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# TEST REPORT

WSCT

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WSET

FCC ID: 2AXYP-OBS-382

AWSET

**Product: Portable Wireless Speaker** 

Model No.: OBS-382

WSIT

VSLI

Trade Mark: oraimo

Report No.: WSCT-A2LA-R&E240700033A-BT

Issued Date: 22 August 2024

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Issued for:

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

WSFT

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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 City, Guangdong Province, China

TEL: +86-755-26996192

FAX: +86-755-86376605

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IEC:0086-755-26990192 20990053 20990

AX:0086-755-86376605

-mail: fengbing.wang@wsct-cert.com Http://www.wsct-ce

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W5 C	WSCT WS	WS	CT WS	ET
	X	X	X	



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### **Test Certification**

Portable Wireless Speaker Product:

Model No.:

**OBS-382** 

oraimo **Trade Mark:** 

Applicant: **ORAIMO TECHNOLOGY LIMITED** 

FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE

19-25 SHAN MEI STREET FOTAN NT HONGKONG

ORAIMO TECHNOLOGY LIMITED Manufacturer:

FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE

19-25 SHAN MEI STREET FOTAN NT HONGKONG

**Date of Test:** 31 July 2024 to 22 August 2024

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

The above equipment has been tested by World Standardization Certification & Testing 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, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

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Checked By:

(Wang Xiang) (Chen Xu)

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Approved By:

(Li Huaibi)

Date: 22

Tested By:

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# 2. Test Result Summary

West of the same o		1000000
Requirement	CFR 47 Section	Result
Antenna Requirement	§15.203/§15.247 (c)	PASS
AC Power Line Conducted Emission	\\ \text{\sqrt} \\ \sqrt	NA NA
Conducted Peak Output Power	§15.247 (b)(1) §2.1046	W5 PASS
20dB Occupied Bandwidth	§15.247 (a)(1) §2.1049	PASS
Carrier Frequencies Separation	§15.247 (a)(1)	PASS
Hopping Channel Number	§15.247 (a)(1)	PASS
Dwell Time	§15.247 (a)(1)	PASS
Radiated Emission	§15.205/§15.209 §2.1053, §2.1057	PASS, 517
Band Edge	§15.247(d) §2.1051, §2.1057	PASS

### Note:

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- 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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Testing Group( Shenzhen) Co.,Ltd

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# 3. EUT Description

_			
	Product Name:	Portable Wireless Speaker W577	V5 ET
$\times$	Model :	OBS-382	
WSET	Trade Mark:	oraimo	
ZUFIL	Operation Frequency:	2402MHz~2480MHz	
	Channel Separation:	1MHz	
	Number of Channel:	797 WSET WSET	V5 ET
$\times$	Modulation Type:	GFSK, π/4-DQPSK, 8-DPSK	
WSET	Modulation Technology:	FHSS WSET WSET WSET	
	Antenna Type:	PCB Antenna	$\times$
	Antenna Gain:	1.63dBi	V5 ET
WSET	Operating Voltage	Li-ion Battery: 18650 Voltage: 3.7V Rated Capacity: 1800mAh Limited Charge Voltage: 4.2V	
	Remark:	N/A.	

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WS					VSET
WSCT	WSET	WSET	WSET	WSCT	

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Operation Frequency each of channel for GFSK, π/4-DQPSK, 8DPSK

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
/						/***	
M05 L7	2402MHz	20	2422MHz	40	2442MHz	60	2462MHz
1	2403MHz	21	2423MHz	41	2443MHz	61	2463MHz
10	2412MHz	30	2432MHz	50	2452MHz	70	2472MHz
11	2413MHz	31	2433MHz	51	2453MHz	71	2473MHz
X	•••	$\times$	•••		•••	$\sim$	
18	2420MHz	38	2440MHz	58	2460MHz	78	2480MHz
M19 <i>ET</i>	2421MHz	39 7	2441MHz	59	2461MHz	W5E	7
Damaada	Chara al O	0.070		41 4 0			DOIC

Remark: Channel 0, 39 &78 have been tested for GESK π/4-DQPSK 8DPSK

	modulation mod	nei 0, 39 &78 hav de.	e been tested for	GFSK, π/4-DQI	75K, 8DPSK	
WSET	W	SET	WSET	WSLT	WSL	
	X	X			X	X
	WSET	WSET	WS	CT	WSET	WSET
WSET		SET	WSCT	WSET	WSI	
	WSET	WSET	W.5		WSET	WSET
WSET		557	WSCT	WSET	WS	
	WSET	WSCT	WS	57	WSET	WSET
WSET		5.57	WSCT	WSET	WS	
	WSET	WSCT	WS		WSET	ocationa Testa
WSET		SET	WSCT	WSET	Gardization Con.	WSCT Group (Shenzhen)
/		60 Tangtou Avenue, Shiyan Street				PHOM # PINOS

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

### 4.1. Test environment and mode

Operating Environment:	
Temperature:	25.0 °C
Humidity:	56 % RH
Atmospheric Pressure:	1010 mbar
Test Mode:	

Engineering mode: Keep the EUT in continuous transmitting by select channel and modulations with Fully-charged battery

The sample was placed 0.8m & 1.5m for the measurement below & 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.

E	quipment	Model No.	Serial No.	FCC ID	Trade Name
	Adapter	XCU32	1	1	X /

#### 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, 20dB Occupied Bandwidth, Carrier Frequencies Separation, Hopping Channel Number, Dwell Time, 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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#### **Facilities and Accreditations** 5.

### 5.1. Facilities

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 City, Guangdong Province, 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

ANAB - Certificate Number: AT-3951

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

	WSET	WSET	WSET	WSET	WSET
WS	$\langle \hspace{0.1cm} \rangle$	$\langle \ \rangle$			
	WSCT	WSET	WSET	WSCT	WSCT
WS	$\langle \ \ \rangle$	$\langle \ \rangle$		$\langle \ \rangle$	TIT I
	WSCI	WSET	WSGT	WSCT	WSIT
WS	$\langle \ \ \ \rangle$	$\langle \hspace{0.1cm} \rangle$			TIT I
	WSGT	WSCT	WSET	$\times$	$\times$
WS	$\langle \hspace{0.1cm} \rangle$	$\langle \hspace{0.1cm} \rangle$		As collegion	WSET Shear

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### 5.3. Measurement Uncertainty

The reported uncertainty of measurement  $y \pm U$ , 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 %.

WSET	No.	Item	MU	
	1	Conducted Emission Test	±3.2dB	X
	2	RF power, conducted	±0.16dB	
	3	Spurious emissions, conducted	±0.21dB	WELL
X	4	All emissions, radiated(<1GHz)	±4.7dB	
WSET	5	All emissions, radiated(>1GHz)	±4.7dB/5/7	
	6	Temperature	±0.5°C	X
	7	Humidity	±2.0%	we i

WSET	WSET	WSCT	WSCT	WSI	
WS			BUT	WSET	WSGT
WSET	WSET	WSCT	WSET	WSI	7
WS	LT WS	CT W	BIT	WSET	WSET
WSCT	WSET	WSET	WSET	WSI	
WS			SU	X	cations Tosting Co
X	X	X	X	8	WS CT

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# **5.4. MEASUREMENT INSTRUMENTS**

OI-II MEXIODITEMENT INSTROMENTS							
	NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	Calibration Date	Calibration Due.	75
(	Test software		EZ-EMC	CON-03A	-	X	
7	Test software	-	MTS8310	WSIT	- /	VS FT	
	EMI Test Receiver	R&S	ESCI	100005	11/05/2023	11/04/2024	
	LISN	AFJ	LS16	16010222119	11/05/2023	11/04/2024	
	LISN(EUT)	Mestec	AN3016	04/10040	11/05/2023	11/04/2024	5
<	Universal Radio Communication Tester	R&S	CMU 200	1100.0008.02	11/05/2023	11/04/2024	
7	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	
	Pre Amplifier	H.P.CT	HP8447E 5 /	2945A02715	11/05/2023	11/04/2024	15
	Pre-Amplifier	CDSI	PAP-1G18-38	-	11/05/2023	11/04/2024	
1	Bi-log Antenna	SCHWARZBECK	VULB9168	01488	11/05/2023	11/04/2024	
7	9*6*6 Anechoic	<i>ET Y</i>	YSET L	W.S ET	11/05/2023	11/04/2024	
	Horn Antenna	COMPLIANCE ENGINEERING	CE18000		11/05/2023	11/04/2024	$\rangle$
	Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-631	11/05/2023	11/04/2024	75
,	Cable	TIME MICROWAVE	LMR-400	N-TYPE04	11/05/2023	11/04/2024	
	System-Controller	ccs	N/A	N/A	N.C.R	N.C.R	
4	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	
	Loop Antenna	EMCO	6502 154	00042960	11/05/2023	11/04/2024	75
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	
4	Power sensor	Anritsu	MX248XD	WSI	11/05/2023	11/04/2024	
	Spectrum Analyzer	Keysight	N9010B	MY60241089	11/05/2023	11/04/2024	>
						-	

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#### Test Results and Measurement Data 6.

### 6.1. Antenna requirement

WSCT

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. 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:

The Bluetooth antenna is a PCB Antenna, it meets the standards, and the best case gain of the antenna is 1.63dBi.

Please refer to the attached 'Internal Photo' for the antenna location

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#### **Conducted Emission** 6.2.

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_	6.2.1. Test Specification	T WSET	WSET
	Test Requirement:	FCC Part15 C Section 15.207	$\sim$
7	Test Method: 5 [7]	ANSI C63.10:2014 W5/	WSET
	Frequency Range:	150 kHz to 30 MHz	$\times$
	Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sv	veep time=auto
7	Limits:	0.15-0.5 66 t 0.5-5	Limit (dBuV) i-peak Average to 56* 56 to 46* 56 46 60 50
		Reference Plane	
7	WSET WSET Test Setup: WSET	40cm 80cm  E.U.T AC power  Test table/Insulation plane	Filter — AC power
7	WSET WSE	Remark: E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m	W5E)
/	Test Mode:	Refer to item 4.1	
7	WSET WSE	provides a 50ohm/50uH co measuring equipment. 2. The peripheral devices are a	network (L.I.S.N.). This upling impedance for the also connected to the main
77	Test Procedure:	power through a LISN that coupling impedance with 50 refer to the block diagram photographs).	ohm termination. (Please n of the test setup and
	WSET WSE	<ol> <li>Both sides of A.C. line are conducted interference. In o emission, the relative positio the interface cables must be ANSI C63.10:2014 on condu</li> </ol>	order to find the maximum ns of equipment and all of changed according to
	Test Result:	NA	WS.77

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### 6.2.2. EUT OPERATING CONDITIONS

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

#### Test data

Note: EUT is powered by batteries and cannot transmit normally while charging. This project

does no	ot require testing	WSET	WSCT	WSET	
	$\langle \ \ \rangle$	SET WS	$\langle \ \rangle$	$\langle  \times$	
WSET	WSET	WSCT	WSET	WSET	/
	TET W	SET WS	$\langle \hspace{0.1cm} \rangle$	WSCT	
WSGT	WSET	WSCT	WSET	WSET	2
	$\langle \ \ \rangle$	SET WS	$\langle \hspace{0.1cm} \rangle$	WSCT	
WSET	WSET	WSET	WSGT	WSET	
	$\langle \ \rangle$	SET WS	W5	Catincations Tosking City	
WSCT	WSCT	WSCT	WSET	WSET Shenzhon	_
ADD: Building A-B, Baoli'an Indust	trial Park, No. 58 and 60, Tangtou Avenue, Sh	iyan Street, Bao'an District, Shenzhen City, Gua	angdong Province, China.	从证明份有限公司	



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#### **Conducted Output Power** 6.3.

### 6.3.1. Test Specification

		A A A	
1	Test Requirement:	FCC Part15 C Section 15.247 (b)(3)	
	Test Method:	ANSI C63.10:2014	_
	Limit:	Section 15.247 (b) The maximum peak conducted output power of the intentional radiator shall not exceed the following: (1) For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band 0.125 watts.	WS
7	Test Setup:	Spectrum Analyzer EUT	WZ
	Test Mode:	Transmitting mode with modulation	
	Test Procedure:	Use the following spectrum analyzer settings:  Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel RBW > the 20 dB bandwidth of the emission being measured VBW ≥ RBW Sweep = auto Detector function = peak Trace = max hold Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission.	WS
	Test Result:	PASS	/
	/Well / Well	Transaction of the second	1000

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### 6.3.2. Test Data

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	GFSK mode				
	Test channel	Peak Output Power (dBm)	Limit (dBm)	Result	
0	Lowest	7.37	20.97	PASS	
	Middle	7.45	20.97	PASS	
	Highest	6.77	20.97	PASS	

*				
	Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Ì	Lowest	8.025	20.97	PASS 77
	Middle	8.10	20.97	PASS
	Highest	7.50	20.97	PASS

7					
	8DPSK mode				
P	Test channel	Peak Output Power (dBm)	Limit (dBm)	Result	
	Lowest	8.24	20.97	PASS	
	Middle	8.36	20.97	PASS	
	Highest	WS ET 7.77	20.97	75 CT PASS	

### Test plots as follows:

W547	W-1-1	WSET	WSLT	11-1-1	
	X	X	$\times$	X	$\sim$
	WSET	WSET	WSET	WSET	WSET
$\times$	X	$\times$	$\sim$	$\times$	

WSET WSET WSET WSET

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# 6.4. 20dB Occupy Bandwidth

WSET

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W5 ET

## 6.4.1. Test Specification

WSCT	Test Requirement:	FCC Part15 C Section 15.247 (a)(1)	
ZVFIGA	Test Method:	ANSI C63.10:2014	
	Limit:	N/A	$\times$
	Test Setup:	Spectrum Analyzer EUT	WS ET
WSET	Test Mode:	Transmitting mode with modulation	
WSET	Test Procedure:	<ol> <li>The testing follows ANSI C63.10:2014 Measurement Guidelines.</li> <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>Use the following spectrum analyzer settings for 20dB Bandwidth measurement.         Span = approximately 2 to 5 times the 20 dB bandwidth, centered on a hopping channel; 1%≤ RBW≤5% of the 20 dB bandwidth; VBW≥3RBW; Sweep = auto; Detector function = peak; Trace = max hold.     </li> <li>Measure and record the results in the test report.</li> </ol>	WSET
	Test Result:	PASS	X
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## 6.4.2. Test data

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	Test channel	-20dB Occupy Bandwidth (MHz)				
	rest charmer	GFSK	π/4-DQPSK	8DPSK	Conclusion	
	Lowest	1.032 <sub>W5</sub> /	1.321	1,309	PASS	
-	Middle	1.028	1.320	1.307	PASS	
	Highest	1.032	1.325	1.287	PASS	

Test plots as follows:

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WSET







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Test Result:

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#### **Carrier Frequencies Separation** 6.5.

,	6.5.1. Test Specification	THE STATE OF THE S	W-5/L
	Test Requirement:	FCC Part15 C Section 15.247 (a)(1)	
Ì	Test Method:	ANSI C63.10:2014 W5 [7] W5 [7]	
	Limit:	Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.	WSL
	Test Setup:	Spectrum Analyzer EUT WSCT	
	Test Mode:	Hopping mode	
,		<ol> <li>The testing follows ANSI C63.10:2014 Measurement Guidelines.</li> <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</li> </ol>	WSG

	or on the trial trial power setting and criable trie 20.
	transmit continuously.
	4. Enable the EUT hopping function.
Test Procedure:	5. Use the following spectrum analyzer settings:
	Span = wide enough to capture the peaks of two adjacent
	channels; RBW is set to approximately 30% of the channel
	spacing, adjust as necessary to best identify the center of
	each individual channel; VBW≥RBW; Sweep = auto;
	Detector function = peak; Trace = max hold.
	6. Use the marker-delta function to determine the separation
	between the peaks of the adjacent channels. Record the
	value in report.

PASS

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W5 CT





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6.5.2. Test data

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4		GFSK mo	ode		
	Test channel	Carrier Frequencies Separation (MHz)	Limit (MHz)	Result	
L	Lowest	0.998	0.688	PASS	
	Middle	1.010	0.685	PASS	X
	Highest	1.174	0.688	PASS	

Pi/4 DQPSK mode Carrier Frequencies Limit (MHz) Test channel Result Separation (MHz) Lowest 1.000 0.881 **PASS** Middle 1.002 0.880 **PASS** Highest 0.998 0.883 **PASS** 

	8DPSK mode					
Test channel	Carrier Frequencies Separation (MHz)	Limit (MHz)	Result			
Lowest	0.994	0.873	PASS			
Middle	1.002	0.871	PASS			
Highest	1.004	0.858	PASS			

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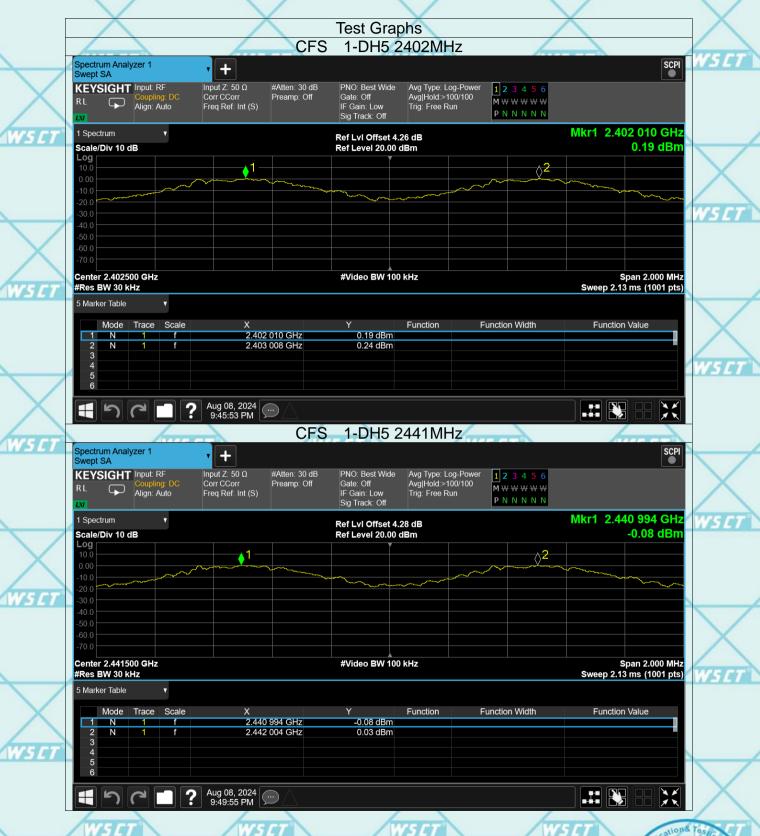
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W5 C1





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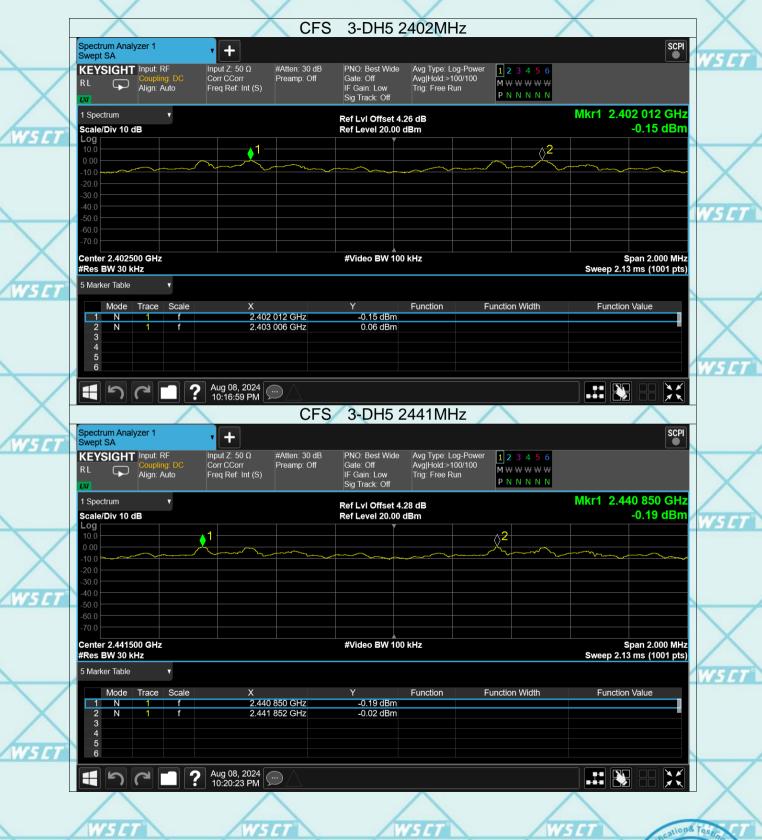




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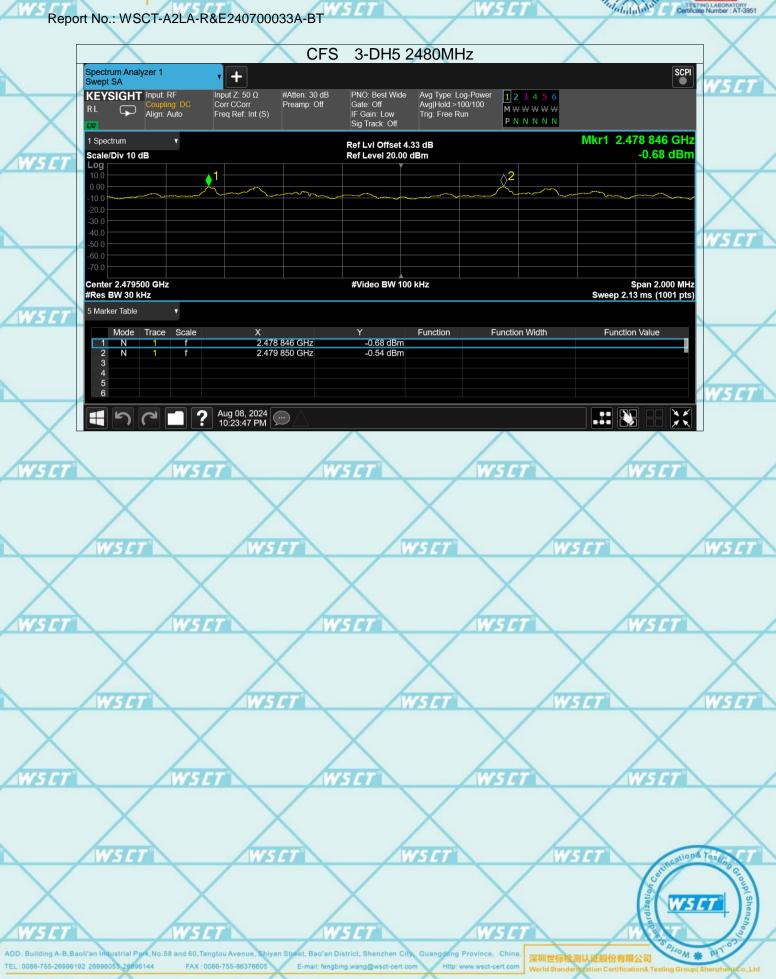
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6.6.

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# **Hopping Channel Number**

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# 6.6.1. Test Specification

WSET	Test Requirement:	FCC Part15 C Section 15.247 (a)(1)		
	Test Method:	ANSI C63.10:2014		
	Limit:	Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.		
WSET	Test Setup:	Spectrum Analyzer EUT	WSET	
	Test Mode:	Hopping mode		
WSET		<ol> <li>The testing follows ANSI C63.10:2014 Measurement Guidelines.</li> <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> </ol>	WSCT	
WSET	Test Procedure:	<ol> <li>Enable the EUT hopping function.</li> <li>Use the following spectrum analyzer settings: Span = the frequency band of operation; set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller; VBW≥RBW; Sweep = auto; Detector function = peak; Trace = max hold.</li> <li>The number of hopping frequency used is defined as the number of total channel.</li> <li>Record the measurement data in report.</li> </ol>	WSET	
	Test Result:	PASS PASS	WSTOTE	
	11719	1117	117.4	

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WSET







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### 6.6.2. Test data

_	Mode	Hopping channel numbers	Limit	Result	WSET
	GFSK, P/4-DQPSK, 8DPSK	79	15	PASS	

Test plots as follows: W5 CT WSET W5CI W5E7 W5 ET W5 CT W5 CT W5CI W5E1 WS CT WSET WS CT W5 ET WSET WS ET W5E7 W5 CT W5E WSE W5E W5 C WSET WS ET WS ET W5 CT W5 ET

W5 ET

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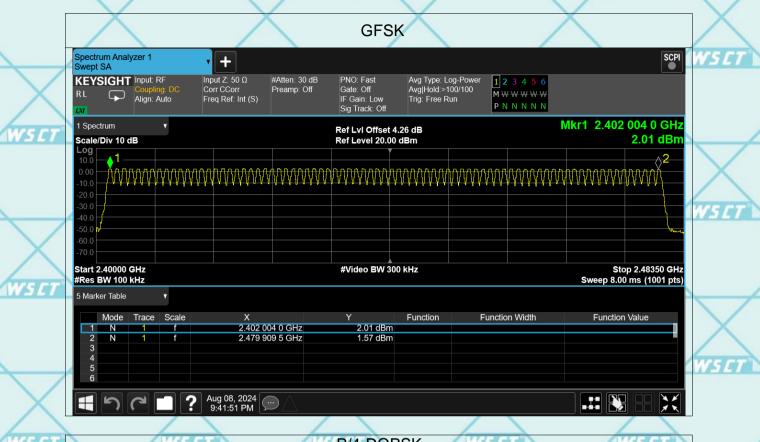
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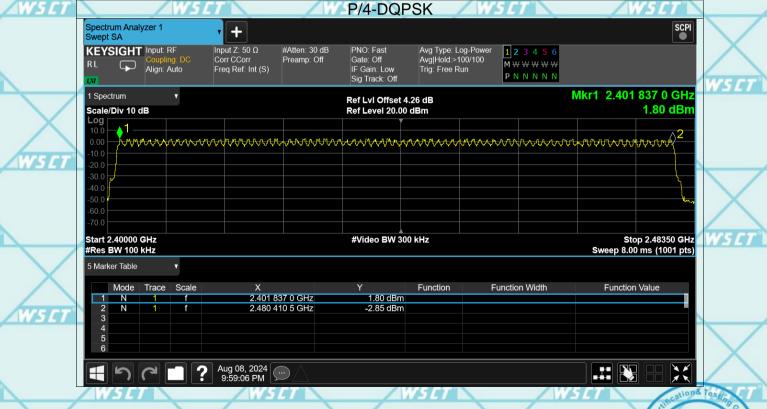






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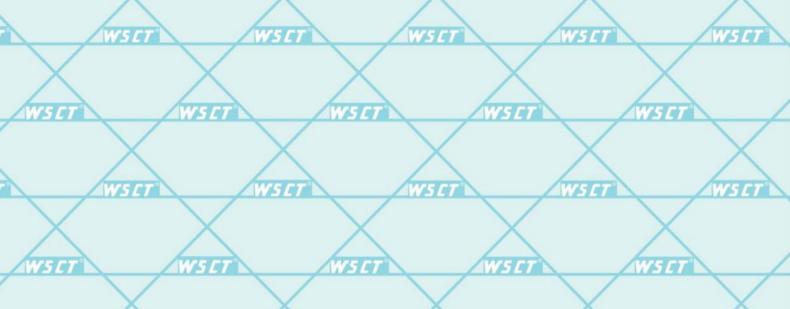
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#### 6.7. **Dwell Time**

# 6.7.1. Test Specification

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X	Test Requirement:	FCC Part15 C Section 15.247 (a)(1)	
WSET	Test Method:	ANSI C63.10:2014 W5 [T] W5 [T]	
	Limit:	The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.	WSC
X	Test Setup:	Spectrum Analyzer EUT	
WSET	Test Mode:	Hopping mode W5 [7] W5 [7]	
WSCT	Test Procedure:	<ol> <li>The testing follows ANSI C63.10:2014 Measurement Guidelines.</li> <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>Enable the EUT hopping function.</li> <li>Use the following spectrum analyzer settings: Span = zero span, centered on a hopping channel; RBW shall be ≤ channel spacing and where possible RBW should be set &gt;&gt; 1 / T, where T is the expected dwell time per channel; VBW≥RBW; Sweep = as necessary to capture the entire dwell time per hopping channel; Detector function = peak; Trace = max hold.</li> <li>Measure and record the results in the test report.</li> </ol>	WST
	Test Result:	PASS	
	WATE WATE	WATER WATER	WSLI

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# 6.7.2. Test Data

**Total Dwell Time** Frequency Burst **Period Time** Limit Verdict Mode **Pulse Time** (MHz) (ms) (ms) Count (ms) (ms) 0.376 1-DH1 2402 119,568 318 31600 400 Pass 2441 1-DH1 400 Pass 0.375 119.250 318 31600 1-DH1 2480 0.374 118.932 318 31600 400 Pass 1-DH3 2402 1.632 239.904 147 31600 400 **Pass** 1-DH3 2441 1.631 259.329 159 31600 400 Pass 1-DH3 2480 1.632 251.328 154 31600 400 Pass 1-DH5 2402 2.881 305.386 106 31600 400 **Pass** 400 Pass 1-DH5 2441 2.878 333.848 116 31600 102 400 1-DH5 2480 2.880 293.760 31600 Pass

Note: 1. In normal mode, hopping rate is 1600 hops/s with 6 slots in 79 hopping channels.

For DH1, With channel hopping rate (1600 / 2 / 79) in Occupancy Time Limit (0.4 x 79) (s), Hops Over Occupancy Time comes to (1600 / 2 / 79) x (0.4 x 79) = 320 hops

> For DH3, With channel hopping rate (1600 / 4 / 79) in Occupancy Time Limit (0.4 x 79) (s), Hops Over Occupancy Time comes to  $(1600 / 4 / 79) \times (0.4 \times 79) = 160 \text{ hops}$

For DH5, With channel hopping rate (1600 / 6 / 79) in Occupancy Time Limit (0.4 x 79) (s), Hops Over Occupancy Time comes to  $(1600 / 6 / 79) \times (0.4 \times 79) = 106.67$  hops

2. Dwell Time(s) = Hops Over Occupancy Time (hops) x Package Transfer Time

Test plots as follows:

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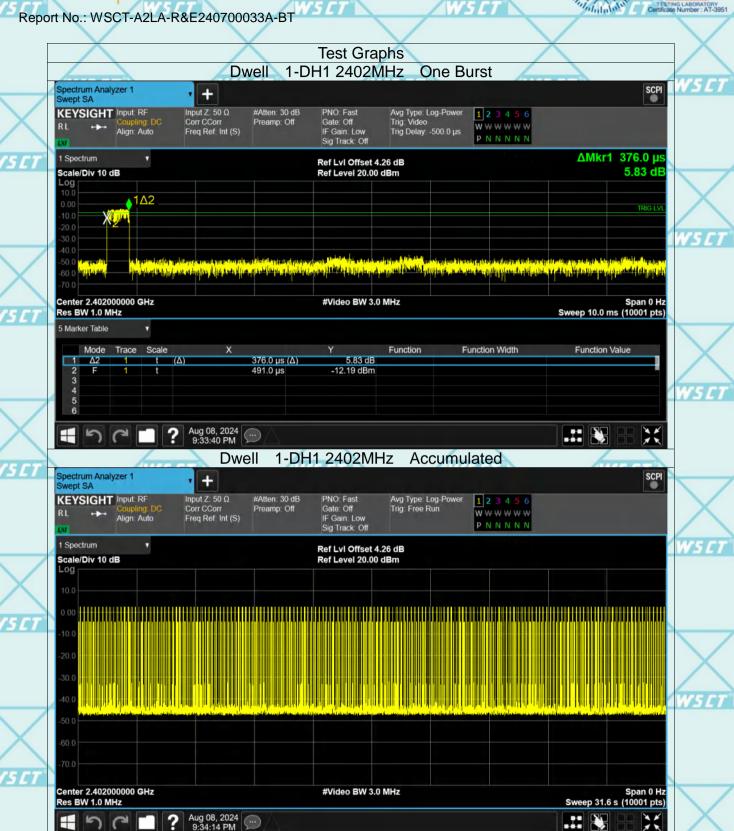
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#### 6.8. **Pseudorandom Frequency Hopping Sequence**

#### FCC Part15 C Section 15.247 (a)(1) requirement: **Test Requirement:**

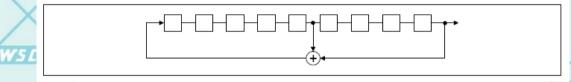
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is

Alternatively. Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a Pseudorandom ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

# **EUT Pseudorandom Frequency Hopping Sequence**

The pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first one of 9 consecutive ones; i.e. the shift register is initialized with nine ones.

- Number of shift register stages: 9
- Length of pseudo-random sequence: 29-1 = 511 bits
- Longest sequence of zeros: 8 (non-inverted signal)



Linear Feedback Shift Register for Generation of the PRBS sequence

An example of Pseudorandom Frequency Hopping Sequence as follow:

0	2	4	6	6:	2 6	4	78	1	73	75	77
				[	Т	7					
							1				
							1				

Each frequency used equally on the average by each transmitter. The system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

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### **Conducted Band Edge Measurement** 6.9.

# 6.9.1. Test Specification

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	Test Requirement:	FCC Part15 C Section 15.247 (d)	
7	Test Method:	ANSI C63.10:2014 W5 [T] W5 [T]	
7	Limit:	In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.	WSET
7	Test Setup:	Spectrum Analyzer EUT	$\vee$
	Test Mode:	Transmitting mode with modulation	
	Test Procedure:	<ol> <li>The testing follows the guidelines in Band-edge Compliance of RF Conducted Emissions of ANSI C63.10:2014 Measurement Guidelines.</li> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>Set RBW = 100 kHz (≥1% span=10MHz), VBW = 300 kHz (≥RBW). Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100kHz RBW. The attenuation shall be 30 dB instead of 20 dB when RMS conducted output power procedure is used.</li> <li>Enable hopping function of the EUT and then repeat step 2 and 3.</li> <li>Measure and record the results in the test report.</li> </ol>	WSLT
	Test Result:	PASS	WS
-			

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## 6.9.2. Test Data



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# 6.10. Conducted Spurious Emission Measurement

6.10.1. Test Specification

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TEL: 0086-755-26996192 26996053 26896144 FAX: 0086-755-86376605

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Report No.: WSCT-A2LA-R&E240700033A-BT



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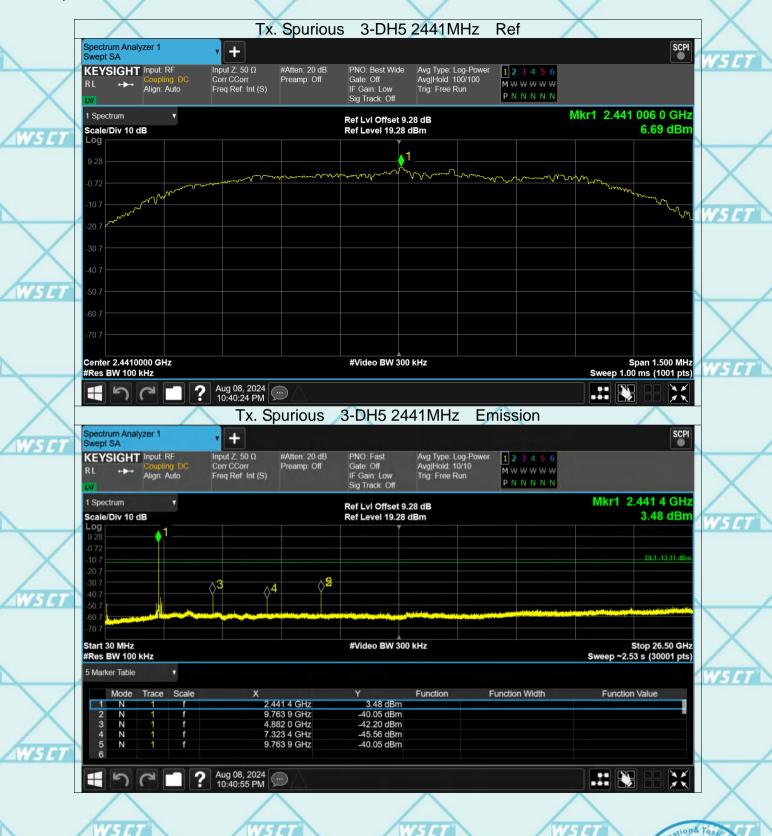
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### 6.11. **Radiated Spurious Emission Measurement**

# 6.11.1. Test Specification

Quasi-peak

Peak

Peak

W5 CT

300KHz

3MHz

10Hz

Quasi-peak Value

Peak Value

Average Value

_				\ /		
ŭ.,	Test Requirement:	FCC Part15	C Section <sup>2</sup>	15.209	i i	X
	Test Method:	ANSI C63.10	):2014	WSIT		WSCT
	Frequency Range:	9 kHz to 25 (	GHz			
	Measurement Distance:	3 m				
	Antenna Polarization: W5	Horizontal &	Vertical		WS	T
/		Frequency	Detector	RBW	VBW	Remark
	X	9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value
		150kHz-	Quasi-peak	9kHz	30kHz	Quasi-peak Value
T)	Doggiver Cotuni	OOM ALL		No. of Concession, Name of Street, or other Persons, or other Pers	50	1

30MHz-1GHz

Above 1GHz

Frequency	Field Strength	Measurement
Frequency	(microvolts/meter)	Distance (meters)
0.009-0.490	2400/F(KHz)	300
0.490-1.705	24000/F(KHz)	30
1.705-30	30	30
30-88	100	V35LT
88-216	150	3
216-960	200	3
Abovo 060	500	3

100KHz

1MHz

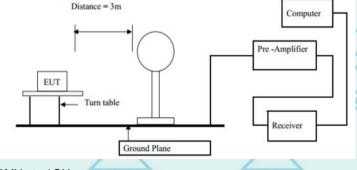
1MHz

Limit:

п		at will make sold to	and the same and t	
	Frequency	Field Strength (microvolts/meter)	Measurement Distance (meters)	Detector
	Above 4CH-	500	3	Average
	Above 1GHz	5000	3	Peak

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For radiated emissions below 30MHz



Test setup:

30MHz to 1GHz

WSE

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Report No.: WSCT-A2LA-R&E240700033A-BT

W5 CT

Coaxial cable (1m) Above 1GHz Receiver-Pre-amplifier-Coaxial cable (1m) Test Mode: Transmitting mode with modulation The testing follows the guidelines in Spurious Emissions of ANSI C63.10:2014 Radiated Measurement Guidelines. For the radiated emission test below 1GHz: The EUT was placed on a turntable with 0.8 meter above ground. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high PASS filter are used for the test in order to get better signal level. Test Procedure: For the radiated emission test above 1GHz: Place the measurement antenna on a turntable with 1.5 meter above ground, which is away from each area of the EUT determined to be a source of

WSET

1.5 meter above ground, which is away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final

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Report No.: WSCT-A2LA-R&E240700033A-BT measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be WSI restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. Set to the maximum power setting and enable the **EUT** transmit continuously. 4. Use the following spectrum analyzer settings: (1) Span shall wide enough to fully capture the emission being measured; (2) Set RBW=100 kHz for f < 1 GHz, RBW=1MHz for f>1GHz; VBW≥RBW; Sweep = auto; Detector function = peak; Trace = max hold for peak (3) For average measurement: use duty cycle correction factor method per 15.35(c). Duty cycle = On time/100 milliseconds On time =N1\*L1+N2\*L2+...+Nn-1\*LNn-1+Nn\*Ln Where N1 is number of type 1 pulses, L1 is length of type 1 pulses, etc. Average Emission Level = Peak Emission Level + 20\*log(Duty cycle) WSCI Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level Test results: **PASS** 

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WSEI

#### 6.11.2. **Test Data**

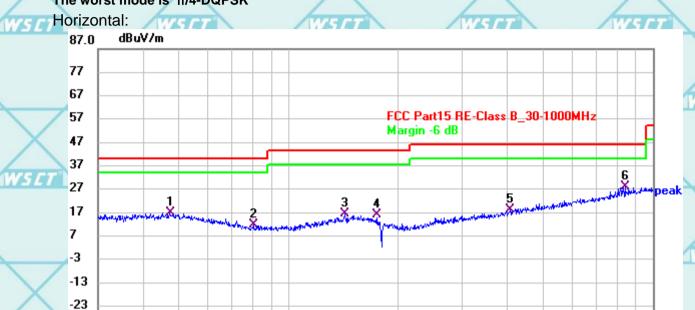
Please refer to following diagram for individual

60.00

300.00

**Below 1GHz** 

The worst mode is  $\pi/4$ -DQPSK



(MHz)

X	No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
WSET	1	47.2219	35.99	-19.09	16.90	40.00	-23.10	QP	
110	2	80.1860	35.64	-23.99	11.65	40.00	-28.35	QP	
X	3	143.2633	36.37	-19.89	16.48	43.50	-27.02	QP	X
	4	175.4207	37.60	-21.55	16.05	43.50	-27.45	QP	
WSCT	5	407.3359	35.36	-17.36	18.00	46.00	-28.00	QP	W5 L
	6 *	840.2860	38.44	-10.34	.28.10	46.00	-17.90	QP	

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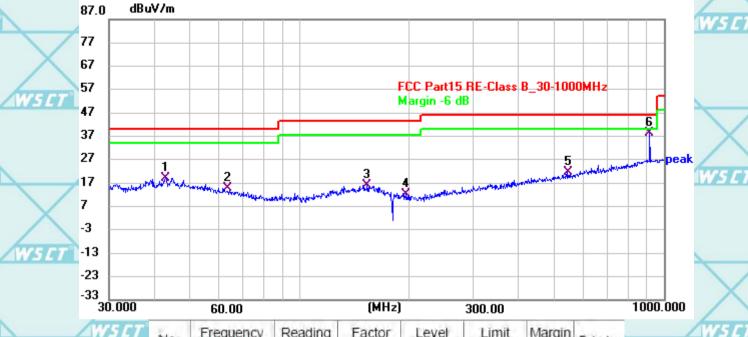






Report No.: WSCT-A2LA-R&E240700033A-BT Vertical:

WS CT



W-5/4/

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	7
1	42,9374	37.82	-18.84	18.98	40.00	-21.02	QP	
2	63.7309	35.65	-21.07	14.58	40.00	-25.42	QP	1
3	153.6712	.35.77	-19.54	16.23	43.50	-27.27	QP	И
4	196.8547	35.59	-23.57	12.02	43.50	-31.48	QP	
5	545.1826	36.62	-14.91	21.71	46.00	-24.29	QP	
6.*	913.6627	48.04	-9.84	38.20	46.00	-7.80	QP	

Note1:

WSE

W5 C Freq. = Emission frequency in MHz W5 CT

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)

e 150 kHz to 30MHz.

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WSET

VSCT W







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W5 CT

# **Above 1GHz**

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

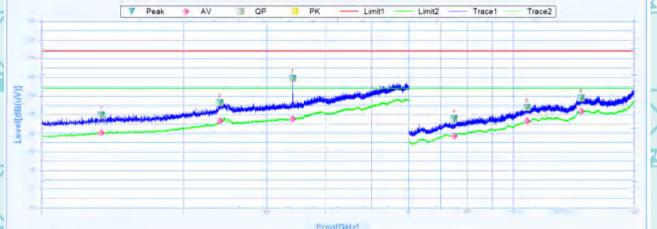
Note 2: The spurious above 18G is noise only, do not show on the report.

**GFSK** 

W5E

Low channel: 2402MHz

Horizontal:



Freq[GHz]

ited Data Lis	it								
Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
1337.5000	39.7	-0.84	40.54	74	-34.3	331.7	Horizontal	PK	Pass
1337.5000	30.2	-0.84	31.04	54	-23.8	331.7	Horizontal	AV	Pass
2388.7500	46.38	7.46	38.92	74	-27.62	1.7	Horizontal	PK	Pass
2388.7500	36.68	7.46	29.22	54	-17.32	1.7	Horizontal	AV	Pass
3403.1250	59.44	9.36	50.08	74	-14.56	252.8	Horizontal	PK	Pass
3403.1250	37.58	9.36	28.22	54	-16.42	252.8	Horizontal	AV	Pass
7492.5000	37.83	36.24	1.59	74	-36.17	146.7	Horizontal	PK	Pass
7492.5000	28.45	36.24	-7.79	54	-25.55	146.7	Horizontal	AV	Pass
10677.0000	43.68	39.05	4.63	74	-30.32	36.8	Horizontal	PK	Pass
10677.0000	36.57	39.05	-2.48	54	-17.43	36.8	Horizontal	AV	Pass
13909.5000	48.81	41.26	7.55	74	-25.19	222.1	Horizontal	PK	Pass
13909.5000	41.61	41.26	0.35	54	-12.39	222.1	Horizontal	AV	Pass
	Freq, [MHz]  1337.5000  1337.5000  2388.7500  2388.7500  3403.1250  7492.5000  7492.5000  10677.0000  13909.5000	[MHz] [dB(uV)]  1337.5000 39.7  1337.5000 30.2  2388.7500 46.38  2388.7500 36.68  3403.1250 59.44  3403.1250 37.58  7492.5000 37.83  7492.5000 28.45  10677.0000 43.68  10677.0000 36.57  13909.5000 48.81	Freq. [MHz]         Reading [dB(uV)]         Factor [dB]           1337.5000         39.7         -0.84           1337.5000         30.2         -0.84           2388.7500         46.38         7.46           2388.7500         36.68         7.46           3403.1250         59.44         9.36           3403.1250         37.58         9.36           7492.5000         37.83         36.24           7492.5000         28.45         36.24           10677.0000         43.68         39.05           10677.0000         36.57         39.05           13909.5000         48.81         41.26	Freq. [MHz]         Reading [dB(uV)]         Factor [dB]         Level [dB(uV)]           1337.5000         39.7         -0.84         40.54           1337.5000         30.2         -0.84         31.04           2388.7500         46.38         7.46         38.92           2388.7500         36.68         7.46         29.22           3403.1250         59.44         9.36         50.08           3403.1250         37.58         9.36         28.22           7492.5000         37.83         36.24         1.59           7492.5000         28.45         36.24         -7.79           10677.0000         43.68         39.05         4.63           10677.0000         36.57         39.05         -2.48           13909.5000         48.81         41.26         7.55	Freq. [MHz]         Reading [dB(uV)]         Factor [dB]         Level [dB(uV)]         Limit [dB]           1337.5000         39.7         -0.84         40.54         74           1337.5000         30.2         -0.84         31.04         54           2388.7500         46.38         7.46         38.92         74           2388.7500         36.68         7.46         29.22         54           3403.1250         59.44         9.36         50.08         74           3403.1250         37.58         9.36         28.22         54           7492.5000         37.83         36.24         1.59         74           7492.5000         28.45         36.24         -7.79         54           10677.0000         43.68         39.05         4.63         74           10677.0000         36.57         39.05         -2.48         54           13909.5000         48.81         41.26         7.55         74	Freq. [MHz]         Reading [dB](uV)]         Factor [dB]         Level [dB](uV)]         Limit [dB]         Margin [dB]           1337.5000         39.7         -0.84         40.54         74         -34.3           1337.5000         30.2         -0.84         31.04         54         -23.8           2388.7500         46.38         7.46         38.92         74         -27.62           2388.7500         36.68         7.46         29.22         54         -17.32           3403.1250         59.44         9.36         50.08         74         -14.56           3403.1250         37.58         9.36         28.22         54         -16.42           7492.5000         37.83         36.24         1.59         74         -36.17           7492.5000         28.45         36.24         -7.79         54         -25.55           10677.0000         43.68         39.05         4.63         74         -30.32           10677.0000         36.57         39.05         -2.48         54         -17.43           13909.5000         48.81         41.26         7.55         74         -25.19	Freq. [MHz]         Reading [dB(uV)]         Factor [dB]         Level [dB(uV)]         Limit [dB]         Margin [dB]         Deg [dB]           1337.5000         39.7         -0.84         40.54         74         -34.3         331.7           1337.5000         30.2         -0.84         31.04         54         -23.8         331.7           2388.7500         46.38         7.46         38.92         74         -27.62         1.7           2388.7500         36.68         7.46         29.22         54         -17.32         1.7           3403.1250         59.44         9.36         50.08         74         -14.56         252.8           3403.1250         37.58         9.36         28.22         54         -16.42         252.8           7492.5000         37.83         36.24         1.59         74         -36.17         146.7           7492.5000         28.45         36.24         -7.79         54         -25.55         146.7           10677.0000         43.68         39.05         4.63         74         -30.32         36.8           10677.0000         48.81         41.26         7.55         74         -25.19         222.1	Freq. [MHz]         Reading [dB(uV)]         Factor [dB]         Level [dB(uV)]         Limit [dB]         Margin [dB]         Deg [°]         Polarity           1337.5000         39.7         -0.84         40.54         74         -34.3         331.7         Horizontal           1337.5000         30.2         -0.84         31.04         54         -23.8         331.7         Horizontal           2388.7500         46.38         7.46         38.92         74         -27.62         1.7         Horizontal           2388.7500         36.68         7.46         29.22         54         -17.32         1.7         Horizontal           3403.1250         59.44         9.36         50.08         74         -14.56         252.8         Horizontal           3403.1250         37.58         9.36         28.22         54         -16.42         252.8         Horizontal           7492.5000         37.83         36.24         1.59         74         -36.17         146.7         Horizontal           10677.0000         28.45         36.24         -7.79         54         -25.55         146.7         Horizontal           10677.0000         36.57         39.05         -2.48         54	Freq. [MHz]         Reading [dB(uV)]         Factor [dB]         Level [dB(uV)]         Limit [dB]         Margin [dB]         Deg [°]         Polarity         Trace           1337.5000         39.7         -0.84         40.54         74         -34.3         331.7         Horizontal         PK           1337.5000         30.2         -0.84         31.04         54         -23.8         331.7         Horizontal         AV           2388.7500         46.38         7.46         38.92         74         -27.62         1.7         Horizontal         PK           2388.7500         36.68         7.46         29.22         54         -17.32         1.7         Horizontal         AV           3403.1250         59.44         9.36         50.08         74         -14.56         252.8         Horizontal         PK           3403.1250         37.58         9.36         28.22         54         -16.42         252.8         Horizontal         AV           7492.5000         37.83         36.24         1.59         74         -36.17         146.7         Horizontal         PK           7492.5000         28.45         36.24         -7.79         54         -25.55         146.7

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WSET



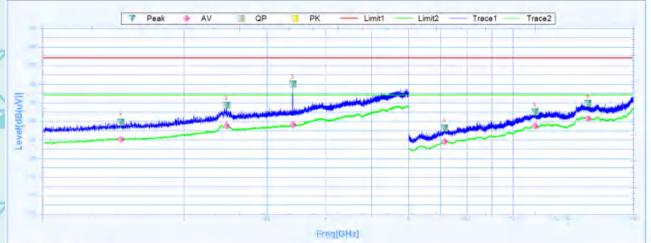


Report No.: WSCT-A2LA-R&E240700033A-BT Vertical: W5 CT

Certificate Number : AT-3951

Trace2

WSET



W5ET

W5C

Suspi	uted Data Lis	t								_
NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
1	1466.2500	39.42	-0.3	39.72	74	-34.58	197.8	Vertical	PK	Pass
1	1466.2500	30.26	-0.3	30.56	54	-23.74	197.8	Vertical	AV	Pass
2	2458.7500	48.48	7.77	40.71	74	-25.52	0.4	Vertical	PK	Pass
2	2458.7500	37.43	7.77	29.66	54	-16.57	0.4	Vertical	AV	Pass
3	3401.8750	59.99	9.35	50.64	74	-14.01	0.4	Vertical	PK	Pass
3	3401.8750	38.12	9.35	28.77	54	-15.88	0.4	Vertical	AV	Pass
4	7152.0000	36.4	35.73	0.67	74	-37.6	252	Vertical	PK	Pass
4	7152.0000	29.05	35.73	-6.68	54	-24.95	252	Vertical	AV	Pass
5	11133.0000	45.01	39.38	5.63	74	-28.99	292.6	Vertical	PK	Pass
5	11133.0000	37.53	39.38	-1.85	54	-16.47	292.6	Vertical	AV	Pass
6	14434.5000	49.74	40.94	8.8	74	-24.26	314.2	Vertical	PK	Pass
6	14434.5000	41.46	40.94	0.52	54	-12.54	314.2	Vertical	AV	Pass

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DD: Building A-B,Baoli'an Industrial Park,No.58 and 60,Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province, Chir EL: 0086-755-26996192 26996053 26996144 FAX: 0086-755-86376605 E-mail: fengbing.wang@wsct-cert.com Http://www.wsct-cert.co

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





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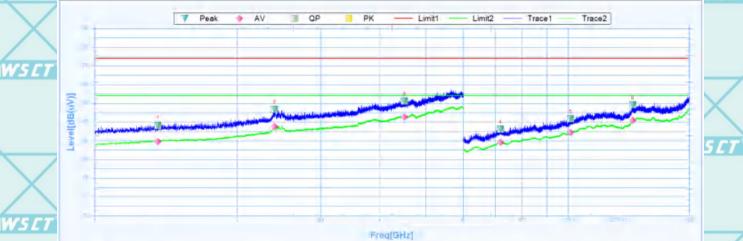
Middle channel: 2440MHz

Horizontal:

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Suspu	rted Data Lis	t								
NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
1	1359.3750	38.27	-0.69	38.96	74	-35.73	360	Vertical	PK	Pass
1	1359.3750	29.63	-0.69	30.32	54	-24.37	360	Vertical	AV	Pass
2	2397.5000	46.71	7.56	39.15	74	-27.29	10.6	Vertical	PK	Pass
2	2397.5000	37.44	7.56	29.88	54	-16.56	10.6	Vertical	AV	Pass
3	4508.1250	51.27	14.11	37.16	74	-22.73	130.7	Vertical	PK	Pass
3	4508.1250	42.55	14.11	28.44	54	-11.45	130.7	Vertical	AV	Pass
4	7191.0000	36.09	35.79	0.3	74	-37.91	232.4	Horizontal	PK	Pass
4	7191.0000	29.21	35.79	-6.58	54	-24.79	232.4	Horizontal	AV	Pass
5	10123.5000	41.71	38.27	3.44	74	-32.29	5.8	Horizontal	PK	Pass
5	10123.5000	34.34	38.27	-3.93	54	-19.66	5.8	Horizontal	AV	Pass
6	13687.5000	49.2	40.69	8.51	74	-24.8	289.8	Horizontal	PK	Pass
6	13687.5000	40.72	40.69	0.03	54	-13.28	289.8	Horizontal	AV	Pass

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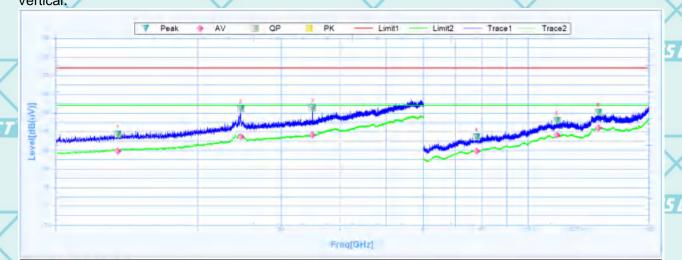


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Vertical:



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W5E

Suspu	uted Data Lis	t								
NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
1	1353.1250	38.57	-0.7	39.27	74	-35.43	-0.1	Vertical	PK	Pass
1	1353.1250	29.57	-0.7	30.27	54	-24.43	-0.1	Vertical	AV	Pass
2	2463.7500	52.2	7.79	44.41	74	-21.8	-0.1	Vertical	PK	Pass
2	2463.7500	37.36	7.79	29.57	54	-16.64	-0.1	Vertical	AV	Pass
3	3497.5000	52.69	9.64	43.05	74	-21.31	91.8	Vertical	PK	Pass
3	3497.5000	38.23	9.64	28.59	54	-15.77	91.8	Vertical	AV	Pass
4	7777.5000	36.98	36,67	0.31	74	-37.02	257.5	Vertical	PK	Pass
4	7777.5000	29.53	36.67	-7.14	54	-24.47	257.5	Vertical	AV	Pass
5	11506.5000	45.88	39.04	6.84	74	-28.12	112.9	Vertical	PK	Pass
5	11506.5000	38.11	39.04	-0.93	54	-15.89	112.9	Vertical	AV	Pass
6	14086.5000	50.25	41.39	8.86	74	-23.75	141.5	Vertical	PK	Pass
6	14086.5000	41.91	41.39	0.52	54	-12.09	141.5	Vertical	AV	Pass

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WSET	WSET	WSET	WSET	WSET	

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WSET





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Report No.: WSCT-A2LA-R&E240700033A-BT

High channel: 2480MHz

Horizontal:

W5CT

Peak AV QP PK Limit1 Limit2 Trace1 Trace2

WSET

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WS ET

Suspi	uted Data Lis	t								
NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
1	1353.7500	40.73	-0.7	41.43	74	-33.27	322.7	Horizontal	PK	Pass
1	1353.7500	30.4	-0.7	31.1	54	-23.6	322.7	Horizontal	AV	Pass
2	2438.1250	54.01	7.7	46.31	74	-19.99	57.4	Horizontal	PK	Pass
2	2438,1250	38.21	7.7	30.51	54	-15.79	57.4	Horizontal	AV	Pass
3	3498.1250	61.47	9.64	51.83	74	-12.53	22.7	Horizontal	PK	Pass
3	3498.1250	38.07	9.64	28.43	54	-15.93	22.7	Horizontal	AV	Pass
4	8092.5000	38.51	37.04	1.47	74	-35.49	360.1	Horizontal	PK	Pass
4	8092.5000	30.59	37.04	-6.45	54	-23.41	360.1	Horizontal	AV	Pass
5	10989.0000	44.62	39.48	5.14	74	-29.38	269.5	Horizontal	PK	Pass
5	10989.0000	37.16	39.48	-2.32	54	-16.84	269.5	Horizontal	AV	Pass
6	14001.0000	49.8	41.5	8.3	74	-24.2	60.3	Horizontal	PK	Pass
6	14001.0000	41.98	41.5	0.48	54	-12.02	60.3	Horizontal	AV	Pass

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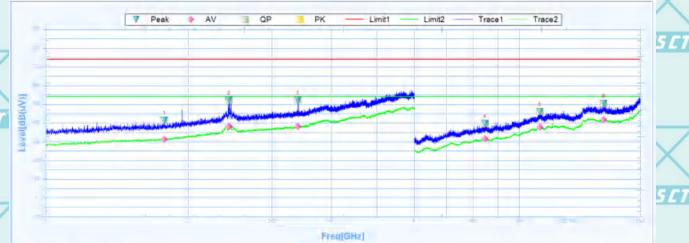


Report No.: WSCT-A2LA-R&E240700033A-BT

WSE



Vertical:



NSE.

NSE

Susp	uted Data Lis	it								
NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
1	1778.1250	41.45	24.99	16.46	74	-32.55	143.2	Vertical	PK	Pass
1	1778.1250	31.24	24.99	6.25	54	-22.76	143.2	Vertical	AV	Pass
2	2437.5000	52.34	27.39	24.95	74	-21.66	49.9	Vertical	PK	Pass
2	2437.5000	38.13	27.39	10.74	54	-15.87	49.9	Vertical	AV	Pass
3	3402.5000	52.21	28.44	23.77	74	-21.79	0	Vertical	PK	Pass
3	3402.5000	38.08	28.44	9.64	54	-15.92	0	Vertical	AV	Pass
4	8457.0000	39.77	9.16	30.61	74	-34.23	359.9	Vertical	PK	Pass
4	8457.0000	31.49	9.16	22.33	54	-22.51	359.9	Vertical	AV	Pass
5	11047.5000	46.04	15.77	30.27	74	-27.96	205.9	Vertical	PK	Pass
5	11047.5000	37.65	15.77	21.88	54	-16.35	205.9	Vertical	AV	Pass
6	15091.5000	50.54	19.56	30.98	74	-23.46	36.2	Vertical	PK	Pass
6	15091.5000	41.8	19.56	22.24	54	-12.2	36.2	Vertical	AV	Pass

### Note:

- The emission levels of other frequencies are very lower than the limit and not show in test report.
- Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.
- Data of measurement shown "---"in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.
  - Measurements were conducted in all three modulation (GFSK, Pi/4 DQPSK, 8DPSK), and the worst case Mode (GFSK) was submitted only.

\*\*\*\*\*END OF REPORT\*\*\*\*\*

FAX:0086-755-8637660