Report No. : FR882140-01





RADIO TEST REPORT

FCC ID	8.0	NKR-SWA51
Equipment		Wireless Audio Module
Brand Name		WNC
Model Name		SWA51
Applicant		Wistron NeWeb Corporation
		20 Park Avenue II, Hsinchu Science Park, Hsinchu 308 Taiwan
Manufacturer		Wistron NeWeb Corporation
		20 Park Avenue II, Hsinchu Science Park, Hsinchu 308 Taiwan
Standard	2 8	47 CFR FCC Part 15.407

The product was received on Aug. 18, 2021, and testing was started from Sep. 04, 2021 and completed on Oct. 29, 2021. 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.)



Table of Contents

Histor	ry of this test report	3
Summ	nary of Test Result	4
1	General Description	5
1.1	Information	5
1.2	Applicable Standards	7
1.3	Testing Location Information	7
1.4	Measurement Uncertainty	7
2	Test Configuration of EUT	8
2.1	Test Channel Mode	8
2.2	The Worst Case Measurement Configuration	9
2.3	EUT Operation during Test	10
2.4	Accessories	10
2.5	Support Equipment	10
2.6	Test Setup Diagram	11
3	Transmitter Test Result	12
3.1	Emission Bandwidth	12
3.2	Maximum Output Power	14
3.3	Power Spectral Density	16
3.4	Unwanted Emissions	19
4	Test Equipment and Calibration Data	23
Apper	ndix A. Test Results of Emission Bandwidth	
Apper	ndix B. Test Results of Maximum Output Power	
Apper	ndix C. Test Results of Power Spectral Density	
Apper	ndix D. Test Results of Unwanted Emissions	
Apper	ndix E. Test Photos	

Photographs of EUT v01



History of this test report

Report No.	Version	Description	Issued Date
FR882140-01	01	Initial issue of report	Nov. 09, 2021



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.407(a)	Emission Bandwidth	PASS	-
3.2	15.407(a)	Maximum Output Power	PASS	-
3.3	15.407(a)	Power Spectral Density	PASS	-
3.4	15.407(b)	Unwanted Emissions	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: Jessie Wei



1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	Mode	Bandwidth	Frequency Spacing (MHz)	Ch. Frequency (MHz)	Channel Number	
5150-5250		2MHz	2	5157.35-5247.35	3-48 [46]	
5150-5250		4MHz	2	5162.35-5246.35	5-47 [43]	
	pi/4-DQPSK		2MHz	0	5726.35-5848.35	0-61 [62]
5725-5850		4MHz	2	5729.35-5847.35	1-60 [60]	
		2MHz	0	5850.35-5874.35	62-74 [13]	
5850-5895		4MHz	2	5849.35-5875.35	61-74 [14]	

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	pi/4-DQPSK,2M	2	1TX
5.15-5.25GHz	pi/4-DQPSK,4M	4	1TX
5.725-5.85GHz	pi/4-DQPSK,2M	2	1TX
5.725-5.85GHz	pi/4-DQPSK,4M	4	1TX
5.85-5.895GHz	pi/4-DQPSK,2M	2	1TX
5.85-5.895GHz	pi/4-DQPSK,4M	4	1TX

Note:

- Use pi/4-DQPSK modulation.
- BWch is the nominal channel bandwidth.
- Nss-Min is the minimum number of spatial streams.

1.1.2 Antenna Information

Ant	Ant. Port Brand Mc	Brond	Medal Name	Antonno Tuno	Connector		Gain (dBi))
Ant.		Model Name	Model Name Antenna Type	Connector	UNII 1	UNII 3	UNII 4	
1	1	WNC	SWA51	Printed Ant.	N/A	4.10	3.39	3.38
2	2	WNC	SWA51	Printed Ant.	N/A	2.17	3.50	2.90

Note: The above information was declared by manufacturer.

The EUT supports the antenna with TX and RX diversity functions.

Both Port 1 (Ant. 1) and Port 2 (Ant. 2) support transmit and receive functions, but only one of them will be used at one time.

The Port 1(Ant. 1) generated the worst case in UNII 1 and UNII 4, and the Port 2(Ant. 2) generated the worst case in UNII 3, so they were selected to test and record in the report.



1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
pi/4-DQPSK	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)

Note:

DC is Duty Cycle.

DCF is Duty Cycle Factor.

1.1.4 EUT Operational Condition

EUT Power Type	From	From power adapter				
Beamforming Function	· □	☐ With beamforming				
Function		Outdoor P2M		Indoor P2M		
Function		Fixed P2P	\boxtimes	Client		
		Indoor Access Point		Subordinate		
Device Type (UNII 4)		Indoor Client				
Test Software Version	AvServer v2.3 · VMXUI v2.3					

Note: The above information was declared by manufacturer.

1.1.5 Table for EUT type information

EUT Type	Module	Firmware	Description
EUT 1	ТХ	3.152.15	The variation of EUT is for different firmware.
EUT 2	RX	3.152.1	

Note1: From the above models, EUT 1 was selected as representative model for the test and its data was recorded in this report.

Note2: The above information was declared by manufacturer.

1.1.6 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FR882140

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

	Modifications	Performance Checking
1. 2. 3.	3. Changing operating frequency to "5162.35~5246.35 MHz,	1.Emission Bandwidth 2.Maximum Output Power 3.Power Spectral Density 4.Unwanted Emissions above 1GHz



1.2 Applicable Standards

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

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

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

- FCC KDB 662911 D01 v02r01
- FCC KDB 412172 D01 v01r01
- FCC KDB 291074 U-NII-4 5.9 Band DR01-44460_Draft

1.3 Testing Location Information

Testing Location Information				
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. RF Conducted TH02-CB		Test Engineer	Test Environment (°C / %)	Test Date
		Jay Lo	22.5~24.2 / 53~56	Sep. 04, 2021~ Oct. 29, 2021
Radiated	03CH01-CB	RJ Huang	23.5~24.6 / 55~59	Sep. 27, 2021~ Sep. 28, 2021

1.4 Measurement Uncertainty

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

Test Items	Uncertainty	Remark
Radiated Emission (1GHz ~ 18GHz)	4.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.2 dB	Confidence levels of 95%
Conducted Emission	2.5 dB	Confidence levels of 95%
Output Power Measurement	1.3 dB	Confidence levels of 95%
Power Density Measurement	2.5 dB	Confidence levels of 95%
Bandwidth Measurement	0.9%	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

UNII 1 Mode
pi/4-DQPSK,2M
5157.35MHz
5201.35MHz
5247.35MHz
pi/4-DQPSK,4M
5162.35MHz
5204.35MHz
5246.35MHz
UNII 3 Mode
pi/4-DQPSK,2M
5726.35MHz
5786.35MHz
5848.35MHz
pi/4-DQPSK,4M
5729.35MHz
5787.35MHz
5847.35MHz
UNII 4 Mode
pi/4-DQPSK,2M
5850.35MHz
5862.35MHz
5874.35MHz
pi/4-DQPSK,4M
5849.35MHz
5861.35MHz
5875.35MHz



2.2 The Worst Case Measurement Configuration

Th	The Worst Case Mode for Following Conformance Tests	
Tests Item	Emission Bandwidth Maximum Output Power Power Spectral Density	
Test Condition Conducted measurement at transmit chains		
1	EUT 1 + 2MHz Bandwidth	
2	EUT 1 + 4MHz Bandwidth	

Th	The Worst Case Mode for Following Conformance Tests		
Tests Item	Unwanted Emissions		
Test ConditionRadiated measurementIf EUT consist of multiple antenna assembly (multiple antenna are used in EU regardless of spatial multiplexing MIMO configuration), the radiated test shou be performed with highest antenna gain of each antenna type.			
Operating Mode > 1GHz CTX			
The EUT was performed at X axis, Y axis and Z axis position, and the worst case was found at Z axis. So the measurement will follow this same test configuration.			
1 EUT 1 in Z axis + 2MHz Bandwidth			
2	EUT 1 in Z axis + 4MHz Bandwidth		
Note: The Adapter below is for measurement only, would not be marketed.			

The Adapter information as below:

Support Unit		Brand	Model Number
Adap	oter	OEM	ADS10-W050200



2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.4 Accessories

N/A

2.5 Support Equipment

For Radiated:

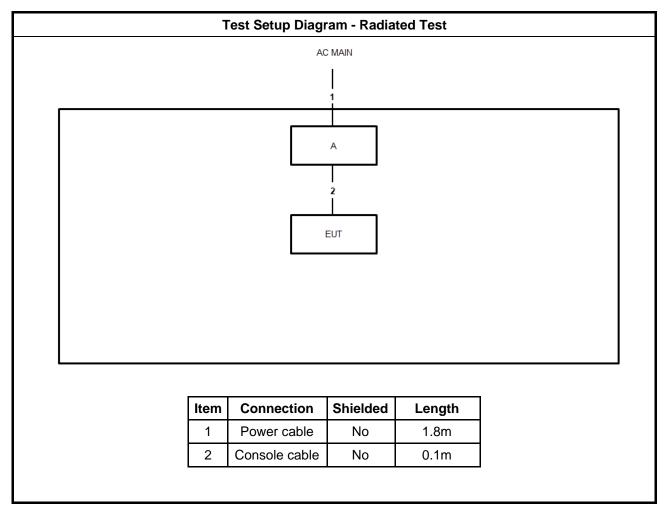
	Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID	
А	Fixture	WNC	48SWA524.SGB	N/A	
В	Adapter	OEM	ADS10-W50200	N/A	

For RF Conducted:

	Support Equipment					
No.	Equipment	Brand Name	Model Name	FCC ID		
А	Notebook	DELL	E4300	N/A		
В	Fixture	WNC	48SWA524.SGB	N/A		
С	Adapter	OEM	ADS10-W05020	N/A		



2.6 Test Setup Diagram





3 Transmitter Test Result

3.1 Emission Bandwidth

3.1.1 Emission Bandwidth Limit

Emission Bandwidth Limit				
UNII Devices				
For the 5.15-5.25 GHz band, N/A				
For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 2 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.	250			
For the 5.47-5.725 GHz band, the maximum conducted output power shall not exceed the lesser of 2 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.	250			
For the 5.725-5.85 GHz band, 6 dB emission bandwidth \geq 500kHz.				
For the 5.85-5.895 GHz band, 6 dB emission bandwidth \geq 500kHz.				
E-LAN Devices				
For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dE whichever power is less. B is the 99% emission bandwidth in MHz.	3m,			
For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dE whichever power is less. B is the 99% emission bandwidth in MHz	3m,			
For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz	/ or			
For the 5.725-5.85 GHz band, 6 dB emission bandwidth \geq 500kHz.				
312 Measuring Instruments				

3.1.2 Measuring Instruments

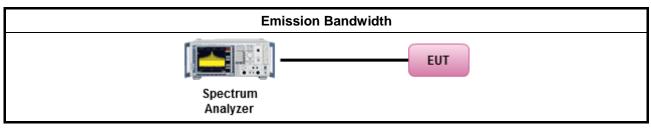
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

	Test Method				
•	 For the emission bandwidth shall be measured using one of the options below: 				
	\boxtimes	Refer as FCC KDB 789033, clause C for EBW and clause D for OBW measurement.			
		Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.			
		Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.			



3.1.4 Test Setup



3.1.5 Test Result of Emission Bandwidth

Refer as Appendix A



3.2 Maximum Output Power

3.2.1 Limit

	Maximum Output Power Limit
UN	I Devices
\boxtimes	For the 5.15-5.25 GHz band:
	 Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 - (G_{TX} - 6). e.i.r.p. at any elevation angle above 30 degrees ≤ 125mW [21dBm]
	• Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$
	 Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W If G_{TX} > 23 dBi, then P_{Out} = 30 - (G_{TX} - 23).
	 Mobile or Portable Client: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW. If G_{TX} > 6 dBi, then P_{Out} = 24 - (G_{TX} - 6).
	For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
	For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If G_{TX} > 6 dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.
\square	For the 5.725-5.85 GHz band:
	 Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 - (G_{TX} - 6).
	 Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
	Maximum EIRP Limit
\boxtimes	For the 5.85-5.895 GHz band:
	 Indoor AP & subordinate device < 36 dBm
	 Client device < 30 dBm
LE-	LAN Devices
	For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
	For the 5.725-5.85 GHz band:
	• Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$.
	 Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the
	· 886-3-656-9065 Page Number · 14 of 24



lesser of 1 W.

P_{out} = maximum conducted output power in dBm,

 G_{TX} = the maximum transmitting antenna directional gain in dBi.

3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

	Test Method				
•	Maximum Conducted Output Power				
	Average over on/off periods with duty factor				
	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).				
	Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)				
	Wideband RF power meter and average over on/off periods with duty factor				
	Refer as FCC KDB 789033, clause E Method PM-G (using an RF average power meter).				
•	For conducted measurement.				
	 If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them. 				
	 If multiple transmit chains, EIRP calculation could be following as methods: P_{total} = P₁ + P₂ + + P_n (calculated in linear unit [mW] and transfer to log unit [dBm]) EIRP_{total} = P_{total} + DG 				

3.2.4 Test Setup

RF Output Power (Power Meter)					
Power Meter					

3.2.5 Test Result of Maximum Output Power

Refer as Appendix B

3.3 Power Spectral Density

3.3.1 Limit

	Peak Power Spectral Density Limit
UNI	I Devices
\boxtimes	For the 5.15-5.25 GHz band:
	• Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 17 - (G_{TX} - 6)$.
	• Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$.
	• Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 23$ dBi, then $P_{Out} = 17 - (G_{TX} - 23)$.
	 Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G_{TX} > 6 dBi, then PPSD= 11 - (G_{TX} - 6)
	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) \leq 11 dBm/MHz. If G _{TX} > 6 dBi, then PPSD= 11 – (G _{TX} – 6).
	For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) \leq 11 dBm/MHz. If G _{TX} > 6 dBi, then PPSD= 11 – (G _{TX} – 6).
\boxtimes	For the 5.725-5.85 GHz band:
	• Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) \leq 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then PPSD= 30 - ($G_{TX} - 6$).
	 Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
	EIRP Power Spectral Density Limit
\boxtimes	For the 5.85-5.895 GHz band:
	 Indoor AP & subordinate device < 20dBm/MHz
	 Client device < 14dBm/MHz
LE-	LAN Devices
	For the 5.15-5.25 GHz band, the e.i.r.p. peak power spectral density (PPSD) \leq 10 dBm/MHz.
	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) \leq 11 dBm/MHz.
	 e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where θ is the angle above the local horizontal plane (of the Earth) as shown below: -13 dBW/MHz for 0° ≤ θ < 8°; -13 - 0.716 (θ-8) dBW/MHz for 8° ≤ θ < 40° -35.9 - 1.22 (θ-40) dBW/MHz for 40° ≤ θ ≤ 45°; -42 dBW/MHz for θ > 45°
	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) \leq 11 dBm/MHz.
	For the 5.725-5.85 GHz band:
	• Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) \leq 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then PPSD= 30 - ($G_{TX} - 6$).
	 Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
PPS	SD = peak power spectral density that he same method as used to determine the conducted output
TEI	



power shall be used to determine the power spectral density. And power spectral density in dBm/MHz G_{TX} = the maximum transmitting antenna directional gain in dBi.

3.3.2 **Measuring Instruments**

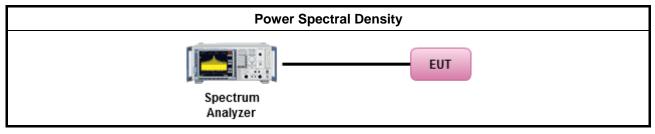
Refer a test equipment and calibration data table in this test report.

3.3.3 **Test Procedures**

		Test Method
	outp func	k power spectral density procedures that the same method as used to determine the conducted ut power shall be used to determine the peak power spectral density and use the peak search tion on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density I be measured using below options:
		Refer as FCC KDB 789033, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth
	[duty	/ cycle ≥ 98% or external video / power trigger]
	\square	Refer as FCC KDB 789033, clause E Method SA-1 (spectral trace averaging).
		Refer as FCC KDB 789033, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)
	duty	cycle < 98% and average over on/off periods with duty factor
	\square	Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
		Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
•	For	conducted measurement.
	•	If the EUT supports multiple transmit chains using options given below:
		Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.
		Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,
		Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.
		If multiple transmit chains, EIRP PPSD calculation could be following as methods: $PPSD_{total} = PPSD_1 + PPSD_2 + + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = PPSD_{total} + DG$



3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Refer as Appendix C



3.4 Unwanted Emissions

3.4.1 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				

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

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





	Un-restricted band emissions above 1GHz Limit
Operating Band	Limit
🔀 5.15 - 5.25 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]
🔲 5.25 - 5.35 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]
🔲 5.47 - 5.725 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]
⊠ 5.725 - 5.85 GHz	all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
⊠ 5.85 - 5.895 GHz	 (i) For an indoor access point or subordinate device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of 15 dBm/MHz and shall decrease linearly to an e.i.r.p. of - 7 dBm/MHz at or above 5.925 GHz. (ii) For a client device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of -5 dBm/MHz and shall decrease linearly to an e.i.r.p. of -27 dBm/MHz at or above 5.925 GHz. (iii) For a client device or indoor access point or subordinate device, all emissions below 5.725 GHz shall not exceed an e.i.r.p. of -27 dBm/MHz at 5.65 GHz increasing linearly to 10 dBm/ MHz at 5.7 GHz, and from 5.7 GHz increasing linearly to a level of 15.6 dBm/MHz at 5.725 GHz.
performed in the n equipment. When be extrapolated to	by be performed at a distance other than the limit distance provided they are not ear field and the emissions to be measured can be detected by the measurement performing measurements at a distance other than that specified, the results shall the specified distance using an extrapolation factor of 20 dB/decade (inverse of field-strength measurements, inverse of linear distance-squared for power-density





3.4.2 Measuring Instruments

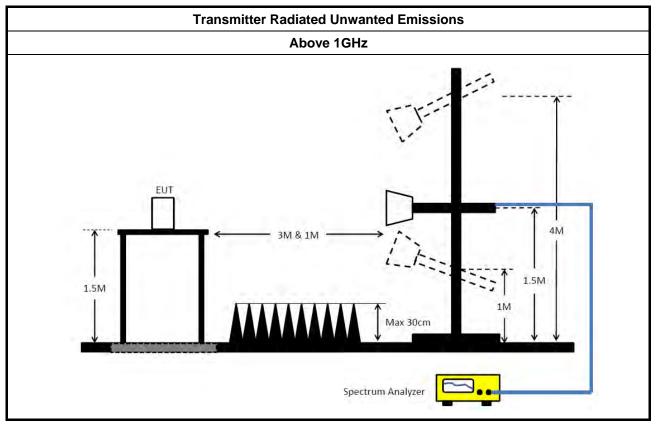
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

		Test Method							
•	Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).								
•	The	average emission levels shall be measured in [duty cycle \geq 98 or duty factor].							
•	For	the transmitter unwanted emissions shall be measured using following options below:							
	•	Refer as FCC KDB 789033, clause G)2) for unwanted emissions into non-restricted bands.							
	•	Refer as FCC KDB 789033, clause G)1) for unwanted emissions into restricted bands.							
		Refer as FCC KDB 789033, G)6) Method AD (Trace Averaging).							
		Refer as FCC KDB 789033, 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.							
		Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.							
		Refer as FCC KDB 789033, clause G)5) measurement procedure peak limit.							
		Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.							
-	For	radiated measurement.							
	•	Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.							
	•	Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.							
	•	Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.							
•	The	any unwanted emissions level shall not exceed the fundamental emission level.							
•		mplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value no need to be reported.							



3.4.4 Test Setup



3.4.5 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.

3.4.6 Test Result of Transmitter Unwanted Emissions

Refer as Appendix D



Test Equipment and Calibration Data 4

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH01-CB	1GHz ~18GHz 3m	May 07, 2021	May 06, 2022	Radiation (03CH01-CB)
Horn Antenna	ETS-LINDGREN	3115	00075790	750MHz ~ 18GHz	Nov. 06, 2020	Nov. 05, 2021	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Aug. 05, 2021	Aug. 04, 2022	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02121	1GHz ~ 26.5GHz	May 20, 2021	May 19, 2022	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 13, 2021	Jul. 12, 2022	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	May 03, 2021	May 02, 2022	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16	1 GHz ~ 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16+17	1 GHz ~ 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz ~ 40 GHz	Jul. 15, 2021	Jul. 14, 2022	Radiation (03CH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Aug. 02, 2021	Aug. 01, 2022	Conducted (TH02-CB)
Power Sensor	Anritsu	MA2411B	1531343	300MHz~40GHz	Aug. 15, 2021	Aug. 14, 2022	Conducted (TH02-CB)
Power Meter	Anritsu	ML2495A	1728001	300MHz~40GHz	Aug. 15, 2021	Aug. 14, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-03	1 GHz – 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-03	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)

Page Number : 23 of 24

: Nov. 09, 2021 Issued Date

Report Version : 01



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 18 GHz	Oct. 05, 2020	Oct. 04, 2021	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH02-CB)

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

NCR means Non-Calibration required.



Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
5.15-5.25GHz	-	-	-	-	-
4-DQPSK,2M	4M	1.957M	1M96G7D	4M	1.949M
4-DQPSK,4M	7.596M	3.978M	3M98G7D	7.424M	3.914M

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



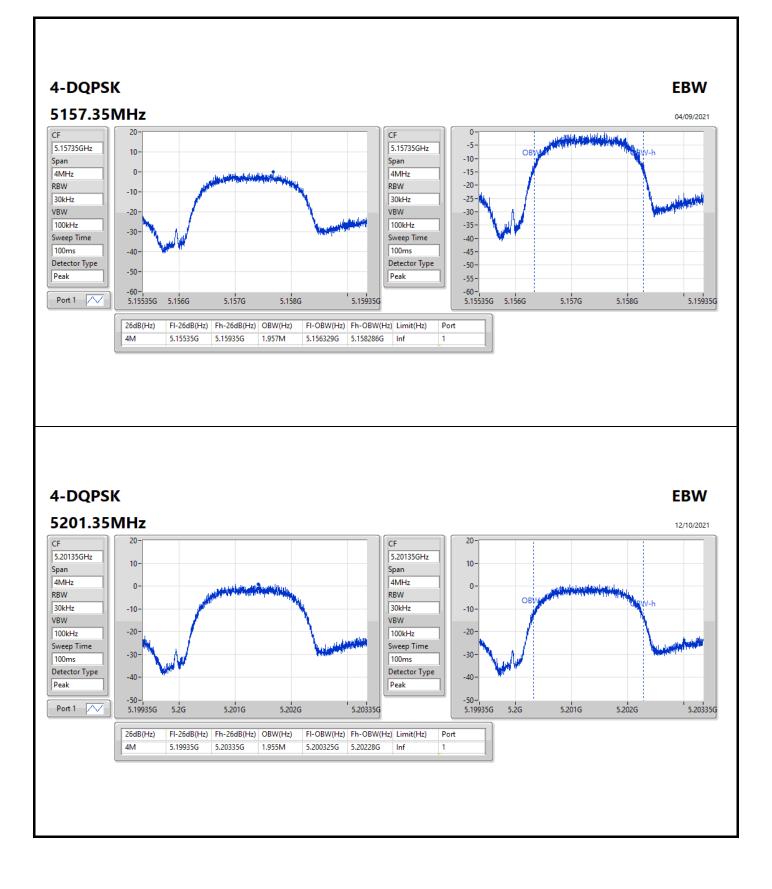
Result

Mode	Result	Limit	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
4-DQPSK,2M	-	-	-	-
5157.35MHz	Pass	Inf	4M	1.957M
5201.35MHz	Pass	Inf	4M	1.955M
5247.35MHz	Pass	Inf	4M	1.949M
4-DQPSK,4M	-	-	-	-
5162.35MHz	Pass	Inf	7.596M	3.938M
5204.35MHz	Pass	Inf	7.424M	3.914M
5246.35MHz	Pass	Inf	7.544M	3.978M

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

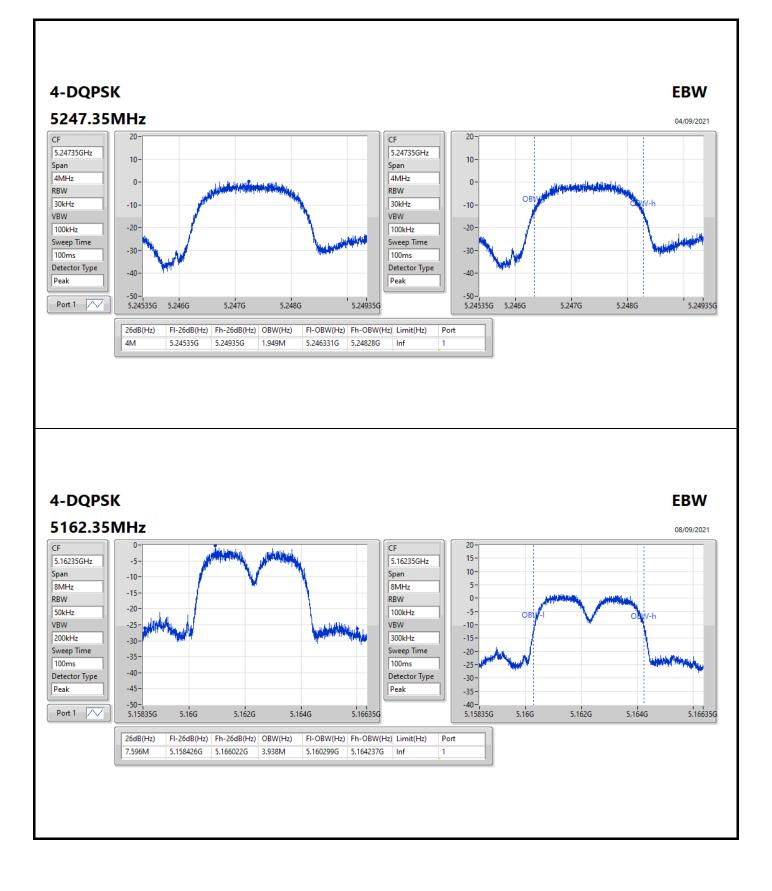






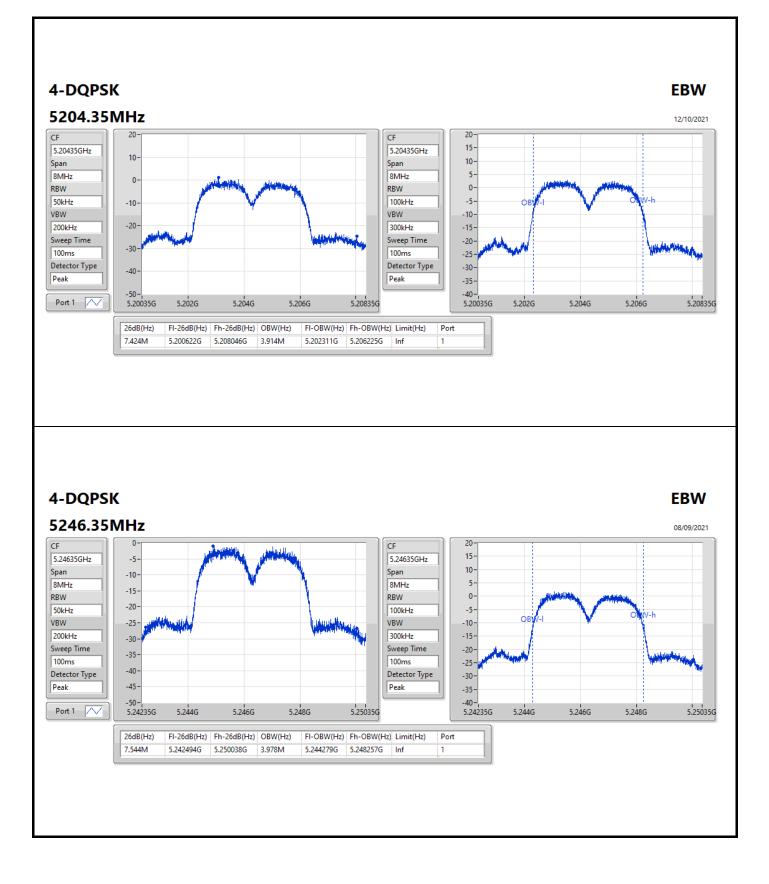














Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.725-5.85GHz	-	-	-	-	-
4-DQPSK,2M	1.641M	2.012M	2M01G7D	1.584M	1.955M
4-DQPSK,4M	3.522M	4.96M	4M96G7D	3.438M	4.468M

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

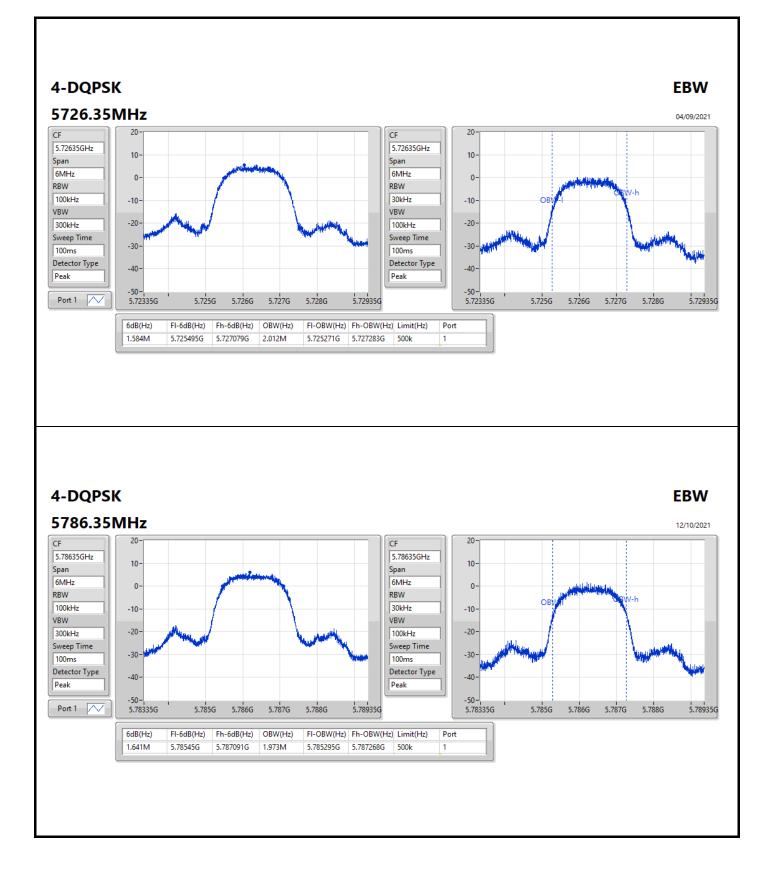


Result

Mode	Result	Limit	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
4-DQPSK,2M	-	-	-	-
5726.35MHz	Pass	500k	1.584M	2.012M
5786.35MHz	Pass	500k	1.641M	1.973M
5848.35MHz	Pass	500k	1.617M	1.955M
4-DQPSK,4M	-	-	-	-
5729.35MHz	Pass	500k	3.522M	4.96M
5787.35MHz	Pass	500k	3.45M	4.468M
5847.35MHz	Pass	500k	3.438M	4.504M

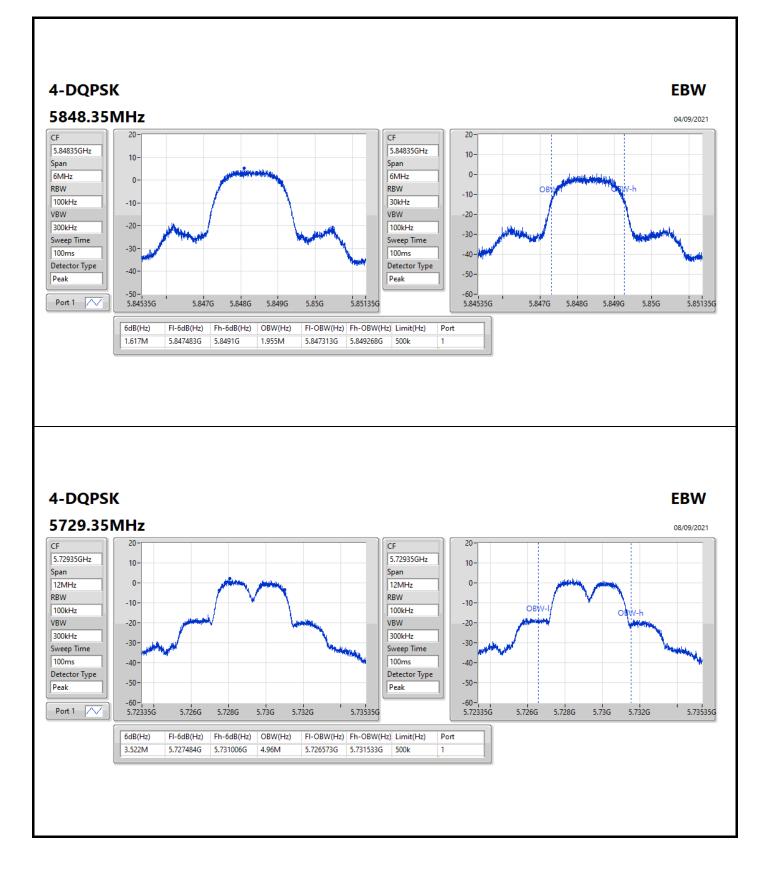
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band Port X-OBW = Port X 99% occupied bandwidth





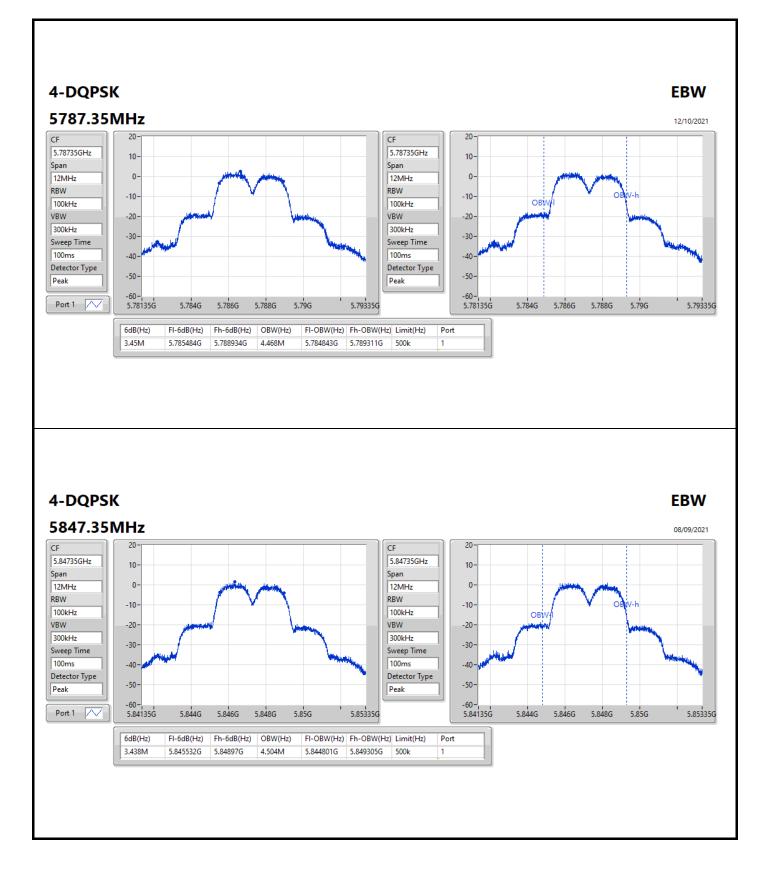














Summary

Mode	Max-N dB (Hz)	ITU-Code	Min-N dB (Hz)
5.725-5.85GHz	-	-	-
4-DQPSK	4.35M	4M40G7D	2.49M
4-DQPSK	7.434M	7M43G7D	7.278M

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

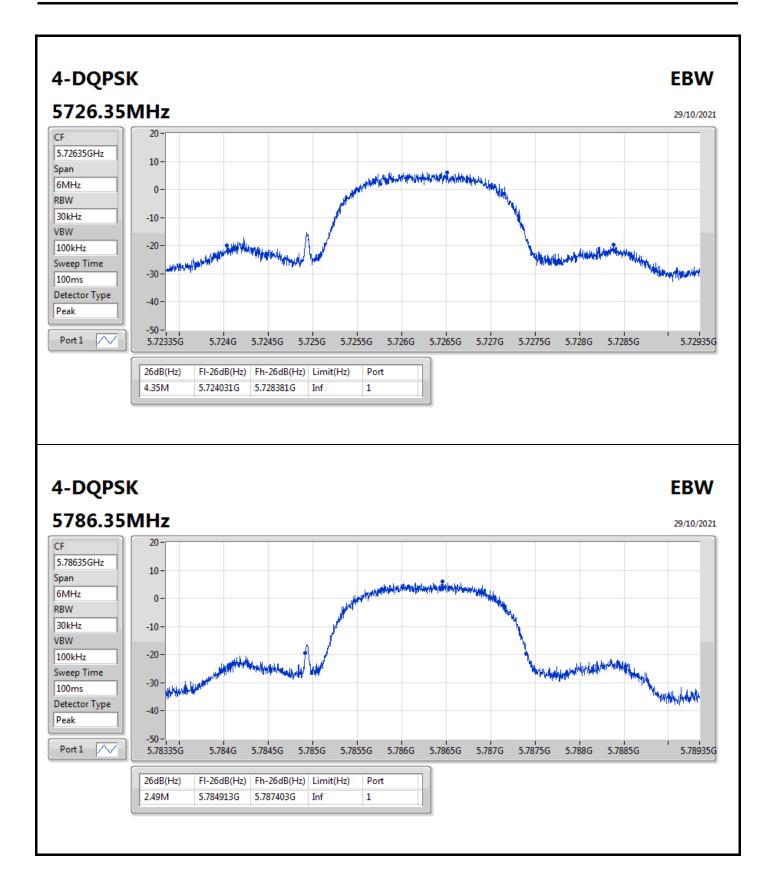


Result

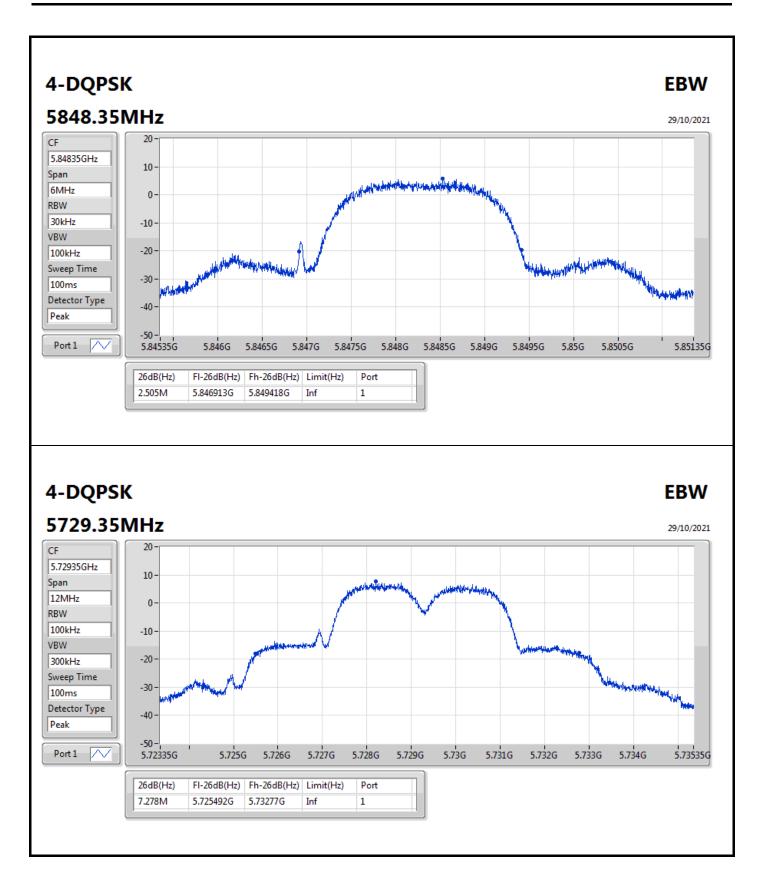
Mode	Result	Limit	Port 1-N dB
		(Hz)	(Hz)
4-DQPSK	-	-	-
5726.35MHz	Pass	Inf	4.35M
5786.35MHz	Pass	Inf	2.49M
5848.35MHz	Pass	Inf	2.505M
4-DQPSK	-	-	-
5729.35MHz	Pass	Inf	7.278M
5787.35MHz	Pass	Inf	7.368M
5847.35MHz	Pass	Inf	7.434M

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

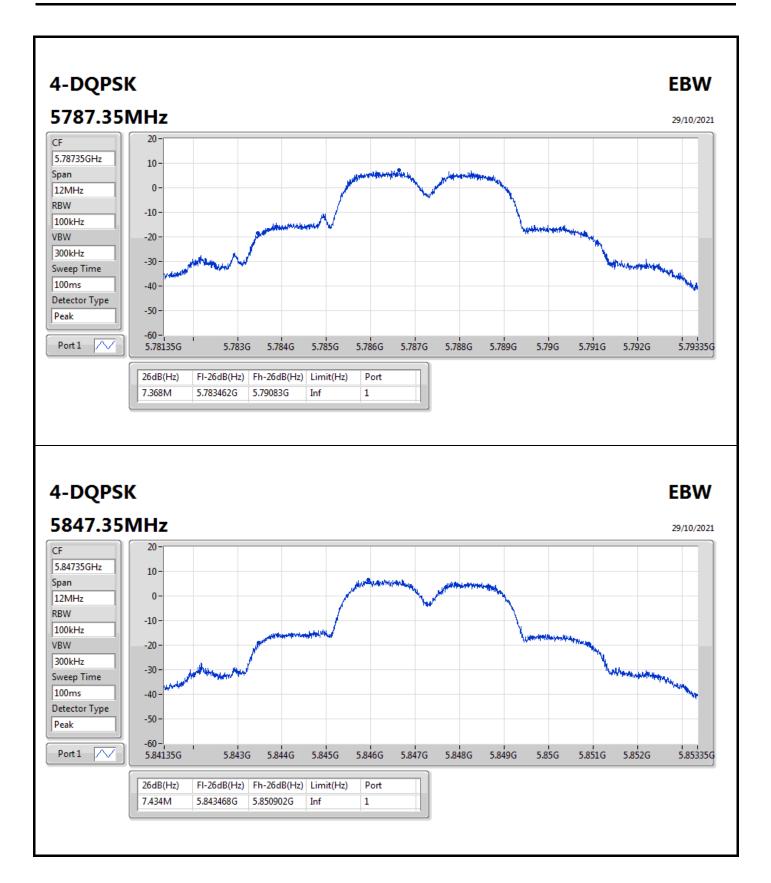














EBW_6dB

Summary

Mode	Max-N dB (Hz)	ITU-Code	Min-N dB (Hz)
5.725-5.895GHz	-	-	-
4-DQPSK,2M	1.653M	1M65G7D	1.617M
4-DQPSK,4M	3.546M	3M55G7D	3.378M

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



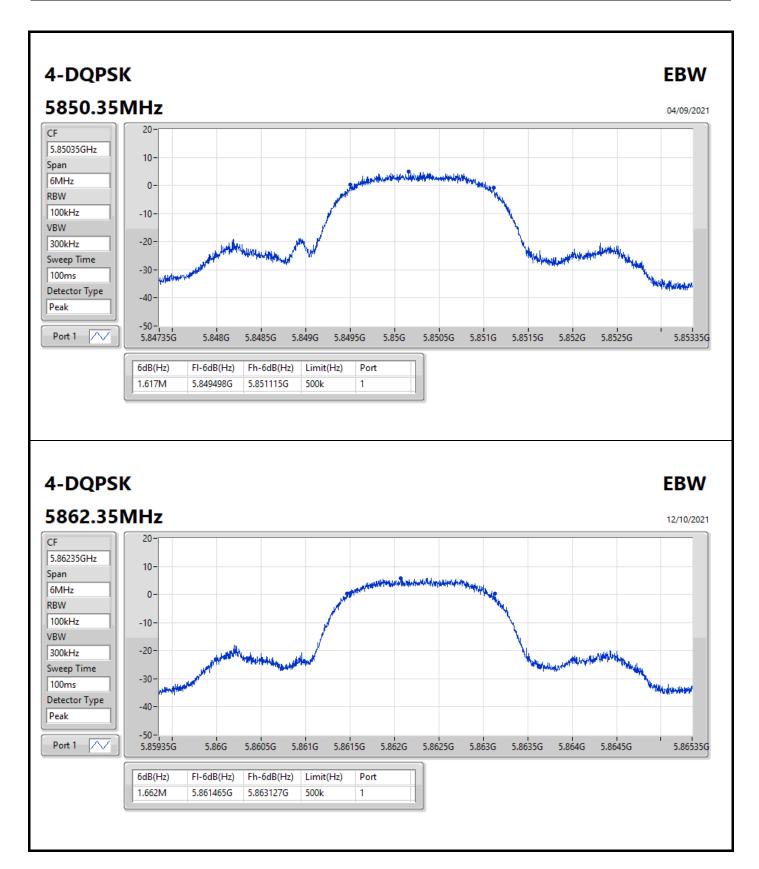
EBW_6dB

Result

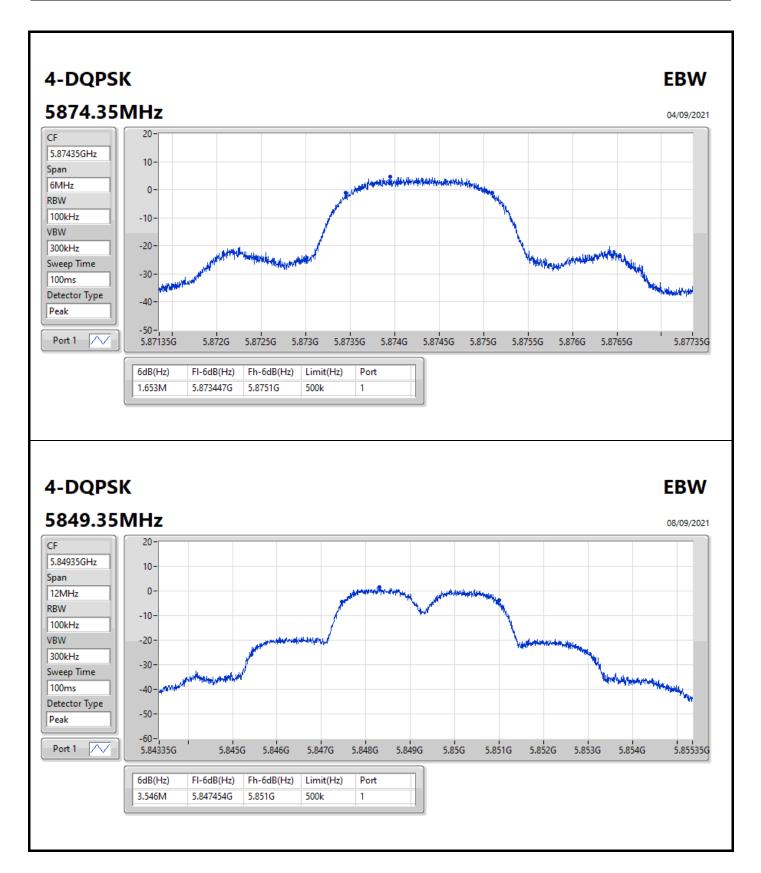
Mode	Result	Limit	Port 1-N dB
		(Hz)	(Hz)
4-DQPSK,2M	-	-	-
5850.35MHz	Pass	500k	1.617M
5862.35 MHz	Pass	500k	1.662M
5874.35MHz	Pass	500k	1.653M
4-DQPSK,4M	-	-	-
5849.35MHz	Pass	500k	3.546M
5861.35MHz	Pass	500k	3.468M
5875.35MHz	Pass	500k	3.378M

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

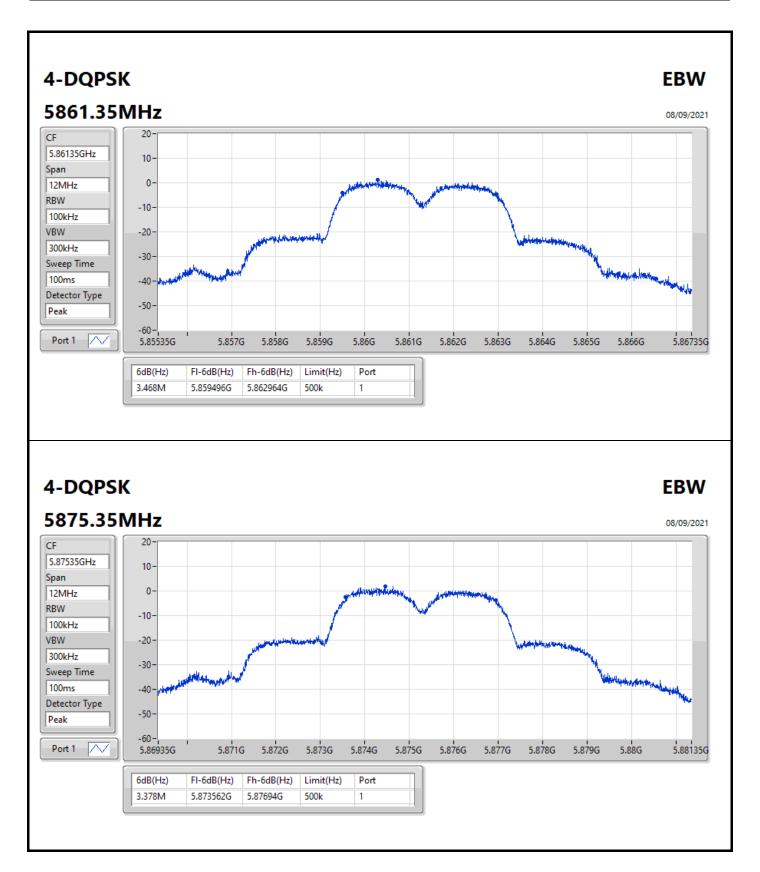














EBW_26dB

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.725-5.895GHz	-	-	-	-	-
4-DQPSK,2M	3.222M	1.958M	1M96G7D	3.222M	1.958M
4-DQPSK,4M	7.41M	4.414M	4M41G7D	7.404M	4.378M

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



EBW_26dB

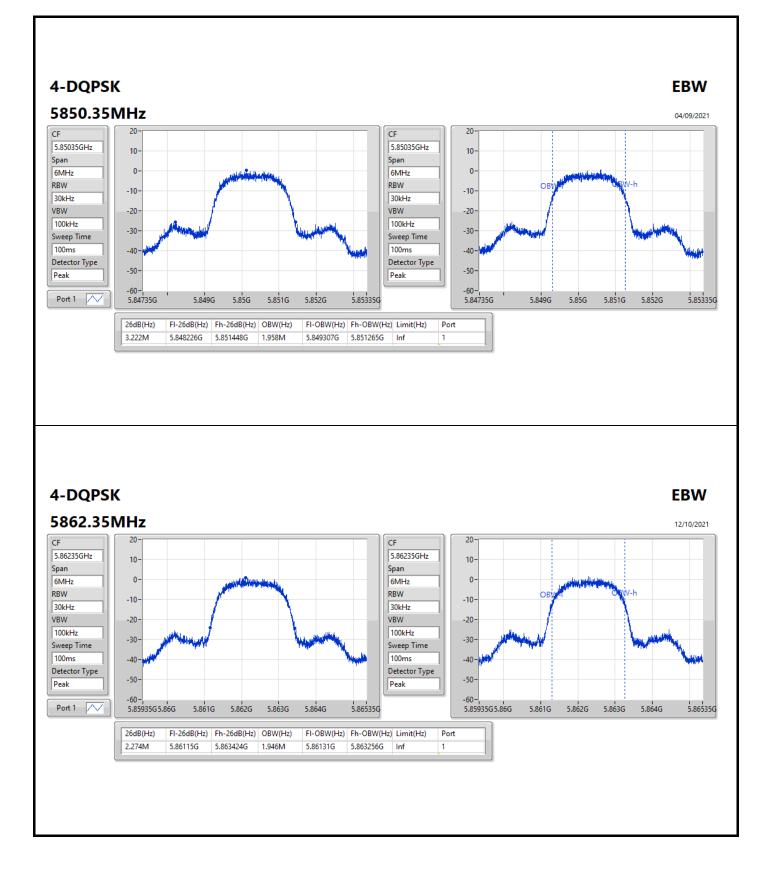
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)
4-DQPSK,2M	-	-	-	-
5850.35MHz	Pass	Inf	3.222M	1.958M
5862.35 MHz	Pass	Inf	2.274M	1.946M
5874.35MHz	Pass	Inf	2.268M	1.946M
4-DQPSK,4M	-	-	-	-
5849.35MHz	Pass	Inf	7.29M	4.516M
5861.35MHz	Pass	Inf	7.404M	4.414M
5875.35MHz	Pass	Inf	7.41M	4.378M

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

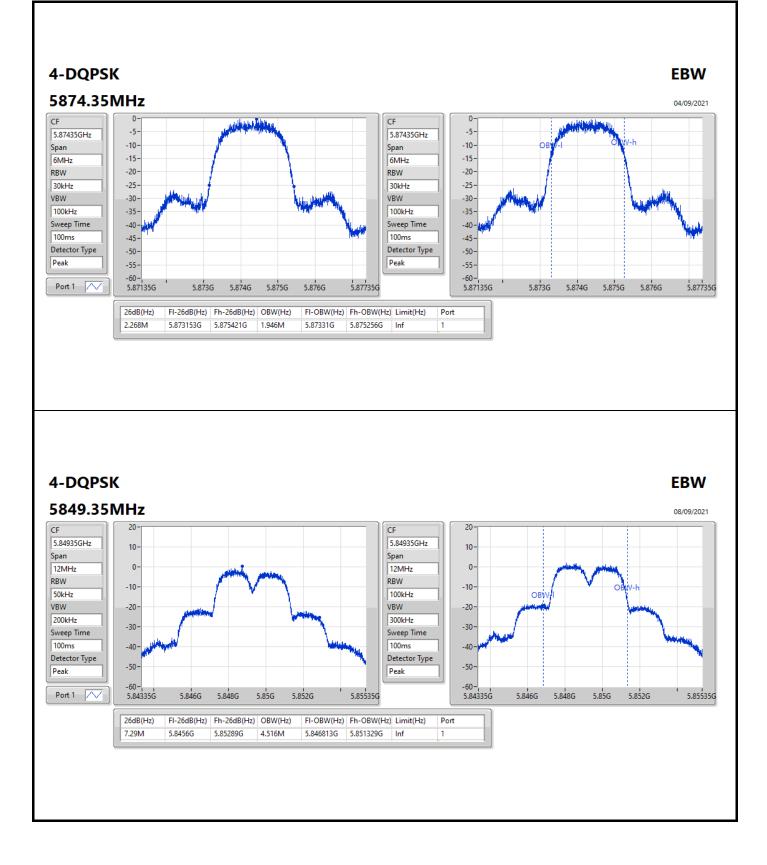






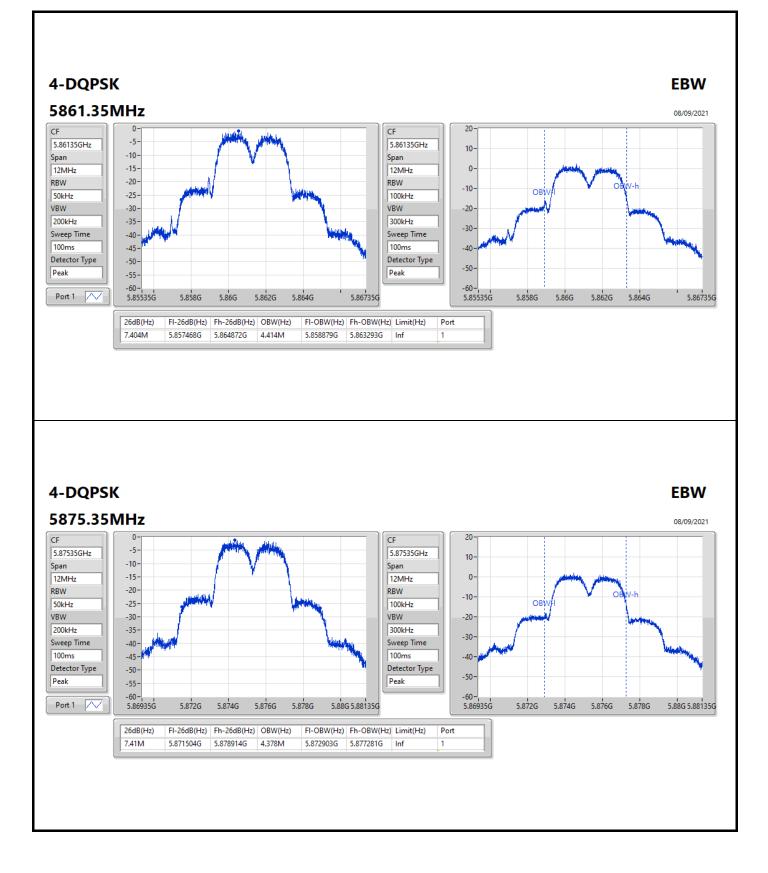














Appendix B.1

Mode	Total Power (dBm)	Total Power (W)
5.15-5.25GHz	-	-
4-DQPSK,2M	7.43	0.00553
4-DQPSK,4M	6.01	0.00399



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
4-DQPSK,2M	-	-	-	-	-
5157.35MHz	Pass	4.10	6.74	6.74	23.98
5201.35MHz	Pass	4.10	7.10	7.10	23.98
5247.35MHz	Pass	4.10	7.43	7.43	23.98
4-DQPSK,4M	-	-	-	-	-
5162.35MHz	Pass	4.10	6.01	6.01	23.98
5204.35MHz	Pass	4.10	5.98	5.98	23.98
5246.35MHz	Pass	4.10	5.96	5.96	23.98

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



Appendix B.2

Mode	Total Power (dBm)	Total Power (W)
5.725-5.85GHz	-	-
4-DQPSK,2M	7.74	0.00594
4-DQPSK,4M	6.33	0.00430



Appendix B.2

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	Power Limit (dBm)
4-DQPSK,2M	-	-	-	-	-
5726.35MHz	Pass	3.50	7.74	7.74	30.00
5786.35MHz	Pass	3.50	7.33	7.33	30.00
5848.35MHz	Pass	3.50	7.12	7.12	30.00
4-DQPSK,4M	-	-	-	-	-
5729.35MHz	Pass	3.50	6.33	6.33	30.00
5787.35MHz	Pass	3.50	6.23	6.23	30.00
5847.35MHz	Pass	3.50	6.08	6.08	30.00

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



Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.725-5.895GHz	-	-	-	-
4-DQPSK,2M	7.21	0.00526	10.59	0.01146
4-DQPSK,4M	6.29	0.00426	9.67	0.00927



Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Total Power (dBm)	EIRP (dBm)	EIRP Limit (dBm)
		(UDI)	(UBIII)	(UBIII)	(UBIII)	(ubili)
4-DQPSK,2M	-	-	-	-	-	-
5850.35MHz	Pass	3.38	7.38	7.38	10.76	30.00
5862.35MHz	Pass	3.38	7.21	7.21	10.59	30.00
5874.35MHz	Pass	3.38	6.91	6.91	10.29	30.00
4-DQPSK,4M	-	-	-	-	-	-
5849.35MHz	Pass	3.38	6.19	6.19	9.57	30.00
5861.35MHz	Pass	3.38	6.29	6.29	9.67	30.00
5875.35MHz	Pass	3.38	5.96	5.96	9.34	30.00

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



Summary

Mode	PD (dBm/RBW)
5.15-5.25GHz	-
4-DQPSK,2M	4.64
4-DQPSK,4M	2.09

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



Result

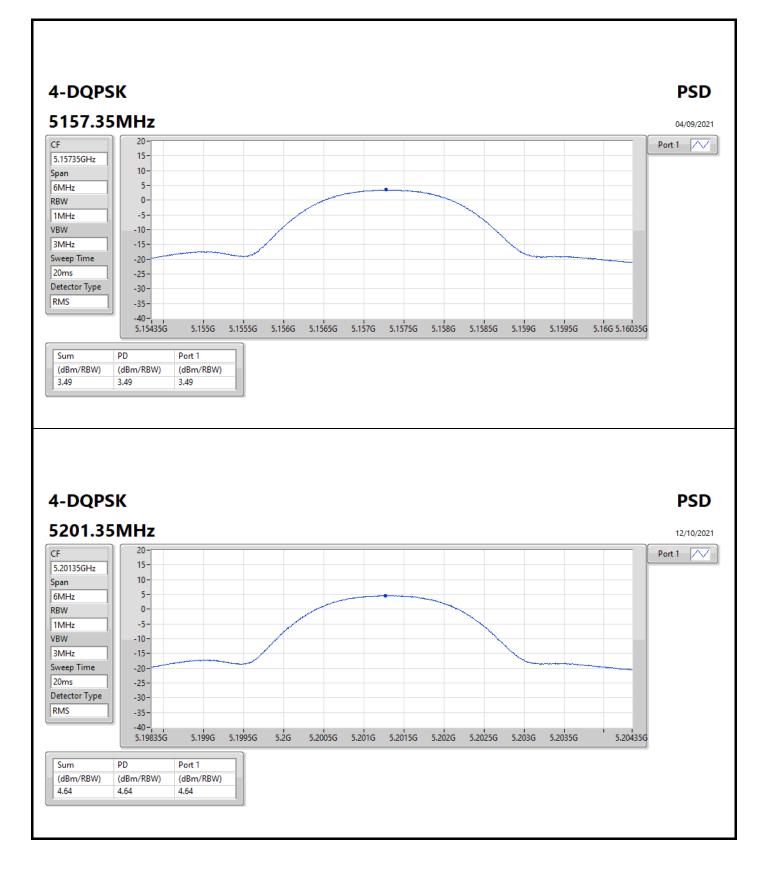
Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
4-DQPSK,2M	-	-	-	-	-
5157.35MHz	Pass	4.10	3.49	3.49	11.00
5201.35MHz	Pass	4.10	4.64	4.64	11.00
5247.35MHz	Pass	4.10	4.15	4.15	11.00
4-DQPSK,4M	-	-	-	-	-
5162.35MHz	Pass	4.10	0.94	0.94	11.00
5204.35MHz	Pass	4.10	2.09	2.09	11.00
5246.35MHz	Pass	4.10	0.86	0.86	11.00

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;





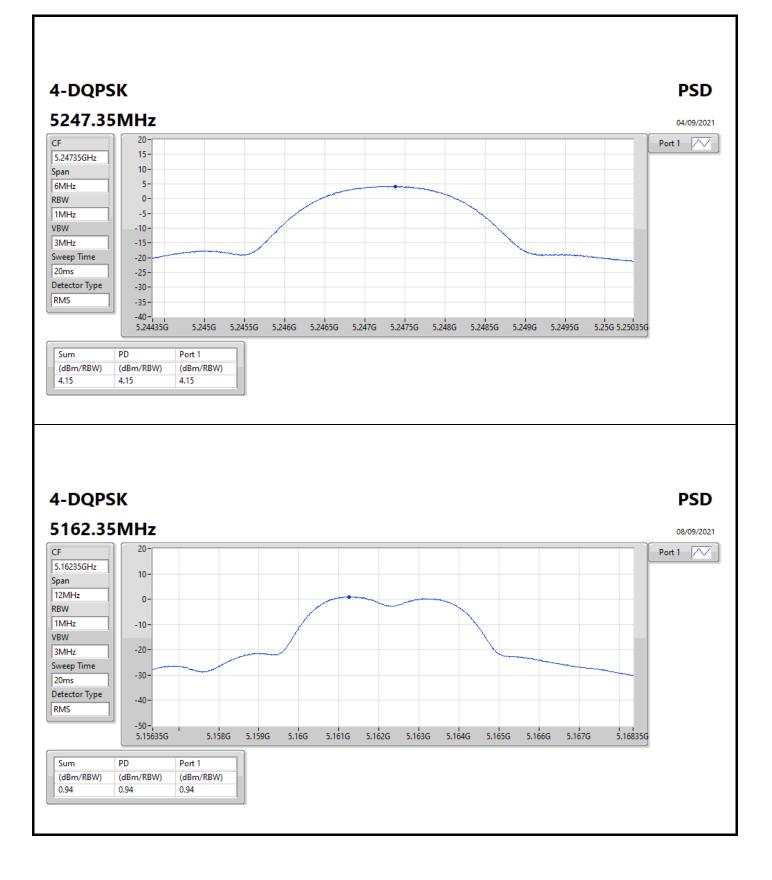








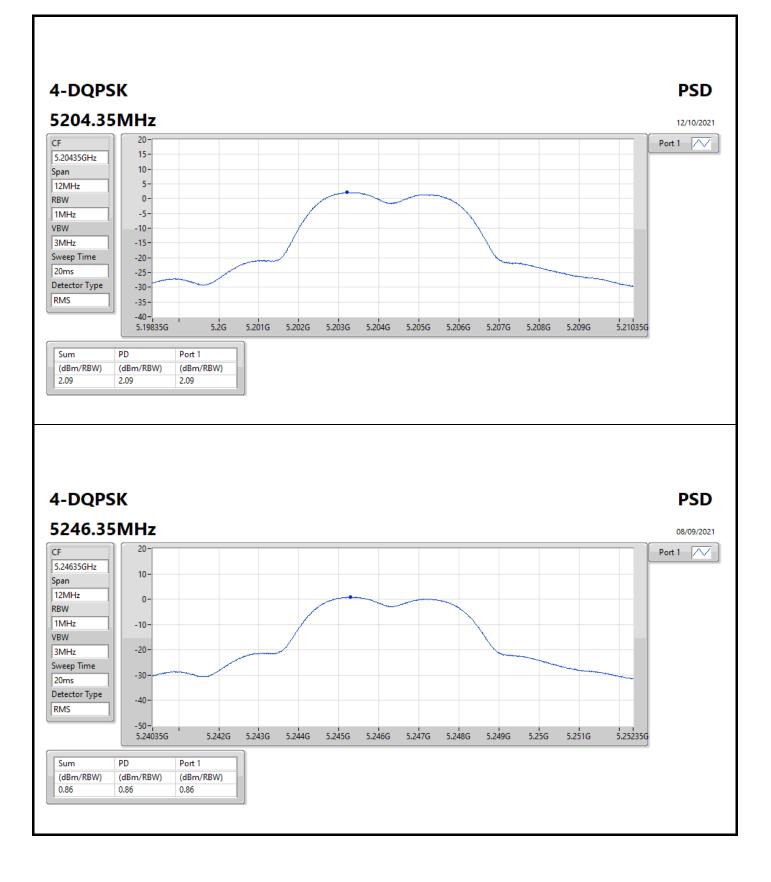














Summary

Mode	PD (dBm/RBW)
5.725-5.85GHz	-
4-DQPSK,2M	3.56
4-DQPSK,4M	0.07

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



Result

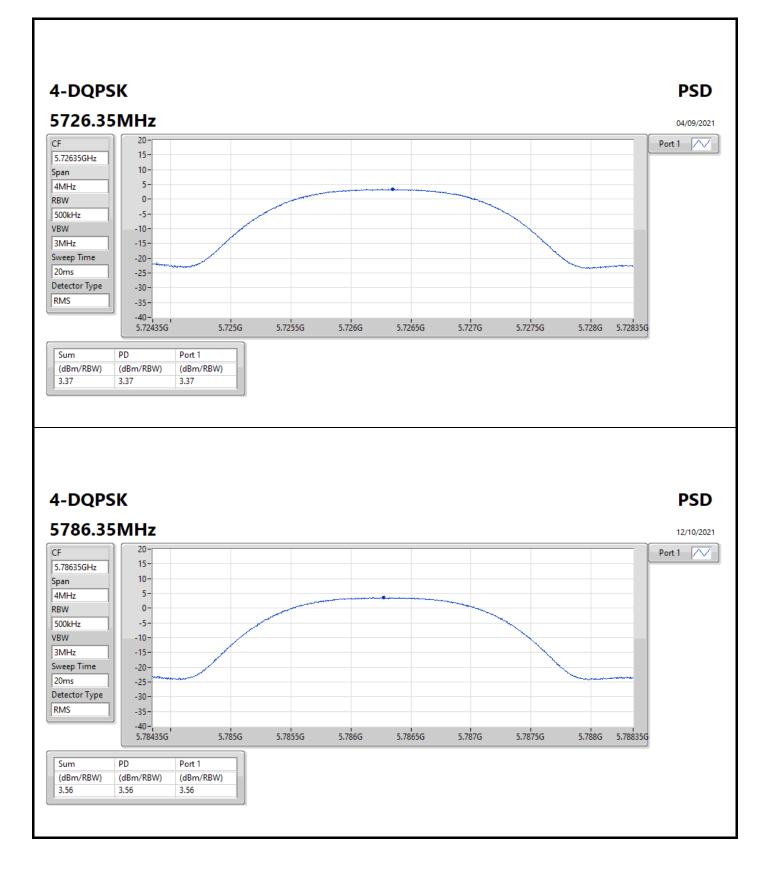
Mode	Result	DG	Port 1	PD	PD Limit	
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	
4-DQPSK,2M	-	-	-	-	-	
5726.35MHz	Pass	3.50	3.37	3.37	30.00	
5786.35MHz	Pass	3.50	3.56	3.56	30.00	
5848.35MHz	Pass	3.50	2.42	2.42	30.00	
4-DQPSK,4M	-	-	-	-	-	
5729.35MHz	Pass	3.50	-0.32	-0.32	30.00	
5787.35MHz	Pass	3.50	0.07	0.07	30.00	
5847.35MHz	Pass	3.50	-1.16	-1.16	30.00	

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;





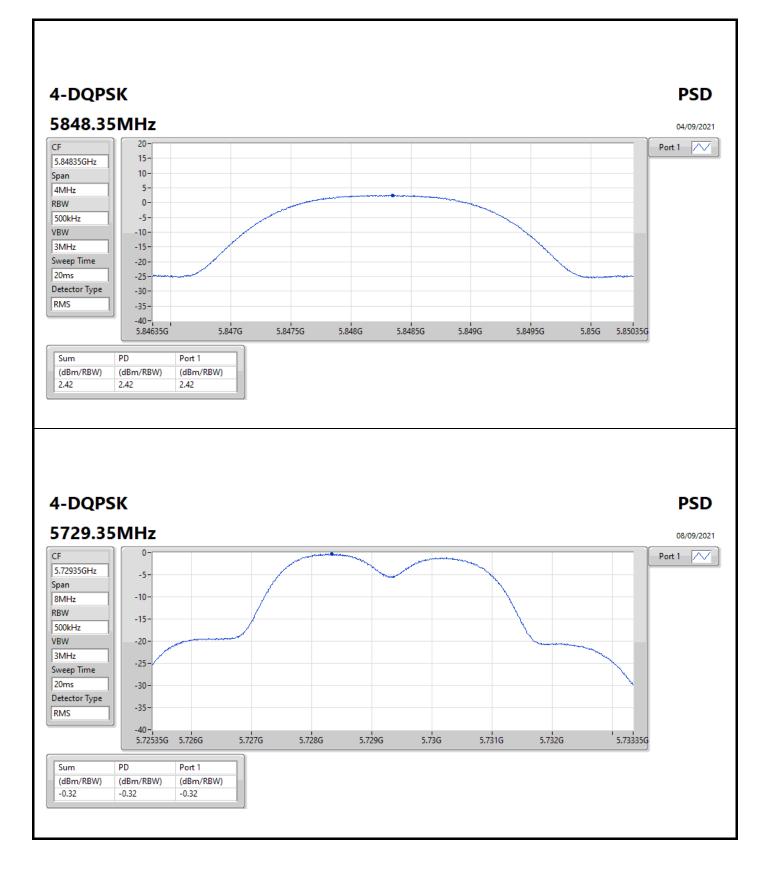






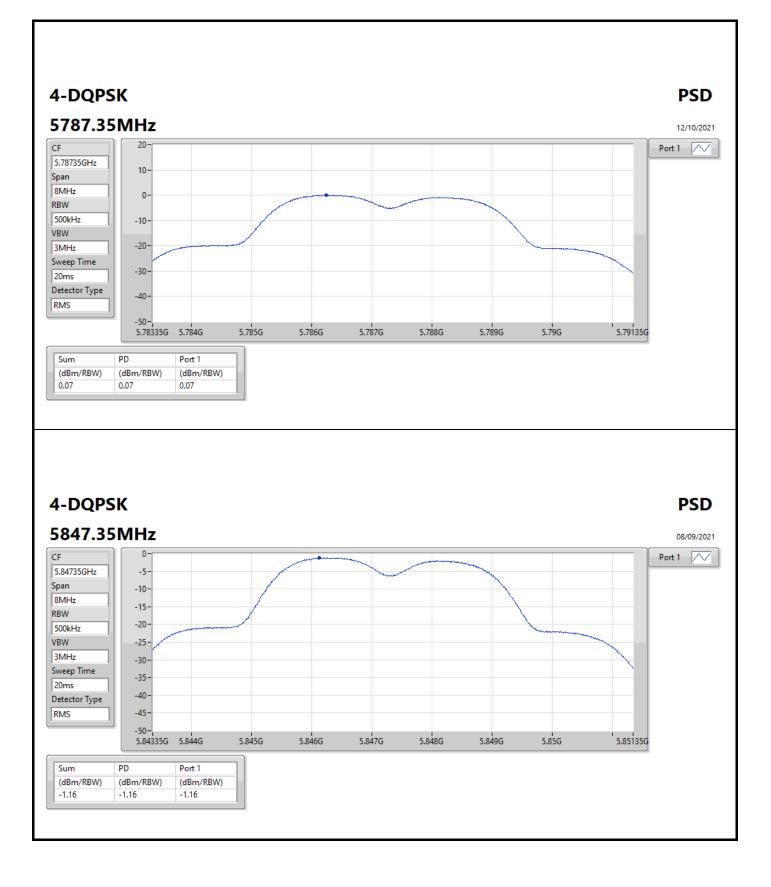














Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)		
5.725-5.895GHz	-	-		
4-DQPSK,2M	5.05	8.43		
4-DQPSK,4M	0.65	4.03		

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

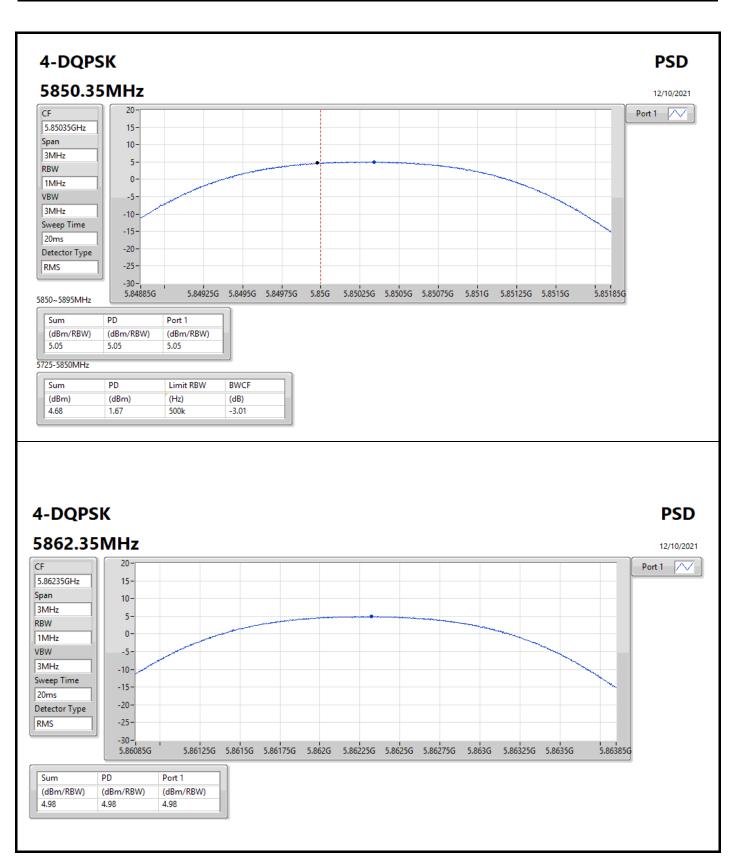


Result

Mode	Result	DG (dBi)	PD (dBm/RBW)	EIRP PD (dBm/RBW)	EIRP PD Limit (dBm/RBW)		
4-DQPSK,2M	-	-	-	-	-		
5850.35MHz	Pass	3.38	5.05	8.43	14.00		
5862.35MHz	Pass	3.38	4.98	8.36	14.00		
5874.35MHz	Pass	3.38	3.79	7.17	14.00		
4-DQPSK,4M	-	-	-	-	-		
5849.35MHz	Pass	3.38	0.44	3.82	14.00		
5861.35MHz	Pass	3.38	0.65	4.03	14.00		
5875.35MHz	Pass	3.38	0.58	3.96	14.00		

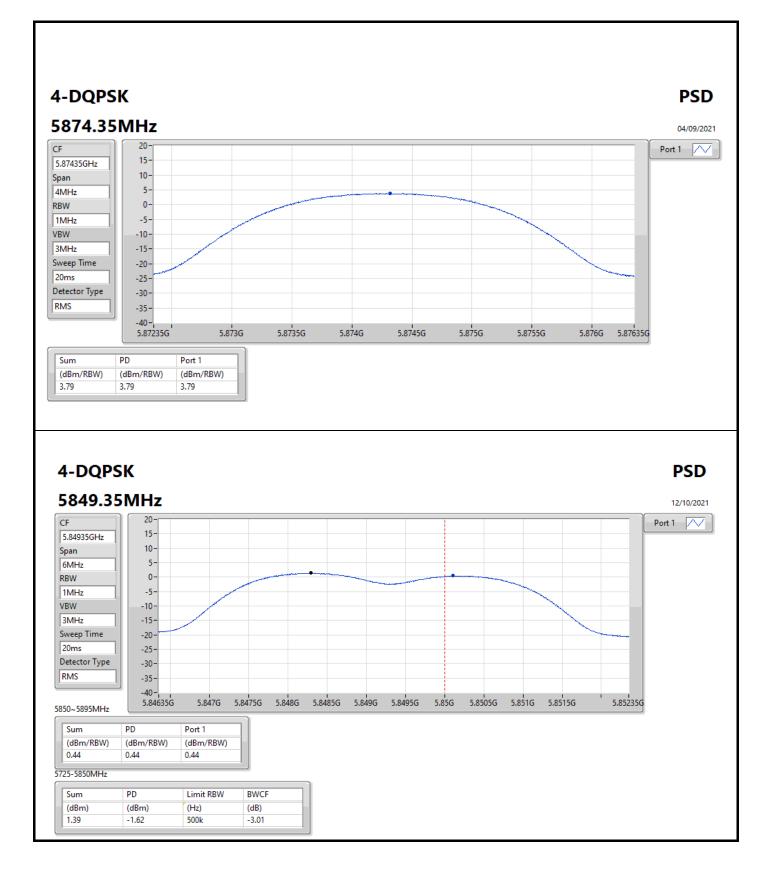
DG = Directional Gain; RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band; PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;







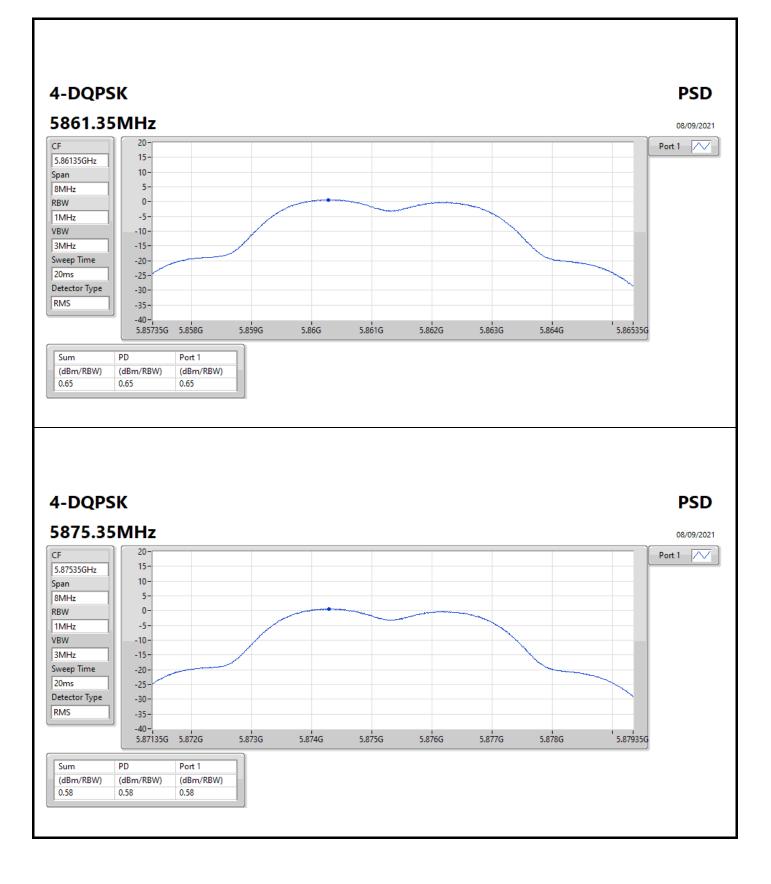














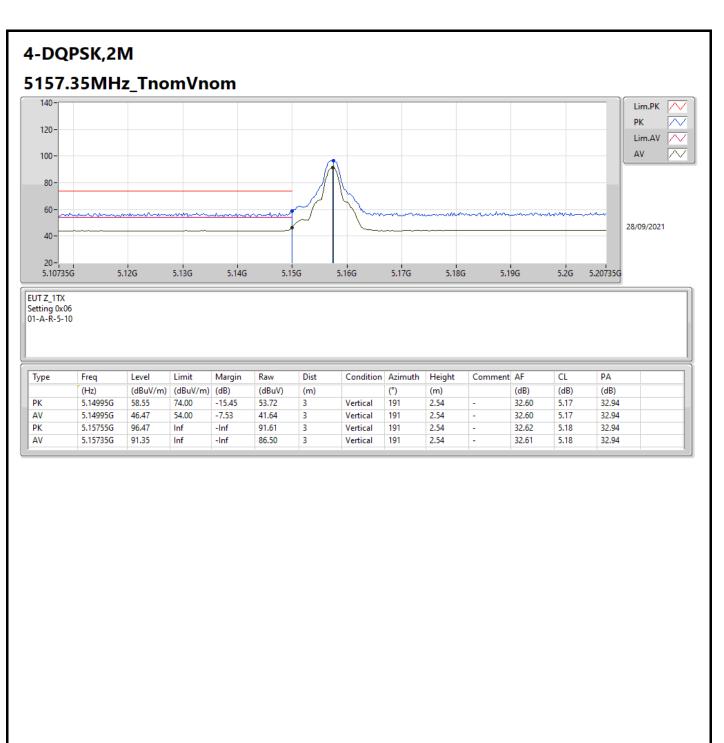
RSE TX above 1GHz

Appendix D.1

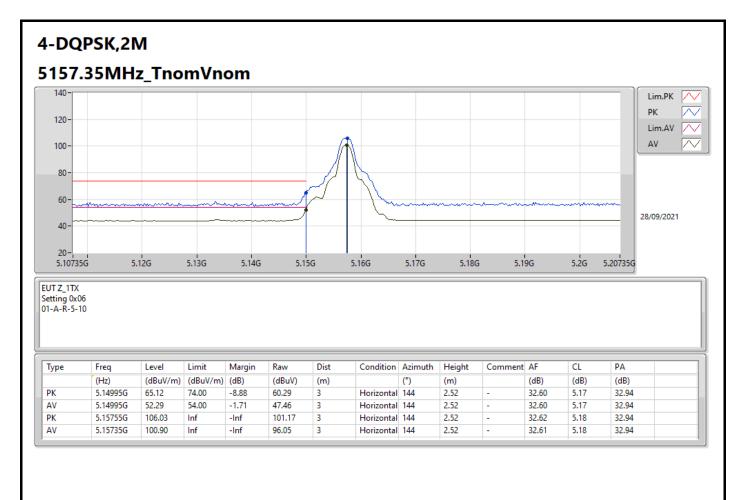
Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.15-5.25GHz	-	-	-	-	-	-	-	-	-	-	-
4-DQPSK,4M	Pass	AV	5.14995G	52.82	54.00	-1.18	3	Horizontal	143	2.51	-



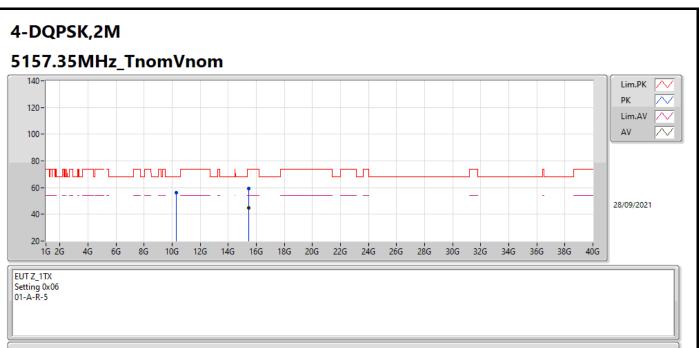
Appendix D.1





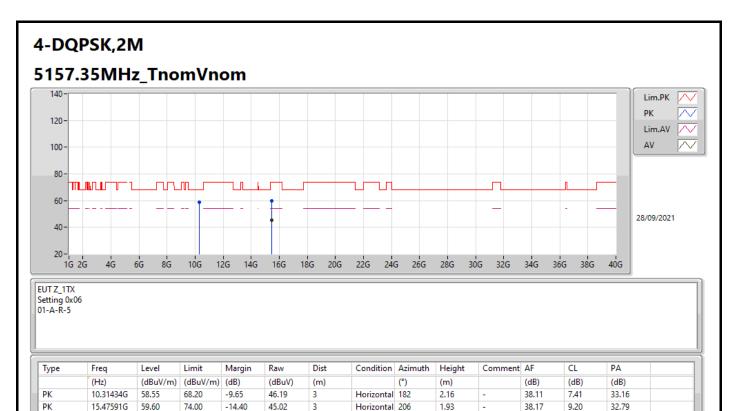






Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	10.31428G	56.44	68.20	-11.76	44.08	3	Vertical	37	2.21	-	38.11	7.41	33.16
PK	15.47257G	59.12	74.00	-14.88	44.54	3	Vertical	59	1.63	-	38.18	9.19	32.79
AV	15.47617G	44.89	54.00	-9.11	30.31	3	Vertical	59	1.63	-	38.17	9.20	32.79





Horizontal 206

1.93

-

38.17

9.20

32.79

AV

15.47559G

45.09

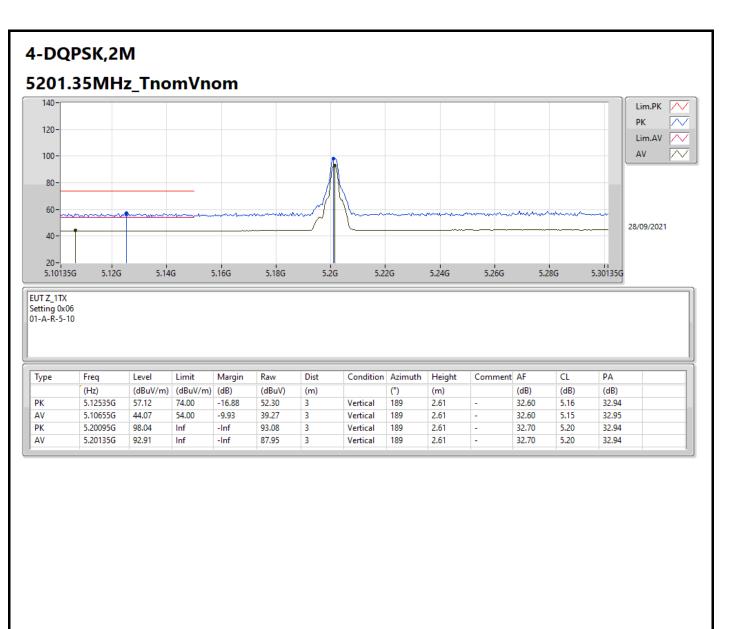
54.00

-8.91

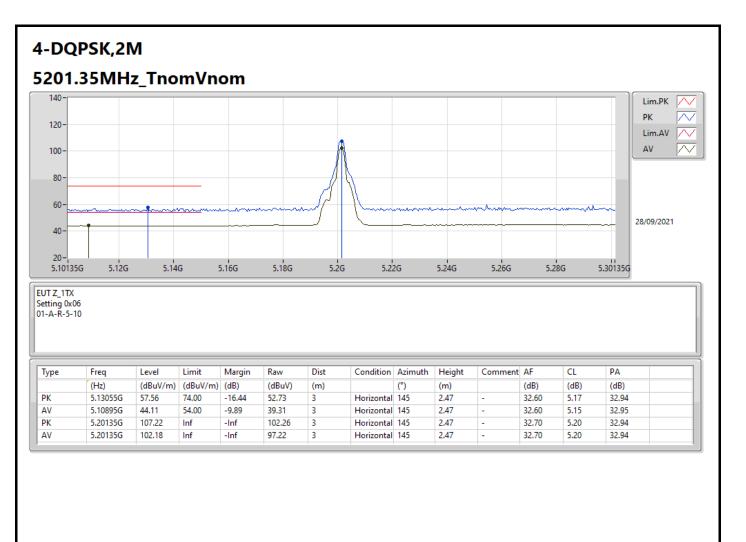
30.51

3

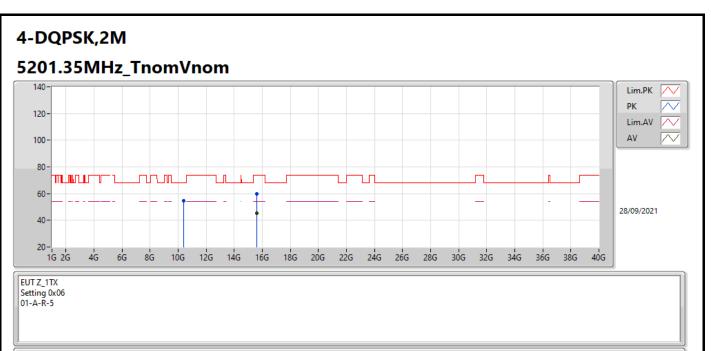






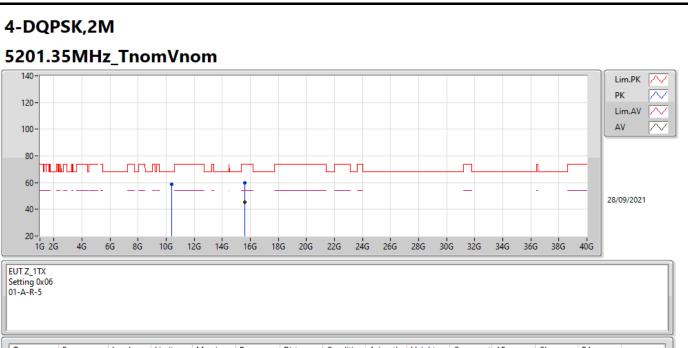






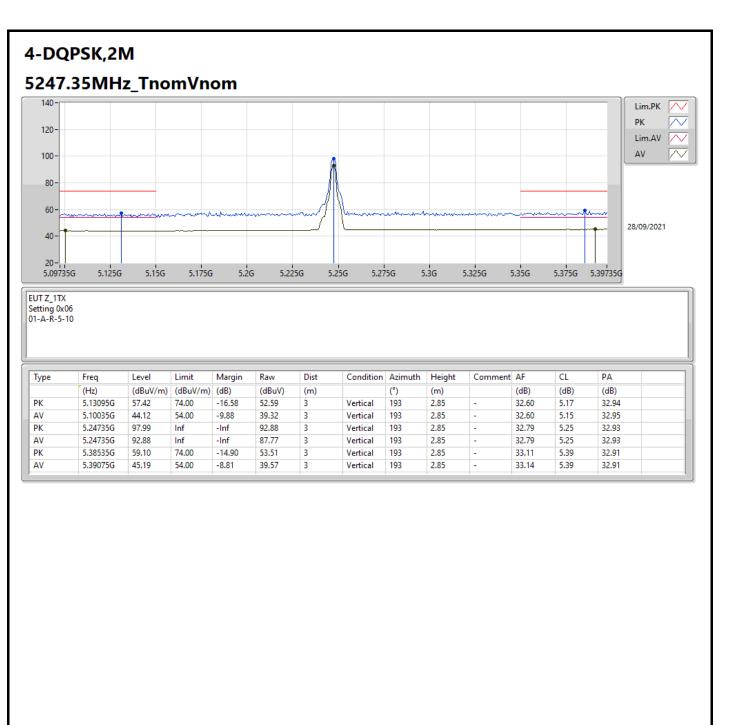
Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	10.40198G	54.46	68.20	-13.74	41.91	3	Vertical	157	1.80	-	38.20	7.44	33.09
PK	15.60311G	60.03	74.00	-13.97	45.31	3	Vertical	182	1.48	-	38.30	9.22	32.80
AV	15.60007G	45.60	54.00	-8.40	30.88	3	Vertical	182	1.48	-	38.30	9.22	32.80



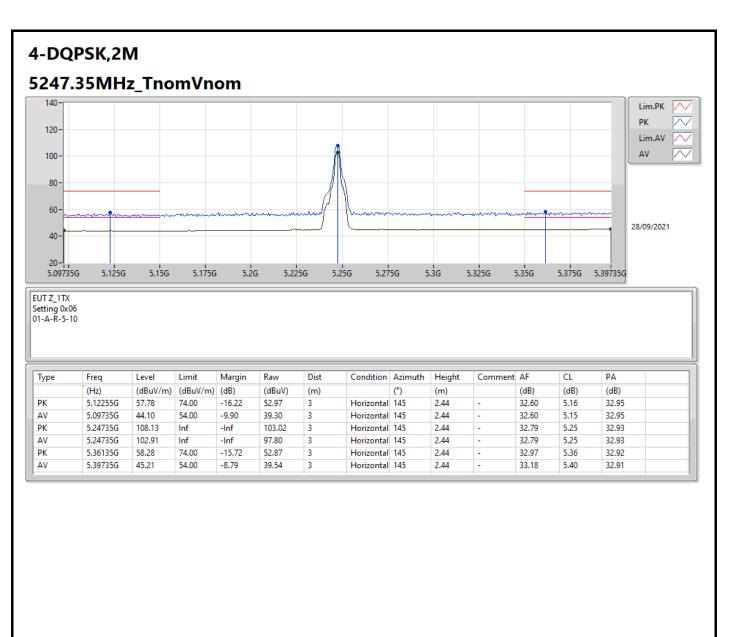


Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	10.40228G	58.76	68.20	-9.44	46.21	3	Horizontal	259	2.04	-	38.20	7.44	33.09
PK	15.60065G	60.06	74.00	-13.94	45.34	3	Horizontal	313	2.79	-	38.30	9.22	32.80
AV	15.60029G	45.58	54.00	-8.42	30.86	3	Horizontal	313	2.79	-	38.30	9.22	32.80
1													i i it

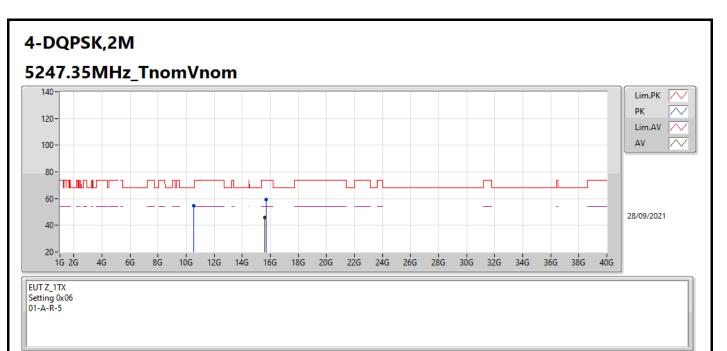






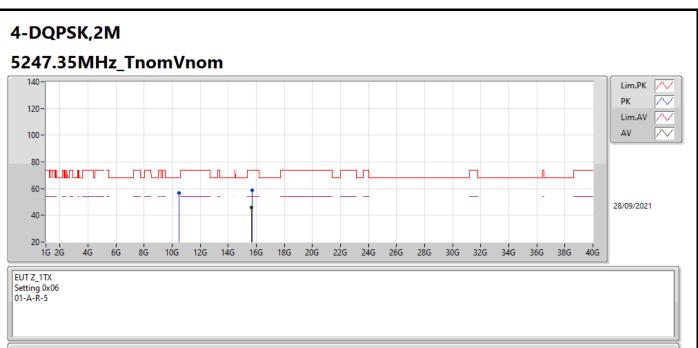






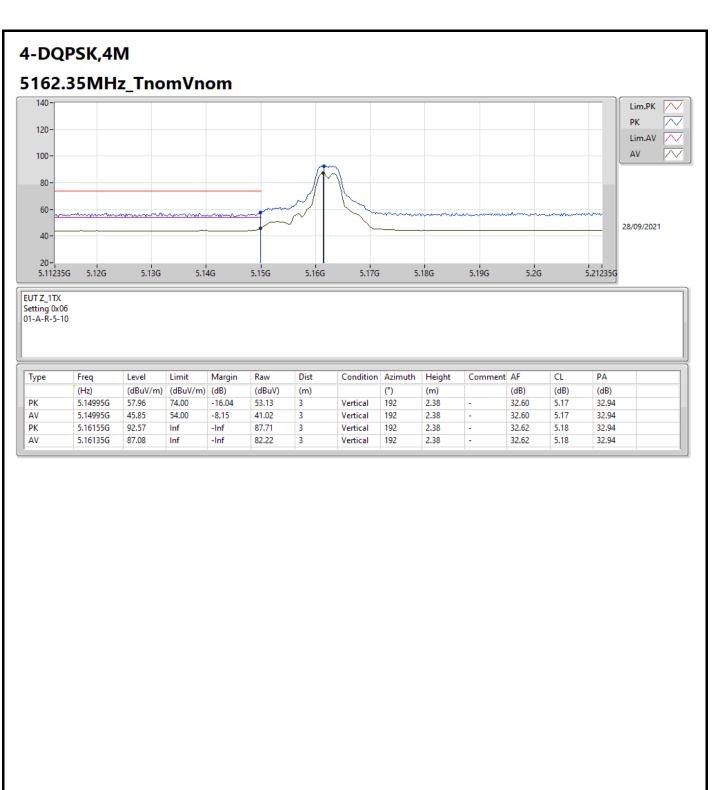
Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
РК	10.5637G	54.70	68.20	-13.50	41.78	3	Vertical	52	2.81	-	38.40	7.50	32.98
РК	15.68205G	59.09	74.00	-14.91	44.26	3	Vertical	237	1.39	-	38.38	9.24	32.79
AV	15.60045G	45.82	54.00	-8.18	31.10	3	Vertical	237	1.39	-	38.30	9.22	32.80



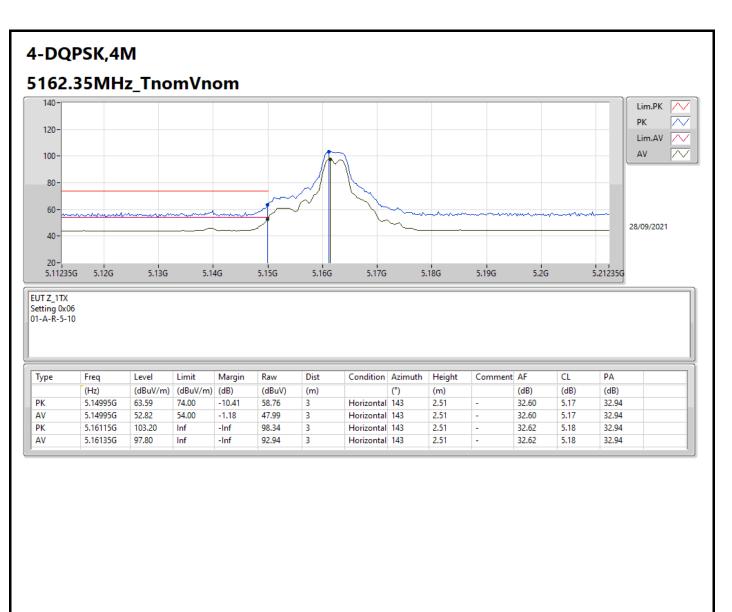


Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA	
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)	
РК	10.49428G	56.94	68.20	-11.26	44.09	3	Horizontal	255	2.78	-	38.39	7.47	33.01	
РК	15.70785G	58.56	74.00	-15.44	43.71	3	Horizontal	224	1.51	-	38.40	9.24	32.79	
AV	15.64245G	45.82	54.00	-8.18	31.05	3	Horizontal	224	1.51	-	38.34	9.23	32.80	

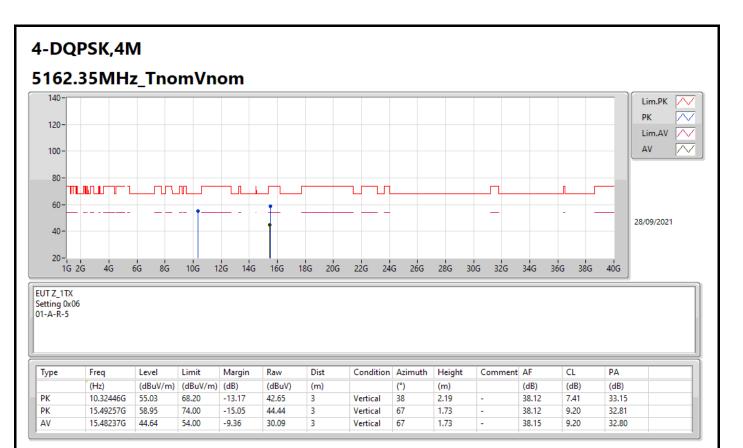




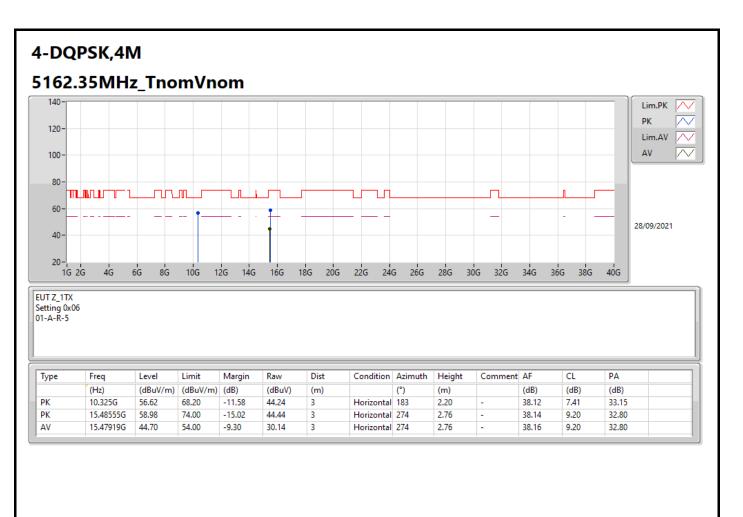




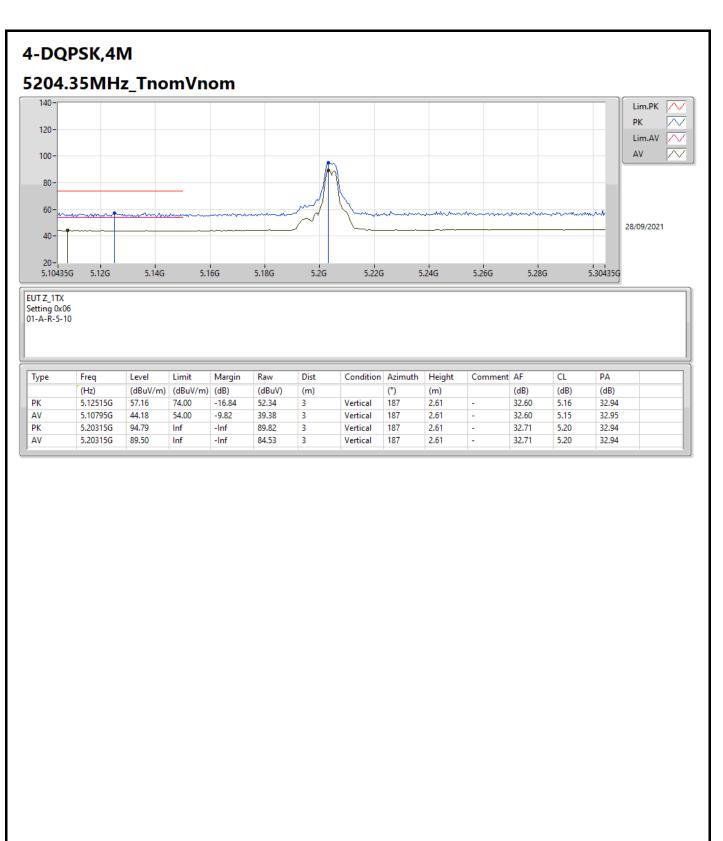




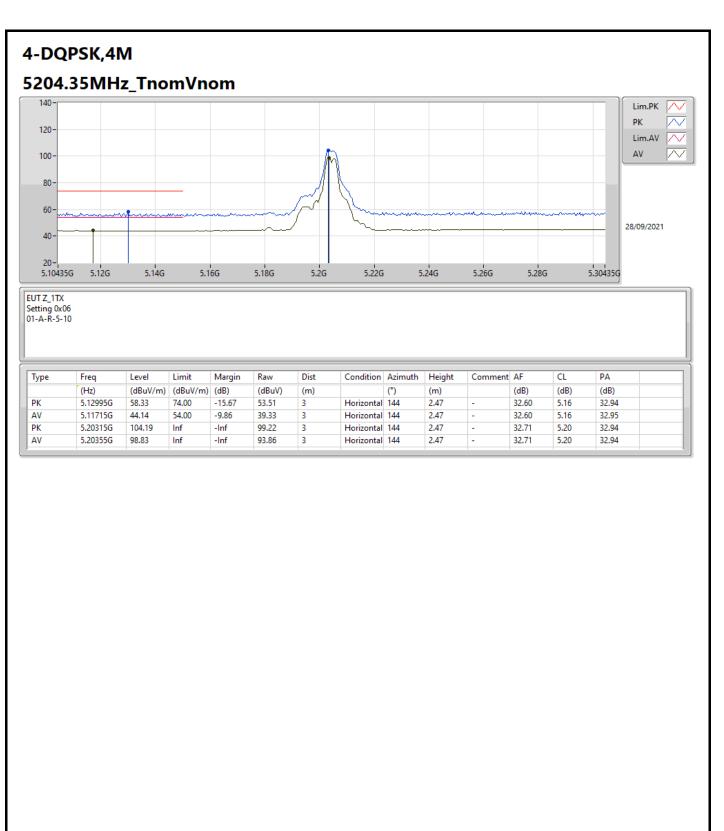




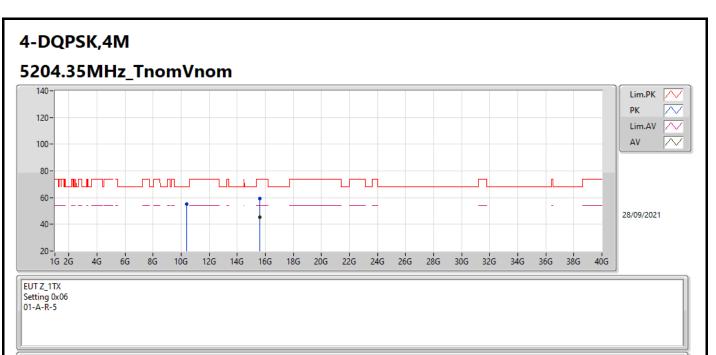






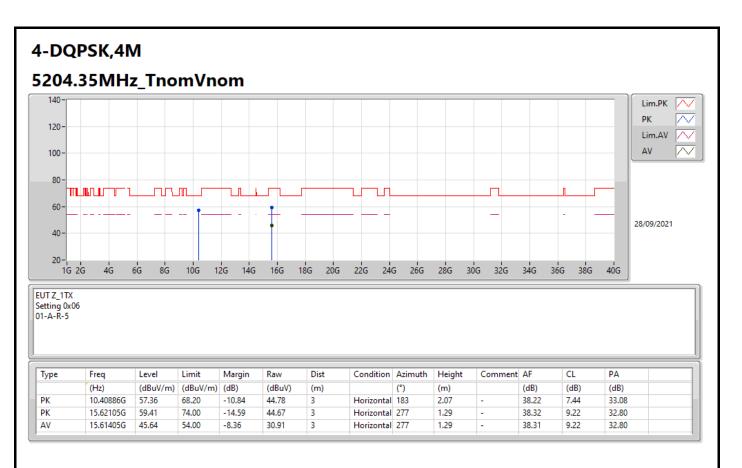




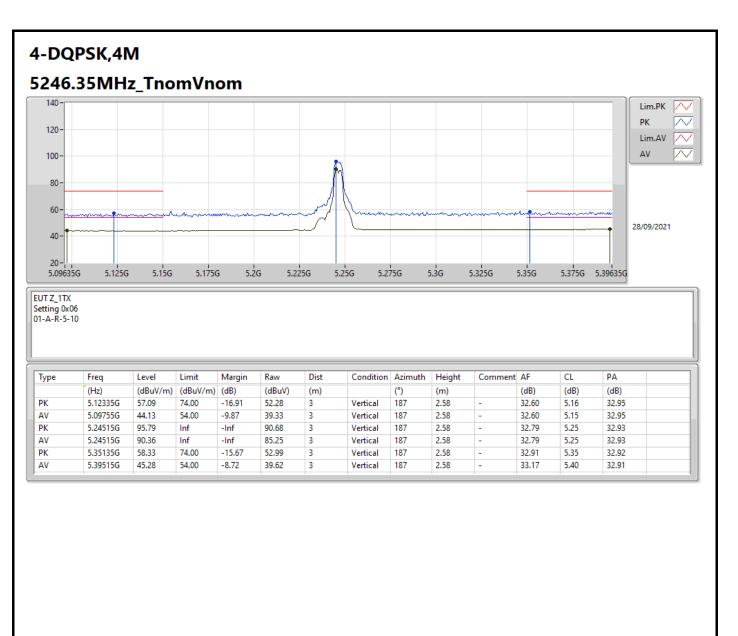


Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
РК	10.4047G	54.93	68.20	-13.27	42.37	3	Vertical	16.8	2.14	-	38.21	7.44	33.09
РК	15.60829G	59.38	74.00	-14.62	44.65	3	Vertical	202	1.27	-	38.31	9.22	32.80
AV	15.60901G	45.57	54.00	-8.43	30.84	3	Vertical	202	1.27	-	38.31	9.22	32.80

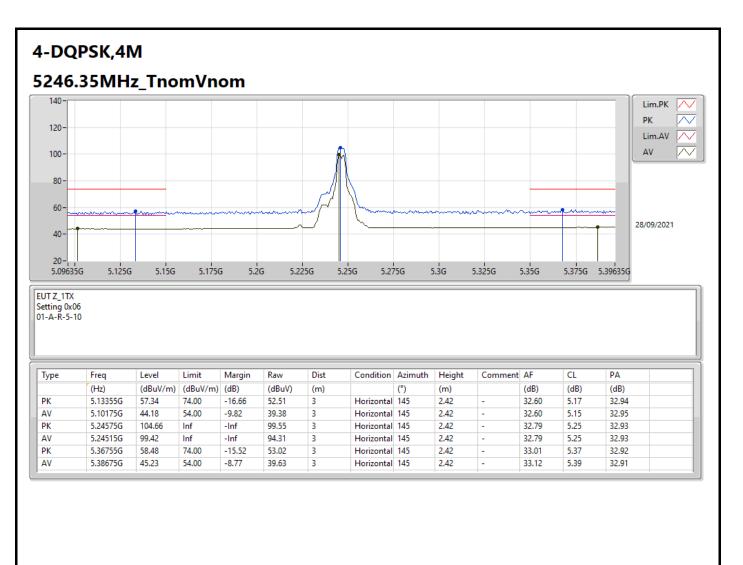




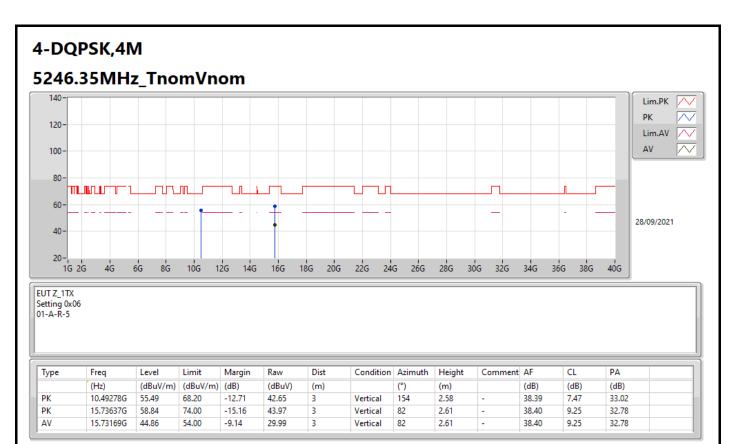




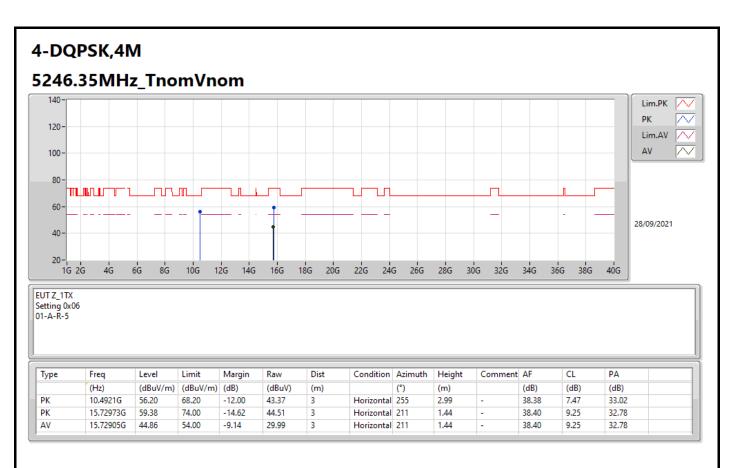














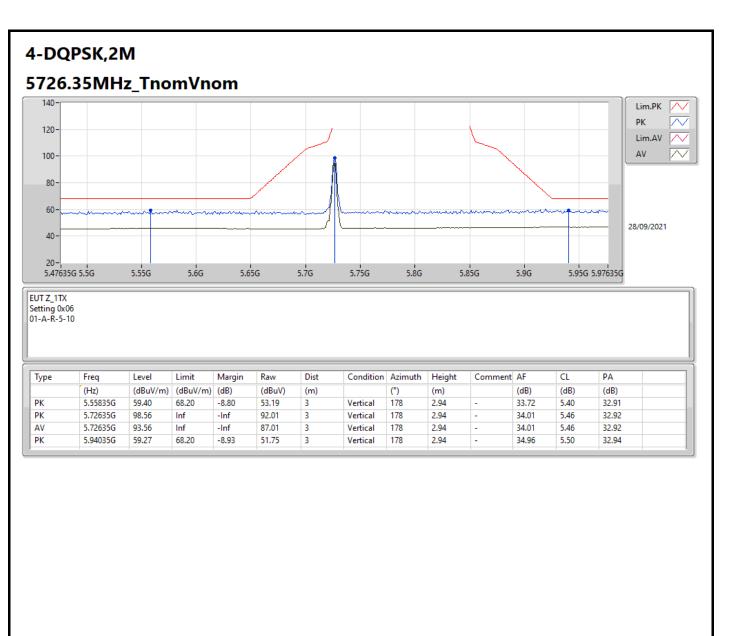
RSE TX above 1GHz

Appendix D.2

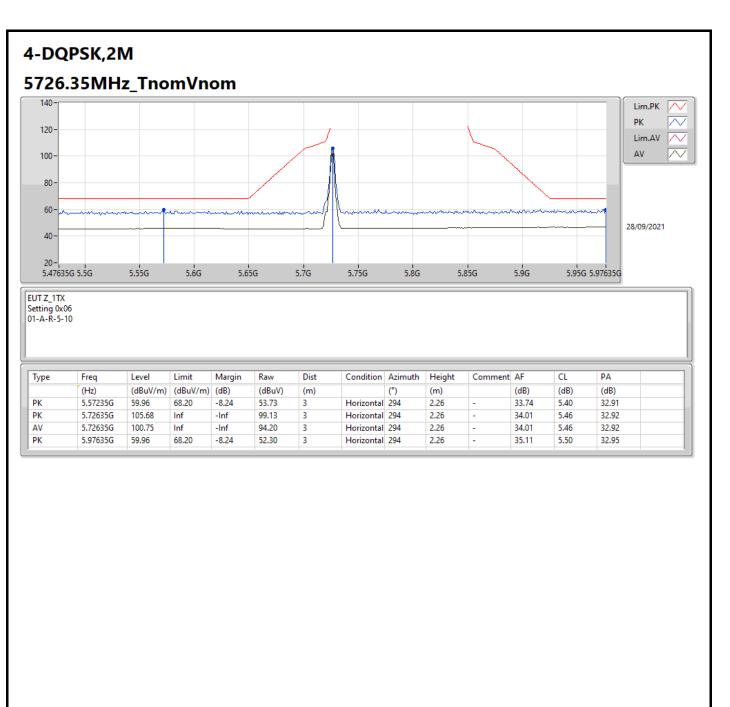
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.725-5.85GHz	-	-	-	-		-	-	-	-	-	-
4-DQPSK,2M	Pass	PK	6.03635G	61.10	68.20	-7.10	3	Vertical	255	3.00	-

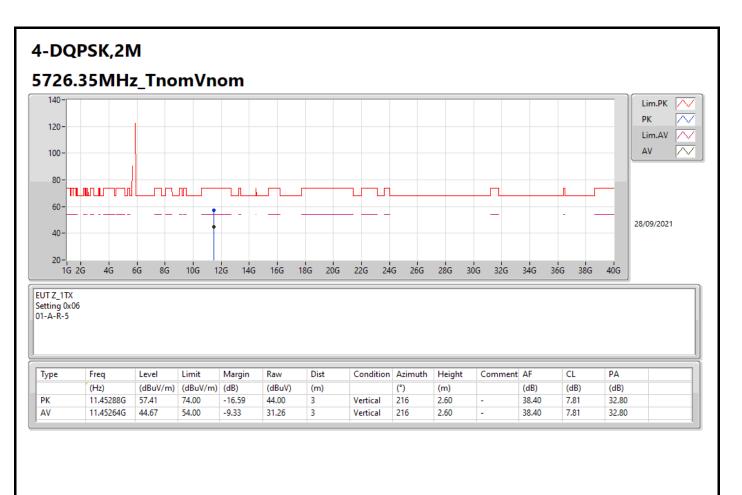




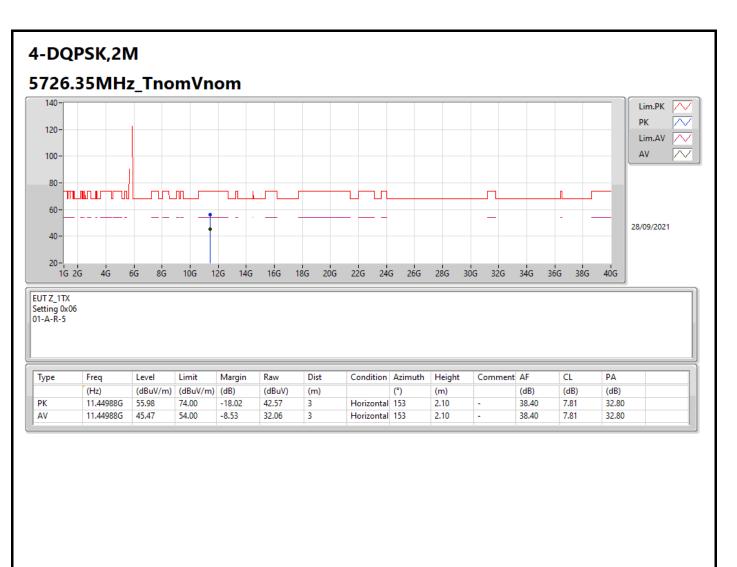




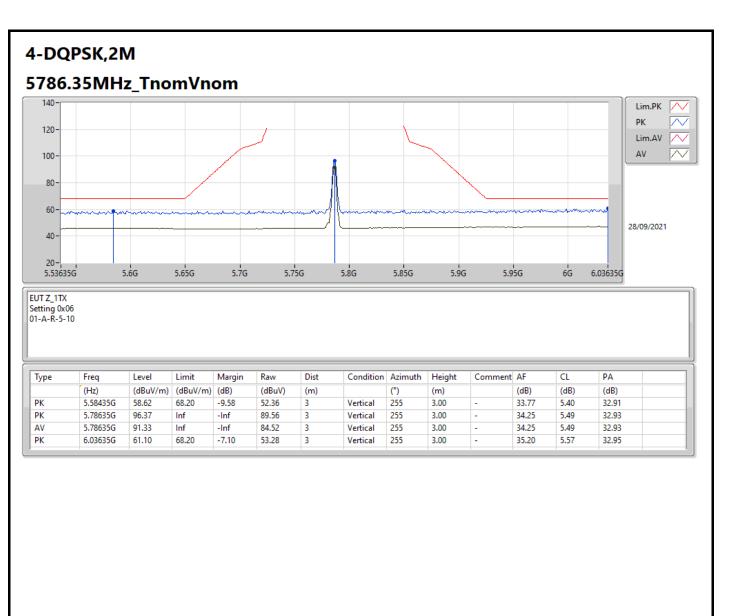




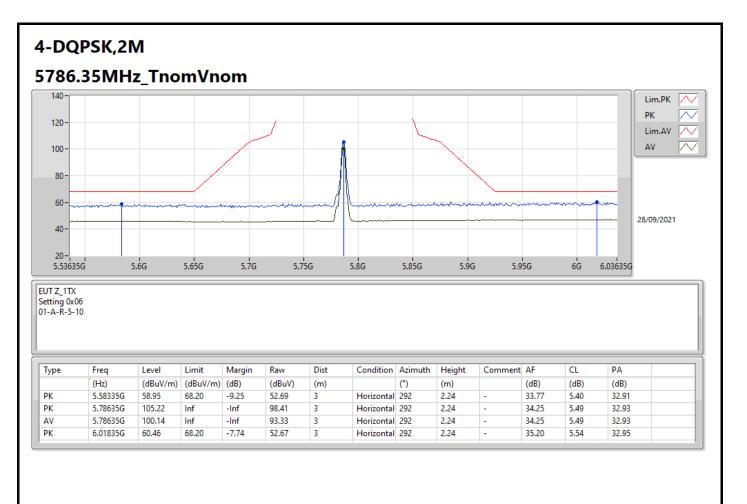




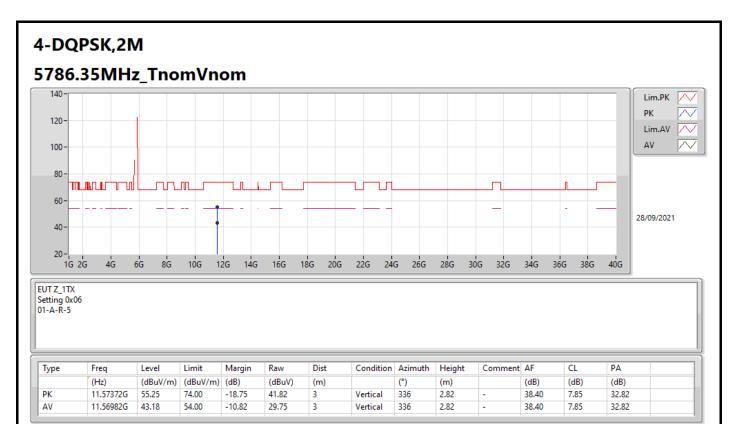




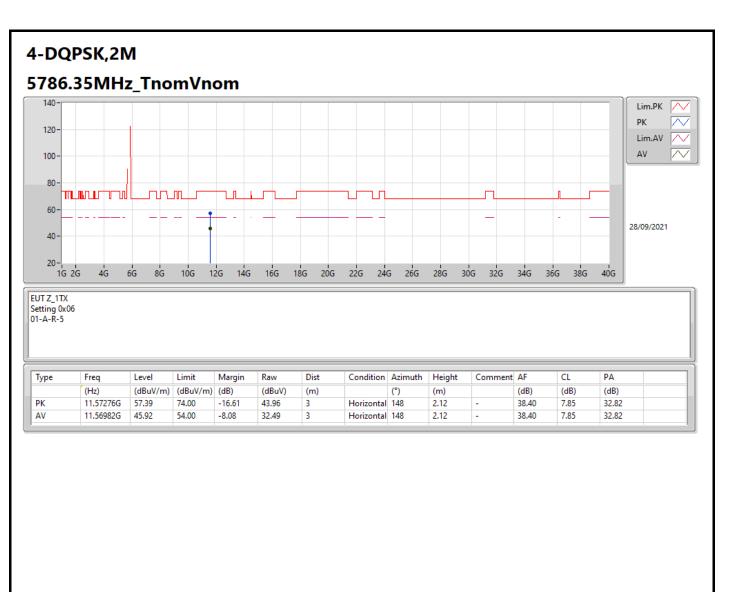




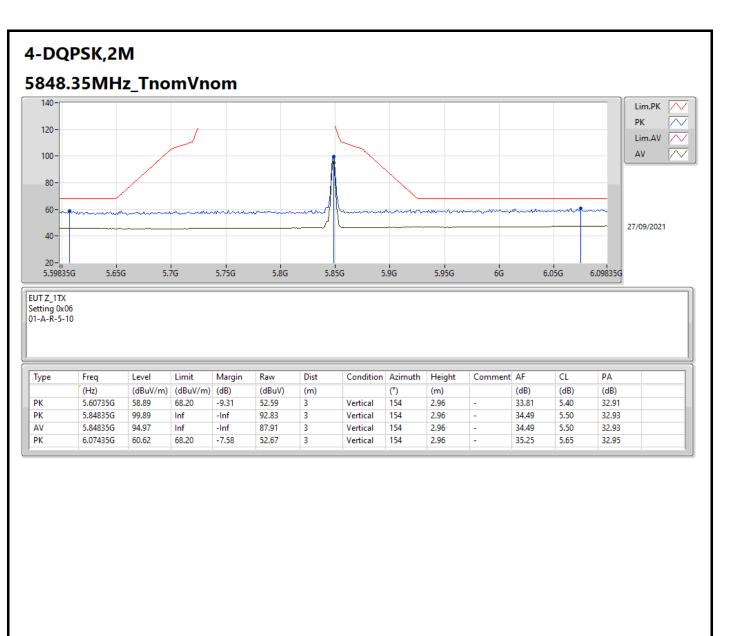




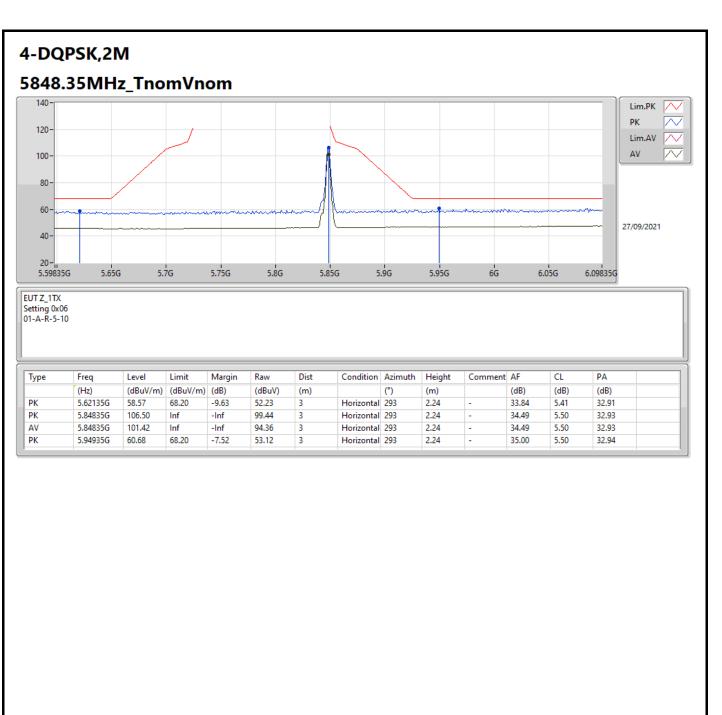




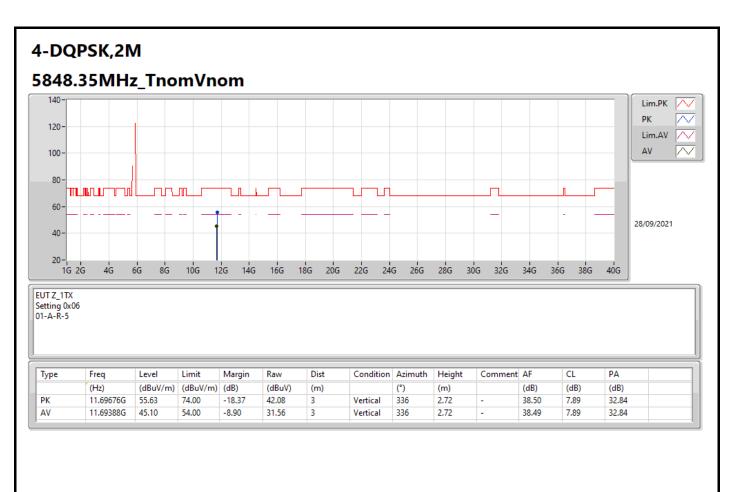




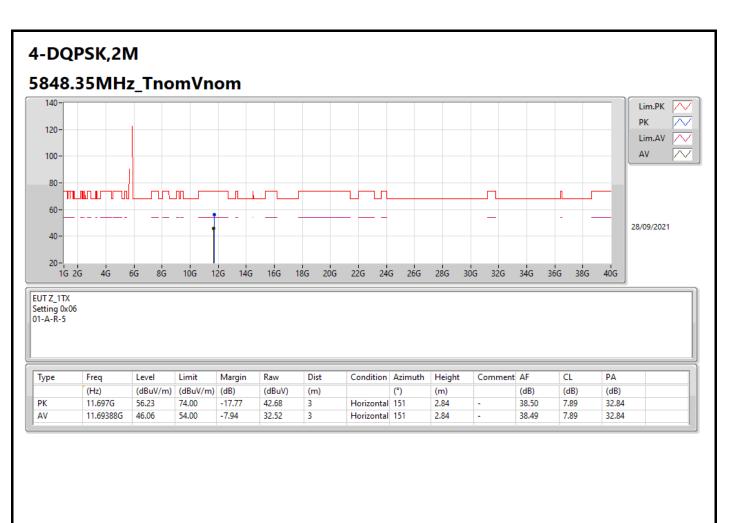




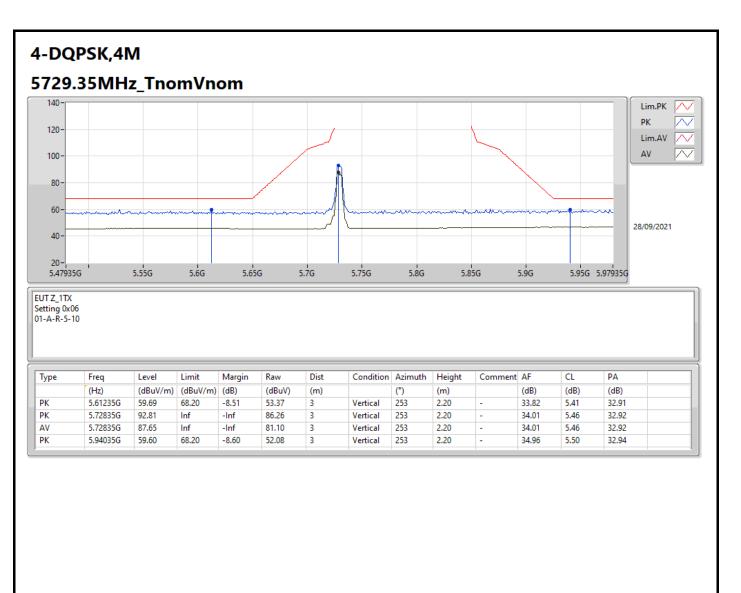




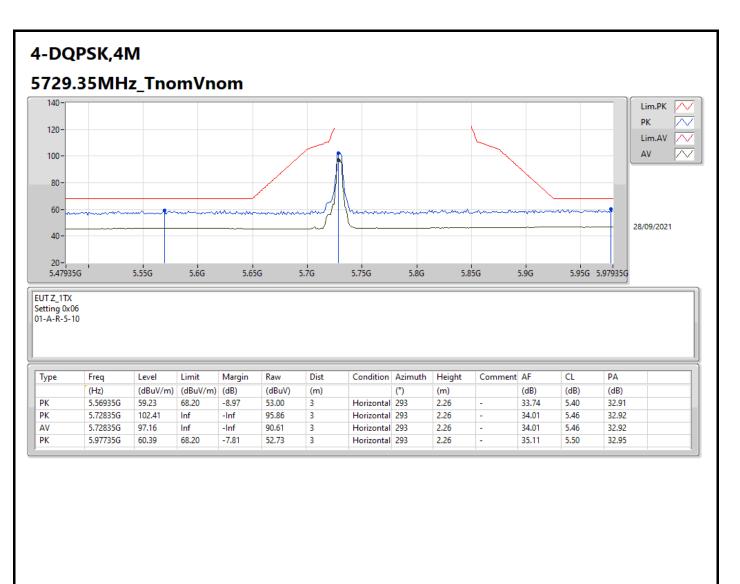




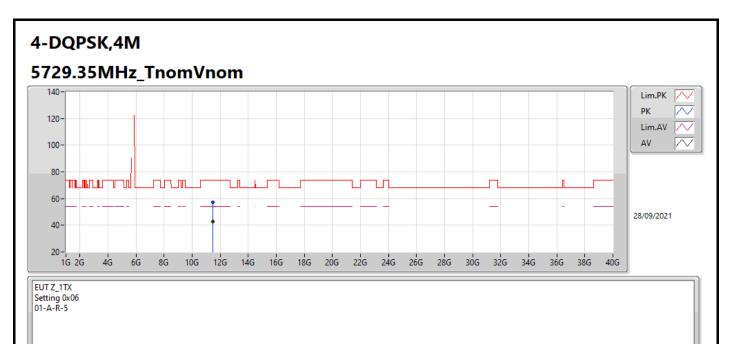






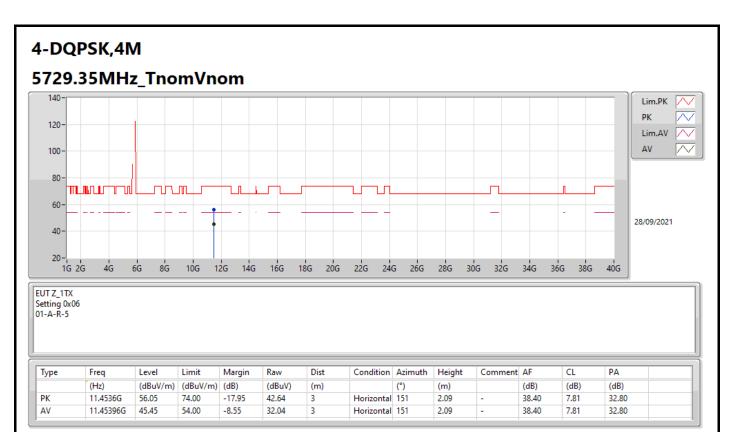




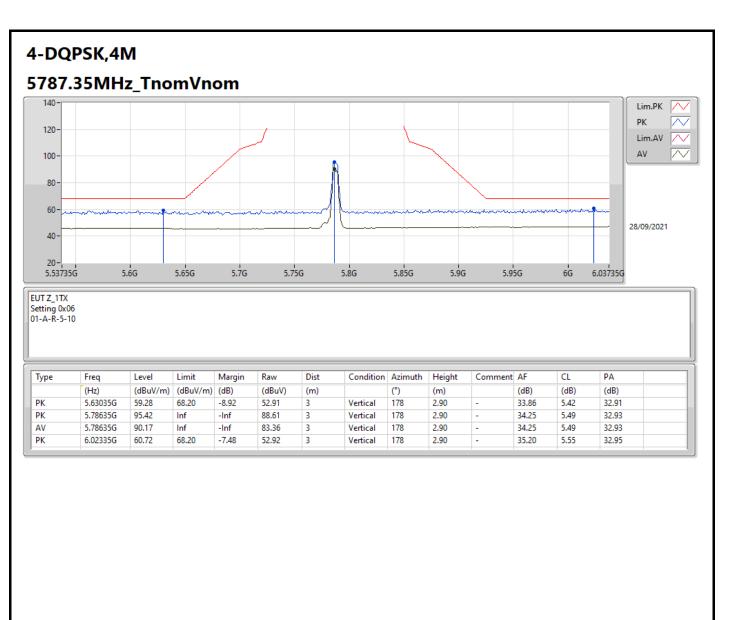


Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
PK	11.45912G	57.08	74.00	-16.92	43.68	3	Vertical	317	2.89	-	38.40	7.81	32.81
AV	11.45858G	42.81	54.00	-11.19	29.41	3	Vertical	317	2.89	-	38.40	7.81	32.81

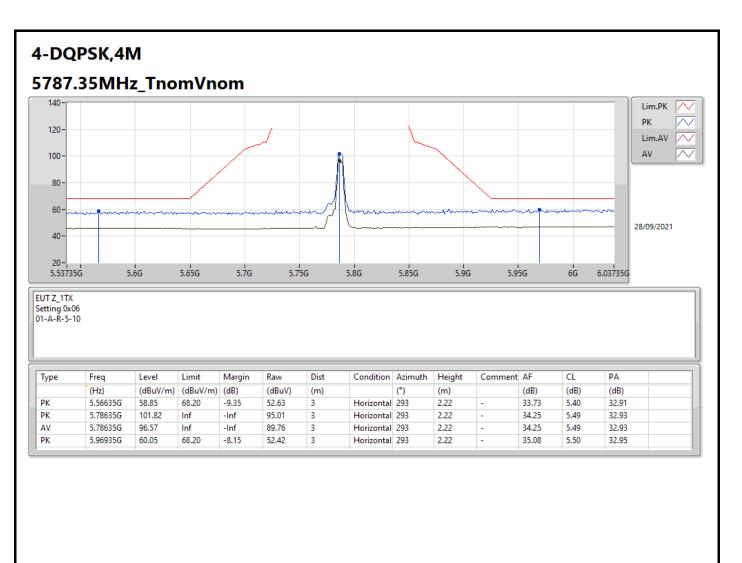




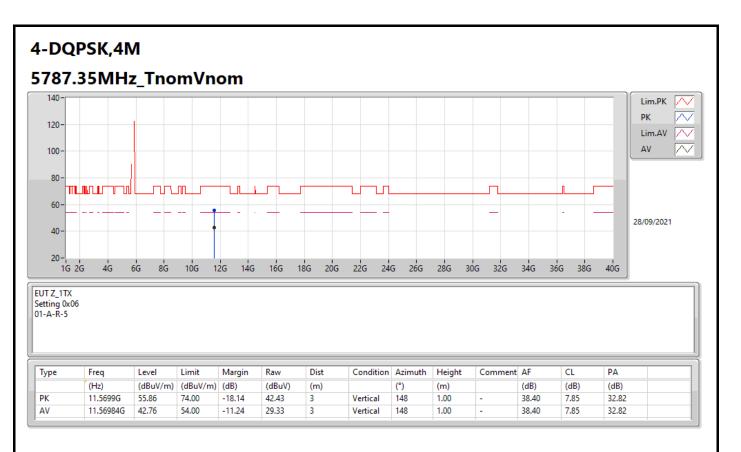




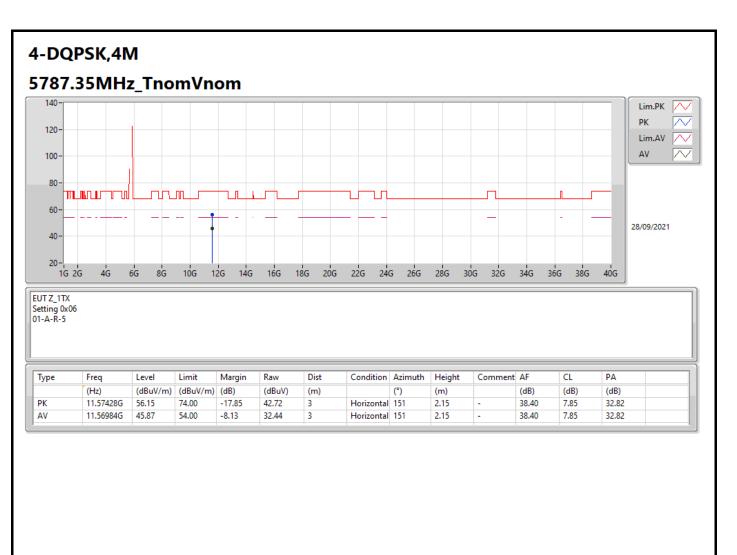




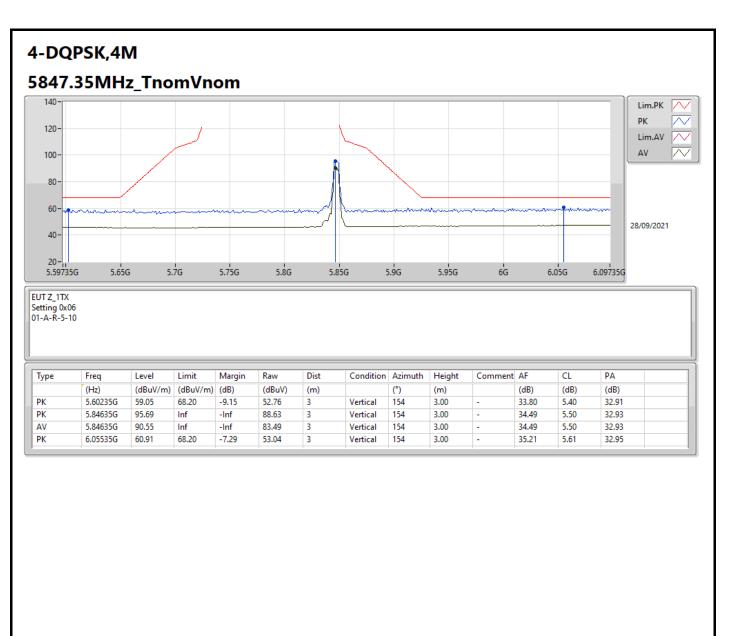




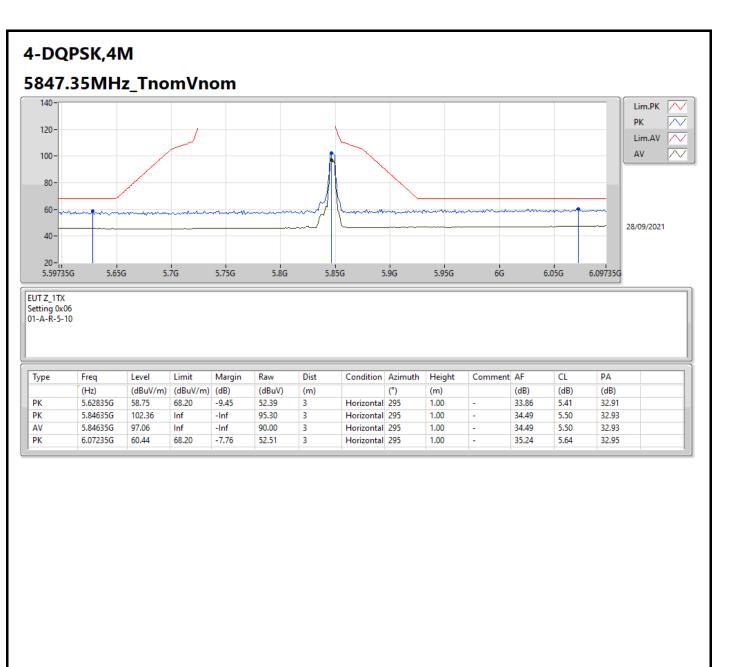




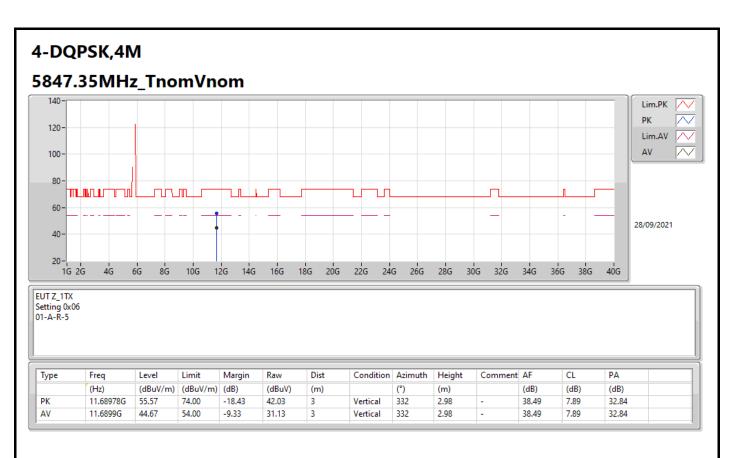




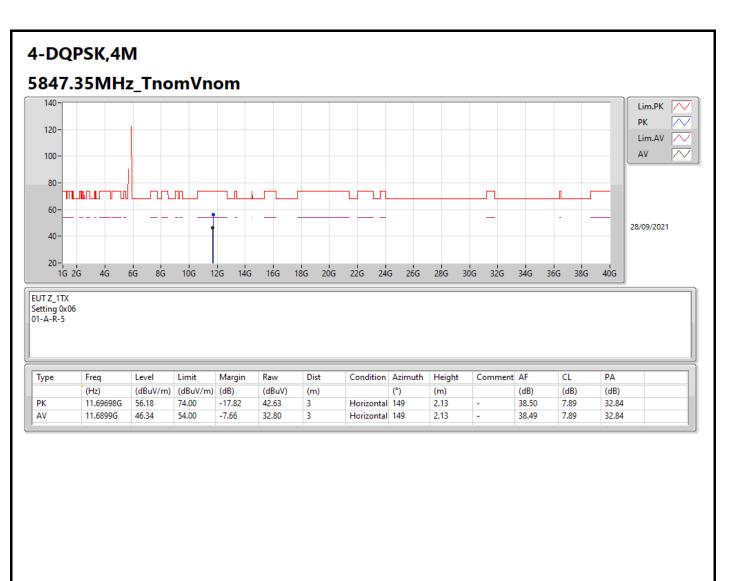














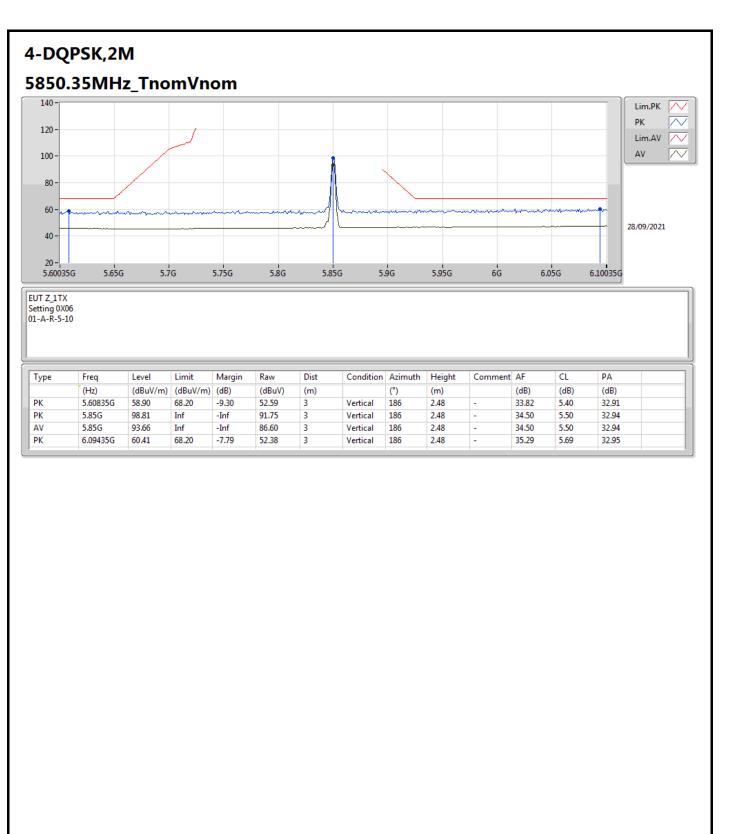
RSE TX above 1GHz

Appendix D.3

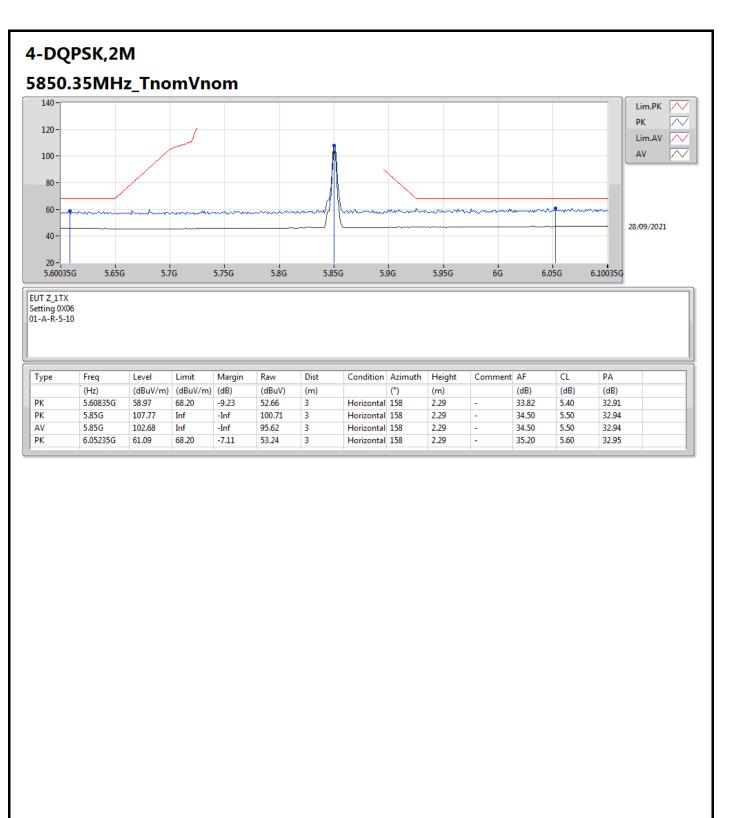
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.85-5.895GHz	-	-	-	-	-	-	-	-	-	-	-
4-DQPSK,2M	Pass	PK	6.08735G	61.83	68.20	-6.37	3	Horizontal	156	2.23	-

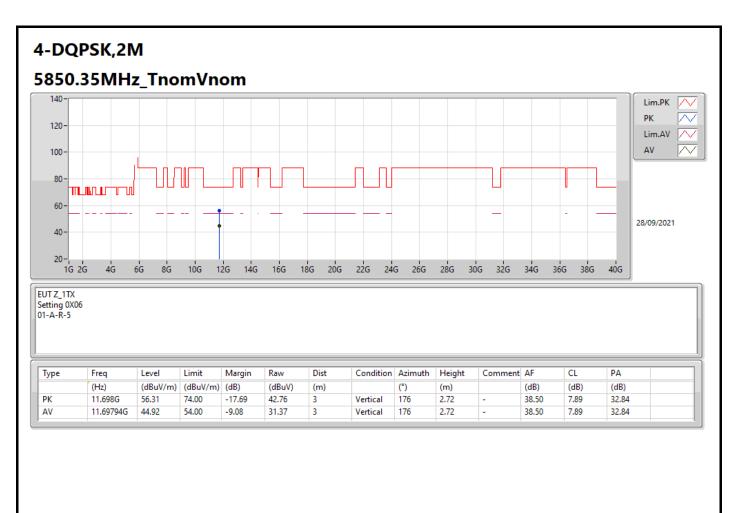




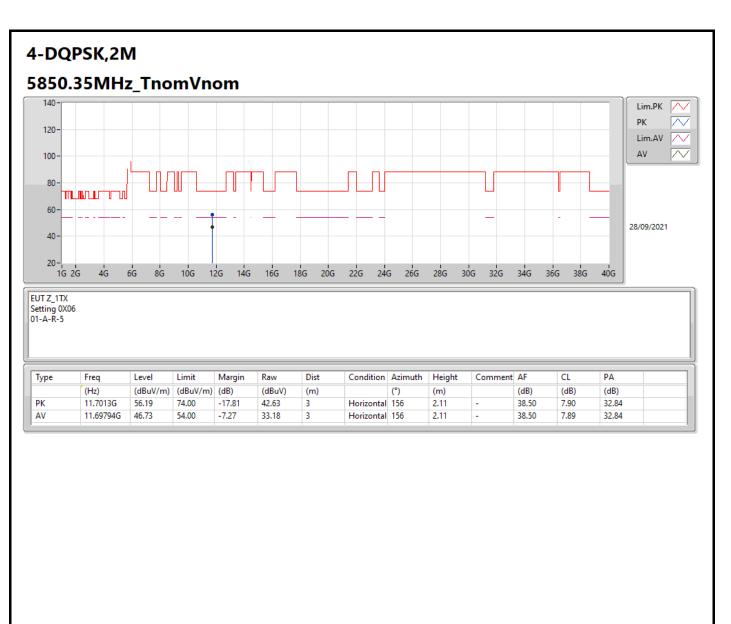




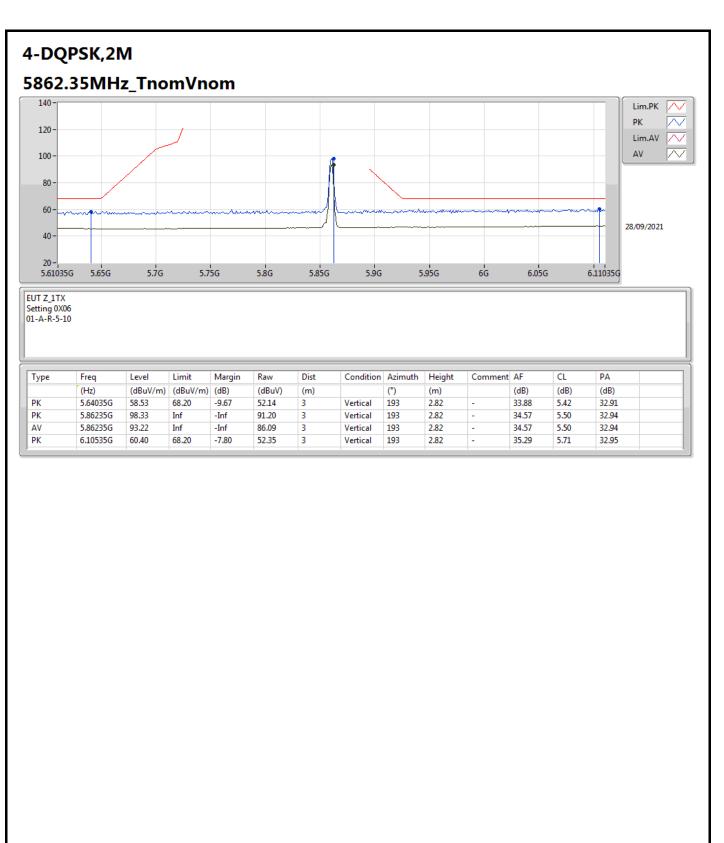




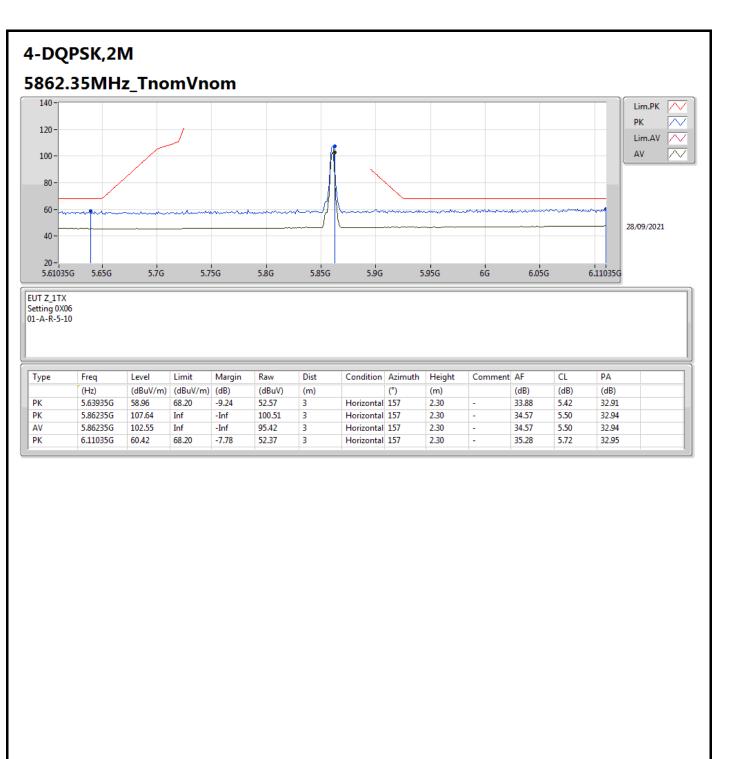




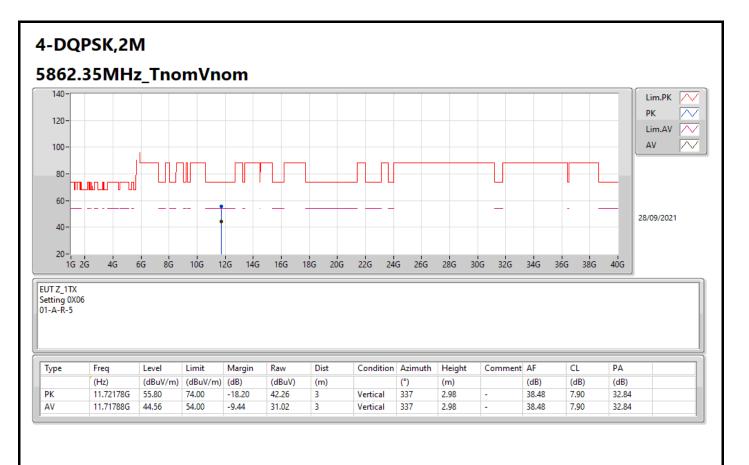




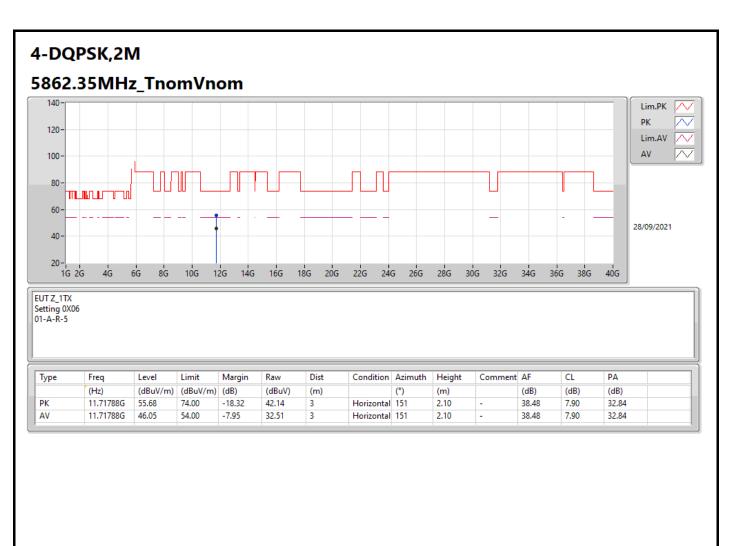




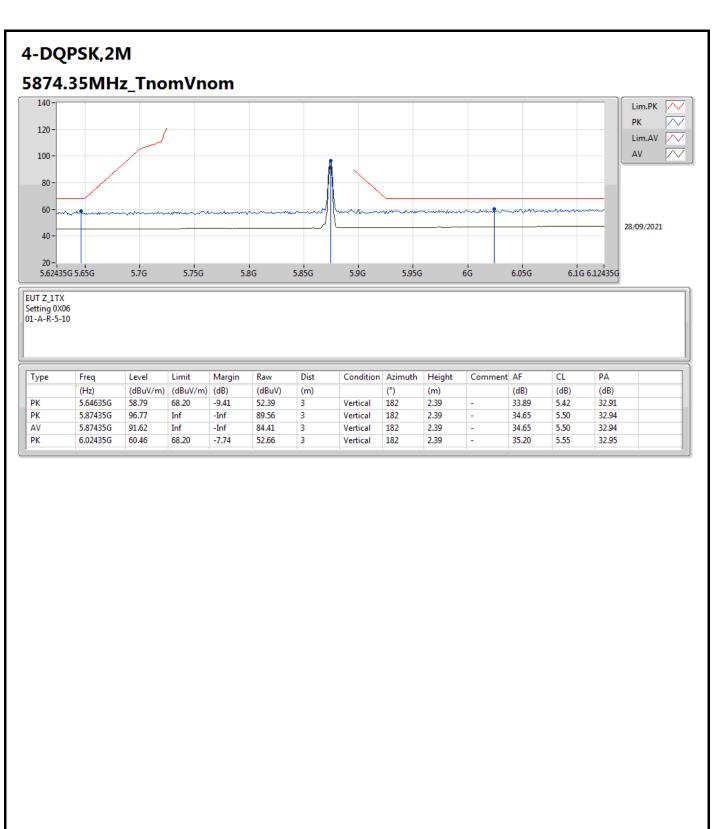




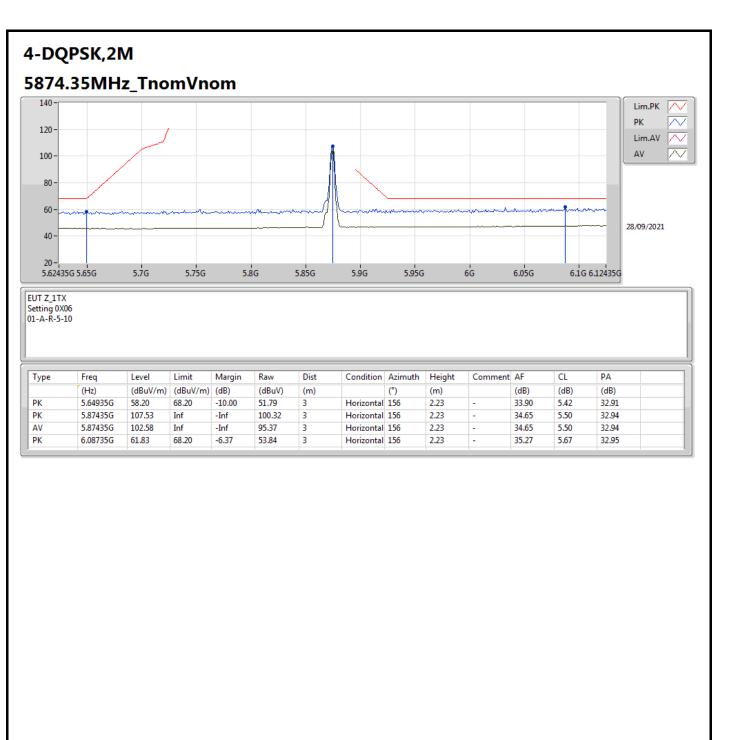




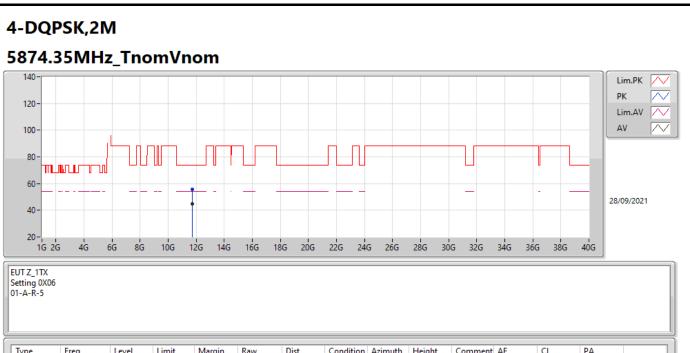






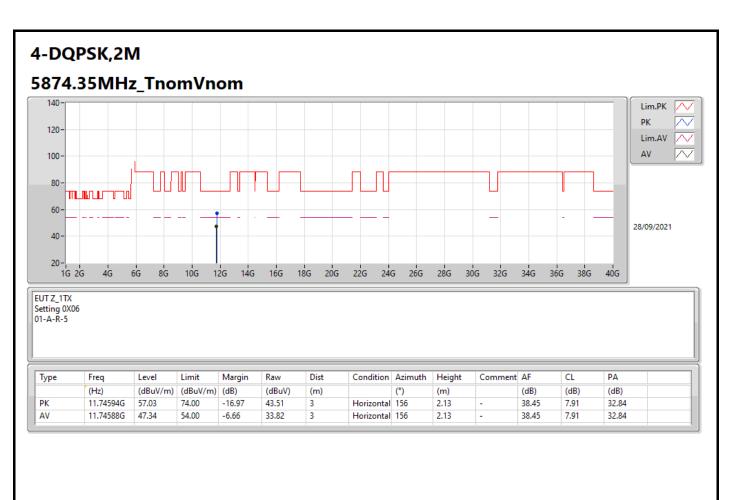




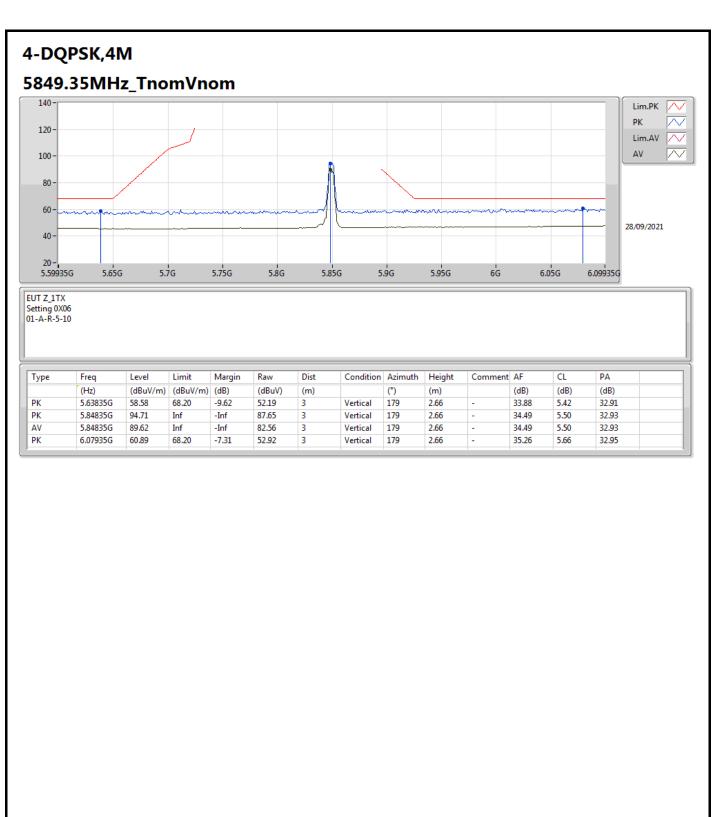


Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
РК	11.74138G	55.85	74.00	-18.15	42.32	3	Vertical	339	3.00	-	38.46	7.91	32.84
AV	11.74588G	44.70	54.00	-9.30	31.18	3	Vertical	339	3.00	-	38.45	7.91	32.84

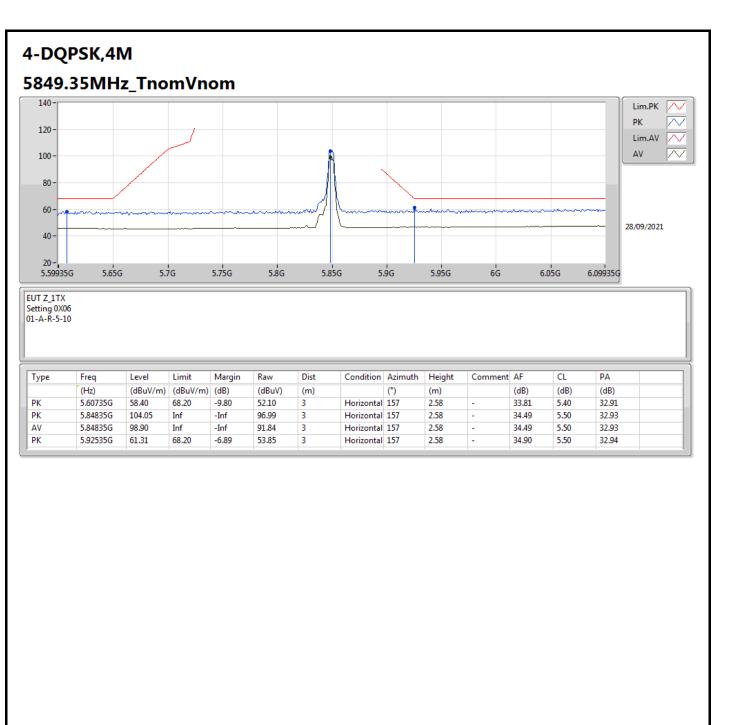




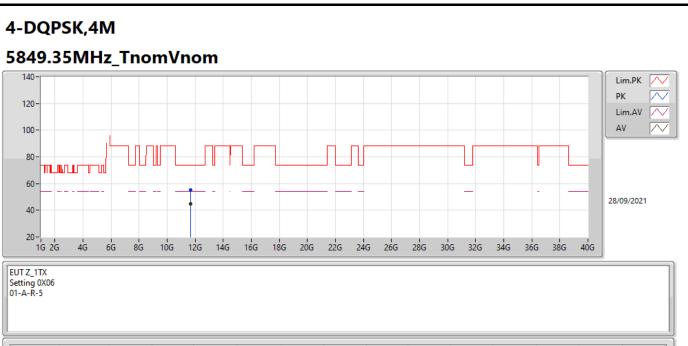






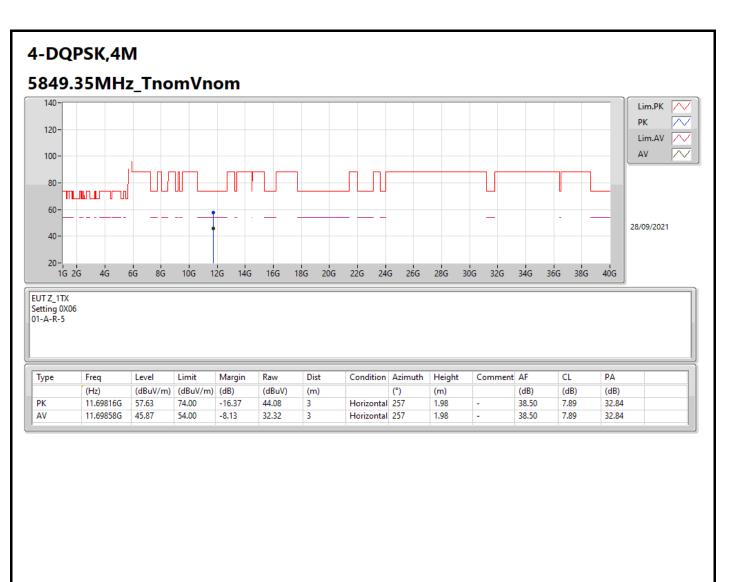




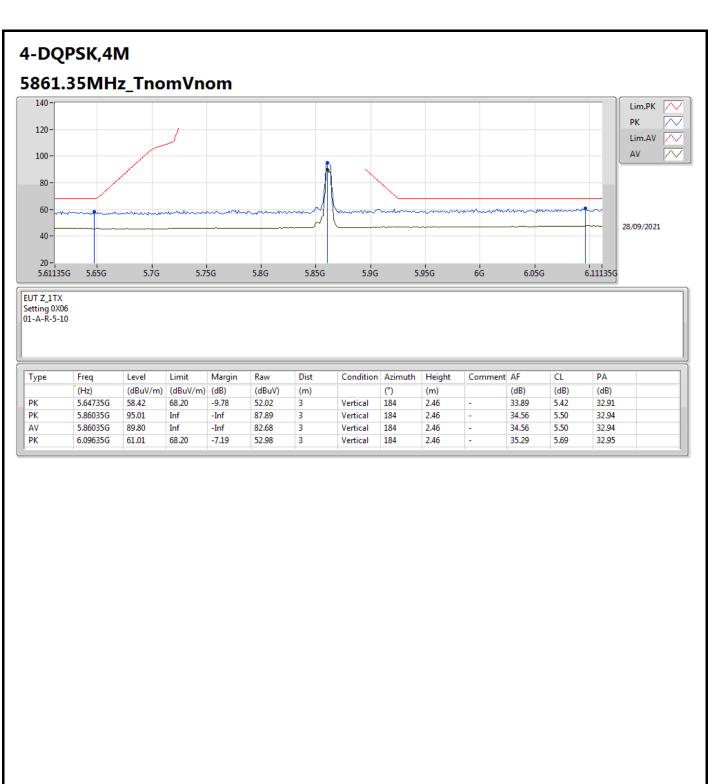


Туре	Freq	Level	Limit	Margin	Raw	Dist	Condition	Azimuth	Height	Comment	AF	CL	PA
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(m)		(°)	(m)		(dB)	(dB)	(dB)
РК	11.69384G	55.18	74.00	-18.82	41.64	3	Vertical	338	3.00	-	38.49	7.89	32.84
AV	11.6939G	44.73	54.00	-9.27	31.19	3	Vertical	338	3.00	-	38.49	7.89	32.84

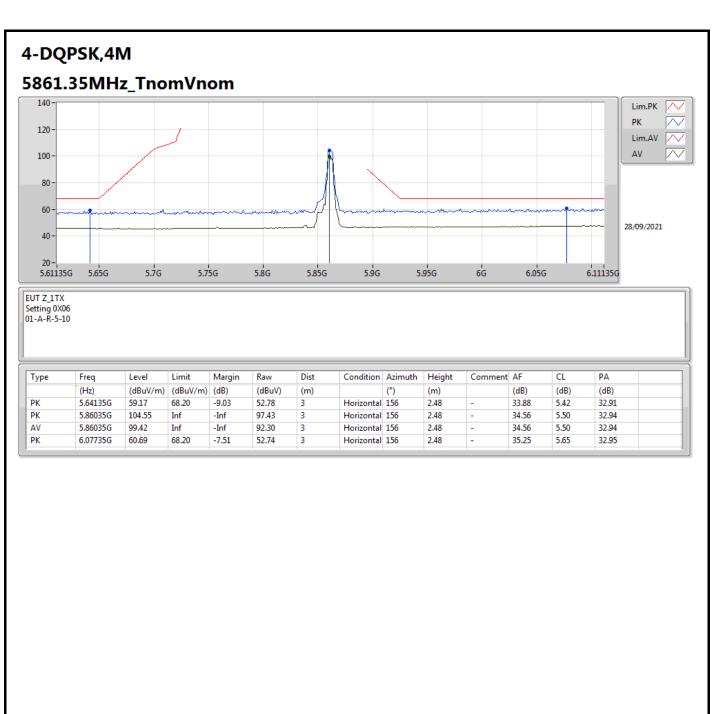














4-DQPSK,4M 5861.35MHz_TnomVnom 140-Lim.PK \wedge РК \sim 120- \sim Lim.AV AV \sim 100-80-┉╷┉╷┉ 60-28/09/2021 40-20-| 1G 2G 4G 8G 10G 14G 16G 20G 22G 24G 26G 28G 30G 32G 34G 36G 38G 6Ġ 12G 18G 40G EUT Z_1TX Setting 0X06 01-A-R-5 Туре Freq Level Limit Margin Raw Dist Condition Azimuth Height Comment AF CL PA (dBuV/m) (dBuV) (dB) (dB) (Hz) (dBuV/m) (dB) (m) (dB) (°) (m) PK 2.96 38.48 7.90 32.84 11.71784G 55.89 74.00 -18.11 42.35 3 Vertical 176 _ AV 11.7179G 44.97 54.00 -9.03 31.43 3 Vertical 176 2.96 -38.48 7.90 32.84



