





WS CT

WSET

W5 CT

W5E1

TEST REPORT

WS E1

WS ET

W5CT WS CT

W5 CT

W5 ET

FCC ID: 2ADYY-K16SAA

Product: Laptop Computer

WSCT

W5 CT

W5 CT

W5 CT

Model No.: K16SAA W5 ET

W5 C7

Trade Mark: TECNO

Report No.: WSCT-ANAB-R&E240700030A-LE

Issued Date: 12 August 2024

W5 ET

WSET

W5 C1

W5 ET

Issued for:

W5 CT

WS C1

TECNO MOBILE LIMITED

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

W5 CT

W5 CT

Issued By:

WS CT

W5 CT

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

TEL: +86-755-26996192

FAX: +86-755-86376605

W5 ET

WSET

W5 CT

W5 CT

Note: This report shall not be reproduced except in full, without the written approval of World WS C Standardization Certification & Testing Group (Shenzhen) Co., Ltd. This document may be altered or revised by World Standardization Certification & Testing Group (Shenzhen) Co., Ltd. personnel only, and shall be noted in the revision section of the document. The test results in the report only apply to the tested sample.

W5 CT

WSET

W5 E7

W5 CT

tions Tes

WS C1

WSCI

DD: Building A-B, Baoil'an Industrial Park, No. 58 and 60, Tangtou Avenue. Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province. China. FAX:0086-755-86376605 L:0086-755-26996192 26996053 26996144

深圳世标检测认证股份有限公司

of the WSCT Group (WSCT SA)

Page 1 of 47

W5 E1



Report No.: WSCT-ANAB-R&E240700030A-LE

W5CT

	TABLE OF CONTENTS
	WSCT WSCT WSCT WSCT
1.	Test Certification 3
2.	Test Result Summary4
3.	EUT Description5
4.	Genera Information6
	4.1. TEST ENVIRONMENT AND MODE
	4.2. DESCRIPTION OF SUPPORT UNITS
5.	Facilities and Accreditations7
WSCT	5.1. FACILITIES
	5.2. ACCREDITATIONS7
	5.3. MEASUREMENT UNCERTAINTY
	5.4. MEASUREMENT INSTRUMENTS9
6.	Test Results and Measurement Data10
X	6.1. ANTENNA REQUIREMENT
	6.2. CONDUCTED EMISSION
WSET	6.3. CONDUCTED OUTPUT POWER
	6.4. EMISSION BANDWIDTH
6	6.5. POWER SPECTRAL DENSITY
	6.6. CONDUCTED BAND EDGE AND SPURIOUS EMISSION MEASUREMENT
	6.7. RADIATED Spurious Emission Measurement
W5CT°	WSET WSET WSET WSET
	WSET WSET WSET WSET WSET
W5 CT	WSET WSET WSET WSET
	X X X X
	WSET WSET WSET

Page 2 of 47





World Standardization Certification & Testing Group (Shenzhen) Co.,ltd. W5 CT Report No.: WSCT-ANAB-R&E240700030A-LE **Test Certification** Product: **Laptop Computer** W5E1 W5 CT WSET K16SAA Model No.: **TECNO Trade Mark:** TECNO MOBILE LIMITED W5 C1 W5 ET W5 CT Applicant: FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 Address: SHAN MEI STREET FOTAN NT HONGKONG TECNO MOBILE LIMITED WE F Manufacturer: W5 C1 FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 Address: SHAN MEI STREET FOTAN NT HONGKONG 11 July 2024 to 12 August 2024 **Date of Test:** W5 CT W5 CT FCC CFR Title 47 Part 15 Subpart C Section 15.247 **Applicable** KDB 558074 D01 DTS Meas Guidance v04 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. WSCI NSET aHBITIAH Tested By: Checked By: (Chen Xu) (Wang Xiang) WSET WSE W5 CT W5 ET Approved By: Date: WSE WSE (Li Huaibi) WSE W5 C7 WS CI W5 CT tiona Tes WSE WSEI W5 CT WS CI WSC1 DD: Building A-B, Baoli'an Industrial Park, No. 58 and 60, Tangtou Ave et, Bao'an District, Shenzhen City, Guangdong Province, China 深圳世标检测认证股份有限公司

of the WSCT Group (WSCT SA

: 0086-755-26996192 26996053 26896144

W5 C1

Page 3 of 47



NS C

Note:

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

Report No.: WSCT-ANAB-R&E240700030A-LE

W5CT°

2. Test Result Summary

	THE CTO MAKE !	THEFT	DATE CT.	W5 CT
/	Requirement	CFR 47 Section	Result	Welst
	Antenna requirement	§15.203/§15.247 (c)	PASS	
7 °	AC Power Line Conducted Emission	W5 ET §15.207	PASS	
_	Conducted Peak Output W5 [7] Power W5 [§15.247 (b)(3) §2.1046	W5 PASS	W5 ET
7	6dB Emission Bandwidth	§15.247 (a)(2) §2.1049	PASS	
	Power Spectral Density	§15.247 (e)	PASS	
	Band Edge W5 L	1§5.247(d) §2.1051, §2.1057	PASS W5 ET	WSCT
_	Spurious Emission	§15.205/§15.209 §2.1053, §2.1057	PASS	

- 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.

W5 CT	WSET	W5 LT	WSET	WSET
\times				\times

WSEI

WSCT WSCT WSCT	WS CT WS CT
----------------	-------------

WSCT WSCT WSCT

WSCT WSCT WSCT WSCT

EL: 0086-755-26996192 26996053 26996144 FAX: 0086-755-86376605 E-mail: fengbing.wang@wsct-cert.com Http: www.wsct-cert.com

wsct-cert.com Http://www.wsct-cert.com Http:/

W5 CT

WE CE WE

Page 4 of 47

W5 CT°







Report No.: WSCT-ANAB-R&E240700030A-LE

W5 CT

EUT Description 3.

	Product:	Laptop Computer W5 CT W5 CT	V5 ET
	Model No.:	K16SAA	
	Trade Mark:	TECNO	
7	Operation Frequency:	2402MHz~2480MHz	
	Channel Separation:	2MHz	X
	Number of Channel:	407 WSET WSET	V5 ET
/	Modulation Technology:	GFSK	
7	Antenna Type:	Integral Antenna	
	Antenna Gain:	3.46dBi	
	WSET	Adapter1: E065-1R200325VU INPUT: 100-240V~50/60Hz, 1.5A OUTPUT:20.0V—3.25A	VS CT
/	Operating Voltage:	Rechargeable Li-ion Polymer Battery: K16S Nominal Voltage: 11.55V Rated Capacity: 6060mAh	
7	WSET	Rated nergy:70.00Wh	
	Remark:	Limited Charge Voltage: 13.2V N/A.	X

Configuration differences

Camera	
1M(Shengtai)	
1M(Visual Era)	W5E
	1M(Shengtai)

Note: The prototypes of both configurations have been tested, and the K16SAA (i7) has the worst test result, which is the main test model reported

Operation Frequency each of channel

/_	Operatio	ii i icquene	y cuon o	1 Onamici				
	Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
	0	2402MHz	10	2422MHz	20	2442MHz	30	2462MHz
(0)	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.

W5 CI

Page 5 of 47







Report No.: WSCT-ANAB-R&E240700030A-LE

Genera Information 4.

4.1. Test environment and mode

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

Test Mode:

Engineering mode: Keep the EUT in continuous transmitting by select channel and modulations(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.

0	Equipment	Model No.	Serial No.	FCC ID	Trade Name
	Adapter	E065-1R200325VU	1	1	TECNO

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.

Page 6 of 47





Report No.: WSCT-ANAB-R&E240700030A-LE

5. Facilities and Accreditations

5.1. Facilities

WSCT[®] WSCT[®]

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

W5CT

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 32. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

5.2. ACCREDITATIONS

ANAB - Certificate Number: AT-3951

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

<i>,</i>	Accreditation (AIV.	AB). Certification r	Number. At-3951			
	WSET	WSET	W5 C	7	VS CT	WSET
WSCT		SET	WSET	WSET	WSCT	
	WSET	WSET	WSE		WSET	WSCT
WSCT		SET	WSET	WSET	WSET	
	WSGT	WSET	WSE		WSET	WSCT
WSET		SET	WSET	WSET	WSCT	
	WSET	WSET	WSE		WSET	ione Testin
WSCT		SET	WSET	WSET	N Sarton O	SET

SET WSET

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

Page 7 of 47

WSCT WSCT





Report No.: WSCT-ANAB-R&E240700030A-LE

W5CT°

5.3. Measurement Uncertainty

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

X	confide	nce of approximately 95 %.		
	No.	Item	MU	
AW5CT°	1	Conducted Emission Test	±3.2dB	
	2	RF power, conducted	±0.16dB	X
	3 _{W5} [Spurious emissions, conducted w5 [7]	±0.21dB	W5 CI
	4	All emissions, radiated(<1GHz)	±4.7dB	
	5	All emissions, radiated(>1GHz)	±4.7dB	
WS CT	6	Temperature	±0.5°C	
	7 X	Humidity	±2.0%	X
	W5 C	T WSCT WSCT WS	ET°	W5 C
\ /				

	WSLT	WSET	WSET	WSET	WSCT
WSCI		$\langle \hspace{0.1cm} \rangle$		$\langle \hspace{0.1cm} \rangle$	CT
	WSCT	WSCT	WSET	WSCT	WSET
WSCI		$\langle \hspace{0.1cm} \rangle$		TET WS	CT .
	WSCT	WSCT	WSET	WSCT	WSET
WSET	$\langle \hspace{0.1cm} \rangle$			W.S	
	WSCT	WSET	WSET		X
		VELI		W5 ET	artificationa Testino C

WELL WELL WELL

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

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







Report No.: WSCT-ANAB-R&E240700030A-LE

W5 CT

5.4.MEASUREMENT INSTRUMENTS

					WELFIE		
X	NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	Calibration Date	Calibration Due.	
C	Test software // 5	[7" V	75 EZ-EMC	CON-03A	- /V	V5 CT	
	Test software		MTS8310	-	\vee	-	X
	EMI Test Receiver	R&S	ESCI	100005	11/05/2023	11/04/2024	
	LISN	AFJ	LS16 ^{W5}	16010222119	11/05/2023	11/04/2024	'5 L
X	LISN(EUT)	Mestec	AN3016	04/10040	11/05/2023	11/04/2024	
C	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	X
	GPIB cable	Megalon	GPIB	N/A	11/05/2023	11/04/2024	
	Spectrum Analyzer	R&S	FSU W 5 L	100114	11/05/2023	11/04/2024	75 L
<	Pre Amplifier	H.P.	HP8447E	2945A02715	11/05/2023	11/04/2024	
	Pre-Amplifier	CDSI	PAP-1G18-38	W.C.C.	11/05/2023	11/04/2024	
4	Bi-log Antenna	SCHWARZBECK	VULB9168	01488	11/05/2023	11/04/2024	
	9*6*6 Anechoic		X		11/05/2023	11/04/2024	X
	Horn Antenna	COMPLIANCE ENGINEERING	CE18000	7	11/05/2023	11/04/2024	15 C
	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	
L	System-Controller	CCS V	V5 C7N/A	N/A [7]	N.C.R	N.C.R	
	Turn Table	ccs	N/A	N/A	N.C.R	N.C.R	X
	Antenna Tower	ccs	N/A	N/A	N.C.R	N.C.R	
	RF cable	Murata	MXHQ87WA300 0		11/05/2023	11/04/2024	15 E
\times	Loop Antenna	EMCO	6502	00042960	11/05/2023	11/04/2024	
T i	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		11/05/2023	11/04/2024	X
	Spectrum Analyzer	Keysight	N9010B	MY60241089	11/05/2023	11/04/2024	Was .
							0 0

Page 9 of 47







Report No.: WSCT-ANAB-R&E240700030A-LE

6. Test Results and Measurement Data

6.1. Antenna requirement

WSET°

W5 CT

W5 C7

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 Integral Antenna. it meets the standards, and the best case gain of the antenna is 3.46dBi.

WS ET

WSCT

WSLI

WSCT

WELT

WELT

IWS CT

WSCT

Steel WSET

WSET

IWS CT

4W5 C7

aws ct

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

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

mber of the WSCT Group (WSCT SA)

Page 10 of 47

WSCT







Report No.: WSCT-ANAB-R&E240700030A-LE

6.2. Conducted Emission

6.2.1. Test Specification

6.	2.1. Test Specification	WEGG WEGG	W-151
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	W5CT
WSET	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	
	WSET WSE	Reference Plane August 10cm LISN	WSCT
WSET	Test Setup:	E.U.T Adapter Filter AC power EMI Receiver 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 	
	WSET WSE	provides a 50ohm/50uH coupling impedance for the measuring equipment.2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH	WSCT
WSCT	Test Procedure:	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	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.	Testin
	Test Result:	PASS	o Group (

Page 11 of 47







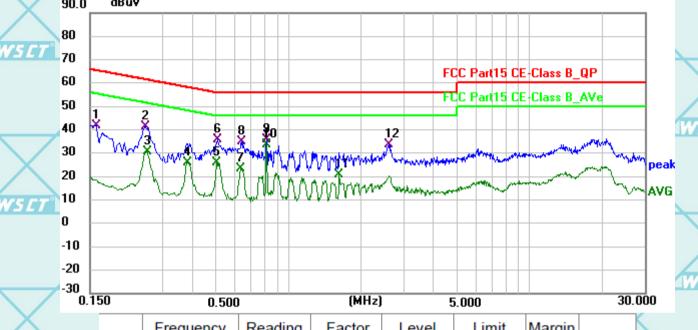
Report No.: WSCT-ANAB-R&E240700030A-LE

W5CT°

6.2.2. Test data (worst case)

The worst mode is BLE 2M Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)

W5 CT



WSET	No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	
	1	0.1590	21.02	20.72	41.74	65.52	-23.78	QP	
	2	0.2535	20.75	20.66	41.41	61.64	-20.23	QP	
	3	0.2580	9.86	20.66	30.52	51.50	-20.98	AVG	
W	4	0.3795	5.33	20.58	25.91	48.29	-22.38	AVG	
	5	0.5055	5.22	20.51	25.73	46.00	-20.27	AVG	<
	6	0.5100	15.15	20.51	35.66	56.00	-20.34	QP	
W5 CT	7	0.6315	2.74	20.53	23.27	46.00	-22.73	AVG	L
	8	0.6405	14.47	20.53	35.00	56.00	-21.00	QP	
	9	0.8115	15.08	20.59	35.67	56.00	-20.33	QP	
WS	10 *	0.8115	12.85	20.59	33.44	46.00	-12.56	AVG	
	11	1.6260	0.12	20.63	20.75	46.00	-25.25	AVG	
	12	2.6204	13.00	20.60	33.60	56.00	-22.40	QP	

WSCT WSCT WSCT WSCT

W5CT"

WSET

W5 CT

WS CT

WSET Colone Testing Croup (Shenz)

WSCT

WELT

WELT

AWS CT

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

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

Member of the WSCT Group (WSCT SA)

Page 12 of 47

WSCT

WSCT

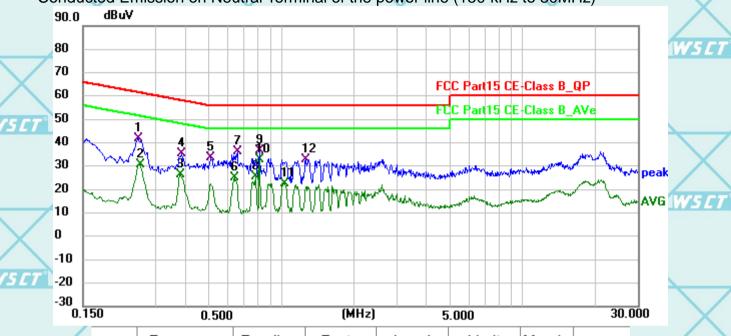






Report No.: WSCT-ANAB-R&E240700030A-LE

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



WE	No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	
	1	0.2535	21.33	20.66	41.99	61.64	-19.65	QP	
	2	0.2580	9.96	20.66	30.62	51.50	-20.88	AVG	
	3	0.3795	5.70	20.58	26.28	48.29	-22.01	AVG	CT°
	4	0.3840	14.59	20.58	35.17	58.19	-23.02	QP	
/	5	0.5100	13.09	20.51	33.60	56.00	-22.40	QP	
W	6	0.6404	4.47	20.53	25.00	46.00	-21.00	AVG	
	7	0.6540	15.68	20.53	36.21	56.00	-19.79	QP	/
	8	0.7799	4.98	20.57	25.55	46.00	-20.45	AVG	
	9	0.8114	16.10	20.59	36.69	56.00	-19.31	QP	C T
	10 *	0.8114	12.32	20.59	32.91	46.00	-13.09	AVG	
	11	1.0320	1.98	20.67	22.65	46.00	-23.35	AVG	
4	12	1.2570	12.25	20.65	32.90	56.00	-23.10	QP	
11/		77			NS L		WSLI		

Note1:

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.

Page 13 of 47







Report No.: WSCT-ANAB-R&E240700030A-LE

6.3. Conducted Output Power

6.3.1. Test Specification W5 ET

W5E7

W5C1

	'\/		
X	Test Requirement:	FCC Part15 C Section 15.247 (b)(3)	
W5 ET	Test Method:	KDB558074 W5 [T] W5 [T]	
	Limit:	30dBm	\times
X	Test Setup:	Spectrum Analyzer EUT	W5 ET
WSET	Test Mode:	Refer to item 4.1	
WSCT	Test Procedure:	 The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v04. Set spectrum analyzer as following:	WSCT
X	Test Result:	amplitude level. PASS	
WSET	WSCT	WSCT WSCT WSCT	

	WSET	WSET	WSET	WSET	WSCT
WSET	WSI		WS E	T WS	T T

Page 14 of 47





Infaladalato



W5 CI

V5 C1

Report No.: WSCT-ANAB-R&E240700030A-LE

W5CT

6.3.2. Test Data

W5C7

WS CT

	BLE 1M							
	Test channel	Maximum Conducted Output Power (dBm)	Limit (dBm)	Result				
0	Lowest	4.36	30.00	PASS				
1	Middle	4.22	30.00	PASS				
	Highest	3.85	30.00	PASS				

		D. = 41					
7	BLE 2M						
	Test channel	Maximum Conducted Output Power (dBm)	Limit (dBm)	Result			
0	Lowest	4.18 <i>5 [T</i>]	30.00	PASS			
	Middle	4.06	30.00	PASS			
	Highest	3.72	30.00	PASS			

Test plots as follows:

W5 CT W5 CI WS CT W5 C1 WSC

W5 CT WS ET W5 CT W5E1 W5C1

WS C WS CI W5C W5 CI

W5 CI W5 CT

> W5C1 WS CT WS CT W5 E1

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

深圳世标检测认证股份有限公司

W5CT

WSET

Page 15 of 47

W5CT W5CT

ation& Testin

W5CT







Report No.: WSCT-ANAB-R&E240700030A-LE

W5 CT

6.4. Emission Bandwidth

	1 4 P P P P		
6/1	1 Toct	Specificatio	
0.4.	1. 1631	Specification	

W5 ET

W5 CT W5 CT

X	Test Requirement:	FCC Part15 C Section 15.247 (a)(2)	
5 C T	Test Method:	KDB558074 W5 CT W5 CT	
	Limit:	>500kHz	
\overline{Z}	Test Setup:	Spectrum Australia EUT	ET.
	To a CM and a	Spectrum Analyzer	
SET"	Test Mode:	Refer to item 4.1	
SET			SET
	Test Procedure:	3. 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. 4. Measure and record the results in the test report.	$\overline{/}$
	Test Result:	PASS	
	WSL	WSU WSU WS	144

W5 C7 W5 C1 W5C1 W5 C

W5 CT

W5 ET W5 C1 W5 E1 WS ET

Page 16 of 47

W5CT

W5CT

W5 CT





V5 C1

Report No.: WSCT-ANAB-R&E240700030A-LE

W5CT"

6.4.2. Test data

ВІ	LE 1M	WELT	/	WEFT	WE	CT	1
$\overline{}$	Test channel		6dB	Emission B	Bandwidth (kHz))	4
X	rest channel	BT LE mode		Limit	Result		
ET.	Lowest	WO	.648		>500k	WSLT	
	Middle	0	.657		>500k	PASS	
	Highest	0	.683		>500k		

BLE 2M WS CT WS CT WS CT

WS	$\mathcal{L}\mathcal{T}$

W5 CT

	Test channel	6dB Emission Bandwidth (kHz)			
	rest chamilei	BT LE mode	Limit	Result	
_	Lowest	1.141	>500k	/	
	Middle	1.146	>500k	PASS	
	Highest	WS CT 1.178 WS CT	>500k	CT*	

Test plots as follows:

		Y .	
<u> </u>	^		\wedge

\sim					

WELT	WELT	WELT	WELT	METT

WE CT WE CT WE CT					
	W5CT"	WSCT	WSET	WSET	W5CT"

W5CT°	W5 CT	W5 CT	W5ET*	cation& Testin
				Strill See

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

a. 深圳世标检测认证股份有限公司 World Standard Zation Certification& Testing Group(Shenzhen

Page 17 of 47

WSET

/SCT°

W5 ET

WSET







Report No.: WSCT-ANAB-R&E240700030A-LE



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

10M # 深圳世标检测认证股份有限公司

VS CI

Page 18 of 47

ation& Test







Report No.: WSCT-ANAB-R&E240700030A-LE



ADD: Building A-B, Baoil'an Industrial Park, No.58 and 60, Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province, China. 深圳世标检测认证股份有限公司 TEL: 0086-755-26996192 26996053 26996144 FAX: 0086-755-86376605

10M #

ation& Testi

15 Ci

Page 19 of 47









Report No.: WSCT-ANAB-R&E240700030A-LE



ADD: Building A-B, Baoil'an Industrial Park, No.58 and 60, Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province, China. TEL: 0086-755-26996192 26996053 26996144 FAX: 0086-755-86376605

10M # 深圳世标检测认证股份有限公司

VS CI







Report No.: WSCT-ANAB-R&E240700030A-LE

6.5. Power Spectral Density

6.5.1. Test Specification

_	WS CT WS C	T' WSTT' WSTT'	W5E
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:	Spectrum Analyzer EUT	W5 E
	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 [7]

RF Test Room								
	Equipment	Manufacturer	Model	Serial Number	Calibration Due			
	Spectrum Analyzer	R&S	FSU	200054	Nov. 27, 2024			
	RF cable (9kHz-26.5GHz)	тст	RE-06	N/A	Nov. 27, 2024			
	Antenna Connector	TCT	RFC-01	N/A	Nov. 27, 2024			

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

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

深圳世标检测认证股份有限公司

Page 21 of 47





Report No.: WSCT-ANAB-R&E240700030A-LE

6.5.3. Test data

W5CT

W5C1

	Test channel	Power Spectral D	ensity (dBm/3kl	Hz)
4	rest channel	BLE 1M	Limit	Result
	Lowest	-11.86	8 dBm/3kHz	
	Middle	y-12.03	8 dBm/3kHz	PASS
	Highest	-12.38	8 dBm/3kHz	

	Test channel	Power Spectral D	ensity (dBm/3kł	W5CT	
7	rest charmer	BLE 2M	Limit	Result	
	Lowest	-14.42	8 dBm/3kHz		
1	Middle	w-14.46	8 dBm/3kHz	PASS	
	Highest	-14.83	8 dBm/3kHz		

	nighest	-14.0	S	o ubili/skmz	
	Test plots as follows:	WSET	WSET	WSET	WSCT
WSET		WSET		WSET	WSCT
	\times	WSET	WSET	WSCT	WSCT
WSET	WSET	WSCI		WSCT	WSCT
		WSET	WSET	WSET	WSCT
WSET	\times	WSCI		WSET	WSCT
	X	WSET	WSET	WSET	atheation Testing
					Will.

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

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

WSET WSE

WSET

WSCT







Report No.: WSCT-ANAB-R&E240700030A-LE Test Graphs BLE 1M 2402MHz **PSD** Spectrum Analyzer 1 Swept SA SCPI Input Z: 50 Ω PNO: Best Wide Avg Type: Log-Power Avg|Hold: 100/100 Trig: Free Run KEYSIGHT Input: RF #Atten: 30 dB 1 2 3 4 5 6 Corr CCorr Freq Ref: Int (S) Preamp: Off Gate: Off IF Gain: Low Align: Auto M ₩ ₩ ₩ ₩ PNNNN 1 Spectrum Mkr1 2.402 015 552 GHz Ref LvI Offset -1.74 dB Ref Level 18.26 dBm Scale/Div 10 dB -11.86 dBm My Manny My mondo Center 2.4020000 GHz #Video BW 10 kHz Span 972.0 kHz Sweep 103 ms (1001 pts) #Res BW 3.0 kHz Jul 30, 2024 12:05:50 AM **PSD** BLE 1M 2440MHz 15 C Spectrum Analyzer 1 Swept SA SCPI + Input Z: 50 Ω #Atten: 30 dB Preamp: Off PNO: Best Wide Avg Type: Log-Power Avg|Hold: 100/100 KEYSIGHT Input: RF 1 2 3 4 5 6 Corr CCorr Freq Ref: Int (S) $M \times W \times W \times W$ Align: Auto IF Gain: Low Sig Track: Off Trig: Free Run Mkr1 2.440 015 8 GHz 1 Spectrum Ref LvI Offset -1.72 dB Ref Level 18.28 dBm -12.03 dBm Scale/Div 10 dB my many many man soft master what my my Center 2.4400000 GHz #Res BW 3.0 kHz Span 985.5 kHz Sweep 104 ms (1001 pts) #Video BW 10 kHz

ADD: Building A-B, Baoli'an Industrial Park, No.58 and 60, Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province, China. TEL: 0086-755-26996192 26996053 26996144 FAX: 0086-755-86376605

Jul 30, 2024 12:06:39 AM

深圳世标检测认证股份有限公司

W5 C1

Page 23 of 47

ation& Test

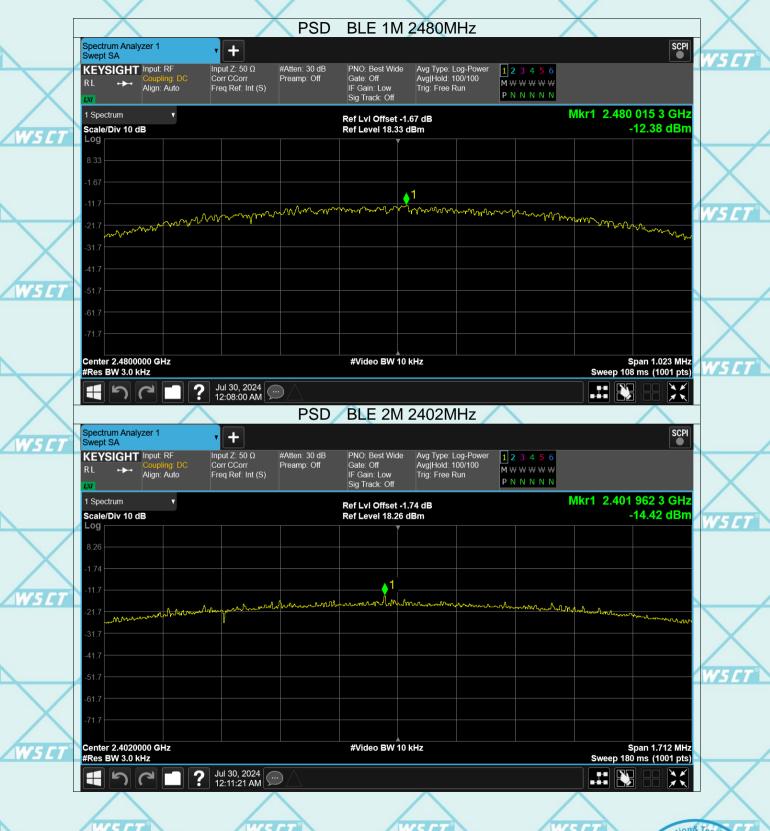




W5 CT



Report No.: WSCT-ANAB-R&E240700030A-LE





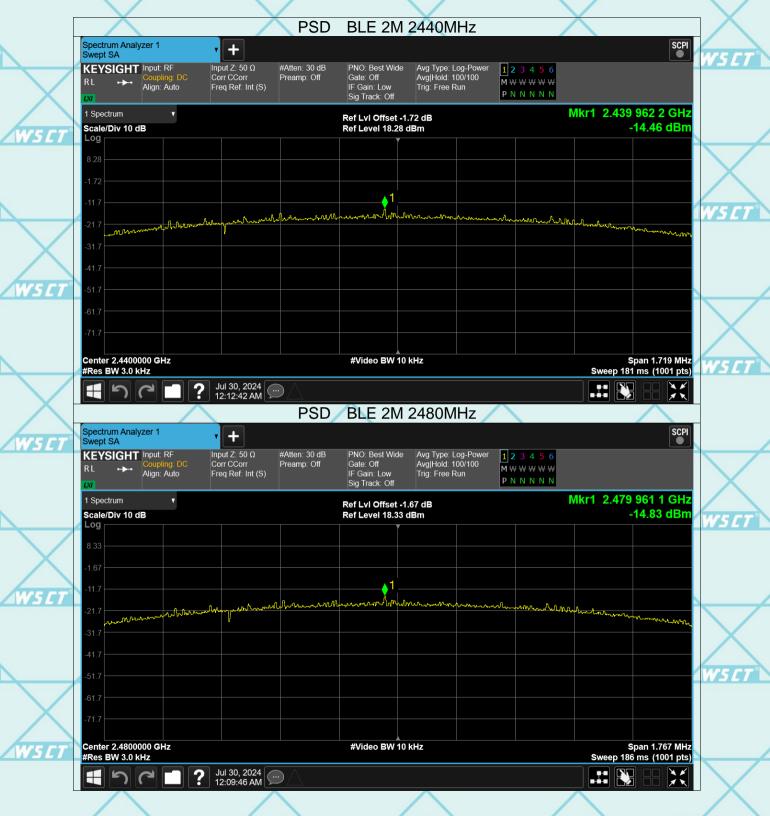




W5 CT



Report No.: WSCT-ANAB-R&E240700030A-LE



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

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

ation& Testi







Report No.: WSCT-ANAB-R&E240700030A-LE

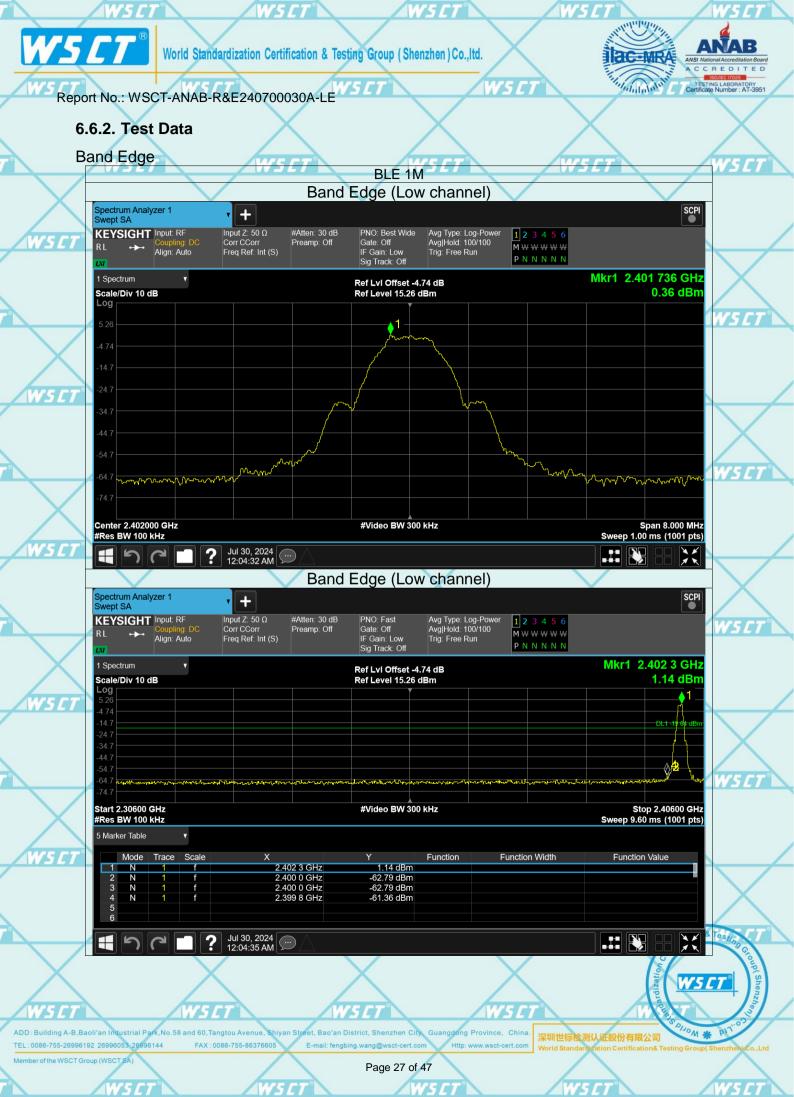
6.6. Conducted Band Edge and Spurious Emission Measurement

6.6.1. Test Specification

0.	6.1. rest specification	T WSCT WSCT	(WSCT")
\vee	Test Requirement:	FCC Part15 C Section 15.247 (d)	
WS ET	Test Method:	KDB558074	
WSET	Limit:	In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).	WSET
	Test Setup:	Spectrum Analyzer EUT	WSET
\bigvee	Test Mode:	Refer to item 4.1	
WSET WSET	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. 	WS CT
	Test Result:	PASS	X

W5CT

Page 26 of 47







W5CT

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

SOMESTROS

TESTING LABORATORY

Report No.: WSCT-ANAB-R&E240700030A-LE





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

VS CI

ation& Tesus







Report No.: WSCT-ANAB-R&E240700030A-LE



ADD: Building A-B, Baoli'an Industrial Park, No.58 and 60, Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province, China. TEL: 0086-755-26996192 26996053 26996144 FAX: 0086-755-86376605

深圳世标检测认证股份有限公司







Report No.: WSCT-ANAB-R&E240700030A-LE

W5 CI



ADD: Building A-B, Baoil'an Industrial Park, No.58 and 60, Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province, China. TEL: 0086-755-26996192 26996053 26996144 FAX: 0086-755-86376605 Http://www.wsct-cert.co

MON # 深圳世标检测认证股份有限公司

15 Ci

Page 30 of 47

ation& Tesus









Report No.: WSCT-ANAB-R&E240700030A-LE

WSCT



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

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

VS CI

Page 32 of 47

lember of the WSCT Group (WSCT SA)







Report No.: WSCT-ANAB-R&E240700030A-LE High channel SCPI Spectrum Analyzer 1 + Input Z: 50 Ω #Atten: 30 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 ____ M ₩ ₩ ₩ ₩ Align: Auto Freq Ref: Int (S) IF Gain: Low Sig Track: Off Trig: Free Run 1 Spectrum Mkr1 2.480 243 0 GHz Ref LvI Offset -1.67 dB Ref Level 18.33 dBm 3.64 dBm Scale/Div 10 dB **(1** Center 2.4800000 GHz #Res BW 100 kHz Span 1.500 MHz Sweep 1.00 ms (1001 pts) #Video BW 300 kHz Jul 30, 2024 12:08:11 AM High channel Spectrum Analyzer 1 Swept SA SCPI + Avg Type: Log-Power Avg|Hold: 10/10 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) Gate: Off IF Gain: Low Sig Track: Off M ₩ ₩ ₩ ₩ Align: Auto PNNNNN Mkr1 2.480 2 GHz 1 Spectrum Ref LvI Offset -1.67 dB 0.87 dBm Scale/Div 10 dB Ref Level 18.33 dBm <mark>⊘</mark>2 **∂**5 Δ3 **∆**4 Start 30 MHz #Video BW 300 kHz Stop 26.50 GHz #Res BW 100 kHz Sweep ~2.53 s (30001 pts) 5 Marker Table

Jul 30, 2024 12:08:42 AM

ADD: Building A-B, Baoil'an Industrial Park, No.58 and 60, Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province, China. TEL: 0086-755-26996192 26996053 26996144 FAX: 0086-755-86376605

2.480 2 GHz 25.428 8 GHz 5.138 7 GHz 7.248 4 GHz

9.838 0 GHz

Http://www.wsct-cert.co

Function Width

Function

0.87 dBm -53.18 dBm -57.16 dBm -59.27 dBm -58.18 dBm

> MON # 深圳世标检测认证股份有限公司

Function Value

Mode

Scale

ation& Tesus









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

MON # 深圳世标检测认证股份有限公司







Report No.: WSCT-ANAB-R&E240700030A-LE



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

MON # 深圳世标检测认证股份有限公司

15 C







Report No.: WSCT-ANAB-R&E240700030A-LE



ADD: Building A-B, Baoil'an Industrial Park, No.58 and 60, Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province, China. MON # 深圳世标检测认证股份有限公司

TEL: 0086-755-26996192 26996053 26996144 FAX: 0086-755-86376605 Http://www.wsct-cert.co

ation& Tesus







Report No.: WSCT-ANAB-R&E240700030A-LE

W5 CT

6.7. Radiated Spurious Emission Measurement

		AL PT		/ / / - II min m
67	_1/	Test S	Specification	on Let
U			poomoun	<i>7</i>

IWSET®

W5CT

W5 C7

6.	7.1. Test Specification		awsl/		Z W 5		_/	WZLI
	Test Requirement:	FCC Part15	C Section	15.209				
WSET	Test Method:	ANSI C63.10):2014	WSCT		WSI	7	
	Frequency Range:	9 kHz to 25 (GHz			/		
	Measurement Distance:	3 m	X		\rightarrow			X
	Antenna Polarization: V5	Horizontal &	Vertical		W5	57		W5 CT
	Operation mode:	Refer to item	4.1					
		Frequency	Detector	RBW	VBW	Remark		
WSET	W5 ET	9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak V	/alue	
	Receiver Setup:	150kHz- 30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak V	/alue	
	Neceiver Setup.	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak V	/alue	X
			Peak	1MHz	3MHz	Peak Valu		
	WSET WSE	Above 1GHz	Peak	1MHz	10Hz	Average Va	lue	WSCT°
				Field Ctus		Manaurana		
X	X	Frequen	су	Field Stre (microvolts)	•	Measureme Distance (me		
		0.009-0.4	190	2400/F(k	,	300	.0.0)	
W5CT°	W5 CT	0.490-1.7		24000/F(100 Mar.	30	7	
		1.705-3	\ /	30		30		
	X	30-88		100	\rightarrow	3		X
	Limit:	88-216 216-96		150 200	-	3		
\searrow	WSCT WSCT	Above 9		500		3		WSCT°
			<u> </u>					
X	X		Field	Strength	Measure	ment		
		Frequency		olts/meter)	Distan	And the second	ctor	
W5CT°	WSET	/W-51-4		500	(meter	-	7/1	
		Above 1GHz		5000	3	Avera Pea		
	\wedge							
	WSET WSET	For radiated	emissions	below 30	MHz 5	CT*		WSET
		Di	stance = 3m			Computer		
X	X	 				Computer		
Augus	Turner.		1) _	Pre -	-Amplifier		
WS CT	Test setup: WSET			-/ I			/ h	
		EUT	3					
			Turn table					

W5CT

WELT

WELT

30MHz to 1GHz

4W5C7

Ground Plane

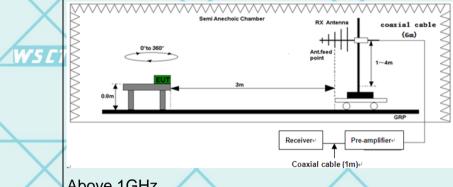
DD: Building A-B,Baoli'an Industrial Park,No.58 and 60,Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province, Chi EL: 0086-755-26996192 26996053 29996144 FAX: 0086-755-86376605 E-mail: fengbing.wang@wsct-cert.com Http::www.wsct-cert.com

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





Report No.: WSCT-ANAB-R&E240700030A-LE



Above 1GHz

Coaxial cable (1m)

Test Procedure:

15 E

 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,

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

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,

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

WS CI



World Standardization Certification & Testing Group (Shenzhen) Co., ltd. **ac-MRA** Report No.: WSCT-ANAB-R&E240700030A-LE

2. Corrected Reading: Antenna Factor + Cable Loss Read Level - Preamp Factor = Level 3. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 december of the EUT measured by the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-pe detector and reported. 4. Use the following spectrum analyzer settings:	el B
3. For measurement below 1GHz, If the emission lever of the EUT measured by the peak detector is 3 de lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peated detector and reported.	3
of the EUT measured by the peak detector is 3 dE lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-pe detector and reported.	3
lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-pe detector and reported.	
level will be reported. Otherwise, the emission measurement will be repeated using the quasi-pe detector and reported.	ak
measurement will be repeated using the quasi-pe detector and reported.	ak
detector and reported. 557	ak
4. Use the following spectrum analyzer settings:	
in dea and remarking operation and appearant	
(1) Span shall wide enough to fully capture the	
emission being measured;	
(2) Set RBW=100 kHz for f < 1 GHz; VBW ≥RBW	./
Sweep = auto; Detector function = peak; Trace	_
max hold;	
(3) Set RRW = 1 MHz VRW= 3MHz for f 1 GH	
for peak measurement.	
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	3
the minimum transmission duration over which the	2
transmitter is on and is transmitting at its maximum	n
power control level for the tested mode of operation	n.
Test mode: Refer to section 4.1 for details	

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 (dBµV) = Limit stated in standard Margin $(dB) = Level (dB\mu V) - Limits (dB\mu V)$

Test results:

WS ET

PASS

W5 CT WS ET WS CT W5 C1

ADD: Building A-B, Baoli'an Industrial Park, No. 58 and 60, Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province, China. FAX: 0086-755-86376605

深圳世标检测认证股份有限公司

Page 39 of 47

W5 C1







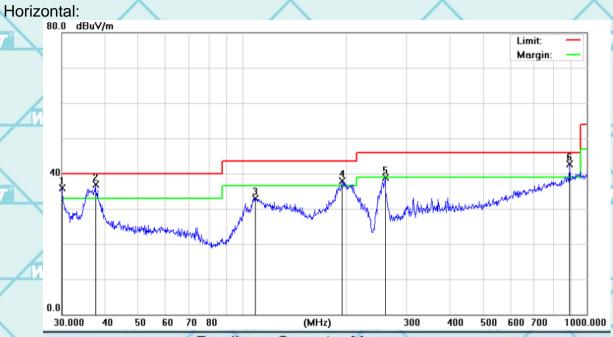
Report No.: WSCT-ANAB-R&E240700030A-LE

6.7.2. Test Data(worst case)

Please refer to following diagram for individual

The worst mode is BLE 2M

Below 1GHz



WSET	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	TI V
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
\ <u>\</u>	1	1	30.0000	37.57	-1.73	35.84	40.00	-4.16	QP
	2	×	37.5479	37.83	-0.86	36.97	40.00	-3.03	QP
	3		109.0286	36.06	-3.16	32.90	43.50	-10.60	QP
WSCT	4	!	195.1365	41.67	-3.81	37.86	43.50	-5.64	QP
	5	1	260.1444	40.36	-1.42	38.94	46.00	-7.06	QP
_	6		890.7278	29.79	12.87	42.66	46.00	-3.34	QP

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

Page 40 of 47

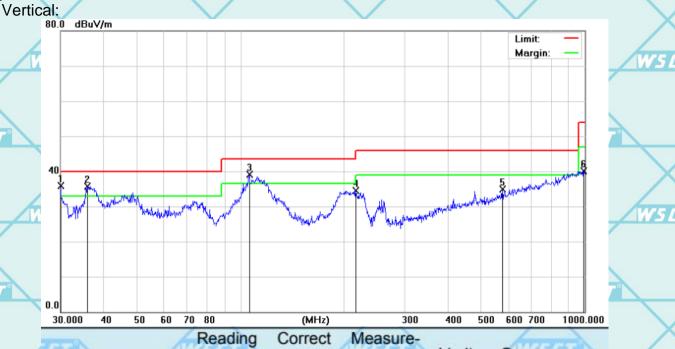






Report No.: WSCT-ANAB-R&E240700030A-LE

W5CT



No.	Mk	. Freq.	Level	Factor	ment	Limit	Over	THE	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	1
1	*	30.0000	37.62	-1.73	35.89	40.00	-4.11	QP	
2	A	35.8746	36.94	-1.16	35.78	40.00	-4.22	QP	7
3	!	106.0126	42.40	-3.37	39.03	43.50	-4.47	QP	
4		216.0240	37.62	-3.07	34.55	46.00	-11.45	QP	
1 5	1	576.6443	27.73	7.08	34.81	46.00	-11.19	QP	
6		993.0114	25.66	14.45	40.11	54.00	-13.89	QP	

WSCT WSCT WSCT WSCT WSCT

Note1:

Freq. = Emission frequency in MHz

Reading level (dBµV) = Receiver reading

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

Measurement (dB μ V) = Reading level (dB μ V) + Corr. Factor (dB)

Limit (dBµV) = Limit stated in standard

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

WSCT

WSET WSET WSET WSET

SET WSET

WS ET WS

Shenzhen City, Guangdong Province, China.

深圳世标检测认证股份有限公司
World Standard Sting Count Sherzhen Co. Ltd.

6996192 26996053 26996144 FAX: 0086-755-86376605 E-mail: fengbing.wang@wsct-cert.com Http: www.wsct-ce
6CTGroup (WSCTSA)

Page 41 of 47

TT WS

WSCT





Report No.: WSCT-ANAB-R&E240700030A-LE

Above 1GHz

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.

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

Low channel: 2402MHz

Horizontal:

NSC



Susputed Data List Deg Reading Factor Level Limit Margin Freq. NO. Polarity Verdict Trace [dB(uV)] [MHz] [dB] [dB(uV)] [dB] [dB] [°] 1477.5000 24.04 -0.26 24.3 74 -49.96 0.5 Horizontal Pass 1477.5000 14.24 -0.26 14.5 54 -39.76 0.5 Horizontal ΑV Pass 2439.3750 36.13 7.7 28.43 74 -37.87 191.6 PK Pass Horizontal 2439.3750 25.19 7.7 17.49 54 -28.81 191.6 Horizontal ΑV Pass 3868.7500 43.95 11.47 32.48 74 -30.05 360 PK Horizontal Pass 34.27 11.47 22.8 54 -19.73 3 3868.7500 360 Horizontal ΑV Pass 37.13 36.35 0.78 74 -36.87 7566.0000 16.4 Horizontal PK Pass 4 7566.0000 28.98 36.35 -7.37 54 -25.02 16.4 Horizontal ΔV Pass 11923.5000 45.49 38.67 6.82 74 -28.51 357.4 Horizontal PK Pass 5 54 11923.5000 38.34 38.67 -0.33 -15.66 357.4 Horizontal ΑV Pass 6 15036.0000 50 40.09 9.91 74 -24 285.4 Horizontal PK Pass 6 41.58 54 15036.0000 40.09 1.49 -12.42 285.4 Horizontal ΑV Pass

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

TEL: 0086-755-26996192 26996053 26996144

Page 42 of 47

FAX: 0086-755-86376605



W5CT

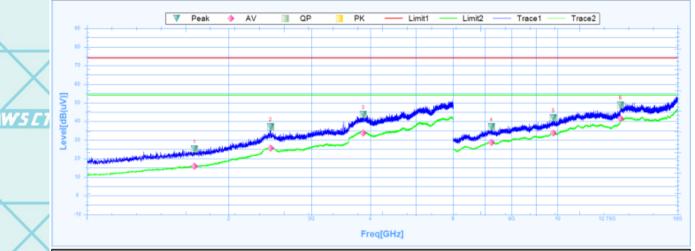




Report No.: WSCT-ANAB-R&E240700030A-LE

W5CT

Vertical:



W5CT

W5 C

W5 E

	Suspu	ited Data Lis	st								
Ż	NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
	1	1691.8750	25.03	0.36	24.67	74	-48.97	360.1	Vertical	PK	Pass
	1	1691.8750	15.81	0.36	15.45	54	-38.19	360.1	Vertical	AV	Pass
	2	2453.7500	37.14	7.75	29.39	74	-36.86	34	Vertical	PK	Pass
	2	2453.7500	25.53	7.75	17.78	54	-28.47	34	Vertical	AV	Pass
	3	3862.5000	43.73	11.42	32.31	74	-30.27	170.3	Vertical	PK	Pass
	3	3862.5000	33.85	11.42	22.43	54	-20.15	170.3	Vertical	AV	Pass
_	4	7231.5000	37.08	35.85	1.23	74	-36.92	52.3	Vertical	PK	Pass
L	4	7231.5000	28.63	35.85	-7.22	54	-25.37	52.3	Vertical	AV	Pass
	5	9801.0000	41.84	37.96	3.88	74	-32.16	273.4	Vertical	PK	Pass
	5	9801.0000	33.69	37.96	-4.27	54	-20.31	273.4	Vertical	AV	Pass
	6	13603.5000	48.85	40.47	8.38	74	-25.15	163.5	Vertical	PK	Pass
	6	13603.5000	41.54	40.47	1.07	54	-12.46	163.5	Vertical	AV	Pass

W5 CI W5 E7 W5 C W5 C1

W5 CT

W5C1 WS ET WS 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, FAX: 0086-755-86376605

深圳世标检测认证股份有限公司

W5CT

Page 43 of 47 W5CT



W5CT°





Report No.: WSCT-ANAB-R&E240700030A-LE

WSET WSET

W5CT

Middle channel: 2440MHz Horizontal:



MPLI	Susputed Data List	t

W5E

_	Suspu	iteu Data Eis	ж.								
	NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
	1	2444.3750	39.32	7.72	31.6	74	-34.68	41.2	Horizontal	PK	Pass
	1	2444.3750	25.58	7.72	17.86	54	-28.42	41.2	Horizontal	AV	Pass
	2	3518.7500	43.08	9.74	33.34	74	-30.92	126	Horizontal	PK	Pass
	2	3518.7500	27.47	9.74	17.73	54	-26.53	126	Horizontal	AV	Pass
	3	5262.5000	47.39	19.37	28.02	74	-26.61	282.6	Horizontal	PK	Pass
-	3	5262.5000	38.79	19.37	19.42	54	-15.21	282.6	Horizontal	AV	Pass
	4	7750.5000	36.96	36.63	0.33	74	-37.04	150.3	Horizontal	PK	Pass
	4	7750.5000	29.51	36.63	-7.12	54	-24.49	150.3	Horizontal	AV	Pass
	5	11893.5000	45.29	38.7	6.59	74	-28.71	103.8	Horizontal	PK	Pass
	5	11893.5000	37.99	38.7	-0.71	54	-16.01	103.8	Horizontal	AV	Pass
	6	13992.0000	48.46	41.48	6.98	74	-25.54	39.2	Horizontal	PK	Pass
ij	6	13992.0000	41.66	41.48	0.18	54	-12.34	39.2	Horizontal	AV	Pass

WSCT WSCT WSCT WSCT WSCT

WSCT WSCT WSCT WSCT

WSET WSET WSET WSET

WSCT WSCT WSCT WSCT

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

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

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

SCT WSCT

Page 44 of 47

WS ET WS ET



W5 ET





Report No.: WSCT-ANAB-R&E240700030A-LE

W5CT

W5CT

Vertical:



W5C

W5C

	Suspu	ited Data Lis	st								
7	NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
	1	1744.3750	31.28	0.55	30.73	74	-42.72	255	Vertical	PK	Pass
	1	1744.3750	16.17	0.55	15.62	54	-37.83	255	Vertical	AV	Pass
	2	2438.7500	34.31	7.7	26.61	74	-39.69	0.5	Vertical	PK	Pass
	2	2438.7500	25.89	7.7	18.19	54	-28.11	0.5	Vertical	AV	Pass
	3	3914.3750	42.95	11.85	31.1	74	-31.05	41	Vertical	PK	Pass
	3	3914.3750	33.92	11.85	22.07	54	-20.08	41	Vertical	AV	Pass
J	4	7737.0000	37.01	36.61	0.4	74	-36.99	87	Vertical	PK	Pass
1	4	7737.0000	29.6	36.61	-7.01	54	-24.4	87	Vertical	AV	Pass
	5	10251.0000	42.13	38.45	3.68	74	-31.87	82.2	Vertical	PK	Pass
	5	10251.0000	34.62	38.45	-3.83	54	-19.38	82.2	Vertical	AV	Pass
	6	13926.0000	48.92	41.31	7.61	74	-25.08	359.5	Vertical	PK	Pass
	6	13926.0000	41.48	41.31	0.17	54	-12.52	359.5	Vertical	AV	Pass

W5 C1 W5 E7 W5 C W5 C1 W5 CT

> W5C1 WS ET WS 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, FAX: 0086-755-86376605

W5CT

深圳世标检测认证股份有限公司

Page 45 of 47

W5CT



W5ET





Report No.: WSCT-ANAB-R&E240700030A-LE

High channel: 2480MHz

Horizontal:

W5CT[®]



W5[T]

W5 E1

W5 E

W5 C

L	Suspu	ted Data Lis	st								
	NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
	1	1508.1250	24.03	-0.26	24.29	74	-49.97	1.3	Horizontal	PK	Pass
	1	1508.1250	14.51	-0.26	14.77	54	-39.49	1.3	Horizontal	AV	Pass
	2	2456.8750	35.26	7.76	27.5	74	-38.74	360.1	Horizontal	PK	Pass
	2	2456.8750	25.19	7.76	17.43	54	-28.81	360.1	Horizontal	AV	Pass
	3	3857.5000	43.29	11.38	31.91	74	-30.71	80.6	Horizontal	PK	Pass
Ţ	3	3857.5000	33.93	11.38	22.55	54	-20.07	80.6	Horizontal	AV	Pass
L	4	7651.5000	36.76	36.48	0.28	74	-37.24	84.6	Horizontal	PK	Pass
	4	7651.5000	29.38	36.48	-7.1	54	-24.62	84.6	Horizontal	AV	Pass
	5	10800.0000	44.01	39.22	4.79	74	-29.99	194.6	Horizontal	PK	Pass
	5	10800.0000	36.26	39.22	-2.96	54	-17.74	194.6	Horizontal	AV	Pass
	6	13999.5000	49.13	41.5	7.63	74	-24.87	308.2	Horizontal	PK	Pass
,	6	13999.5000	41.8	41.5	0.3	54	-12.2	308.2	Horizontal	AV	Pass

WSET WSET WSET WSET WSET WSET WSET

WSET WSET WSET WSET STORE TO SELECT OF STORE TO SELECT OF STORE TO SELECT OF SELECT OF

ADD: Building A-B, Baoil'an Industrial Park, No.58 and 60, Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province, China.
TEL: 086-755-26996192 26998053 26996144 FAX: 086-755-86376605 E-mail: fengbing.wang@wsct-cert.com Http://www.wsct-cert.com

W5CT

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

W5CT

Member of the WSCT Group (WSCT SA)

Page 46 of 47

WSCT

WSCT

'S C T







Report No.: WSCT-ANAB-R&E240700030A-LE Vertical:

W5 C





NS C

	Suspu	ited Data Lis	st								
7	NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
	1	1215.6250	21.82	-1.84	23.66	74	-52.18	7.4	Vertical	PK	Pass
	1	1215.6250	12.75	-1.84	14.59	54	-41.25	7.4	Vertical	AV	Pass
	2	2453.1250	36.57	7.75	28.82	74	-37.43	35.2	Vertical	PK	Pass
	2	2453.1250	25.47	7.75	17.72	54	-28.53	35.2	Vertical	AV	Pass
	3	3861.8750	43.24	11.42	31.82	74	-30.76	300.5	Vertical	PK	Pass
	3	3861.8750	33.9	11.42	22.48	54	-20.1	300.5	Vertical	AV	Pass
_	4	7276.5000	36.81	35.91	0.9	74	-37.19	249.7	Vertical	PK	Pass
L	4	7276.5000	28.46	35.91	-7.45	54	-25.54	249.7	Vertical	AV	Pass
	5	11077.5000	44.78	39.43	5.35	74	-29.22	185.2	Vertical	PK	Pass
	5	11077.5000	37.44	39.43	-1.99	54	-16.56	185.2	Vertical	AV	Pass
	6	13617.0000	48.45	40.5	7.95	74	-25.55	12	Vertical	PK	Pass
	6	13617.0000	41.4	40.5	0.9	54	-12.6	12	Vertical	AV	Pass

Note:

- 1. All emissions not reported were more than 20dB below the specified limit or in the noise floor.
- 2. Emission Level= Reading Level+Probe Factor +Cable Loss.

3. Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Please refer to Annex "Set Up Photos-15C" for test setup photos

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

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

Page 47 of 47