

FCC Test Report

Equipment : MAX-STREAM AC4000 MU-MIMO TRI-BAND ROUTER
Brand Name : LINKSYS
Model No. : EA9300, EA9250
FCC ID : Q87-EA9300
Standard : 47 CFR FCC Part 15.407
Operating Band : 5150 MHz – 5250 MHz
5725 MHz – 5850 MHz
Applicant : Linksys LLC
121 Theory Drive, Irvine, CA 92617, USA
Function : ☐ Outdoor; ☒ Indoor; ☐ Fixed P2P
☐ Client

The product sample received on Dec. 27, 2016 and completely tested on Mar. 13, 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.

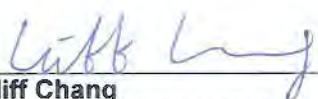

Cliff Chang
SPORTON INTERNATIONAL INC.





Table of Contents

1	GENERAL DESCRIPTION	5
1.1	Information.....	5
1.2	Testing Applied Standards	9
1.3	Testing Location Information.....	9
1.4	Measurement Uncertainty	9
2	TEST CONFIGURATION OF EUT	10
2.1	Test Channel Mode	10
2.2	The Worst Case Measurement Configuration.....	12
2.3	EUT Operation during Test	14
2.4	Accessories	15
2.5	Support Equipment.....	16
2.6	Test Setup Diagram	17
3	TRANSMITTER TEST RESULT	22
3.1	AC Power-line Conducted Emissions	22
3.2	Emission Bandwidth	24
3.3	Maximum Conducted Output Power	25
3.4	Peak Power Spectral Density.....	27
3.5	Unwanted Emissions.....	30
3.6	Frequency Stability.....	34
4	TEST EQUIPMENT AND CALIBRATION DATA	35
APPENDIX A. TEST RESULTS OF AC POWER-LINE CONDUCTED EMISSIONS		
APPENDIX B. TEST RESULTS OF EMISSION BANDWIDTH		
APPENDIX C. TEST RESULTS OF MAXIMUM CONDUCTED OUTPUT POWER		
APPENDIX D. TEST RESULTS OF PEAK POWER SPECTRAL DENSITY		
APPENDIX E. TEST RESULTS OF UNWANTED EMISSIONS		
APPENDIX F. TEST RESULTS OF FREQUENCY STABILITY		
APPENDIX G. TEST RESULTS OF RADIATED EMISSION CO-LOCATION		
APPENDIX H. TEST PHOTOS		
PHOTOGRAPHS OF EUT V01		

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



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FCC ID: Q87-EA9300

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5150-5250	a, n (HT20), ac (VHT20)	5180-5240	36-48 [4]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40)	5190-5230	38-46 [2]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80)	5210	42 [1]
5725-5850		5775	155 [1]

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



Note:

- ♦ 5.2G/5.2G-I(IC) is the 5.2GHz Band (5.15-5.25GHz).
- ♦ 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 and VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- ♦ BWch is the nominal channel bandwidth.
- ♦ Nss-Min is the minimum number of spatial streams.
- ♦ Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.

1.1.2 Antenna Information

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)		
					2.4GHz (Radio2)	5GHz	
						B1 (Radio3)	B4 (Radio1)
1	ARISTOTLE	RFA-52-F90-1-9537	Dipole Antenna	I-PEX	1.30	2.51	-
2	ARISTOTLE	RFA-52-F90-2-9537	Dipole Antenna	I-PEX	1.71	2.19	-
3	ARISTOTLE	RFA-52-F90-3-9537	Dipole Antenna	I-PEX	1.72	2.52	-
4	ARISTOTLE	RFA-05-F90-1-9537	Dipole Antenna	I-PEX	-	-	1.98
5	ARISTOTLE	RFA-05-F90-2-9537	Dipole Antenna	I-PEX	-	-	1.14
6	ARISTOTLE	RFA-05-F90-3-9537	Dipole Antenna	I-PEX	-	-	2.37

Note: The EUT has six antennas.

<For 2.4GHz Band>

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

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

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

<For 5GHz Band 1>

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

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

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

<For 5GHz Band 4>

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

Ant. 4, Ant. 5 and Ant. 6 can be used as transmitting/receiving antenna.

Ant. 4, Ant. 5 and Ant. 6 could transmit/receive simultaneously.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)
802.11a	0.855	0.68
802.11ac VHT20	0.777	1.096
802.11ac VHT20-BF	0.947	0.237
802.11ac VHT40	0.955	0.2
802.11ac VHT40-BF	0.855	0.68
802.11ac VHT80	0.907	0.424
802.11ac VHT80-BF	0.863	0.64

1.1.4 EUT Operational Condition

EUT Power Type	From Power Adapter		
Beamforming Function	☒ With beamforming	☐ Without beamforming	

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

1.1.5 Table for Multiple Model Name

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

Model Name	Description
EA9300	All the models are identical, the different model names served as marketing strategy.
EA9250	

Note: From the above models, model: EA9300 was selected as representative model for the test and its data was recorded in this report.

1.1.6 Table for Multiple Source

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

Source	Brand Name	VENDORNO	PARTDESC
First source	SK HYNIX	H5TC2G63GFR-PBA	MEMORY,SDRAM DDR3,128MX16,FBGA, 96PIN,H5TC2G63GFR-PBA,0~+95,CLASS 2
Second source	WINBOND	W632GU6KB-12	MEMORY,SDRAM DDR3,128MX16,WBGA, 96PIN,W632GU6KB,0~+85,CLASS 2

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	Andy Tsai/ Eddie Weng/ Ron Huang/ Peter Wu	22°C / 54%	Dec. 28, 2016~ Jan. 04, 2017
Radiated	03CH01-CB	Stim Sung/ Steven Liang	22°C / 54%	Dec. 28, 2016~ Mar. 08, 2017
AC Conduction	CO01-CB	Da Deng	24°C / 55%	Mar. 13, 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 x10 ⁻⁸	Confidence levels of 95%
Frequency Stability	6.06 x10 ⁻⁸	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Band	Power Setting
802.11a_Nss1_3TX	-
5180MHz	79
5200MHz	95
5240MHz	94
5745MHz	99
5785MHz	99
5825MHz	99
802.11ac VHT20_Nss1,(MCS0)_3TX	-
5180MHz	77
5200MHz	95
5240MHz	95
5745MHz	99
5785MHz	99
5825MHz	99
802.11ac VHT40_Nss1,(MCS0)_3TX	-
5190MHz	61
5230MHz	84
5755MHz	87
5795MHz	92
802.11ac VHT80_Nss1,(MCS0)_3TX	-
5210MHz	60
5775MHz	78
802.11ac VHT20-BF_Nss1,(MCS0)_3TX	-
5180MHz	77
5200MHz	92
5240MHz	92
5745MHz	97
5785MHz	97
5825MHz	97
802.11ac VHT40-BF_Nss1,(MCS0)_3TX	-
5190MHz	61
5230MHz	84
5755MHz	91
5795MHz	94
802.11ac VHT80-BF_Nss1,(MCS0)_3TX	-
5210MHz	64
5775MHz	81



Note:

- ♦ VHT20/VHT40 covers HT20/HT40, due to same modulation. The power setting for 802.11n HT20 and HT40 are the same or lower than 802.11ac VHT20 and VHT40.
- ♦ There are two modes of EUT, one is beamforming mode, and the other is non-beamforming mode for 802.11ac. All test results were recorded in the report.

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	Normal Link
1	Main source + Adapter 1
2	Main source + Adapter 2
Mode 2 generated the worst test result, so it was recorded in this report.	

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

The Worst Case Mode for Following Conformance Tests	
Tests Item	Unwanted Emissions
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	Normal Link
1	Main source + EUT in Z axis + Adapter 1
2	Main source + EUT in Y axis + Adapter 1
Mode 1 has been evaluated to be the worst case between Mode 1~2, thus measurement for Mode 3 will follow this same test mode.	
3	Main source + EUT in Z axis + Adapter 2
4	Second source + EUT in Z axis + Adapter 1
5	Second source + EUT in Y axis + Adapter 1
Mode 4 has been evaluated to be the worst case between Mode 4~5, thus measurement for Mode 6 will follow this same test mode.	
6	Second source + EUT in Z axis + Adapter 2
Mode 3 and Mode 4 generated the worst test result, so it was recorded in this report.	



Operating Mode > 1GHz	CTX
	The EUT was performed in Z axis and Y axis position for Radiated emission above 1GHz test, and the worst case was found at Z axis. So the measurement will follow this same test configuration.
1	EUT in Z axis

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis
Test Condition	Radiated measurement
Operating Mode	Normal Link
1	Place EUT in Z axis - WLAN 2.4GHz(Radio2)+WLAN 5GHz(Radio3)
2	Place EUT in Y axis - WLAN 2.4GHz(Radio2)+WLAN 5GHz(Radio3)
Mode 1 is the worst case and it was record in this test report.	
Refer to Sporton Test Report No.: FA6D1310 for Co-location RF Exposure Evaluation and Appendix G for Radiated Emission Co-location.	



2.3 EUT Operation during Test

For CTX Mode:

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

During the test, the following programs under WIN 7 were executed.

The program was executed as follows:

1. During the test, the EUT operation to normal function.
2. Executed command fixed test channel under Telnet.
3. Executed "Lantest.exe" to link with the remote workstation to transmit and receive packet by RX Device and transmit duty cycle no less 98%.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Accessories

Accessories				
Equipment Name	Brand Name	Model Name	Rating	DC Power Line
Adapter 1	APD	DA-60M12	Input: 100-240V~50-60Hz 1.5A Max. (1.5A Max) Output: 12V, 5A	Non-Shielded, 1.0m.
Adapter 2	Ktec	KSA-65W-120500M2	Input: 100-240V~50-60Hz 1.5A Output: 12V, 5.0A	Non-Shielded, 1.0m.
Others				
Power Core*1 RJ-45 Cable, non-shielded, 1m (For Adapter 1 use: Non-Shielded, 1.3m / for Adapter 2 use: Non-Shielded, 1.7m)				

2.5 Support Equipment

For Test Site No: CO01-CB

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB*5	DELL	E6430	DoC
2	Flash disk3.0*2	Transcend	JetFlash-700	DoC

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

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB*5	DELL	E4300	DoC
2	Flash disk*2	Silicon Power	I-Series	DoC

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

For Non-Beamforming Mode

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E4300	DoC

For Beamforming Mode

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook*2	DELL	E4300	DoC
2	RX Device	Boardcom	BCM943162ZP	QDS-BRCM1075

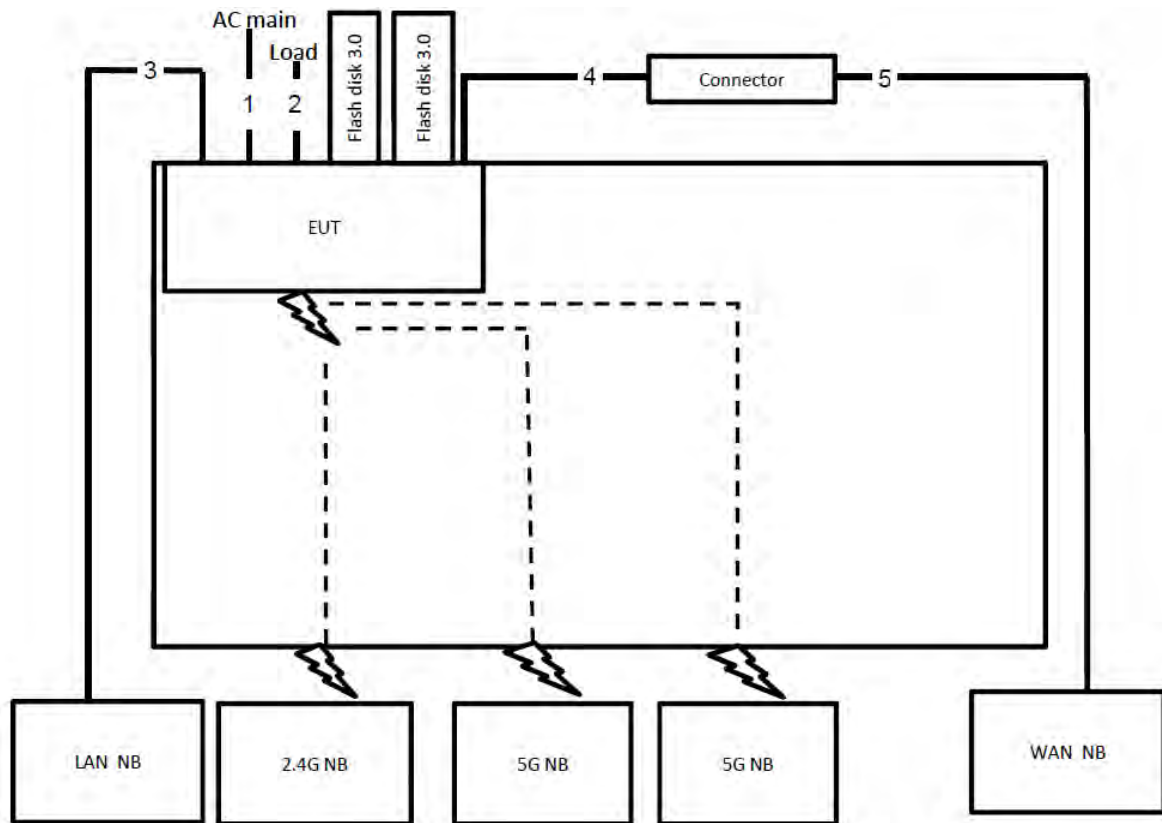
For Test Site No: TH01-CB

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E4300	DoC

2.6 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test

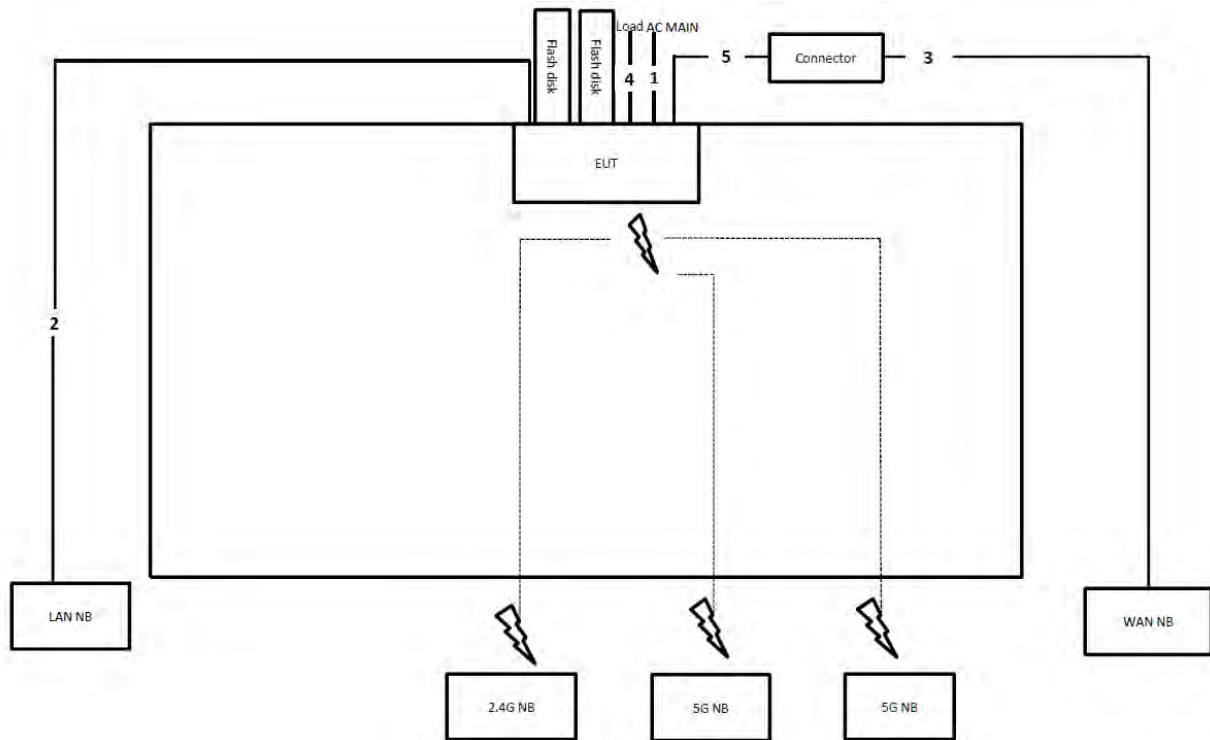
Test Mode: Mode 2



Item	Connection	Shielded	Length
1	Power cable	No	2.7m
2	RJ-45 cable*3	No	1.5m
3	RJ-45 cable	No	10m
4	RJ-45 cable	No	1m
5	RJ-45 cable	No	10m

Test Setup Diagram - Radiated Test < 1GHz

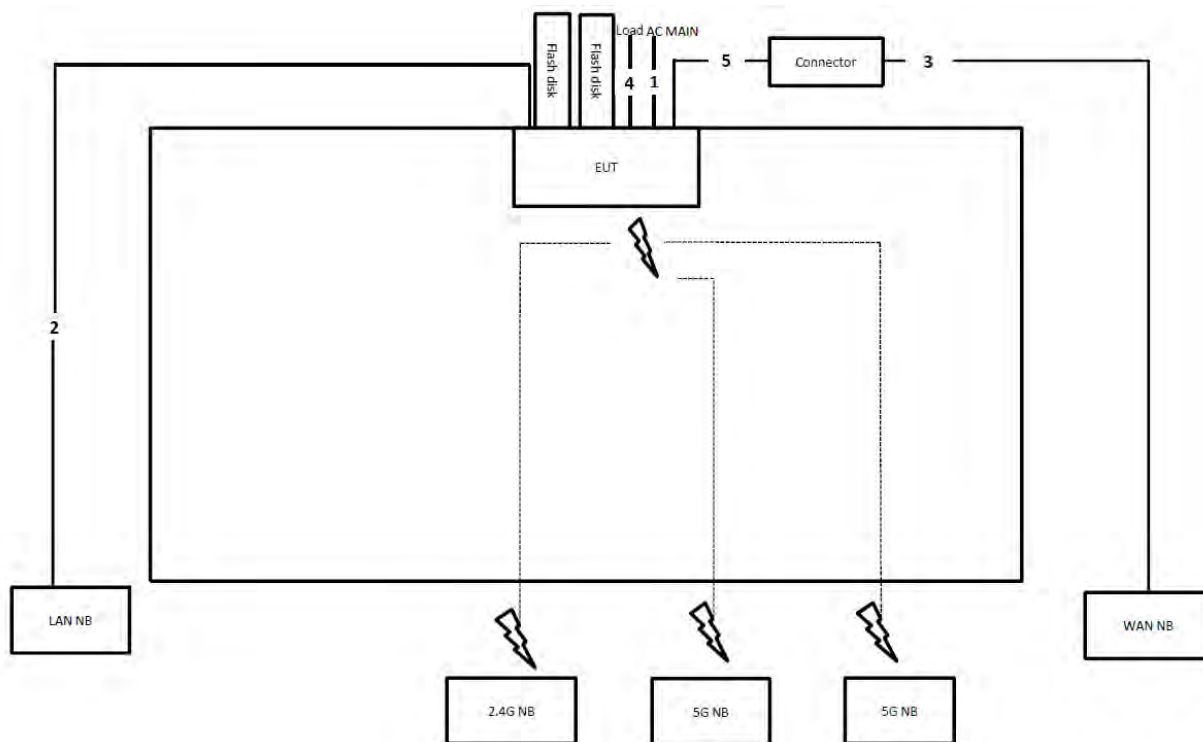
Test Mode: Mode 3



Item	Connection	Shielded	Length
1	Power cable	No	2.7m
2	RJ-45 cable	No	10m
3	RJ-45 cable	No	10m
4	RJ-45 cable*3	No	1.5m
5	RJ-45 cable	No	1m

Test Setup Diagram - Radiated Test < 1GHz

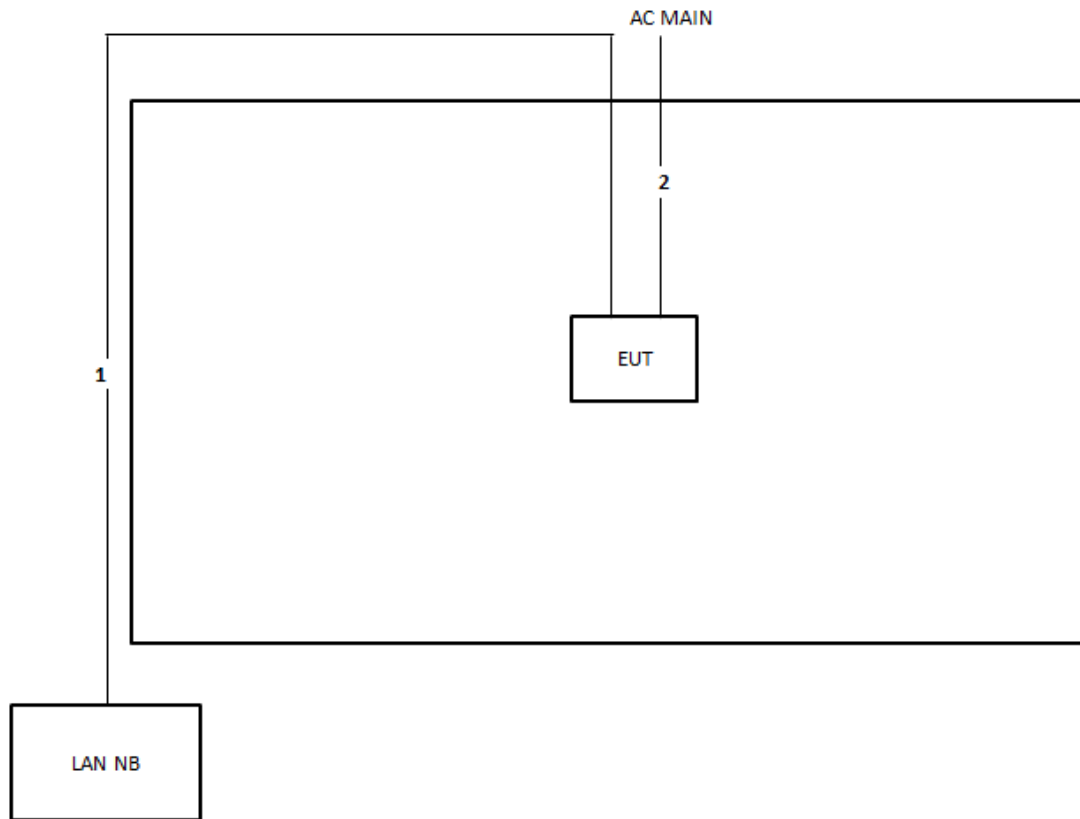
Test Mode: Mode 4



Item	Connection	Shielded	Length
1	Power cable	No	2.3m
2	RJ-45 cable	No	10m
3	RJ-45 cable	No	10m
4	RJ-45 cable*3	No	1.5m
5	RJ-45 cable	No	1m

Test Setup Diagram - Radiated Test > 1GHz

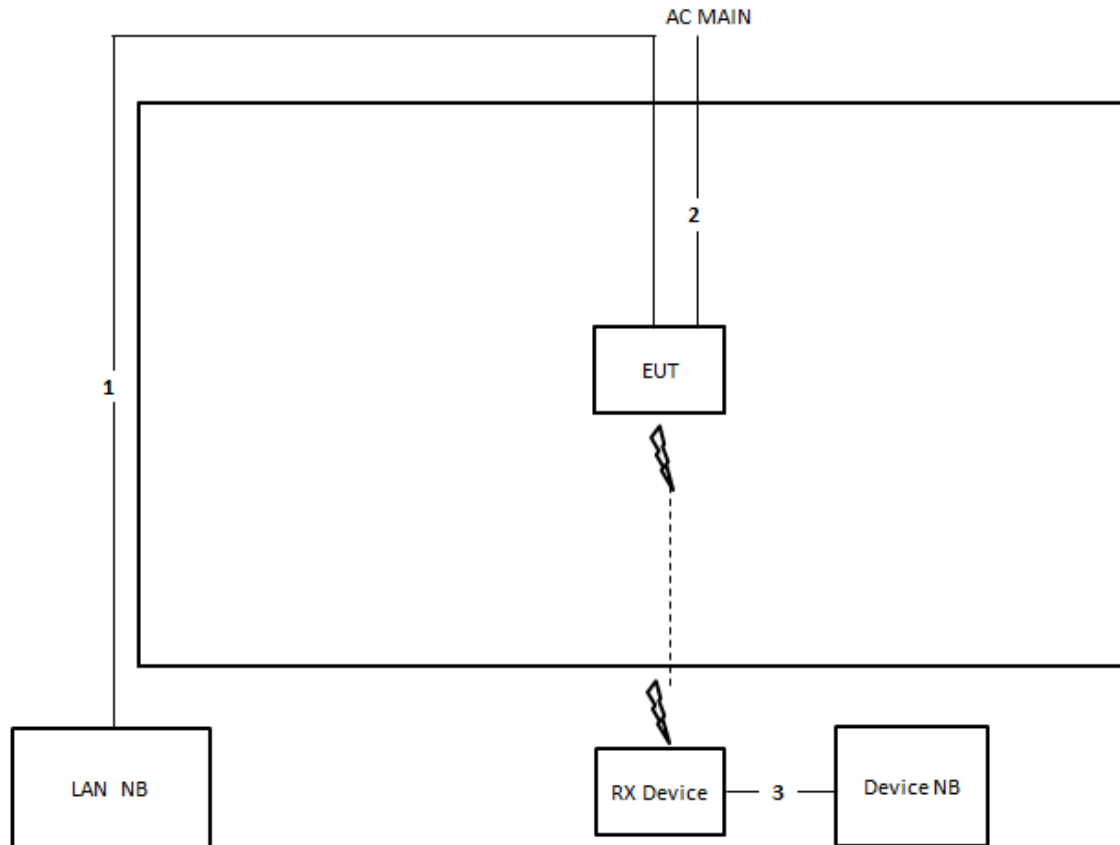
For Non-Beamforming Mode



Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	Power cable	No	2.3m

Test Setup Diagram - Radiated Test > 1GHz

For Beamforming Mode



Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	Power cable	No	2.3m
3	RJ-45 cable	No	1.5m

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.

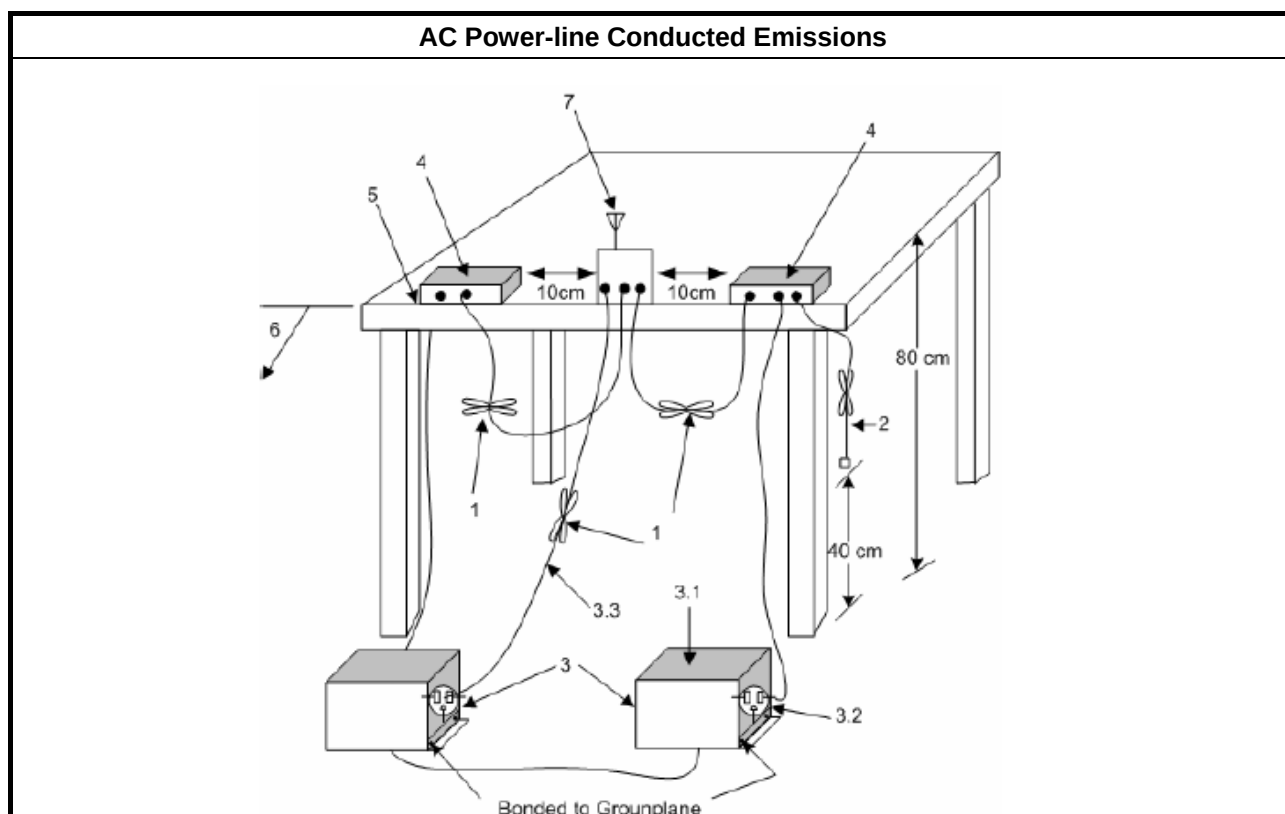
3.1.2 Measuring Instruments

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.

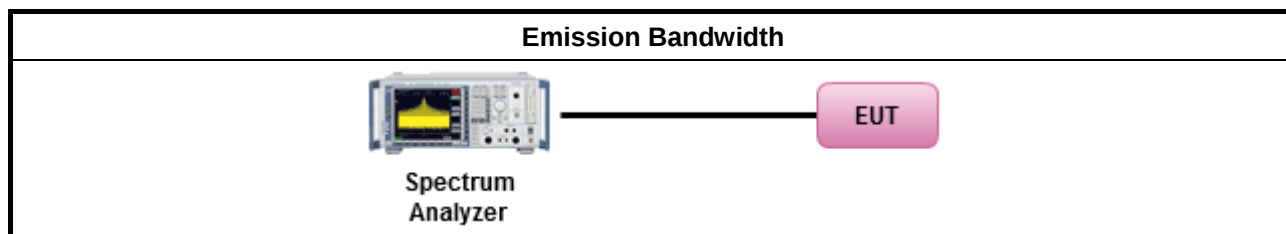
3.2.2 Measuring Instruments

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 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.	
☐ For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.	
☒ For the 5.725-5.85 GHz band:	
	- Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
LE-LAN Devices	
☐ For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.	
☐ For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz	
☐ For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz	
☐ For the 5.725-5.85 GHz band:	
	- Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$. - Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
P_{Out} = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

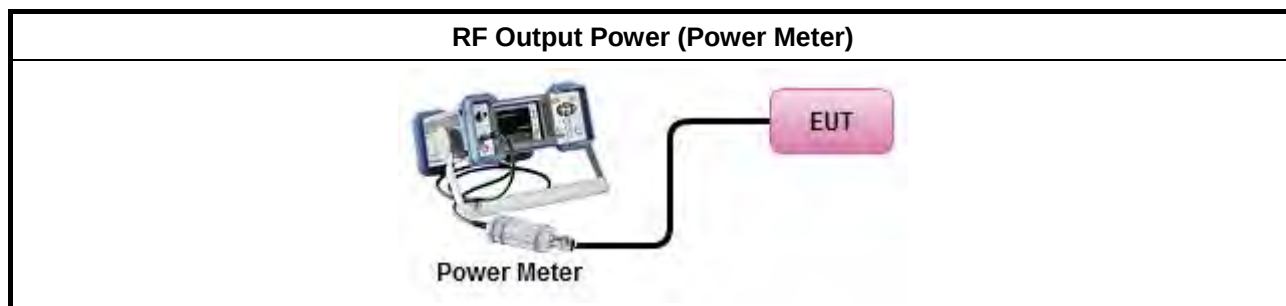
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Peak Power Spectral Density

3.4.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit	
UNII Devices	
☒ 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 peak power spectral density (PPSD) ≤ 4 dBm/MHz and 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.	

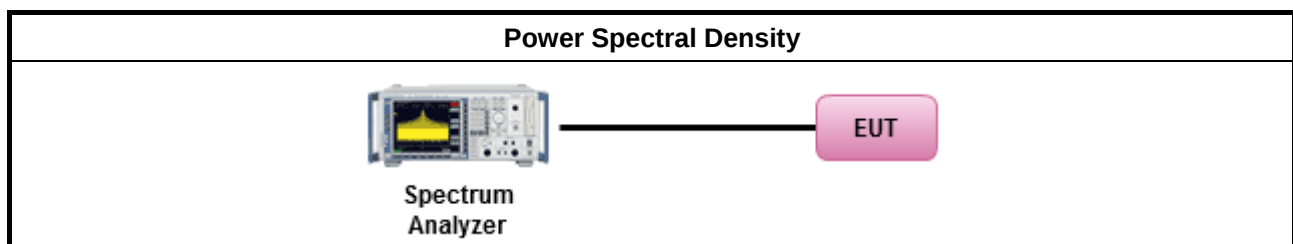
3.4.2 Measuring Instruments

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, F5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth [duty cycle ≥ 98% or external video / power trigger]	
☒ 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





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).

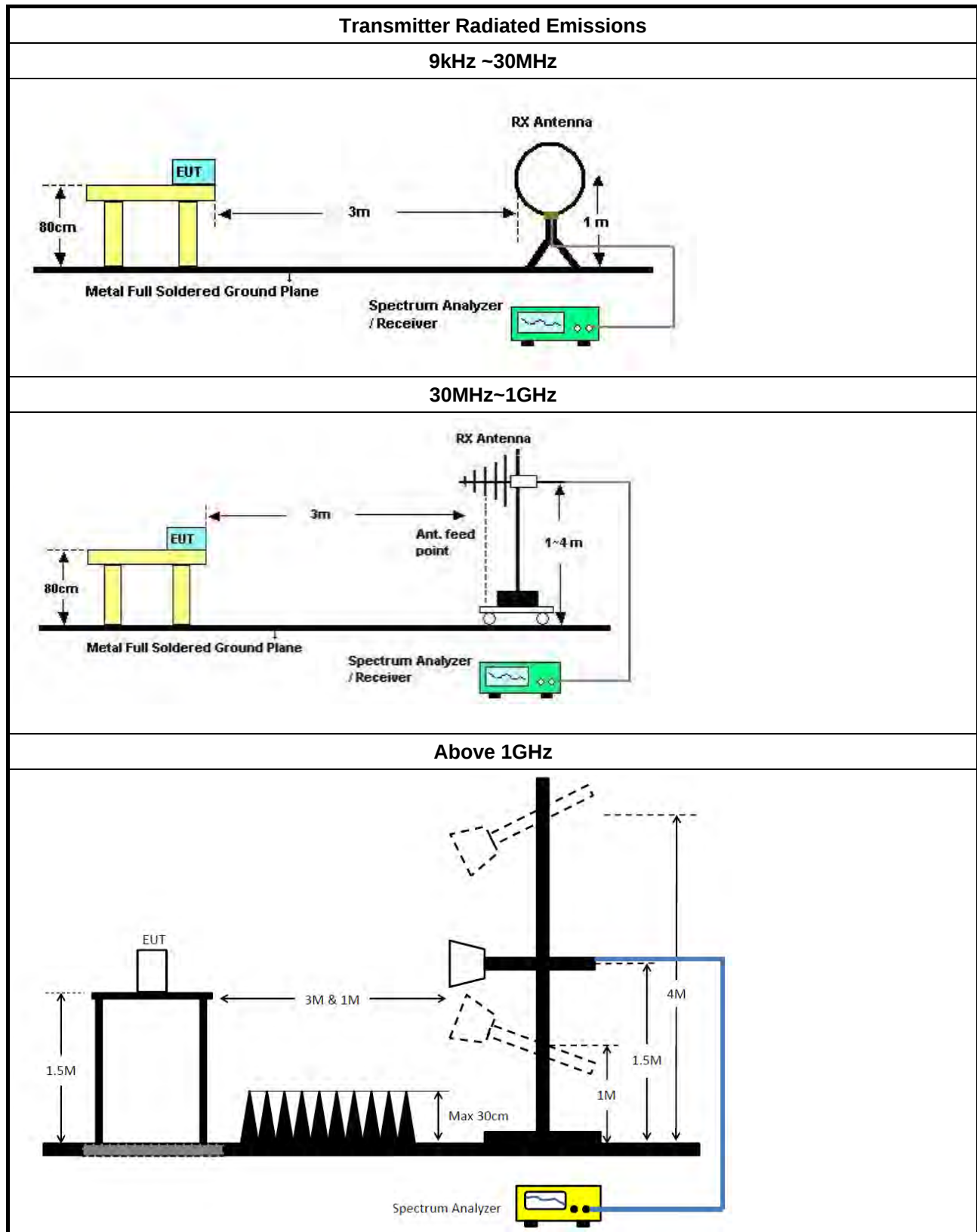
3.5.2 Measuring Instruments

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 $\geq$ 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.

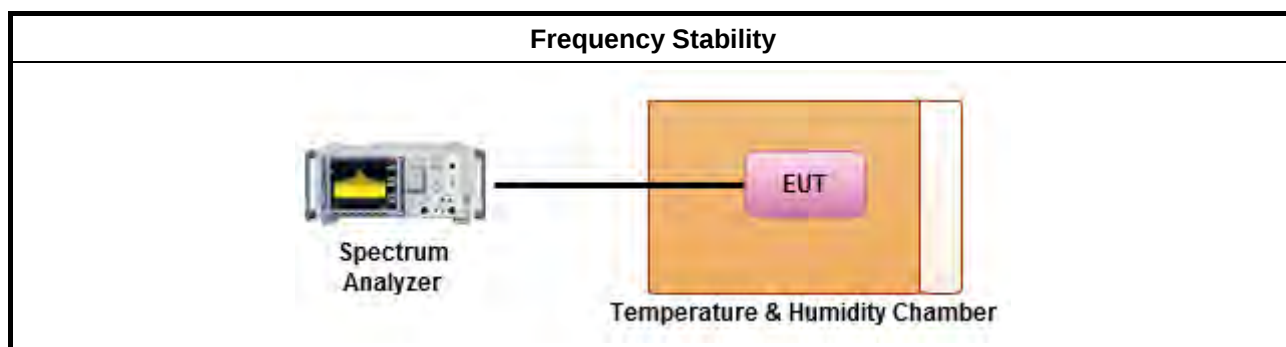
3.6.2 Measuring Instruments

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~40°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. 23, 2017	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)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2016*	Radiation (03CH01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCi	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 30, 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	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)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
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)
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.

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



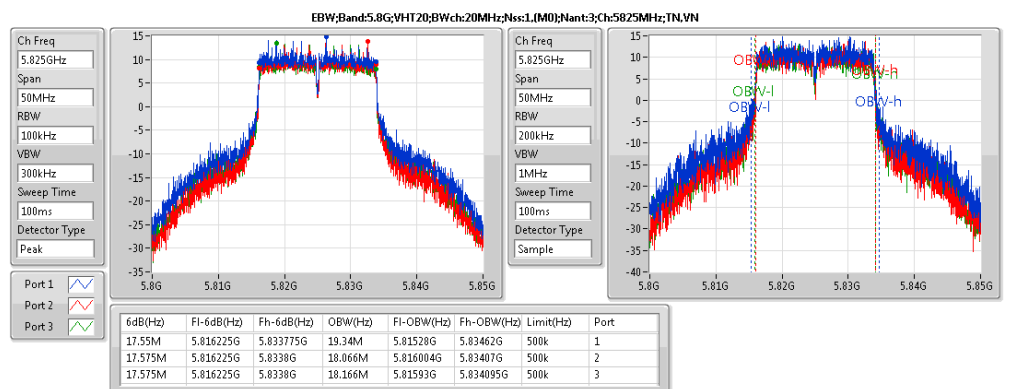
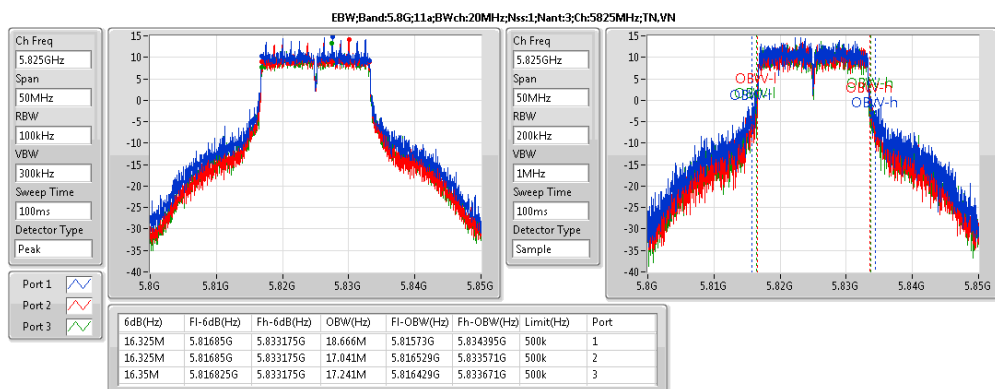
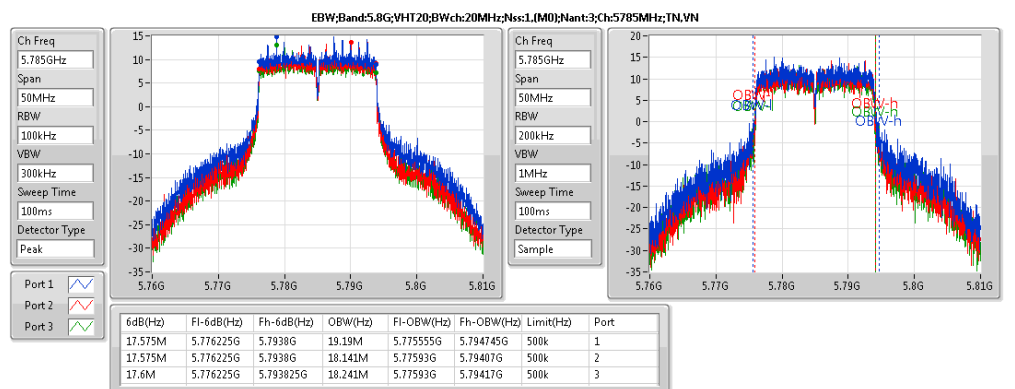
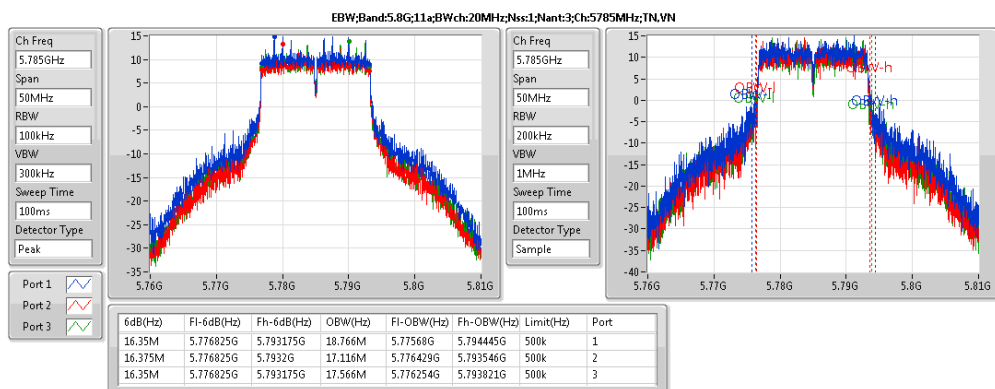
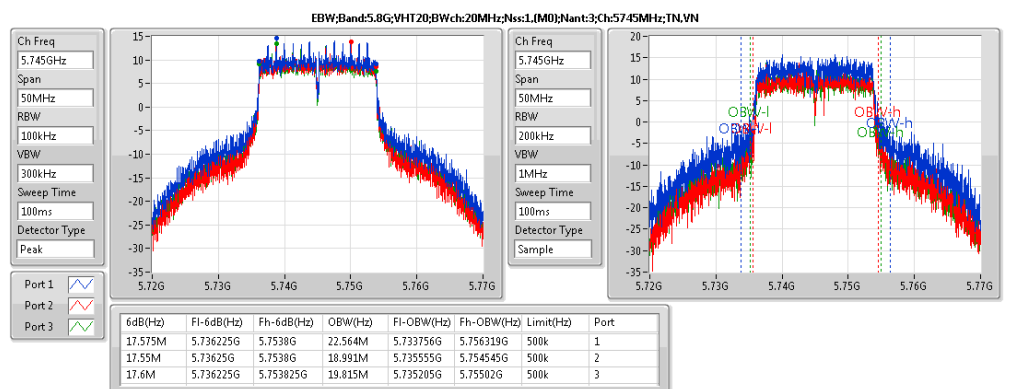
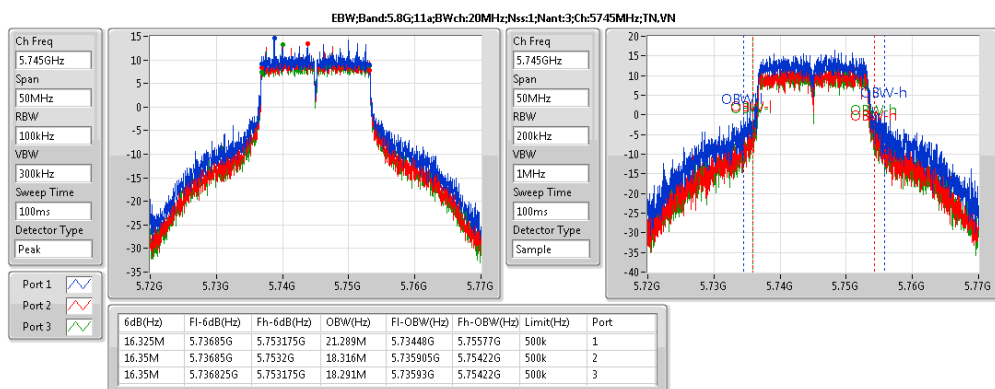
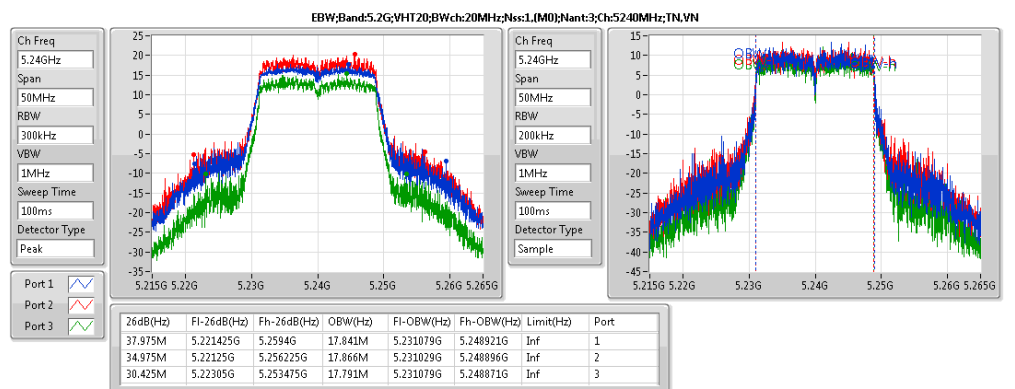
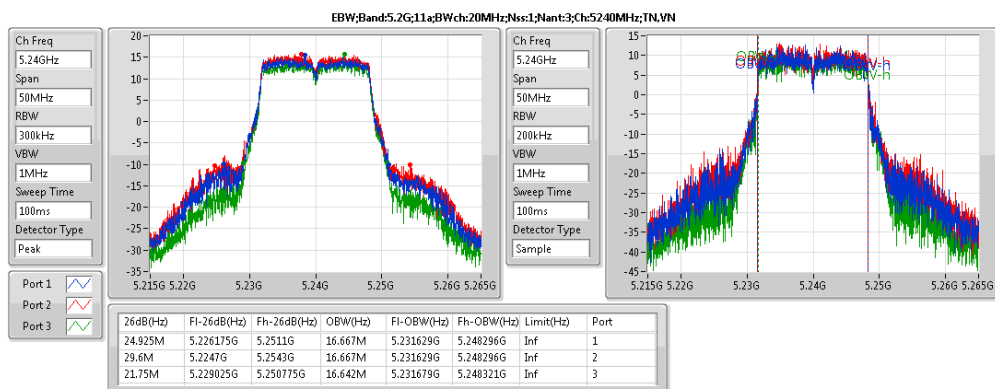
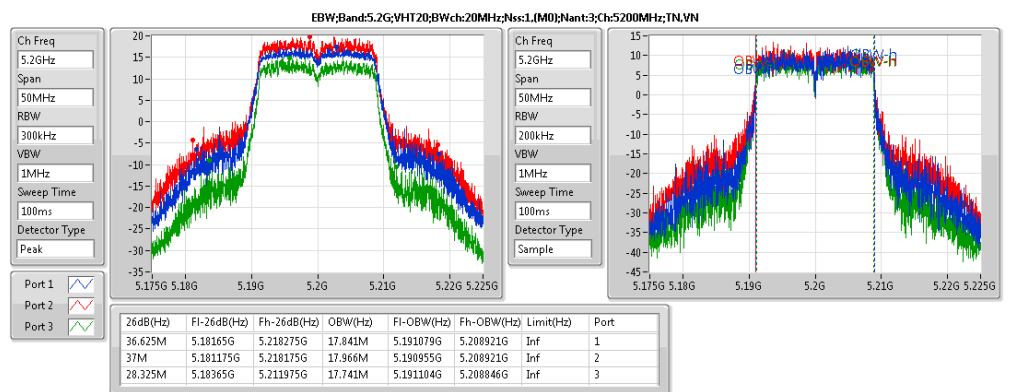
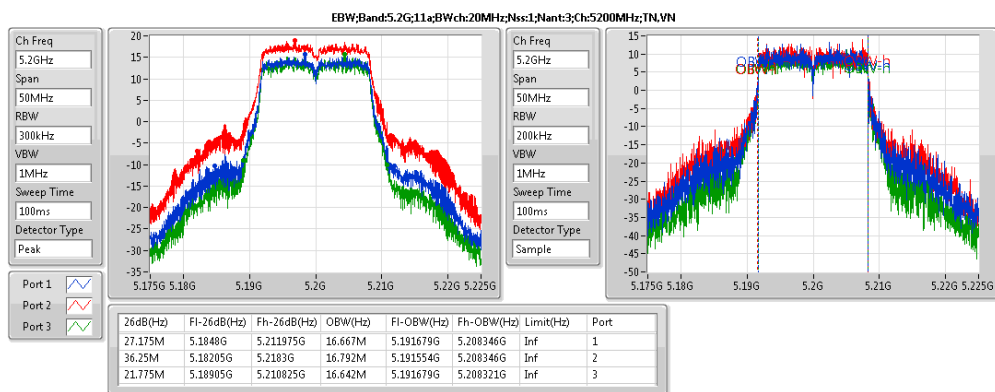
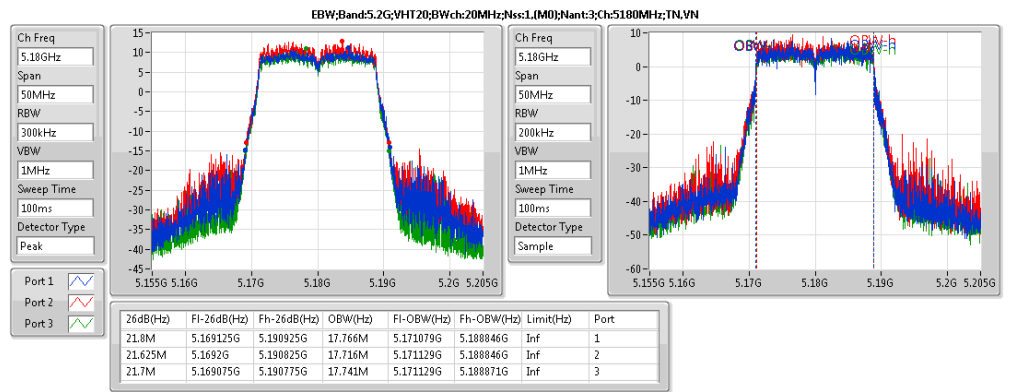
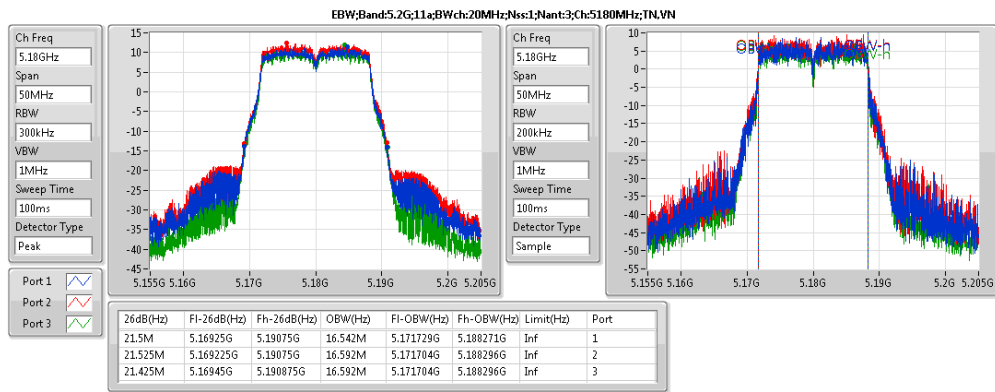
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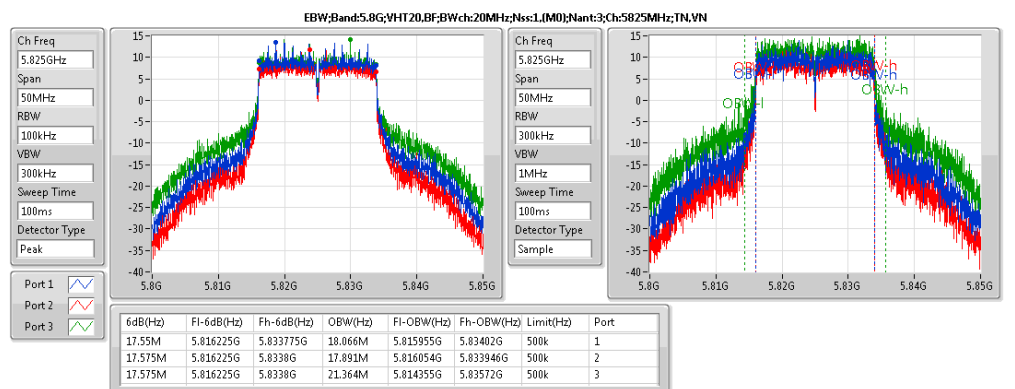
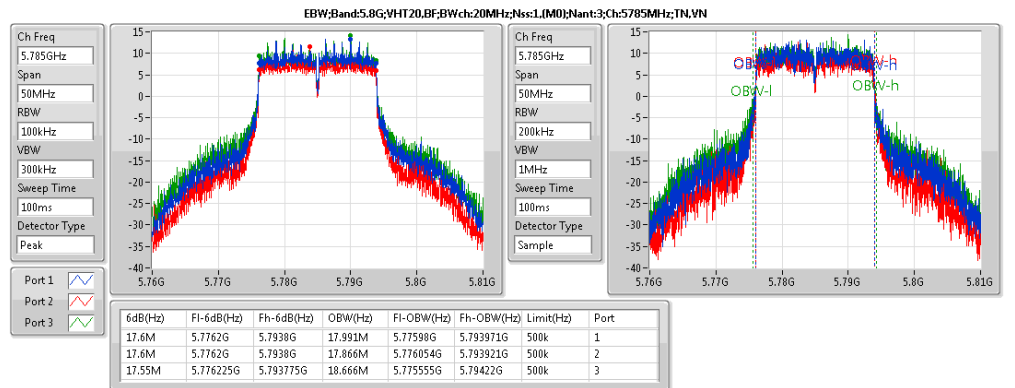
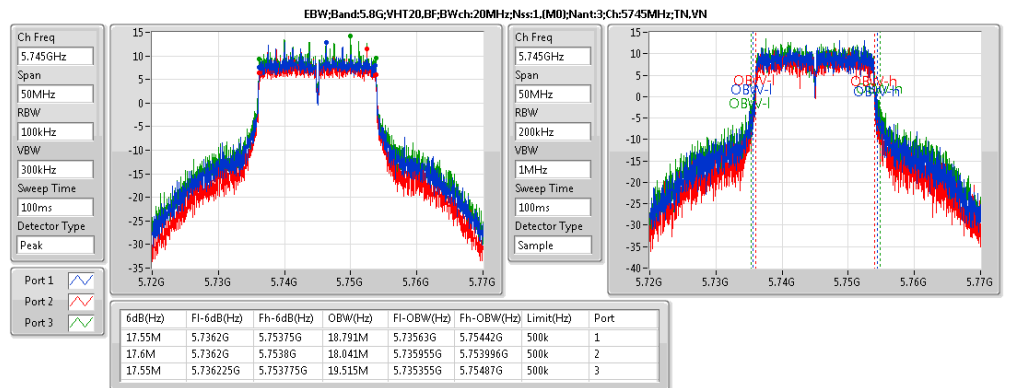
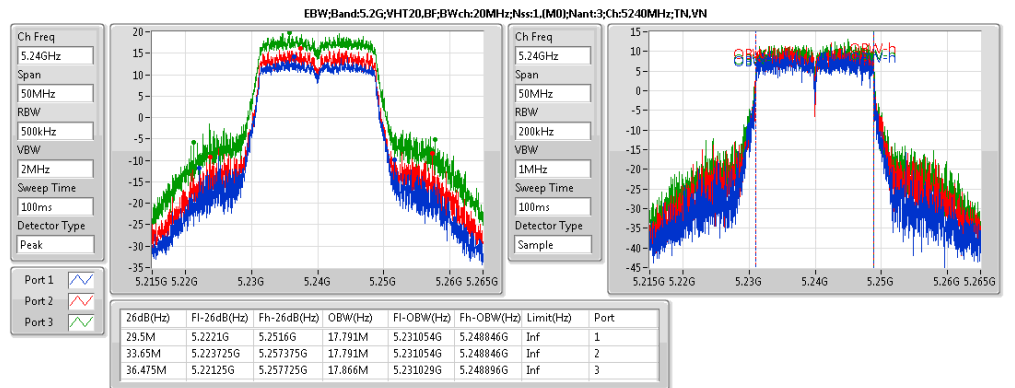
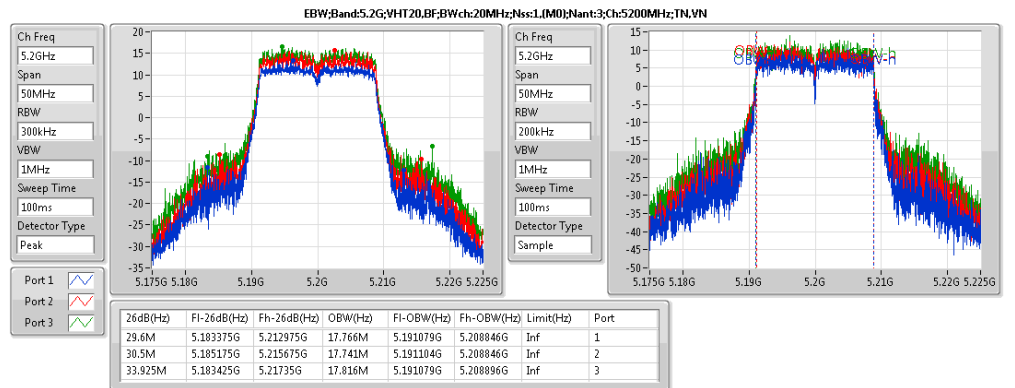
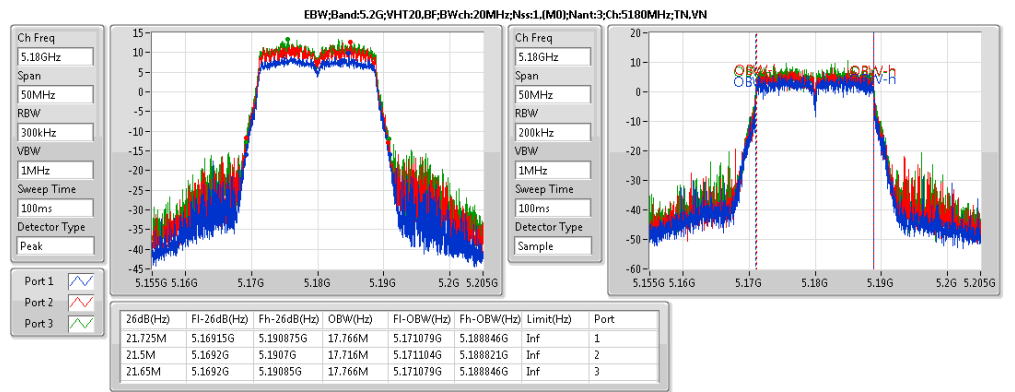
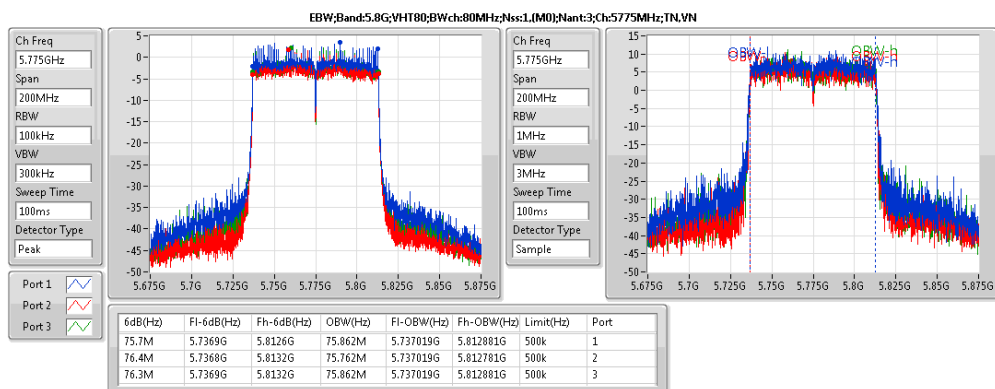
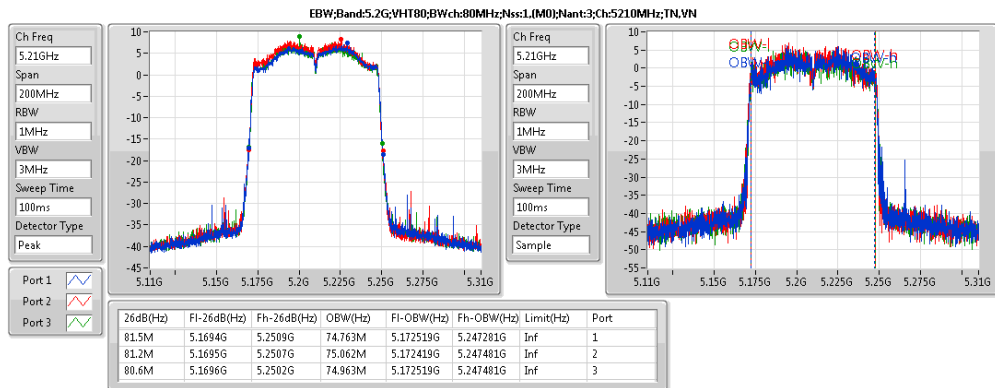
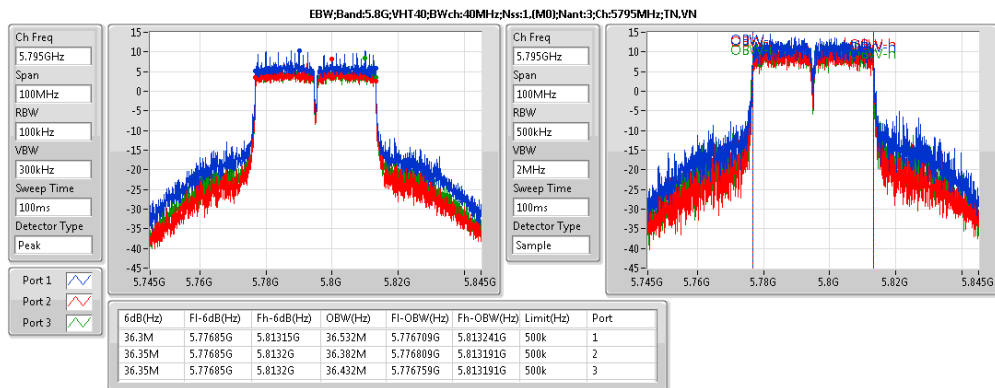
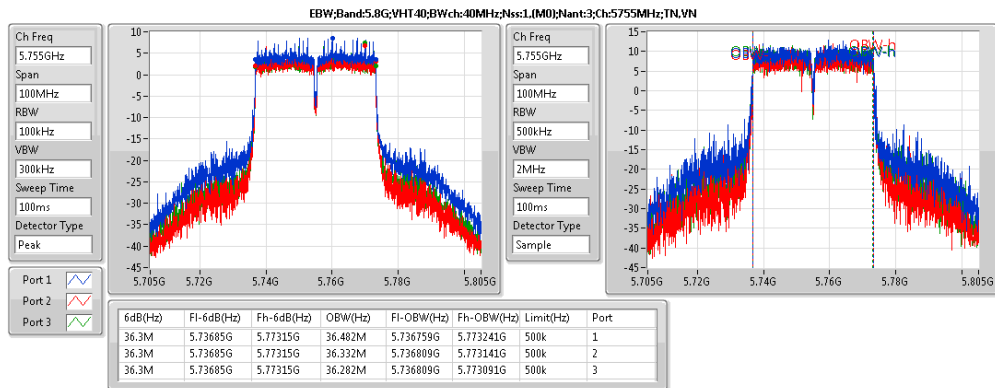
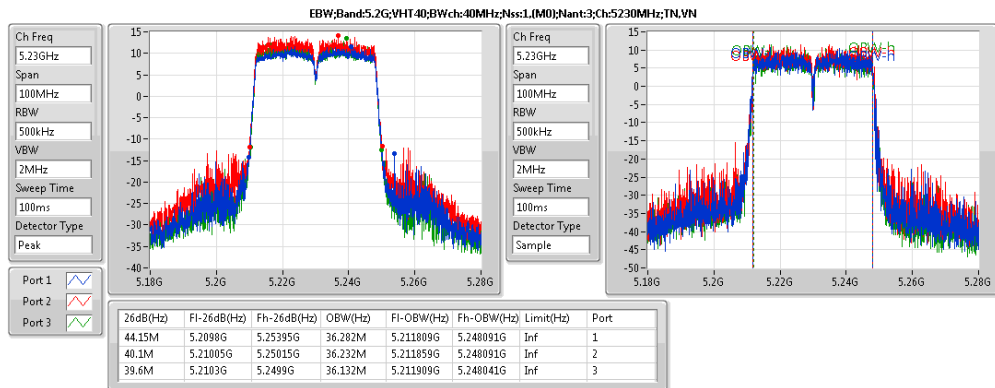
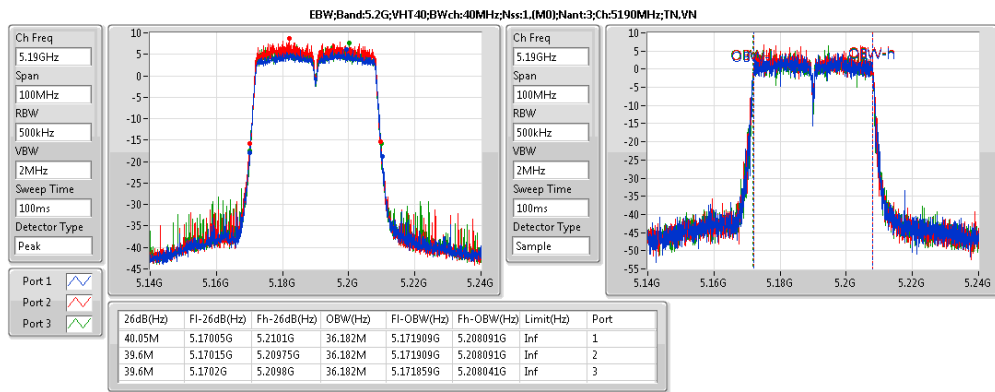
Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.2G;11a;Nss1;Ntx3	36.25M	16.792M	16M8D1D	21.425M	16.542M
5.8G;11a;Nss1;Ntx3	16.375M	21.289M	21M3D1D	16.325M	17.041M
5.2G;VHT20;Nss1,(M0);Ntx3	37.975M	17.966M	18M0D1D	21.625M	17.716M
5.8G;VHT20;Nss1,(M0);Ntx3	17.6M	22.564M	22M6D1D	17.55M	18.066M
5.2G;VHT40;Nss1,(M0);Ntx3	44.15M	36.282M	36M3D1D	39.6M	36.132M
5.8G;VHT40;Nss1,(M0);Ntx3	36.35M	36.532M	36M5D1D	36.3M	36.282M
5.2G;VHT80;Nss1,(M0);Ntx3	81.5M	75.062M	75M1D1D	80.6M	74.763M
5.8G;VHT80;Nss1,(M0);Ntx3	76.4M	75.862M	75M9D1D	75.7M	75.762M
5.2G;VHT20,BF;Nss1,(M0);Ntx3	36.475M	17.866M	17M9D1D	21.5M	17.716M
5.8G;VHT20,BF;Nss1,(M0);Ntx3	17.6M	21.364M	21M4D1D	17.55M	17.866M
5.2G;VHT40,BF;Nss1,(M0);Ntx3	45.95M	36.332M	36M3D1D	39.7M	36.182M
5.8G;VHT40,BF;Nss1,(M0);Ntx3	36.35M	36.732M	36M7D1D	36.3M	36.382M
5.2G;VHT80,BF;Nss1,(M0);Ntx3	81.5M	75.062M	75M1D1D	80.6M	74.863M
5.8G;VHT80,BF;Nss1,(M0);Ntx3	76.4M	75.962M	76M0D1D	76.1M	75.662M

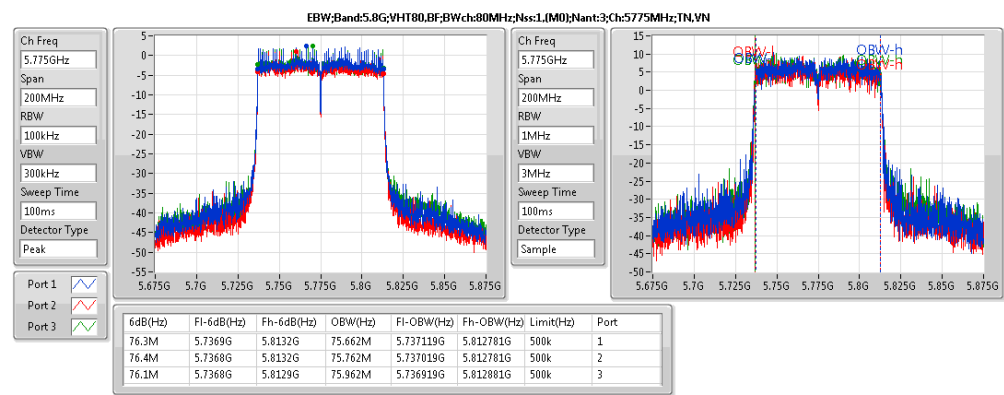
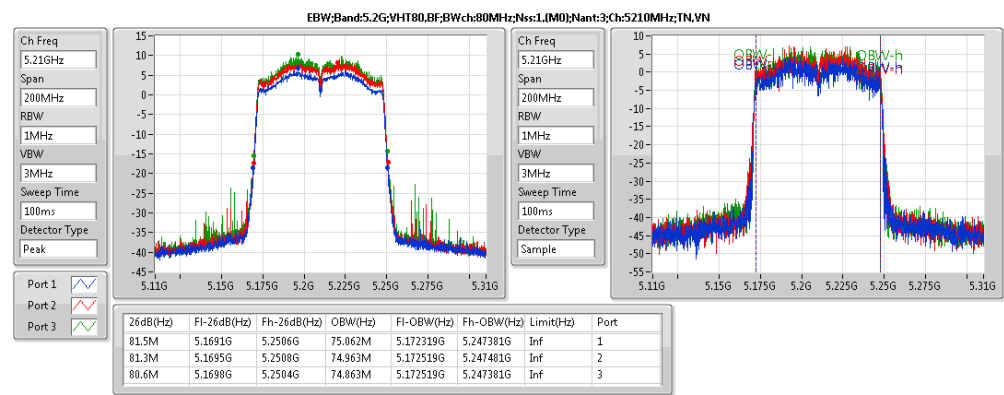
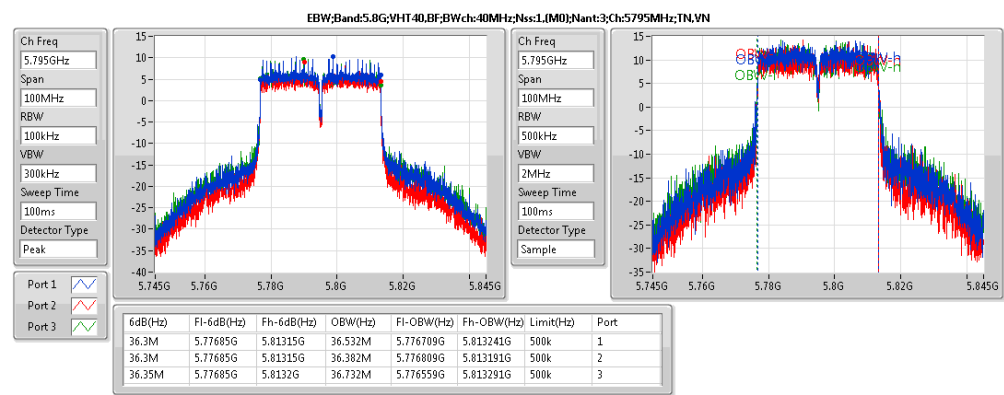
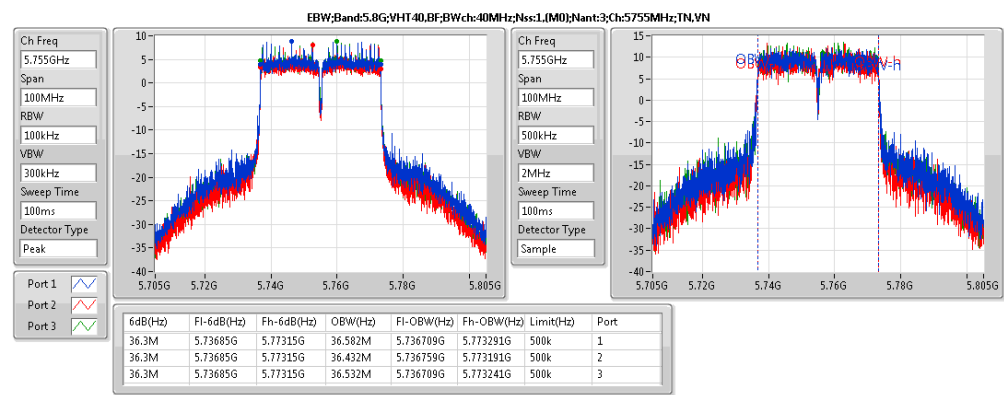
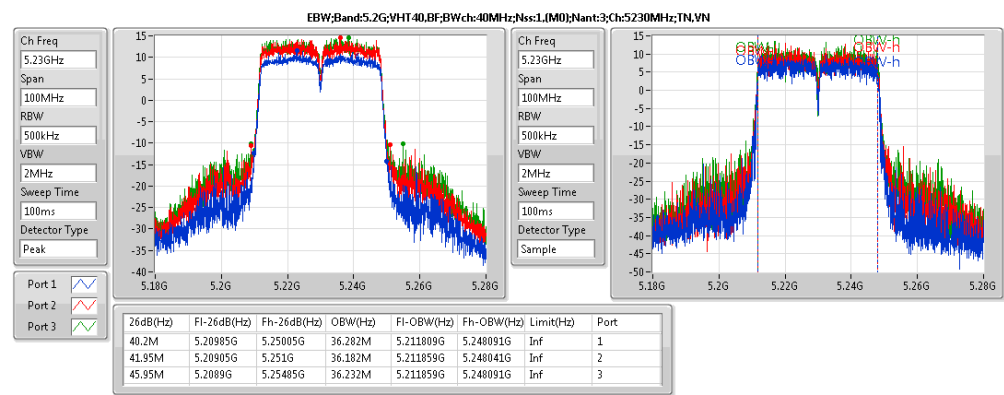
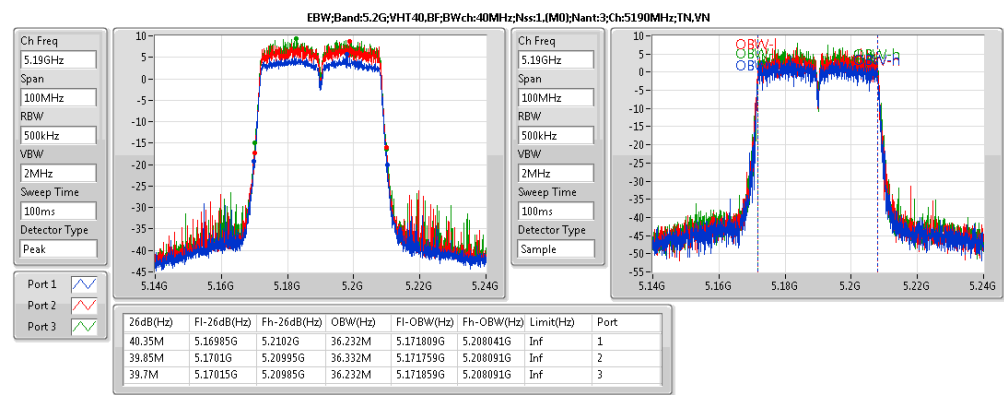


Result

Mode	Result	Limit (Hz)	P1-N dB (Hz)	P1-OBW (Hz)	P2-N dB (Hz)	P2-OBW (Hz)	P3-N dB (Hz)	P3-OBW (Hz)
5.2G;11a;Nss1;Ntx3;5180	Pass	Inf	21.5M	16.542M	21.525M	16.592M	21.425M	16.592M
5.2G;11a;Nss1;Ntx3;5200	Pass	Inf	27.175M	16.667M	36.25M	16.792M	21.775M	16.642M
5.2G;11a;Nss1;Ntx3;5240	Pass	Inf	24.925M	16.667M	29.6M	16.667M	21.75M	16.642M
5.8G;11a;Nss1;Ntx3;5745	Pass	500k	16.325M	21.289M	16.35M	18.316M	16.35M	18.291M
5.8G;11a;Nss1;Ntx3;5785	Pass	500k	16.35M	18.766M	16.375M	17.116M	16.35M	17.566M
5.8G;11a;Nss1;Ntx3;5825	Pass	500k	16.325M	18.666M	16.325M	17.041M	16.35M	17.241M
5.2G;VHT20;Nss1,(M0);Ntx3;5180	Pass	Inf	21.8M	17.766M	21.625M	17.716M	21.7M	17.741M
5.2G;VHT20;Nss1,(M0);Ntx3;5200	Pass	Inf	36.625M	17.841M	37M	17.966M	28.325M	17.741M
5.2G;VHT20;Nss1,(M0);Ntx3;5240	Pass	Inf	37.975M	17.841M	34.975M	17.866M	30.425M	17.791M
5.8G;VHT20;Nss1,(M0);Ntx3;5745	Pass	500k	17.575M	22.564M	17.55M	18.991M	17.6M	19.815M
5.8G;VHT20;Nss1,(M0);Ntx3;5785	Pass	500k	17.575M	19.19M	17.575M	18.141M	17.6M	18.241M
5.8G;VHT20;Nss1,(M0);Ntx3;5825	Pass	500k	17.55M	19.34M	17.575M	18.066M	17.575M	18.166M
5.2G;VHT40;Nss1,(M0);Ntx3;5190	Pass	Inf	40.05M	36.182M	39.6M	36.182M	39.6M	36.182M
5.2G;VHT40;Nss1,(M0);Ntx3;5230	Pass	Inf	44.15M	36.282M	40.1M	36.232M	39.6M	36.132M
5.8G;VHT40;Nss1,(M0);Ntx3;5755	Pass	500k	36.3M	36.482M	36.3M	36.332M	36.3M	36.282M
5.8G;VHT40;Nss1,(M0);Ntx3;5795	Pass	500k	36.3M	36.532M	36.35M	36.382M	36.35M	36.432M
5.2G;VHT80;Nss1,(M0);Ntx3;5210	Pass	Inf	81.5M	74.763M	81.2M	75.062M	80.6M	74.963M
5.8G;VHT80;Nss1,(M0);Ntx3;5775	Pass	500k	75.7M	75.862M	76.4M	75.762M	76.3M	75.862M
5.2G;VHT20,BF;Nss1,(M0);Ntx3;5180	Pass	Inf	21.725M	17.766M	21.5M	17.716M	21.65M	17.766M
5.2G;VHT20,BF;Nss1,(M0);Ntx3;5200	Pass	Inf	29.6M	17.766M	30.5M	17.741M	33.925M	17.816M
5.2G;VHT20,BF;Nss1,(M0);Ntx3;5240	Pass	Inf	29.5M	17.791M	33.65M	17.791M	36.475M	17.866M
5.8G;VHT20,BF;Nss1,(M0);Ntx3;5745	Pass	500k	17.55M	18.791M	17.6M	18.041M	17.55M	19.515M
5.8G;VHT20,BF;Nss1,(M0);Ntx3;5785	Pass	500k	17.6M	17.991M	17.6M	17.866M	17.55M	18.666M
5.8G;VHT20,BF;Nss1,(M0);Ntx3;5825	Pass	500k	17.55M	18.066M	17.575M	17.891M	17.575M	21.364M
5.2G;VHT40,BF;Nss1,(M0);Ntx3;5190	Pass	Inf	40.35M	36.232M	39.85M	36.332M	39.7M	36.232M
5.2G;VHT40,BF;Nss1,(M0);Ntx3;5230	Pass	Inf	40.2M	36.282M	41.95M	36.182M	45.95M	36.232M
5.8G;VHT40,BF;Nss1,(M0);Ntx3;5755	Pass	500k	36.3M	36.582M	36.3M	36.432M	36.3M	36.532M
5.8G;VHT40,BF;Nss1,(M0);Ntx3;5795	Pass	500k	36.3M	36.532M	36.3M	36.382M	36.35M	36.732M
5.2G;VHT80,BF;Nss1,(M0);Ntx3;5210	Pass	Inf	81.5M	75.062M	81.3M	74.963M	80.6M	74.863M
5.8G;VHT80,BF;Nss1,(M0);Ntx3;5775	Pass	500k	76.3M	75.662M	76.4M	75.762M	76.1M	75.962M









Summary

Mode	Sum (dBm)	Sum (W)	EIRP (dBm)	EIRP (W)
5.2G;11a;Nss1;Ntx3	28.40	0.69183	30.92	1.23595
5.8G;11a;Nss1;Ntx3	29.93	0.98401	32.30	1.69824
5.2G;VHT20;Nss1,(M0);Ntx3	28.63	0.72946	31.15	1.30317
5.8G;VHT20;Nss1,(M0);Ntx3	29.90	0.97724	32.27	1.68655
5.2G;VHT40;Nss1,(M0);Ntx3	25.63	0.36559	28.15	0.65313
5.8G;VHT40;Nss1,(M0);Ntx3	28.04	0.6368	30.41	1.09901
5.2G;VHT80;Nss1,(M0);Ntx3	19.58	0.09078	22.10	0.16218
5.8G;VHT80;Nss1,(M0);Ntx3	24.37	0.27353	26.74	0.47206
5.2G;VHT20,BF;Nss1,(M0);Ntx3	28.79	0.75683	35.97	3.95367
5.8G;VHT20,BF;Nss1,(M0);Ntx3	29.18	0.82794	35.80	3.80189
5.2G;VHT40,BF;Nss1,(M0);Ntx3	27.01	0.50234	34.19	2.62422
5.8G;VHT40,BF;Nss1,(M0);Ntx3	28.73	0.74645	35.35	3.42768
5.2G;VHT80,BF;Nss1,(M0);Ntx3	21.84	0.15276	29.02	0.79799
5.8G;VHT80,BF;Nss1,(M0);Ntx3	25.80	0.38019	32.41	1.74181



Result

Mode	Result	DG (dBi)	Sum (dBm)	Sum Lim. (dBm)	EIRP (dBm)	EIRP Lim. (dBm)	P1 (dBm)	P2 (dBm)	P3 (dBm)
5.2G;11a;Nss1;Ntx3;5180	Pass	2.52	24.61	30.00	27.13	36.00	20.04	20.07	19.36
5.2G;11a;Nss1;Ntx3;5200	Pass	2.52	28.40	30.00	30.92	36.00	23.93	23.91	22.99
5.2G;11a;Nss1;Ntx3;5240	Pass	2.52	28.34	30.00	30.86	36.00	23.89	23.88	22.87
5.8G;11a;Nss1;Ntx3;5745	Pass	2.37	29.93	30.00	32.30	36.00	25.25	25.69	24.44
5.8G;11a;Nss1;Ntx3;5785	Pass	2.37	29.87	30.00	32.24	36.00	25.62	25.10	24.49
5.8G;11a;Nss1;Ntx3;5825	Pass	2.37	29.90	30.00	32.27	36.00	25.57	24.92	24.87
5.2G;VHT20;Nss1,(M0);Ntx3;5180	Pass	2.52	24.15	30.00	26.67	36.00	19.47	19.48	19.19
5.2G;VHT20;Nss1,(M0);Ntx3;5200	Pass	2.52	28.55	30.00	31.07	36.00	24.10	24.10	23.07
5.2G;VHT20;Nss1,(M0);Ntx3;5240	Pass	2.52	28.63	30.00	31.15	36.00	24.27	24.01	23.23
5.8G;VHT20;Nss1,(M0);Ntx3;5745	Pass	2.37	29.79	30.00	32.16	36.00	25.40	25.11	24.50
5.8G;VHT20;Nss1,(M0);Ntx3;5785	Pass	2.37	29.84	30.00	32.21	36.00	25.40	25.20	24.57
5.8G;VHT20;Nss1,(M0);Ntx3;5825	Pass	2.37	29.90	30.00	32.27	36.00	25.58	25.19	24.56
5.2G;VHT40;Nss1,(M0);Ntx3;5190	Pass	2.52	19.98	30.00	22.50	36.00	15.15	15.19	15.29
5.2G;VHT40;Nss1,(M0);Ntx3;5230	Pass	2.52	25.63	30.00	28.15	36.00	20.92	20.88	20.79
5.8G;VHT40;Nss1,(M0);Ntx3;5755	Pass	2.37	27.68	30.00	30.05	36.00	23.58	23.01	21.98
5.8G;VHT40;Nss1,(M0);Ntx3;5795	Pass	2.37	28.04	30.00	30.41	36.00	24.02	23.14	22.52
5.2G;VHT80;Nss1,(M0);Ntx3;5210	Pass	2.52	19.58	30.00	22.10	36.00	14.93	14.90	14.60
5.8G;VHT80;Nss1,(M0);Ntx3;5775	Pass	2.37	24.37	30.00	26.74	36.00	20.39	19.19	19.09
5.2G;VHT20,BF;Nss1,(M0);Ntx3;5180	Pass	7.18	25.13	28.82	32.31	36.00	21.30	19.80	19.80
5.2G;VHT20,BF;Nss1,(M0);Ntx3;5200	Pass	7.18	28.71	28.82	35.89	36.00	24.31	23.72	23.76
5.2G;VHT20,BF;Nss1,(M0);Ntx3;5240	Pass	7.18	28.79	28.82	35.97	36.00	24.73	23.60	23.63
5.8G;VHT20,BF;Nss1,(M0);Ntx3;5745	Pass	6.62	29.18	29.38	35.80	36.00	25.19	24.84	22.85
5.8G;VHT20,BF;Nss1,(M0);Ntx3;5785	Pass	6.62	29.15	29.38	35.77	36.00	24.99	24.94	22.91
5.8G;VHT20,BF;Nss1,(M0);Ntx3;5825	Pass	6.62	29.14	29.38	35.76	36.00	24.89	24.92	23.05
5.2G;VHT40,BF;Nss1,(M0);Ntx3;5190	Pass	7.18	21.18	28.82	28.36	36.00	16.95	16.12	16.09
5.2G;VHT40,BF;Nss1,(M0);Ntx3;5230	Pass	7.18	27.01	28.82	34.19	36.00	22.62	22.00	22.06
5.8G;VHT40,BF;Nss1,(M0);Ntx3;5755	Pass	6.62	28.44	29.38	35.06	36.00	23.68	23.69	23.64
5.8G;VHT40,BF;Nss1,(M0);Ntx3;5795	Pass	6.62	28.73	29.38	35.35	36.00	24.89	23.75	23.03
5.2G;VHT80,BF;Nss1,(M0);Ntx3;5210	Pass	7.18	21.84	28.82	29.02	36.00	17.48	16.74	16.95
5.8G;VHT80,BF;Nss1,(M0);Ntx3;5775	Pass	6.62	25.80	29.38	32.41	36.00	21.19	21.18	20.69



Summary

Mode	PD (dBm/RBW)	EIRP.PD (dBm/RBW)
5.2G;11a;Nss1;Ntx3	15.81	22.99
5.8G;11a;Nss1;Ntx3	16.40	23.02
5.2G;VHT20;Nss1,(M0);Ntx3	15.66	22.84
5.8G;VHT20;Nss1,(M0);Ntx3	16.59	23.21
5.2G;VHT40;Nss1,(M0);Ntx3	9.65	16.83
5.8G;VHT40;Nss1,(M0);Ntx3	11.11	17.73
5.2G;VHT80;Nss1,(M0);Ntx3	1.22	8.40
5.8G;VHT80;Nss1,(M0);Ntx3	4.52	11.14
5.2G;VHT20,BF;Nss1,(M0);Ntx3	15.35	22.53
5.8G;VHT20,BF;Nss1,(M0);Ntx3	14.60	21.22
5.2G;VHT40,BF;Nss1,(M0);Ntx3	10.44	17.62
5.8G;VHT40,BF;Nss1,(M0);Ntx3	11.30	17.92
5.2G;VHT80,BF;Nss1,(M0);Ntx3	2.90	10.07
5.8G;VHT80,BF;Nss1,(M0);Ntx3	4.75	11.37



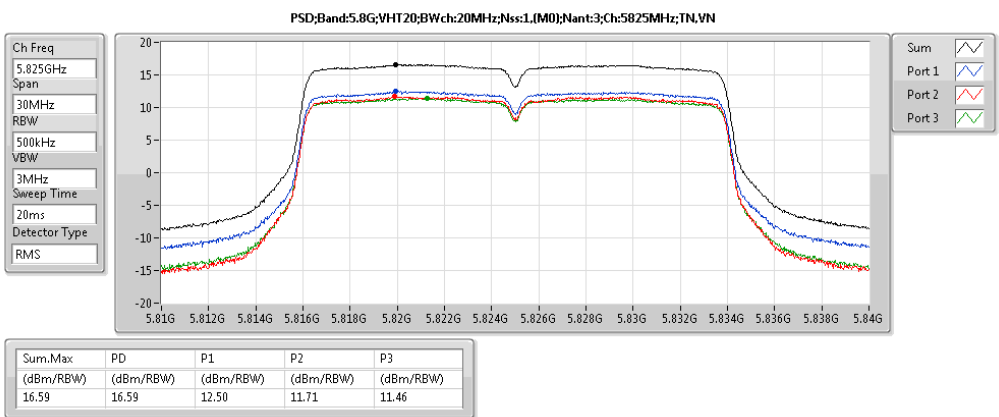
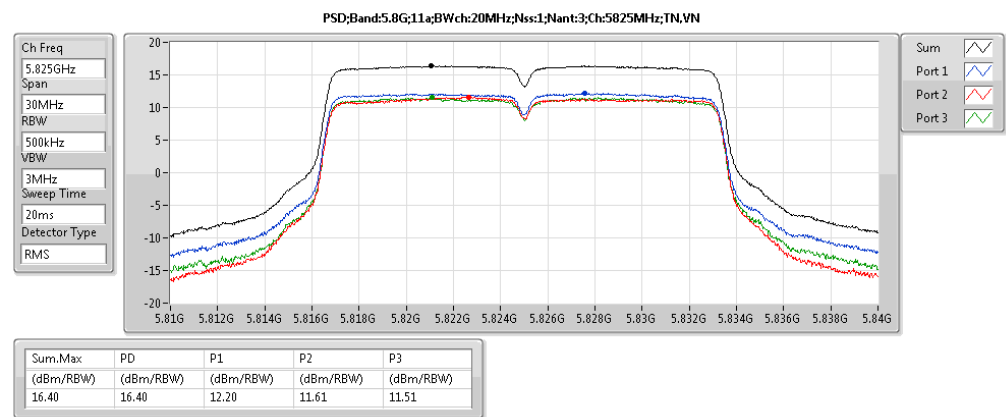
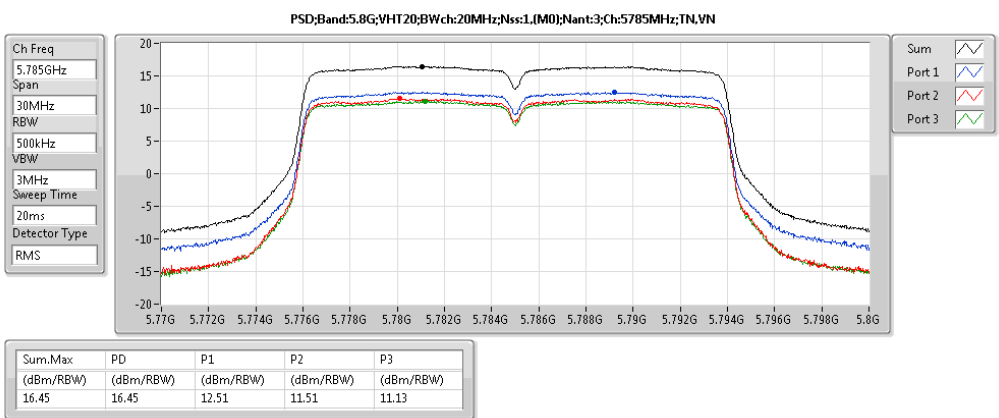
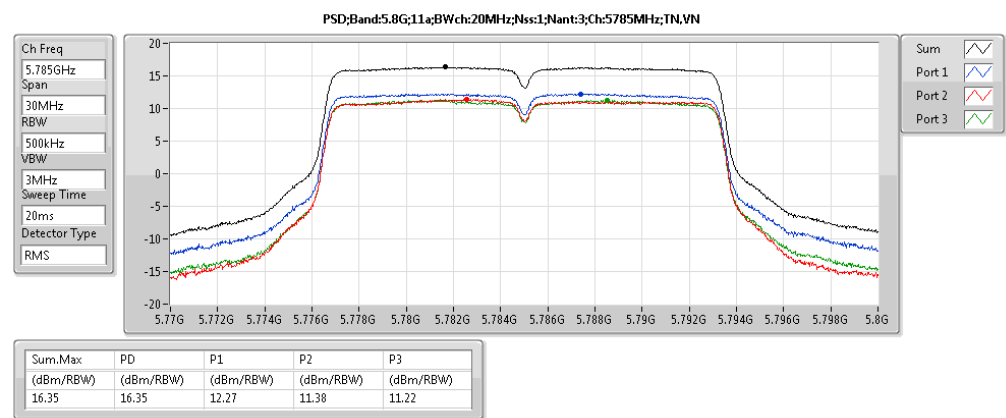
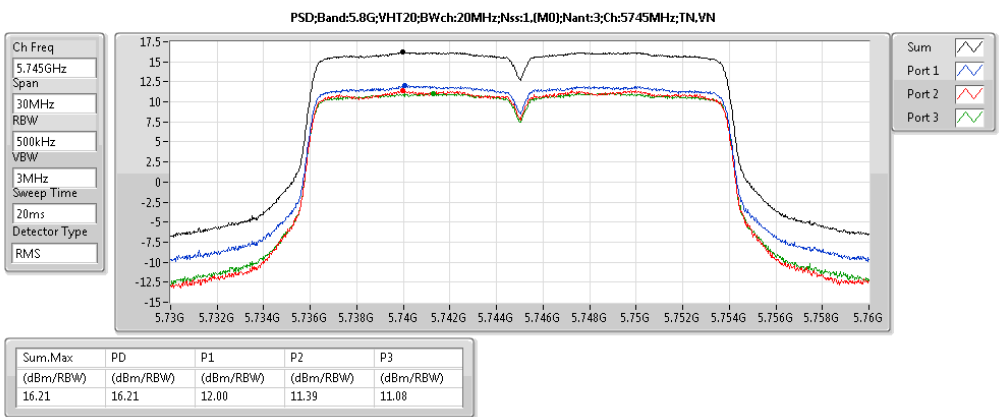
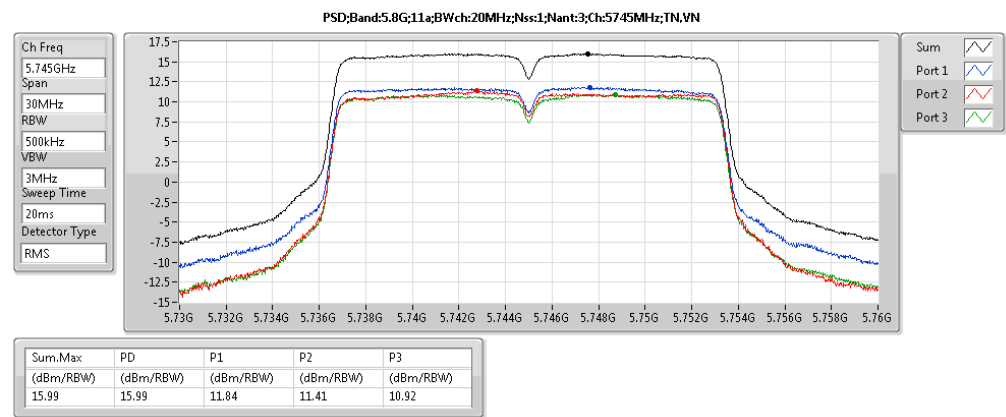
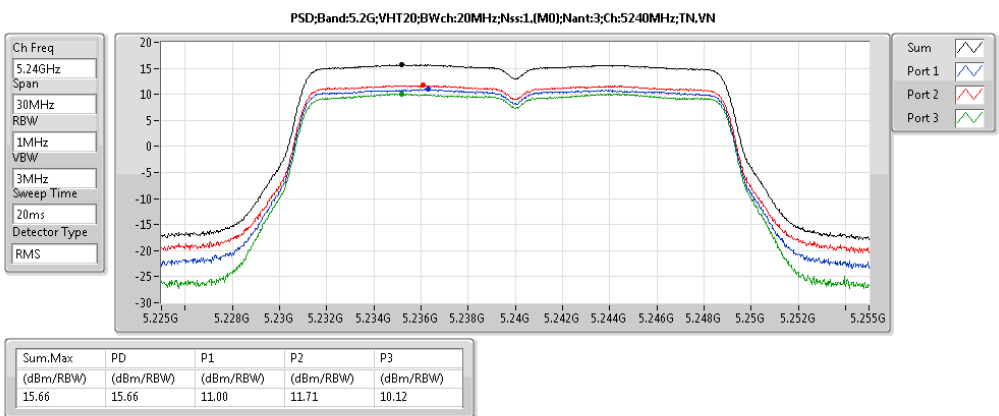
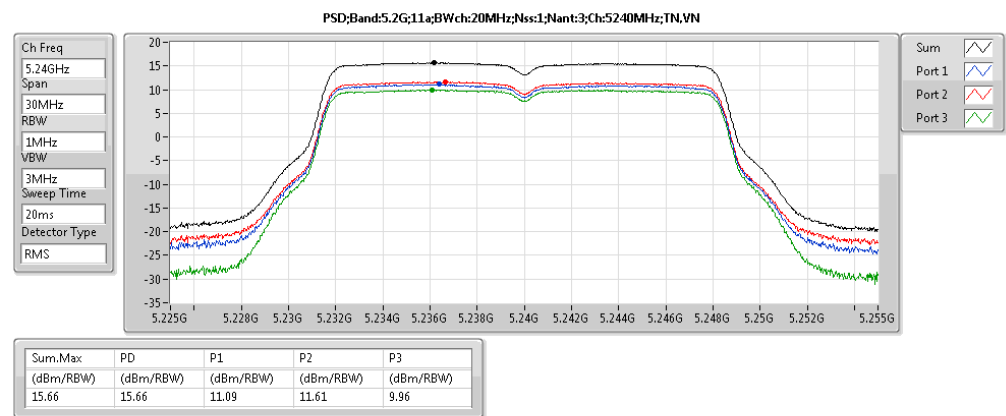
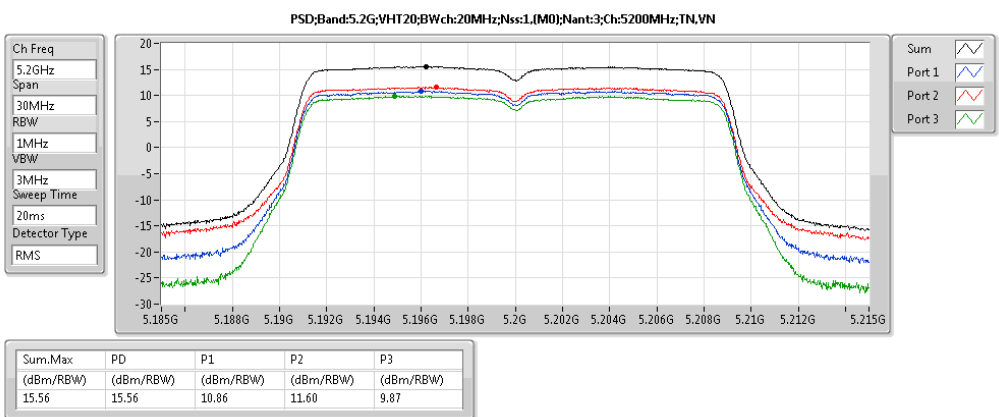
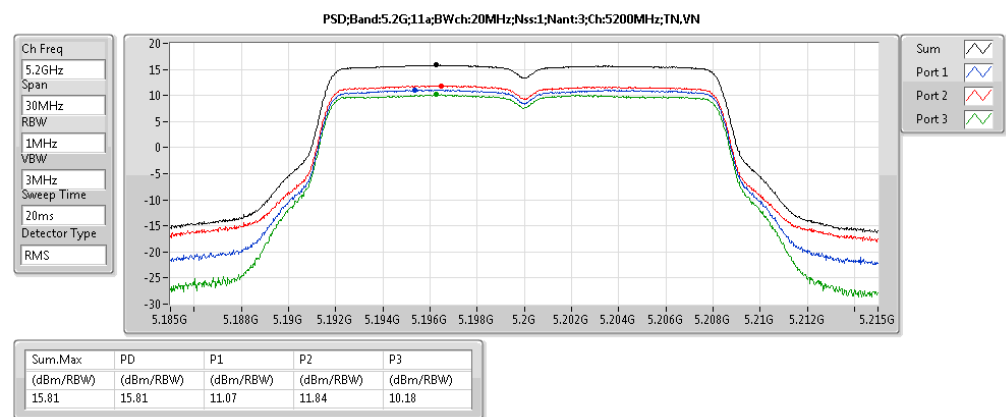
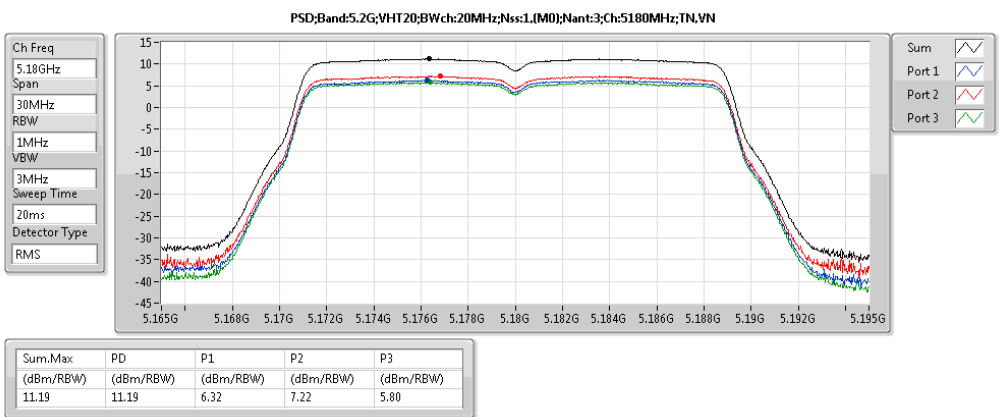
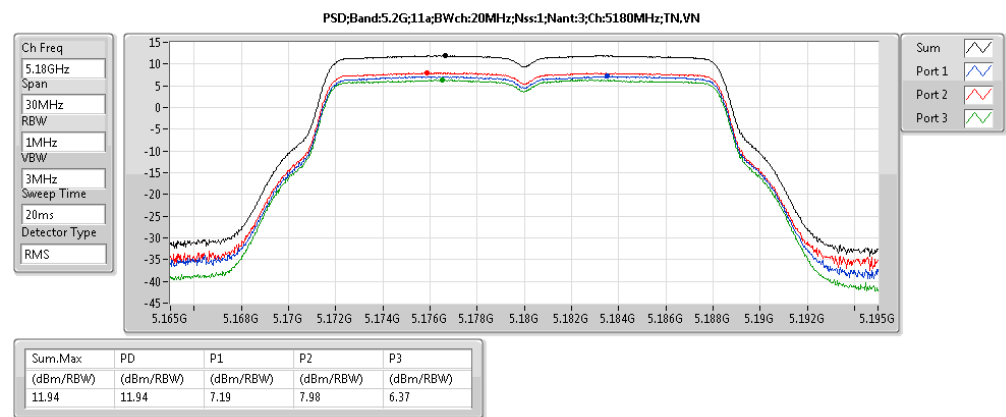
Result

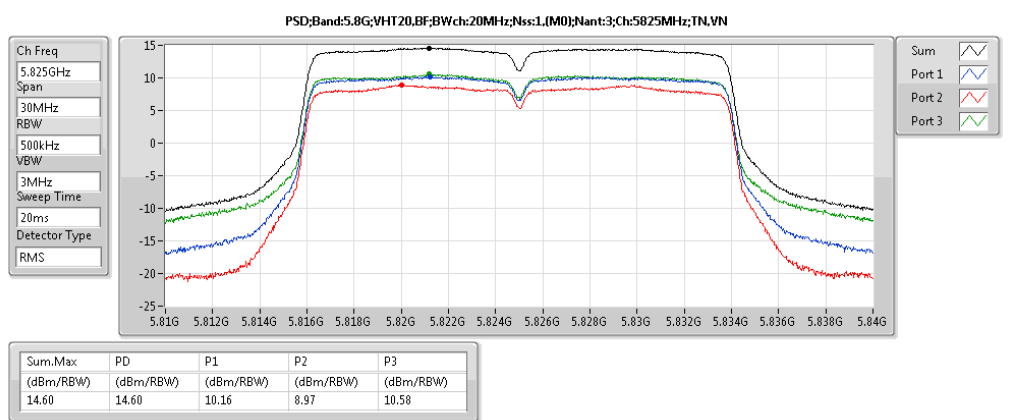
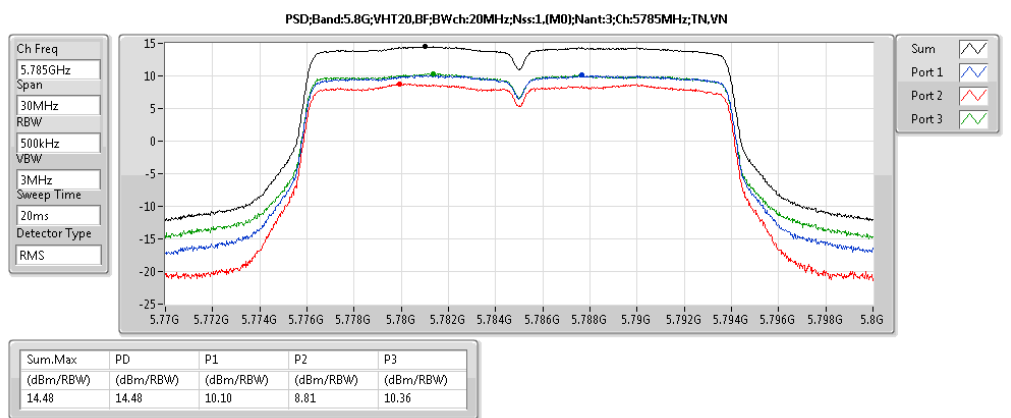
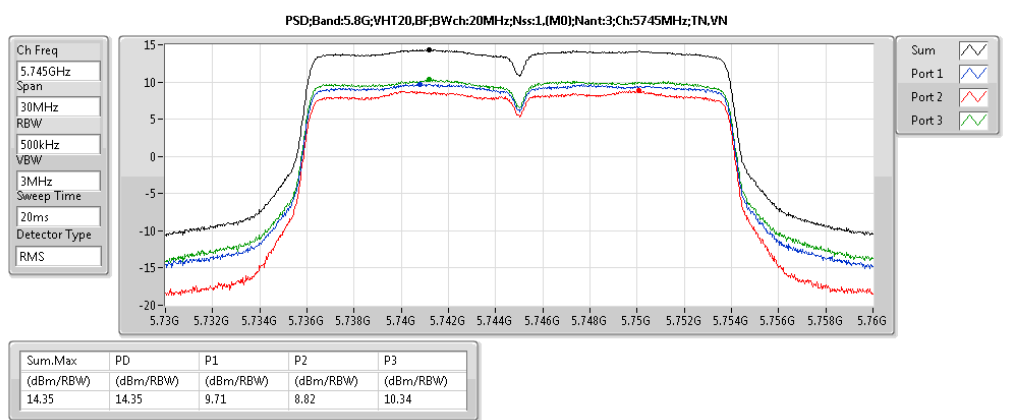
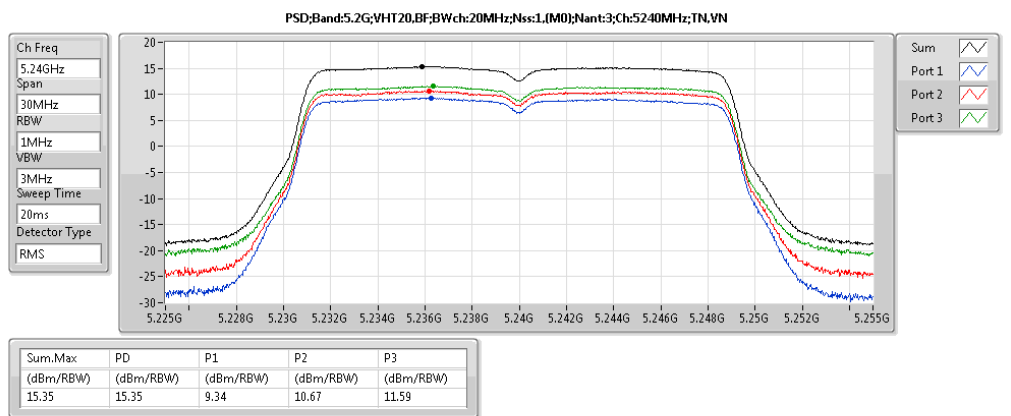
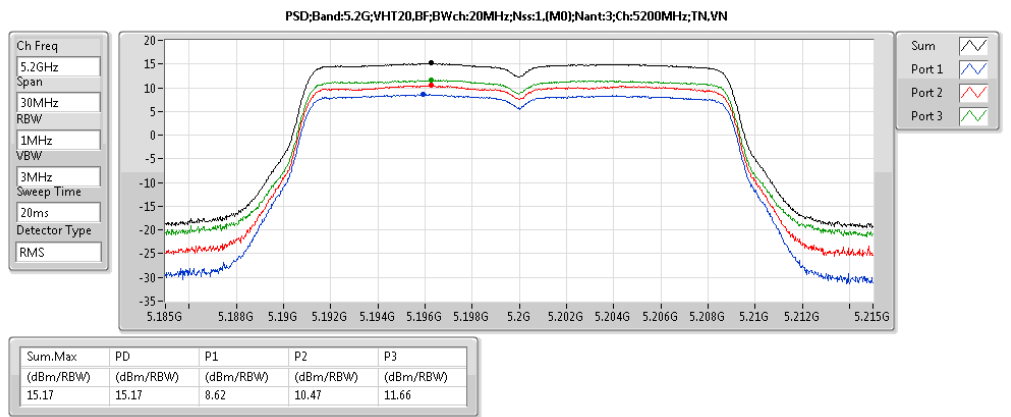
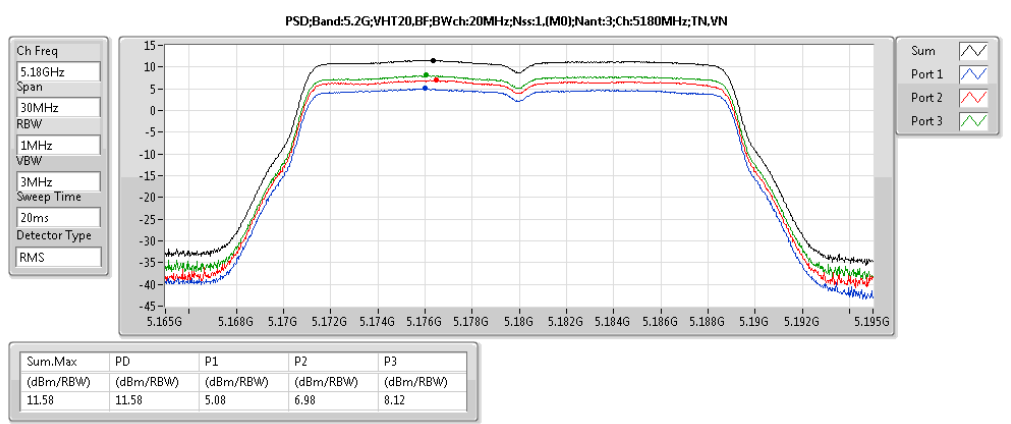
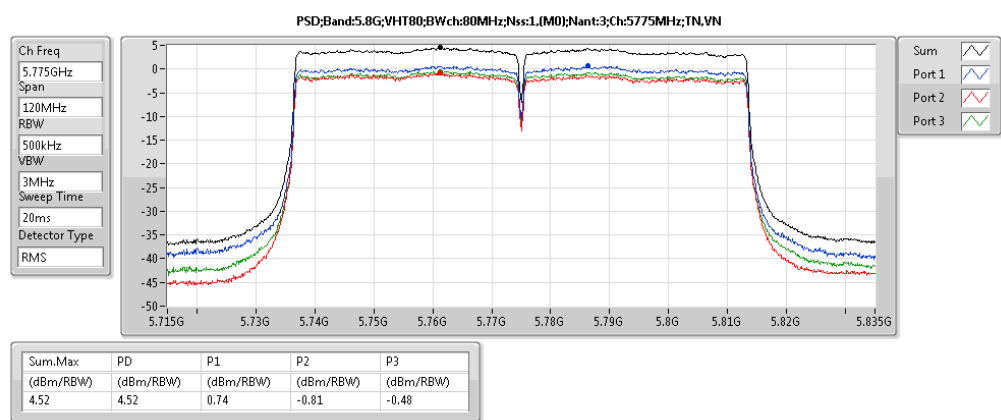
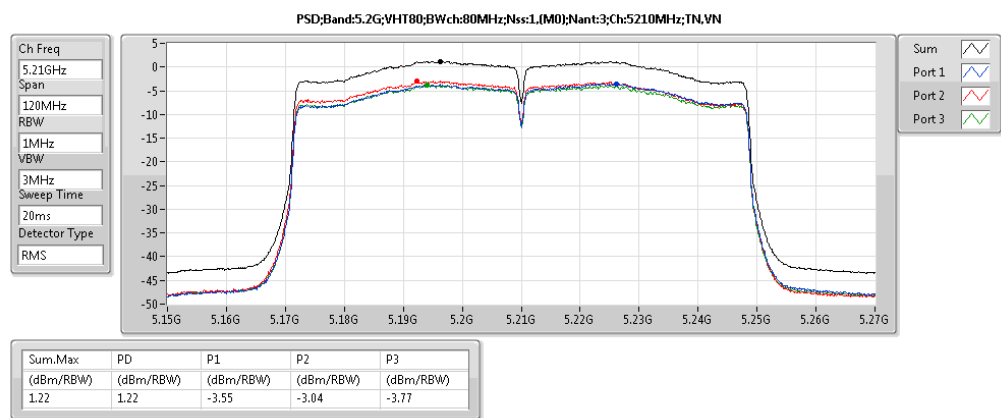
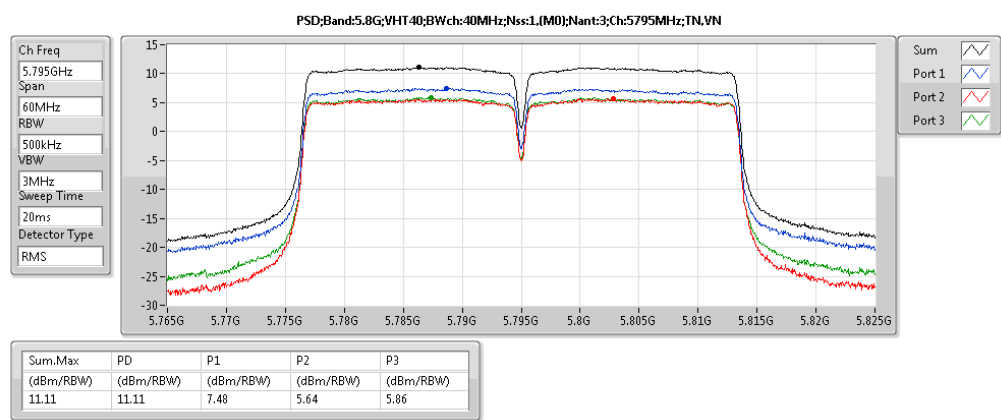
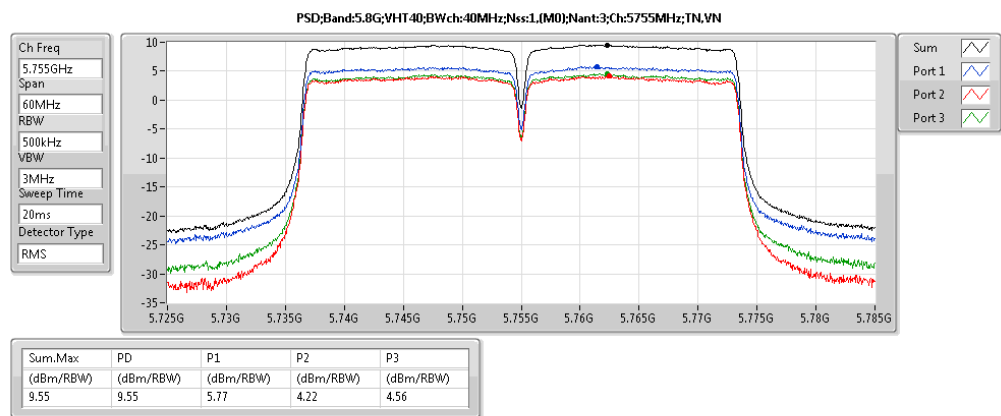
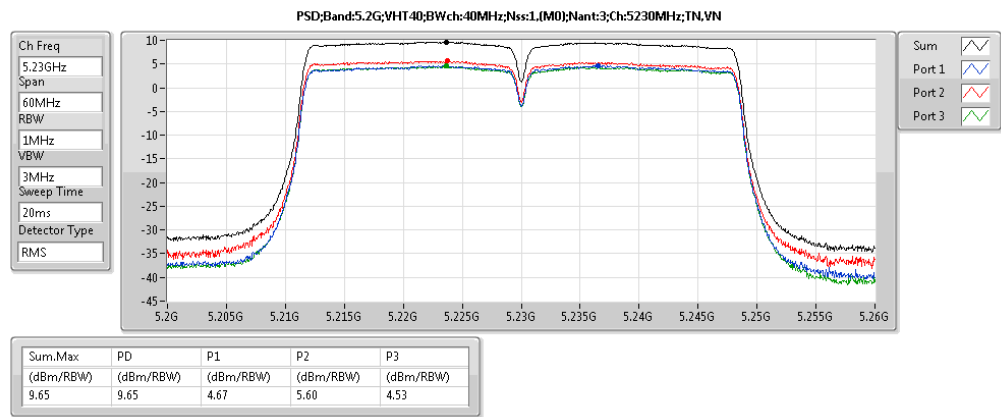
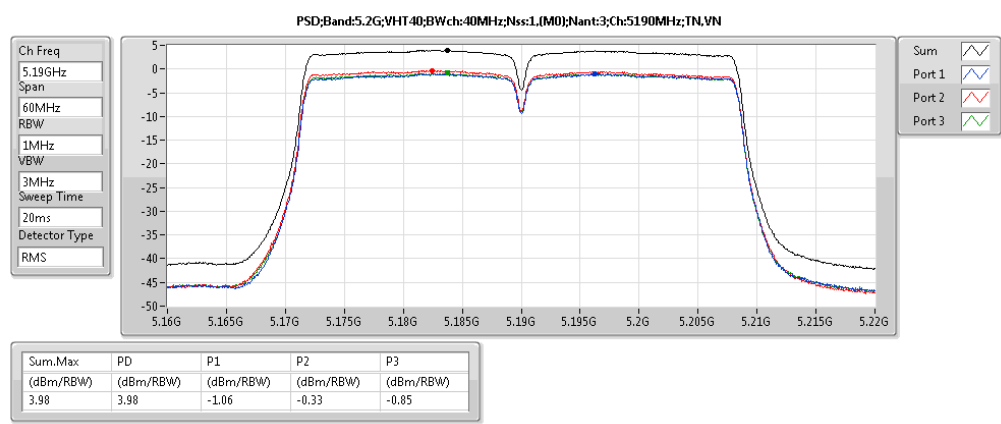
Mode	Result	Meas.RBW (Hz)	Lim.RBW (Hz)	BWCF (dB)	DG (dBi)	PD (dBm/RBW)	PD.Limit (dBm/RBW)	EIRP.PD (dBm/RBW)	EIRP.PD.Li m (dBm/RBW)	P1 (dBm/RBW)	P2 (dBm/RBW)	P3 (dBm/RBW)
5.2G;11a;Nss1;Ntx3;5180	Pass	1M	1M	0.00	7.18	11.94	15.82	19.12	Inf	7.19	7.98	6.37
5.2G;11a;Nss1;Ntx3;5200	Pass	1M	1M	0.00	7.18	15.81	15.82	22.99	Inf	11.07	11.84	10.18
5.2G;11a;Nss1;Ntx3;5240	Pass	1M	1M	0.00	7.18	15.66	15.82	22.84	Inf	11.09	11.61	9.96
5.8G;11a;Nss1;Ntx3;5745	Pass	500k	500k	0.00	6.62	15.99	29.38	22.61	Inf	11.84	11.41	10.92
5.8G;11a;Nss1;Ntx3;5785	Pass	500k	500k	0.00	6.62	16.35	29.38	22.97	Inf	12.27	11.38	11.22
5.8G;11a;Nss1;Ntx3;5825	Pass	500k	500k	0.00	6.62	16.40	29.38	23.02	Inf	12.20	11.61	11.51
5.2G;VHT20;Nss1,(M0);Ntx3;5180	Pass	1M	1M	0.00	7.18	11.19	15.82	18.37	Inf	6.32	7.22	5.80
5.2G;VHT20;Nss1,(M0);Ntx3;5200	Pass	1M	1M	0.00	7.18	15.56	15.82	22.74	Inf	10.86	11.60	9.87
5.2G;VHT20;Nss1,(M0);Ntx3;5240	Pass	1M	1M	0.00	7.18	15.66	15.82	22.84	Inf	11.00	11.71	10.12
5.8G;VHT20;Nss1,(M0);Ntx3;5745	Pass	500k	500k	0.00	6.62	16.21	29.38	22.83	Inf	12.00	11.39	11.08
5.8G;VHT20;Nss1,(M0);Ntx3;5785	Pass	500k	500k	0.00	6.62	16.45	29.38	23.07	Inf	12.51	11.51	11.13
5.8G;VHT20;Nss1,(M0);Ntx3;5825	Pass	500k	500k	0.00	6.62	16.59	29.38	23.21	Inf	12.50	11.71	11.46
5.2G;VHT40;Nss1,(M0);Ntx3;5190	Pass	1M	1M	0.00	7.18	3.98	15.82	11.16	Inf	-1.06	-0.33	-0.85
5.2G;VHT40;Nss1,(M0);Ntx3;5230	Pass	1M	1M	0.00	7.18	9.65	15.82	16.83	Inf	4.67	5.60	4.53
5.8G;VHT40;Nss1,(M0);Ntx3;5755	Pass	500k	500k	0.00	6.62	9.55	29.38	16.17	Inf	5.77	4.22	4.56
5.8G;VHT40;Nss1,(M0);Ntx3;5795	Pass	500k	500k	0.00	6.62	11.11	29.38	17.73	Inf	7.48	5.64	5.86
5.2G;VHT80;Nss1,(M0);Ntx3;5210	Pass	1M	1M	0.00	7.18	1.22	15.82	8.40	Inf	-3.55	-3.04	-3.77
5.8G;VHT80;Nss1,(M0);Ntx3;5775	Pass	500k	500k	0.00	6.62	4.52	29.38	11.14	Inf	0.74	-0.81	-0.48
5.2G;VHT20,BF;Nss1,(M0);Ntx3;5180	Pass	1M	1M	0.00	7.18	11.58	15.82	18.76	Inf	5.08	6.98	8.12
5.2G;VHT20,BF;Nss1,(M0);Ntx3;5200	Pass	1M	1M	0.00	7.18	15.17	15.82	22.35	Inf	8.62	10.47	11.66
5.2G;VHT20,BF;Nss1,(M0);Ntx3;5240	Pass	1M	1M	0.00	7.18	15.35	15.82	22.53	Inf	9.34	10.67	11.59
5.8G;VHT20,BF;Nss1,(M0);Ntx3;5745	Pass	500k	500k	0.00	6.62	14.35	29.38	20.97	Inf	9.71	8.82	10.34
5.8G;VHT20,BF;Nss1,(M0);Ntx3;5785	Pass	500k	500k	0.00	6.62	14.48	29.38	21.10	Inf	10.10	8.81	10.36
5.8G;VHT20,BF;Nss1,(M0);Ntx3;5825	Pass	500k	500k	0.00	6.62	14.60	29.38	21.22	Inf	10.16	8.97	10.58
5.2G;VHT40,BF;Nss1,(M0);Ntx3;5190	Pass	1M	1M	0.00	7.18	4.73	15.82	11.91	Inf	-1.38	0.19	0.90
5.2G;VHT40,BF;Nss1,(M0);Ntx3;5230	Pass	1M	1M	0.00	7.18	10.44	15.82	17.62	Inf	4.30	5.95	6.62
5.8G;VHT40,BF;Nss1,(M0);Ntx3;5755	Pass	500k	500k	0.00	6.62	10.34	29.38	16.96	Inf	5.87	5.18	5.99
5.8G;VHT40,BF;Nss1,(M0);Ntx3;5795	Pass	500k	500k	0.00	6.62	11.30	29.38	17.92	Inf	7.18	5.89	6.80
5.2G;VHT80,BF;Nss1,(M0);Ntx3;5210	Pass	1M	1M	0.00	7.18	2.90	15.82	10.07	Inf	-2.04	-1.05	-2.18
5.8G;VHT80,BF;Nss1,(M0);Ntx3;5775	Pass	500k	500k	0.00	6.62	4.75	29.38	11.37	Inf	-0.13	-0.22	0.52



PSD Result

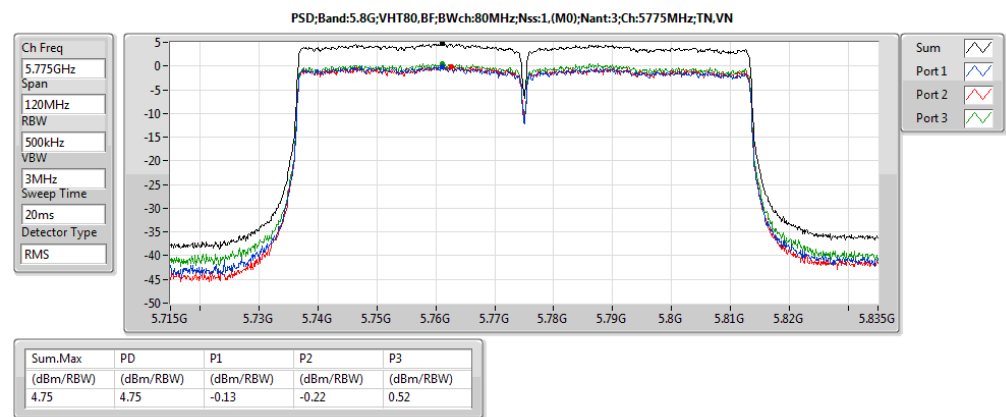
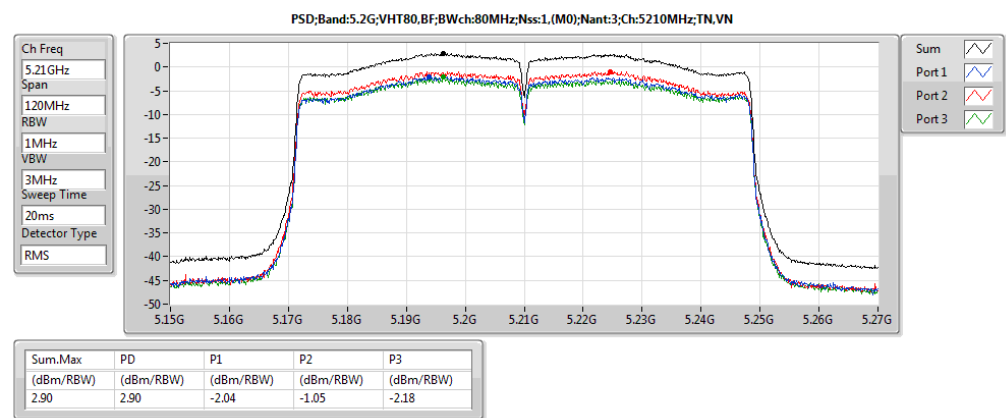
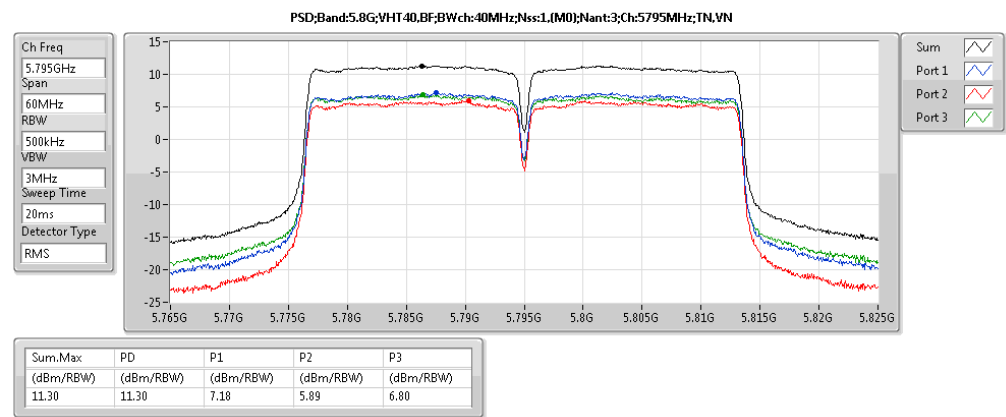
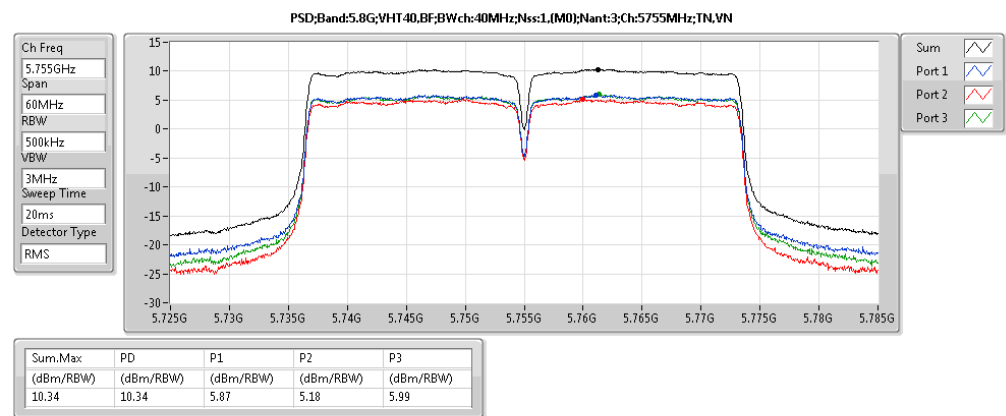
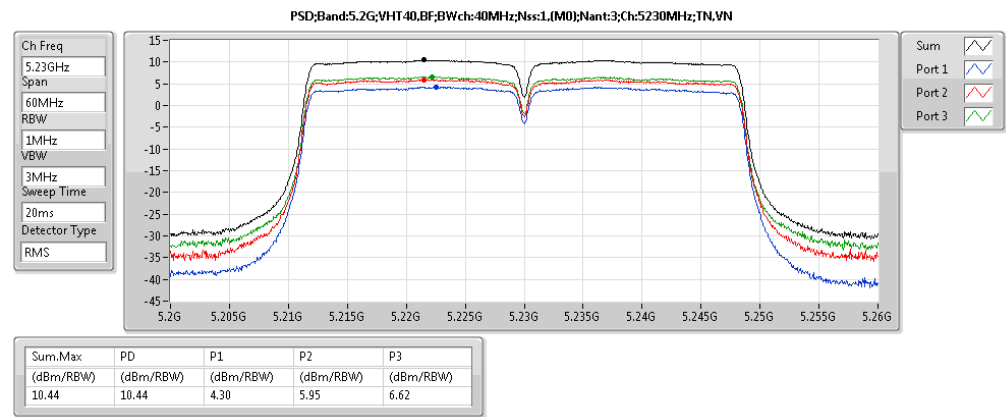
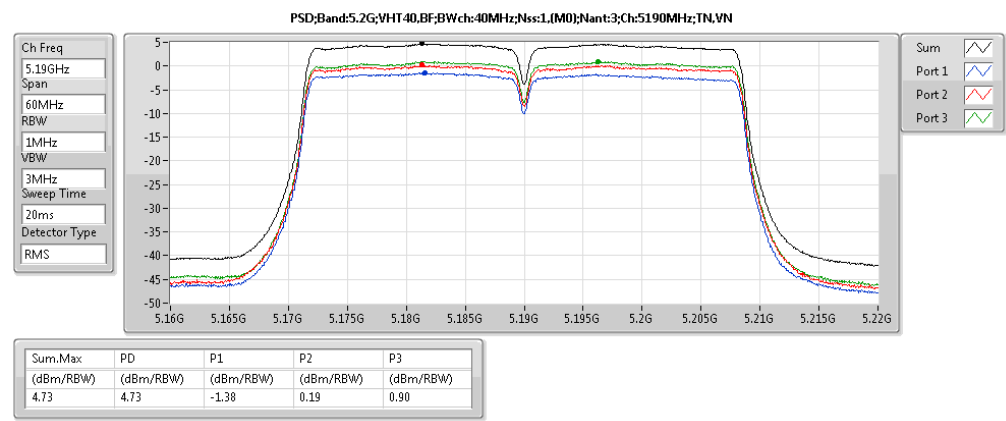
Appendix D

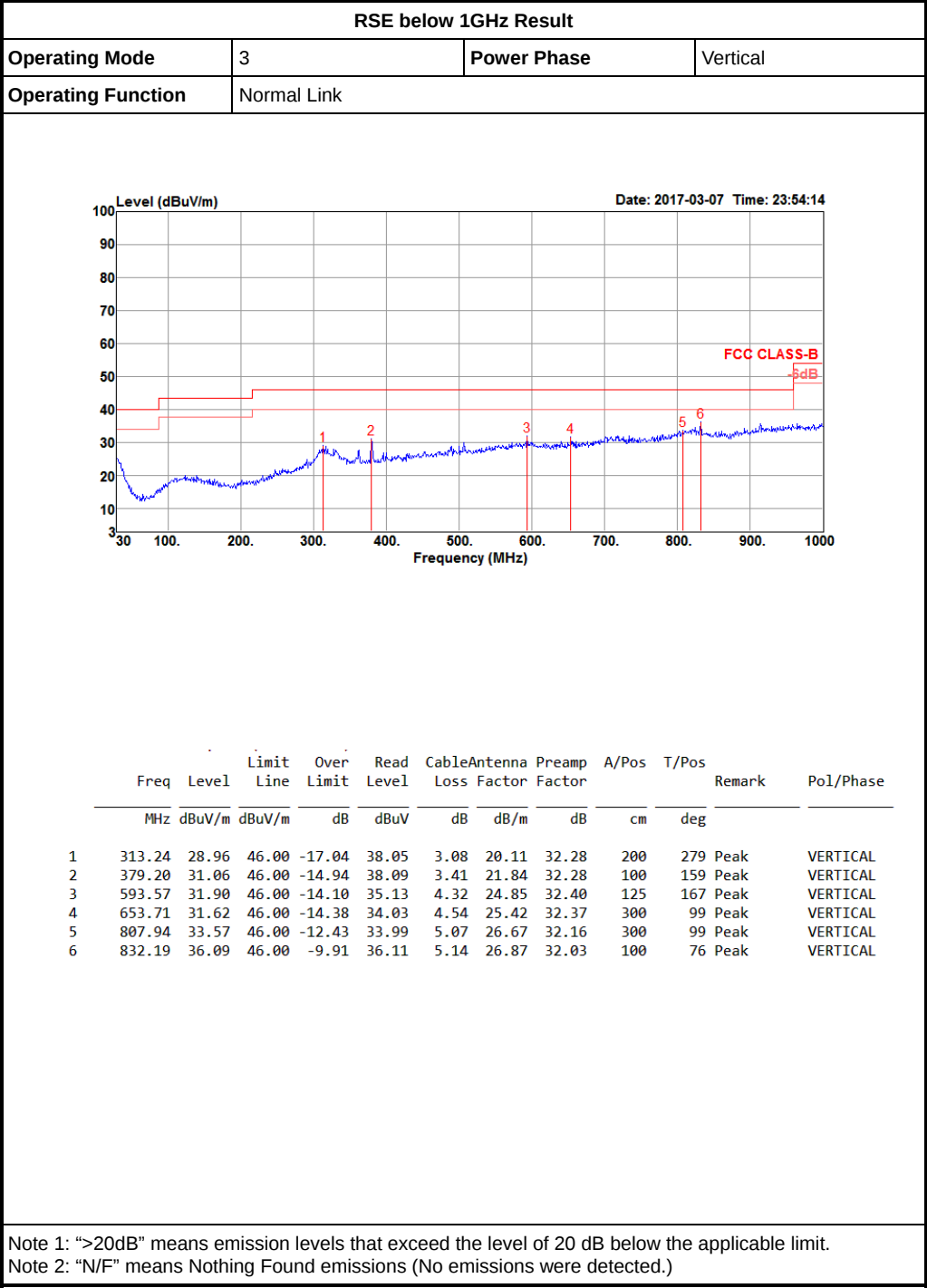
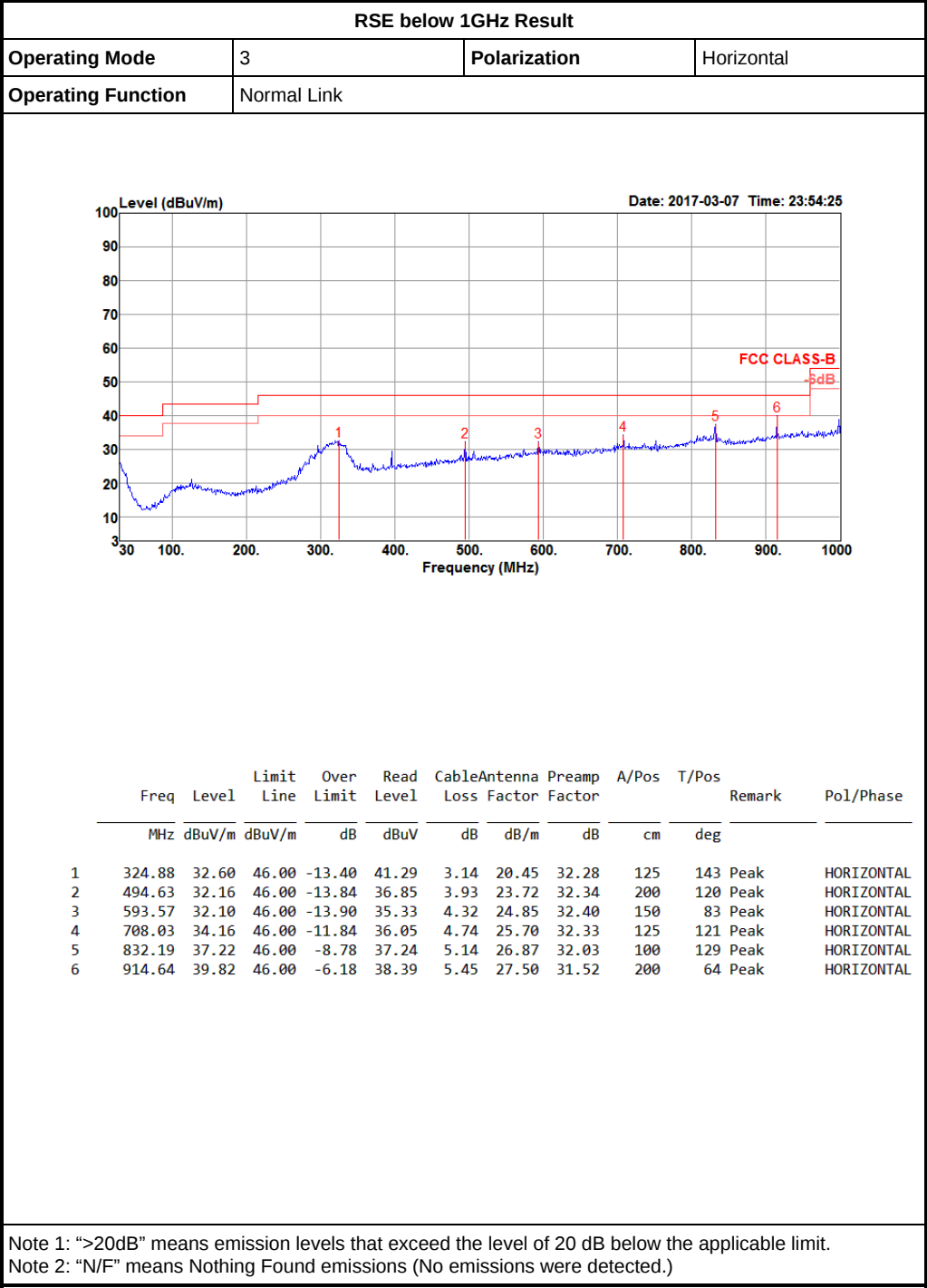






PSD Result







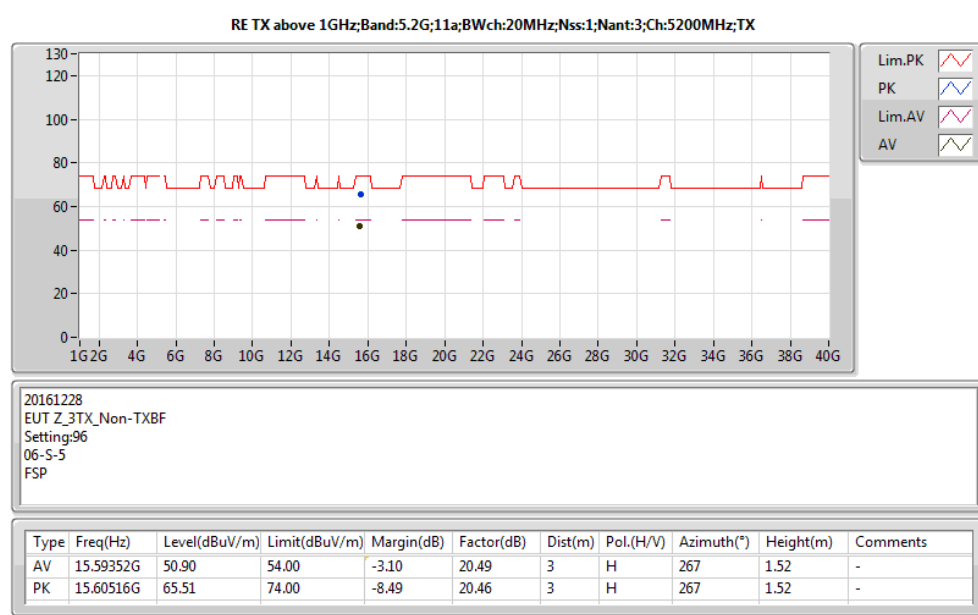
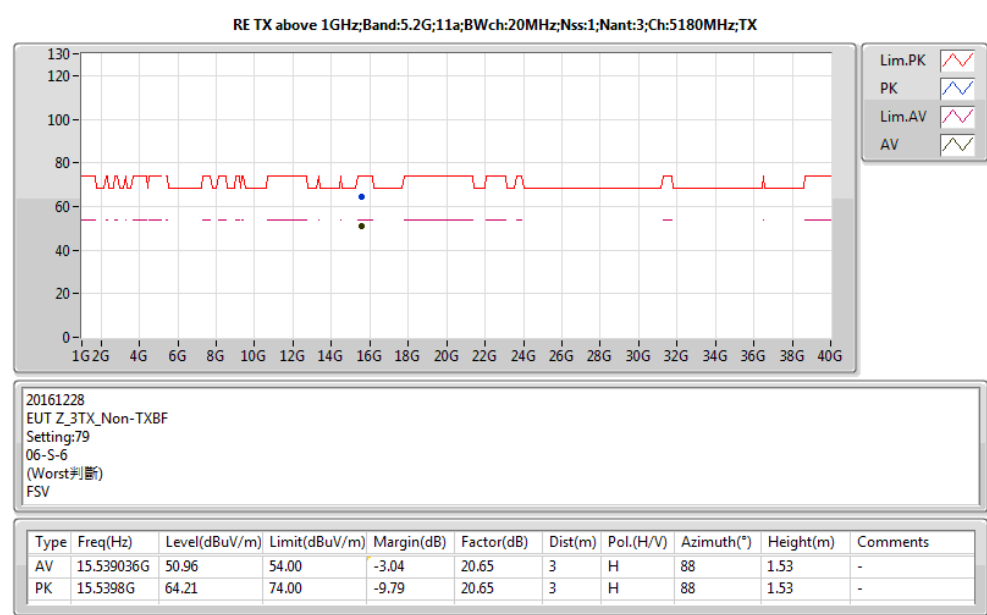
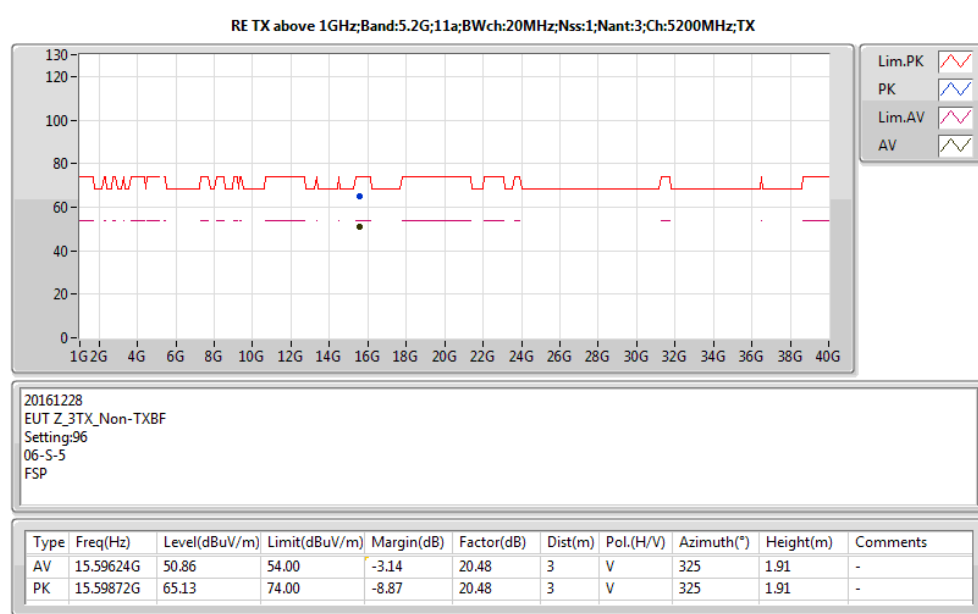
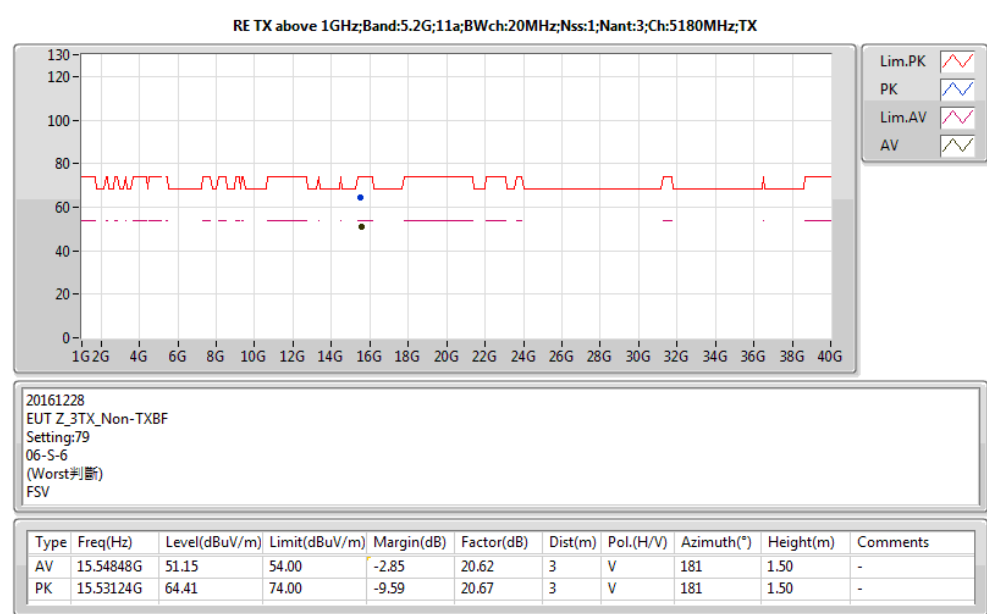
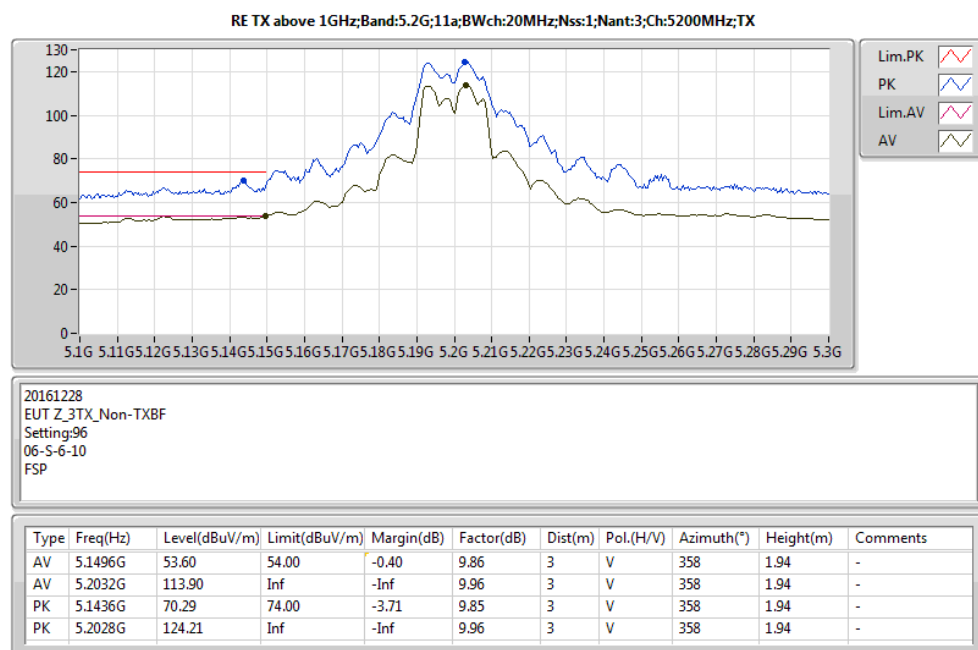
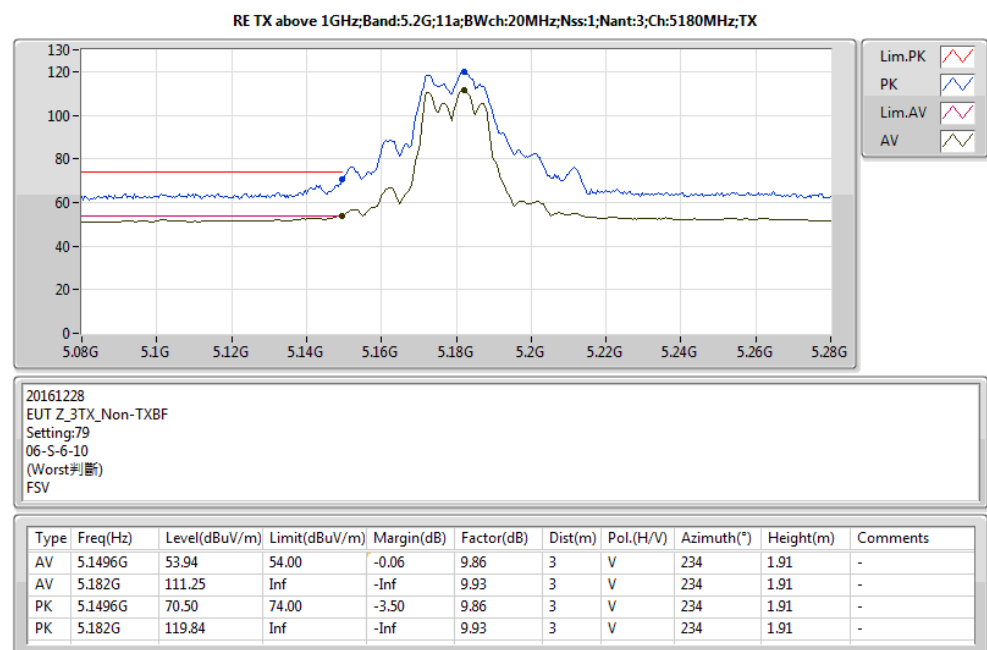
RSE below 1GHz Result																																																																																																											
Operating Mode	4				Polarization				Horizontal																																																																																																		
Operating Function	Normal Link																																																																																																										
Level (dBuV/m) Date: 2017-03-07 Time: 22:38:13 FCC CLASS-B 5dB 1 2 3 4 5 6 Frequency (MHz) <table><tr><th></th><th>Freq</th><th>Level</th><th>Limit</th><th>Over</th><th>Read</th><th>CableAntenna</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phase</th></tr><tr><th></th><th>MHz</th><th>dBuV/m</th><th>dBuV/m</th><th>dB</th><th>dBuV</th><th>dB</th><th>dB/m</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>291.90</td><td>32.86</td><td>46.00</td><td>-13.14</td><td>42.63</td><td>2.97</td><td>19.54</td><td>32.28</td><td>125</td><td>163</td><td>Peak</td></tr><tr><td>2</td><td>322.94</td><td>36.58</td><td>46.00</td><td>-9.42</td><td>45.31</td><td>3.13</td><td>20.42</td><td>32.28</td><td>100</td><td>224</td><td>Peak</td></tr><tr><td>3</td><td>494.63</td><td>35.24</td><td>46.00</td><td>-10.76</td><td>39.93</td><td>3.93</td><td>23.72</td><td>32.34</td><td>100</td><td>91</td><td>Peak</td></tr><tr><td>4</td><td>809.88</td><td>34.73</td><td>46.00</td><td>-11.27</td><td>35.12</td><td>5.08</td><td>26.69</td><td>32.16</td><td>100</td><td>140</td><td>Peak</td></tr><tr><td>5</td><td>914.64</td><td>37.13</td><td>46.00</td><td>-8.87</td><td>35.70</td><td>5.45</td><td>27.50</td><td>31.52</td><td>100</td><td>113</td><td>Peak</td></tr><tr><td>6</td><td>971.87</td><td>37.44</td><td>54.00</td><td>-16.56</td><td>35.08</td><td>5.59</td><td>27.79</td><td>31.02</td><td>200</td><td>62</td><td>Peak</td></tr></table> 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.)													Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		1	291.90	32.86	46.00	-13.14	42.63	2.97	19.54	32.28	125	163	Peak	2	322.94	36.58	46.00	-9.42	45.31	3.13	20.42	32.28	100	224	Peak	3	494.63	35.24	46.00	-10.76	39.93	3.93	23.72	32.34	100	91	Peak	4	809.88	34.73	46.00	-11.27	35.12	5.08	26.69	32.16	100	140	Peak	5	914.64	37.13	46.00	-8.87	35.70	5.45	27.50	31.52	100	113	Peak	6	971.87	37.44	54.00	-16.56	35.08	5.59	27.79	31.02	200	62	Peak
	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase																																																																																																
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg																																																																																																	
1	291.90	32.86	46.00	-13.14	42.63	2.97	19.54	32.28	125	163	Peak																																																																																																
2	322.94	36.58	46.00	-9.42	45.31	3.13	20.42	32.28	100	224	Peak																																																																																																
3	494.63	35.24	46.00	-10.76	39.93	3.93	23.72	32.34	100	91	Peak																																																																																																
4	809.88	34.73	46.00	-11.27	35.12	5.08	26.69	32.16	100	140	Peak																																																																																																
5	914.64	37.13	46.00	-8.87	35.70	5.45	27.50	31.52	100	113	Peak																																																																																																
6	971.87	37.44	54.00	-16.56	35.08	5.59	27.79	31.02	200	62	Peak																																																																																																

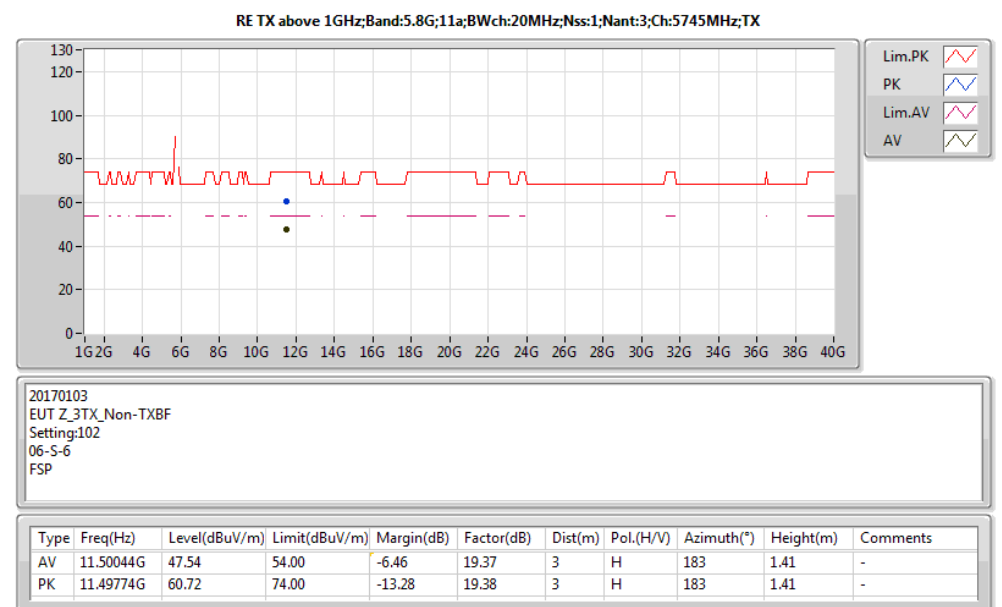
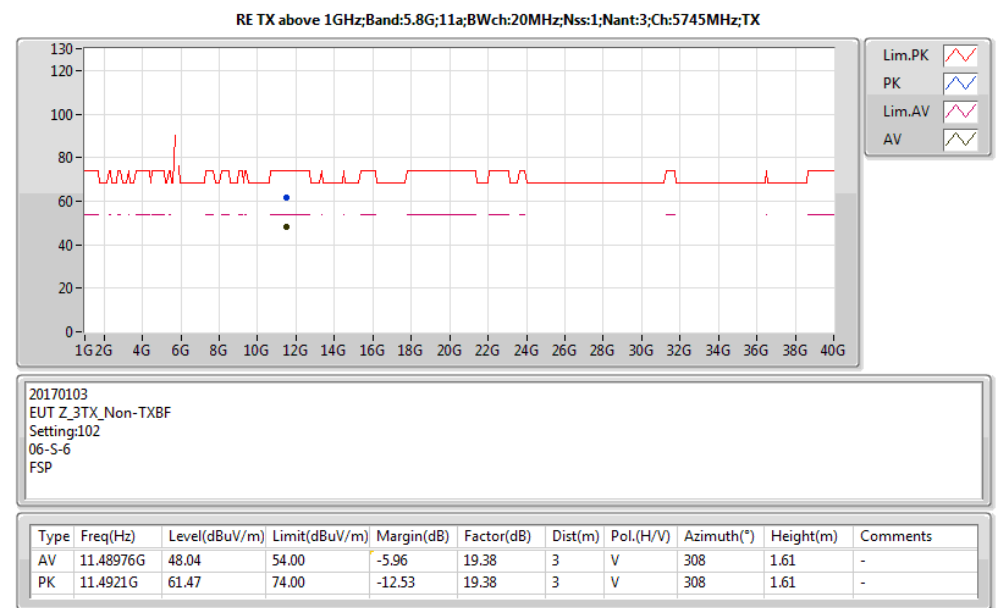
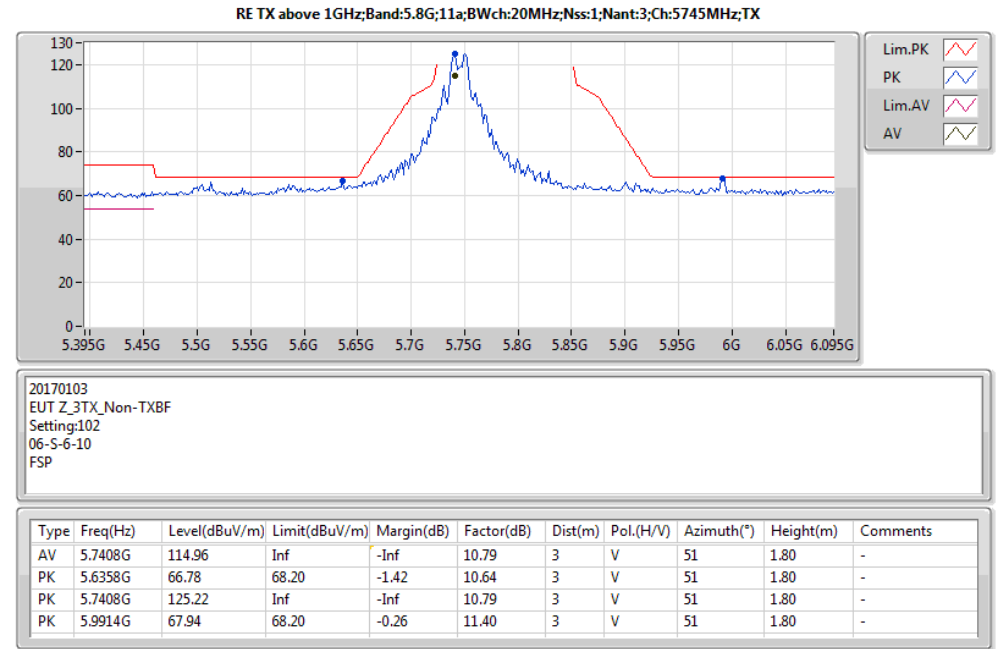
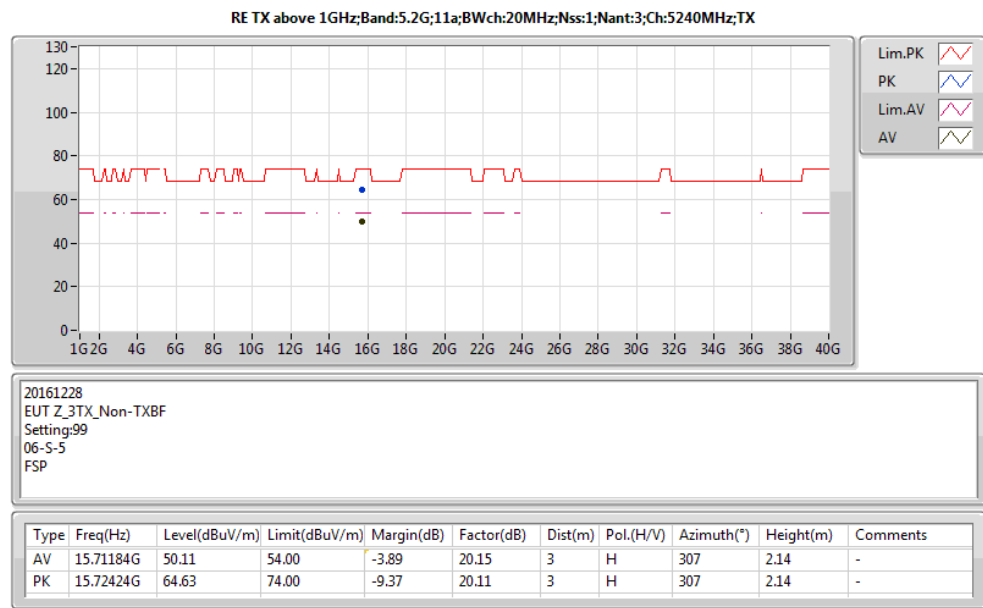
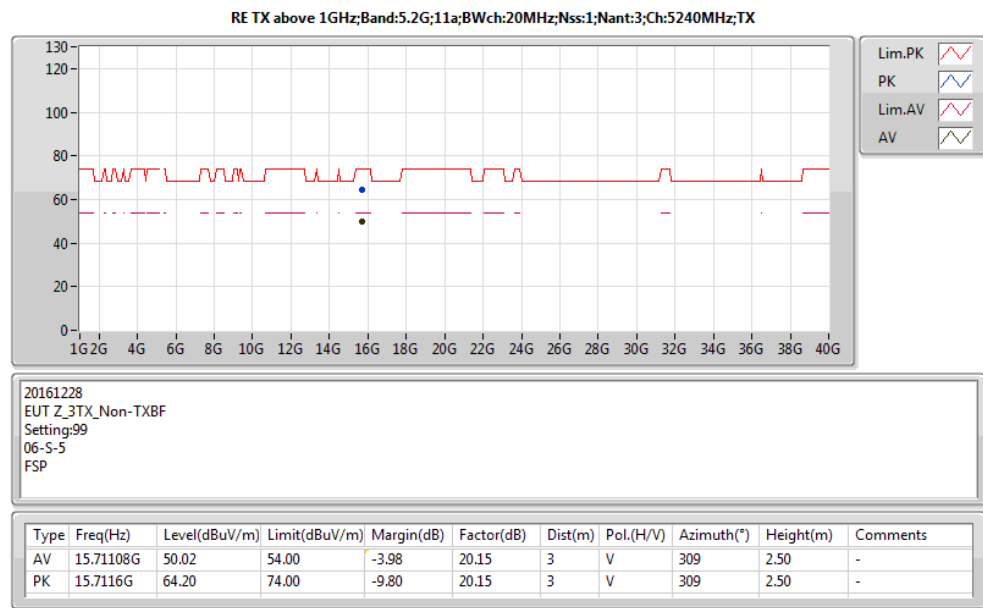
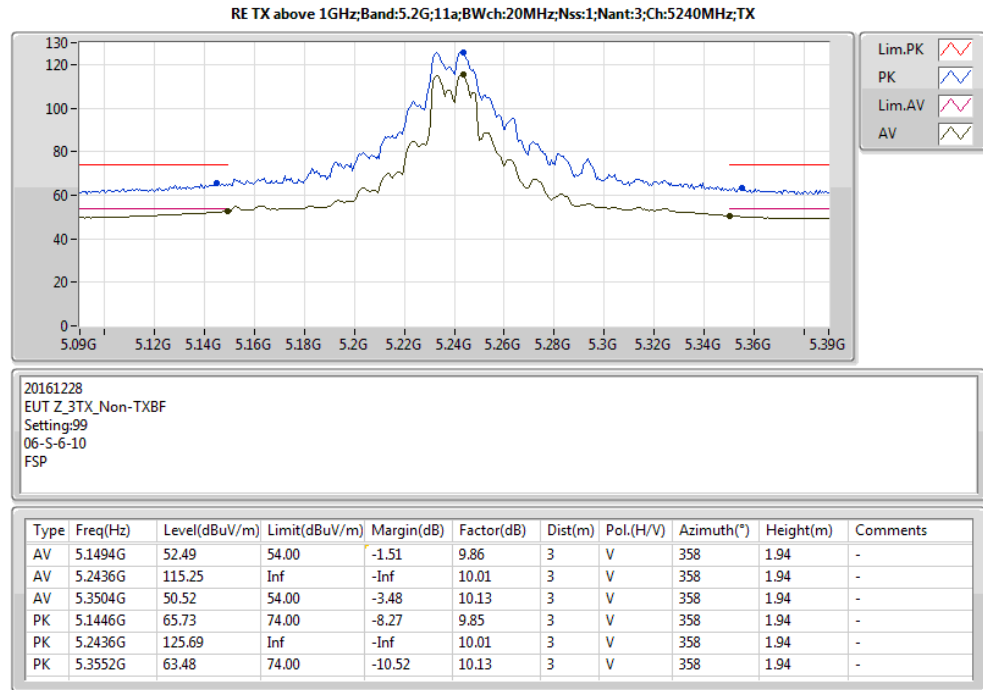
RSE below 1GHz Result																																																																																																											
Operating Mode	4				Power Phase				Vertical																																																																																																		
Operating Function	Normal Link																																																																																																										
Level (dBuV/m) Date: 2017-03-07 Time: 22:37:59 FCC CLASS-B 5dB 2 3 4 5 6 Frequency (MHz) <table><tr><th></th><th>Freq</th><th>Level</th><th>Limit</th><th>Over</th><th>Read</th><th>CableAntenna</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phase</th></tr><tr><th></th><th>MHz</th><th>dBuV/m</th><th>dBuV/m</th><th>dB</th><th>dBuV</th><th>dB</th><th>dB/m</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>36.79</td><td>26.52</td><td>40.00</td><td>-13.48</td><td>36.23</td><td>0.99</td><td>21.69</td><td>32.39</td><td>125</td><td>83</td><td>Peak</td></tr><tr><td>2</td><td>313.24</td><td>30.90</td><td>46.00</td><td>-15.10</td><td>39.99</td><td>3.08</td><td>20.11</td><td>32.28</td><td>200</td><td>294</td><td>Peak</td></tr><tr><td>3</td><td>380.17</td><td>29.66</td><td>46.00</td><td>-16.34</td><td>36.65</td><td>3.42</td><td>21.87</td><td>32.28</td><td>125</td><td>197</td><td>Peak</td></tr><tr><td>4</td><td>706.09</td><td>32.69</td><td>46.00</td><td>-13.31</td><td>34.62</td><td>4.73</td><td>25.68</td><td>32.34</td><td>100</td><td>106</td><td>Peak</td></tr><tr><td>5</td><td>831.22</td><td>34.85</td><td>46.00</td><td>-11.15</td><td>34.90</td><td>5.14</td><td>26.84</td><td>32.03</td><td>200</td><td>352</td><td>Peak</td></tr><tr><td>6</td><td>943.74</td><td>35.28</td><td>46.00</td><td>-10.72</td><td>33.40</td><td>5.51</td><td>27.66</td><td>31.29</td><td>150</td><td>26</td><td>Peak</td></tr></table> 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.)													Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		1	36.79	26.52	40.00	-13.48	36.23	0.99	21.69	32.39	125	83	Peak	2	313.24	30.90	46.00	-15.10	39.99	3.08	20.11	32.28	200	294	Peak	3	380.17	29.66	46.00	-16.34	36.65	3.42	21.87	32.28	125	197	Peak	4	706.09	32.69	46.00	-13.31	34.62	4.73	25.68	32.34	100	106	Peak	5	831.22	34.85	46.00	-11.15	34.90	5.14	26.84	32.03	200	352	Peak	6	943.74	35.28	46.00	-10.72	33.40	5.51	27.66	31.29	150	26	Peak
	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase																																																																																																
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg																																																																																																	
1	36.79	26.52	40.00	-13.48	36.23	0.99	21.69	32.39	125	83	Peak																																																																																																
2	313.24	30.90	46.00	-15.10	39.99	3.08	20.11	32.28	200	294	Peak																																																																																																
3	380.17	29.66	46.00	-16.34	36.65	3.42	21.87	32.28	125	197	Peak																																																																																																
4	706.09	32.69	46.00	-13.31	34.62	4.73	25.68	32.34	100	106	Peak																																																																																																
5	831.22	34.85	46.00	-11.15	34.90	5.14	26.84	32.03	200	352	Peak																																																																																																
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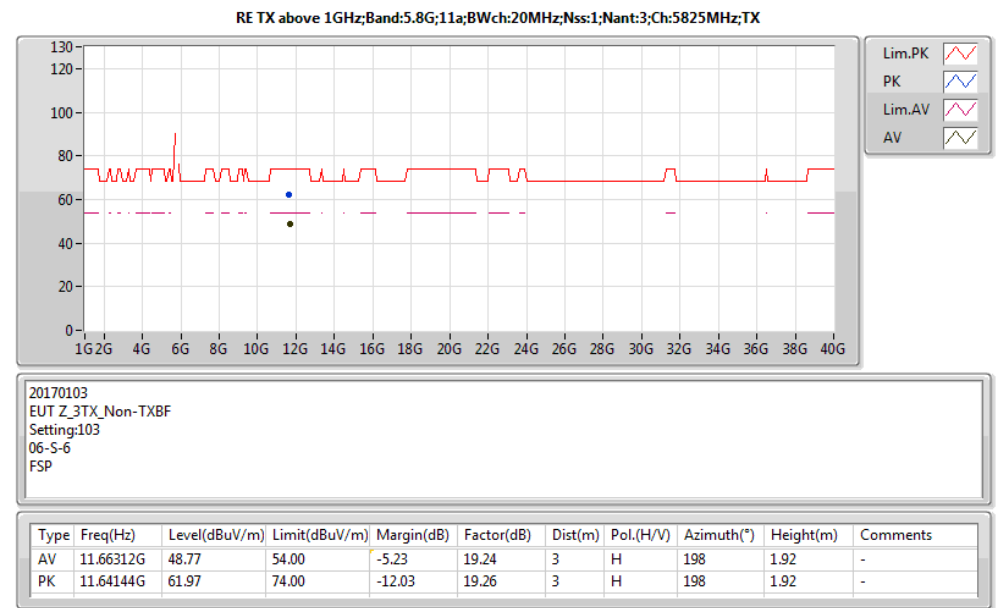
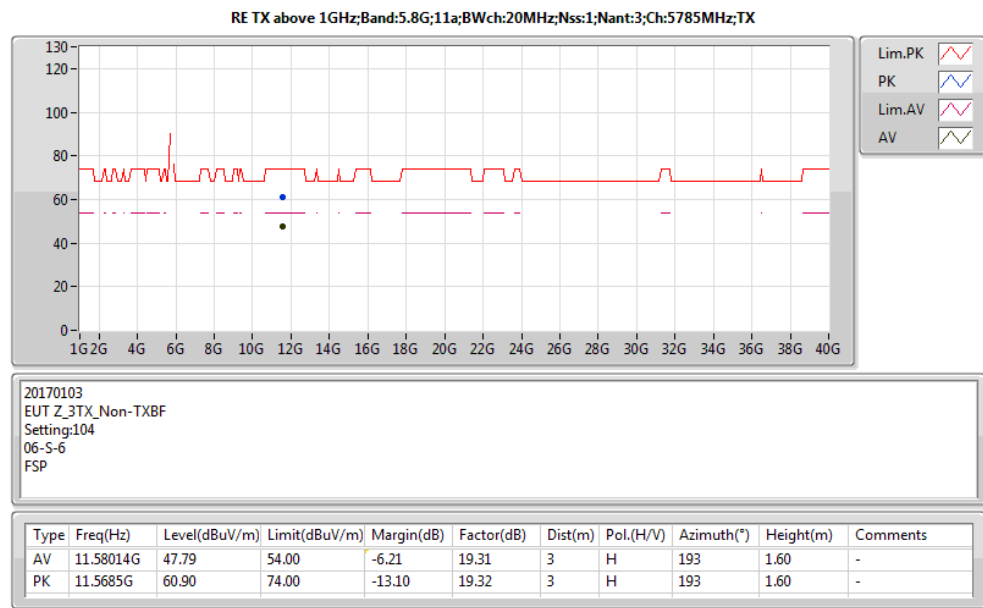
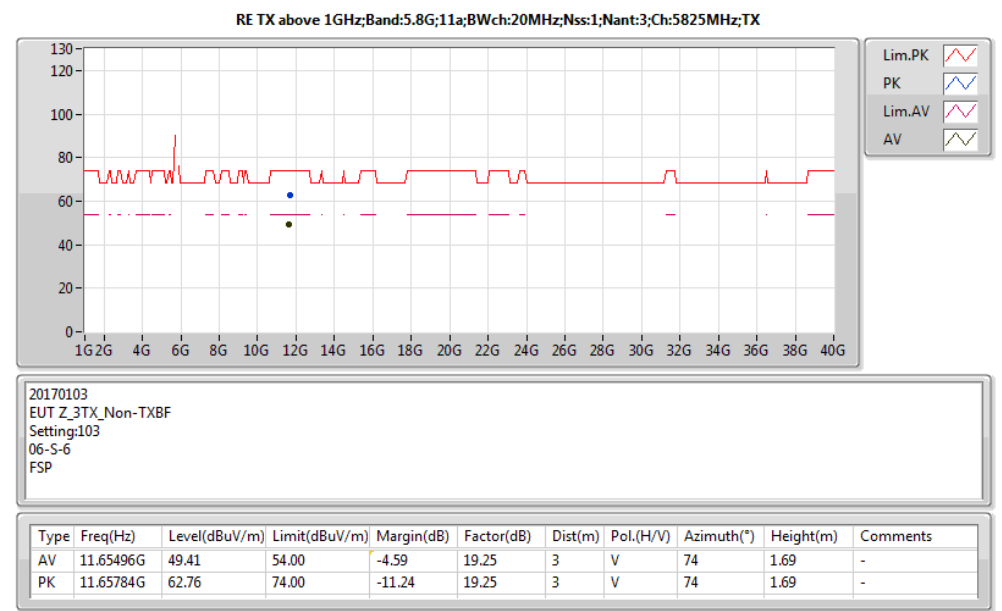
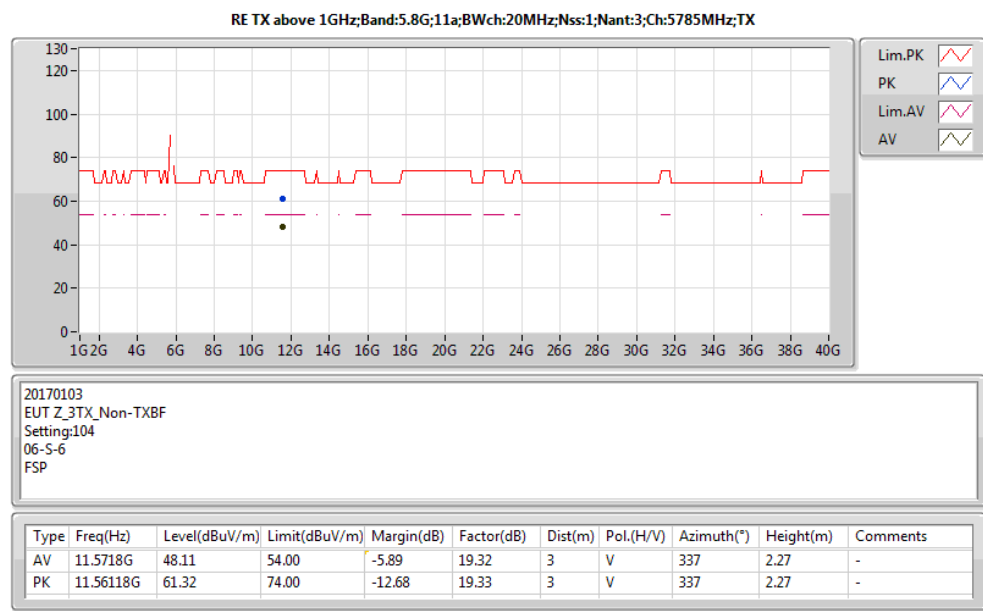
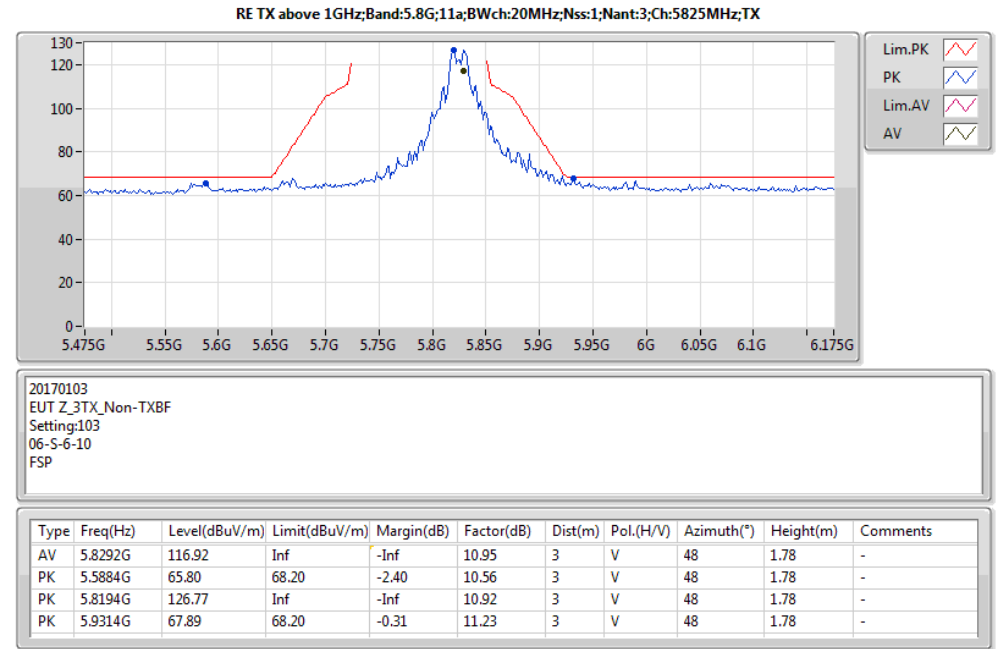
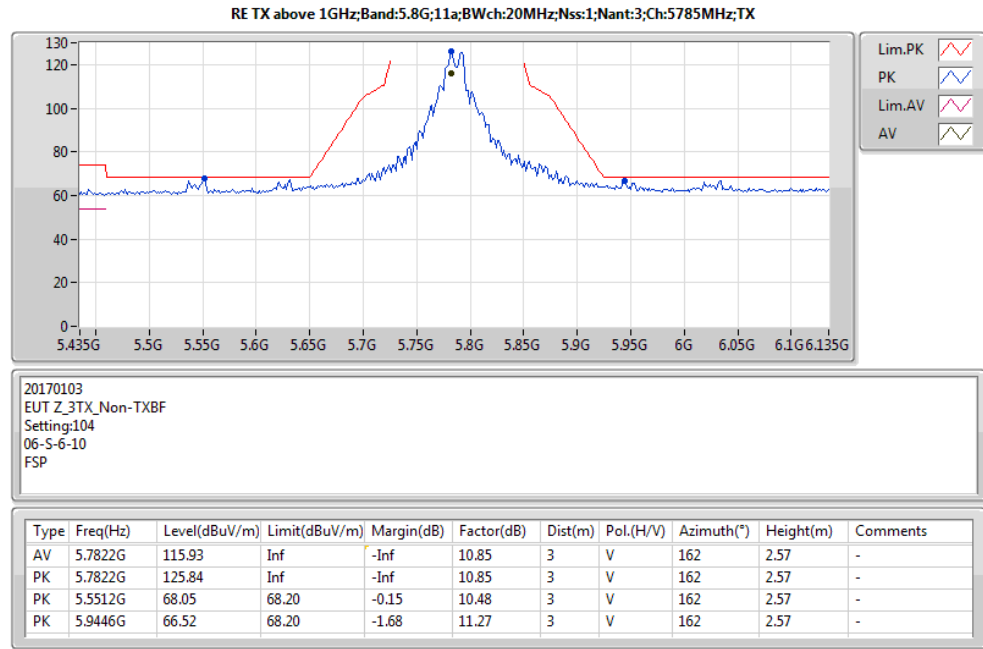


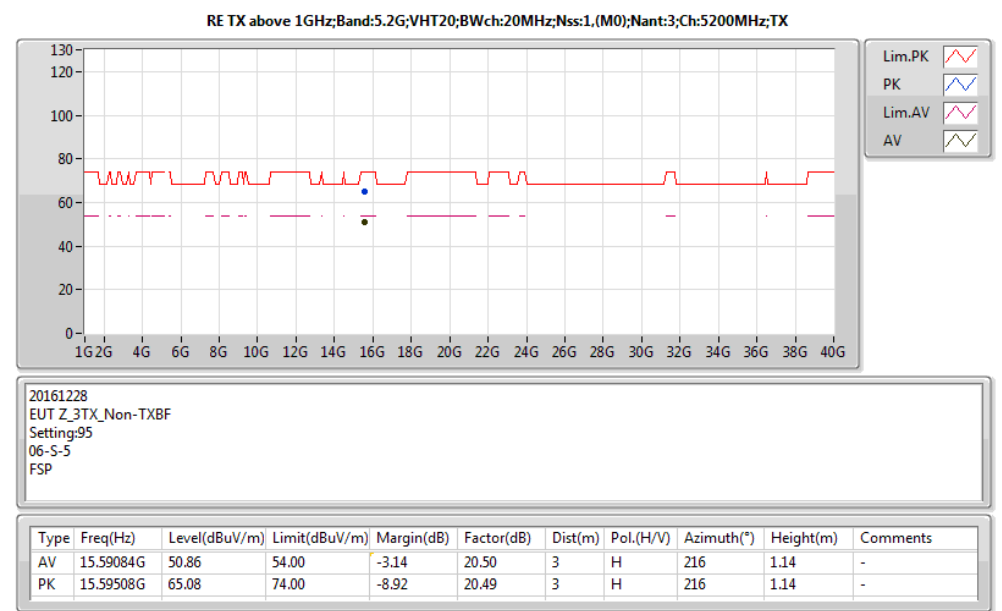
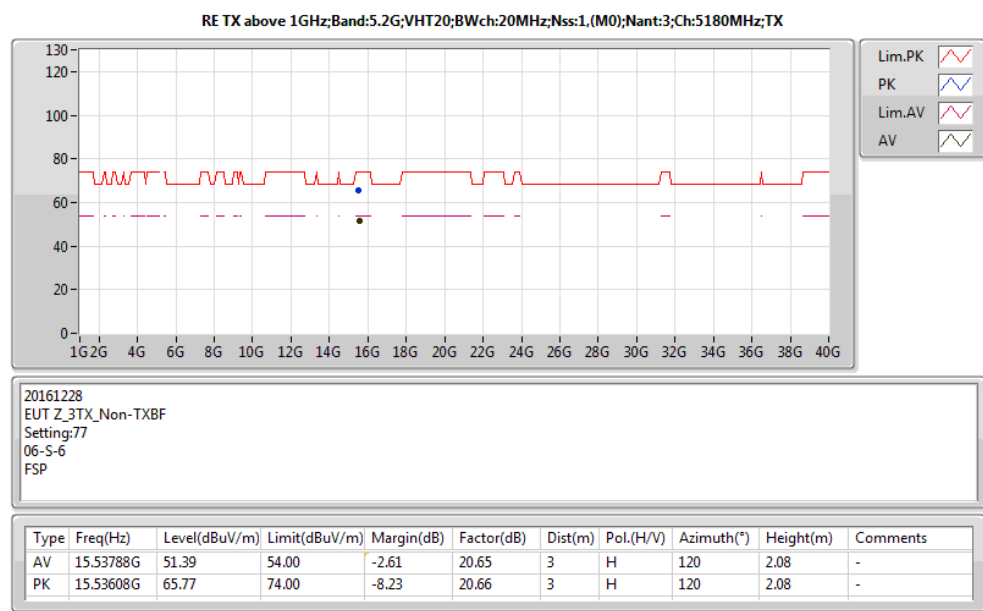
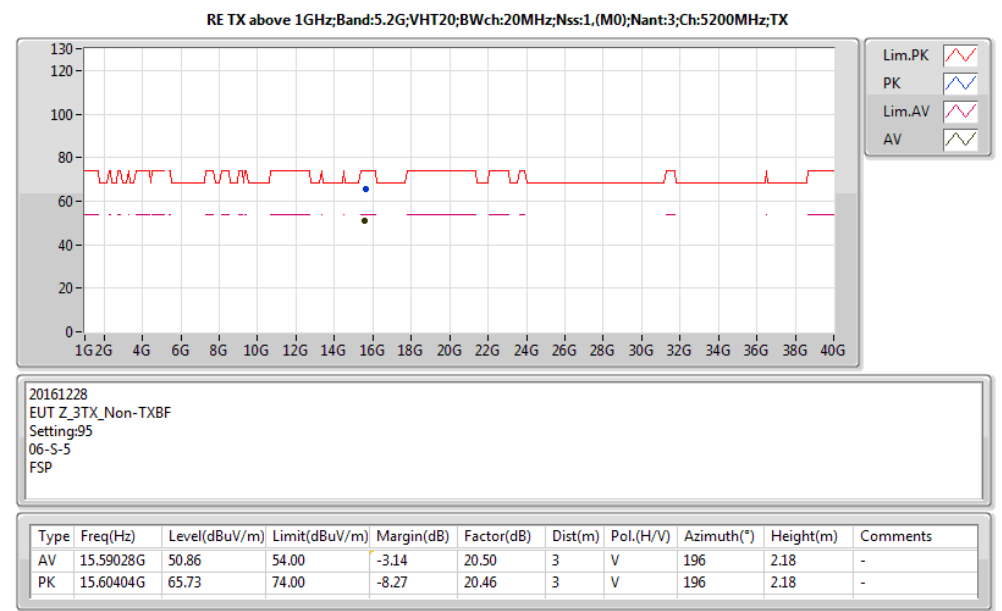
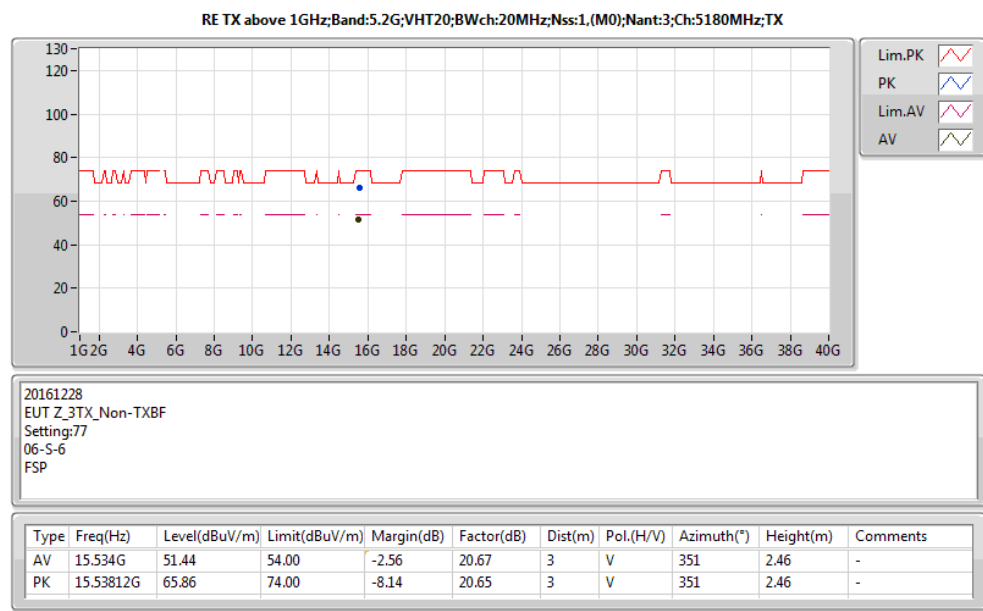
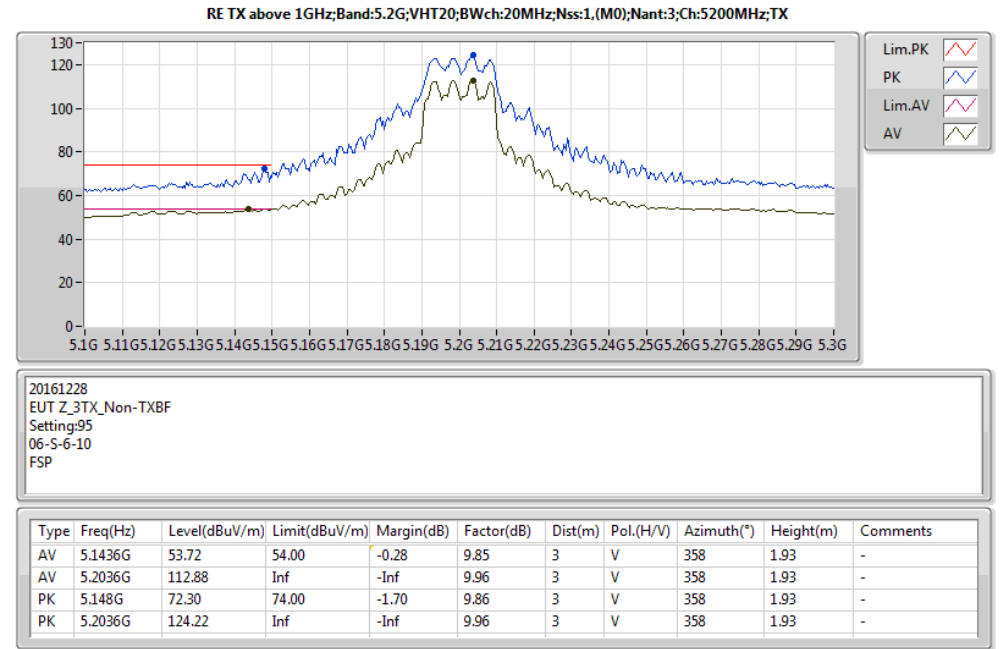
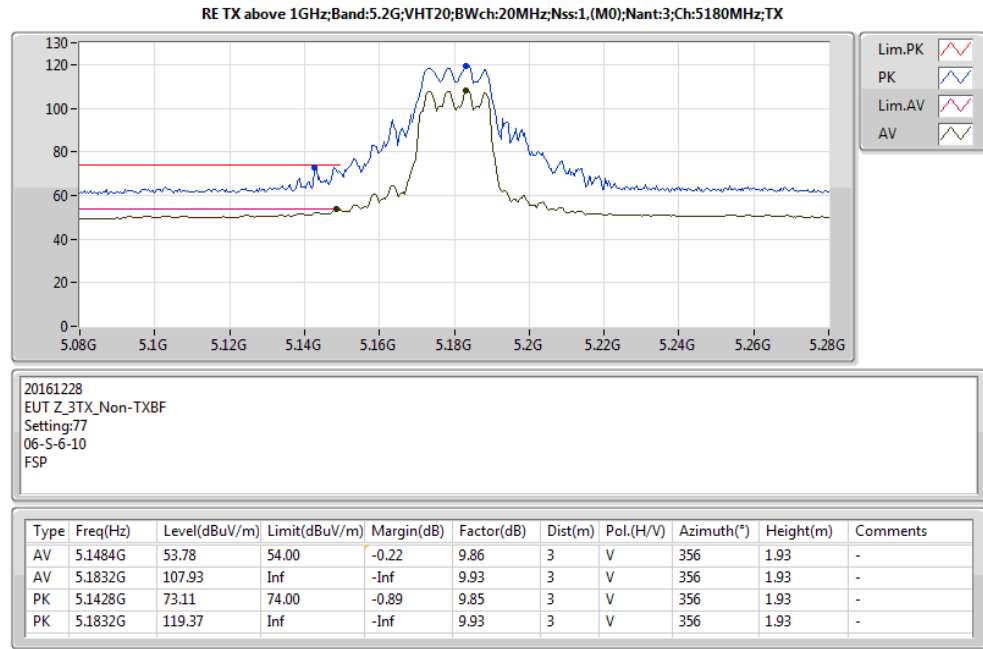
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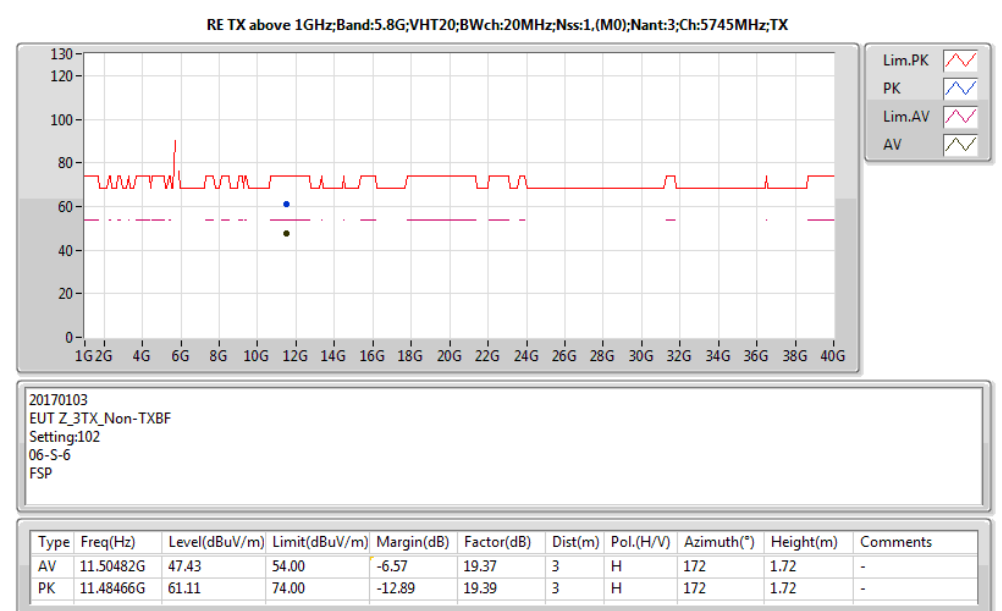
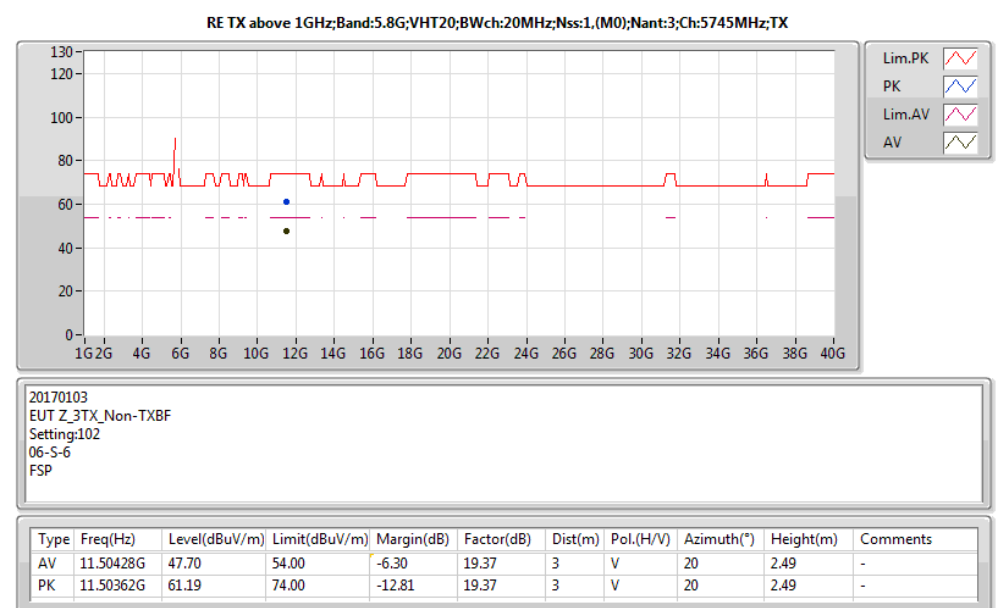
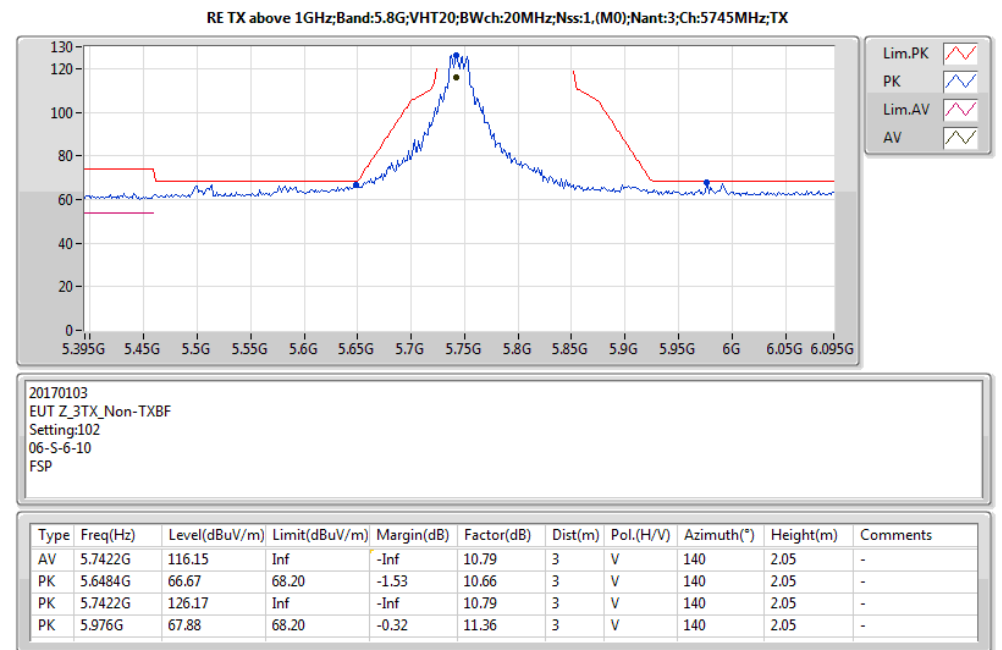
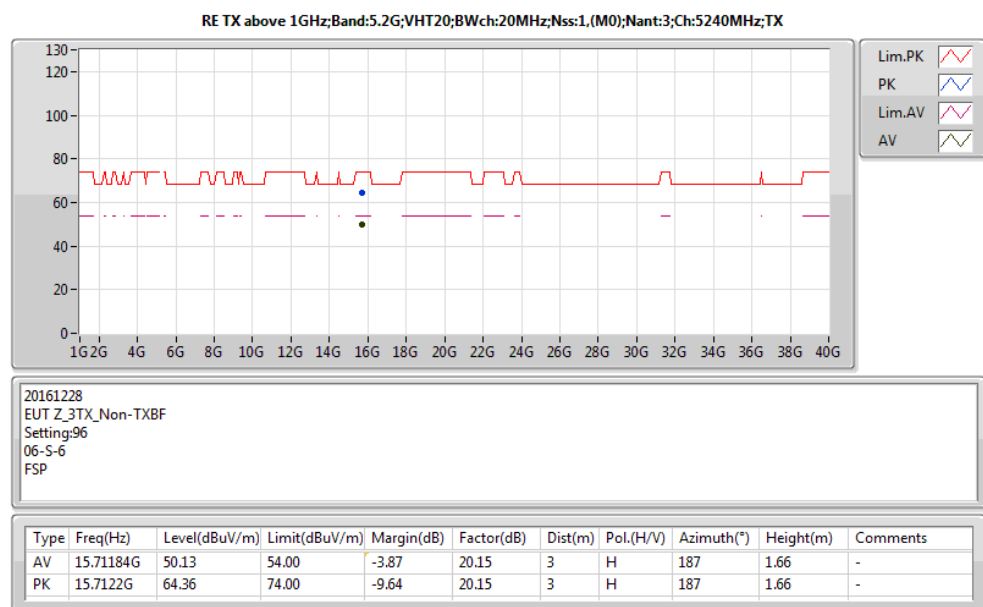
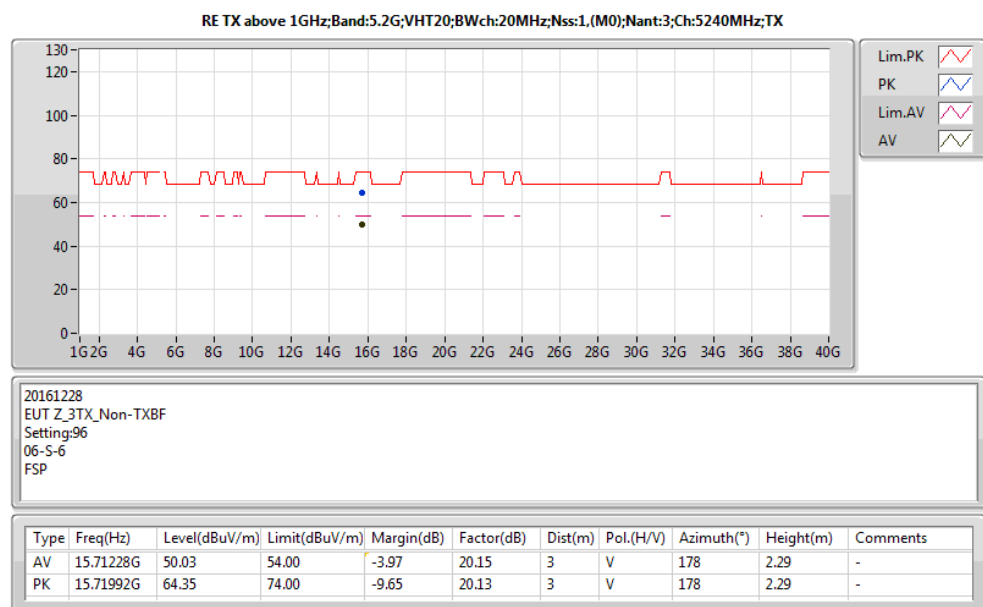
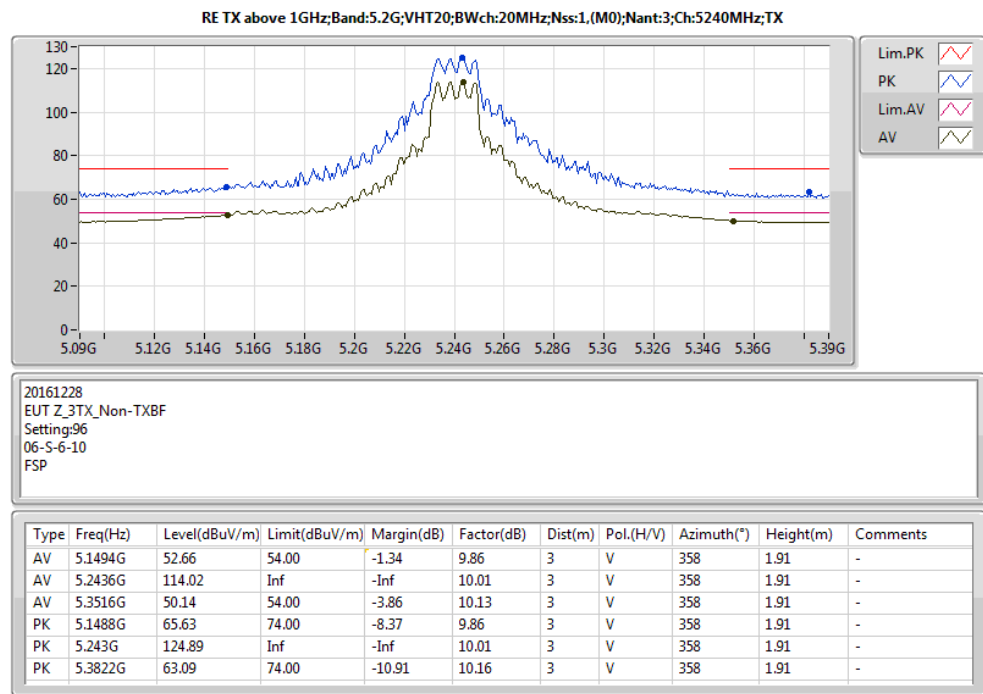
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5.8G;VHT20,BF;Nss1,(M0);Ntx3;5825	Pass	PK	5.923G	69.65	69.68	-0.03	11.21	3	V	359	1.79	-

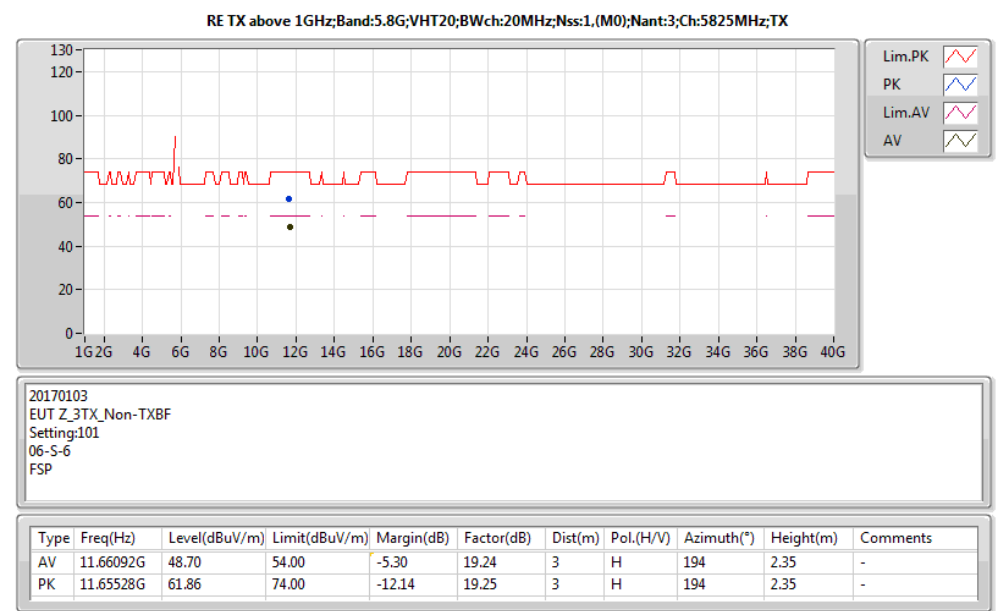
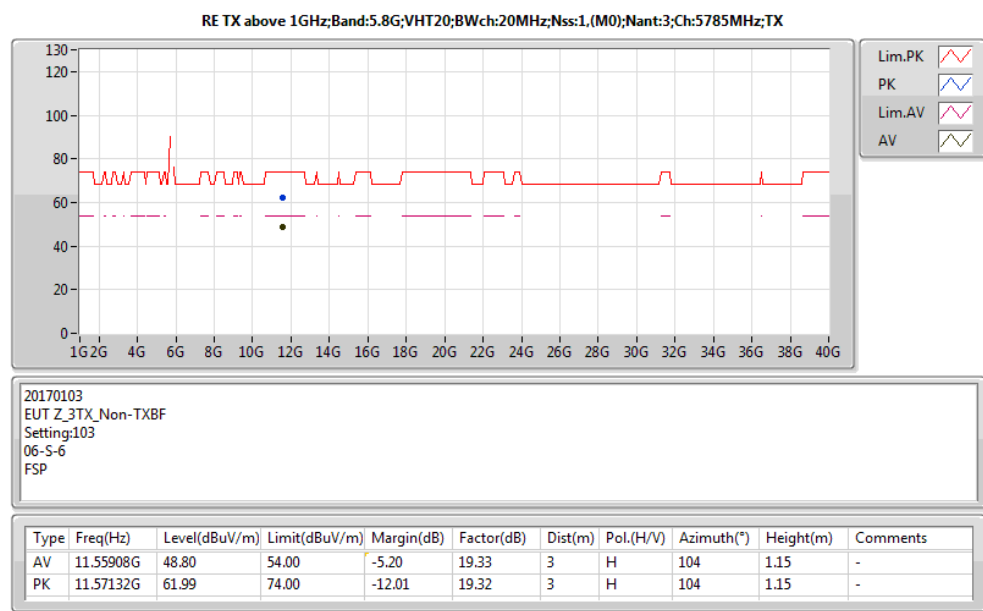
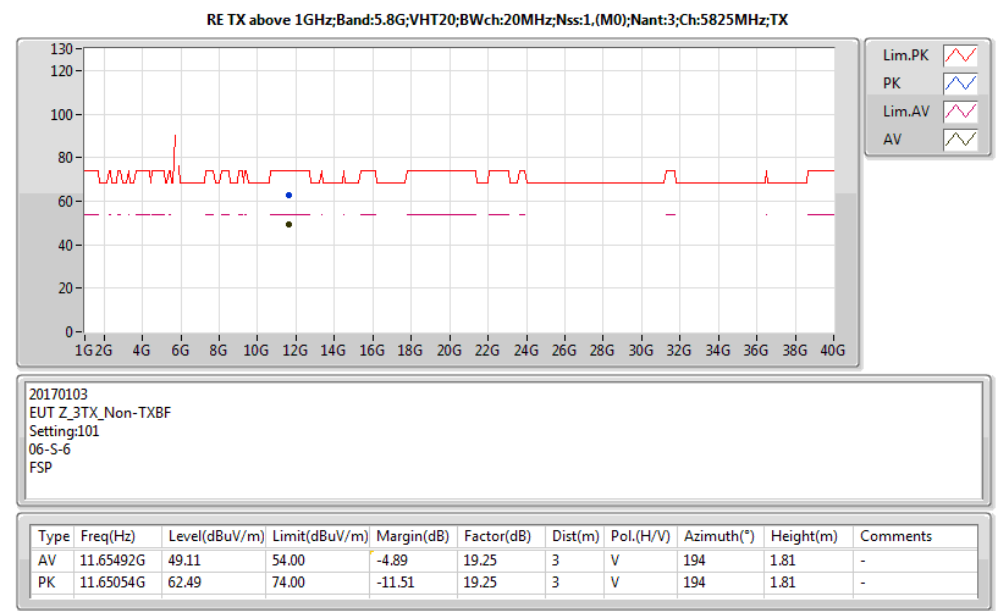
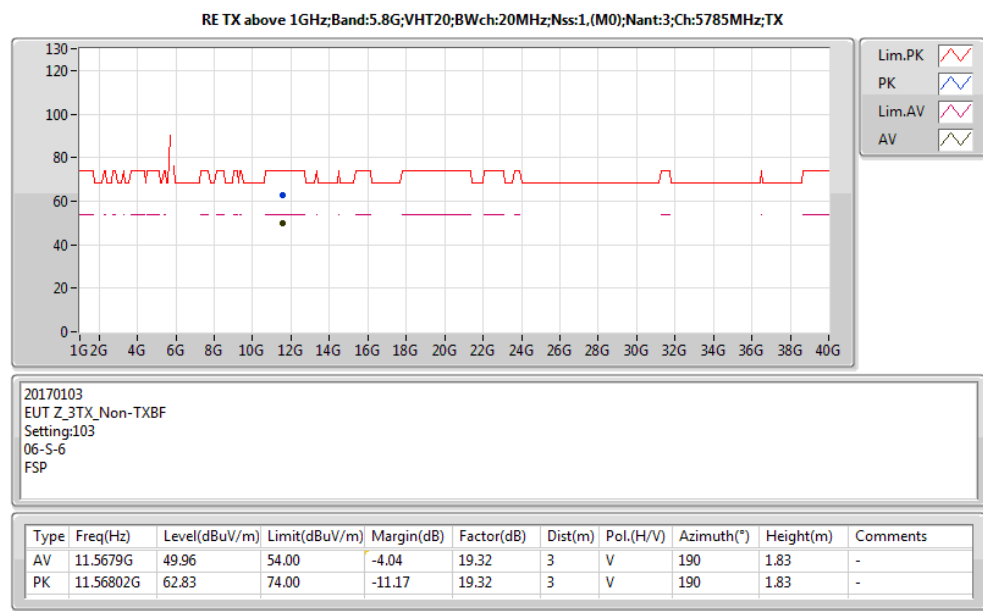
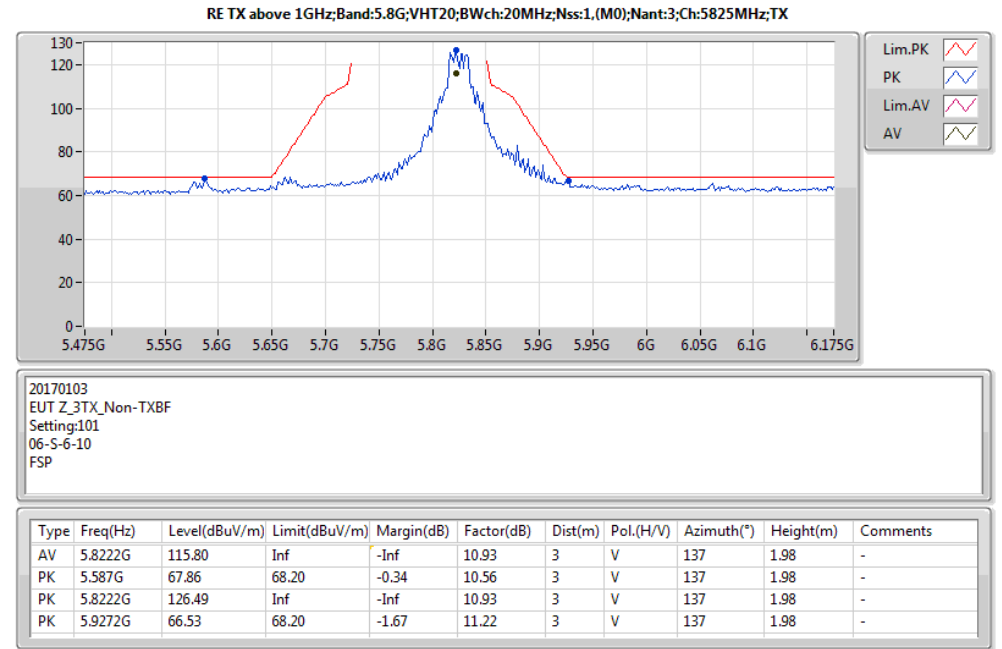
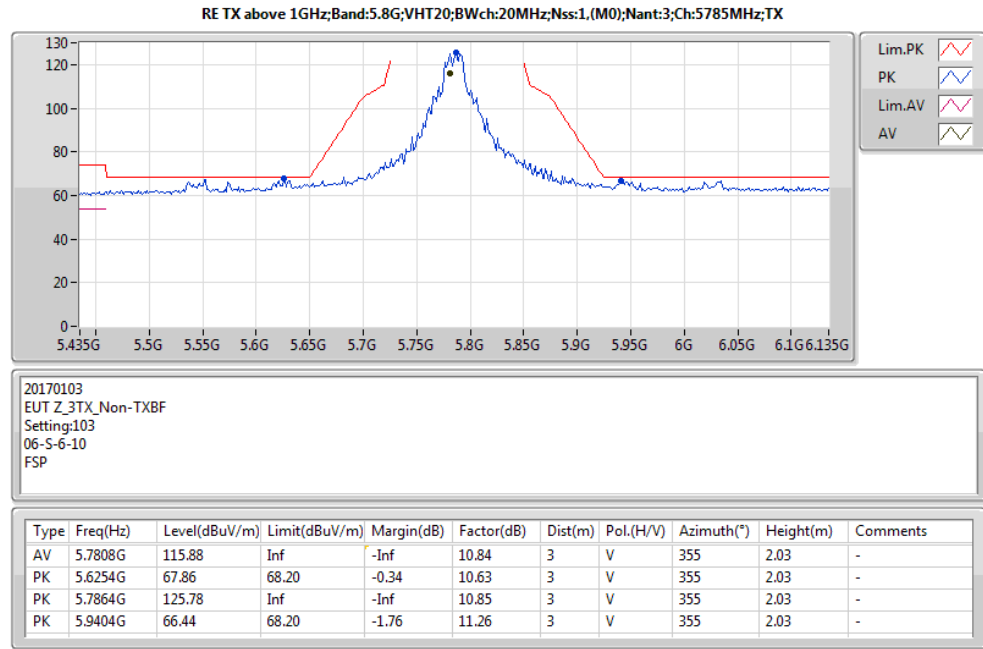


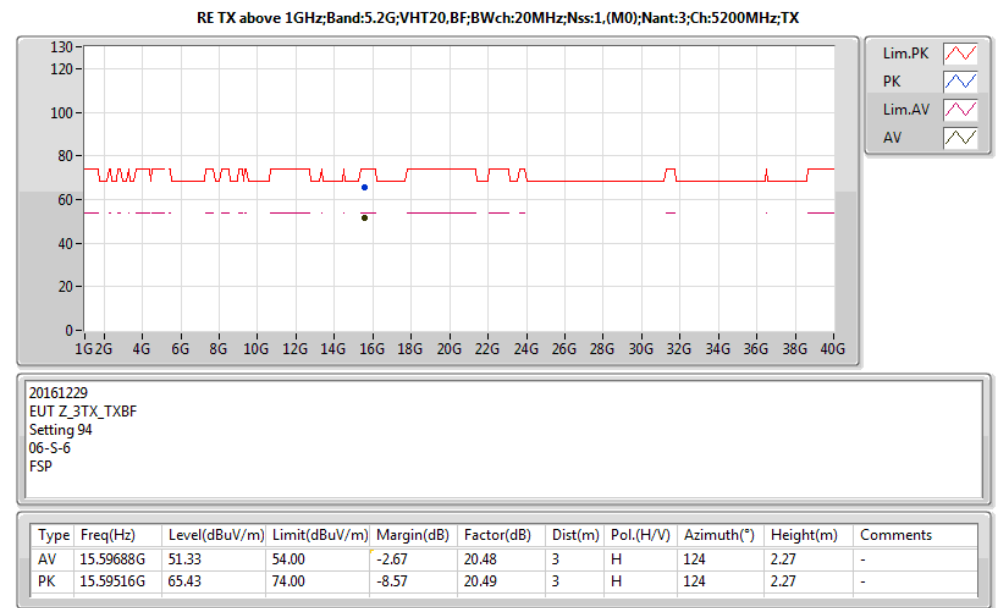
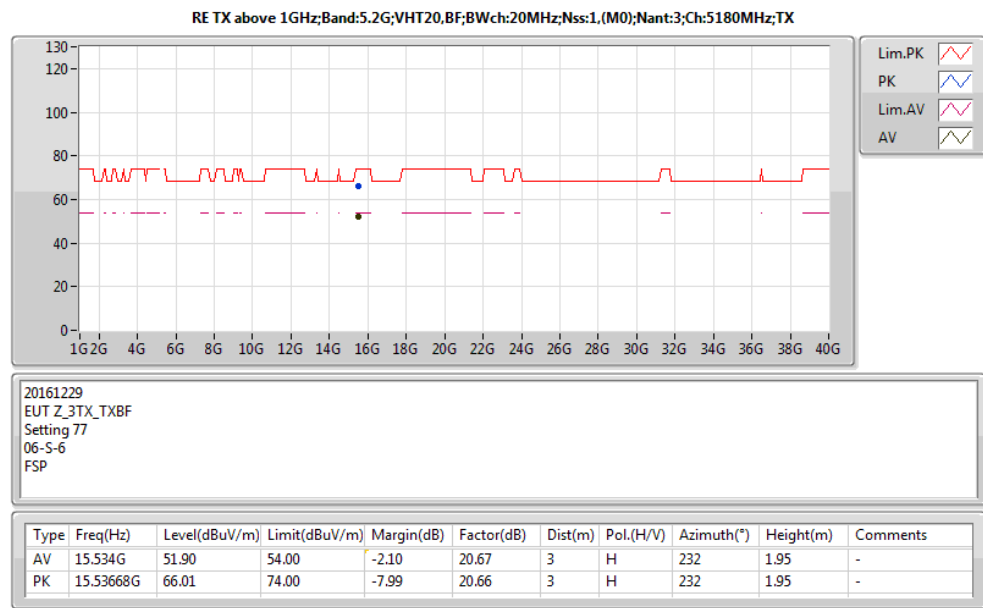
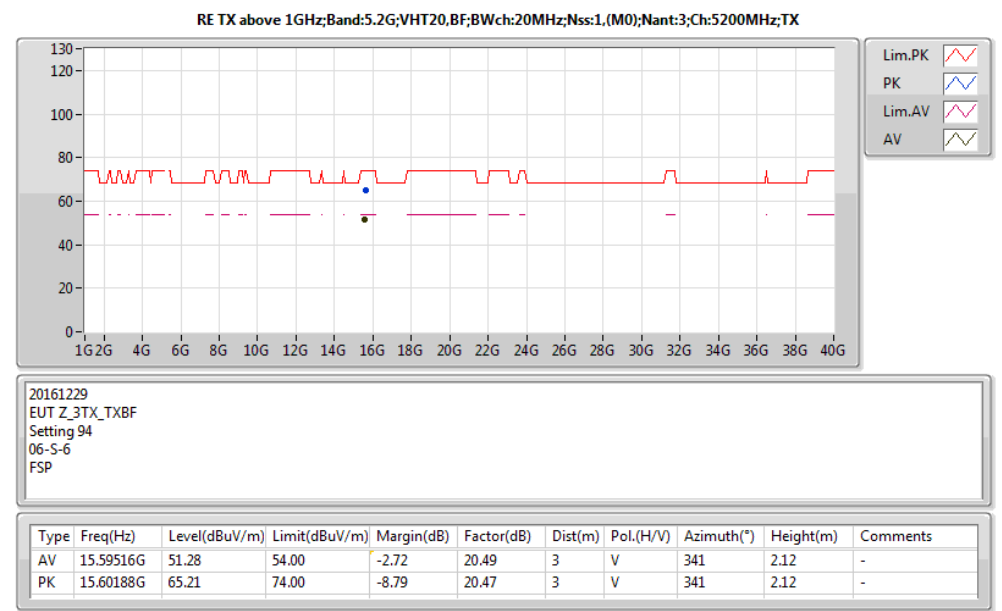
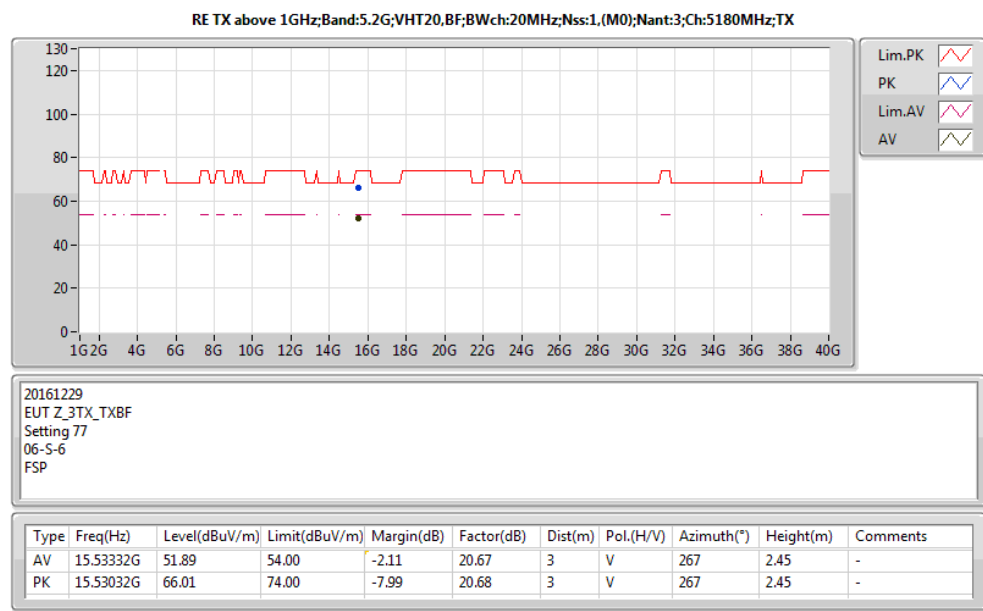
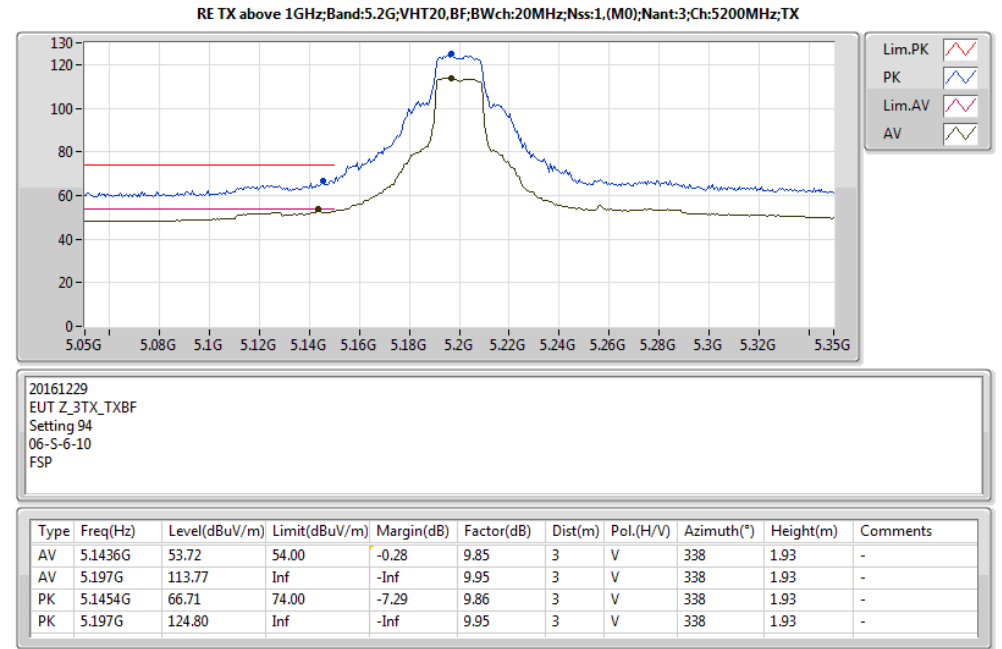
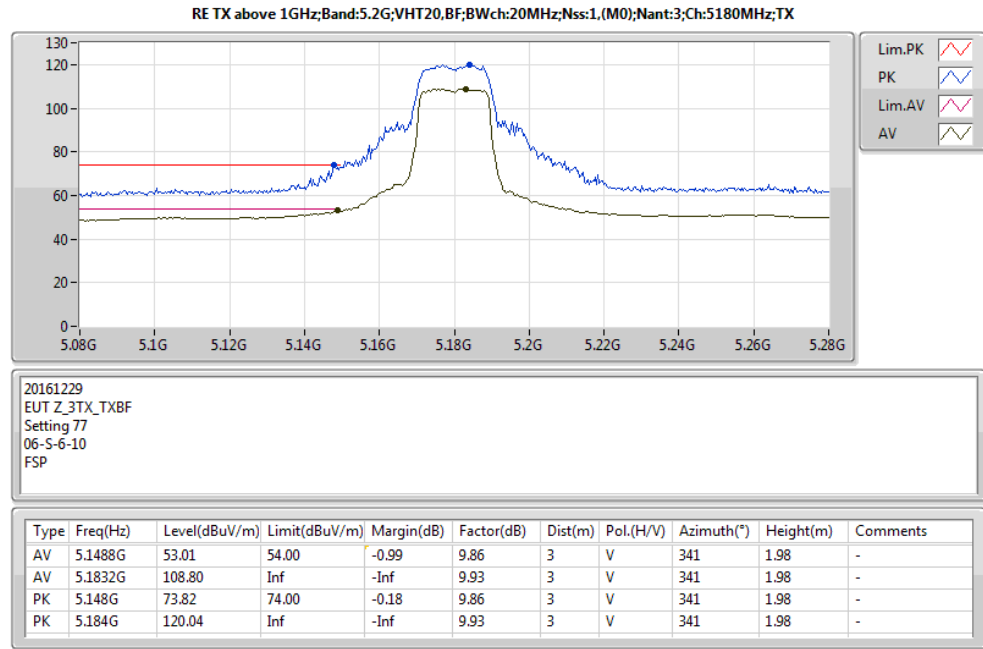


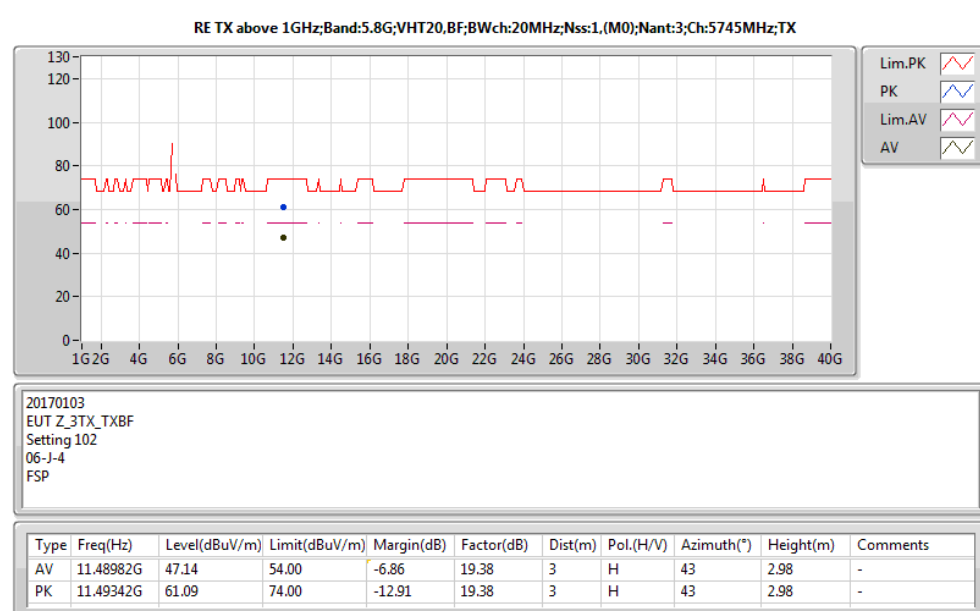
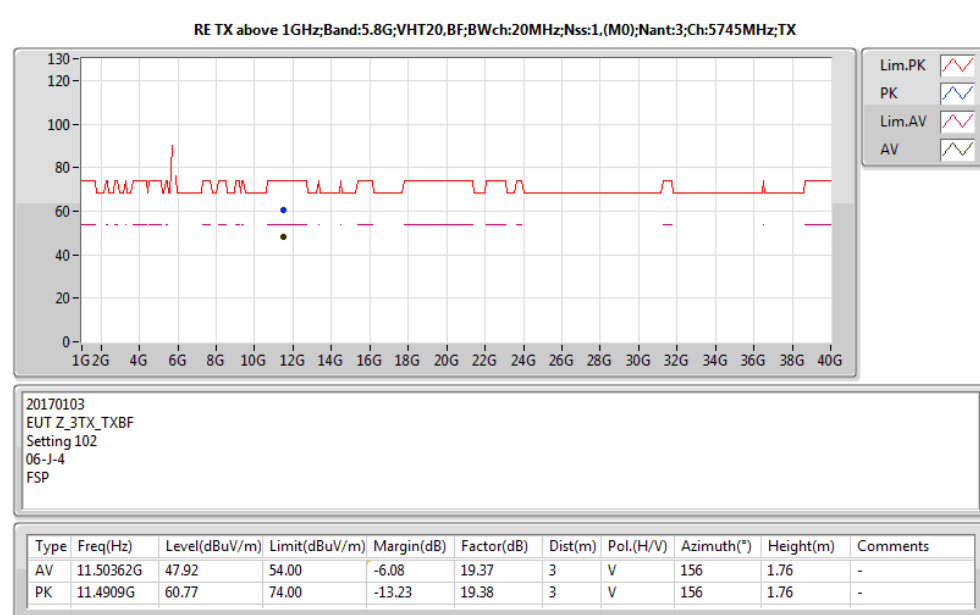
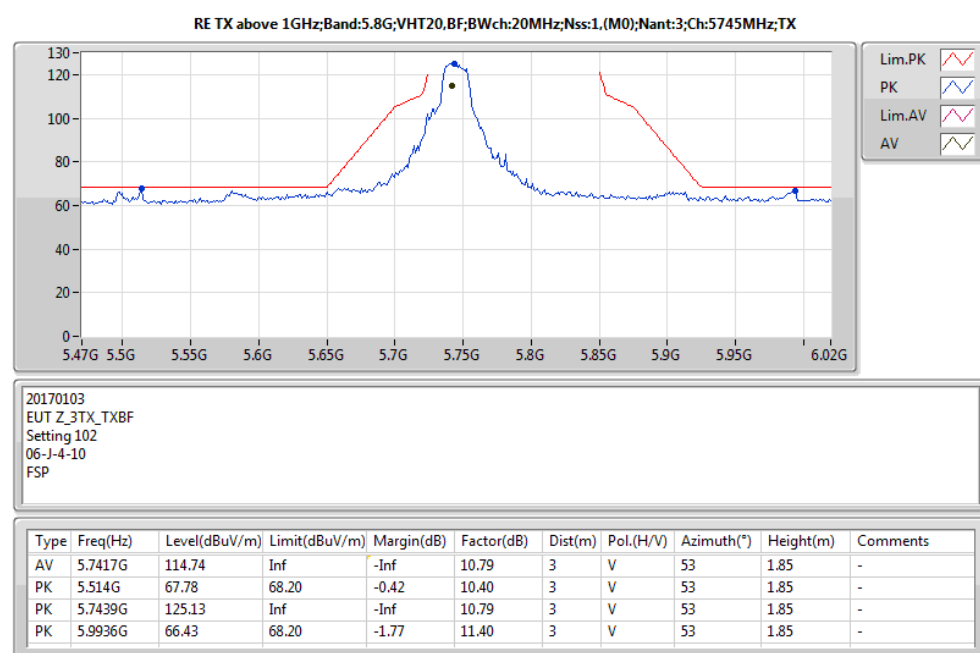
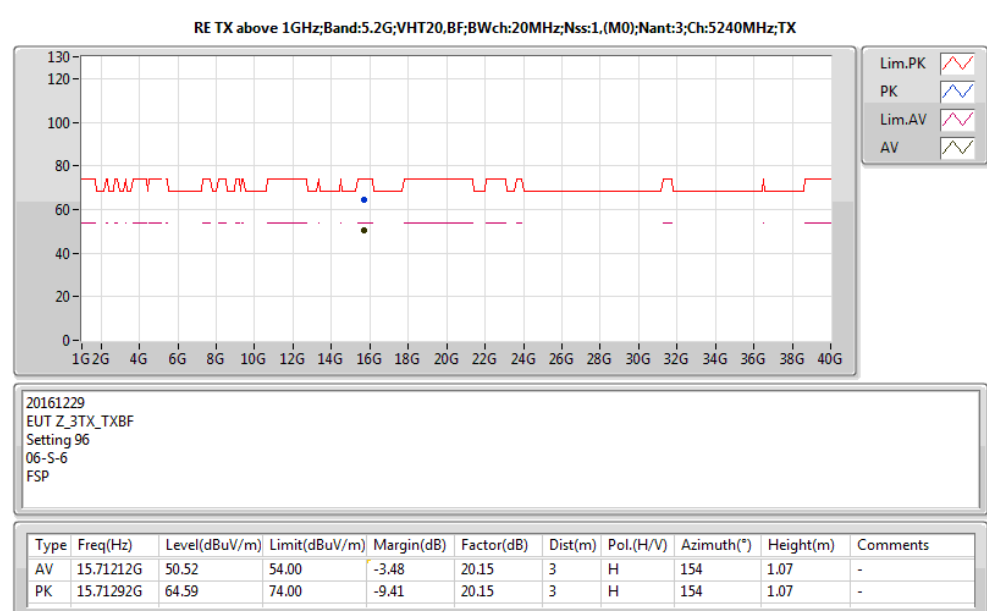
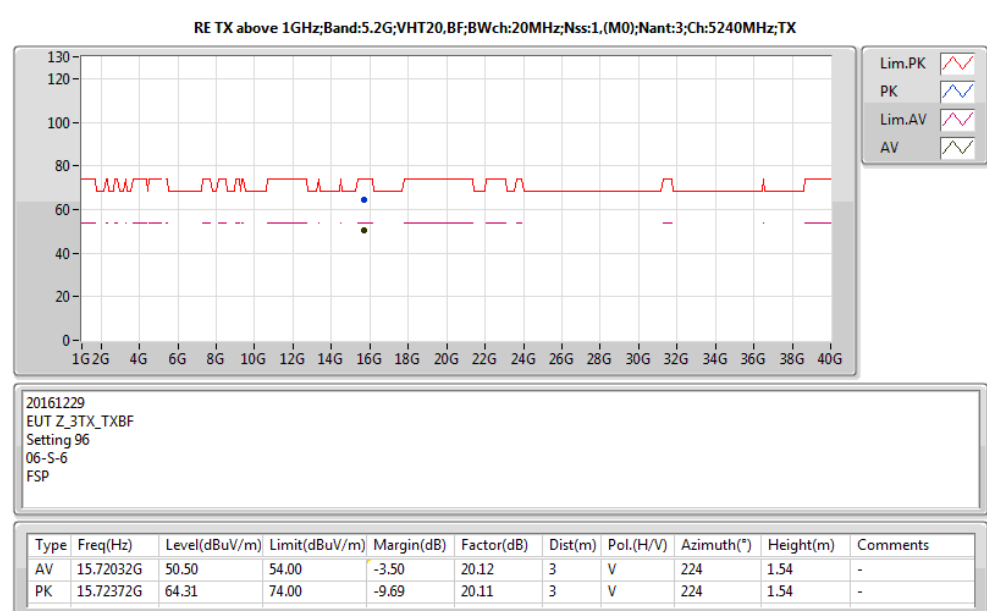
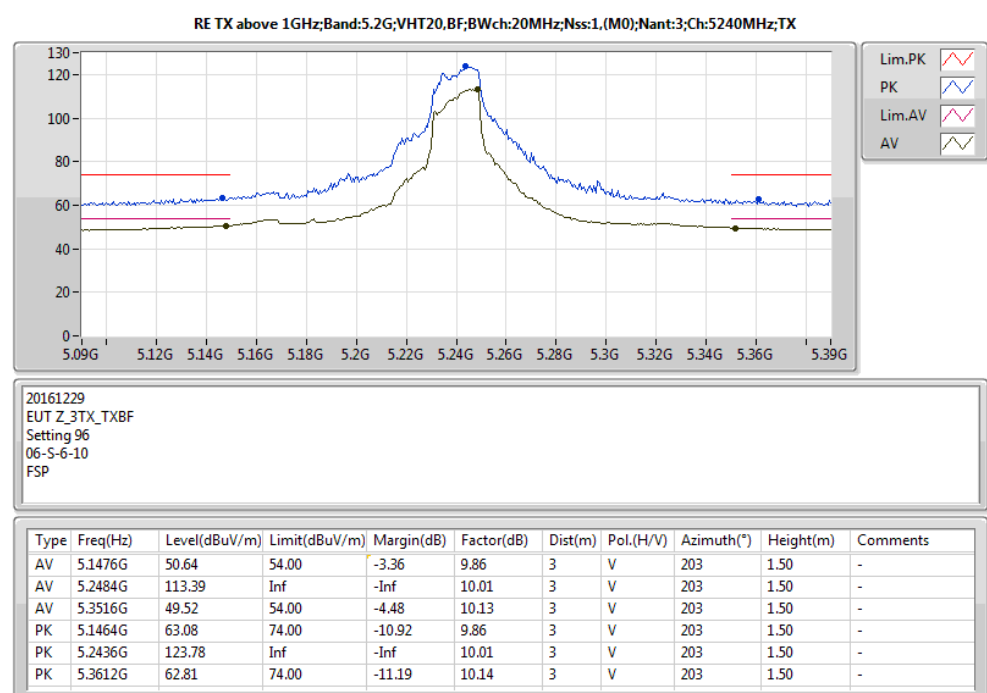


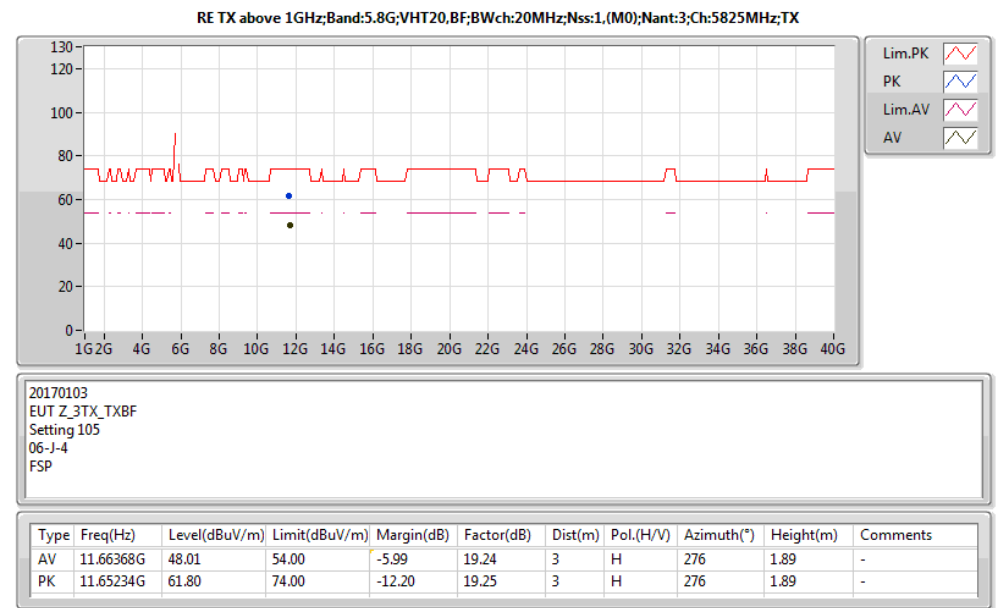
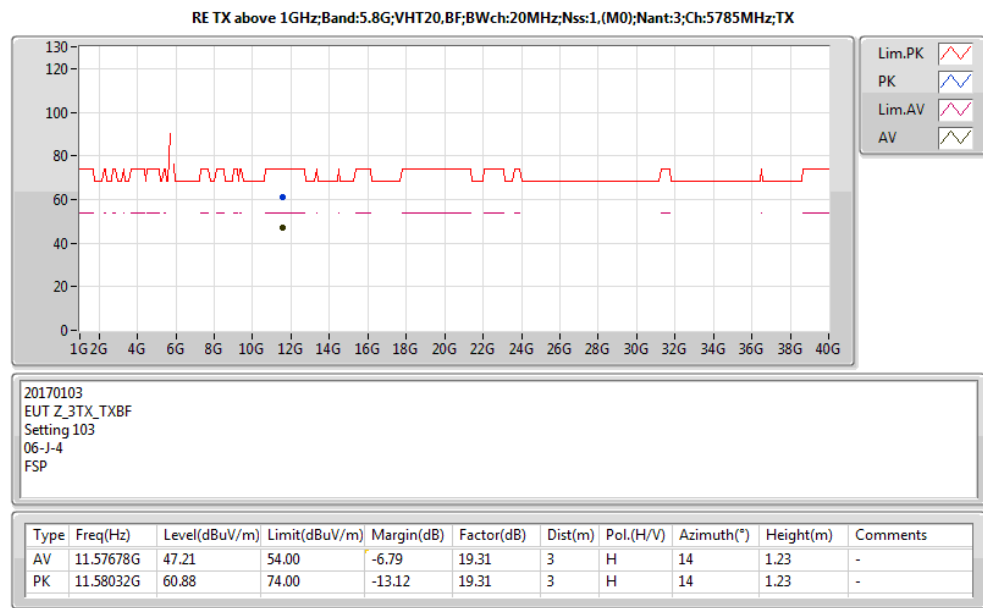
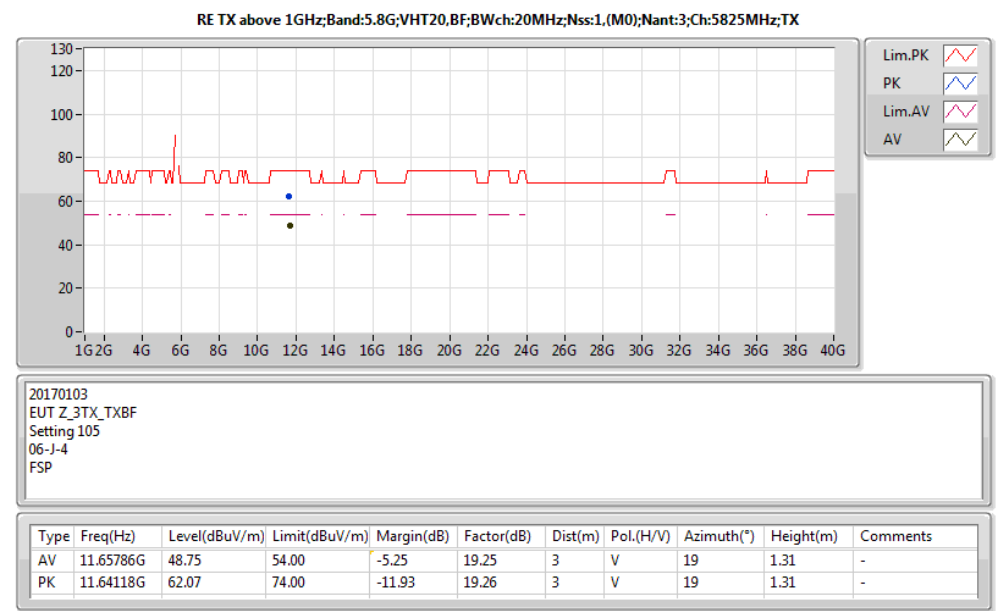
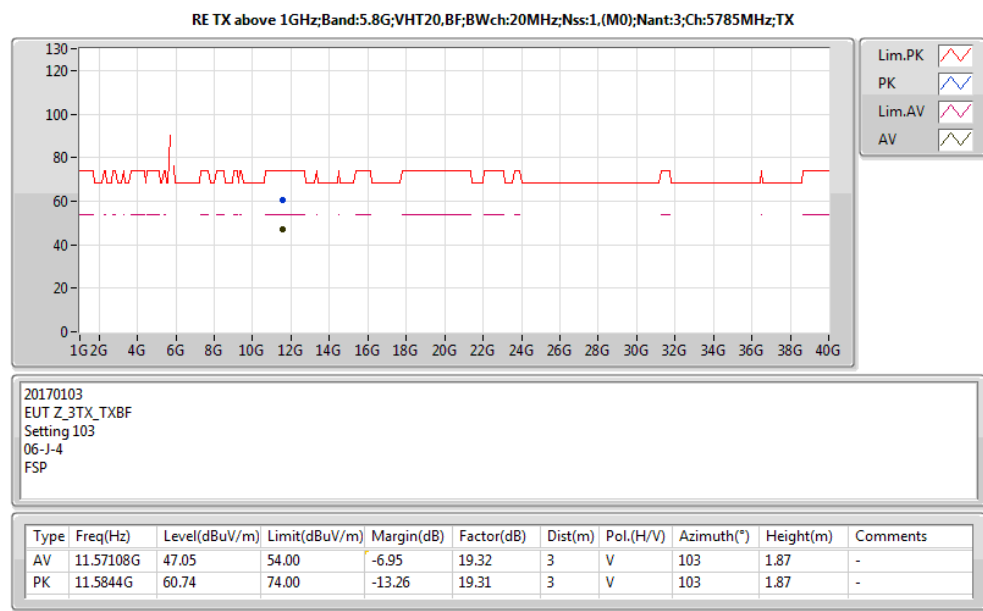
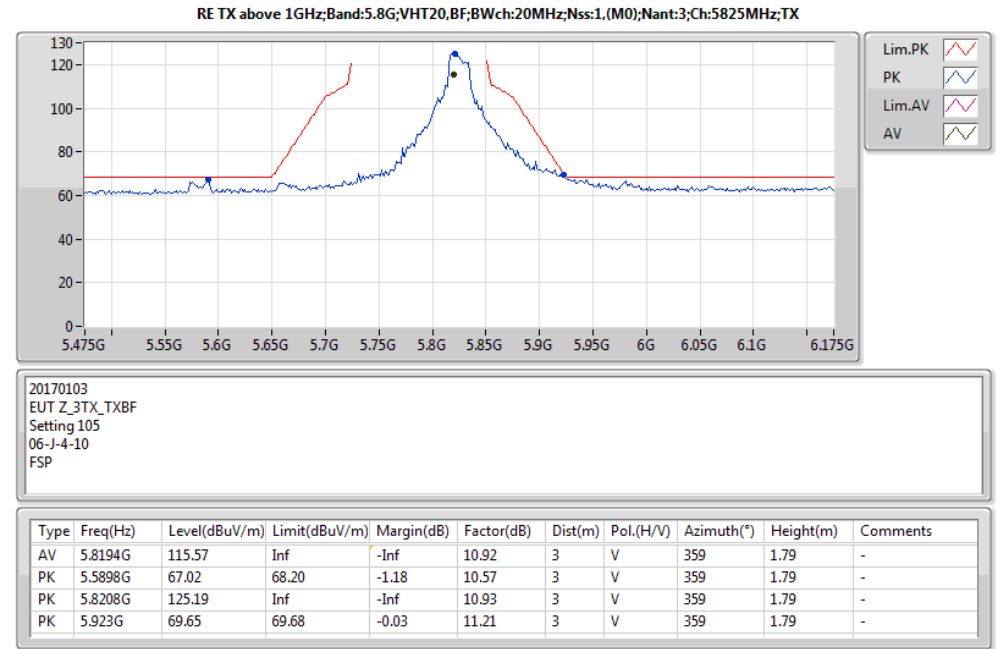
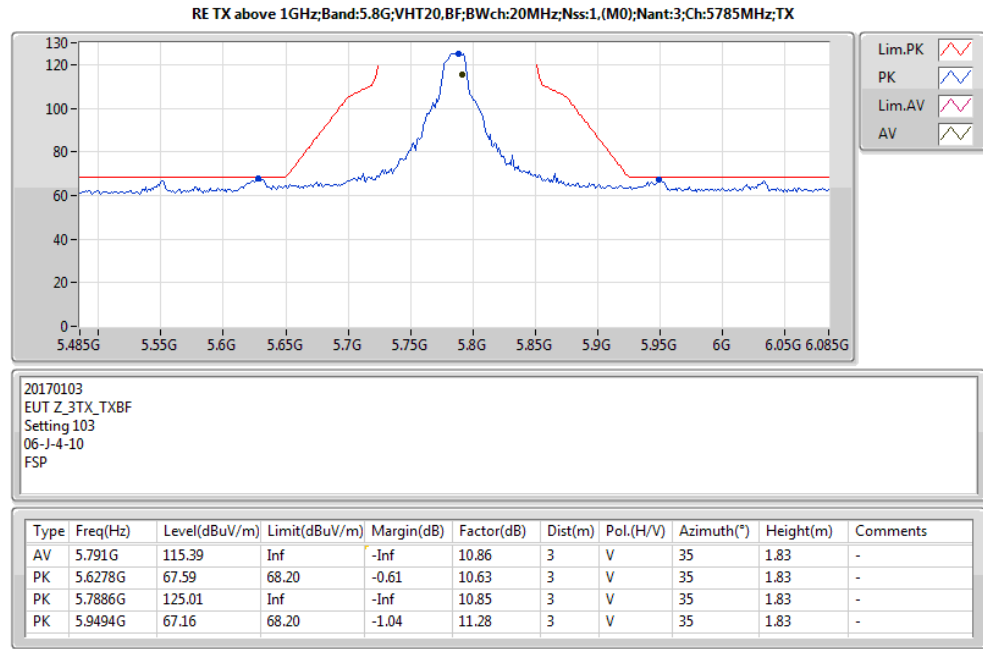


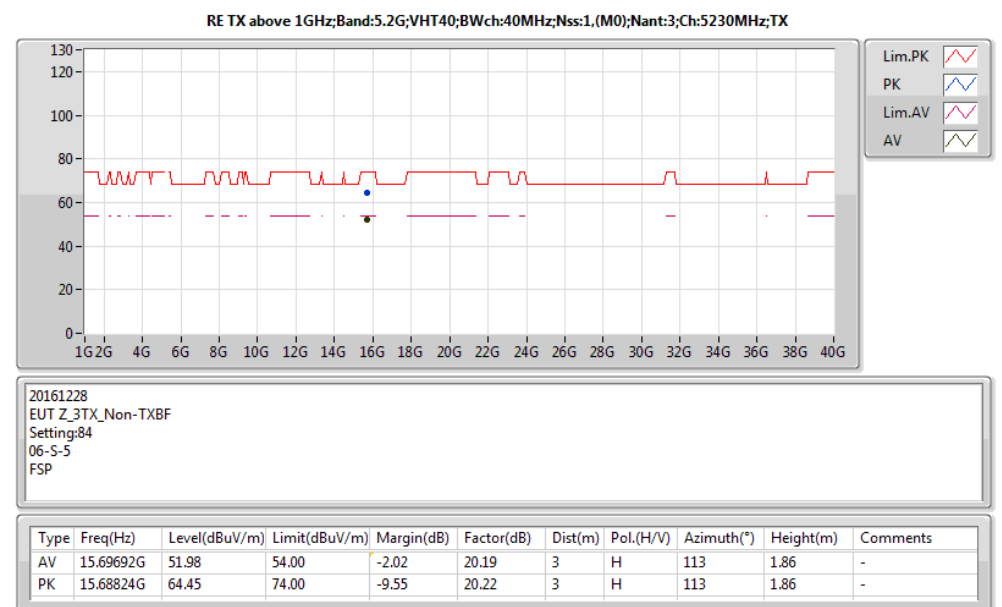
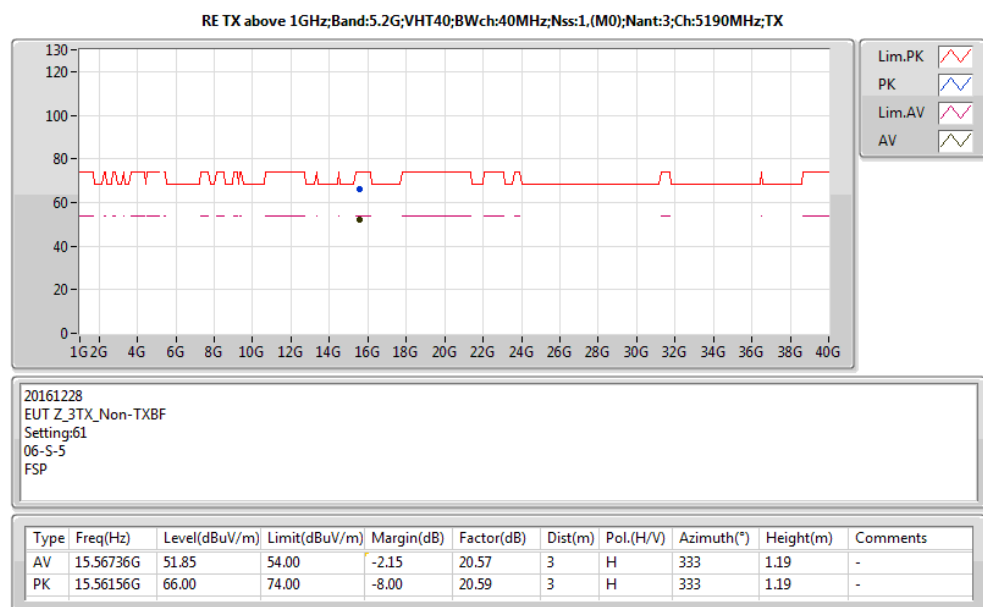
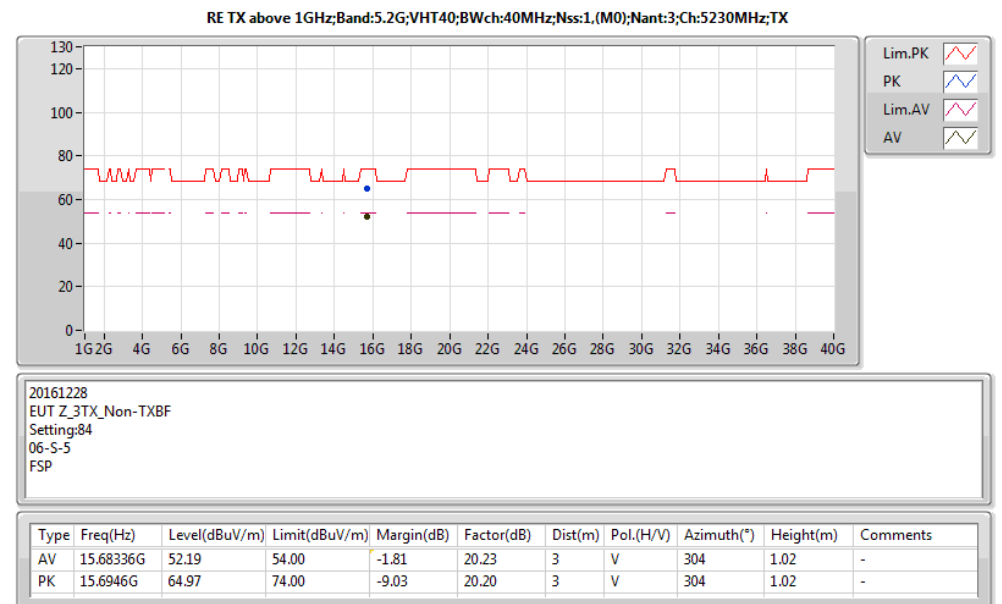
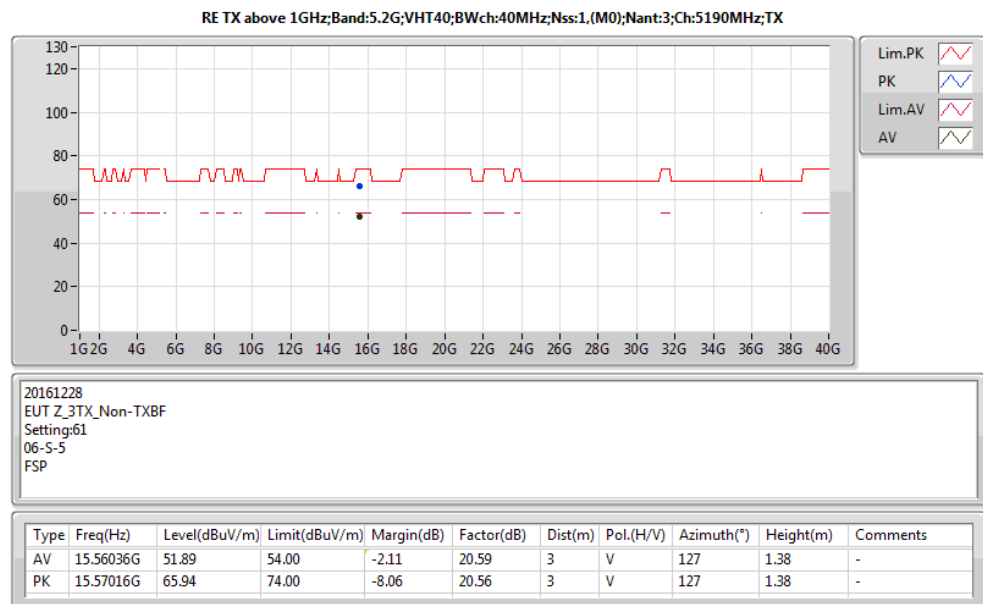
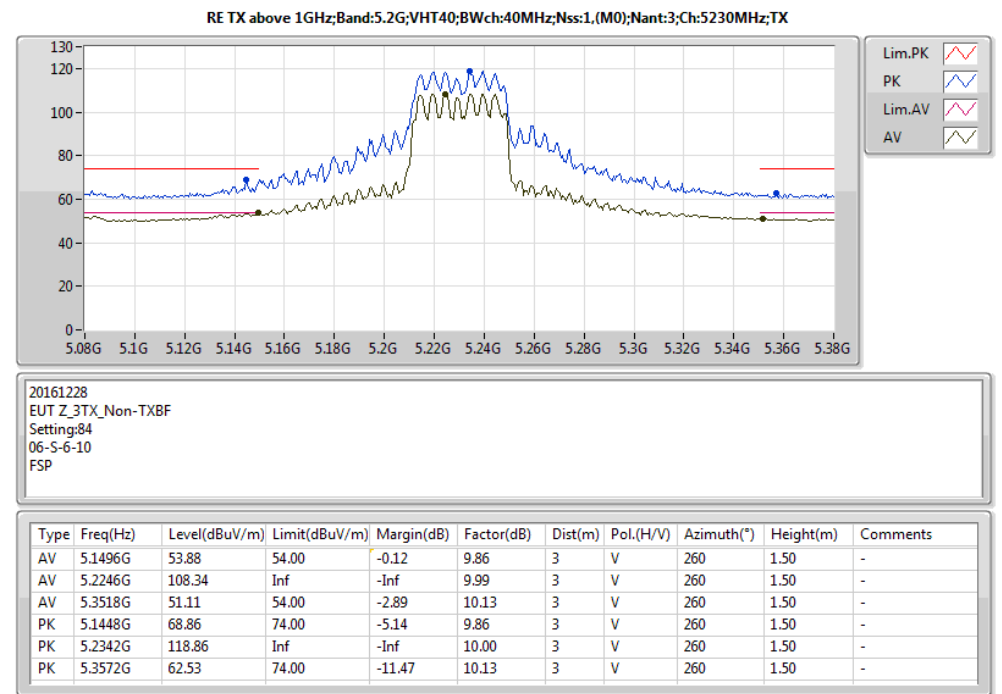
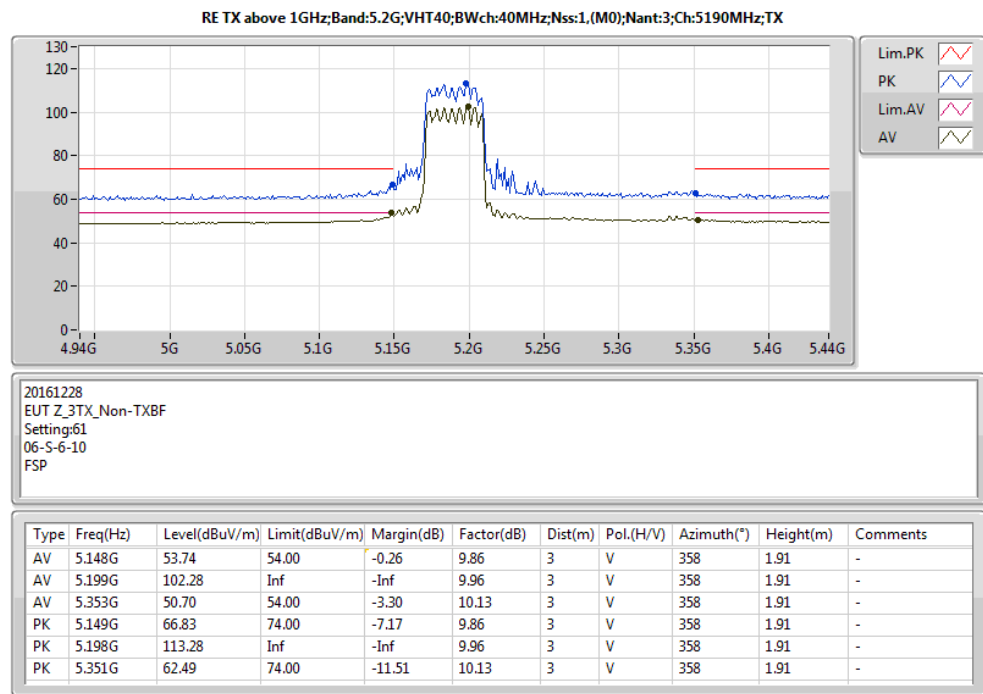


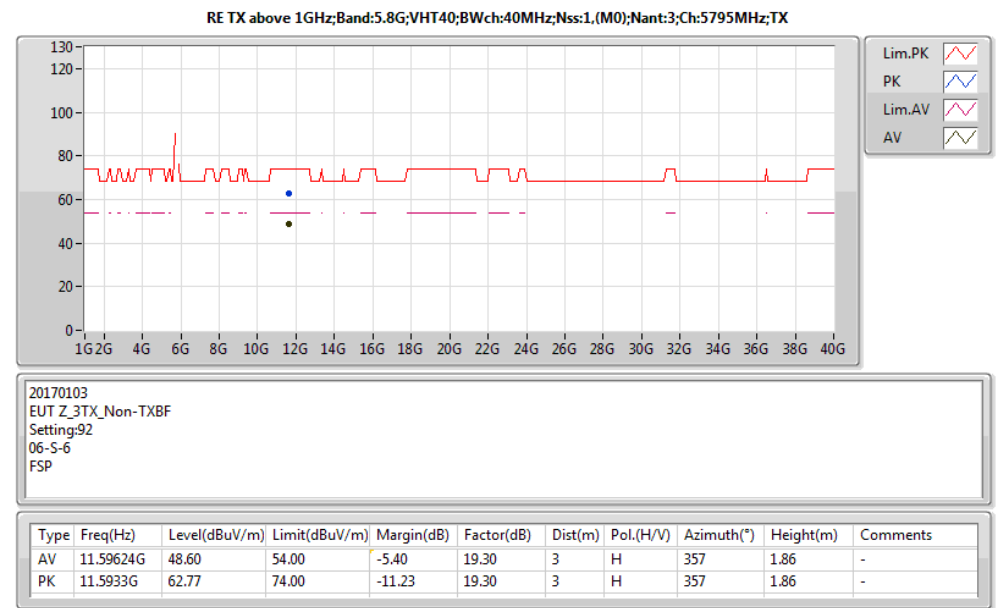
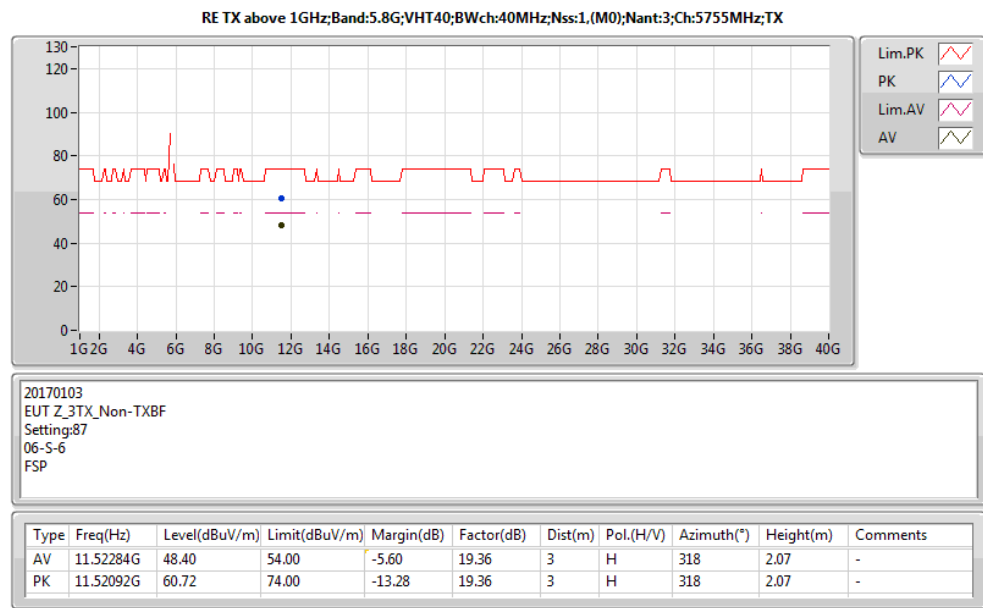
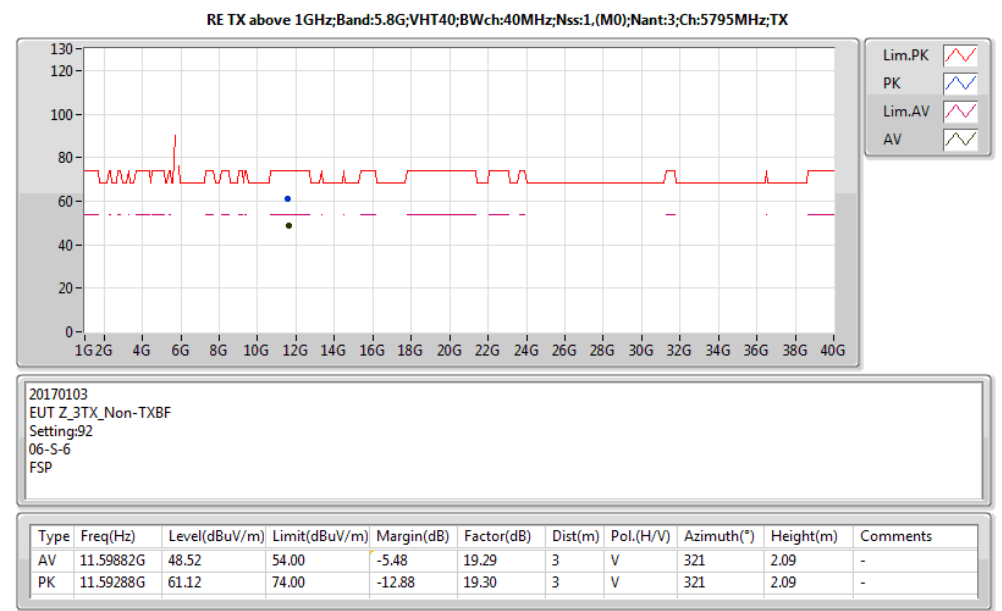
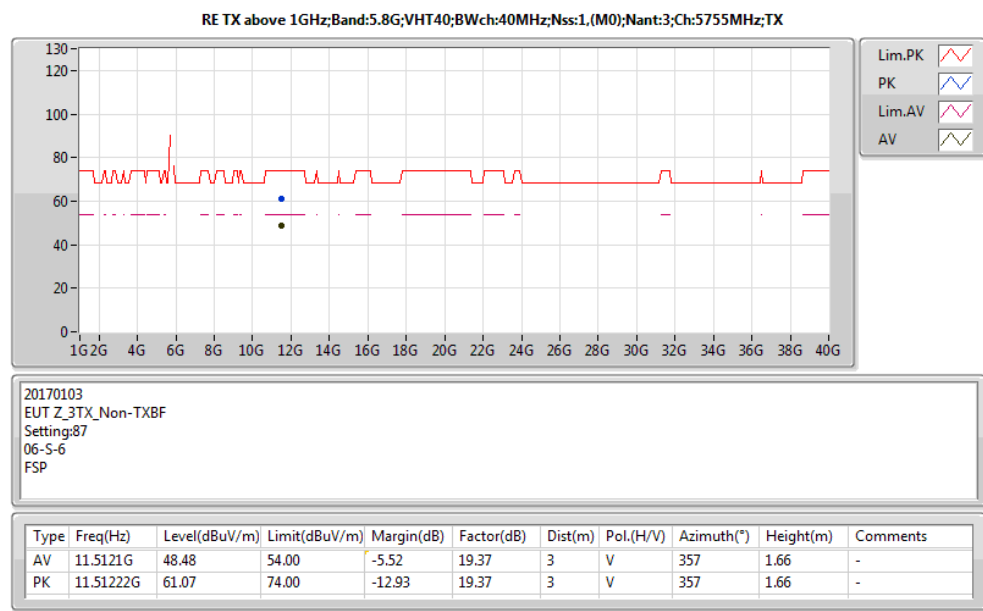
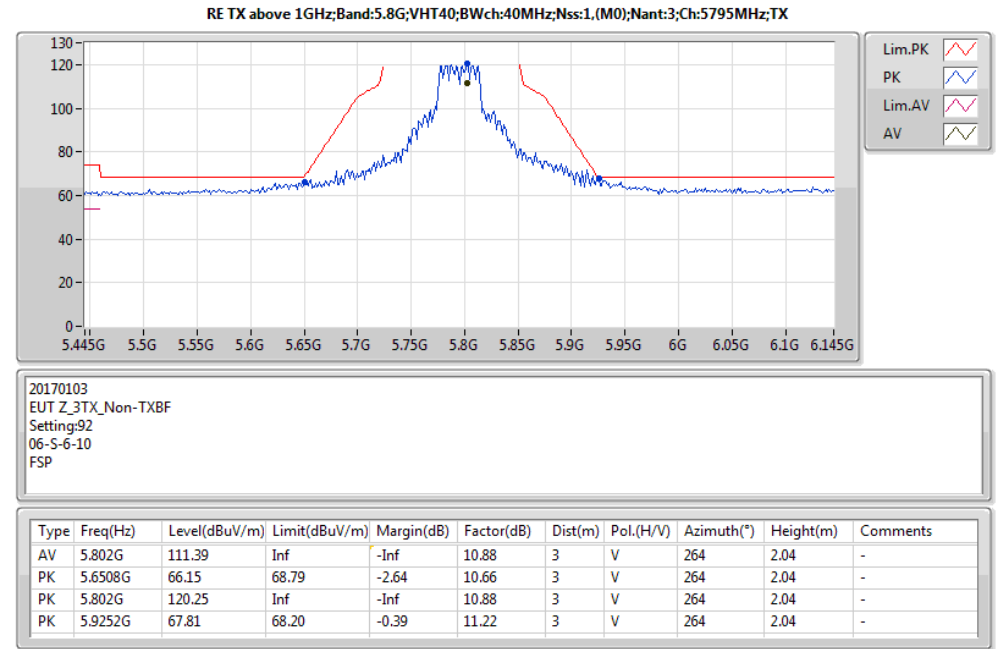
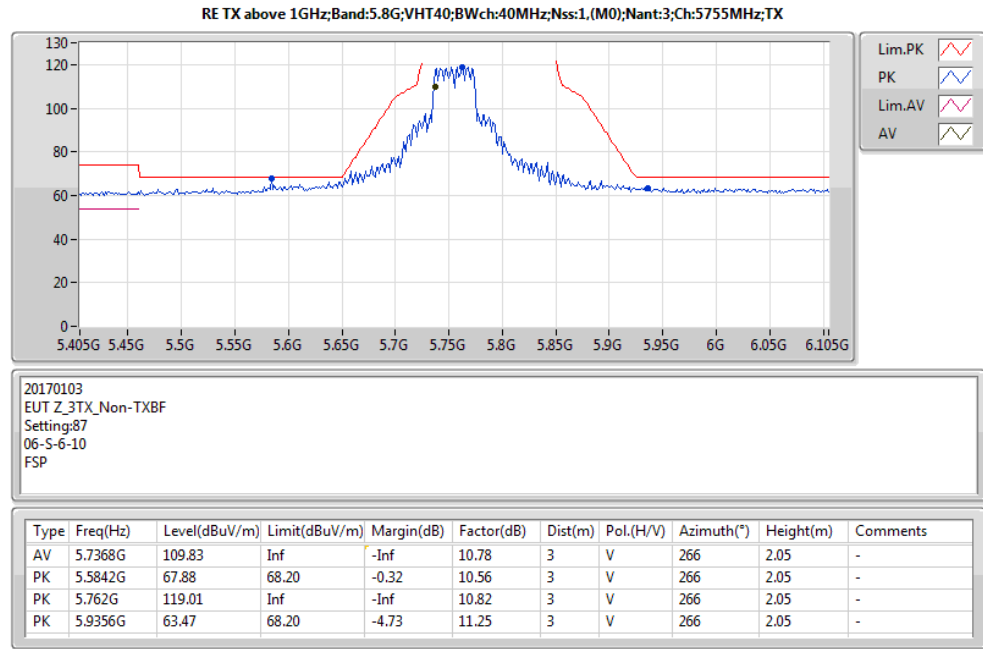


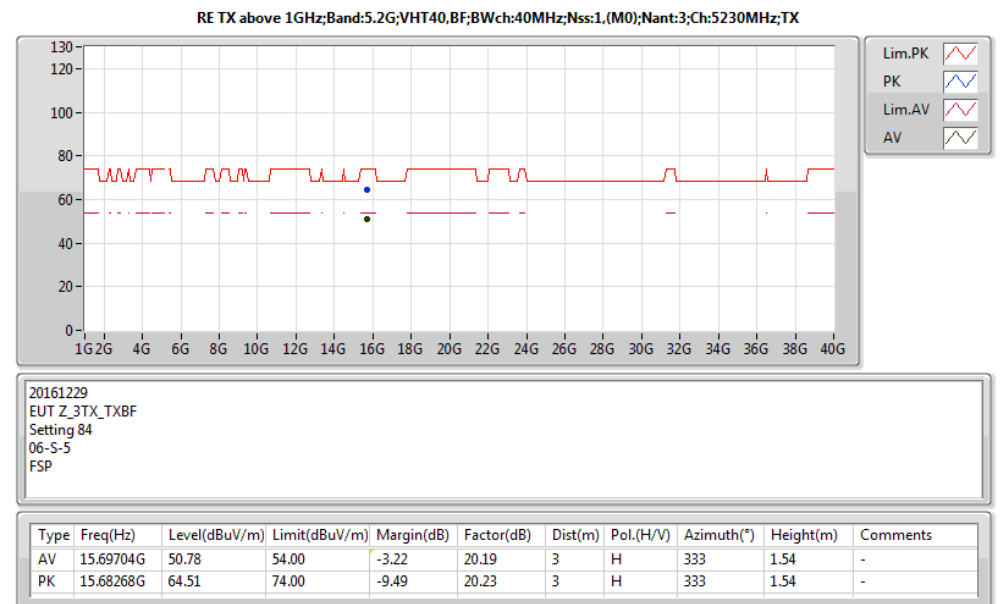
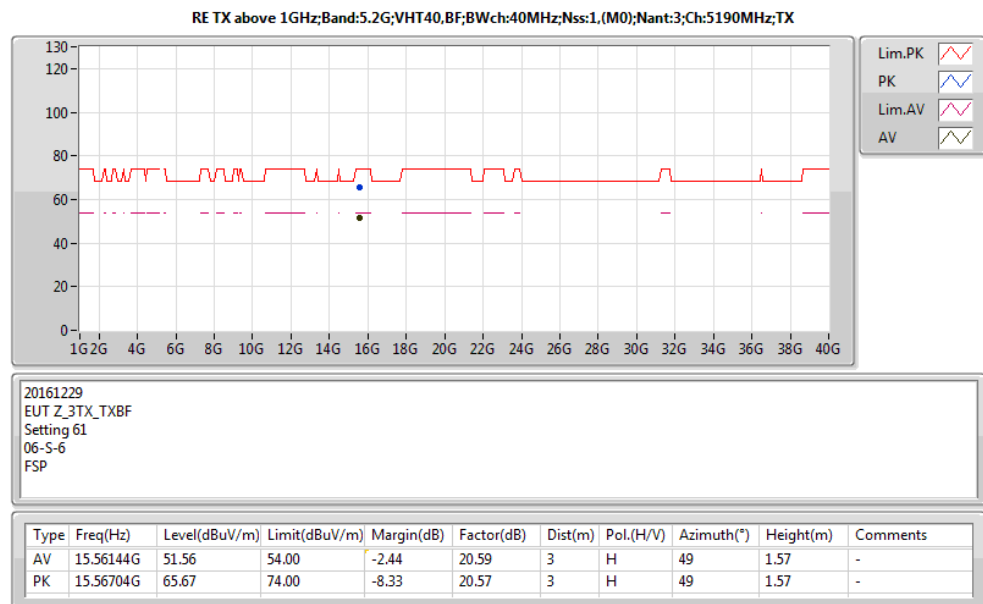
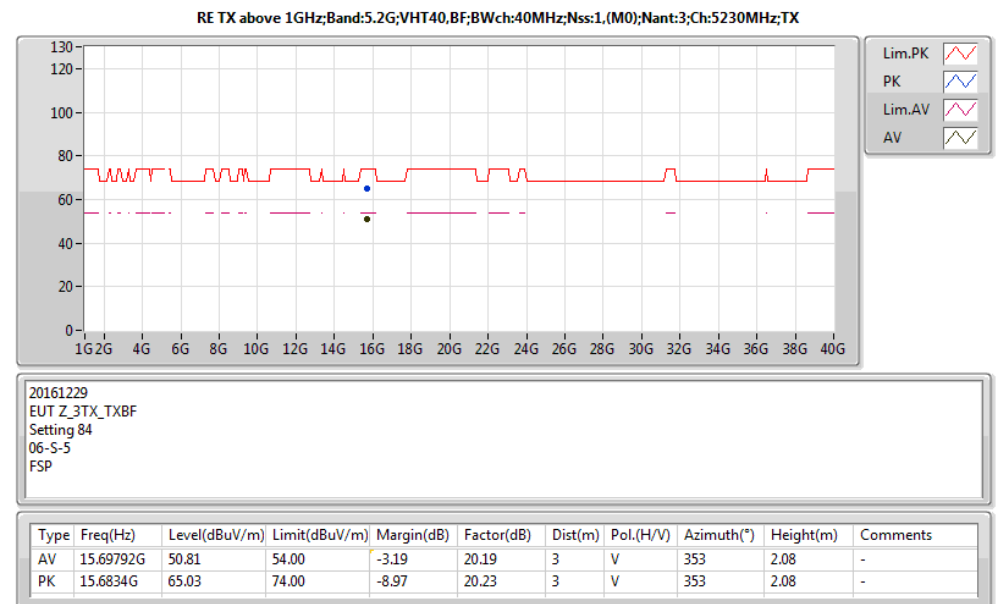
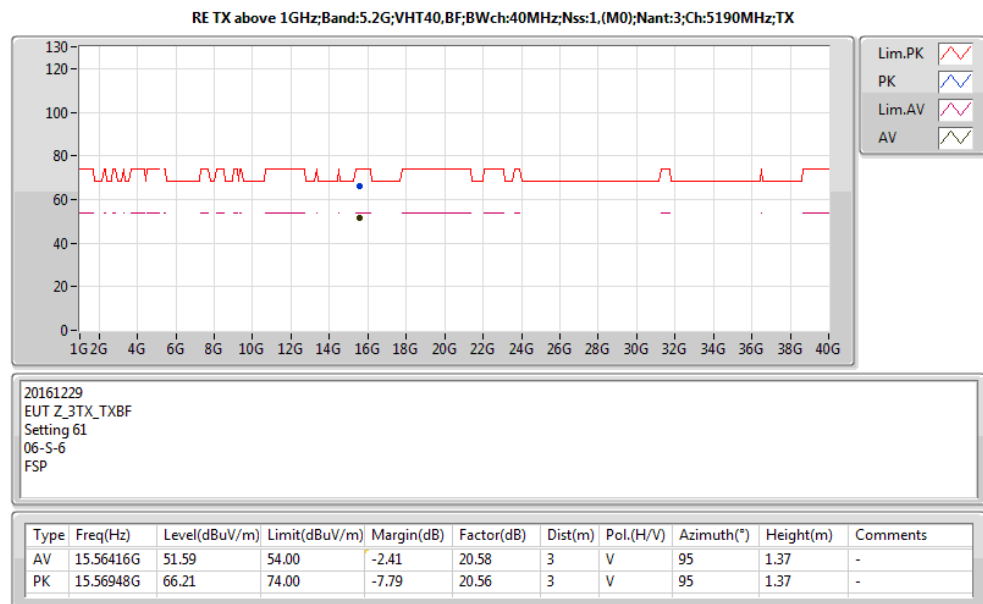
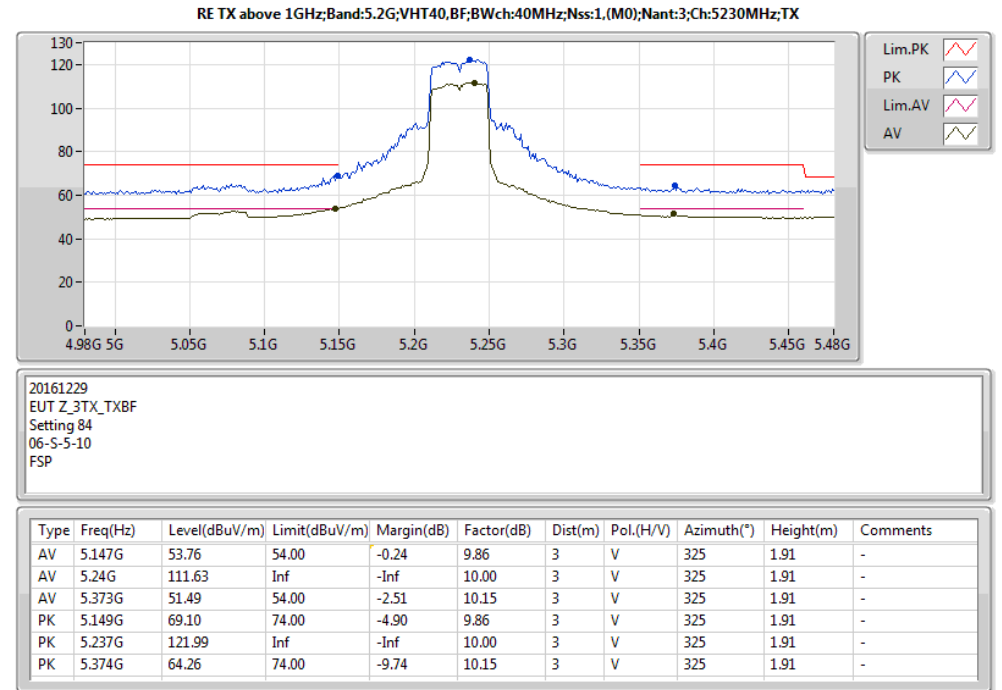
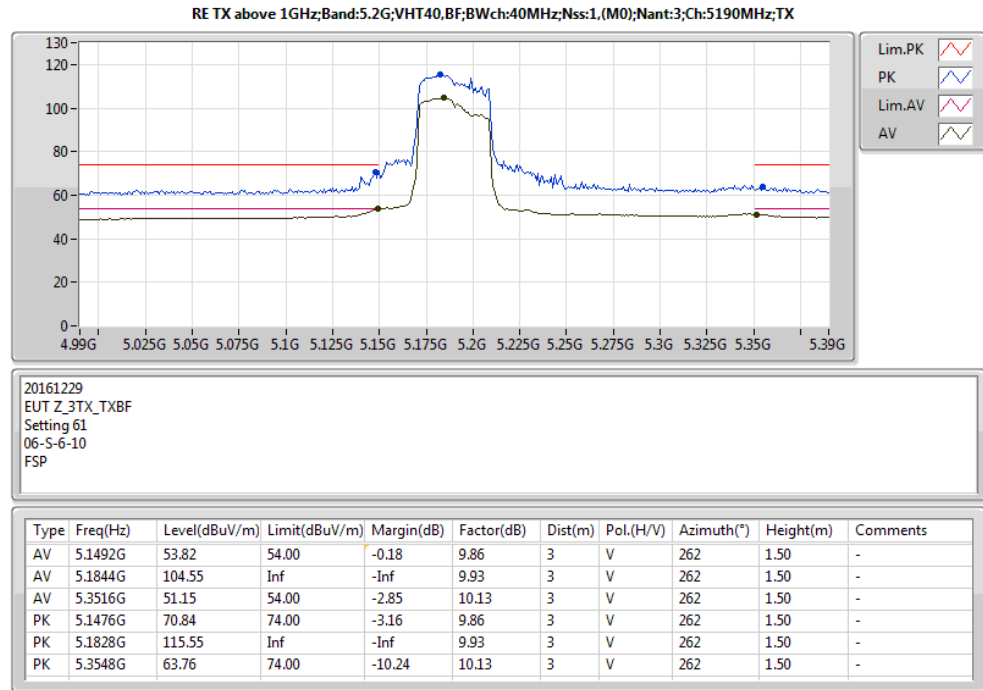


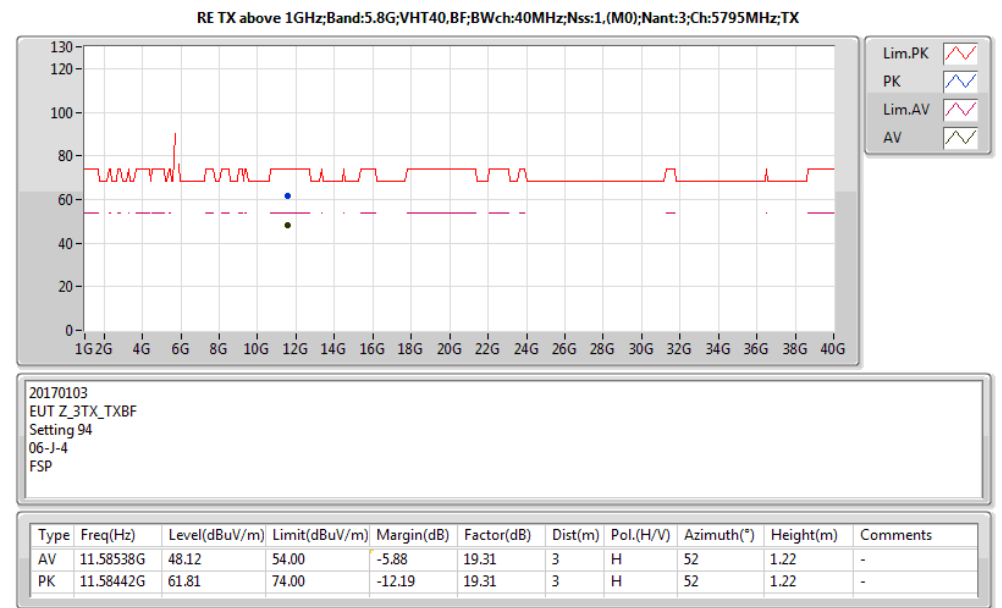
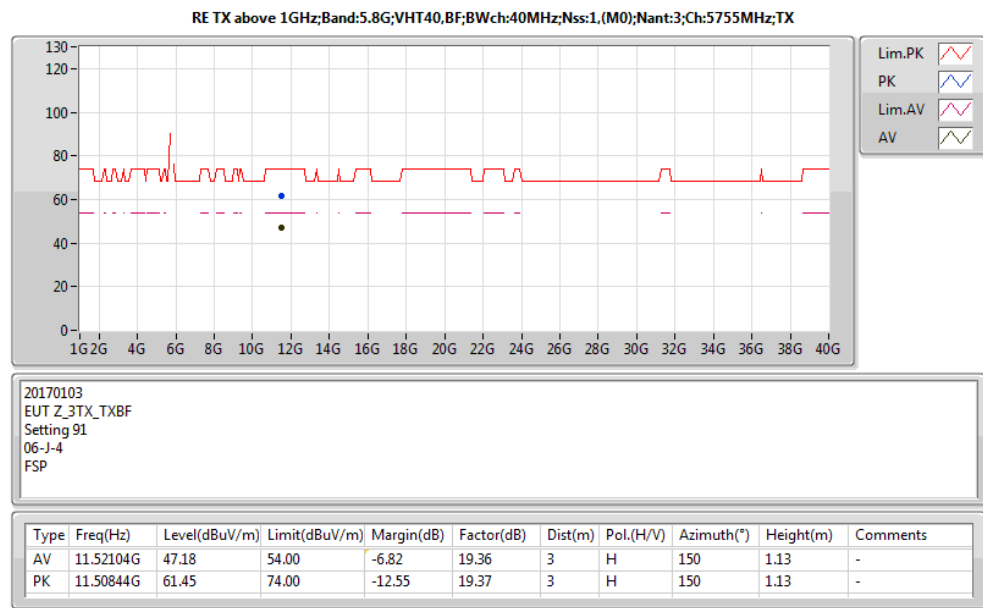
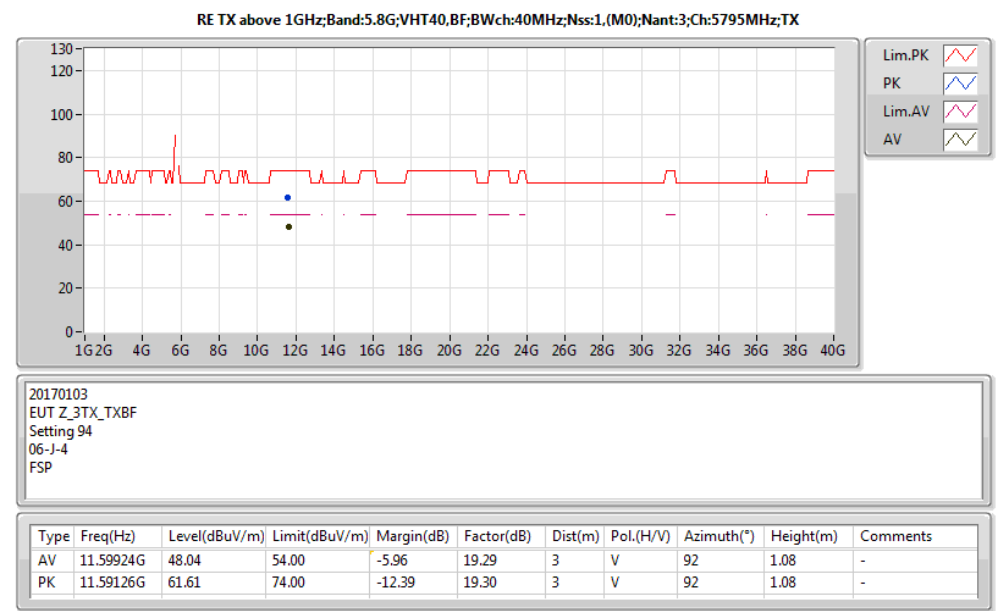
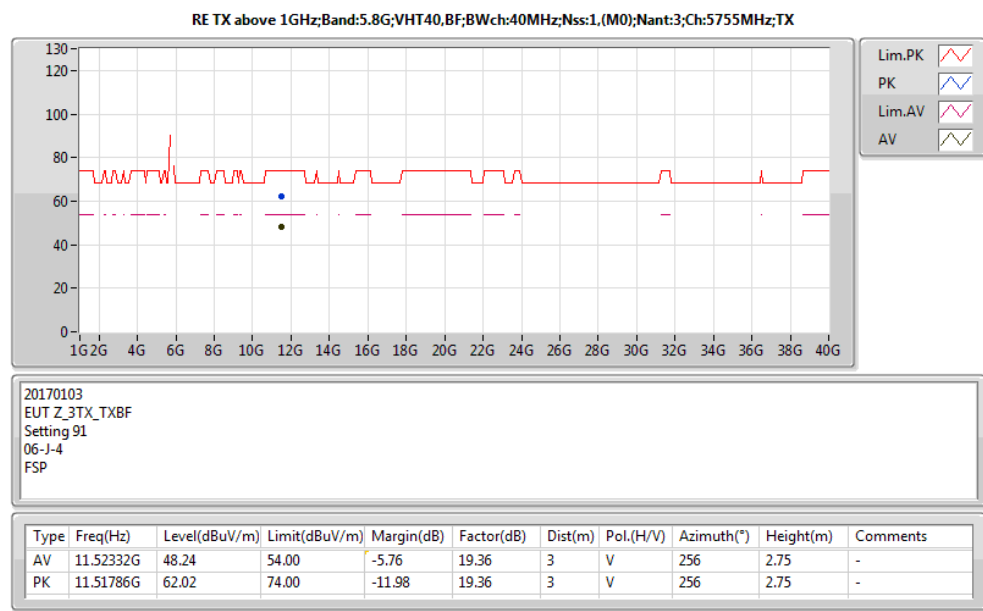
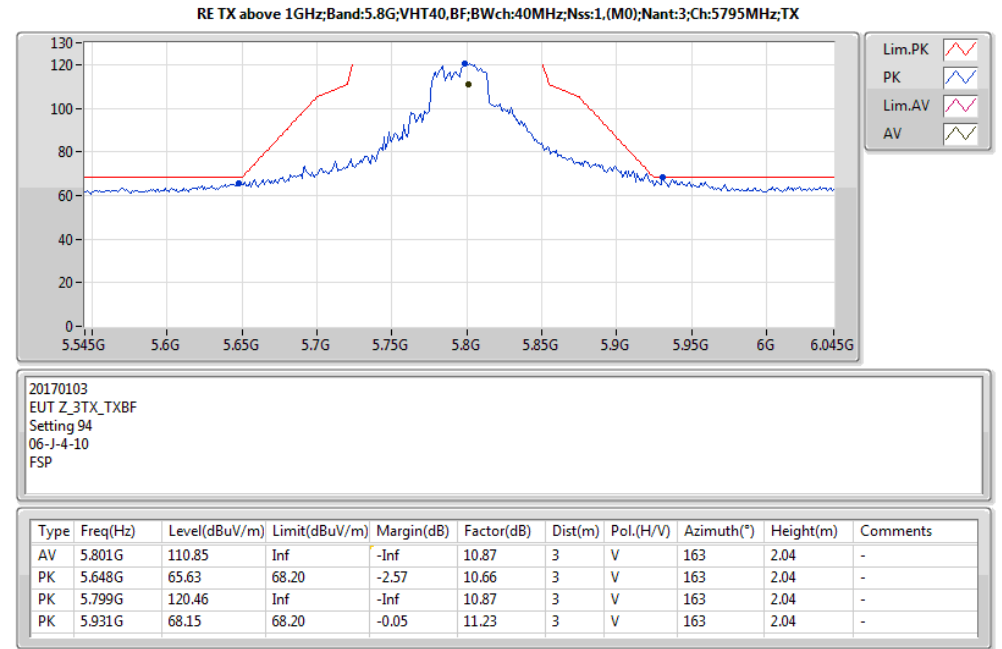
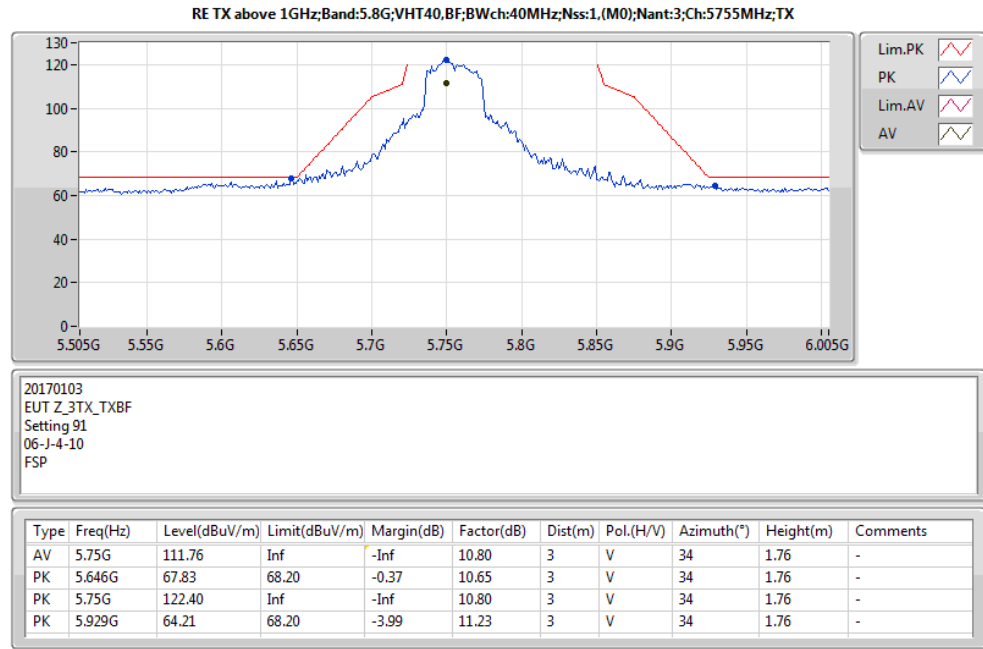


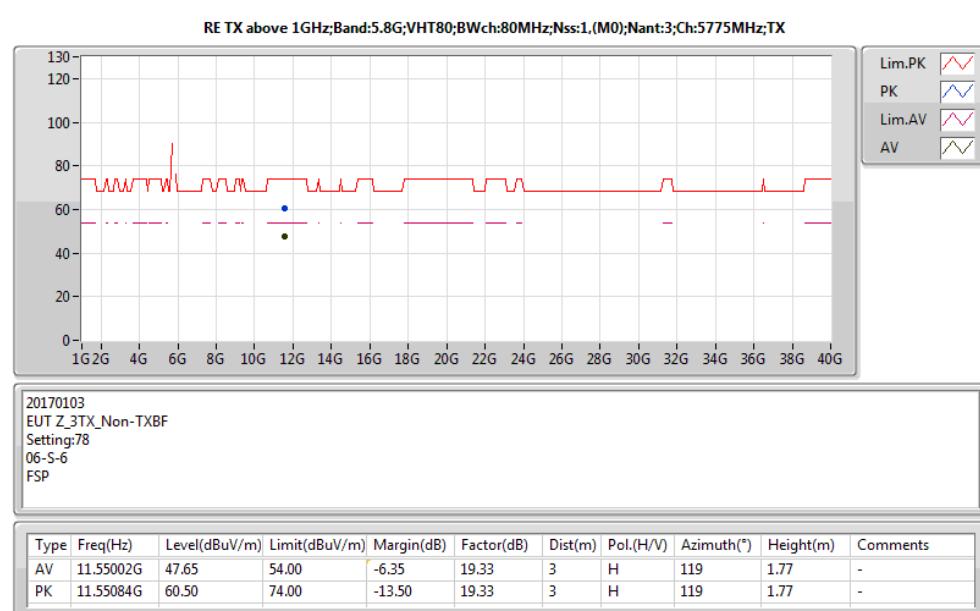
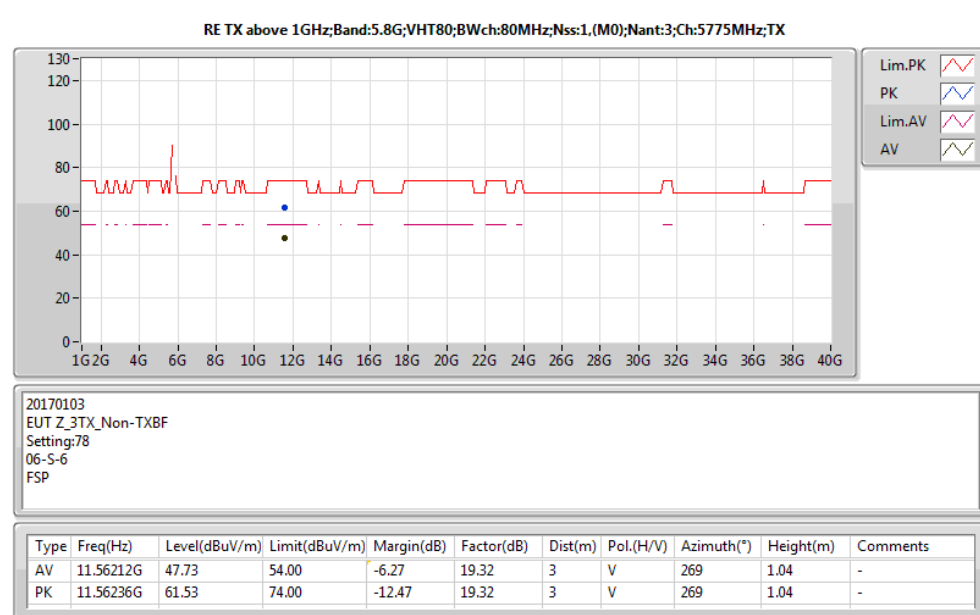
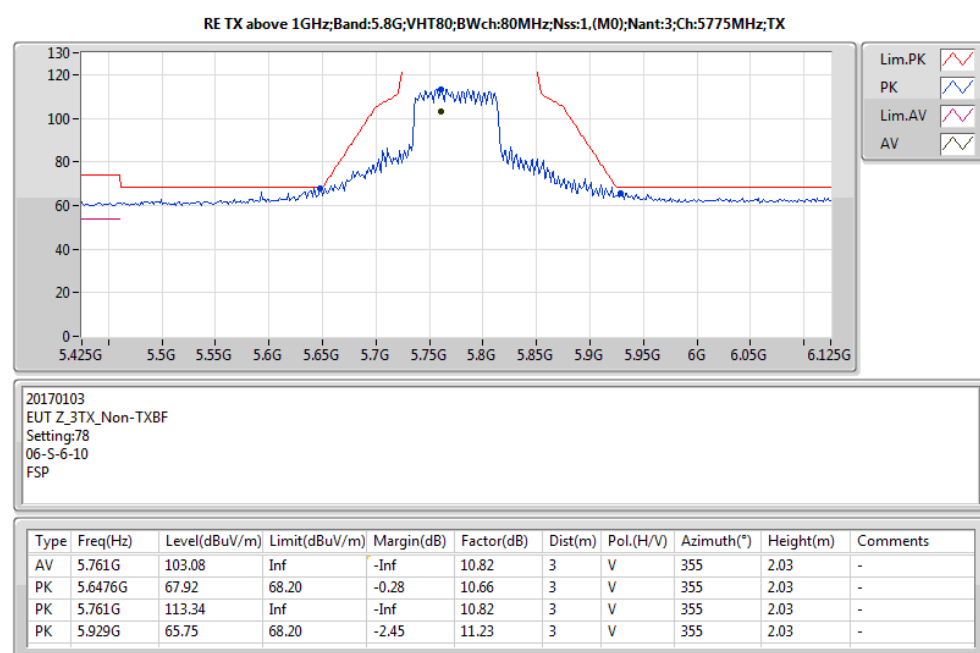
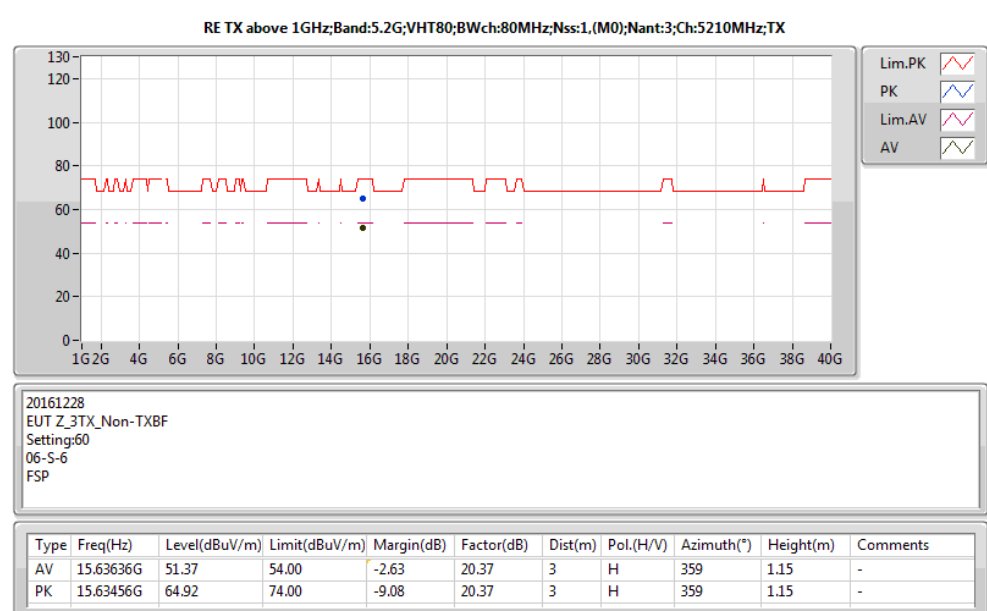
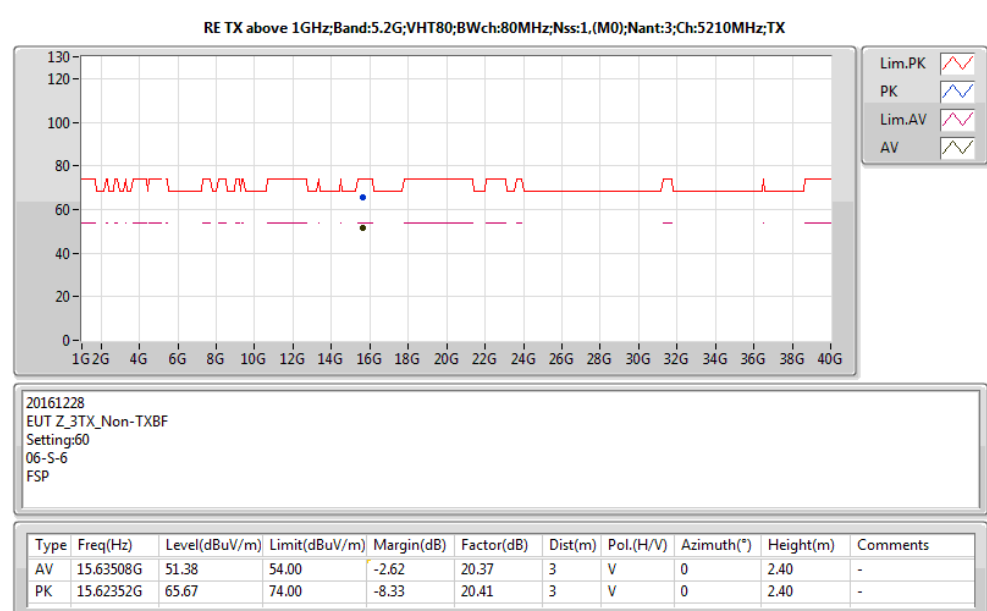
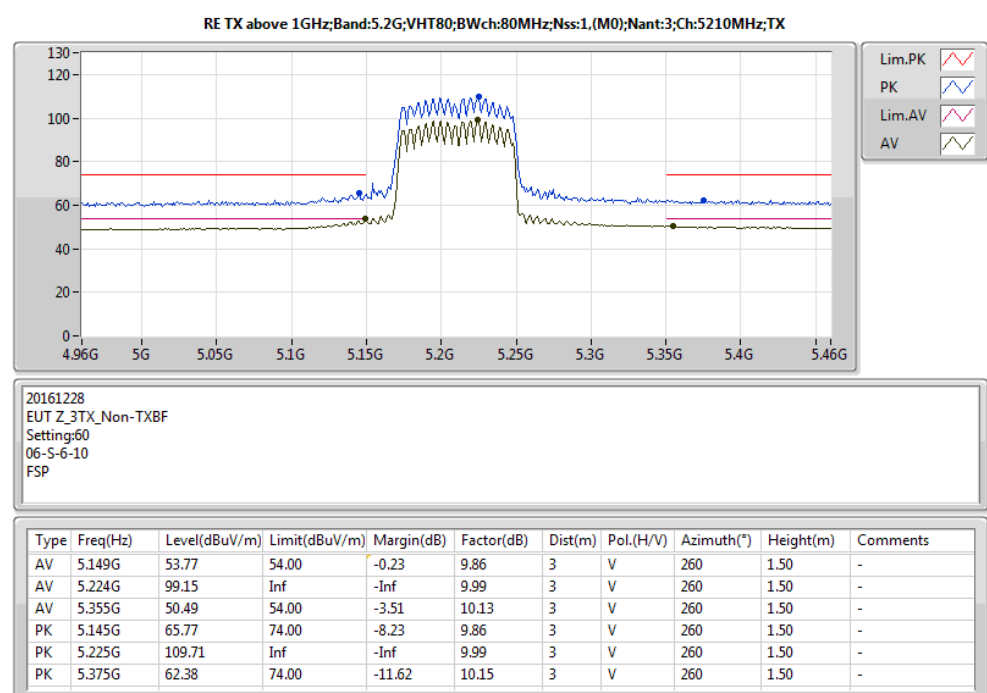


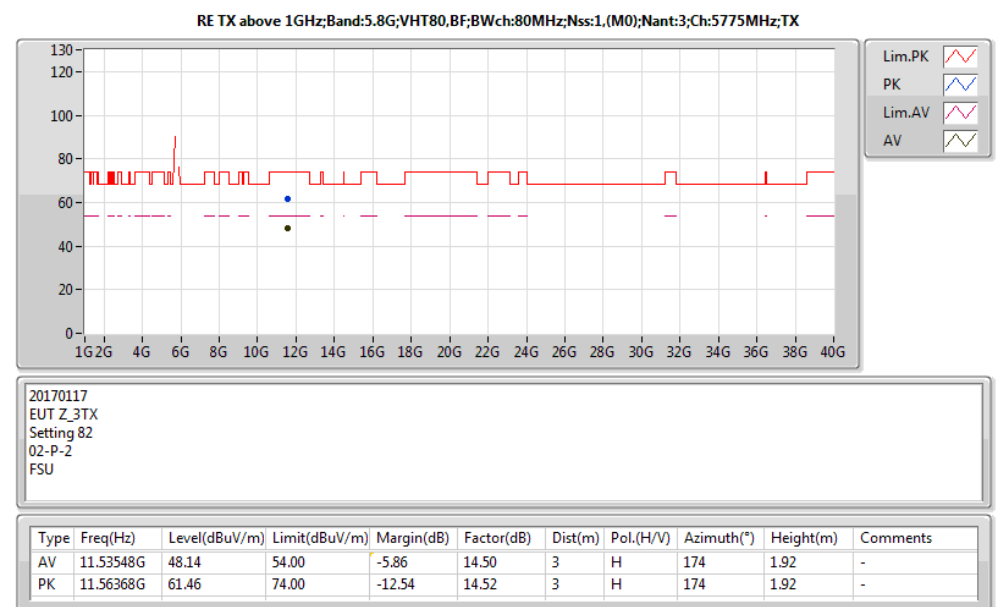
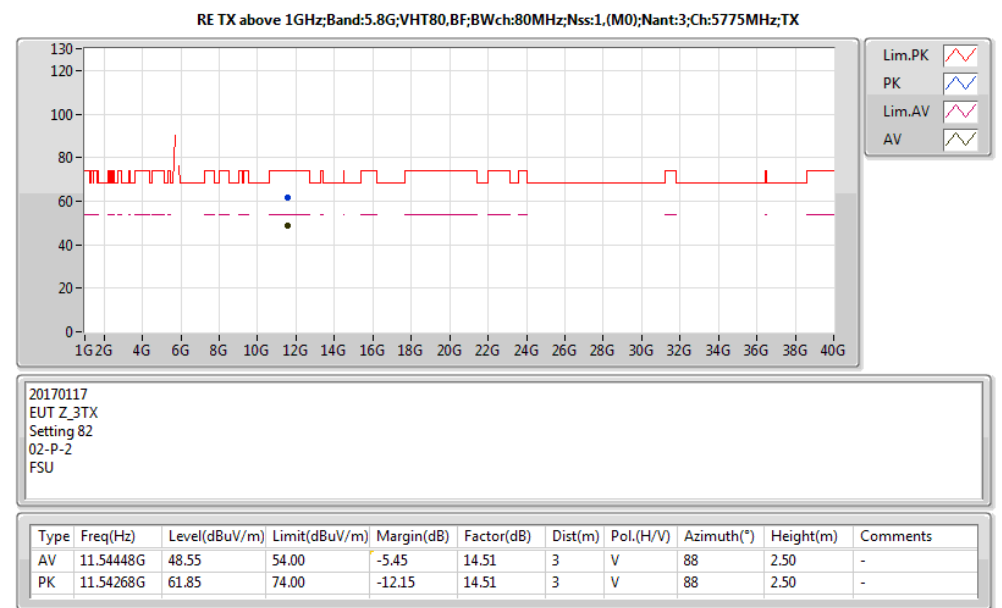
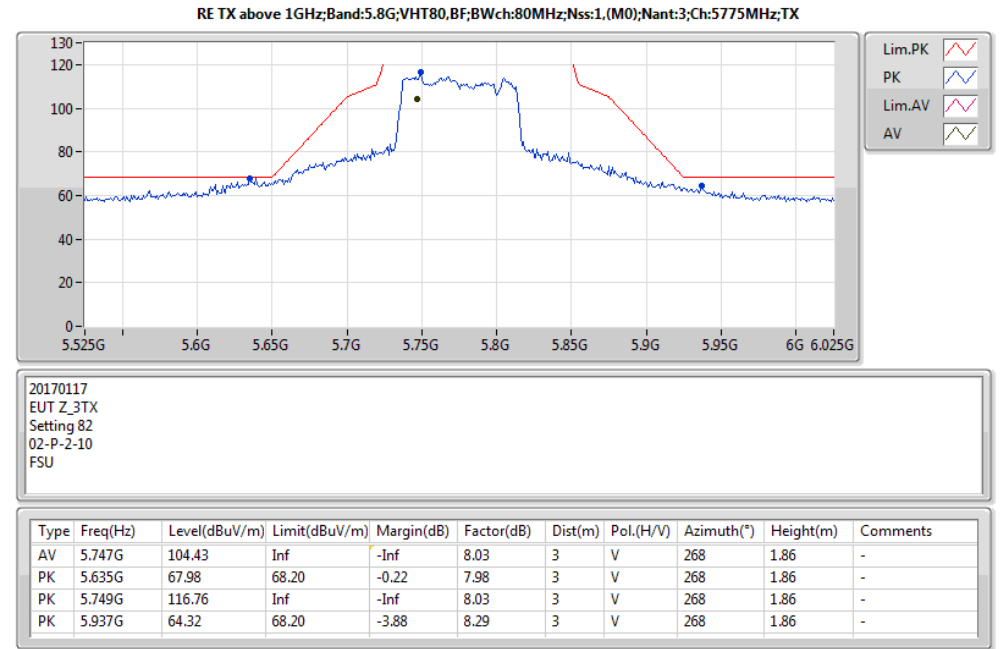
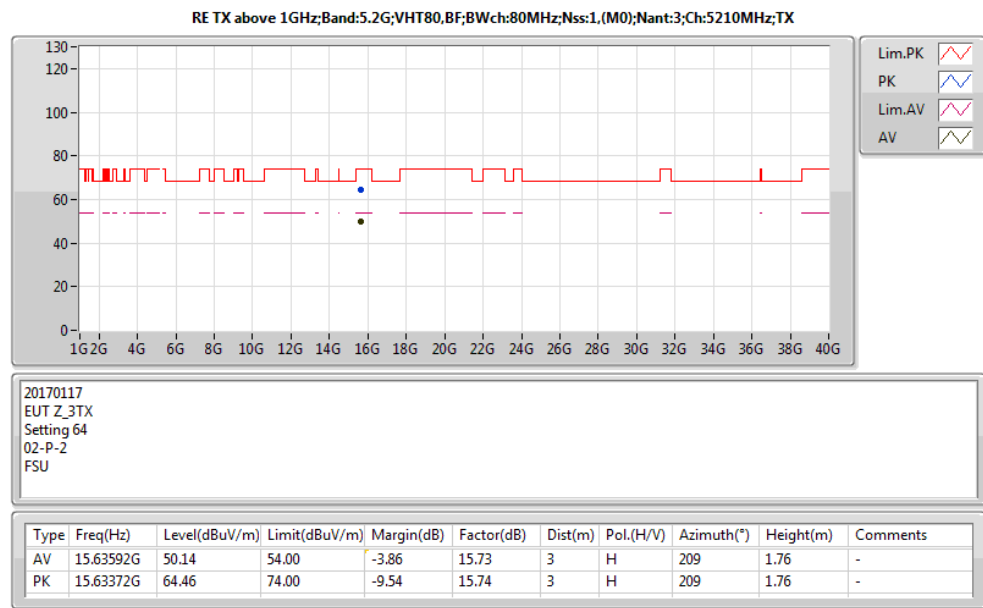
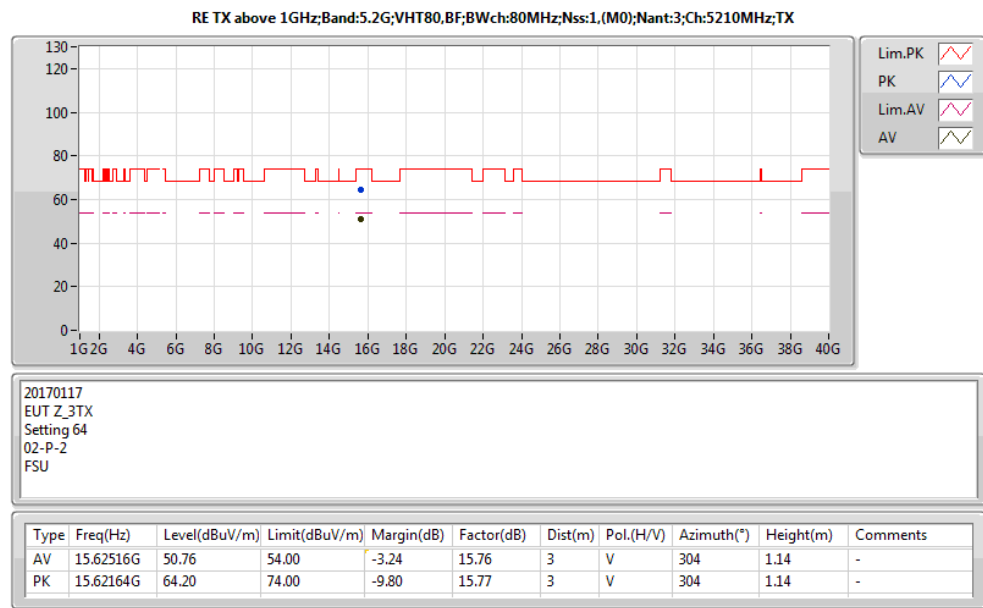
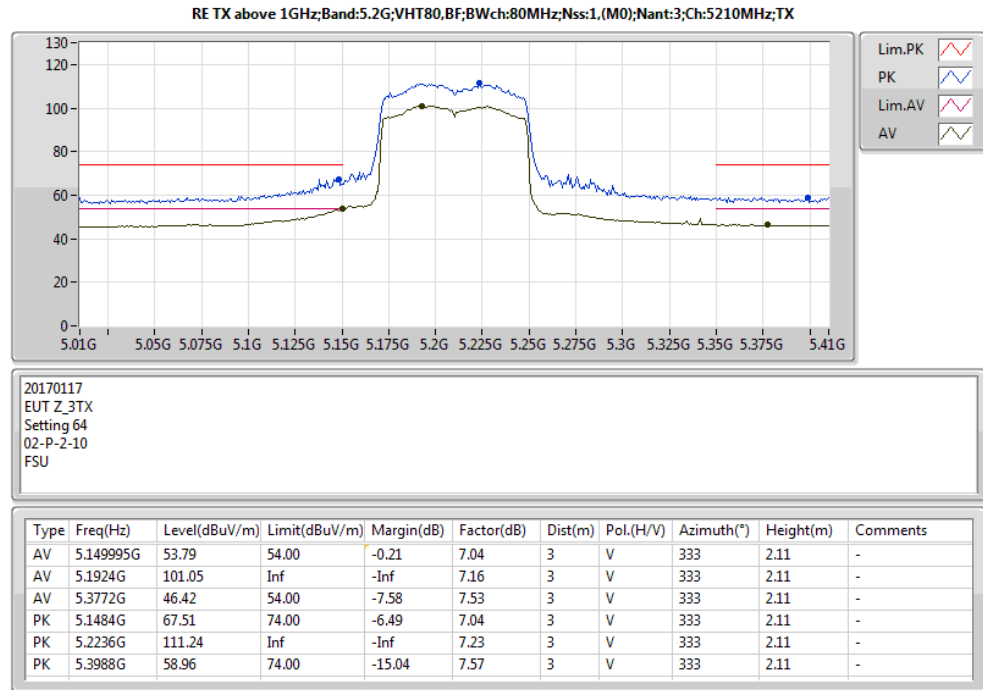












Mode: 20 MHz / Ant. 2

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5199.9992	5199.9983	5199.9977	5199.9972
110.00	5199.9988	5199.9983	5199.9975	5199.9970
93.50	5199.9987	5199.9977	5199.9971	5199.9969
Max. Deviation (MHz)	0.0013	0.0023	0.0029	0.0031
Max. Deviation (ppm)	0.25	0.44	0.56	0.60
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5199.9956	5199.9944	5199.9925	5199.9903
10	5199.9943	5199.9930	5199.9915	5199.9897
20	5199.9931	5199.9918	5199.9902	5199.9883
30	5199.9917	5199.9906	5199.9892	5199.9876
40	5199.9901	5199.9886	5199.9870	5199.9850
Max. Deviation (MHz)	0.0099	0.0114	0.0130	0.0150
Max. Deviation (ppm)	1.90	2.19	2.50	2.88
Result	Pass			

Mode: 20 MHz / Ant. 4

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5784.9908	5784.9907	5784.9899	5784.9897
110.00	5784.9907	5784.9898	5784.9890	5784.9883
93.50	5784.9899	5784.9889	5784.9886	5784.9881
Max. Deviation (MHz)	0.0101	0.0111	0.0114	0.0119
Max. Deviation (ppm)	1.75	1.92	1.97	2.06
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5784.9969	5784.9957	5784.9938	5784.9916
10	5784.9956	5784.9943	5784.9928	5784.9910
20	5784.9944	5784.9931	5784.9915	5784.9896
30	5784.9930	5784.9919	5784.9905	5784.9889
40	5784.9914	5784.9899	5784.9883	5784.9863
Max. Deviation (MHz)	0.0086	0.0101	0.0117	0.0137
Max. Deviation (ppm)	1.49	1.75	2.02	2.37
Result	Pass			

Mode: 40 MHz / Ant. 2

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5190 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5189.9951	5189.9943	5189.9938	5189.9934
110.00	5189.9948	5189.9942	5189.9933	5189.9923
93.50	5189.9947	5189.9938	5189.9934	5189.9931
Max. Deviation (MHz)	0.0053	0.0062	0.0067	0.0077
Max. Deviation (ppm)	1.02	1.19	1.29	1.48
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5190 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5189.9959	5189.9947	5189.9928	5189.9906
10	5189.9946	5189.9933	5189.9918	5189.9900
20	5189.9934	5189.9921	5189.9905	5189.9886
30	5189.9920	5189.9909	5189.9895	5189.9879
40	5189.9904	5189.9889	5189.9873	5189.9853
Max. Deviation (MHz)	0.0113	0.0125	0.0140	0.0167
Max. Deviation (ppm)	2.18	2.41	2.70	3.22
Result	Pass			

Mode: 40 MHz / Ant. 4

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5755 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5754.9941	5754.9932	5754.9926	5754.9916
110.00	5754.9937	5754.9935	5754.9927	5754.9920
93.50	5754.9929	5754.9922	5754.9912	5754.9910
Max. Deviation (MHz)	0.0071	0.0078	0.0088	0.0090
Max. Deviation (ppm)	1.23	1.36	1.53	1.56
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5755 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5754.9939	5754.9927	5754.9908	5754.9886
10	5754.9926	5754.9913	5754.9898	5754.9880
20	5754.9914	5754.9901	5754.9885	5754.9866
30	5754.9900	5754.9889	5754.9875	5754.9859
40	5754.9884	5754.9869	5754.9853	5754.9833
Max. Deviation (MHz)	0.0116	0.0131	0.0147	0.0167
Max. Deviation (ppm)	2.02	2.28	2.55	2.90
Result	Pass			

Mode: 80 MHz / Ant. 2

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5210 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5209.9957	5209.9953	5209.9948	5209.9938
110.00	5209.9951	5209.9946	5209.9939	5209.9934
93.50	5209.9950	5209.9946	5209.9940	5209.9934
Max. Deviation (MHz)	0.0050	0.0054	0.0061	0.0066
Max. Deviation (ppm)	0.96	1.04	1.17	1.27
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5210 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5210.0005	5209.9993	5209.9974	5209.9952
10	5209.9992	5209.9979	5209.9964	5209.9946
20	5209.9980	5209.9967	5209.9951	5209.9932
30	5209.9966	5209.9955	5209.9941	5209.9925
40	5209.9950	5209.9935	5209.9919	5209.9899
Max. Deviation (MHz)	0.0050	0.0065	0.0081	0.0101
Max. Deviation (ppm)	0.96	1.25	1.55	1.94
Result	Pass			

Mode: 80 MHz / Ant. 4

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5775 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5774.9972	5774.9963	5774.9956	5774.9952
110.00	5774.9971	5774.9970	5774.9960	5774.9952
93.50	5774.9966	5774.9960	5774.9957	5774.9951
Max. Deviation (MHz)	0.0034	0.0040	0.0044	0.0049
Max. Deviation (ppm)	0.59	0.69	0.76	0.85
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5775 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
0	5775.0005	5774.9993	5774.9974	5774.9952
10	5774.9992	5774.9979	5774.9964	5774.9946
20	5774.9980	5774.9967	5774.9951	5774.9932
30	5774.9966	5774.9955	5774.9941	5774.9925
40	5774.9950	5774.9935	5774.9919	5774.9899
Max. Deviation (MHz)	0.0067	0.0079	0.0094	0.0121
Max. Deviation (ppm)	1.16	1.37	1.63	2.10
Result	Pass			