





For Question,
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TEST REPORT

FCC ID: 2AXYP-OSW-811H

Product: Smart Watch

Model No.: OSW-811H

Trade Mark: oraimo

Report No.: WSCT-A2LA-R&E240600027A-BT

Issued Date: 20 June 2024

Issued for:

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

Issued By:

World Standardization Certification & Testing Group(Shenzhen) Co.,Ltd.
Building A-B, Baoshi Science & Technology Park, Baoshi Road,
Bao'an District, Shenzhen, Guangdong, Chingon & Testing

TEL: +86-755-26996192 FAX: +86-755-86376605

Note: The results contained in this report pertain only to the tested sample. This report shall not be reproduced, except in full, without written approval of World Standardization Certification & Testing Group(Shenzhen) Co., Ltd. This report must not be used by the client to claim product certification,

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Report No.: WSCT-A2LA-R&E240600027A-BT

1. Test Certification

Product: Smart Watch

Model No.: OSW-811H

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

FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL

CENTRE 19-25 SHAN MEI STREET FOTAN NT HONGKONG

Factory: Chongqing Zhouhai Intelligent Technology Co., Ltd.

4F,Building 9,Linkong Intelligent Industrial Park,No 6 Langyue Road,Shuangfengqiao Subdistrict,Yubei District,Chongqing,China

Date of Test: 07 June 2024 to 20 June 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/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By:

(Wang Xiang)

Checked By:

(Chen Xu)

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Approved By:

(Liu Fuxin)

Checked By:

Date: 20 Jme 2014

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2. Test Result Summary

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7	Requirement	CFR 47 Section	Result
	Antenna Requirement	§15.203/§15.247 (c)	PASS
0	AC Power Line Conducted Emission	§15,207	PASS
1	Conducted Peak Output Power	§15.247 (b)(1) §2.1046	PASS
0	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
7	Dwell Time	§15.247 (a)(1)	PASS
1	Radiated Emission	§15.205/§15.209 §2.1053, §2.1057	PASS
	Band Edge	§15.247(d) §2.1051, §2.1057	PASS
	ZI BYRKE ZI BY		7 1 1 A 7 W W 3

Note:

- 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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3. **EUT Description**

Product Name:	Smart Watch
Model :	OSW-811H
Trade Mark:	oraimo
Operation Frequency:	2402MHz~2480MHz
Channel Separation:	1MHz
Number of Channel:	79 W541
Modulation Type:	GFSK, π/4-DQPSK, 8-DPSK
Modulation Technology:	FHSS WSGT
Antenna Type:	Wire antenna
Antenna Gain:	-1.74dBi
Operating Voltage	Rechargeable Li-ion Battery: 551925PN3 Voltage: 3.8V Rated Capacity: 290mAh Limited Charge Voltage: 4.35V
Remark:	N/A.

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

					·		WWW
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	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		X		X		X	
18	2420MHz	38	2440MHz	58	2460MHz	78	2480MHz
19	2421MHz	39	2441MHz	59	2461MHz	17-19	
D	01	0 0 70 1-		1 1 0	FOLC // DO	SDOL OF	DOIL

Remark: Channel 0, 39 &78 have been tested for GFSK, $\pi/4$ -DQPSK, 8DPSK modulation mode.

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4. Genera Information

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.

4.2. 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
Adapter	XCU32	1	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, 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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5. Facilities and Accreditations

5.1. Facilities

All measurement facilities used to collect the measurement data are located at Building A-B, Baoshi Science & Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China of the World Standardization Certification & Testing Group(Shenzhen) CO., LTD

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

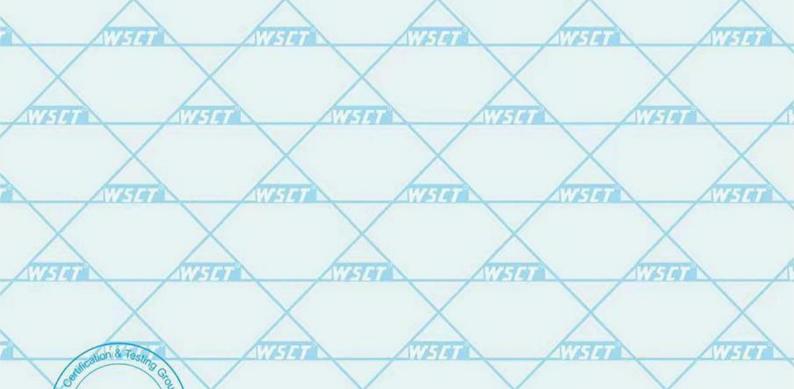
China National Accreditation Service for Conformity Assessment, The test firm Registration Number: L3732

FCC - Designation Number: CN1303

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

A2LA - Certificate Number: 5768.01

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (A2LA). Certification Number: 5768.01



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5.3. Measurement Uncertainty

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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 %.

	No.	Item	MU
100	1	Conducted Emission Test	±3.2dB
	2	RF power, conducted	±0.16dB
	3	Spurious emissions, conducted	±0.21dB
7	4	All emissions, radiated(<1GHz)	±4.7dB
	5	All emissions, radiated(>1GHz)	±4.7dB
	6	Temperature W547	±0.5°C
	7	Humidity	±2.0%

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	F14 B	NYSTON	NVF14	NISTATA	WEIGH
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	X	WATER	WSTAT	William	WSI
Saddle State of the State of th	Testing Graus (S)			X	X

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5.4. MEASUREMENT INSTRUMENTS

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NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	Calibration Date	Calibration Due.	Z
Test software		EZ-EMC	CON-03A	-	X-	
Test software	H - K	MTS8310	17274	- 1	414	
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	Z
Universal Radio Communication Tester	R&S	CMU 200	1100.0008.02	11/05/2023	11/04/2024	
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	HP	HP8447E	2945A02715	11/05/2023	11/04/2024	Z
Pre-Amplifier	CDSI	PAP-1G18-38		11/05/2023	11/04/2024	
Bi-log Antenna	SUNOL Sciences	JB3	A021907	11/05/2023	11/04/2024	
9*6*6 Anechoic	A	ISIT A	N759T	11/05/2023	11/04/2024	
Horn Antenna	COMPLIANCE ENGINEERING	CE18000		11/05/2023	11/04/2024	1
Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-631	11/05/2023	11/04/2024	
Cable	TIME MICROWAVE	LMR-400	N-TYPE04	11/05/2023	11/04/2024	É
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	
Loop Antenna	EMCO	6502	00042960	11/05/2023	11/04/2024	Z
Horn Antenna	SCHWARZBECK	BBHA 9170	1123	11/05/2023	11/04/2024	
Power meter	Anritsu	ML2487A	6K00003613	11/05/2023	11/04/2024	
Power sensor	Anritsu	MX248XD	AVESTEE	11/05/2023	11/04/2024	
Spectrum Analyzer	Keysight	N9010B	MY60241089	11/05/2023	11/04/2024	1
						1



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6. Test Results and Measurement Data

6.1. Antenna requirement

Standard requirement:

FCC Part15 C Section 15.203 /247(c)

15.203 requirement:

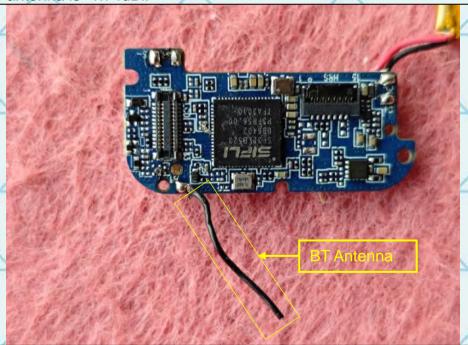
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit 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:

The Bluetooth antenna is a Wire Antenna. it meets the standards, and the best case gain of the antenna is -1.74dBi.





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6.2. Conducted Emission

6.2.1. Test Specification

6.2.1. Test Specification	
Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2014
Frequency Range:	150 kHz to 30 MHz
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto
Limits:	Frequency range (MHz) Limit (dBuV) 0.15-0.5 66 to 56* 56 to 46* 0.5-5 56 46 5-30 60 50
X	Reference Plane
NISTED NIST	40cm 80cm LISN
Test Setup:	E.U.T AC power EMI Receiver
Test Mode:	Refer to item 4.1
VISIT	The E.U.T is connected to an adapter through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.
Test Procedure:	 The peripheral devices are also connected to the main 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). Both sides of A.C. line are checked for maximum
tion & Testino	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.
Test Result:	PASS

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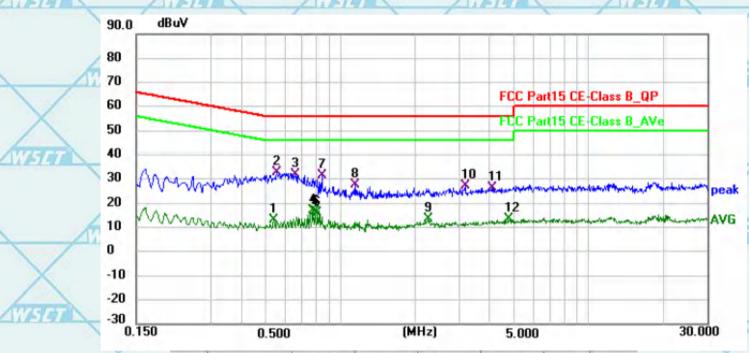
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6.2.2. Test data(worst case)

Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)

The worst mode is 8-DPSK



	No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	,
WHITE	1	0.5370	-7.54	20.52	12.98	46.00	-33.02	AVG	
	2 *	0.5550	12.08	20.52	32.60	56.00	-23.40	QP	/
	3	0.6585	11.45	20.53	31.98	56.00	-24.02	QP	
741	14	0.7710	-3.43	20.57	17.14	46.00	-28.86	AVG	45
	5	0.7890	-4.26	20.58	16.32	46.00	-29.68	AVG	
X	6	0.8070	-4.44	20.59	16.15	46.00	-29.85	AVG	
	7	0.8430	11.11	20.60	31.71	56.00	-24:29	QP	
AWSET	8	1.1490	7.15	20.66	27.81	56.00	-28.19	QP	
	9	2.2559	-7.00	20.61	13.61	46.00	-32.39	AVG	
X	10	3.1785	6.44	20.59	27.03	56.00	-28.97	QP	
	11	4.0830	5.96	20.58	26.54	56.00	-29.46	QP	-
744	12	4.7399	-7.21	20.57	13.36	46.00	-32.64	AVG	5

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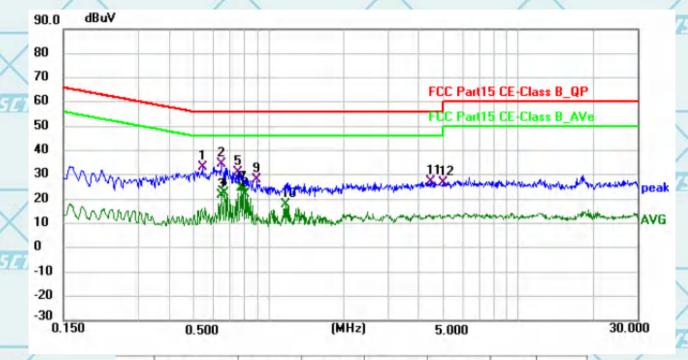




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	No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	
	1	0.5415	12.70	20.52	33.22	56.00	-22.78	QP	k
7	2	0.6450	14.09	20.53	34.62	56.00	-21.38	QP	ŀ
	3	0.6450	1.10	20.53	21.63	46.00	-24.37	AVG	1
	4	0.6630	1.81	20.53	22.34	46.00	-23.66	AVG	1
7	5	0.7530	10.43	20.56	30.99	56.00	-25.01	QP	1
	6 *	0.7710	4.24	20.57	24.81	46.00	-21.19	AVG	1
	7	0.7890	4.07	20.58	24.65	46.00	-21.35	AVG	1
	8	0.8070	1.69	20.59	22.28	46.00	-23.72	AVG	١
	9	0.8970	7.23	20.63	27.86	56.00	-28.14	QP	
/	10	1.1670	-2.70	20.66	17.96	46.00	-28.04	AVG	1
	11	4.4430	6.48	20.58	27.06	56.00	-28.94	QP	1
7	12	4.9875	6.31	20.57	26.88	56.00	-29.12	QP	ĺ

Note:

Freq. = Emission frequency in MHz

Reading level $(dB\mu V)$ = Receiver reading

Corr. Factor (dB) = Lisn factor + Cable loss

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

Limit (dBµV) = Limit stated in standard

Margin (dB) = Measurement (dB μ V) – Limits (dB μ V)

Q.P. =Quasi-Peak AVG =average

is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.

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6.3. Conducted Output Power

6.3.1. Test Specification

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.				
Test Setup:	Spectrum Analyzer EUT				
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.				
Test Result:	PASS				











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6.3.2. Test Data

7				
	Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
5	Lowest	7.08	20.97	PASS
	Middle	7.04	20.97	PASS
	Highest	6.94	20.97	PASS

	ATTION	2011 dell ole all 1	2-3-2-X	2 off oh off		
7	Pi/4DQPSK mode					
	Test channel	Peak Output Power (dBm)	Limit (dBm)	Result		
0	Lowest	9.49	20.97	PASS		
	Middle	9.11	20.97	PASS		
	Highest	8.75	20.97	PASS		

r		and A. M. L. Z. Million Spring and A. L.	And the State of the Assessment of the Assessmen	Total Control of the
8DPSK mode				
5	Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
	Lowest	9.73	20.97	PASS
	Middle	9.59	20.97	PASS
	Highest	9.26	20.97	PASS

Test plots as follows:

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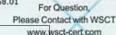




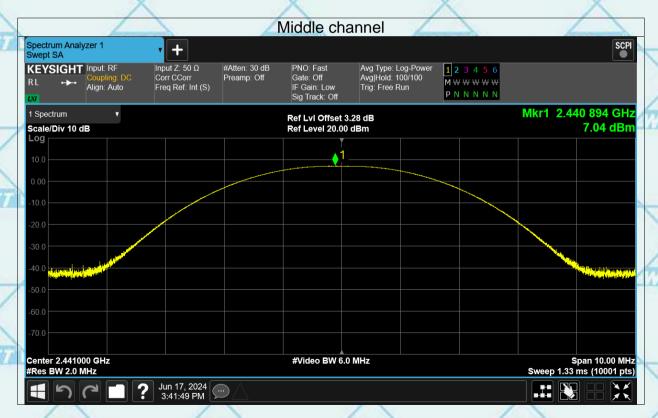
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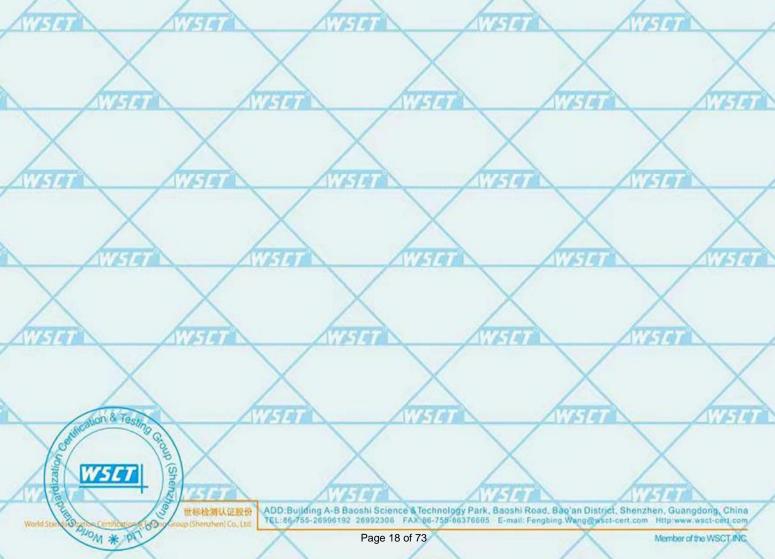


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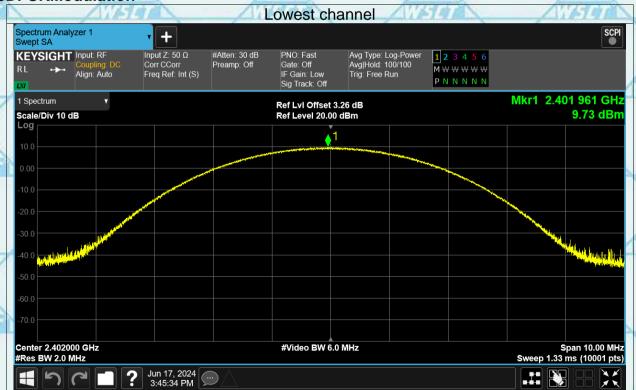
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8DPSKModulation





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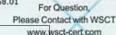




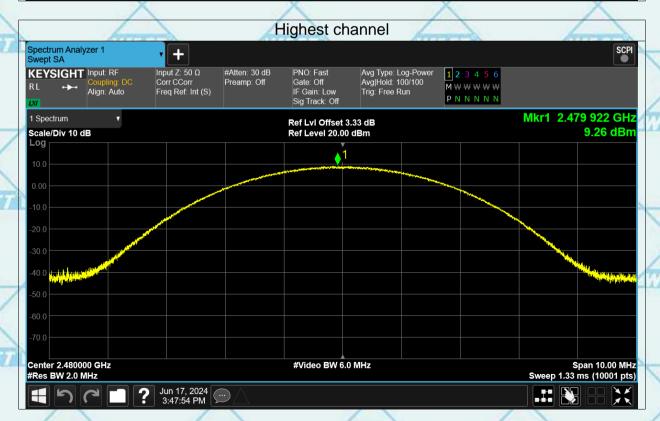


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6.4. 20dB Occupy Bandwidth

6.4.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2014
Limit:	N/A
Test Setup:	Special and the second
Test Mode:	Transmitting mode with modulation
Test Procedure:	 The testing follows ANSI C63.10:2014 Measurement Guidelines. 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. Set to the maximum power setting and enable the EUT transmit continuously. 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. Measure and record the results in the test report.
Test Result:	PASS
7 3	



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6.4.2. Test data

			and the second s			
	Toot obonnol	-20dB Occupy Bandwidth (MHz)				
	Test channel	GFSK	π/4-DQPSK	8DPSK	Conclusion	
	Lowest	0.928	1.347	1.349	PASS	
\	Middle	0.961	1.333	1.337	PASS	
	Highest	0.951	1.324	1.318	PASS	

Test plots as follows:

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WHAT	Wester	Wester	Wester	W-Stat	,
NV2-7					E14
WEIGH	Wister	WHITE	Wister	William	,
NVF1					274
WESTIN	Wister	WESTER	W5197	Wester	
NVET					574.0
WETER	Wiston	WEIGH	NV-141	WETO	
					F19
Solution & Te	Par Carden (S)	X	X	X	

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2 Metrics

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

-10.275 kHz

928.4 kHz



Measure Trace

% of OBW Power

Total Power

Trace 1

17.2 dBm

99.00 %

-20.00 dB



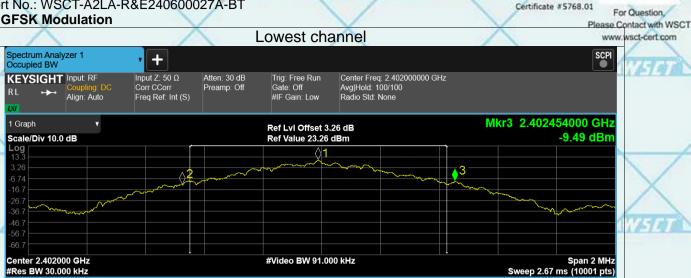


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Occupied Bandwidth 872.22 kHz

Transmit Freq Error

x dB Bandwidth



#Video BW 91.000 kHz



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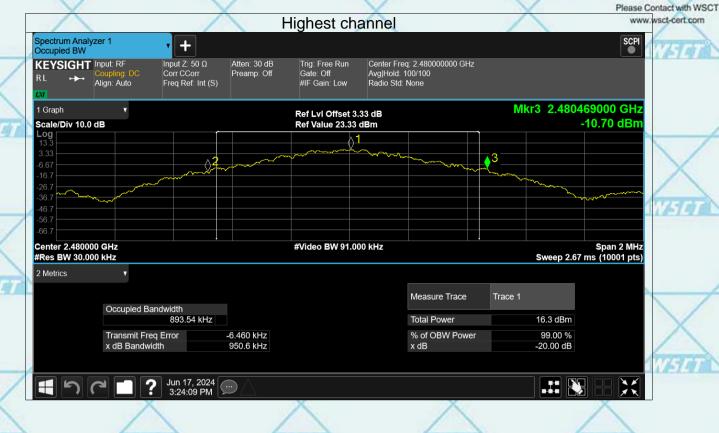


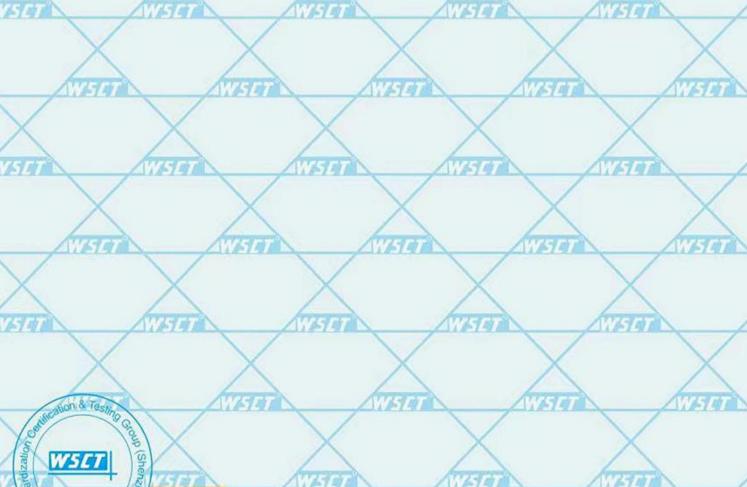
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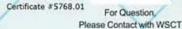


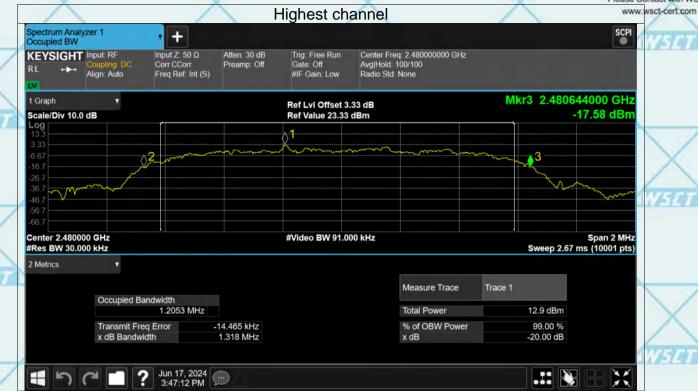






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6.5. Carrier Frequencies Separation

6.5.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2014
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.
Test Setup:	Spectrum Analyzer EUT
Test Mode:	Hopping mode
Test Procedure:	 The testing follows ANSI C63.10:2014 Measurement Guidelines. 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. Set to the maximum power setting and enable the EUT transmit continuously. Enable the EUT hopping function. 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. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. Record the value in report.
Test Result:	PASS











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6.5.2. Test data

GFSK mode				
2	Test channel	Carrier Frequencies Separation (MHz)	Limit (MHz)	Result
	Lowest	1.000	2/3*20dB BW	PASS
	Middle	1.000	2/3*20dB BW	PASS
	Highest	1.000	2/3*20dB BW	PASS

Pi/4 DQPSK mode				
		Carrier Frequencies Separation (MHz)	Limit (MHz)	Result
	Lowest	1.000	2/3*20dB BW	PASS
	Middle	0.998	2/3*20dB BW	PASS
	Highest	1.000	2/3*20dB BW	PASS

	8DPSK mode			
6	Test channel	Carrier Frequencies Separation (MHz)	Limit (MHz)	Result
	Lowest	0.998	2/3*20dB BW	PASS
	Middle	1.000	2/3*20dB BW	PASS
7	Highest	1.000	2/3*20dB BW	PASS

Warld Stand 160 pin Commonton 160 py stoup (Sh

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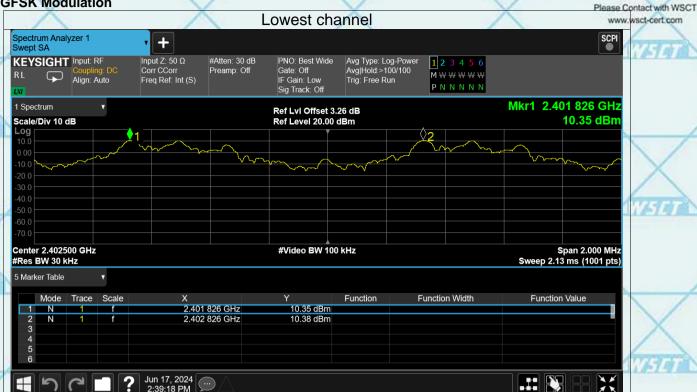


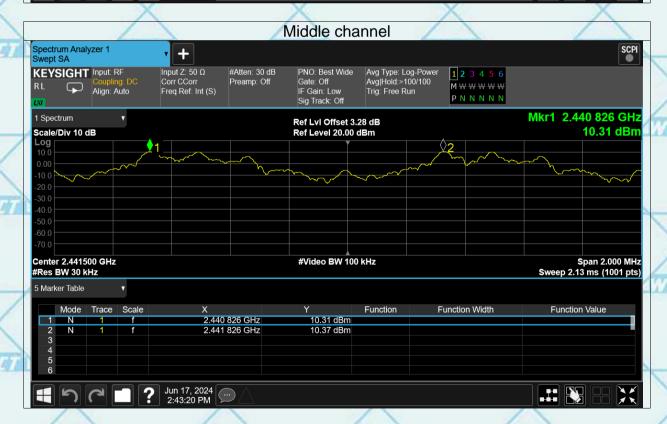


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Certificate #5768.01 **GFSK Modulation**













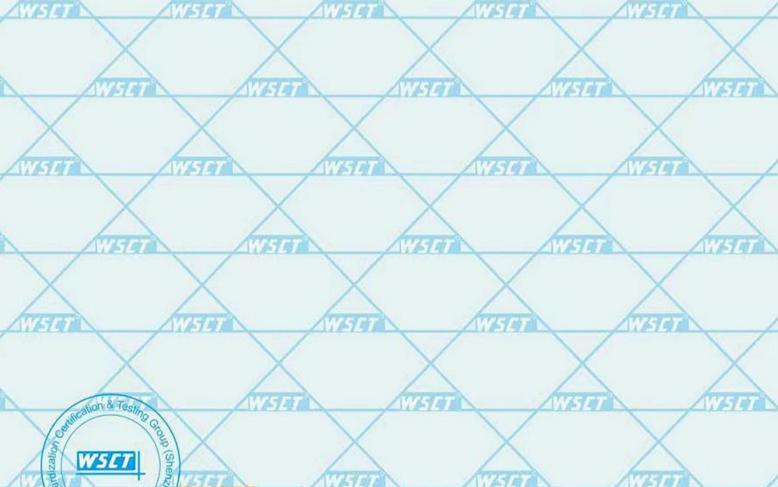


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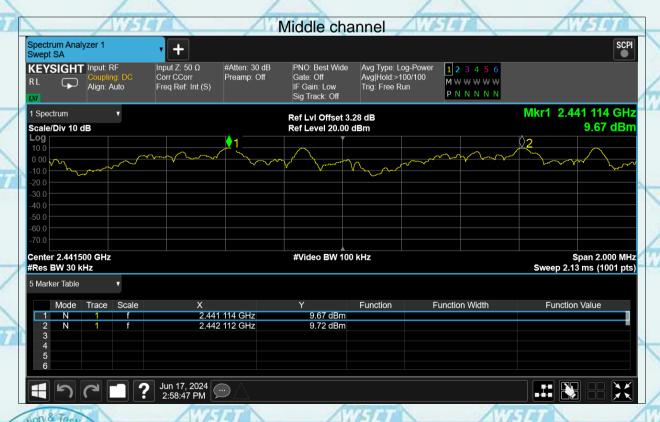


Pi/4DQPSK Modulation

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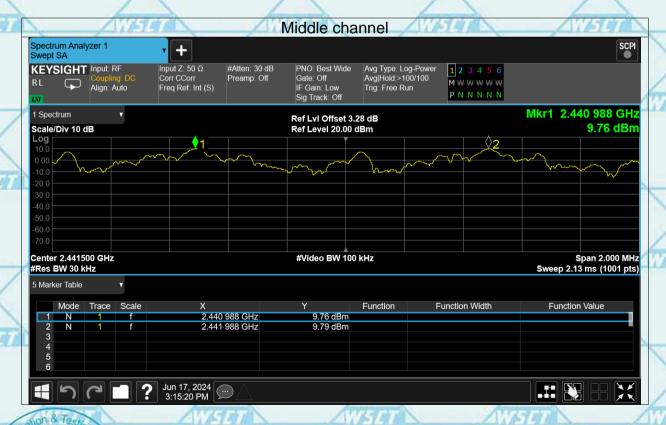


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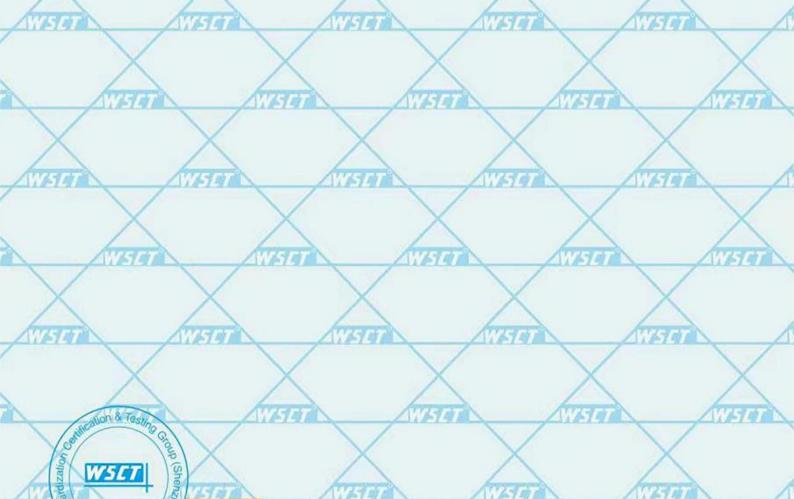


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Certificate #5768.01 For Question, Please Contact with WSCT www.wsct-cert.com Highest channel Spectrum Analyzer 1 Swept SA SCPI + Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off #Atten: 30 dB Preamp: Off Avg Type: Log-Power Avg|Hold:>100/100 KEYSIGHT Input: RF 1 2 3 4 5 6 $\mathsf{M} \times \mathsf{W} \times \mathsf{W} \times \mathsf{W}$ Align: Auto Trig: Free Run PNNNNN Mkr1 2.478 990 GHz 1 Spectrum Ref LvI Offset 3.33 dB Ref Level 20.00 dBm 9.57 dBm Scale/Div 10 dB Center 2.479500 GHz #Res BW 30 kHz Span 2.000 MHz Sweep 2.13 ms (1001 pts) #Video BW 100 kHz 5 Marker Table Function Value Mode Function Function Width 2.478 990 GHz 2.479 990 GHz 9.57 dBm 9.38 dBm



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6.6. Hopping Channel Number

6.6.1. Test Specification

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.
Test Setup:	Spectrum Analyzer EUT
Test Mode:	Hopping mode
	 The testing follows ANSI C63.10:2014 Measurement Guidelines. 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. Set to the maximum power setting and enable the
Test Procedure:	 EUT transmit continuously. 4. Enable the EUT hopping function. 5. 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. 6. The number of hopping frequency used is defined as the number of total channel. 7. Record the measurement data in report.
Test Result:	PASS



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Limit





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Mode

6.6.2. Test data

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Result

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X	GFSK, P/4-DQPSK, 8DPSK	79	15	PASS	
AVETER	est plots as follows:	WHI	WSET	11610	_/
	V	X			
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	X	X	X		
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X	X	X	\times	X	
AVE 14 A	WEIGH	AVE THE	WESTER	176791	
		X			
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(Spille)	Mora Testino Ga	100			
Zation	VSC1 SE				
Perputation	Mon & Testing Gray (Shape ADD: Building Tet: 86,755-	ng A-B Baoshi Science & Techno 26988192 26992306 FAX 86.75	ology Park, Baoshi Road, Bao'an Dist 5-86378605 E-mail: Pengbing Wang@w	trict, Shenzhen, Guangdong, Ch	nina

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Hopping channel

numbers





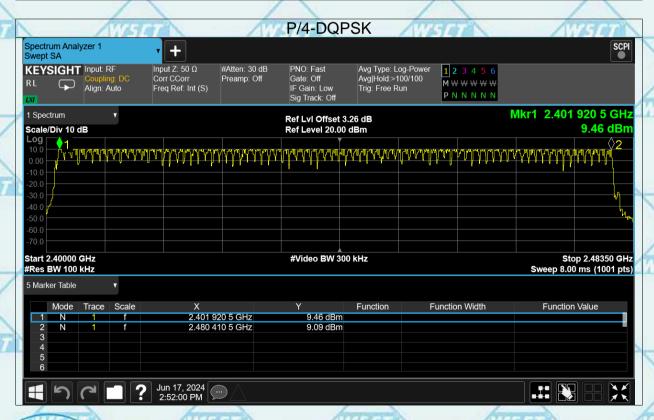




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Spectrum Analyzer 1 Swept SA

1 Spectrum

Scale/Div 10 dB

KEYSIGHT Input: RF

Align: Auto

(Shenz)

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







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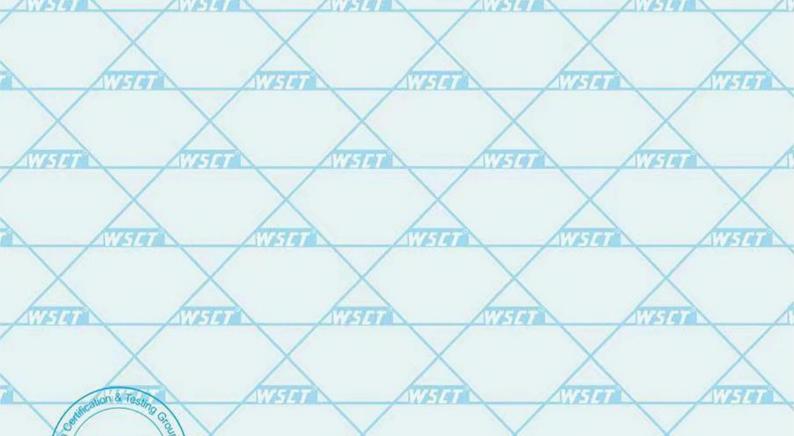
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Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)





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6.7. Dwell Time

6.7.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2014
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.
Test Setup:	Spectrum Analyzer EUT
Test Mode:	Hopping mode W507
Test Procedure:	 The testing follows ANSI C63.10:2014 Measurement Guidelines. 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. Set to the maximum power setting and enable the EUT transmit continuously. Enable the EUT hopping function. 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 >> 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. Measure and record the results in the test report.
Test Result:	PASS











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6.7.2. Test Data

Mode	Frequency	Pulse Time	Total Dwell Time	Burst	Period Time	Limit	Verdict
	(MHz)	(ms)	(ms)	Count	(ms)	(ms)	
1-DH1	2402	0.413	74.34	180	31600	400	Pass
1-DH1	2441	0.413	76.405	185	31600	400	Pass
1-DH1	2480	0.413	78.883	191	31600	400	Pass
1-DH3	2402	1.669	205.287	123	31600	400	Pass
1-DH3	2441	1.671	180.468	108	31600	400	Pass
1-DH3	2480	1.671	180.468	108	31600	400	Pass
1-DH5	2402	2.917	212.941	73	31600	400	Pass
1-DH5	2441	2.919	242.277	83	31600	400	Pass
1-DH5	2480	2.917	218.775	75	31600	400	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 (0.4×79) (s), Hops Over Occupancy Time comes to $(1600/2/79) \times (0.4 \times 79) = 320$ 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 $(1600 / 4 / 79) \times (0.4 \times 79) = 160$ hops

For DH5, With channel hopping rate (1600/6/79) in Occupancy Time Limit (0.4×79) (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:

WISTER WISTER WISTER WISTER WISTER WISTER WISTER

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W5ET

NOM * PT

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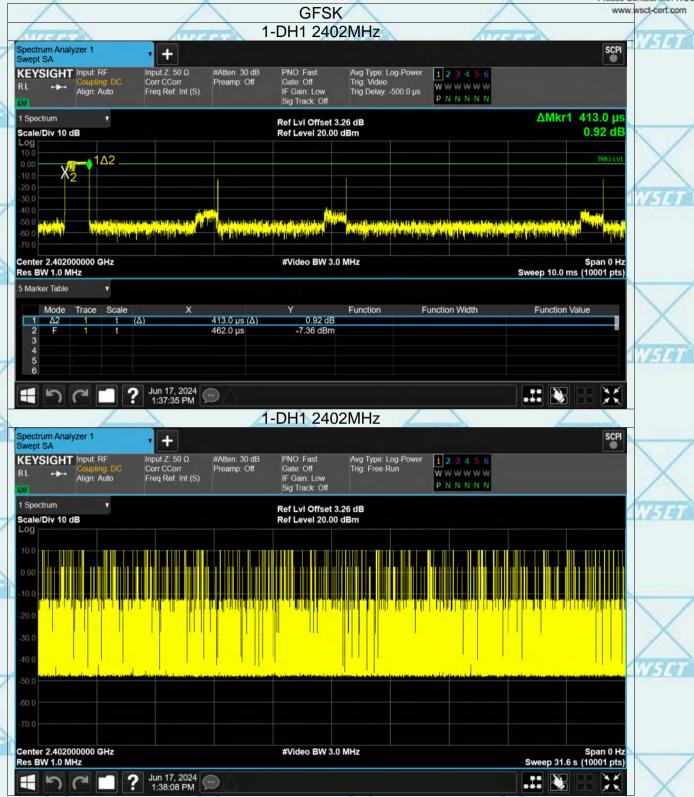






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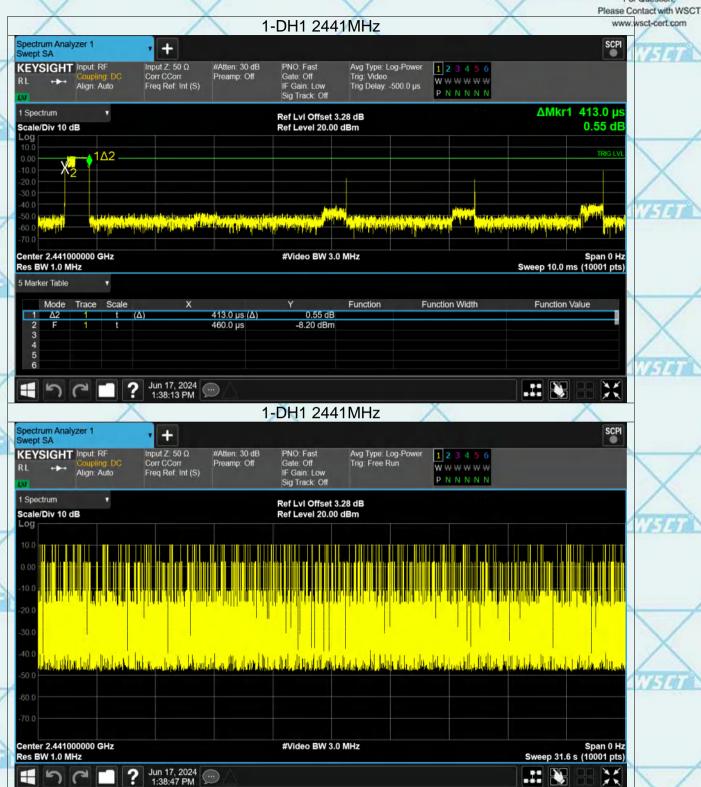






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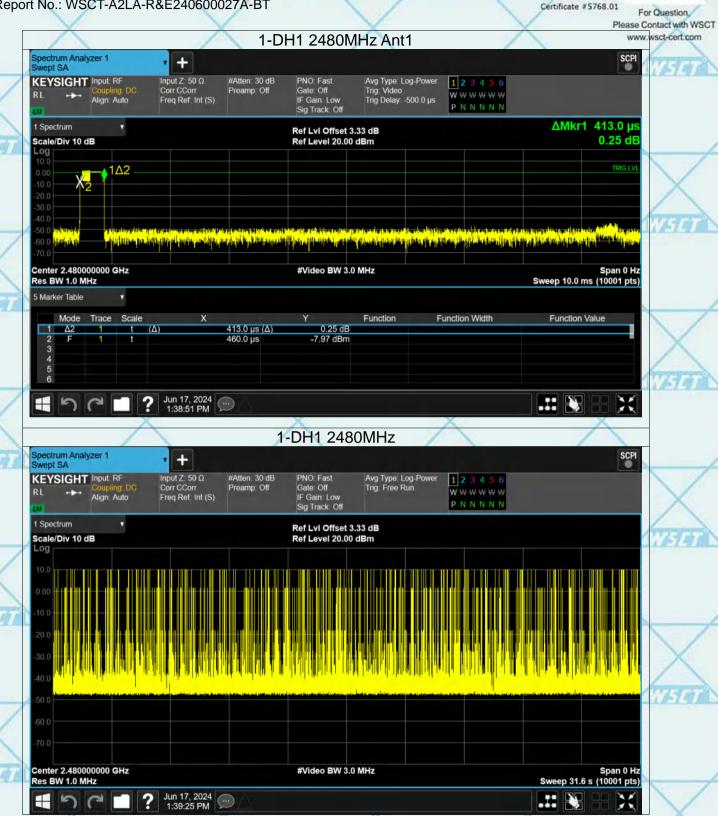






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Spectrum Analyzer 1

1 Spectrum

Scale/Div 10 dB

KEYSIGHT Input: RF

Center 2.441000000 GHz

Scale

Res BW 1.0 MHz 5 Marker Table Mode

Align: Auto

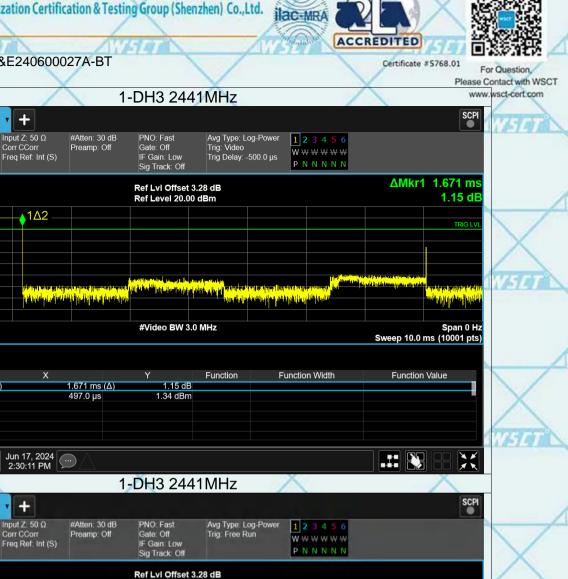
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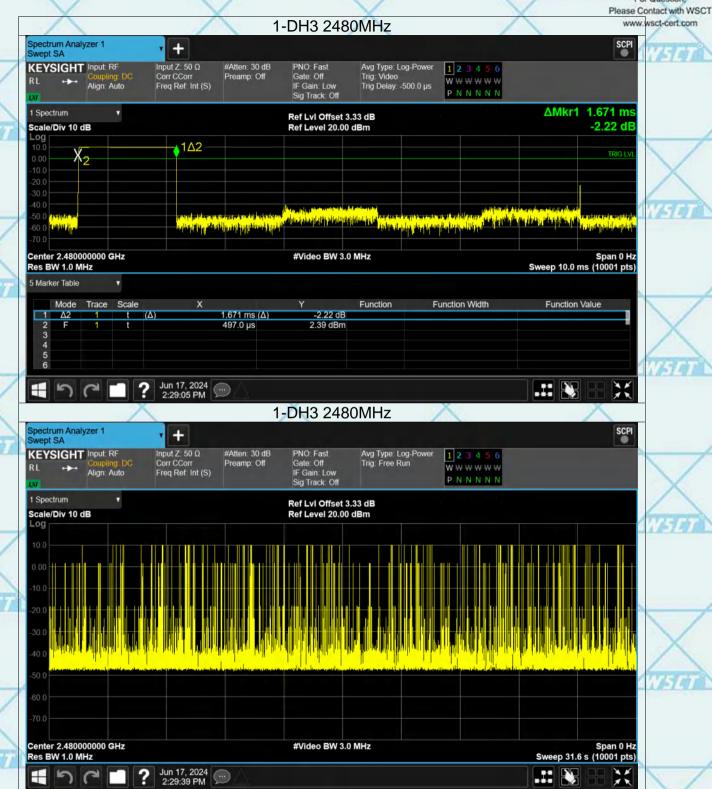






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Certificate #5768.01 For Question, Please Contact with WSCT www.wsct-cert.com 1-DH5 2402MHz Spectrum Analyzer 1 SCPI + Input Z: 50 Ω #Atten: 30 dB Preamp: Off PNO: Fast Gate: Off Avg Type: Log-Power Trig: Video KEYSIGHT Input: RF Corr CCorr **w** ₩ ₩ ₩ ₩ IF Gain: Low Sig Track: Off Align: Auto Trig Delay: -500.0 µs Freq Ref: Int (S) 1 Spectrum ΔMkr1 2.917 ms Ref LvI Offset 3.26 dB Ref Level 20.00 dBm 1.31 dB Scale/Div 10 dB 1Δ2 Х5 this finite of least region for a gold file of flower and provided to the standard problem to shall be seen in the problem of the standard between the standard properties and the standard problem of the standard properties and the standard properties are standard properties and the standard properties and the standard properties are standard properties are standard properties are standard properties and the standard properties are standard properties areal properties are standard properties are standard properties ar Center 2.402000000 GHz Span 0 Hz Sweep 10.0 ms (10001 pts) #Video BW 3.0 MHz Res BW 1.0 MHz 5 Marker Table Mode Scale **Function Width** Function Value Function 2.917 ms (Δ) 462.0 µs -7.45 dBm Jun 17, 2024 2:35:20 PM 1-DH5 2402MHz Ant1 Spectrum Analyzer 1 Swept SA SCPI + Avg Type: Log-Power Trig: Free Run Input Z: 50 Ω #Atten: 30 dB PNO: Fast KEYSIGHT Input: RF 1 2 3 4 5 6 Corr CCorr Freq Ref: Int (S) Preamp: Off Gate: Off IF Gain: Low Sig Track: Off **W** W W W W Align: Auto PNNNNN Ref LvI Offset 3.26 dB Scale/Div 10 dB Ref Level 20.00 dBm



Center 2.402000000 GHz

Jun 17, 2024 2:35:53 PM

Res BW 1.0 MHz

Log

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#Video BW 3.0 MHz

Span 0 Hz

Sweep 31.6 s (10001 pts)

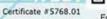








Report No.: WSCT-A2LA-R&E240600027A-BT







Spectrum Analyzer 1

1 Spectrum

Scale/Div 10 dB

KEYSIGHT Input: RF

Center 2.480000000 GHz

Res BW 1.0 MHz 5 Marker Table

Mode

Align: Auto

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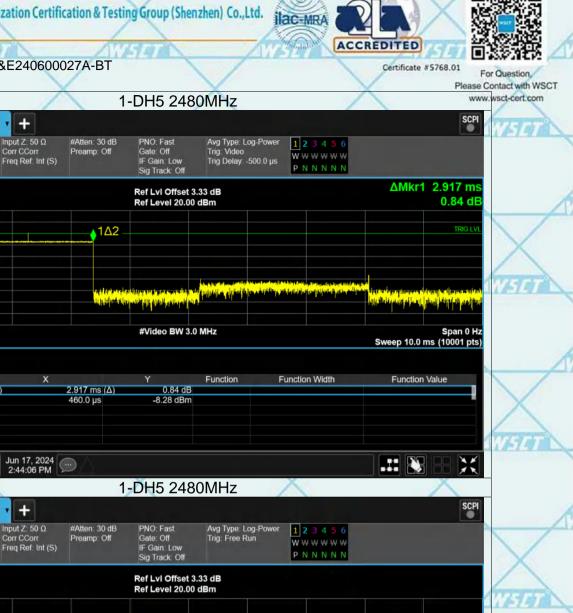






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+ nput Z: 50 Ω







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6.8. Pseudorandom Frequency Hopping Sequence

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

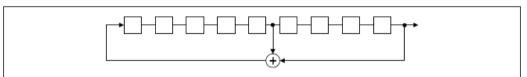
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

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

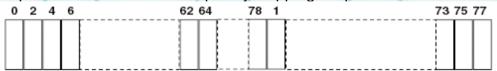
The pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first one of 9 consecutive ones; i.e. the shift register is initialized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



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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6.9. Conducted Band Edge Measurement

6.9.1. Test Specification

	Test Requirement:	FCC Part15 C Section 15.247 (d)				
	Test Method:	ANSI C63.10:2014				
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.				
	Test Setup:	Spectrum Analyzer EUT				
	Test Mode:	Transmitting mode with modulation				
	Test Procedure:	 The testing follows the guidelines in Band-edge Compliance of RF Conducted Emissions of ANSI C63.10:2014 Measurement Guidelines. Set to the maximum power setting and enable the EUT transmit continuously. 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. Enable hopping function of the EUT and then repeat step 2 and 3. Measure and record the results in the test report. 				
	Test Result:	PASS				
П	ATTITUTE ATTITUTE	THE STREET STREET				









6.9.2. Test Data

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GFSK Modulation (the worst case)





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6.10. Conducted Spurious Emission Measurement

6.10.1. Test Specification

in the restricted bands must also comply with the radiated emission limits. Test Setup: Transmitting mode with modulation 1. The testing follows the guidelines in Spurious RF Conducted Emissions of ANSI C63.10:2014 Measurement Guidelines 2. 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. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Set RBW = 100 kHz, VBW = 300kHz, scan up through 10th harmonic. All harmonics / spurs must be at least 20 dB down from the highest emission leve within the authorized band as measured with a 100 kHz RBW. 5. Measure and record the results in the test report. 6. The RF fundamental frequency should be excluded.		
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 fin the restricted bands must also comply with the radiated emission limits. Test Setup: Test Mode: Transmitting mode with modulation 1. The testing follows the guidelines in Spurious RF Conducted Emissions of ANSI C63.10:2014 Measurement Guidelines 2. 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. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Set RBW = 100 kHz, VBW = 300kHz, scan up through 10th harmonic. All harmonics / spurs must be at least 20 dB down from the highest emission leve within the authorized band as measured with a 100 kHz RBW. 5. Measure and record the results in the test report. 6. The RF fundamental frequency should be excluded against the limit line in the operating frequency ban	Test Requirement:	FCC Part15 C Section 15.247 (d)
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 fin the restricted bands must also comply with the radiated emission limits. Test Setup: Test Mode: Transmitting mode with modulation 1. The testing follows the guidelines in Spurious RF Conducted Emissions of ANSI C63.10:2014 Measurement Guidelines 2. 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. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Set RBW = 100 kHz, VBW = 300kHz, scan up through 10th harmonic. All harmonics / spurs must lat least 20 dB down from the highest emission leve within the authorized band as measured with a 100 kHz RBW. 5. Measure and record the results in the test report. 6. The RF fundamental frequency should be excluded against the limit line in the operating frequency ban	Test Method:	ANSI C63.10:2014
Test Mode: Transmitting mode with modulation 1. The testing follows the guidelines in Spurious RF Conducted Emissions of ANSI C63.10:2014 Measurement Guidelines 2. 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. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Set RBW = 100 kHz, VBW = 300kHz, scan up through 10th harmonic. All harmonics / spurs must be at least 20 dB down from the highest emission leve within the authorized band as measured with a 100 kHz RBW. 5. Measure and record the results in the test report. 6. The RF fundamental frequency should be excluded against the limit line in the operating frequency ban	Limit:	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
1. The testing follows the guidelines in Spurious RF Conducted Emissions of ANSI C63.10:2014 Measurement Guidelines 2. 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. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Set RBW = 100 kHz, VBW = 300kHz, scan up through 10th harmonic. All harmonics / spurs must be at least 20 dB down from the highest emission leve within the authorized band as measured with a 100 kHz RBW. 5. Measure and record the results in the test report. 6. The RF fundamental frequency should be excluded against the limit line in the operating frequency ban	Test Setup:	Spectrum Analyzer EUT
Conducted Emissions of ANSI C63.10:2014 Measurement Guidelines 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. Set to the maximum power setting and enable the EUT transmit continuously. Set RBW = 100 kHz, VBW = 300kHz, scan up through 10th harmonic. All harmonics / spurs must be at least 20 dB down from the highest emission leve within the authorized band as measured with a 100 kHz RBW. Measure and record the results in the test report. The RF fundamental frequency should be excluded against the limit line in the operating frequency ban	Test Mode:	Transmitting mode with modulation
Test Result: PASS	Test Procedure:	 Conducted Emissions of ANSI C63.10:2014 Measurement Guidelines 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. Set to the maximum power setting and enable the EUT transmit continuously. Set RBW = 100 kHz, VBW = 300kHz, scan up through 10th harmonic. All harmonics / spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW.
	Test Result:	PASS









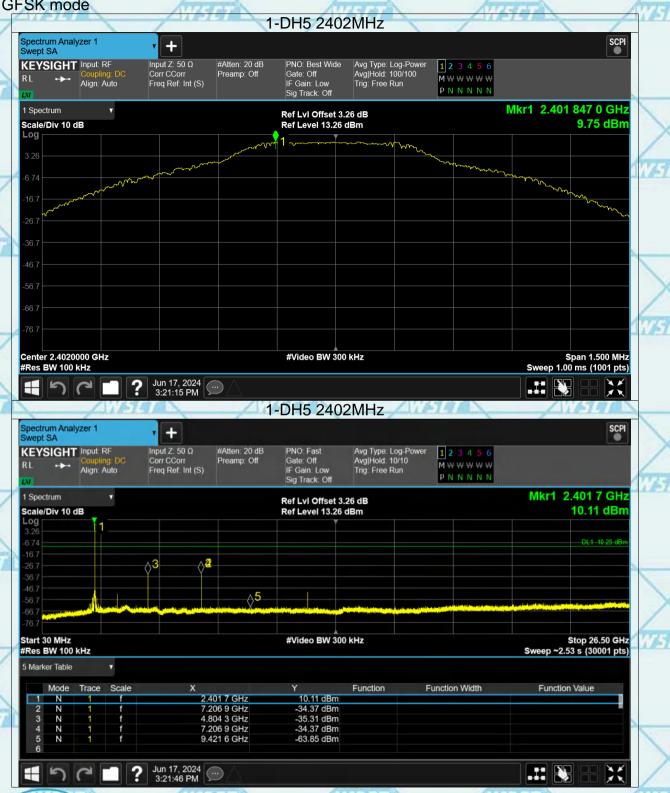


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Test Data GFSK mode





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1 Spectrum

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Certificate #5768.01 For Question, Please Contact with WSCT 1-DH5 2480MHz www.wsct-cert.com Spectrum Analyzer 1 SCPI + PNO: Best Wide Gate: Off Input Z: 50 Ω #Atten: 20 dB Preamp: Off Avg Type: Log-Power Avg|Hold: 100/100 KEYSIGHT Input: RF 1 2 3 4 5 6 $\mathsf{M} \times \mathsf{W} \times \mathsf{W} \times \mathsf{W}$ Align: Auto IF Gain: Low Sig Track: Off Freq Ref: Int (S) Trig: Free Run PNNNNN Mkr1 2.480 036 0 GHz Ref LvI Offset 3.33 dB Scale/Div 10 dB Ref Level 13.33 dBm 9.39 dBm Center 2.4800000 GHz #Res BW 100 kHz Span 1.500 MHz Sweep 1.00 ms (1001 pts) #Video BW 300 kHz Jun 17, 2024 3:24:13 PM 1-DH5 2480MHz Spectrum Analyzer 1 Swept SA SCPI + Avg Type: Log-Power Avg|Hold: 10/10 Trig: Free Run Input Z: 50 Ω #Atten: 20 dB PNO: Fast KEYSIGHT Input: RF 1 2 3 4 5 6 Corr CCorr Freq Ref: Int (S) Gate: Off IF Gain: Low Sig Track: Off MWWWWW Align: Auto PNNNNN Mkr1 2.480 2 GHz Ref LvI Offset 3.33 dB 8.45 dBm Scale/Div 10 dB Ref Level 13.33 dBm **∆**5 #Video BW 300 kHz Stop 26.50 GHz #Res BW 100 kHz Sweep ~2.53 s (30001 pts) Scale **Function Function Width Function Value** 2.480 2 GHz 4.960 5 GHz 4.960 5 GHz 7.440 7 GHz 8.45 dBm -32.99 dBm -32.99 dBm -37.10 dBm



Start 30 MHz

5 Marker Table

Mode

Z

Ν N

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-60.36 dBm

9.921 0 GHz

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1 Spectrum

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Certificate #5768.01 For Question, Please Contact with WSCT www.wsct-cert.com 2-DH5 2441MHz Spectrum Analyzer 1 SCPI + PNO: Best Wide Gate: Off Input Z: 50 Ω #Atten: 20 dB Preamp: Off Avg Type: Log-Power Avg|Hold: 100/100 KEYSIGHT Input: RF 1 2 3 4 5 6 Corr CCorr $\mathsf{M} \times \mathsf{W} \times \mathsf{W} \times \mathsf{W}$ IF Gain: Low Sig Track: Off Align: Auto Freq Ref: Int (S) Trig: Free Run PNNNNN Mkr1 2.441 058 5 GHz Ref LvI Offset 3.28 dB 8.80 dBm Scale/Div 10 dB Ref Level 13.28 dBm Center 2.4410000 GHz #Res BW 100 kHz Span 1.500 MHz Sweep 1.00 ms (1001 pts) #Video BW 300 kHz Jun 17, 2024 3:27:22 PM 噩 2-DH5 2441MHz Spectrum Analyzer 1 Swept SA SCPI + Avg Type: Log-Power Avg|Hold: 10/10 Trig: Free Run Input Z: 50 Ω #Atten: 20 dB PNO: Fast KEYSIGHT Input: RF 1 2 3 4 5 6 Corr CCorr Freq Ref: Int (S) Preamp: Off Gate: Off IF Gain: Low Sig Track: Off MWWWWW Align: Auto PNNNNN Mkr1 2.441 4 GHz Ref LvI Offset 3.28 dB 7.67 dBm Scale/Div 10 dB Ref Level 13.28 dBm **∆**4 **♦**5 Start 30 MHz #Video BW 300 kHz Stop 26.50 GHz #Res BW 100 kHz Sweep ~2.53 s (30001 pts) 5 Marker Table Trace Scale **Function Function Width Function Value** Mode 2.441 4 GHz 7.67 dBm -47.21 dBm -47.21 dBm -57.85 dBm 4.882 0 GHz 4.882 0 GHz



Z

N

-63.15 dBm

7.322 5 GHz

9.695 1 GHz

Jun 17, 2024 3:27:53 PM





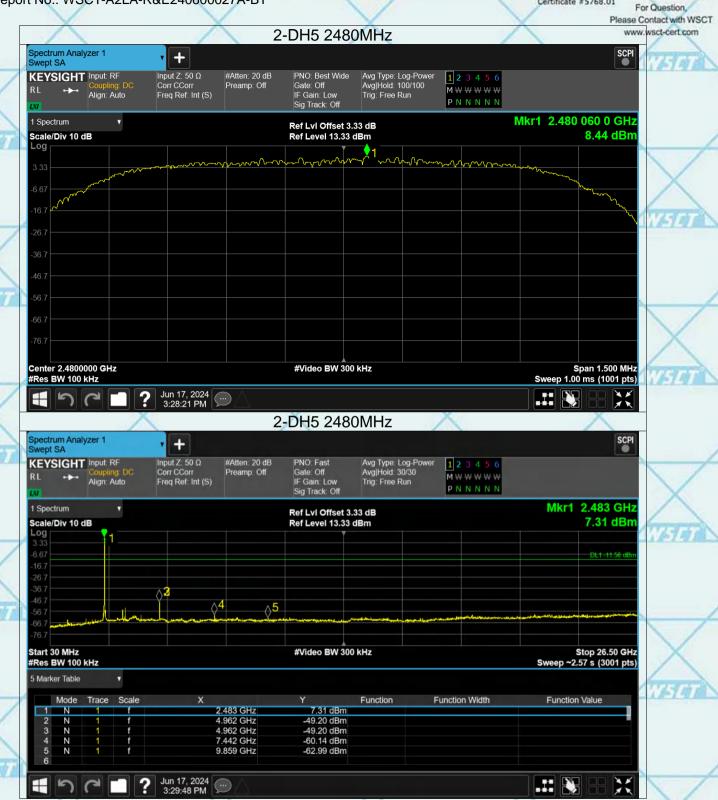




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Report No.: WSCT-A2LA-R&E240600027A-BT Certificate #5768.01 For Question, 8DPSK mode Please Contact with WSCT www.wsct-cert.com 3-DH5 2402MHz Spectrum Analyzer 1 SCPI + wept SA Input Z: 50 Ω #Atten: 20 dB Preamp: Off PNO: Best Wide Gate: Off Avg Type: Log-Power Avg|Hold: 100/100 KEYSIGHT Input: RF 1 2 3 4 5 6 Corr CCorr $\mathsf{M} \times \mathsf{W} \times \mathsf{W} \times \mathsf{W}$ Align: Auto IF Gain: Low Sig Track: Off Freq Ref: Int (S) Trig: Free Run PNNNNN 1 Spectrum Mkr1 2.401 847 0 GHz Ref LvI Offset 3.26 dB Ref Level 13.26 dBm Scale/Div 10 dB 5.74 dBm Center 2.4020000 GHz #Res BW 100 kHz Span 1.500 MHz Sweep 1.00 ms (1001 pts) #Video BW 300 kHz Jun 17, 2024 3:44:58 PM 3-DH5 2402MHz Spectrum Analyzer 1 Swept SA SCPI + Avg Type: Log-Power Avg|Hold: 10/10 Trig: Free Run Input Z: 50 Ω #Atten: 20 dB PNO: Fast KEYSIGHT Input: RF 1 2 3 4 5 6 Corr CCorr Freq Ref: Int (S) Gate: Off IF Gain: Low Sig Track: Off MWWWWW Align: Auto PNNNNN Mkr1 2.401 7 GHz Ref LvI Offset 3.26 dB 4.20 dBm Scale/Div 10 dB Ref Level 13.26 dBm DL1 -14.26 dE \triangle 4 **∆**5 Start 30 MHz #Video BW 300 kHz Stop 26.50 GHz #Res BW 100 kHz Sweep ~2.53 s (30001 pts) 5 Marker Table Scale **Function Function Width Function Value** Mode 2.401 7 GHz 4.804 3 GHz 4.20 dBm -54.85 dBm -54.85 dBm -60.83 dBm N 4.804 3 GHz 7.206 0 GHz Ν



N

-63.43 dBm

9.716 3 GHz

Jun 17, 2024 3:45:29 PM









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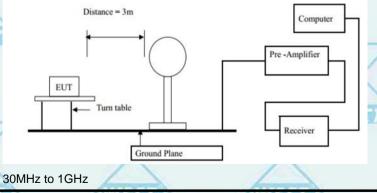
6.11. Radiated Spurious Emission Measurement

6.11.1. Test Specification

7	6.11.1. Test Specification	\/		1		
	Test Requirement:	FCC Part15	C Sectio	n 15.209		X
ò	Test Method:	ANSI C63.10):2014	17274		11274
	Frequency Range:	9 kHz to 25 (GHz			/
	Measurement Distance:	3 m			X	
	Antenna Polarization:	Horizontal &	Vertical		1117	The state of the s
		Frequency	Detecto	r RBW	VBW	Remark
	X	9kHz- 150kHz	Quasi-pea	ak 200Hz	1kHz	Quasi-peak Value
8	Deseiver Setup	150kHz-	Quasi-pea	ak 9kHz	30kHz	Quasi-peak Value
	Receiver Setup:	30MHz		1777	2021411	/7/4 m m
		30MHz-1GHz	Quasi-pea		300KHz	Quasi-peak Value
	X	Above 1GHz	Peak	1MHz	3MHz	Peak Value
			Peak	1MHz	10Hz	Average Value
	17270	Frequen	cy/5/5	Field Stre	ength	Measurement
7		riequen	Су	(microvolts	/meter)	Distance (meters)
		0.009-0.4	190	2400/F(I	(Hz)	300
		0.490-1.7	705	24000/F(KHz)	30
8		1.705-3		30		30
	176746	30-88		100		3
		88-216		150		3
	Limit:	216-96		200	- 7	3
		Above 9	60	500	/	3
	ATTENDED ATTENDED		ATTE	The state of the s	1000	THE REAL PROPERTY.
٠,			WAR CAN	1100	Measure	ment

Frequency	Field Strength (microvolts/meter)	Measurement Distance (meters)	Detector
Ab 4 OI I-	500	3	Average
Above 1GHz	5000	3	Peak

V V



Test setup:

W5ET

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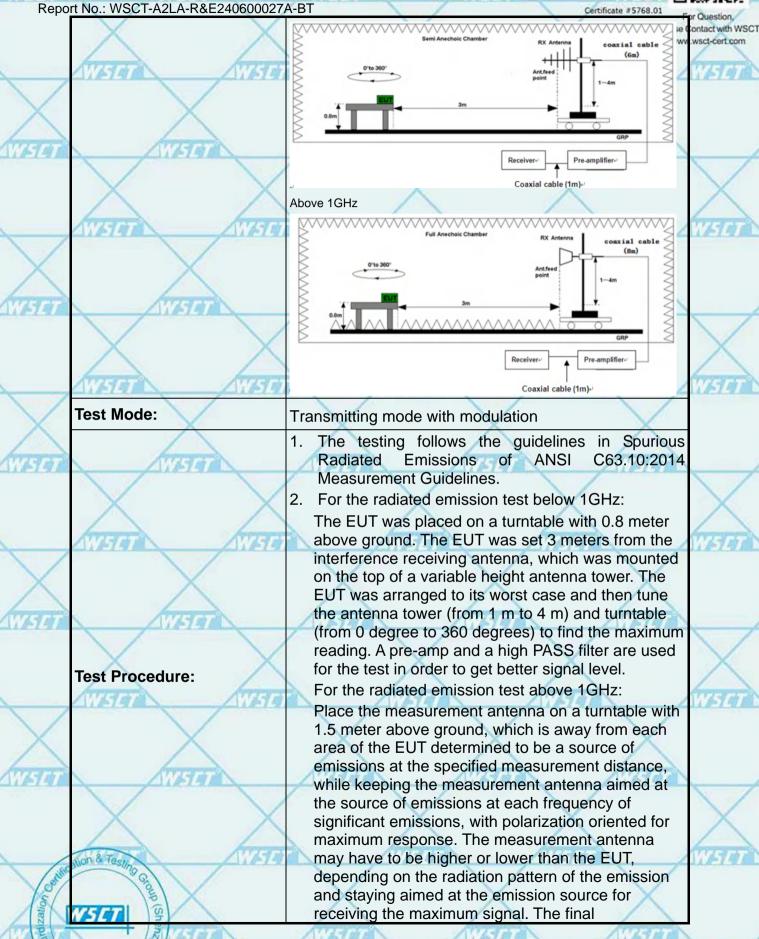
For radiated emissions below 30MHz



















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πορο	TOTAL TRANSPORT	TRALE TOUGOUGE TO E		antenna elevatior	shall be that which	For Question, Contact with WSC
				emissions. The n		
	MIZZA	10232	antenna elevati	on for maximum	emissions shall be	1777
	1111111	- IFIA			of from 1 m to 4 m	LACIN MI
V				nd or reference g		
	/	3.			tting and enable the)
AVZTA	AVZ.	788	EUT transmit of		11234	
		4.	Use the followi	ng spectrum ana	lyzer settings:	/
	X	X		wide enough to t	fully capture the	X
				eing measured;		
	WEST	1775			GHz, RBW=1MHz	WSET
/		/		z; VBW≥RBW;		
X		X			nction = peak; Trace	
				ld for peak		
AVATAI	ATT	741		ge measurement	2 1 2 2 4 4 4 4	
				factor method po		\/
	X	X			me/100 milliseconds +Nn-1*LNn-1+Nn*Lr	//
	A	Anna				-
	21479	11-79	Accompany of the second	type 1 pulses, etc	pe 1 pulses, L1 is	41.F7.9.B
				Emission Level =		
	/			0*log(Duty cycle)	I Can Lillission	
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CIPITE	1	144		ad Level - Pream	a Factor + Cable	/
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	Test results:	PA	ASS			
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/	1	/	/			
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AWSET	ATT	744	TIETHT .	AVSTON	AV6196	
	//					1/
	X	X	X			X
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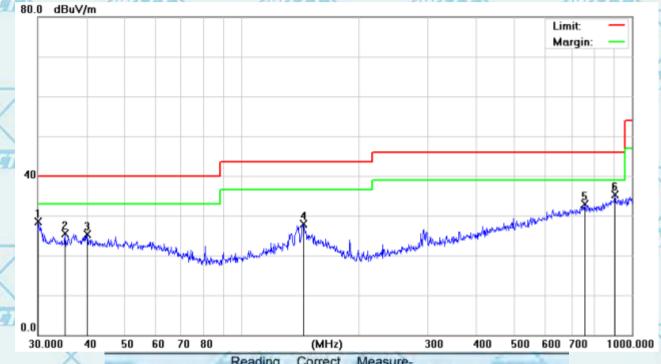
6.11.2. Test Data(worst case)

Please refer to following diagram for individual

Below 1GHz

The worst mode is 8-DPSK

Horizontal:



No.	Mk.	Freq.	Level	Factor	ment	Limit	Over	100
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		30.1054	31.16	-2.60	28.56	40.00	-11.44	QP
2		35.2512	27.73	-2.25	25.48	40.00	-14.52	QP
3		40.1347	26.68	-1.46	25.22	40.00	-14.78	QP
4		143.8295	29.99	-2.12	27.87	43.50	-15.63	QP
5	Ch.,	755.3873	27.28	5.70	32.98	46.00	-13.02	QP
6	+	903.3094	27.69	7.61	35.30	46.00	-10.70	QP

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ADD:Building A-B Baoshi Science & Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China TEL:86-755-26996192 26992306 FAX:86-758-86376605 E-mail: Fengbing.Wang@wsct-cert.com Http://www.wsct-cert.com



ilac MRA

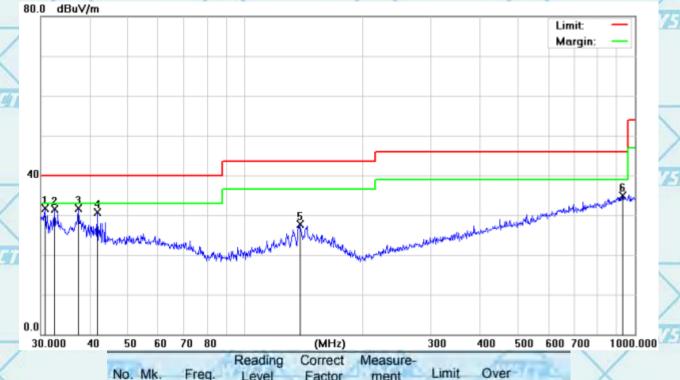




Report No.: WSCT-A2LA-R&E240600027A-BT Vertical:

Certificate #5768.01

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	No.	Mk.	Freq.	Reading Level	Correct	Measure- ment	Limit	Over	1100
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
-	1	*	30.7455	34.37	-2.58	31.79	40.00	-8.21	QP
	2		32.5198	33.98	-2.53	31.45	40.00	-8.55	QP
	3		37.4165	33.44	-1.80	31.64	40.00	-8.36	QP
ì	4		41.8596	32.34	-1.73	30.61	40.00	-9.39	QP
	5	De	138.3873	30.19	-2.42	27.77	43.50	-15.73	QP
	6		929.0082	26.95	7.96	34.91	46.00	-11.09	QP

Note1:

Freq. = Emission frequency in MHz

Reading level $(dB\mu V)$ = Receiver reading

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

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

Limit (dBµV) = Limit stated in standard

Margin (dB) = Measurement (dB μ V) – Limits (dB μ V)

e 150 kHz to 30MHz.

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Above 1GHz

8-DPSK

4	Eroa	Low channel: 2402MHz							
Freq. (MHz)		Ant.Pol	Emission Level(dBuV) L		Limit 3m(dBuV/m)		Over(dB)		
	(IVIIIZ)	H/V	PK	AV	PK	AV	PK	AV	
1	4804	V	58.09	41.88	74	54	-15.91	-12.12	
	7206	V	59.68	40.62	74	54	-14.32	-13.38	
	4804	Ι	59.50	40.05	74	54	-14.50	-13.95	
	7206	I	58.96	39.96	74	54	-15.04	-14.04	

	ALL I SHOW IN LINE		21 1 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1	20.7			T J - B - L - M S		
4	Freq. (MHz)	Middle channel: 2441MHz							
		Ant.Pol	Emission L	_evel(dBuV)	Limit 3m(dBuV/m)		Over(dB)		
		H/V	PK	AV	PK	AV	PK	AV	
	4882	V	58.73	41.25	74	54	-15.27	-12.75	
	7323	V	59.40	40.94	74	54	-14.60	-13.06	
	4882	Ι	59.43	40.57	74	54	-14.57	-13.43	
	7323	Τ	58.51	39.51	74	54	-15.49	-14.49	

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4	Freq. (MHz)	High channel: 2480MHz						
		Ant.Pol	Emission Level(dBuV)		Limit 3m(dBuV/m)		Over(dB)	
		H/V	PK	AV	PK	AV	PK	AV
	4960	V	60.65	40.36	74	54	-13.35	-13.64
	7440	V	58.23	39.67	74	54	-15.77	-14.33
	4960	Ι	58.40	39.36	74	54	-15.60	-14.64
	7440	I	58.12	39.12	74	54	-15.88	-14.88

Note:

- 1. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 2. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 3. 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.

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Report No.: WSCT-A2LA-R&E240600027A-BT Restricted Bands Requirements

Test result for 8-DPSK Mode(the worst case)

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Frequency	Reading	Correct Factor	Emission Level	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel							Alles
2387	63.12	-8.76	54.36	74	19.64	F	PK
2387	56.27	-8.76	47.51	54	6.49	Н	AV
2387	63.21	-8.73	54.48	74	19.52	V	PK
2387	55.30	-8.73	46.57	54	7.43	V/5	AV
2390	64.69	-8.76	55.93	74	18.07	Н	PK
2390	56.87	-8.76	48.11	54	5.89	Н	AV
2390	59.06	-8.73	50.33	74	23.67	V	PK
2390	54.17	-8.73	45.44	54	8.56	V	AV
High Channel							
2483.5	64.40	-8.76	55.64	74	18.36	1	PK
2483.5	54.29	-8.76	45.53	54	8.47	HIFT	AV
2483.5	61.85	-8.73	53.12	74	20.88	V	PK
2483.5	54.97	-8.73	46.24	54	7.76	V	AV

Note: Freq. = Emission frequency in MHz Reading level $(dB\mu V)$ = Receiver reading

Corr. Factor (dB) = Attenuation factor + Cable loss

Level $(dB\mu V)$ = Reading level $(dB\mu V)$ + Corr. Factor (dB) Limit $(dB\mu V)$ = Limit stated in standard

Margin (dB) = Level (dB μ V) – Limits (dB μ V)

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

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ADD:Building A-B Baoshi Science & Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China TEL:86/755-26998192 26992306 FAX:86-755-96376605. E-mail: Fengbing, Wang@wsct-cert.com Http://www.wsct-cert.com