

WS CT



TEST REPORT

FCC ID: 2AXYP-OSW-804

Product: Smart Watch

Model No.: OSW-804

Trade Mark: oraimo

Report No.: WSCT-ANAB-R&E240800044A-LE

Issued Date: 20 September 2024

Issued for:

ORAIMO TECHNOLOGY LIMITED FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 W5 C7 SHAN MEI STREET FOTAN NT HONGKONG

WSET

Issued By:

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

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

Report No.: WSCT-ANAB-R&E240800044A-LE

Test Certification

Product: **Smart Watch**

Model No.: OSW-804

oraimo **Trade Mark:**

ORAIMO TECHNOLOGY LIMITED Applicant:

FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE

WSET

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: 06 September 2024 to 20 September 2024

Applicable FCC CFR Title 47 Part 15 Subpart C Section 15.247

Standards: KDB 558074 D01 DTS Meas Guidance v04

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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Wart King Tested By:

(Wang Xiang)

Checked By:

Chero (Chen Xu)

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Approved By:

Date: 20 September

(Li Huaibi) W5ET

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2. Test Result Summary

	THE CO.	11/2	THE CT.	W5ET°
/	Requirement	CFR 47 Section	Result	WP17B
	Antenna requirement	§15.203/§15.247 (c)	PASS	
7 °	AC Power Line Conducted Emission	W5 ET §15.207	NA NA	
_	Conducted Peak Output W5 [7] Power W5 [§15.247 (b)(3) §2.1046	W5 PASS	W5 CT
7	6dB Emission Bandwidth	§15.247 (a)(2) §2.1049	PASS	
	Power Spectral Density	§15.247 (e)	PASS	
	Band Edge W5 D	1§5.247(d) y 2.1051, §2.1057	PASS W5 CT	WSET
	Spurious Emission	§15.205/§15.209 §2.1053, §2.1057	PASS	
7 400				

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 WSET WSET	V5 CT
	Model :	OSW-804	
	Trade Mark:	oraimo	
7	Operation Frequency:	2402MHz~2480MHz	$\overline{}$
	Channel Separation:	2MHz	X
	Number of Channel:	40T WSET WSET	VS CT
/	Modulation Technology:	GFSK	
7	Antenna Type;	Wire antenna	
	Antenna Gain:	0.63dBi	
	Operating Voltage	Li-ion Polymer Battery: 552123 Nominal Voltage: 3.8V Rated Capacity: 300mAh Rated Energy: 1.14Wh Limited Charge Voltage: 4.2V	VS ET
7	Remark:	N/A. WSCT WSCT	

Operation Frequency each of channel

	Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
7	0	2402MHz	10	2422MHz	20	2442MHz	30	2462MHz
	1	2404MHz	11	2424MHz	21	2444MHz	31	2464MHz
\								
	8	2418MHz	18	2438MHz	28	2458MHz	38	2478MHz
	9	2420MHz	19	2440MHz	29	2460MHz	39	2480MHz
	Remark: Channel 0, 19 & 39 have been tested.							

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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
T	

Test Mode:

Engineering mode: Keep the EUT in continuous transmitting by select channel and modulations(The value of duty cycle is 98.46%) with Fully-charged battery.

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

Description of Support Units

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

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

Note:

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

Test Instruments.

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5. Facilities and Accreditations

5.1. Facilities

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

Bao'an District, Shenzhen 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 W5 [7] 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

Accred	itation (ANAB).Certific	ation Number: AT-395		$\langle \ \ $	
W	SCT WS	ET WS	LT WS	CT WS CT	\
WSET	WSET	WSET	WSET	WSCT	
W	SET WS	$\langle \hspace{0.1cm} \rangle$	$\langle \hspace{0.1cm} \rangle$	ET WS ET	
WSET	WSET	WSET	WSET	WSCT	
	SET WS	CT WS	ET WS	ET WS ET	
WSET	WSET	WSET	WSET	WSCT	
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5.3. Measurement Uncertainty

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

				_
	No.	Item	MU	
W5 CT°	1	Power Spectral Density	±3.2dB	
	2	Duty Cycle and Tx-Sequence and Tx-Gap	±1%	X
	3 _{W5}	Medium Utilisation Factor W5 77	±1.3%	W5 CT
	4	Occupied Channel Bandwidth	±2.4%	
	5	Transmitter Unwanted Emission in the out-of Band	±1.3%	
WSET"	6	Transmitter Unwanted Emissions in the Spurious Domain	±2.5%	
	7	Receiver Spurious Emissions	±2.5%	X
	8W5 [Conducted Emission Test W5 [7]	±3.2dB	W5 CT
\sim	9	RF power, conducted	±0.16dB	
Week.	10	Spurious emissions, conducted	±0.21dB	
<u> WSET</u>	11	All emissions, radiated(<1GHz)	±4.7dB	
	12	All emissions, radiated(>1GHz)	±4.7dB	X
	13 <i>15 L</i>	Temperature W5 [T] W5 [T] W5	±0.5°C	W5 CT
X	14	Humidity	±2.0%	
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5.4.MEASUREMENT INSTRUMENTS

	5.4.WEASUREWENT INSTRUMENTS						\wedge
_	NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	Calibration Date	Calibration Due.	75 C 1
\langle	Test software		EZ-EMC	CON-03A	-	Χ-	
<u></u>	Test software		MTS8310	WSCT	- /	75 C T	
_	EMI Test Receiver	R&S	ESCI	100005	11/05/2023	11/04/2024	
	LISN	AFJ	LS16	16010222119	11/05/2023	11/04/2024	\times
	LISN(EUT)	Mestec	AN3016	04/10040	11/05/2023	11/04/2024	'5 C I
<	Universal Radio Communication Tester	R&S	CMU 200	1100.0008.02	11/05/2023	11/04/2024	
C	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	\wedge
	Pre Amplifier	IH.P. <i>ET</i> **	HP8447E 5 /	2945A02715	11/05/2023	11/04/2024	/5 C 1
1	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	
C	9*6*6 Anechoic	ET V	YS CT .	W.S ET	11/05/2023	11/04/2024	
	Horn Antenna	COMPLIANCE ENGINEERING	CE18000		11/05/2023	11/04/2024	X
	Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-631	11/05/2023	11/04/2024	15 C I
	Cable	TIME MICROWAVE	LMR-400	N-TYPE04	11/05/2023	11/04/2024	
\langle	System-Controller	ccs	N/A	N/A	N.C.R	N.C.R	
C i	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	6502W5	00042960	11/05/2023	11/04/2024	15 C 1
1	Horn Antenna	SCHWARZBECK	BBHA 9170	1123	11/05/2023	11/04/2024	
	Power meter	Anritsu	ML2487A	6K00003613	11/05/2023	11/04/2024	
4	Power sensor	Anritsu	MX248XD	WSG	11/05/2023	11/04/2024	
	Spectrum Analyzer	Keysight	N9010B	MY60241089	11/05/2023	11/04/2024	X

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Test Results and Measurement Data 6.

6.1. Antenna requirement

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Standard requirement:

FCC Part15 C Section 15.203 /247(c)

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. 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 0.63dBi.

Please refer to the attachment "OSW-804 Internal Photo" for the antenna location

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6.2. Conducted Emission

6.2.1. Test Specification W5 ET

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9.	2.1. Test Specification		
X	Test Requirement:	FCC Part15 C Section 15.207	
WSET	Test Method: 5	ANSI C63.10:2014 W5 [T] W5 [T]	
	Frequency Range:	150 kHz to 30 MHz	\times
	Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto	WSLT
WSET	Limits:	Frequency range Limit (dBuV) (MHz) Quasi-peak Average 0.15-0.5 66 to 56* 56 to 46* 0.5-5 56 46 5-30 60 50	
	\times	Reference Plane	X
	WSET WSE	40cm LISN	WSET
WSET	Test Setup:	E.U.T Adapter Test table/Insulation plane Remark E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m	WSET
\times	Test Mode:	Charging + Transmitting Mode	
WSET	WSET	 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. 	
		The peripheral devices are also connected to the main	
WSET	WSET WSET Test Procedure:	power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum	
	WSET WSE	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.	Testine
	Test Result:	N/A	S. Group (S

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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

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:

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

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6.3. Conducted Output Power

6.3.1. Test Specification W5 ET

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X	Test Requirement:	FCC Part15 C Section 15.247 (b)(3)	
WSET	Test Method:	KDB558074 W5 [T] W5 [T]	
	Limit:	30dBm	\times
	Test Setup:	EUT.	W5 ET
		Spectrum Analyzer	
W5 CT	Test Mode:	Refer to item 4.1	
WSET	Test Procedure:	 The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v04. Set spectrum analyzer as following: 5 7 Set the RBW ≥ DTS bandwidth. Set VBW ≥ 3 x RBW. Set span ≥ 3 x RBW Sweep time = auto couple.7 	WSCT
		e) Detector = peak. f) Trace mode = max hold. g) Allow trace to fully stabilize. h) Use peak marker function to determine the peak amplitude level.	WSCT
X	Test Result:	PASS	
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6.3.2. Test Data

_	BLE 1M					
	Test channel	Maximum Conducted Output Power (dBm)	Limit (dBm)	Result		
	Lowest	6.49	30.00	PASS		
L	Middle	7.30	30.00	PASS		
	Highest	7.42	30.00	PASS		

/		BLE 2M	1		WSLT
	Test channel	Maximum Conducted Output Power (dBm)	Limit (dBm)	Result	
	Lowest	6.54	30.00	PASS -	
	Middle	7.33	30.00	PASS	
	Highest	7.44	30.00	PASS	

Test plots as follows:

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6.4. Emission Bandwidth

6.4.1. Test Specification V5 [1]

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X	Test Requirement:	FCC Part15 C Section 15.247 (a)(2)	
V5 ET	Test Method:	KDB558074 W5 [T] W5 [T]	
	Limit:	>500kHz	\times
\overline{X}	Test Setup:	Spectrum Analyzer EUT	WS ET
VS ET	Test Mode:	Refer to item 4.1	
YS ET	Test Procedure:	 The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v04. Set to the maximum power setting and enable the EUT transmit continuously. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6dB bandwidth must be greater than 500 kHz. Measure and record the results in the test report. 	WSET
	Test Result:	PASS	\triangle
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6.4.2. Test data

BI	LE 1M	WELL	WS	CT.	WSIT
$\overline{}$	Test channel	6dB Emission	Bandwidth (kHz)		
X	rest channel	BT LE mode	Limit	Result	
N5 ET	Lowest	0.504	>500k	WSCT	
	Middle	0.502	>500k	PASS	
	Highest	0.501	>500k		

BLE 2M WSCT 6dB Emission Bandwidth (kHz) Test channel BT LE mode Limit Result W5 ET 0.839 >500k Lowest W5 C7 Middle 0.840 >500k **PASS** 0.823 Highest >500k

Test plots as follows:

W5 ET

WS CT

W5 CI

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W5 ET

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WS ET

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6.5. Power Spectral Density

6.5.1. Test Specification

	WSCT	T WSTT WSTT	WSE
7	Test Requirement:	FCC Part15 C Section 15.247 (e)	
	Test Method:	KDB558074	
	Limit:	The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.	X
7	Test Setup:	Secretary Analysis EUT	W5C
	Test Mode:	Refer to item 4.1	
	Test Procedure:	 The testing follows Measurement Procedure 10.2 Method PKPSD of FCC KDB Publication No.558074 D01 DTS Meas. Guidance v04 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. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW): 3 kHz ≤ RBW ≤ 100 kHz. Video bandwidth VBW ≥ 3 x RBW. In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW) Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level. Measure and record the results in the test report. 	WSC
	Test Result:	PASS	X

6.5.2. Test Instruments W5 CT

	RF Test Room						
Equipment Manufacturer		Model	Serial Number	Calibration Due			
	Spectrum Analyzer	R&S	FSU	200054	Nov. 04, 2024		
	RF cable (9kHz-26.5GHz)	TCT	RE-06	N/A	Nov. 04, 2024		
	Antenna Connector	тст	RFC-01	N/A	Nov. 04, 2024		

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

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6.5.3. Test data

W5 CT

W5 CT

	Test channel	Power Spectral D	ensity (dBm/3kl	Hz)
1	rest charmer	BLE 1M	Limit	Result
	Lowest	-3.30	8 dBm/3kHz	
0	Middle	-2.52	8 dBm/3kHz	PASS
	Highest	-2.49	8 dBm/3kHz	

	Test channel	Power Spectral Density (dBm/3kHz)			
7	rest chamile	BLE 2M	Limit	Result	
	Lowest	-3.80	8 dBm/3kHz		
0	Middle	w-2.98	8 dBm/3kHz	PASS	
	Highest	-2.87	8 dBm/3kHz		

	Test plots as follows:	W5ET*	W5 CT	WSET	WSET
WSET			WSE		SET
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	WS ET	WSET	WSET	WSET	WSET
WSET		X	WSC		SET
	X	X	X	X	X

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W5 CT WSET W5 ET W5 E1

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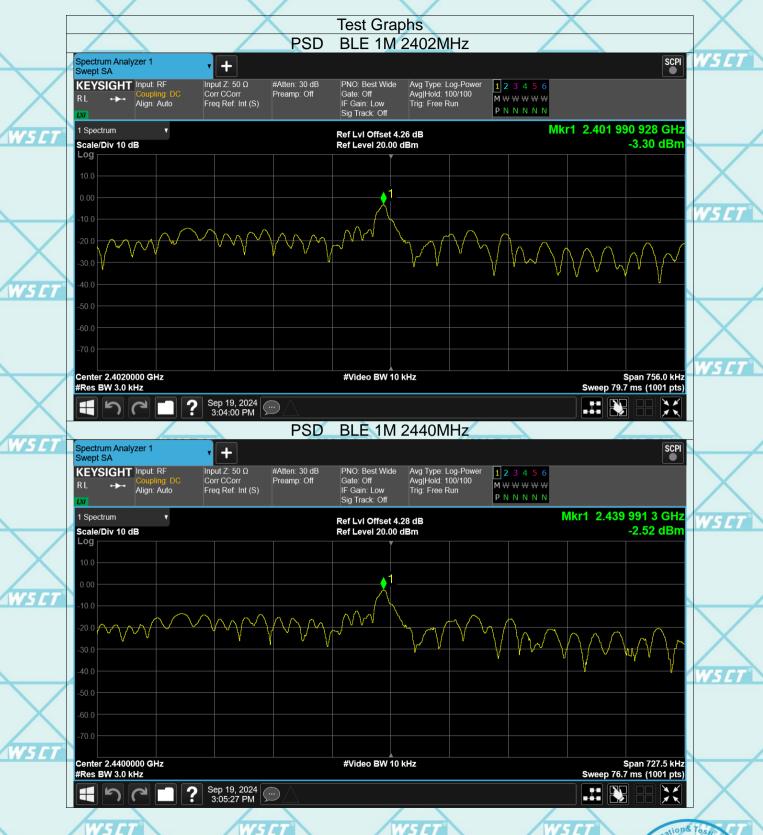
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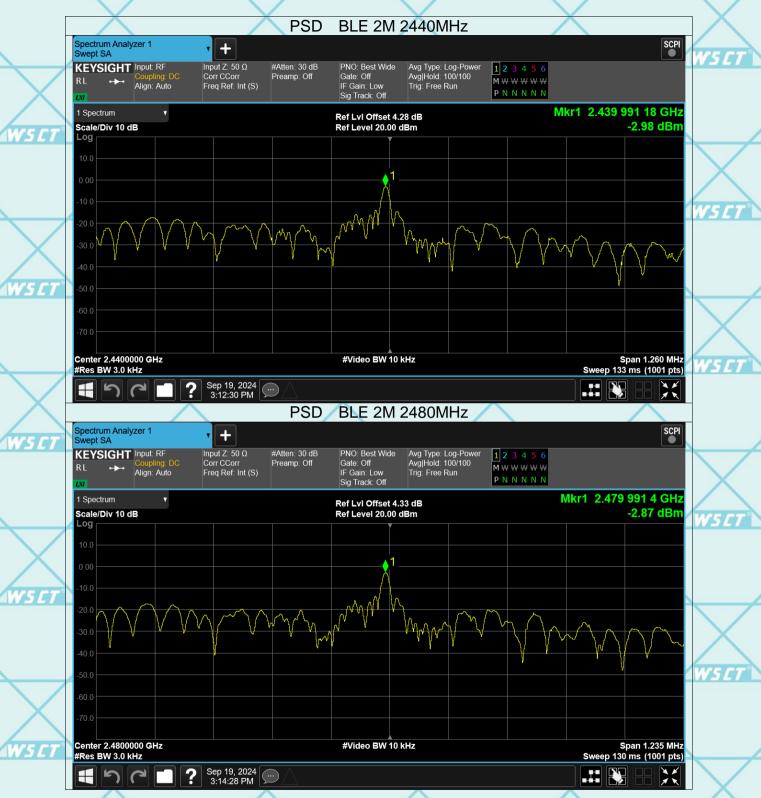




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6.6. Conducted Band Edge and Spurious Emission Measurement

6.6.1. Test Specification

0.	6.1. Test specification 5	T WSCT WSCT	(WSET"
\times	Test Requirement:	FCC Part15 C Section 15.247 (d)	
367	Test Method:	KDB558074	
	Limit:	In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).	WSET
	Test Setup:	Spectrum Analyzer EUT	WSET
\checkmark	Test Mode:	Refer to item 4.1	
III.	Test Procedure:	 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=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d). Measure and record the results in the test report. The RF fundamental frequency should be excluded against the limit line in the operating frequency band. 	WSCT
	Test Result:	PASS	X

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Conducted RF Spurious Emission

Test Graphs

Tx. Spurious BLE 1M 2402M





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-40.30 dBm -51.35 dBm -52.90 dBm

-50.78 dBm

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6.7. Radiated Spurious Emission Measurement

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6.	7.1. Test Specification						TO LI
							_
	Test Requirement:	FCC Part15	C Section	15.209			
WSCT	Test Method:	ANSI C63.10):2014	WSCI		WSCI	
	Frequency Range:	9 kHz to 25 (GHz /			/	
	Measurement Distance:	3 m	X		\rightarrow		-
	Antenna Polarization: V5	Horizontal &	Vertical		W5	7	WSET
	Operation mode:	Refer to item	4.1				
		Frequency	Detector	RBW	VBW	Remark	
WSET	W5LT°	9kHz- 150kHz	Quasi-peal		1kHz	Quasi-peak Va	lue
	Receiver Setup:	150kHz- 30MHz	Quasi-peal	k 9kHz	30kHz	Quasi-peak Va	lue
	X	30MHz-1GHz	Quasi-peal	k 100KHz	300KHz	Quasi-peak Va	lue
		Above 1GHz	Peak	1MHz	3MHz	Peak Value	
$\overline{}$	WSET WSET	10010 10112	Peak	1MHz	10Hz	Average Valu	e / W5CT
		Fragues	OV.	Field Stre	ength	Measurement	t
		Frequen		(microvolts		Distance (mete	rs)
WSCT	WSET	0.009-0.4		2400/F(I	207	300	
44767	111111111111111111111111111111111111111	0.490-1.7 1.705-3		24000/F(30	KHZ)	30 30	
		30-88		100		3	
		88-216		150		3	
	Limit: WS C1	216-96		200		3	WSET
	WE STATE OF THE ST	Above 9	60	500	/ UF	3	/ 11-15-1
		\rightarrow	1	\rightarrow	1	X	
		Frequency	Fiel	d Strength	Measure Distan		
W5 CT	WSET	WSET	(micro	ovolts/meter)	(meter	Annual Control	
		Above 1GHz		500	3	Average	e
	\times	Above 10112		5000	3	Peak	_ ×
	WSCT WSCT	For radiated	emission	s below 30	MHz	-	WSCT
	1614						/ 1714
X	X	Di	stance = 3m				
	The same of the sa	[Pre	-Amplifier	
W5CT	Test setup: W5 ET	[\	$\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $			
		EUT					

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30MHz to 1GHz

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W5E

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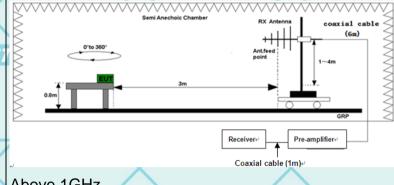
Ground Plane

SET WSET





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Above 1GHz

Coaxial cable (1m)

Test Procedure:

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 For the radiated emission test below 1GHz: The EUT was placed on a turntable with 0.1 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. 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 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 measurement antenna elevation shall be that which

maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m//s above the ground or reference ground plane

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Repo	rt No.: WSCT-ANAB-R&E240800044	IA-LÉ	s (valider : A1-55
	WSET WSET	 Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB 	W5E
WSET	WSET	lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.	
		4. Use the following spectrum analyzer settings: (1) Span shall wide enough to fully capture the emission being measured;	\times
WSET	WSET WSET	 (2) Set RBW=100 kHz for f < 1 GHz; VBW ≥RBW; Sweep = auto; Detector function = peak; Trace = max hold; (3) Set RBW = 1 MHz, VBW= 3MHz for f 1 GHz for peak measurement. 	W5 Ci
	WSCT WSC	For average measurement: VBW = 10 Hz, when duty cycle is no less than 98 percent. VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.	WSG
WSET	Test mode: W5/7/	Refer to section 4.1 for details	
	Test results: Note: Freq. = Emission frequency in MHz	PASS	X
	Reading level (dBµV) = Receiver reading Corr. Factor (dB) = Attenuation factor + C Level (dBµV) = Reading level (dBµV) + C Limit (dBµV) = Limit stated in standard Margin (dB) = Level (dBµV) - Limits (dBµV)	Cable loss Corr. Factor (dB)	W5Ei

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6.7.2. Test Data(Worst case)

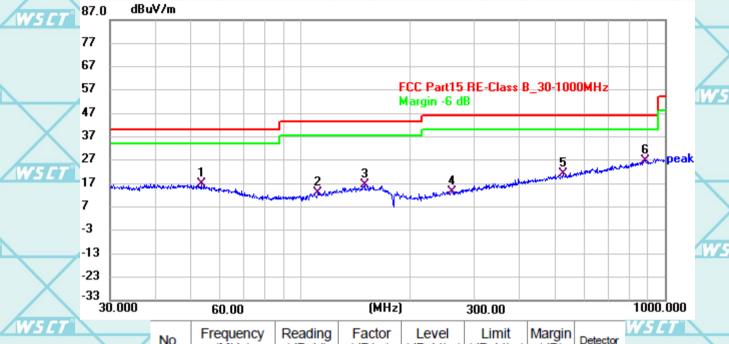
Please refer to following diagram for individual

Below 1GHz

W5 CT

The worst mode is BLE 1M

Horizontal:



	No.	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Detector	
	1	53.5287	36.07	-19.10	16.97	40.00	-23.03	QP	
WSET	2	111.6890	35.15	-22.21	12.94	43.50	-30.56	QP	
WELG	3	150.2082	35.80	-19.51	16.29	43.50	-27.21	QP	1
\times	4	261.4018	35.17	-21.57	13.60	46.00	-32.40	QP	
	5	524.7841	35.95	-14.95	21.00	46.00	-25.00	QP	
W5CT"	6 *	883.7278	36.81	-9.85	26.96	46.00	-19.04	QP	ĺ

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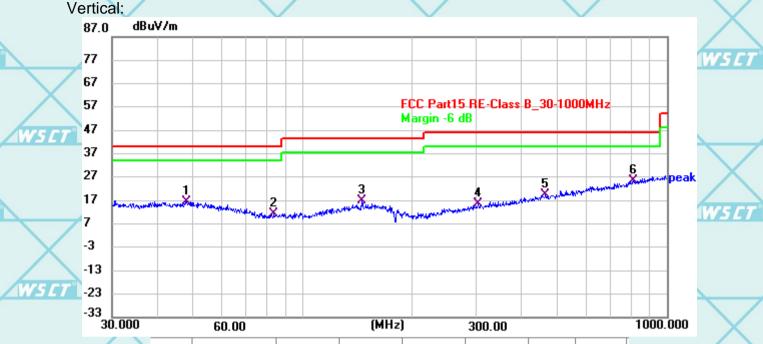


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WS CT°



WSET	No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
	1	47.9940	35.63	-19.02	16.61	40.00	-23.39	QP	
	2	83.5954	35.42	-23.93	11.49	40.00	-28.51	QP	
	3	145.7332	36.75	-19.73	17.02	43.50	-26.48	QP	4
	4	304.2097	35.72	-20.08	15.64	46.00	-30.36	QP	ŀ
	5	464.7838	35.72	-16.13	19.59	46.00	-26.41	QP	
	6 *	811.3315	36.32	-10.70	25.62	46.00	-20.38	QP	

WSCT WSCT WSCT WSCT WSCT

Note1:

WS CT

Freq. = Emission frequency in MHz

V5 Reading level (dBµV) = Receiver reading 7

Corr. Factor (dB) = Antenna factor + Cable loss - Amplifier factor. Measurement (dBµV) = Reading level (dBµV) + Corr. Factor (dB)

Limit (dBµV) = Limit stated in standard

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

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WSET WSET WSET

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深圳世标检测认证股份有限公司 World Standard ration Certification & Testing Group (Shenzhen) Co.,Lt

WELT

WSCI

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WSCT



W5 ET





Report No.: WSCT-ANAB-R&E240800044A-LE

W5 CT

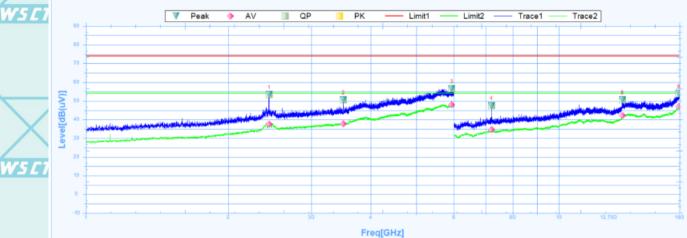
Above 1GHz(The worst mode is BLE 1M)

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

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

Low channel: 2402MHz

Horizontal:



W5 C

	Susputed Data List										
/	NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
J	1	2438.7500	53.32	27.39	25.93	74	-20.68	282.1	Horizontal	PK	Pass
L	1	2438.7500	37.51	27.39	10.12	54	-16.49	282.1	Horizontal	AV	Pass
	2	3503.1250	50.57	28.51	22.06	74	-23.43	178.1	Horizontal	PK	Pass
	2	3503.1250	37.7	28.51	9.19	54	-16.3	178.1	Horizontal	AV	Pass
	3	5939.3750	56.43	32.7	23.73	74	-17.57	342	Horizontal	PK	Pass
	3	5939.3750	47.83	32.7	15.13	54	-6.17	342	Horizontal	AV	Pass
,	4	7206.0000	47.54	7	40.54	74	-26.46	251.5	Horizontal	PK	Pass
	4	7206.0000	34.63	7	27.63	54	-19.37	251.5	Horizontal	AV	Pass
	5	13630.5000	50.43	18.06	32.37	74	-23.57	360	Horizontal	PK	Pass
I	5	13630.5000	42.25	18.06	24.19	54	-11.75	360	Horizontal	AV	Pass
L	6	17946.0000	53.78	23.55	30.23	74	-20.22	0.5	Horizontal	PK	Pass
	6	17946.0000	46.96	23.55	23.41	54	-7.04	0.5	Horizontal	AV	Pass

W5 CI WSE

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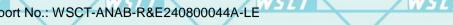




Report No.: WSCT-ANAB-R&E240800044A-LE

W5 CT

Vertical:



W5CT

Trace2 Freq[GHz]

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Susputed Data List												
	NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict	-
	1	2410.6250	45.4	27.3	18.1	74	-28.6	21.2	Vertical	PK	Pass	L
	1	2410.6250	37.33	27.3	10.03	54	-16.67	21.2	Vertical	AV	Pass	l
	2	3406.8750	58.76	28.44	30.32	74	-15.24	359.5	Vertical	PK	Pass	ŀ
/	2	3406.8750	37.23	28.44	8.79	54	-16.77	359.5	Vertical	AV	Pass	
	3	5703.1250	56.74	32.32	24.42	74	-17.26	133.5	Vertical	PK	Pass	
1	3	5703.1250	47.44	32.32	15.12	54	-6.56	133.5	Vertical	AV	Pass	
7	4	7206.0000	48.07	7	41.07	74	-25.93	218	Vertical	PK	Pass	
	4	7206.0000	35.82	7	28.82	54	-18.18	218	Vertical	AV	Pass	
	5	11454.0000	46.99	16	30.99	74	-27.01	147.5	Vertical	PK	Pass	
	5	11454.0000	39.03	16	23.03	54	-14.97	147.5	Vertical	AV	Pass	L
	6	17998.5000	54.06	23.92	30.14	74	-19.94	1	Vertical	PK	Pass	
	6	17998.5000	47.05	23.92	23.13	54	-6.95	1	Vertical	AV	Pass	

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 W5 CT	W5 CT"	WSET	WSCT	W5 CT

WSCT	WSCT	WSCT	WSIT	WSCT

WSCT	WSCT	WSIT	WSIT

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W5CT

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W5ET

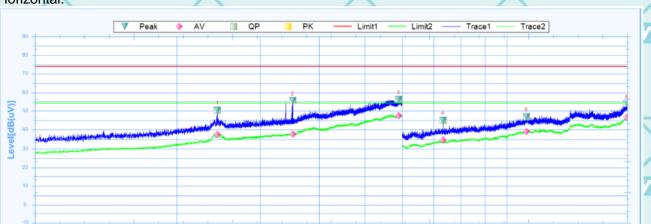




Report No.: WSCT-ANAB-R&E240800044A-LE

Middle channel: 2440MHz

Horizontal:



Freq[GHz]

W5[T]

W5 CT

W5 E

W5 E

W5 CI

L	Susputed Data List										
	NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
	1	2435.6250	50.33	27.38	22.95	74	-23.67	354.6	Horizontal	PK	Pass
	1	2435.6250	37.53	27.38	10.15	54	-16.47	354.6	Horizontal	AV	Pass
	2	3519.3750	55.57	28.55	27.02	74	-18.43	0	Horizontal	PK	Pass
	2	3519.3750	37.76	28.55	9.21	54	-16.24	0	Horizontal	AV	Pass
	3	5900.0000	56.3	32.64	23.66	74	-17.7	353	Horizontal	PK	Pass
Ţ	3	5900.0000	47.54	32.64	14.9	54	-6.46	353	Horizontal	AV	Pass
	4	7320.0000	44.98	6.87	38.11	74	-29.02	289.8	Horizontal	PK	Pass
	4	7320.0000	34.64	6.87	27.77	54	-19.36	289.8	Horizontal	AV	Pass
	5	10998.0000	46.83	15.61	31.22	74	-27.17	330.4	Horizontal	PK	Pass
	5	10998.0000	39.08	15.61	23.47	54	-14.92	330.4	Horizontal	AV	Pass
	6	17962.5000	53.92	23.66	30.26	74	-20.08	360.1	Horizontal	PK	Pass
	6	17962.5000	46.59	23.66	22.93	54	-7.41	360.1	Horizontal	AV	Pass

W5 E7 W5 CI W5 C W5 C1

W5 CT

W5C1 WS ET WS CT W5 E1

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W5 CT



W5CT

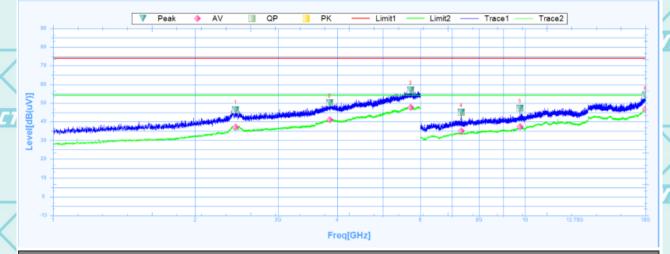




Report No.: WSCT-ANAB-R&E240800044A-LE

W5 CT

Vertical:



W5CT

W5 C

W5 E

	Suspu	ited Data Lis	st									
<u> </u>	NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict	
	1	2435.6250	46.44	27.38	19.06	74	-27.56	280.6	Vertical	PK	Pass	
	1	2435.6250	36.97	27.38	9.59	54	-17.03	280.6	Vertical	AV	Pass	
	2	3854.3750	50.02	29.35	20.67	74	-23.98	304.6	Vertical	PK	Pass	
<	2	3854.3750	40.98	29.35	11.63	54	-13.02	304.6	Vertical	AV	Pass	
	3	5718.7500	56.94	32.35	24.59	74	-17.06	299.8	Vertical	PK	Pass	
	3	5718.7500	47.57	32.35	15.22	54	-6.43	299.8	Vertical	AV	Pass	
	4	7320.0000	44.99	6.87	38.12	74	-29.01	230.1	Vertical	PK	Pass	
24	4	7320.0000	35.12	6.87	28.25	54	-18.88	230.1	Vertical	AV	Pass	
	5	9754.5000	47.15	11.77	35.38	74	-26.85	276.6	Vertical	PK	Pass	2
	5	9754.5000	37.22	11.77	25.45	54	-16.78	276.6	Vertical	AV	Pass	
	6	17992.5000	54.02	23.88	30.14	74	-19.98	117.7	Vertical	PK	Pass	-
	6	17992.5000	46.88	23.88	23	54	-7.12	117.7	Vertical	AV	Pass	

W5 CI W5 E7 W5 C W5 C1

W5 CT

W5C1 WS ET WS CT W5 E1

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W5CT



W5ET



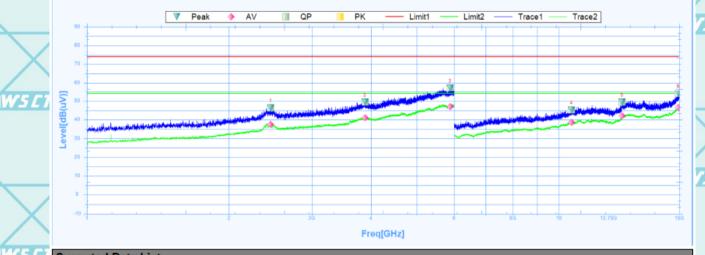


Report No.: WSCT-ANAB-R&E240800044A-LE

High channel: 2480MHz

Horizontal:

W5 CT



W5 E

W5E

L	Suspu	puted Data List										
	NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict	
	1	2450.6250	46.41	27.43	18.98	74	-27.59	180.5	Horizontal	PK	Pass	
	1	2450.6250	37.55	27.43	10.12	54	-16.45	180.5	Horizontal	AV	Pass	
	2	3883.1250	49.52	29.42	20.1	74	-24.48	11.1	Horizontal	PK	Pass	
	2	3883.1250	40.99	29.42	11.57	54	-13.01	11.1	Horizontal	AV	Pass	
	3	5881.8750	57.23	32.61	24.62	74	-16.77	328.7	Horizontal	PK	Pass	
Ţ	3	5881.8750	46.95	32.61	14.34	54	-7.05	328.7	Horizontal	AV	Pass	
L	4	10638.0000	45.3	14.46	30.84	74	-28.7	360	Horizontal	PK	Pass	
	4	10638.0000	38.56	14.46	24.1	54	-15.44	360	Horizontal	AV	Pass	
	5	13611.0000	49.47	18	31.47	74	-24.53	360	Horizontal	PK	Pass	
	5	13611.0000	42.12	18	24.12	54	-11.88	360	Horizontal	AV	Pass	
	6	17920.5000	54.17	23.39	30.78	74	-19.83	45.9	Horizontal	PK	Pass	
	6	17920.5000	46.55	23.39	23.16	54	-7.45	45.9	Horizontal	AV	Pass	

WS CI W5 CI

W5C1 WS ET W5 CT W5 E1

Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province, China. ADD: Building A-B, Baoli'an Industrial Park, No. 58 and 60, Tangtou Avenue,

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W5 CT



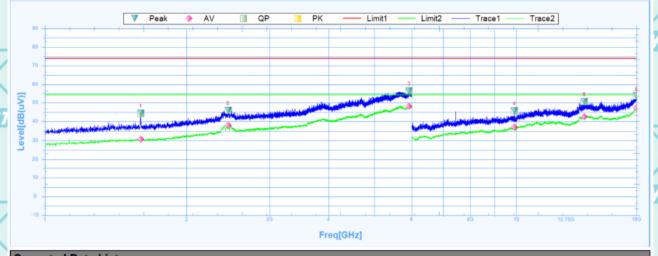




Report No.: WSCT-ANAB-R&E240800044A-LE



Vertical:



NSE.

Su	ıspu	ted Data Lis	st								
N	.0	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
1		1596.8750	44.44	24.9	19.54	74	-29.56	222.1	Vertical	PK	Pass
1		1596.8750	30.63	24.9	5.73	54	-23.37	222.1	Vertical	AV	Pass
2		2448.1250	45.84	27.42	18.42	74	-28.16	105	Vertical	PK	Pass
2		2448.1250	38.02	27.42	10.6	54	-15.98	105	Vertical	AV	Pass
3		5925.6250	56.43	32.68	23.75	74	-17.57	0	Vertical	PK	Pass
3		5925.6250	48.19	32.68	15.51	54	-5.81	0	Vertical	AV	Pass
4		9913.5000	45.73	12.16	33.57	74	-28.27	283.8	Vertical	PK	Pass
4		9913.5000	37.04	12.16	24.88	54	-16.96	283.8	Vertical	AV	Pass
5		13953.0000	50.45	18.99	31.46	74	-23.55	360	Vertical	PK	Pass
5		13953.0000	42.51	18.99	23.52	54	-11.49	360	Vertical	AV	Pass
6		17994.0000	53.56	23.89	29.67	74	-20.44	1.1	Vertical	PK	Pass
6		17994.0000	47.17	23.89	23.28	54	-6.83	1.1	Vertical	AV	Pass

Note:

- All emissions not reported were more than 20dB below the specified limit or in the noise floor.
- Emission Level= Reading Level+Probe Factor +Cable Loss.
- Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

****END OF REPORT****

ADD: Building A-B, Baoli'an Industrial Park, No. 58 and 60, Tangtou Avenue,

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