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TEST REPORT

W5 CT

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WS E1

FCC ID: 2ADYY-K16SAA

Product: Laptop Computer

W5 []

Model No.: K16SAA

WSET

W5 CT

Trade Mark: TECNO

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

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Issued Date: 12 August 2024

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Issued for:

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TECNO MOBILE LIMITED

FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET FOTAN NT HONGKONG W5C1

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Issued By:

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

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Test Result Summary 2.

	THE CTO MAKE !	THE CT	THE CT.
7	Requirement	CFR 47 Section	Result
	Antenna Requirement	§15.203/§15.247 (c)	PASS
7°	AC Power Line Conducted Emission	\\ \begin{align*} \text{ \text{ \text{ \text{ \text{ \text{ \text{ \text{ \text{ \text{ \text{ \text{ \text{ \qqq \	PASS
	Conducted Peak Output W5 [7] Power W5 [§15.247 (b)(1) §2.1046	W5 PASS
	20dB Occupied Bandwidth	§15.247 (a)(1) §2.1049	PASS
	Carrier Frequencies Separation	§15.247 (a)(1)	PASS
	Hopping Channel Number	§15.247 (a)(1)	W5 C PASS
7	Dwell Time	§15.247 (a)(1)	PASS
77	Radiated Emission	§15.205/§15.209 W-§2.1053, §2.1057 W5 ET	PASS _{V5ET}
	Band Edge	§15.247(d) §2.1051, §2.1057	PASS

Note:

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- 1. PASS: Test item meets the requirement.
- 2. Fail: Test item does not meet the requirement.
- 3. N/A: Test case does not apply to the test object.
- 4. The test result judgment is decided by the limit of test standard.

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EUT Description 3.

	Product Name:	Laptop Computer WSCT WSCT	V5 CT
/	Model :	K16SAA	
_	Trade Mark:	TECNO	
	Operation Frequency:	2402MHz~2480MHz	$ egthinspace{1.5em} $
	Channel Separation:	1MHz	
_	Number of Channel:	79	YSET N
	Modulation Type:	GFSK, π/4-DQPSK, 8-DPSK	
57	Modulation W5 [7] Technology:	FHSS WSET WSET WSET	
	Antenna Type:	Integral Antenna	X
	Antenna Gain:	3.46dBi W5.77	NS CT
-77	Operating Voltage:	Adapter1: E065-1R200325VU INPUT: 100-240V~50/60Hz, 1.5A OUTPUT:20.0V==3.25A Rechargeable Li-ion Polymer Battery: K16S Nominal Voltage: 11.55V Rated Capacity: 6060mAh Rated nergy:70.00Wh Limited Charge Voltage: 13.2V	
/	Remark:	N/A.	VSLT N
-	Configuration differences		

Configuration differences

Configuration/ Processor	Camera
K16SAA (i5)	1M(Shengtai)
K16SAA (i7)	1M(Visual Era)

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

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

	9 00 0000		,		, , ,		,	
,	Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
	0	2402MHz	20	2422MHz	40	2442MHz	60	2462MHz
	1	2403MHz	21	2423MHz	41	2443MHz	61	2463MHz
6		W5 CT		WSET		WSET		W5CT°
	10	2412MHz	30	2432MHz	50	2452MHz	70	2472MHz
	11	2413MHz	31	2433MHz	51	2453MHz	71	2473MHz
	/		<u></u>				/	
7	ZM18Z7	2420MHz	38	2440MHz	58	2460MHz	78	2480MHz
7	19	2421MHz	39	2441MHz	59	2461MHz		- \
Remark: Channel 0, 39 &78 have been tested for GESK, π/4-DQPSK, 8D						DPSK /		

modulation mode.

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Genera Information 4.

4.1. Test environment and mode

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

Test Mode:

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

The sample was placed 0.8m & 1.5m for the measurement below & above 1GHz above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

Description of Support Units

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

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, 20dB Occupied Bandwidth, Carrier Frequencies Separation, Hopping Channel Number, Dwell Time, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

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5. Facilities and Accreditations

5.1. Facilities

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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 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

WSET	WSET	WS ET	WSET*	WSET
WS CT WS C	$\langle \hspace{0.1cm} \rangle$	$\langle \rangle$	$\langle \hspace{0.2cm} \rangle$	
WSET	WSET	WSET	WSET	WSCT
WS CT WS C	$\langle \rangle$	$\langle \hspace{0.2cm} \rangle$	$\langle \hspace{0.1cm} \rangle$	
WSET	WSCT	WSET	WSET	WSCT
WS CT WS C	$\langle \hspace{0.2cm} \rangle$	$\langle \hspace{0.2cm} \rangle$	$\langle \hspace{0.1cm} \rangle$	
	WSET	WSET	\times	X
WSCT	$\langle \rangle$	$\langle \rangle$	dordization Con	WS CT Strong Change (Shenzho)

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Measurement Uncertainty

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

W5 CT	No.	Item	MU
	1	Duty Cycle and Tx-Sequence and Tx-Gap	±1%
	2	Dwell Time and Minimum Frequency Occupation	±1.2%
	3	Medium Utilisation Factor	±1.3%
X	4	Occupied Channel Bandwidth	±2.4%
WSET	5	Transmitter Unwanted Emission in the out-of Band	±1.3% [7]
	6	Transmitter Unwanted Emissions in the Spurious Domain	±2.5%
	7	Receiver Spurious Emissions	±2.5%
	8	Conducted Emission Test	±3.2dB
X	9	RF power, conducted	±0.16dB
W5 ET	10	Spurious emissions, conducted 7 W5 [7]	±0.21dB
	11	All emissions, radiated(<1GHz)	±4.7dB
	12	All emissions, radiated(>1GHz)	±4.7dB
7	13	Temperature	±0.5°C
	14	Humidity	±2.0%
ATTIVITIES			

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5.4. MEASUREMENT INSTRUMENTS

	5.4. WEASU			\wedge			
	NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	Calibration Date	Calibration Due.	'S E T
<	Test software		EZ-EMC	CON-03A	-	Χ-	
r	Test software	- /	MTS8310	WSCT	- /	VS CT	
	EMI Test Receiver	R&S	ESCI	100005	11/05/2023	11/04/2024	
	LISN	AFJ	LS16	16010222119	11/05/2023	11/04/2024	\wedge
	LISN(EUT)	Mestec	AN3016	04/10040	11/05/2023	11/04/2024	'S E T
<	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	15ET
	Pre-Amplifier	CDSI	PAP-1G18-38	-	11/05/2023	11/04/2024	
	Bi-log Antenna	SCHWARZBECK	VULB9168	01488	11/05/2023	11/04/2024	
C	9*6*6 Anechoic	ET V	VS CT	W.S.CT	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 E T
,	Cable	TIME MICROWAVE	LMR-400	N-TYPE04	11/05/2023	11/04/2024	
	System-Controller	ccs	N/A	N/A	N.C.R	N.C.R	
C	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	-	11/05/2023	11/04/2024	
	Loop Antenna	EMCO	6502W51	00042960	11/05/2023	11/04/2024	SET
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	WSLT	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 Integral Antenna. it meets the standards, and the best case gain of the antenna is 3.46dBi.

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Conducted Emission 6.2.

$\overline{}$	6.2.1. Test Specification 5	T WSET WSET	V5CT
X	Test Requirement:	FCC Part15 C Section 15.207	
WSET	Test Method: 5 [7]	ANSI C63.10:2014 W5 [7] W5 [7]	
	Frequency Range:	150 kHz to 30 MHz	\vee
	Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto	V5 CT
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	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
		Reference Plane	X
	WSET WSE		WSET
WSET	Test Setup: WS ET	Test table/Insulation plane Remark E.U.T: Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m	WSET
X	Test Mode:	Refer to item 4.1	
W5 CT	WSET	1. The E.U.T is connected to an adapter through a line	
	\times	impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.	X
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).	WS CT
	WSET WSE	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.	esung Go
X	Test Result:	PASS WS C	7° She







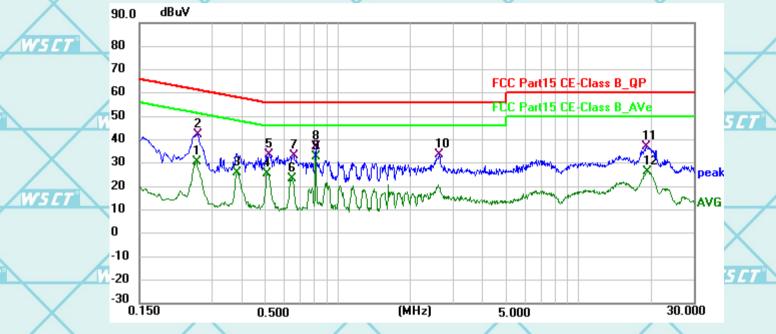
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6.2.2. Test data(worst case)

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

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WSET	No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	0
X	1	0.2580	9.77	20.66	30.43	51.50	-21.07	AVG	
WSC	2	0.2625	21.48	20.65	42.13	61.35	-19.22	QP	
	3	0.3795	5.33	20.58	25.91	48.29	-22.38	AVG	7
X	4	0.5100	5.16	20.51	25.67	46.00	-20.33	AVG	
WSET	5	0.5190	13.13	20.51	33.64	56.00	-22.36	QP	10
THE STATE OF THE S	6	0.6450	2.76	20.53	23.29	46.00	-22.71	AVG	
X	7	0.6540	12.64	20.53	33.17	56.00	-22.83	QP	
	8	0.8115	16.66	20.59	37.25	56.00	-18.75	QP	
WSC	9 *	0.8115	12.00	20.59	32.59	46.00	-13.41	AVG	7
\sim	10	2.6295	12.87	20.60	33.47	56.00	-22.53	QP	Ī
	11	19.0860	16.64	20.24	36.88	60.00	-23.12	QP	
WSCT	12	19.3245	6.10	20.25	26.35	50.00	-23.65	AVG	.0
	-					-			-

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VSCT WSC

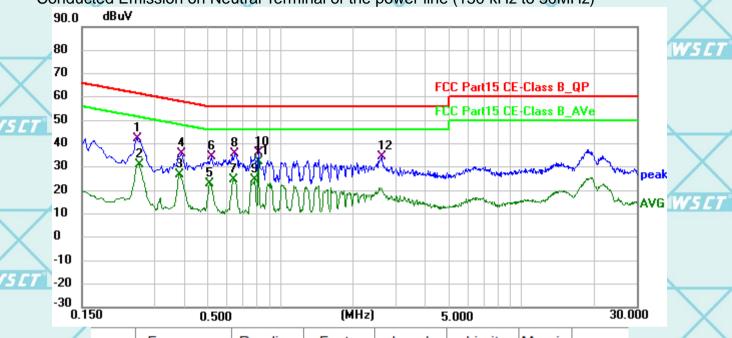






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Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)



W5	No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	
	1	0.2535	21.66	20.66	42.32	61.64	-19.32	QP	/
	2	0.2580	10.57	20.66	31.23	51.50	-20.27	AVG	/
	3	0.3795	6.28	20.58	26.86	48.29	-21.43	AVG	C T
	4	0.3885	15.08	20.58	35.66	58.10	-22.44	QP	
	5	0.5100	2.63	20.51	23.14	46.00	-22.86	AVG	
WS	6	0.5144	13.80	20.51	34.31	56.00	-21.69	QP	
	7	0.6404	3.92	20.53	24.45	46.00	-21.55	AVG	/
	8	0.6493	15.11	20.53	35.64	56.00	-20.36	QP	
	9	0.7799	4.20	20.57	24.77	46.00	-21.23	AVG	ΓT
	10	0.8114	15.65	20.59	36.24	56.00	-19.76	QP	. /
	11 *	0.8114	11.84	20.59	32.43	46.00	-13.57	AVG	
4	12	2.6295	13.97	20.60	34.57	56.00	-21.43	QP	
IW5									

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 $(dB\mu V) = Limit$ stated in standard

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

Q.P. =Quasi-Peak AVG =average

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

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6.3. Conducted Output Power

6.3.1. Test Specification 5

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X	Test Requirement:	FCC Part15 C Section 15.247 (b)(3)	
WSIT	Test Method:	ANSI C63.10:2014	
West	Limit:	Section 15.247 (b) The maximum peak conducted output power of the intentional radiator shall not exceed the following: (1) For frequency hopping systems operating	WSET
W5ET°	Test Setup:	Spectrum Analyzer EUT	WSCT
	Test Mode:	Transmitting mode with modulation	
W5 CT	Test Procedure:	Use the following spectrum analyzer settings: Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel RBW > the 20 dB bandwidth of the emission being measured VBW ≥ RBW Sweep = auto Detector function = peak Trace = max hold Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission.	WSET
	Test Result:	PASS	X

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TESTING LABORATORY Certificate Number : AT-3951

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6.3.2. Test Data

_	GFSK mode					
	Test channel	Peak Output Power (dBm)	Limit (dBm)	Result		
0	Lowest	8.80	20.97	PASS		
1	Middle	8.94	20.97	PASS		
	Highest	8.23	20.97	PASS		

Pi/4DQPSK mode Peak Output Power Limit (dBm) Test channel Result (dBm) 9.44 PASS 20.97 Lowest **PASS** Middle 9.91 20.97 8.79 **PASS** Highest 20.97

8DPSK mode Peak Output Power Test channel Limit (dBm) Result (dBm) W5E Lowest 9.71 20.97 **PASS** Middle 20.97 **PASS** 9.27 Highest 9.04 20.97 **PASS**

Test plots as follows:

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WSCT WSCT WSCT

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W5 CT W5 CT

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W5 C1

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

W5 CT 1-DH5 2480MHz Power SCPI Spectrum Analyzer 1 + Input Z: 50 Ω #Atten: 30 dB Preamp: Off PNO: Fast Gate: Off Avg Type: Log-Power Avg|Hold: 100/100 KEYSIGHT Input: RF 1 2 3 4 5 6 Corr CCorr Freq Ref: Int (S) ____ M ₩ ₩ ₩ ₩ Align: Auto IF Gain: Low Sig Track: Off Trig: Free Run 1 Spectrum Mkr1 2.479 735 GHz Ref LvI Offset 4.33 dB Ref Level 20.00 dBm 8.23 dBm Scale/Div 10 dB 75 C Span 10.00 MHz Sweep 1.33 ms (10001 pts) Center 2.480000 GHz #Res BW 2.0 MHz #Video BW 6.0 MHz Jul 31, 2024 12:12:43 AM ⊞ 2-DH5 2402MHz Power Spectrum Analyzer 1 Swept SA SCPI + Input Z: 50 Ω #Atten: 30 dB PNO: Fast Avg Type: Log-Power Avg|Hold: 100/100 Trig: Free Run KEYSIGHT Input: RF 1 2 3 4 5 6 Corr CCorr Freq Ref: Int (S) Preamp: Off Gate: Off IF Gain: Low Sig Track: Off M ₩ ₩ ₩ ₩ Align: Auto PNNNNN Mkr1 2.402 005 GHz 1 Spectrum Ref Lvl Offset 4.26 dB 9.44 dBm Scale/Div 10 dB Ref Level 20.00 dBm Log 1

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Span 10.00 MHz Sweep 1.33 ms (10001 pts)

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Center 2.402000 GHz #Res BW 2.0 MHz

#Video BW 6.0 MHz

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

W5 CT 2-DH5 2441MHz Power SCPI Spectrum Analyzer 1 + Input Z: 50 Ω #Atten: 30 dB Preamp: Off PNO: Fast Gate: Off Avg Type: Log-Power Avg|Hold: 100/100 KEYSIGHT Input: RF 1 2 3 4 5 6 Corr CCorr Freq Ref: Int (S) ____ M ₩ ₩ ₩ ₩ Align: Auto IF Gain: Low Sig Track: Off Trig: Free Run 1 Spectrum Mkr1 2.440 80 GHz Ref LvI Offset 4.28 dB Ref Level 20.00 dBm 9.91 dBm Scale/Div 10 dB 75 C Center 2.441000 GHz #Res BW 2.0 MHz Span 10.00 MHz Sweep 1.00 ms (1001 pts) #Video BW 6.0 MHz Jul 31, 2024 12:14:35 AM 2-DH5 2480MHz Power Spectrum Analyzer 1 Swept SA SCPI + Input Z: 50 Ω #Atten: 30 dB PNO: Fast Avg Type: Log-Power Avg|Hold: 100/100 Trig: Free Run KEYSIGHT Input: RF 1 2 3 4 5 6 Corr CCorr Freq Ref: Int (S) Preamp: Off Gate: Off IF Gain: Low Sig Track: Off M ₩ ₩ ₩ ₩ Align: Auto PNNNNN Mkr1 2.479 845 GHz 1 Spectrum Ref LvI Offset 4.33 dB 8.79 dBm Scale/Div 10 dB Ref Level 20.00 dBm Log **5**1 Center 2.480000 GHz #Res BW 2.0 MHz #Video BW 6.0 MHz Span 10.00 MHz Sweep 1.33 ms (10001 pts)

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3-DH5 2402MHz Power SCPI Spectrum Analyzer 1 + Input Z: 50 Ω #Atten: 30 dB Preamp: Off PNO: Fast Gate: Off Avg Type: Log-Power Avg|Hold: 100/100 KEYSIGHT Input: RF 1 2 3 4 5 6 Corr CCorr Freq Ref: Int (S) ____ M ₩ ₩ ₩ ₩ Align: Auto IF Gain: Low Sig Track: Off Trig: Free Run 1 Spectrum Mkr1 2.401 923 GHz Ref LvI Offset 4.26 dB Ref Level 20.00 dBm 9.71 dBm Scale/Div 10 dB 75 C Span 10.00 MHz Sweep 1.33 ms (10001 pts) Center 2.402000 GHz #Res BW 2.0 MHz #Video BW 6.0 MHz Jul 31, 2024 12:17:23 AM ⊞ 3-DH5 2441MHz Power Spectrum Analyzer 1 Swept SA SCPI + Input Z: 50 Ω #Atten: 30 dB PNO: Fast Avg Type: Log-Power Avg|Hold: 100/100 Trig: Free Run KEYSIGHT Input: RF 1 2 3 4 5 6 Corr CCorr Freq Ref: Int (S) Preamp: Off Gate: Off IF Gain: Low Sig Track: Off M ₩ ₩ ₩ ₩ Align: Auto PNNNNN Mkr1 2.440 945 GHz 1 Spectrum Ref LvI Offset 3.28 dB 9.27 dBm Scale/Div 10 dB Ref Level 20.00 dBm Log Center 2.441000 GHz #Res BW 2.0 MHz #Video BW 6.0 MHz Span 10.00 MHz Sweep 1.33 ms (10001 pts)

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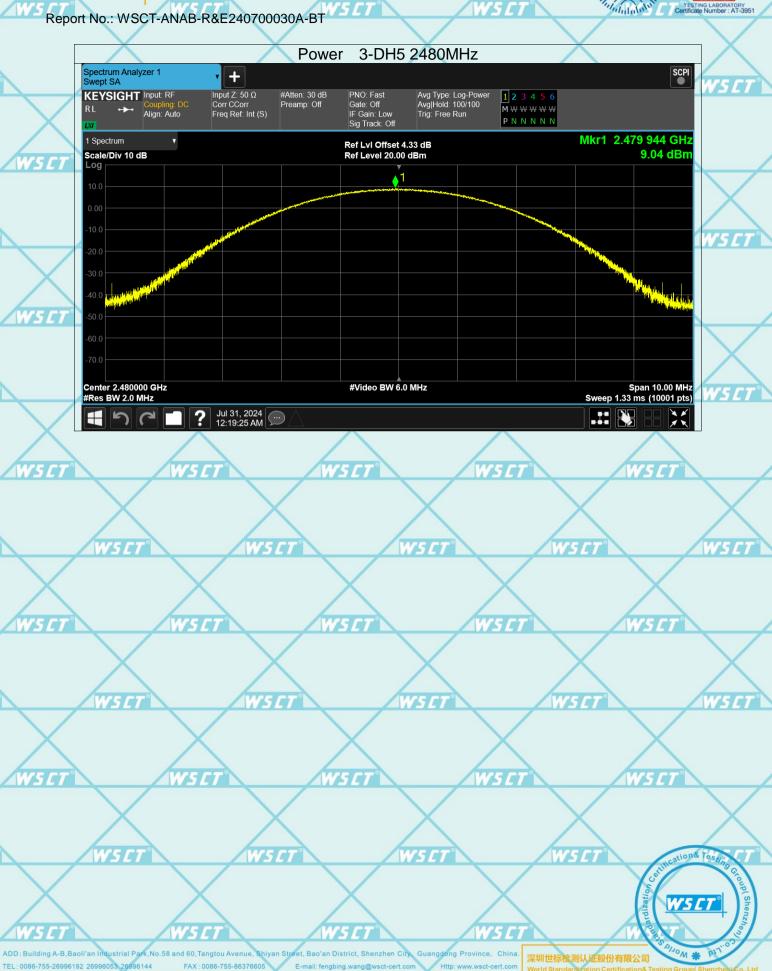
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20dB Occupy Bandwidth 6.4.

6.4.1. Test Specification

			4
X	Test Requirement:	FCC Part15 C Section 15.247 (a)(1)	
W5 ET	Test Method:	ANSI C63.10:2014 W5 [T] W5 [T]	
	Limit:	N/A	\times
X	Test Setup:	Spectrum Analyzer EUT	WSET
WSET	Test Mode:	Transmitting mode with modulation W5	
WSET	Test Procedure:	 The testing follows ANSI C63.10:2014 Measurement Guidelines. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. Set to the maximum power setting and enable the EUT transmit continuously. Use the following spectrum analyzer settings for 20dB Bandwidth measurement. Span = approximately 2 to 5 times the 20 dB bandwidth, centered on a hopping channel; 1%≤ RBW ≤ 5% of the 20 dB bandwidth; VBW ≥ 3RBW; Sweep = auto; Detector function = peak; Trace = max hold. Measure and record the results in the test report. 	W5 CT
	Test Result:	PASS	
		X	

		X	X	
WSCT	WSET	WSCT	WSCT	WSCT

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W5CT





W5C

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

W5 CT

6.4.2. Test data

Toot obannal	-20	dB Occupy Band	dwidth (MHz)
rest charmer	GFSK	π/4-DQPSK	8DPSK	Conclusion
Lowest	0.957	1.284	1.305	PASS
Middle	1.034 _{W5} /	1.283	1.292	PASS _{V5}
Highest	0.939	1.285	1.313	PASS
	Middle	Test channel GFSK Lowest 0.957 Middle 1.034 Middle	Test channel GFSK π/4-DQPSK Lowest 0.957 1.284 Middle 1.034 7 1.283	GFSK π/4-DQPSK 8DPSK Lowest 0.957 1.284 1.305 Middle 1.034 γ 5 1.283 γ 1.292

Test plots as follows: W5 C W5 CT W5 C1 W5 C1 W5 C7 W5 C1 W5 CT W5 CT W5 E1 WSET WSCI W5 CT W5 CT WS ET W5E1 W5C1 W5E W5 C W5C W5 CI W5 CT W5C1 WS ET WS CT W5 E1

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W5 CT





W5 CI

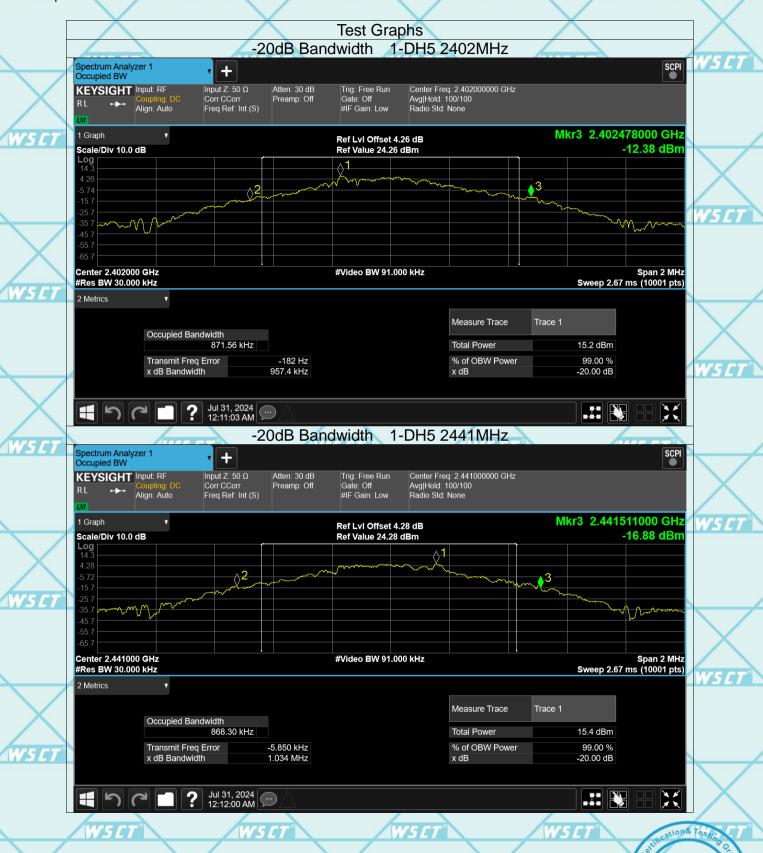


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WSET



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WSET







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W5 C







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W5CT

6.5. Carrier Frequencies Separation

6.5.1.	Test :	Specifi	ication
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W5 ET

X	Test Requirement:	FCC Part15 C Section 15.247 (a)(1)	
WSET	Test Method:	ANSI C63.10:2014 W5 [T] W5 [T]	
	Limit:	Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.	WSET
WSLT	Test Setup:	Spectrum Analyzer EUT W5.5.7	
	Test Mode:	Hopping mode	
WSET	Test Procedure:	 The testing follows ANSI C63.10:2014 Measurement Guidelines. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. Set to the maximum power setting and enable the EUT transmit continuously. Enable the EUT hopping function. Use the following spectrum analyzer settings: Span = wide enough to capture the peaks of two adjacent channels; RBW is set to approximately 30% of the channel spacing, adjust as necessary to best identify the center of each individual channel; VBW≥RBW; Sweep = auto;	WSCT
	Test Result:	PASS	

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WSET

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W5 CT



6.5.2. Test data

GFSK mode						
(MHz) Result						
B BW PASS						
dB BW PASS						
dB BW PASS						

Pi/4 DQPSK mode Carrier Frequencies Limit (MHz) Test channel Result Separation (MHz) WS CT Lowest 0.994 **PASS** 2/3*20dB BW Middle 1.024 **PASS** 2/3*20dB BW Highest **PASS** 0.978 2/3*20dB BW

	8DPSK mode					
0	Test channel	Carrier Frequencies Separation (MHz)	Limit (MHz)	Result		
	Lowest	0.982	2/3*20dB BW	PASS		
	Middle	1.002	2/3*20dB BW	PASS		
1	Highest	1.012	2/3*20dB BW	PASS		

W5 E1 W5 C W5E W5 CI

W5 E1

W5C1 WS ET W5 CT W5 E1

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W5 CT

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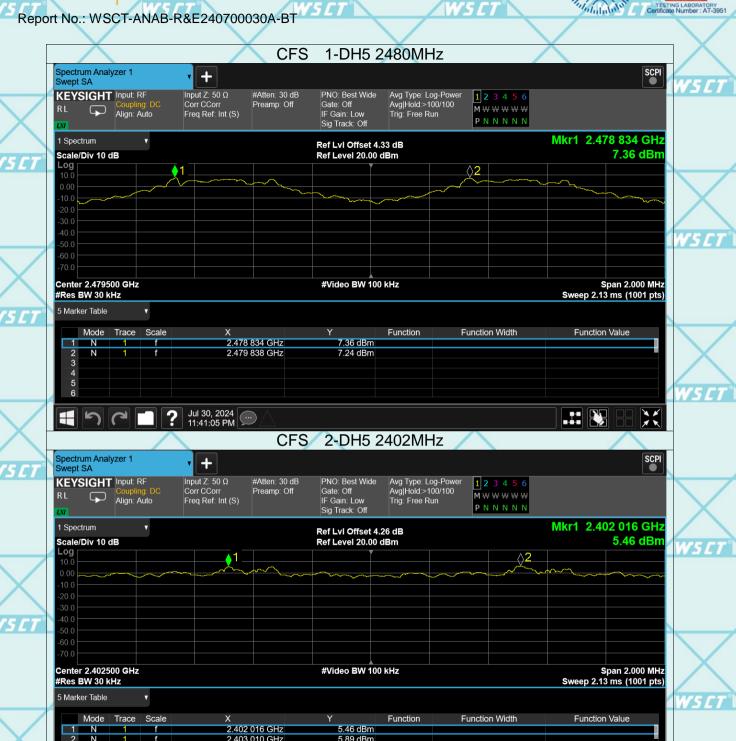
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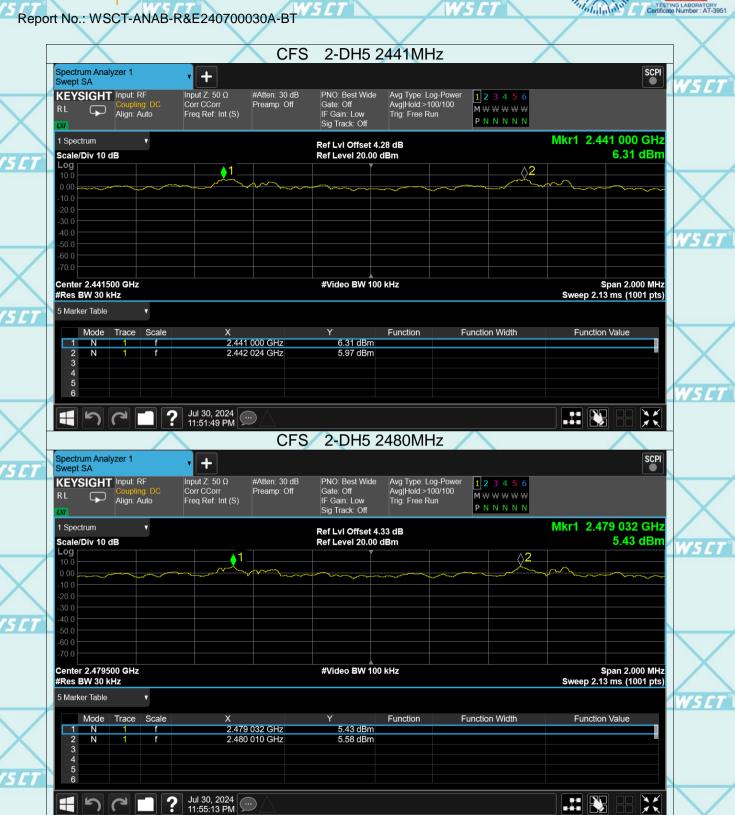
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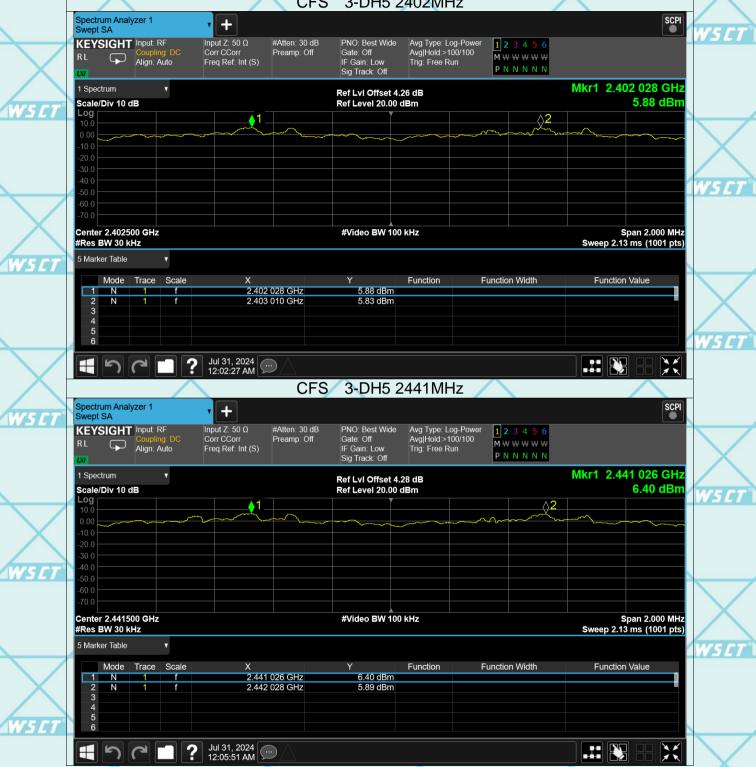






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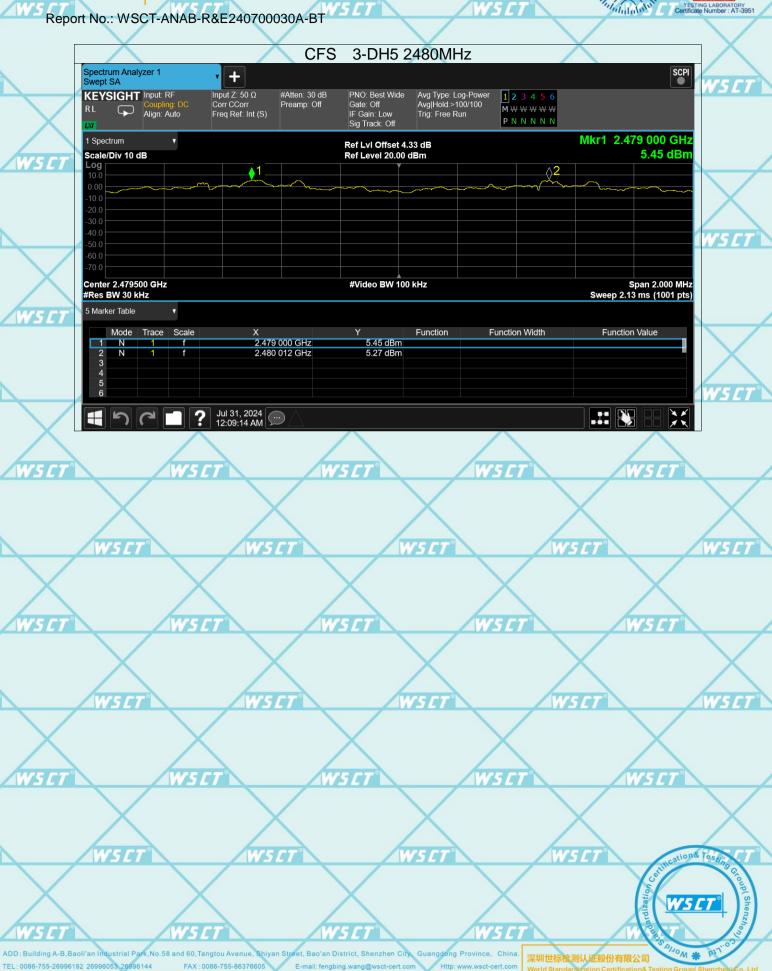












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6.6. Hopping Channel Number

W5 CT

W5 CT

W5CT

6.6.1. Test Specification

WSET	Test Requirement:	FCC Part15 C Section 15.247 (a)(1)	
ZW36/	Test Method:	ANSI C63.10:2014	
	Limit:	Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.	\triangle
WSET	Test Setup:	Spectrum Analyzer EUT	WS CT
	Test Mode:	Hopping mode	$\overline{}$
WSET	Test Procedure:	 The testing follows ANSI C63.10:2014 Measurement Guidelines. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. Set to the maximum power setting and enable the EUT transmit continuously. Enable the EUT hopping function. Use the following spectrum analyzer settings: Span = 	WSCT
WSET		the frequency band of operation; set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller; VBW≥RBW; Sweep = auto; Detector function = peak; Trace = max hold. The number of hopping frequency used is defined as the number of total channel. Record the measurement data in report.	
	Test Result:	PASS	
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W5 CT

W5 CT

WS CT

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W5 CT

6.6.2. Test data

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

Test plots as follows:

W5 C1 W5 CT WSCI

W5CI W5 CT W5 C7 W5 CT W5 CI

W5 E1 WS CI WS CI WSEI WSE

W5 CT W5 CT WS ET W5E1 W5 C1

W5 C W5 C W5 C W5C

WSEI

W5 CI WS ET W5 CT W5 C1

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W5 C1

W5C1