

3787

Report No.: FR380301-01

# RADIO TEST REPORT

FCC ID : Z8H89FT0082

Equipment : 6094HH

Brand Name : Cambium Networks

Model Name : 6094HH

Applicant : Cambium Networks Inc.

3800 Golf Road, Suite 360 Rolling Meadows, IL

60008, USA

Manufacturer : Cambium Networks, Ltd.

Ashburton, TQ13 7UP, UK

Standard : 47 CFR FCC Part 15.407

The product was received on Oct. 18, 2023, and testing was started from Dec. 01, 2023 and completed on Jun. 13, 2024. We, Sporton International Inc. Hsinchu 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 test results in this variant report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory

No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)

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

Report Template No.: CB-A12\_5 Ver1.1

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Report Version : 02

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**Appendix F. Test Photos** 

Photographs of EUT v01

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# History of this test report

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Report No.	Version	Description	Issued Date
FR380301-01	01	Initial issue of report	Mar. 15, 2024
FR380301-01	02	Adding test results of Maximum Equivalent Isotopically Radiated Power (E.I.R.P.) and Peak Power Spectral Density (E.I.R.P.) for 6FX mode	Jun. 17, 2024

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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	15.407(a)	Emission Bandwidth	PASS	-
3.3	15.407(a)	Maximum Equivalent Isotopically Radiated Power (E.I.R.P.)	PASS	-
3.4	15.407(a)	Peak Power Spectral Density (E.I.R.P.)	PASS	-
3.5	15.407(b)	Unwanted Emissions	PASS	-
-	15.407(d)	Contention-Based Protocol	N/A	Standard Client & Fixed Client w/o test

#### **Conformity Assessment Condition:**

- 1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
- 2. The measurement uncertainty please refer to each test result in the chapter "Measurement Uncertainty".

#### Disclaimer:

- 1. The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.
- 2. The test configuration, test mode and test software were written in this test report are declared by the manufacturer.

Reviewed by: Sam Chen

Report Producer: Sophia Shiung

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# 1 General Description

## 1.1 Information

## 1.1.1 RF General Information

Frequency Range (MHz)	Ch. Bandwidth (MHz)	Ch. Frequency (MHz)	Ch. Space (MHz)
5925-6425	E	5928-6422	1
6525-6875	5	6528-6872	1
5925-6425	40	5945-6405	1
6525-6875	40	6545-6855	1

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Band	Mode	BWch (MHz)	Nant
5.925-6.425GHz	QPSK5	5	2TX
5.925-6.425GHz	QPSK40	40	2TX
6.525-6.875GHz	QPSK5	5	2TX
6.525-6.875GHz	QPSK40	40	2TX

#### Note:

• The 6GHz function uses QPSK modulation.

• BWch is the nominal channel bandwidth.

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#### 1.1.2 Antenna Information

#### For EUT 1

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
	Cambium	Canopy V Dish Antenna	Dish	RP-SMA	
4	Cambium	Canopy V Dish Antenna	Dish	RP-SMA	Note 1
'	Cambium	Canopy V Dish Antenna	Dish	RP-SMA	Note i
	Cambium	Canopy V Dish Antenna	Dish	RP-SMA	

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#### Note 1:

			Port		Gain (dBi)			
Ant.	WLAN 5GHz WLAN 6GHz			WI AN ECH-	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
	R1	R2	R1+R2	R1	R2	WLAN 5GHz	WLAN 6GHz	
	-	1	3	-	1	21.922	21.892	
1	-	2	4	-	2	21.853	21.898	
'	2	-	2	2	-	21.893	21.893	
	1	-	1	1	-	21.851	21.851	

#### For EUT 2

		Port	:		Antonno		Gain (dBi)	
Ant.	WLAN 5GHz		GHz	Brand	Model Name	Antenna Type	Connector	WLAN 5GHz
	R1	R2	R1+R2			Турс		WLAN 3GHZ
	-	1	3	Cambium	Canopy V Patch Antenna	Patch	RP-SMA	3.20
1	-	2	4	Cambium	Canopy V Patch Antenna	Patch	RP-SMA	3.20
1 '	2	-	2	Cambium	Canopy V Patch Antenna	Patch	RP-SMA	4.20
	1	-	1	Cambium	Canopy V Patch Antenna	Patch	RP-SMA	4.70

Note 2: An EUT will only be equipped with one type of antenna.

Note 3: The above information was declared by manufacturer.

#### Note 4: For 5GHz function:

#### For Radio 1 (R1) (2TX/2RX):

Port 1~2 can be used as transmitting/receiving antenna.

Port 1~2 could transmit/receive simultaneously.

#### For Radio 2 (R2) (2TX/2RX):

Port 1~2 can be used as transmitting/receiving antenna.

Port 1~2 could transmit/receive simultaneously.

#### For Radio 1 + Radio 2 (R1+R2) (2TX/2RX):

Port 1~4 can be used as transmitting/receiving antenna.

Port 1~4 could transmit/receive simultaneously.

#### For 6GHz function:

#### For Radio 1 (R1) (2TX/2RX):

Port 1~2 can be used as transmitting/receiving antenna.

Port 1~2 could transmit/receive simultaneously.

#### For Radio 2 (R2) (2TX/2RX):

Port 1~2 can be used as transmitting/receiving antenna.

Port 1~2 could transmit/receive simultaneously.

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Note 5: Directional gain information for WLAN 5GHz and WLAN 6GHz for 6FX mode

Туре	Maximum Output Power	Power Spectral Density
Non-BF	Directional gain = Max.gain + array gain. For power measurements on IEEE 802.11 devices Array Gain = 0 dB (i.e., no array gain) for N ANT ≤ 4	$Directional Gain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{AST}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^{2}}{N_{ANT}} \right]$
BF	$Directional Gain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^{2}}{N_{ANT}} \right]$	$Directional Gain = 10 \cdot log \left[ \frac{\sum_{j=1}^{N_{AST}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^{2}}{N_{ANT}} \right]$

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Ex.

Directional Gain (NSS1) formula : 
$$\textit{Directiona 1Gain} = 10 \cdot \log \left[ \frac{\sum\limits_{j=1}^{N_{ss}} \left\{ \sum\limits_{k=1}^{N_{ssr}} g_{j,k} \right\}^2}{N_{\textit{ANT}}} \right]$$

$$\begin{split} & \text{NSS1}(\text{g1,1}) = \ 10^{\text{G1/20}} \ ; \text{NSS1}(\text{g1,2}) = \ 10^{\text{G2/20}} \ ; \text{NSS1}(\text{g1,2}) = \ 10^{\text{G3/20}}; \text{NSS1}(\text{g1,2}) = \ 10^{\text{G4/20}} \\ & \text{gj,k} = & (\text{Nss1}(\text{g1,1}) \ + \ \text{Nss1}(\text{g1,2}) \ + \ \text{Nss1}(\text{g1,3}) \ + \ \text{Nss1}(\text{g1,4}) \ )^2 \\ & \text{DG} = & 10 \ \log[(\text{Nss1}(\text{g1,1}) \ + \ \text{Nss1}(\text{g1,2}) \ + \ \text{Nss1}(\text{g1,3}) \ + \ \text{Nss1}(\text{g1,4}))^2 \ / \ \text{N}_{\text{ANT}}] => 10 \\ & \log[(10^{\text{G1/20}} \ + \ 10^{\text{G2/20}} \ + \ 10^{\text{G3/20}} \ + \ 10^{\text{G4/20}} \ )^2 \ / \ \text{N}_{\text{ANT}}] \end{split}$$

#### Where:

Dish Antenna (Cross-Polarized Antenna)

5G UNII-1 G1 = 21.893 dBi; G2 = 21.851 dBi;

5G UNII-3 G1 = 21.922 dBi; G2 = 21.853 dBi;

6E UNII-5 G1 = 21.851 dBi; G2 = 21.893 dBi;

6E UNII-7 G1 = 21.892 dBi; G2 = 21.898 dBi;

5G UNII-1 DG = 21.893 dBi

5G UNII-3 DG = 21.922 dBi

6E UNII-5 DG = 21.893 dBi

6E UNII-7 DG = 21.898 dBi

#### Patch Antenna (Cross-Polarized Antenna)

5G UNII-1 G1 = 4.20 dBi; G2 = 4.70 dBi;

5G UNII-3 G1 = 3.20 dBi; G2 = 3.20 dBi;

5G UNII-1 DG = 4.70 dBi

5G UNII-3 DG = 3.20 dBi

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## 1.1.3 Mode Test Duty Cycle

#### For 6FC mode:

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
QPSK5	0.976	0.11	2.437m	1k
QPSK40	0.976	0.11	2.435m	1k

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#### For 6FX mode:

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
QPSK5	0.977	0.1	2.438m	1k
QPSK40	0.976	0.11	2.435m	1k

## Note:

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

# 1.1.4 EUT Operational Condition

EUT Power Type		From PoE				
Beamforming Function		With beamforming	$\boxtimes$	Without beamforming		
		Indoor Access Point		Subordinate		
Device Type		Indoor Client		Standard Power Access Point		
Device Type		Dual Client	$\boxtimes$	Standard Client		
	$\boxtimes$	Fixed Client		Very Low Power		
Condition of EUT		Indoor	$\boxtimes$	Outdoor		
Test Software Version		DOS [ver 6.1.7601]				

Note: The above information was declared by manufacturer.

#### 1.1.5 Table for EUT Information

EUT	Antenna Type	Support
1	Dish	WLAN 5GHz / 6GHz
2	Patch	WLAN 5GHz

Note: The above information was declared by manufacturer.

#### 1.1.6 Table for Radio Function

Radio (R)	Function
R1	Support 5GHz UNII 1 and 6GHz UNII 5
R2	Support 5GHz UNII 3 and 6GHz UNII 7

Note: The above information was declared by manufacturer.

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# 1.1.7 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FR380301.

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

Modifications	Performance Checking
For EUT 1, add the UNII 5 and UNII 7 for Fixed Client (6FC) and Standard Client (6FX) through SW change which bandwidth is available for 5MHz and 40MHz only.	For EUT 1:  1. All the test items for Fixed Client mode  2. Maximum Equivalent Isotopically Radiated Power  (E.I.R.P.) and Peak Power Spectral Density (E.I.R.P.)  for Standard Client mode

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# 1.2 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 15.407
- ANSI C63.10-2013
- FCC KDB 789033 D02 v02r01

The following reference test guidance is not within the scope of accreditation of TAF.

- FCC KDB 987594 D02 v02r01
- FCC KDB 662911 D01 v02r01
- FCC KDB 412172 D01 v01r01
- FCC KDB 414788 D01 v01r01

## 1.3 Testing Location Information

Testina	Location	Inf	ormation

Test Lab.: Sporton International Inc. Hsinchu Laboratory

Hsinchu ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)

(TAF: 3787) TEL: 886-3-656-9065 FAX: 886-3-656-9085

Test site Designation No. TW3787 with FCC.

Conformity Assessment Body Identifier (CABID) TW3787 with ISED.

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted (Other test items)	TH01-CB	Mason Chan	24.3~25.1 / 62~68	Dec. 01, 2023~ Dec. 04, 2023
RF Conducted: 6FX (E.I.R.P. Power / PSD)	TH01-CB	Mason Chan	22.9~23.8 / 61~64	Jun. 13, 2024
RF Radiated: 6FC (E.I.R.P. Power / PSD)	03CH01-CB	Paul Hu	21~22 / 56~59	Dec. 01, 2023~ Dec. 02, 2023
Radiated < 1GHz	10CH01-CB	Ryan Huang	21~22 / 51~52	Dec. 20, 2023
Radiated > 1GHz	03CH01-CB	Paul Hu	21~22 / 56~59	Dec. 01, 2023~ Dec. 02, 2023
AC Conduction	CO02-CB	Gray Lee	22~23 / 55~56	Dec. 20, 2023

Note: The tested sample for RF Conducted: 6FX (E.I.R.P. Power / PSD) tests was received on Jan. 19, 2024.

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# 1.4 Measurement Uncertainty

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

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Test date: Before May 28, 2024

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.4 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz) 5.0 dB Confidence levels of 95		Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.0 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.1 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.2 dB	Confidence levels of 95%
Conducted Emission	3.1 dB	Confidence levels of 95%
Output Power Measurement	0.8 dB	Confidence levels of 95%
Bandwidth Measurement	2.2%	Confidence levels of 95%

Test date: After May 27, 2024

Test Items	Uncertainty	Remark
Conducted Emission	3.1 dB	Confidence levels of 95%
Output Power Measurement	0.8 dB	Confidence levels of 95%
Power Density Measurement	3.1 dB	Confidence levels of 95%

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# 2 Test Configuration of EUT

# 2.1 Test Channel Mode

Mode
QPSK5_5MHz_Nss1_2TX
5928MHz
6175MHz
6422MHz
6528MHz
6700MHz
6872MHz
QPSK40_40MHz_Nss1_2TX
5945MHz
6175MHz
6405MHz
6545MHz
6700MHz
6855MHz

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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 Test Voltage: 120Vac / 60Hz
Operating Mode	СТХ
1	EUT 1 (6FC)

The Worst Case Mode for Following Conformance Tests	
Tests Item  Emission Bandwidth  Maximum E.I.R.P. at any elevation angle above 30 degrees  Emission MASK	
Test Condition	Conducted measurement at transmit chains
1	EUT 1 (6FC)

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Т	The Worst Case Mode for Following Conformance Tests		
Tests Item	Maximum Equivalent Isotopically Radiated Power (E.I.R.P.) Peak Power Spectral Density (E.I.R.P.)		
Test Condition	Conducted measurement at transmit chains		
1	EUT 1 (6FX)		
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.		
Test Mode	After evaluating, EUT in Y axis was the worst case, so the measurement will follow this same test configuration.		
1	EUT 1 (6FC) in Y axis		

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The Worst Case Mode for Following Conformance Tests		
Tests Item	Unwanted Emissions	
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.	
Operating Mode < 1GHz	CTX	
&	After evaluating, EUT in Y axis was the worst case, so the measurement will follow this same test configuration.	
1	EUT 1 (6FC) in Y axis	

Note: The PoE was for measurement only and would not be marketed. Its information is shown as below:

Equipment	Brand Name	Model Name
PoE	Cambium	NET-P60-56IN

# 2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

## 2.4 Accessories

Wall bracket\*1 (For EUT 1 only)

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# 2.5 Support Equipment

#### For AC Conduction and Radiated < 1GHz:

	Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID	
Α	PoE	Cambium	NET-P60-56IN	N/A	
В	LAN NB	DELL	E6430	N/A	

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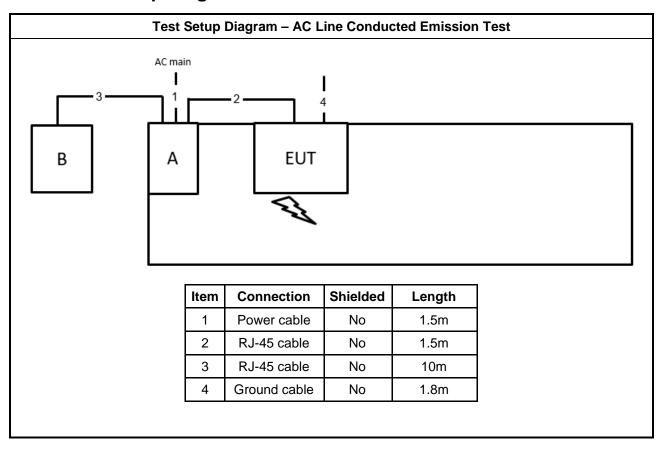
#### For Radiated >1GHz, RF Radiated (E.I.R.P. Power / PSD) and RF Conducted:

	Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID	
Α	NB	DELL	E4300	N/A	
В	PoE	Cambium	NET-P60-56IN	N/A	

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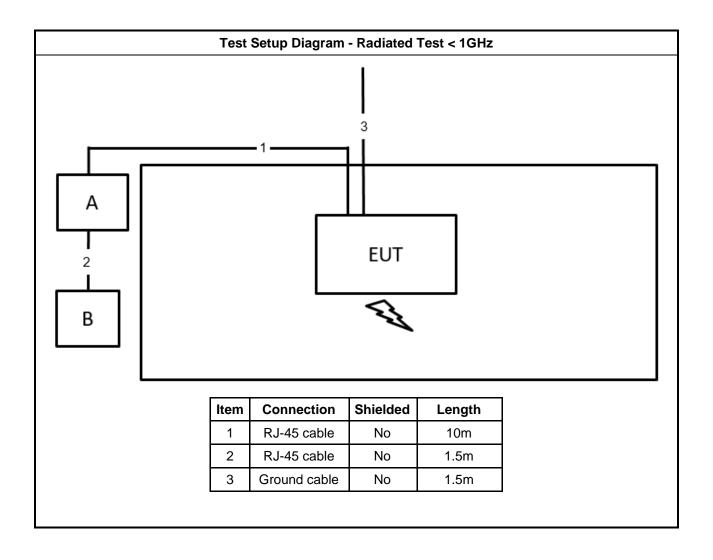
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# 2.6 Test Setup Diagram



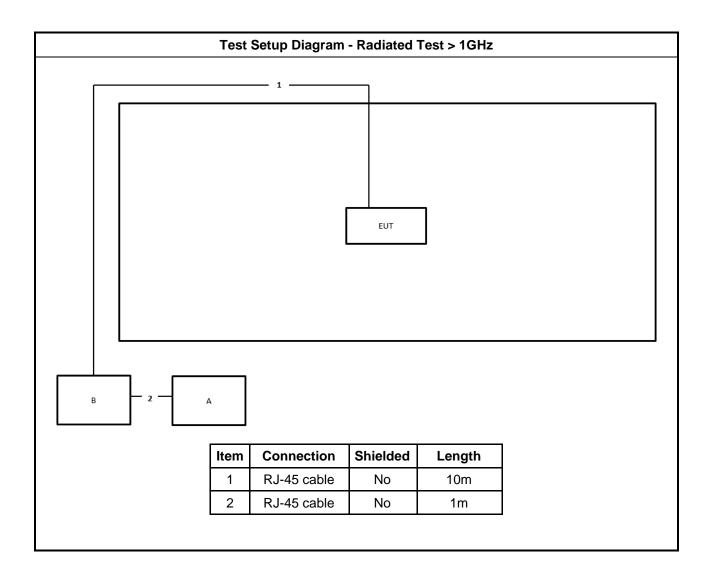
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# 3 Transmitter Test Result

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

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## 3.1.4 Test Setup

# AC Power-line Conducted Emissions

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

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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 Measurement Results Calculation

The measured Level is calculated using:

- a. Corrected Reading (dBuV) = LISN Factor + Cable Loss + Read Level = Level
- b. Margin = Limit + (Read Level + LISN Factor + Cable Loss)

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

Refer as Appendix A

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# 3.2 Emission Bandwidth

#### 3.2.1 Emission Bandwidth Limit

	Emission Bandwidth Limit			
UNI	UNII Devices			
$\boxtimes$	For the 5925-6425 GHz band, N/A			
	For the 6425-6525 GHz band, N/A			
$\boxtimes$	For the 6525-6875 GHz band, N/A			
	For the 6875-7125 GHz band, N/A			
RL	RLAN Devices			
	For the 5925-6425 GHz band, N/A			
	For the 6425-6525 GHz band, N/A			
	For the 6525-6875 GHz band, N/A			
	For the 6875-7125 GHz band, N/A			

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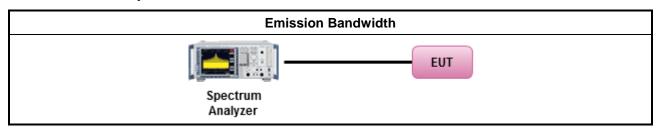
## 3.2.2 Measuring Instruments

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:		
	$\boxtimes$	According to FCC KDB 987594 D02 clause II.C, measurement procedure shall refer to FCC KDB 789033 D02, 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

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# 3.3 Maximum Equivalent Isotopically Radiated Power (E.I.R.P.)

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# 3.3.1 Maximum Equivalent Isotopically Radiated Power (E.I.R.P.) Limit

		Maximum Equivalent Isotopically Radiated Power (E.I.R.P.) Limit
UNI	I De	vices
$\boxtimes$	For	the 5.925 ~ 6.425 GHz band:
	•	For standard power access point and fixed client device : e.i.r.p < 36 dBm. For outdoor devices, the maximum e.i.r.p. at any elevation angle above 30 degrees not exceed 125 mW (21 dBm).
	•	For indoor access point : e.i.r.p < 30 dBm.
	•	For subordinate device control of an indoor access point : e.i.r.p < 30 dBm.
	•	For client device control of a standard power access point : e.i.r.p < 30 dBm.
	•	For client device control of an indoor access point : e.i.r.p < 24 dBm.
	•	For very low power device : e.i.r.p < 14 dBm.
	For	the 6.425 ~ 6.525 GHz band:
	•	For indoor access point : e.i.r.p < 30 dBm.
		For client device control of an indoor access point : e.i.r.p < 24 dBm.
$\boxtimes$	For	the 6.525 ~ 6.875 GHz band:
	•	For standard power access point and fixed client device : e.i.r.p < 36 dBm. For outdoor devices, the maximum e.i.r.p. at any elevation angle above 30 degrees not exceed 125 mW (21 dBm).
	•	For indoor access point : e.i.r.p < 30 dBm.
	•	For subordinate device control of an indoor access point : e.i.r.p < 30 dBm.
	•	For client device control of a standard power access point : e.i.r.p < 30 dBm.
	•	For client device control of an indoor access point : e.i.r.p < 24 dBm.
		For very low power device : e.i.r.p < 14 dBm.
	For	the 6.875 ~ 7.125 GHz band:
	•	For indoor access point : e.i.r.p < 30 dBm.
	•	For client device control of an indoor access point : e.i.r.p < 24 dBm.
RLA	AN D	Pevices
	For	the 5.925 ~ 7.125 GHz band:
	•	For low-power indoor access-points & indoor subordinate devices < 30 dBm .
	•	For low-power client devices < 24 dBm.
	For	the 5.925 ~ 6.875 GHz band:
	•	For standard-power access points & fixed client devices < 36 dBm. For outdoor devices, the maximum e.i.r.p. at any elevation angle above 30 degrees not exceed 125 mW (21 dBm).
	•	For standard client devices < 30 dBm.
	•	

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## 3.3.2 Measuring Instruments

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

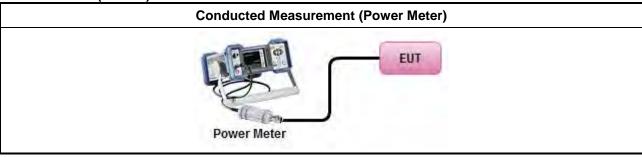
#### 3.3.3 Test Procedures

		10011100044100	
		Test Method	
•	According to FCC KDB 987594 D02 clause II.E, the test measurement procedure shall refer to KDB 789033.		
	Aver	age over on/off periods with duty factor	
		For 6FC mode (Others): Refer as FCC KDB 789033 D02, clause E Method SA-2 (spectral trace averaging).	
		Spectrum analyzer setting: RBW/VBW : 1/3MHz ; Detector : RMS ; Trace mode : Average ; Sweep Count 100.	
		Refer as FCC KDB 789033 D02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)	
	Wide	band RF power meter and average over on/off periods with duty factor	
		For 6FC mode (Phi $30^\circ$ ) and 6FX mode: Refer as FCC KDB 789033 D02, clause E Method PM-G (using an RF average power meter).	
$\boxtimes$	For o	conducted measurement: For 6FC mode (Phi 30°) and 6FX mode	
	•	If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.	
	•	If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \ldots + P_n \\ \text{(calculated in linear unit [mW] and transfer to log unit [dBm])} \\ \text{EIRP}_{total} = P_{total} + DG$	
$\boxtimes$	For	radiated measurement: For 6FC mode (Others)	
	•	Refer as FCC KDB 789033 D02 clause II A.1.F "Antenna-port Conducted versus Radiated Testing"	
		Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.	
	•	Refer as FCC KDB 412172 D01 clause 2.2 for EIRP calculation.	

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## 3.3.4 Test Setup

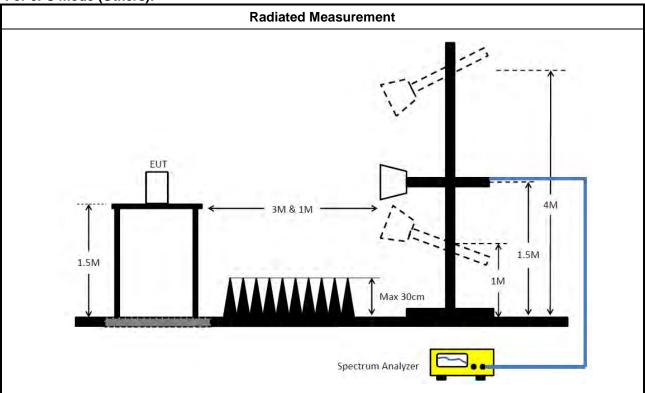
For 6FC mode (Phi 30°) and 6FX mode:



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## For 6FC mode (Others):



3.3.5 Test Result of Maximum Equivalent Isotopically Radiated Power (E.I.R.P)

Refer as Appendix C

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# 3.4 Peak Power Spectral Density (E.I.R.P.)

# 3.4.1 Peak Power Spectral Density (E.I.R.P.) Limit

	Peak Power Spectral Density (E.I.R.P.) Limit				
UNI	UNII Devices				
$\boxtimes$	For	the 5.925 ~ 6.425 GHz band:			
	-	For standard power access point and fixed client device : e.i.r.p PSD < 23 dBm/MHz.			
	•	For indoor access point : e.i.r.p PSD < 5 dBm/MHz.			
	•	For subordinate device control of an indoor access point : e.i.r.p PSD < 5 dBm/MHz.			
	•	For client device control of a standard power access point : e.i.r.p PSD < 17 dBm/MHz.			
	•	For client device control of an indoor access point : e.i.r.p PSD < -1 dBm/MHz.			
	•	For very low power device : e.i.r.p PSD < -5 dBm/MHz.			
	For	the 6.425 ~ 6.525 GHz band:			
	•	For indoor access point : e.i.r.p PSD < 5 dBm/MHz.			
	•	For client device control of an indoor access point : e.i.r.p PSD < -1 dBm/MHz.			
$\boxtimes$	For	the 6.525 ~ 6.875 GHz band:			
	•	For standard power access point and fixed client device : e.i.r.p PSD < 23 dBm/MHz.			
	•	For indoor access point : e.i.r.p PSD < 5 dBm/MHz.			
	•	For subordinate device control of an indoor access point : e.i.r.p PSD < 5 dBm/MHz.			
	•	For client device control of a standard power access point : e.i.r.p PSD < 17 dBm/MHz.			
	•	For client device control of an indoor access point : e.i.r.p PSD < -1 dBm/MHz.			
	•	For very low power device : e.i.r.p PSD < -5 dBm/MHz.			
	For	the 6.875 ~ 7.125 GHz band:			
	•	For indoor access point : e.i.r.p PSD < 5 dBm/MHz.			
	•	For client device control of an indoor access point : e.i.r.p PSD < -1 dBm/MHz.			
RL	AN D	evices			
	For	the 5.925 ~ 7.125 GHz band:			
	•	For low-power indoor access-points & indoor subordinate devices < 5 dBm / MHz.			
	•	For low-power client devices < -1 dBm / MHz.			
	For	the 5.925 ~ 6.875 GHz band:			
	•	For standard-power access points & fixed client devices < 23 dBm / MHz.			
	•	For standard client devices < 17 dBm / MHz.			

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## 3.4.2 Measuring Instruments

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

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## 3.4.3 Test Procedures

			Test Method
•	According to FCC KDB 987594 D02 clause II.F, the measurement procedure shall refer to KDB 789033. 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 bandwidths < 1	KDB 789033 D02, F)5) power spectral density can be measured using resolution MHz provided that the results are integrated over 1 MHz bandwidth
	[duty	cycle ≥ 98% or	external video / power trigger]
	$\boxtimes$	Refer as FCC h	(DB 789033 D02, clause E Method SA-1 (spectral trace averaging).
		Refer as FCC speed)	KDB 789033 D02, clause E Method SA-1 Alt. (RMS detection with slow sweep
	duty	cycle < 98% an	d average over on/off periods with duty factor
	$\boxtimes$	Refer as FCC h	KDB 789033 D02, clause E Method SA-2 (spectral trace averaging).
		Refer as FCC speed)	KDB 789033 D02, clause E Method SA-2 Alt. (RMS detection with slow sweep
	For	conducted meas	surement: For 6FX mode
	•	If the EUT supp	ports multiple transmit chains using options given below:
		In-band po spectrum summing of first spectr NTX outpu	Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, ower spectral density (PSD). Sample all transmit ports simultaneously using a analyzer for each transmit port. Where the trace bin-by-bin of each transmit port can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the al bin of output 2 and that from the first spectral bin of output 3, and so on up to the at to obtain the value for the first frequency bin of the summed spectrum.). Add upude (power) values for the different transmit chains and use this as the new data
		are meas maximum summed n	Measure and sum spectral maxima across the outputs. With this technique, spectra ured at each output of the device at the required resolution bandwidth. The value (peak) of each spectrum is determined. These maximum values are then nathematically in linear power units across the outputs. These operations shall be separately over frequency spans that have different out-of-band or spurious mits,
		FCC KDB and each t	Measure and add 10 $\log(N)$ dB, where N is the number of transmit chains. Refer as 662911, In-band power spectral density (PSD). Performed at each transmit chains transmit chains shall be compared with the limit have been reduced with 10 $\log(N)$ . ansmit chains shall be add 10 $\log(N)$ to compared with the limit.
	•	$PPSD_{total} = PPS$	mit chains, EIRP PPSD calculation could be following as methods:  SD1 + PPSD2 + + PPSDn  near unit [mW] and transfer to log unit [dBm])  Dtotal + DG

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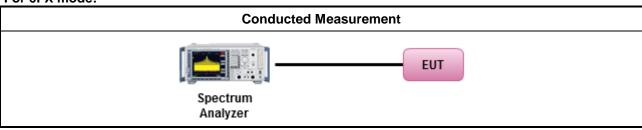
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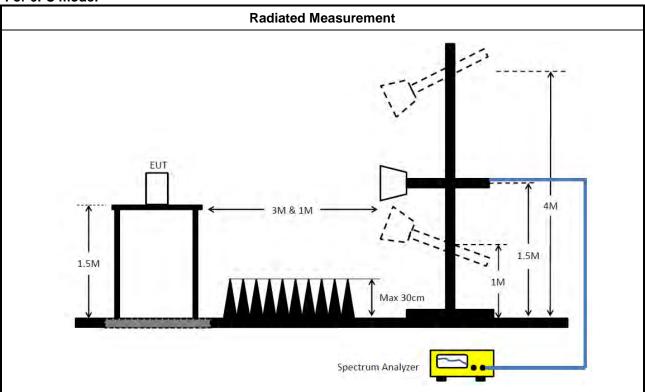
- Refer as FCC KDB 789033 D02 clause II A.1.F "Antenna-port Conducted versus Radiated Testing"
- Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
- Refer as FCC KDB 412172 D01 clause 2.2 for EIRP calculation.

## 3.4.4 Test Setup

#### For 6FX mode:



#### For 6FC mode:



## 3.4.5 Test Result of Peak Power Spectral Density (E.I.R.P.)

Refer as Appendix D

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#### 3.5 Unwanted Emissions

#### 3.5.1 Transmitter Unwanted Emissions Limit

Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit							
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)				
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300				
0.490~1.705	24000/F(kHz)	33.8 - 23	30				
1.705~30.0	30	29	30				
30~88	100	40	3				
88~216	150	43.5	3				
216~960	200	46	3				
Above 960	500	54	3				

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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 EUT.
- Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m(20 x log (standard distance/ test distance) = 20log(3/1) = 9.54dB.

  EX. Above 18GHz emission limit calculation (3m to 1m) = 54dBuV/m at 3m + 9.54dB = 63.54 dBuV/m at 1m.

Un-restricted band emissions above 1GHz Limit						
Frequency	Limit					
Any outside the 5.945 –	e.i.r.p27 dBm [68.2 dBuV/m@3m]					
6.875 GHz emission	Note 1: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m(20 x log (standard distance/test distance) = 20log(3/1) = 9.54dB.  EX. Above 18GHz emission limit calculation (3m to 1m) = 68.2dBuV/m at 3m + 9.54dB = 77.74 dBuV/m at 1m.  Note 2:-27 dBm EIRP OOBE is measured RMS which is a deviation from the current 15E rules for 5 GHz bands. In addition, 15.35(b) applies where the peak emissions must be limited to no more than 20 dB above the average limit.					

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Frequency **Emission MASK Limit** 5.945 - 6.875 GHz Power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than oneand one-half times the channel bandwidth must be suppressed by at least 40 dB. Fc - EBW Fc + EBW 40 dB Fc + 1.5 X EBW EBW/2 - 1MHz 1.5 X EBW + 1MHz

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### 3.5.2 Measuring Instruments

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

#### 3.5.3 Test Procedures

#### **Test Method**

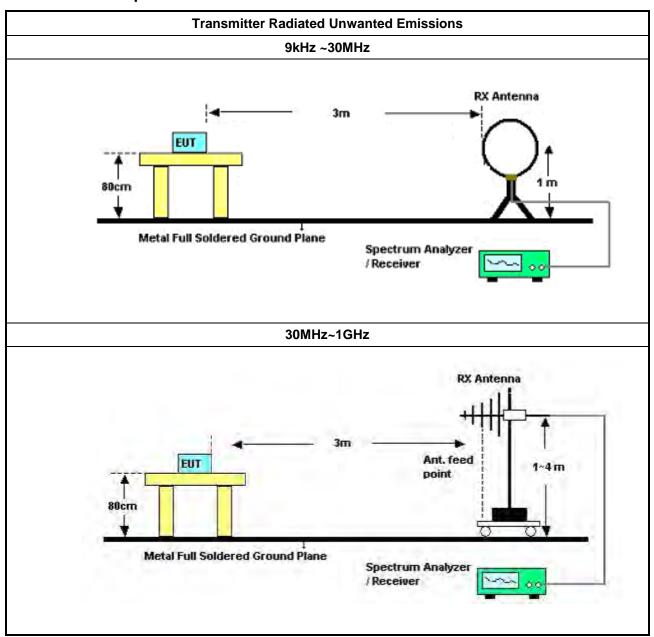
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- According to FCC KDB 987594 D02 II.G. the unwanted emission measurement procedure shall refer to KDB 789300(except emission MASK).
  - Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).
- The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].
- For the transmitter unwanted emissions shall be measured using following options below:
  - Refer as FCC KDB 789033 D02, clause G)2) for unwanted emissions into non-restricted bands.
  - Refer as FCC KDB 789033 D02, clause G)1) for unwanted emissions into restricted bands.
    - Refer as FCC KDB 789033 D02, G)6) Method AD (Trace Averaging). (For unrestricted band measurement)
    - Refer as FCC KDB 789033 D02, G)6) Method VB (Reduced VBW).
    - Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time. (For restricted band average measurement)
    - Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
    - Refer as FCC KDB 789033 D02, clause G)5) measurement procedure peak limit.
    - Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.
  - Refer as FCC KDB 789033 D02, clause G)3)d)ii) for Band edge Integration measurements.
- For emission MASK shall be measured using following options below:
  - Refer as FCC KDB 987594 D02, J) In-Band Emissions
- For radiated measurement.
  - Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
  - Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
  - Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
- The any unwanted emissions level shall not exceed the fundamental emission level.
- All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

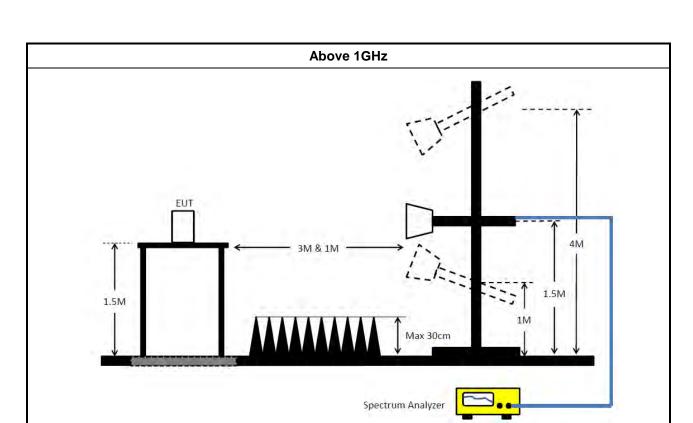
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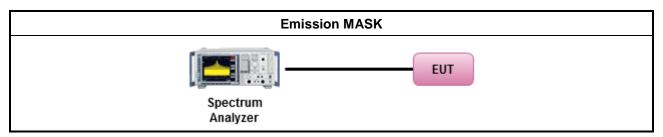
## 3.5.4 Test Setup



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#### 3.5.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna factor (AF) + Cable loss (CL) + Read level (Raw) - Preamp factor (PA)(if applicable) = Level

## 3.5.6 Transmitter Unwanted Emissions (Below 30MHz)

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.

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

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

#### 3.5.7 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E

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# 4 Test Equipment and Calibration Data

	<u> </u>			I			
Instrument	Brand	Model No.	Serial No.	Characteristics	Characteristics Calibration  Date		Remark
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	z ~ 30MHz Apr. 06, 2023		Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Apr. 27, 2023	Apr. 26, 2024	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	May 18, 2023	May 17, 2024	Conduction (CO02-CB)
COND Cable	Woken	Cable	2	0.15MHz ~ 30MHz	Oct. 17, 2023	Oct. 16, 2024	Conduction (CO02-CB)
Pulse Limiter	Schwarzbeck	VTSD 9561F-N	00378	9kHz ~ 30MHz	Oct. 17, 2023	Oct. 16, 2024	Conduction (CO02-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO02-CB)
Loop Antenna	Teseq	HLA 6121	65417	9kHz - 30 MHz	Oct. 13, 2023	Oct. 12, 2024	Radiation (10CH01-CB)
10m Semi Anechoic Chamber NSA	TDK	SAC-10M	10CH01-CB	30MHz~1GHz 10m,3m	Jan. 18, 2023	Jan. 17, 2024	Radiation (10CH01-CB)
Amplifier	Agilent	8447D	2944A10783	9kHz ~ 1.3GHz	Mar. 10, 2023	Mar. 09, 2024	Radiation (10CH01-CB)
Amplifier	Agilent	8447D	2944A10784	9kHz ~ 1.3GHz	Mar. 10, 2023	Mar. 09, 2024	Radiation (10CH01-CB)
Low Cable	Woken	SUCOFLEX 104	low cable-01	25MHz ~ 1GHz	Oct. 17, 2023	Oct. 16, 2024	Radiation (10CH01-CB)
Low Cable	Woken	SUCOFLEX 104	low cable-02	25MHz ~ 1GHz	Oct. 17, 2023	Oct. 16, 2024	Radiation (10CH01-CB)
EMI Test Receiver	Rohde&Schwarz	ESCI	100186	9kHz ~ 3GHz	Jul. 11, 2023	Jul. 10, 2024	Radiation (10CH01-CB)
Spectrum Analyzer	Rohde&Schwarz	FSV30	101026	9kHz ~ 30GHz	Apr. 19, 2023	Apr. 18, 2024	Radiation (10CH01-CB)
Bilog Antenna with 6dB Attenator	Schaffner & EMCI	CBL6112B& N-6-06	2888&AT-N0605	30MHz ~ 1GHz	Jan. 19, 2023	Jan. 18, 2024	Radiation (10CH01-CB)
Amplifier	EM	EM101	060703	10MHz ~ 1GHz	Oct. 18, 2023	Oct. 17, 2024	Radiation (10CH01-CB)
Low Cable	TITAN	T318E	low cable-03	30MHz ~ 1GHz	Nov. 23, 2023	Nov. 22, 2024	Radiation (10CH01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (10CH01-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH01-CB	1GHz ~18GHz 3m	May 05, 2023	May 04, 2024	Radiation (03CH01-CB)

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Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Horn Antenna	ETS-LINDGREN	3115	00075790	750MHz ~ 18GHz	Oct. 30, 2023	Oct. 29, 2024	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Sep. 04, 2023	Sep. 03, 2024	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02121	1GHz ~ 26.5GHz	May 18, 2023	May 17, 2024	Radiation (03CH01-CB)
Pre-Amplifier	SGH	SGH184	20230109-3	18~40GHz	Jan. 13, 2023	Jan. 12, 2024	Radiation (03CH01-CB)
Signal Analyzer	R&S	FSV3044	101437	10kHz ~ 44GHz	Nov. 28, 2023	Nov. 27, 2024	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16	1 GHz ~ 18 GHz	Nov. 06, 2023	Nov. 05, 2024	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16+17	1 GHz ~ 18 GHz	Nov. 06, 2023	Nov. 05, 2024	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#6	1GHz ~ 40 GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH01-CB)
Band Rejector	MTJ	6G Band Rejector	BRJ-01	1GHz ~ 7.4GHz	Oct. 03, 2023	Oct. 02, 2024	Radiation (03CH01-CB)
Band Rejector	MTJ	6G Band Rejector	BRJ-02	1GHz ~ 8GHz	Oct. 03, 2023	Oct. 02, 2024	Radiation (03CH01-CB)
Test Software	SPORTON	SENSE	V5.10 -		N.C.R.	N.C.R.	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	May 29, 2023	May 28, 2024	Conducted (TH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	May 27, 2024	May 26, 2025	Conducted (TH01-CB)
Switch	SPTCB	SP-SWI	SWI-01	1~26.5 GHz	Oct. 03, 2023	Oct. 02, 2024	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz – 18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz – 18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz – 18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-30	1 GHz – 18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH01-CB)

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FAX: 886-3-656-9085 Issued Date : Jun. 17, 2024

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Power Sensor	Anritsu	MA2411B	1339408	300MHz~ 40GHz	Sep. 12, 2023	Sep. 11, 2024	Conducted (TH01-CB)
Power Meter	Anritsu	ML2495A	1517009	300MHz~ 40GHz	Sep. 12, 2023	Sep. 11, 2024	Conducted (TH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH01-CB)

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

NCR means Non-Calibration required.

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FAX: 886-3-656-9085 Issued Date : Jun. 17, 2024



## **Conducted Emissions at Powerline**

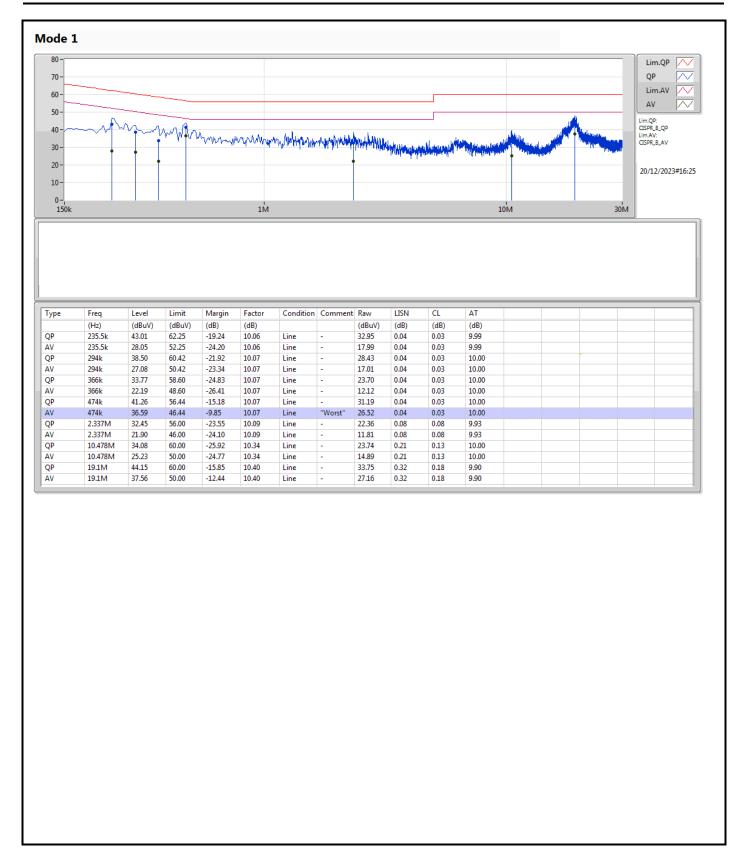
Appendix A

Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	474k	36.59	46.44	-9.85	Line

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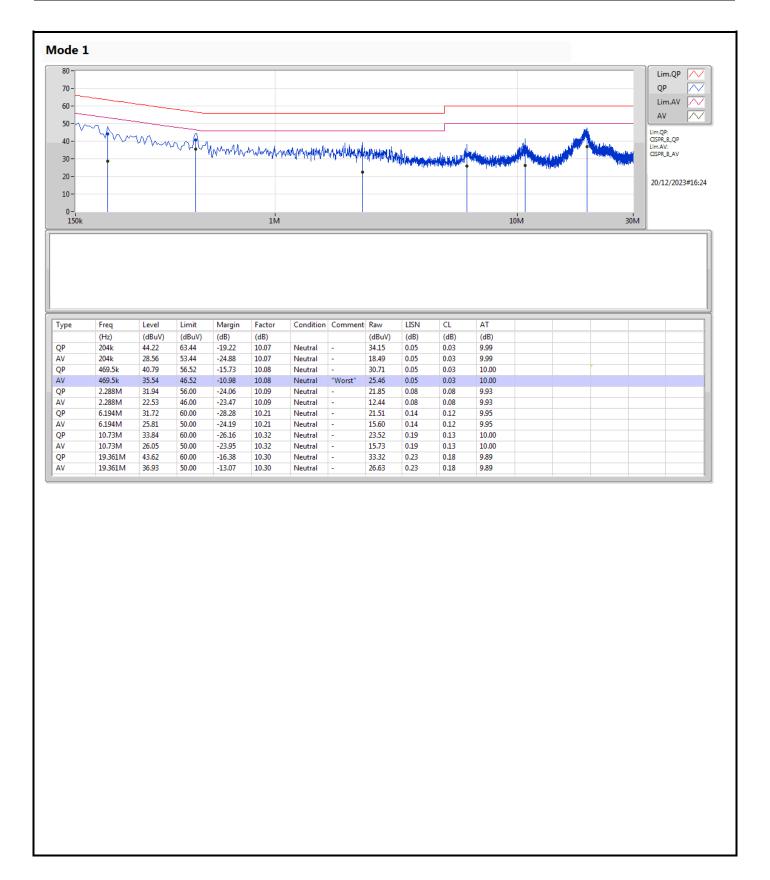
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Appendix B **EBW** 

#### Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
5.925-6.425GHz	-	·	=	ū	-
QPSK5_5MHz_Nss1_2TX	4.95M	4.604M	4M60G7D	4.895M	4.591M
QPSK40_40MHz_Nss1_2TX	37.95M	35.878M	35M9G7D	37.62M	35.732M
6.525-6.875GHz	-	-	-	-	-
QPSK5_5MHz_Nss1_2TX	4.978M	4.61M	4M61G7D	4.854M	4.598M
QPSK40_40MHz_Nss1_2TX	37.95M	35.938M	35M9G7D	37.73M	35.828M

 $\label{eq:max-NdB} \mbox{ Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;} \mbox{ Max-OBW = Maximum 99% occupied bandwidth;} \mbox{ Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;} \mbox{ Min-OBW = Minimum 99% occupied bandwidth} \mbox{ } \mbox{ Min-OBW = Minimum 99% occupied bandwidth} \mbox{ } \mbox{ } \mbox{ Min-OBW = Minimum 99% occupied bandwidth} \mbox{ } \mbox{ }$ 

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## Result

Mode	Result	Limit	Port 1-N dB	Port 1-OBW	Port 2-N dB	Port 2-OBW
		(Hz)	(Hz)	(Hz)	(Hz)	(Hz)
QPSK5_5MHz_Nss1_2TX	-	-	-	-	=	-
5928MHz	Pass	Inf	4.923M	4.604M	4.95M	4.591M
6175MHz	Pass	Inf	4.895M	4.604M	4.895M	4.604M
6422MHz	Pass	Inf	4.909M	4.598M	4.909M	4.604M
6528MHz	Pass	Inf	4.978M	4.598M	4.854M	4.604M
6700MHz	Pass	Inf	4.978M	4.598M	4.868M	4.604M
6872MHz	Pass	Inf	4.868M	4.598M	4.964M	4.61M
QPSK40_40MHz_Nss1_2TX	-	-	-	-	-	-
5945MHz	Pass	Inf	37.95M	35.732M	37.62M	35.732M
6175MHz	Pass	Inf	37.73M	35.878M	37.95M	35.796M
6405MHz	Pass	Inf	37.95M	35.782M	37.95M	35.832M
6545MHz	Pass	Inf	37.84M	35.828M	37.84M	35.938M
6700MHz	Pass	Inf	37.73M	35.876M	37.73M	35.881M
6855MHz	Pass	Inf	37.95M	35.882M	37.84M	35.832M

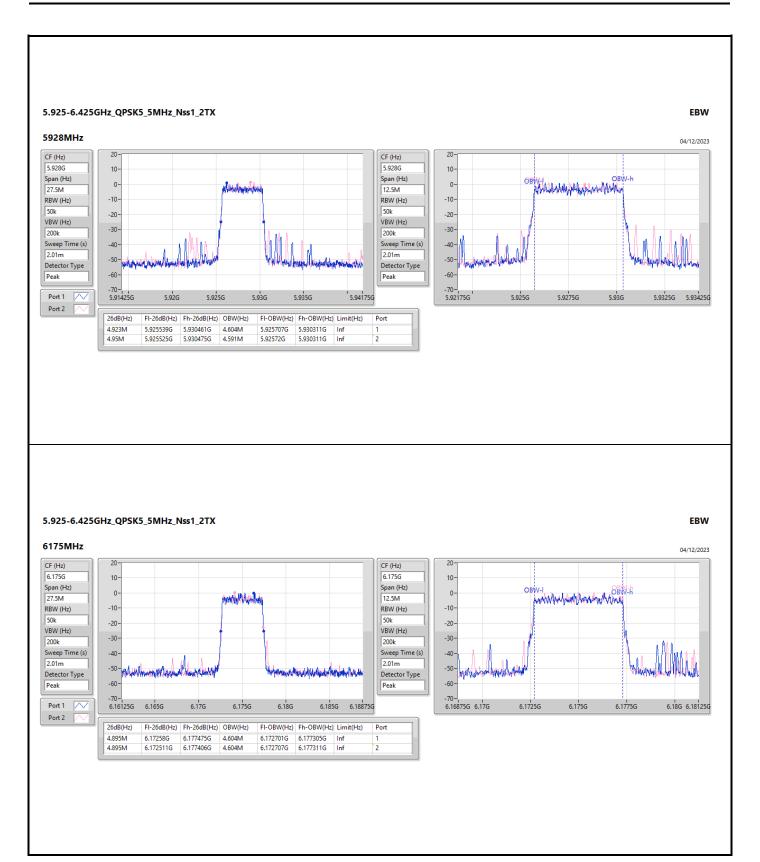
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band Port X-OBW = Port X 99% occupied bandwidth

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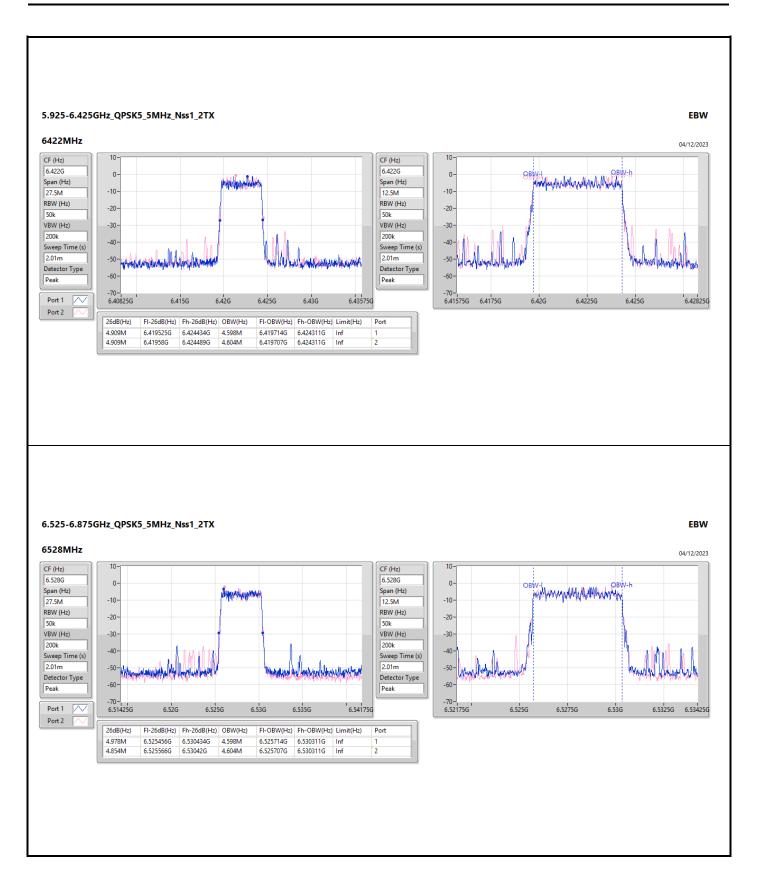
SPORTON LAB.

EBW Appendix B



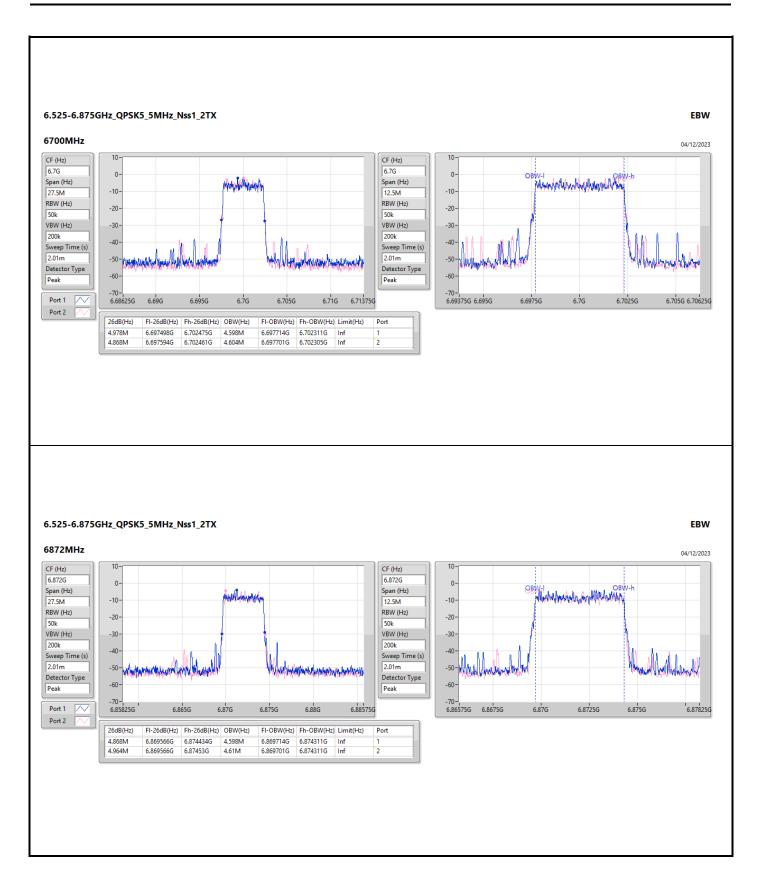
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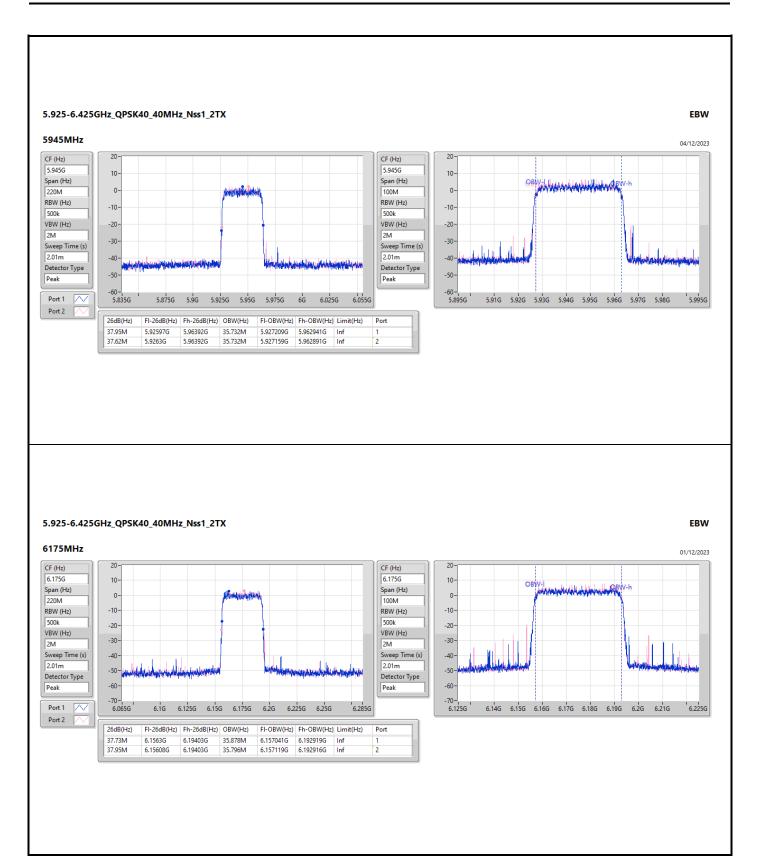
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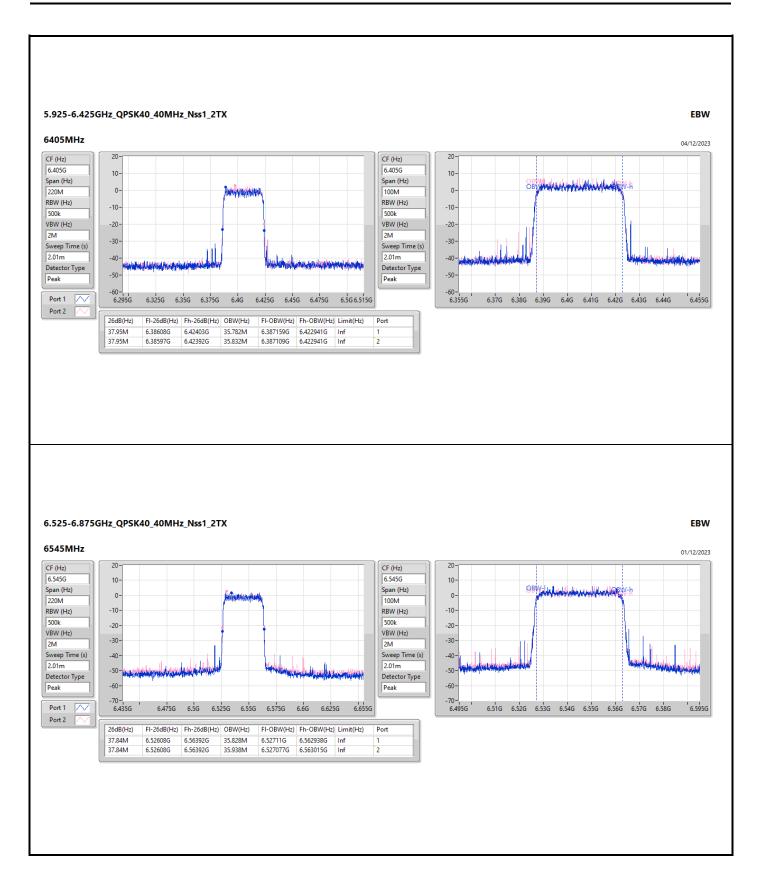
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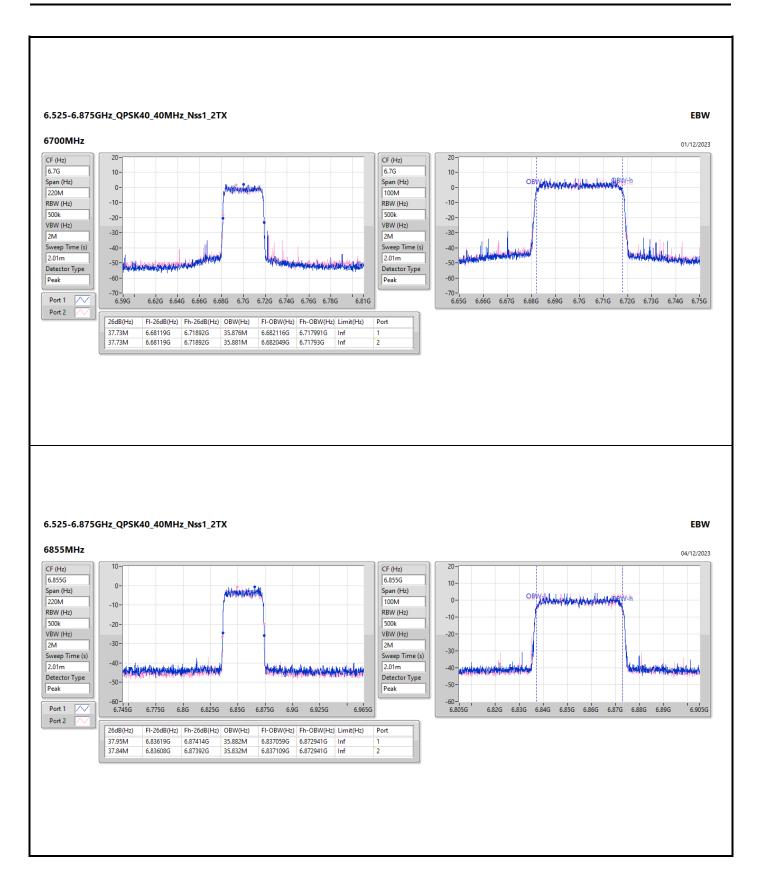
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## Average Power-E.I.R.P.\_For 6FC mode

Appendix C.1

Summary

Mode	EIRP	EIRP
	(dBm)	(W)
5.925-6.425GHz	-	-
QPSK5_5MHz_Nss1_2TX	30.27	1.06414
QPSK40_40MHz_Nss1_2TX	35.89	3.88150
6.525-6.875GHz	-	-
QPSK5_5MHz_Nss1_2TX	30.26	1.06170
QPSK40_40MHz_Nss1_2TX	35.82	3.81944

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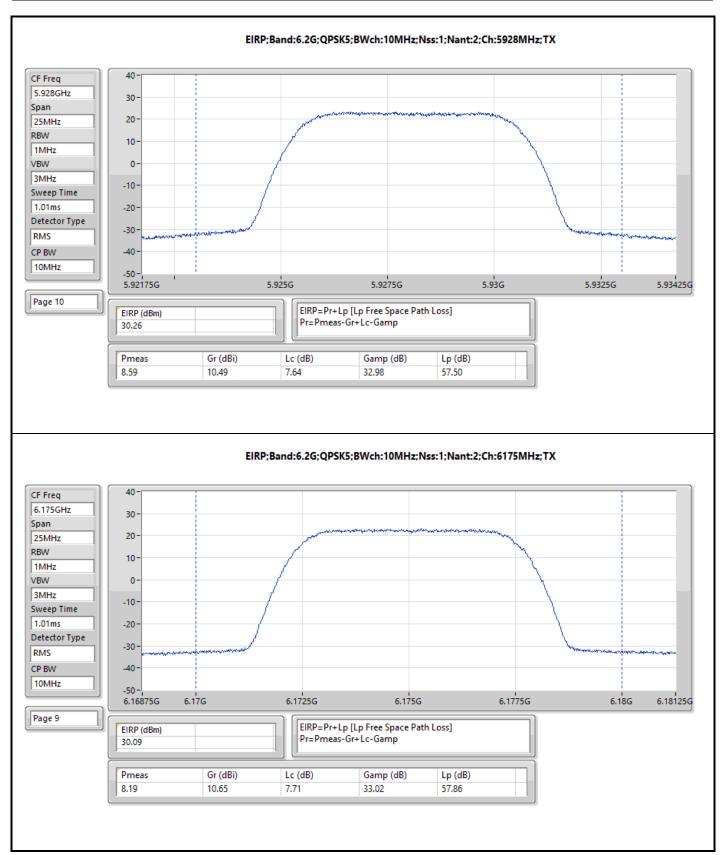
## Result

Mode	Result	Radiated EIRP	EIRP Limit
		(dBm)	(dBm)
QPSK5_5MHz_Nss1_2TX	-	-	-
5928MHz	Pass	30.26	36.00
6175MHz	Pass	30.09	36.00
6422MHz	Pass	30.27	36.00
6528MHz	Pass	30.26	36.00
6700MHz	Pass	29.77	36.00
6872MHz	Pass	29.68	36.00
QPSK40_40MHz_Nss1_2TX	-	-	-
5945MHz	Pass	33.20	36.00
6175MHz	Pass	34.66	36.00
6405MHz	Pass	35.89	36.00
6545MHz	Pass	35.19	36.00
6700MHz	Pass	35.82	36.00
6855MHz	Pass	35.74	36.00

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

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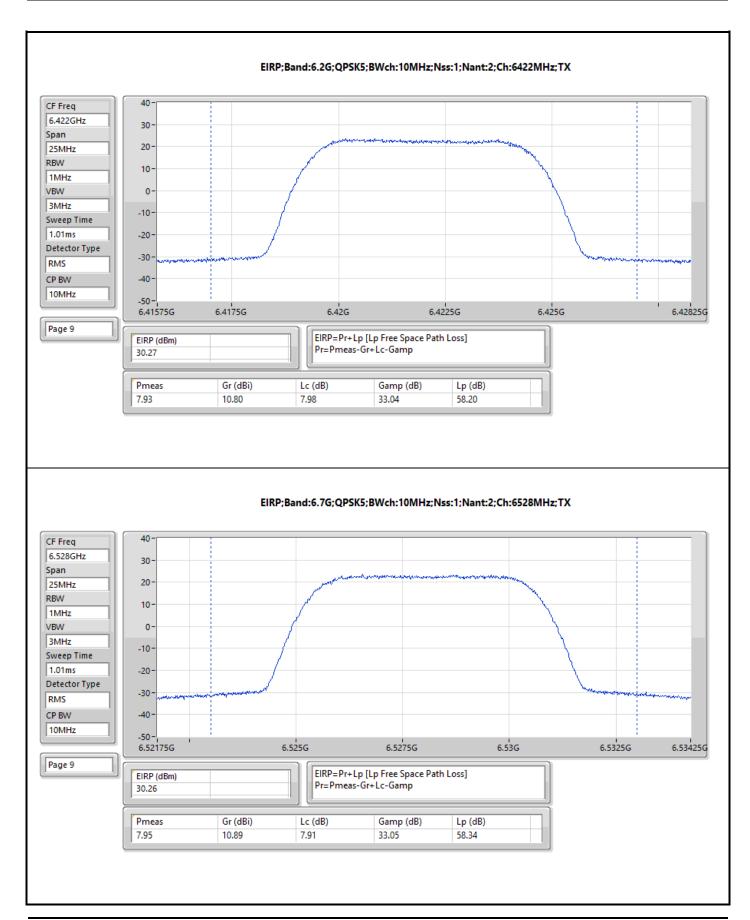




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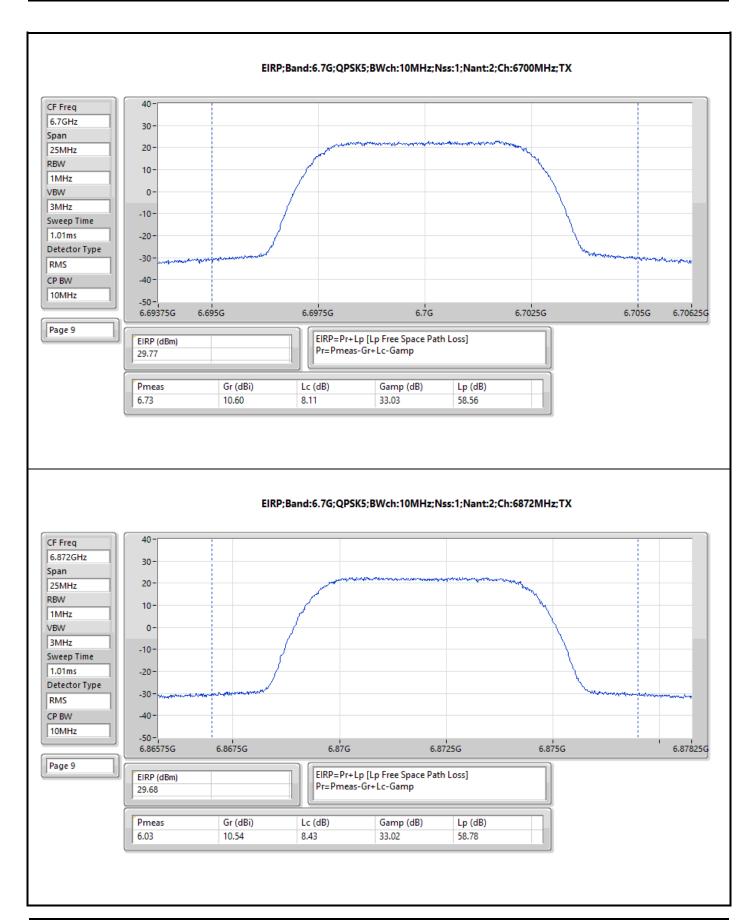




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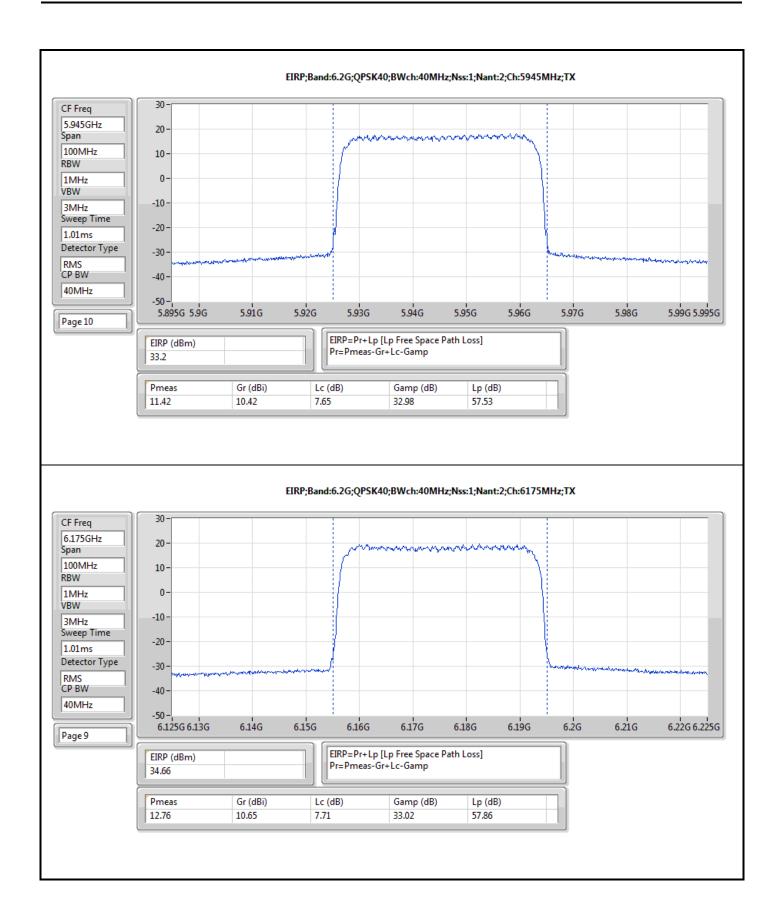
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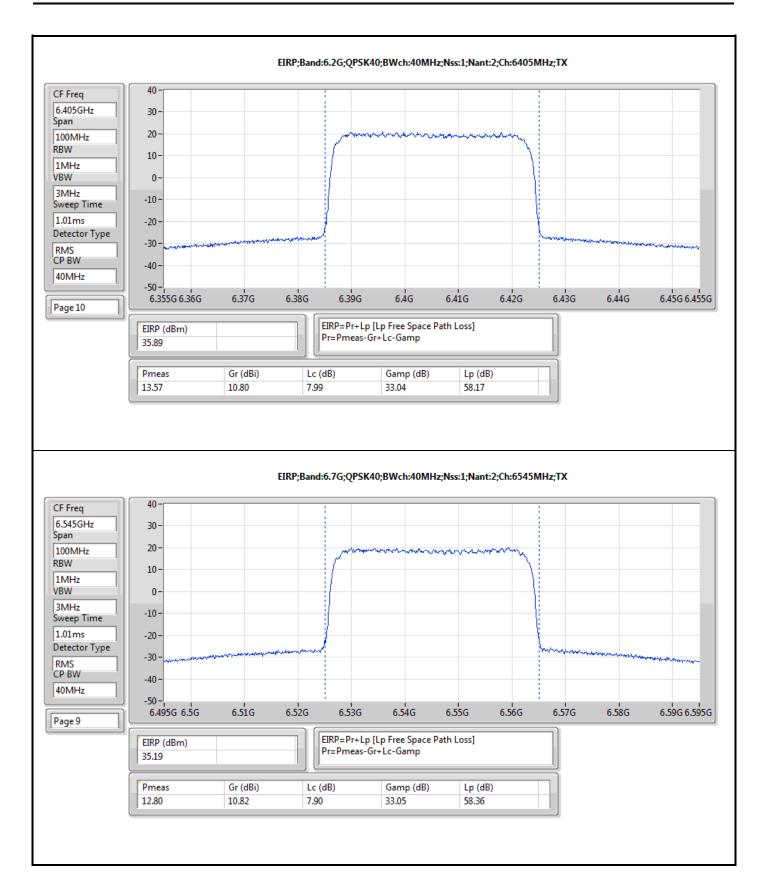
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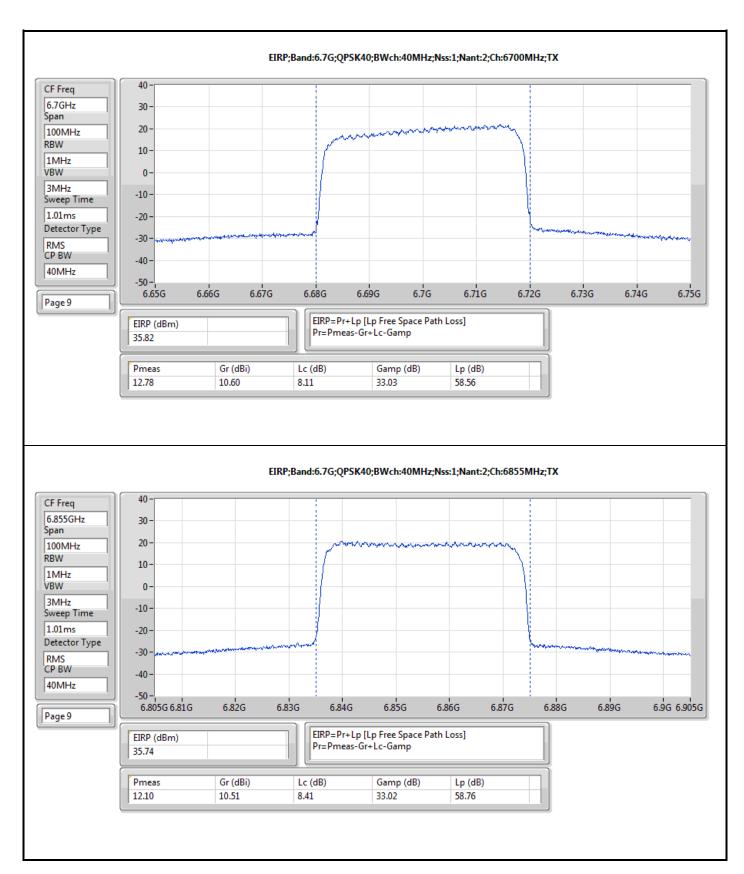
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# Average Power-E.I.R.P. at any elevation angle above 30 degrees \_For 6FC mode

Appendix C.2

Summary

Mode	Total Power	Total Power	EIRP[Phi 30°]	EIRP[Phi 30°]
	(dBm)	(W)	(dBm)	(W)
5.925-6.425GHz	-	=	-	-
QPSK5_5MHz_Nss1_2TX	13.50	0.02239	16.26	0.042267
QPSK40_40MHz_Nss1_2TX	17.84	0.06081	20.60	0.114815
6.525-6.875GHz	-	-	-	-
QPSK5_5MHz_Nss1_2TX	10.21	0.01050	14.63	0.029040
QPSK40_40MHz_Nss1_2TX	16.54	0.04508	20.96	0.124738

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# Average Power-E.I.R.P. at any elevation angle above 30 degrees \_For 6FC mode

Appendix C.2

#### Result

Mode	Result	DG[Phi 30°]	Port 1	Port 2	Total Power	EIRP [Phi 30°]	EIRP Limit[Phi 30°]
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
QPSK5_5MHz_Nss1_2TX	=	-	-	-	=	-	=
5928MHz	Pass	2.76	10.31	10.66	13.50	16.26	21.00
6175MHz	Pass	2.76	9.32	9.72	12.53	15.29	21.00
6422MHz	Pass	2.76	8.19	8.38	11.30	14.06	21.00
6528MHz	Pass	4.42	7.04	7.36	10.21	14.63	21.00
6700MHz	Pass	4.42	7.22	7.00	10.12	14.54	21.00
6872MHz	Pass	4.42	5.40	5.03	8.23	12.65	21.00
QPSK40_40MHz_Nss1_2TX	-	-	-	-	-	-	-
5945MHz	Pass	2.76	13.30	13.75	16.54	19.30	21.00
6175MHz	Pass	2.76	14.51	15.13	17.84	20.60	21.00
6405MHz	Pass	2.76	13.59	14.22	16.93	19.69	21.00
6545MHz	Pass	4.42	13.18	13.31	16.26	20.68	21.00
6700MHz	Pass	4.42	13.60	13.45	16.54	20.96	21.00
6855MHz	Pass	4.42	11.36	11.14	14.26	18.68	21.00

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

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## Average Power\_For 6FX mode

Appendix C.3

Summary

Mode	Total Power	Total Power	EIRP	EIRP
	(dBm)	(W)	(dBm)	(W)
5.925-6.425GHz	÷	-	ų.	-
QPSK5_5MHz_Nss1_2TX	3.05	0.00202	24.94	0.31189
QPSK40_40MHz_Nss1_2TX	8.02	0.00634	29.91	0.97949
6.525-6.875GHz	÷	-	ų.	-
QPSK5_5MHz_Nss1_2TX	2.91	0.00195	24.81	0.30269
QPSK40_40MHz_Nss1_2TX	8.07	0.00641	29.97	0.99312

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Appendix C.3



## Result

Mode	Result	DG	Port 1	Port 2	Total Power	Power Limit	EIRP	EIRP Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
QPSK5_5MHz_Nss1_2TX	=	T.	-	=	ū	-	=	-
5928MHz	Pass	21.893	-0.46	0.45	3.03	Inf	24.92	30.00
6175MHz	Pass	21.893	-0.37	0.42	3.05	Inf	24.94	30.00
6422MHz	Pass	21.893	-0.61	0.10	2.77	Inf	24.66	30.00
6528MHz	Pass	21.898	0.51	-0.97	2.84	Inf	24.74	30.00
6700MHz	Pass	21.898	0.63	-0.99	2.91	Inf	24.81	30.00
6872MHz	Pass	21.898	-0.33	-0.35	2.67	Inf	24.57	30.00
QPSK40_40MHz_Nss1_2TX	-	-	-	-	-	-	-	=
5945MHz	Pass	21.893	4.74	5.26	8.02	Inf	29.91	30.00
6175MHz	Pass	21.893	4.28	5.13	7.74	Inf	29.63	30.00
6405MHz	Pass	21.893	4.39	5.24	7.85	Inf	29.74	30.00
6545MHz	Pass	21.898	5.79	4.19	8.07	Inf	29.97	30.00
6700MHz	Pass	21.898	4.87	5.12	8.01	Inf	29.91	30.00
6855MHz	Pass	21.898	4.66	4.58	7.63	Inf	29.53	30.00

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

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Appendix D.1



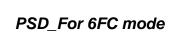
Summary

Mode	Radiated EIRP PD (dBm/RBW)
5.925-6.425GHz	-
QPSK5_5MHz_Nss1_2TX	22.74
QPSK40_40MHz_Nss1_2TX	20.29
6.525-6.875GHz	-
QPSK5_5MHz_Nss1_2TX	22.77
QPSK40_40MHz_Nss1_2TX	21.58

 $RBW = 500kHz \ for \ 5.725\text{-}5.85GHz \ band \ / \ 1MHz \ for \ other \ band;$ 

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Appendix D.1



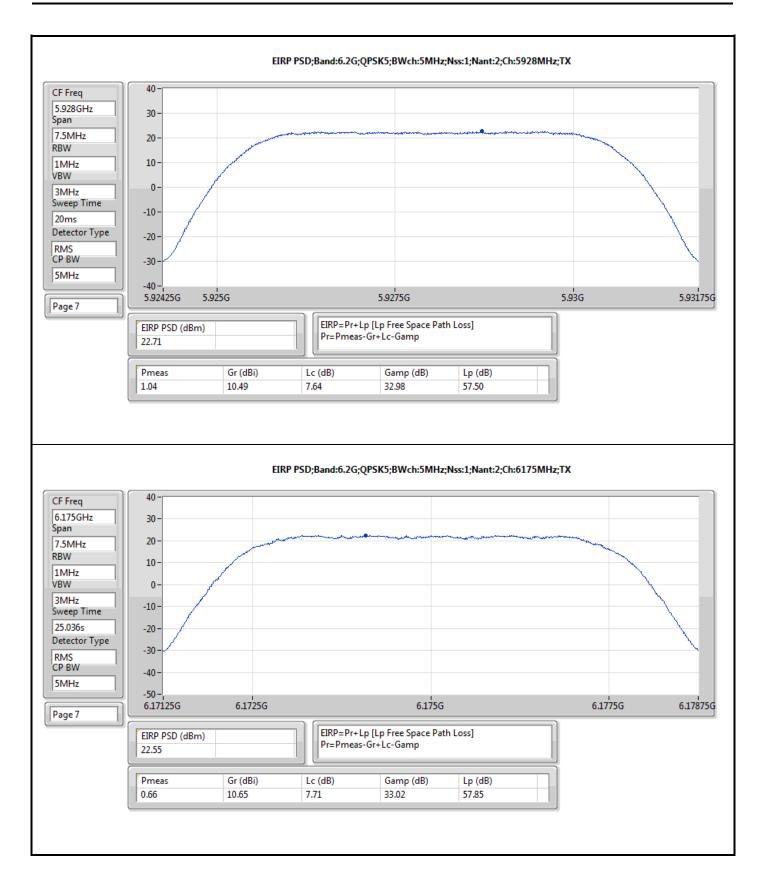
#### Result

Mode	Result	Radiated EIRP PD	EIRP PD Limit
		(dBm/RBW)	(dBm/RBW)
QPSK5_5MHz_Nss1_2TX	-	-	=
5928MHz	Pass	22.71	23.00
6175MHz	Pass	22.55	23.00
6422MHz	Pass	22.74	23.00
6528MHz	Pass	22.73	23.00
6700MHz	Pass	22.76	23.00
6872MHz	Pass	22.77	23.00
QPSK40_40MHz_Nss1_2TX	-	-	-
5945MHz	Pass	17.55	23.00
6175MHz	Pass	19.21	23.00
6405MHz	Pass	20.29	23.00
6545MHz	Pass	20.53	23.00
6700MHz	Pass	21.58	23.00
6855MHz	Pass	20.08	23.00

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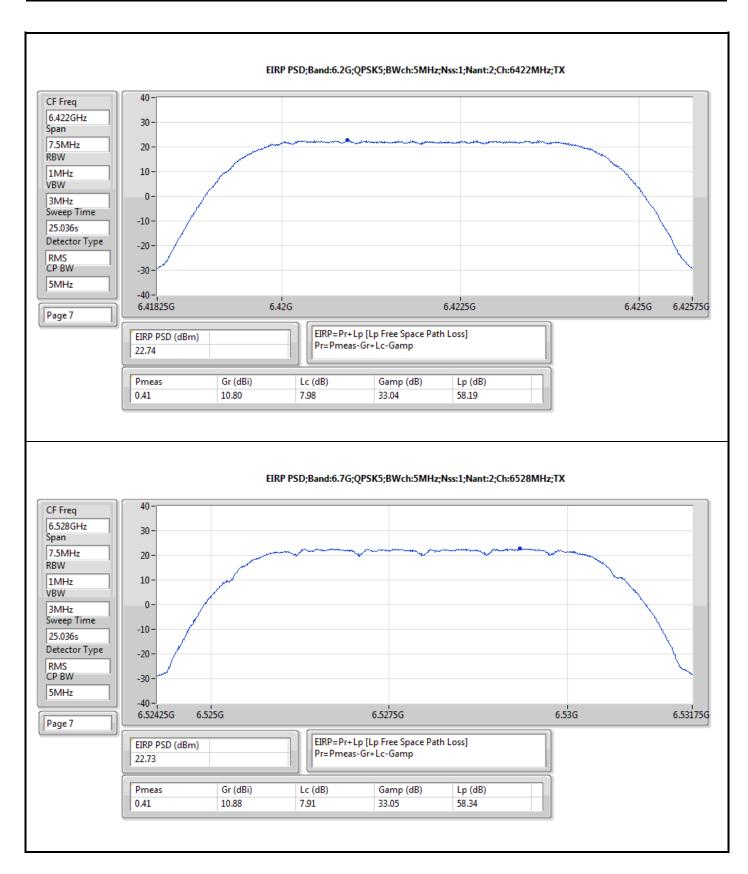
DG = Directional Gain; RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band; PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;



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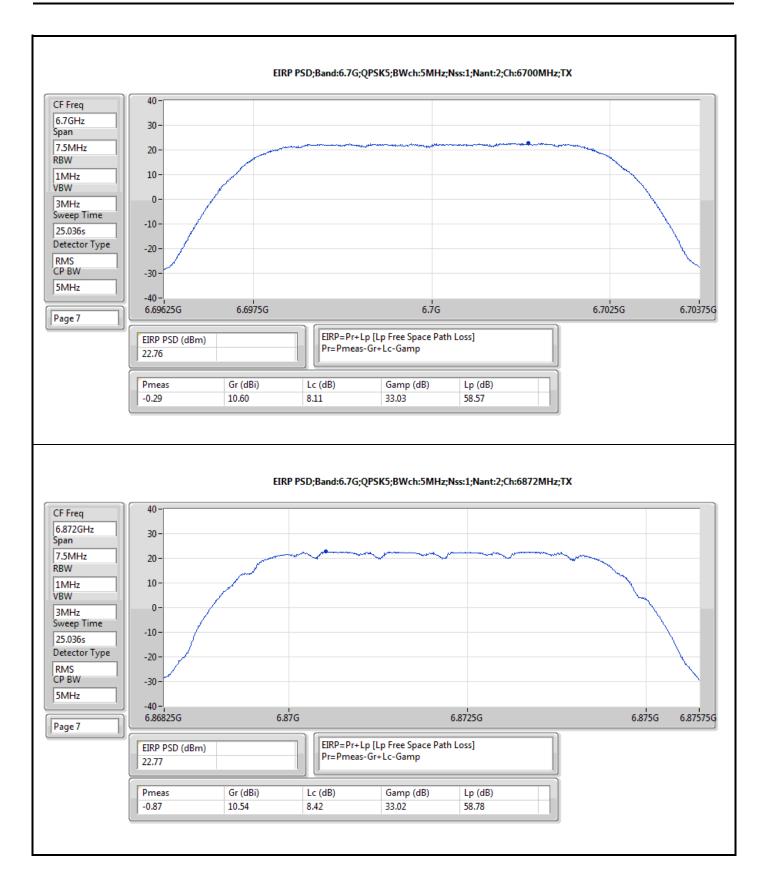
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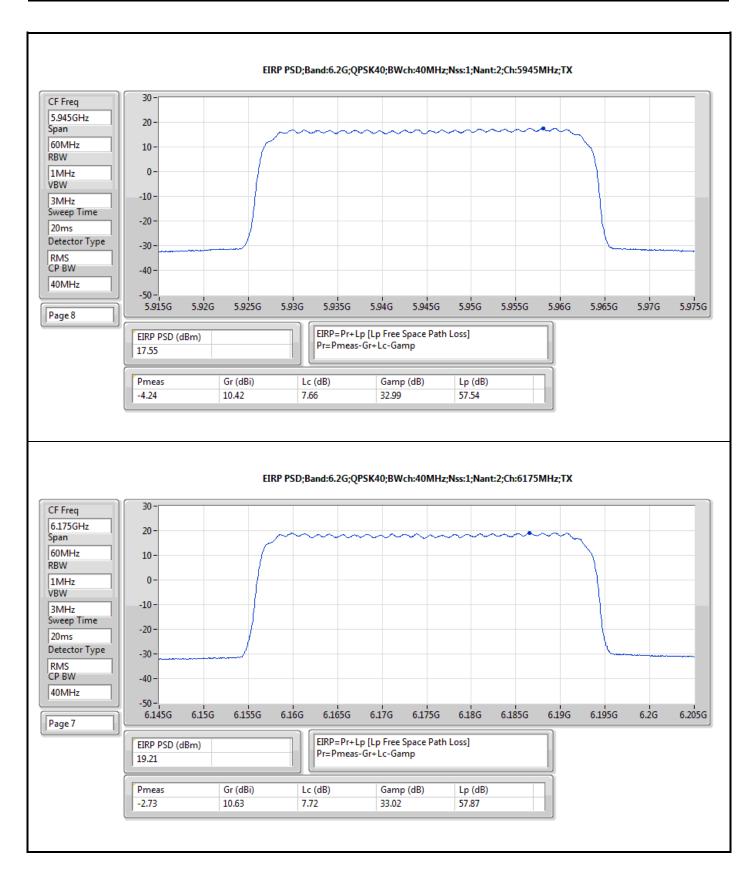
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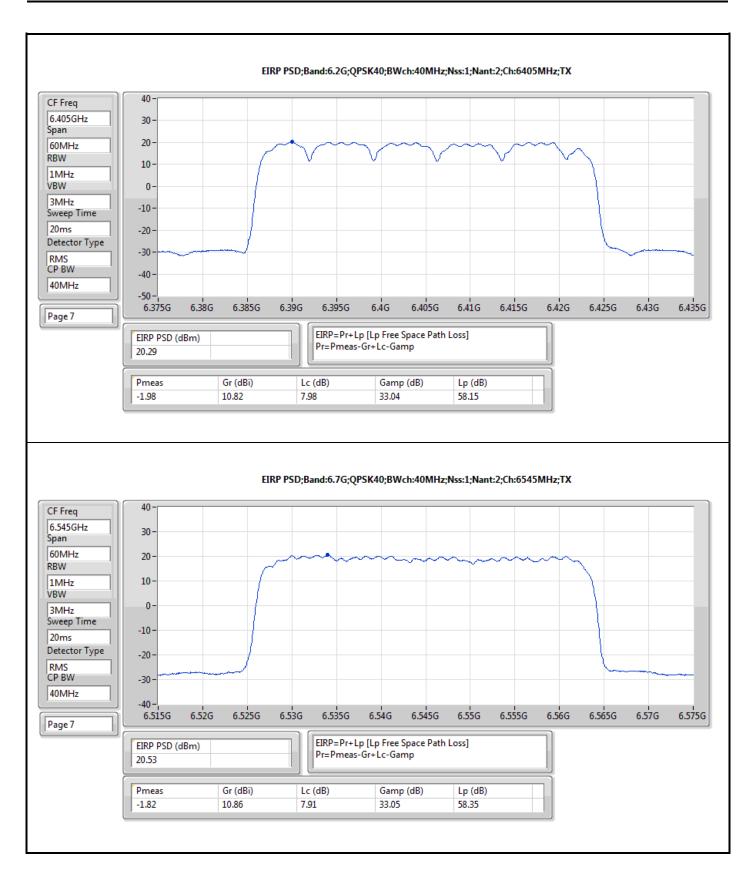




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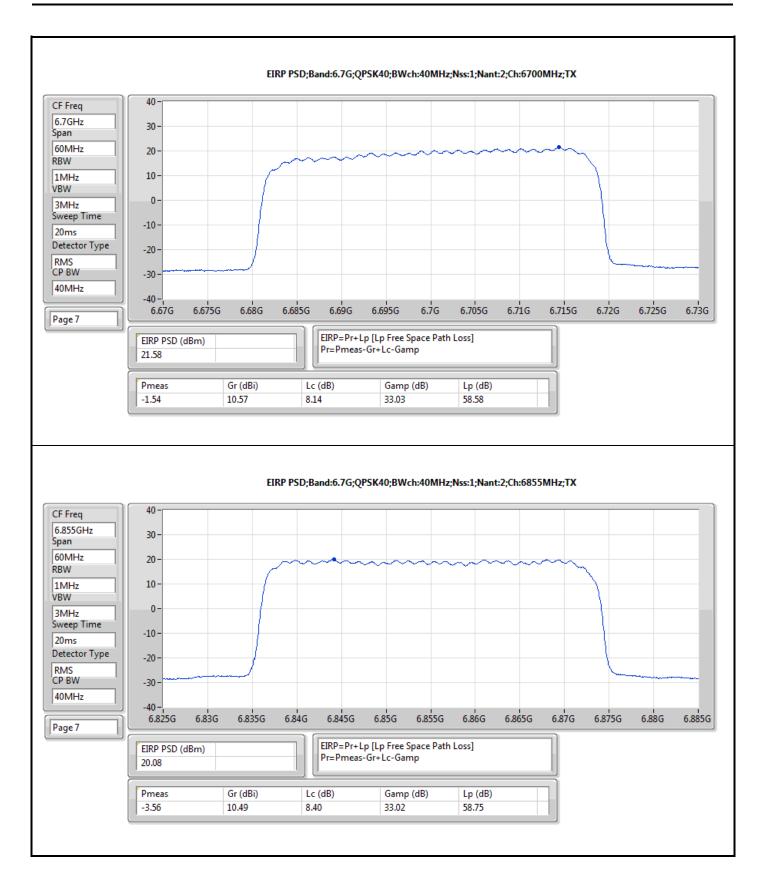
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## PSD\_For 6FX mode

## Appendix D.2

Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.925-6.425GHz	-	-
QPSK5_5MHz_Nss1_2TX	-4.93	16.96
QPSK40_40MHz_Nss1_2TX	-8.27	13.62
6.525-6.875GHz	-	-
QPSK5_5MHz_Nss1_2TX	-4.98	16.92
QPSK40_40MHz_Nss1_2TX	-8.06	13.84

 $RBW = 500kHz \ for \ 5.725\text{-}5.85GHz \ band \ / \ 1MHz \ for \ other \ band;$ 

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## PSD\_For 6FX mode

Appendix D.2

#### Result

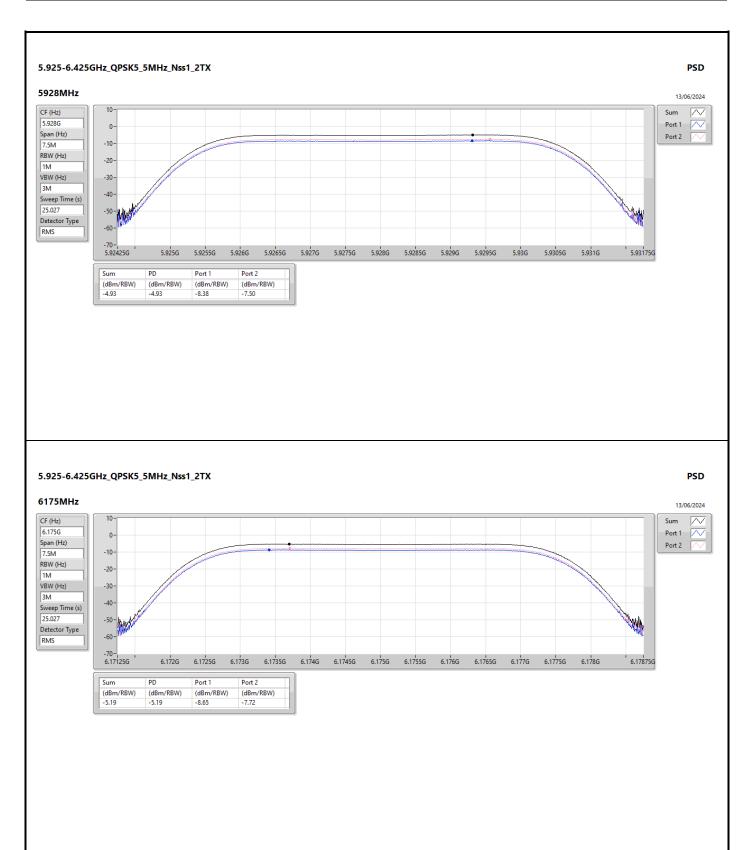
Mode	Result	DG	Port 1	Port 2	PD	PD Limit	EIRP PD	EIRP PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
QPSK5_5MHz_Nss1_2TX	-	-	-	-	-	-	-	-
5928MHz	Pass	21.893	-8.38	-7.50	-4.93	Inf	16.96	17.00
6175MHz	Pass	21.893	-8.65	-7.72	-5.19	Inf	16.70	17.00
6422MHz	Pass	21.893	-8.60	-7.93	-5.27	Inf	16.62	17.00
6528MHz	Pass	21.898	-7.49	-8.95	-5.20	Inf	16.70	17.00
6700MHz	Pass	21.898	-7.19	-8.82	-4.98	Inf	16.92	17.00
6872MHz	Pass	21.898	-8.20	-8.35	-5.37	Inf	16.53	17.00
QPSK40_40MHz_Nss1_2TX	-	-	-	-	-	-	-	-
5945MHz	Pass	21.893	-11.23	-10.80	-8.27	Inf	13.62	17.00
6175MHz	Pass	21.893	-11.84	-10.96	-8.43	Inf	13.46	17.00
6405MHz	Pass	21.893	-11.90	-11.12	-8.51	Inf	13.38	17.00
6545MHz	Pass	21.898	-10.34	-11.99	-8.08	Inf	13.82	17.00
6700MHz	Pass	21.898	-11.04	-10.90	-8.06	Inf	13.84	17.00
6855MHz	Pass	21.898	-11.42	-11.54	-8.59	Inf	13.31	17.00

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

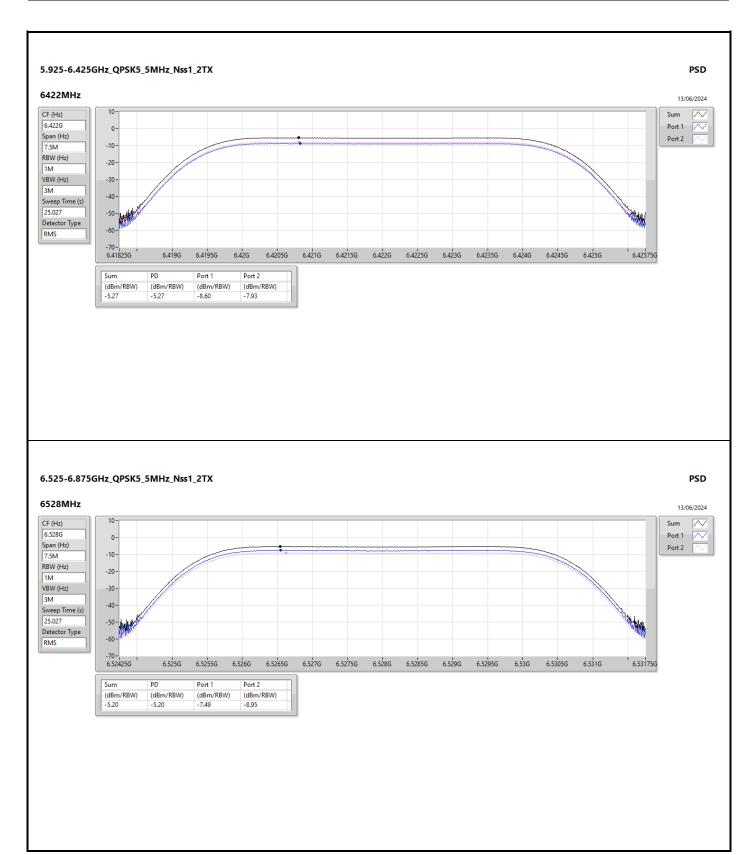




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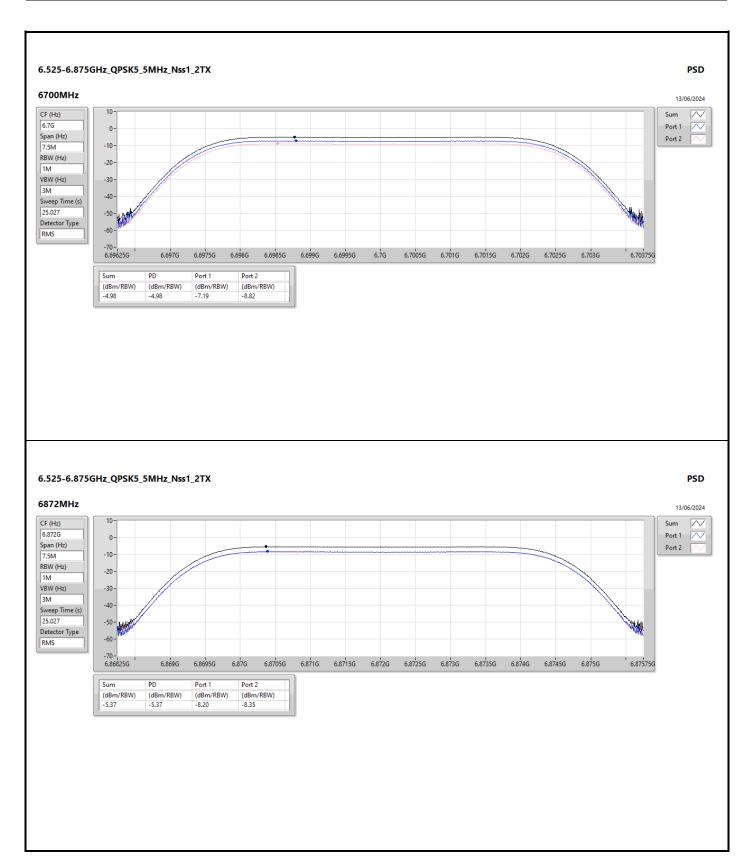




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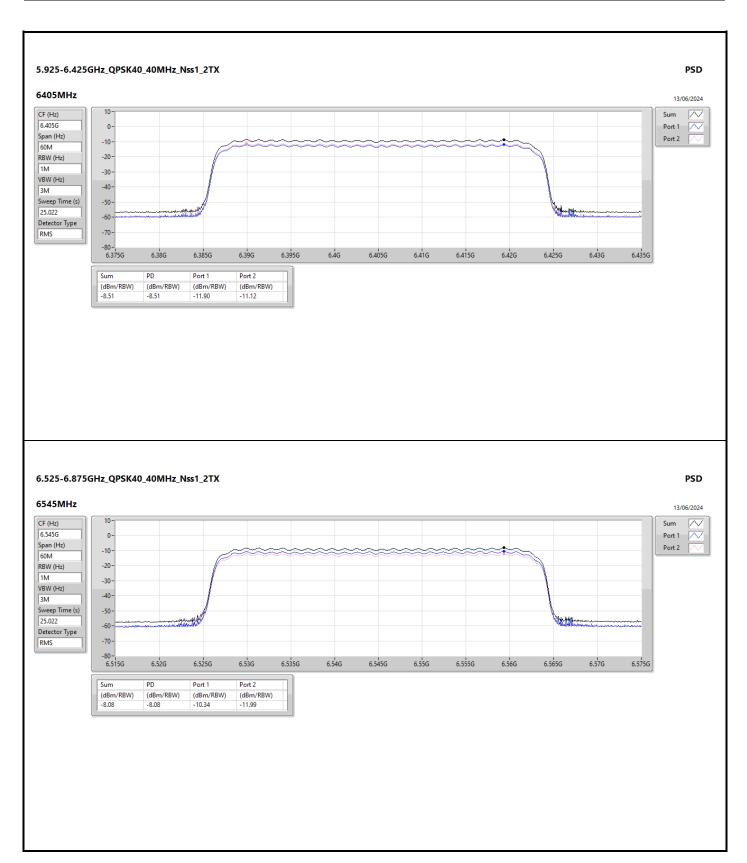




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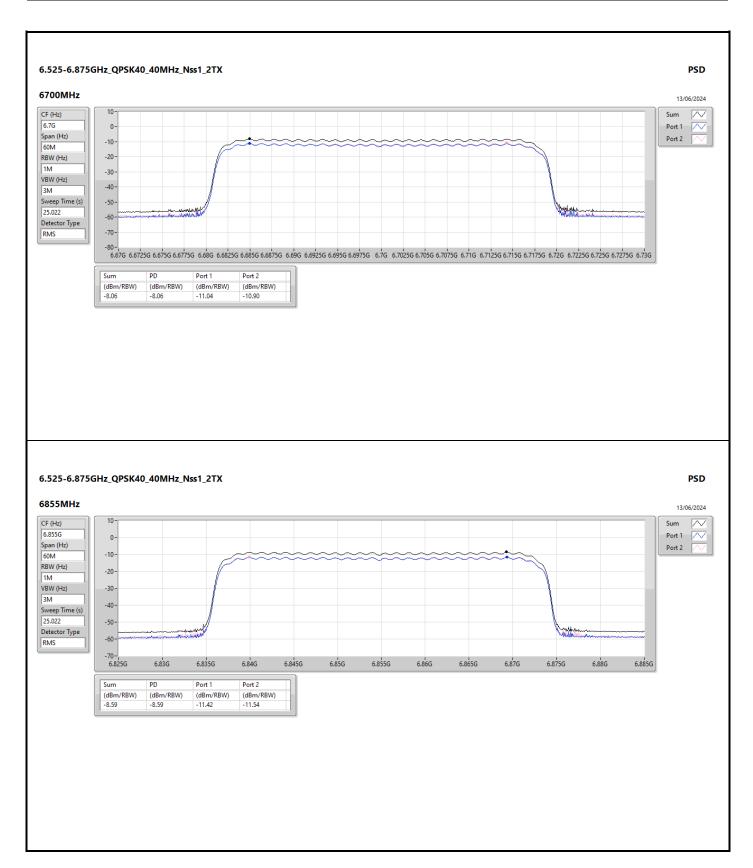




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## Radiated Emissions below 1GHz

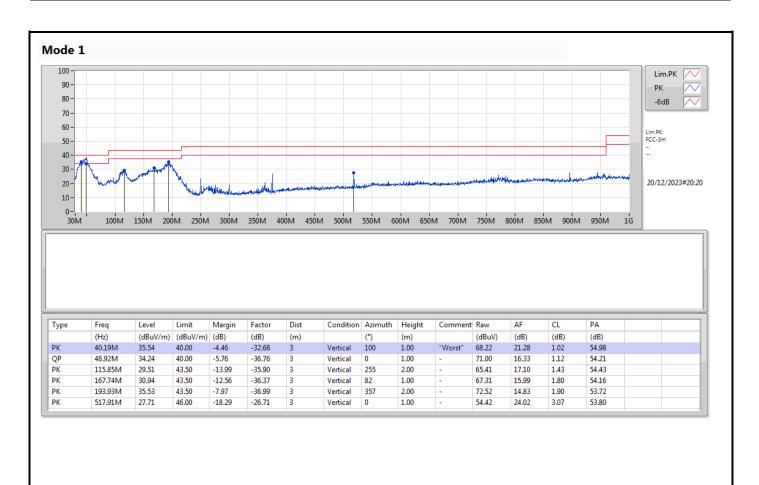
Appendix E.1

Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	PK	40.19M	35.54	40.00	-4.46	Vertical

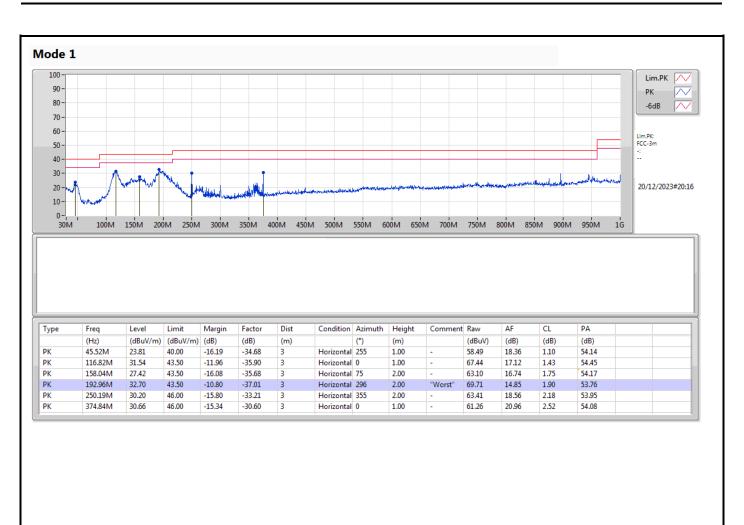
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## RSE TX above 1GHz

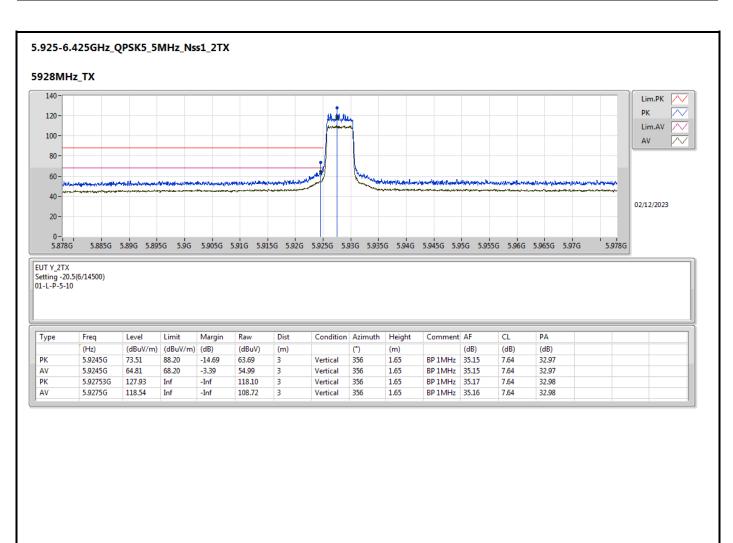
Appendix E.2

Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)		(°)	(m)	
5.925-6.425GHz	-	-	-	-	-	-	-	-	-	-	-
QPSK40_40MHz_Nss1_2TX	Pass	AV	5.925G	68.12	68.20	-0.08	3	Horizontal	356	1.66	-

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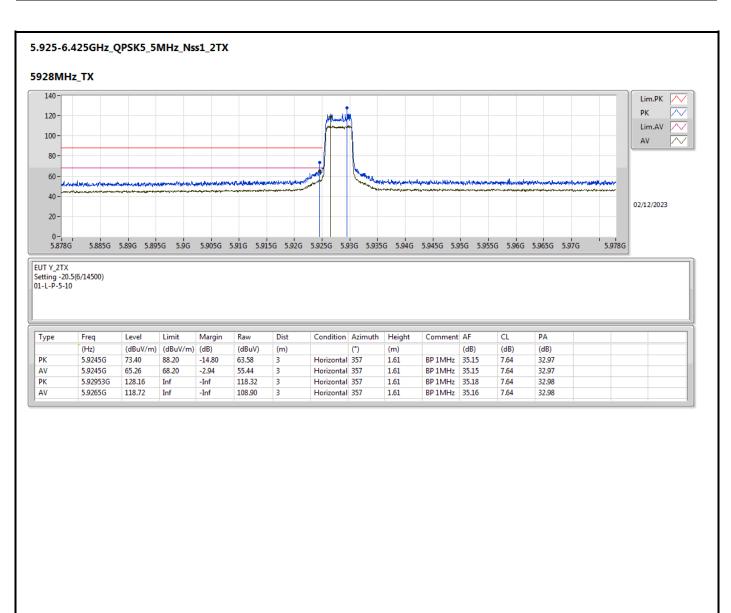




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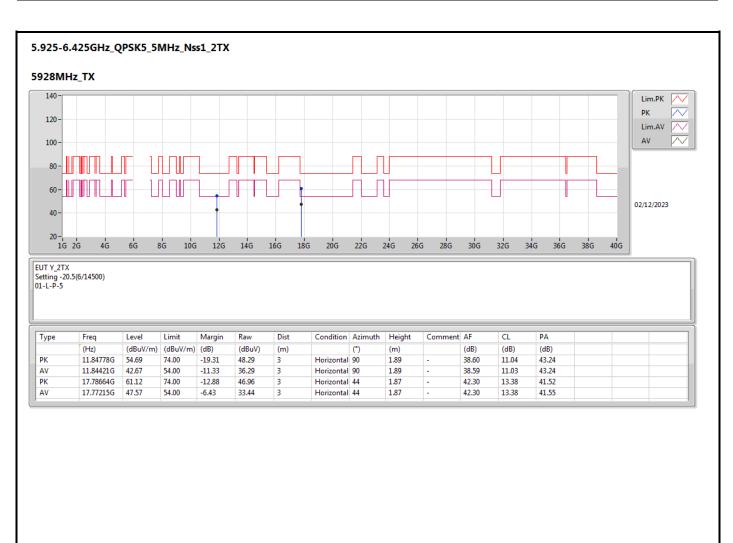
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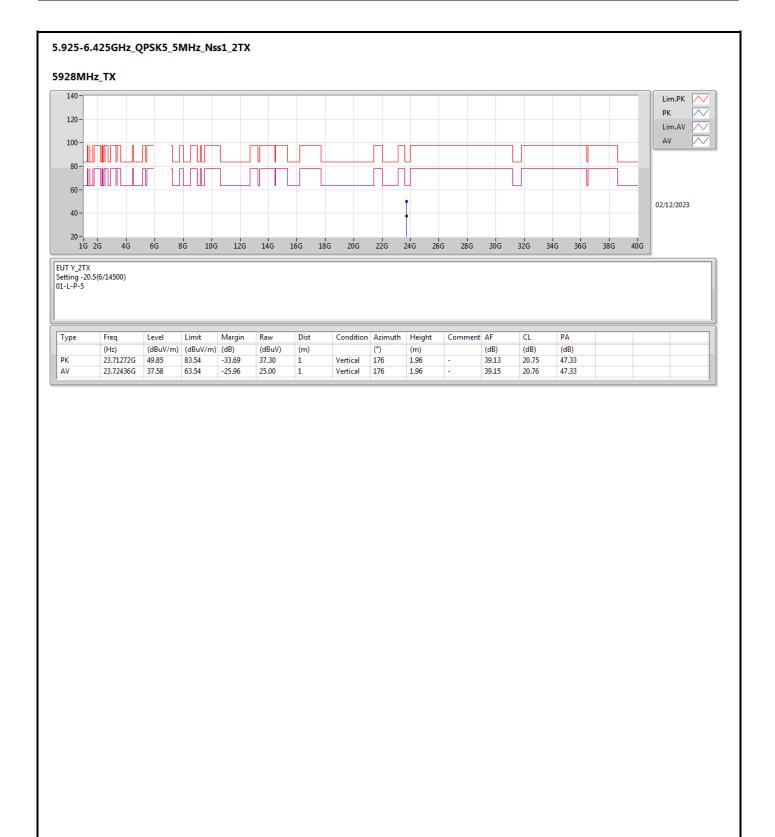




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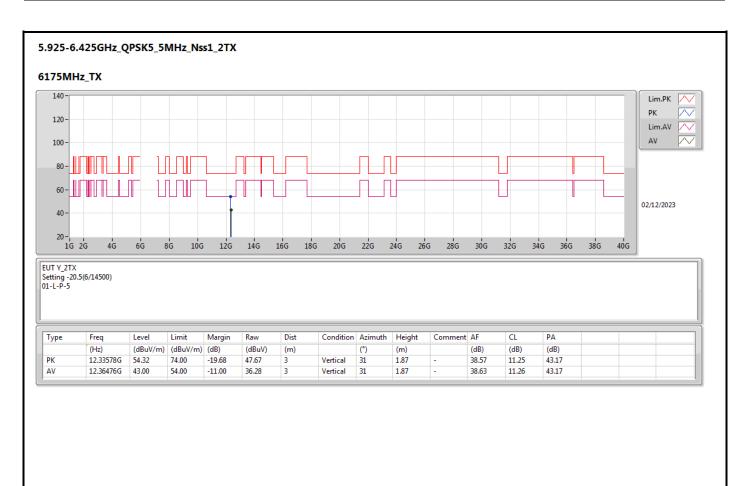
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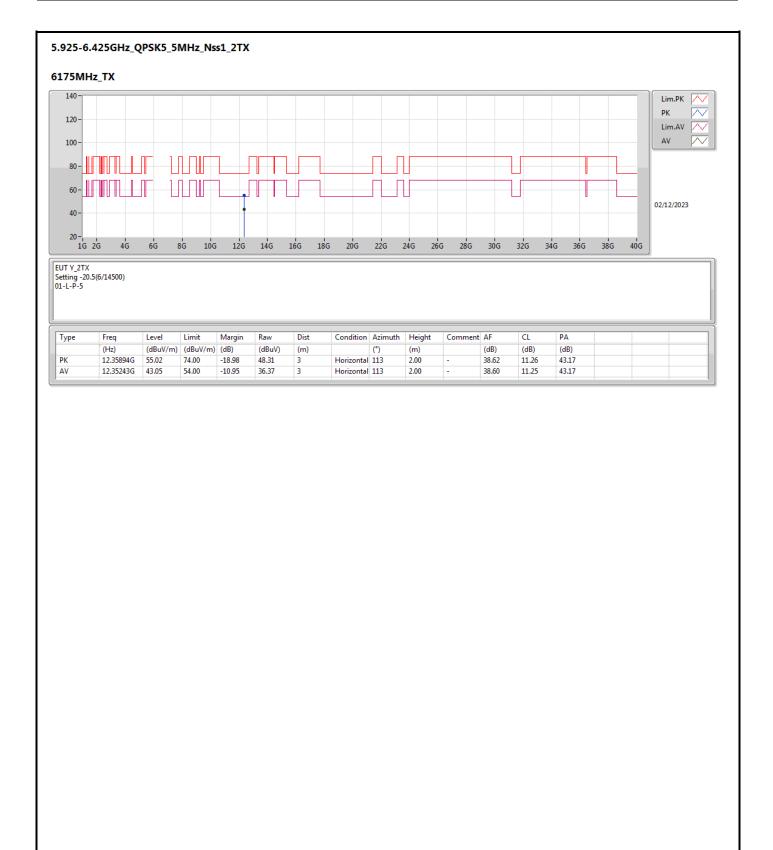




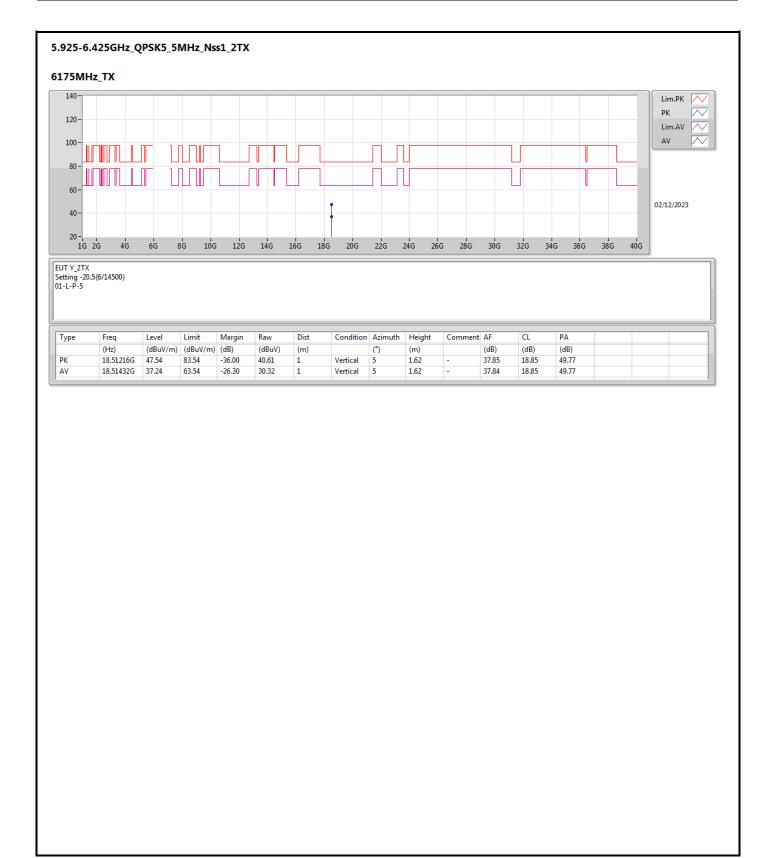
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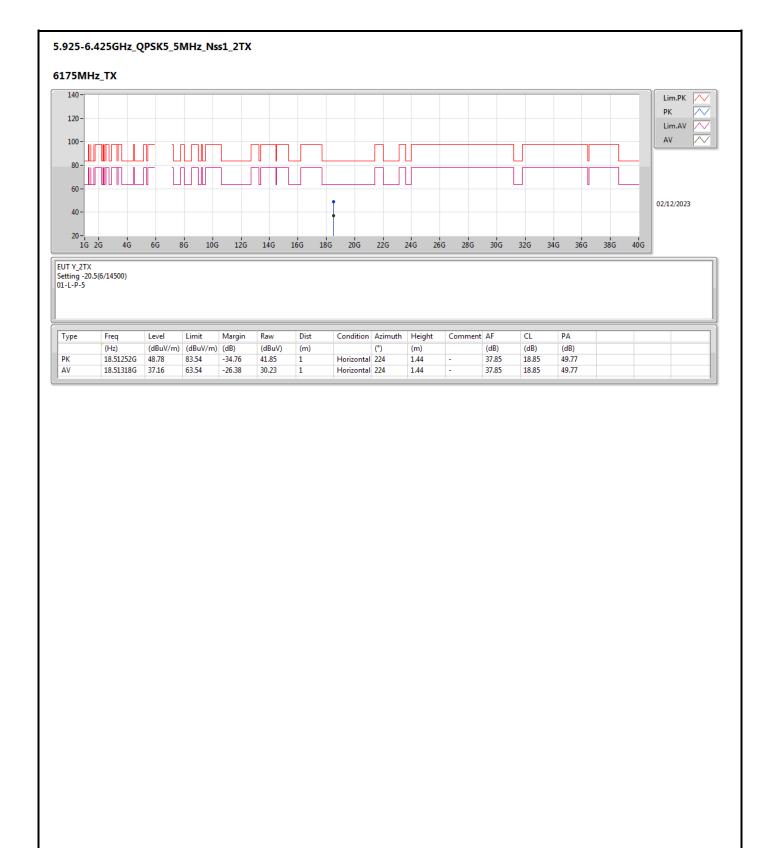






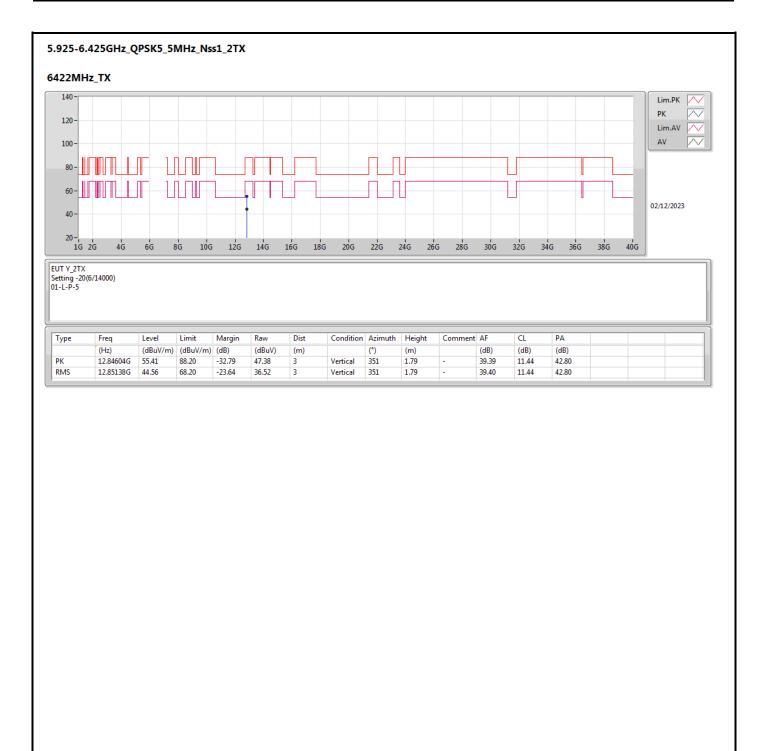






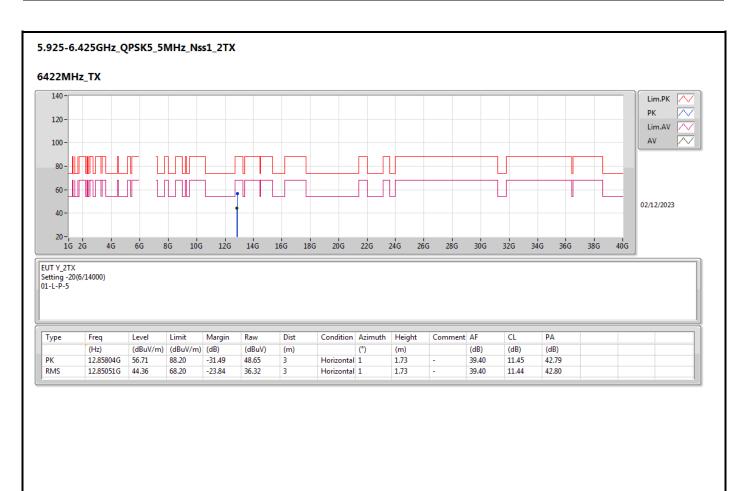
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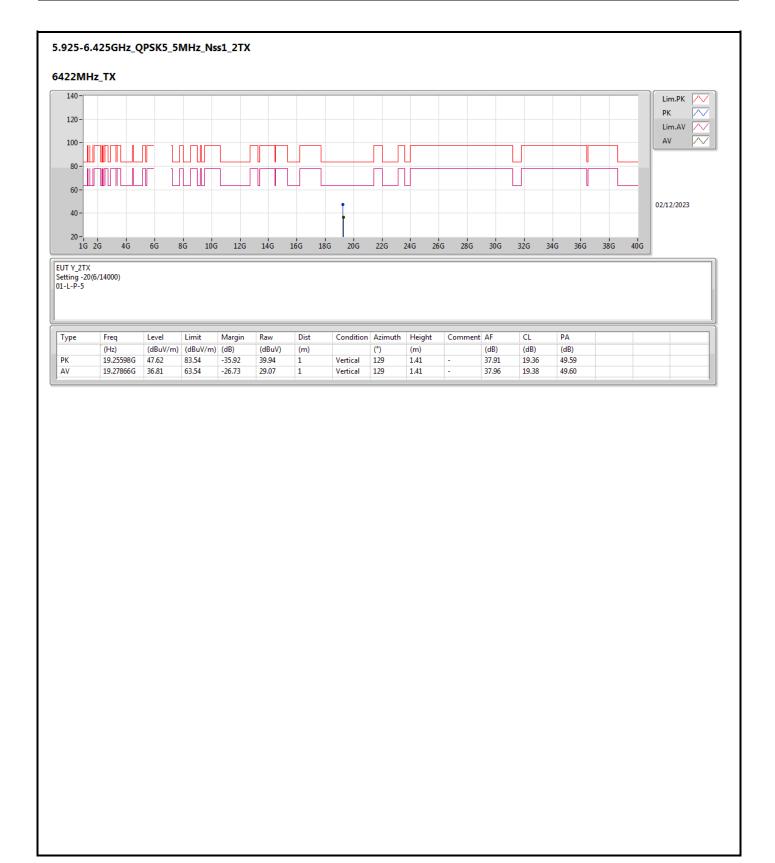
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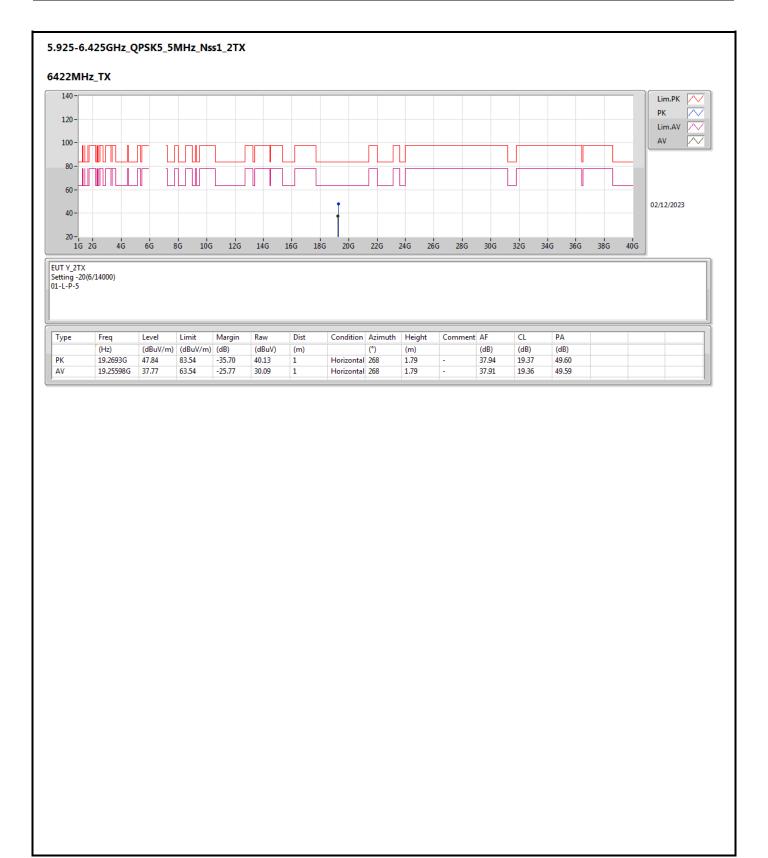
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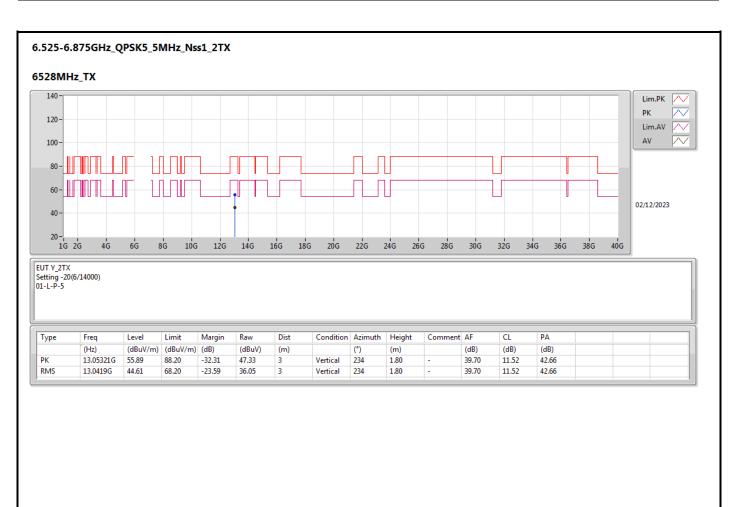
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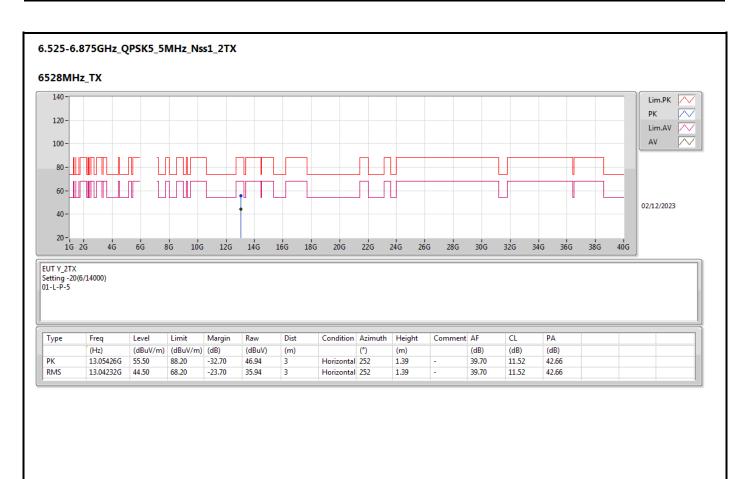
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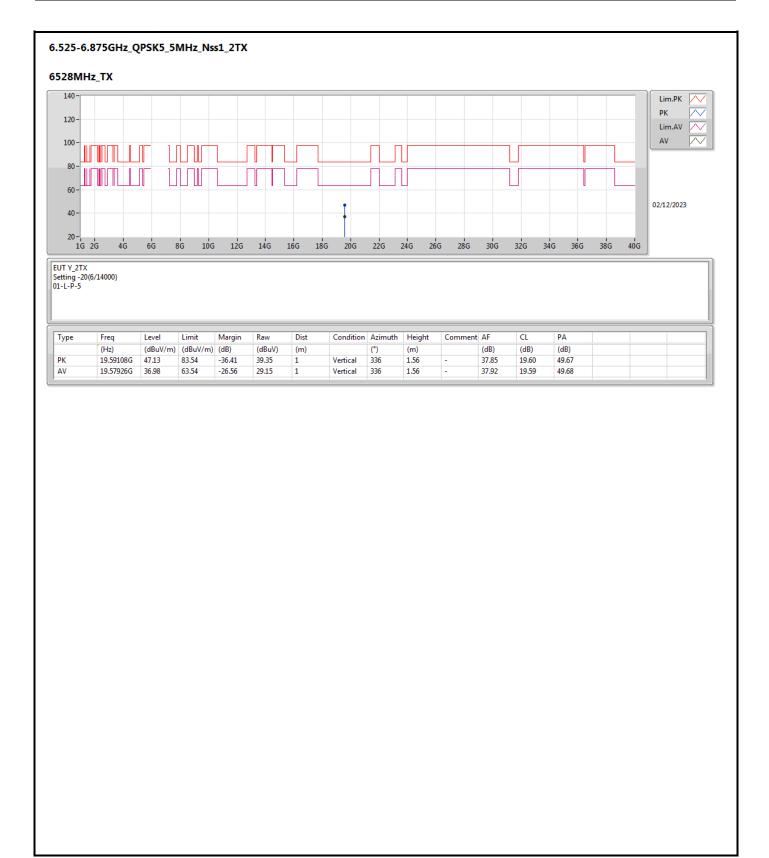




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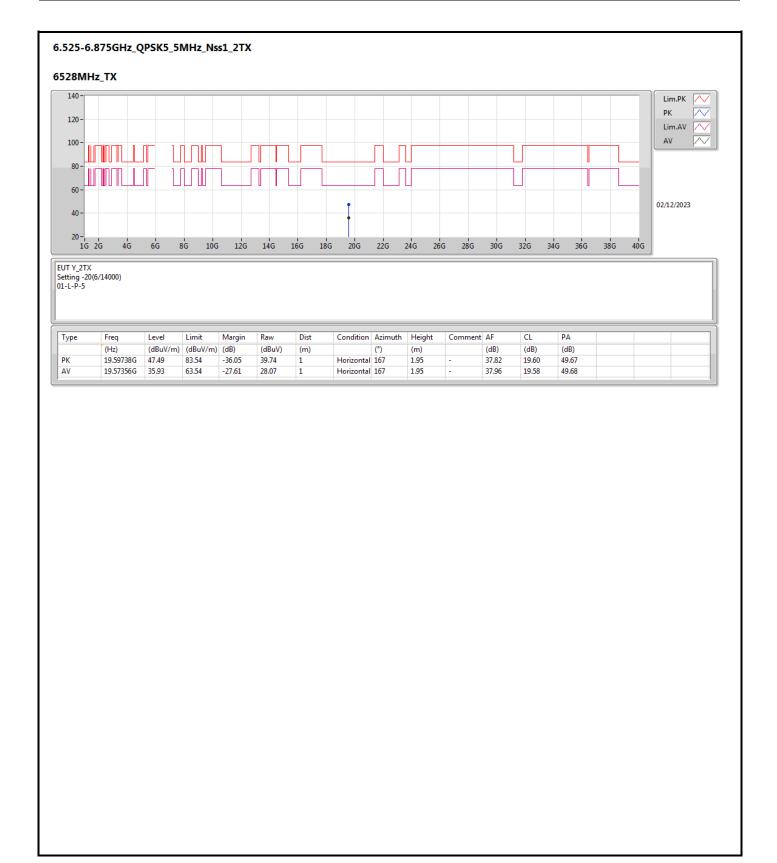
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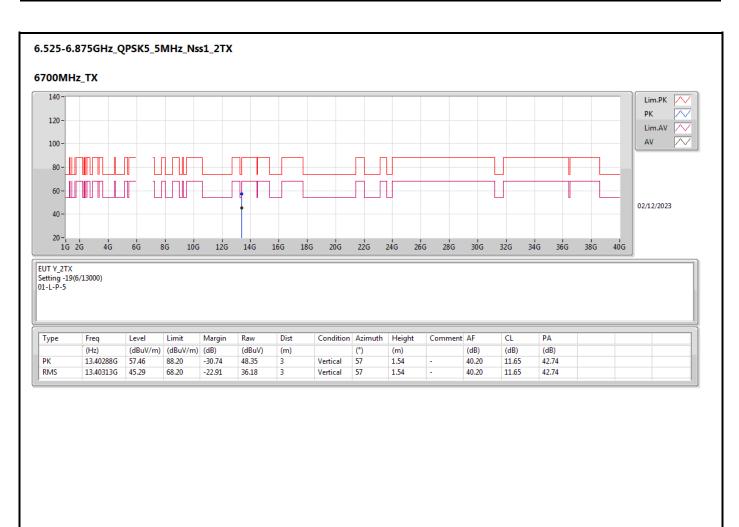
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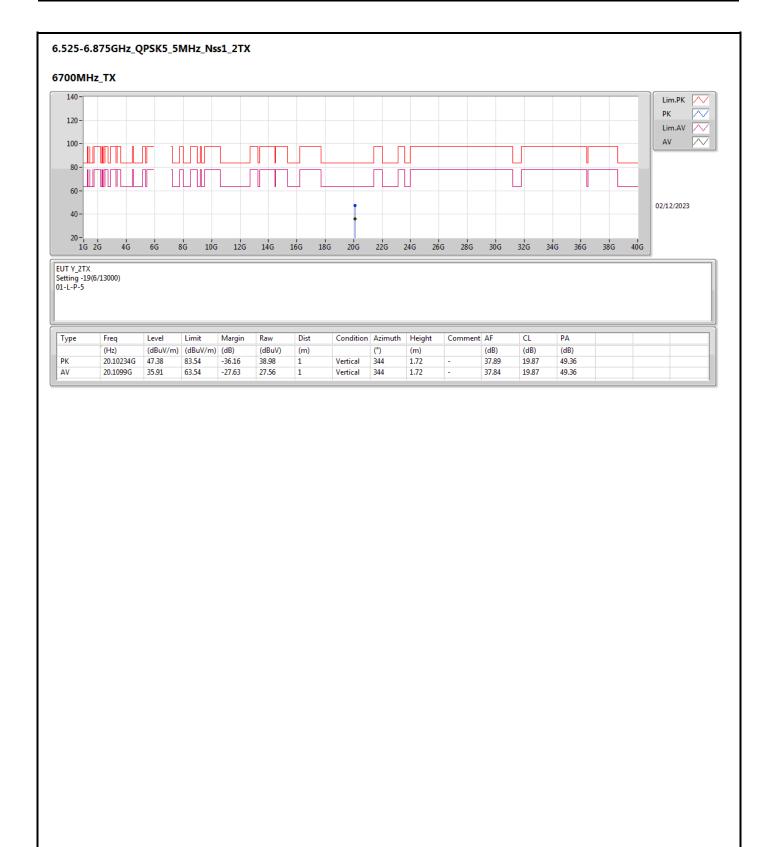
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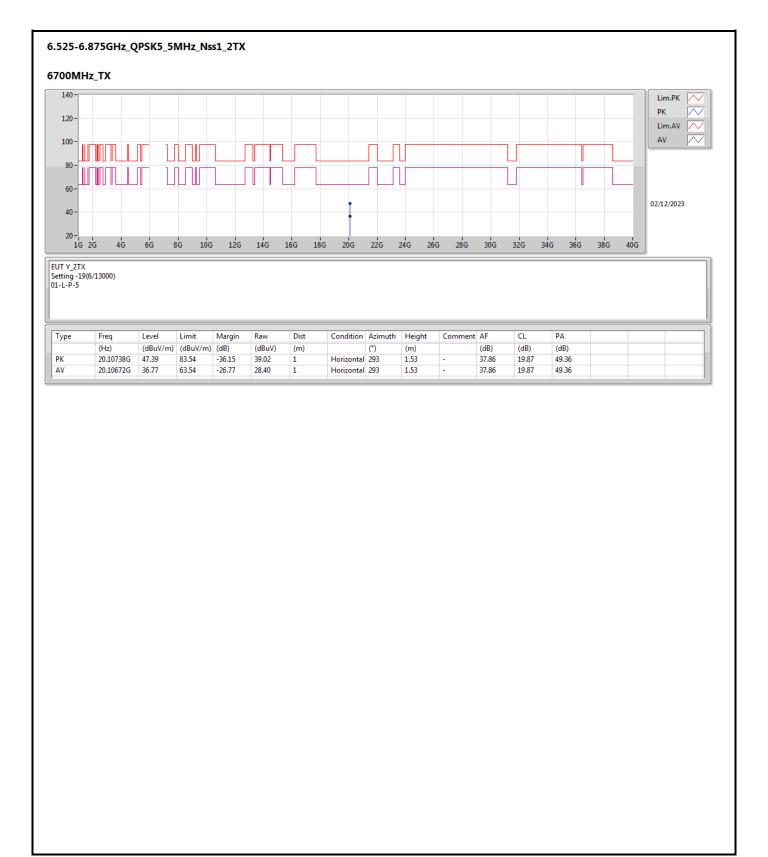
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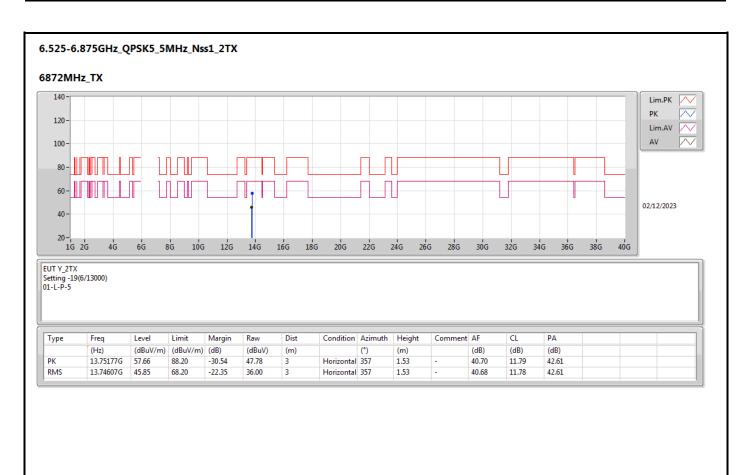
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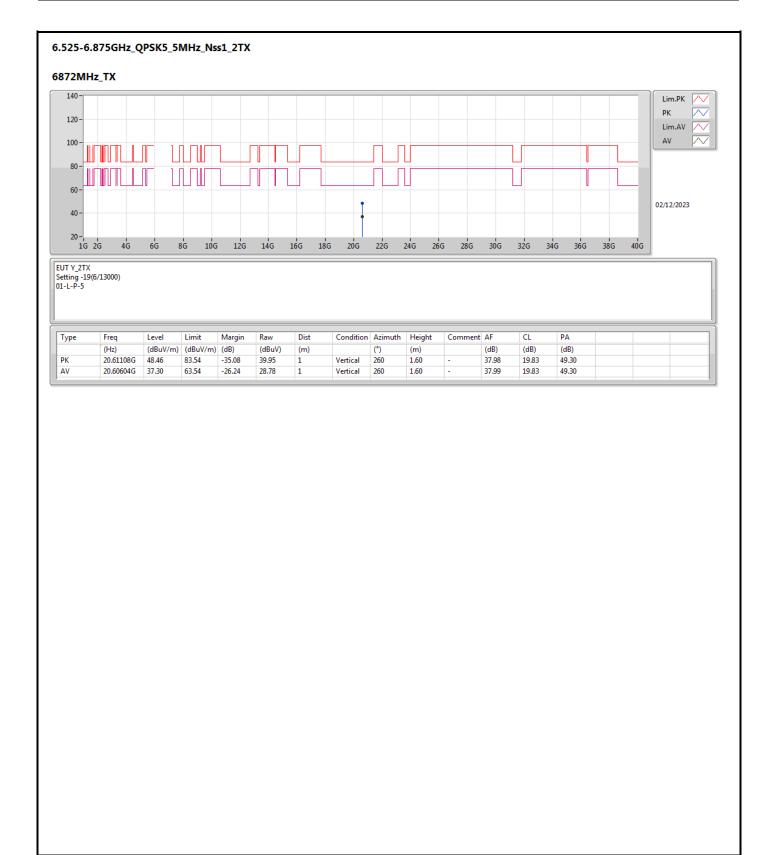
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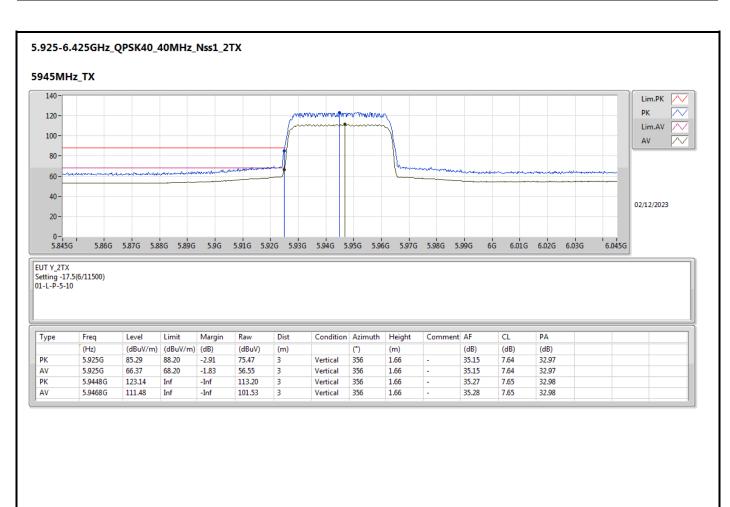
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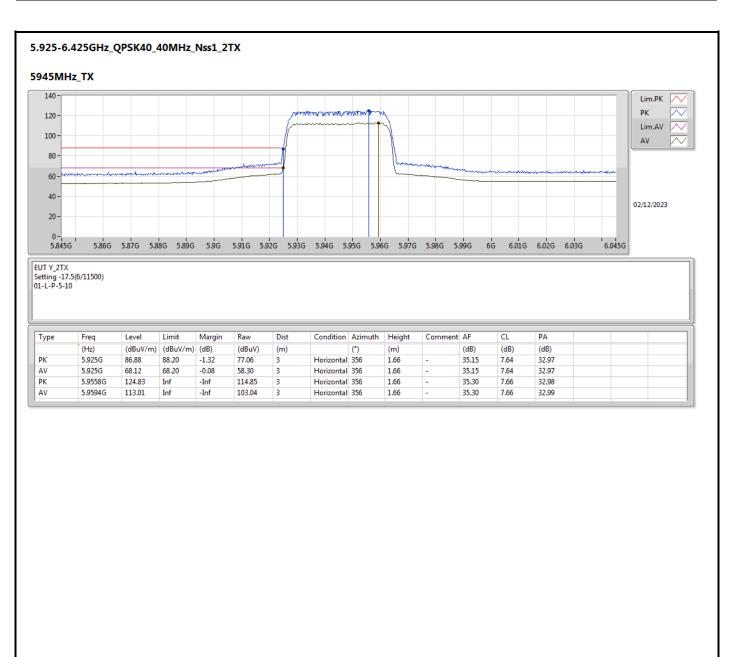




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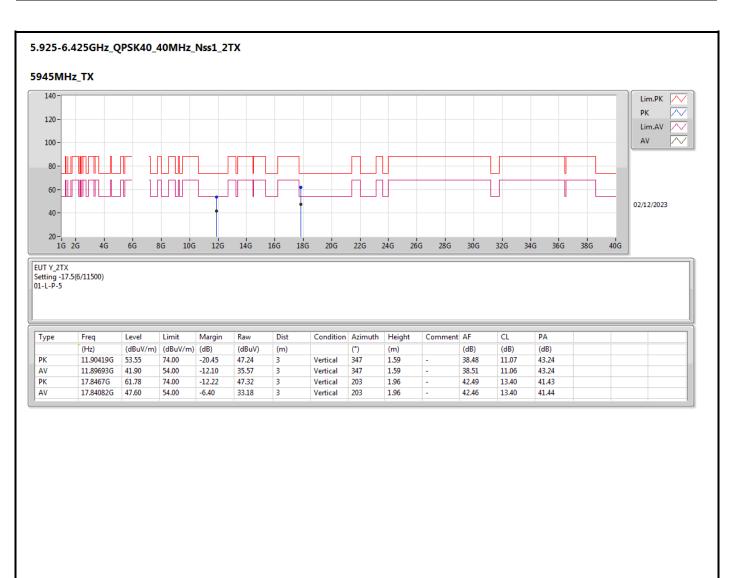
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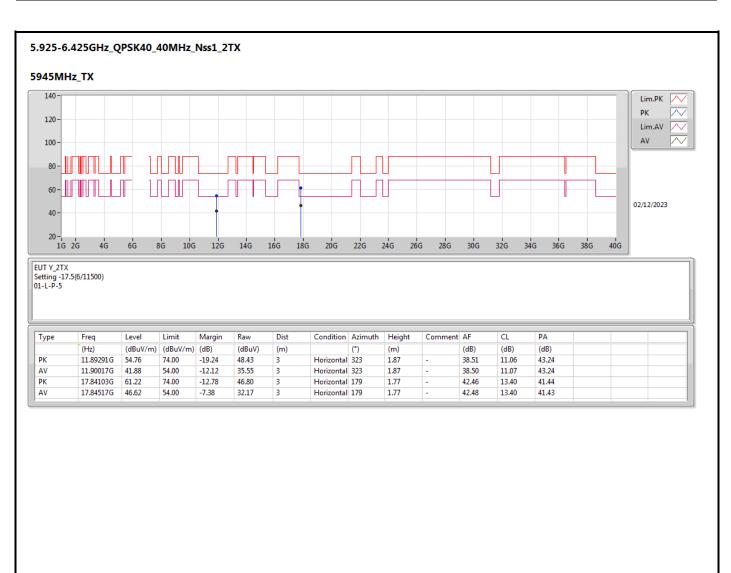
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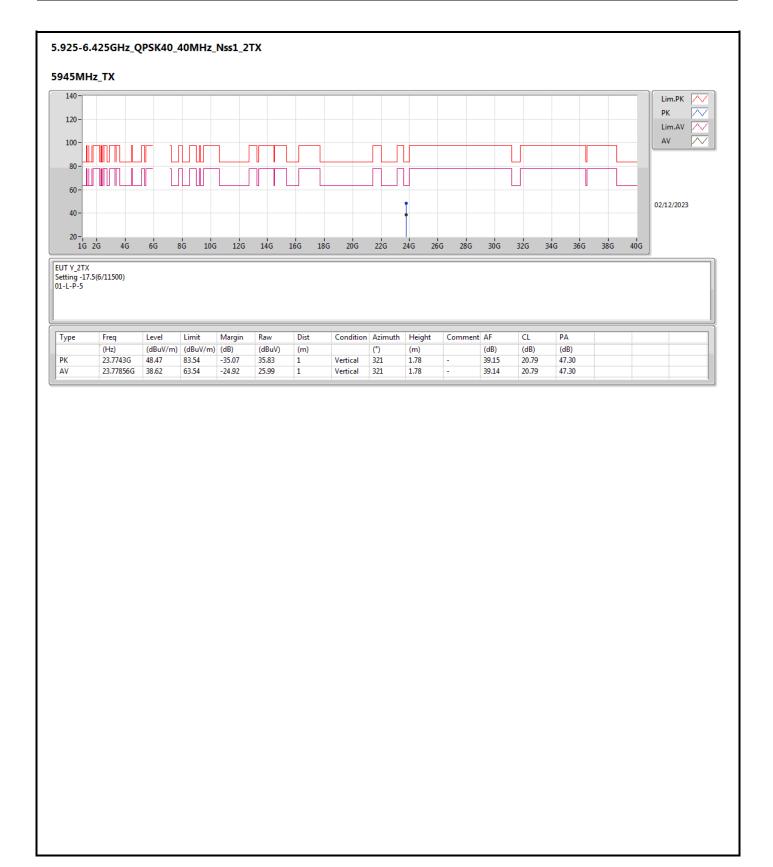
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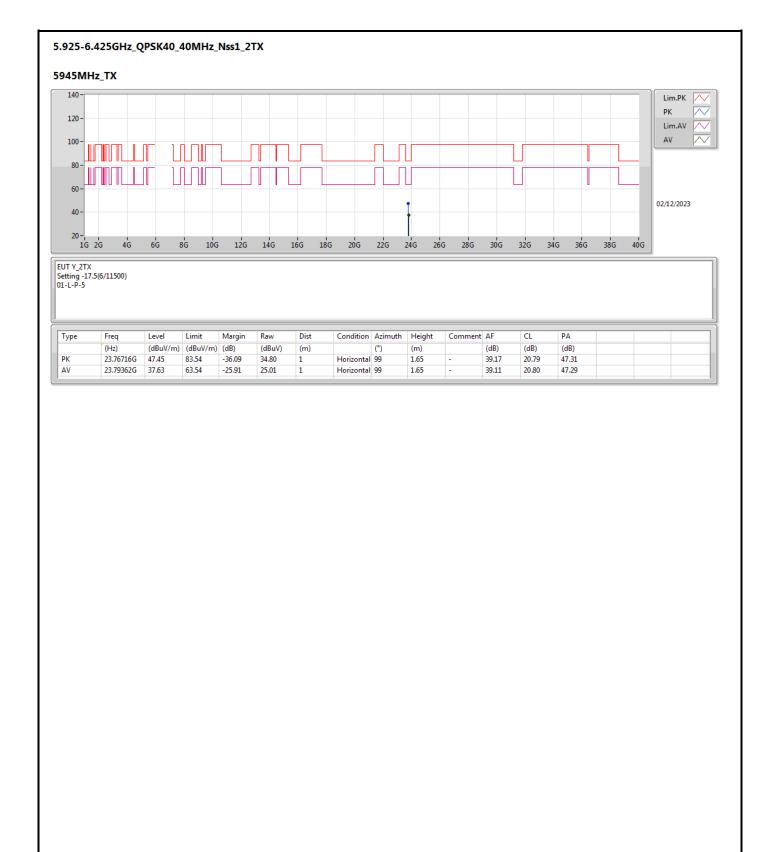
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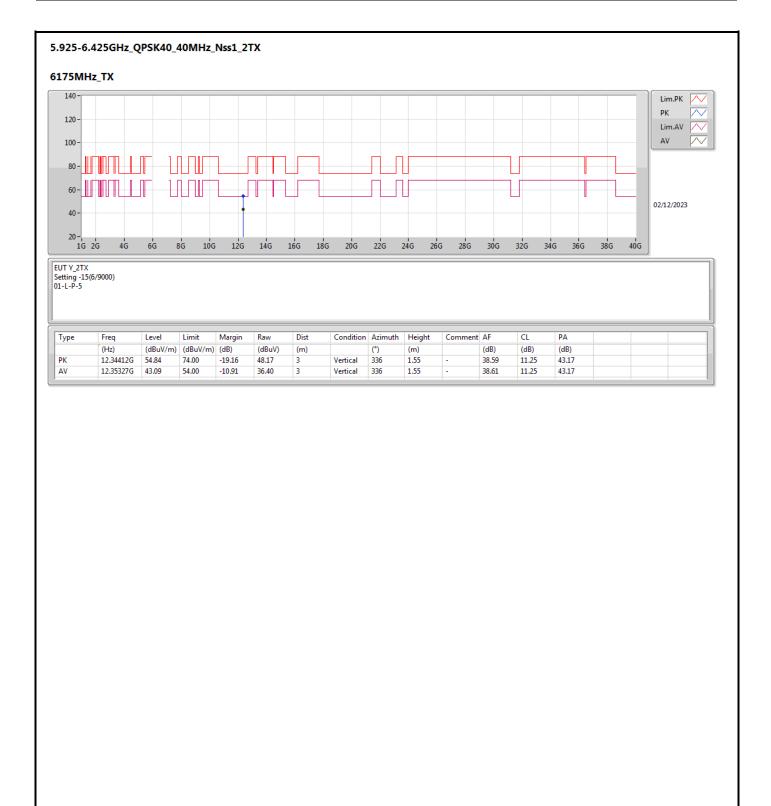
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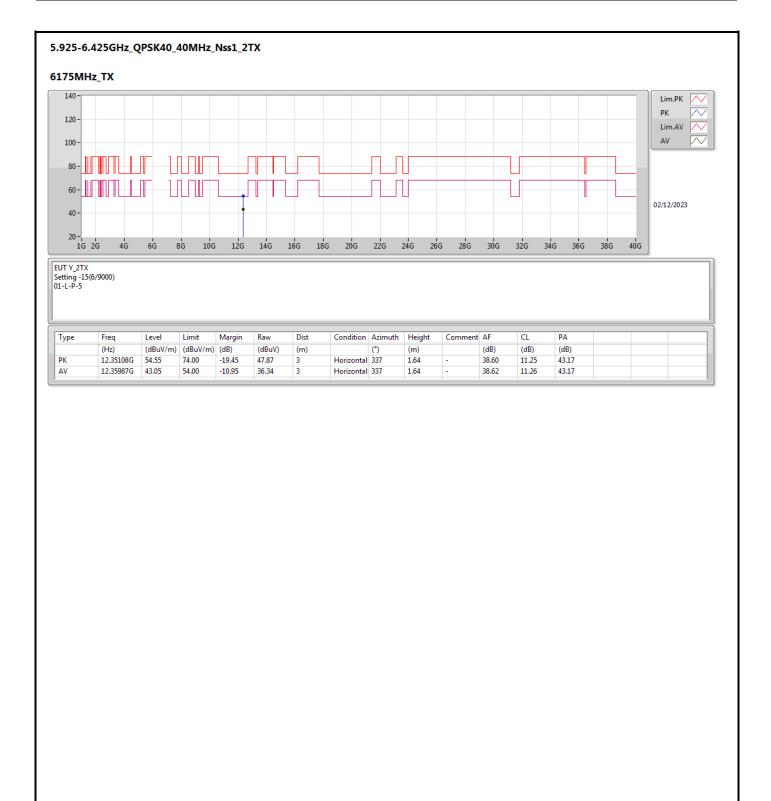
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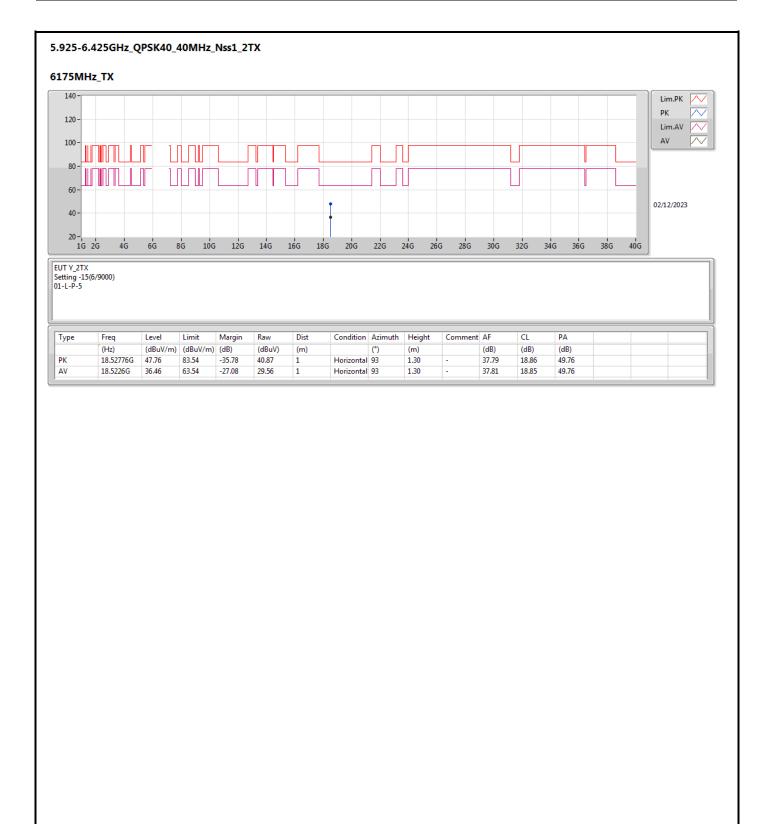






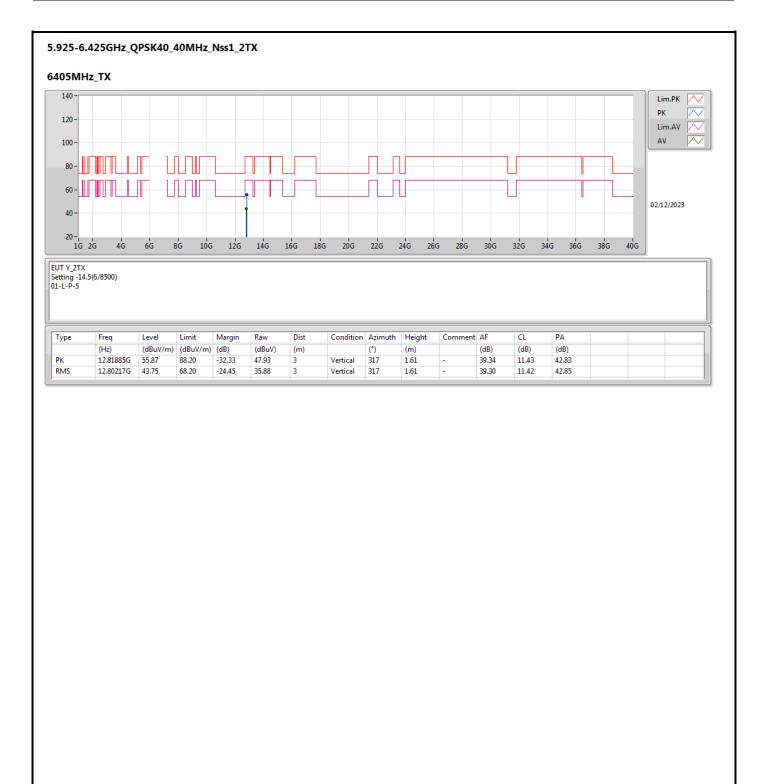
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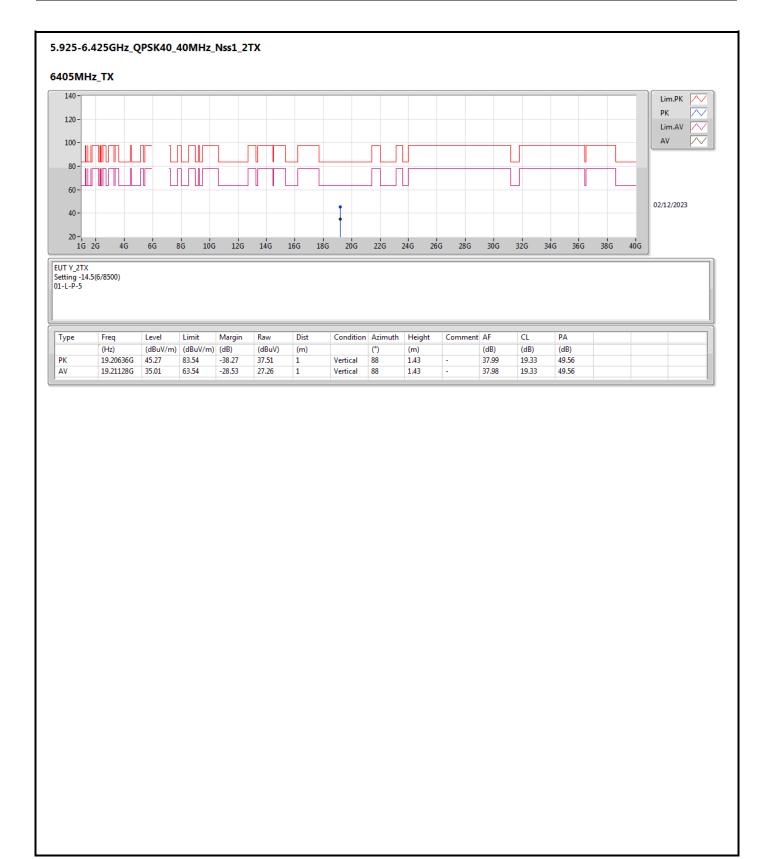
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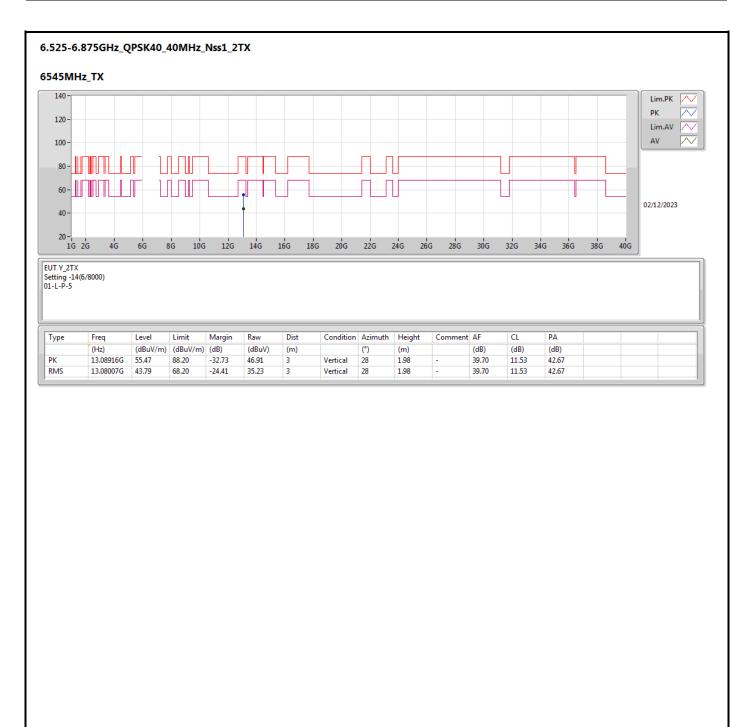


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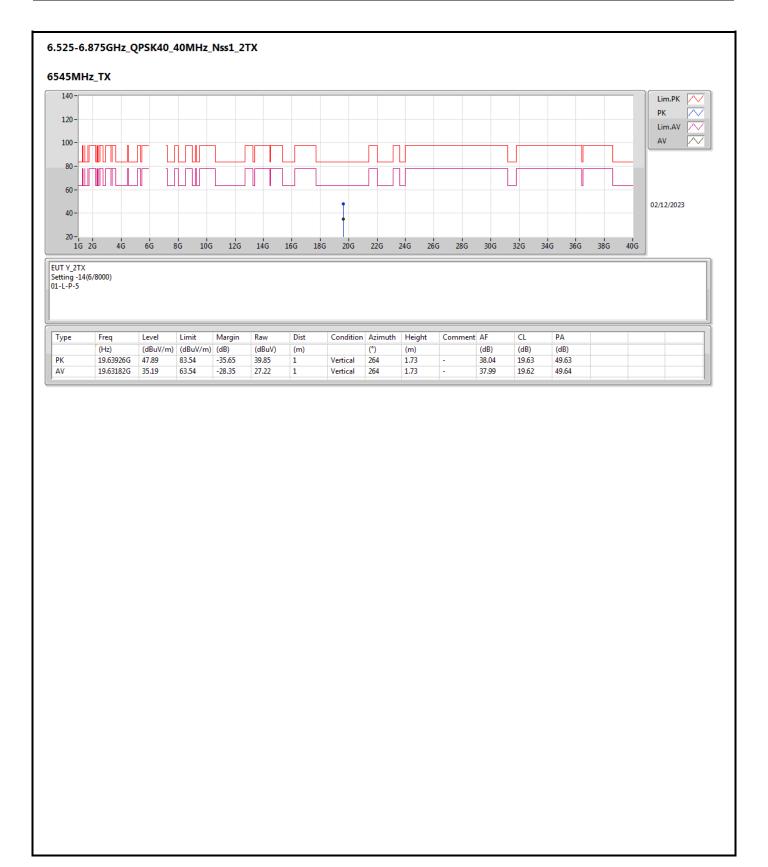




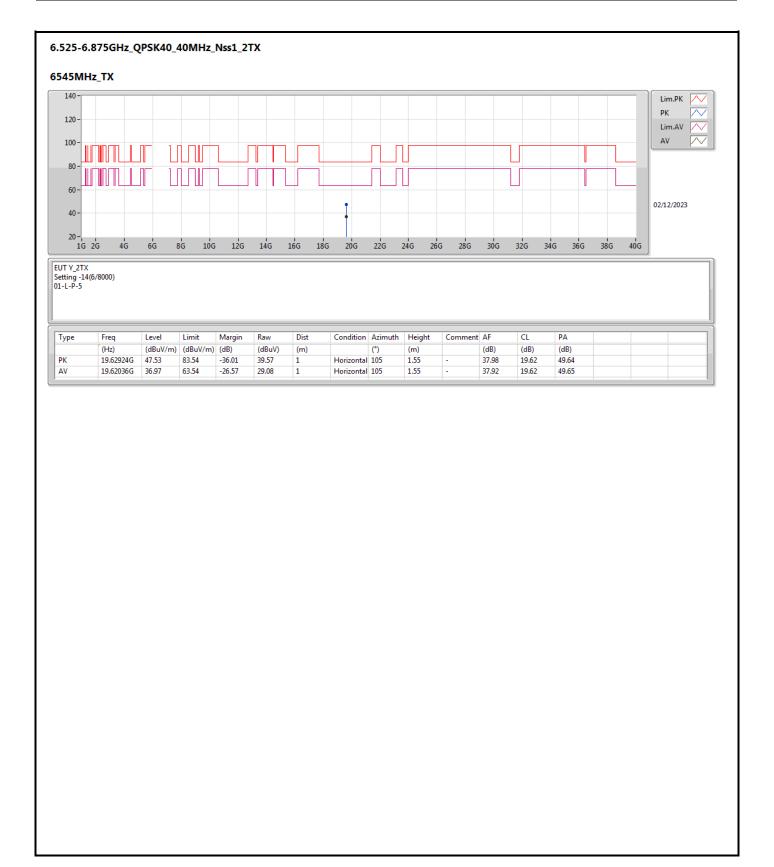
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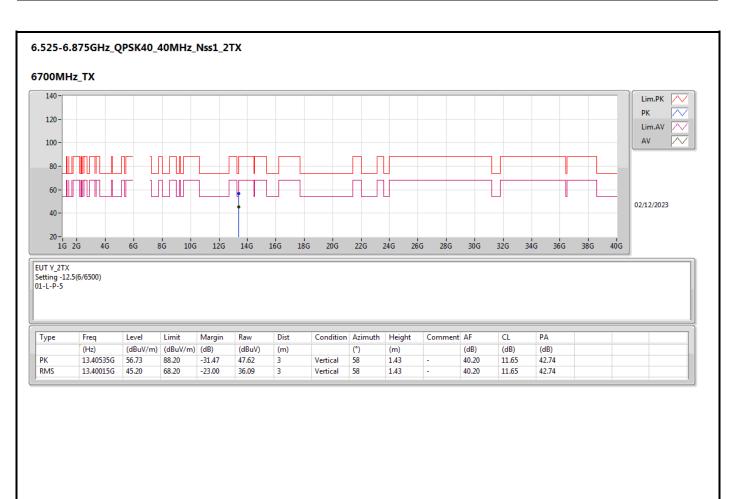






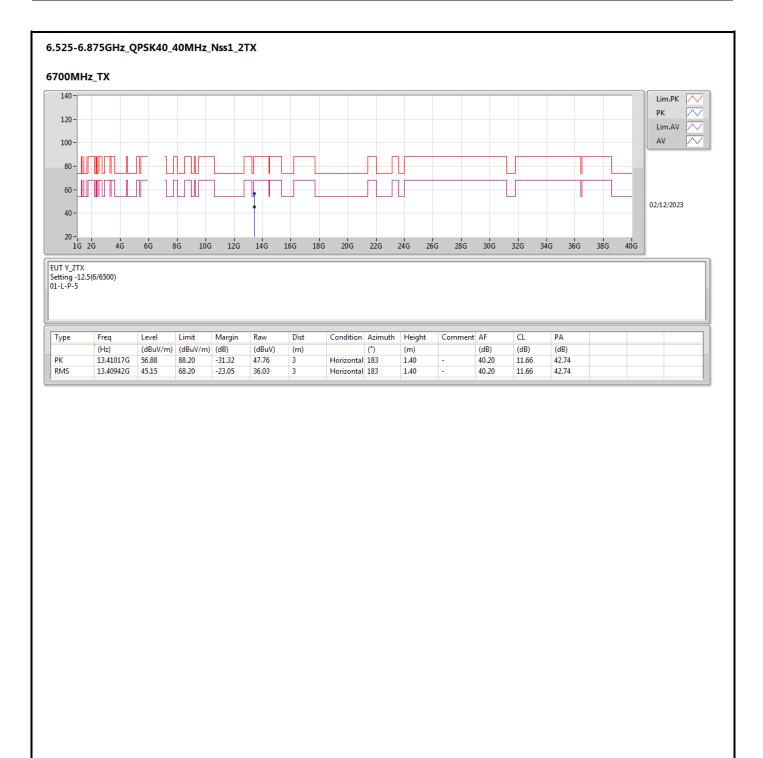






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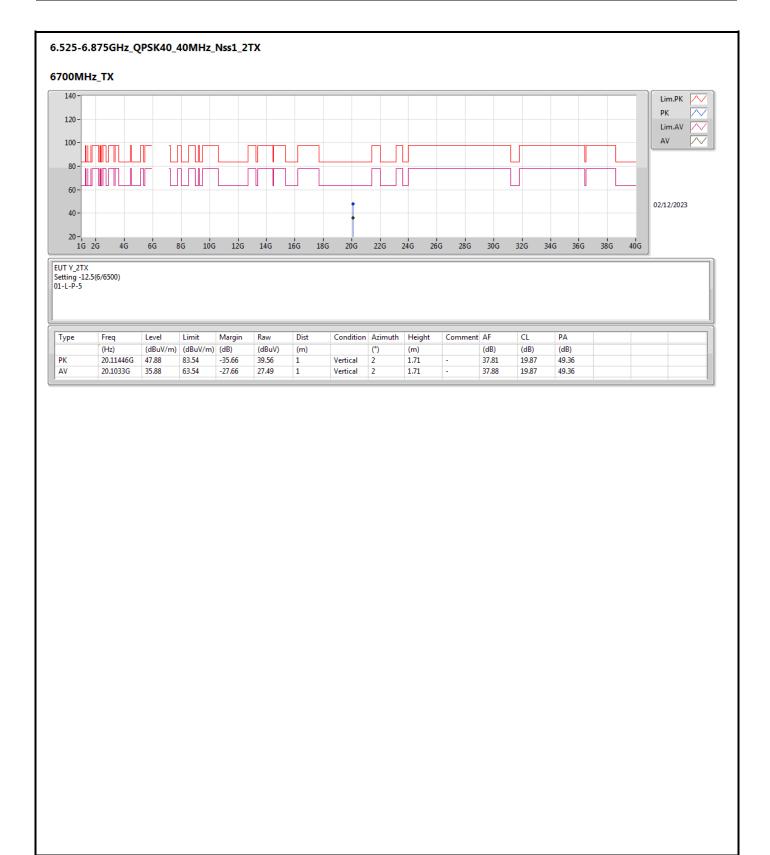




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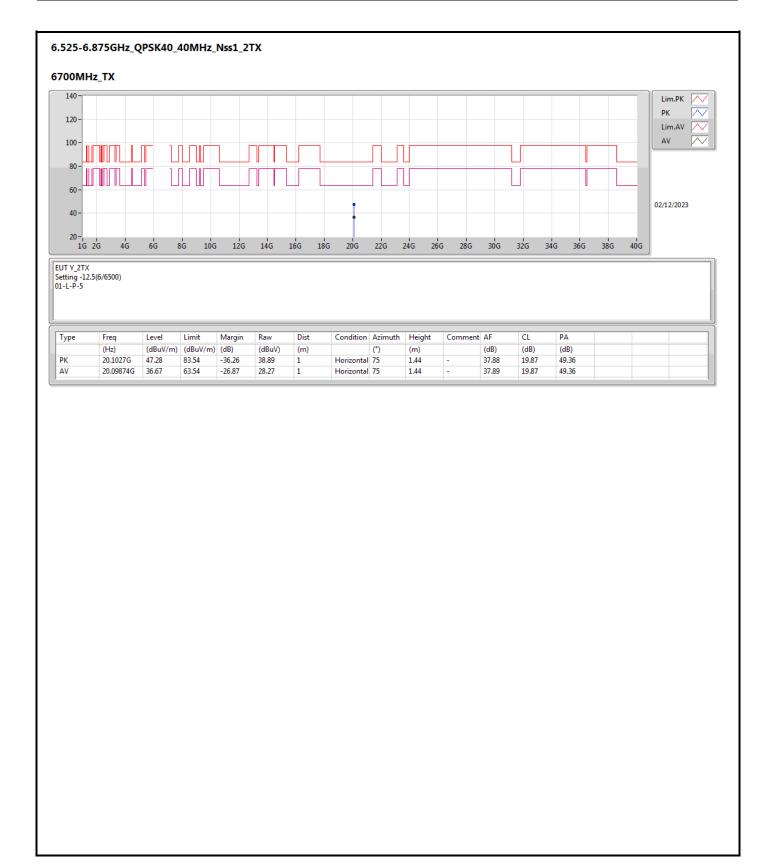
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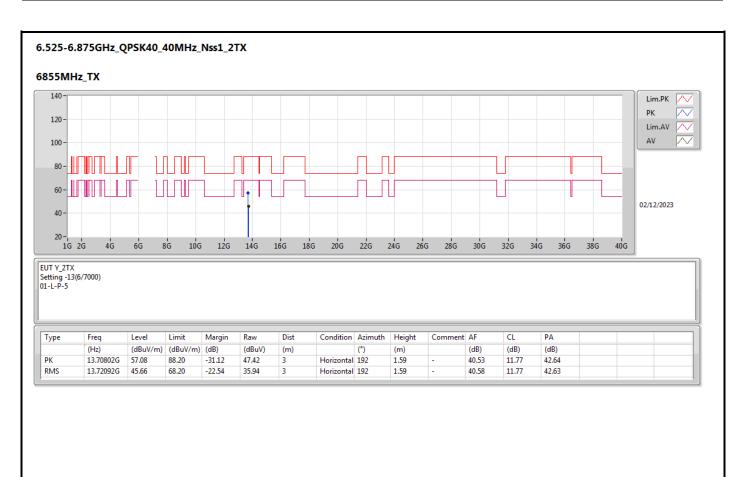
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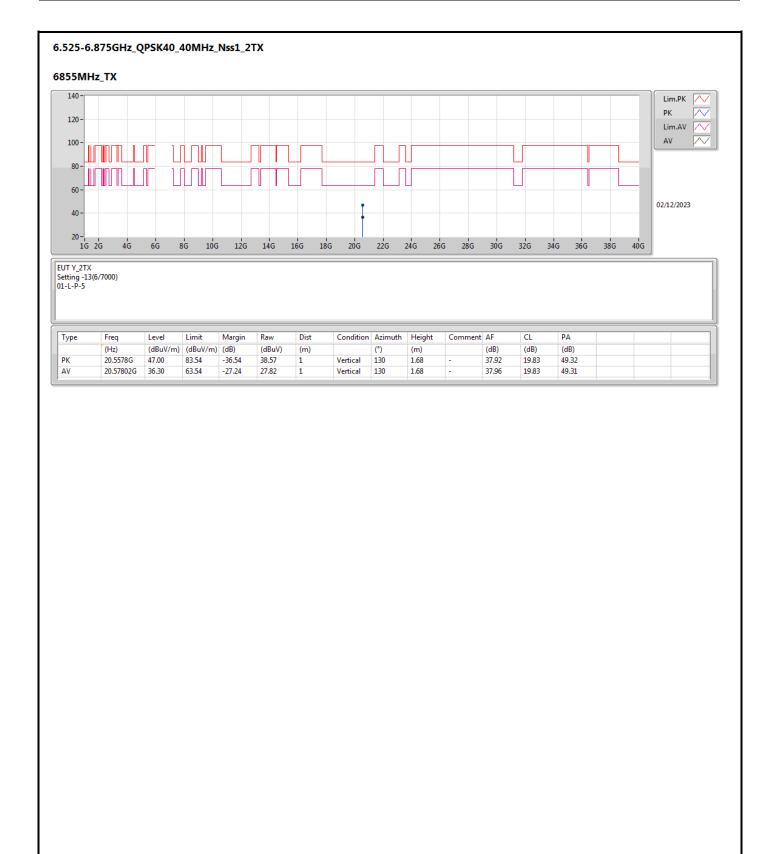
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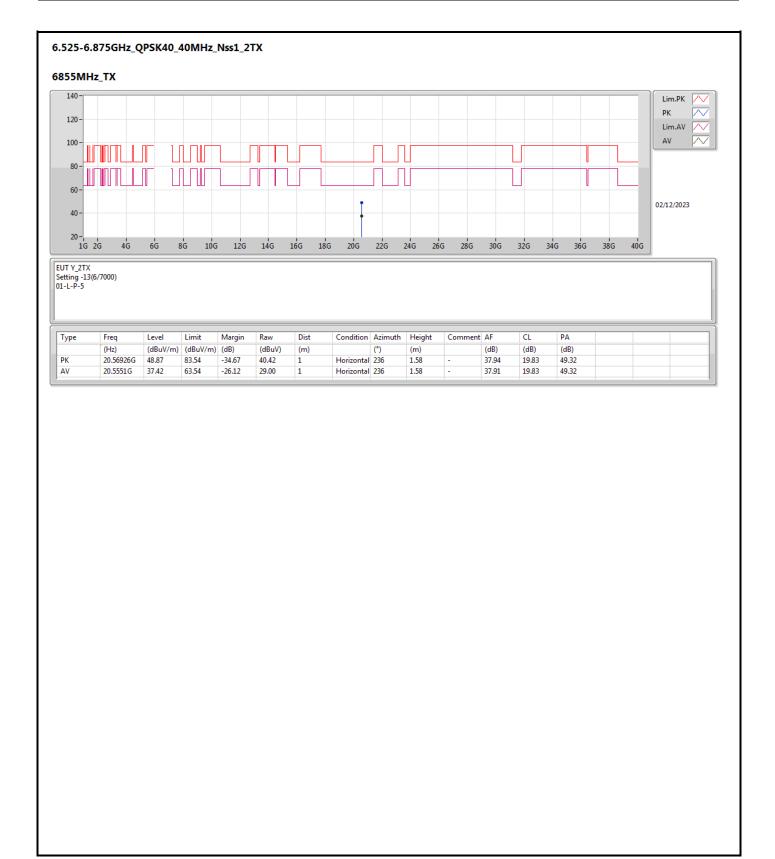


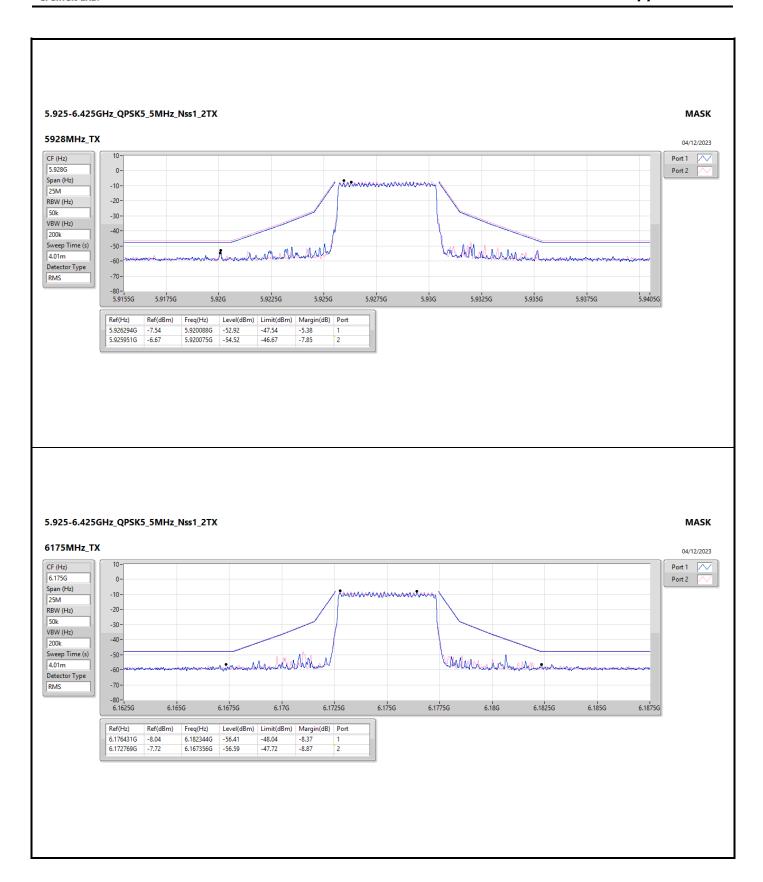


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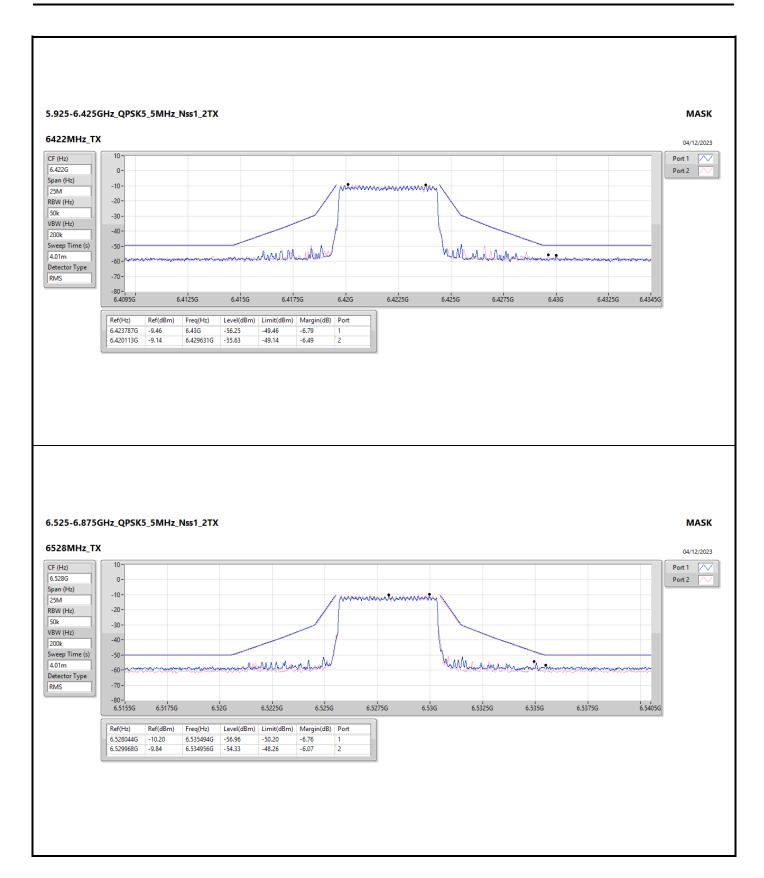






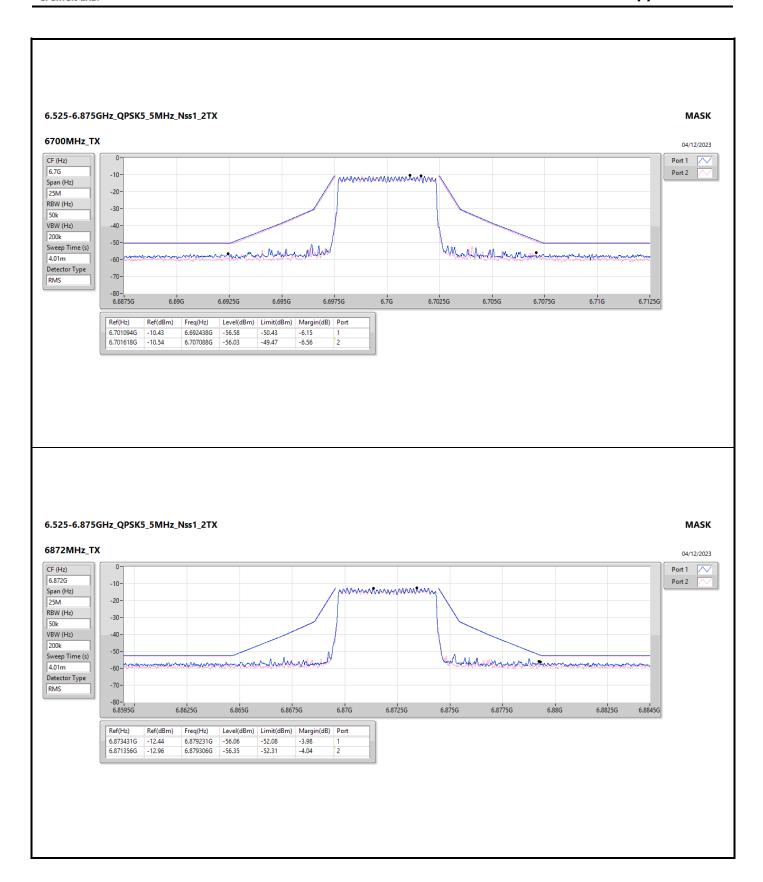
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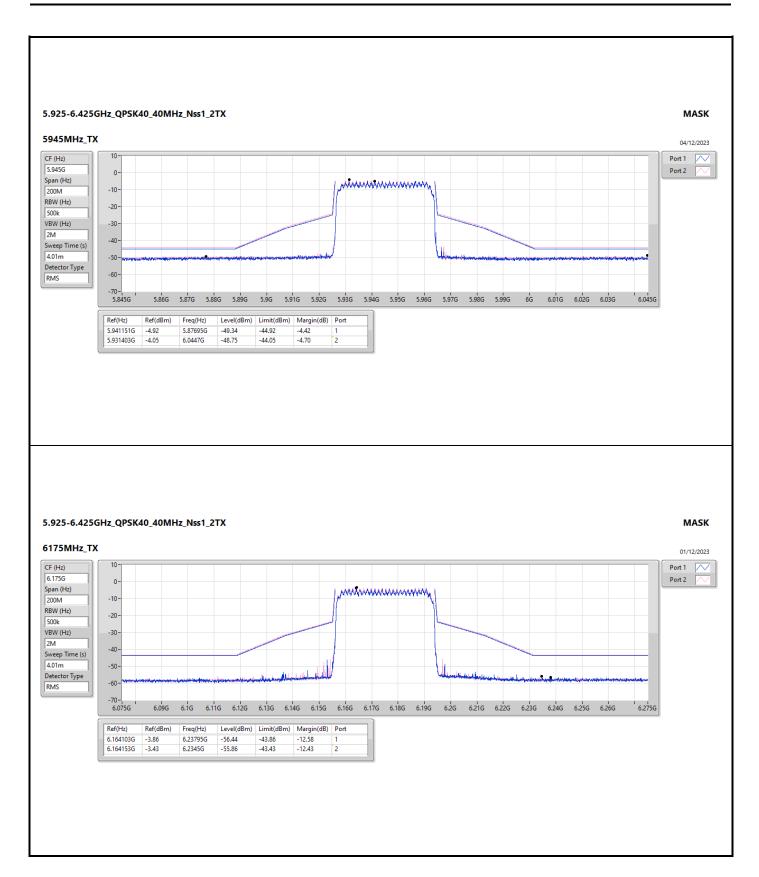
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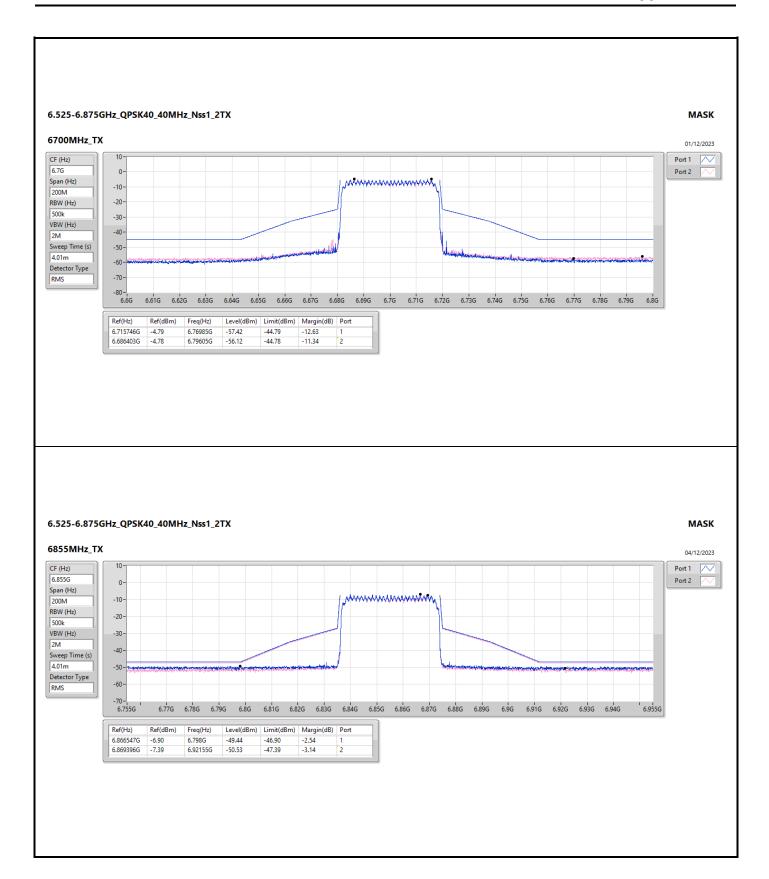
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