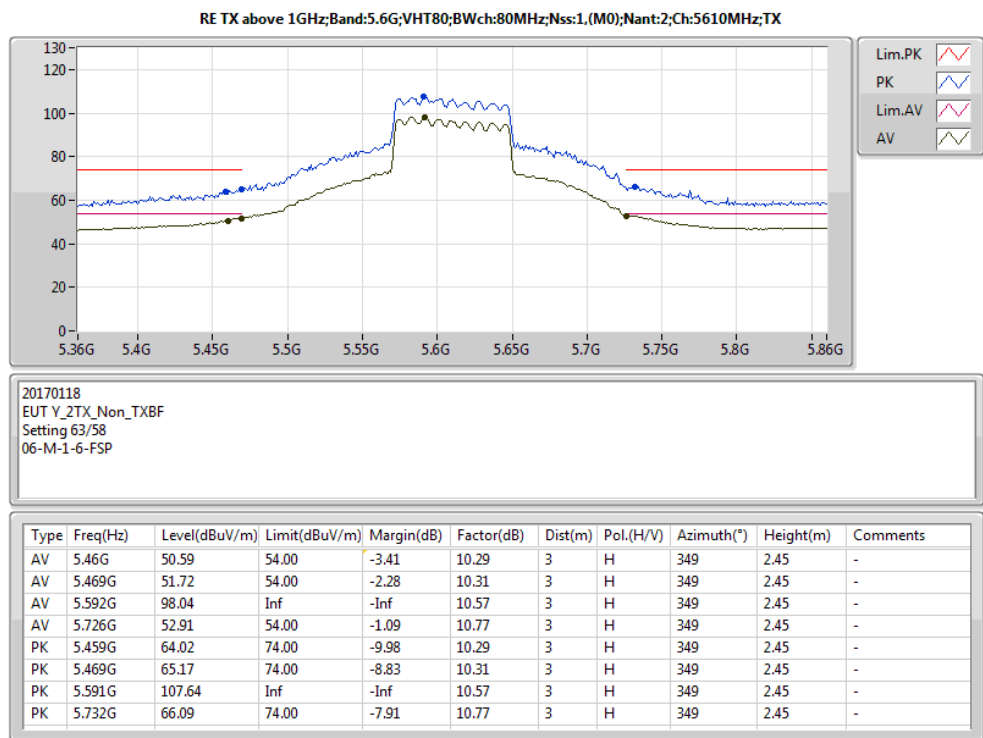
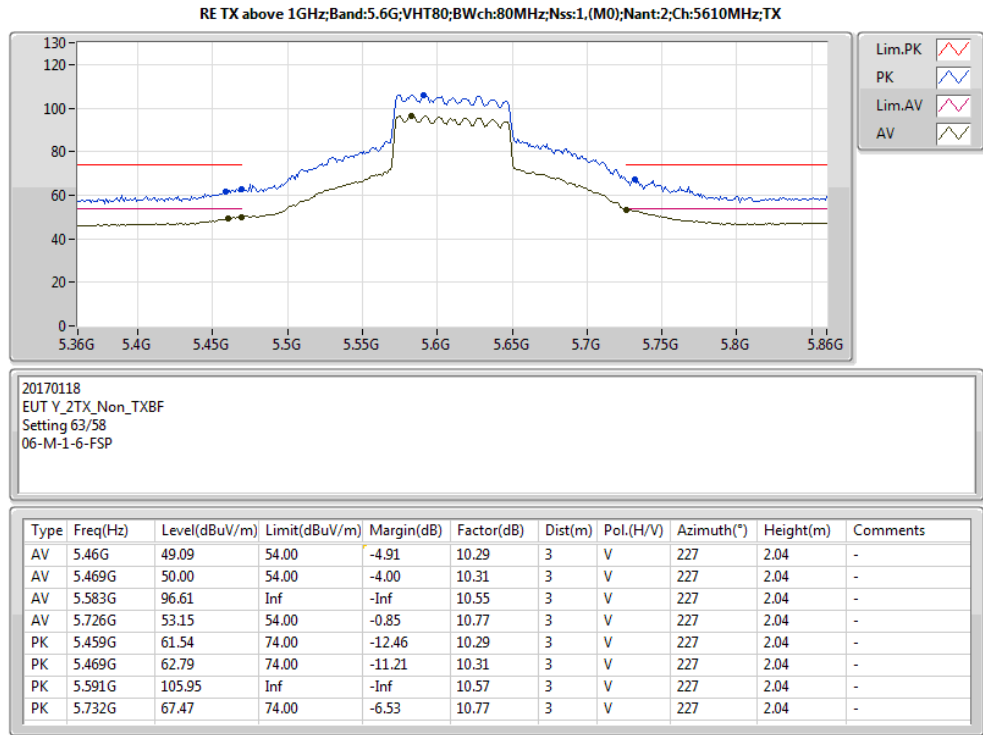


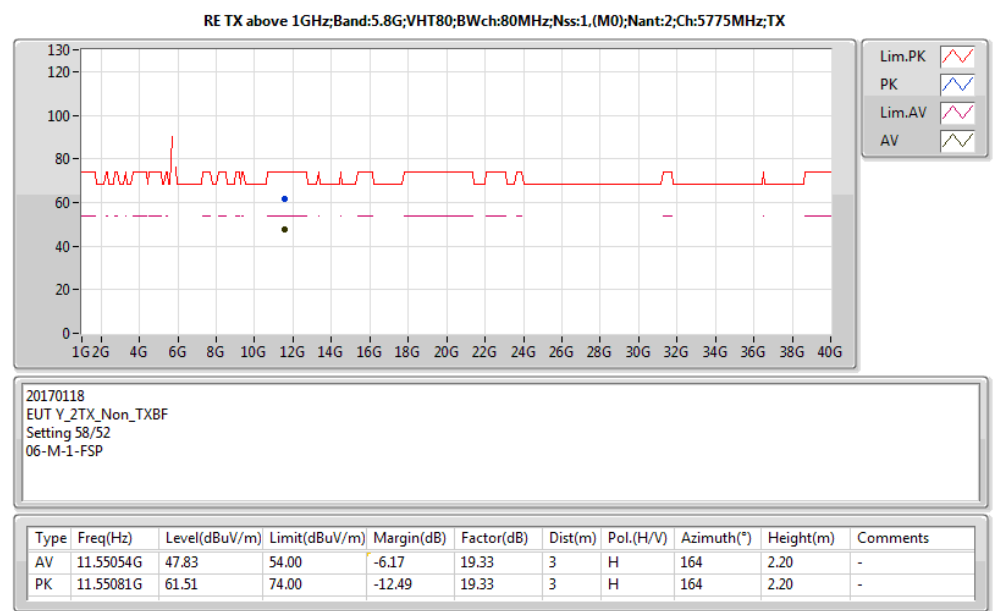
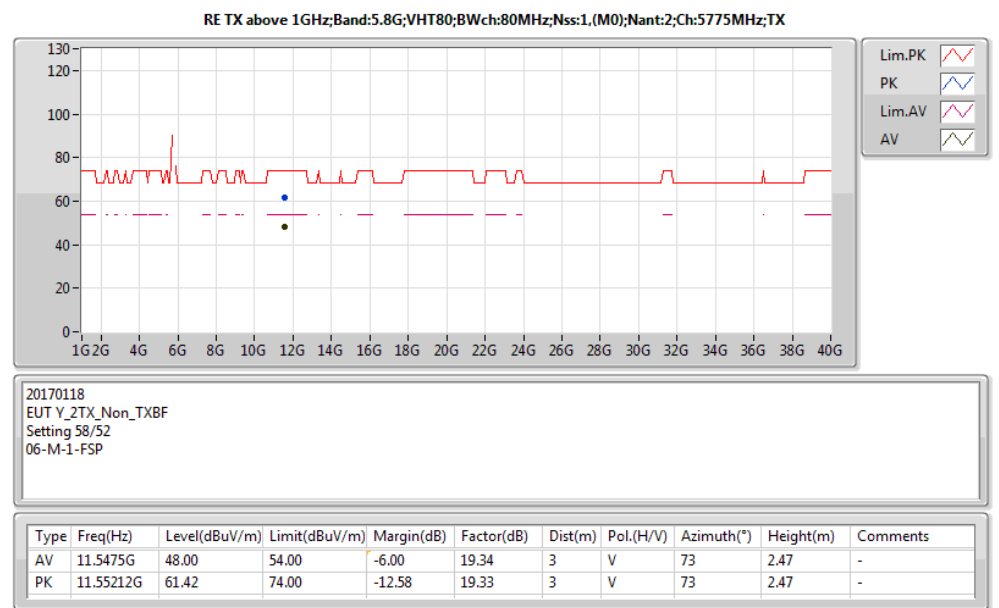
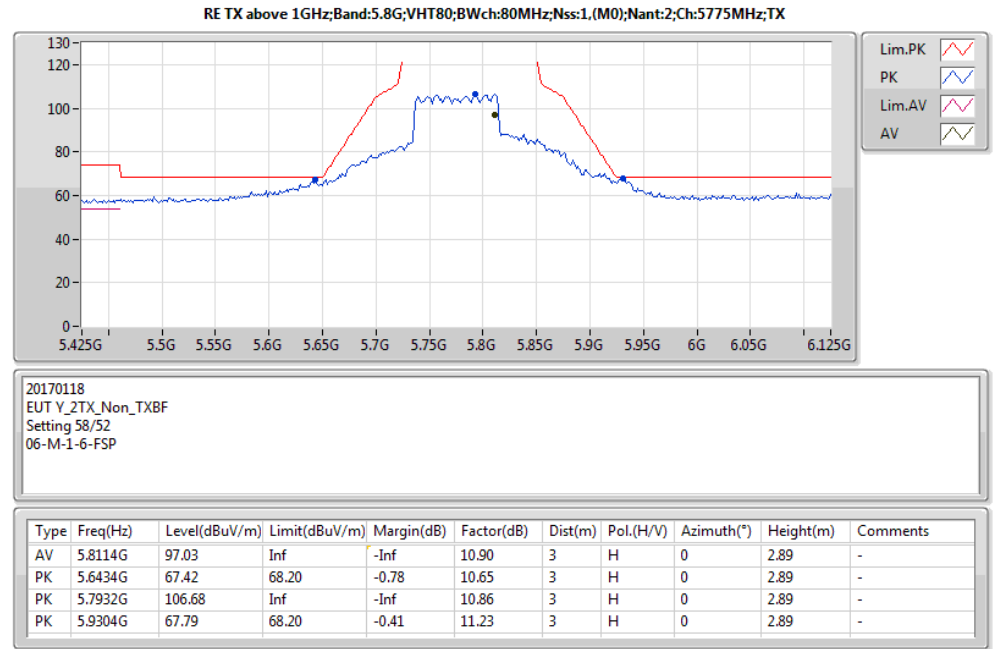
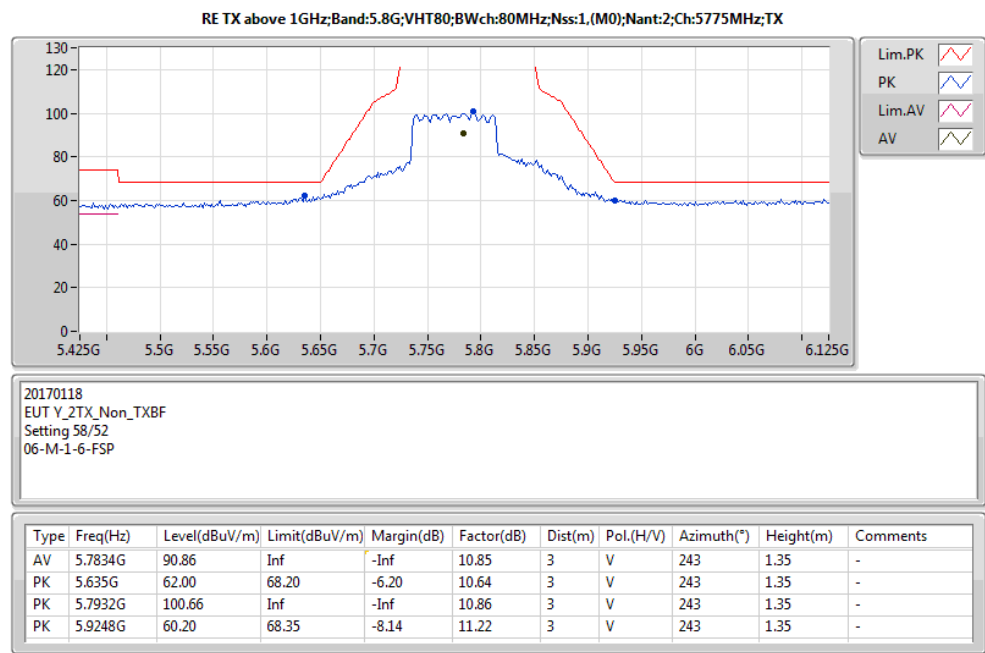
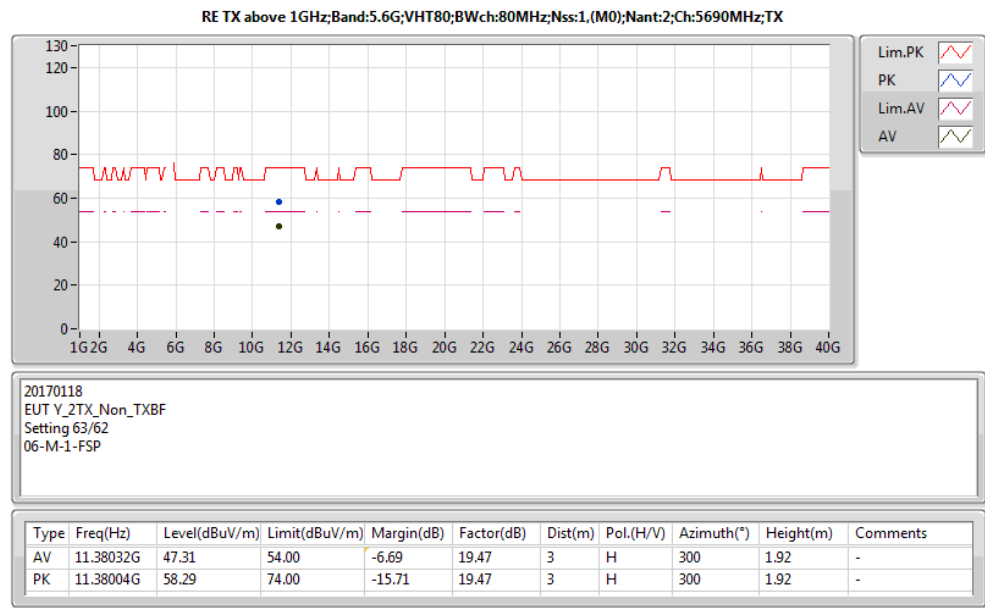
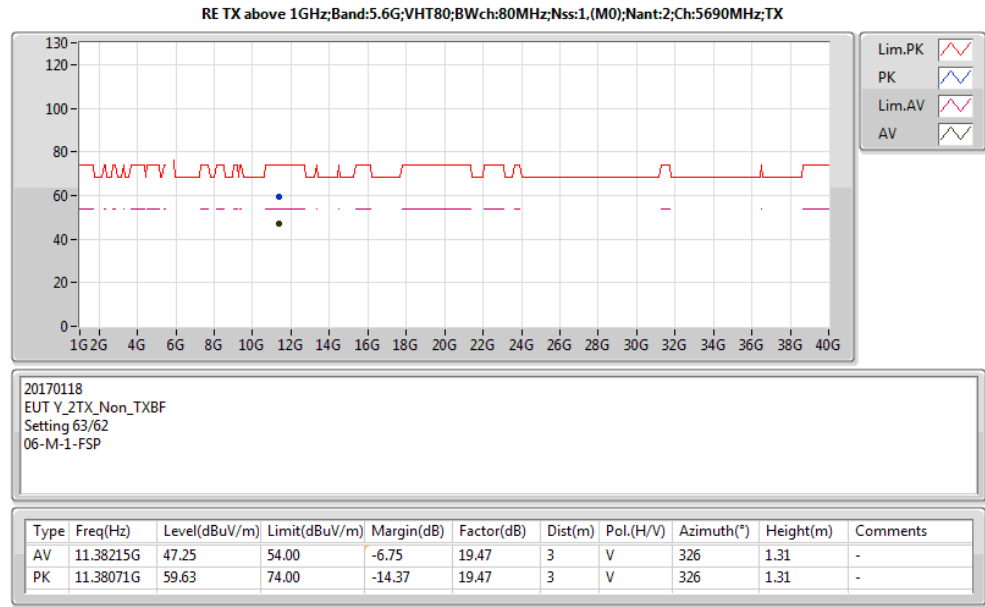












Mode: 20 MHz / Port 2
Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5199.9809	5199.9799	5199.9795	5199.9786
110.00	5199.9800	5199.9795	5199.9794	5199.9789
93.50	5199.9790	5199.9787	5199.9779	5199.9775
Max. Deviation (MHz)	0.0210	0.0213	0.0221	0.0225
Max. Deviation (ppm)	4.04	4.10	4.25	4.33
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5199.9816	5199.9815	5199.9807	5199.9800
10	5199.9809	5199.9799	5199.9795	5199.9785
20	5199.9800	5199.9793	5199.9783	5199.9779
30	5199.9791	5199.9783	5199.9780	5199.9771
40	5199.9788	5199.9787	5199.9779	5199.9776
50	5199.9768	5199.9761	5199.9751	5199.9749
60	5199.9771	5199.9769	5199.9763	5199.9756
70	5199.9769	5199.9764	5199.9763	5199.9756
Max. Deviation (MHz)	0.0232	0.0239	0.0249	0.0251
Max. Deviation (ppm)	4.46	4.60	4.79	4.83
Result	Pass			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5300 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5299.9801	5299.9796	5299.9787	5299.9777
110.00	5299.9800	5299.9790	5299.9782	5299.9774
93.50	5299.9793	5299.9790	5299.9783	5299.9782
Max. Deviation (MHz)	0.0207	0.0210	0.0218	0.0226
Max. Deviation (ppm)	3.91	3.96	4.11	4.26
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5300 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5299.9808	5299.9801	5299.9794	5299.9786
10	5299.9806	5299.9796	5299.9793	5299.9786
20	5299.9800	5299.9793	5299.9791	5299.9788
30	5299.9791	5299.9781	5299.9780	5299.9776
40	5299.9777	5299.9772	5299.9764	5299.9760
50	5299.9782	5299.9778	5299.9775	5299.9765
60	5299.9771	5299.9770	5299.9763	5299.9759
70	5299.9765	5299.9761	5299.9752	5299.9744
Max. Deviation (MHz)	0.0223	0.0228	0.0236	0.0240
Max. Deviation (ppm)	4.21	4.30	4.45	4.53
Result	Pass			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5580 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5579.9810	5579.9808	5579.9802	5579.9797
110.00	5579.9800	5579.9799	5579.9792	5579.9789
93.50	5579.9797	5579.9790	5579.9783	5579.9779
Max. Deviation (MHz)	0.0203	0.0210	0.0217	0.0221
Max. Deviation (ppm)	3.64	3.76	3.89	3.96
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5580 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5579.9825	5579.9820	5579.9811	5579.9808
10	5579.9812	5579.9806	5579.9798	5579.9788
20	5579.9800	5579.9794	5579.9784	5579.9782
30	5579.9791	5579.9782	5579.9776	5579.9774
40	5579.9777	5579.9772	5579.9764	5579.9763
50	5579.9773	5579.9770	5579.9769	5579.9767
60	5579.9782	5579.9780	5579.9773	5579.9766
70	5579.9765	5579.9757	5579.9756	5579.9755
Max. Deviation (MHz)	0.0227	0.0230	0.0236	0.0237
Max. Deviation (ppm)	4.07	4.12	4.23	4.25
Result	Pass			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5784.9806	5784.9805	5784.9804	5784.9802
110.00	5784.9800	5784.9792	5784.9791	5784.9790
93.50	5784.9790	5784.9785	5784.9781	5784.9776
Max. Deviation (MHz)	0.0210	0.0215	0.0219	0.0224
Max. Deviation (ppm)	3.63	3.72	3.79	3.87
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5784.9816	5784.9806	5784.9798	5784.9796
10	5784.9801	5784.9800	5784.9799	5784.9798
20	5784.9800	5784.9792	5784.9782	5784.9773
30	5784.9791	5784.9786	5784.9776	5784.9766
40	5784.9779	5784.9769	5784.9760	5784.9756
50	5784.9786	5784.9782	5784.9774	5784.9770
60	5784.9789	5784.9780	5784.9773	5784.9766
70	5784.9773	5784.9763	5784.9753	5784.9750
Max. Deviation (MHz)	0.0221	0.0231	0.0240	0.0244
Max. Deviation (ppm)	3.82	3.99	4.15	4.22
Result	Pass			

Mode: 40 MHz / Port 2

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5190 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5189.9805	5189.9799	5189.9790	5189.9783
110.00	5189.9800	5189.9799	5189.9798	5189.9790
93.50	5189.9795	5189.9790	5189.9787	5189.9784
Max. Deviation (MHz)	0.0205	0.0210	0.0213	0.0217
Max. Deviation (ppm)	3.95	4.05	4.10	4.18
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5190 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5189.9825	5189.9816	5189.9814	5189.9813
10	5189.9815	5189.9811	5189.9808	5189.9798
20	5189.9800	5189.9796	5189.9787	5189.9785
30	5189.9791	5189.9787	5189.9786	5189.9782
40	5189.9780	5189.9778	5189.9777	5189.9770
50	5189.9798	5189.9789	5189.9786	5189.9780
60	5189.9778	5189.9772	5189.9763	5189.9755
70	5189.9772	5189.9762	5189.9754	5189.9744
Max. Deviation (MHz)	0.0220	0.0222	0.0223	0.0230
Max. Deviation (ppm)	4.24	4.28	4.30	4.43
Result	Pass			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5310 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5309.9807	5309.9802	5309.9797	5309.9794
110.00	5309.9800	5309.9790	5309.9780	5309.9777
93.50	5309.9794	5309.9788	5309.9780	5309.9777
Max. Deviation (MHz)	0.0206	0.0212	0.0220	0.0223
Max. Deviation (ppm)	3.88	3.99	4.14	4.20
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5310 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5309.9825	5309.9816	5309.9812	5309.9804
10	5309.9806	5309.9804	5309.9795	5309.9785
20	5309.9800	5309.9794	5309.9784	5309.9780
30	5309.9791	5309.9783	5309.9775	5309.9769
40	5309.9783	5309.9782	5309.9778	5309.9773
50	5309.9797	5309.9790	5309.9780	5309.9773
60	5309.9771	5309.9763	5309.9756	5309.9749
70	5309.9772	5309.9771	5309.9766	5309.9758
Max. Deviation (MHz)	0.0217	0.0218	0.0225	0.0231
Max. Deviation (ppm)	4.09	4.11	4.24	4.35
Result	Pass			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5550 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5549.9806	5549.9803	5549.9797	5549.9787
110.00	5549.9800	5549.9796	5549.9788	5549.9779
93.50	5549.9793	5549.9789	5549.9782	5549.9777
Max. Deviation (MHz)	0.0207	0.0211	0.0218	0.0223
Max. Deviation (ppm)	3.73	3.80	3.93	4.02
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5550 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5549.9829	5549.9822	5549.9818	5549.9813
10	5549.9815	5549.9808	5549.9804	5549.9797
20	5549.9800	5549.9792	5549.9789	5549.9782
30	5549.9791	5549.9781	5549.9771	5549.9769
40	5549.9789	5549.9779	5549.9770	5549.9761
50	5549.9796	5549.9791	5549.9781	5549.9778
60	5549.9776	5549.9771	5549.9766	5549.9757
70	5549.9773	5549.9763	5549.9755	5549.9753
Max. Deviation (MHz)	0.0211	0.0221	0.0230	0.0239
Max. Deviation (ppm)	3.80	3.98	4.14	4.31
Result	Pass			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5755 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5754.9803	5754.9796	5754.9793	5754.9784
110.00	5754.9800	5754.9790	5754.9780	5754.9777
93.50	5754.9797	5754.9796	5754.9792	5754.9790
Max. Deviation (MHz)	0.0203	0.0210	0.0220	0.0223
Max. Deviation (ppm)	3.53	3.65	3.82	3.87
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5755 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5754.9814	5754.9805	5754.9796	5754.9793
10	5754.9812	5754.9806	5754.9802	5754.9800
20	5754.9800	5754.9795	5754.9786	5754.9780
30	5754.9791	5754.9789	5754.9787	5754.9777
40	5754.9776	5754.9767	5754.9761	5754.9752
50	5754.9785	5754.9776	5754.9767	5754.9765
60	5754.9772	5754.9763	5754.9753	5754.9749
70	5754.9774	5754.9765	5754.9757	5754.9756
Max. Deviation (MHz)	0.0224	0.0233	0.0239	0.0248
Max. Deviation (ppm)	3.89	4.05	4.15	4.31
Result	Pass			

Mode: 80 MHz / Port 2
Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5210 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5209.9810	5209.9809	5209.9808	5209.9805
110.00	5209.9800	5209.9798	5209.9790	5209.9786
93.50	5209.9799	5209.9790	5209.9789	5209.9784
Max. Deviation (MHz)	0.0201	0.0210	0.0211	0.0216
Max. Deviation (ppm)	3.86	4.03	4.05	4.15
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5210 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5209.9818	5209.9810	5209.9805	5209.9797
10	5209.9817	5209.9815	5209.9813	5209.9804
20	5209.9800	5209.9790	5209.9781	5209.9775
30	5209.9791	5209.9784	5209.9782	5209.9774
40	5209.9787	5209.9777	5209.9769	5209.9766
50	5209.9782	5209.9772	5209.9767	5209.9764
60	5209.9783	5209.9776	5209.9770	5209.9760
70	5209.9782	5209.9775	5209.9773	5209.9765
Max. Deviation (MHz)	0.0218	0.0228	0.0233	0.0236
Max. Deviation (ppm)	4.18	4.38	4.47	4.53
Result	Pass			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5290 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5289.9808	5289.9799	5289.9794	5289.9786
110.00	5289.9800	5289.9793	5289.9787	5289.9781
93.50	5289.9794	5289.9793	5289.9788	5289.9778
Max. Deviation (MHz)	0.0206	0.0207	0.0213	0.0222
Max. Deviation (ppm)	3.89	3.91	4.03	4.20
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5290 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5289.9820	5289.9815	5289.9806	5289.9805
10	5289.9816	5289.9812	5289.9803	5289.9800
20	5289.9800	5289.9790	5289.9784	5289.9783
30	5289.9791	5289.9782	5289.9781	5289.9772
40	5289.9784	5289.9776	5289.9772	5289.9770
50	5289.9791	5289.9782	5289.9780	5289.9773
60	5289.9775	5289.9769	5289.9765	5289.9758
70	5289.9771	5289.9764	5289.9757	5289.9754
Max. Deviation (MHz)	0.0216	0.0224	0.0228	0.0230
Max. Deviation (ppm)	4.08	4.23	4.31	4.35
Result	Pass			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5530 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5529.9807	5529.9802	5529.9793	5529.9786
110.00	5529.9800	5529.9798	5529.9790	5529.9783
93.50	5529.9798	5529.9790	5529.9785	5529.9775
Max. Deviation (MHz)	0.0202	0.0210	0.0215	0.0225
Max. Deviation (ppm)	3.65	3.80	3.89	4.07
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5530 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5529.9828	5529.9823	5529.9813	5529.9804
10	5529.9811	5529.9804	5529.9797	5529.9790
20	5529.9800	5529.9798	5529.9797	5529.9794
30	5529.9791	5529.9787	5529.9782	5529.9772
40	5529.9789	5529.9781	5529.9780	5529.9775
50	5529.9797	5529.9794	5529.9792	5529.9783
60	5529.9781	5529.9780	5529.9771	5529.9762
70	5529.9781	5529.9777	5529.9768	5529.9759
Max. Deviation (MHz)	0.0211	0.0219	0.0220	0.0228
Max. Deviation (ppm)	3.82	3.96	3.98	4.12
Result	Pass			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5775 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5774.9810	5774.9805	5774.9795	5774.9791
110.00	5774.9800	5774.9799	5774.9797	5774.9791
93.50	5774.9794	5774.9788	5774.9783	5774.9777
Max. Deviation (MHz)	0.0206	0.0212	0.0217	0.0223
Max. Deviation (ppm)	3.57	3.67	3.76	3.86
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5775 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5774.9817	5774.9809	5774.9801	5774.9797
10	5774.9805	5774.9804	5774.9801	5774.9792
20	5774.9800	5774.9798	5774.9795	5774.9786
30	5774.9791	5774.9789	5774.9781	5774.9780
40	5774.9781	5774.9779	5774.9771	5774.9766
50	5774.9790	5774.9780	5774.9772	5774.9770
60	5774.9776	5774.9769	5774.9760	5774.9758
70	5774.9761	5774.9751	5774.9746	5774.9739
Max. Deviation (MHz)	0.0219	0.0221	0.0229	0.0234
Max. Deviation (ppm)	3.79	3.83	3.97	4.05
Result	Pass			