World Standardization Certification & Testing Group (Shenzhen) Co., ltd.

WSET W5CT





WSCT

# **TEST REPORT**

AWSET"

WSET

FCC ID: 2AXYP-OPN-672

**Product: Open-Ear Bluetooth Headphones** 

Model No.: OPN-672

WSLT

**Trade Mark: oraimo** 

Report No.: WSCT-ANAB-R&E241000050A-LE

Issued Date: 17 October 2024

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Issued for:

WSET

ORAIMO TECHNOLOGY LIMITED FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET FOTAN NT HONGKONG

W5CT

Issued By:

WSCI

World Standardization Certification & Testing Group(Shenzhen) Co.,Ltd. Building A-B, Baoli'an Industrial Park, No. 58 and 60, Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen, Guangdong, Chinam & Too

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#### **Test Certification** 1.

Open-Ear Bluetooth Headphones Product:

Model No.:

**OPN-672** 

**Trade Mark:** 

oraimo

**Applicant:** 

**ORAIMO TECHNOLOGY LIMITED** 

FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25

SHAN MEI STREET FOTAN NT HONGKONG

Manufacturer:

**ORAIMO TECHNOLOGY LIMITED** 

WSCT

FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25

SHAN MEI STREET FOTAN NT HONGKONG

Date of receipt:

11 September

**Date of Test:** 

12 September 2024 to 16 October 2024

**Applicable** Standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247

KDB 558074 D01 DTS Meas Guidance v04

The above equipment has been tested by World Standardization Certification & Group(Shenzhen)Co., Ltd. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

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Tested By:

Checked By:

(Qin Shuiquan)

(Wang Xiang)

Approved By:

(Li Huaibi)

Date:

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#### **Test Result Summary** 2.

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$\overline{}$	Requirement	CFR 47 Section	Result	(WSCT <sup>®</sup> )
X	Antenna requirement	§15.203/§15.247 (c)	PASS	
W5CT	AC Power Line Conducted Emission	W5 ET §15,207 W5 ET	N/AW5 ET	
	Maximum conducted output power ws/		PASS W 5 C 1	WSET
	6dB Emission Bandwidth	§15.247 (a)(2) §2.1049	PASS	
AWS ET	Power Spectral Density	§15.247 (e)	PASS	$\overline{}$
	Band Edge	1§5.247(d) §2.1051, §2.1057	PASS WS CT	W5 ET
X	Spurious Emission	§15.205/§15.209 §2.1053, §2.1057	PASS	
<b>W5</b> [T]	Note: W55	WSET WSET	WSET	

1. PASS: Test item meets the requirement.

2. Fail: Test item does not meet the requirement.

3. N/A: Test case does not apply to the test object.

4. The test result judgment is decided by the limit of test standard.

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### **EUT Description** 3.

	Product Name:	Open-Ear Bluetooth Headphones	V5 CT
$\times$	Model :	OPN-672	
	Trade Mark:	oraimo	
W5 C1	Software version:	V0.3.2	-/
	Hardware version:	V03-00	X
	Operation Frequency:	1M/2M:2402MHz~2480MHz	VS ET
	Channel Separation:	2MHz	<i>F178</i>
X	Number of Channel:	40	
W5CT	Modulation Technology:	GFSK WSET WSET WSET	$\overline{}$
	Antenna Type:	FPC Antenna	X
	Antenna Gain:	2.05dBi	V5 ET
X	Operating Voltage:	Li-ion Battery : 591222 Rated Voltage: 3.8V Rated Capacity: 150mAh 0.57Wh	
WS CT	Remark:	N/A. WSET WSET WSET	/
	Note: 1. N/A stands for no ag	oplicable.	

2. Antenna gain provided by the customer.

	WSET	WSET	WSET	WSET	AW5LT N
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	WSET	WSET	WSET	WSET	WSET
WSC	$\langle \hspace{0.1cm} \rangle$				ET

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**Operation Frequency each of channel** 

	Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
	0	2402MHz	10	2422MHz	20	2442MHz	30	2462MHz
	1	2404MHz	11	2424MHz	21	2444MHz	31	2464MHz
<b>7</b> °		WELT		WELT		WELT		WELL
	8	2418MHz	18	2438MHz	28	2458MHz	38	2478MHz
	9	2420MHz	19	2440MHz	29	2460MHz	39	2480MHz
	Remark:	1M Channal	በ 10 & 3	0 have heer	n tested	2M Channal	1 10 8 '	38 have been

19 & 39 have been tested. 2M Channel 1, tested.

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#### **Genera Information** 4.

### 4.1. Test environment and mode

Operating Environment:	
Temperature:	25.0 °C
Humidity: W5 E/	56 % RH W5L/
Atmospheric Pressure:	1010 mbar
Test Mode:	<u>range</u>
Engineering mode:	Keep the EUT in continuous transmitting by select channel and modulations(The value of duty cycle is 98.46%) with
W5CT W5CT	Fully-charged battery.

The sample was placed (0.1m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

## **Description of Support Units**

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	<u> </u>	/	1	/

### Note:

- 1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
- 3. For conducted measurements (Output Power, 6dB Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

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## 5. Facilities and Accreditations

### 5.1. Facilities

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All measurement facilities used to collect the measurement data are located at World Standardization Certification & Testing Group(Shenzhen) Co.,Ltd.
Building A-B,Baoli'an Industrial Park,No.58 and 60,Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen, Guangdong, China.

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

### 5.2. ACCREDITATIONS

**CNAS - Registration Number: L3732** 

China National Accreditation Service for Conformity Assessment, The test firm Registration Number: L3732

FCC - Designation Number: CN1303

World Standardization Certification & Testing Group(Shenzhen) CO., LTD. has been W5L accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Designation Number: CN1303.

ANAB - Certificate Number: AT-3951

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (ANAB). Certification Number: AT-3951

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## 5.3. Measurement Uncertainty

The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

	No.	Item	MU	
W5 CT°	1	Power Spectral Density W5.17	±3.2dB /5 [ ]	
	2	Duty Cycle and Tx-Sequence and Tx-Gap	±1%	X
	3 <sub>W5</sub> C	Medium Utilisation Factor	±1.3%	W5C
abla	4	Occupied Channel Bandwidth	±2.4%	
	5	Transmitter Unwanted Emission in the out-of Band	±1.3%	
W5CT	6	Transmitter Unwanted Emissions in the Spurious Domain	±2.5%	
	7	Receiver Spurious Emissions	±2.5%	X
	8 <sub>W5</sub> [	Conducted Emission Test WSET	±3.2dB	W5C
	9	RF power, conducted	±0.16dB	
	10	Spurious emissions, conducted	±0.21dB	
AWS CT	11	All emissions, radiated(<1GHz)	±4.7dB	
	12	All emissions, radiated(>1GHz)	±4.7dB	X
	13/5/	Temperature WSCT WSCT WS	±0.5°C	W5 C
	14	Humidity	±2.0%	

W5CT°	W5 ET	W5ET"	W5 ET®	W5 CT °

	W5CT°	W5CT°	WSCT	W5CT <sup>®</sup>	AWE CT"
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## **5.4.MEASUREMENT INSTRUMENTS**

	N-HIME/ROSKEMERT INTO INCOME INTO						
	NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	Calibration Date	Calibration Due.	/5 E
$\langle$	Test software		EZ-EMC	CON-03A	-	X-	
_	Test software		MTS8310	WELT	- /-	WE CT	
7	EMI Test Receiver	R&S	ESCI	100005	11/05/2023	11/04/2024	
	LISN	AFJ	LS16	16010222119	11/05/2023	11/04/2024	X
	LISN(EUT)	Mestec	AN3016	04/10040	11/05/2023	11/04/2024	15 E
<	Universal Radio Communication Tester	R&S	CMU 200	1100.0008.02	11/05/2023	11/04/2024	
9	Coaxial cable	Megalon	LMR400	N/A	11/05/2023	11/04/2024	
	GPIB cable	Megalon	GPIB	N/A	11/05/2023	11/04/2024	
	Spectrum Analyzer	R&S	FSU	100114	11/05/2023	11/04/2024	X
	Pre Amplifier	H.B.CT	HP8447E	2945A02715	11/05/2023	11/04/2024	V5 E
	Pre-Amplifier	CDSI	PAP-1G18-38		11/05/2023	11/04/2024	
\	Bi-log Antenna	SCHWARZBECK	VULB9168	01488	7/29/2024	7/28/2025	
5	9*6*6 Anechoic	<i>ET</i>	VSET -	W5 ET®	11/05/2023	11/04/2024	
	Horn Antenna	COMPLIANCE ENGINEERING	CE18000		11/05/2023	11/04/2024	X
	Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-631	11/05/2023	11/04/2024	100
	Cable	TIME MICROWAVE	LMR-400	N-TYPE04	11/05/2023	11/04/2024	V 5 E
$\langle$	System-Controller	ccs	N/A	N/A	N.C.R	N.C.R	
	Turn Table	ccs	N/A	N/A	N.C.R	N.C.R	
	Antenna Tower	ccs	N/A	N/A	N.C.R	N.C.R	
	RF cable	Murata	MXHQ87WA300 0	-	11/05/2023	11/04/2024	X
	Loop Antenna	EMCO	6502 W 5 /	7 00042960	11/05/2023	11/04/2024	V5 E
1	Horn Antenna	SCHWARZBECK	BBHA 9170	1123	11/05/2023	11/04/2024	
1	Power meter	Anritsu	ML2487A	6K00003613	11/05/2023	11/04/2024	
[	Power sensor	67 Anritsu	MX248XD	W5CT*	11/05/2023	11/04/2024	
	Spectrum Analyzer	Keysight	N9010B	MY60241089	11/05/2023	11/04/2024	X

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## 6. Test Results and Measurement Data

## 6.1. Antenna requirement

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Standard requirement:

FCC Part15 C 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(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

E.U.T Antenna:

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The Bluetooth antenna is a FPC Antenna. it meets the standards, and the best case gain of the antenna is 2.05dBi.

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# 6.2. Conducted Emission

	6.2.1. Test Specification 5	T" WSET" WSET"	W5CT°
X	Test Requirement:	FCC Part15 C Section 15.207	
W5CT°	Test Method:	ANSI C63.10:2014 W5 [7]	
	Frequency Range:	150 kHz to 30 MHz	$\mathbf{X}$
	Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto	
WSET	Limits:	Frequency range (MHz) Quasi-peak Average 0.15-0.5 66 to 56* 56 to 46* 0.5-5 56 46	W5 ET
		5-30 60 50	
	WSET WSE	Reference Plane  40cm LISN	WSET
WS ET	Test Setup:	E.U.T Adapter EMI Receiver	
	W5ET W5E	Remark E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m	WSET
$\times$	Test Mode:	Charging + Transmitting Mode	
WS CT	WSET	1. The E.U.T is connected to an adapter through a line impedance stabilization network (L.I.S.N.). This	
	$\times$	provides a 50ohm/50uH coupling impedance for the measuring equipment.  2. The peripheral devices are also connected to the main	X
X	Test Procedure:	power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).	
W5ET <sup>®</sup>	WSET WSE	3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2014 on conducted measurement.	X
	Test Result:	N/A Cathrostion	& Testing Gro

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#### **EUT OPERATING CONDITIONS** 6.2.2.

The EUT is working in the Normal link mode. All modes have been tested and normal link mode is W.S.C. worst.

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 60 Hz and 240 VAC, 50 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (120 VAC, 60 Hz) shown here.

<b>Test da</b> Note: E	ata UT powered by battery	/ not applicable	5.57	WSET	WSET
WSET	W5 CT	WSCT	WSCT	WSET	
	SET WS			WSCT	WSET
WSET	WSET	WSET	WSET	WSET	
	SET WS			WSET	W5 CT
WSET	WSET	WSCT	WSET	WSET	
	SET WS			WSET	WSET
WSET	WSET	WSLT	WSET	WSET	
	5 CT W.5				16 10
				Catthean	n& Testing Gro

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## 6.3. Conducted Output Power

## 6.3.1. Test Specification 5

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X	Test Requirement:	FCC Part15 C Section 15.247 (b)(3)	
NS CT	Test Method:	KDB558074 W5 CT W5 CT	
	Limit:	30dBm	$\mathbf{X}$
$\overline{}$	Test Setup:	Sea dayon Anabaya	WSET
$/ \setminus$		Spectrum Analyzer	
NS CT	Test Mode:	Refer to item 4.1	
WS CT	Test Procedure:	<ol> <li>The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v04.</li> <li>Set spectrum analyzer as following:         <ul> <li>a) Set the RBW ≥ DTS bandwidth.</li> <li>b) Set VBW ≥ 3 x RBW.</li> <li>c) Set span ≥ 3 x RBW</li> <li>d) Sweep time = auto couple.</li> </ul> </li> </ol>	WSCT
		e) Detector = peak. f) Trace mode = max hold. g) Allow trace to fully stabilize. h) Use peak marker function to determine the peak amplitude level.	WSET
X	Test Result:	PASS	

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11-19			V5 CT°		

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## 6.3.2. Test Data

		BLE 1N	1	
	Test channel	Maximum conducted output power (dBm)	Limit (dBm)	Result
	Lowest	6.20	30.00	PASS
	Middle	7.81	30.00	PASS
	Highest	6.58	30.00	PASS
,				

7	BLE 2M				
	Test channel	Maximum Conducted Output Power (dBm)	Limit (dBm)	Result	
0	Lowest	4.84 5 <i>[ T</i> ]	30.00	PASS	
	Middle	5.58	30.00	PASS	
	Highest	5.70	30.00	PASS	

Test plots as follows:

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WSCT WSCT WSCT WSCT

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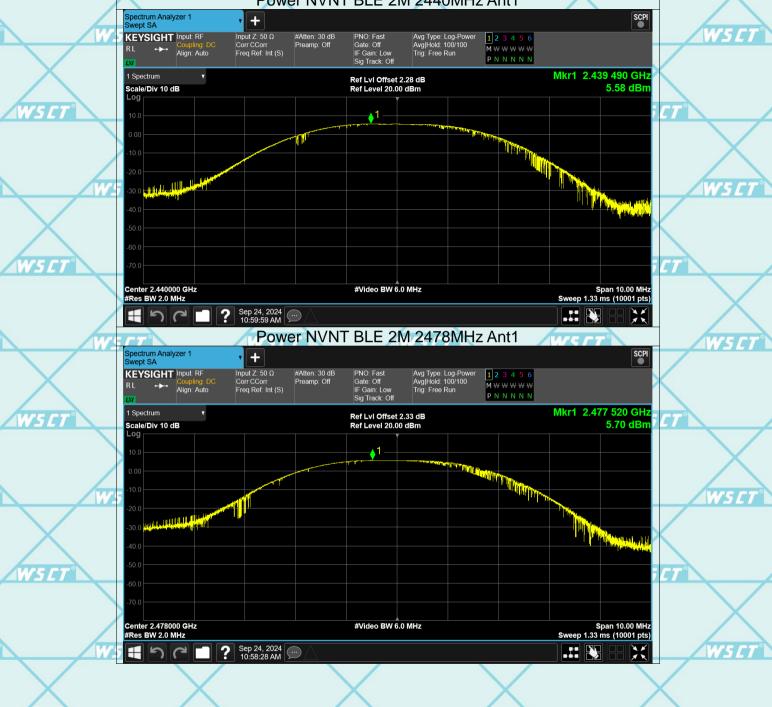
Power NIVNT RI E 1M 2480MHz Apt1













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# 6.4. Emission Bandwidth

6.4.1. Test S	pecification	

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Test Requirement:	FCC Part15 C Section 15.247 (a)(2)					
Test Method:	KDB558074 W5 [T] W5 [T]					
Limit:	>500kHz					
Test Setup:	WSE WSE					
	Spectrum Analyzer EUT					
Test Mode:	Refer to item 4.1					
Test Procedure:	<ol> <li>The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v04.</li> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6dB bandwidth must be greater than 500 kHz.</li> <li>Measure and record the results in the test report.</li> </ol>					
Test Result:	PASS					
WSET	VSLT WSCT WSCT WSC					

W5 CT W5E7 W5E1 W5 CT W5 CT

W5 ET W5 ET W5 CT W5 CT W5 C7

W5E1

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W5 C

Report No.: WSCT-ANAB-R&E240700034A-LE

W5CT°

## 6.4.2. Test data

BL	E	1	M

W5 CI

WS C

-		MAPPET <sup>®</sup>		
-	Test channel	6dB Emission E	andwidth (MHz)	)
	rest chamilei	BT LE mode	Limit	Result
0	Lowest	0.6247	>500k	WSCT
	Middle	0.6204	>500k	PASS
	Highest	0.6157	>500k	

BLE 2M

Test channel	6dB Emission E	Bandwidth (MHz	)
rest charmer	BT LE mode	Limit	Result
Lowest	1.049	>500k	W5CT"
Middle	1.070	>500k	PASS
Highest	1.055	>500k	

Test plots as follows:

/	W5 CT	W5ET*	W5CT°	WSCT	W5/T°

W5 CT	WSCT	W5 ET	W5CT°	W5 ET

WSCT WSCT WSCT WSCT WSCT
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			\	

	VS CT	WSIT	WELT	WELT'	WELT
- A					

W5CT°		MAC CT	AMERICA
	W5CT°	WSCT	W5 CT

WSET WSET WSET

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World Standardization Certification & Testing Group (Shenzhen) Co., ltd. ILAC-MRA WS CI Report No.: WSCT-ANAB-R&E240700034A-LE -6dB Bandwidth NVNT BLE 1M 2480MHz Ant1 Spectrum Analyzer of Occupied BW + Center Freq: 2.480000000 GHz Avg|Hold: 100/100 Radio Std: None Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) KEYSIGHT Input: RF Trig: Free Run Gate: Off #IF Gain: Low Atten: 30 dB Preamp: Off Mkr3 2.480317000 GHz 1 Graph Ref LvI Offset 7.33 dB Ref Value 27.33 dBm 4.75 dBm Scale/Div 10.0 dB δ2 **3**3



WSCT WSCT WSCT WSCT

WSET WSET WSET

WSET WSET WSET

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ANSI National Accreditation Board
A C C R E D I T E D

SIGNIC 17925
TESTING LABORATORY
Certificate Number: AT-3951

Report No.: WSCT-ANAB-R&E240700034A-LE

## 6.5. Power Spectral Density

## 6.5.1. Test Specification

	WELT WEL	T" WELT" WELT" W	SET°
	Test Requirement:	FCC Part15 C Section 15.247 (e)	
	Test Method:	KDB558074	
W5ET°	Limit:	The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.	$\overline{}$
	Test Setup:		S C T
X		Spectrum Analyzer EUT	
	Test Mode:	Refer to item 4.1	
WSET	Test Procedure:	<ul> <li>was compensated to the results for each measurement.</li> <li>3. Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW): 3 kHz ≤ RBW ≤ 100 kHz. Video bandwidth VBW ≥ 3 x RBW. In order to make an accurate measurement, set the span to 1.5</li> </ul>	5 <i>CT</i>
WSET		the peak marker function to determine the maximum power level.  6. Measure and record the results in the test report.	
	Test Result:	PASS	X

$\times$	$\times$		$\times$	$\times$
WSET	WSET	WSET*	W5CT°	W5 CT°

WSET WSET W

WSCT

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W5 C7



W5 CT



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## 6.5.2. Test data

W5 CI

	Test channel	Power Spectral Density (dBm/3kHz)				
1	rest charmer	BLE 1M	Limit	Result		
	Lowest	-8.92	8 dBm/3kHz	X		
	Middle	7.23	8 dBm/3kHz	PASS		
	Highest	-8.56	8 dBm/3kHz			
		X		X .		

	Test channel	Power Spectral Density (dBm/3kHz)			
/	rest channel	BLE 2M	Limit	Result	
	Lowest	-4.66	8 dBm/3kHz		
6	Middle	-4.68	8 dBm/3kHz	PASS	
	Highest	-4.03	8 dBm/3kHz		

	W5CT"	WSET	W5 CT	WSCT WSCT	
AWRET	WEE	West	WEET	WE CT.	

W5 ET	WSET	WS ET"	WS CT"	W5 ET

WE FE	W5CT°	W5CT°	W5CT	
WS CT				

X	X	×	×	X	

WSCT WSCT WSCT WSCT	W5CT <sup>®</sup>

W5CT <sup>®</sup>	W5CT <sup>®</sup>	W5 ET	W5CT <sup>°</sup>

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W5CT° World Standardization Certification & Testing Group (Shenzhen) Co..ltd. ILAC-MRA WSCI Report No.: WSCT-ANAB-R&E240700034A-LE PSD NVNT BLE 1M 2480MHz Ant1 **+** Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) KEYSIGHT Input: RF PNO: Best Wide Gate: Off IF Gain: Low Avg Type: Log-Powe Avg|Hold: 100/100 Trig: Free Run Mkr1 2.480 005 544 GHz Ref LvI Offset 2.33 dB Ref Level 20.00 dBm -8.56 dBm Scale/Div 10 dB #Video BW 10 kHz Center 2.4800000 GHz #Res BW 3.0 kHz Span 924.0 kHz Sweep 97.5 ms (1001 pts) Sep 24, 2024 10:37:24 AM 1 5 6 \*\* PSD NVNT BLE 2M 2404MHz Ant1 Spectrum Analyzer 1 Swept SA + Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) KEYSIGHT Input: RF PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off Avg Type: Log-Power Avg|Hold: 100/100 Trig: Free Run PNNNN Mkr1 2.403 960 7 GHz Ref Lvl Offset 2.26 dB Ref Level 20.00 dBm -4.66 dBm Scale/Div 10 dB #Video BW 10 kHz Center 2.4040000 GHz #Res BW 3.0 kHz Span 1.574 MHz Sweep 166 ms (1001 pts) ? Nov 13, 2024 .... ation& Test ADD: Building A-B, Baoli'an Industrial Park, No. 58 and 60, Tangto 深圳世标检测认证股份有限公司 TEL: 0086-755-26996192 26996053 26996144 Page 27

World Standardization Certification & Testing Group (Shenzhen) Co., ltd. ILAC-MRA W5 CI Report No.: WSCT-ANAB-R&E240700034A-LE PSD NVNT BLE 2M 2440MHz Ant1 **+** Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) KEYSIGHT Input: RF PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off Avg Type: Log-Powe Avg|Hold: 100/100 Trig: Free Run Mkr1 2.439 993 6 GHz 1 Spectrum Ref LvI Offset 2.28 dB Ref Level 20.00 dBm -4.68 dBm Scale/Div 10 dB Center 2.4400000 GHz #Res BW 3.0 kHz #Video BW 10 kHz Span 1.605 MHz Sweep 169 ms (1001 pts) 1 5 6 PSD NVNT BLE 2M 2478MHz Ant1 Spectrum Analyzer 1 Swept SA + Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) KEYSIGHT Input: RF PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off Avg Type: Log-Power Avg|Hold: 100/100 Trig: Free Run Mkr1 2.477 958 9 GHz Ref LvI Offset 2.33 dB Ref Level 20.00 dBm -4.03 dBm Scale/Div 10 dB #Video BW 10 kHz Center 2.4780000 GHz #Res BW 3.0 kHz Span 1.583 MHz Sweep 167 ms (1001 pts) ? Nov 13, 2024 (...) ation& Test ADD: Building A-B.Baoli'an Industrial Park, No. 58 and 60, Tangtou Av. 深圳世标检测认证股份有限公司 TEL: 0086-755-26996192 26996053 26996144 FAX: 0086-755-86376605 Page 28



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Report No.: WSCT-ANAB-R&E240700034A-LE

# 6.6. Conducted Band Edge and Spurious Emission Measurement

	6.6.1. Test Specification	T WSET WSET	WSET
$\overline{}$	Test Requirement:	FCC Part15 C Section 15.247 (d)	
	Test Method:	KDB558074	
WSET	Limit:	In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).	WSET
WS ET	Test Setup:	Spectrum Analyzer EUT	WSET
	Test Mode:	Refer to item 4.1	
WSET	Test Procedure:	<ol> <li>The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.</li> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).</li> <li>Measure and record the results in the test report.</li> <li>The RF fundamental frequency should be excluded against the limit line in the operating frequency band.</li> </ol>	WSCT
	Test Result:	PASS	X



W5CT® World Standardization Certification & Testing Group (Shenzhen) Co., ltd. IIac-MRA Report No.: WSCT-ANAB-R&E240700034A-LE W5C7 Band Edge NVNT BLE 1M 2480MHz Ant1 Ref **+** Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) KEYSIGHT Input: RF PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off Avg Type: Log-Pow Avg|Hold: 100/100 Trig: Free Run Mkr1 2.479 768 GHz 1 Spectrum Ref LvI Offset 7.33 dB Ref Level 20.00 dBm 11.26 dBm Scale/Div 10 dB homont #Video BW 300 kHz Center 2.480000 GHz #Res BW 100 kHz Span 8.000 MHz Sweep 1.00 ms (1001 pts) Sep 24, 2024 10:35:03 AM Band Edge NVNT BLE 1M 2480MHz Ant1 Emission Spectrum Analyzer 1 Swept SA + Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) KEYSIGHT Input: RF PNO: Fast Gate: Off IF Gain: Low Sig Track: Off Avg Type: Log-Power Avg|Hold: 100/100 Trig: Free Run #Atten: 30 dB Preamp: Off PNNNNN Mkr1 2.480 0 GHz Ref LvI Offset 7.33 dB Ref Level 20.00 dBm 11.35 dBm Scale/Div 10 dB Start 2.47600 GHz #Res BW 100 kHz Stop 2.57600 GHz Sweep 9.60 ms (1001 pts) #Video BW 300 kHz Function Width Function Value 11.35 dBm -53.20 dBm -55.15 dBm -51.67 dBm 2.500 0 GHz 2.484 9 GHz ? Sep 24, 2024 .... 10:35:06 AM ation& Tes ADD: Building A-B, Baoli'an Industrial Park, No.58 and 60, Tangtou Ave 深圳世标检测认证股份有限公司 TEL: 0086-755-26996192 26996053 26996144 FAX: 0086-755-86376605 Page 31

W5 [T] World Standardization Certification & Testing Group (Shenzhen) Co.,ltd. IIac-MRA WS CI Report No.: WSCT-ANAB-R&E240700034A-LE Band Edge NVNT BLE 2M 2404MHz Ant1 Ref **+** Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) KEYSIGHT Input: RF PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off Avg Type: Log-Powe Avg|Hold: 100/100 Trig: Free Run Mkr1 2.404 008 GHz 1 Spectrum Ref LvI Offset 5.26 dB Ref Level 20.00 dBm 4.04 dBm Scale/Div 10 dB Center 2.404000 GHz #Res BW 100 kHz #Video BW 300 kHz Span 8.000 MHz Sweep 1.00 ms (1001 pts) Sep 24, 2024 10:46:06 AM Band Edge NVNT BLE 2M 2404MHz Ant1 Emission Spectrum Analyzer 1 Swept SA + Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) KEYSIGHT Input: RF PNO: Fast Gate: Off IF Gain: Low Sig Track: Off Avg Type: Log-Power Avg|Hold: 100/100 Trig: Free Run #Atten: 30 dB Preamp: Off PNNNNN Mkr1 2.403 5 GHz Ref LvI Offset 5.26 dB Ref Level 20.00 dBm 3.96 dBm Scale/Div 10 dB Start 2.30800 GHz #Res BW 100 kHz Stop 2.40800 GHz Sweep 9.60 ms (1001 pts) #Video BW 300 kHz Function Width Function Value -55.32 dBm -53.52 dBm 2.400 0 GHz 2.351 1 GHz ? Sep 24, 2024 .... 10:46:09 AM ation& Test ADD: Building A-B, Baoli'an Industrial Park, No. 58 and 60, Tangtou Avenu 深圳世标检测认证股份有限公司 TEL: 0086-755-26996192 26996053 26996144 FAX: 0086-755-86376605 Page 32

W5CT® World Standardization Certification & Testing Group (Shenzhen) Co., ltd. IIac-MRA Report No.: WSCT-ANAB-R&E240700034A-LE W5C7 Band Edge NVNT BLE 2M 2478MHz Ant1 Ref **+** Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) KEYSIGHT Input: RF PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off Avg Type: Log-Powe Avg|Hold: 100/100 Trig: Free Run Mkr1 2.478 016 GHz 1 Spectrum Ref LvI Offset 5.33 dB Ref Level 20.00 dBm 9.35 dBm Scale/Div 10 dB JAN NAM VAN Mayrana Center 2.478000 GHz #Res BW 100 kHz #Video BW 300 kHz Span 8.000 MHz Sweep 1.00 ms (1001 pts) Sep 24, 2024 10:47:32 AM Band Edge NVNT BLE 2M 2478MHz Ant1 Emission Spectrum Analyzer 1 Swept SA + Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) KEYSIGHT Input: RF PNO: Fast Gate: Off IF Gain: Low Sig Track: Off Avg Type: Log-Power Avg|Hold: 100/100 Trig: Free Run #Atten: 30 dB Preamp: Off PNNNNN Mkr1 2.478 0 GHz Ref LvI Offset 5.33 dB Ref Level 20.00 dBm 9.40 dBm Scale/Div 10 dB Start 2.47400 GHz #Res BW 100 kHz Stop 2.57400 GHz Sweep 9.60 ms (1001 pts) #Video BW 300 kHz Function Width Function Value 2.500 0 GHz 2.498 1 GHz ? Sep 24, 2024 .... 10:47:35 AM ation& Tes ADD: Building A-B, Baoli'an Industrial Park, No. 58 and 60, Tangtou Ave 深圳世标检测认证股份有限公司 TEL: 0086-755-26996192 26996053 26996144 FAX: 0086-755-86376605 Page 33



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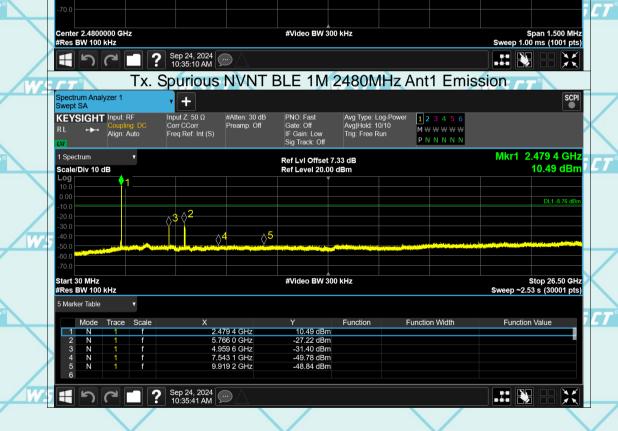
Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref







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SET WSET WSET

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W5CT® World Standardization Certification & Testing Group (Shenzhen) Co., ltd. ILAC-MRA WS CI Report No.: WSCT-ANAB-R&E240700034A-LE Tx. Spurious NVNT BLE 2M 2404MHz Ant1 Ref + Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) KEYSIGHT Input: RF PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off Avg Type: Log-Powe Avg|Hold: 100/100 Trig: Free Run Mkr1 2.404 009 GHz 1 Spectrum Ref LvI Offset 5.26 dB Ref Level 20.00 dBm 4.01 dBm Scale/Div 10 dB



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#Video BW 300 kHz Center 2.478000 GHz #Res BW 100 kHz Span 3.000 MHz Sweep 1.00 ms (1001 pts) Sep 24, 2024 10:47:39 AM # 5 C Tx. Spurious NVNT BLE 2M 2478MHz Ant1 Emission Spectrum Analyzer 1 Swept SA + Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) KEYSIGHT Input: RF PNO: Fast Gate: Off IF Gain: Low Sig Track: Off Avg Type: Log-Power Avg|Hold: 10/10 Trig: Free Run #Atten: 30 dB Preamp: Off **M** ₩ ₩ ₩ ₩ PNNNNN Mkr1 2.478 5 GHz Ref LvI Offset 5.33 dB Ref Level 20.00 dBm 7.11 dBm Scale/Div 10 dB δ5 **∆**4 Start 30 MHz #Res BW 100 kHz Stop 26.50 GHz Sweep ~2.53 s (30001 pts) #Video BW 300 kHz Function Width Function Value 2.478 5 GHz 4.955 2 GHz 4.955 2 GHz 7.294 3 GHz 9.912 1 GHz 7.11 dBm -33.92 dBm -33.92 dBm -51.61 dBm -51.93 dBm Sep 24, 2024 10:48:10 AM 

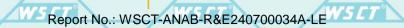
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# 6.7. Radiated Spurious Emission Measurement

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671	Test S	pecifica	ation	
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	6.7.1. Test Specification	7	W5C1		W5	ET°		W5CT"
$\times$	Test Requirement:	FCC Part15	C Section	n 15.209	<u> </u>		X	
WSET	Test Method:	ANSI C63.10	):2014	WSC			WSCT	
	Frequency Range:	9 kHz to 25 (	GHz	7117		/		
	Measurement Distance:	3 m	X	C.				X
	Antenna Polarization:	Horizontal &	Vertical		W5	CT.		W5CT"
	Operation mode:	Refer to item	4.1					
		Frequency	Detector		VBW		temark	
W5 CT	WS CT"	9kHz- 150kHz 150kHz-	Quasi-pea Quasi-pea		1kHz 30kHz		peak Value peak Value	
	Receiver Setup:	30MHz	Quasi-pea	IK SKI IZ	30KH2	Quasi	peak value	
		30MHz-1GHz	Quasi-pea		300KHz		-peak Value	X
		Above 1GHz	Peak Peak	1MHz 1MHz	3MHz 10Hz		ak Value age Value	
	WSCT WSC		Feak	TIVITZ	1002	Aver	age value	WSCT"
		Frequen	CV	Field Stre	-		surement	
		0.009-0.4		(microvolts 2400/F(l		Distan	ce (meters) 300	
W5 CT	WSET	0.490-1.7		24000/F(			305 [7]	
		1.705-3		30			30	
	$\times$	30-88		100			3	X
	1 :40:4.	88-216		150			3	
	Limit: WSCI	216-96 Above 9		200 500		[7]	3	W5CT°
$\overline{}$		7,5000		000				
X	X	X	Fio	ld Ctronath	Measure	ment	X	
		Frequency		eld Strength rovolts/meter)	Distan		Detector	
W5CT°	WSET	WSCT	(11101		(mete	rs)	WSCT"	
		Above 1GHz	2	500 5000	3		Average Peak	
	$\rightarrow$		$\overline{}$				1 oan	X
	WS CT WS CT	For radiated	emission	s below 30	)MHz	CT		WSCT
		Di	stance = 3m			Comput	er	
			<b></b>		_			
W5ET	WSET	1	1(	( ) г	Pre	-Amplifier		
	Test setup: W5 C7	EUT		$\forall$				
	$\times$	T	□ Turn table					X
					_ 니	Receiver		
	WSCT WSCT		Grou	nd Plane	L		acation	& Testing
		30MHz to 10	3Hz				3000	CT®
								She

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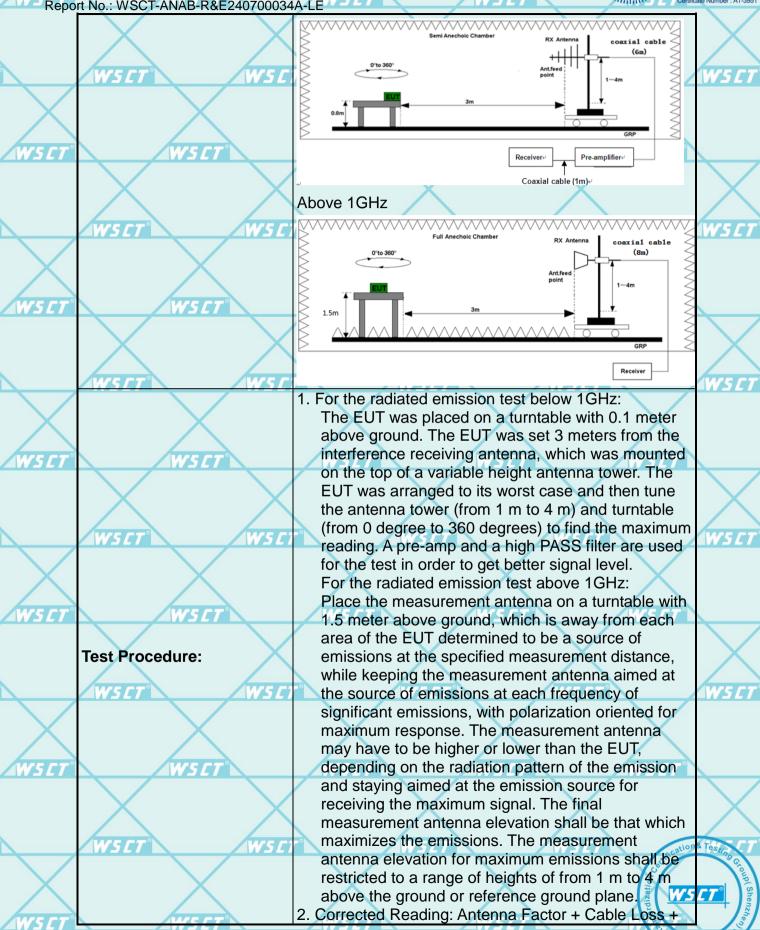






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W5*CT* 1





Repo	rt No.: WSCT-ANAB-R&E240700034	A-I F	ate Number : AT-3951
πορο	X	Read Level - Preamp Factor = Level 3. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB	X
	WSET WSE	lower than the applicable limit, the peak emission	W5CT"
WSET	W5 CT	level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.  4. Use the following spectrum analyzer settings: 15 [7]	
	X	(1) Span shall wide enough to fully capture the emission being measured;	X
	WSET WSET	(2) Set RBW=100 kHz for f < 1 GHz; VBW ≥RBW; Sweep = auto; Detector function = peak; Trace =	WSET
WSLT	W5 ET°	max hold; (3) Set RBW = 1 MHz, VBW= 3MHz for f 1 GHz for peak measurement. For average measurement: VBW = 10 Hz, when	
		duty cycle is no less than 98 percent. VBW ≥ 1/T,	
	WSET* WSE	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	WS LT
		power control level for the tested mode of operation.	
	Test mode:	Refer to section 4.1 for details	
W5CT°	Test results: V5 [7]	PASS 5 CT W5 CT W5 CT	

Note 1: The symbol of "--" in the table which means not application.

For the test data above 1 GHz, According the ANSI C63.10-2013, where limits are specified for both average 15 L Note 2: and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Note 3: The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

Note 4: The EUT is working in the Normal link mode below 1 GHz. All modes have been tested and normal link mode is worst.

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TO.. WOOT AWAD REEZ-070000-77 EE

W5CT"

#### 6.7.2. Test Data

Please refer to following diagram for individual

W5 E1 **Below 1GHz** Horizontal: dBuV/m 87.0 77 67 FCC Part15 RE-Class B\_30-1000MHz 57 Margin -6 dB 47 37 27 2 7 -3 -13 -23 (MHz) 1000.000 60.00 300.00

	No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1	59.2325	36.19	-20.38	15.81	40.00	-24.19	QP
	2	85.3353	36.04	-23.91	12.13	40.00	-27.87	QP
X	3	156.5264	36.18	-19.50	16.68	43.50	-26.82	QP
5	4	399.0302	35.38	-17.64	17.74	46.00	-28.26	QP
	5	624.8041	35.65	-13.15	22.50	46.00	-23.50	QP
	6 *	831.1284	48.78	-10.55	38.23	46.00	-7.77	QP

WSET WSET WSET WSET

WSLI WSLI WSLI

WSCT WSCT WSCT WSCT WSCT

WSCT WSCT WSCT WSCT

WSET WSET WSET

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Vertical:

WS CT



1000.000



WSCI

dBuV/m 87.0 77 67 FCC Part15 RE-Class B\_30-1000MHz 57 Margin -6 dB 47 37 27 17 7 -3 -13 -23 -33 <u>|</u> 30.000

300.00

WSLT

×	No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
7	1	46.2996	36.11	-19.01	17.10	40.00	-22.90	QP	
	2	86.5408	34.96	-23.87	11.09	40.00	-28.91	QP	
	3	152.8650	35.04	-19.55	15.49	43.50	-28.01	QP	
	4	292.0583	35.25	-20.53	14.72	46.00	-31.28	QP	
	5	529.8691	35.64	-14.94	20.70	46.00	-25.30	QP	۲
×	6 *	871.0371	36.38	-9.99	26.39	46.00	-19.61	QP	

(MHz)

Note1:

Freq. = Emission frequency in MHz

Reading level (dBµV) = Receiver reading

Corr. Factor (dB) = Antenna factor + Cable loss - Amplifier factor.

Measurement ( $dB\mu V$ ) = Reading level ( $dB\mu V$ ) + Corr. Factor (dB)

Limit  $(dB\mu V)$  = Limit stated in standard

Margin (dB) = Measurement (dB $\mu$ V) – Limits (dB $\mu$ V)

60.00

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Report No.: WSCT-ANAB-R&E240700034A-LE

T WSC1

## **Above 1GHz**

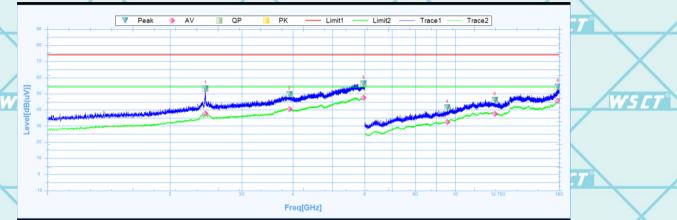
Note 1: The marked spikes near 2400 MHz with circle should be ignored because they are Fundamental signal.

Note 2: The spurious above 18G is noise only, do not show on the report.

Note 3 BLE 1M and 2M both tested the report and only recorded the worst-case scenario 1M:

Low channel: 2402MHz

Horizontal:



	Suspu	ited Data Lis	it								
N	NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
	1	2438.7500	53.21	7.7	45.51	74	-20.79	96.6	Horizontal	PK	Pass
	1	2438.7500	37.72	7.7	30.02	54	-16.28	96.6	Horizontal	AV	Pass
	2	3925.6250	49.68	11.91	37.77	74	-24.32	250.8	Horizontal	PK	Pass
	2	3925.6250	40.33	11.91	28.42	54	-13.67	250.8	Horizontal	AV	Pass
	3	5958.1250	56.35	21.95	34.4	74	-17.65	231.7	Horizontal	PK	Pass
	3	5958.1250	47.36	21.95	25.41	54	-6.64	231.7	Horizontal	AV	Pass
- 2	4	9567.0000	41.54	37.8	3.74	74	-32.46	359.8	Horizontal	PK	Pass
	4	9567.0000	32.32	37.8	-5.48	54	-21.68	359.8	Horizontal	AV	Pass
	5	12504.0000	46.04	38.75	7.29	74	-27.96	360.1	Horizontal	PK	Pass
V	5	12504.0000	37.42	38.75	-1.33	54	-16.58	360.1	Horizontal	AV	Pass
	6	17860.5000	54.21	45.57	8.64	74	-19.79	54.2	Horizontal	PK	Pass
	6	17860.5000	45.76	45.57	0.19	54	-8.24	54.2	Horizontal	AV	Pass

W5CT°	WSET	WSL	7° W5	ET° W	S C T°
	WSET	W5 ET°	W5 ET*	W5ET*	WS CT"
WSET	WSCT	WSL	7° W5	CT W	SCT <sup>®</sup>

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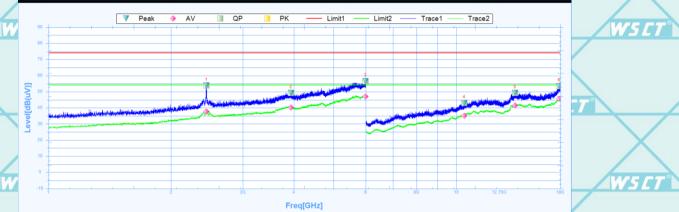
W5 CT



Report No.: WSCT-ANAB-R&E240700034A-LEW5 [7]

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Vertical:



W5 CT°

W5CT°

W5 C1

W5 CT

	Suspu	ited Data Lis	it								
_	NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
	1	2438.7500	53.81	7.7	46.11	74	-20.19	358.2	Vertical	PK	Pass
,	1	2438.7500	37.69	7.7	29.99	54	-16.31	358.2	Vertical	AV	Pass
_	2	3933.7500	49.22	11.91	37.31	74	-24.78	-0.1	Vertical	PK	Pass
	2	3933.7500	40.22	11.91	28.31	54	-13.78	-0.1	Vertical	AV	Pass
	3	5990.0000	56.59	21.61	34.98	74	-17.41	234	Vertical	PK	Pass
	3	5990.0000	47.1	21.61	25.49	54	-6.9	234	Vertical	AV	Pass
	4	10458.0000	43.04	38.74	4.3	74	-30.96	165.5	Vertical	PK	Pass
	4	10458.0000	35.09	38.74	-3.65	54	-18.91	165.5	Vertical	AV	Pass
	5	13932.0000	49.25	41.32	7.93	74	-24.75	200.2	Vertical	PK	Pass
	5	13932.0000	41.52	41.32	0.2	54	-12.48	200.2	Vertical	AV	Pass
1	6	17875.5000	53.38	45.67	7.71	74	-20.62	14.2	Vertical	PK	Pass
	6	17875.5000	45.62	45.67	-0.05	54	-8.38	14.2	Vertical	AV	Pass

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Report No.: WSCT-ANAB-R&E240700034A-LE

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Middle channel: 2440MHz

Horizontal:

Peak AV OP PK Limit1 Limit2 Trace1 Trace2

WS ET

	Suspu	ited Data Lis	it								
	NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
/	1	2440.0000	46.42	7.71	38.71	74	-27.58	144.3	Horizontal	PK	Pass
7	1	2440.0000	37.28	7.71	29.57	54	-16.72	144.3	Horizontal	AV	Pass
A	2	3505.0000	57.13	9.67	47.46	74	-16.87	127.5	Horizontal	PK	Pass
	2	3505.0000	37.39	9.67	27.72	54	-16.61	127.5	Horizontal	AV	Pass
	3	5931.8750	56.72	21.97	34.75	74	-17.28	6.2	Horizontal	PK	Pass
	3	5931.8750	47.7	21.97	25.73	54	-6.3	6.2	Horizontal	AV	Pass
	4	9534.0000	39.55	37.77	1.78	74	-34.45	1.3	Horizontal	PK	Pass
	4	9534.0000	32.6	37.77	-5.17	54	-21.4	1.3	Horizontal	AV	Pass
	5	13630.5000	50.01	40.54	9.47	74	-23.99	125.9	Horizontal	PK	Pass
	5	13630.5000	40.85	40.54	0.31	54	-13.15	125.9	Horizontal	AV	Pass
	6	17977.5000	53.75	46.35	7.4	74	-20.25	357.5	Horizontal	PK	Pass
	6	17977.5000	46.57	46.35	0.22	54	-7.43	357.5	Horizontal	AV	Pass
77		(0)		100					100		

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W5 CT



Report No.: WSCT-ANAB-R&E240700034A-LE

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W5 CT

	Suspu	ited Data Lis	ST.									7
	NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict	Ź
	1	2434.3750	47.98	7.69	40.29	74	-26.02	161.1	Vertical	PK	Pass	
/	1	2434.3750	36.9	7.69	29.21	54	-17.1	161.1	Vertical	AV	Pass	
,	2	3401.8750	60.75	9.35	51.4	74	-13.25	359.4	Vertical	PK	Pass	
A	2	3401.8750	37.03	9.35	27.68	54	-16.97	359.4	Vertical	AV	Pass	
	3	5743.1250	71.86	21.16	50.7	74	-2.14	0	Vertical	PK	Pass	/
	3	5743.1250	47.16	21.16	26	54	-6.84	0	Vertical	AV	Pass	
	4	10581.0000	42.6	38.91	3.69	74	-31.4	9.3	Vertical	PK	Pass	
	4	10581.0000	36.26	38.91	-2.65	54	-17.74	9.3	Vertical	AV	Pass	
	5	13345.5000	45.85	39.8	6.05	74	-28.15	9.3	Vertical	PK	Pass	Ż
(	5	13345.5000	38.04	39.8	-1.76	54	-15.96	9.3	Vertical	AV	Pass	
	6	17952.0000	53.24	46.18	7.06	74	-20.76	279	Vertical	PK	Pass	
	6	17952.0000	46.28	46.18	0.1	54	-7.72	279	Vertical	AV	Pass	

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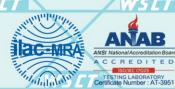
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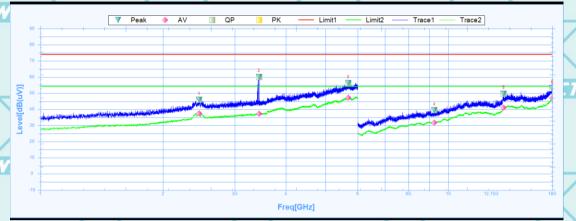


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W5 CT

High channel: 2480MHz

Horizontal:



Susputed Data List Reading Factor Level Limit Margin Deg Polarity Verdict [dB(uV)] [dB(uV)] [dB] [dB] [dB] [°] 2448.7500 45.86 7.74 38.12 183.4 PK Pass 74 -28.14 Horizontal 2448.7500 37.44 7.74 29.7 54 -16.56 183.4 Horizontal Pass 3435.6250 60.14 50.65 74 -13.86 360.1 Horizontal Pass 3435.6250 37.36 9.49 27.87 54 -16.64 360.1 Horizontal ΑV Pass 5685.0000 56.31 21.21 35.1 74 -17.69 292.2 Pass Horizontal 5685.0000 47.2 21.21 25.99 54 -6.8 292.2 Horizontal ΑV Pass 9250.5000 39.54 37.58 1.96 74 -34.46 39.1 Horizontal Pass 4 9250.5000 31.72 37.58 -5.86 54 -22.28 39.1 ΑV Pass 5 13672.5000 49.6 40.65 8.95 74 351.8 Pass Horizontal 13672.5000 40.94 40.65 0.29 54 -13.06 351.8 Horizontal ΑV Pass 17998.5000 52.99 46.49 6.5 74 -21.01 83.4 Pass Horizontal 17998.5000 46.91 46.49 0.42 54 -7.09 83.4 Horizontal

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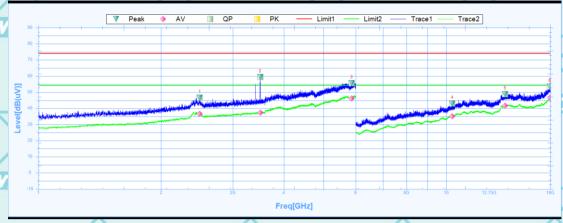


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### Vertical:



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	ted Data Lis	^-								
١٥.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
	2486.8750	46.5	7.86	38.64	74	-27.5	135.5	Vertical	PK	Pass
	2486.8750	36.72	7.86	28.86	54	-17.28	135.5	Vertical	AV	Pass
	3498.7500	59.32	9.65	49.67	74	-14.68	307.7	Vertical	PK	Pass
	3498.7500	37.3	9.65	27.65	54	-16.7	307.7	Vertical	AV	Pass
	5868.7500	55.64	21.19	34.45	74	-18.36	344.7	Vertical	PK	Pass
	5868.7500	46.05	21.19	24.86	54	-7.95	344.7	Vertical	AV	Pass
	10351.5000	42.92	38.59	4.33	74	-31.08	30.9	Vertical	PK	Pass
	10351.5000	35.02	38.59	-3.57	54	-18.98	30.9	Vertical	AV	Pass
	13945.5000	48.84	41.36	7.48	74	-25.16	176.7	Vertical	PK	Pass
	13945.5000	41.64	41.36	0.28	54	-12.36	176.7	Vertical	AV	Pass
	17968.5000	53.43	46.29	7.14	74	-20.57	236.5	Vertical	PK	Pass
	17968.5000	46.49	46.29	0.2	54	-7.51	236.5	Vertical	AV	Pass
	40.	2486.8750 2486.8750 3498.7500 3498.7500 5868.7500 5868.7500 10351.5000 10351.5000 13945.5000 17968.5000	2486.8750 46.5 2486.8750 36.72 3498.7500 59.32 3498.7500 37.3 5868.7500 55.64 5868.7500 46.05 10351.5000 42.92 10351.5000 35.02 13945.5000 48.84 13945.5000 41.64 17968.5000 53.43	IMAZ         [dB(uV)]         [dB]           2486.8750         46.5         7.86           2486.8750         36.72         7.86           3498.7500         59.32         9.65           3498.7500         37.3         9.65           5868.7500         55.64         21.19           5868.7500         46.05         21.19           10351.5000         42.92         38.59           13945.5000         48.84         41.36           13945.5000         41.64         41.36           17968.5000         53.43         46.29	IMEZ         [dB(uV)]         [dB]         [dB(uV)]           2486.8750         46.5         7.86         38.64           2486.8750         36.72         7.86         28.86           3498.7500         59.32         9.65         49.67           3498.7500         37.3         9.65         27.65           5868.7500         55.64         21.19         34.45           5868.7500         46.05         21.19         24.86           10351.5000         42.92         38.59         4.33           10351.5000         35.02         38.59         -3.57           13945.5000         48.84         41.36         7.48           13945.5000         41.64         41.36         0.28           17968.5000         53.43         46.29         7.14	IMAZ         [dB(uV)]         [dB]         [dB(uV)]         [dB]           2486.8750         46.5         7.86         38.64         74           2486.8750         36.72         7.86         28.86         54           3498.7500         59.32         9.65         49.67         74           3498.7500         37.3         9.65         27.65         54           5868.7500         55.64         21.19         34.45         74           5868.7500         46.05         21.19         24.86         54           10351.5000         42.92         38.59         4.33         74           13945.5000         48.84         41.36         7.48         74           13945.5000         41.64         41.36         0.28         54           17968.5000         53.43         46.29         7.14         74	AO.         [MHz]         [dB(uV)]         [dB]         [dB(uV)]         [dB]         [dB]           2486.8750         46.5         7.86         38.64         74         -27.5           2486.8750         36.72         7.86         28.86         54         -17.28           3498.7500         59.32         9.65         49.67         74         -14.68           3498.7500         37.3         9.65         27.65         54         -16.7           5868.7500         55.64         21.19         34.45         74         -18.36           5868.7500         46.05         21.19         24.86         54         -7.95           10351.5000         42.92         38.59         4.33         74         -31.08           10351.5000         35.02         38.59         -3.57         54         -18.98           13945.5000         48.84         41.36         7.48         74         -25.16           13945.5000         53.43         46.29         7.14         74         -20.57	MEZ         [dB(uV)]         [dB]         [dB(uV)]         [dB]         [dB]         [dB]         [c]           2486.8750         46.5         7.86         38.64         74         -27.5         135.5           2486.8750         36.72         7.86         28.86         54         -17.28         135.5           3498.7500         59.32         9.65         49.67         74         -14.68         307.7           3498.7500         37.3         9.65         27.65         54         -16.7         307.7           5868.7500         55.64         21.19         34.45         74         -18.36         344.7           5868.7500         46.05         21.19         24.86         54         -7.95         344.7           10361.5000         42.92         38.59         4.33         74         -31.08         30.9           10361.5000         35.02         38.59         -3.57         54         -18.98         30.9           13945.5000         48.84         41.36         7.48         74         -25.16         176.7           17968.5000         53.43         46.29         7.14         74         -20.57         236.5	Columbia   Columbia	Table   Column   Co

#### Note:

- 1. All emissions not reported were more than 20dB below the specified limit or in the noise floor.
- 2. Emission Level= Reading Level+Probe Factor +Cable Loss.
- 3. Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 4. EUT has been tested in unfolded states, and the report only reflects data in the unfolded state (worst-case scenario)

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