

Report No.: FR461102AB

RADIO TEST REPORT

FCC ID : ZQ6-WL72917

Equipment : AloT Module

Brand Name : AMPAK Technology Inc, SPARKLAN COMMUNICATIONS INC

Model Name : WL72917

Applicant : AMPAK Technology Inc.

3F, No. 1, Jen Al Road, Hsinchu Industrial Park, Hsinchu City

30352, Taiwan (R.O.C.)

Manufacturer : BILLIONTON SYSTEMS INC.

No. 21, Sui-Lih Rd., Hsin-Chu City 300, Taiwan (R.O.C.)

Standard: 47 CFR FCC Part 15.247

The product was received on Jul. 05, 2024, and testing was started from Aug. 20, 2024 and completed on Dec. 05, 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 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-A10_6 Ver1.3

Page Number : 1 of 31

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Report Version : 01

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Photographs of EUT v01

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Appendix E. Test Results of Emissions in Non-restricted Frequency Bands

Appendix F. Test Results of Emissions in Restricted Frequency Bands

History of this test report

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Report No.	Version	Description	Issued Date
FR461102AB	01	Initial issue of report	Dec. 12, 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	15.247(a)	DTS Bandwidth	PASS	-
3.3	15.247(b)	Maximum Conducted Output Power	PASS	-
3.4	15.247(e)	Power Spectral Density	PASS	-
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	-
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	-

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:

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.

Reviewed by: Sam Chen

Report Producer: Sandy Chuang

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1 General Description

1.1 Information

1.1.1 RF General Information

<For BT-LE(1Mbps)>

Frequency Range (MHz)	Bluetooth Mode	Ch. Frequency (MHz)	Channel Number
2400-2483.5	LE	2402-2480	0-39 [40]

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<For BT-LE(2Mbps)>

Frequency Range (MHz)	Bluetooth Mode	Ch. Frequency (MHz)	Channel Number	
2400-2483.5	LE	2402-2478	0-38 [39]	

Band	Mode	BWch (MHz)	Nant
2.4G	BT-LE(1Mbps)	1	1
2.4G	BT-LE(500Kb/s)	1	1
2.4G	BT-LE(125Kb/s)	1	1
2.4G	BT-LE(2Mbps)	2	1

Note:

• Bluetooth LE uses a GFSK modulation.

BWch is the nominal channel bandwidth.

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1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Cable loss (dB)	Net Gain (dBi)	Equip EUT
1		SparkLAN	AD-305N	Dipole	Reverse SMA	5.00	0.4	4.60	2
2		SparkLAN	AD-103AG	Dipole	Reverse SMA	2.02	0.4	1.62	2
3	1	SparkLAN	AD-301N	Dipole	Reverse SMA	4.40	0.4	4.00	2
4		SparkLAN	AD-302N	Dipole	Reverse SMA	3.14	0.4	2.74	2
5		SparkLAN	AD-303N	Dipole	Reverse SMA	3.14	0.4	2.74	2
6		Pulse	TZ2412W	Dipole	Reverse SMA	3.60	0.4	3.20	2
7	-	Pulse	ANT8010LL04R2400A	Chip	N/A	0.70	-	0.70	1
8	1	TSKY	A8-A006-00XXX	PIFA	I-PEX	1.02	-	1.02	2

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Note 1: The above information was declared by manufacturer.

Note 2:

For RF Conducted:

only the Ant.1 highest antenna gain has been tested and recorded in the test report.

For Other tests:

Only the highest gain antenna (Ant.1, Ant.7 and Ant.8) were selected from each different types of antenna to test and record in report.

<WLAN 2.4GHz>

For IEEE 802.11b/g/n/ax (1TX/1RX):

Only Port 1 can be used as transmitting antenna.

<Bluetooth> (1TX/1RX):

Only Port 1 can be used as transmitting antenna.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF (dB)	T (s)	VBW (Hz)_1/T
BT-LE(1Mbps)	0.879	0.56	2.198m	1k
BT-LE(2Mbps)	0.456	3.41	1.141m	1k

Note:

DC is Duty Cycle.

DCF is Duty Cycle Factor.

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1.1.4 EUT Operational Condition

EUT Power Type	Fro	From host system				
Function	\boxtimes	Point-to-multipoint Doint-to-point				
Test Software Version	SUI	SUDT AccessPort v1.37				
	\boxtimes	☐ LE 1M PHY: 1 Mb/s				
Support Mode	\boxtimes	LE Coded PHY (S=2): 500 Kb/s				
Support Mode	\boxtimes	LE Coded PHY (S=8): 125 Kb/s				
	\boxtimes	LE 2M PHY: 2 Mb/s				

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Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

Brand Name	Model Name	Description
AMPAK Technology Inc	WI 70047	All the brands are identical, the difference brand
SPARKLAN COMMUNICATIONS INC	WL72917	for difference served as marketing strategy.

Note 1: From the above, brand: AMPAK Technology Inc was selected as representative model for the test and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.

1.1.6 Table for EUT Information

EUT	Equip Antenna
1	Ant. 7
2	Ant. 1~6 (with I-PEX cable), Ant. 8

Note 1:

For RF Conducted:

"EUT 2 + Ant. 1 with I-PEX cable" was selected as representative EUT for the test and its data was recorded in this report.

For Other tests:

Only the highest gain antenna EUT 2 + Ant. 1 with I-PEX cable, EUT 1 + Ant. 7 and EUT 1 + Ant. 8, were selected from each different types of antenna to test and record in this report

Note 2: The above information was declared by manufacturer.

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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 15.247
- ANSI C63.10-2013

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

- FCC KDB 558074 D01 v05r02
- FCC KDB 414788 D01 v01r01

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.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted	ucted TH01-CB Richard Pai 22.6~24.6 / 63~65		22.6~24.6 / 63~65	Nov. 29, 2024~ Dec. 02, 2024
Radiated (Below 1GHz)	03CH01-CB	Black Lu	21.3-22.6 / 54-59	Aug. 20, 2024~ Nov. 29, 2024
Radiated (Above 1GHz)	03CH01-CB 03CH03-CB 03CH04-CB	Black Lu	21.3-22.6 / 54-59 21.8-22.9 / 55-58 22.7-23.8 / 56-59	Aug. 20, 2024~ Nov. 29, 2024
AC Conduction	CO01-CB	Bob Chang	22~23 / 57~58	Dec. 03, 2024~ Dec. 05, 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

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level (based on a coverage factor (k=2)

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.8 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	4.1 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.2 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.2 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.0 dB	Confidence levels of 95%
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%
Bandwidth Measurement	2.1 %	Confidence levels of 95%

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2 Test Configuration of EUT

2.1 Test Channel Mode

Mode
BT-LE(1Mbps)
2402MHz
2440MHz
2480MHz
BT-LE(2Mbps)
2402MHz
2440MHz
2478MHz

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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 CTX			
1	WLAN 2.4GHz: EUT 1 + Ant. 7		
2	WLAN 2.4GHz: EUT 2 + Ant. 1 with I-PEX cable		
3	WLAN 2.4GHz: EUT 2 + Ant. 8		
4	Bluetooth: EUT 1 + Ant. 7		
5	Bluetooth: EUT 2 + Ant. 1 with I-PEX cable		
6	Bluetooth: EUT 2 + Ant. 8		
For operating mode 3 is the worst case and it was record in this test report.			

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The Worst Case Mode for Following Conformance Tests	
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains
1	EUT 2 + Ant. 1 with I-PEX cable

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The Worst Case Mode for Following Conformance Tests		
Tests Item	Emissions in Restricted Frequency Bands	
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.	
Operating Mode < 1GHz	CTX	

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<For WLAN 2.4GHz>

After evaluating, the worst case was found at as below for Emissions in Restricted Frequency Bands above 1GHz. Thus, the measurement will follow this same test configuration.

<For Bluetooth>

The EUT was performed at X axis, Y axis and Z axis position.

EUT 1 in Y axis + Ant. 7, EUT 2 in X axis + Ant. 1 with I-PEX cable and EUT 2 in Z axis + Ant. 8 has been evaluated to be the worst case at Restricted Frequency Bands above 1GHz;

EUT 2 + Ant. 8 (Bandedge at X axis / Harmonic at Z axis)

thus, the measurement will follow this same test configuration

,	3
1	WLAN 2.4GHz: EUT 1 in X axis + Ant. 7
2	WLAN 2.4GHz: EUT 2 in X axis + Ant. 1 with I-PEX cable
3	WLAN 2.4GHz: EUT 2 in X axis + Ant. 8
4	Bluetooth: EUT 1 in Y axis + Ant. 7
5	Bluetooth: EUT 2 in X axis + Ant. 1 with I-PEX cable
6	Bluetooth: EUT 2 in Z axis + Ant. 8
For operating mode 3 is the worst case and it was record in this test report.	
Operating Mode > 1GHz CTX	
The EUT was performed at X axis, Y axis and Z axis position, and the worst case as below:	
1 EUT 1 + Ant. 7 (Bandedge at Z axis / Harmonic at Y axis)	
2	EUT 2 + Ant. 1 with I-PEX cable (Bandedge at X axis / Harmonic at X axis)

2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.4 Accessories

3

N/A

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2.5 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
Α	NB	DELL	PP13S	N/A
В	Earphone	e-Power	GT-02	N/A
С	Mouse	acer	MOJFUO	N/A
D	Fixture	AMPAK	WL72917_EVB_S_V00	N/A

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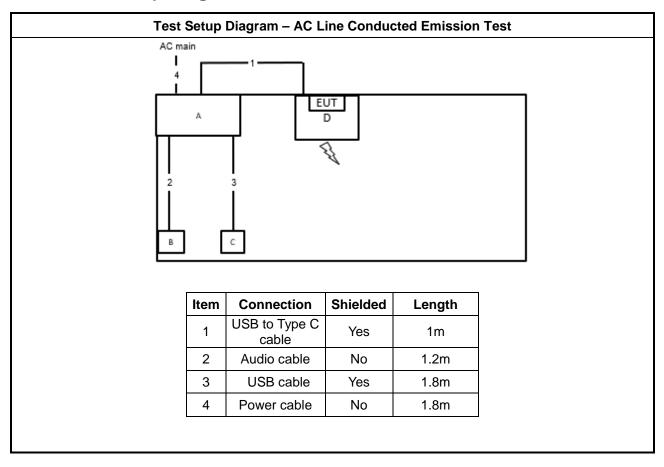
For Radiated and RF Conducted:

	Support Equipment			
No.	Equipment	Brand Name	Model Name	FCC ID
Α	Notebook	DELL	E4300	N/A
В	Fixture	AMPAK	WL72917_EVB_S_V00	N/A

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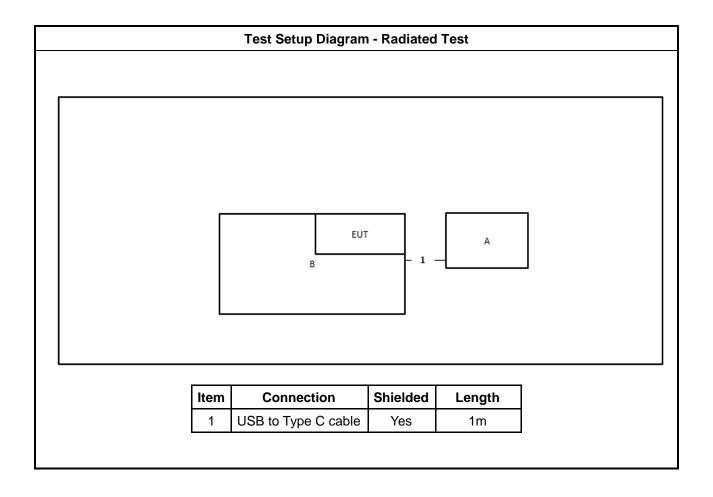
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2.6 Test Setup Diagram



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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		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	of the frequency.	

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3.1.2 Measuring Instruments

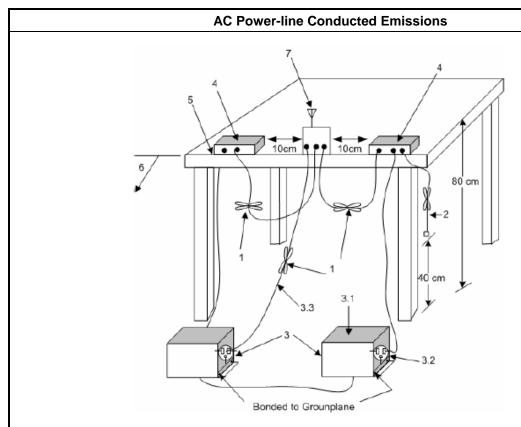
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

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

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3.1.4 **Test Setup**



-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 Ω 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.

- -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
- 7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

1.1.1. Measurement Results Calculation

The measured Level is calculated using:

- Corrected Reading: LISN Factor (LISN) + Attenuator (AT/AUX) + Cable Loss (CL) + Read Level (Raw) = Level
- Margin = -Limit + Level

Test Result of AC Power-line Conducted Emissions 3.1.5

Refer as Appendix A

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3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

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

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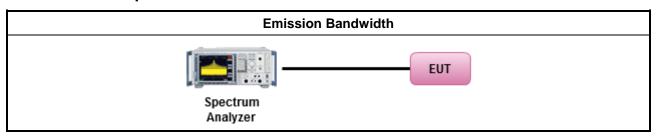
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

_			
		Test Method	
•	For the emission bandwidth shall be measured using one of the options below:		
	\boxtimes	Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.1 Option 1 for 6 dB bandwidth measurement.	
		Refer as FCC KDB 558074, clause 8.2 & C63.10 clause 11.8.2 Option 2 for 6 dB bandwidth measurement.	
		Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.	

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

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3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit

- If G_{TX} ≤ 6 dBi, then P_{Out} ≤ 30 dBm (1 W)
- Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 (G_{TX} 6)$ dBm
- Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 (G_{TX} 6)/3$ dBm
- Smart antenna system (SAS):
 - Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 (G_{TX} 6)/3$ dBm
 - Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 (G_{TX} 6)/3$ dBm
 - Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 (G_{TX} 6)/3 + 8$ dB dBm

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 \mathbf{P}_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, \mathbf{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.

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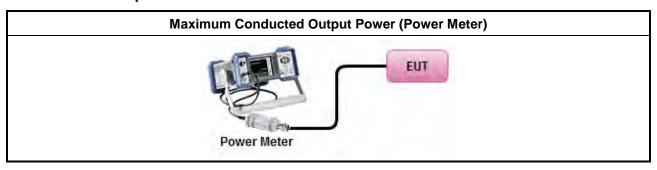
3.3.3 Test Procedures

		Test Method
•	Max	mum Peak Conducted Output Power
		Refer as FCC KDB 558074, clause 8.3.1.1 & C63.10 clause 11.9.1.1 (RBW ≥ EBW method).
		Refer as FCC KDB 558074, clause 8.3.1.3 & C63.10 clause 11.9.1.3 (peak power meter).
•	Max	mum Conducted Output Power
	[duty	v cycle ≥ 98% or external video / power trigger]
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.2 Method AVGSA-1.
		Refer as FCC KDB 558074, clause $8.3.2.2$ & C63.10 clause $11.9.2.2.3$ Method AVGSA-1A. (alternative)
	duty	cycle < 98% and average over on/off periods with duty factor
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.4 Method AVGSA-2.
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.5 Method AVGSA-2A (alternative)
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.6 Method AVGSA-3
		Refer as FCC KDB 558074, clause 8.3.2.2 & C63.10 clause 11.9.2.2.7 Method AVGSA-3A (alternative)
	Mea	surement using a power meter (PM)
		Refer as FCC KDB 558074, clause $8.3.2.3$ & C63.10 clause $11.9.2.3.1$ Method AVGPM (using an RF average power meter).
		Refer as FCC KDB 558074, clause $8.3.2.3 \& C63.10$ clause $11.9.2.3.2$ Method AVGPM-G (using an gate RF average power meter).
•	For	conducted measurement.
	•	If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
	•	If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \ldots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

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3.3.4 Test Setup



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3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

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3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

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

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3.4.2 Measuring Instruments

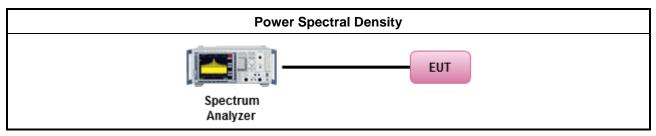
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

	Test Method							
•	Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).							
	Refer as FCC KDB 558074, clause 8.4 & C63.10 clause 11.10 Method Max. PSD.							
	[duty cycle ≥ 98% or external video / power trigger]							
•	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.							

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3.4.4 Test Setup



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3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

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3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

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

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

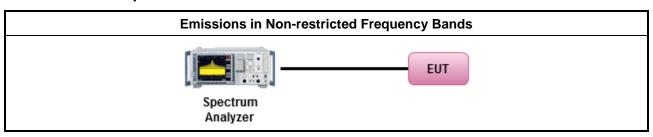
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

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3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions Limit								
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)					
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300					
0.490~1.705	24000/F(kHz)	33.8 - 23	30					
1.705~30.0	30	29	30					
30~88	100	40	3					
88~216	150	43.5	3					
216~960	200	46	3					
Above 960	500	54	3					

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- Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).
- Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB / decade). The test report shall specify the extrapolation method used to determine compliance of the ELIT
- Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

3.6.2 Measuring Instruments

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

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3.6.3 Test Procedures

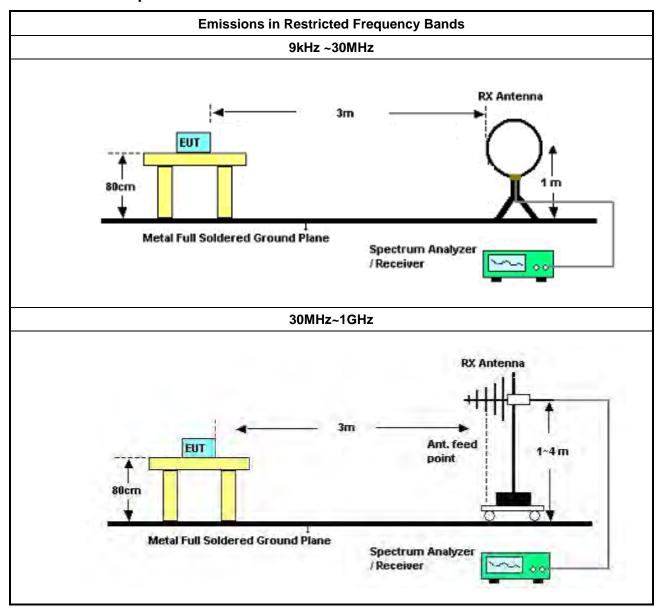
		Test Method							
•	The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].								
•	Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.								
•	For the transmitter unwanted emissions shall be measured using following options below:								
	Refer as FCC KDB 558074, clause 8.6 for unwanted emissions into restricted bands.								
	Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.1(trace averaging for decycle ≥98%).								
		Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.2(trace averaging + duty factor).							
	Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.5.3(Reduced VBW≥1/T).								
	☐ Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse tire.								
		Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.							
		Refer as FCC KDB 558074, clause 8.6 & C63.10 clause 11.12.2.4 measurement procedure peak limit.							
•	For	the transmitter band-edge emissions shall be measured using following options below:							
	•	Refer as FCC KDB 558074 clause 8.7 & c63.10 clause 11.13.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.							
	•	Refer as FCC KDB 558074, clause 8.7 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements.							
	•	Refer as FCC KDB 558074, clause 8.7 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).							
	•	For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB							
	•	For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.							

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3.6.4 Test Setup



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Above 1GHz

Spectrum Analyzer

Above 1GHz

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3.6.5 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.

3.6.6 Emissions in Restricted Frequency Bands (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.

3.6.7 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

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4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.4GHz	Mar. 01, 2024	Feb. 28, 2025	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50- 16-2	04083	150kHz ~ 100MHz	Feb. 19, 2024	Feb. 18, 2025	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Apr. 24, 2024	Apr. 23, 2025	Conduction (CO01-CB)
Pulse Limiter	Rohde&Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Oct. 16, 2024	Oct. 15, 2025	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	Oct. 16, 2024	Oct. 15, 2025	Conduction (CO01-CB)
Test Software	SPORTON	SENSE-EMI	V5.11	150kHz-30MHz	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6121	65417	9kHz - 30 MHz	Oct. 13, 2023	Oct. 12, 2024	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6121	65417	9kHz - 30 MHz	Oct. 16, 2024	Oct. 15, 2025	Radiation (03CH01-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH01-CB	30 MHz ~ 1 GHz	Jan. 18, 2024	Jan. 17, 2025	Radiation (03CH01-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH01-CB	1GHz ~18GHz 3m	May 04, 2024	May 03, 2025	Radiation (03CH01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Feb. 18, 2024	Feb. 17, 2025	Radiation (03CH01-CB)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120D-01816	1GHz~18GHz	Dec. 20, 2023	Dec. 19, 2024	Radiation (03CH01-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jul. 09, 2024	Jul. 08, 2025	Radiation (03CH01-CB)
Pre-Amplifier	SGH	SGH0301	20230109-2	10M~1GHz	Jun. 22, 2024	Jun. 21, 2025	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02121	1GHz ~ 26.5GHz	May 17, 2024	May 16, 2025	Radiation (03CH01-CB)
Pre-Amplifier	SGH	SGH1840	20230109-3	18~40GHz	Jan. 12, 2024	Jan. 11, 2025	Radiation (03CH01-CB)
Signal Analyzer	R&S	FSV3044	101437	10kHz ~ 44GHz	Nov. 28, 2023	Nov. 27, 2024	Radiation (03CH01-CB)
Signal Analyzer	R&S	FSV40	101904	9kHz ~ 40GHz	Apr. 26, 2024	Apr. 25, 2025	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESR7	102172	9kHz ~ 7GHz	Oct. 20, 2023	Oct. 19, 2024	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESR7	102172	9kHz ~ 7GHz	Oct. 21, 2024	Oct. 20, 2025	Radiation (03CH01-CB)
RF Cable-low	Woken	RG402	Low Cable-31+32	30 MHz ~ 1 GHz	Aug. 02, 2024	Aug. 01, 2025	Radiation (03CH01-CB)

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Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
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	1 GHz ~ 18 GHz	Oct. 01, 2024	Sep. 30, 2025	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)
RF Cable-high	Woken	RG402	High Cable-16+17	1 GHz ~ 18 GHz	Oct. 01, 2024	Sep. 30, 2025	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Jan. 11, 2024	Jan. 10, 2025	Radiation (03CH01-CB)
Test Software	SPORTON	SENSE-EMI	V5.11.8	30MHz-40GHz	N.C.R.	N.C.R.	Radiation (03CH01-CB)
Test Software	SPORTON	SENSE- 15247_FS	V5.11.18	2.4GHz- 2.4835GHz	N.C.R.	N.C.R.	Radiation (03CH01-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH03-CB	1GHz ~18GHz 3m	May 03, 2024	May 02, 2025	Radiation (03CH03-CB)
Horn Antenna	ETS · Lindgren	3115	6821	750MHz~18GHz	Jan. 24, 2024	Jan. 23, 2025	Radiation (03CH03-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jul. 09, 2024	Jul. 08, 2025	Radiation (03CH03-CB)
Pre-Amplifier	Agilent	8449B	3008A02097	1GHz ~ 26.5GHz	Jun. 29, 2024	Jun. 28, 2025	Radiation (03CH03-CB)
Pre-Amplifier	SGH	SGH1840	20230109-3	18~40GHz	Jan. 12, 2024	Jan. 11, 2025	Radiation (03CH03-CB)
Spectrum Analyzer	R&S	FSP40	100019	9kHz ~ 40GHz	Jun. 11, 2024	Jun. 10, 2025	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-20+29	1GHz ~ 18GHz	Feb. 29, 2024	Feb. 28, 2025	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-29	1GHz ~ 18GHz	Feb. 29, 2024	Feb. 28, 2025	Radiation (03CH03-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Jan. 11, 2024	Jan. 10, 2025	Radiation (03CH03-CB)
Test Software	SPORTON	SENSE- 15247_FS	V5.11.18	2.4GHz- 2.4835GHz	N.C.R.	N.C.R.	Radiation (03CH03-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH04-CB	1GHz ~18GHz 3m	Feb. 22, 2024	Feb. 21, 2025	Radiation (03CH04-CB)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120D-01816	1GHz~18GHz	Dec. 20, 2023	Dec. 19, 2024	Radiation (03CH04-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jul. 09, 2024	Jul. 08, 2025	Radiation (03CH04-CB)
Pre-Amplifier	SGH	SGH5265	20211115-1	1~ 26.5GHz	Jan. 17, 2024	Jan. 16, 2025	Radiation (03CH04-CB)
Pre-Amplifier	SGH	SGH1840	20230109-3	18~40GHz	Jan. 12, 2024	Jan. 11, 2025	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Mar. 19, 2024	Mar. 18, 2025	Radiation (03CH04-CB

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Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-21	1GHz - 18GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21	1GHz - 18GHz	Oct. 01, 2024	Sep. 30, 2025	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21+67	1GHz - 18GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH04-CB)
RF Cable-high	Woken	RG402	High Cable-21+67	1GHz - 18GHz	Oct. 01, 2024	Sep. 30, 2025	Radiation (03CH04-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Jan. 11, 2024	Jan. 10, 2025	Radiation (03CH04-CB)
Test Software	SPORTON	SENSE- 15247_FS	V5.11.18	2.4GHz- 2.4835GHz	N.C.R.	N.C.R.	Radiation (03CH04-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	May 27, 2024	May 26, 2025	Conducted (TH01-CB)
Switch	SPTCB	SP-SWI	SWI-01	1~18 GHz	Oct. 02, 2024	Oct. 01, 2025	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 18 GHz	Oct. 01, 2024	Sep. 30, 2025	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz – 18 GHz	Oct. 01, 2024	Sep. 30, 2025	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz – 18 GHz	Oct. 01, 2024	Sep. 30, 2025	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz – 18 GHz	Oct. 01, 2024	Sep. 30, 2025	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 18 GHz	Oct. 01, 2024	Sep. 30, 2025	Conducted (TH01-CB)
Power Sensor	Agilent	E9327A	US40442088	50MHz~18GHz	Mar. 01, 2024	Feb. 28, 2025	Conducted (TH01-CB)
Power Meter	Agilent	E4416A	MY45100745	50MHz~18GHz	Jul. 12, 2024	Jul. 11, 2025	Conducted (TH01-CB)
Test Software	SPORTON	SENSE- 15247_DTS	V5.11.18	2.4GHz- 2.4835GHz	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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Conducted Emissions at Powerline

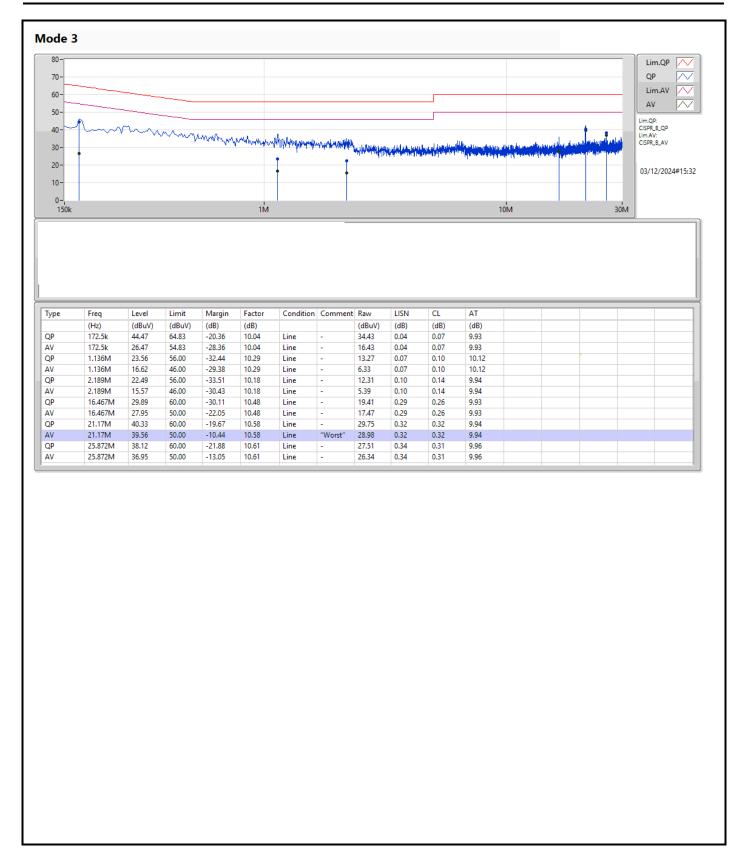
Appendix A

Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 3	Pass	AV	21.17M	39.95	50.00	-10.05	Neutral

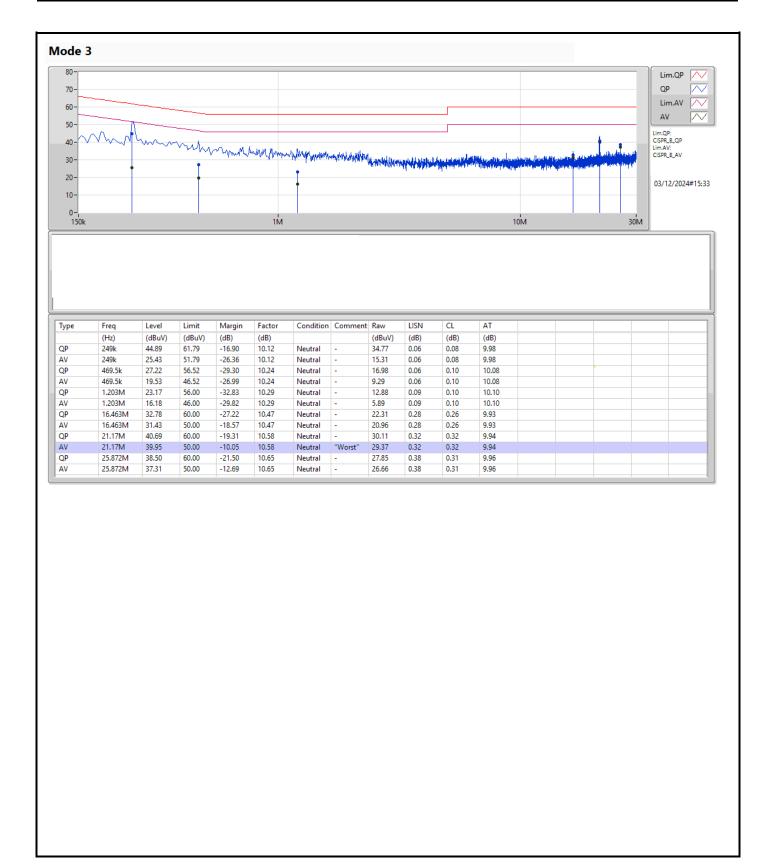
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EBW-DTS Appendix B

Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
2.4-2.4835GHz	-	-	-	-	-
BT-LE(1Mbps)	802.5k	1.228M	1M23F1D	667.5k	1.215M
BT-LE(2Mbps)	1.55M	2.458M	2M46F1D	935k	2.423M

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

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EBW-DTS Appendix B

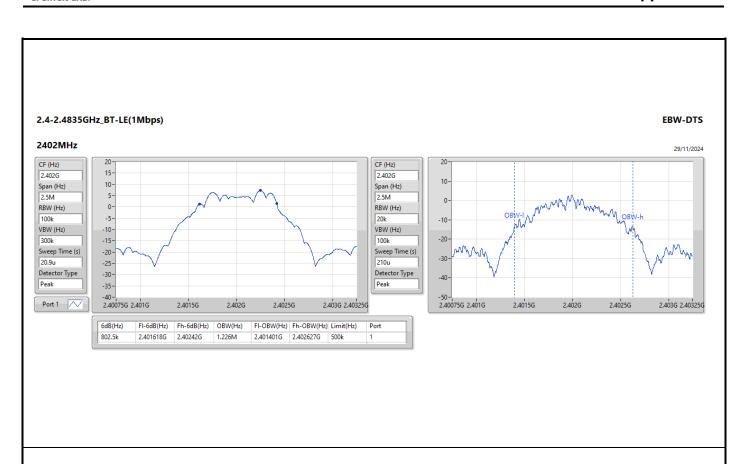
Result

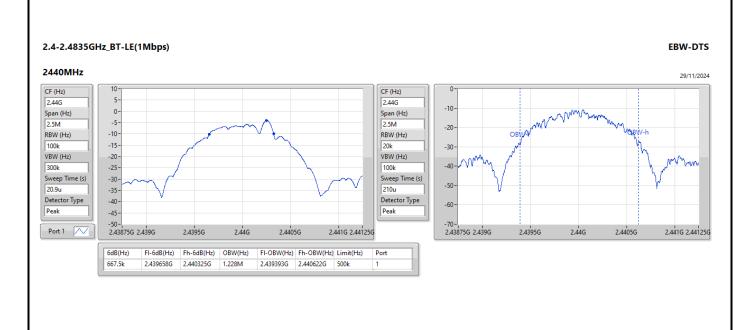
Mode	Result	Limit	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
BT-LE(1Mbps)	-	-	-	-
2402MHz	Pass	500k	802.5k	1.226M
2440MHz	Pass	500k	667.5k	1.228M
2480MHz	Pass	500k	778.75k	1.215M
BT-LE(2Mbps)	·	-	-	-
2402MHz	Pass	500k	1.51M	2.449M
2440MHz	Pass	500k	935k	2.423M
2478MHz	Pass	500k	1.55M	2.458M

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

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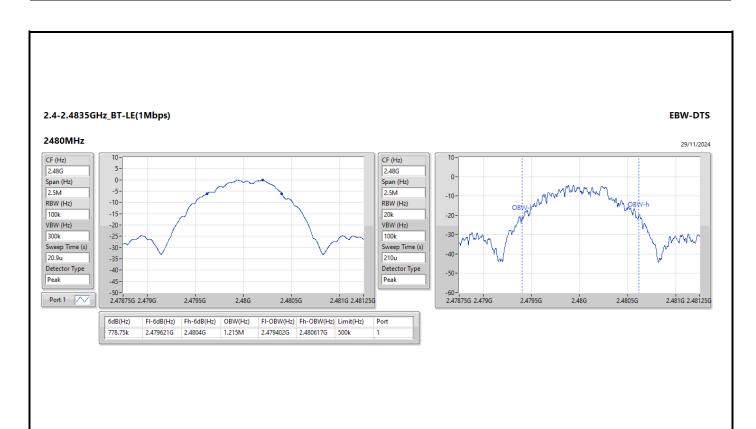
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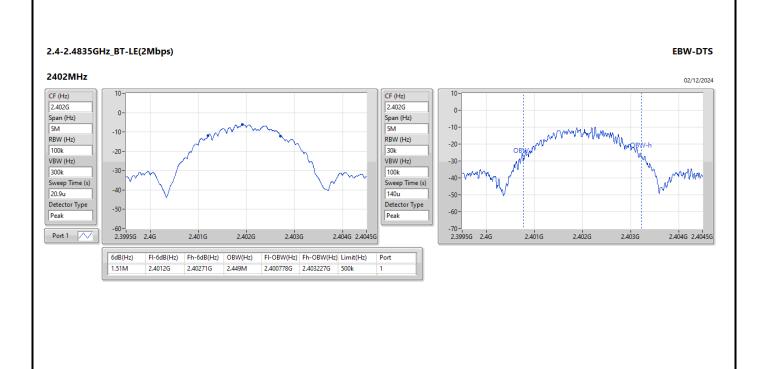




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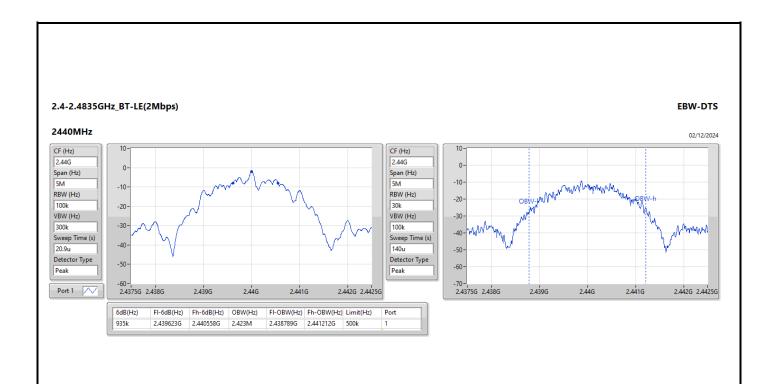
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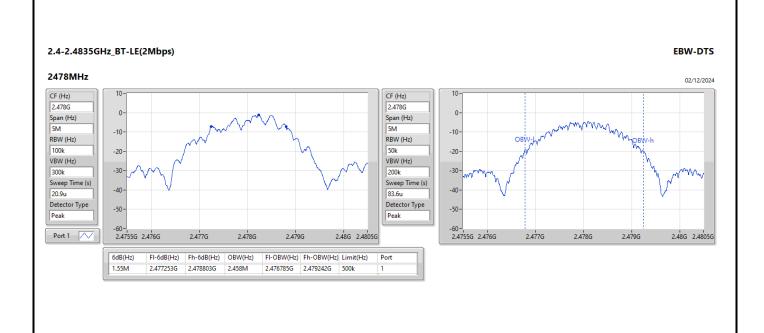




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EBW-DTS Appendix B





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Average Power-DTS

Appendix C

Summary

Mode	Total Power	Total Power
	(dBm)	(W)
2.4-2.4835GHz	-	-
BT-LE(1Mbps)	7.50	0.00562
BT-LE(2Mbps)	3.09	0.00204

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Average Power-DTS

Appendix C

Result

Mode	Result	DG	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)
BT-LE(1Mbps)	=	=	-	-
2402MHz	Pass	4.60	7.50	30.00
2440MHz	Pass	4.60	-3.71	30.00
2480MHz	Pass	4.60	2.30	30.00
BT-LE(2Mbps)	-	=	-	-
2402MHz	Pass	4.60	-1.03	30.00
2440MHz	Pass	4.60	-1.08	30.00
2478MHz	Pass	4.60	3.09	30.00

DG = Directional Gain; Port X = Port X output power; Inf = There's no restriction for the limit.

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PSD-DTS Appendix D

Summary

Mode	PD (dBm/RBW)
2.4-2.4835GHz	-
BT-LE(1Mbps)	-6.13
BT-LE(2Mbps)	-14.54

RBW = 3kHz;

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Appendix D **PSD-DTS**

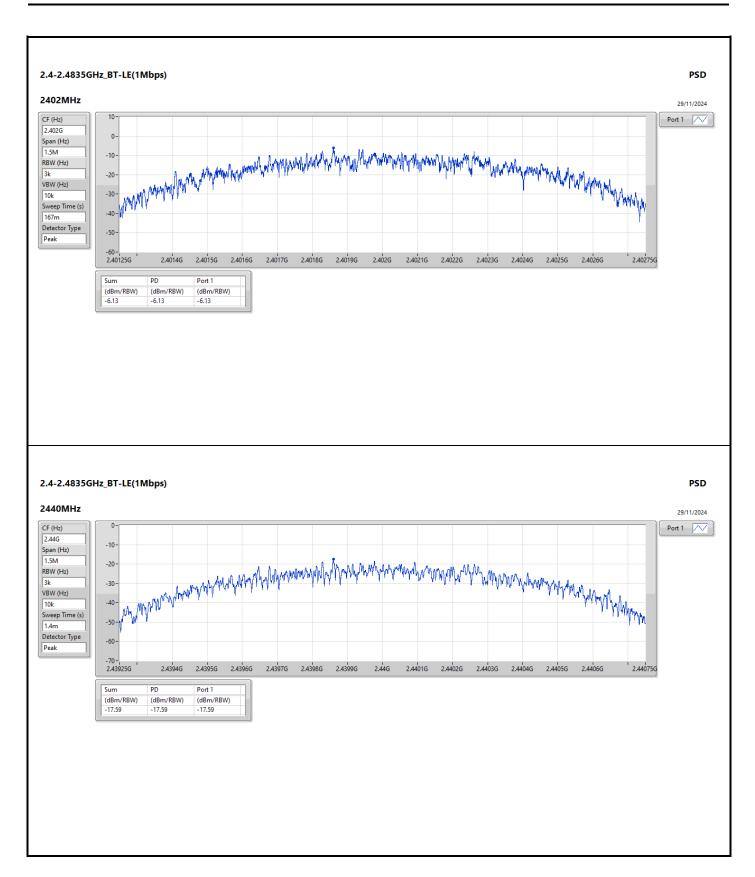
Result

Mode	Result	DG	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)
BT-LE(1Mbps)	=	=	-	-
2402MHz	Pass	4.60	-6.13	8.00
2440MHz	Pass	4.60	-17.59	8.00
2480MHz	Pass	4.60	-11.47	8.00
BT-LE(2Mbps)	-	-	-	-
2402MHz	Pass	4.60	-16.95	8.00
2440MHz	Pass	4.60	-17.30	8.00
2478MHz	Pass	4.60	-14.54	8.00

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DG = Directional Gain; RBW = 3kHz; PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density; Inf = There's no restriction for the limit.

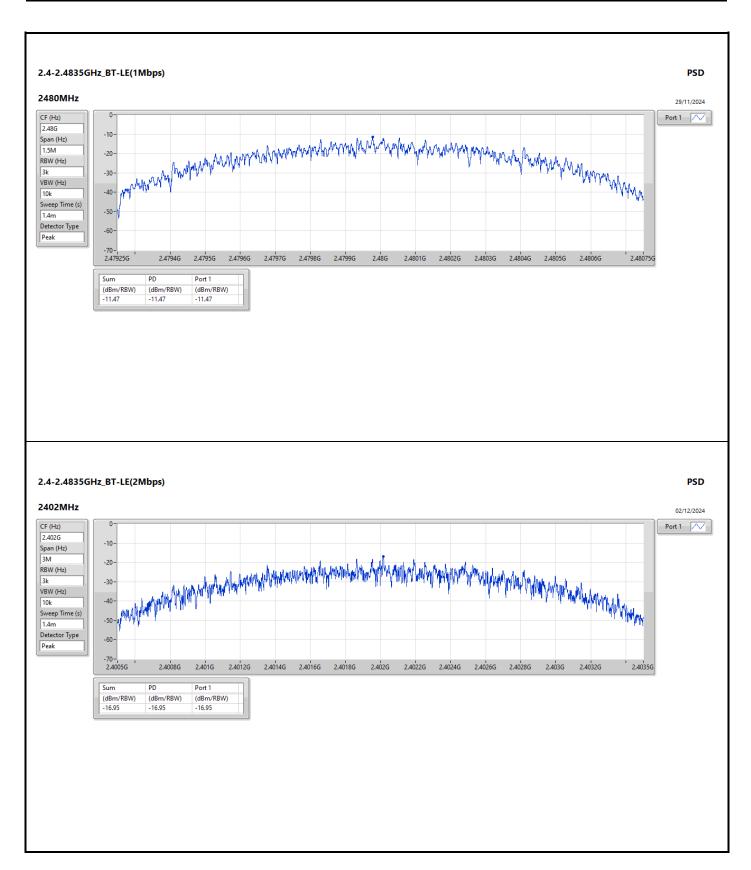
Appendix D



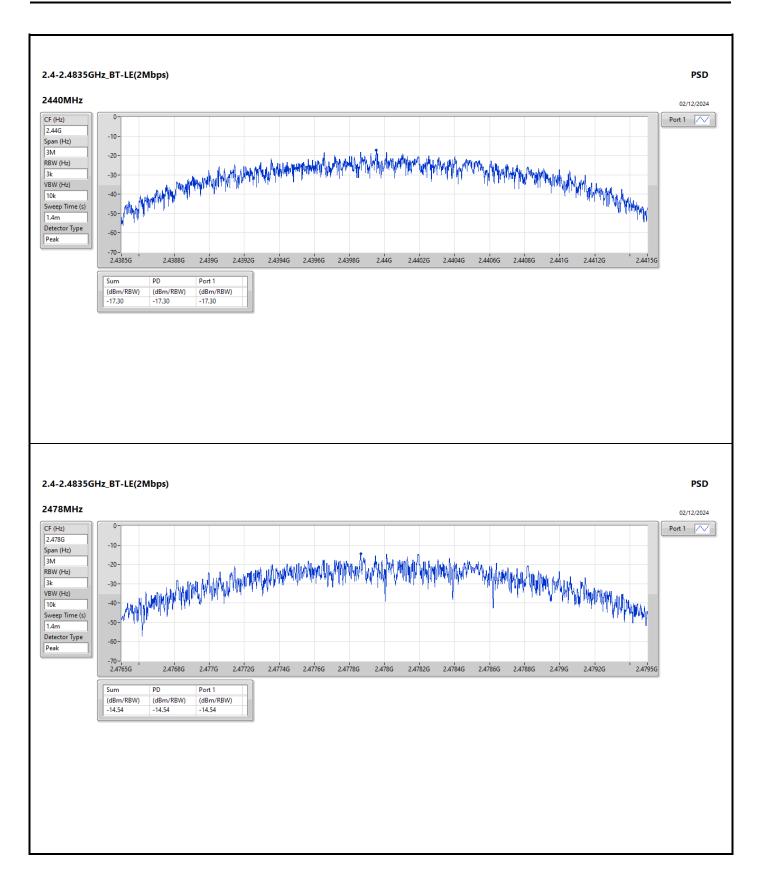
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Appendix D





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Summary

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-		-		-	-
BT-LE(1Mbps)	Pass	2.40167G	7.40	-22.60	1.75373G	-54.04	2.39996G	-40.29	2.4G	-38.75	2.50234G	-55.84	21.67333G	-47.70	1
BT-LE(2Mbps)	Pass	2.47816G	3.11	-26.89	61.73M	-61.62	2.4G	-28.03	2.4G	-30.27	2.50022G	-60.78	21.51867G	-54.33	1

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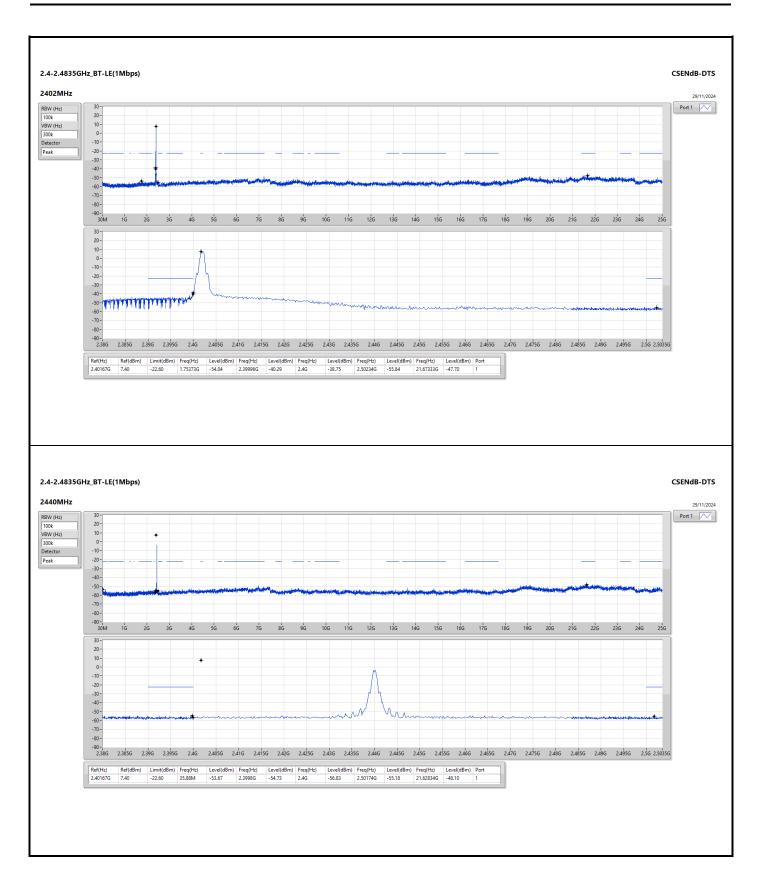


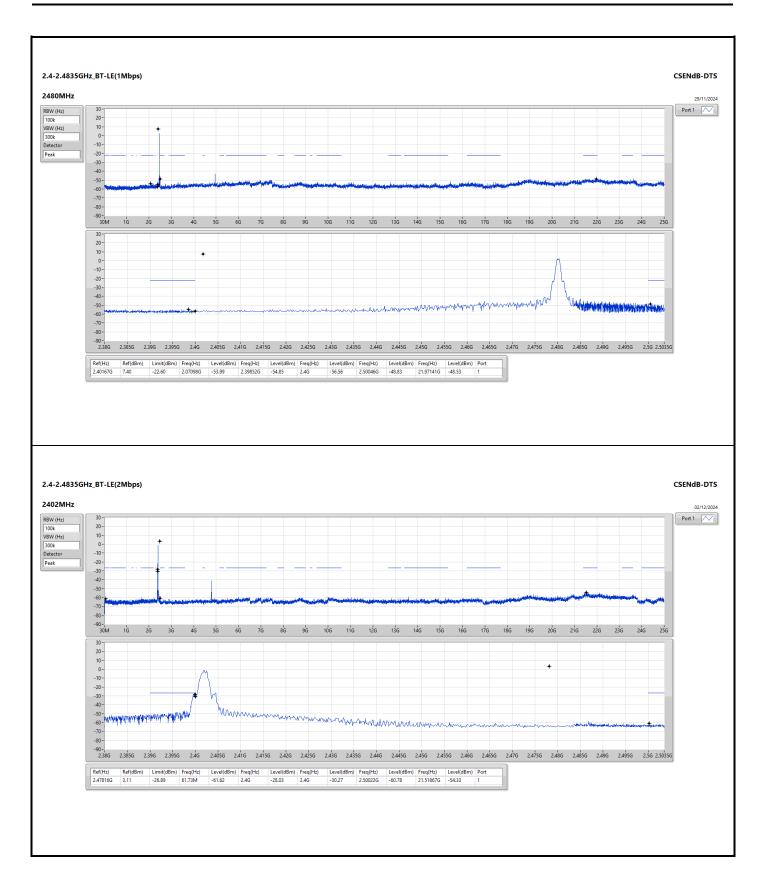
Result

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
BT-LE(1Mbps)	-		-	-	-	-		-	-	-		-	-	-	-
2402MHz	Pass	2.40167G	7.40	-22.60	1.75373G	-54.04	2.39996G	-40.29	2.4G	-38.75	2.50234G	-55.84	21.67333G	-47.70	1
2440MHz	Pass	2.40167G	7.40	-22.60	35.88M	-53.67	2.3998G	-54.73	2.4G	-56.83	2.50174G	-55.18	21.62834G	-48.10	1
2480MHz	Pass	2.40167G	7.40	-22.60	2.07098G	-53.99	2.39852G	-54.85	2.4G	-56.56	2.50046G	-48.83	21.97141G	-48.53	1
BT-LE(2Mbps)	-		-			-		-	-	-				-	-
2402MHz	Pass	2.47816G	3.11	-26.89	61.73M	-61.62	2.4G	-28.03	2.4G	-30.27	2.50022G	-60.78	21.51867G	-54.33	1
2440MHz	Pass	2.47816G	3.11	-26.89	2.03808G	-60.88	2.397G	-57.44	2.4G	-60.04	2.5015G	-60.89	21.50742G	-54.63	1
2478MHz	Pass	2.47816G	3.11	-26.89	2.16145G	-61.36	2.39004G	-59.14	2.4G	-62.74	2.50094G	-50.07	21.65083G	-54.48	1

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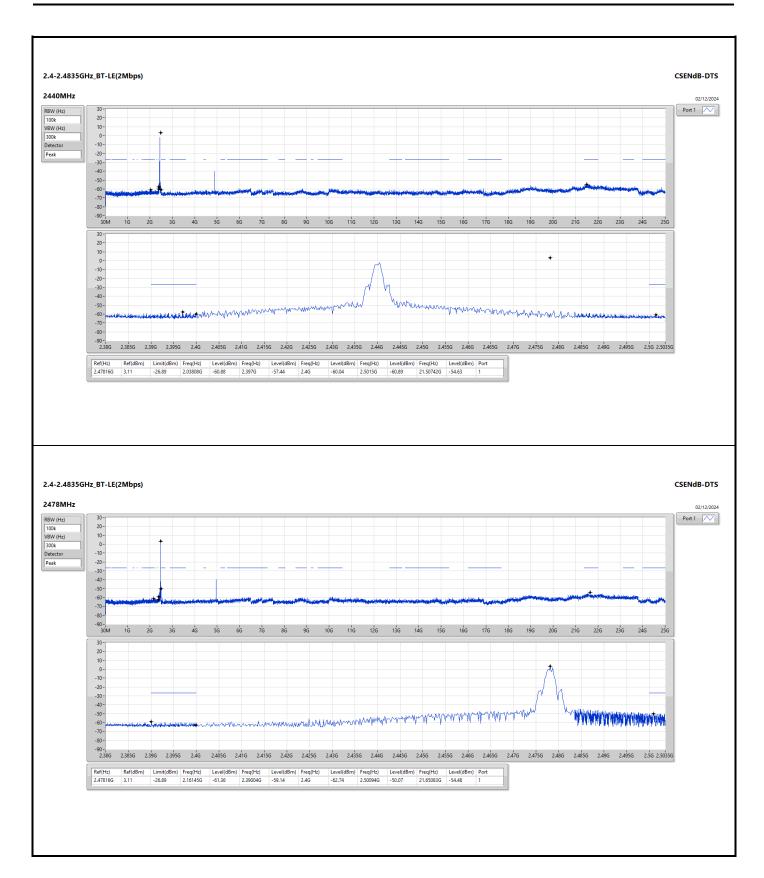
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Radiated Emissions below 1GHz

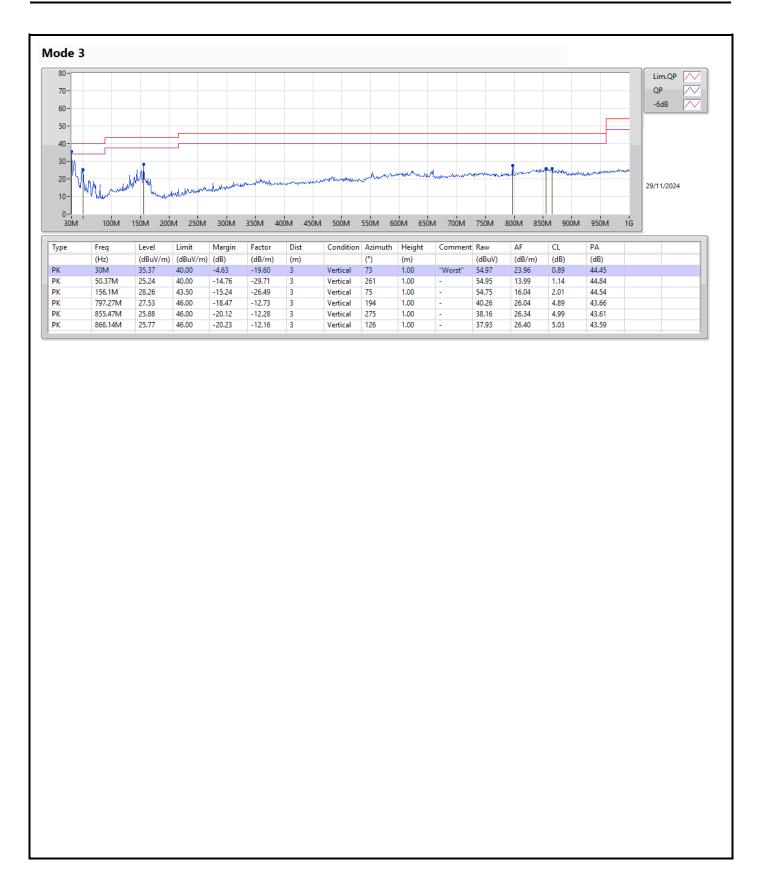
Appendix F.1

Summary

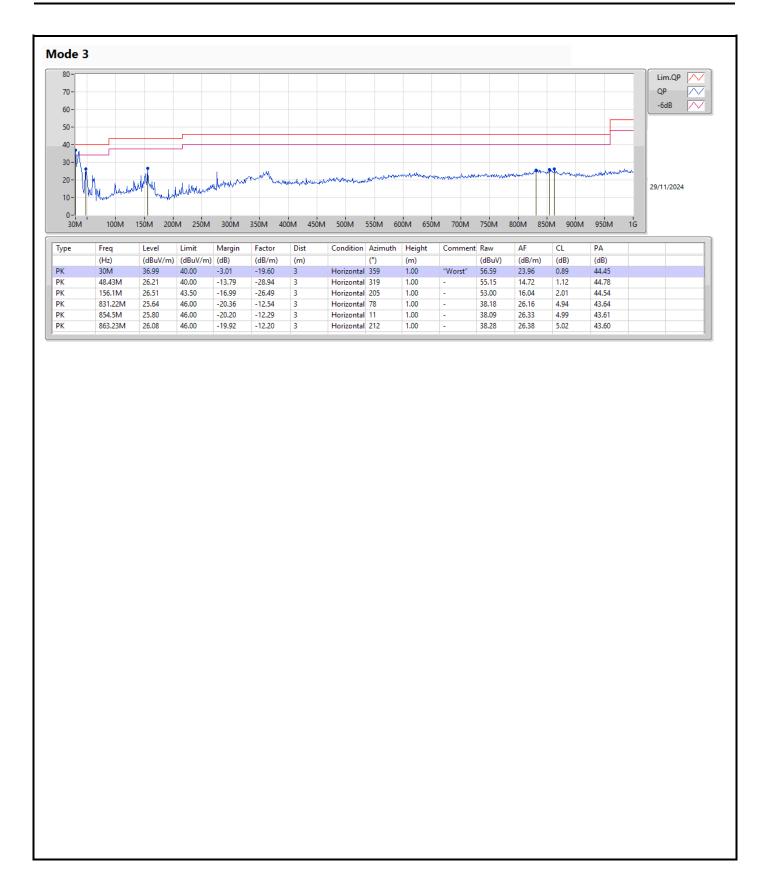
Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 3	Pass	PK	30M	36.99	40.00	-3.01	Horizontal

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RSE TX above 1GHz_Test Mode: Mode 1

Appendix F.2

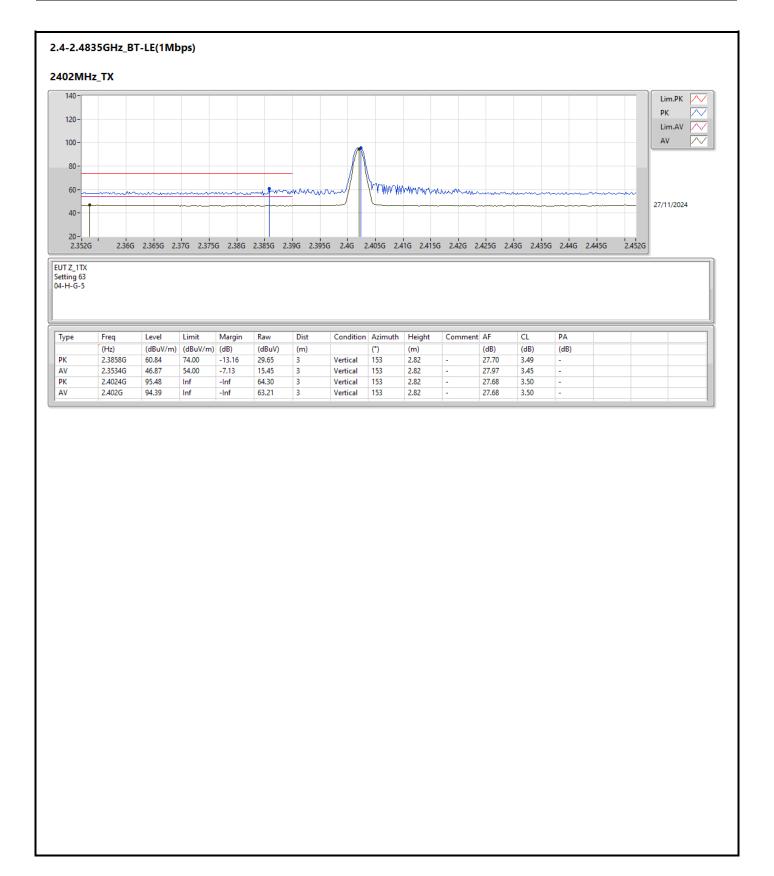
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	PK	2.4835G	73.78	74.00	-0.22	3	Horizontal	5	1.47	-

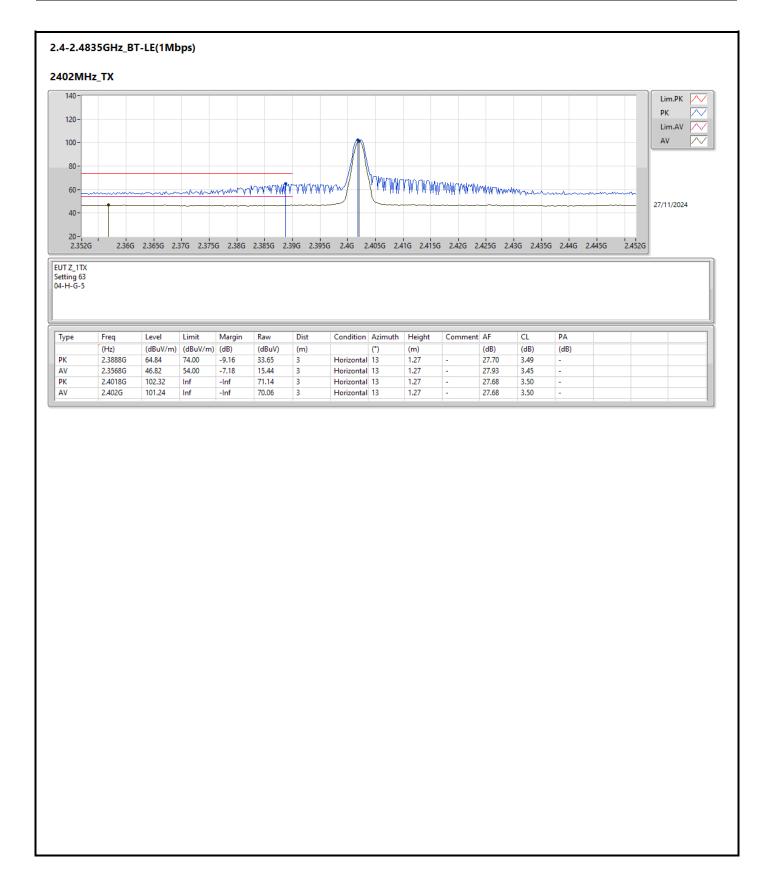
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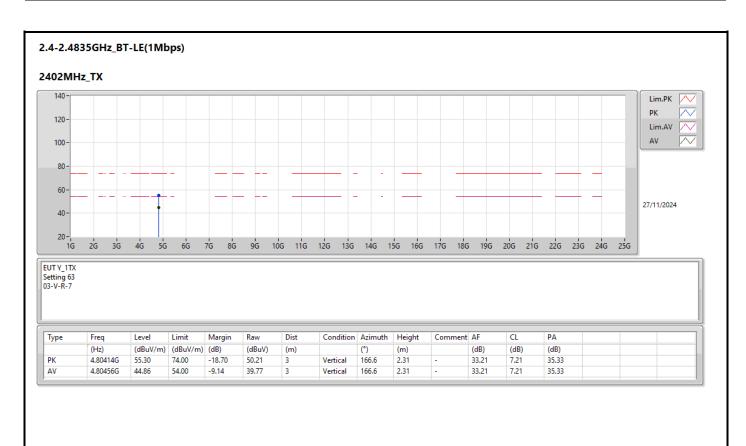






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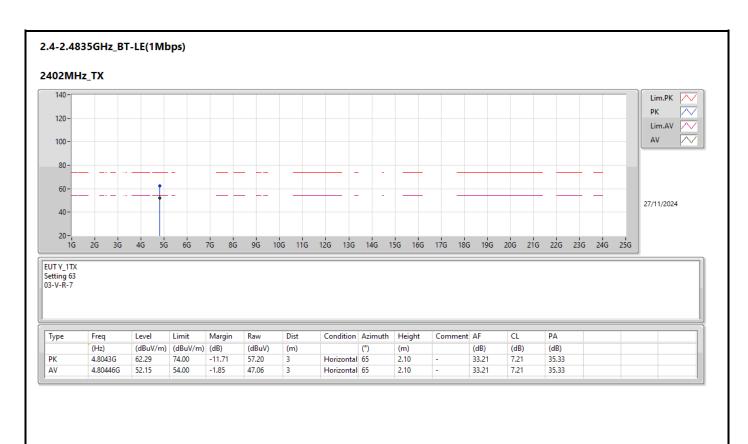




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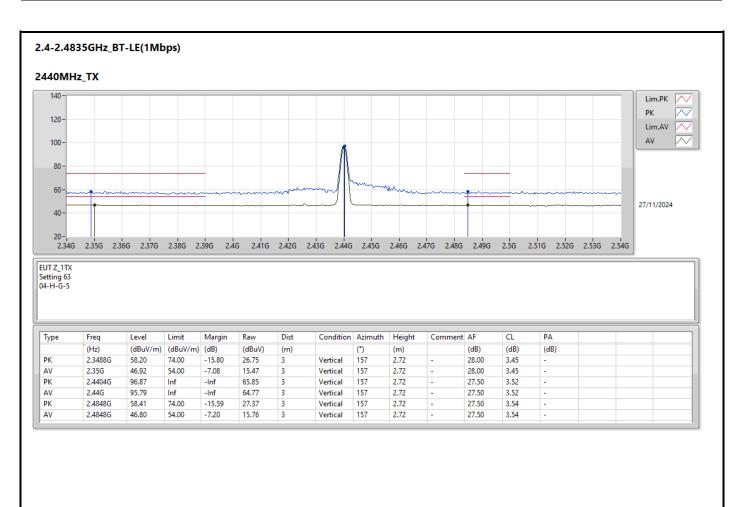
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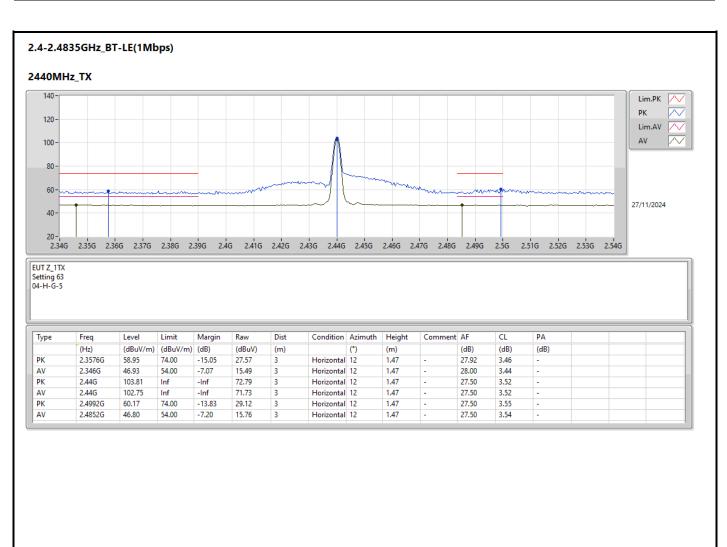
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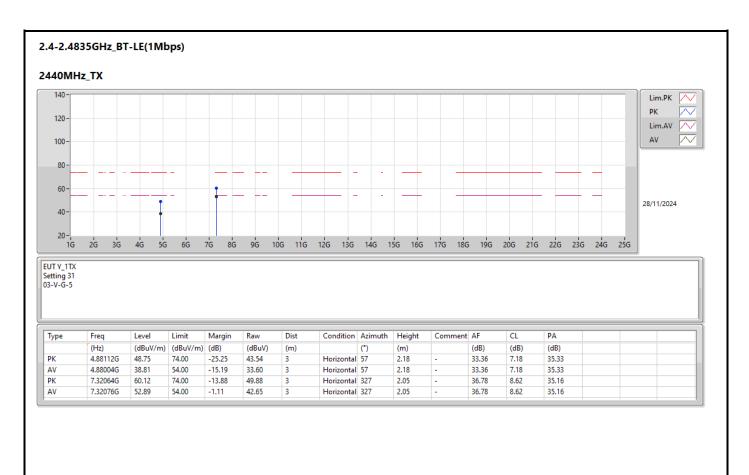
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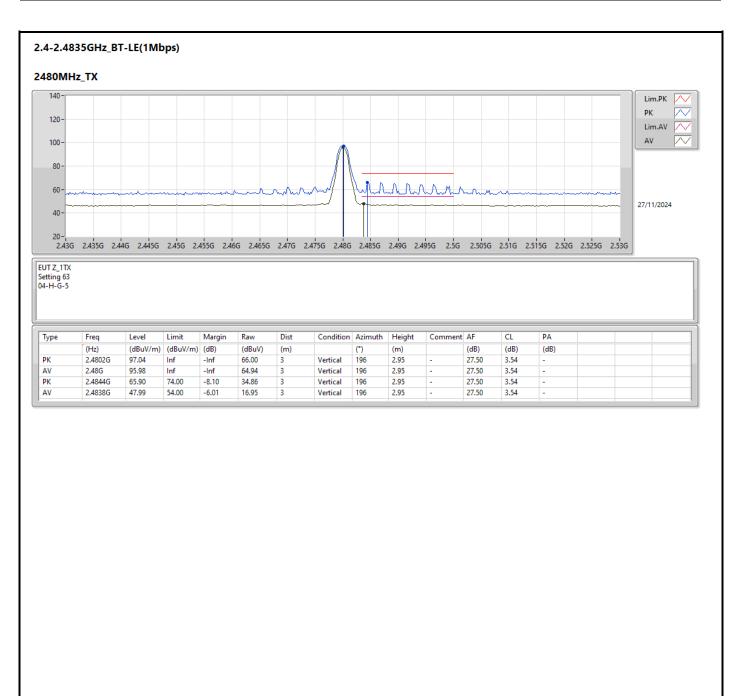




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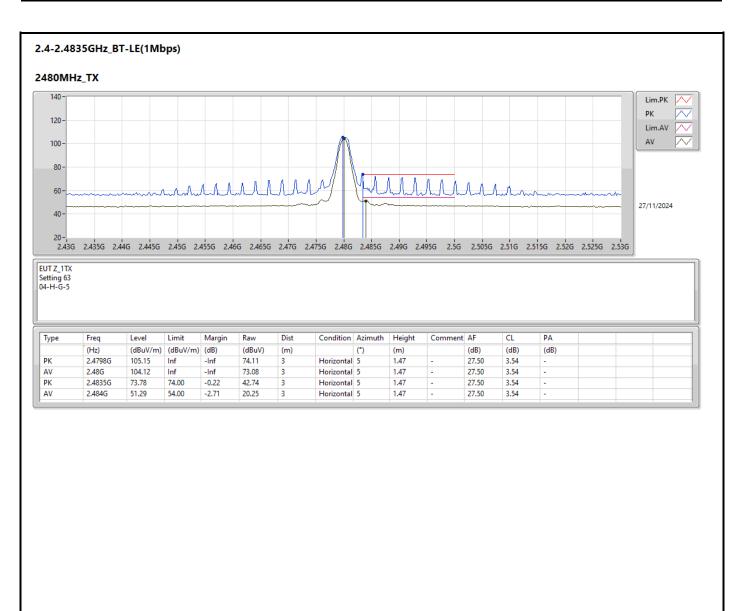




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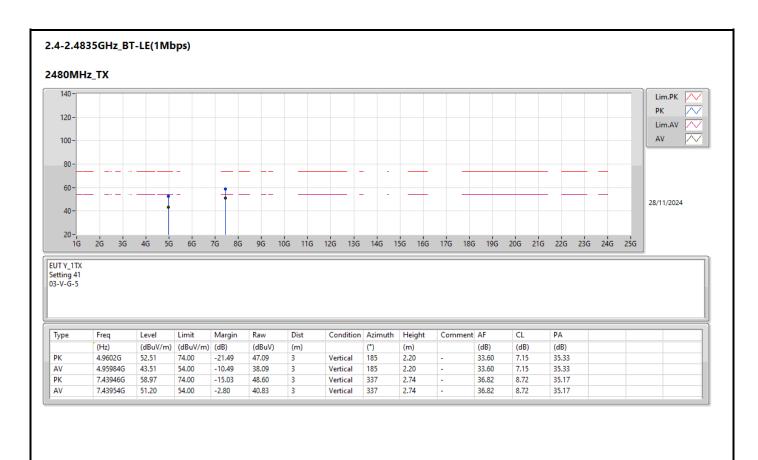




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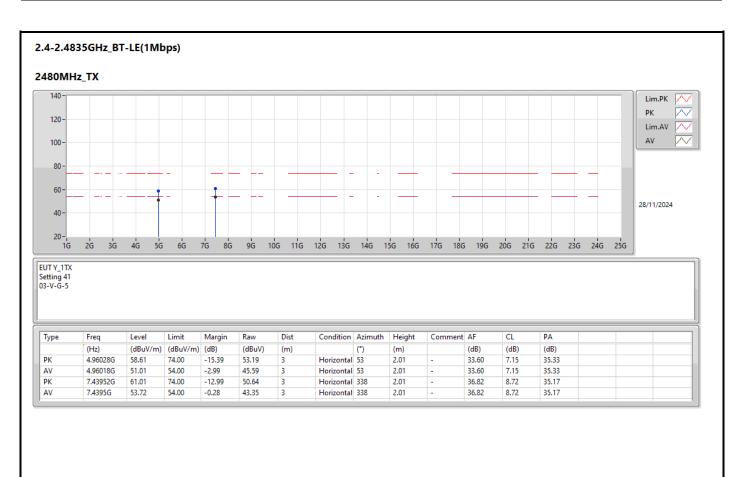




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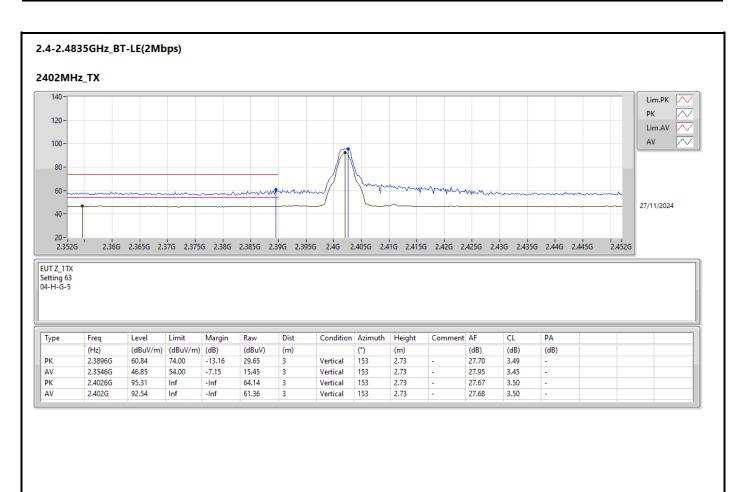




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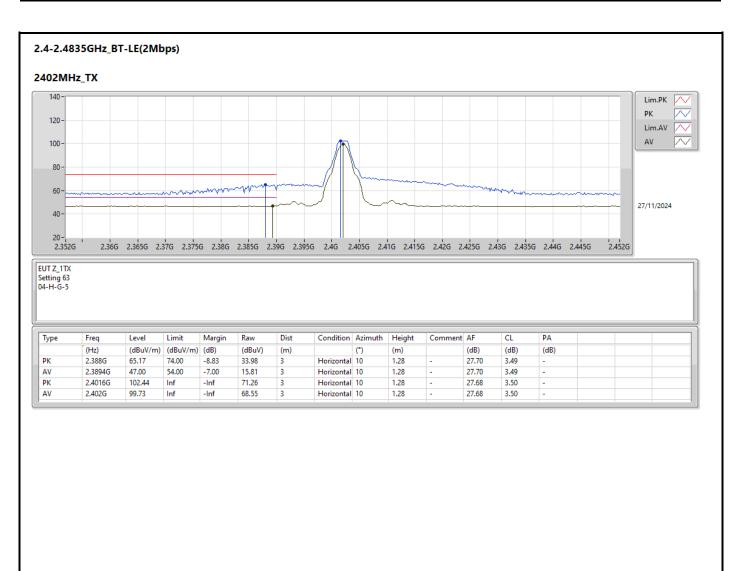




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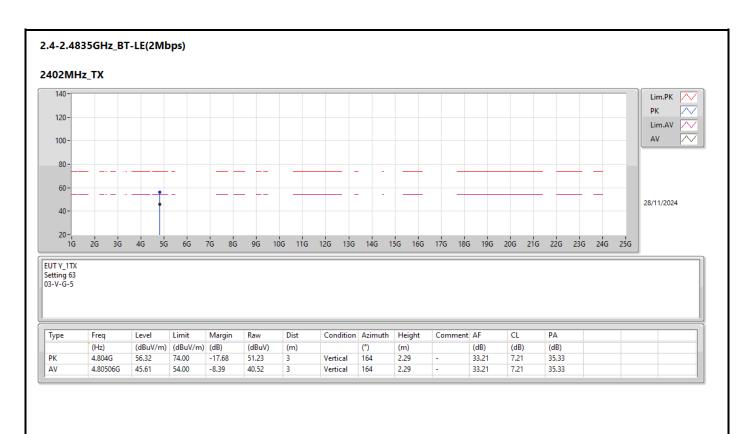




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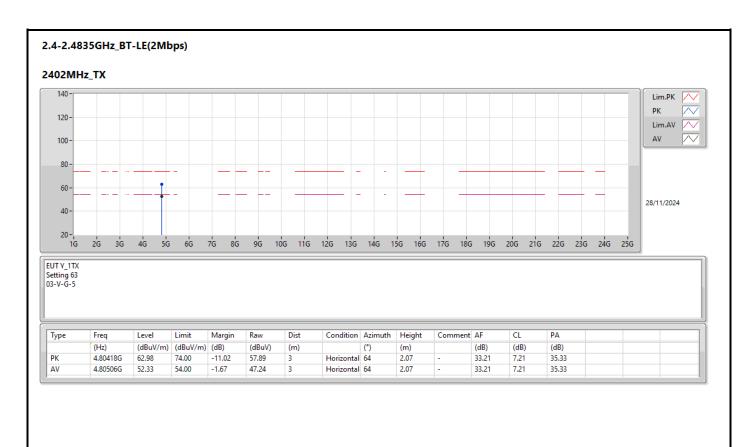
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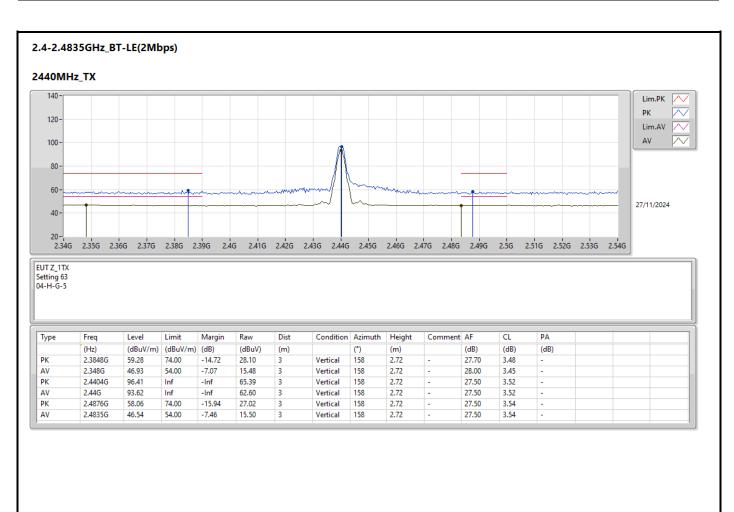




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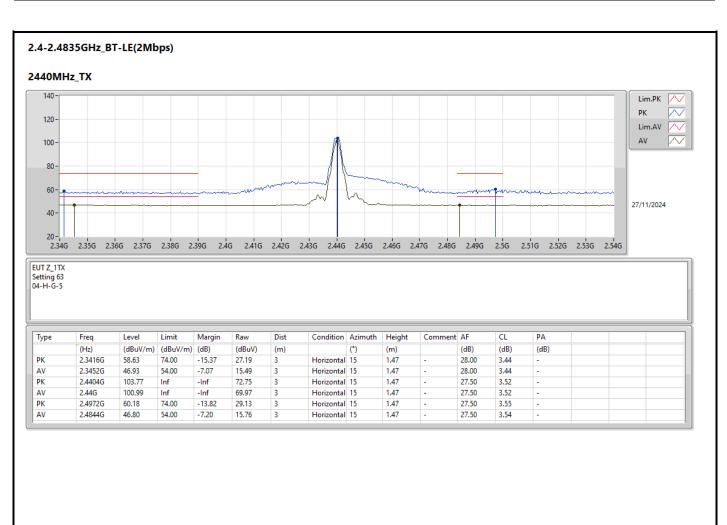




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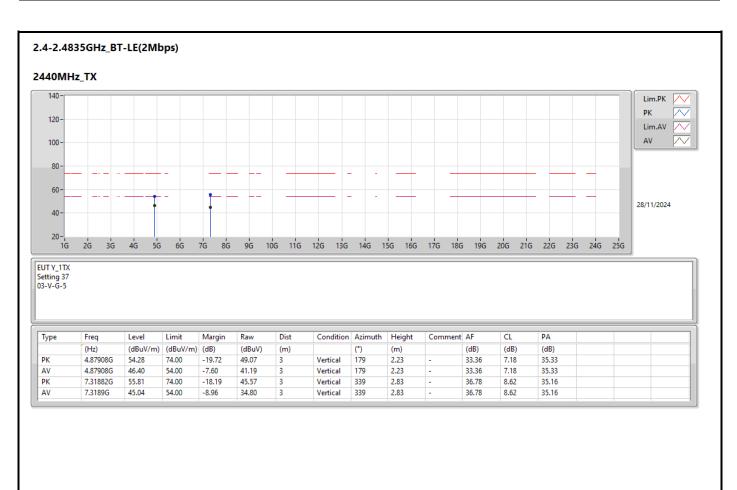




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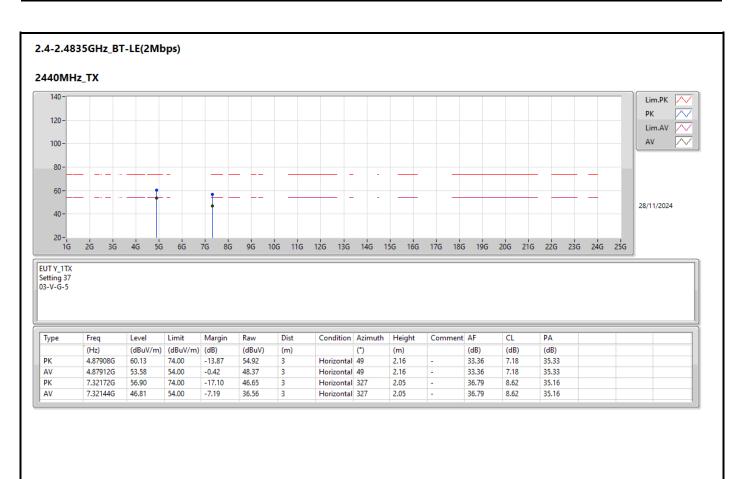




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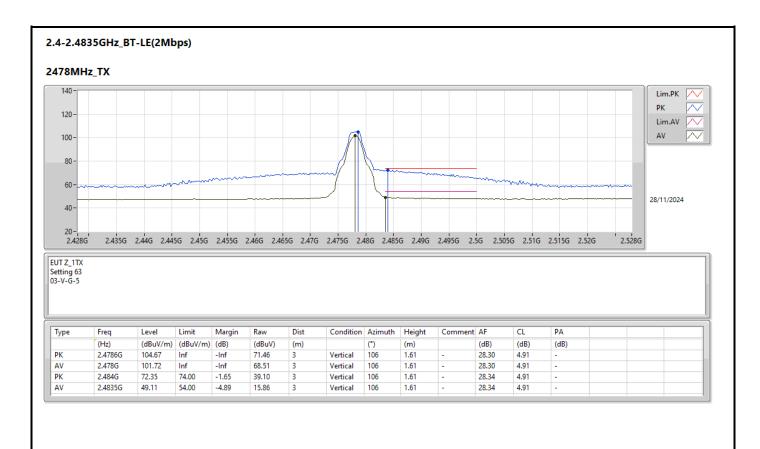




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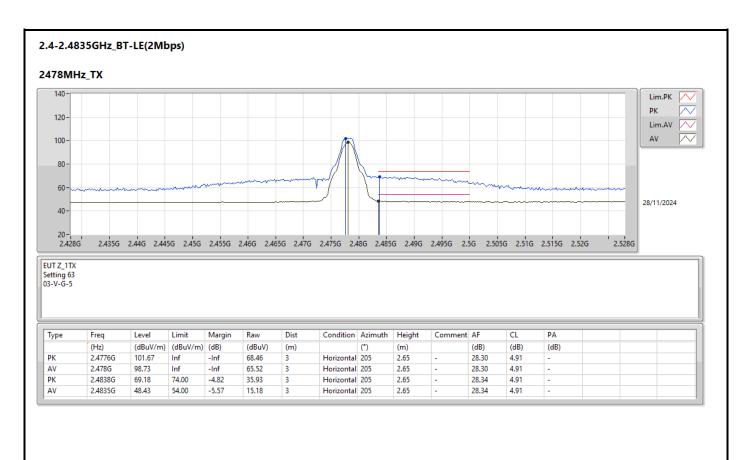




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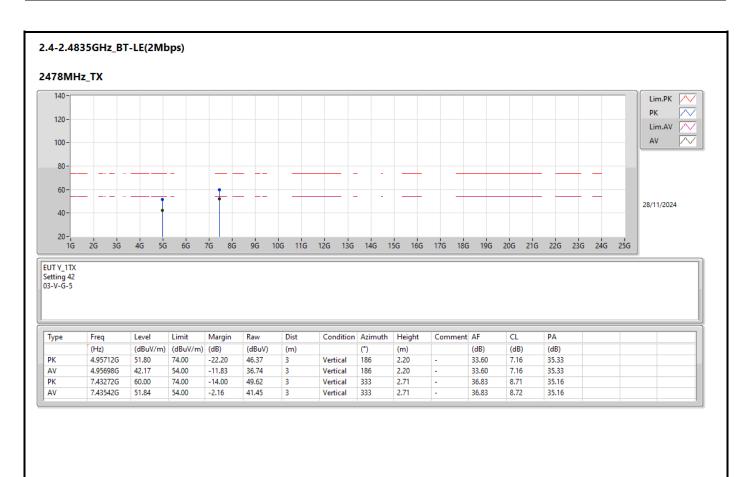




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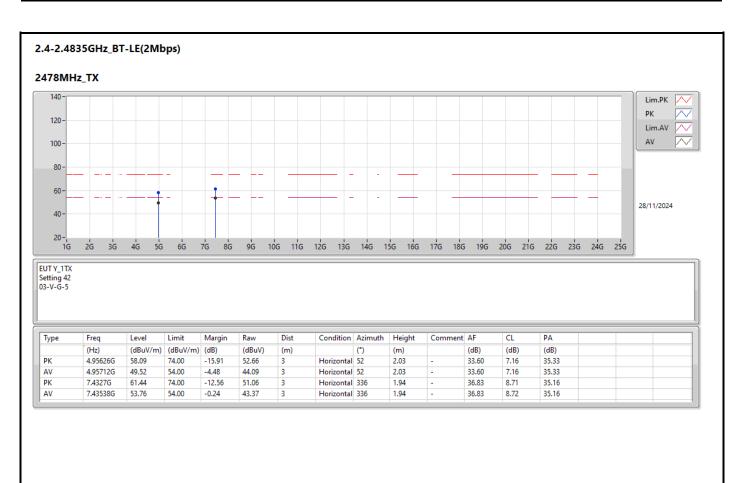




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RSE TX above 1GHz_Test Mode: Mode 2

Appendix F.3

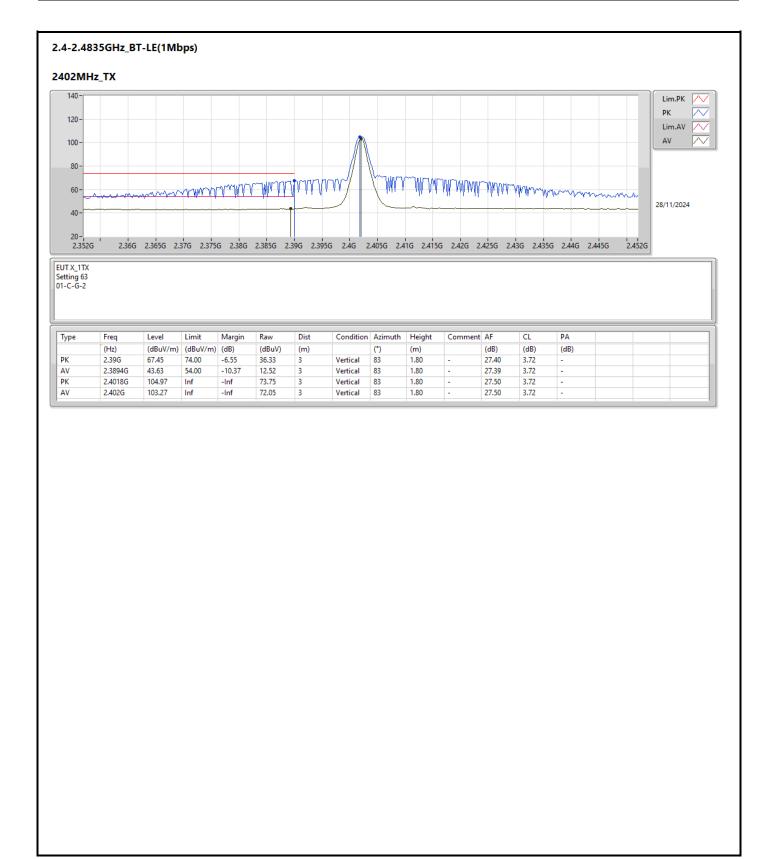
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	2.4835G	53.14	54.00	-0.86	3	Vertical	281	1.20	-

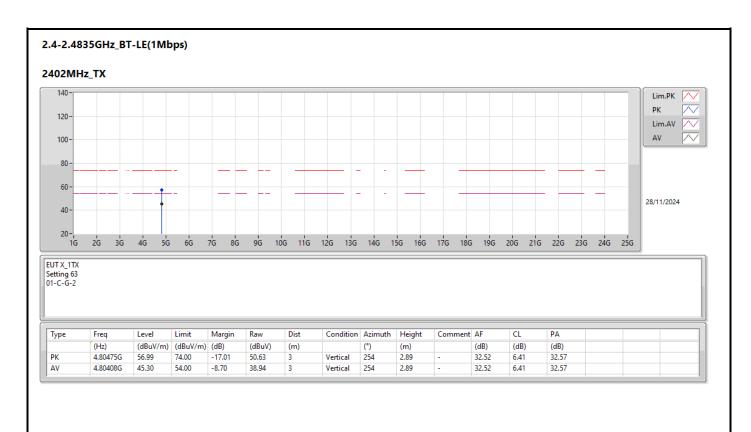
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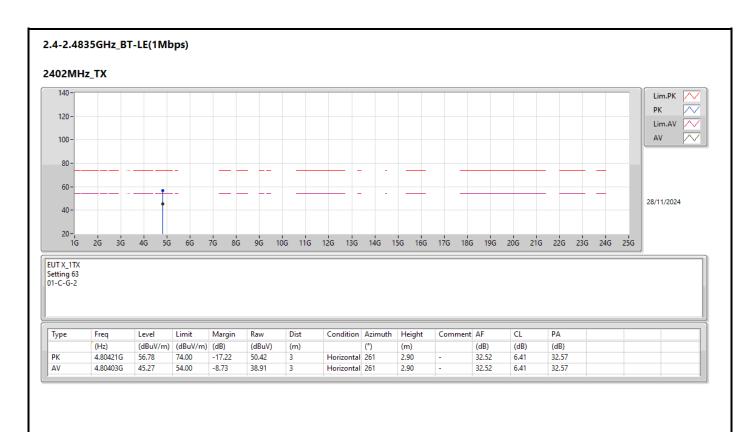




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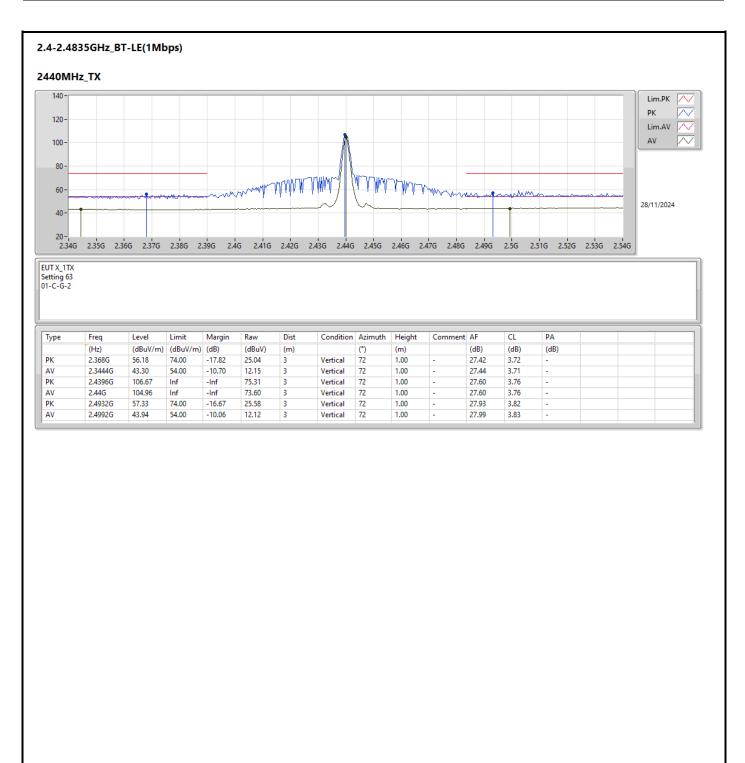




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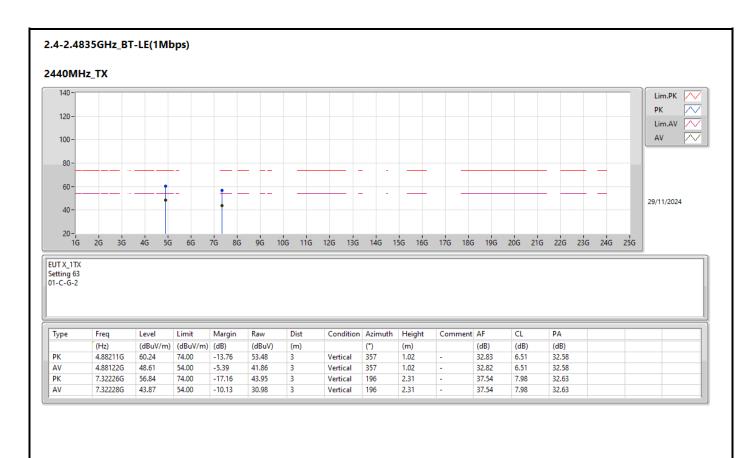
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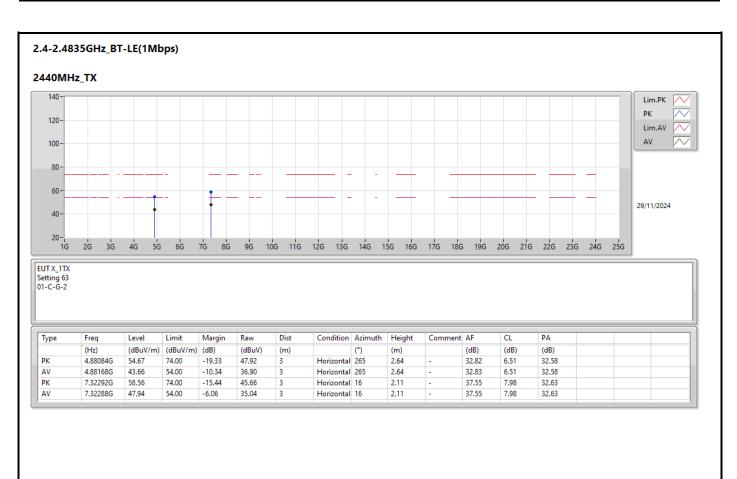
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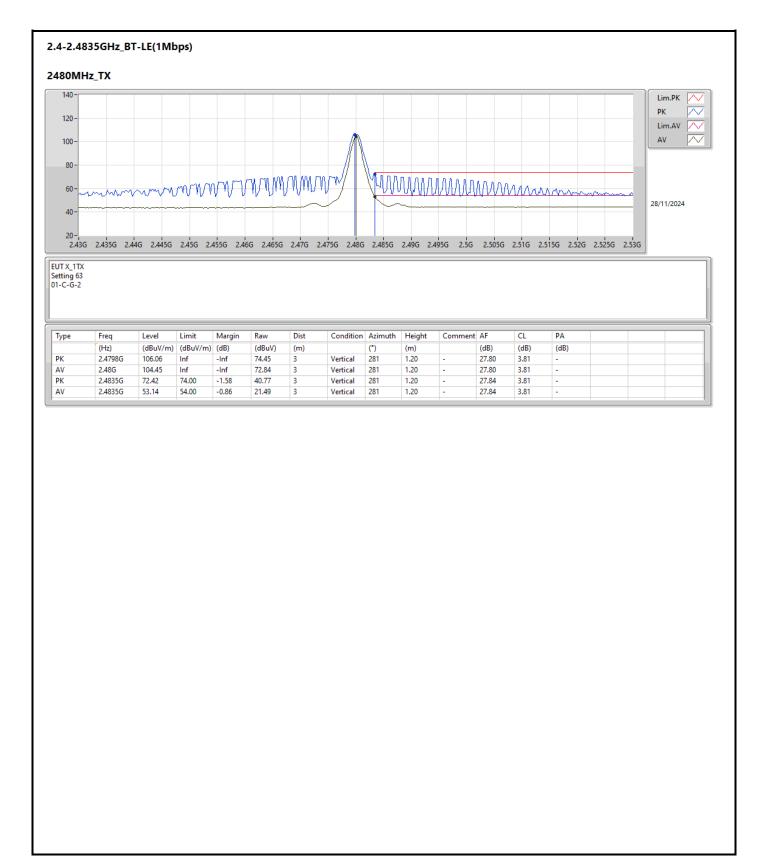
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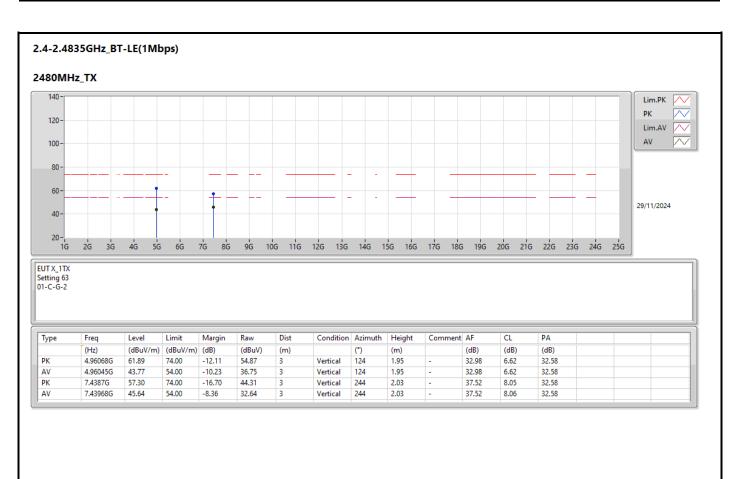


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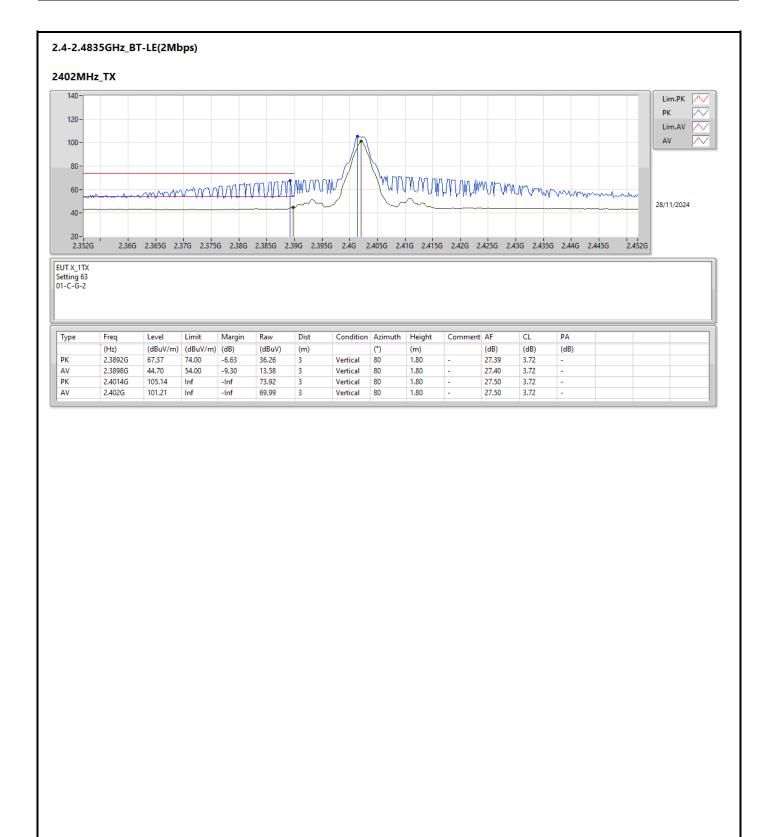




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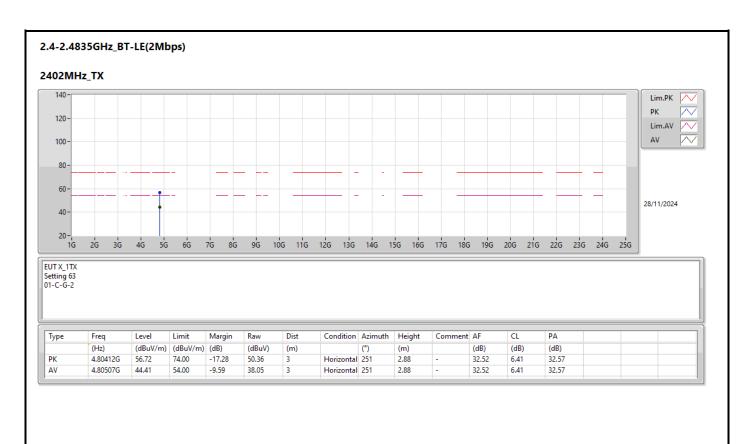
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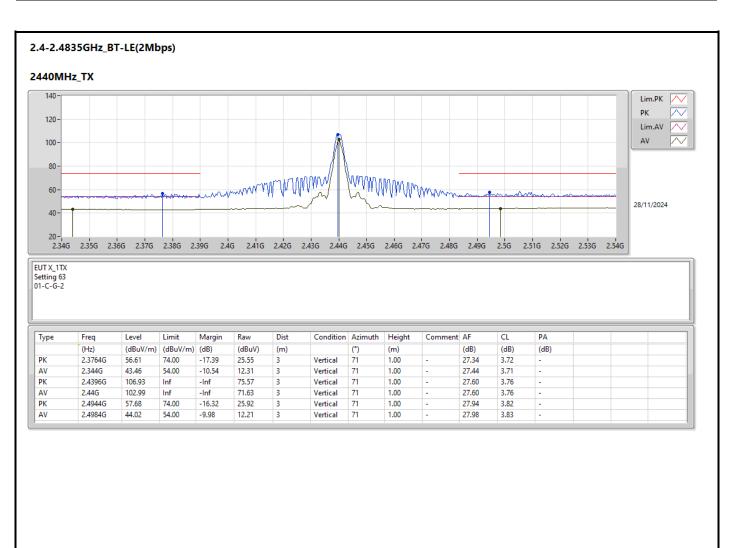
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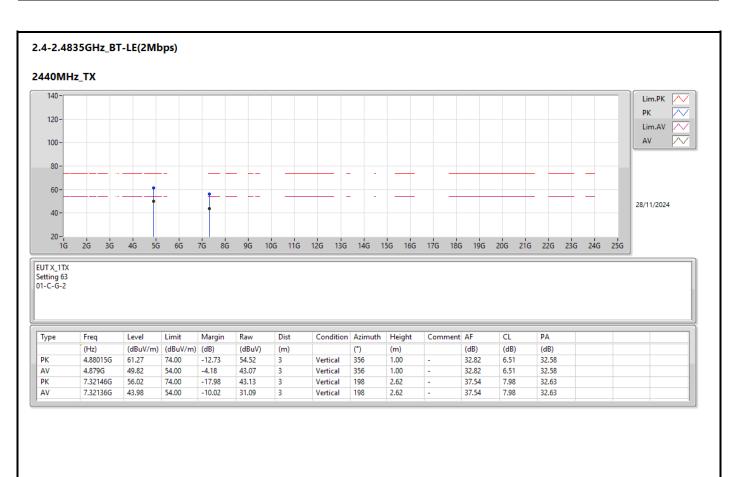
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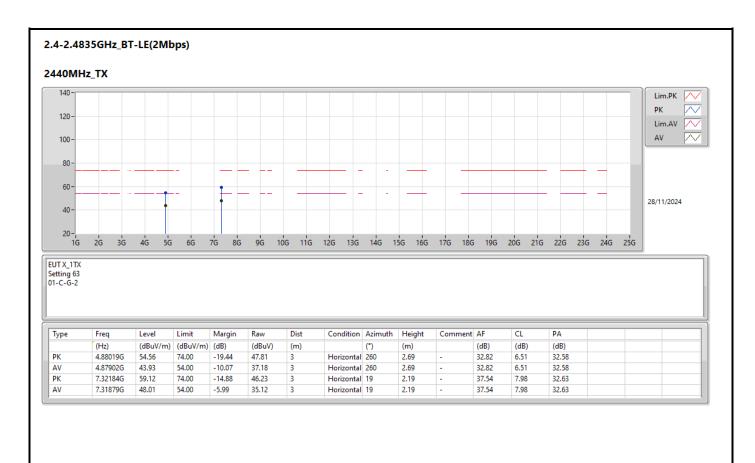
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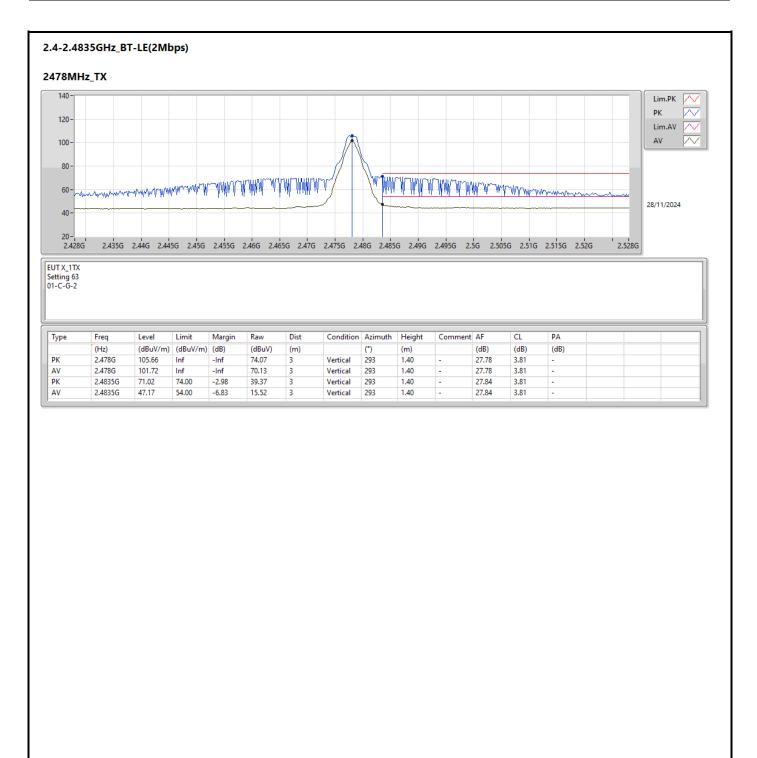
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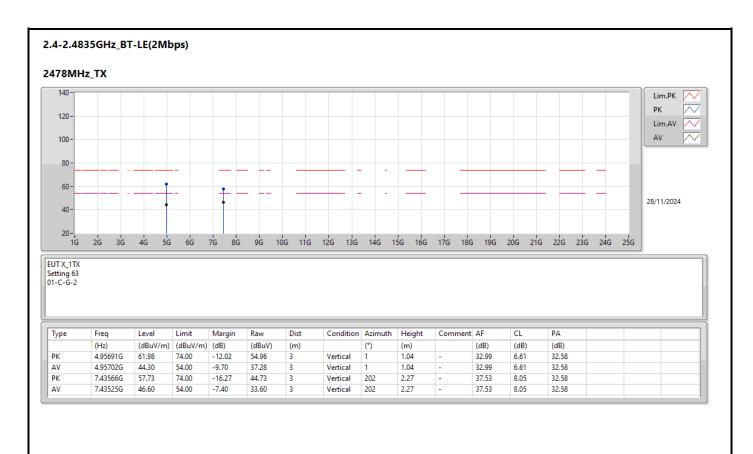




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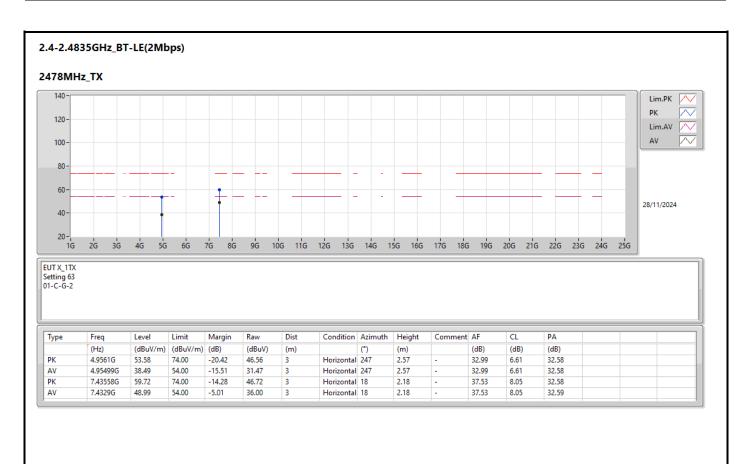
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RSE TX above 1GHz_Test Mode: Mode 3

Appendix F.4

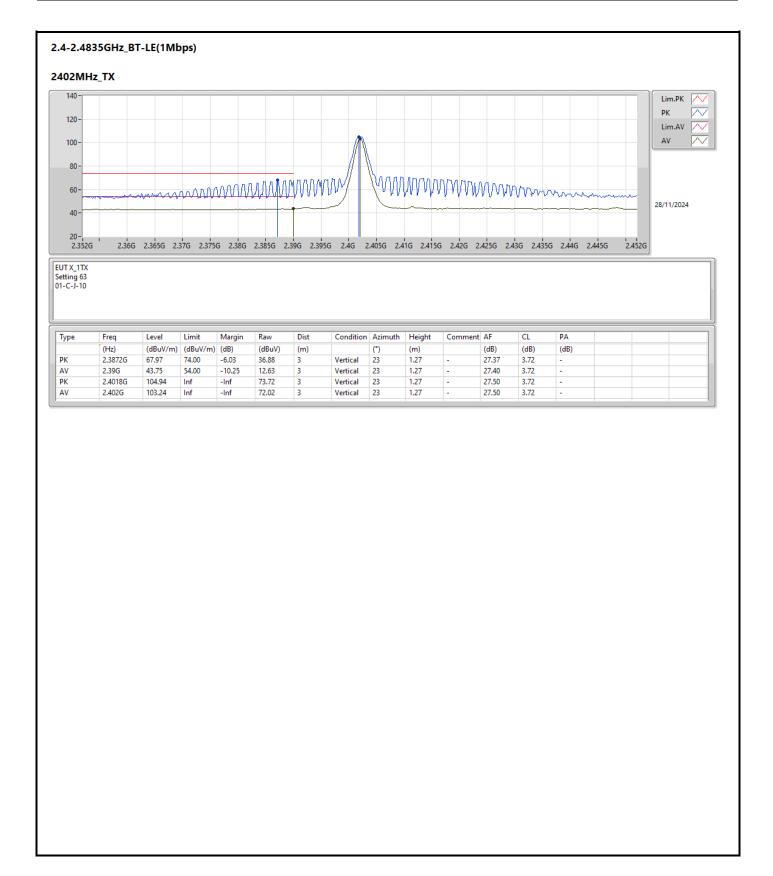
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-
BT-LE(1Mbps)	Pass	AV	4.96006G	51.36	54.00	-2.64	3	Horizontal	330	2.12	-
BT-LE(2Mbps)	Pass	AV	4.80305G	52.47	54.00	-1.53	3	Horizontal	175	2.58	-

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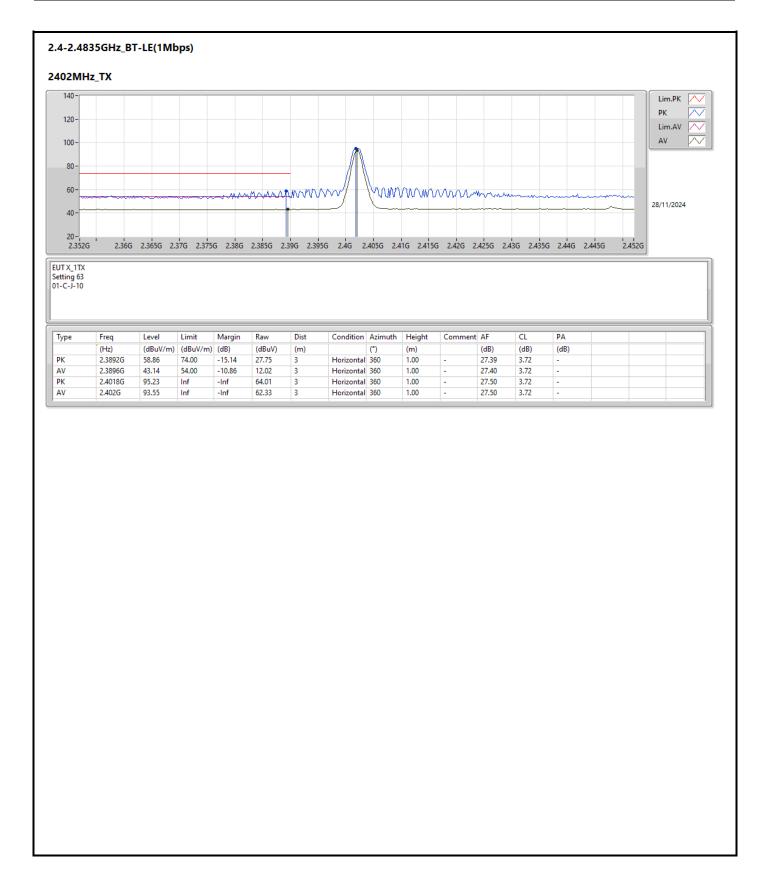
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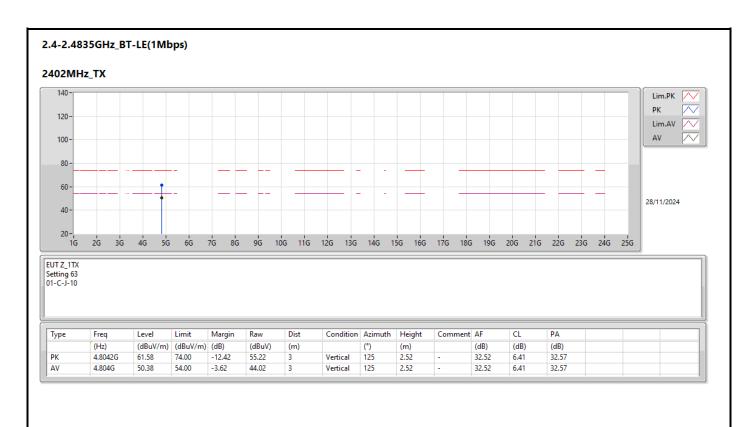


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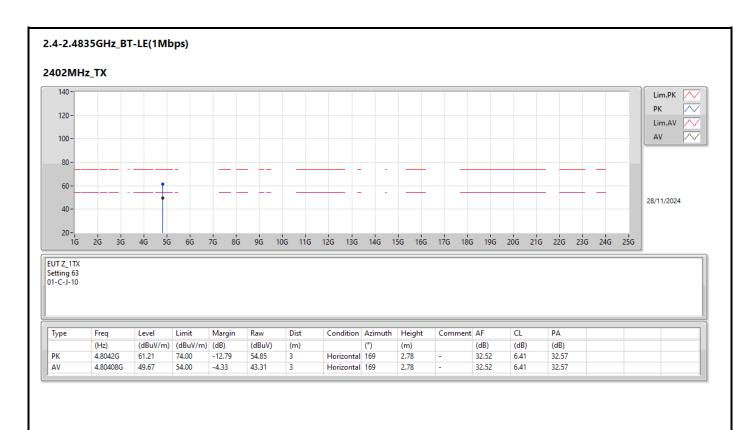




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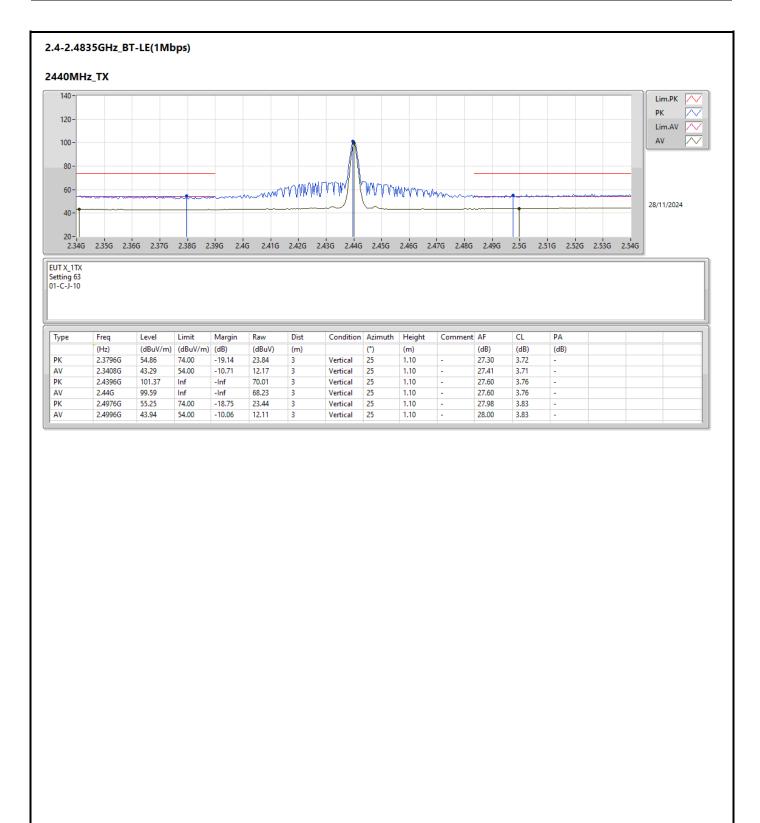




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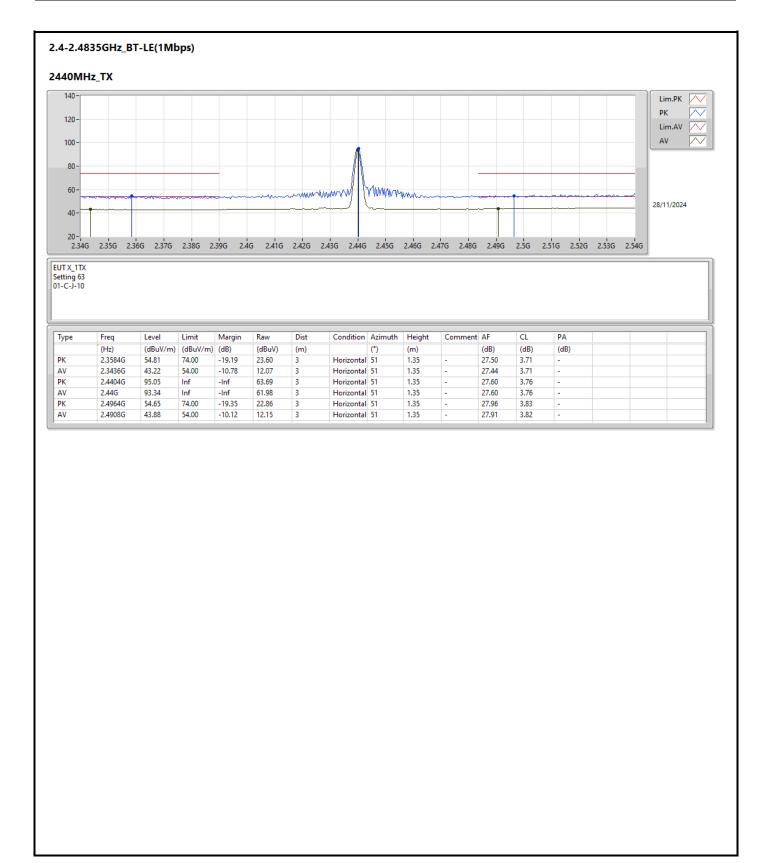




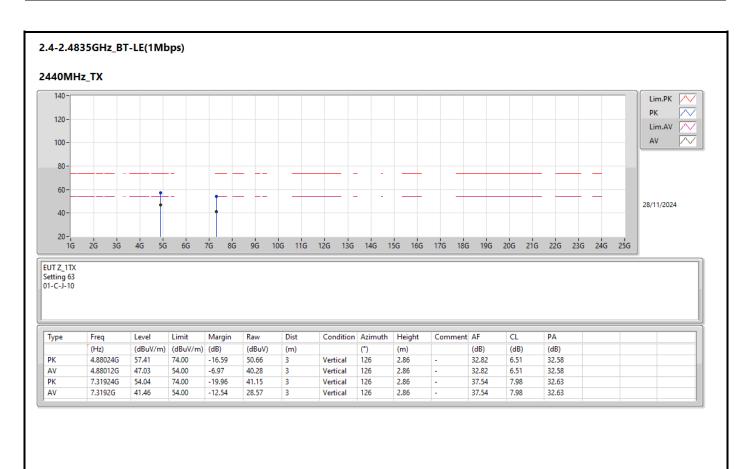
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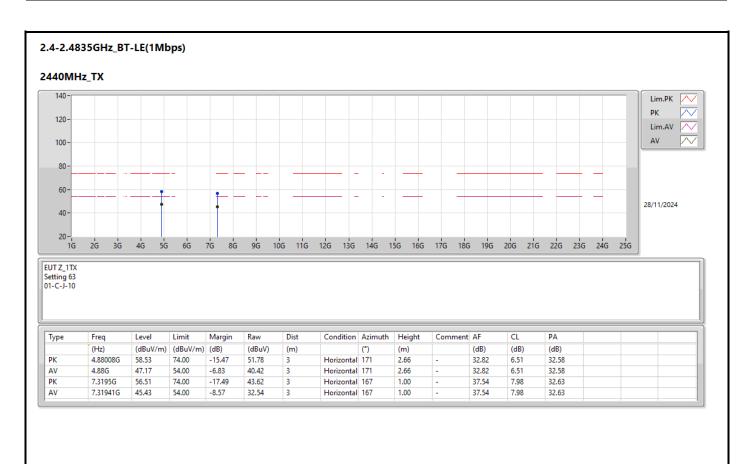






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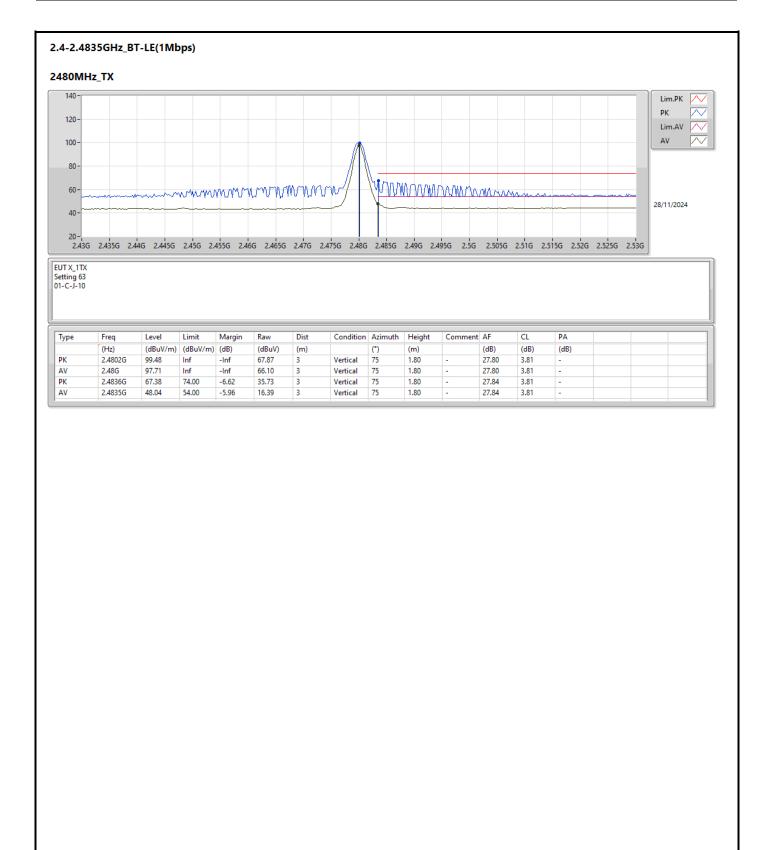




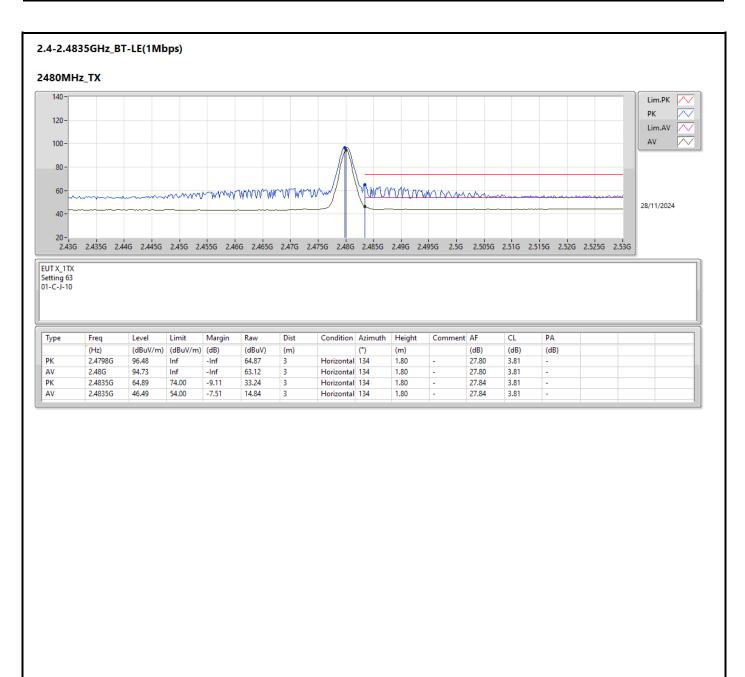
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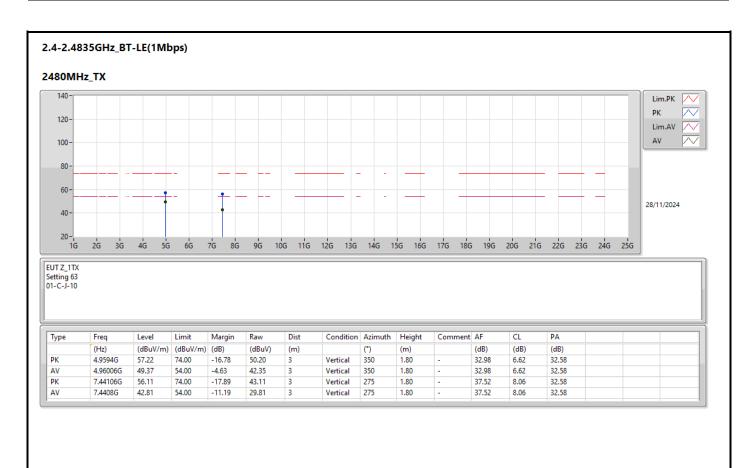




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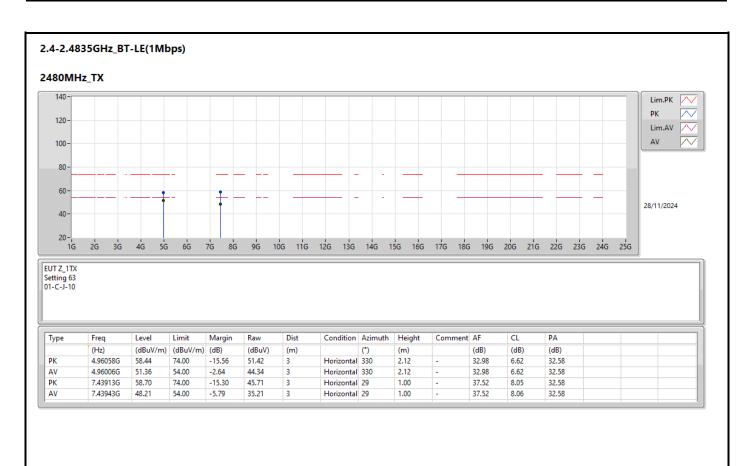




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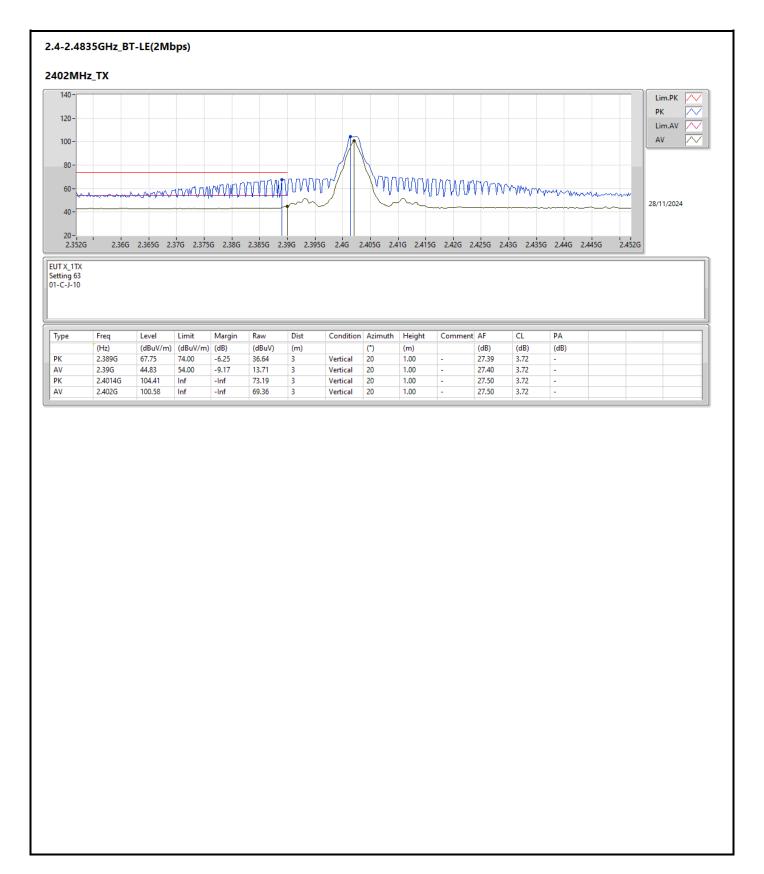




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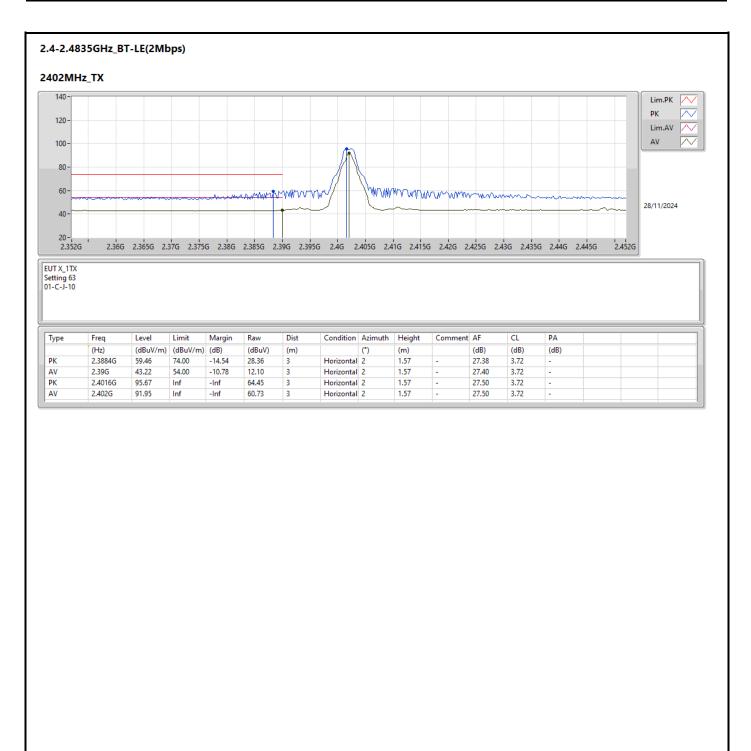




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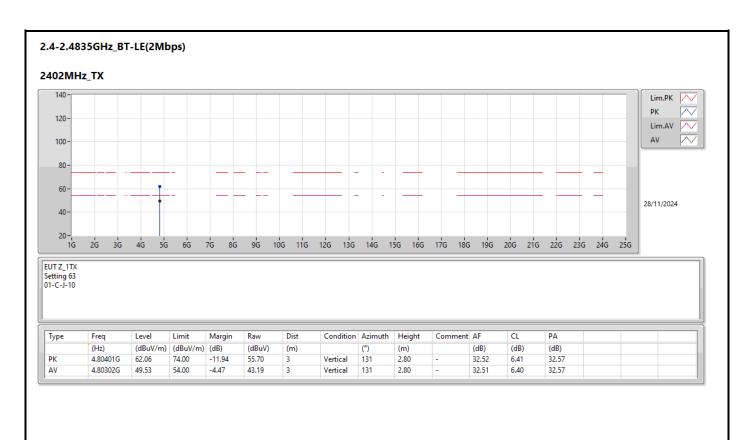




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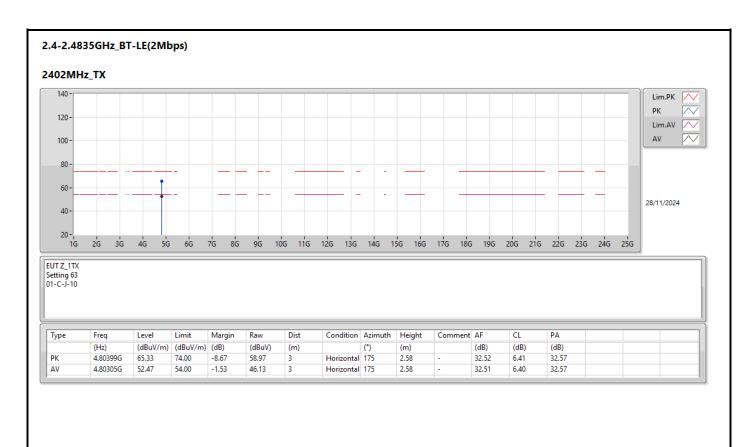




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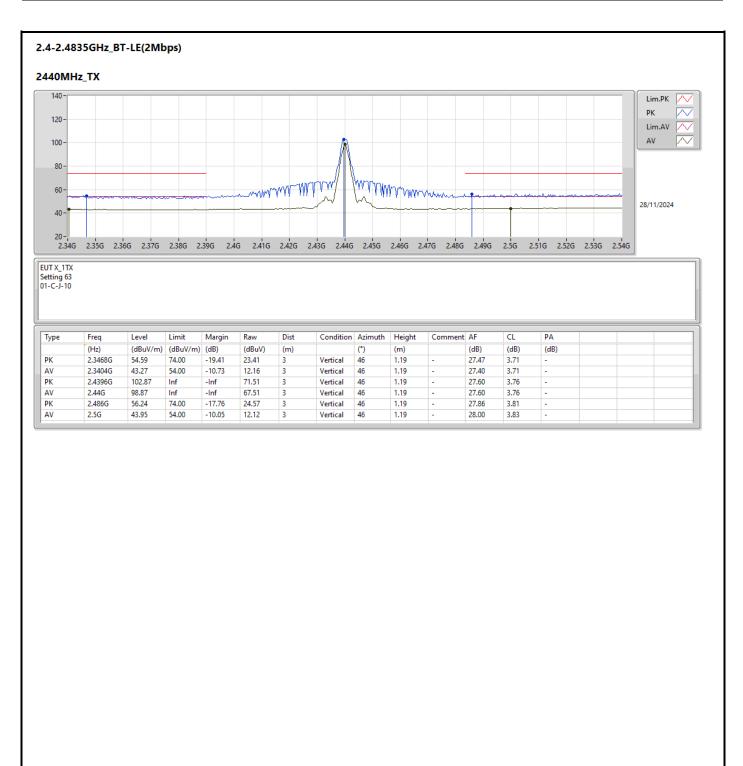




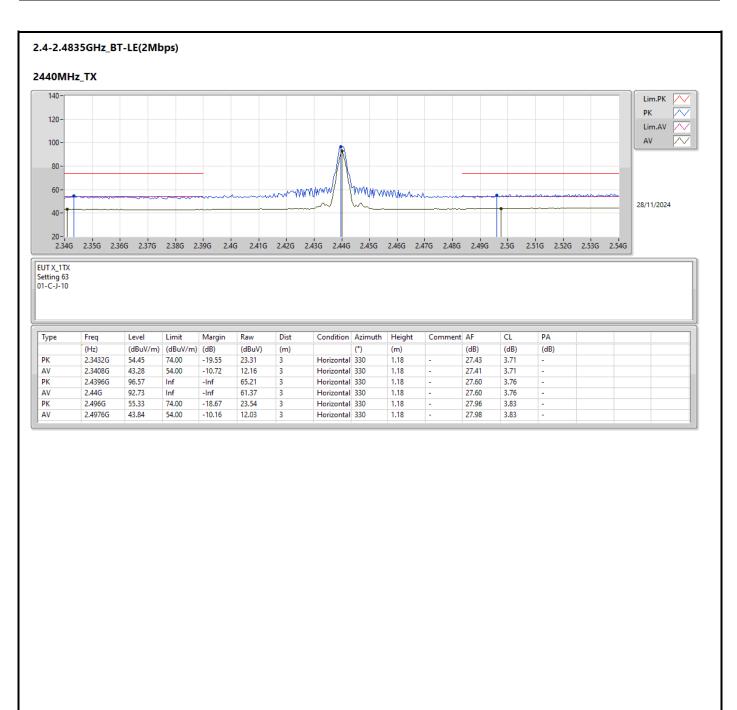
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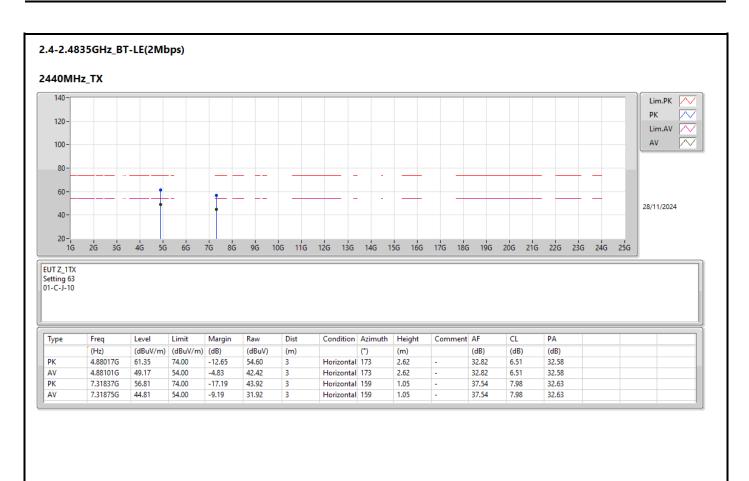




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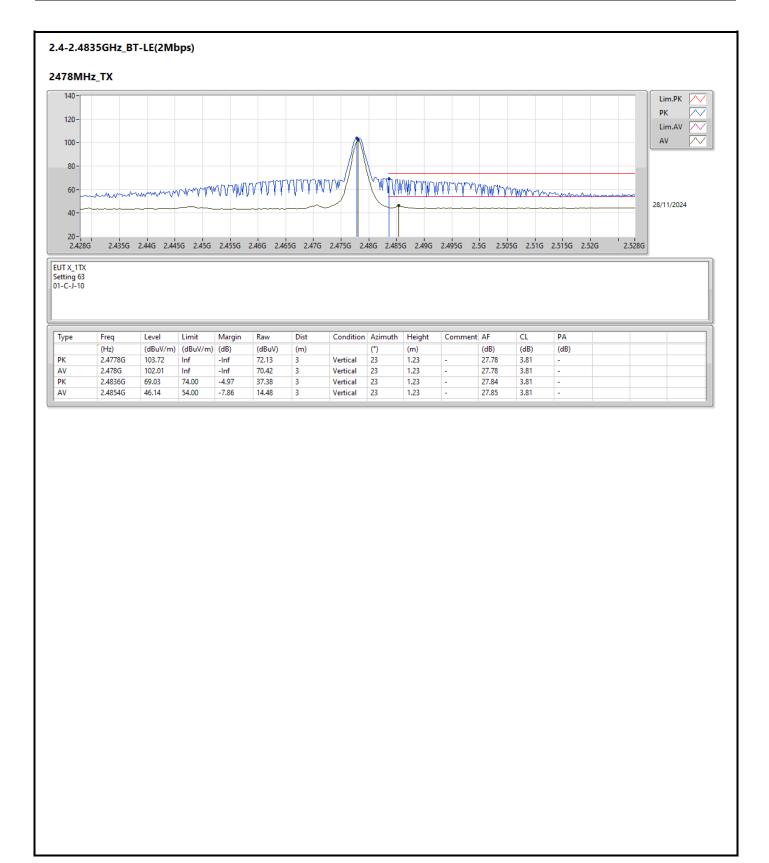




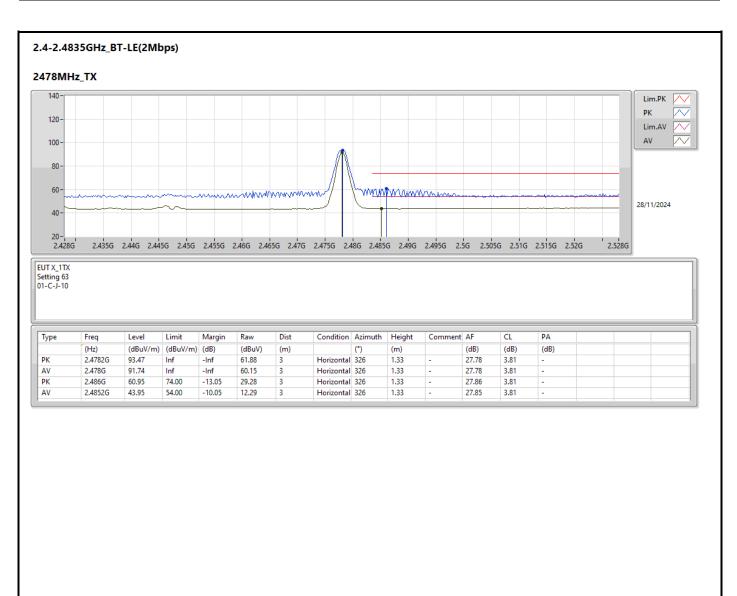
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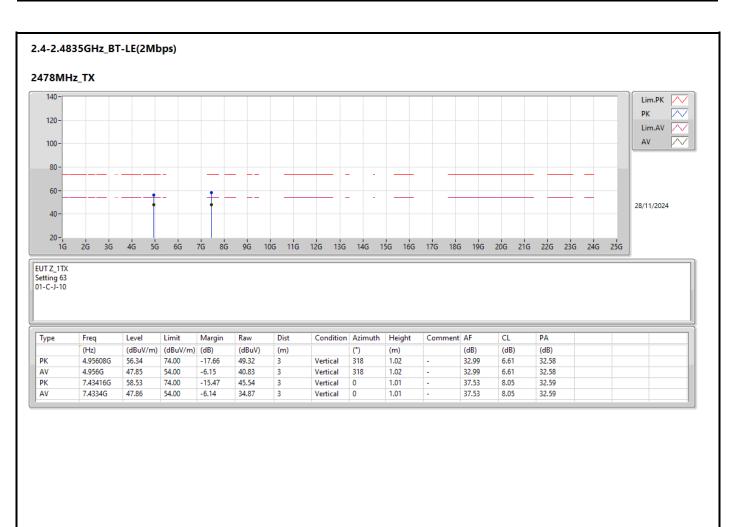






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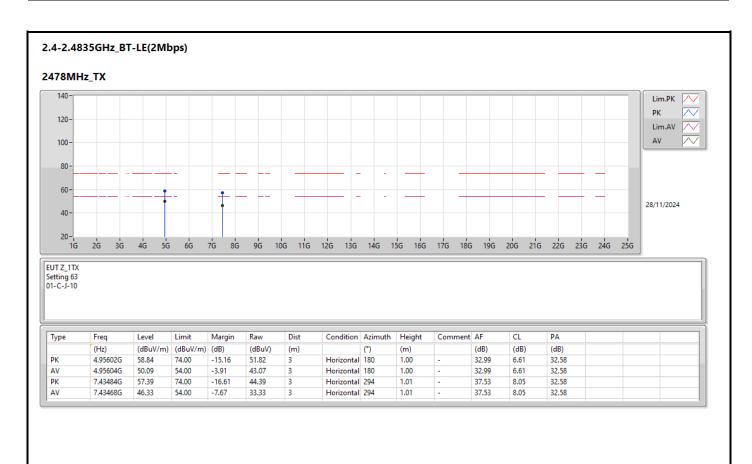




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