

W5 ET

TEST REPORT

WSCT

FCC ID: 2BDBM-ES-D

Product: Sensor Controller

Model No.: ES-D,ES-DP,ES-D(WT),ES-DP(WT) W5 (

Trade Mark: Skydance

Report No.: WSCT-ANAB-R&E241100067A-2478MHZ

Issued Date: 30 December 2024

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Issued for: 5 57

Guangzhou Skydance Co.,Ltd.

1-3F, No.19, ChuangYuan Road, Zhongcun Street, Panyu District, Guangzhou, China 511495

WSCT

Issued By:

WSET

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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W5 CT

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WSET

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WSET

Report No.: WSCT-ANAB-R&E241100067A-2478MHZ

Test Certification

Product:

Sensor Controller

Model No.:

ES-D,ES-DP,ES-D(WT),ES-DP(WT)

Trade Mark:

Skydance

Applicant:

Guangzhou Skydance Co.,Ltd.

AWS CT 1-3F, No.19, ChuangYuan Road, Zhongcun Street, Panyu District,

WSCT

Guangzhou, China 511495

Manufacturer: WSLT

Guangzhou Skydance Co.,Ltd.

1-3F, No.19, ChuangYuan Road, Zhongcun Street, Panyu District,

Guangzhou, China 511495

Date of Test:

09 December 2024 to 30 December 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.

Tested By:

Wattile

(Wang Xiang)

Checked By:

(Chen Xu)

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Approved By:

(Li Huaibi)

Date: 30 De

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Test Result Summary 2.

	MARCE STORY	THE PER	AMERICA	W5CT [®]
7	Requirement	CFR 47 Section	Result	Welsi
	Antenna requirement	§15.203/§15.247 (c)	PASS	
7 °	AC Power Line Conducted Emission	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	NA NA	\bigvee
_	Conducted Peak Output W5 [7] Power W5 [§15.247 (b)(3) §2.1046	W5 PASS	WSET
	6dB Emission Bandwidth	§15.247 (a)(2) §2.1049	PASS	
/ 1	Power Spectral Density	§15.247 (e)	PASS	
	Band Edge W5/	1§5.247(d) §2.1051, §2.1057	PASS	WS CT
_	Spurious Emission	§15.205/§15.209 §2.1053, §2.1057	PASS	
	Note:	Wall	WSLI	

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 E1

W5 E WSE W5 C W5C

WS E7

W5 C1 WS ET W5 CT W5 E1

W5 C 7

W5 C1

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W5CT

3. EUT Description

	Product Name:	Sensor Controller W5 [7] W5 [7]	V5 CT
	Model :	ES-D,ES-DP,ES-D(WT),ES-DP(WT)	
	Trade Mark:	Skydance	
1	Operation Frequency:	2478MHz	
	Modulation Technology:	GFSK	X
	Antenna Type:	Wire antenna W5 CT W5 CT	V5 CT
	Antenna Gain:	2.5dBi.	
7	Operating Voltage	DC 24V from DC source(Product operating voltage range:5-24V)	
	Remark:	N/A.	

NOTE: ES-D, ES-DP, ES-D(WT) and ES-DP(WT) are series models with only differences in appearance and color, while all other specifications are identical. ES-D is the main test (5.5) model.

Operation Frequency each of channel

W5 CT	Frequency	CT \	WSET	WSET	WSCT
	2478MHz				

W5CT°	W5 CT°	W5 ET°	W5 CT°	W5CT*

W5CT"	W5CT /	W5CT	WS ET	WS CT
-------	--------	------	-------	-------

WSCT	W5 CT"	WSCT	W5CT°	W5CT°
------	--------	------	-------	-------

W5CT"	WSET	WSET	WSET	W5CT°

W5 CT	WSET	WS ET"	W5 LT	scation& Testin
			_{\text{c}}	See See

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WSCT

roup (WSCT SA)

WSET







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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
Took Mode.	

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
DC source	66319D	\times	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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Facilities and Accreditations 5.

5.1. Facilities

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

Bao'an District, Shenzhen City, Guangdong Province, China

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

5.2. ACCREDITATIONS

ANAB - Certificate Number: AT-3951

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

	Accreditation (ANAB). Certification	n Number. Ar-	-3951		
	WSCT	W5 E		WSET	WSET	WSET
WS		WSET	WSET	WS		WSCT
	WSET	WSE		WSET	WSET	WSET
WS		WSET	WSET	WS		WSCT
	WSET	WSE		WSET	WSET	WSET
WS		WSET	WSET	WS		WSCT
	WSET	WSE		WSET	WSET	
WS		WSET	WSET	WS		WSET Shenzhous

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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 [7]	±1.3%	W5 CT
	4	Occupied Channel Bandwidth	±2.4%	
	5	Transmitter Unwanted Emission in the out-of Band	±1.3%	
W5 CT°	6	Transmitter Unwanted Emissions in the Spurious Domain	±2.5%	
	7	Receiver Spurious Emissions	±2.5%	X
	8W5[Conducted Emission Test W5 [7] W5	±3.2dB	W5 CT
\times	9	RF power, conducted	±0.16dB	
	10	Spurious emissions, conducted	±0.21dB	
W5CT°	11	All emissions, radiated(<1GHz)	±4.7dB	
	12	All emissions, radiated(>1GHz)	±4.7dB	X
	13/5 C	Temperature WSET WSET WS	±0.5°C	W5 CT
X	14	Humidity	±2.0%	

	X	\times	\times	X	X
W	SET	WS ET°	WSET	W5 CT	W5CT°
\times	\times	\times	\times	X	
WSET	WSET	WSET	WSET	WSET	

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5.4.MEASUREMENT INSTRUMENTS

	NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	Calibration Date	Calibration Due.	'5
	Test software		EZ-EMC	CON-03A	-	X-	
	Test software		MTS8310	WSCT	- /	75 FT	
_	EMI Test Receiver	R&S	ESCI	100005	11/05/2024	11/04/2025	
	LISN	AFJ	LS16	16010222119	11/05/2024	11/04/2025	X
	LISN(EUT)	Mestec	AN3016	04/10040	11/05/2024	11/04/2025	75
	Universal Radio Communication Tester	R&S	CMU 200	1100.0008.02	11/05/2024	11/04/2025	
4	Coaxial cable	Megalon	LMR400	N/A	11/05/2024	11/04/2025	
	GPIB cable	Megalon	GPIB	N/A	11/05/2024	11/04/2025	
	Spectrum Analyzer	R&S	FSU	100114	11/05/2024	11/04/2025	
	Pre Amplifier	₩.P. <i>ET</i>	HP8447E 5 /	72945A02715	11/05/2024	11/04/2025	15
	Pre-Amplifier	CDSI	PAP-1G18-38	-	11/05/2024	11/04/2025	
/	Bi-log Antenna	SCHWARZBECK	VULB9168	01488	11/05/2024	11/04/2025	
7	9*6*6 Anechoic	ET V	VS CT L	W.S.ET	11/05/2024	11/04/2025	
	Horn Antenna	COMPLIANCE ENGINEERING	CE18000		11/05/2024	11/04/2025	
	Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-631	11/05/2024	11/04/2025	75
	Cable	TIME MICROWAVE	LMR-400	N-TYPE04	11/05/2024	11/04/2025	
	System-Controller	ccs	N/A	N/A	N.C.R	N.C.R	
4	Turn Table	ccs	V5 / 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	-	11/05/2024	11/04/2025	/
	Loop Antenna	EMCO	6502W51	00042960	11/05/2024	11/04/2025	15
1	Horn Antenna	SCHWARZBECK	BBHA 9170	1123	11/05/2024	11/04/2025	
-	Power meter	Anritsu	ML2487A	6K00003613	11/05/2024	11/04/2025	
7	Power sensor	Anritsu	MX248XD	WSET	11/05/2024	11/04/2025	
	Spectrum Analyzer	Keysight	N9010B	MY60241089	11/05/2024	11/04/2025	

W5CT

W5ET

WSCT

W5CT°

WSET

VSCT WSC

IWS CT

W5CT

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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 2.5dBi.

Please refer to the attachment "ES-D Internal Photo" for the antenna location

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6.2. Conducted Emission

W5 CT

6.	2.1. Test Specification	Mari Mari	WJLI
X	Test Requirement:	FCC Part15 C Section 15.207	
WSCT	Test Method: 5/7	ANSI C63.10:2014 W5 [T] W5 [T]	
	Frequency Range:	150 kHz to 30 MHz	∇
	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	
	X	Reference Plane	X
	WSET WSE	40cm 10cm 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 WSE Test Procedure:	 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 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). 	WSCT°
WSET	WSCT	3. Both sides of A.C. line are checked for maximum	
		conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2014 on conducted measurement.	
	Test Result:	N/A	esting Go
	. Jot Hooditi	Te l	1 %

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6.2.2. EUT OPERATING CONDITIONS

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

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

Test data:

Note: NA(This product is powered by a DC source and does not require testing for this project.)

AW5CT

WSET	WSET	WSCT	WSET	WSCT	
WSC		$\langle \hspace{0.1cm} \rangle$			W5 ET
WSCT	WSET	WSCT	WSCT	WSET	
WSE	$\langle \hspace{0.1cm} \rangle$	$\langle \hspace{0.1cm} \rangle$		<	WSET
WSCT	WSET	WSCT	WSCT	WSET	,
WSC	$\langle \hspace{0.1cm} \rangle$	$\langle \hspace{0.1cm} \rangle$			WS CT
WSET	WSET	WSET	WSCT	WSET	
WSC		$\langle \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$			Testo (1)
WSET	WSCT	WSET	WSET	other WS	Group (Shenzhon)
		Street, Bao'an District, Shenzhen City, Gua		明认证股份有限公司 **	DITION

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6.3. Conducted Output Power

6.3.1. Test Specification W5 ET

W5 ET

W5 CT

W5C1

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

	WSCT	WSET	WSCT	W5CT	WSCT
X					X
W5 CT	W5	CT W.	TET W	SET W	VS CT

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6.3.2. Test Data

Test channel	Maximum Conducted Output Power (dBm)	Limit (dBm)	Result	W5ET"
2478MHz	-2.23	30.00	PASS	

Test plots as follows: W5 C1 W5 C1 W5 CI W5 CI W5C1 W5 CT W5 C7 W5 CI W5 E1 WS CI WS CI WSEI WSE W5 CT W5 CT WS ET W5E1 W5 C1 W5 E W5 C W5 C W5C W5 CT W5 CI WS ET W5 CT W5 E1 W5C1

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W5 C1











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6.4. Emission Bandwidth

6.4.1. Test Specification W5 [7]

W5CT°

W5 CT

W5 ET

W5 CT

X	Test Requirement:	FCC Part15 C Section 15.247 (a)(2)	
WSET	Test Method:	KDB558074 W5 LT W5 LT	
	Limit:	>500kHz	\times
	Test Setup:		WSET
		Spectrum Analyzer EUT	
WSET	Test Mode:	Refer to item 4.1	
	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 	WSET
WSET		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.	
	Test Result:	PASS	
	WSI	WSIGN	WSLI

WSET WSET WSET WSET WSET WSET WSET

W5CT°

WSET

WSET

W5 CT

WSCT WSCT

WS CT WS C

AWS CT

AWS CT

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6.4.2. Test data

	Test channel	6dB Emission Bandwidth (kHz)				
	rest chamilei	2478MHz	Limit	Result		
	Test result	775.4kHz	>500k	PASS		
-0	WELL	WSCT	WELL	WELL		

W5 CT	WSCT	W5 ET	W5 CT	WSCT
	Test plots as follows:			
				X
	W5 CT	WSET	WSET	VSCT WSCT
	1126		1	
X	X	X	X	X
WSET	WSET	WSET	W5 ET	W5 ET
				\vee
	WSET	WSET	WS CT N	VSCT WSCT
X	X	X	X	X
WSET	WSET	WSET	WSET	W5 CT°
/ WELGI	The state of the s	W P I P	WE G	
	X	X	X	\times
	W5 CT	W5 CT	WS ET	VS CT WS CT
	WBL .	WSLI	WSLI	WBU N
X	WSL.	WSLI	WSLT	WSU N
WSCT	\times	\times	\times	WSET*
WSET	WSET	WSET	WSET	
WSCT	\times	\times	\times	
WSCT	WSET	WSCT	WSET	WSCT
WSCT	WSET	WSCT	WSET	
WSCI	WSET	WSCT	WSET	WSCT
	WS CT	WS CT	WS CT	WSCT WSCT
WSCT	WSET	WSCT	WSET	WSCT
	WS CT	WS CT	WS CT	WSCT WSCT
	WSET WSET	WS ET	WSCT WSCT	WS CT WS CT
	WSET WSET	WS ET	WSCT WSCT	WS CT WS CT
	WSET WSET	WS ET	WSCT WSCT	WS CT WS CT
	WSET WSET	WS ET	WSCT WSCT	WSET WSET

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6.5. Power Spectral Density

6.5.1. Test Specification

	WSTT WST	T WELL WELL	W5CT
∇	Test Requirement:	FCC Part15 C Section 15.247 (e)	
	Test Method:	KDB558074	
WSET [®]	Limit:	The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.	
	Test Setup:	Spectrum Analyzer EUT	WS ET
Weer	Test Mode:	Refer to item 4.1	
WSET	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. 	WS CT
	Test Result:	PASS	X

WSET WSET WSET WSET

WSCT WSCT WSCT WSCT

WS CT WS C

WSET

WSCT

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g A-B,Baoli'an Industrial Park,No.58 and 60,Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province, China. 5-26996192 26996053 26996144 FAX: 0086-755-86376605 E-mail: fengbing.wang@wsct-cert.com Http: www.wsct-cert.com W5CT



W5ET



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6.5.2. Test data		X		
Test channel	Power Spectral D	ensity (dBm/3kHz	z)	W5ET
rest channel	2478MHz	Limit	Result	
Test result	-18.67dBm/3kHz	8 dBm/3kHz	PASS	
WS CT WS CT	WSET	WSLT	WSET	$\overline{}$
Test plots as follows:	X	\times		X
WSET	WSET WSET	WSE		WSET
				11717
X	X	X	X	
WSCT WSCT	WSET	WS LT	WSET	
		\searrow		
WS ET	WS ET WS ET	W5E	7°	W5CT
\times	X	\times	\times	
WSCT WSCT	WSET	WSET	WSET	
NPG NPG		WE IS	/ 11719	$\overline{}$
X	X	X		X
WSET	WSET WSET	W5 E	7	WSET
WS CT WS CT	WSCT	WSET	WSCT	/
	X	\times		X
WSCT	WSCT	West		WSCT

W5 CT W5 CT W5 E1 WSET

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W5 CT



W5 C1











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6.6. Conducted Band Edge and Spurious Emission Measurement

6.6.1. Test Specification

6.	6.1. Test Specification	T WSET WSET	(W5 CT)
\times	Test Requirement:	FCC Part15 C Section 15.247 (d)	
Week	Test Method:	KDB558074	
WS ET	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).	WS ET*
	Test Setup:	Spectrum Analyzer EUT	WSET
\bigvee	Test Mode:	Refer to item 4.1	
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. 	WSET
	Test Result:	PASS	X

W5CT

WSET

WSET

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VS CT WS C

W5 C7

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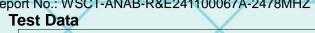
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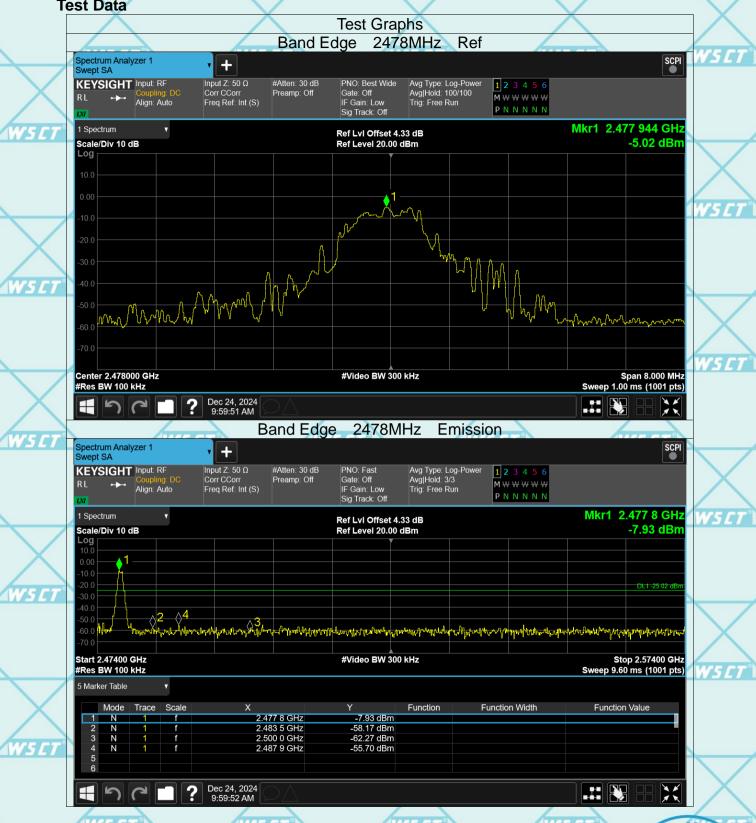






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6.7. Radiated Spurious Emission Measurement

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0.7.		COLO	DECILI	catio	

W5 CT

6.	7.1. Test Specification 75.1.		WS CT°		W5	77	W5CT	
X	Test Requirement:	FCC Part15	C Section	15.209		$\overline{}$		
WSET	Test Method:	ANSI C63.10):2014	WSCT		WSE		
	Frequency Range:	9 kHz to 25 (GHz					
	Measurement Distance:	3 m						
	Antenna Polarization: V5 [7]	Horizontal &	Vertical		W5	7	W5 CT	
	Operation mode:	Refer to item	4.1					
		Frequency 9kHz- 150kHz	Detector Quasi-peak	RBW 200Hz	VBW 1kHz	Remark Quasi-peak Va	alue	
WSET"	W5 ET Receiver Setup:	150kHz- 30MHz	Quasi-peak		30kHz	Quasi-peak Va	The second secon	
		30MHz-1GHz Above 1GHz	Quasi-peak Peak	100KHz 1MHz	300KHz 3MHz	Quasi-peak Va Peak Value		
	WS CT WS CT	Above IGHZ	Peak	1MHz	10Hz	Average Val	ue W5CT°	
X	\times	Frequen	Field Stre	•	Measuremer Distance (mete			
WSET	WSET	0.009-0.4 0.490-1.7		2400/F(k 24000/F(New York	300		
		1.705-3	0	30	KI IZ)	30		
	\times	30-88 88-216		100	\rightarrow	3	-X	
	Limit: WS CI	216-96		150 3 200 3			7777	
$\overline{}$	WBG	Above 9	60	500		3	(WSET	
X	X	Frequency	Field	Strength	Measure Distan	Measurement Detector		
W5 CT	WSCT	WSCT	(microv	volts/meter)	(meter	A Company of the Comp		
	\times	Above 1GHz		500 5000	3	Averaç Peak		
	WSET WSET	For radiated	emissions	below 30	MHz		WSLT	
		Di	stance = 3m			Computer		
WSET	WSET	<u></u>			Pre -	-Amplifier		
- 17 A	Test setup:	EUT	Turn toble					

30MHz to 1GHz

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Ground Plane





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Coaxial cable (1m)

Above 1GHz

Coaxial cable (1m)

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

15 E

Test Procedure:

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V5E





T No.: WSCT-ANAB-R&E241100067	A-2478MHZ	
	2. Corrected Reading: Antenna Factor + Cable Loss +	
	Read Level - Preamp Factor = Level	
NACCE NACCE	3. For measurement below 1GHz, If the emission level	4
W5CT W5C	of the EUT measured by the peak detector is 3 dB	L
	lower than the applicable limit, the peak emission	
	level will be reported. Otherwise, the emission	
	measurement will be repeated using the quasi-peak	
WSET	detector and reported.	_
	4. Use the following spectrum analyzer settings:	
X	(1) Span shall wide enough to fully capture the	
	emission being measured;	4
W5CT W5CI	(2) Set RBW=100 kHz for f < 1 GHz; VBW ≥RBW;	
	Sweep = auto; Detector function = peak; Trace =	

(3) Set RBW = 1 MHz, VBW= 3MHz for f 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 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.

max hold;

Test mode: Refer to section 4.1 for details Test results: PASS

Note: Freq. = Emission frequency in MHz Reading level (dBµV) = Receiver reading WSCI Corr. Factor (dB) = Attenuation factor + Cable loss Level (dBµV) = Reading level (dBµV) + Corr. Factor (dB) Limit (dBµV) = Limit stated in standard

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





W5C7



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TI NO.: WSC1-ANAB-R&E241100067A-2478MITZ

6.7.2. Test Data

Please refer to following diagram for individual

Below 1GHz

W5C1

Horizontal: dBuV/m 87.0 W5 CT° 67 FCC Part15 RE-Class B_30-1000MHz 57 Margin -6 dB 47 37 27 17 -3 -13 -23 -33 30.000 1000.000 (MHz) 60.00 300.00

WSET	No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	00
	1 *	36.6374	49.04	-19.42	29.62	40.00	-10.38	QP	
	2	55.2450	37.21	-19.62	17.59	40.00	-22.41	QP	
	3	82.6481	51.65	-24.03	27.62	40.00	-12.38	QP	7
X	4	134.4412	46.48	-20.27	26.21	43.50	-17.29	QP	
WSCT	5	229.5947	53.03	-23.13	29.90	46.00	-16.10	QP	00
	6	397.8077	39.63	-17.66	21.97	46.00	-24.03	QP	

WSET WSET WSET WSET

WSCT WSCT WSCT WSCT

WSCT WSCT WSCT WSCT

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WS ET

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WSCT

WSET







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1	No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	
	1 *	36.6054	53.58	-19.42	34.16	40.00	-5.84	QP	
_	2	45.0583	49.26	-18.88	30.38	40.00	-9.62	QP	
	3	55.9762	47.57	-19.85	27.72	40.00	-12.28	QP	
	4	82.0706	53.98	-24.07	29.91	40.00	-10.09	QP	
/	5	139.4224	43.70	-19.92	23.78	43.50	-19.72	QP	
4	6	280.6382	44.58	-20.95	23.63	46.00	-22.37	QP	3

W5 5 Note1:

awsl!

/WSCT

AWS CT

WSCI

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)

WSCT WSCT WSCT WSCT WSCT

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WELT

IWS CT

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ET WSET

WSCT



Horizontal:

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Above 1GHz

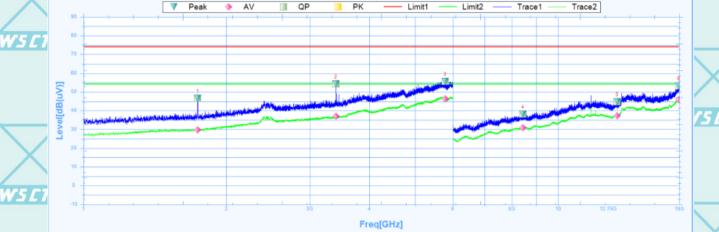
Note 1: The spurious above 18G is noise only, do not show on the report.

Test channel: 2478MHz W5 CT

W5 ET

W5 CT

W5 C1



	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	1740.0000	46.58	24.97	21.61	74	-27.42	282	Horizontal	PK	Pass		
1	1	1740.0000	29.73	24.97	4.76	54	-24.27	282	Horizontal	AV	Pass		
Ţ	2	3401.8750	54.24	28.44	25.8	74	-19.76	359.5	Horizontal	PK	Pass		
L	2	3401.8750	37.14	28.44	8.7	54	-16.86	359.5	Horizontal	AV	Pass		
	3	5778.1250	55.68	32.44	23.24	74	-18.32	263	Horizontal	PK	Pass		
	3	5778.1250	46.28	32.44	13.84	54	-7.72	263	Horizontal	AV	Pass		
	4	8434.5000	38.23	9.13	29.1	74	-35.77	15.7	Horizontal	PK	Pass		
	4	8434.5000	30.91	9.13	21.78	54	-23.09	15.7	Horizontal	AV	Pass		
,	5	13317.0000	44.83	17.12	27.71	74	-29.17	244.4	Horizontal	PK	Pass		
	5	13317.0000	37.36	17.12	20.24	54	-16.64	244.4	Horizontal	AV	Pass		
/	6	17956.5000	53.11	23.62	29.49	74	-20.89	143.9	Horizontal	PK	Pass		
I	6	17956.5000	45.83	23.62	22.21	54	-8.17	143.9	Horizontal	AV	Pass		

	WSCT	WSCT	WSET	WSET	W5CT
			\wedge		
W5CT"	W5LT	W5CT	W5 CT	WSCT	

W5 C1 WS CT W5 C1

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W5 C1



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Vertical:

Peak AV QP PK — Limit1 — Limit2 — Trace1 — Trace2

W5 E1

WSE

Susputed Data List											
NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict	
1	2461.8750	48.45	27.47	20.98	74	-25.55	131.2	Vertical	PK	Pass	
1	2461.8750	35.72	27.47	8.25	54	-18.28	131.2	Vertical	AV	Pass	
2	3401.8750	60.29	28.44	31.85	74	-13.71	-0.1	Vertical	PK	Pass	
2	3401.8750	36.92	28.44	8.48	54	-17.08	-0.1	Vertical	AV	Pass	
3	5716.8750	56.13	32.35	23.78	74	-17.87	107.3	Vertical	PK	Pass	
3	5716.8750	47.03	32.35	14.68	54	-6.97	107.3	Vertical	AV	Pass	
4	11745.0000	48.06	16.11	31.95	74	-25.94	342.6	Vertical	PK	Pass	
4	11745.0000	43.28	16.11	27.17	54	-10.72	342.6	Vertical	AV	Pass	
5	13875.0000	47.89	18.76	29.13	74	-26.11	355.7	Vertical	PK	Pass	
5	13875.0000	41.07	18.76	22.31	54	-12.93	355.7	Vertical	AV	Pass	
6	17863.5000	52.65	23.03	29.62	74	-21.35	60.6	Vertical	PK	Pass	
6	17863.5000	45.47	23.03	22.44	54	-8.53	60.6	Vertical	AV	Pass	

Note:

All emissions not reported were more than 20dB below the specified limit or in the noise floor.

<u> AWSLI</u>

- 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.

WSCT WSCT WSCT WSCT WSCT WSCT

W5CT"

W5ET

WS CT

W5 CT

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WELT

IWS CT

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VSET WSET

W5CT





75 C I

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14-15-1

6.7.3. Restricted Bands Requirements

	W5CT"		W5ET		NS CT		NS ET"		
/	Frequency	Reading	Correct	Emission	Limit	Margin	Polar	Detector	
1			Factor	Level					
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V		
Ż		AWSLI N		2478MH	7 W	SLI		/WSLT	_
	2483.5	04.00	0.70			04.70	H	PK	
	2403.3	61.03	-8.76	52.27	74	21.73	X	ΓN	
	2483.5	55.82	-8.76	47.06	54	6.94	H	AV	
	2483.5	61.82	-8.73	53.09	v 5 /74	20.91	V5VT	PK	W
	2483.5	54.89	-8.73	46.16	54	7.84	V	AV	

Note: Freq. = Emission frequency in MHz
Reading level (dBµV) = Receiver reading

Corr. Factor (dB) = Attenuation factor + Cable loss Level (dBµV) = Reading level (dBµV) + Corr. Factor (dB)

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

WS CT WS CT

W5 CT°

_W5[T]

<u> ZWSCT</u>

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

WSCT WSCT WSCT WSCT WSCT

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WSCT WSCT WSCT WSCT

WSET WSET WSET WSET WSET

WSCT WSCT WSCT WSCT

WSET WSET WSET

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W5CT"

WSET

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