

# **FCC Test Report**

Application No.:	DNT2410080005R2362-03649
Applicant:	Dongguan Yongfang Electronics Technology Co., Ltd.
Address of	NO.12, Long'an Road, The 2'nd Industrial Zone, Shigu, Tangxia, Dongguan,
Applicant:	523729, China
EUT Description:	True Wireless Earphone
Model No.:	TWS-T25, 22885
FCC ID:	2ACYR-T25
Power Supply:	DC 3.7V From Battery
Charging Voltage:	DC 5V
Trade Mark:	
	47 CFR FCC Part 2, Subpart J
Standards:	47 CFR Part 15, Subpart C
	ANSI C63.10: 2020
Date of Receipt:	2024/10/09
Date of Test:	2024/10/10 to 2024/10/15
Date of Issue:	2024/10/16
Test Result:	PASS

**Prepared By: Reviewed By:** 

Approved By:

Wayne . Jon (Testing Engineer) incils (Project Engineer) time then (Manager)



Note: If there is any objection to the results in this report, please submit a written inquiry to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp, and is issued by the company in accordance with the requirements of the "Conditions of Issuance of Test Reports" printed in the attached page. Unless otherwise stated, the results presented in this report only apply to the samples tested this time. Partial reproduction of this report is not allowed unless approved by the company in writing.

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Date: October 16, 2024 Pa

**Report Revise Record** 

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0		Oct 16, 2024	Valid	Original Report

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# Test Summary

1

Test Requirement	Test Method	Test Result	Result
15.203/247(b)		Clause 3.1	PASS
15.247 (a)(1)	ANSI C63.10: 2020	Clause 3.2	PASS
15.247 (b)(1)	ANSI C63.10: 2020	Clause 3.3	PASS
15.247 (a)(1)	ANSI C63.10: 2020	Clause 3.4	PASS
15.247 (a)(1)	ANSI C63.10: 2020	Clause 3.5	PASS
15.247 (a)(1)	ANSI C63.10: 2020	Clause 3.6	PASS
15.247(d)	ANSI C63.10: 2020	Clause 3.7	PASS
15.247(d)	ANSI C63.10: 2020	Clause 3.8	PASS
15.247(d);	ANSI C63 10: 2020	Clause 3.0	PASS
15.205/15.209	ANSI C03.10. 2020	Clause 5.9	FA00
15.247(d); 15.205/15.209	ANSI C63.10: 2020	Clause 3.10	PASS
15.207	ANSI C63.10: 2020	Clause 3.11	N/A
	15.203/247(b) 15.247 (a)(1) 15.247 (b)(1) 15.247 (a)(1) 15.247 (a)(1) 15.247 (a)(1) 15.247 (d) 15.247(d) 15.247(d); 15.205/15.209 15.247(d); 15.205/15.209	15.203/247(b)          15.247 (a)(1)       ANSI C63.10: 2020         15.247 (b)(1)       ANSI C63.10: 2020         15.247 (a)(1)       ANSI C63.10: 2020         15.247 (d)       ANSI C63.10: 2020         15.247(d)       ANSI C63.10: 2020         15.247(d);       ANSI C63.10: 2020	15.203/247(b)Clause 3.115.247 (a)(1)ANSI C63.10: 2020Clause 3.215.247 (b)(1)ANSI C63.10: 2020Clause 3.315.247 (a)(1)ANSI C63.10: 2020Clause 3.415.247 (a)(1)ANSI C63.10: 2020Clause 3.515.247 (a)(1)ANSI C63.10: 2020Clause 3.615.247 (a)(1)ANSI C63.10: 2020Clause 3.615.247 (a)(1)ANSI C63.10: 2020Clause 3.615.247 (a)(1)ANSI C63.10: 2020Clause 3.715.247 (d)ANSI C63.10: 2020Clause 3.815.247 (d);ANSI C63.10: 2020Clause 3.915.205/15.209ANSI C63.10: 2020Clause 3.915.205/15.209ANSI C63.10: 2020Clause 3.10

### Note:

1. "N/A" denotes test is not applicable in this test report.



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# 2 General Information

# 2.1 Test Location

Company:	Dongguan DN Testing Co., Ltd
Address:	No. 1, West Fourth Street, South Xinfa Road, Wusha Liwu, Chang ' an Town, Dongguan City, Guangdong P.R.China
Test engineer:	Wayne Lin



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# 2.2 General Description of EUT

Manufacturer:	Dongguan Yongfang Electronics Technology Co., Ltd.		
Address of Manufacturer:	NO.12, Long'an Road, The 2'nd Industrial Zone, Shigu, Tangxia, Dongguan, 523729, China		
Test EUT Description:	True Wireless Earphone		
Model No.:	TWS-T25		
Additional Model(s):	22885		
Chip Type:	AD6983D		
Serial number:	PR2410080005R2362		
Power Supply:	DC 3.7V From Battery		
Charging Voltage:	DC 5V		
Trade Mark:			
Hardware Version:	V1.0		
Software Version:	V1.0		
Operation Frequency:	2402 MHz to 2480 MHz		
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)		
Type of Modulation:	GFSK,π/4-DQPSK		
Sample Type:	Portable Device,  Module, Mobile Device		
Antenna Type:	□ External, ⊠ Integrated		
Antenna Ports:	🖂 Ant 1, 🗌 Ant 2, 🗌 Ant 3		
Antonno Ocinte	Provided by applicant		
Antenna Gain*:	2.67dBi		
	Provided by applicant		
RF Cable*:	0.5dB(0.6~1GHz); 0.8dB(1.4~2GHz); 1.0dB(2.1~2.7GHz); 1.5dB(3~4GHz); 1.8dB(4.4~6GHz);		

### Remark:

\*All models are just color differences, motherboard, PCB circuit board, chip, electronic components, appearance is all the same.

\*Since the above data and/or information is provided by the applicant relevant results or conclusions of this report are only made for these data and/or information, DNT is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.



# 2.3 Channel List

	Operation Frequency of each channel						
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2402MHz	20	2422MHz	40	2442MHz	60	2462MHz
1	2403MHz	21	2423MHz	41	2443MHz	61	2463MHz
2	2404MHz	22	2424MHz	42	2444MHz	62	2464MHz
/ 3	2405MHz	23	2425MHz	43	2445MHz	63	2465MHz
4	2406MHz	24	2426MHz	44	2446MHz	64	2466MHz
5	2407MHz	25	2427MHz	45	2447MHz	65	2467MHz
6	2408MHz	26	2428MHz	46	2448MHz	66	2468MHz
7	2409MHz	27	2429MHz	47	2449MHz	67	2469MHz
8	2410MHz	28	2430MHz	48	2450MHz	68	2470MHz
9	2411MHz	29	2431MHz	49	2451MHz	69	2471MHz
10	2412MHz	30	2432MHz	50	2452MHz	70	2472MHz
11	2413MHz	31	2433MHz	51	2453MHz	71	2473MHz
12	2414MHz	32	2434MHz	52	2454MHz	72	2474MHz
13	2415MHz	33	2435MHz	53	2455MHz	73	2475MHz
14	2416MHz	34	2436MHz	54	2456MHz	74	2476MHz
15	2417MHz	35	2437MHz	55	2457MHz	75	2477MHz
16	2418MHz	36	2438MHz	56	2458MHz	76	2478MHz
17	2419MHz	37	2439MHz	57	2459MHz	77	2479MHz
18	2420MHz	38	2440MHz	58	2460MHz	78	2480MHz
19	2421MHz	39	2441MHz	59	2461MHz	)	

### Remark:

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:

Channel	Frequency
The Lowest channel	2402MHz
The Middle channel	2441MHz
The Highest channel	2480MHz



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# 2.4 5Test Environment and Mode

Operating Environment:				
Temperature:	20~25.0 °C			
Humidity:	45~56 % RH			
Atmospheric Pressure:	101.0~101.30 KPa			
Test mode:				
Transmitting mode:	mode: Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.			



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# 2.5 Power Setting of Test Software

Software Name	$\circ$ $\circ$	FCC_assist_1.0.2.2	O, O, O
Frequency(MHz)	2402	2441	2480
GFSK Setting	10	10	10
$\pi$ /4-DQPSK Setting	10	10	10

# 2.6 Description of Support Units

The EUT has been tested independent unit.

# 2.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

Lab A:

### • FCC, USA

**Designation Number: CN1348** 

### A2LA (Certificate No. 7050.01)

DONGGUAN DN TESTING CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 7050.01.

### Innovation, Science and Economic Development Canada

DONGGUAN DN TESTING CO., LTD. EMC Laboratory has been recognized by ISED as an accredited testing laboratory. CAB identifier is CN0149. IC#: 30755.



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# 2.8 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	20dB Emission Bandwidth	±0.0196%
2	Carrier Frequency Separation	±1.9%
3	Number of Hopping Channel	±1.9%
4	Time of Occupancy	±0.028%
5	Max Peak Conducted Output Power	±0.743 dB
6	Band-edge Spurious Emission	±1.328 dB
7	Conducted RF Spurious Emission	9KHz-1GHz:±0.746dB 1GHz-26GHz:±1.328dB

No.	Item	Measurement Uncertainty
1	Conduction Emission	± 3.0dB (150kHz to 30MHz)
0,	O, O, O, O, O, O	± 4.8dB (Below 1GHz)
	De dista d Envirsion	± 4.8dB (1GHz to 6GHz)
2	Radiated Emission	± 4.5dB (6GHz to 18GHz)
$\sim$		± 5.02dB (Above 18GHz)

# 2.9 Equipment List

	For Connec	ct EUT Anten	na Terminal <sup>-</sup>	Test	
Description	Manufacturer	Model	Serial Number	Cal date	Due date
Signal Generator	Keysight	N5181A-6G	MY48180415	2023-10-25	2024-10-24
Signal Generator	Keysight	N5182B	MY57300617	2023-10-25	2024-10-24
Power supply	Keysight	E3640A	ZB2022656	2023-10-25	2024-10-24
Radio Communication Tester	R&S	CMW500	105082	2023-10-25	2024-10-24
Spectrum Analyzer	Aglient	N9010A	MY52221458	2023-10-25	2024-10-24
BT/WIFI Test Software	Tonscend	JS1120 V3.1.83	NA	NA	NA
RF Control Unit	Tonscend	JS0806-2	22F8060581	NA	NA
Power Sensor	Anritsu	ML2495A	2129005	2023-10-25	2024-10-24
Pulse Power Sensor	Anritsu	MA2411B	1911397	2023-10-25	2024-10-24
temperature and humidity box	SCOTEK	SCD-C40-80PRO	6866682020008	2023-10-25	2024-10-24

	Test Equipment for Conducted Emission							
Description	Manufacturer	Model	Serial Number	Cal Date	Due Date			
Receiver	R&S	ESCI3	101152	2023-10-24	2024-10-23			
LISN	R&S	ENV216	102874	2023-10-24	2024-10-23			
ISN	R&S	ENY81-CA6	1309.8590.03	2023-10-24	2024-10-23			

Test Ed	quipment for F	Radiated Emis	sion(30MHz	-1000MH	z)
Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
Receiver	R&S	ESR7	102497	2023-10-24	2024-10-23
Test Software	ETS-LINDGREN	TILE-FULL	NA	NA	NA
RF Cable	ETS-LINDGREN	RFC-NMS-100- NMS-350-IN	NA	2023-10-24	2024-10-23
Log periodic antenna	ETS-LINDGREN	VULB 9168	01475	2023-10-24	2024-10-23
Pre-amplifier	Schwarzbeck	BBV9743B	00423	2023-10-24	2024-10-23



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Test E	Test Equipment for Radiated Emission(Above 1000MHz)							
Description	Manufacturer	Model	Serial Number	Cal Date	Due Date			
Frequency analyser	Keysight	N9010A	MY52221458	2023-10-24	2024-10-23			
RF Cable	ETS-LINDGREN	RFC-NMS-100- NMS-350-IN	NA	2023-10-24	2024-10-23			
Horn Antenna	ETS-LINDGREN	3117	00252567	2023-10-24	2024-10-23			
Double ridged waveguide antenna	ETS-LINDGREN	3116C	00251780	2023-10-24	2024-10-23			
Test Software	ETS-LINDGREN	TILE-FULL	NA	NA	NA			
Pre-amplifier	ETS-LINDGREN	3117-PA	252567	2023-10-24	2024-10-23			
Pre-amplifier	ETS-LINDGREN	3116C-PA	251780	2023-10-24	2024-10-23			

# 2.10 Assistant equipment used for test

Code	Equipment	Manufacturer	Model No.	Equipment No.
1	Computer	acer	N22C8	EMC notebook01
2	Adapter	HUAWEI	HW-100225C00	NA



# **3** Test results and Measurement Data

# 3.1 Antenna Requirement

### Standard requirement: 47 CFR Part 15C Section 15.203 /247(c)

#### 15.203 requirement:

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, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

### 15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 2.67dBi.



# 3.2 20dB Emission Bandwidth

Test Requirement:	47 CFR Part 15C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2020 Section 7.8.7
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table
<	Ground Reference Plane
Instruments Used:	Refer to section 2.9 for details
Exploratory Test Mode:	Non-hopping transmitting with all kind of modulation and all kind of data type.
Final Test Mode:	Through Pre-scan, find the worst case of all modulation type.
Limit:	NA
Test Results:	Pass

The detailed test data see: Appendix A



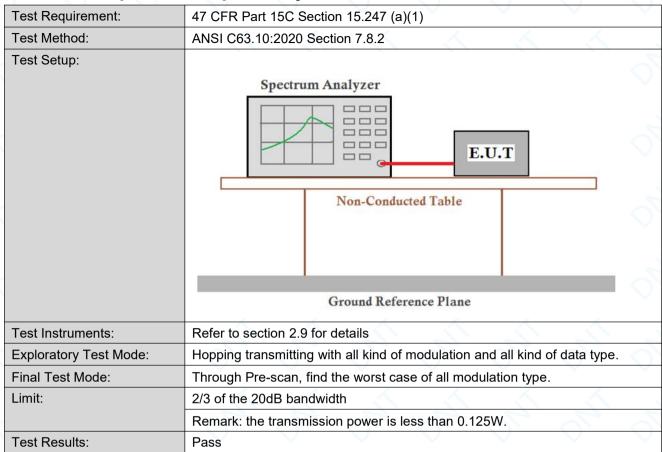
# 3.3 Conducted Output Power

Test Requirement:	47 CFR Part 15C Section 15.247 (b)(1)
Test Method:	ANSI C63.10:2020 Section 7.8.5
Test Setup:	Spectrum Analyzer E.U.T
	Non-Conducted Table
	Ground Reference Plane
Test Instruments:	Refer to section 2.9 for details
Exploratory Test Mode:	Non-hopping transmitting with all kind of modulation and all kind of data type.
Final Test Mode:	Through Pre-scan, find the worst case of all modulation type.
Limit:	(20.97dBm) 125mW
Test Results:	Pass

The detailed test data see: Appendix B



# 3.4 Carrier Frequencies Separationy



The detailed test data see: Appendix C



# 3.5 Dwell Time

Test Requirement:	47 CFR Part 15C Section 15.247 (a)(1)	$\sim$	
Test Method:	ANSI C63.10:2020 Section 7.8.4	<u> </u>	
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table	n m m	0, 0, 0,
	Ground Reference Plane		
Instruments Used:	Refer to section 2.9 for details	$\mathbf{O}$	
Test Mode:	Hopping transmitting with all kind of modulation and all kind of	data type.	
Limit:	0.4 Second		
Test Results:	Pass	~	~

The detailed test data see: Appendix D



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# 3.6 Hopping Channel Number

Test Requirement:	47 CFR Part 15C Section 15.247 (a)(1)	
Test Method:	ANSI C63.10:2020 Section 7.8.3	
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane	Q. Q. Q.
Instruments Used:	Refer to section 2.9 for details	
Test Mode:	Hopping transmitting with all kind of modulation	$\bigcirc$
Limit:	At least 15 channels	
Test Results:	Pass	

The detailed test data see: Appendix E



# 3.7 Band-edge for RF Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10:2020 Section 7.8.6
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table
	Ground Reference Plane
Instruments Used:	Refer to section 2.9 for details
Exploratory Test Mode:	Hopping and Non-hopping transmitting with all kind of modulation and all kind of data type.
Final Test Mode:	Through Pre-scan, find the worst case of all modulation type.
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.
Test Results:	Pass

The detailed test data see: Appendix F



# 3.8 RF Conducted Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10: 2020 Section 11.11
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane
Instruments Used:	Refer to section 2.9 for details
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Through Pre-scan, find the worst case of all modulation type.
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.
Test Results:	Pass

The detailed test data see: Appendix G



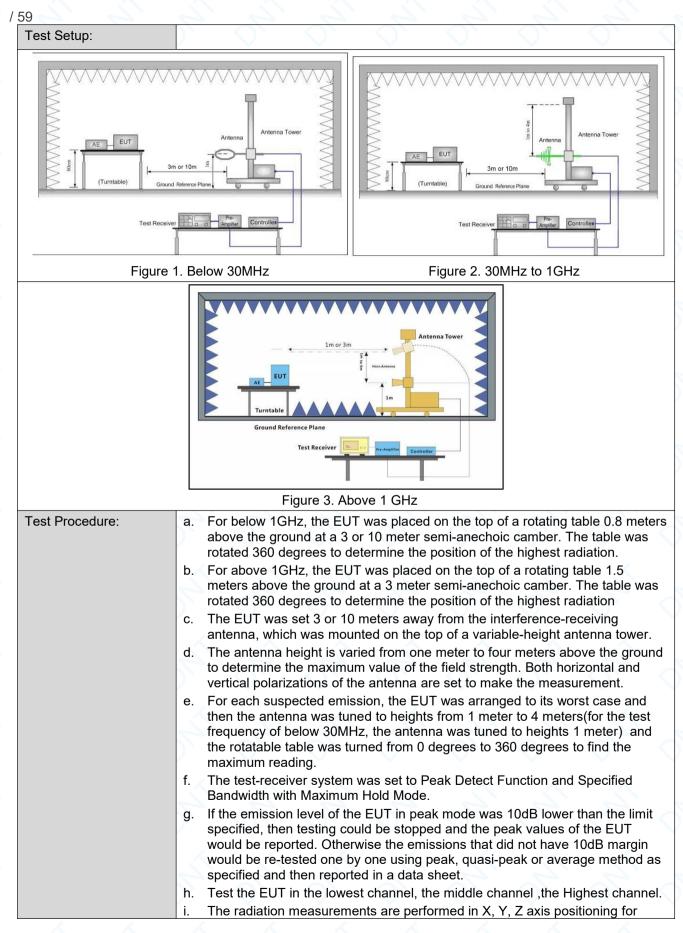
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# 3.9 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15C Sectio	n 15.209 and 15.20	)5	<u> </u>	<u> </u>			
Test Method:	ANSI C63.10: 2020 Sect	ANSI C63.10: 2020 Section 11.12						
Test Site:	Measurement Distance: 3m or 10m (Semi-Anechoic Chamber)							
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark			
	0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak			
	0.009MHz-0.090MHz	Average	10kHz	30kHz	Average			
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak			
	0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak			
	0.110MHz-0.490MHz	Average	10kHz	30kHz	Average			
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak			
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak			
		Peak	1MHz	3MHz	Peak			
	Above 1GHz	Peak	1MHz	10Hz (DC≥0.98)	Average			
	× ×	$\langle \langle \rangle$		≥1/T (DC<0.98)	$\langle \langle \rangle$			
Limit:	Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)			
	0.009MHz-0.490MHz	2400/F(kHz)	- 🔨	~	300			
	0.490MHz-1.705MHz	24000/F(kHz)	-	<u></u> `	30			
	1.705MHz-30MHz	30	<u> </u>	$\sim$ -	30			
	30MHz-88MHz	100	40.0	Quasi-peak	3			
	88MHz-216MHz	150	43.5	Quasi-peak	3			
	216MHz-960MHz	200	46.0	Quasi-peak	3			
	960MHz-1GHz	500	54.0	Quasi-peak	3			
	Above 1GHz	500	54.0	Average	3			
	Above 1GHz Remark: 15.35(b),Unless emissions is 20dB above applicable to the equipm emission level radiated b	s otherwise specifie the maximum per ent under test. This	ed, the limit of mitted avera	on peak radio fi ge emission lir	requency nit			





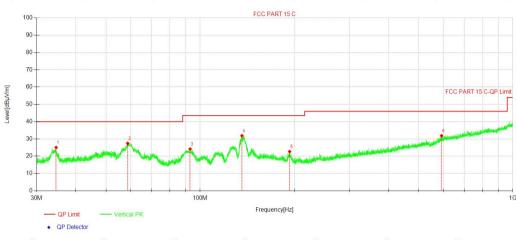


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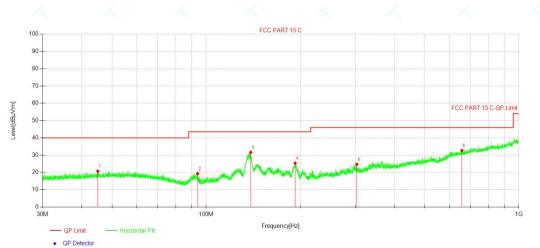
	<ul><li>Transmitting mode, And found the X axis positioning which it is worse case.</li><li>j. Repeat above procedures until all frequencies measured was complete.</li></ul>
Test Configuration:	Measurements Below 1000MHz
-	• RBW = 120 kHz
	• VBW = 300 kHz
	Detector = Peak
	Trace mode = max hold
	Peak Measurements Above 1000 MHz
	• RBW = 1 MHz
	VBW ≥ 3 MHz
	Detector = Peak
	Sweep time = auto
	Trace mode = max hold
	Average Measurements Above 1000MHz
	• RBW = 1 MHz
	• VBW = 10 Hz, when duty cycle is no less than 98 percent.
	• VBW $\ge$ 1/T, when duty cycle is less than 98 percent where T is the minimum
	transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates.
	Charge+Transmitting mode.
Final Test Mode:	Pretest the EUT at Transmitting mode.
	Through Pre-scan, find the DH5 of data type is the worst case of All modulation type.
Instruments Used:	Refer to section 2.9 for details
Test Results:	Pass



# Test data For 30-1000MHz



NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	Limit [dBµV/ m]	Margin [dB]	Height [cm]	Angle [°]	Remark	Polarity
1	34.63	34.40	-9.37	25.03	40.00	14.97	100	354	QP	Vertical
2	58.69	36.04	-8.62	27.42	40.00	12.58	100	338	QP	Vertical
3	92.91	37.75	-13.62	24.13	43.50	19.37	200	349	QP	Vertical
4	136.07	40.72	-8.86	31.86	43.50	11.64	100	48	QP	Vertical
5	193.29	33.50	-10.82	22.68	43.50	20.82	100	216	QP	Vertical
6	591.59	32.15	-0.31	31.84	46.00	14.16	100	286	QP	Vertical



NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark	Polarity
1	45.05	28.95	-8.24	20.71	40.00	19.29	200	360	QP	Horizontal
2	93.99	32.80	-13.50	19.30	43.50	24.20	200	290	QP	Horizontal
3	138.92	40.20	-8.59	31.61	43.50	11.89	200	37	QP	Horizontal
4	192.62	36.07	-10.75	25.32	43.50	18.18	200	115	QP	Horizontal
5	303.22	31.53	-6.89	24.64	46.00	21.36	100	261	QP	Horizontal
6	657.68	31.15	1.54	32.69	46.00	13.31	200	178	QP	Horizontal

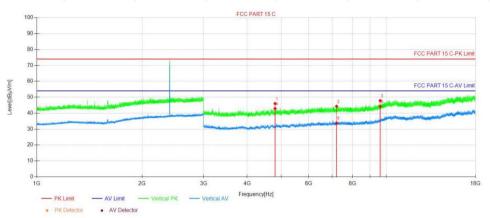
Dongguan DN Testing Co., Ltd.

 Add: No. 1, West Fourth Street, Xingfa South Road, Wusha Community, Chang 'an Town, Dongguan City, Guangdong P.R.China

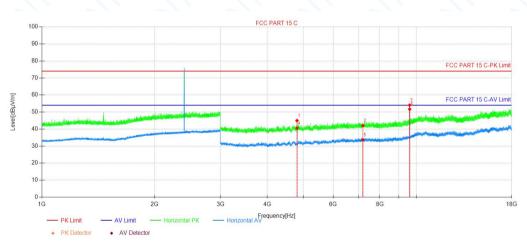
 Web: www.dn-testing.com
 Tel:+86-769-88087383
 E-mail: <a href="mailto:service@dn-testing.com">service@dn-testing.com</a>



# For above 1GHz DH5 2402MHz



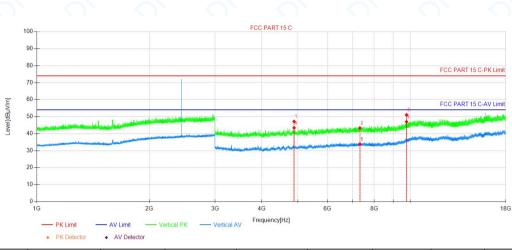
NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Heigh t [cm]	Angle [°]	Remark	Polarity
1	4803.84	50.63	-4.61	46.02	74.00	27.98	150	107	Peak	Vertical
2	7206.21	46.07	-1.76	44.31	74.00	29.69	150	178	Peak	Vertical
3	9607.83	47.00	0.87	47.87	74.00	26.13	150	164	Peak	Vertical
4	4804.59	47.47	-4.61	42.86	54.00	11.14	150	107	AV	Vertical
5	7206.21	35.59	-1.76	33.83	54.00	20.17	150	107	AV	Vertical
6	9608.58	43.42	0.88	44.30	54.00	9.70	150	344	AV	Vertical



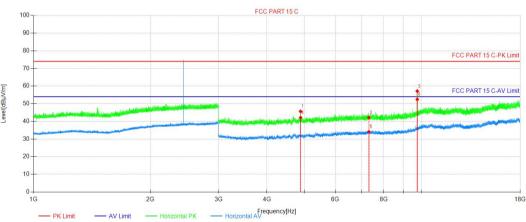
NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark	Polarity
1	4803.84	49.59	-4.61	44.98	74.00	29.02	150	357	Peak	Horizon
2	7206.21	43.76	-1.76	42.00	74.00	32.00	150	126	Peak	Horizon
3	9607.83	53.15	0.87	54.02	74.00	19.98	150	43	Peak	Horizon
4	4804.59	45.22	-4.61	40.61	54.00	13.39	150	357	AV	Horizon
5	7206.21	35.44	-1.76	33.68	54.00	20.32	150	193	AV	Horizon
6	9608.58	50.80	0.88	51.68	54.00	2.32	150	43	AV	Horizon



### DH5 2441MHz



NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark	Polarity
1	4881.84	51.82	-4.72	47.10	74.00	26.90	150	113	Peak	Vertical
2	7323.21	44.76	-1.49	43.27	74.00	30.73	150	360	Peak	Vertical
3	9763.83	49.39	1.64	51.03	74.00	22.97	150	125	Peak	Vertical
4	4882.59	48.09	-4.72	43.37	54.00	10.63	150	98	AV	Vertical
5	7323.21	35.24	-1.49	33.75	54.00	20.25	150	324	AV	Vertical
6	9764.58	45.33	1.64	46.97	54.00	7.03	150	351	AV	Vertical

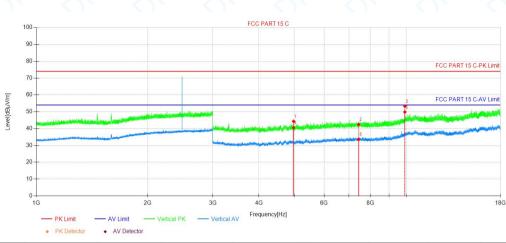


PK Detector	• A	/ Detector
-------------	-----	------------

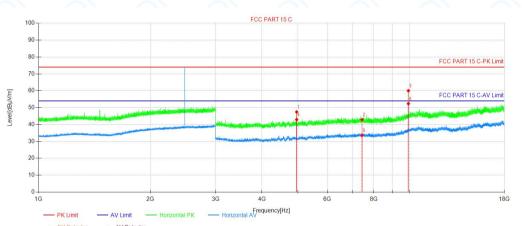
NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark	Polarity
1	4881.84	50.38	-4.72	45.66	74.00	28.34	150	265	Peak	Horizon
2	7323.21	43.61	-1.49	42.12	74.00	31.88	150	196	Peak	Horizon
3	9763.83	55.50	1.64	57.14	74.00	16.86	150	292	Peak	Horizon
4	4882.59	46.84	-4.72	42.12	54.00	11.88	150	251	AV	Horizon
5	7323.21	35.62	-1.49	34.13	54.00	19.87	150	98	AV	Horizon
6	9764.58	50.83	1.64	52.47	54.00	1.53	150	279	AV	Horizon



### DH5 2480MHz



NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark	Polarity
1	4959.84	49.17	-4.86	44.31	74.00	29.69	150	110	Peak	Vertical
2	7440.22	43.78	-1.34	42.44	74.00	31.56	150	69	Peak	Vertical
3	9919.84	51.03	2.26	53.29	74.00	20.71	150	360	Peak	Vertical
4	4960.59	45.36	-4.86	40.50	54.00	13.50	150	96	AV	Vertical
5	7440.22	34.90	-1.34	33.56	54.00	20.44	150	220	AV	Vertical
6	9920.59	47.56	2.27	49.83	54.00	4.17	150	355	AV	Vertical



			<ul> <li>PK Detector</li> </ul>	<ul> <li>Av Detector</li> </ul>							
	NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark	Polarity
	1	4959.84	52.30	-4.86	47.44	74.00	26.56	150	281	Peak	Horizon
	2	7440.22	44.27	-1.34	42.93	74.00	31.07	150	252	Peak	Horizon
	3	9919.84	57.74	2.26	60.00	74.00	14.00	150	281	Peak	Horizon
	4	4960.59	47.80	-4.86	42.94	54.00	11.06	150	266	AV	Horizon
	5	7440.22	34.91	-1.34	33.57	54.00	20.43	150	281	AV	Horizon
	6	9920.59	50.10	2.27	52.37	54.00	1.63	150	281	AV	Horizon
_											



#### Note:

1. The Measurement (Result Level) is calculated by Reading Level adding the Correct Factor(maybe including Ant.Factor and the Cable Factor etc.), The basic equation is as follows:

Result Level= Reading Level + Correct Factor(including Ant.Factor, Cable Factor etc.)

2. The amplitude of 9KHz to 30MHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

3. The amplitude of 18GHz to 25GHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be report.

4. All channels had been pre-test,DH5 is the worst case, only the worst case was reported.



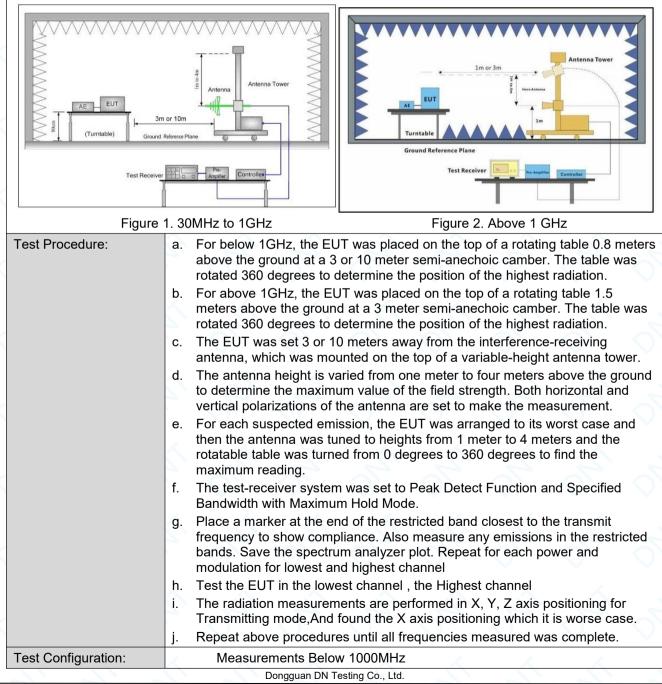
Report No.: DNT2410080005R2362-03649 Date: October 16, 2024

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# 3.10 Restricted bands around fundamental frequency

47 CFR Part 15C Section 1	5.209 and 15.205	(), ()		
ANSI C63.10: 2020 Section	11.12	, ,		
Measurement Distance: 3m	or 10m (Semi-Anechoic C	hamber)		
Frequency	Limit (dBuV/m)	Remark		
30MHz-88MHz	40.0	Quasi-peak		
88MHz-216MHz	43.5	Quasi-peak		
216MHz-960MHz	46.0	Quasi-peak		
960MHz-1GHz	54.0	Quasi-peak		
	54.0	Average Value		
Above IGH2	74.0	Peak Value		
	216MHz-960MHz	216MHz-960MHz         46.0           960MHz-1GHz         54.0           Above 1GHz         54.0		

### Test Setup:



 Add: No. 1, West Fourth Street, Xingfa South Road, Wusha Community, Chang 'an Town, Dongguan City, Guangdong P.R.China

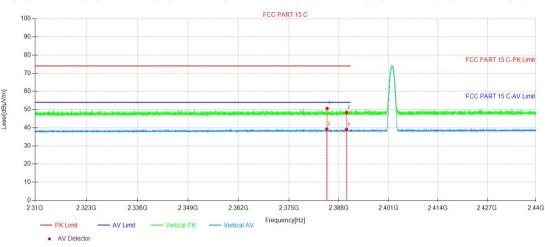
 Web: www.dn-testing.com
 Tel:+86-769-88087383

 E-mail: <a href="mailto:service@dn-testing.com">service@dn-testing.com</a>

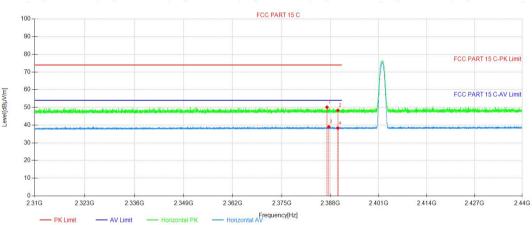


Report No.: DN	T2410080005R2362-03649 Date: October 16, 2024 Page: 30 / 59
	<ul> <li>RBW = 120 kHz</li> <li>VBW = 300 kHz</li> <li>Detector = Peak</li> <li>Trace mode = max hold</li> <li>Peak Measurements Above 1000 MHz</li> </ul>
	<ul> <li>RBW = 1 MHz</li> <li>VBW ≥ 3 MHz</li> <li>Detector = Peak</li> </ul>
	<ul> <li>Sweep time = auto</li> <li>Trace mode = max hold</li> <li>Average Measurements Above 1000MHz</li> <li>RBW = 1 MHz</li> </ul>
	<ul> <li>VBW = 10 Hz, when duty cycle is no less than 98 percent.</li> <li>VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum</li> <li>transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.</li> </ul>
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates. Transmitting mode.
Final Test Mode:	Pretest the EUT Transmitting mode. Through Pre-scan, find the DH5 of data type is the worst case of all modulation type. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 2.9 for details
Test Results:	Pass

## Test Date DH5 2402MHz



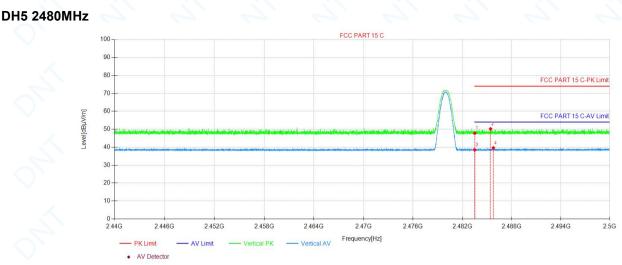
NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	AV Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark	Polarity
1	2384.95	51.42	-0.82	50.60	74.00	23.40	150	102	Peak	Vertical
2	2390.01	49.22	-0.80	48.42	74.00	25.58	150	168	Peak	Vertical
3	2384.84	40.04	-0.82	39.22	54.00	14.78	150	117	AV	Vertical
4	2390.01	39.92	-0.80	39.12	54.00	14.88	150	325	AV	Vertical



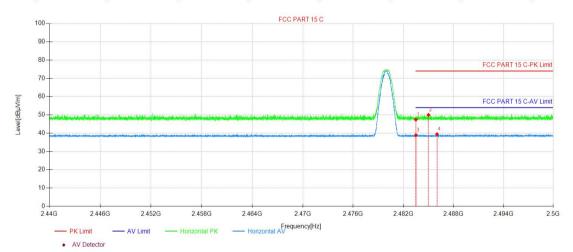
AV Detector

NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	AV Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark	Polarity
1	2387.09	50.91	-0.81	50.10	74.00	23.90	150	205	Peak	Horizon
2	2390.01	49.13	-0.80	48.33	74.00	25.67	150	178	Peak	Horizon
3	2387.59	39.79	-0.80	38.99	54.00	15.01	150	258	AV	Horizon
4	2390.01	39.09	-0.80	38.29	54.00	15.71	150	3	AV	Horizon





NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark	Polarity
1	2483.50	48.10	-0.29	47.81	74.00	26.19	150	138	Peak	Vertical
2	2485.43	50.46	-0.27	50.19	74.00	23.81	150	128	Peak	Vertical
3	2483.50	38.81	-0.29	38.52	54.00	15.48	150	217	AV	Vertical
4	2485.77	39.85	-0.27	39.58	54.00	14.42	150	235	AV	Vertical



NO.	Freq. [MHz]	Reading Level [dBµV]	Correct Factor [dB/m]	Result Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark	Polarity
1	2483.50	47.72	-0.29	47.43	74.00	26.57	150	28	Peak	Horizon
2	2485.01	50.21	-0.27	49.94	74.00	24.06	150	132	Peak	Horizon
3	2483.50	39.17	-0.29	38.88	54.00	15.12	150	70	AV	Horizon
4	2486.03	39.69	-0.27	39.42	54.00	14.58	150	217	AV	Horizon

### Note:

1. The Measurement (Result Level) is calculated by Reading Level adding the Correct Factor(maybe

including Ant.Factor and the Cable Factor etc.), The basic equation is as follows:

Result Level= Reading Level + Correct Factor(including Ant.Factor, Cable Factor etc.

2.All channels had been pre-test, DH5 is the worst case, only the worst case was reported.



Test Requirement:	47 CFR Part 15C Section	n 15.207						
Fest Method:	ANSI C63.10: 2020	7 7						
Test Frequency Range:	150kHz to 30MHz							
Limit:		🔨 📈 Limit	t (dBuV)					
	Frequency range (MHz)	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 Procedure:	<ul> <li>room.</li> <li>2) The EUT was connecting impedance Stabilization impedance. The power of a second LISN 2, which is plane in the same way as multiple socket outlet stristingle LISN provided the 3) The tabletop EUT was ground reference plane. placed on the horizontal</li> <li>4) The test was perform of the EUT shall be 0.4 m vertical ground reference plane. The LIS unit under test and bond mounted on top of the gr between the closest point the EUT and associated In order to find the maxim equipment and all of the factors.</li> </ul>	sturbance voltage test wa ted to AC power source th Network) which provides a ables of all other units of t was bonded to the ground s the LISN 1 for the unit be p was used to connect mu rating of the LISN was no s placed upon a non-meta And for floor-standing arra ground reference plane, ed with a vertical ground r n from the vertical ground r plane was bonded to the N 1 was placed 0.8 m fror ed to a ground reference p ound reference plane. Thi ts of the LISN 1 and the E equipment was at least 0. num emission, the relative interface cables must be o	a S0Ω/50µH + 5Ω linear the EUT were connected reference eing measured. A ultiple power cables to a t exceeded. Illic table 0.8m above the angement, the EUT was eference plane. The rear reference plane. The rear reference plane. The horizontal ground m the boundary of the blane for LISNs s distance was EUT. All other units of 8 m from the LISN 2. positions of					
Test Setup:		nducted measurement.						
Test Setup:	ANSI COS. 10 2013 Off CC		Test Receiver					
Test Setup: Exploratory Test Mode:	Shielding Room		Test Receiver					

# 3.11 AC Power Line Conducted Emissions

 Add: No. 1, West Fourth Street, Xingfa South Road, Wusha Community, Chang 'an Town, Dongguan City, Guangdong P.R.China

 Web: www.dn-testing.com
 Tel:+86-769-88087383
 E-mail: <a href="mailto:service@dn-testing.com">service@dn-testing.com</a>



Date: October 16, 2024

Final Test Mode:	Through Pre-scan, find the the worst case.
Instruments Used:	Refer to section 2.9 for details
Test Results:	NA

Note: The wireless function does not work while the prototype is charging



#### Remark:

- 1. The following Quasi-Peak and Average measurements were performed on the EUT:
- 2. The Measurement (Result Level) is calculated by Reading Level adding the Correct Factor(maybe
- including LISN Factor and the Cable Factor etc.), The basic equation is as follows:
  - Result Level= Reading Level + Correct Factor(including LISN Factor, Cable Factor etc



Date: October 16, 2024

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# 4 Appendix

# Appendix A: 20dB Emission Bandwidth

<b>Test Result</b>	$\mathbf{O}$	$\bigcirc$		$\bigcirc$		$\sim$	$\mathbf{O}$
Test Mode	Antenna	Freq(MHz)	20dB EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
	~	2402	1.041	2401.457	2402.498	🔨	
DH5	Ant1	2441	1.026	2440.463	2441.489		
	$\hat{\mathbf{C}}$	2480	1.014	2479.484	2480.498	-	
		2402	1.305	2401.325	2402.630	<u> </u>	
2DH5	Ant1	2441	1.326	2440.325	2441.651	/	
		2480	1.290	2479.358	2480.648		



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### Test Graphs

Frequency	02:15:28 AMOct 14, 2024 TRACE 1 2 3 4 5 6 TYPE MWWWWW	g Type: RMS		SENSE:PUL		000 GHz		req	ter F
Auto Tun	DET P P P P P	[Hold: 100/100		Trig: Free Ru #Atten: 40 dB	Wide ↔ cLow	PNO: N IFGain			
AutoTun	1kr3 1.041 MHz 0.163 dB	ΔM					Offset 14. f 30.00 d		B/div
Center Fre 2.402000000 GH									
Start Fre 2.400500000 GH	-30.75 dBri		r n	mh	ann	2	_	_	
Stop Fre 2.403500000 GH		- Marine Marine			_	www	ᠰᢛᠰᡗᢆ᠕ᡨ	h	ŝ
CF Ste 300.000 kH Auto Ma	Span 3.000 MHz .200 ms (1001 pts)			100 kHz	#VBW			30 k	s BW
Freq Offs	PUNCTION VALUE	FUNCTION WIDTH	FUNC	31.317 dBm 10.748 dBm 0.163 dB	Hz	2.401 457 G 2.402 003 G 1.041 M	(Δ)	f	N N Δ1
									-
	<u>×</u>		_						

### DH5\_Ant1\_2441

ilent Spectrum Analyzer - Swept SA				
RL RF 50 2 DC	SENSE:PUL	#Aug Type: RMS	02:18:46 AM Oct 14, 2024 TRACE 1 2 3 4 5 6	Frequency
enter Freq 2.44100000	PNO: Wide Trig: Free Ru IFGain:Low #Atten: 40 dB		TYPE MWWWWW DET P P P P P P	
Ref Offset 14.31 dE dB/div Ref 30.00 dBm	3	ΔN	lkr3 1.026 MHz -0.814 dB	Auto Tun
				Center Fre 2.441000000 GH
0.0	2 American	ν	-31.24 øBn	Start Fre 2.439500000 GI
10 10 10			mmm	<b>Stop Fr</b> 2.442500000 G
enter 2.441000 GHz Res BW 30 kHz	#VBW 100 kHz	Sweep 3	Span 3.000 MHz .200 ms (1001 pts)	CF Ste 300.000 k Auto M
1         N         1         f         2.4           2         N         1         f         2.4           3         Δ1         1         f         Δ.4           5         -         -         -           6         -         -         -           7         -         -         -	40 463 GHz 31.434 dBm 40 979 GHz 11.244 dBm 1.026 MHz (Δ) -0.814 dB			Freq Offs
8				

### DH5\_Ant1\_2480

Agilent Spectrum Analyzer - Swe					
RL RF 50 Ω Center Freq 2.48000	0000 GHz PNO: Mide +++ Trig: F	#Avg Type ree Run Avg Hold:	: RMS TRAI	4Oct 14, 2024 E 1 2 3 4 5 6 E MWWWWW	Frequency
Ref Offset 14. 10 dB/div Ref 30.00 d	IFGain:Low #Atten	40 dB	ΔMkr3 1.0	14 MHz 253 dB	Auto Tun
20.0 10.0				;	Center Fre 2.480000000 GH
-10.0		2 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	1	-33.90 aBm	Start Fre 2.478500000 GF
40.0 50.0 60.0			and and a second and a second and a second and a second a		<b>Stop Fre</b> 2.481500000 GH
Center 2.480000 GHz #Res BW 30 kHz	#VBW 100 kł	łz s	Span 3 Sweep 3.200 ms (	.000 MHz 1001 pts)	CF Ste 300.000 kH
Mx9         Mx09         TCD         TC           1         N         f         f           2         N         f         f           3         Δ1         f         (Δ)           4         f         f         (Δ)           6         -         -         -           7         -         -         -           9         -         -         -           10         -         -         -	× 2479 494 GHz 34.126 2.479 958 GHz - 13.902 1.014 MHz (Δ) - 0.28	dBm	CTION WIDTH PUNCTI		Freq Offs 0 F
G			STATUS 🔀 Align N	ow, All required	



Date: October 16, 2024

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Frequency	02:24:02 AMOct 14, 2024 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P P P P P	ALIGN OFF /g Type: RMS g Hold: 100/100	n	SENSE:PU Trig: Free Ri #Atten: 40 di	: Wide ↔	DOOO GH	alyzer - Sw 50 Q 2.40200	RF		RL
Auto Tu	1kr3 1.305 MHz -0.285 dB	Δ١				31 dB	Offset 14 f 30.00 (		3/div	
Center Fr 2.402000000 0										. <b>og</b> 20.0 10.0
Start Fi 2.400500000 G	-31 21 øBn	×∽∽3∆1	~l~~	~^^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	prov.	l				0.00 10.0 20.0 30.0
Stop Fi 2.403500000 G	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Jown				m	ᠺᠬ᠕᠕ᡢᠬ	www	m	10.0 50.0 50.0
CF St 300.000 F Auto	Span 3.000 MHz .200 ms (1001 pts) FUNCTIONWALUE	Sweep 3	FUNCT	100 kHz	#VBV	×		4020 30 k	s BV	Re
Freq Off				-31.507 dBm -11.212 dBm -0.285 dB		2.401 325 2.401 829 1.305	(Δ)	f f f	Ν Ν Δ1	2 3 4 5
										6 7 8 9 10
	×				-		1	-	1	11

### 2DH5\_Ant1\_2441

RL RF 50 Ω DC     Center Freq 2.441000000	I GHz Trig: Free Run	ALIGN OFF 02 #Avg Type: RMS AvglHold: 100/100	27:13 AM Oct 14, 2024 TRACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency
Ref Offset 14.31 dB 10 dB/div Ref 30.00 dBm	IFGain:Low #Atten: 40 dB		ост РРРРРР 3 1.326 MHz -0.219 dB	Auto Tun
				Center Fre 2.441000000 GF
-10.0	John Marine		31.08 oBm	Start Fre 2.439500000 GH
40.0 50.0 60.0			mhunn	<b>Stop Fre</b> 2.442500000 Gł
Center 2.441000 GHz #Res BW 30 kHz			pan 3.000 MHz 1 ms (1001 pts) FUNCTION VALUE	CF Ste 300.000 kH Auto Ma
2 N 1 f 2.44	0.325 GHz 31.416 dBm 0.982 GHz - 11.094 dBm 1.326 MHz (Δ) 0.219 dB		=	Freq Offs 0⊦
10 11 <			×	

#### 2DH5\_Ant1\_2480

enter Fre	RF 50 Ω q 2.48000	PNC	): Wide 中			#Avg Avg F	Type:	RMS 100/100		RACE 1 2 3 TYPE MWM DET P P P	456	Frequency
0 dB/div	Ref Offset 14. Ref 30.00 d	.31 dB	ain:Low	WAtten: 40	40			Δ١	Mkr3 1		IHz	Auto Tun
09 20.0 10.0												Center Fre 2.480000000 GH
20.0			$\sim$	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	may alac	- Marina	200	<b>3</b> ∆1		-38.	TOEM	<b>Start Fre</b> 2.478500000 GH
10.0 10.0 10.0	, wm Whome	hand						burn	n	mar	~~	<b>Stop Fr</b> 2.481500000 GI
enter 2.48 Res BW 30	) kHz		#VBV	/ 100 kHz					3.200 m		pts)	CF Ste 300.000 kl Auto M
X000         Here           1         N         1           2         N         1           3         Δ1         1           4         -         -           5         -         -	f f f (Δ)	× 2.479 358 2.479 826 1.290	GHz GHz MHz (Δ)	-33.939 dE -13.714 dE -0.087	m	NCTION	FUAL	TION WIDTH		CTION VALUE	1 N	Freq Offs 01
6 7 8 9 10												
G				11				1	Is 🔀 Aligr		>	

Dongguan DN Testing Co., Ltd.

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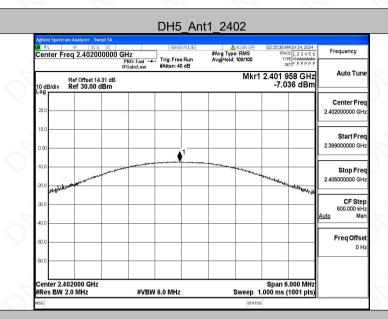
# Appendix B: Maximum conducted output power

Test Result					
Test Mode	Antenna	Freq(MHz)	Conducted Peak Powert[dBm]	Conducted Limit[dBm]	Verdict
1	1	2402	-7.04	≤20.97	PASS
DH5	Ant1	2441	-7.33	≤20.97	PASS
		2480	-9.45	≤20.97	PASS
		2402	-6.80	≤20.97	PASS
2DH5	Ant1	2441	-6.79	≤20.97	PASS
	1	2480	-9.03	≤20.97	PASS



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### **Test Graphs**



#### DH5\_Ant1\_2441

	HZ PNO: Fast ↔ Trig: Free Run FGain:Low #Atten: 40 dB	ALIGN OFF #Avg Type: RMS Avg[Hold: 100/100	02:19:03 AM Oct 14, 2024 TRACE 1 2 3 4 5 6 TYPE M WANNAM DET P P P P P P	Frequency
Ref Offset 14.31 dB 10 dB/div Ref 30.00 dBm		Mkr1	2.441 030 GHz -7.328 dBm	Auto Tun
20.0				Center Fre 2.441000000 GH
0.00	1			Start Fre 2.438000000 GF
-10.0			month and a share for the	Stop Fre 2.444000000 GF
-30.0				CF Ste 600.000 kl <u>Auto</u> Mi
-50.0				Freq Offs 01
-60.0				
Center 2.441000 GHz #Res BW 2.0 MHz	#VBW 6.0 MHz	Sween 1	Span 6.000 MHz .000 ms (1001 pts)	

#### DH5\_Ant1\_2480

enter F	RF 50 Ω req 2.48000	Р	IZ NO: Fast ↔ Sain:Low	]		#Avg Type Avg Hold:	ALIGN OFF 2: RMS 100/100	TRAC	MOct 14, 2024 2E 1 2 3 4 5 6 PE MWWWWWW ET P P P P P P	Freque	ency
0 dB/div	Ref Offset 14 Ref 30.00	.31 dB	Sain:Low	WALLETT. 44			Mkr1		34 GHz 47 dBm	Aut	to Tun
20.0										Cent 2.480000	ter Fre
0.00					1					Sta 2.477000	art Fr 000 G
10.0 20.0	Wooddelaward		and a state of the second	•			and	m water to	-Jenesco William	Ste 2.483000	op Fr 000 G
30.0 40.0									banki		CF St .000 k M
50.0										Free	q Offs 0
60.0											
Center 2.4 Res BW	480000 GHz 2.0 MHz	I	#VBW	6.0 MHz			Sweep 1		.000 MHz 1001 pts)		

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		2DH5_Ar	nt1_2402		
Agilent Spectrum Analyzer RL RF Center Freq 2.40	50 Q DC 2000000 GHz PNO: Fa		ALIGN OFF #Avg Type: RMS Avg Hold: 100/100	02:24:19 AM Oct 14, 2024 TRACE 1 2 3 4 5 TYPE MWWWW DET P P P P P	6 Frequency
10 dB/div Ref 30.0	IFGain:L t 14.31 dB 00 dBm	ow #Atten: 40 dB	Mkr1	2.401 964 GH: -6.800 dBn	z Auto Tur
20.0					Center Fre 2.402000000 GF
0.00		1			Start Fro 2.399000000 GI
20.0 Websternersterkeyterner	have and the second	and in the local state of the s		www.www.www.	Stop Fro 2.405000000 GI
80.0				- 10fM	CF Ste 600.000 ki <u>Auto</u> Mi
50.0					Freq Offs 01
60.0					
Center 2.402000 G #Res BW 2.0 MHz		VBW 6.0 MHz	Sweep 1	Span 6.000 MH: .000 ms (1001 pts	
ISG			STATUS	Align Now, All req	uired

#### 2DH5\_Ant1\_2441

Agrient Spec	trum Analyzer - RF 5	0 Q DC		SENSE:PULSE		ALIGN OFF	02:27:30 M	4Oct 14, 2024	
	Freq 2.441		GHz		#Avg Typ	RMS	TRAC	E123456	Frequency
			PNO: Fast ++- IFGain:Low	Trig: Free Run #Atten: 40 dB	Avg Hold:	100/100	TY/ D8	T P P P P P P	
10 dB/div	Ref Offset Ref 30.0					Mkr1		64 GHz 94 dBm	Auto Tur
									Center Fre
20.0									2.441000000 GH
10.0									Start Fre
0.00	_		_						2.438000000 Gł
-10.0			-		uner to share and any				
-20.0	and the second of the	on the order water					www.workelal/uluk	when half and	Stop Fre 2.444000000 GH
·20.0 Uhread	for the second s							"When the lease	
-30.0									CF Ste 600.000 kł Auto Ma
-40.0									
-50.0									Freq Offs
-60.0									
	.441000 GH	łz	#VBW	6.0 MHz		Sweep 1		.000 MHz 1001 pts)	
MSG							Align N		red.

### 2DH5\_Ant1\_2480

Agilent Spectrum Analyzer									
Center Freq 2.48	50.9 DC		SENSE:F		#Avg Type AvgIHold:		TRAJ	MOct 14, 2024 CE 1 2 3 4 5 6 PE MWWWWW	Frequency
10 dB/div Ref 30.	t 14.31 dB	PNO: Fast 🔸 IFGain:Low	#Atten: 40 (		Arginou.		2.480 2	10 GHz 27 dBm	Auto Tune
20.0									Center Fred 2.480000000 GH:
0.00				<b>▲</b> 1					Start Fre 2.477000000 GH
-10.0	agunterrater and	a) des reise and a second second		<u> </u>	and the second strained	and a feature and a feature of the	ungerlanderskap	and white the	Stop Fre 2.483000000 GH
-30.0								- deally	CF Ste 600.000 k⊢ <u>Auto</u> Ma
50.0									Freq Offse 0 ⊢
-60.0 Center 2.480000 G	Hz							.000 MHz	
#Res BW 2.0 MHz		#VBW	6.0 MHz					(1001 pts) ow, All requi	red

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# Appendix C: Carrier frequency separation

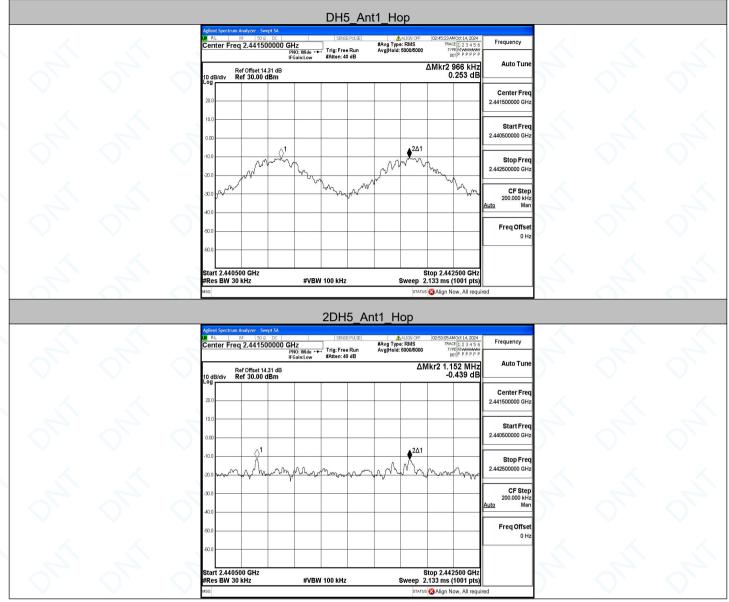
Test	Result

Test Mode	Antenna	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Нор	0.966	≥0.694	PASS
2DH5	Ant1	Нор	1.152	≥0.884	PASS



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### **Test Graphs**





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Appendix D: Dwell Time

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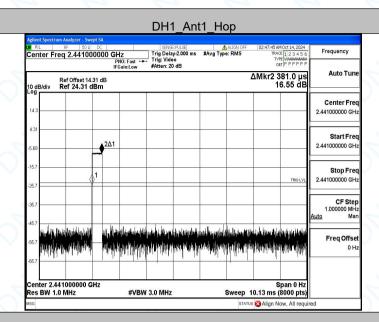
#### **Test Result**

Test Mode	Antenna	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Нор	0.381	320	0.122	≤0.4	PASS
DH3	Ant1	Нор	1.637	160	0.262	≤0.4	PASS
DH5	Ant1	🗸 Нор 💙	2.887	106.67	0.308	≤0.4	PASS
2DH1	Ant1	Нор	0.391	320	0.125	≤0.4	PASS
2DH3	Ant1	Нор	1.643	160	0.263	≤0.4	PASS
2DH5	Ant1	Нор	2.891	106.67	0.308	≤0.4	PASS



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### **Test Graphs**



#### DH3\_Ant1\_Hop

Center Fr	RF 50 Ω DC eq 2.44100000	0 GHz PN0: Fast	Trig Dela	#ULSE #-2.000 ms o	#Avg Type	ALIGN OFF	TRAC	MOct 14, 2024 E 1 2 3 4 5 6 PE WWWWWW	Frequency
10 dB/div	Ref Offset 14.31 d Ref 24.31 dBm	IFGain:Low	#Atten: 20			2	Mkr2 1.	.637 ms 5.44 dB	Auto Tur
14.3									Center Fr 2.441000000 G
4.31		<u></u> 2∆ <sup>.</sup>							Start Fre 2.441000000 G
-15.7								TRIG LVL	Stop Fr 2.441000000 G
-36.7					-				CF Sto 1.000000 M Auto M
-45.7 -55.7	li na kon liikud Ula liikud liikud	rite Pite	adadadada milanta	nahihada Anti-Noya	lander Million	un an	n di badana Partapi par	tang kepula Na Provinsi	Freq Offs 0
-65.7	41000000 GHz		- J	1 r		1-1-1-	s	ipan 0 Hz	
Res BW 1.	0 MHz	#VBW	3.0 MHz		5	Sweep 1		8000 pts)	

#### DH5\_Ant1\_Hop

RL RF 50Ω DC Center Freq 2.44100000		SENSE:PULSE	ALIGN OFF	02:46:55 AM Oct 14,	
		Trig Delay-2.000 ms Trig: Video	#Avg Type: RMS	TRACE 1 2 3 TYPE WWW DET P P P	456 Frequency
Ref Offset 14.31 d 10 dB/div Ref 24.31 dBm	IFGain:Low	#Atten: 20 dB	Ĺ	Mkr2 2.887 14.69	ms Auto Tun
14.3					Center Fre 2.441000000 GH
5.69		2Δ1			Start Fre 2.441000000 GH
5.7 Ø <sup>1</sup>				TR	Stop Fre 2.441000000 GH
15.7					CF Ste 1.000000 MH Auto Ma
<sup>56.7</sup> Marthan Marthala Marthan Marthan		Alenderine be Ministration be	dan mangalaka mangana kangana Mangana pangana kangana	aliyaniki dila Miyani	Freq Offse
66.7 Center 2.441000000 GHz		.0 MHz		Span ( 10.13 ms (8000	

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