

Report No.: FR932923AA



# **FCC RADIO TEST REPORT**

FCC ID : O2U-CH7368

Equipment : Wireless Gateway

Brand Name : CO

Model Name : CH7368, CH7368XXXXXXX (The "X" in the model

name can be 0 to 9, A to Z, dash ok blank, for

marketing purpose)

Applicant : COMPAL BROADBAND NETWORKS,INC.

13F-1, No.1, Taiyuan 1st St., Zhubei City, Hsinchu

County 30288, Taiwan, R.O.C.

Manufacturer : COMPAL BROADBAND NETWORKS, INC.

13F-1, No.1, Taiyuan 1st St., Zhubei City, Hsinchu

County 30288, Taiwan, R.O.C.

Standard: 47 CFR FCC Part 15.247

The product was received on Apr. 09, 2019, and testing was started from Apr. 24, 2019 and completed on May 27, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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

Approved by: Sam Chen

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

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

TEL: 886-3-656-9065 FAX: 886-3-656-9085

Report Template No.: CB Ver1.0

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: Jun. 19, 2019

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# History of this test report

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Report No.	Version	Description	Issued Date
FR932923AA	01	Initial issue of report	Jun. 14, 2019
FR932923AA	02	Revise the equipment name and add a model name.	Jun. 19, 2019

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# **Summary of Test Result**

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Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.247(a)	DTS Bandwidth	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(e)	Power Spectral Density	PASS	-
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

#### **Declaration of Conformity:**

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

#### **Comments and Explanations:**

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

Reviewed by: Sam Chen Report Producer: Cindy Peng

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# 1 General Description

#### 1.1 Information

#### 1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
2400-2483.5	b, g, n (HT20)	2412-2462	1-11 [11]
2400-2483.5	n (HT40)	2422-2452	3-9 [7]

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Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11b	20	1TX
2.4-2.4835GHz	802.11g	20	3TX
2.4-2.4835GHz	802.11n HT20	20	3TX
2.4-2.4835GHz	802.11n HT40	40	3TX

#### Note:

- ◆ 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- 11g, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM 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.

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#### 1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Remark
1	3	CBN	CH7368	Diople Antenna	I-PEX	5.2	2.4GHz
2	2	CBN	CH7368	Diople Antenna	I-PEX	3.6	2.4GHz
3	1	CBN	CH7368	Diople Antenna	I-PEX	5.5	2.4GHz
4	4	CBN	CH7368	Diople Antenna	I-PEX	7.1	5GHz
5	3	CBN	CH7368	Diople Antenna	I-PEX	6.8	5GHz
6	2	CBN	CH7368	Diople Antenna	I-PEX	7.0	5GHz
7	1	CBN	CH7368	Diople Antenna	I-PEX	5.9	5GHz

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Note 1: The above information was declared by manufacturer.

Note 2: The EUT has seven antennas (Ant. 1~Ant. 3 for WLAN 2.4GHz use, and the other antennas for WLAN 5GHz use) .

Note 3: For WLAN 2.4GHz:

802.11b (1TX/1RX): Only Port 1 could transmit/receive simultaneously.

802.11g/n (3TX/3RX): Port 1, Port 2 and Port 3 could transmit/receive simultaneously.

Note 4: For WLAN 5GHz:

802.11a/n/ac (4TX/4RX): Port 1, Port 2, Port 3 and Port 4 could transmit/receive simultaneously.

#### 1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11b	0.998	0.009	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11g	0.984	0.07	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11n HT20	0.982	0.079	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11n HT40	0.966	0.15	650.625u	3k

#### Note:

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

#### 1.1.4 EUT Operational Condition

EUT Power Type	From power adapter				
Beamforming Function		With beamforming	$\boxtimes$	Without beamforming	
Function		Point-to-multipoint		Point-to-point	
Test Software Version	Lantq DUT Generation Wave500				
Test Sample Serial Number		Normal Link and CTX - 5GHz:		1417368200002	
100t Gampie Geriai Namber	СТХ	- 2.4GHz:		1417368200000	

Note: The above information was declared by manufacturer.

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# 1.2 Table for Multiple Listing

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

Brand Name	Model Name	Description
	CH7368	All the models are identical, and
con	CH7368XXXXXX (The "X" in the model name can be	the difference model served as
	0 to 9 , A to Z , dash ok blank , for maketing purpose)	marketing strategy.

From the above models, model: CH7368 was selected as representative model for the test and its data was recorded in this report.

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#### 1.3 Applicable Standards

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

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- 47 CFR FCC Part 15
- ANSI C63.10-2013
- FCC KDB 558074 D01 v05r02
- FCC KDB 662911 D01 v02r01

#### 1.4 Testing Location Information

	Testing Location							
	HWA YA ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)							
		TEL	:	886-3-327-3456 FAX : 886-3-327-0973				
$\boxtimes$	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	Welson Chen	22~24°C / 54~56%	Apr. 26, 2019~May 10, 2019
Radiated (Below 1GHz)	03CH01-CB	Paul Chen	22~24°C / 50~60%	May 24, 2019
Radiated (Above 1GHz)	03CH01-CB	Welson Chen	22~24°C / 53~55%	Apr. 24, 2019~May 07, 2019
AC Conduction	CO01-CB	Deven Huang	22~23°C / 55~58%	May 27, 2019

Test site Designation No. TW0006 with FCC.

#### 1.5 Measurement Uncertainty

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

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.0 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	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 <sup>-8</sup>	Confidence levels of 95%

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Test site registered number IC 4086B with Industry Canada.

# 2 Test Configuration of EUT

## 2.1 Test Channel Mode

Mode	PowerSetting
802.11b_Nss1,(1Mbps)_1TX	-
2412MHz	20.5
2437MHz	20.5
2462MHz	20
802.11g_Nss1,(6Mbps)_3TX	-
2412MHz	17.5
2417MHz	20
2437MHz	22
2457MHz	19.5
2462MHz	17
802.11n HT20_Nss1,(MCS0)_3TX	-
2412MHz	16
2417MHz	20
2437MHz	22
2457MHz	18.5
2462MHz	16
802.11n HT40_Nss1,(MCS0)_3TX	-
2422MHz	14
2427MHz	15.5
2437MHz	17.5
2452MHz	15.5

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# 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		
1	Normal Link	

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The Worst Case Mode for Following Conformance Tests	
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains.

Th	The Worst Case Mode for Following Conformance Tests		
Tests Item	Emissions in Restricted Frequency Bands		
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			
1	Normal Link		
Operating Mode > 1GHz			
1	CTX		

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

# 2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.

#### 2.4 Accessories

Accessories				
No.	<b>Equipment Name</b>	Brand Name	Model Name	Rating
1	Adapter	Frecom	F30L2-120250SPAU	INPUT: 100-240Vac, 50/60Hz, 0.8A OUTPUT: 12Vdc, 2.5A

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# 2.5 Support Equipment

#### For AC Conduction:

	Support Equipment			
No.	Equipment	Brand Name	Model Name	FCC ID
Α	Flash disk3.0	Transcend	JetFlash-700	N/A
В	LAN NB	DELL	E6430	N/A
С	2.4G NB	DELL	E6430	N/A
D	5G NB	DELL	E6430	N/A
Е	Terminal system	MOTOROLA	BSR2000	N/A
F	Terminal system NB	ACER	MS2308	N/A
G	Phone 1	SAMPO	HT-B 907WL	N/A
Н	Phone 2	SAMPO	HT-B 907WL	N/A
Ι	Splitter	N/A	N/A	N/A

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For Radiated (below 1GHz):

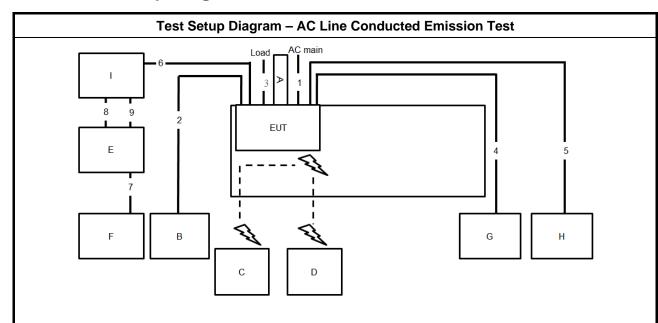
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
Α	2.4G NB	Apple	Mac Book	N/A
В	5G NB	Apple	Mac Book	N/A
С	LAN NB	DELL	E4300	N/A
D	Terminal system NB	acer	N/A	N/A
Е	Phone 1	SAMPO	HT-B 907WL	N/A
F	Phone 2	SAMPO	HT-B 907WL	N/A
G	Terminal system	MOTOROLA	BSR2000	N/A
Н	Splitter	N/A	N/A	N/A
Ι	Flash disk3.0	Silicon Power	B06	N/A

For Radiated (above 1GHz) and RF Conducted:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
Α	NB	DELL	E4300	N/A

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# 2.6 Test Setup Diagram

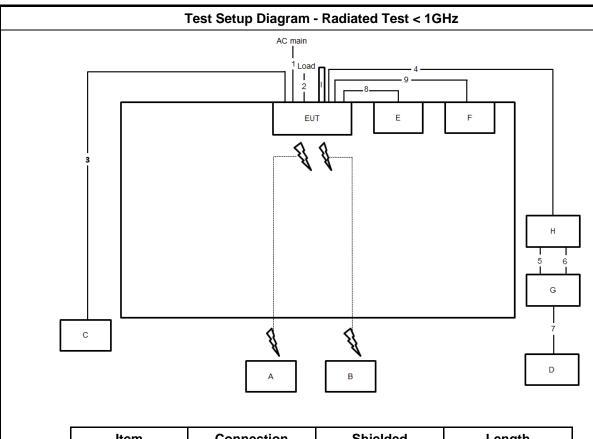


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Item	Connection	Shielded	Length
1	Power cable	No	2m
2	RJ-45 cable	No	10m
3	RJ-45 cable*3	No	1.5m
4	RJ-11 cable	No	10m
5	RJ-11 cable	No	10m
6	Coaxial cable	Yes	10m
7	RJ-45 cable	No	1.5m
8	Coaxial cable	Yes	2m
9	Coaxial cable	Yes	2m

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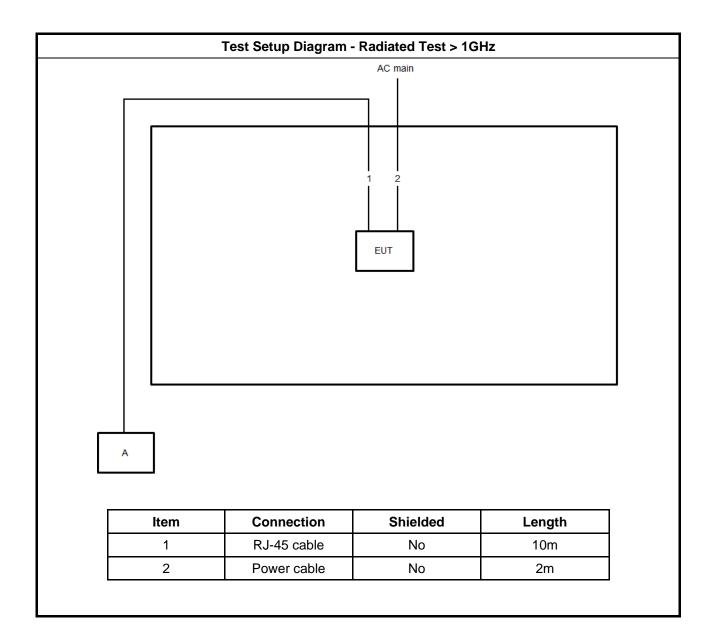
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Item	Connection	Shielded	Length
1	Power cable	No	2m
2	RJ-45 cable*3	No	1.5m
3	RJ-45 cable	No	10m
4	Coaxial cable	Yes	10m
5	Coaxial cable	Yes	2m
6	Coaxial cable	Yes	2m
7	RJ-45 cable	No	3m
8	RJ-11 cable	No	1.5m
9	RJ-11 cable	No	1.5m

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#### 3 Transmitter Test Result

#### 3.1 AC Power-line Conducted Emissions

#### 3.1.1 AC Power-line Conducted Emissions Limit

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

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#### 3.1.2 Measuring Instruments

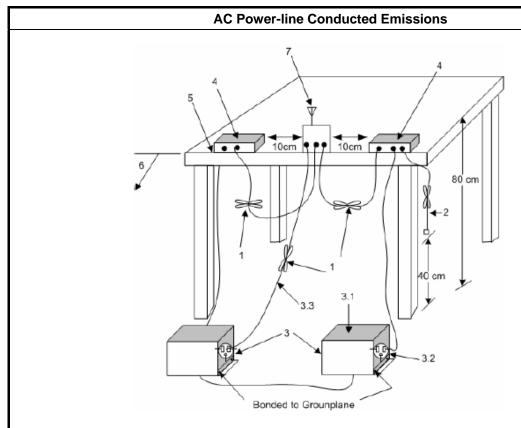
Refer a test equipment and calibration data table in this test report.

#### 3.1.3 Test Procedures

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

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#### 3.1.4 Test Setup



1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.

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

#### 3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

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#### 3.2 DTS Bandwidth

#### 3.2.1 6dB Bandwidth Limit

6dB Bandwidth Limit					
Systems using digital modulation techniques:					
■ 6 dB bandwidth ≥ 500 kHz.					

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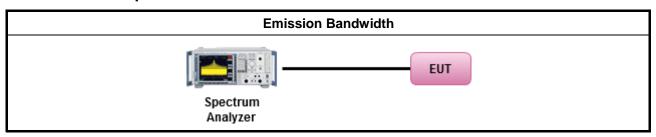
#### 3.2.2 Measuring Instruments

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:								
	$\boxtimes$	Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement.							
		Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 Option 2 for 6 dB bandwidth measurement.							
		Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.							

#### 3.2.4 Test Setup



#### 3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

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#### 3.3 Maximum Conducted Output Power

#### 3.3.1 Maximum Conducted Output Power Limit

# Maximum Conducted Output Power Limit■ If $G_{TX} \le 6$ dBi, then $P_{Out} \le 30$ dBm (1 W)■ Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm■ Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm■ Smart antenna system (SAS):- Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm- Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm- Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB dBm $P_{Out} =$ maximum peak conducted output power or maximum conducted output power in dBm, $G_{TX} =$ the maximum transmitting antenna directional gain in dBi.

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#### 3.3.2 Measuring Instruments

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

#### 3.3.3 Test Procedures

	Test Method
•	Maximum Peak Conducted Output Power
	Refer as FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW ≥ EBW method).
	Refer as FCC KDB 558074, clause 8.3.1.3 & C63.10 clause 11.9.1.3 (peak power meter).
•	Maximum Conducted Output Power
	duty cycle ≥ 98% or external video / power trigger]
	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1.
	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.3 Method AVGSA-1A (alternative)
	duty cycle < 98% and average over on/off periods with duty factor
	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2.
	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA-2 (alternative)
	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3
	Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.7 Method AVGSA-3 (alternative)
	Measurement using a power meter (PM)
	Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.1 Method AVGPM (using a RF average power meter).
	Refer as FCC KDB 558074, clause 8.3.2.3 & C63.10 clause 11.9.2.3.2 Method AVGPM-G (usin an gate RF average power meter).

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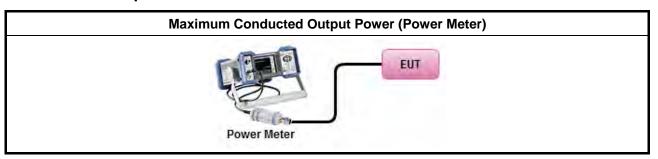
#### For conducted measurement.

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.

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■ If multiple transmit chains, EIRP calculation could be following as methods: P<sub>total</sub> = P<sub>1</sub> + P<sub>2</sub> +... + P<sub>n</sub> (calculated in linear unit [mW] and transfer to log unit [dBm]) EIRP<sub>total</sub> = P<sub>total</sub> + DG

#### 3.3.4 Test Setup



#### 3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

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## 3.4 Power Spectral Density

#### 3.4.1 Power Spectral Density Limit

# Power Spectral Density Limit ■ Power Spectral Density (PSD) ≤ 8 dBm/3kHz

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#### 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. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).
	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.2 Method PKPSD.
	[duty cycle ≥ 98% or external video / power trigger]
	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.3 Method AVGPSD-1.
	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.5 Method AVGPSD-2.
	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.7 Method AVGPSD-3.
	duty cycle < 98% and average over on/off periods with duty factor
	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.4 Method AVGPSD-1A. (alternative).
	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.6 Method AVGPSD-2A. (alternative)
	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10.8 Method AVGPSD-3A. (alternative)
•	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, spectral 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,

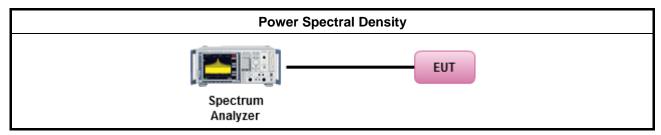
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Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.

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#### 3.4.4 Test Setup



#### 3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

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#### 3.5 Emissions in Non-restricted Frequency Bands

#### 3.5.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit						
RF output power procedure Limit (dBc)						
Peak output power procedure	20					
Average output power procedure	30					

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- Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.
- Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.

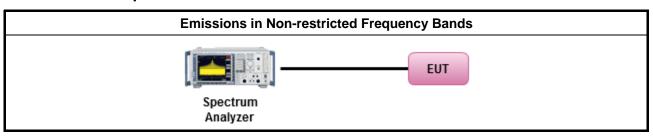
#### 3.5.2 Measuring Instruments

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

#### 3.5.3 Test Procedures

	Test Method
•	Refer as FCC KDB 558074, clause 8.5 for unwanted emissions into non-restricted bands.

#### 3.5.4 Test Setup



#### 3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

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#### 3.6 Emissions in Restricted Frequency Bands

#### 3.6.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions 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						

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

#### 3.6.2 Measuring Instruments

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

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#### 3.6.3 Test Procedures

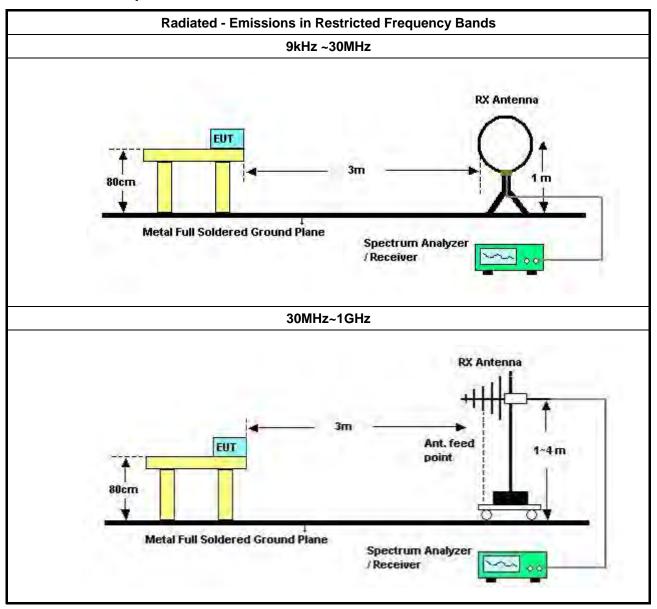
		Test Method							
•	The	average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].							
•		er as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency nnel and highest frequency channel within the allowed operating band.							
•	For	the transmitter unwanted emissions shall be measured using following options below:							
	■ Refer as FCC KDB 558074, clause 8.6 for unwanted emissions into restricted bands.								
	Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for du cycle ≥98%).								
		Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.2(trace averaging + duty factor).							
		Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.3(Reduced VBW≥1/T).							
		Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.							
		Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.							
		Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.4 measurement procedure peak limit.							
•	For	the transmitter band-edge emissions shall be measured using following options below:							
_	•	Refer as FCC KDB 558074 clause 8.7 & C63.10 clause 11.13.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.							
	•	Refer as FCC KDB 558074, clause 8.7 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements.							
	•	Refer as FCC KDB 558074, clause 8.7 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).							
	<ul> <li>For conducted unwanted emissions into restricted bands (absolute emission limits).</li> <li>Devices with multiple transmit chains using options given below:</li> <li>(1) Measure and sum the spectra across the outputs or</li> <li>(2) Measure and add 10 log(N) dB</li> </ul>								
	•	For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.							

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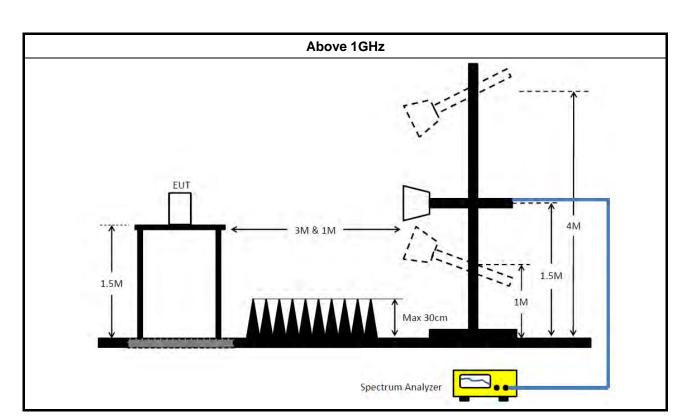
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#### 3.6.4 Test Setup



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#### 3.6.5 Emissions in Restricted Frequency Bands (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.

The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10 harmonic or 40 GHz, whichever is appropriate.

#### 3.6.6 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

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# **Test Equipment and Calibration Data**

Instrument	Manufacture r	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 28, 2019	Jan. 29, 2020	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50 -16-2	04083	150kHz ~ 100MHz	Dec. 24, 2018	Dec. 23, 2019	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Jan. 11, 2019	Jan. 10, 2020	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	May 21, 2019	May 20, 2020	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 29, 2019	Mar. 28, 2020	Radiation (03CH01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 27, 2018	Aug. 26, 2019	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 13, 2018	Nov. 12, 2019	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jun. 28, 2018	Jun. 27, 2019	Radiation (03CH01-CB)
Pre-Amplifier	EMCI	EMC330N	980391	20MHz ~ 3GHz	Jun. 13, 2018	Jun. 12, 2019	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 08, 2019	Jan. 07, 2020	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35- HG	1864479	18GHz ~ 40GHz	Jul. 04, 2018	Jul. 03, 2019	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Jan. 31, 2019	Jan. 30, 2020	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESCS	100359	9kHz ~ 2.75GHz	Jul. 03, 2018	Jul. 02, 2019	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 08, 2018	Oct. 07, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Jul. 27, 2018	Jul. 26, 2019	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Feb. 25, 2019	Feb. 24, 2020	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)

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Instrument	Manufacture r	Model No.	del No. Serial No. Characteristics		Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 08, 2018	Oct. 07, 2019	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-28	1 GHz –26.5 GHz	Nov. 19, 2018	Nov. 18, 2019	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 05, 2018	Nov. 04, 2019	Conducted (TH01-CB)

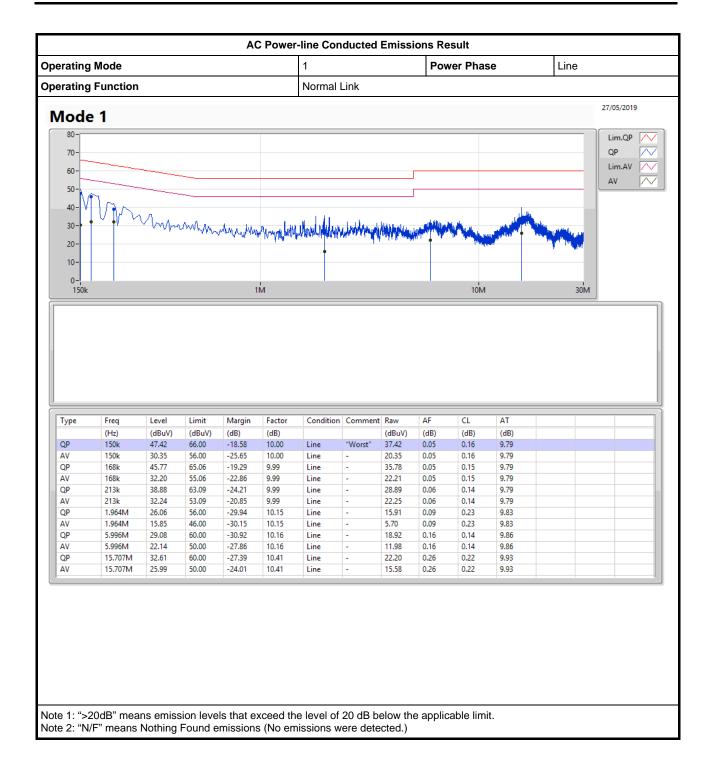
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Note: Calibration Interval of instruments listed above is one year.

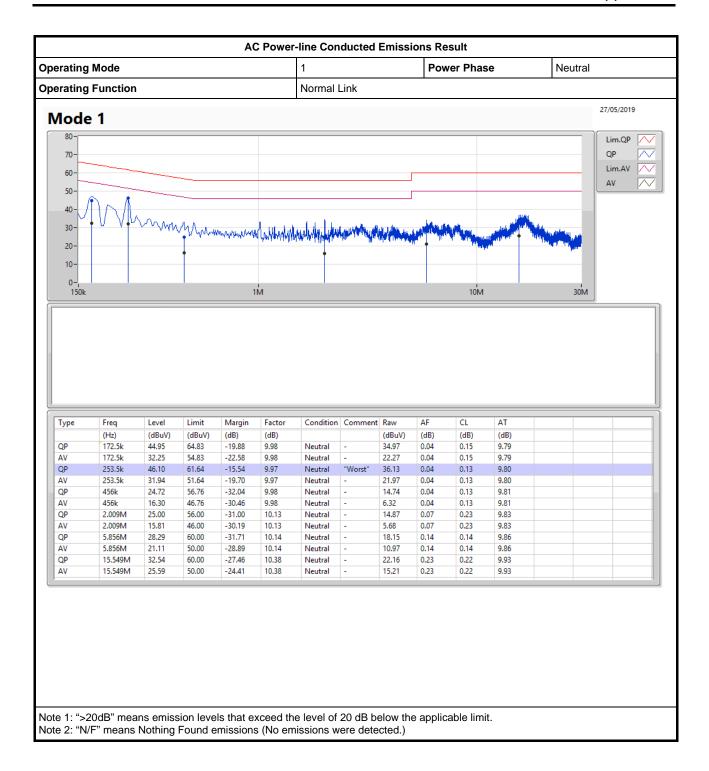
N.C.R. means Non-Calibration required.

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#### AC Power-line Conducted Emissions Result



#### AC Power-line Conducted Emissions Result





**Summary** 

Mode	Mode Max-N dB		ITU-Code	Min-N dB	Min-OBW	
	(Hz)	(Hz)		(Hz)	(Hz)	
2.4-2.4835GHz	-	-	-	-	-	
802.11b_Nss1,(1Mbps)_1TX	8.05M	10.645M	10M6G1D	7.525M	10.595M	
802.11g_Nss1,(6Mbps)_3TX	16.325M	18.616M	18M6D1D	16.025M	16.467M	
802.11n HT20_Nss1,(MCS0)_3TX	17.55M	19.665M	19M7D1D	16.325M	17.666M	
802.11n HT40_Nss1,(MCS0)_3TX	35.9M	36.282M	36M3D1D	35.05M	36.182M	

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

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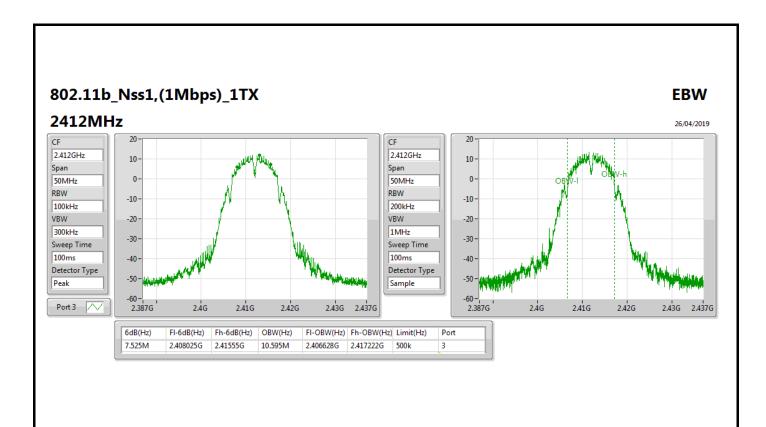
#### Result

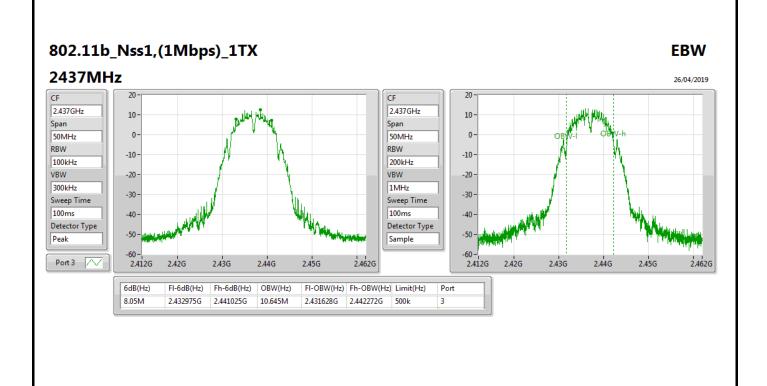
Mode	Result	Limit	Port 1-N dB	Port 1-OBW	Port 2-N dB	Port 2-OBW	Port 3-N dB	Port 3-OBW
		(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	7.525M	10.595M	-	-	-	-
2437MHz	Pass	500k	8.05M	10.645M	-	-	-	-
2462MHz	Pass	500k	7.55M	10.645M	-	-	-	-
802.11g_Nss1,(6Mbps)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	16.3M	16.467M	16.325M	16.492M	16.25M	16.467M
2437MHz	Pass	500k	16.3M	18.491M	16.3M	17.941M	16.025M	18.616M
2462MHz	Pass	500k	16.3M	16.517M	16.325M	16.592M	16.3M	16.467M
802.11n HT20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
2412MHz	Pass	500k	17.55M	17.666M	17.55M	17.741M	17.15M	17.691M
2437MHz	Pass	500k	16.325M	19.665M	16.9M	19.565M	17.15M	19.665M
2462MHz	Pass	500k	17.525M	17.716M	17.55M	17.691M	17.25M	17.716M
802.11n HT40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-
2422MHz	Pass	500k	35.9M	36.182M	35.45M	36.232M	35.35M	36.182M
2437MHz	Pass	500k	35.05M	36.282M	35.7M	36.232M	35.3M	36.182M
2452MHz	Pass	500k	35.45M	36.282M	35.25M	36.232M	35.45M	36.282M

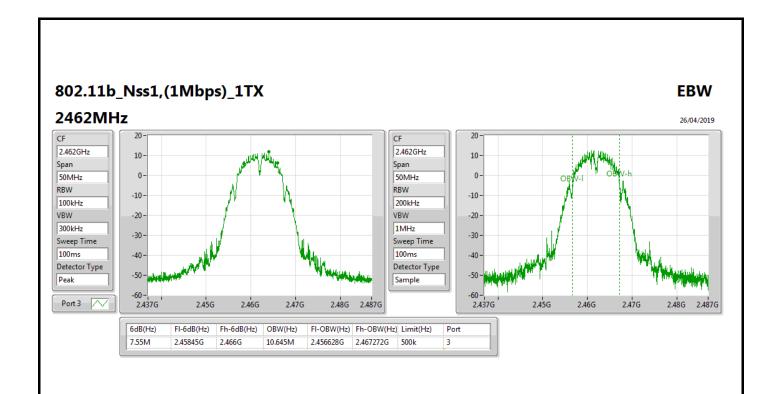
Port X-N dB = Port X 6dB down bandwidth; Port X-OBW = Port X 99% occupied bandwidth;

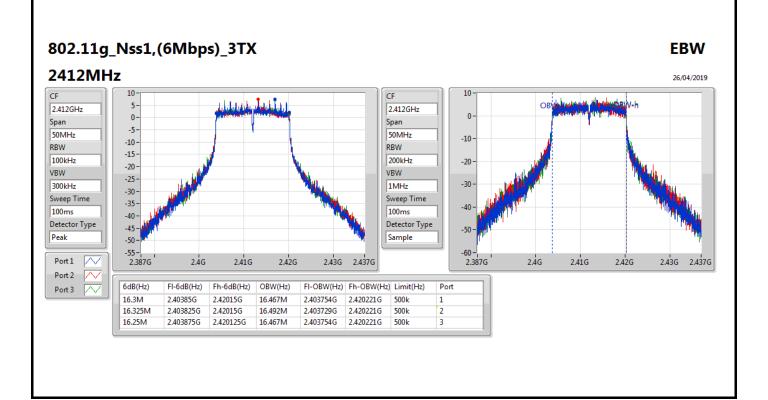
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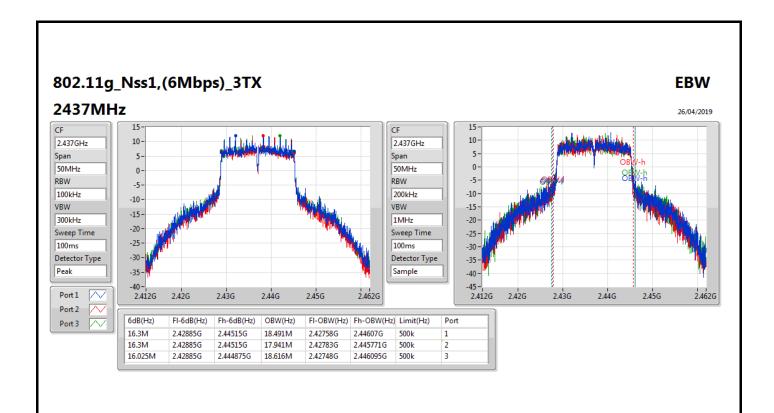
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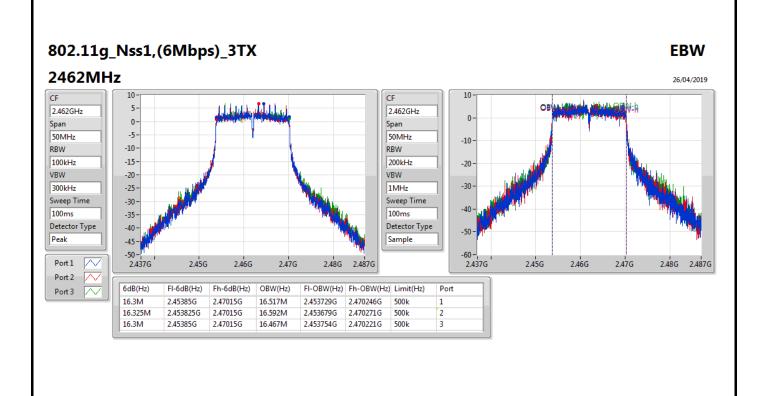


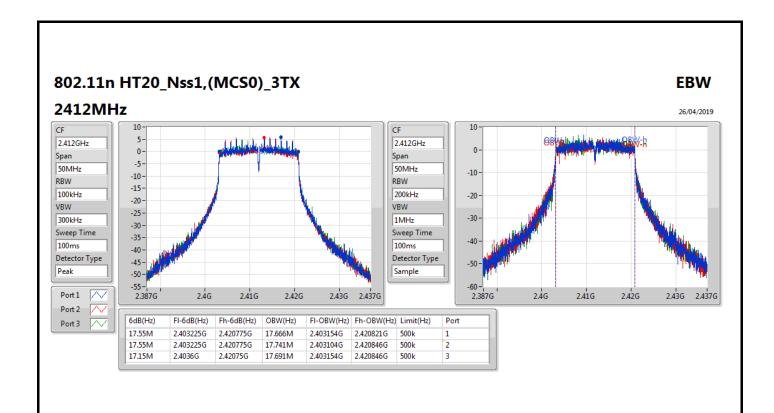


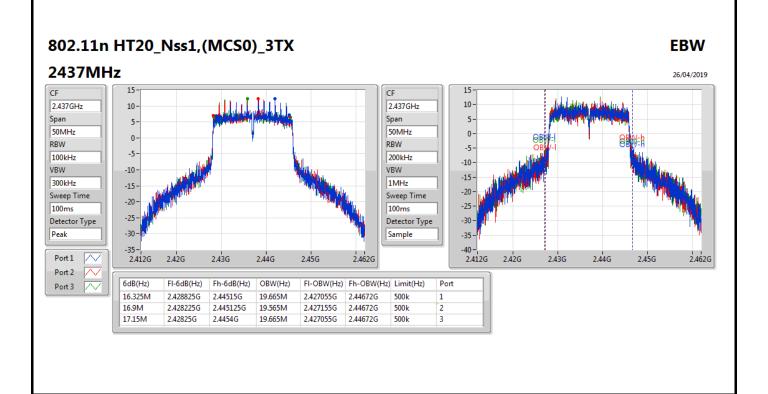






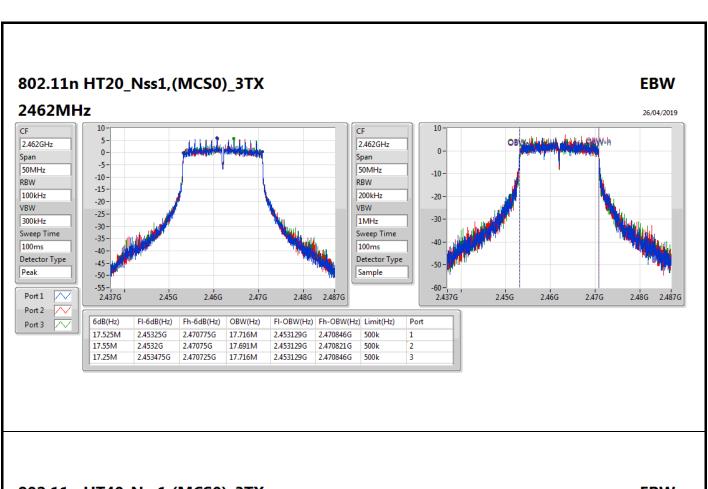


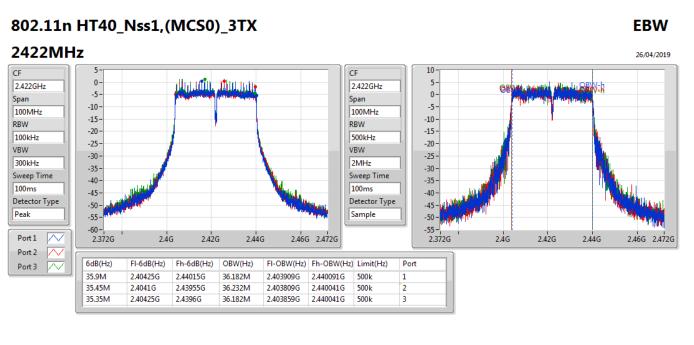




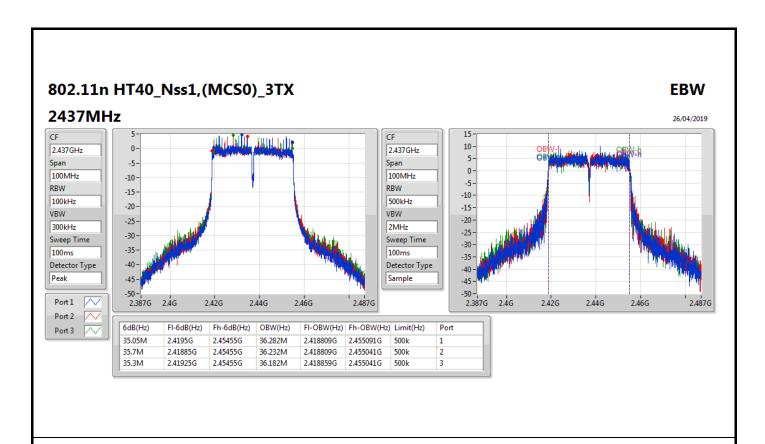
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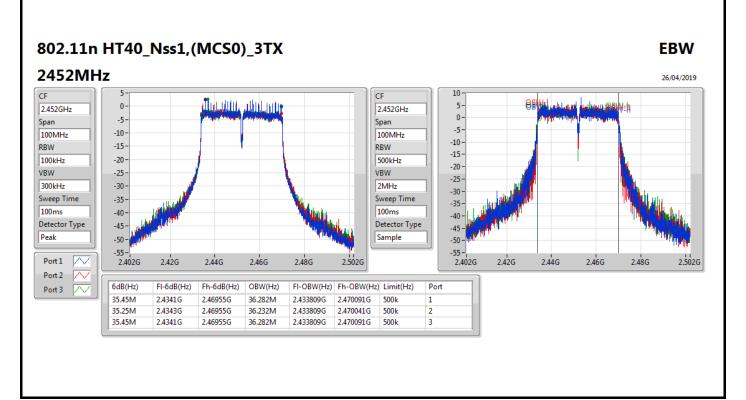
EBW Result Appendix B





EBW Result Appendix B







## Average Power Result

Appendix C

**Summary** 

Mode	Total Power	Total Power
	(dBm)	(W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	21.04	0.12706
802.11g_Nss1,(6Mbps)_3TX	27.13	0.51642
802.11n HT20_Nss1,(MCS0)_3TX	27.14	0.51761
802.11n HT40_Nss1,(MCS0)_3TX	23.01	0.19999



### Result

Mode	Result	DG	Port 1	Port 2	Port 3	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	5.50	21.04	-	-	21.04	30.00
2437MHz	Pass	5.50	20.58	-	-	20.58	30.00
2462MHz	Pass	5.50	20.14	-	-	20.14	30.00
802.11g_Nss1,(6Mbps)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	5.50	18.07	18.22	18.20	22.94	30.00
2417MHz	Pass	5.50	20.53	20.13	20.55	25.18	30.00
2437MHz	Pass	5.50	22.40	22.21	22.47	27.13	30.00
2457MHz	Pass	5.50	20.13	20.16	20.28	24.96	30.00
2462MHz	Pass	5.50	17.64	17.69	17.90	22.52	30.00
802.11n HT20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	5.50	16.59	16.47	16.65	21.34	30.00
2417MHz	Pass	5.50	20.28	20.32	20.47	25.13	30.00
2437MHz	Pass	5.50	22.42	22.32	22.37	27.14	30.00
2457MHz	Pass	5.50	19.19	18.99	19.13	23.88	30.00
2462MHz	Pass	5.50	16.69	16.72	16.81	21.51	30.00
802.11n HT40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2422MHz	Pass	5.50	14.34	14.19	14.85	19.24	30.00
2427MHz	Pass	5.50	16.02	16.08	16.25	20.89	30.00
2437MHz	Pass	5.50	18.10	18.17	18.43	23.01	30.00
2452MHz	Pass	5.50	16.06	15.75	16.03	20.72	30.00

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



**Summary** 

Mode	PD
	(dBm/RBW)
2.4-2.4835GHz	·
802.11b_Nss1,(1Mbps)_1TX	-7.79
802.11g_Nss1,(6Mbps)_3TX	1.50
802.11n HT20_Nss1,(MCS0)_3TX	-0.24
802.11n HT40_Nss1,(MCS0)_3TX	-6.87

RBW=3 kHz.

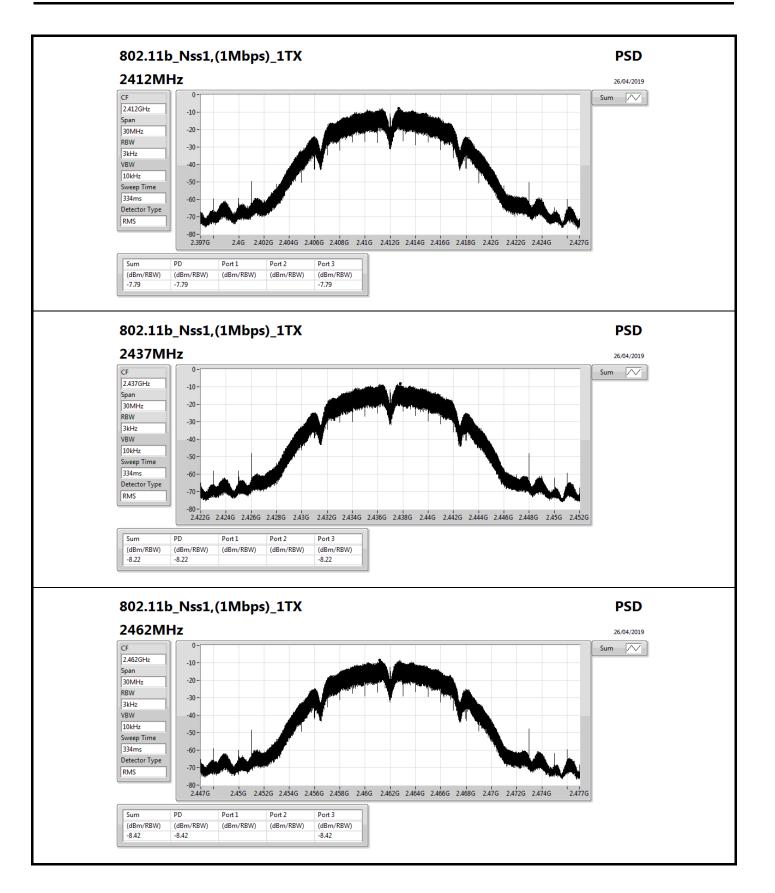


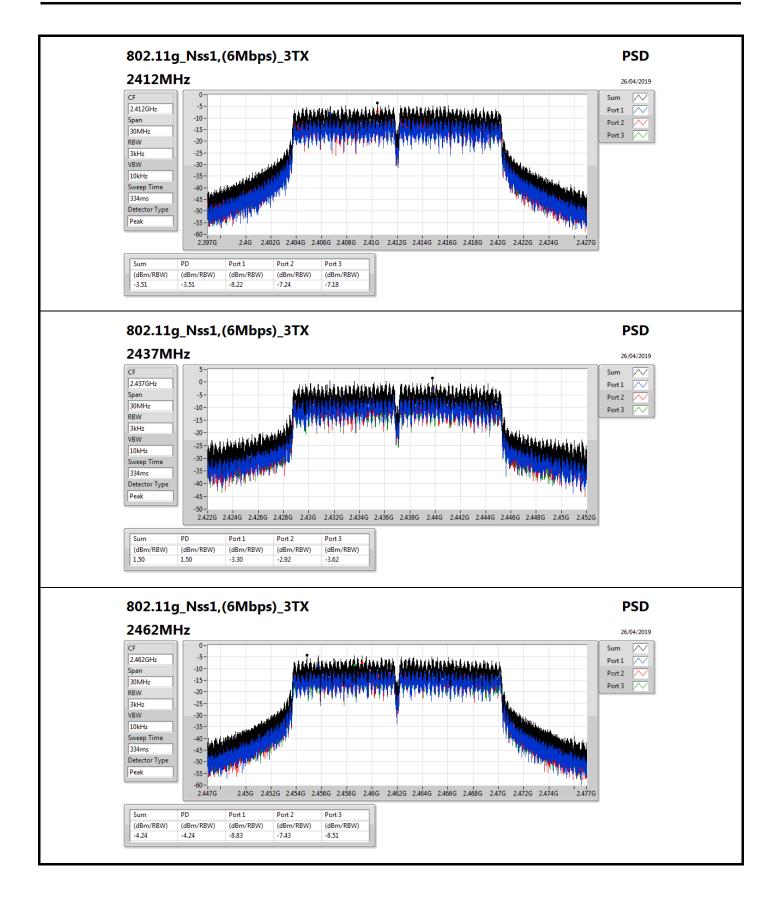
#### Result

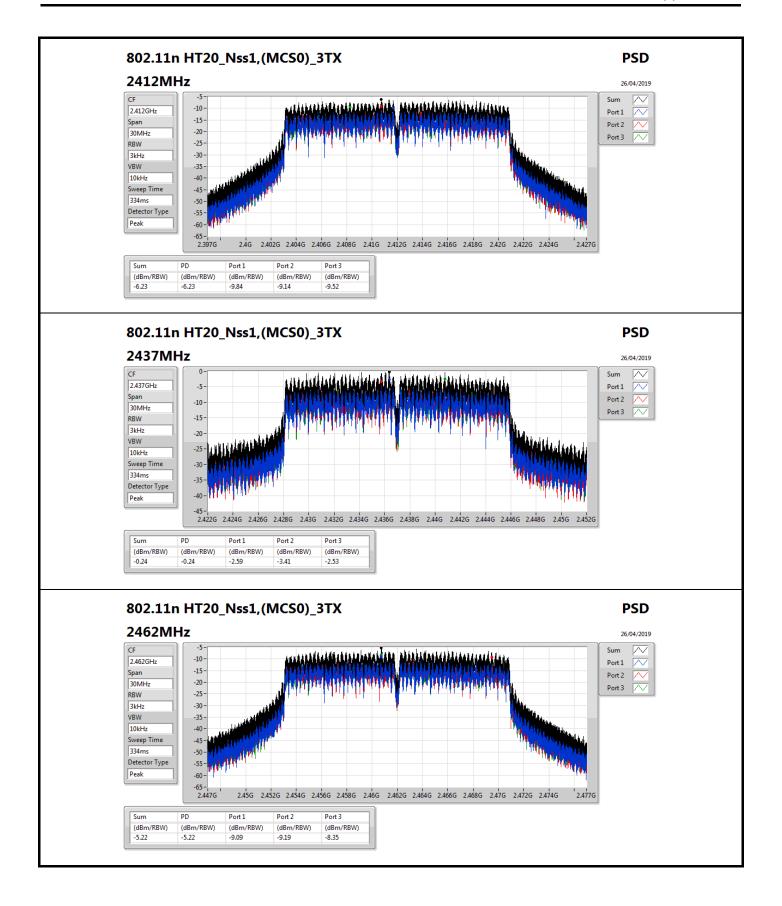
Mode	Result	DG	Port 1	Port 2	Port 3	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-
2412MHz	Pass	5.50	-7.79	-	-	-7.79	8.00
2437MHz	Pass	5.50	-8.22	-	-	-8.22	8.00
2462MHz	Pass	5.50	-8.42	-	-	-8.42	8.00
802.11g_Nss1,(6Mbps)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	9.58	-8.22	-7.24	-7.18	-3.51	4.42
2437MHz	Pass	9.58	-3.30	-2.92	-3.62	1.50	4.42
2462MHz	Pass	9.58	-8.83	-7.43	-8.51	-4.24	4.42
802.11n HT20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2412MHz	Pass	9.58	-9.84	-9.14	-9.52	-6.23	4.42
2437MHz	Pass	9.58	-2.59	-3.41	-2.53	-0.24	4.42
2462MHz	Pass	9.58	-9.09	-9.19	-8.35	-5.22	4.42
802.11n HT40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-
2422MHz	Pass	9.58	-14.68	-14.63	-12.95	-10.70	4.42
2437MHz	Pass	9.58	-10.52	-10.67	-10.37	-6.87	4.42
2452MHz	Pass	9.58	-12.91	-11.64	-12.18	-8.69	4.42

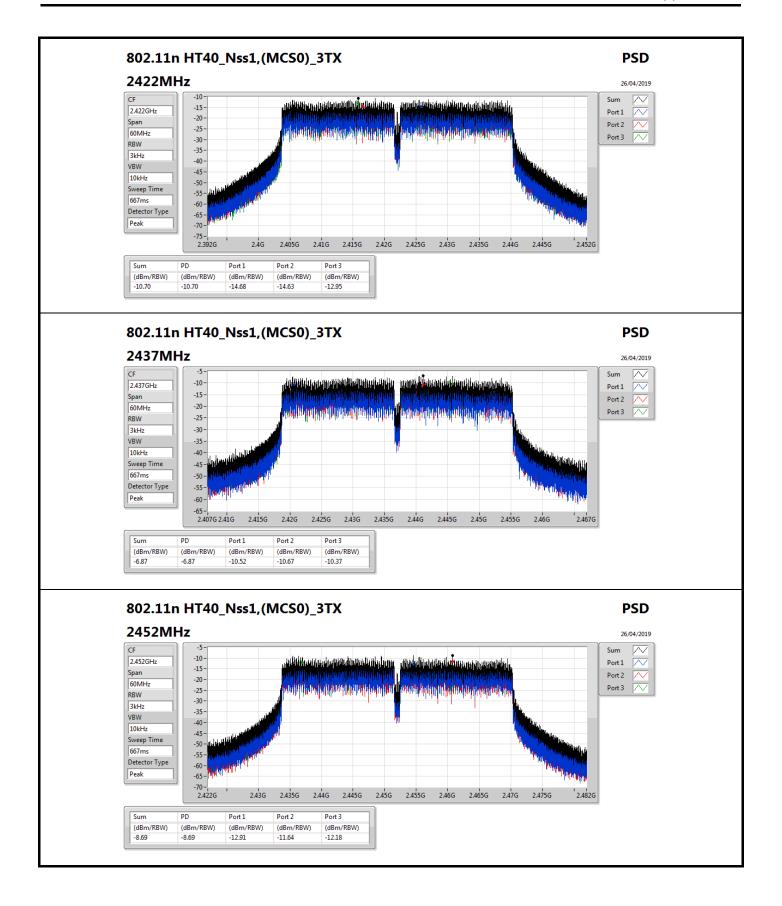
**DG** = Directional Gain; RBW=3 kHz;

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











# CSE(Non-restricted Band) Result

Appendix E

**Summary** 

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	Pass	2.41148G	11.98	-18.02	867.05M	-42.96	2.39872G	-38.21	2.49296G	-42.14	15.24801G	-33.71	3
802.11g_Nss1,(6Mbps)_3TX	Pass	2.43824G	12.03	-17.97	899.09M	-43.33	2.3995G	-21.72	2.49558G	-42.87	15.2761G	-33.95	3
802.11n HT20_Nss1,(MCS0)_3TX	Pass	2.43828G	11.97	-18.03	931.42M	-42.30	2.39994G	-26.23	2.50634G	-42.40	15.25644G	-33.67	2
802.11n HT40_Nss1,(MCS0)_3TX	Pass	2.442G	4.56	-25.44	1.82565G	-42.50	2.39988G	-29.97	2.53498G	-42.30	15.2261G	-34.44	3



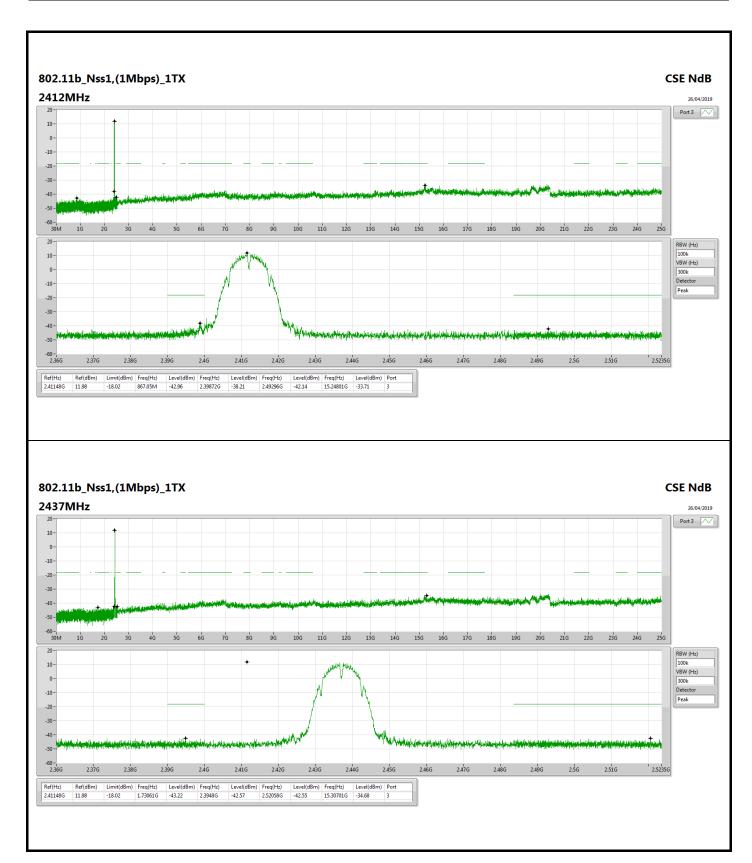
## CSE(Non-restricted Band) Result

Appendix E

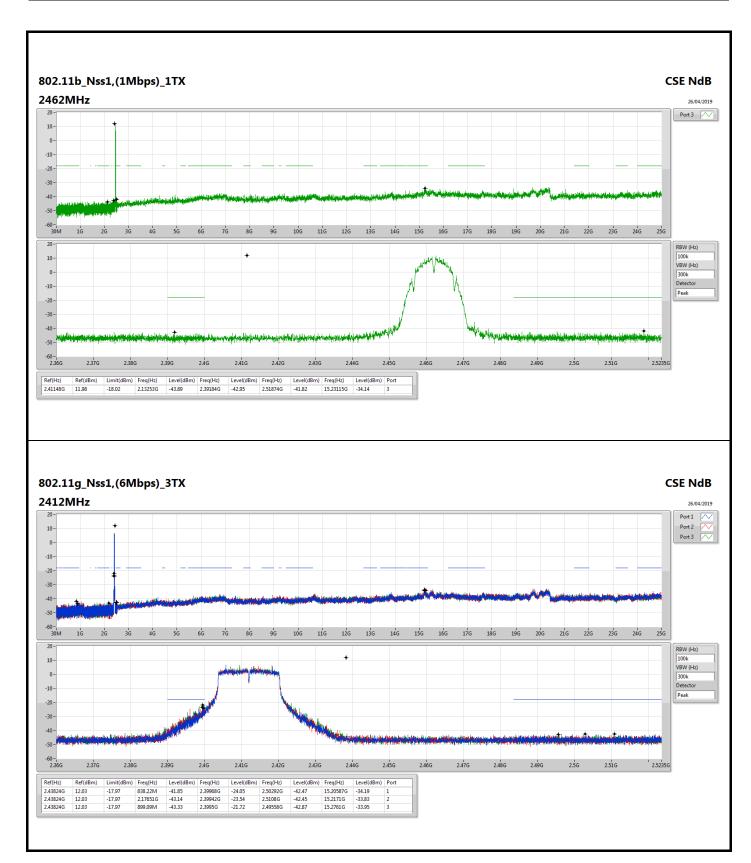
#### Result

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.41148G	11.98	-18.02	867.05M	-42.96	2.39872G	-38.21	2.49296G	-42.14	15.24801G	-33.71	3
2437MHz	Pass	2.41148G	11.98	-18.02	1.73061G	-43.22	2.3948G	-42.57	2.52058G	-42.55	15.30701G	-34.68	3
2462MHz	Pass	2.41148G	11.98	-18.02	2.13253G	-43.89	2.39184G	-42.95	2.51874G	-41.82	15.23115G	-34.14	3
802.11g_Nss1,(6Mbps)_3TX	-	-	-	-	-	-	-	-	-	-	-	-	
2412MHz	Pass	2.43824G	12.03	-17.97	838.22M	-41.85	2.39968G	-24.05	2.50292G	-42.47	15.20587G	-34.19	1
2412MHz	Pass	2.43824G	12.03	-17.97	2.17651G	-43.14	2.39942G	-23.54	2.5108G	-42.45	15.2171G	-33.83	2
2412MHz	Pass	2.43824G	12.03	-17.97	899.09M	-43.33	2.3995G	-21.72	2.49558G	-42.87	15.2761G	-33.95	3
2437MHz	Pass	2.43824G	12.03	-17.97	953.55M	-43.28	2.3979G	-38.30	2.49016G	-42.18	15.06258G	-34.21	1
2437MHz	Pass	2.43824G	12.03	-17.97	1.79905G	-42.87	2.39826G	-38.06	2.48482G	-40.61	15.21148G	-33.45	2
2437MHz	Pass	2.43824G	12.03	-17.97	954.14M	-43.24	2.39822G	-38.49	2.48358G	-42.03	24.23861G	-35.13	3
2462MHz	Pass	2.43824G	12.03	-17.97	2.13603G	-43.15	2.39356G	-42.44	2.48448G	-38.84	15.24239G	-33.95	1
2462MHz	Pass	2.43824G	12.03	-17.97	1.95778G	-43.27	2.39356G	-42.64	2.48372G	-37.57	15.26768G	-34.38	2
2462MHz	Pass	2.43824G	12.03	-17.97	867.05M	-43.46	2.39226G	-42.18	2.48388G	-37.79	15.22553G	-34.87	3
802.11n HT20_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	2.43828G	11.97	-18.03	761.91M	-42.91	2.39992G	-26.37	2.49122G	-42.50	15.22272G	-34.29	1
2412MHz	Pass	2.43828G	11.97	-18.03	931.42M	-42.30	2.39994G	-26.23	2.50634G	-42.40	15.25644G	-33.67	2
2412MHz	Pass	2.43828G	11.97	-18.03	2.15642G	-42.54	2.39948G	-26.32	2.50922G	-42.87	15.21991G	-34.39	3
2437MHz	Pass	2.43828G	11.97	-18.03	2.04953G	-42.11	2.39954G	-36.13	2.4845G	-40.92	24.66847G	-34.27	1
2437MHz	Pass	2.43828G	11.97	-18.03	951.81M	-42.95	2.39604G	-37.77	2.48616G	-41.62	16.39993G	-34.45	2
2437MHz	Pass	2.43828G	11.97	-18.03	2.10749G	-43.08	2.39766G	-37.35	2.485G	-41.04	15.23958G	-34.21	3
2462MHz	Pass	2.43828G	11.97	-18.03	1.98458G	-43.39	2.39646G	-42.54	2.48386G	-40.33	15.20867G	-34.57	1
2462MHz	Pass	2.43828G	11.97	-18.03	694.34M	-43.21	2.39902G	-43.18	2.48394G	-40.18	15.26206G	-34.15	2
2462MHz	Pass	2.43828G	11.97	-18.03	1.93594G	-43.17	2.39416G	-43.24	2.48358G	-37.35	15.27891G	-34.10	3
802.11n HT40_Nss1,(MCS0)_3TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	2.442G	4.56	-25.44	886.17M	-43.18	2.3986G	-32.14	2.53622G	-42.44	15.23732G	-34.72	1
2422MHz	Pass	2.442G	4.56	-25.44	2.13709G	-42.98	2.39988G	-30.51	2.55294G	-42.20	15.21208G	-34.02	2
2422MHz	Pass	2.442G	4.56	-25.44	1.82565G	-42.50	2.39988G	-29.97	2.53498G	-42.30	15.2261G	-34.44	3
2437MHz	Pass	2.442G	4.56	-25.44	2.14167G	-43.06	2.39952G	-34.56	2.4845G	-39.58	15.2233G	-34.56	1
2437MHz	Pass	2.442G	4.56	-25.44	765.95M	-42.95	2.39892G	-33.35	2.48382G	-40.69	15.24293G	-34.84	2
2437MHz	Pass	2.442G	4.56	-25.44	1.93957G	-43.77	2.39976G	-32.21	2.48478G	-38.99	16.44328G	-34.80	3
2452MHz	Pass	2.442G	4.56	-25.44	936.84M	-41.94	2.39832G	-43.81	2.4875G	-39.26	17.60717G	-35.00	1
2452MHz	Pass	2.442G	4.56	-25.44	1.78758G	-42.88	2.39252G	-43.81	2.4853G	-39.79	15.24573G	-34.12	2
2452MHz	Pass	2.442G	4.56	-25.44	2.07783G	-43.32	2.39268G	-43.64	2.48802G	-38.04	14.94845G	-34.22	3

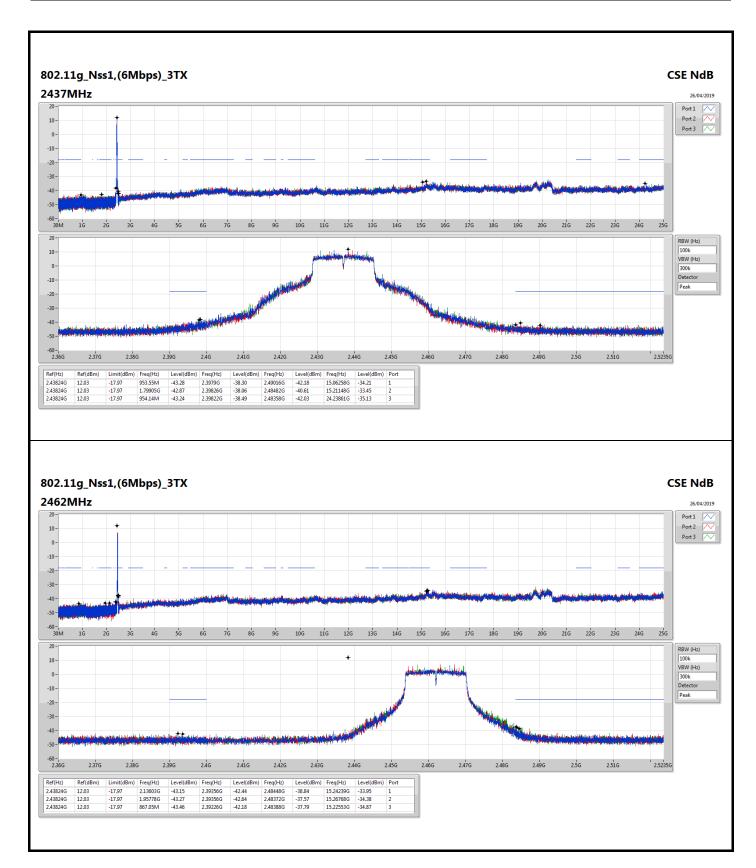




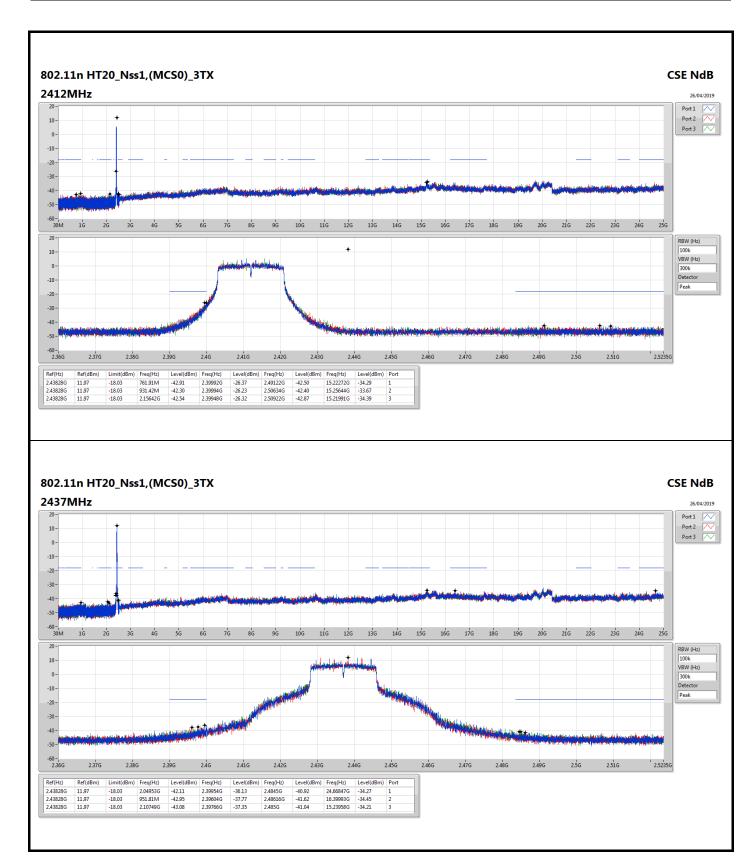




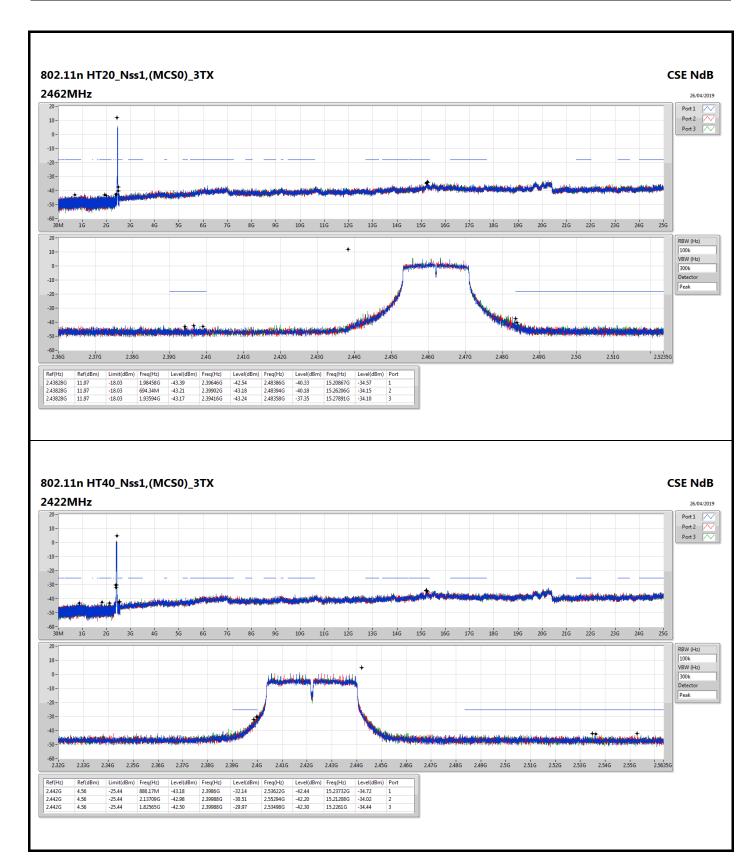




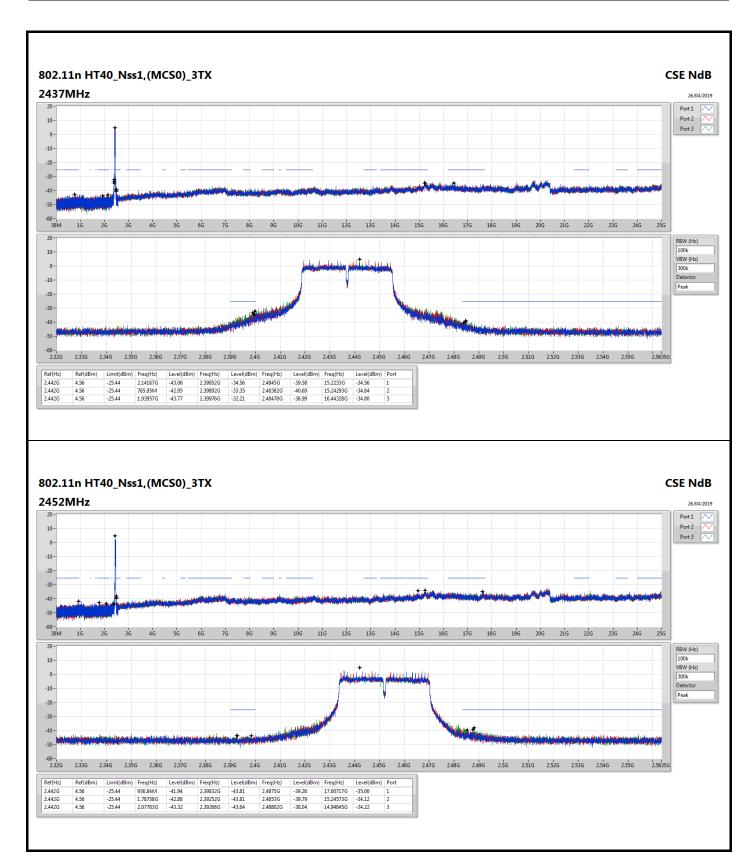






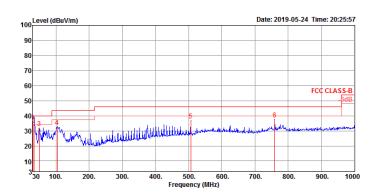








RSE below 1GHz Result											
Operating Mode	Operating Mode 1 Polarization Vertical										
Operating Function	Normal Link										



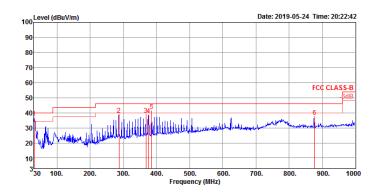
	Freq	Level						Factor		1/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	30.00	36.13	40.00	-3.87	39.50	0.80	24.40	28.57	125	129	QP	VERTICAL
2	33.88	33.99	40.00	-6.01	39.30	0.72	22.54	28.57	100	227	QP	VERTICAL
3	49.40	32.12	40.00	-7.88	45.23	0.93	14.52	28.56	100	53	Peak	VERTICAL
4	103.72	32.78	43.50	-10.72	42.72	1.25	17.24	28.43	100	288	Peak	VERTICAL
5	506.27	37.13	46.00	-8.87	40.58	2.39	23.55	29.39	100	251	Peak	VERTICAL
6	759.44	37.59	46.00	-8.41	38.01	3.00	25.97	29.39	100	221	Peak	VERTICAL

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

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RSE below 1GHz Result												
Operating Mode	Operating Mode 1 Polarization Horizontal											
Operating Function	Departing Function Normal Link											



	Freq	Level	Line						A/POS	1/205	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	31.94	36.68	40.00	-3.32	41.37	0.76	23.12	28.57	300	215	Peak	HORIZONTAL
2	287.05	38.94	46.00	-7.06	46.12	1.90	18.87	27.95	125	76	Peak	HORIZONTAL
3	368.53	38.74	46.00	-7.26	44.56	2.05	20.65	28.52	100	61	Peak	HORIZONTAL
4	375.32	38.40	46.00	-7.60	44.16	2.09	20.73	28.58	100	202	Peak	HORIZONTAL
5	385.02	41.28	46.00	-4.72	46.81	2.13	21.00	28.66	100	84	Peak	HORIZONTAL
6	875.84	37.47	46.00	-8.53	36.72	3.31	26.57	29.13	100	199	Peak	HORIZONTAL

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



# RSE TX above 1GHz Result

Appendix F.2

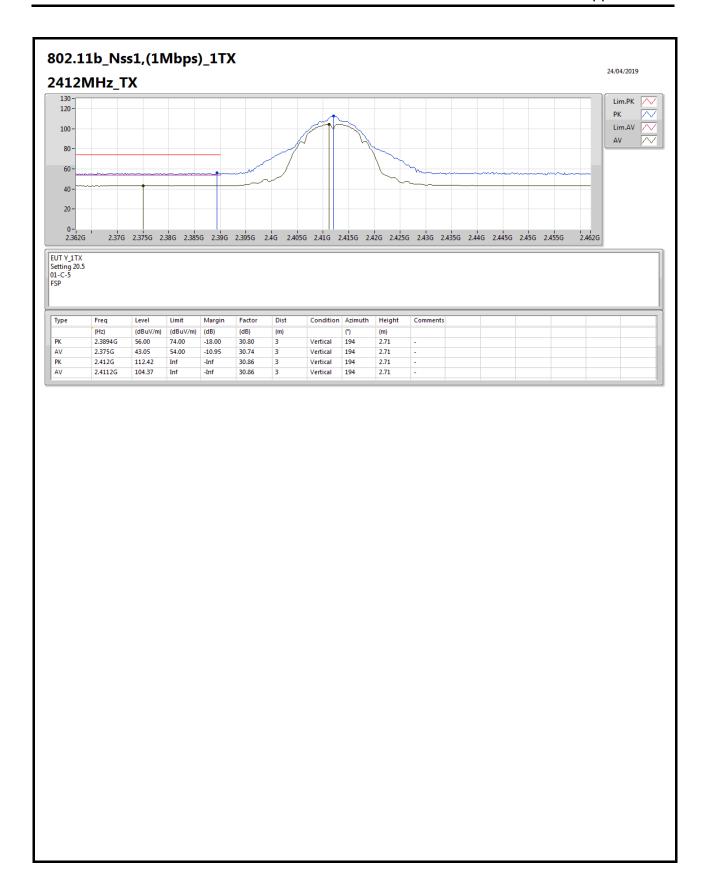
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**Summary** 

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11g_Nss1,(6Mbps)_3TX	Pass	PK	2.4854G	73.97	74.00	-0.03	30.97	3	Horizontal	37	1.98	-

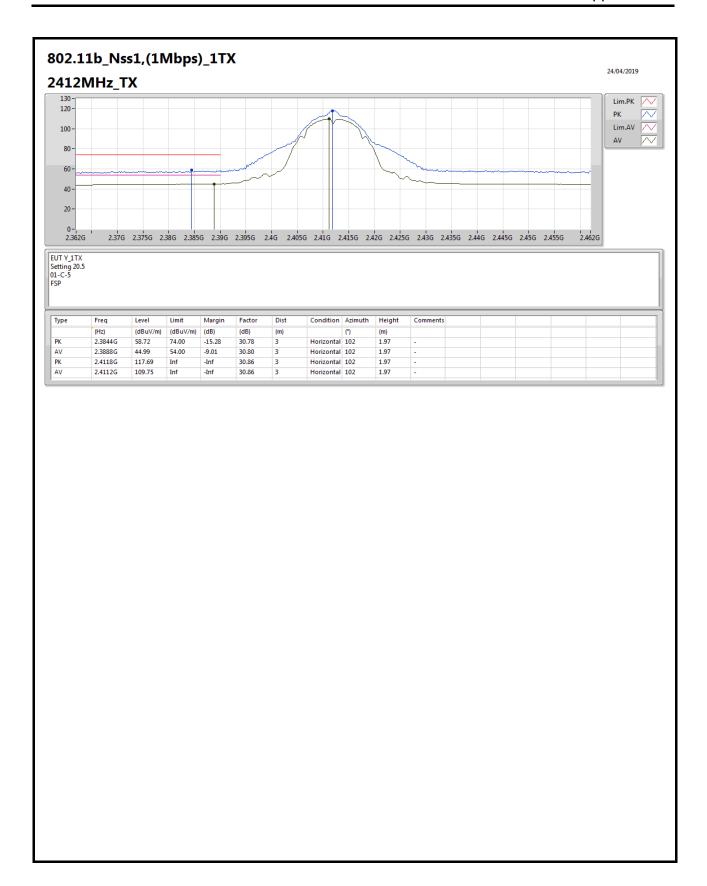
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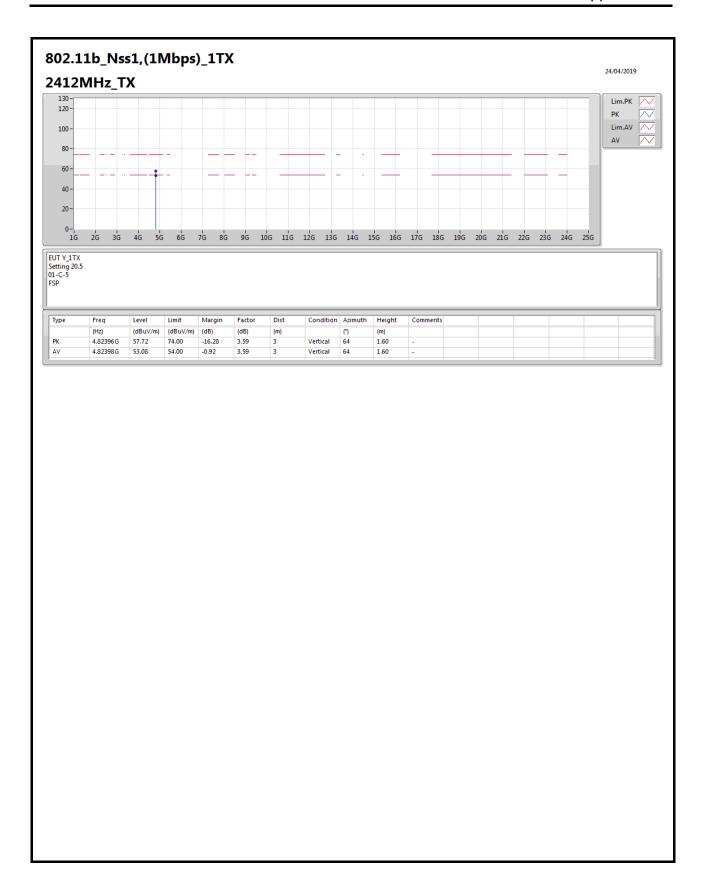
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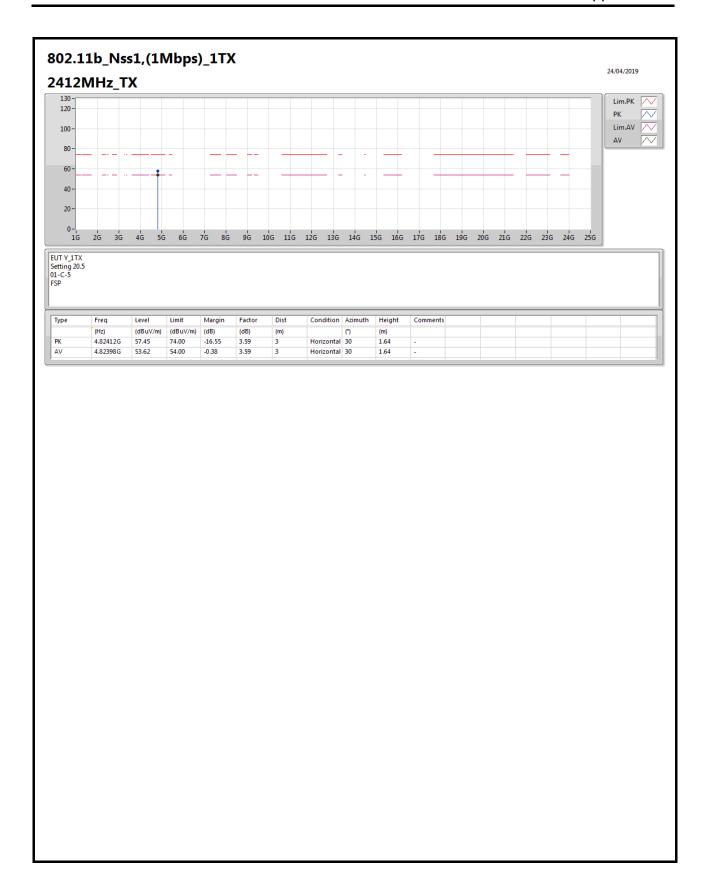
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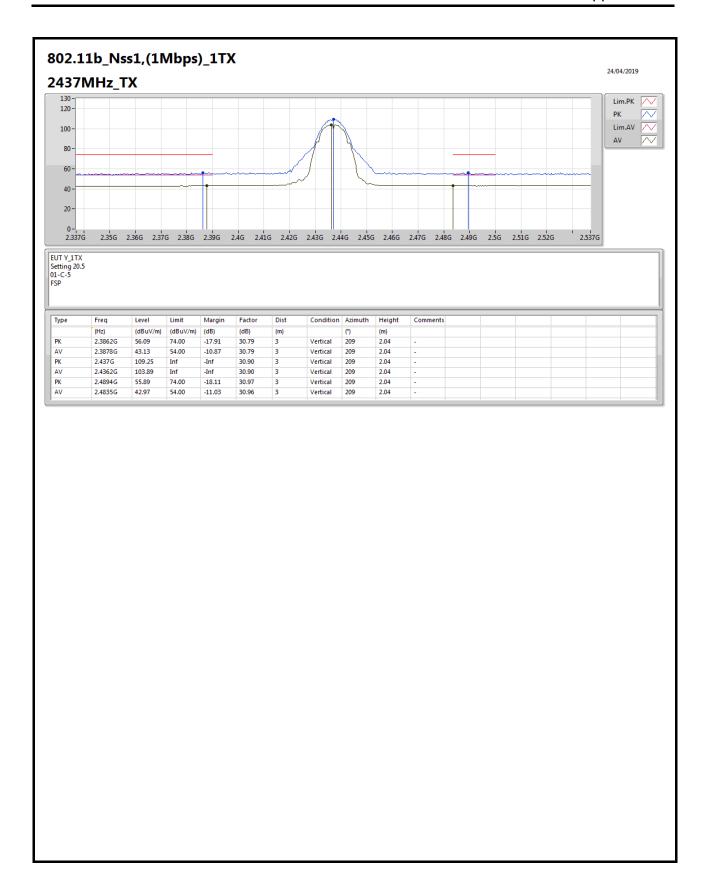
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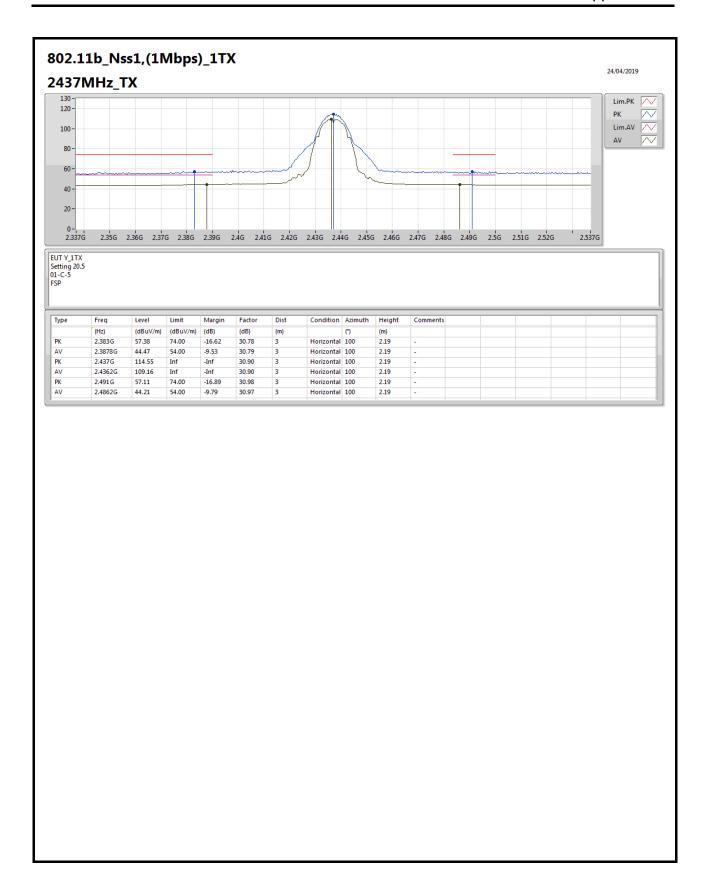
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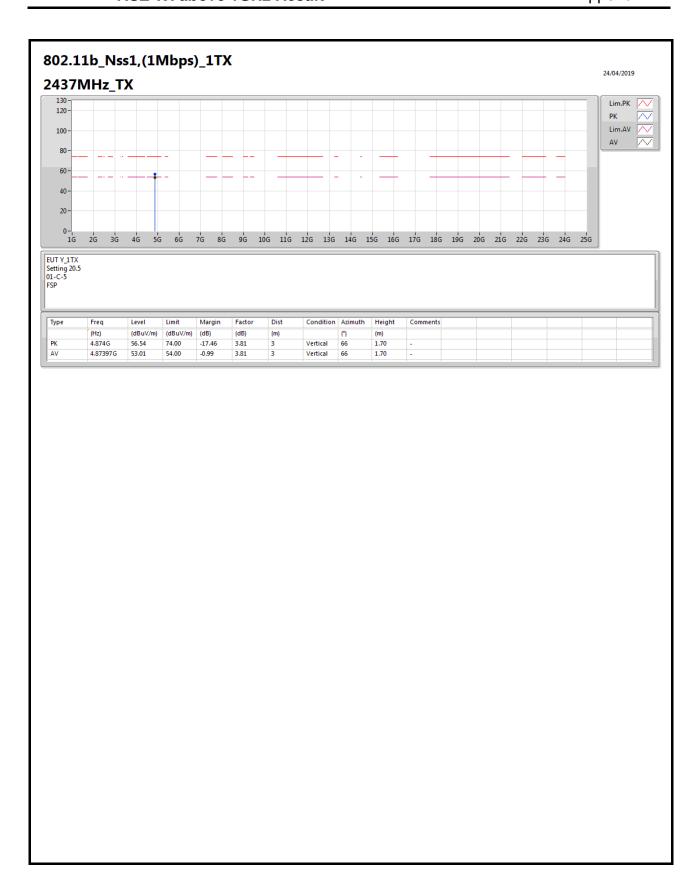
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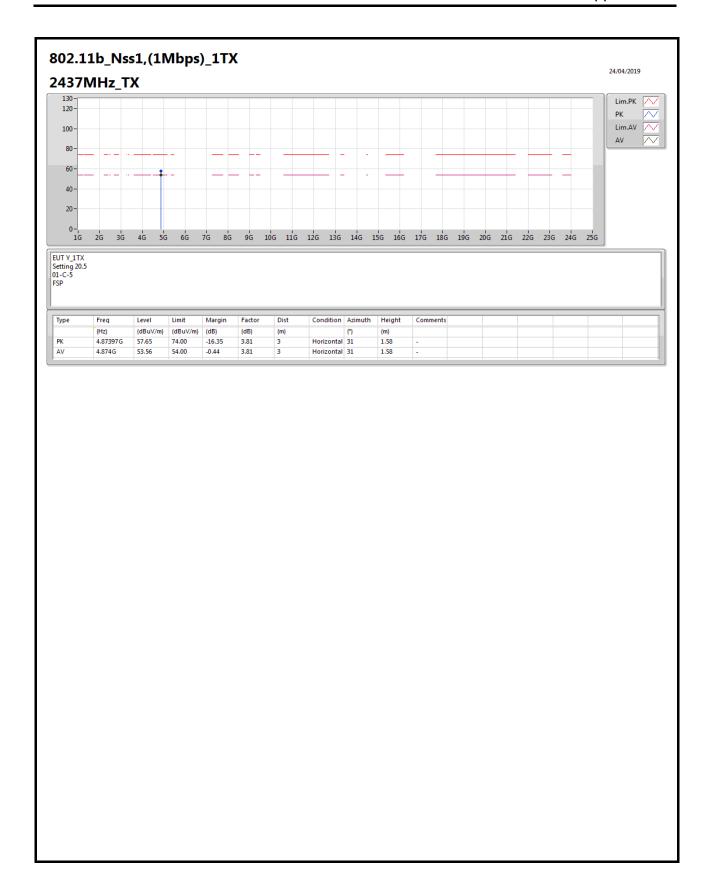
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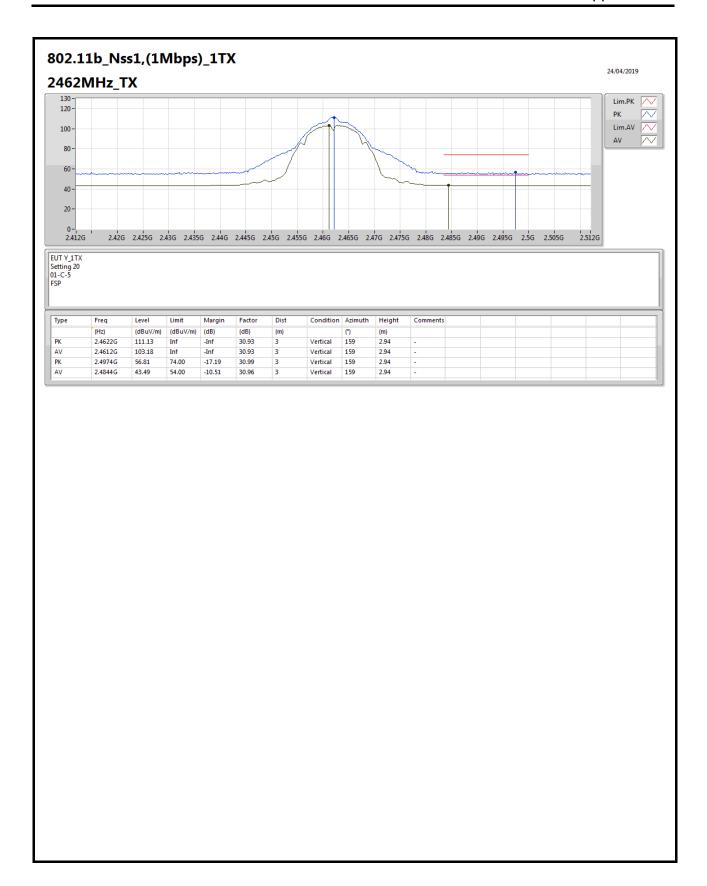
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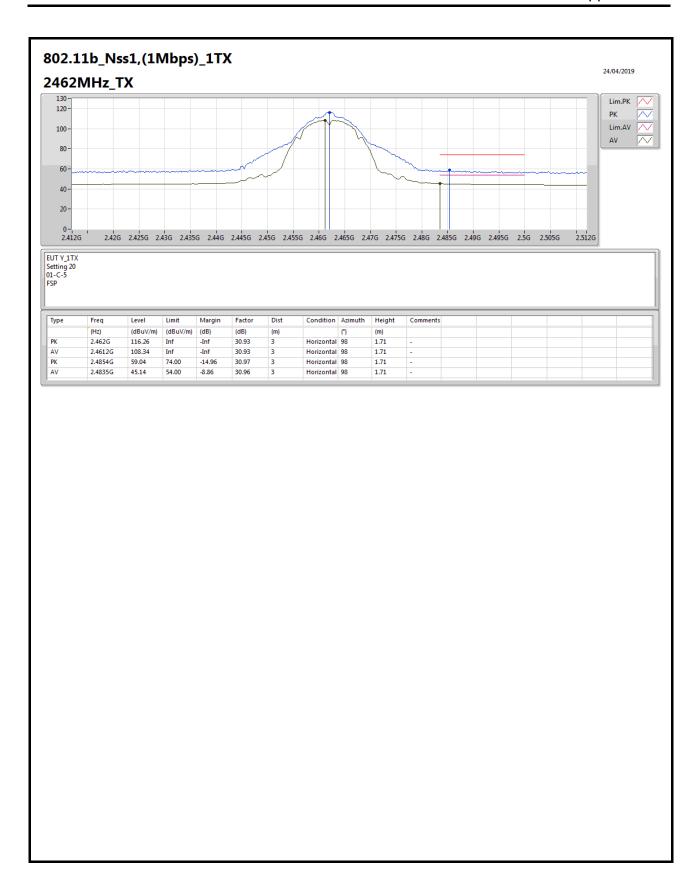
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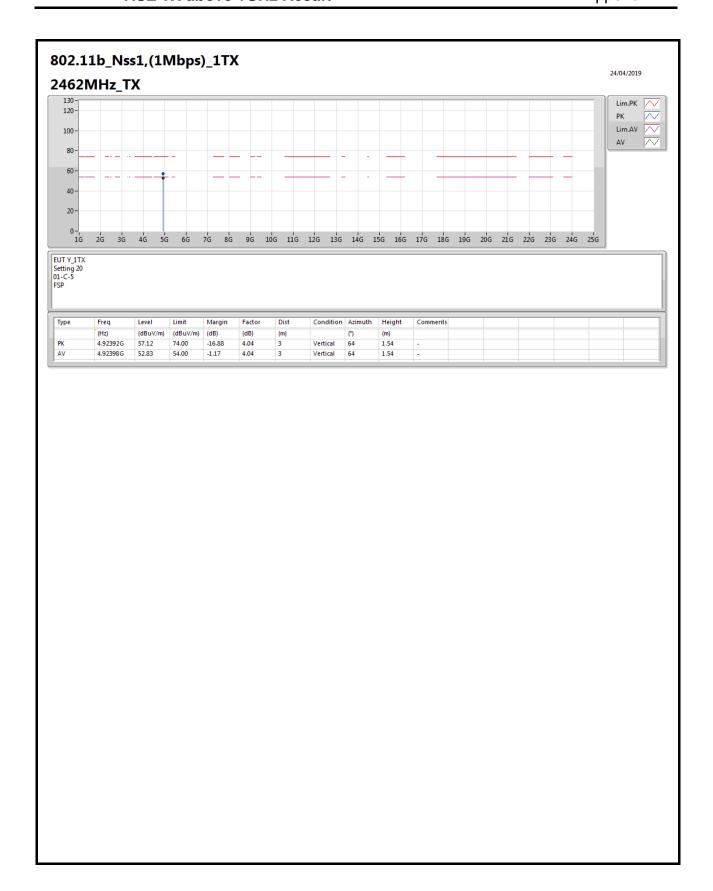
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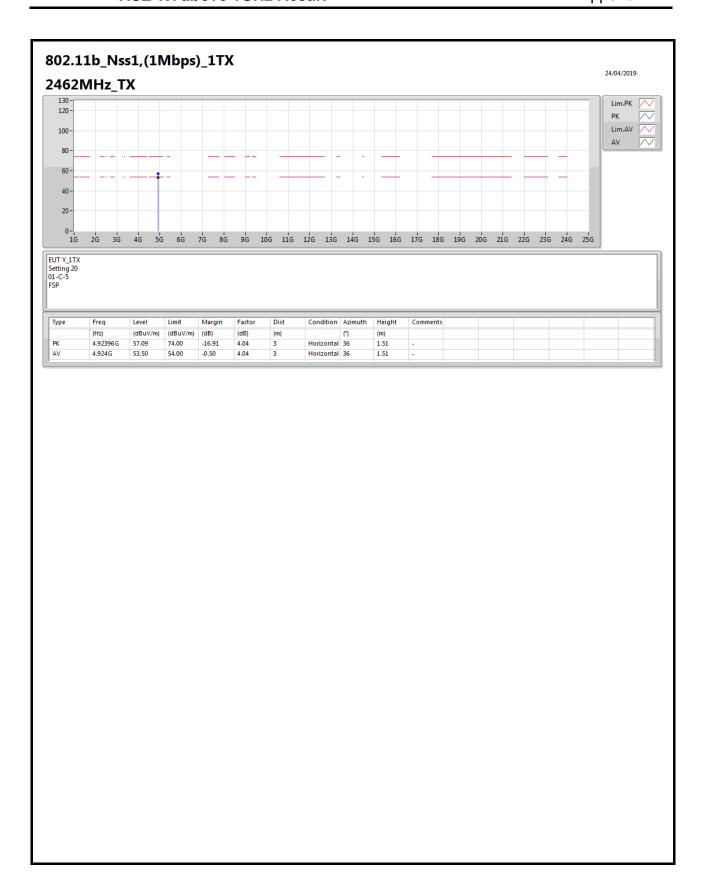
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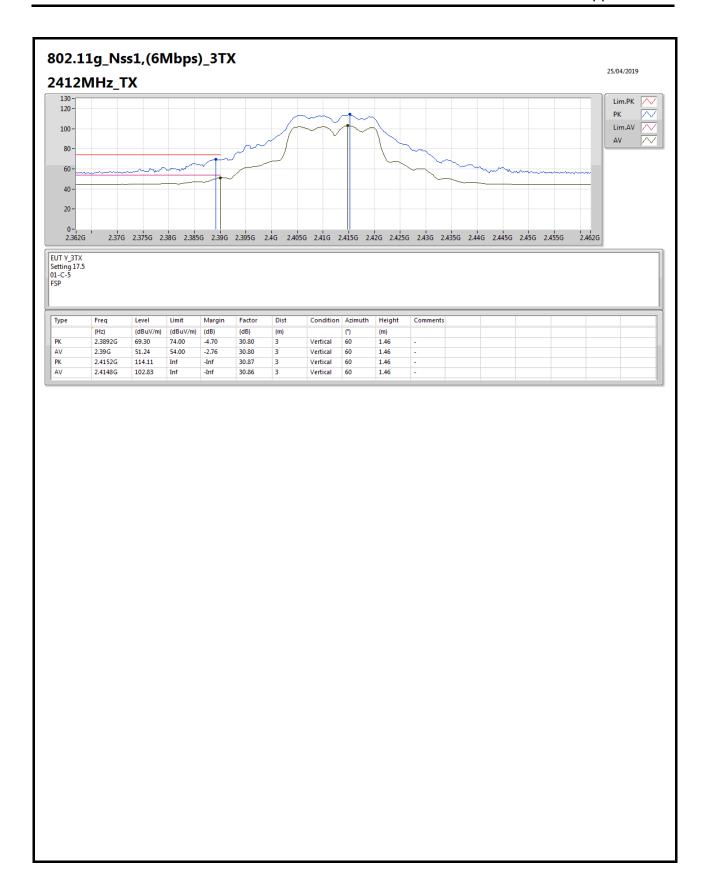
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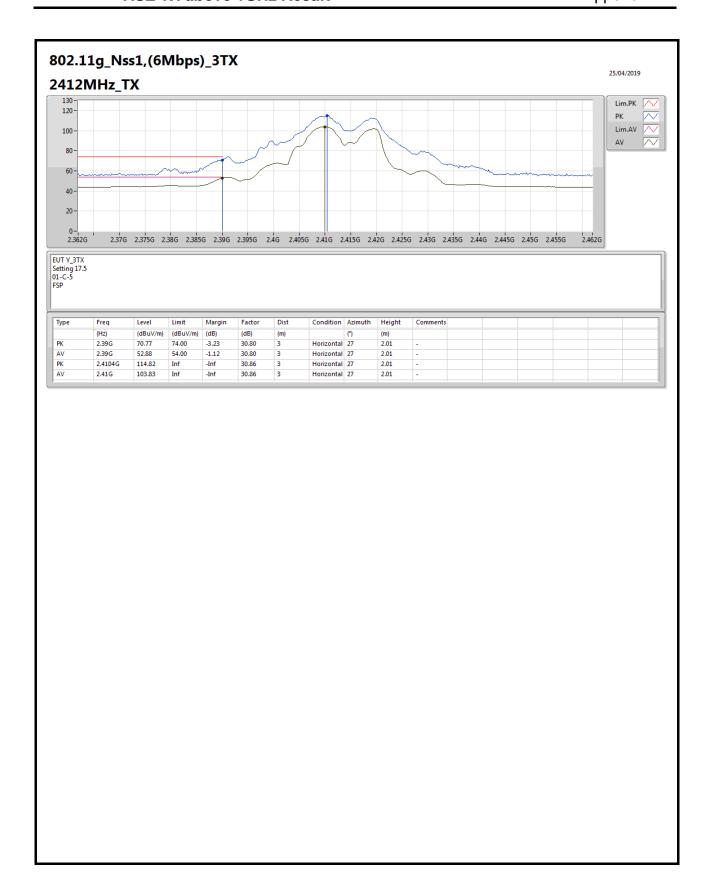
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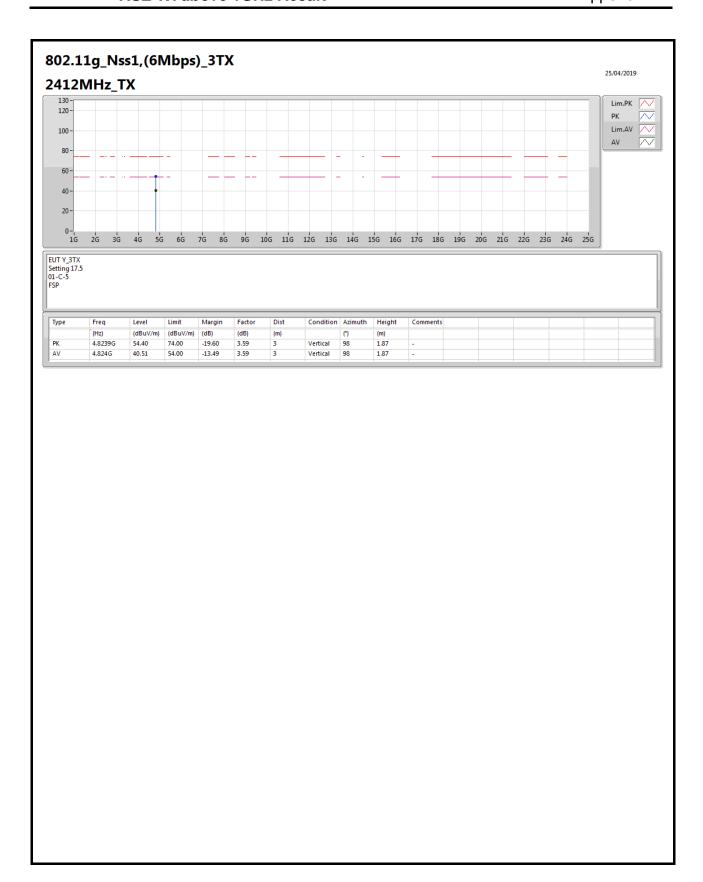
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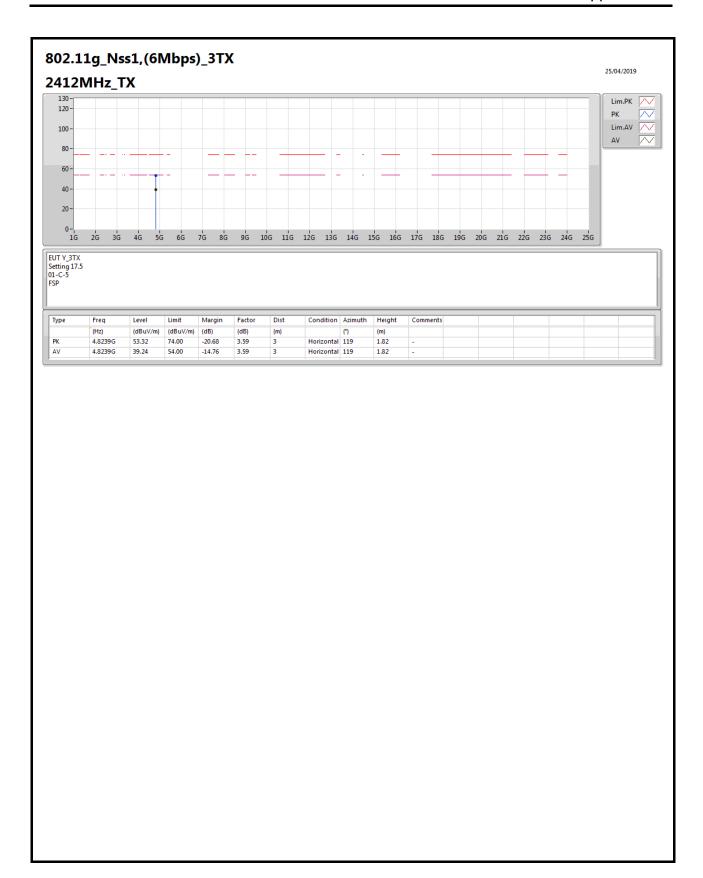
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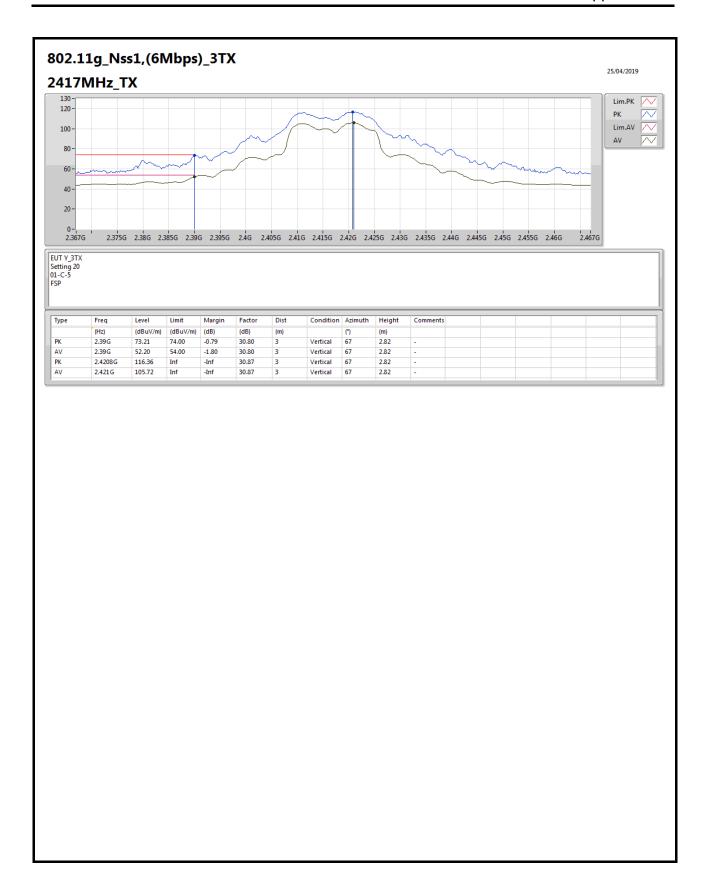
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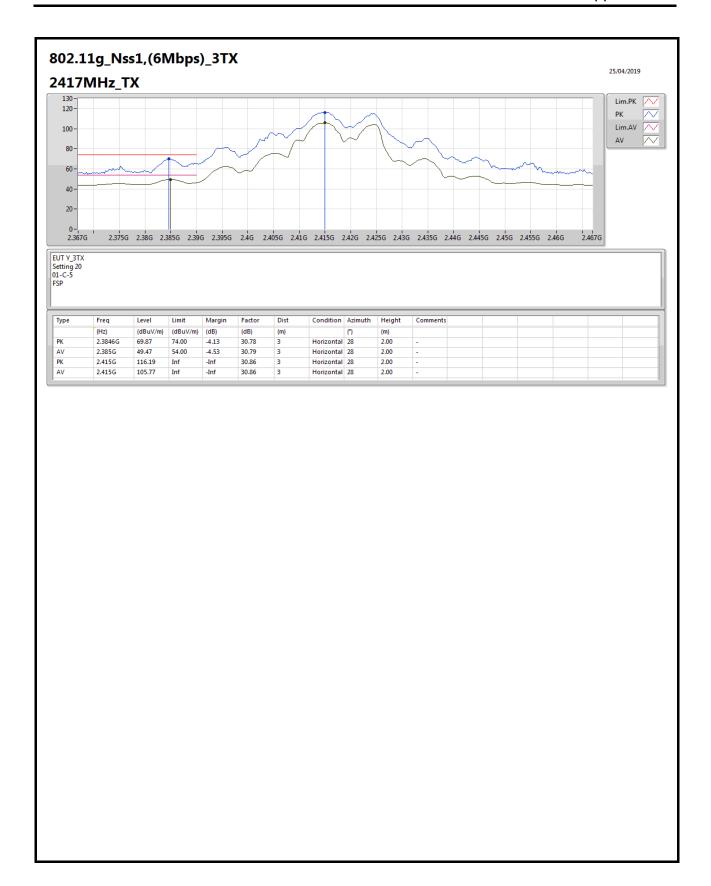
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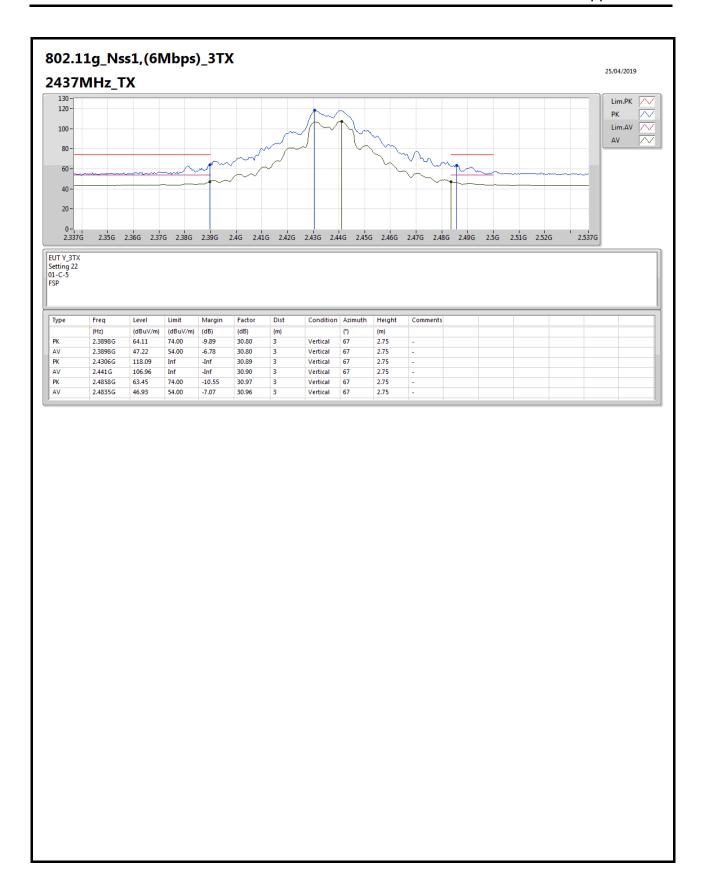
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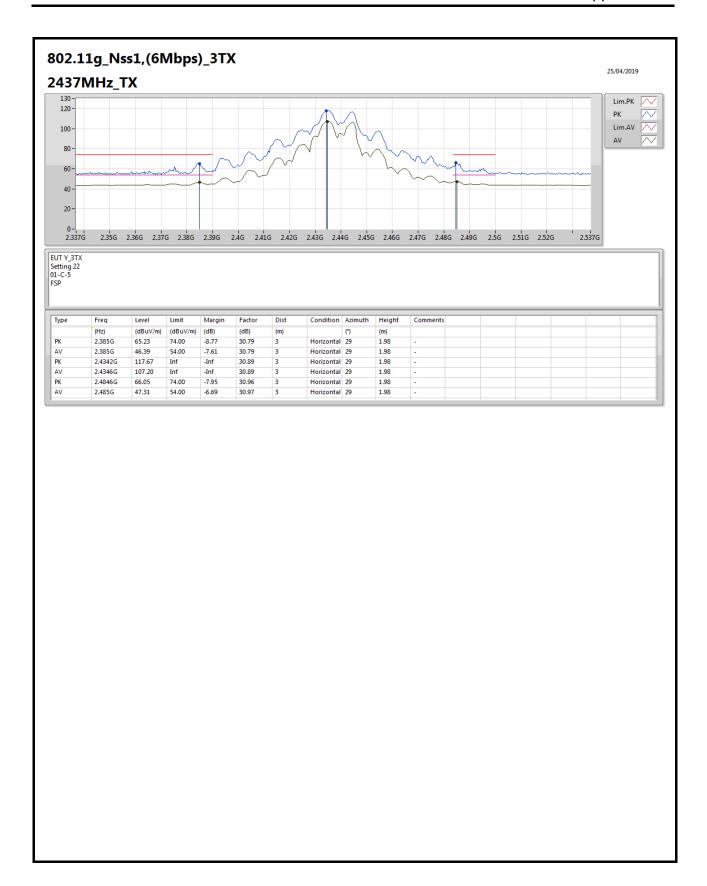
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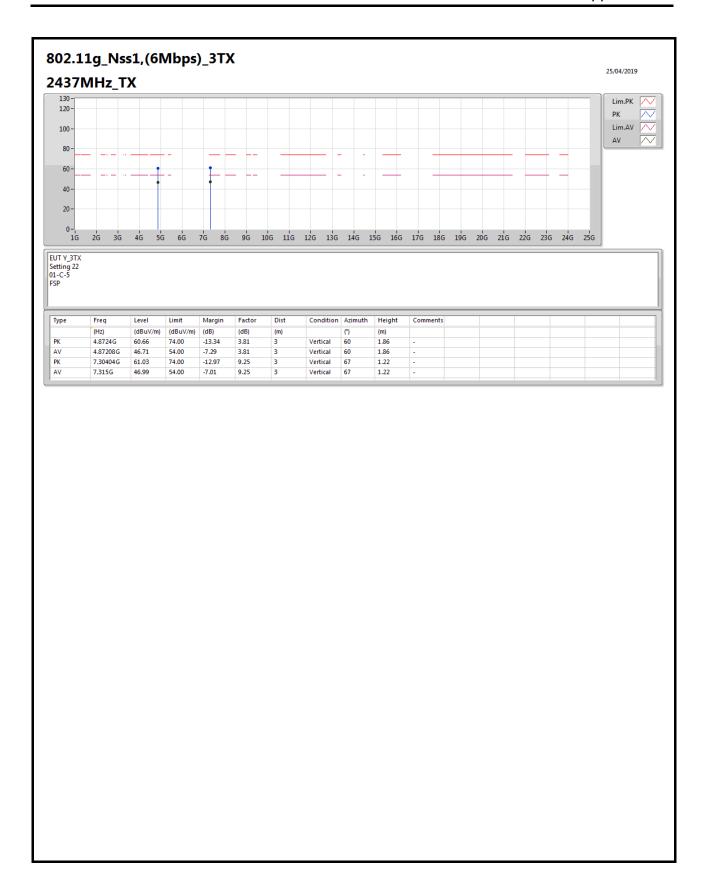
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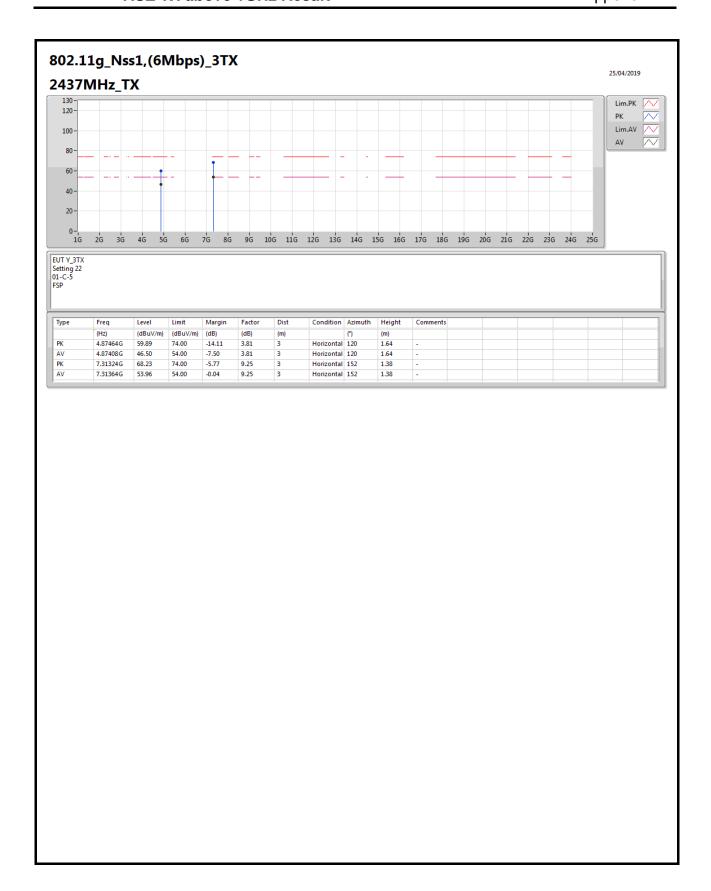
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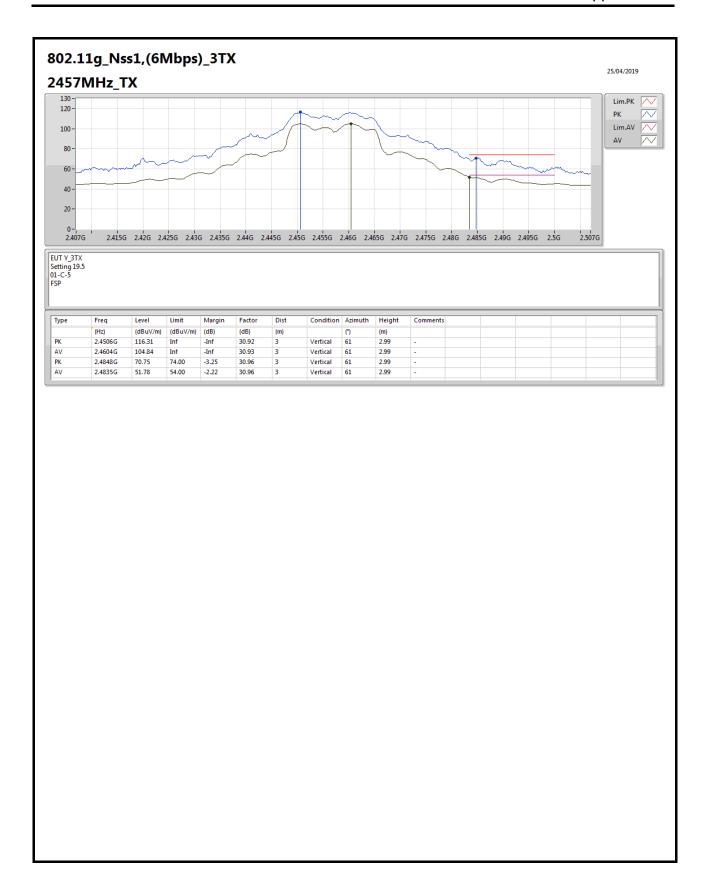
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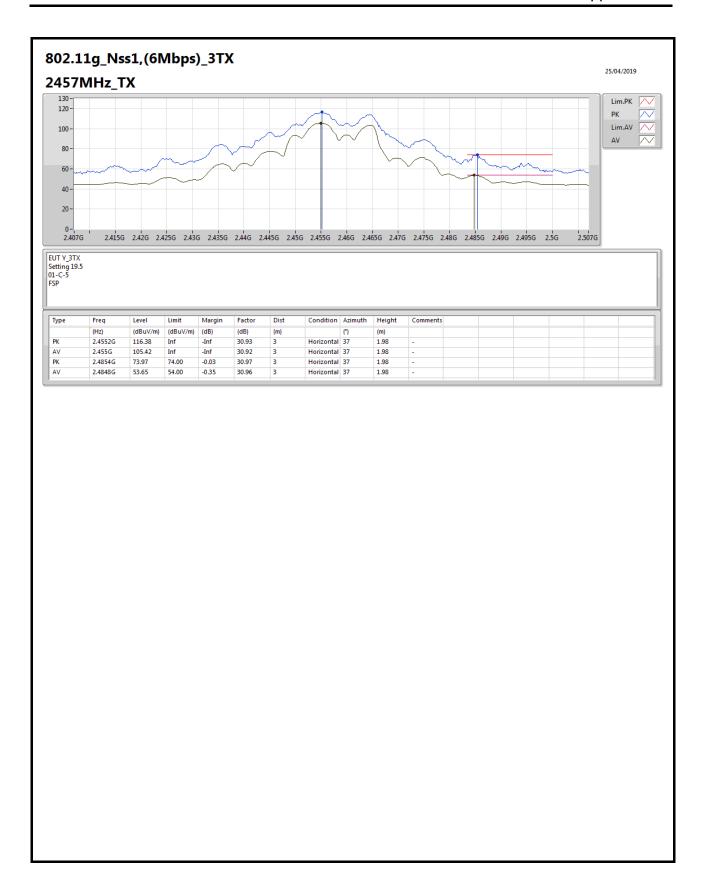
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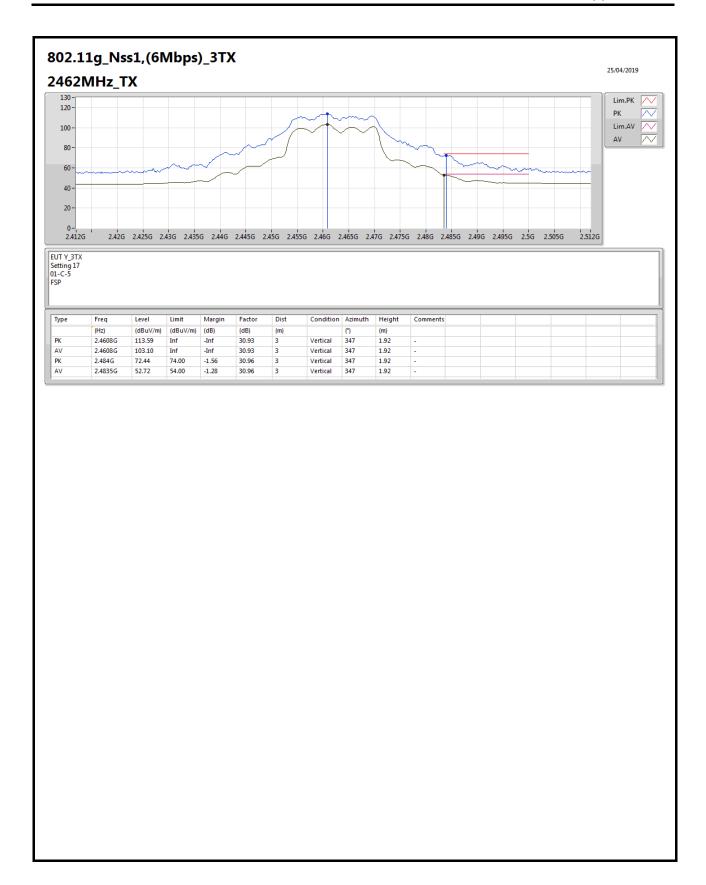
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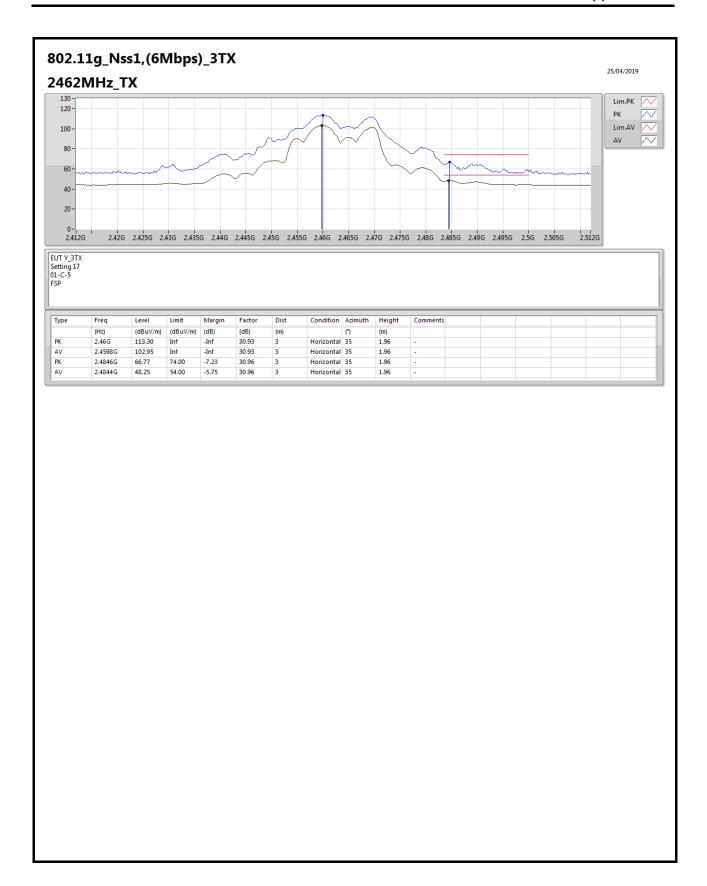
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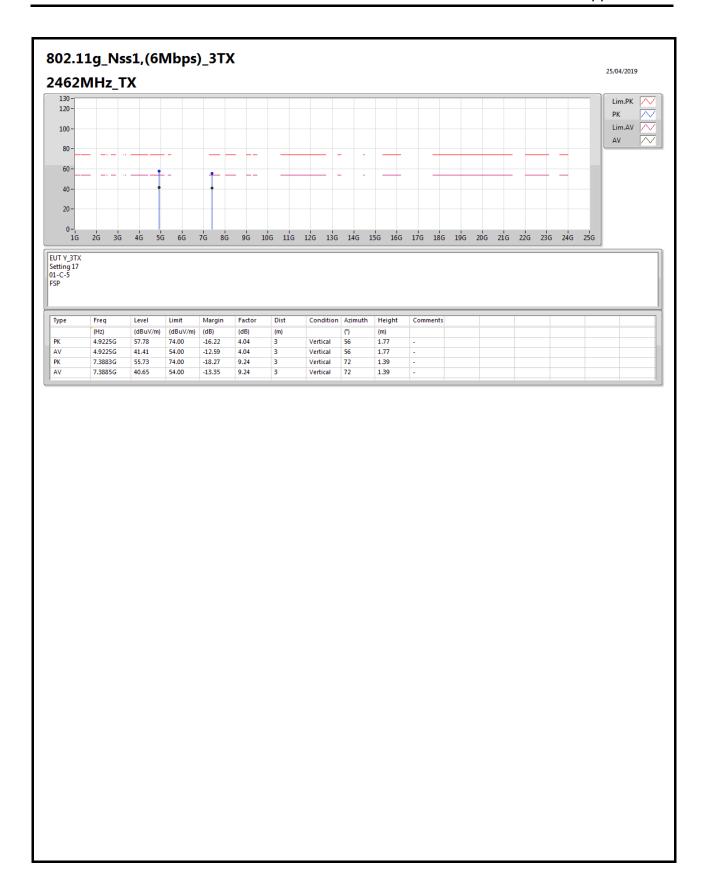
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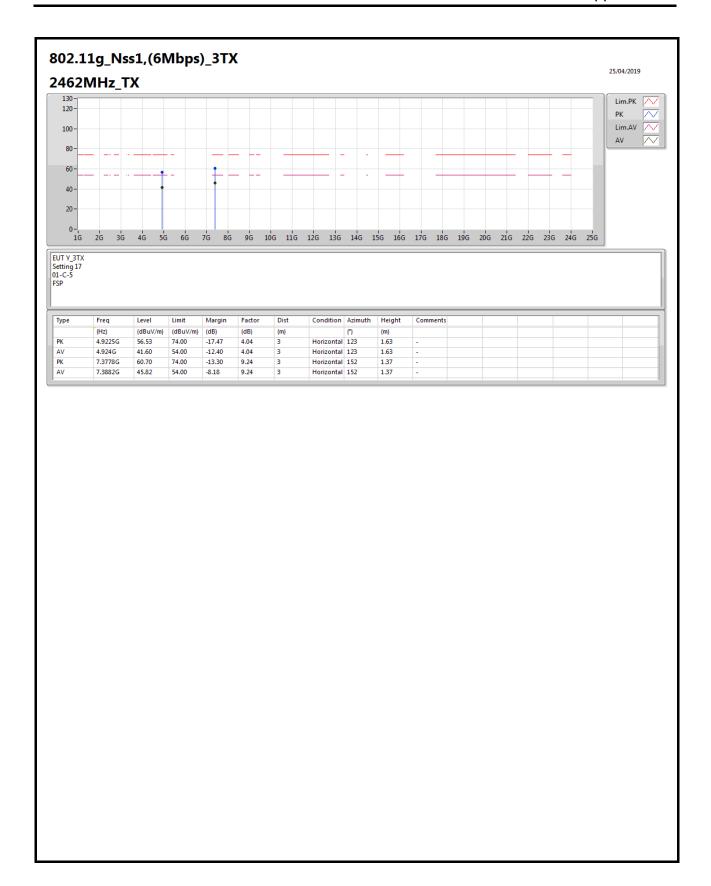
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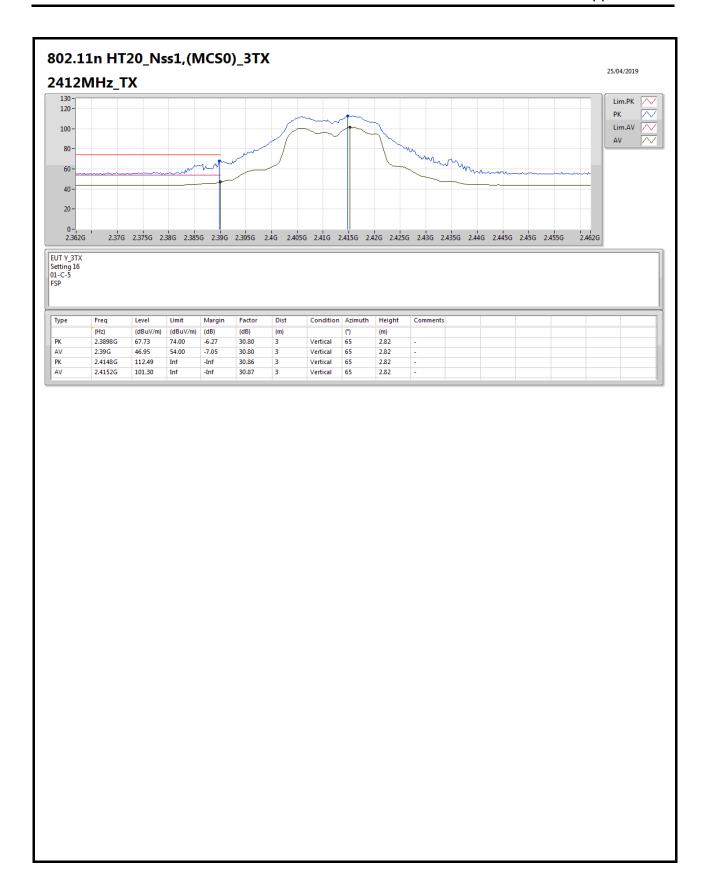
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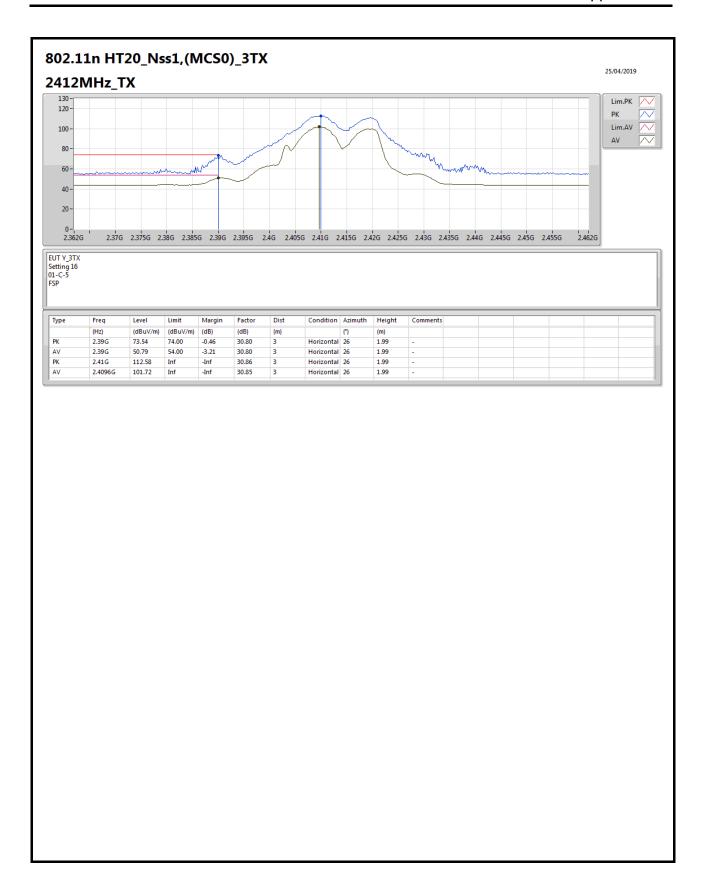
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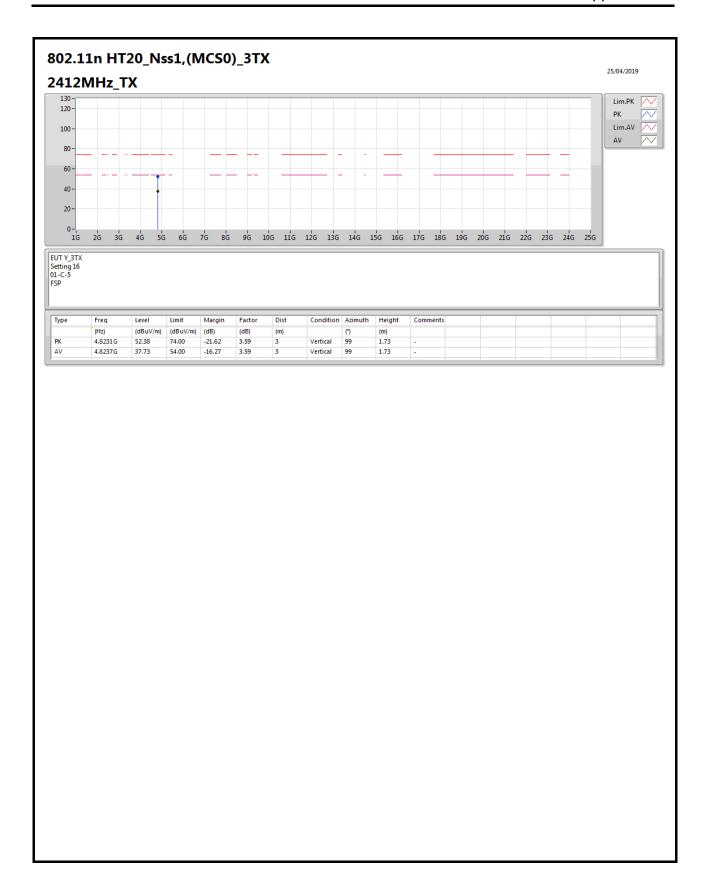
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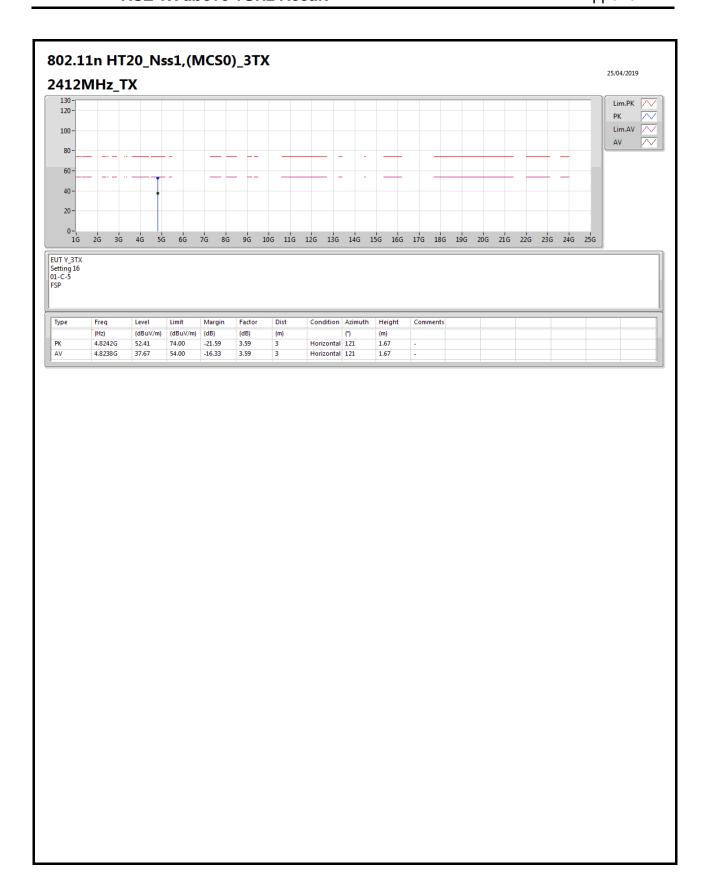
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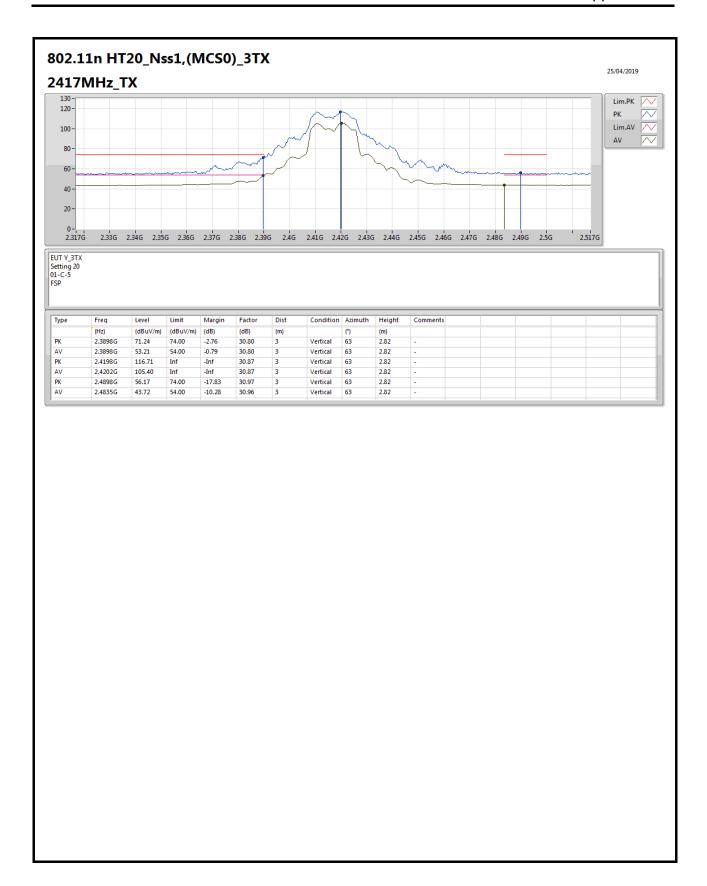
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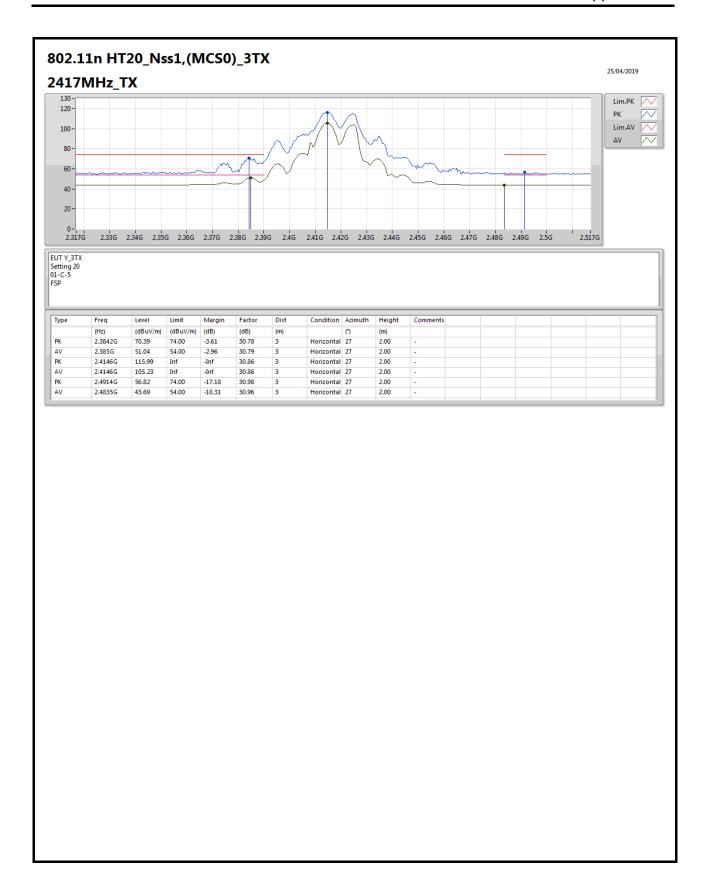
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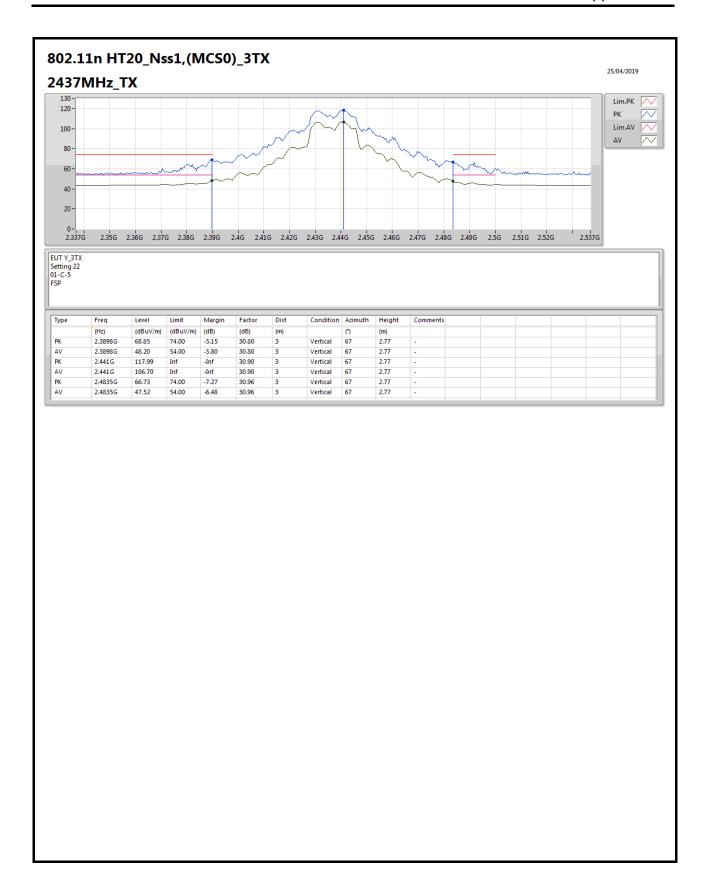
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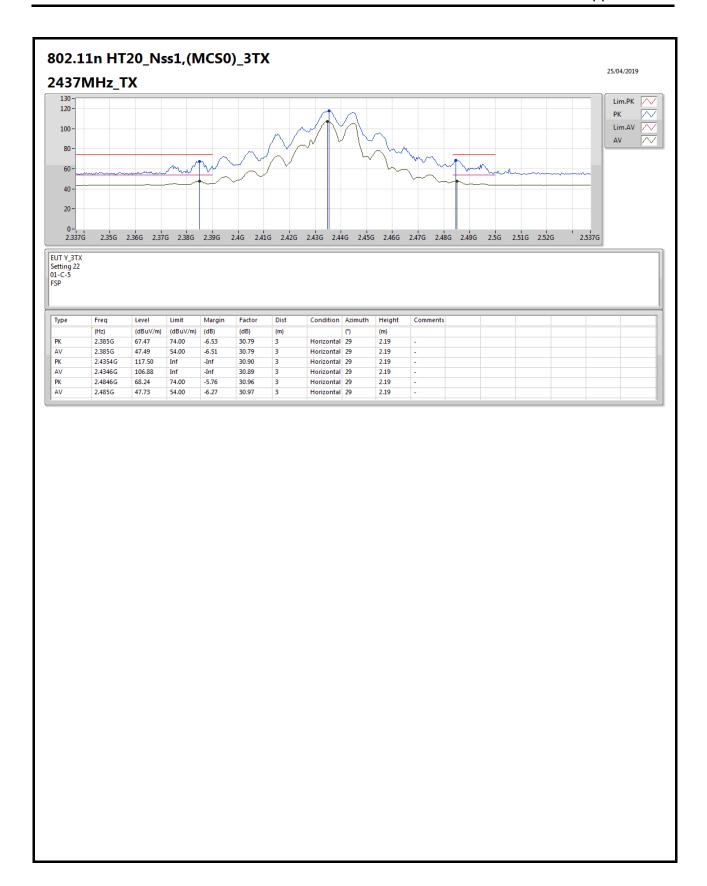
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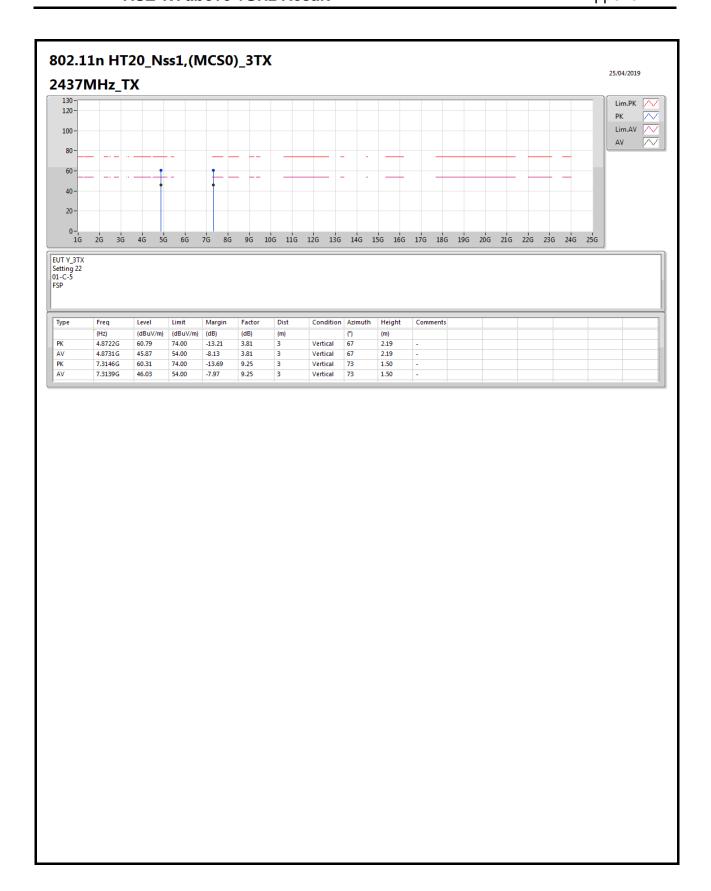
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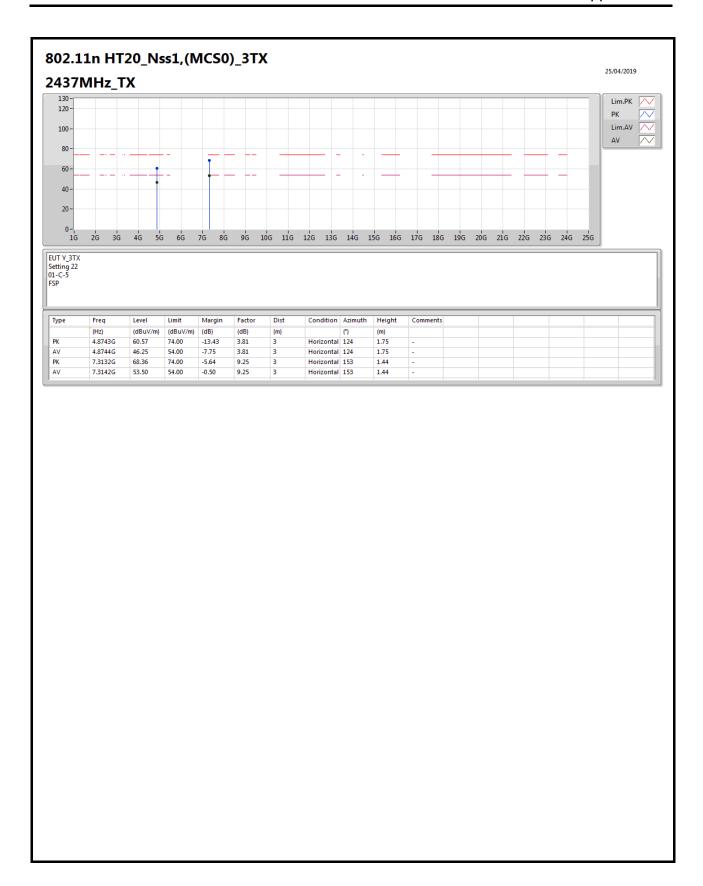
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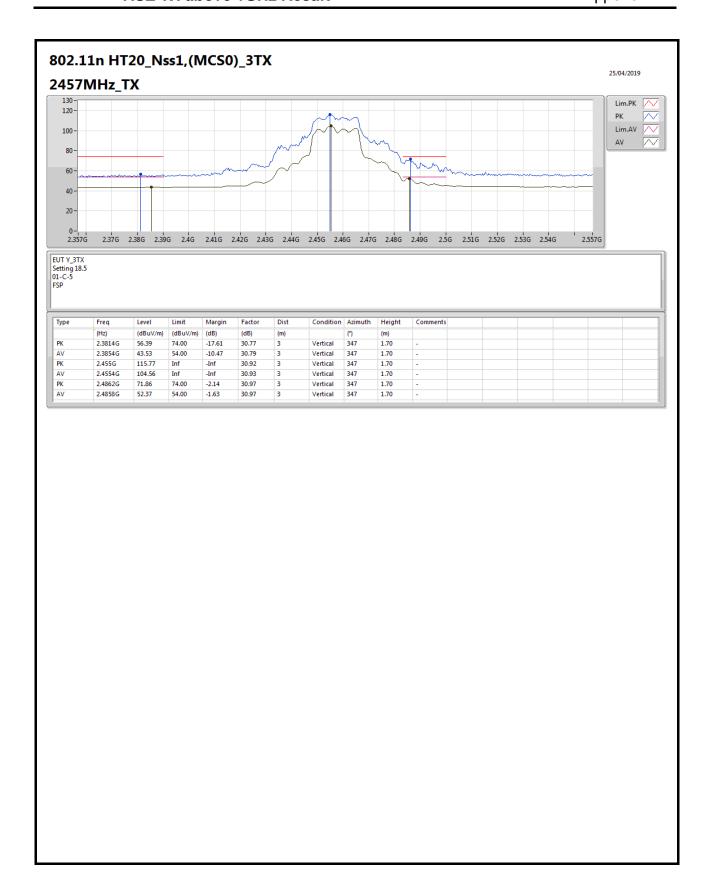
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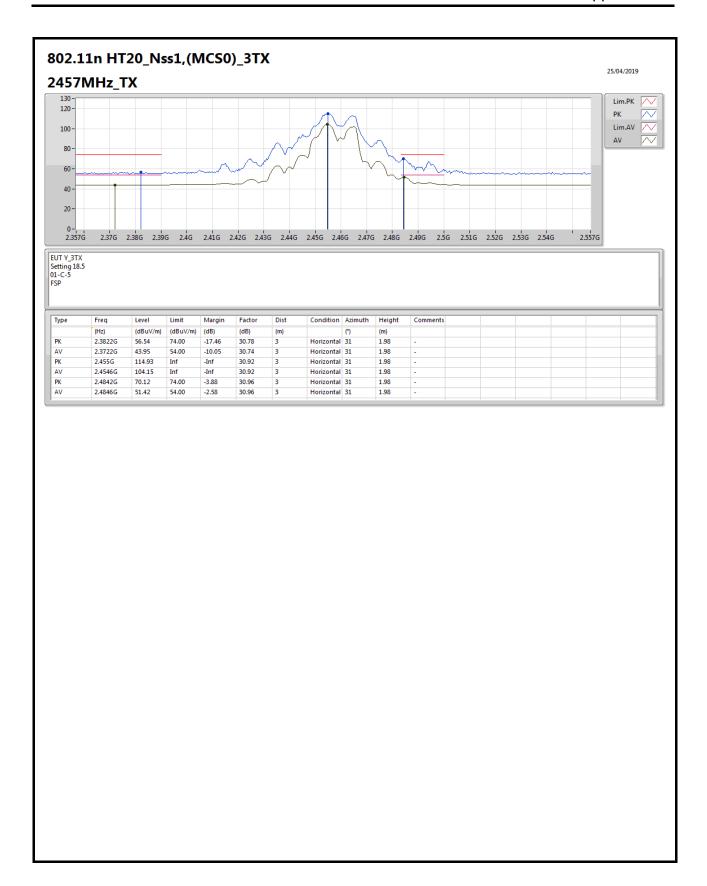
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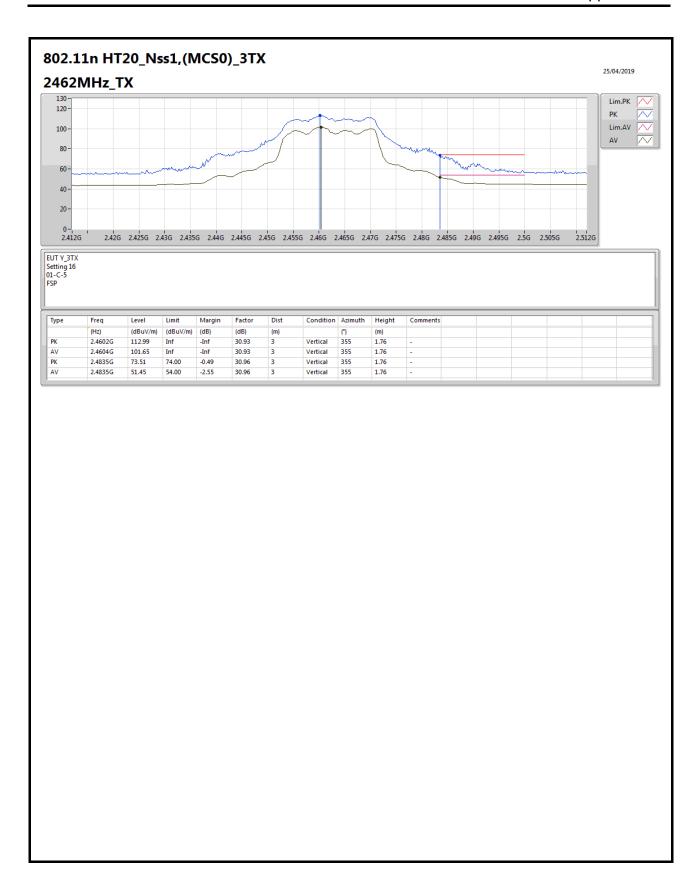
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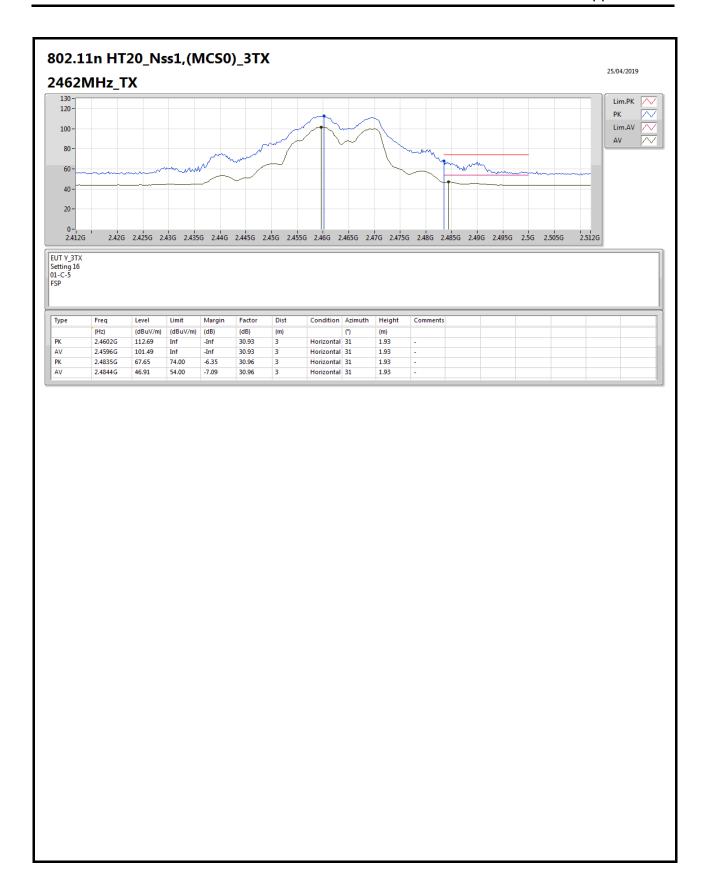
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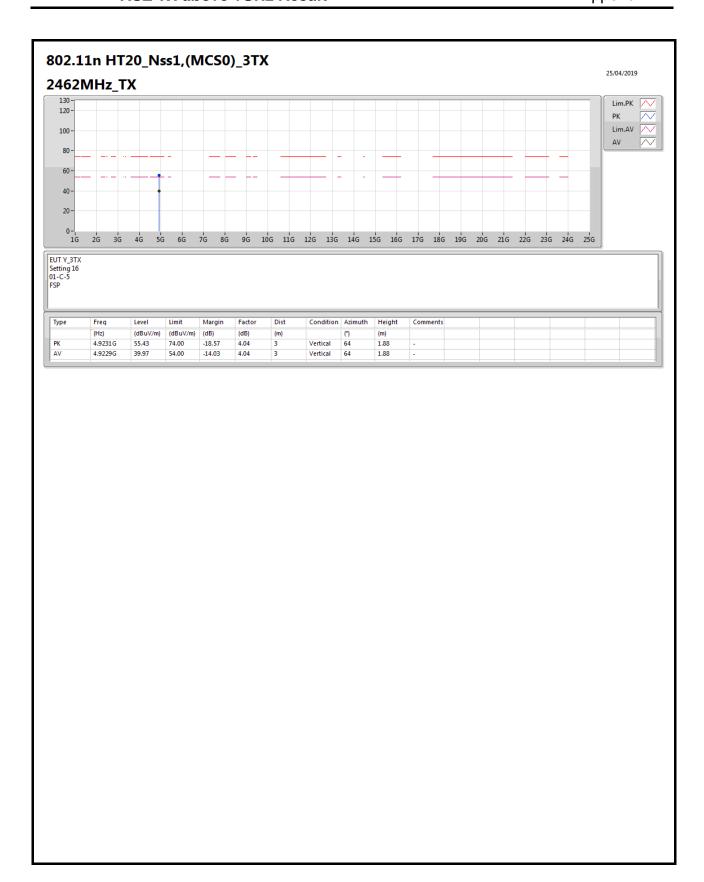
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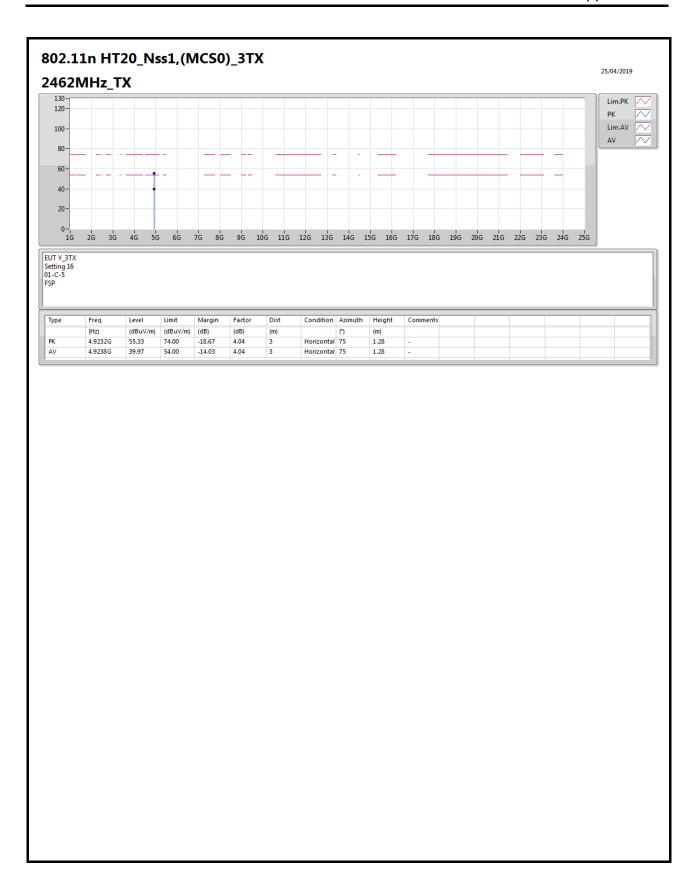
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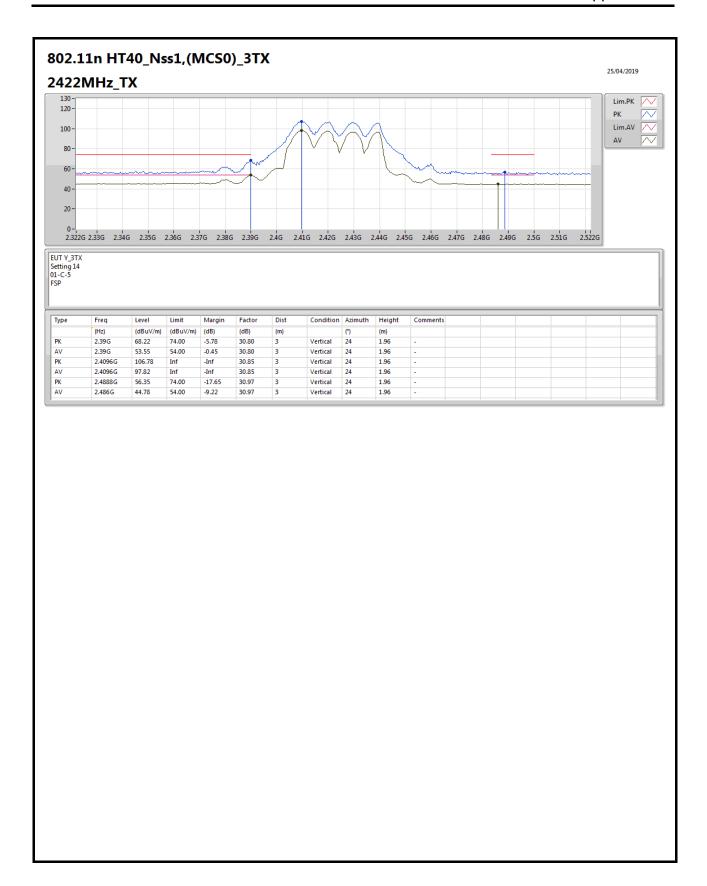
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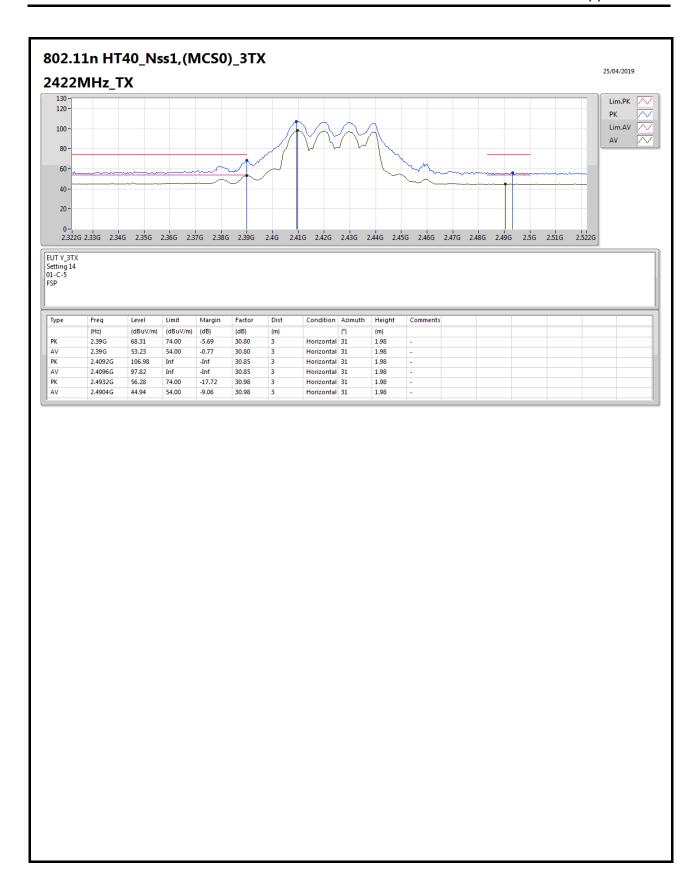
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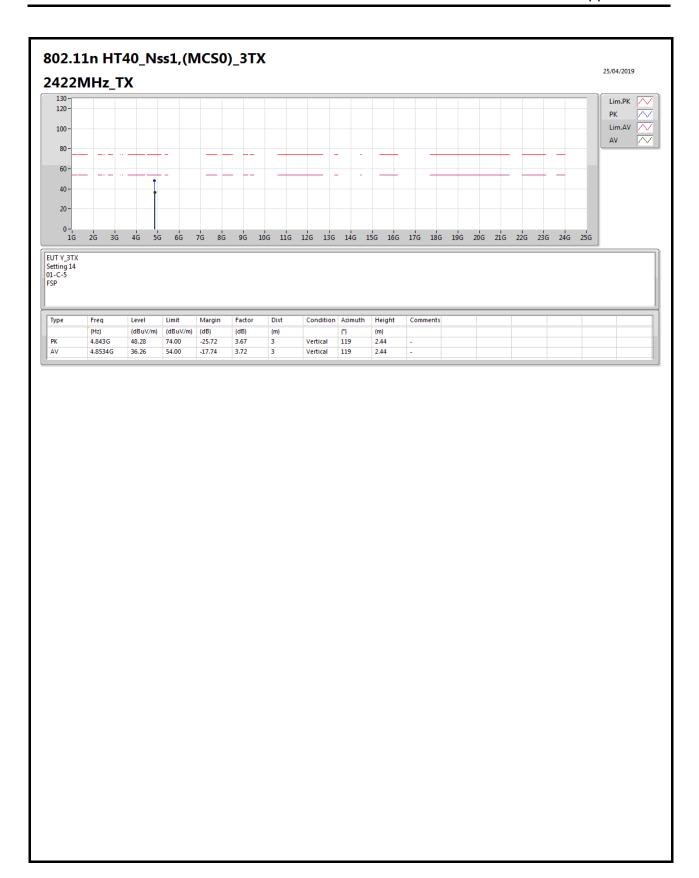
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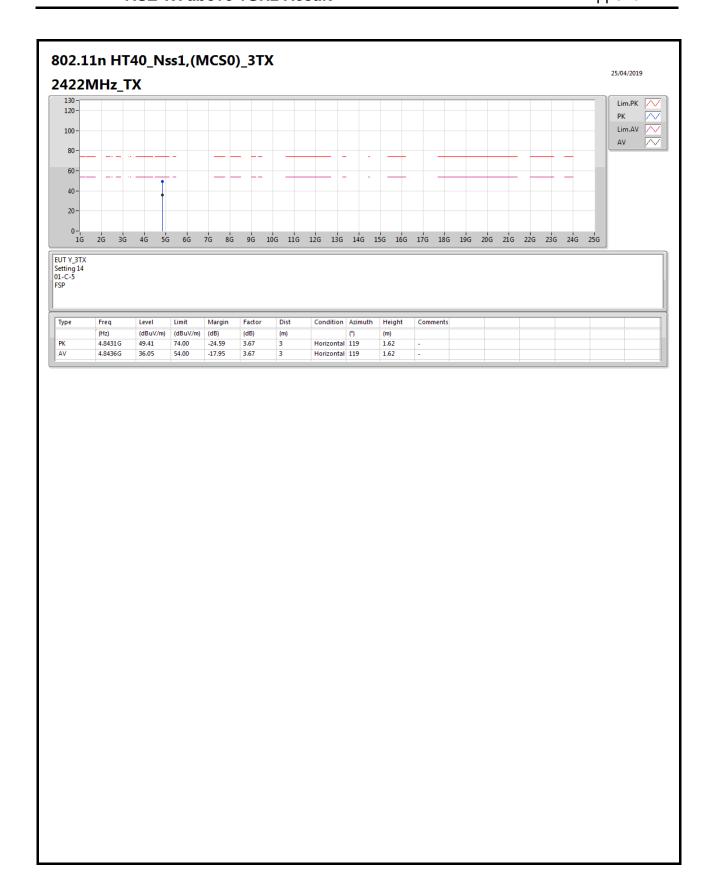
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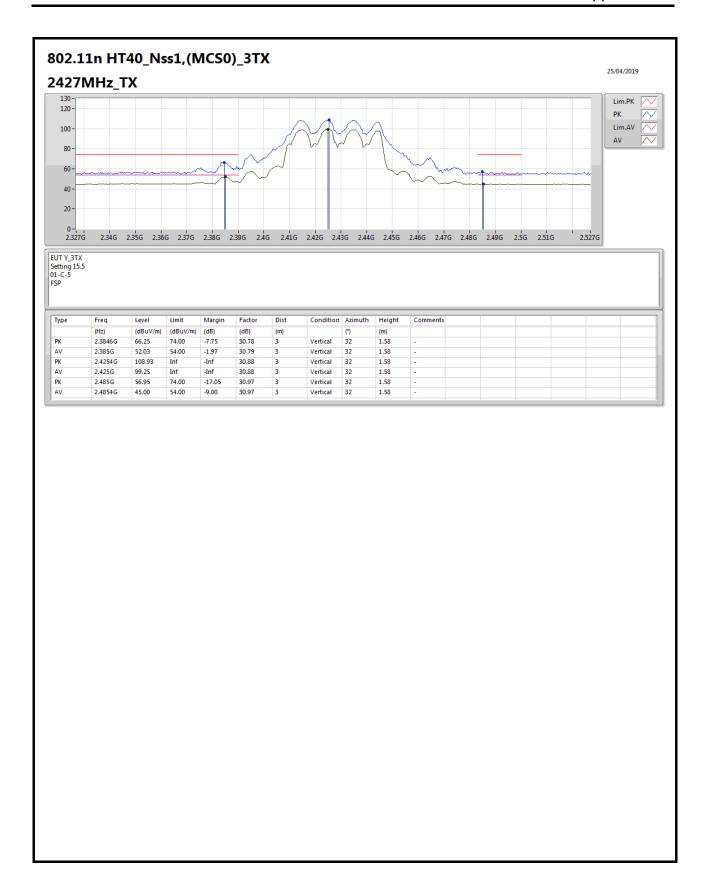
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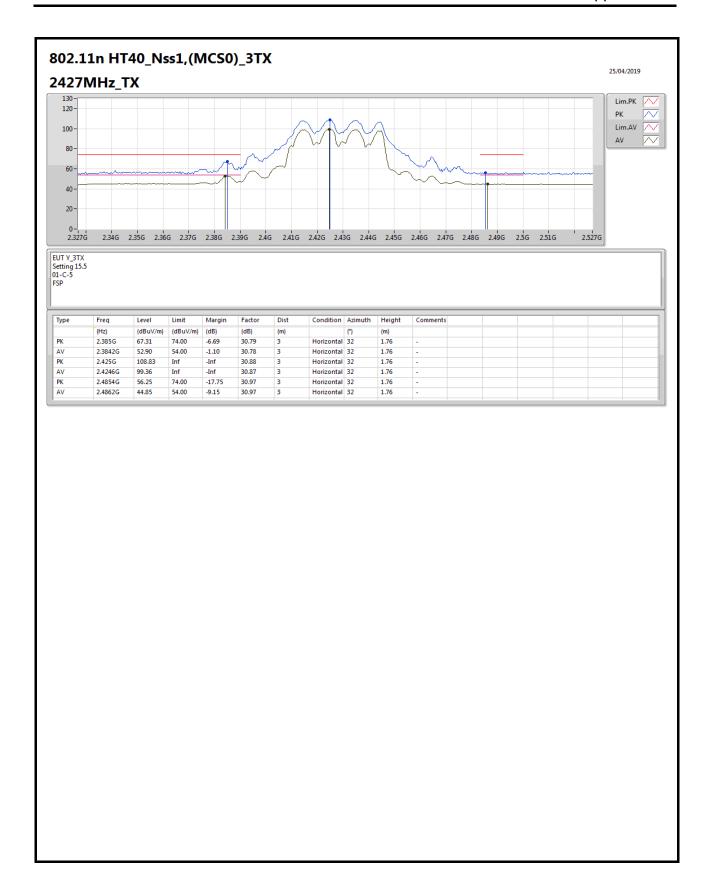
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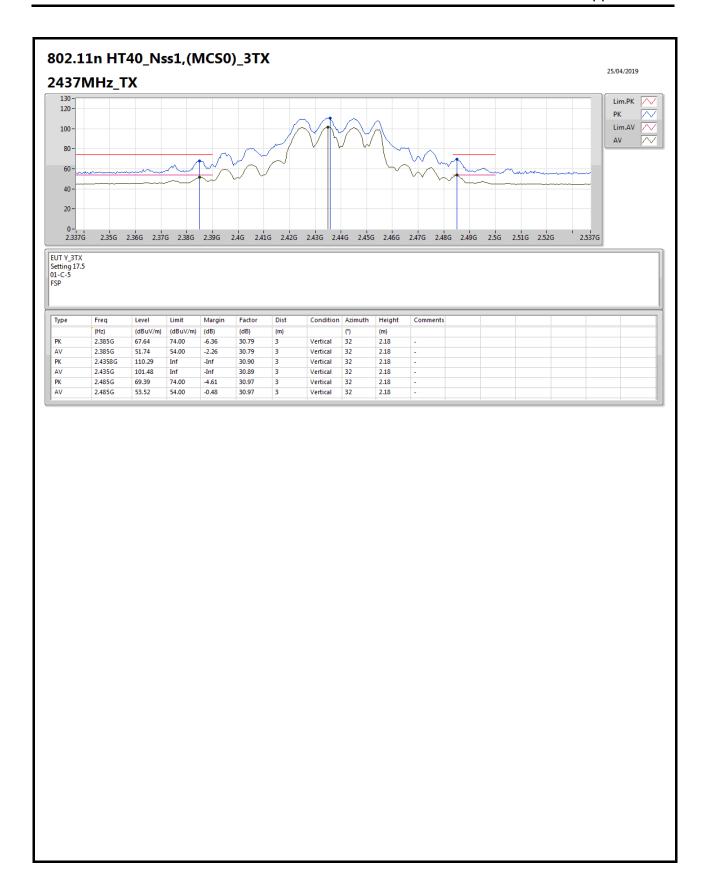
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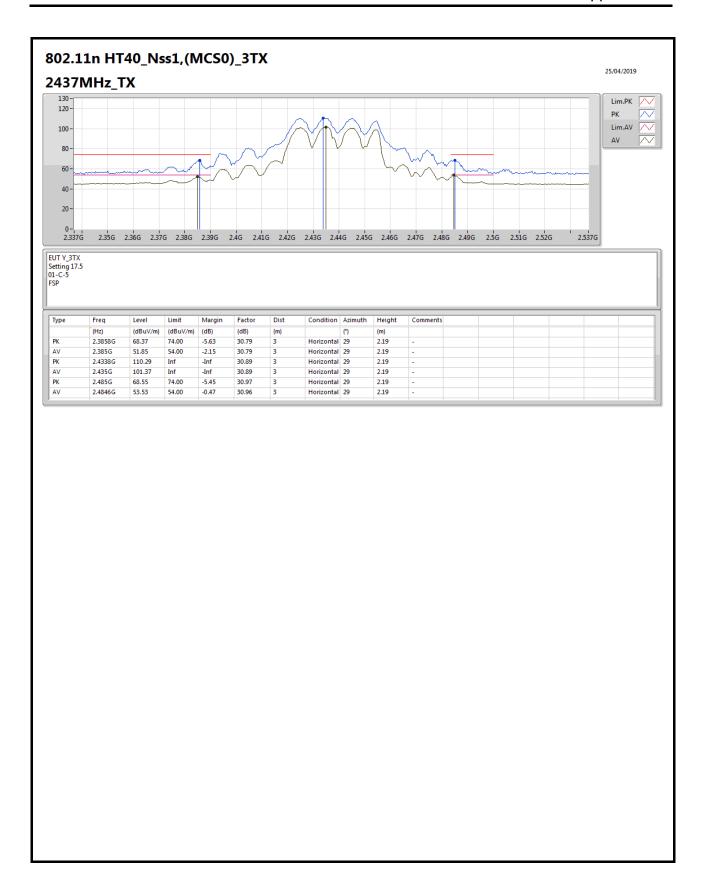
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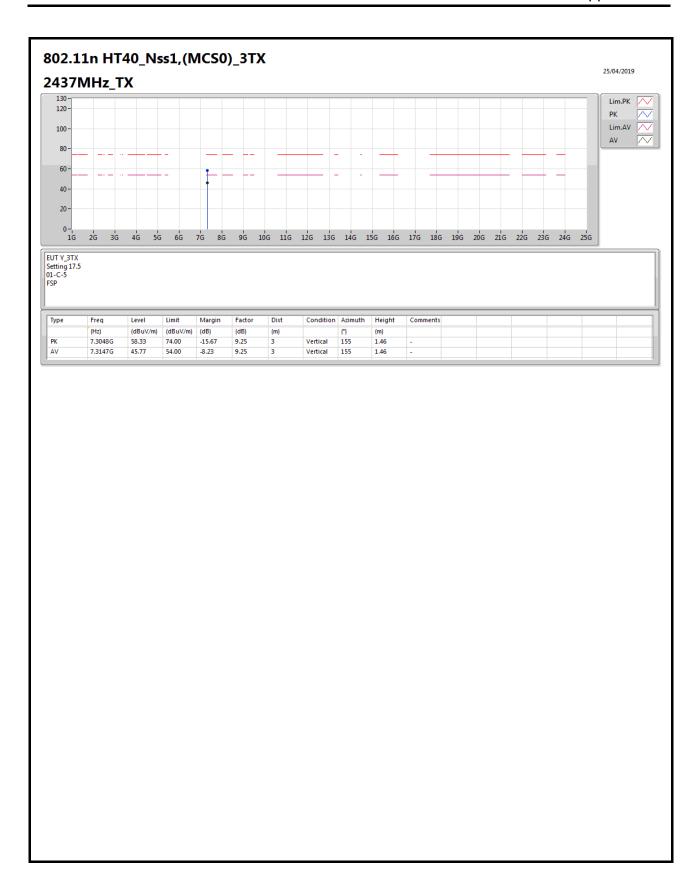
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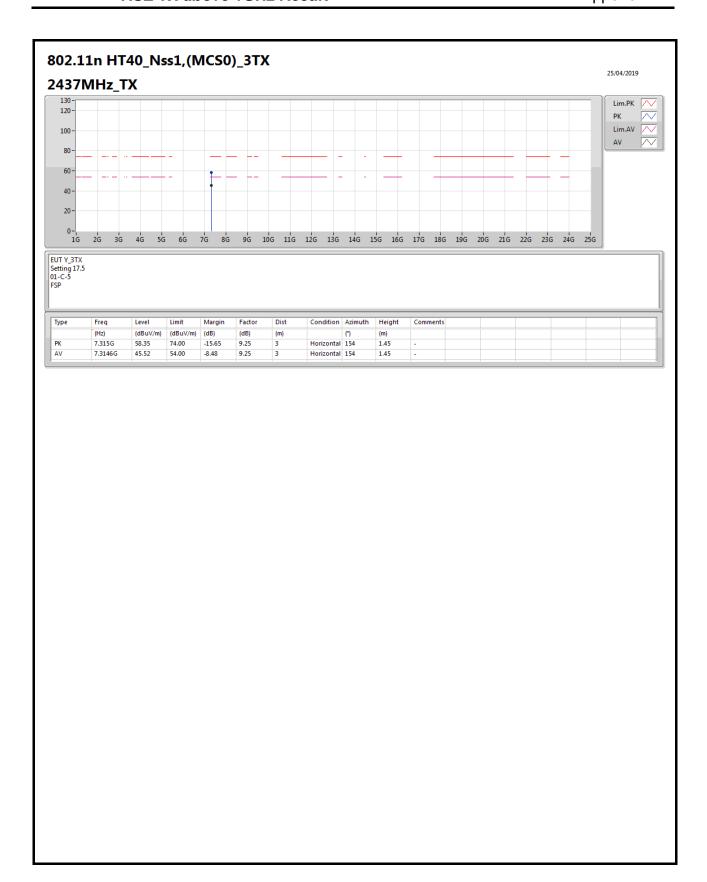
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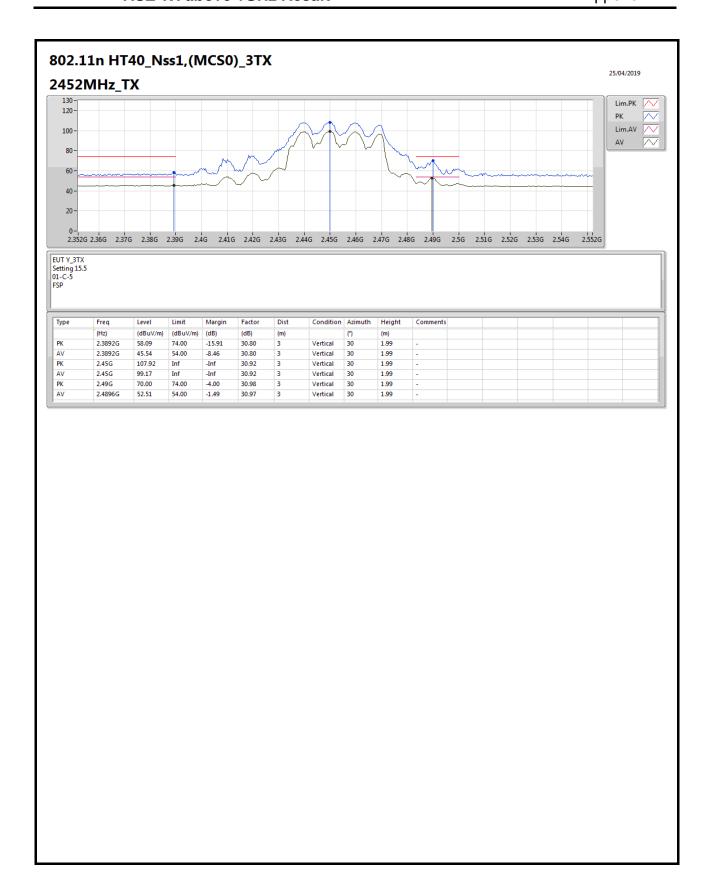
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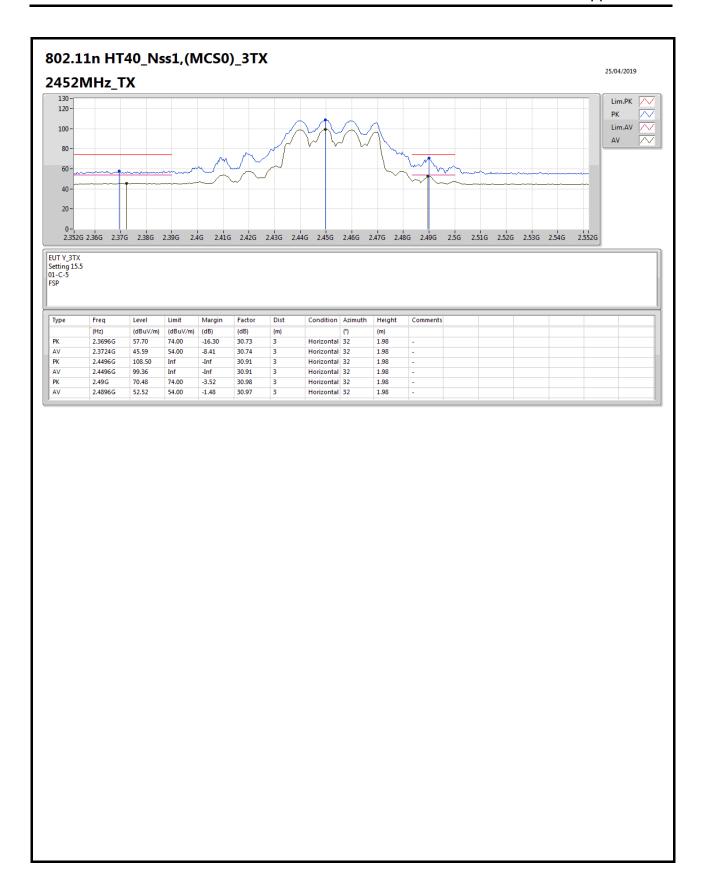
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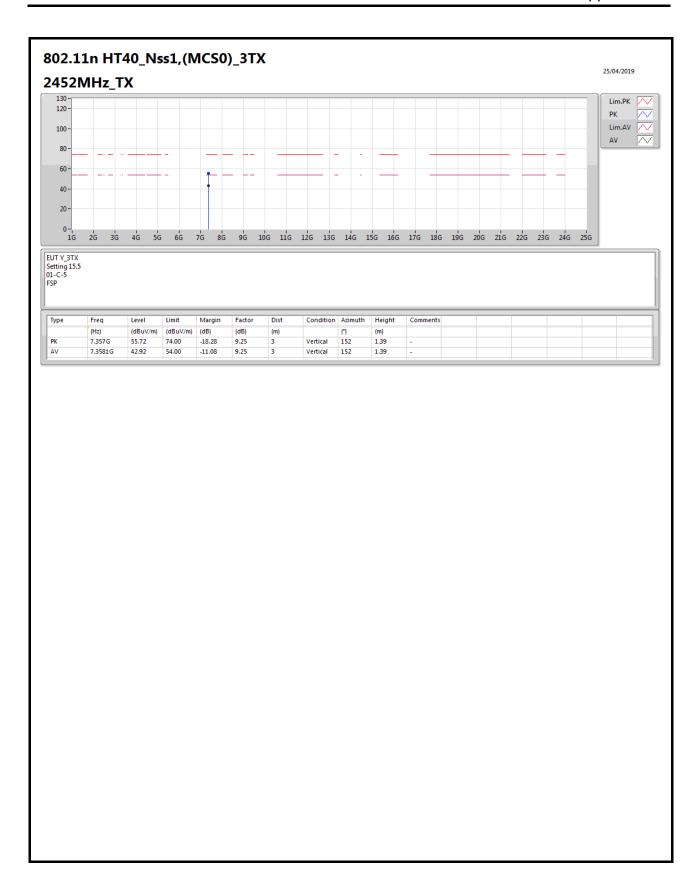
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