

RF TEST REPORT

For

MAYFLASH LIMITED

Product Name: TGS

Test Model(s): TGS

Report Reference No. : DACE250320033RL001

FCC ID : 2ASVQ-TGS

Applicant's Name : MAYFLASH LIMITED

Address 3/F,Buiding No.1,TingWei Industrial Park,LiuFang Rd,No.67,BaoAn,

Shenzhen,China.

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

102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park,

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

Guangdong, China

Test Specification Standard : 47 CFR Part 15.247

Date of Receipt : March 20, 2025

Date of Test : March 20, 2025 to March 27, 2025

Data of Issue : March 27, 2025

Result : Pass

Note: This report shall not be reproduced except in full, without the written approval of Shenzhen DACE Testing Technology Co., Ltd. This document may be altered or revised by Shenzhen DACE Testing Technology Co., Ltd. personnel only, and shall be noted in the revision section of the document. The test results in the report only apply to the tested sample

Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 1 of 69



Apply for company information

Applicant's Name	:	MAYFLASH LIMITED			
Address	:	k/F,Buiding No.1,TingWei Industrial Park,LiuFang Rd,No.67,BaoAn, Shenzhen,China.			
Product Name	:	TGS			
Test Model(s)	<u>:</u>	TGS			
Series Model(s)		N/A			
Test Specification Standard(s)	•	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.

Compiled by:

Keren Hwang

Keren Huang / Test Engineer

March 27, 2025

Supervised by:

Approved by:

Machael Mo / Manager

March 27, 2025

March 27, 2025

March 27, 2025

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

Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 2 of 69



DAG

Report No.: DACE250320033RL001

Revision History Of Report

Version	Description	REPORT No.	Issue Date
V1.0	Original	DACE250320033RL001	March 27, 2025
1		21	. (

Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 3 of 69

DIE

CONTENTS

1 TEST SUMMARY	6
1.1 Test Standards	
1.2 SUMMARY OF TEST RESULT	
2 GENERAL INFORMATION	7
2.1 CLIENT INFORMATION	7
2.2 DESCRIPTION OF DEVICE (EUT)	7
2.3 DESCRIPTION OF TEST MODES	8
2.4 DESCRIPTION OF SUPPORT UNITS	
2.6 STATEMENT OF THE MEASUREMENT UNCERTAINTY	10
2.7 IDENTIFICATION OF TESTING LABORATORY	10
2.8 Announcement	
3 EVALUATION RESULTS (EVALUATION)	11
3.1 ANTENNA REQUIREMENT	11
3.1.1 Conclusion:	11
4 RADIO SPECTRUM MATTER TEST RESULTS (RF)	12
4.1 6dB Bandwidth	
4.1.1 E.U.T. Operation:	12
4.1.2 Test Setup Diagram:	12
4.1.3 Test Data:	
4.2 MAXIMUM CONDUCTED OUTPUT POWER	
4.2.1 E.U.T. Operation:	13
4.2.2 Test Setup Diagram:	14
4.2.3 Test Data:	
4.3 Power Spectral Density	
4.3.1 E.U.T. Operation:	
4.3.2 Test Setup Diagram:	
4.3.3 Test Data:	
4.4 EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS	16
4.4.1 E.U.T. Operation:	16
4.4.2 Test Setup Diagram:	
4.4.3 Test Data:	
4.5 BAND EDGE EMISSIONS (RADIATED)	
4.5.1 E.U.T. Operation:	
4.5.2 Test Setup Diagram:	17
4.5.3 Test Data:	
4.6 EMISSIONS IN FREQUENCY BANDS (BELOW 1GHz)	
4.6.1 E.U.T. Operation:	
4.6.2 Test Data:	
4.7 EMISSIONS IN FREQUENCY BANDS (ABOVE 1GHz)	
4.7.1 E.U.T. Operation:	
4.7.2 Test Data:	
5 TEST SETUP PHOTOS	
6 PHOTOS OF THE EUTAPPENDIX	
16DB BANDWIDTH	
IOUD DANDWIDIH	4U





DAG

DAG

Report No.: DACE250320033RL001

2.	99% Occupied Bandwidth	44
3.	DUTY CYCLE	48
	PEAK OUTPUT POWER	
	POWER SPECTRAL DENSITY	_
_	BANDEDGE	
-	Spurious Emission	

DAG

Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 5 of 69

DAG



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
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), 15.209, 15.205	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

Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 6 of 69



2 GENERAL INFORMATION

2.1 Client Information

Applicant's Name : MAYFLASH LIMITED

Address : 3/F,Buiding No.1,TingWei Industrial Park,LiuFang Rd,No.67,BaoAn,

Shenzhen, China.

Manufacturer : MAYFLASH LIMITED

Address : 3/F,Buiding No.1,TingWei Industrial Park,LiuFang Rd,No.67,BaoAn,

Shenzhen, China.

2.2 Description of Device (EUT)

Product Name:	TGS
Model/Type reference:	TGS
Series Model:	N/A
Trade Mark:	N/A
Power Supply:	USB:5.0V
Operation Frequency:	2402MHz to 2480MHz
Number of Channels:	40
Modulation Type:	GFSK
Antenna Type:	Chip Antenna
Antenna Gain:	3.49dBi
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	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

Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 7 of 69



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.
ТМ3	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

Title	Manufacturer	Model No.	Serial No.
PC	Lenovo	Air 14 Plus	C

102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park, Tangtou Community, Shiyan Subdistrict, Bao'an District, Shenzhen, Guangdong, China Tel: +86-755-23010613 Page 8 of 69 E-mail: service@dace-lab.com



2.5 Equipments Used During The Test

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	/
Power divider	MIDEWEST	PWD-2533	SMA-79	2023-05-11	2026-05-10
RF Sensor Unit	Tachoy Information Technology(she nzhen) Co.,Ltd.	TR1029-2	000001	/	DYG
Wideband radio communication tester	R&S	CMW500	113410	2024-06-12	2025-06-11
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

Report No.: DACE250320033RL001

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
EMI Test software	Farad	EZ -EMC	V1.1.42	1	/	
Positioning Controller	MF	MF-7802	1	1	/	
Amplifier(18-40G)	COM-POWER	AH-1840	10100008-1	2023-05-19	2025-05-18	
Horn antenna	COM-POWER	AH-1840 (18-40G)	10100008	2023-05-19	2025-05-18	
Loop antenna	ZHINAN	ZN30900C	ZN30900C	2024-06-14	2026-06-13	
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	2024-05-20	2025-05-19	
Cable(HF)#1	Schwarzbeck	SYV-50-3-1	1	2024-05-20	2025-05-19	
Power amplifier(LF)	Schwarzbeck	BBV9743	9743-151	2024-06-12	2025-06-11	
Power amplifier(HF)	Schwarzbeck	BBV9718	9718-282	2024-06-12	2025-06-11	
Wideband radio communication tester	R&S	CMW500	113410	2024-06-12	2025-06-11	
Spectrum Analyzer	R&S	FSP30	1321.3008K40 -101729-jR	2024-06-12	2025-06-11	
Test Receiver	R&S	ESCI 3	1166.5950K03 -101431-Jq	2024-06-13	2025-06-12	
Horn Antenna	Sunol Sciences	DRH-118	A091114	2023-05-13	2025-05-12	
Broadband Antenna	Sunol Sciences	JB6 Antenna	A090414	2024-09-28	2026-09-27	
	*	•			•	

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

Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 9 of 69

2.6 Statement Of The Measurement Uncertainty

Test Item	Measurement Uncertainty
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:	102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park, Tangtou Connunity, Shiyan Subdistrict, 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:	102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park, Tangtou Connunity, Shiyan Subdistrict, 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.

102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park, Tangtou Community, Shiyan Subdistrict, Bao'an District, Shenzhen, Guangdong, China Web: http://www.dace-lab.com E-mail: service@dace-lab.com Page 10 of 69



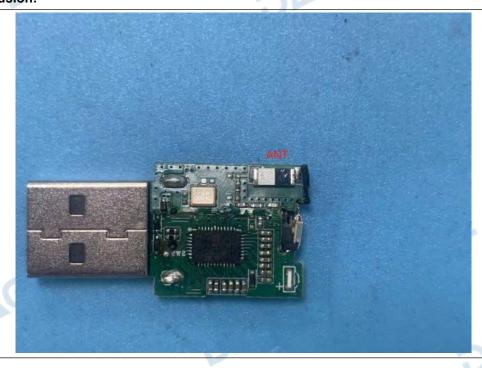
3 Evaluation Results (Evaluation)

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

Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 11 of 69



4 Radio Spectrum Matter Test Results (RF)

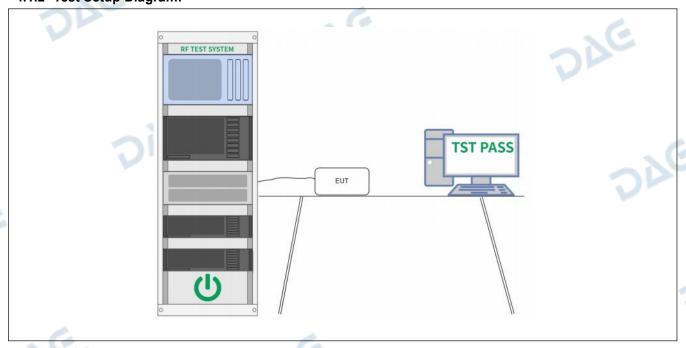
4.1 6dB Bandwidth

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.

4.1.1 E.U.T. Operation:

Operating Environment:					
Temperature:	Temperature: 23.7 °C Humidity: 47 % Atmospheric Pressure: 102 kPa				
Pretest mode:	Pretest mode: TM1, TM2, TM3				
Final test mode: TM1, TM2, TM3					

4.1.2 Test Setup Diagram:



4.1.3 Test Data:

Please Refer to Appendix for Details.

Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 12 of 69



DAC

4.2 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.: DACE250320033RL001

4.2.1 E.U.T. Operation:

Operating Environment:								
Temperature:	23.7 °C		Humidity:	47 %	-	Atmospheric Pressure:	102 kPa	- 2/
Pretest mode:		TM1,	TM2, TM3					SI
Final test mode:		TM1,	TM2, TM3					

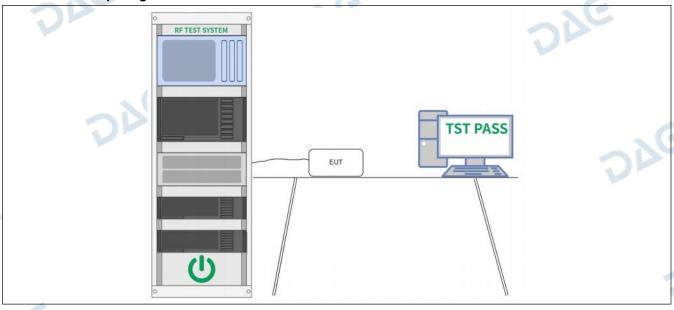
102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park, Tangtou Community, Shiyan Subdistrict, Bao'an District, Shenzhen, Guangdong, China

Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 13 of 69





4.2.2 Test Setup Diagram:



4.2.3 Test Data:

DAG

DAG

Please Refer to Appendix for Details.

Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 14 of 69

DAG



4.3 Power Spectral Density

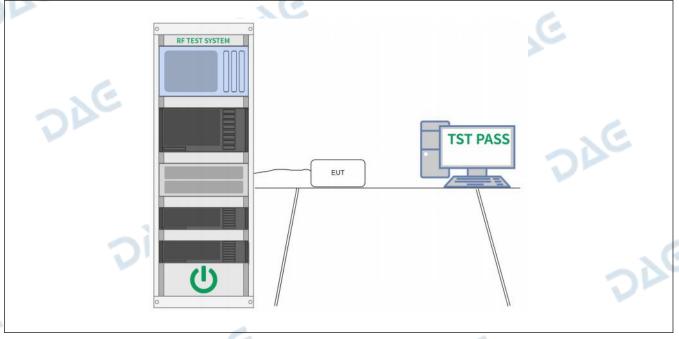
V1.0

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

4.3.1 E.U.T. Operation:

Operating Environment:							
Temperature:	Temperature: 23.7 °C Humidity: 47 % Atmospheric Pressure: 102 kPa					102 kPa	
Pretest mode: TM1, TM2, TM3					4		
Final test mode:		TM1,	TM2, TM3				

4.3.2 Test Setup Diagram:



4.3.3 Test Data:

Please Refer to Appendix for Details.

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

Web: http://www.dace-lab.com

Tel: +86-755-23010613

E-mail: service@dace-lab.com

Page 15 of 69



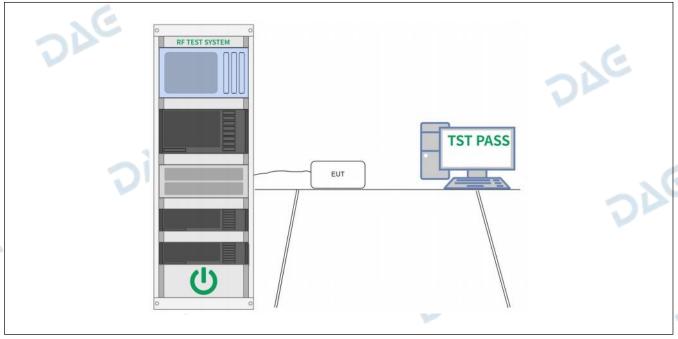
4.4 Emissions in non-restricted frequency bands

Test Requirement:	47 CFR 15.247(d), 15.209, 15.205
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

4.4.1 E.U.T. Operation:

Operating Environment:						
Temperature: 23.7 °C Humidity: 47 % Atmospheric Pressure: 102 kPa						102 kPa
Pretest mode: TM1, TM2, TM3					C	
Final test mode: TM1, TM2, TM3						

4.4.2 Test Setup Diagram:



4.4.3 Test Data:

Please Refer to Appendix for Details.

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

Web: http://www.dace-lab.com

Tel: +86-755-23010613

E-mail: service@dace-lab.com

Page 16 of 69



4.5 Band edge emissions (Radiated)

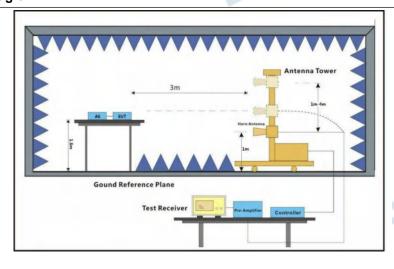
V1.0

Test Requirement:	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 -	** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.2 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 6.10 KDB 558074 D01 15.247 Meas Guidance v05r02						
Procedure:	ANSI C63.10-2013 section 6.10.5.2						

4.5.1 E.U.T. Operation:

Operating Environment:						
Temperature:	23.7 °C		Humidity:	47 %	Atmospheric Pressure:	102 kPa
Pretest mode: TM1		TM1,	TM2, TM3		. 6	
Final test mode: TM1						

4.5.2 Test Setup Diagram:



Web: http://www.dace-lab.com

Tel: +86-755-23010613

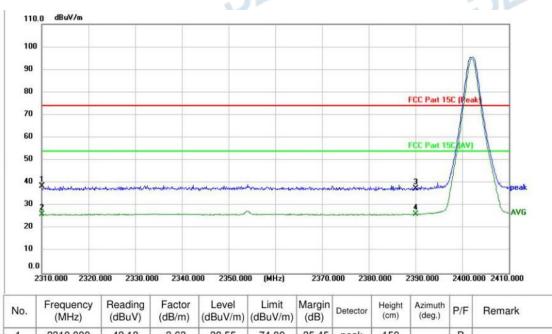
E-mail: service@dace-lab.com

Page 17 of 69



4.5.3 Test Data:

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



Web: http://www.dace-lab.com

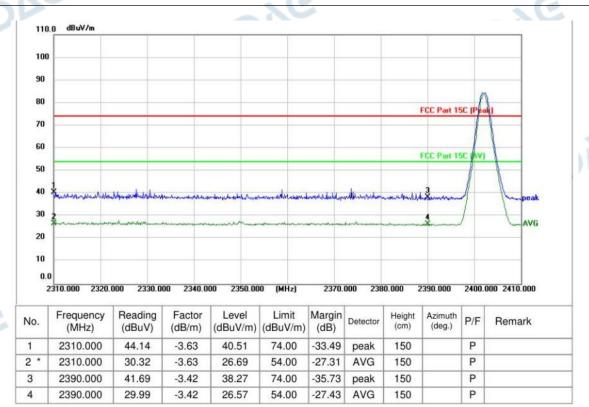
Tel: +86-755-23010613

Page 18 of 69

Report No.: DACE250320033RL001



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

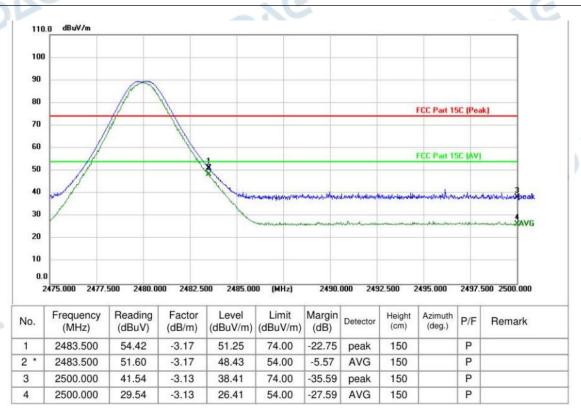


DAG

DAG

Report No.: DACE250320033RL001

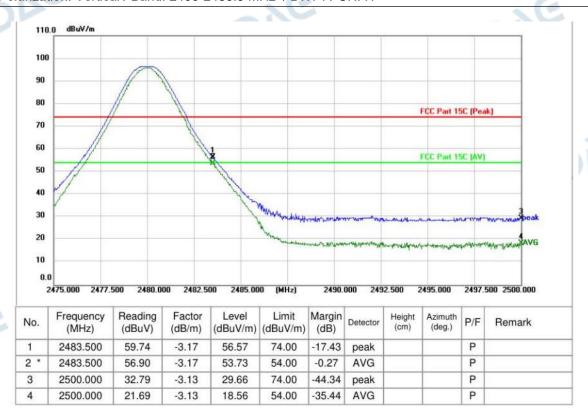
TM3 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: H



DAG



TM3 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H



Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 21 of 69



4.6 Emissions in frequency bands (below 1GHz)

Test Requirement:		(d), In addition, radiated emissions						
		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					
	** Except as provided in	** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands						
	54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 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:	a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was resulted 360 degrees to determine the position of the highest radiation. b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated degrees to determine the position of the highest radiation. c. The EUT was set 3 or 10 meters away from the interference-receiving anterwhich was mounted on the top of a variable-height antenna tower.							
	d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-							
	tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. h. Test the EUT in the lowest channel, the middle channel, the Highest channel. i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. j. Repeat above procedures until all frequencies measured was complete. Remark: 1) For emission below 1GHz, through pre-scan found the worst case is the lowest							

Report No.: DACE250320033RL001

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

Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 22 of 69



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

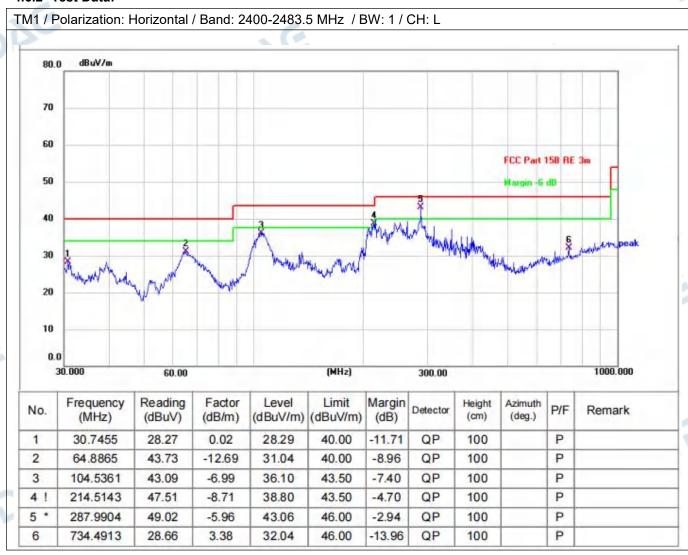
2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows: Final Test Level =Receiver Reading + Antenna Factor + Cable Factor "C Preamplifier Factor

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.

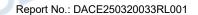
4.6.1 E.U.T. Operation:

Operating Environment:						
Temperature:	23.7 °C		Humidity:	47 %	Atmospheric Pressure:	102 kPa
Pretest mode: TM1			, TM2, TM3			
Final test mode: TM1				270		

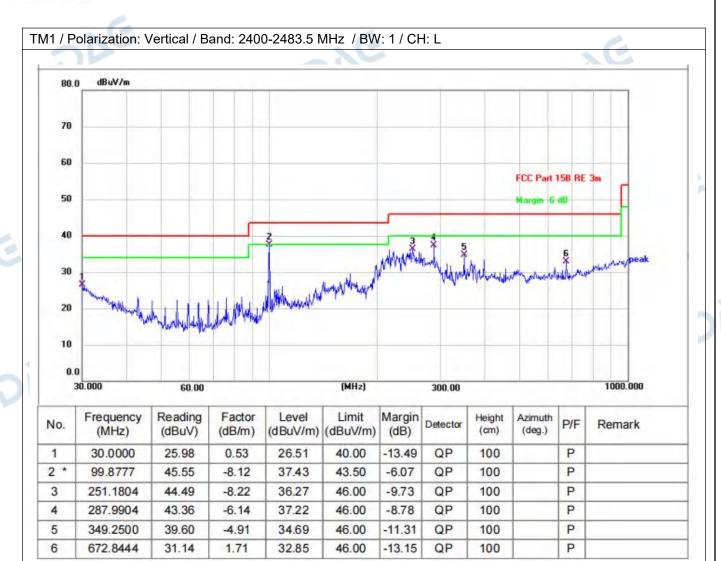
4.6.2 Test Data:



Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 23 of 69









4.7 Emissions in frequency bands (above 1GHz)

Test Requirement:	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				
	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:	a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be retested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. h. Test the EUT in the lowest channel, the middle channel, the Highest channel. i. The radiation measurements are performed in X, Y, Z axis positioning for						
	Transmitting mode, and found the X axis positioning which it is the worst case. j. Repeat above procedures until all frequencies measured was complete. Remark: 1) For emission below 1GHz, through pre-scan found the worst case is the lowest						

Report No.: DACE250320033RL001

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

Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 25 of 69



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

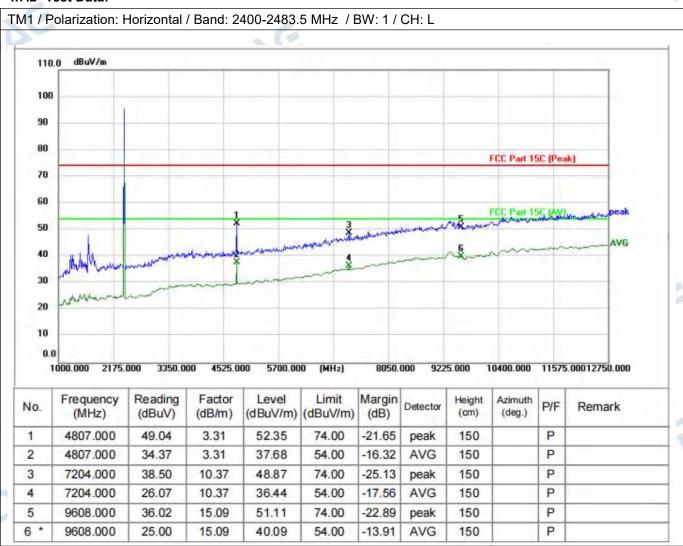
Report No.: DACE250320033RL001

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:	23.7 °C		Humidity:	47 %	Atmospheric Pressure:	102 kPa
Pretest mode: TM1			, TM2, TM3			
Final test mode: TM1				270		

4.7.2 Test Data:

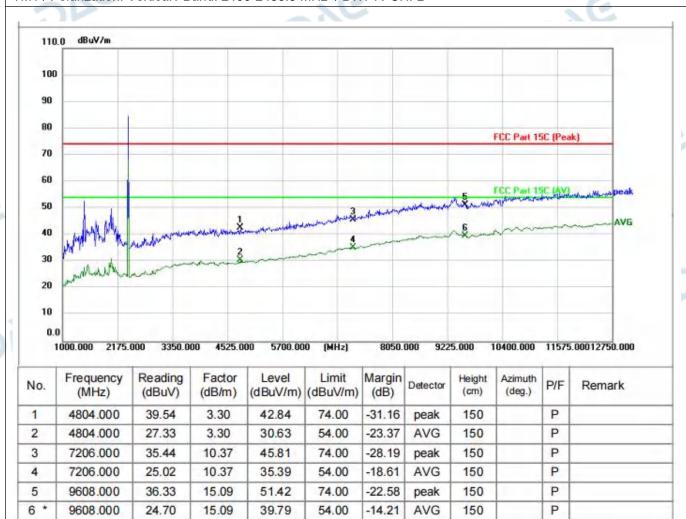


Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 26 of 69



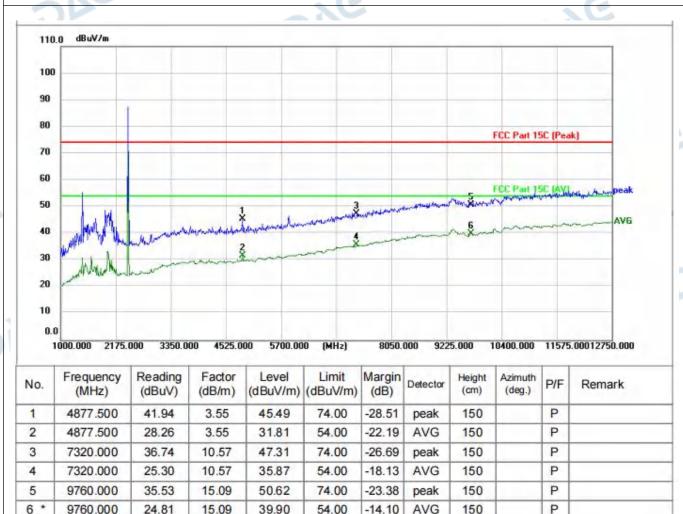


TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L





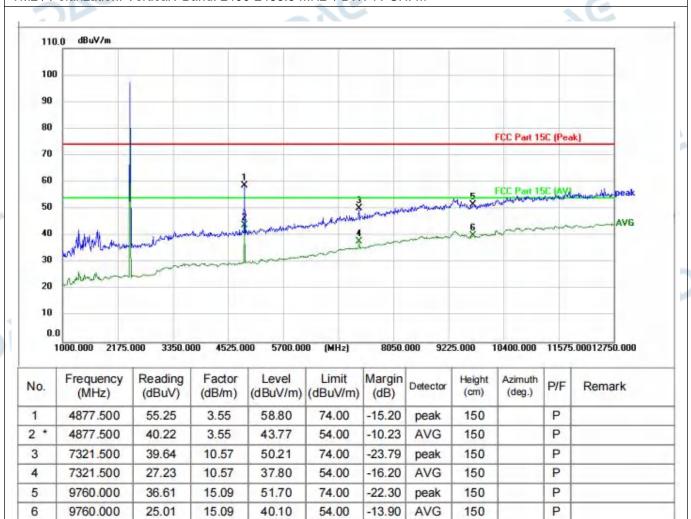
TM2 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: M

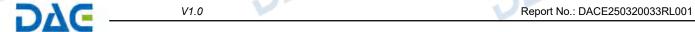




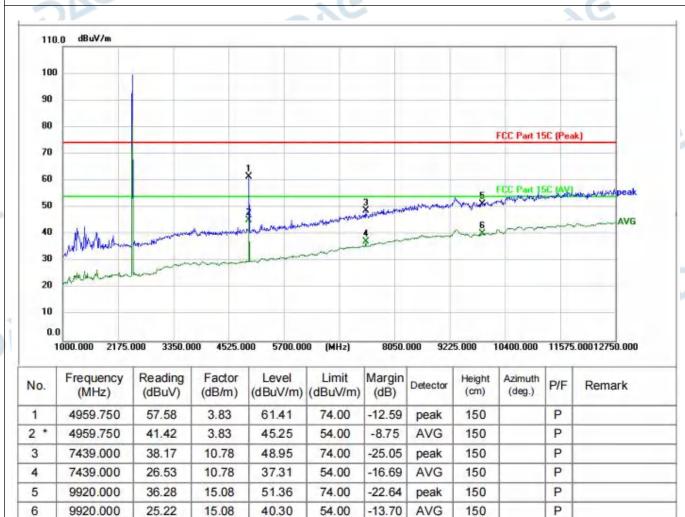
TM2 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: M

DAG





TM3 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: H



E-mail: service@dace-lab.com

Page 30 of 69

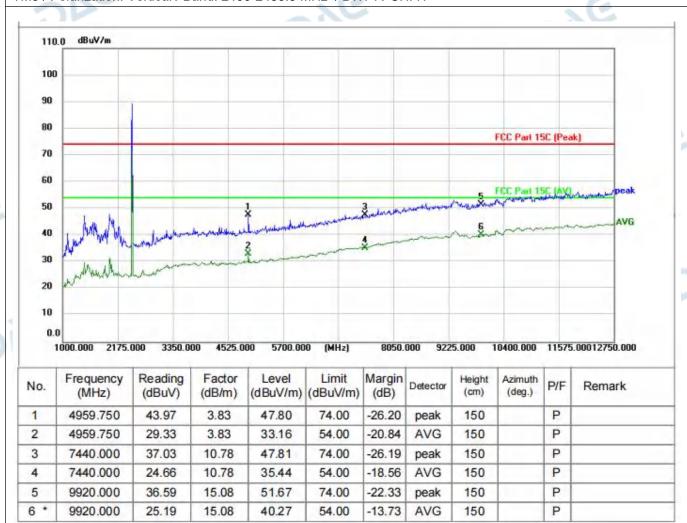
Tel: +86-755-23010613

Web: http://www.dace-lab.com



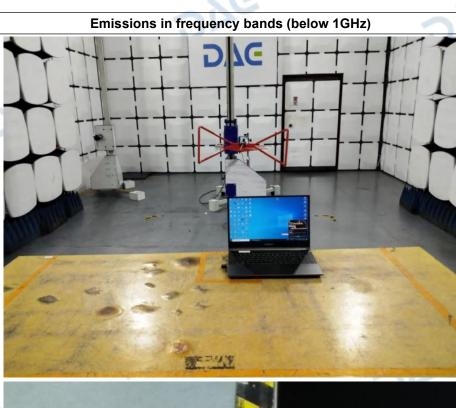


TM3 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: H



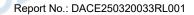


TEST SETUP PHOTOS

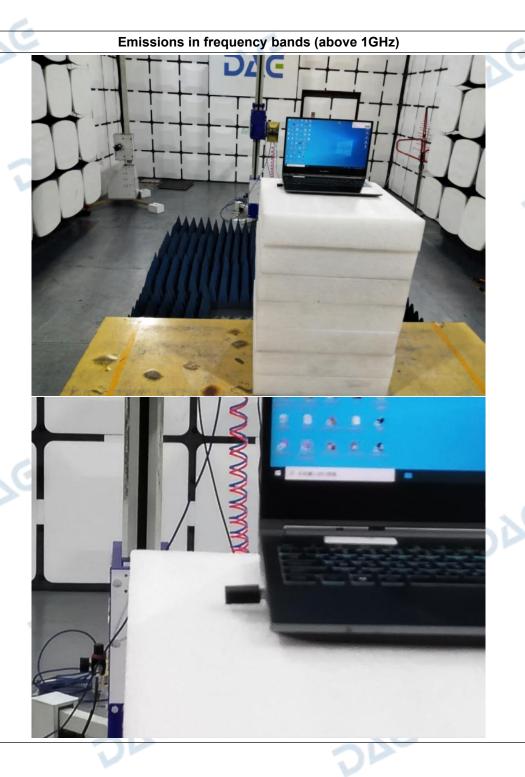




Page 32 of 69 Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com









6 PHOTOS OF THE EUT

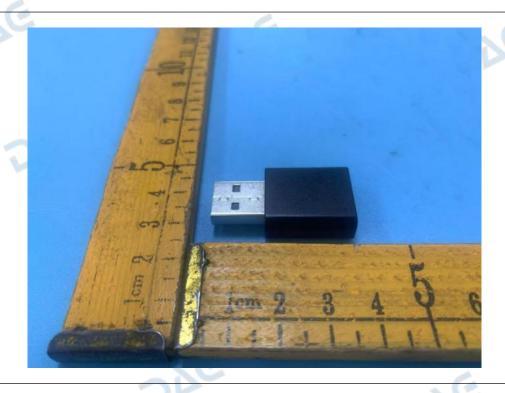
V1.0

External











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

Web: http://www.dace-lab.com

Tel: +86-755-23010613

E-mail: service@dace-lab.com

Page 35 of 69







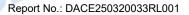
102, Building H1, & 1/F., Building H, Hongfa Science & Technology Park, Tangtou Community, Shiyan Subdistrict, Bao'an District, Shenzhen, Guangdong, China

Web: http://www.dace-lab.com

Tel: +86-755-23010613

E-mail: service@dace-lab.com

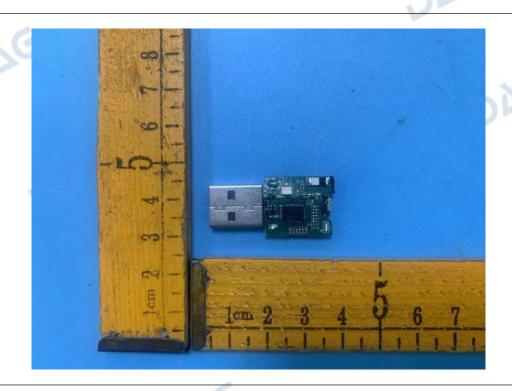
Page 36 of 69





Internal











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

Web: http://www.dace-lab.com

Tel: +86-755-23010613

E-mail: service@dace-lab.com

Page 38 of 69



DAG

Report No.: DACE250320033RL001

Appendix

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

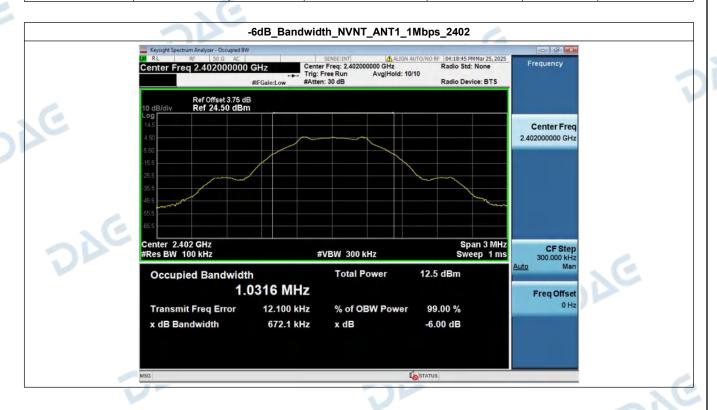
Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 39 of 69



HT250320012--TGS--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	672.10	500	Pass
NVNT	ANT1	1Mbps	2440.00	680.97	500	Pass
NVNT	ANT1	1Mbps	2480.00	682.02	500	Pass
NVNT	ANT1	2Mbps	2402.00	1400.16	500	Pass
NVNT	ANT1	2Mbps	2440.00	1365.39	500	Pass
NVNT	ANT1	2Mbps	2480.00	1368.82	500	Pass



Web: http://www.dace-lab.com

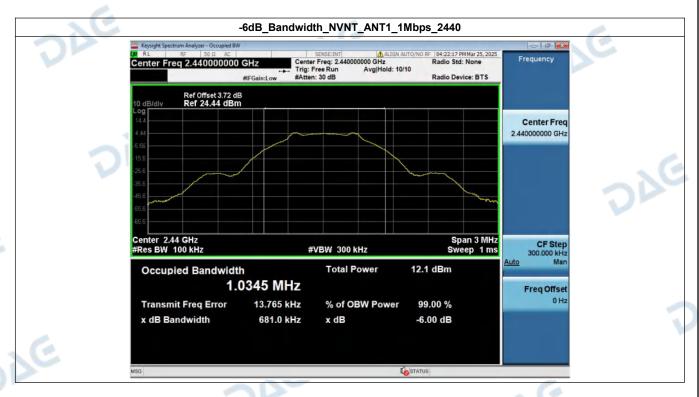
Tel: +86-755-23010613

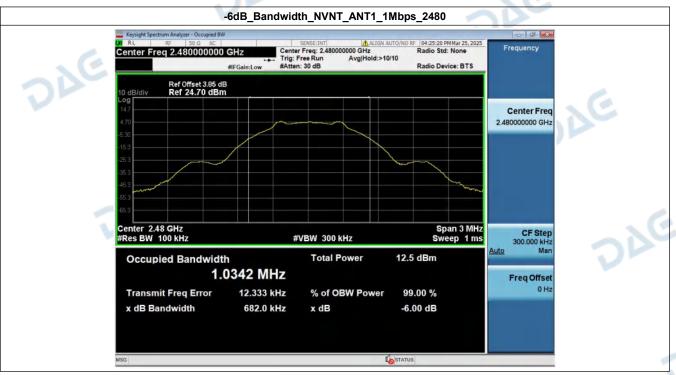
E-mail: service@dace-lab.com

Page 40 of 69



V1.0

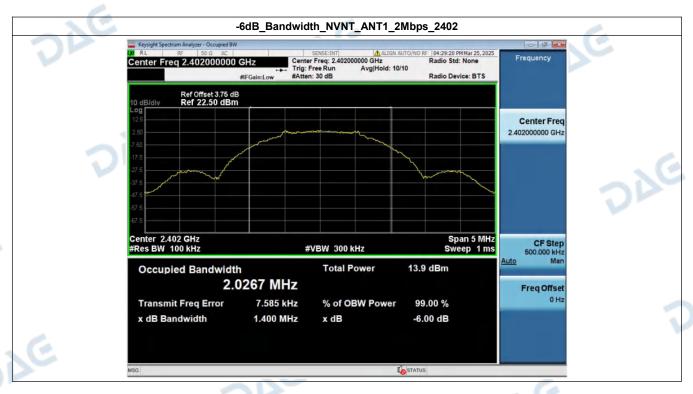


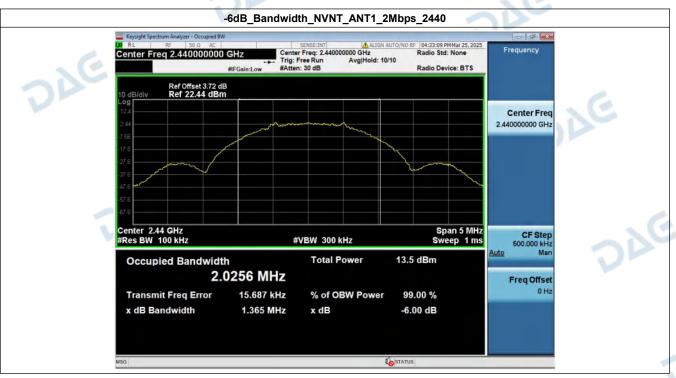


Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 41 of 69



V1.0





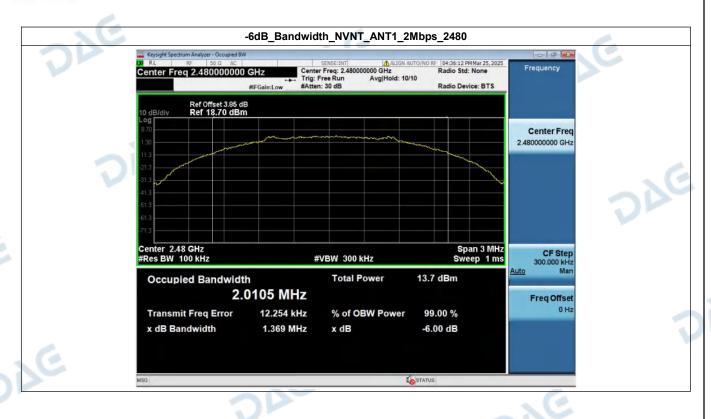
Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com



DAG

DAG

V1.0



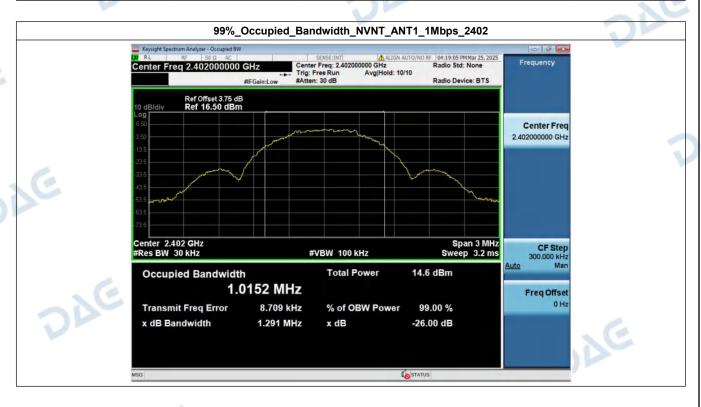
Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 43 of 69



Report No.: DACE250320033RL001

2. 99% Occupied Bandwidth

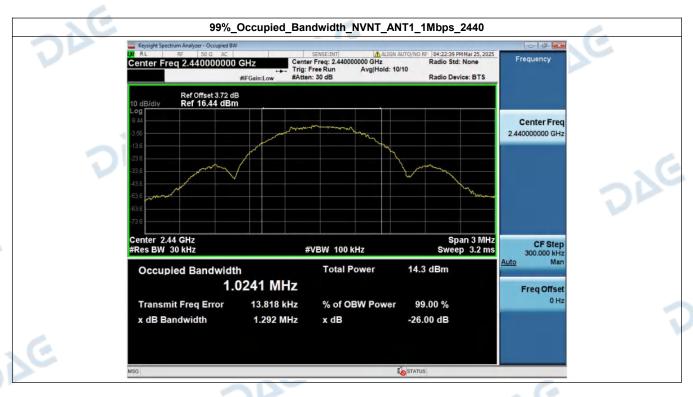
Condition	Antenna	Rate	Frequency (MHz)	99%%BW(MHz)
NVNT	ANT1	1Mbps	2402.00	1.015
NVNT	ANT1	1Mbps	2440.00	1.024
NVNT	ANT1	1Mbps	2480.00	1.034
NVNT	ANT1	2Mbps	2402.00	2.016
NVNT	ANT1	2Mbps	2440.00	2.012
NVNT	ANT1	2Mbps	2480.00	2.015

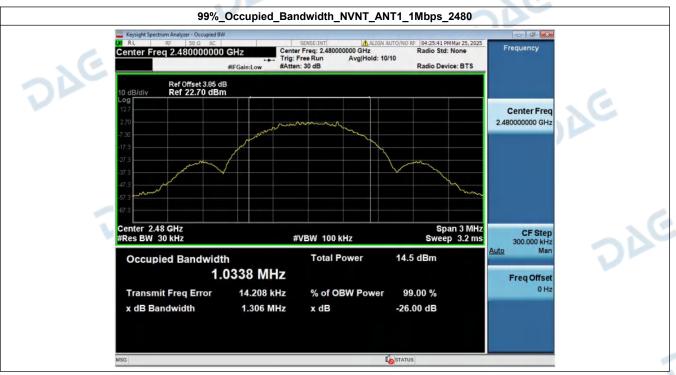


Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 44 of 69



V1.0

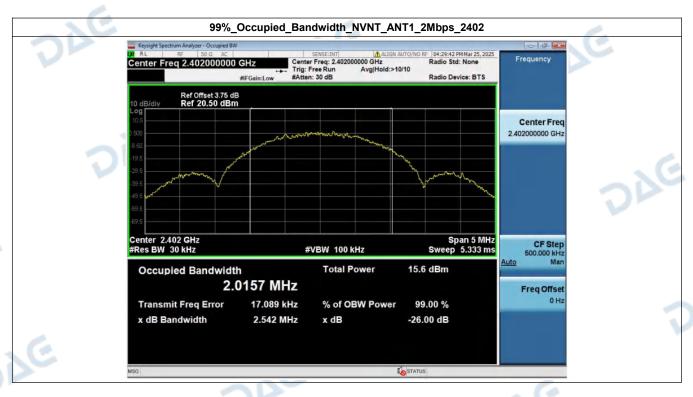


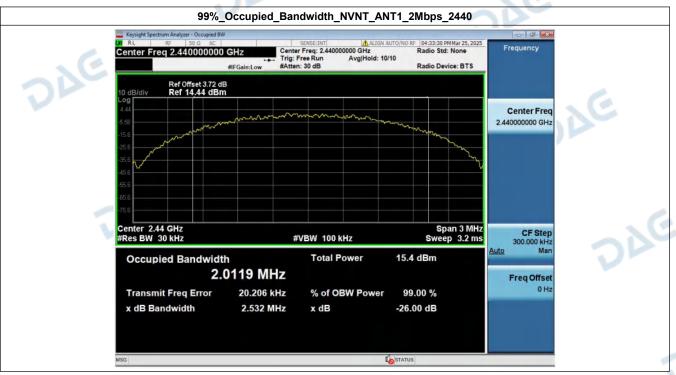


Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 45 of 69



V1.0





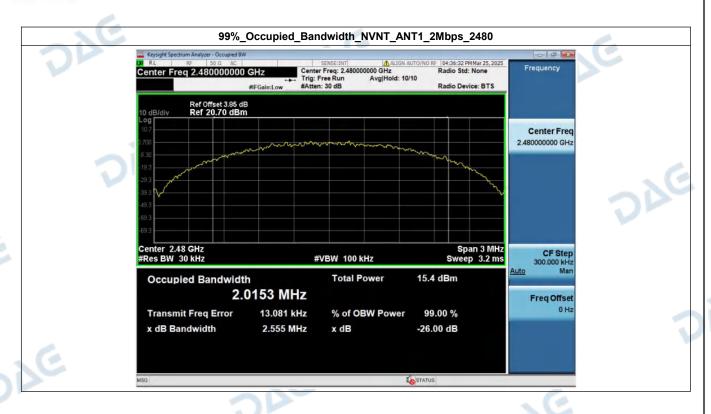
Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 46 of 69



DAG

DAG

V1.0



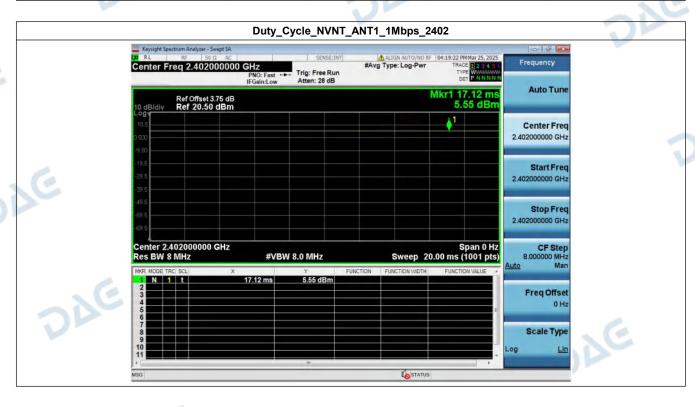
Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 47 of 69



Report No.: DACE250320033RL001

3. Duty Cycle

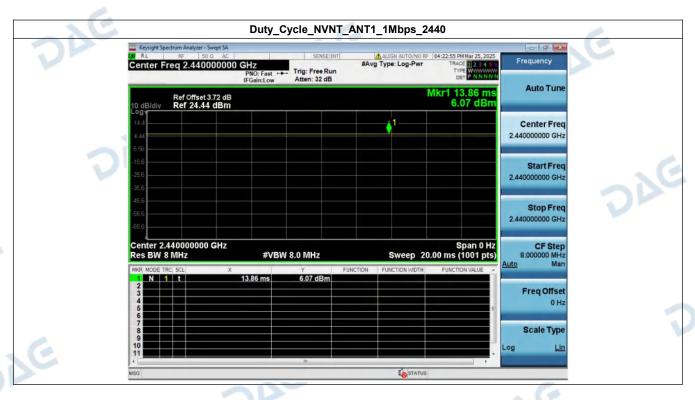
Condition	Antenna	Rate	Frequency (MHz)	Dutycycle(%)	Duty_factor
NVNT	ANT1	1Mbps	2402.00	100	0.00
NVNT	ANT1	1Mbps	2440.00	100	0.00
NVNT	ANT1	1Mbps	2480.00	100	0.00
NVNT	ANT1	2Mbps	2402.00	100	0.00
NVNT	ANT1	2Mbps	2440.00	100	0.00
NVNT	ANT1	2Mbps	2480.00	100	0.00

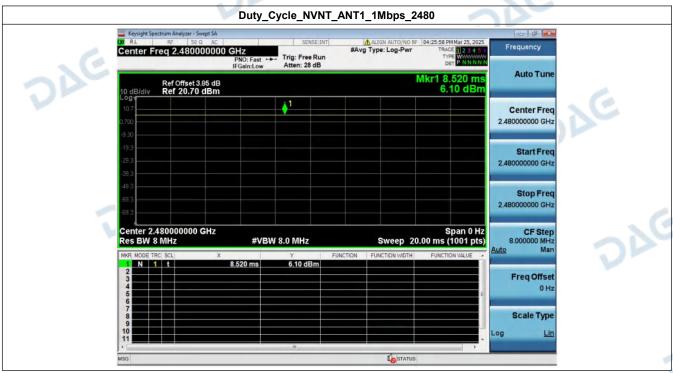


Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 48 of 69



V1.0

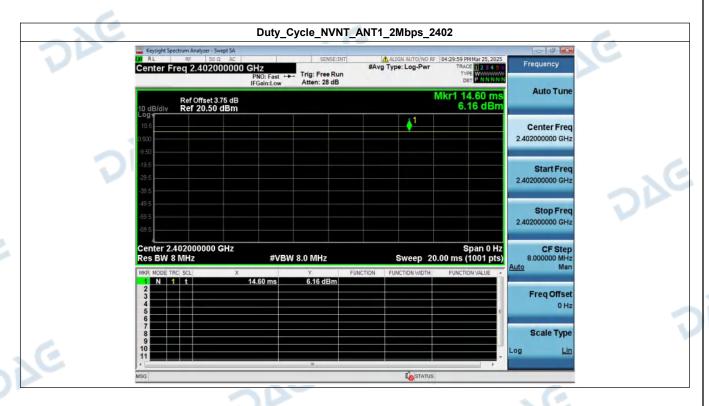


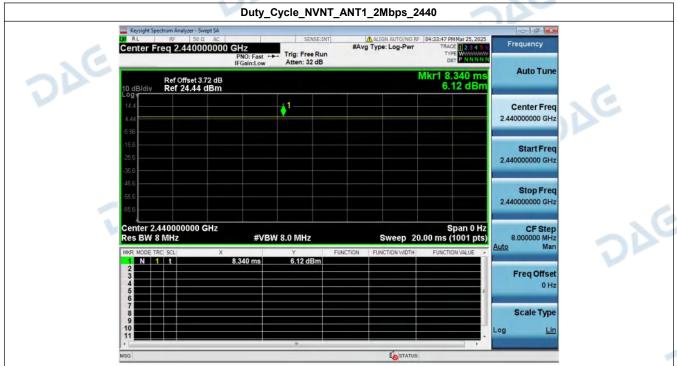


Page 49 of 69 Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com



V1.0





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

Web: http://www.dace-lab.com

Tel: +86-755-23010613

E-mail: service@dace-lab.com

Page 50 of 69

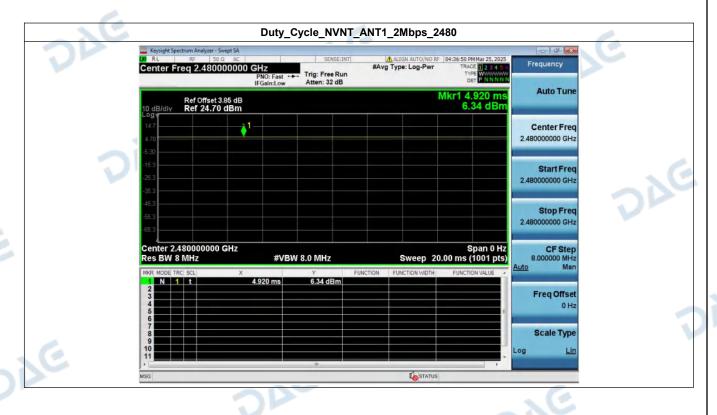
Report No.: DACE250320033RL001



DAG

DAG

DAG



DAG

DAG

DIE

DAG

DAG

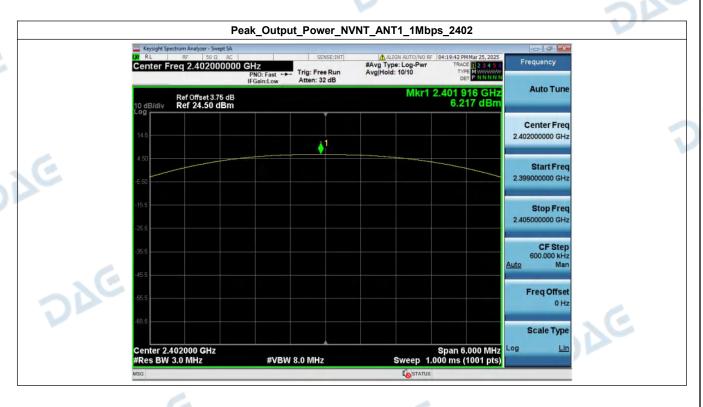
Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 51 of 69



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	6.22	4.19	1000	Pass
NVNT	ANT1	1Mbps	2440.00	5.99	3.97	1000	Pass
NVNT	ANT1	1Mbps	2480.00	6.28	4.25	1000	Pass
NVNT	ANT1	2Mbps	2402.00	6.23	4.20	1000	Pass
NVNT	ANT1	2Mbps	2440.00	5.98	3.96	1000	Pass
NVNT	ANT1	2Mbps	2480.00	6.23	4.20	1000	Pass

Report No.: DACE250320033RL001

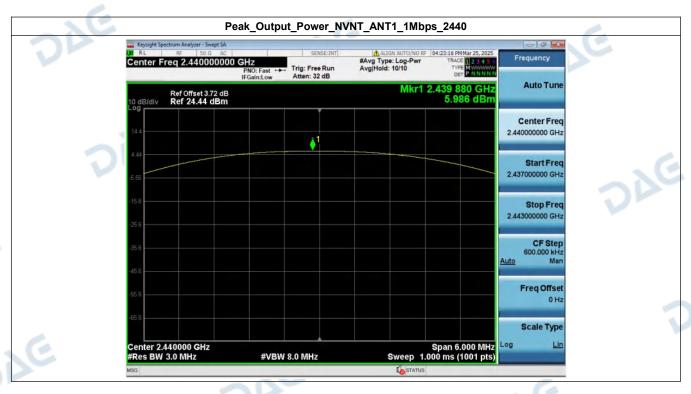


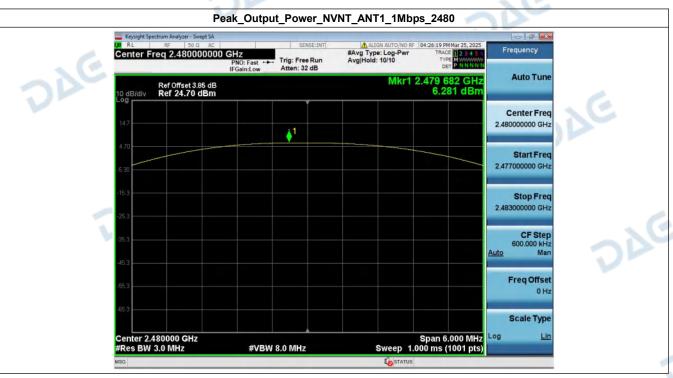
Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 52 of 69



DAG

V1.0

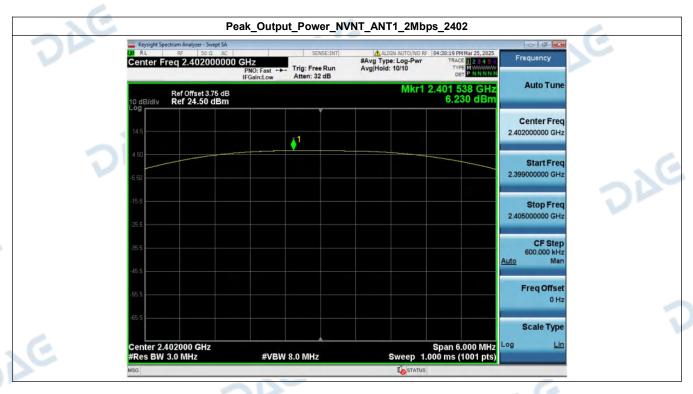


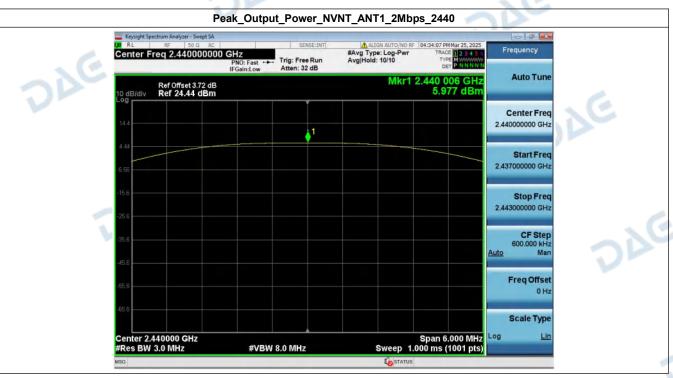




DAG

V1.0





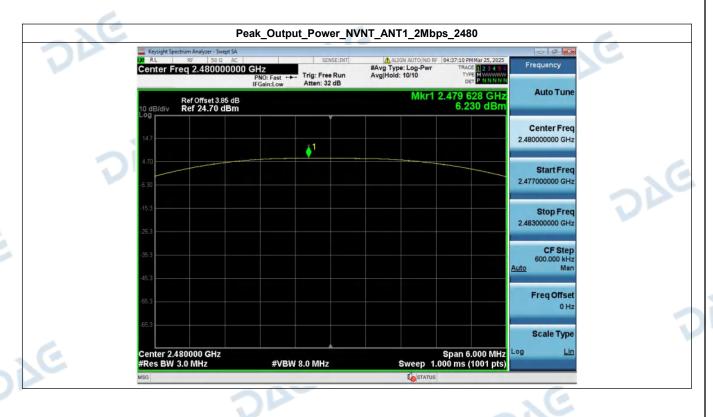
Report No.: DACE250320033RL001



DAG

DAG

DAG



DAG

DAG

DAG

DAG

DAG

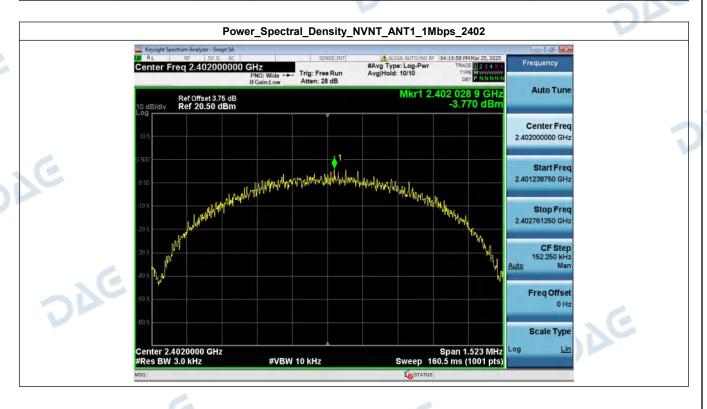
Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 55 of 69



.0 Report No.: DACE250320033RL001

5. Power Spectral Density

Condition	Antenna	Rate	Frequency (MHz)	Power Spectral Density(dBm/3kHz)	Limit(dBm/3kHz)	Result
NVNT	ANT1	1Mbps	2402.00	-3.77	8	Pass
NVNT	ANT1	1Mbps	2440.00	-5.07	8	Pass
NVNT	ANT1	1Mbps	2480.00	-4.70	8	Pass
NVNT	ANT1	2Mbps	2402.00	-7.63	8	Pass
NVNT	ANT1	2Mbps	2440.00	-7.73	8	Pass
NVNT	ANT1	2Mbps	2480.00	-8.11	8	Pass



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

Web: http://www.dace-lab.com

Tel: +86-755-23010613

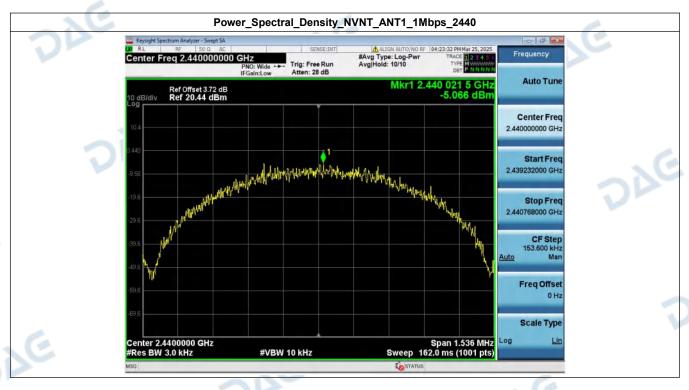
E-mail: service@dace-lab.com

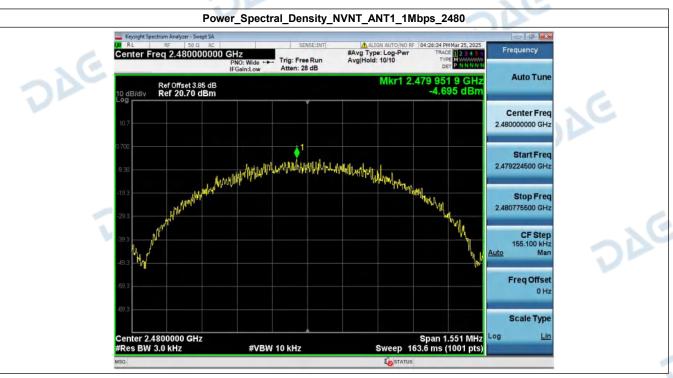
Page 56 of 69



DAG

V1.0

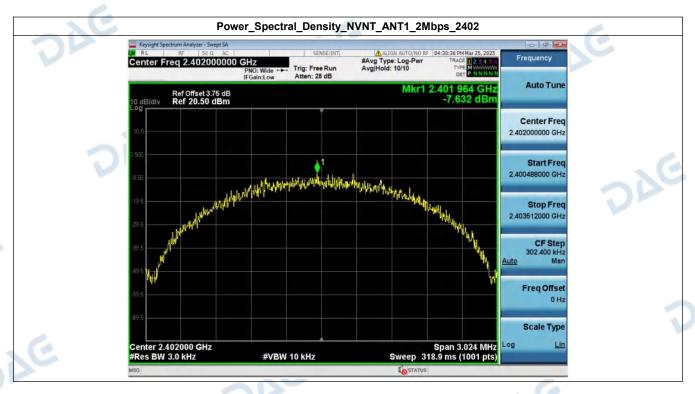


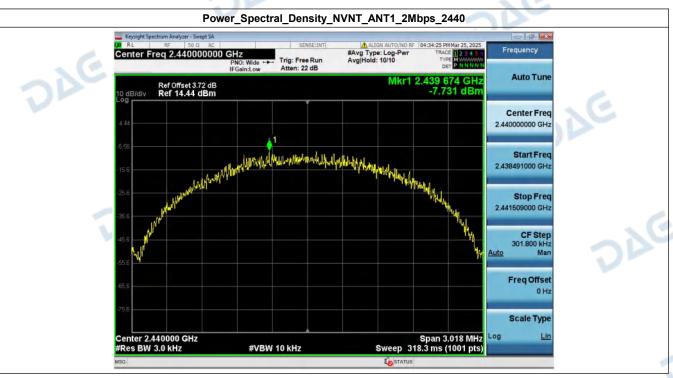


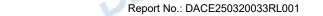


DAG

V1.0









DAG

DAG



DAG

DAG

DIE

DAG

DAG

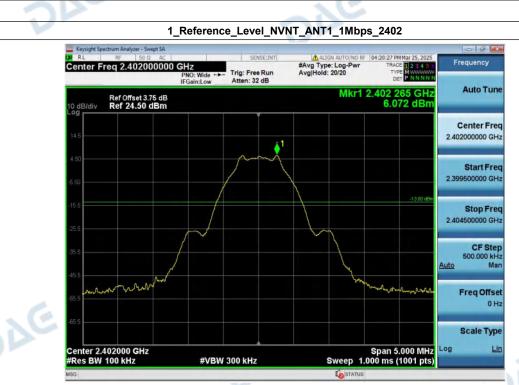
Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 59 of 69



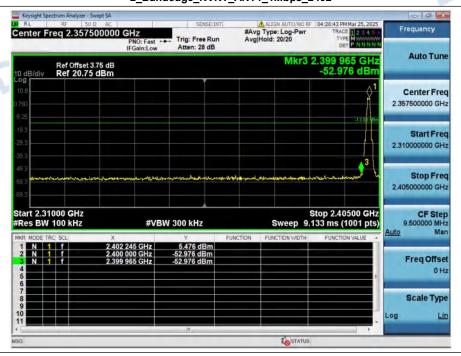
6. Bandedge

V1.0

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	6.072	-52.976	-13.928	Pass
NVNT	ANT1	1Mbps	2480.00	2498.075	6.087	-53.791	-13.913	Pass
NVNT	ANT1	2Mbps	2402.00	2399.965	4.455	-28.904	-15.545	Pass
NVNT	ANT1	2Mbps	2480.00	2483.625	4.079	-57.327	-15.921	Pass



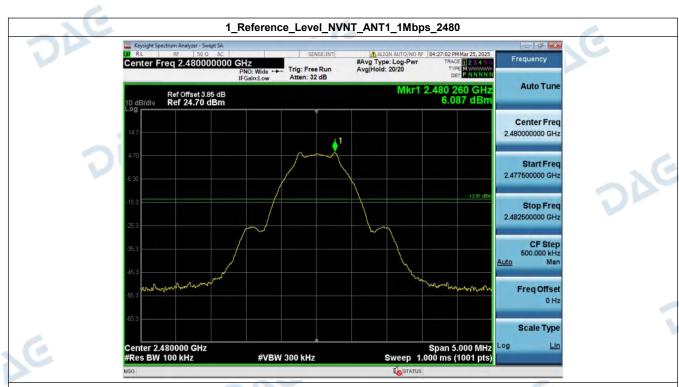
2_Bandedge_NVNT_ANT1_1Mbps_2402



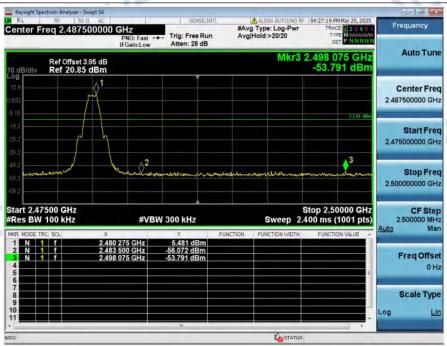
Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 60 of 69



V1.0







Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 61 of 69



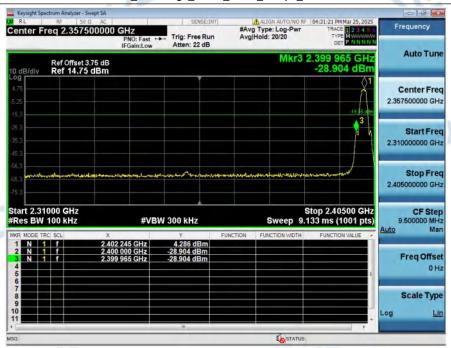
V1.0



Report No.: DACE250320033RL001



2_Bandedge_NVNT_ANT1_2Mbps_2402



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

Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 62 of 69



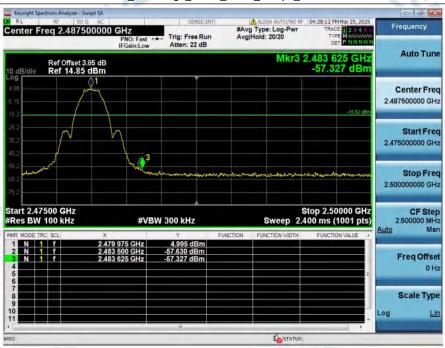
V1.0



Report No.: DACE250320033RL001



2_Bandedge_NVNT_ANT1_2Mbps_2480



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

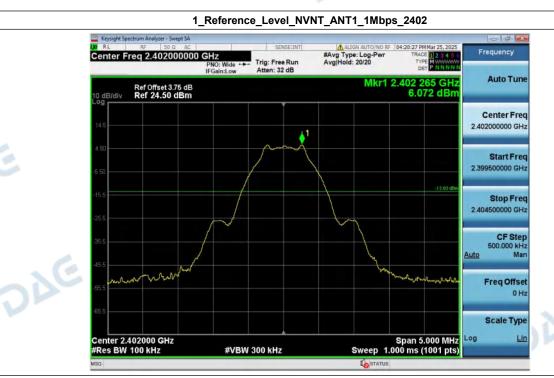
Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 63 of 69



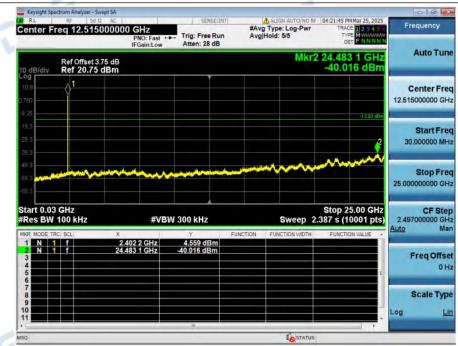
7. Spurious Emission

V1.0

Condition	Antenna	Modulation	TX_Frequency (MHz)	Ref_level(dBm)	Spurious level(dBm)	limit(dBm)	Result
NVNT	ANT1	1Mbps	2402.00	6.072	-40.016	-13.928	Pass
NVNT	ANT1	1Mbps	2440.00	5.653	-39.904	-14.347	Pass
NVNT	ANT1	1Mbps	2480.00	6.087	-40.588	-13.913	Pass
NVNT	ANT1	2Mbps	2402.00	4.455	-45.899	-15.545	Pass
NVNT	ANT1	2Mbps	2440.00	3.556	-41.897	-16.444	Pass
NVNT	ANT1	2Mbps	2480.00	4.079	-46.020	-15.921	Pass



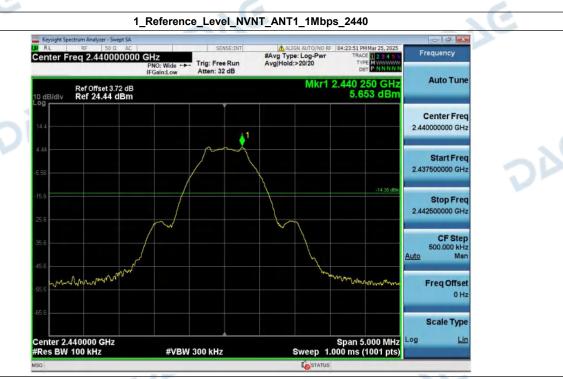
2_Spurious_Emission_NVNT_ANT1_1Mbps_2402



Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 64 of 69



V1.0

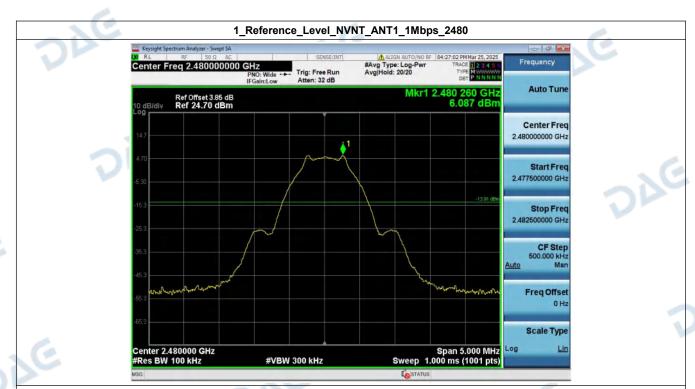


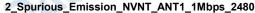
2_Spurious_Emission_NVNT_ANT1_1Mbps_2440





V1.0







Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 66 of 69

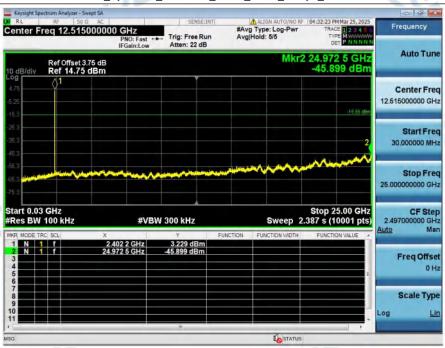


V1.0





2_Spurious_Emission_NVNT_ANT1_2Mbps_2402



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

Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 67 of 69



V1.0





2_Spurious_Emission_NVNT_ANT1_2Mbps_2440



Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 68 of 69



V1.0





****************** End of Report ***************

Web: http://www.dace-lab.com Tel: +86-755-23010613 E-mail: service@dace-lab.com Page 69 of 69