



RF TEST REPORT

For

Linksmart Technology(Zhongshan) Co..Ltd.
Product Name: LCD projector

Test Model(s): Y5N

Report Reference No. : DACE250701005RL001

FCC ID : 2BHDN-Y5N

Applicant's Name: Linksmart Technology(Zhongshan) Co..Ltd.

Address : No,11, Yingbin Avenue, Banfu Town, Zhongshan City, China

Testing Laboratory: Shenzhen DACE Testing Technology Co., Ltd.

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Address : Tangtou Community, Shiyan Subdistrict, Bao'an District, Shenzhen,

Guangdong, China

Test Specification Standard : 47 CFR Part 15.247

Date of Receipt : July 1, 2025

Date of Test : July 1, 2025 to July 23, 2025

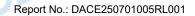
Data of Issue : July 23, 2025

Result : Pass

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Applicant's Name	:	Linksmart Technology(Zhongshan) CoLtd.		
Address	:	No,11,Yingbin Avenue, Banfu Town, Zhongshan City, China		
Product Name	:	LCD projector	27	
Test Model(s)	:	Y5N	V	
Series Model(s)	ò	Y5N-1, Y5N-2, Y5N-3, Y5N-4		
Test Specification Standard(s)	6.0	47 CFR Part 15.247		

NOTE1:

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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July 23, 2025 July 23, 2025 July 23, 2025

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Report No.: DACE250701005RL001

Revision History Of Report

Version	Description	REPORT No.	Issue Date
V1.0	Original	DACE250701005RL001	July 23, 2025
	1	2	

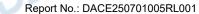
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V1.0

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1 TEST SUMMARY

1.1 Test Standards

The tests were performed according to following standards:

47 CFR Part 15.247: Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz

1.2 Summary of Test Result

Item	Standard	Method	Requirement	Result
Antenna requirement	47 CFR Part 15.247		47 CFR 15.203	Pass
Conducted Emission at AC power line	47 CFR Part 15.247	ANSI C63.10-2013 section 6.2	47 CFR 15.207(a)	Pass
6dB Bandwidth	47 CFR Part 15.247	ANSI C63.10-2013, section 11.8 KDB 558074 D01 15.247 Meas Guidance v05r02	47 CFR 15.247(a)(2)	Pass
Maximum Conducted Output Power	47 CFR Part 15.247	ANSI C63.10-2013, section 11.9.1 KDB 558074 D01 15.247 Meas Guidance v05r02	47 CFR 15.247(b)(3)	Pass
Power Spectral Density	47 CFR Part 15.247	ANSI C63.10-2013, section 11.10 KDB 558074 D01 15.247 Meas Guidance v05r02	47 CFR 15.247(e)	Pass
Emissions in non-restricted frequency bands	47 CFR Part 15.247	ANSI C63.10-2013 section 11.11 KDB 558074 D01 15.247 Meas Guidance v05r02	47 CFR 15.247(d)	Pass
Band edge emissions (Radiated)	47 CFR Part 15.247	ANSI C63.10-2013 section 6.10 KDB 558074 D01 15.247 Meas Guidance v05r02	47 CFR 15.247(d), 15.209, 15.205	Pass
Emissions in frequency bands (below 1GHz)	47 CFR Part 15.247	ANSI C63.10-2013 section 6.6.4 KDB 558074 D01 15.247 Meas Guidance v05r02	47 CFR 15.247(d), 15.209, 15.205	Pass
Emissions in frequency bands (above 1GHz)	47 CFR Part 15.247	ANSI C63.10-2013 section 6.6.4 KDB 558074 D01 15.247 Meas Guidance v05r02	47 CFR 15.247(d), 15.209, 15.205	Pass

102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park, Tangtou Community, Shiyan Subdistrict, Bao'an District, Shenzhen, Guangdong, China

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Report No.: DACE250701005RL001

2 GENERAL INFORMATION

2.1 Client Information

Applicant's Name: Linksmart Technology(Zhongshan) Co..Ltd.

Address : No,11,Yingbin Avenue, Banfu Town, Zhongshan City, China

Manufacturer : Linksmart Technology(Zhongshan) Co..Ltd.

Address : No,11,Yingbin Avenue, Banfu Town, Zhongshan City, China

2.2 Description of Device (EUT)

Product Name:	LCD projector
Model/Type reference:	Y5N
Series Model:	Y5N-1, Y5N-2, Y5N-3, Y5N-4
Model Difference:	The product has many models, only the model name and color is different, and the other parts such as the circuit principle, pcb and electrical structure are the same.
Trade Mark:	E EXTRAVIS
Power Supply:	DC 32V/2.1A from adapter
Operation Frequency:	2402MHz to 2480MHz
Number of Channels:	40
Modulation Type:	GFSK
Antenna Type:	FPC Antenna
Antenna Gain:	1.88dBi
Hardware Version:	V1.0
Software Version:	V1.0

(Remark:The Antenna Gain is supplied by the customer.DACE is not responsible for This data and the related calculations associated with it)

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402 MHz	11	2422 MHz	21	2442 MHz	31	2462 MHz
2	2404 MHz	12	2424 MHz	22	2444 MHz	32	2464 MHz
3	2406 MHz	13	2426 MHz	23	2446 MHz	33	2466 MHz
4	2408 MHz	14	2428 MHz	24	2448 MHz	34	2468 MHz
5	2410 MHz	15	2430 MHz	25	2450 MHz	35	2470 MHz
6	2412 MHz	16	2432 MHz	26	2452 MHz	36	2472 MHz
7	2414 MHz	17	2434 MHz	27	2454 MHz	37	2474 MHz
8	2416 MHz	18	2436 MHz	28	2456 MHz	38	2476 MHz
9	2418 MHz	19	2438 MHz	29	2458 MHz	39	2478 MHz
10	2420 MHz	20	2440 MHz	30	2460 MHz	40	2480 MHz

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park, Tangtou Community, Shiyan Subdistrict, Bao'an District, Shenzhen, Guangdong, China

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Test channel	Frequency (MHz)
rest channel	BLE
Lowest channel	2402MHz
Middle channel	2440MHz
Highest channel	2480MHz

2.3 Description of Test Modes

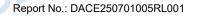
No	Title	Description
TM1	Lowest channel	Keep the EUT connect to AC power line and works in continuously transmitting mode with GFSK modulation.
TM2	Middle channel	Keep the EUT connect to AC power line and works in continuously transmitting mode with GFSK modulation.
ТМЗ	Highest channel	Keep the EUT connect to AC power line and works in continuously transmitting mode with GFSK modulation.

2.4 Description of Support Units

The EUT was tested as an independent device.

102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park, Tangtou Community, Shiyan Subdistrict, Bao'an District, Shenzhen, Guangdong, China

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2.5 Equipments Used During The Test

Conducted Emission at AC power line						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
Power absorbing clamp	SCHWARZ BECK	MESS- ELEKTRONIK	1	2025-04-23	2026-04-22	
Electric Network	SCHWARZ BECK	CAT5 8158	CAT5 8158#207	2025-04-18	2026-04-17	
Cable	SCHWARZ BECK	100	1	2025-04-18	2026-04-17	
Pulse Limiter	SCHWARZ BECK	VTSD 9561-F Pulse limiter 10dB Attenuation	561-G071	2024-12-06	2025-12-05	
50ΩCoaxial Switch	Anritsu	MP59B	M20531	/	/	
Test Receiver	Rohde & Schwarz	ESPI TEST RECEIVER	1164.6607K03 -102109-MH	2025-04-25	2026-04-24	
L.I.S.N	R&S	ESH3-Z5	831.5518.52	2025-04-18	2026-04-17	
L.I.S.N	SCHWARZ BECK	NSLK 8126	05055	2025-04-18	2026-04-17	
Pulse Limiter	CYBERTEK	EM5010A	1	2024-09-27	2025-09-26	
EMI test software	EZ -EMC	EZ	V1.1.42	1	1	

6dB Bandwidth

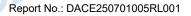
Maximum Conducted Output Power

Power Spectral Density

Emissions in non-restricted frequency bands

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
RF Test Software	Tachoy Information Technology(she nzhen) Co.,Ltd.	RTS-01	V1.0.0	1	1
Power divider	MIDEWEST	PWD-2533	SMA-79	2025-04-18	2026-05-10
RF Sensor Unit	Tachoy Information Technology(she nzhen) Co.,Ltd.	TR1029-2	000001	1	1
Wideband radio communication tester	R&S	CMW500	113410	2025-04-25	2026-04-24
Vector Signal Generator	Keysight	N5181A	MY50143455	2024-12-06	2025-12-05
Signal Generator	Keysight	N5182A	MY48180415	2024-12-06	2025-12-05
Spectrum Analyzer	Keysight	N9020A	MY53420323	2024-12-06	2025-12-05

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Emissions in frequency bands (above 1GHz) Band edge emissions (Radiated) Emissions in frequency bands (below 1GHz)

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI Test software	Farad	EZ -EMC	V1.1.42	/	/
Positioning Controller	MF	MF-7802	61	1	/
Amplifier(18-40G)	COM-POWER	AH-1840	10100008-1	2024-04-26	2027-04-25
Horn antenna	COM-POWER	AH-1840 (18-40G)	10100008	2024-04-26	2027-04-25
Loop antenna	ZHINAN	ZN30900C	ZN30900C	2025-04-28	2026-04-27
Cable(LF)#2	Schwarzbeck	1	/	2024-12-19	2025-12-18
Cable(LF)#1	Schwarzbeck	1	1	2024-12-19	2025-12-18
Cable(HF)#2	Schwarzbeck	AK9515E	96250	2025-04-25	2026-04-24
Cable(HF)#1	Schwarzbeck	SYV-50-3-1		2025-04-25	2026-04-24
Power amplifier(LF)	Schwarzbeck	BBV9743	9743-151	2025-04-29	2026-04-28
Power amplifier(HF)	Schwarzbeck	BBV9718	9718-282	2025-04-29	2026-04-28
Wideband radio communication tester	R&S	CMW500	113410	2025-04-25	2026-04-24
Spectrum Analyzer	R&S	FSP30	1321.3008K40 -101729-jR	2025-04-18	2026-04-17
Test Receiver	R&S	ESCI 3	1166.5950K03 -101431-Jq	2025-04-18	2026-04-17
Horn Antenna	Sunol Sciences	DRH-118	A091114	2025-04-21	2026-04-20
Broadband Antenna	Sunol Sciences	JB6 Antenna	A090414	2024-09-28	2026-09-27

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2.6 Statement Of The Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Disturbance (0.15~30MHz)	±3.41dB
Occupied Bandwidth	±3.63%
RF conducted power	±0.733dB
RF power density	±0.234%
Conducted Spurious emissions	±1.98dB
Radiated Emission (Above 1GHz)	±5.46dB
Radiated Emission (Below 1GHz)	±5.79dB

Note: (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2.7 Identification of Testing Laboratory

Company Name:	Shenzhen DACE Testing Technology Co., Ltd.
Address:	101-102 Building H5 & 1/F., Building H, Hongfa Science & Technology Park, Tangtou, Shiyan, Bao'an District, Shenzhen, Guangdong, China
Phone Number:	+86-13267178997
Fax Number:	86-755-29113252

Identification of the Responsible Testing Location

Company Name:	Shenzhen DACE Testing Technology Co., Ltd.
Address:	101-102 Building H5 & 1/F., Building H, Hongfa Science & Technology Park, Tangtou, Shiyan, Bao'an District, Shenzhen, Guangdong, China
Phone Number:	+86-13267178997
Fax Number:	86-755-29113252
Designation Number:	CN1342
Test Firm Registration Number:	778666
A2LA Certificate Number:	6270.01

2.8 Announcement

- (1) The test report reference to the report template version v0.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) This document may not be altered or revised in any way unless done so by DACE and all revisions are duly noted in the revisions section.
- (5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
- (6) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

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Report No.: DACE250701005RL001

3 Evaluation Results (Evaluation)

3.1 Antenna requirement

Test Requirement:

Refer to 47 CFR Part 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

3.1.1 Conclusion:



102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park, Tangtou Community, Shiyan Subdistrict, Bao'an District, Shenzhen, Guangdong, China

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4 Radio Spectrum Matter Test Results (RF)

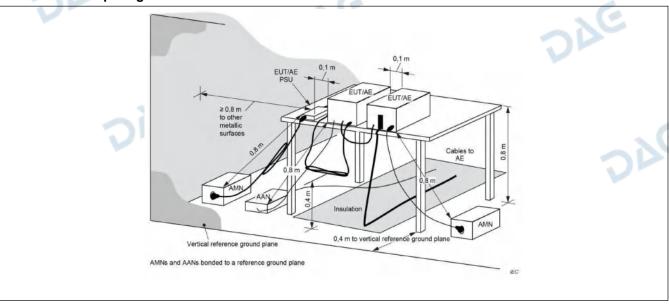
4.1 Conducted Emission at AC power line

Test Requirement:	Refer to 47 CFR 15.207(a), Except as shown in paragraphs (b)and (c)of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN).							
Test Limit:	Frequency of emission (MHz) Conducted limit (dBµV)							
		Quasi-peak	Average					
	0.15-0.5	66 to 56*	56 to 46*					
	0.5-5	56	46					
	5-30	60	50					
\	*Decreases with the logarithm of the frequency.							
Test Method:	ANSI C63.10-2013 section 6.2							
Procedure:	Refer to ANSI C63.10-2013 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices							

4.1.1 E.U.T. Operation:

Operating Enviro	Operating Environment:							
Temperature:	23.4 °C		Humidity:	50 %	Atn	nospheric Pressure:	102 kPa	
Pretest mode:		TM1						
Final test mode:		TM1						

4.1.2 Test Setup Diagram:



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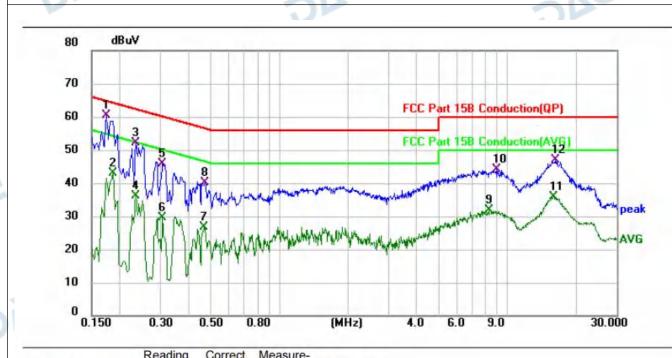
E-mail: service@dace-lab.com

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4.1.3 Test Data:

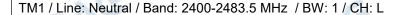
TM1 / Line: Line / Band: 2400-2483.5 MHz / BW: 1 / CH: L

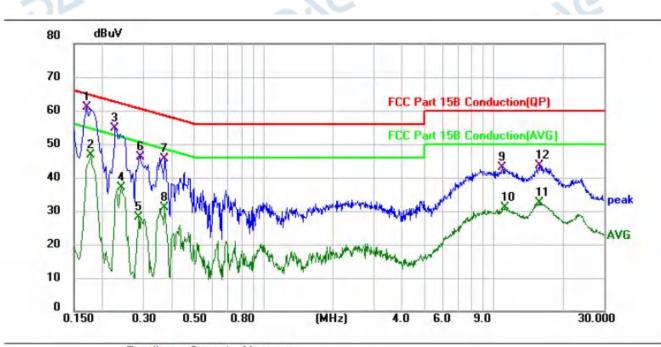


	Freq.	Level	Factor	ment	Limit	Over			
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
1 *	0.1740	50.19	10.10	60.29	64.77	-4.48	QP		
2	0.1860	32.99	10.10	43.09	54.21	-11.12	AVG		
3	0.2340	41.97	10.09	52.06	62.31	-10.25	QP		
4	0.2340	26.04	10.09	36.13	52.31	-16.18	AVG		
5	0.3060	35.83	10.09	45.92	60.08	-14.16	QP		
6	0.3060	19.45	10.09	29.54	50.08	-20.54	AVG		
7	0.4660	16.51	10.10	26.61	46.58	-19.97	AVG		
8	0.4700	30.05	10.10	40.15	56.51	-16.36	QP		
9	8.3300	21.69	10.27	31.96	50.00	-18.04	AVG		
10	8.9500	33.86	10.28	44.14	60.00	-15.86	QP		
11	15.9180	25.45	10.52	35.97	50.00	-14.03	AVG		
12	16.2780	36.34	10.53	46.87	60.00	-13.13	QP		

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No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
1	*	0.1700	50.94	10.08	61.02	64.96	-3.94	QP		
2		0.1780	36.70	10.08	46.78	54.58	-7.80	AVG		-
3		0.2260	44.75	10.08	54.83	62.60	-7.77	QP		
4		0.2420	26.90	10.08	36.98	52.03	-15.05	AVG		
5		0.2860	18.17	10.08	28.25	50.64	-22.39	AVG		
6		0.2900	36.08	10.08	46.16	60.52	-14.36	QP		
7		0.3700	35.41	10.07	45.48	58.50	-13.02	QP		
8		0.3700	20.91	10.07	30.98	48.50	-17.52	AVG		
9		10.8139	32.58	10.36	42.94	60.00	-17.06	QP		
10		11.1780	20.72	10.36	31.08	50.00	-18.92	AVG		
11		15.7700	21.99	10.50	32.49	50.00	-17.51	AVG		
12		15.8700	33.02	10.50	43.52	60.00	-16.48	QP		

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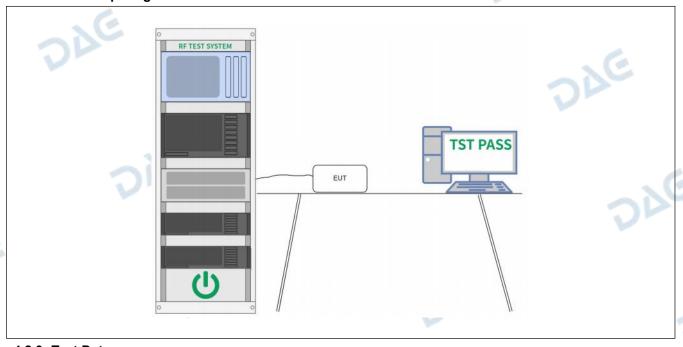
4.2 6dB Bandwidth

Test Requirement:	47 CFR 15.247(a)(2)
Test Limit:	Refer to 47 CFR 15.247(a)(2), Systems using digital modulation techniques may operate in the 902-928 MHz, and 2400-2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.
Test Method:	ANSI C63.10-2013, section 11.8 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	a) Set RBW = 100 kHz. b) Set the VBW >= [3 × RBW]. c) Detector = peak. d) Trace mode = max hold. e) Sweep = auto couple. f) Allow the trace to stabilize. g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

4.2.1 E.U.T. Operation:

Operating Environment:							
Temperature:	23.4 °C		Humidity:	50 %	Atmospheric Pressure:	102 kPa	
Pretest mode: TM1,		TM2, TM3			C		
Final test mode: TM1		TM2, TM3					

4.2.2 Test Setup Diagram:



4.2.3 Test Data:

Please Refer to Appendix for Details.

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4.3 Maximum Conducted Output Power

Test Requirement:	47 CFR 15.247(b)(3)
Test Limit:	Refer to 47 CFR 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.
Test Method:	ANSI C63.10-2013, section 11.9.1 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	ANSI C63.10-2013, section 11.9.1 Maximum peak conducted output power Note: Per ANSI C63.10-2013, if there are two or more antnnas, the conducted powers at Core 0, Core 1,, Core i were first measured separately, as shown in the section above(this product olny have one antenna). The measured values were then summed in linear power units then converted back to dBm. Per ANSI C63.10-2013 Section 14.4.3.2.3, the directional gain is calculated using the following formula, where GN is the gain of the nth antenna and NANT, the total number of antennas used. For correlated unequal antenna gain Directional gain = 10*log[(10G1/20 + 10G2/20 + + 10GN/20)2 / NANT] dBi For completely uncorrelated unequal antenna gain Directional gain = 10*log[(10G1/10 + 10G2/10 + + 10GN/10)/ NANT] dBi Sample Multiple antennas Calculation: Core 0 + Core 1 +Core i. = MIMO/CDD (i is the number of antennas) (#VALUE! mW + mW) = #VALUE! mW = dBm Sample e.i.r.p. Calculation: e.i.r.p. (dBm) = Conducted Power (dBm) + Ant gain (dBi)

Report No.: DACE250701005RL001

4.3.1 E.U.T. Operation:

Operating Environment:								
Temperature:	23.4 °C		Humidity:	50 %	1	Atmospheric Pressure:	102 kPa	- 2/
Pretest mode:		TM1,	TM2, TM3					
Final test mode:		TM1,	TM2, TM3					

4.3.2 Test Setup Diagram:

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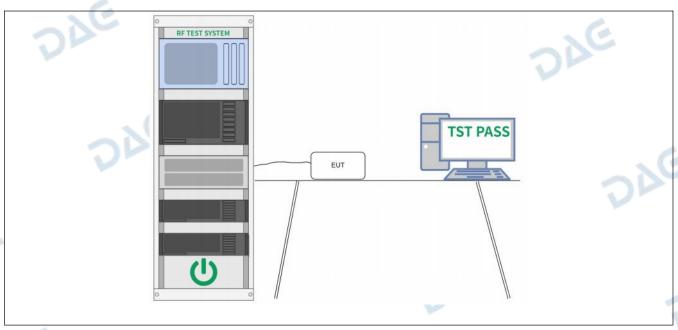


Report No.: DACE250701005RL001

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4.3.3 Test Data:

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Please Refer to Appendix for Details.

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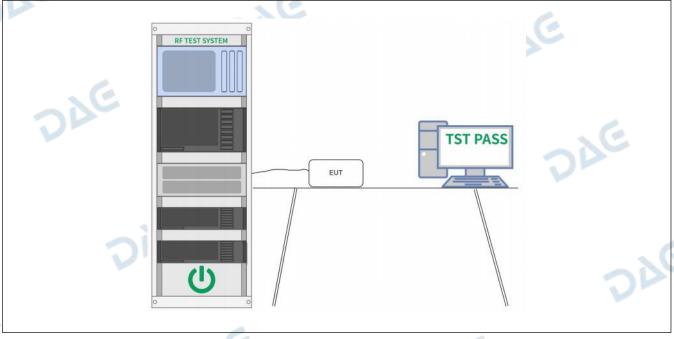
4.4 Power Spectral Density

Test Requirement:	47 CFR 15.247(e)
Test Limit:	Refer to 47 CFR 15.247(e), For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.
Test Method:	ANSI C63.10-2013, section 11.10 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	ANSI C63.10-2013, section 11.10, Maximum power spectral density level in the fundamental emission

4.4.1 E.U.T. Operation:

Operating Environment:									
Temperature:	emperature: 23.4 °C			Humidity: 50 % Atmospheric Press		neric Pressure:	102 kPa		
Pretest mode:			TM2, TM3		1		4		
Final test mode:			TM2, TM3						

4.4.2 Test Setup Diagram:



4.4.3 Test Data:

Please Refer to Appendix for Details.

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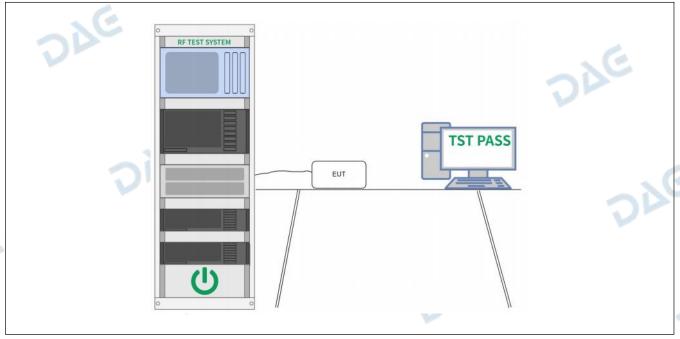
4.5 Emissions in non-restricted frequency bands

Test Requirement:	47 CFR 15.247(d)
Test Limit:	Refer to 47 CFR 15.247(d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required.
Test Method:	ANSI C63.10-2013 section 11.11 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	ANSI C63.10-2013 Section 11.11.1, Section 11.11.2, Section 11.11.3

4.5.1 E.U.T. Operation:

Operating Environment:									
Temperature:	23.4 °C		Humidity:	50 %	Atmospheric Pressure:	102 kPa			
Pretest mode: TM1, TM2, TM			TM2, TM3			6			
Final test mode: TM1, TM2, TM3			TM2, TM3						

4.5.2 Test Setup Diagram:



4.5.3 Test Data:

Please Refer to Appendix for Details.

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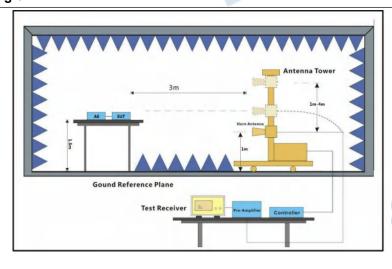
4.6 Band edge emissions (Radiated)

Test Requirement:	restricted bands, as define	Refer to 47 CFR 15.247(d), In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).`						
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)					
	0.009-0.490	2400/F(kHz)	300					
	0.490-1.705	24000/F(kHz)	30					
	1.705-30.0	30	30					
	30-88	100 **	3					
	88-216	150 **	3					
	216-960	200 **	3					
1	Above 960	500	3					
Ve -	radiators operating under 54-72 MHz, 76-88 MHz, 1 these frequency bands is and 15.241. In the emission table above The emission limits shown employing a CISPR quasi-110–490 kHz and above 1	aragraph (g), fundamental emission this section shall not be located in the factor of	the frequency bands ever, operation within his part, e.g., §§ 15.231 and edges. heasurements ency bands 9–90 kHz, in these three bands					
Test Method:	ANSI C63.10-2013 section KDB 558074 D01 15.247							
Procedure:	ANSI C63.10-2013 section	6.10.5.2	1C					

4.6.1 E.U.T. Operation:

Operating Environment:									
Temperature:	23.4 °C	C Humidity: 50 % Atmospheric Pressure:		102 kPa					
Pretest mode: TM			TM1, TM2, TM3						
Final test mode:		TM1,	TM1, TM2, TM3						

4.6.2 Test Setup Diagram:



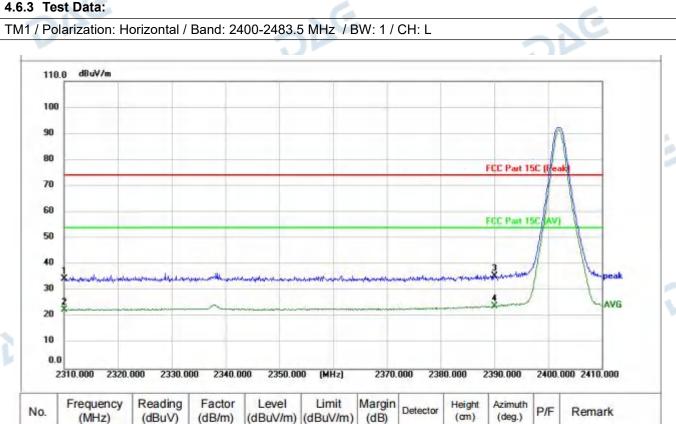
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74.00

54.00

74.00

54.00

-39.53

-31.28

-38.50

-30.05

peak

AVG

peak

AVG



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2310.000

2310.000

2390.000

2390.000

41.10

29.35

41.92

30.37

-6.63

-6.63

-6.42

-6.42

34.47

22.72

35.50

23.95

1

2

3

4 *

DAG

P

P

P

Р

DAG

149

149

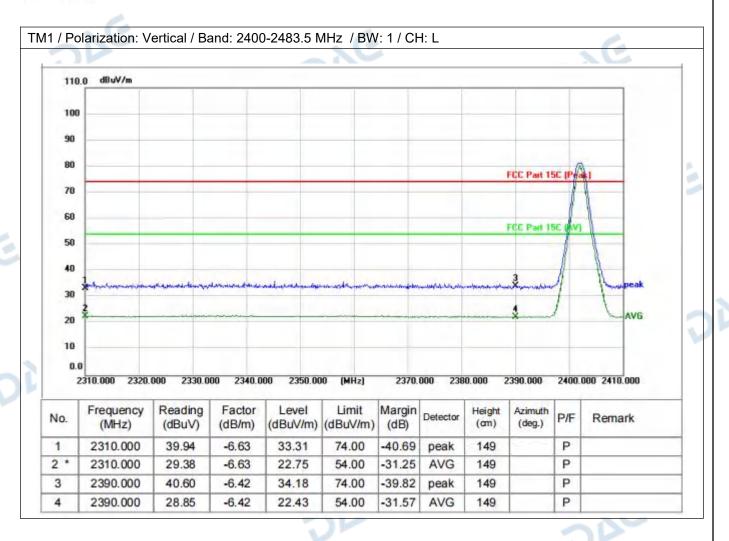
149

149

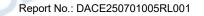
Report No.: DACE250701005RL001



DAG



DAG



P

P



3

4

DAG

2500.000

2500.000

38.44

28.76

-6.13

-6.13

32.31

22.63

74.00

54.00

-41.69

-31.37

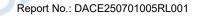
peak

AVG

149

149

TM3 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: H 110.0 dBuV/m 100 90 80 FCC Part 15C (Peak) ø 70 60 FCC Part 15C (AV) 50 40 30 20 1 10 0.0 2497.500 2500.000 2477.500 2480.000 2482.500 2485,000 (MHz) 2490.000 2492,500 2495.000 Factor Level Reading Limit Margin Frequency Height Azimuth Detector P/F No. Remark (MHz) (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) (am) (deg.) 1 2483.500 55.53 -6.17 49.36 74.00 -24.64 peak 149 P 2 * 2483.500 51.94 -6.17 45.77 54.00 -8.23 AVG 149 P



P

P

DAG



3

4

DAG

2500.000

2500.000

41.48

28.93

-6.13

-6.13

35.35

22.80

74.00

54.00

-38.65

-31.20

peak

AVG

149

149

TM3 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H 110.0 dBuV/m 100 80 FCC Part 15C (Peak) 70 60 FCC Part 15C (AV) 50 40 30 20 10 0.0 2497.500 2500.000 2477.500 2480.000 2482.500 2485.000 (MHz) 2490.000 2492.500 2495.000 Level Reading Factor Limit Margin Frequency Height Azimuth Detector P/F Remark No. (MHz) (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) (am) (deg.) 2483.500 51.70 -6.17 45.53 74.00 -28.47 peak 149 P 1 2 * 2483.500 47.51 -6.17 41.34 54.00 -12.66 AVG 149 P

DAG

4.7 Emissions in frequency bands (below 1GHz)

Test Requirement:	Refer to 47 CFR 15.247(d),	In addition, radiated emissions w	hich fall in the					
	restricted bands, as defined	in § 15.205(a), must also comply § 15.209(a)(see § 15.205(c)).`						
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)					
	0.009-0.490	2400/F(kHz)	300					
	0.490-1.705	24000/F(kHz)	30					
	1.705-30.0	30	30					
	30-88	100 **	3					
	88-216	150 **	3					
	216-960	200 **	3					
1	Above 960	500	3					
	and 15.241. In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.							
Test Method:	ANSI C63.10-2013 section 6.6.4 KDB 558074 D01 15.247 Meas Guidance v05r02							
Procedure:	above the ground at a 3 or 360 degrees to determine the b. For above 1GHz, the EUT above the ground at a 3 medegrees to determine the poor. The EUT was set 3 or 10 which was mounted on the tod. The antenna height is varietermine the maximum val polarizations of the antenna e. For each suspected emist the antenna was turned to be below 30MHz, the antenna was turned from 0 degrees to f. The test-receiver system was turned for f. The test-receiver system was turned from 0 degrees to f. The test-receiver system was turned for f. The test-receiver system was turn	was placed on the top of a rotation meter semi-anechoic chamber be position of the highest radiation. Was placed on the top of a rotation of the highest radiation. The tastion of the highest radiation. Was away from the interference op of a variable-height antenna to ied from one meter to four meters ue of the field strength. Both horizare set to make the measurements on, the EUT was arranged to its eights from 1 meter to 4 meters (for was tuned to heights 1 meter) and the was set to Peak Detect Function and Mode. The EUT in peak mode was 10dB lower be stopped and the peak values seit on the total makes and the peak values seits, quasi-peak or average methods.	The table was rotated n. ing table 1.5 meters able was rotated 360 ee-receiving antenna, ower. s above the ground to zontal and vertical nt. s worst case and then or the test frequency of the rotatable table um reading. and Specified wer than the limit of the EUT would be argin would be re-					
)	h. Test the EUT in the lowes i. The radiation measurement Transmitting mode, and four	t channel, the middle channel, the nts are performed in X, Y, Z axis p nd the X axis positioning which it until all frequencies measured w	oositioning for is the worst case.					

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channel. Only the worst case is recorded in the report.

2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows: Final Test Level =Receiver Reading + Antenna Factor + Cable Factor "C Preamplifier Factor

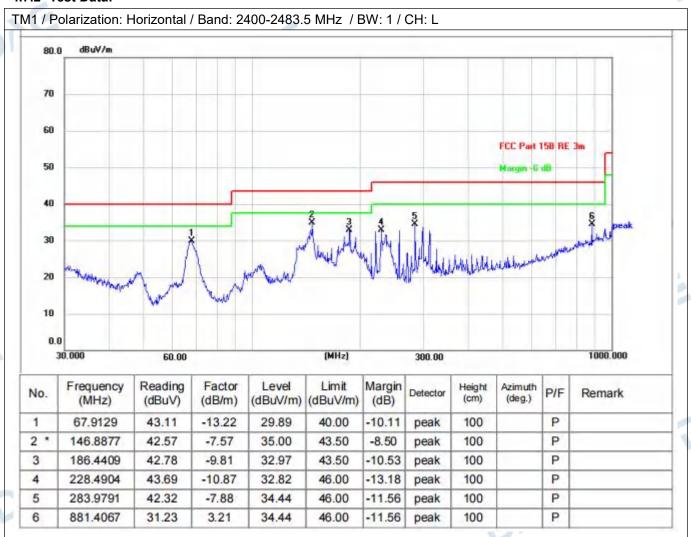
Report No.: DACE250701005RL001

3) Scan from 9kHz to 25GHz, the disturbance above 12.75GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. Fundamental frequency is blocked by filter, and only spurious emission is shown.

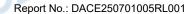
4.7.1 E.U.T. Operation:

Operating Environment:									
Temperature:	23.4 °C	_ >	Humidity:	102 kPa					
Pretest mode:					. 6				
Final test mode: TM1					270				

4.7.2 Test Data:



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5!

6

DAG

187.0956

215.2678

47.20

44.83

-9.36

-9.71

37.84

35.12

43.50

43.50

-5.66

-8.38

QP

QP

P

P

DAG

TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L dBuV/m 80.0 70 60 FCC Part 15B RE 3m 50 40 30 20 10 0.0 30.000 (MHz) 1000.000 60.00 300.00 Level Frequency Reading Factor Limit Margin Height Azimuth P/F Detector Remark No. (cm) (deg.) (MHz) (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) 1! 48.5015 48.79 -12.5436.25 40.00 -3.75QP P 2 * 68.1514 51.04 -13.0238.02 40.00 -1.98QP P 49.32 -7.89 43.50 -2.07 QP P 3! 146.8876 41.43 QP P 152.6641 46.05 -8.21 37.84 43.50 -5.66 4!



4.8 Emissions in frequency bands (above 1GHz)

4.8 Emissions in	n frequency bands (abo	ove 1GHz)	- 6							
Test Requirement:	restricted bands, as defir	Refer to 47 CFR 15.247(d), in addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).`								
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)							
	0.009-0.490	2400/F(kHz)	300							
	0.490-1.705	24000/F(kHz)	30							
	1.705-30.0	30	30							
	30-88	100 **	3							
	88-216	150 **	3							
	216-960	200 **	3							
	Above 960	500	3							
. (-	and 15.241. In the emission table about the emission limits show employing a CISPR quart 110–490 kHz and above	s permitted under other sections ove, the tighter limit applies at the vn in the above table are based si-peak detector except for the f 1000 MHz. Radiated emission ents employing an average dete	ne band edges. on measurements frequency bands 9–90 kHz, limits in these three bands							
Test Method:	ANSI C63.10-2013 secti KDB 558074 D01 15.247	on 6.6.4 7 Meas Guidance v05r02	. (-							
Procedure:	above the ground at a 3 360 degrees to determin b. For above 1GHz, the labove the ground at a 3 degrees to determine the c. The EUT was set 3 or which was mounted on t d. The antenna height is determine the maximum polarizations of the antene. For each suspected e the antenna was tuned to below 30MHz, the anten was turned from 0 degree f. The test-receiver system Bandwidth with Maximur g. If the emission level of specified, then testing correported. Otherwise the tested one by one using reported in a data sheet. h. Test the EUT in the low i. The radiation measure	f the EUT in peak mode was 10 buld be stopped and the peak va emissions that did not have 10d peak, quasi-peak or average m	mber. The table was rotated diation. rotating table 1.5 meters The table was rotated 360 on. erence-receiving antenna, nna tower. neters above the ground to horizontal and vertical rement. I to its worst case and then eers (for the test frequency of er) and the rotatable table aximum reading. Etion and Specified IdB lower than the limit alues of the EUT would be defined as specified and then ethod as specified and then ethod as specified and then ethod.							
		res until all frequencies measur								

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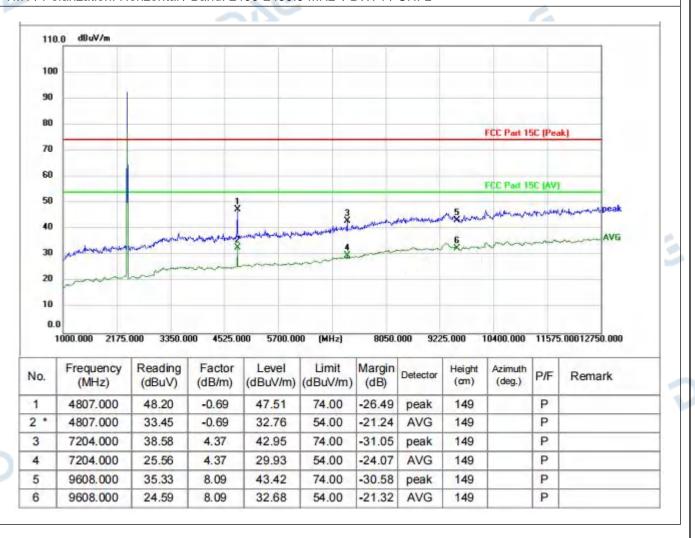
- Report No.: DACE250701005RL001
- 1) For emission below 1GHz, through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows: Final Test Level =Receiver Reading + Antenna Factor + Cable Factor "C Preamplifier Factor
- 3) Scan from 9kHz to 25GHz, the disturbance above 12.75GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. Fundamental frequency is blocked by filter, and only spurious emission is shown.

4.8.1 E.U.T. Operation:

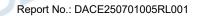
Operating Environment:									
Temperature:	23.4 °C	20	Humidity:	50 %	Atmospheric Pressure:	102 kPa			
Pretest mode: TM			1, TM2, TM3						
Final test mode: TM1					2)	4			

4.8.2 Test Data:

TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L

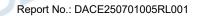


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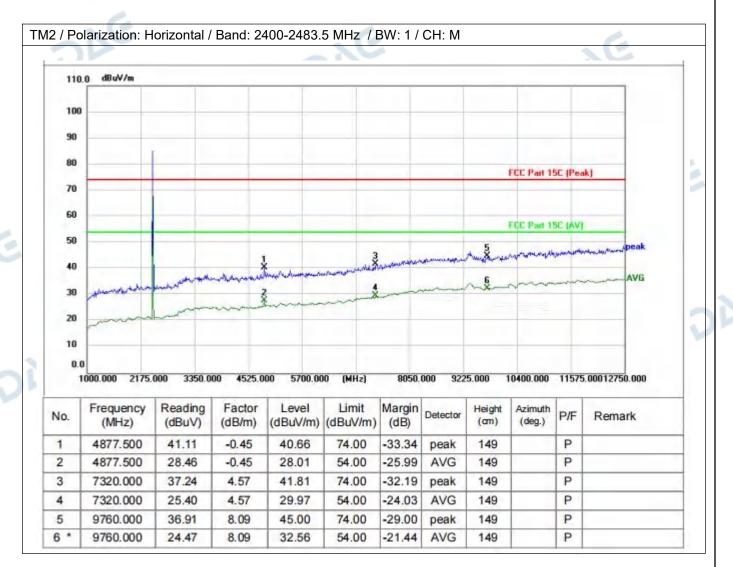


TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L 110.0 dBuV/m 100 90 80 FCC Part 15C (Peak) 70 60 FCC Paul 15C (AV) 50 40 AVG 30 20 10 0.0 10400.000 11575.00012750.000 2175.000 3350.000 5700.000 8050.000 9225,000 4525,000 (MHz) Factor Reading Limit Margin Frequency Level Height Azimuth Detector P/F No. Remark (MHz) (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) (cm) (deg.) 4804.000 37.03 -0.70 36.33 74.00 -37.67 peak 149 P 2 4804.000 26.09 -0.70 25.39 54.00 -28.61 AVG 149 P P 3 7206.000 35.43 4.37 39.80 74.00 -34.20 peak 149 4 7206.000 24.57 4.37 28.94 54.00 -25.06 AVG 149 P 5 9608.000 35.93 8.09 44.02 74.00 -29.98 peak 149 P 6 * 9608.000 24.77 8.09 32.86 54.00 -21.14 AVG 149 P



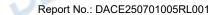


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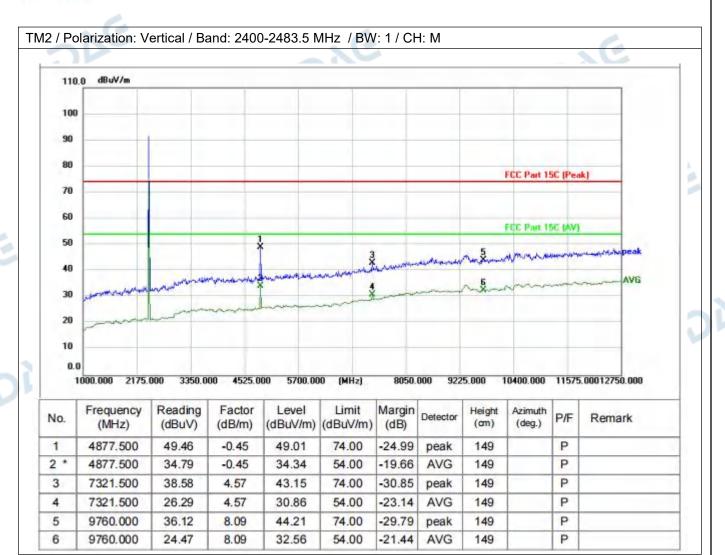
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DAG

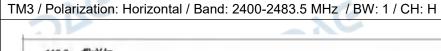


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DAG

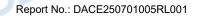
DΔG







No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	4959.750	54.05	-0.17	53.88	74.00	-20.12	peak	149		P	
2 *	4959.750	38.58	-0.17	38.41	54.00	-15.59	AVG	149		Р	
3	7439.000	37.99	4.78	42.77	74.00	-31.23	peak	149		P	
4	7439.000	25.36	4.78	30.14	54.00	-23.86	AVG	149		P	
5	9920.000	36.43	8.08	44.51	74.00	-29.49	peak	149		P	
6	9920.000	24.93	8.08	33.01	54.00	-20.99	AVG	149		P	



P

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6

DAG

9920.000

24.81

8.08

32.89

54.00

-21.11

AVG

149

TM3 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H dBuV/m 110.0 100 90 RO FCC Part 15C (Peak) 70 60 FCC Part 15C (AV) 50 40 AVG 30 20 10 0.0 2175.000 3350.000 4525,000 5700.000 8050.000 9225,000 10400.000 11575.00012750.000 Frequency Reading Factor Level Limit Margin Height Azimuth Detector P/F No. Remark (MHz) (dBuV) (dB/m) (dBuV/m) (dBuV/m) (dB) (cm) (deg.) 1 4959.750 39.43 -0.1739.26 74.00 -34.74 149 P peak 4959.750 -26.52 P 2 27.65 -0.1727.48 54.00 AVG 149 P 3 7440.000 35.40 4.78 40.18 74.00 -33.82 149 peak P 7440.000 24.34 4.78 29.12 54.00 -24.88 AVG 149 4 9920.000 36.06 8.08 44.14 74.00 -29.86 149 P 5 peak

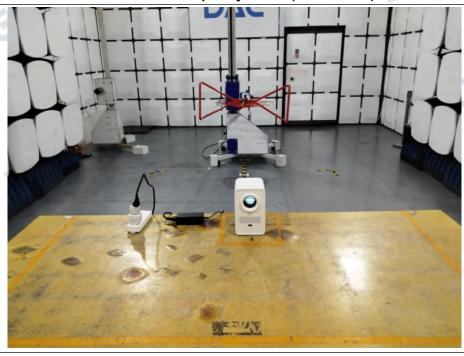


5 TEST SETUP PHOTOS

Conducted Emission at AC power line



Emissions in frequency bands (below 1GHz)



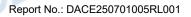
102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park, Tangtou Community, Shiyan Subdistrict, Bao'an District, Shenzhen, Guangdong, China

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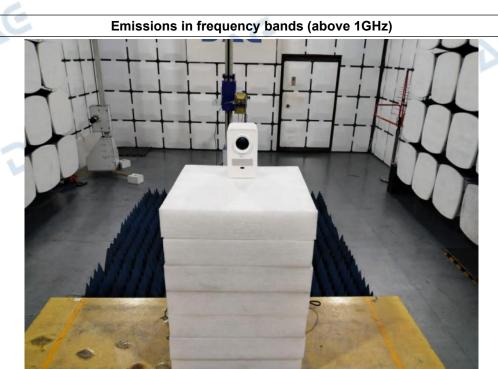




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PHOTOS OF THE EUT

External





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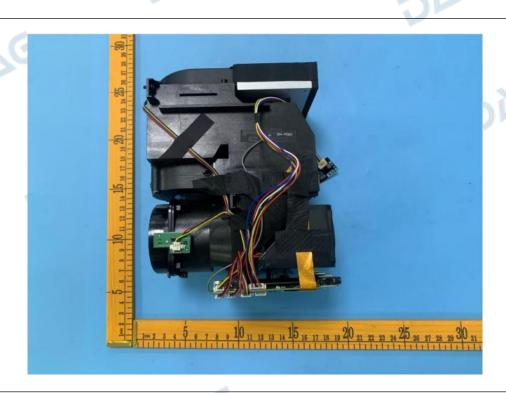
102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park, Tangtou Community, Shiyan Subdistrict, Bao'an District, Shenzhen, Guangdong, China

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Internal





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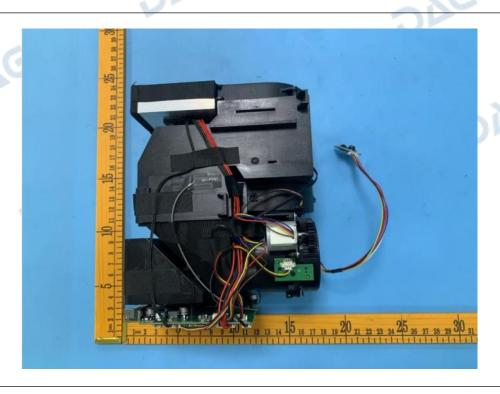
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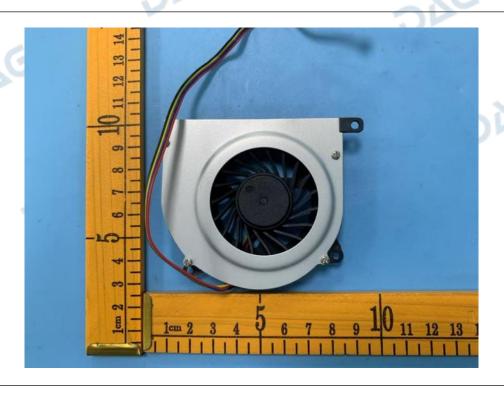
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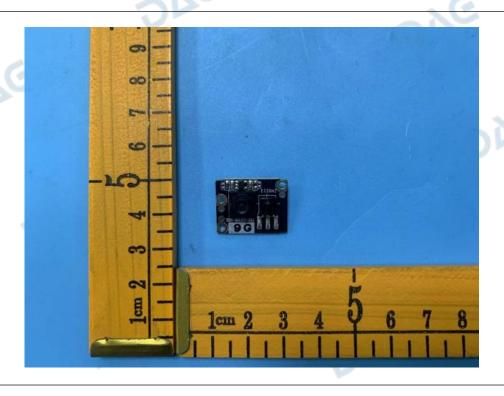








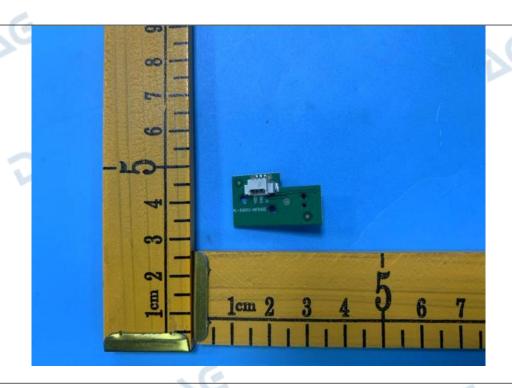


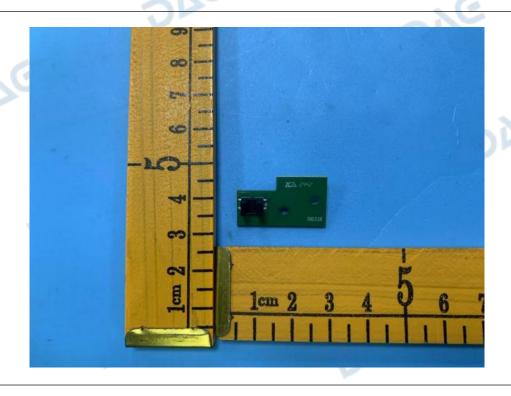


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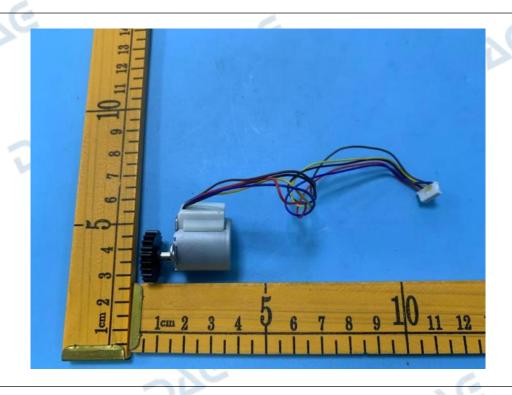






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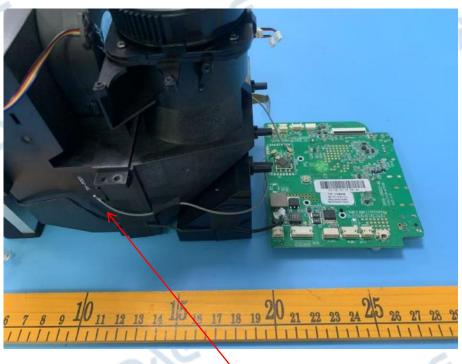




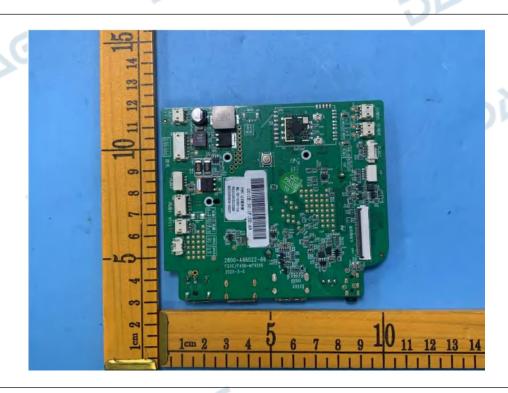
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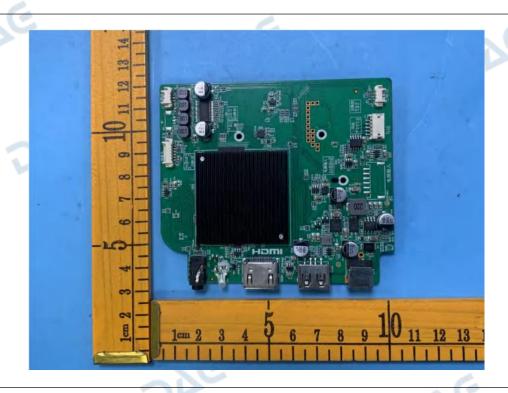


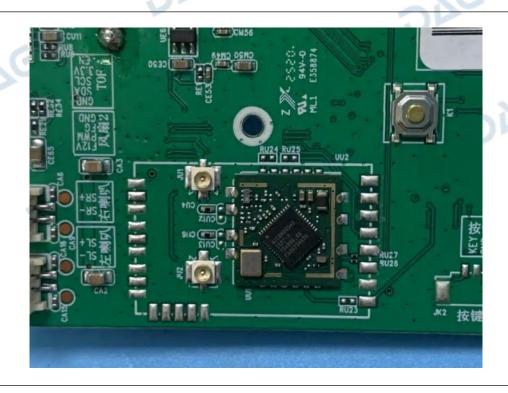
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Appendix

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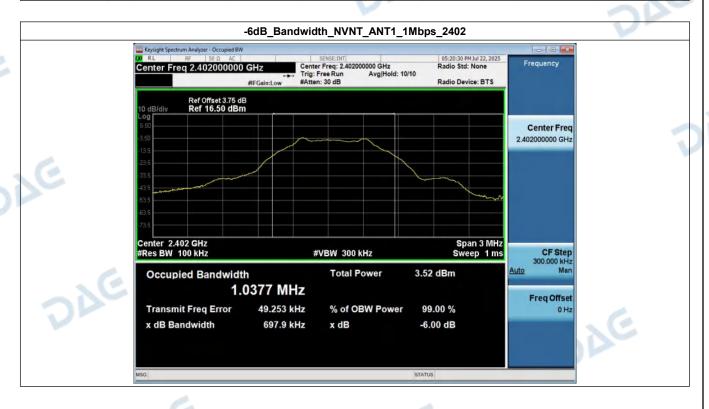
DAG



HT250701003--Y5N--BLE--FCC FCC_BLE (Part15.247) Test Data

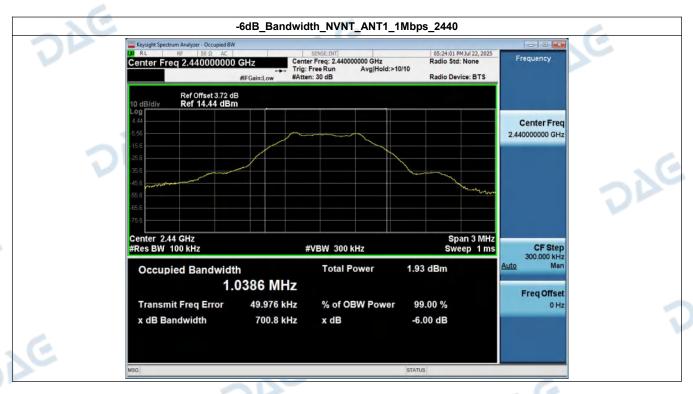
1. -6dB Bandwidth

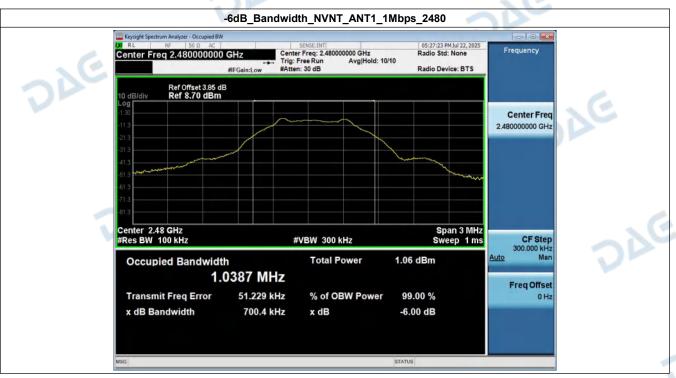
Condition	Antenna	Rate	Frequency (MHz)	-6dB BW(kHz)	limit(kHz)	Result
NVNT	ANT1	1Mbps	2402.00	697.87	500	Pass
NVNT	ANT1	1Mbps	2440.00	700.77	500	Pass
NVNT	ANT1	1Mbps	2480.00	700.44	500	Pass



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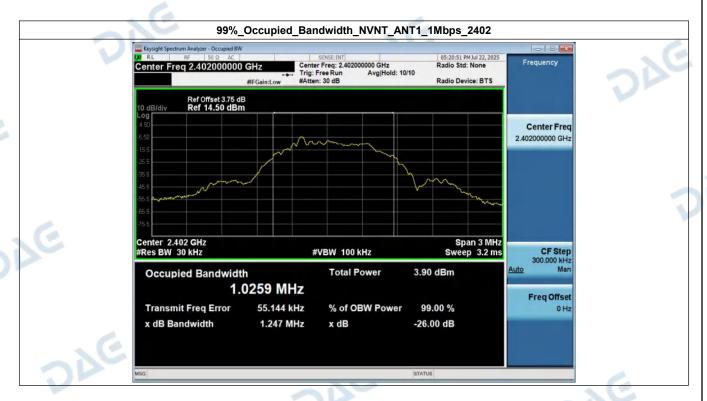






2. 99% Occupied Bandwidth

Condition	Antenna	Rate	Frequency (MHz)	99%%BW(MHz)	
NVNT	ANT1	1Mbps	2402.00	1.026	
NVNT	ANT1	1Mbps	2440.00	1.026	
NVNT	ANT1	1Mbps	2480.00	1.026	



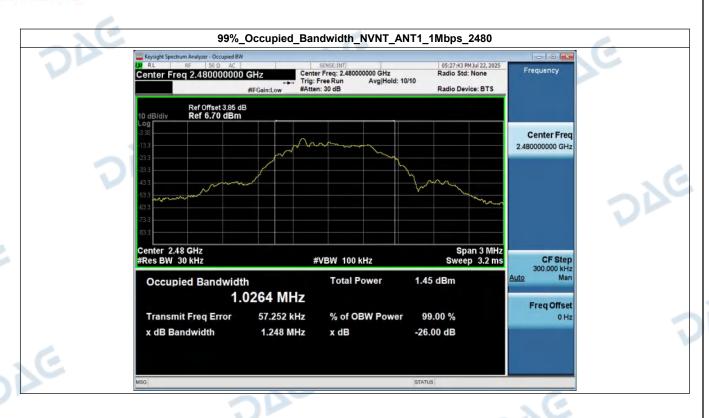


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V1.0



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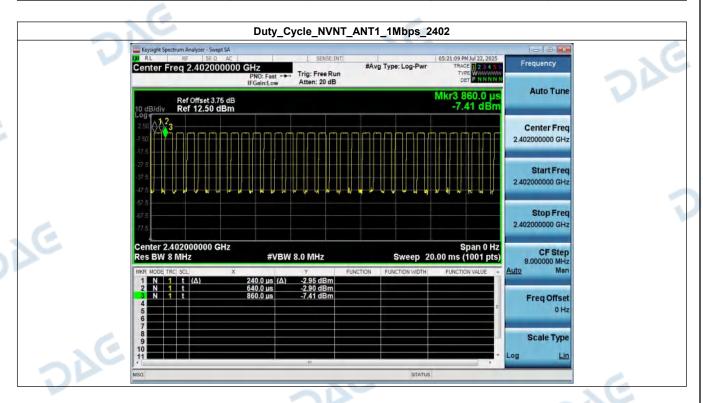
DAG

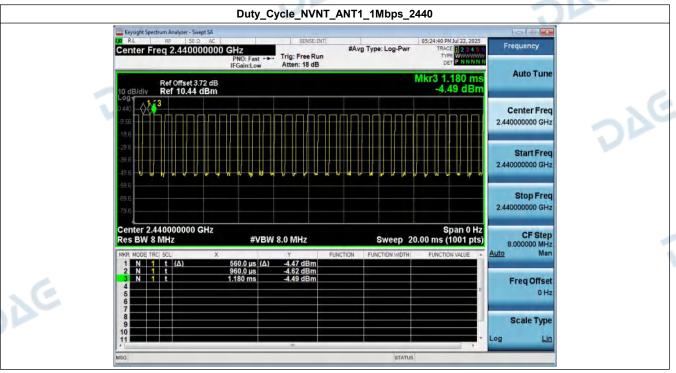
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3. Duty Cycle

Condition	Antenna	Rate	Frequency (MHz)	Dutycycle(%)	Duty_factor
NVNT	ANT1	1Mbps	2402.00	67.74	1.69
NVNT	ANT1	1Mbps	2440.00	67.74	1.69
NVNT	ANT1	1Mbps	2480.00	62.50	2.04





Report No.: DACE250701005RL001

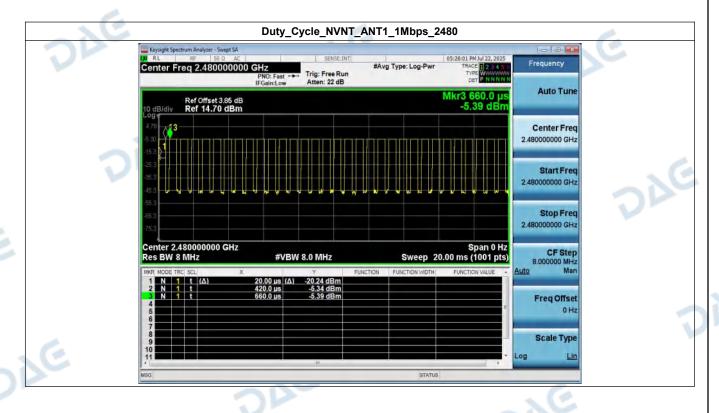


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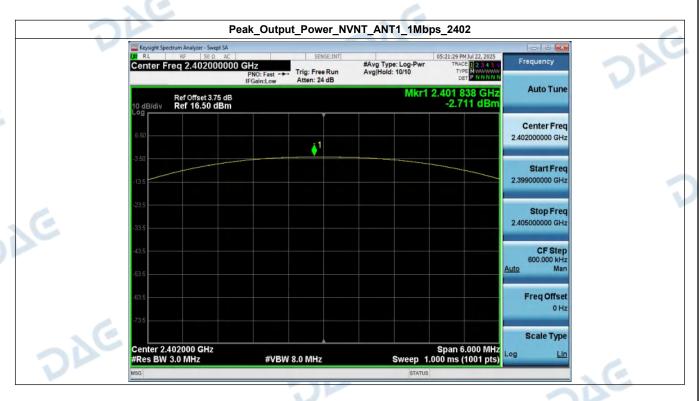
DAG

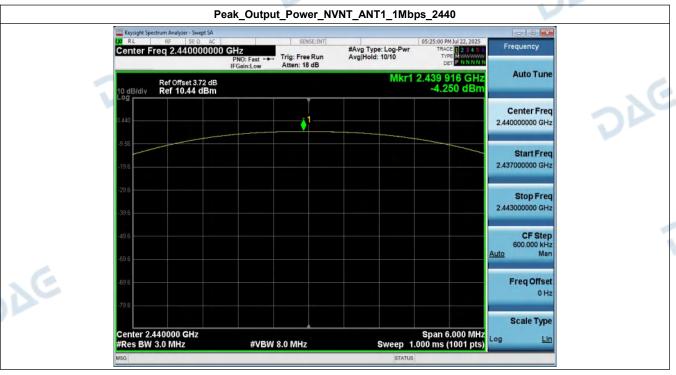
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4. Peak Output Power

Condition	Antenna	Rate	Frequency (MHz)	Max. Conducted Power(dBm)	Max. Conducted Power(mW)	Limit(mW)	Result
NVNT	ANT1	1Mbps	2402.00	-2.71	0.54	1000	Pass
NVNT	ANT1	1Mbps	2440.00	-4.25	0.38	1000	Pass
NVNT	ANT1	1Mbps	2480.00	-5.16	0.30	1000	Pass





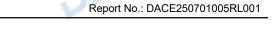


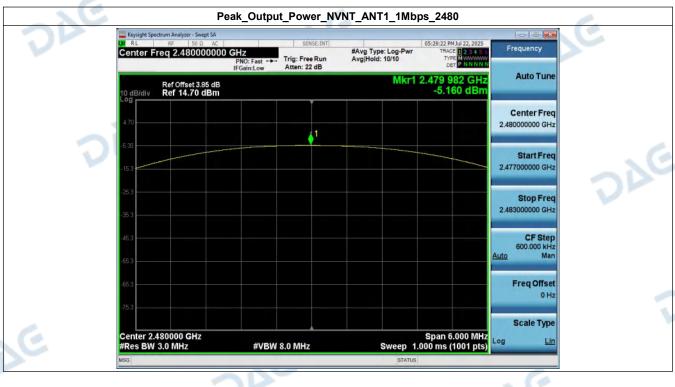
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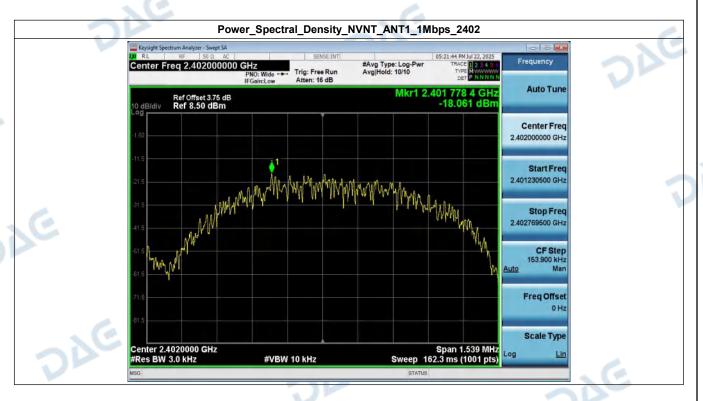
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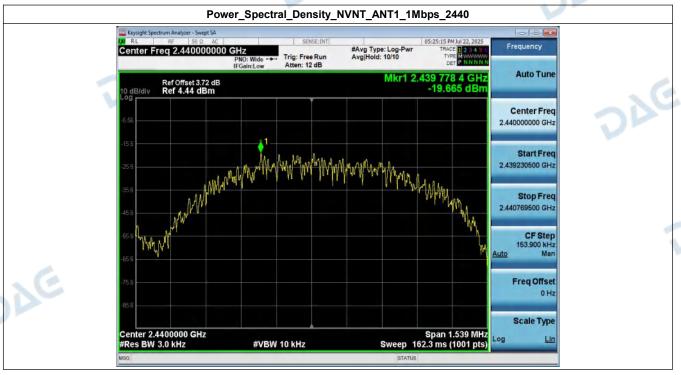


5. Power Spectral Density

V1.0

Condition	Antenna	Rate	Frequency (MHz)	Power Spectral Density(dBm/3kHz)	Limit(dBm/3kHz)	Result
NVNT	ANT1	1Mbps	2402.00	-18.06	8	Pass
NVNT	ANT1	1Mbps	2440.00	-19.66	8	Pass
NVNT	ANT1	1Mbps	2480.00	-20.52	8	Pass





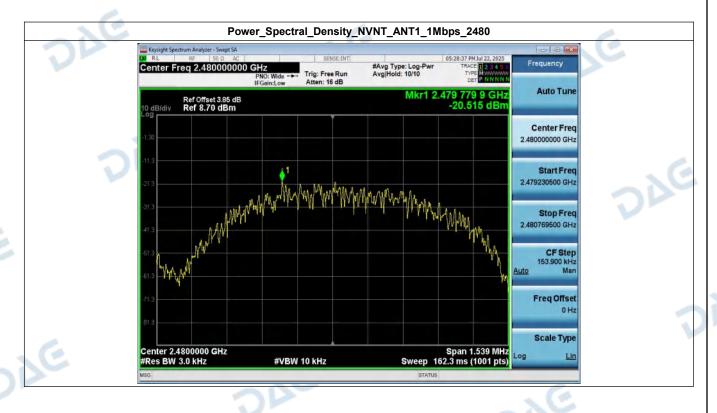
Report No.: DACE250701005RL001



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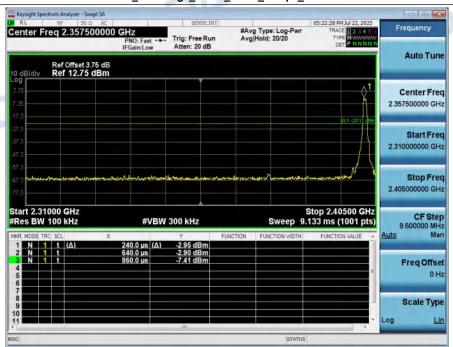


6. Bandedge

Condition	Antenna	Modulation	TX_Frequency (MHz)	Max. Mark_freq(MHz)	Ref_level(dBm)	Spurious level(dBm)	limit(dBm)	Result
NVNT	ANT1	1Mbps	2402.00	2399.965	-3.112	-54.424	-23.112	Pass
NVNT	ANT1	1Mbps	2480.00	2486.575	-5.604	-67.056	-25.604	Pass









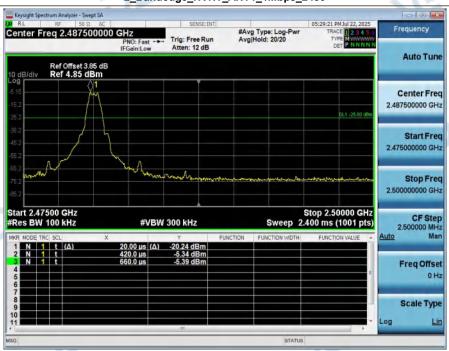
4

V1.0



2_Bandedge_NVNT_ANT1_1Mbps_2480

#VBW 300 kHz

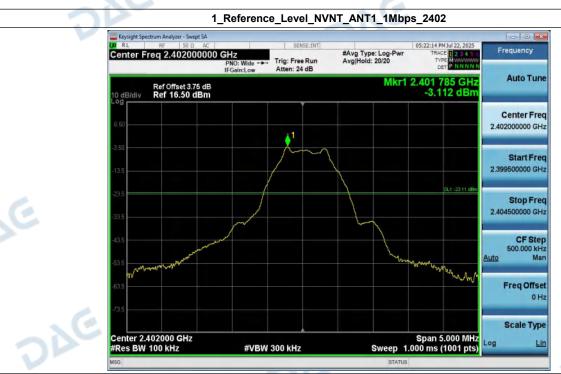




7. Spurious Emission

V1.0

Condition	Antenna	Modulation	TX_Frequency (MHz)	Ref_level(dBm)	Spurious level(dBm)	limit(dBm)	Result
NVNT	ANT1	1Mbps	2402.00	-3.112	-48.020	-23.112	Pass
NVNT	ANT1	1Mbps	2440.00	-4.686	-51.015	-24.686	Pass
NVNT	ANT1	1Mbps	2480.00	-5.604	-50.704	-25.604	Pass









4

V1.0





2_Spurious_Emission_NVNT_ANT1_1Mbps_2440



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4





#VBW 300 kHz



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