

















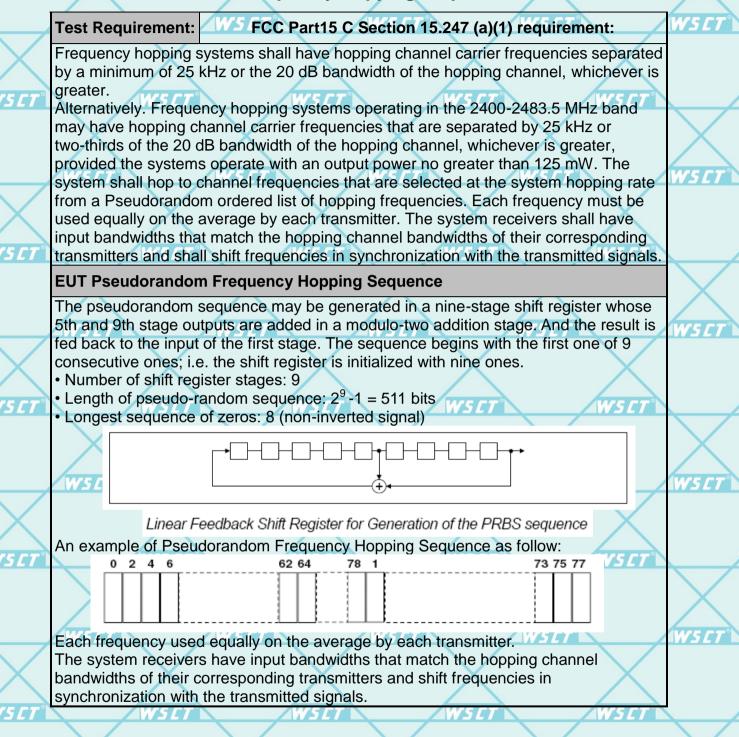
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Report No.: WSCT-ANAB-R&E250200010A-BT

### 6.8. **Pseudorandom Frequency Hopping Sequence**



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# 6.9. Conducted Band Edge Measurement

6.9.1. Test Specification 5

$\mathbf{X}$	Test Requirement:	FCC Part15 C Section 15.247 (d)	
WSET	Test Method:	ANSI C63.10:2014 W557 W557	
	Limit:	In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.	WSET
WSET	Test Setup:	Spectrum Analyzer EUT	$\checkmark$
	Test Mode:	Transmitting mode with modulation	$\bigtriangleup$
WSCT	Test Procedure:	<ol> <li>The testing follows the guidelines in Band-edge Compliance of RF Conducted Emissions of ANSI C63.10:2014 Measurement Guidelines.</li> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>Set RBW = 100 kHz (≥1% span=10MHz), VBW = 300 kHz (≥RBW). Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100kHz RBW. The attenuation shall be 30 dB instead of 20 dB when RMS conducted output power procedure is used.</li> <li>Enable hopping function of the EUT and then repeat step 2 and 3.</li> <li>Measure and record the results in the test report.</li> </ol>	WSCT WSCT
	Test Result:	PASS	
WSET	WSET WSE	WSET WSET	
WSET	WSET	WSET WSET WSET	Group (Shenzhen)
	oll'an Industrial Park,No.58 and 60,Tangtou Avenue, Shiyan S	treet, Bao'an District, Shenzhen City, Guangdong Province, China. E-mail: fengbing.wang@wsct-cert.com Http://www.wsct-cert.com World Standard: a fail of the fa	PIT
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Report No.: WSCT-ANAB-R&E250200010A-BT

#### **Conducted Spurious Emission Measurement** 6.10.

	6.10.1	Test Specification	•
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	6.10.1. Test Specificatio	n wscr wscr	wsct
$\times$	Test Requirement:	FCC Part15 C Section 15.247 (d)	
5 <i>CT</i> °	Test Method:	ANSI C63.10:2014	
	Limit:	In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.	WSCT
5 <i>CT</i>	Test Setup:	Spectrum Analyzer EUT W5C7	
	Test Mode:	Transmitting mode with modulation	$\searrow$
5 <i>CT</i>	Test Procedure:	<ol> <li>The testing follows the guidelines in Spurious RF Conducted Emissions of ANSI C63.10:2014 Measurement Guidelines</li> <li>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.</li> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>Set RBW = 100 kHz, VBW = 300kHz, scan up through 10th harmonic. All harmonics / spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW.</li> <li>Measure and record the results in the test report.</li> <li>The RF fundamental frequency should be excluded against the limit line in the operating frequency band.</li> </ol>	WS CT
	Test Result:	PASS	$\wedge$
	WSCT WSC	7° W5C7° W5C7°	WSCT
SET	WSET	WSET WSET WSET	
	WSET WSE	$\langle X \rangle$	
1		T WSCT WSCT Conneation&	AND GIOU

ng A-B,Baoli'an Industrial Park,No.58 and 60, Tangtou Aver Shenzhen City, Guar ong Province, China M # 深圳世标检测认证股份有限公司 FAX:0086-755-8637660 TEL:0086-755-26996192 26996053 26996144 E-mail: fen of the WSCT Group (WSCT SA

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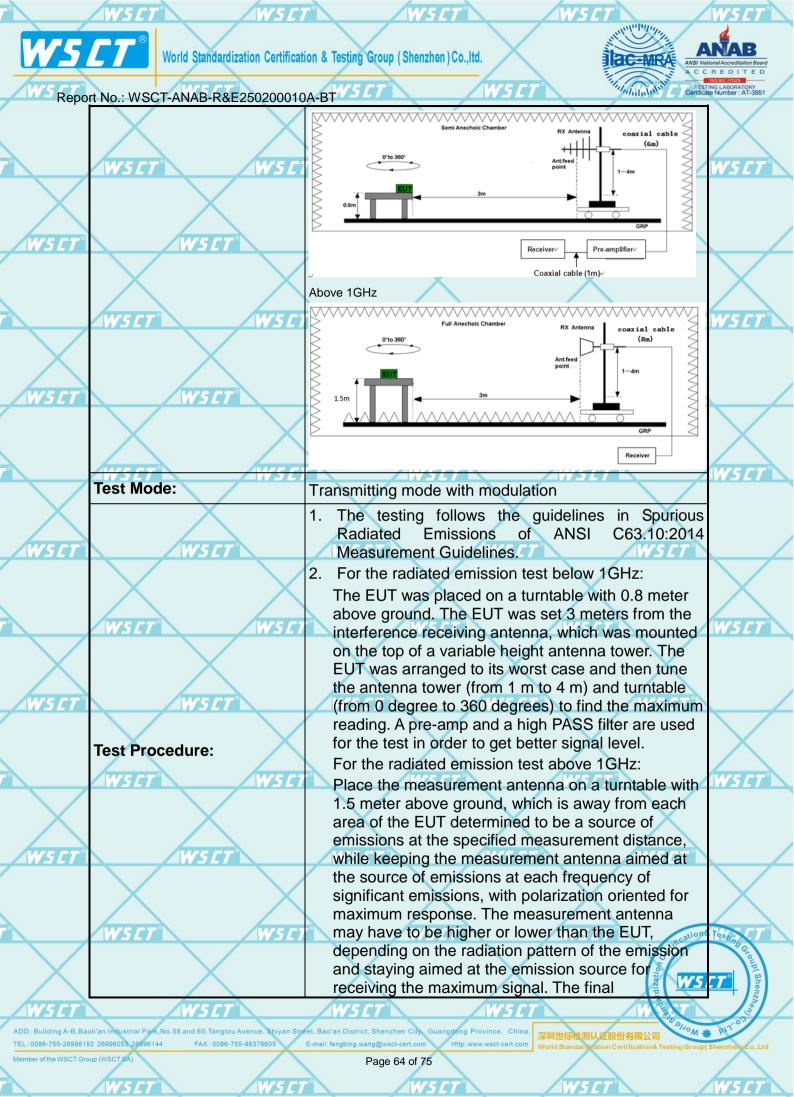


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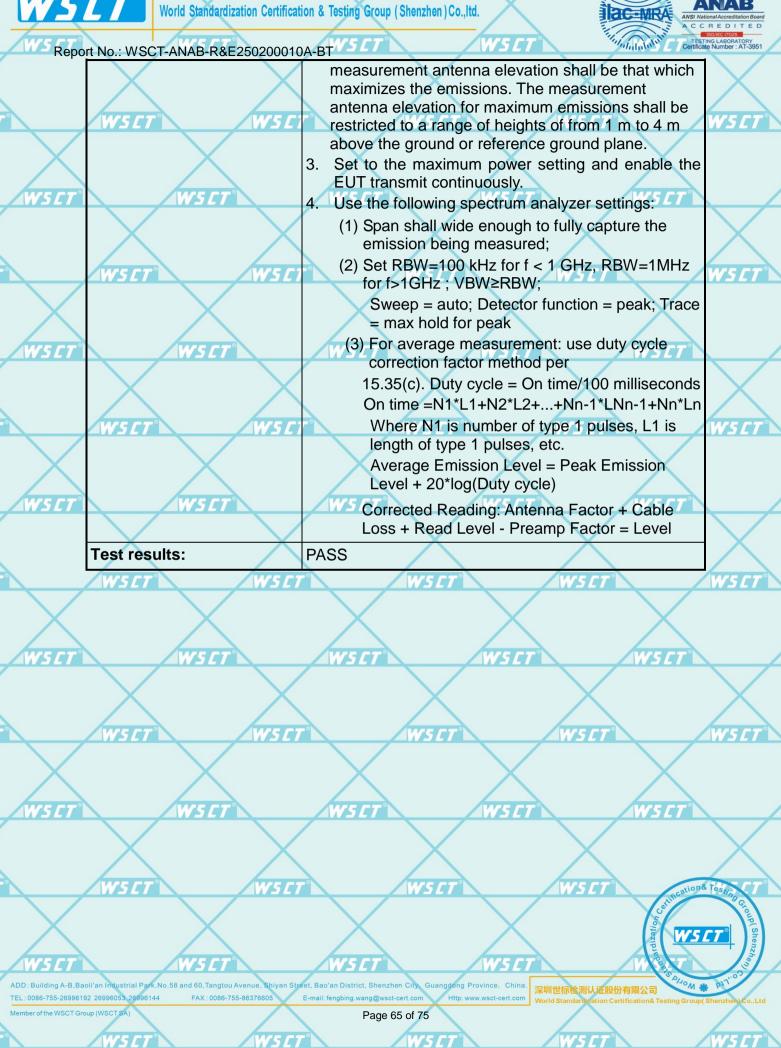
Report No.: WSCT-ANAB-R&E250200010A-BTV5 CT

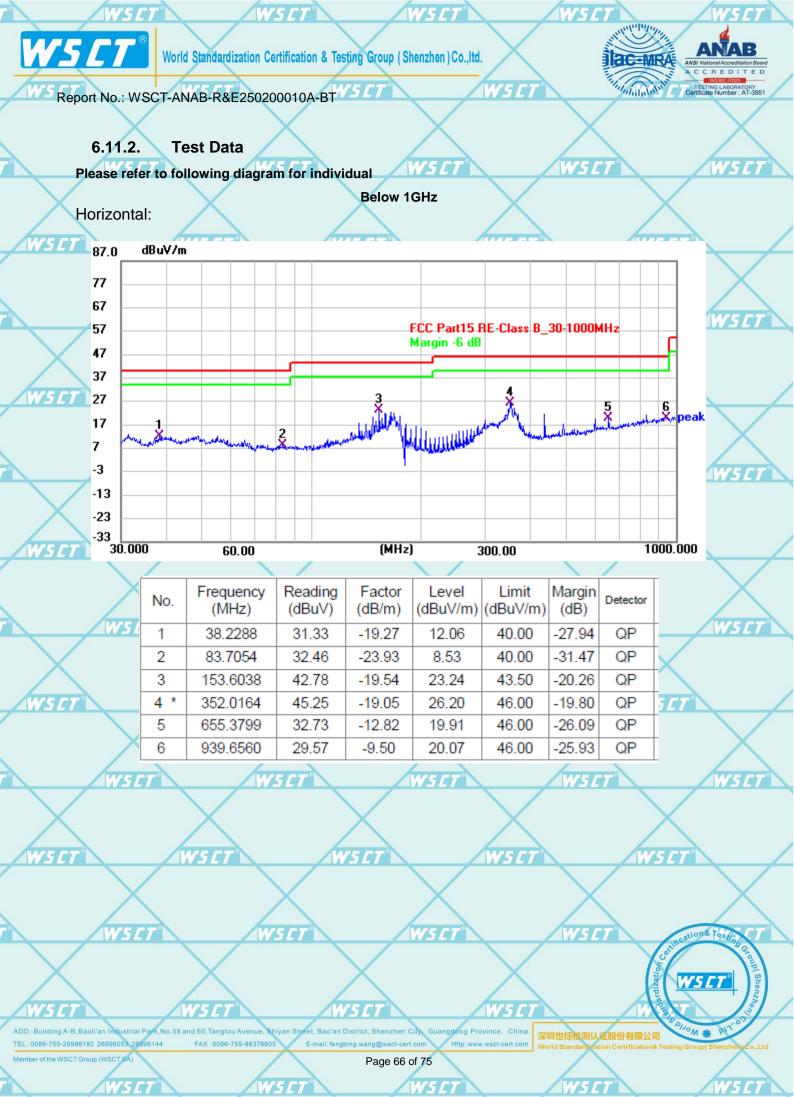
# 6.11. Radiated Spurious Emission Measurement

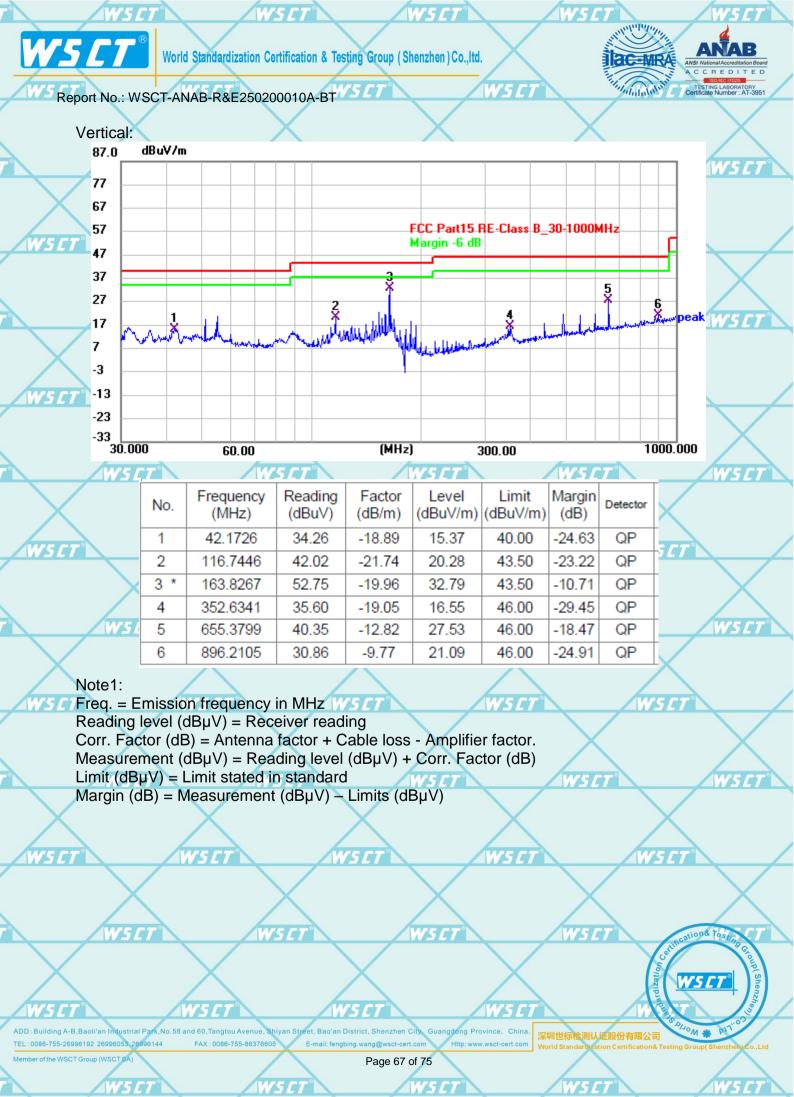
	6.11.1. Test Specification		WSET		/w5	CT	WSET	
	Test Requirement:	FCC Part15	C Section	n 15.209				
$\land$	Test Method:	ANSI C63.10:2014						
WSCT <sup>°</sup>	Frequency Range:	9 kHz to 25 (	GHz	WS CT		W5 L	7	
	Measurement Distance:	3 m	$\overline{\checkmark}$			/		
	Antenna Polarization:	Horizontal &	Vertical	<u>_</u>		7		
	WSLT WSL	Frequency	Detector	RBW	VBW	Remark	WSCT <sup>®</sup>	
$\sim$		9kHz- 150kHz	Quasi-peal	k 200Hz	1kHz	Quasi-peak \	alue	
		150kHz-	Quasi-peal	k 9kHz	30kHz	Quasi-peak \	alue	
WSET	Receiver Setup:	30MHz 30MHz-1GHz	Quasi-peal	k 100KHz	300KHz	Quasi-peak \		
			Peak	1MHz	300KHZ 3MHz	Peak Valu		
		Above 1GHz	Peak	1MHz	10Hz	Average Va		
		<b>-</b>		Field Stre	ength	ent		
	WSET WSET		<u>4W3L1</u>	(microvolts)	/meter) 5	Distance (me	ters) WSCT	
		0.009-0.4		2400/F(ł	<i>,</i>	300		
	X	1.705-3		24000/F( 30		30 30		
		30-88		100		3		
WSET	WSCT Limit:		3	150				
			216-960 20 Above 960 50					
	$\wedge$	Above 9	00	500		-		
	WSET WSET		WSCE	ment	WS CT			
		Frequency Field Strength (microvolts/meter)			Distan	tor		
X	$\times$		500			(meters) 3 Average		
		Above 1GHz	2	5000	3	Pea		
WSET	WSLT	For radiated emis	ssions below	30MHz		/WSL		
	$\times$ $\times$	51	stance = 2m				X	
		Di	stance = 3m			Computer		
	WSET WSET	•		$\frown$	Dec	Amplifier	WSCT®	
	Toot coture	· ·	'(	🕖 г	Pre -A	Amplifier		
	Test setup:	EUT						
WSET	W5ET		7					
			Ť		R	teceiver		
	$\times$ $\times$		Ground	d Plane	Ľ		X	
		30MHz to 1GHz	$\langle \rangle$		/			
	WSET WSET		WSLT		WS		neationa Testing CT	
						Le Su	a Group	
	X			X		izatio	WSCT Shenzh	
WSET	WSET	WSET		WSET		The Party	The state	
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	WSET WSET		WSET		ws.	<b>57</b> °	WSET	

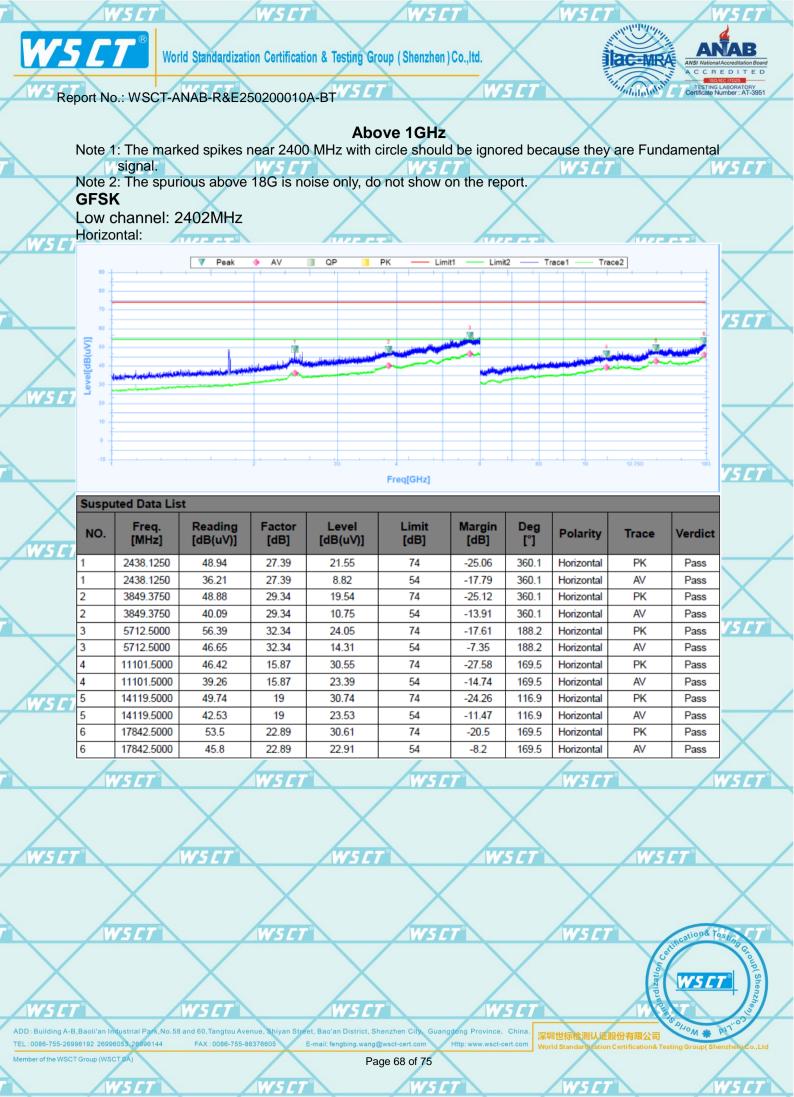


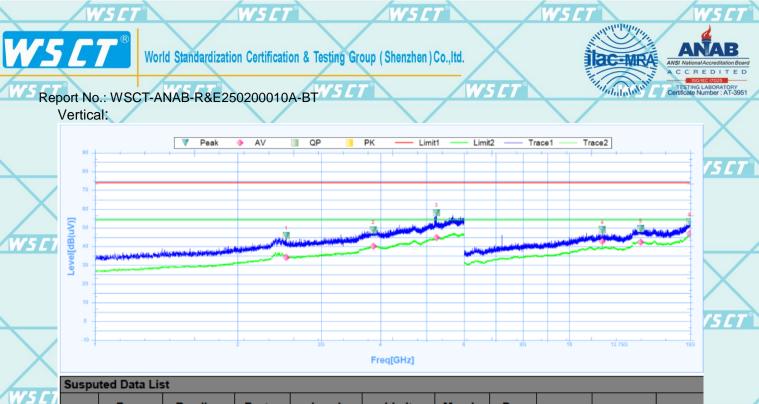












		neu Data Lis										
'S C 1	NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict	$\checkmark$
	1	2528.1250	45.9	27.63	18.27	74	-28.1	134.4	Vertical	PK	Pass	$\wedge$
	1	2528.1250	34.27	27.63	6.64	54	-19.73	134.4	Vertical	AV	Pass	
	2	3861.8750	48.88	29.37	19.51	74	-25.12	109.4	Vertical	PK	Pass	VSCT
$\langle \rangle$	2	3861.8750	40.1	29.37	10.73	54	-13.9	109.4	Vertical	AV	Pass	
X	3	5246.2500	58.16	31.8	26.36	74	-15.84	343.6	Vertical	PK	Pass	
	3	5246.2500	44.77	31.8	12.97	54	-9.23	343.6	Vertical	AV	Pass	
'S C 1	4	11745.0000	48.98	16.11	32.87	74	-25.02	358.3	Vertical	PK	Pass	
	4	11745.0000	42.78	16.11	26.67	54	-11.22	358.3	Vertical	AV	Pass	
	5	14143.5000	49.65	18.98	30.67	74	-24.35	359.6	Vertical	PK	Pass	$\sim$
	5	14143.5000	42.34	18.98	23.36	54	-11.66	359.6	Vertical	AV	Pass	$\wedge$
	6	17967.0000	53.11	23.7	29.41	74	-20.89	345.8	Vertical	PK	Pass	
	6	17967.0000	46.98	23.7	23.28	54	-7.02	345.8	Vertical	AV	Pass	<i>VSCT</i>
						0						

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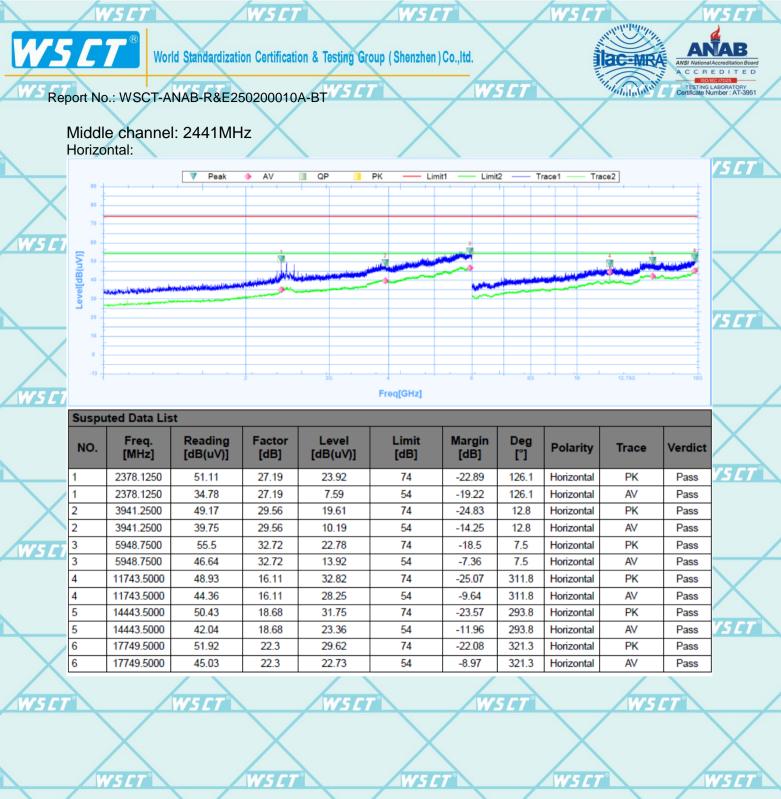
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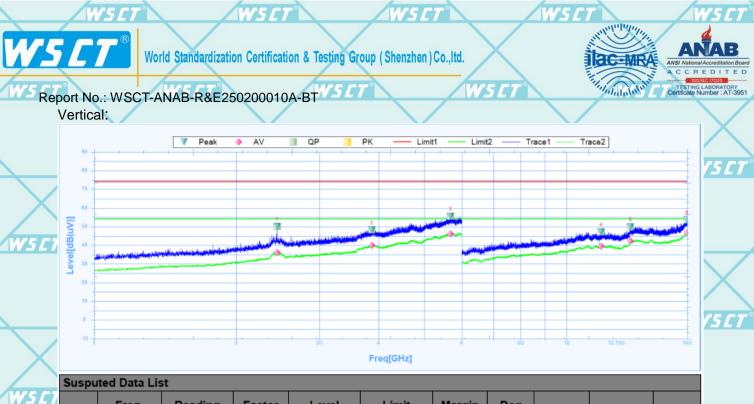
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' <u>5 C</u> 1	NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict	
	1	2440.0000	50.03	27.4	22.63	74	-23.97	339.8	Vertical	PK	Pass	
	1	2440.0000	36.24	27.4	8.84	54	-17.76	339.8	Vertical	AV	Pass	
	2	3871.2500	48.29	29.39	18.9	74	-25.71	293.2	Vertical	PK	Pass	V S L
	2	3871.2500	40.04	29.39	10.65	54	-13.96	293.2	Vertical	AV	Pass	
X	3	5680.0000	55.59	32.29	23.3	74	-18.41	0.6	Vertical	PK	Pass	
$ \land $	3	5680.0000	46.04	32.29	13.75	54	-7.96	0.6	Vertical	AV	Pass	
'S C 1	4	11827.5000	47.3	16.3	31	74	-26.7	109.7	Vertical	PK	Pass	
260	4	11827.5000	39.51	16.3	23.21	54	-14.49	109.7	Vertical	AV	Pass	
	5	13648.5000	49.79	18.11	31.68	74	-24.21	237.6	Vertical	PK	Pass	$\sim$
	5	13648.5000	42.37	18.11	24.26	54	-11.63	237.6	Vertical	AV	Pass	
	6	17977.5000	53.65	23.77	29.88	74	-20.35	208.9	Vertical	PK	Pass	
	6	17977.5000	46.71	23.77	22.94	54	-7.29	208.9	Vertical	AV	Pass	V5 L
	/							/			/	

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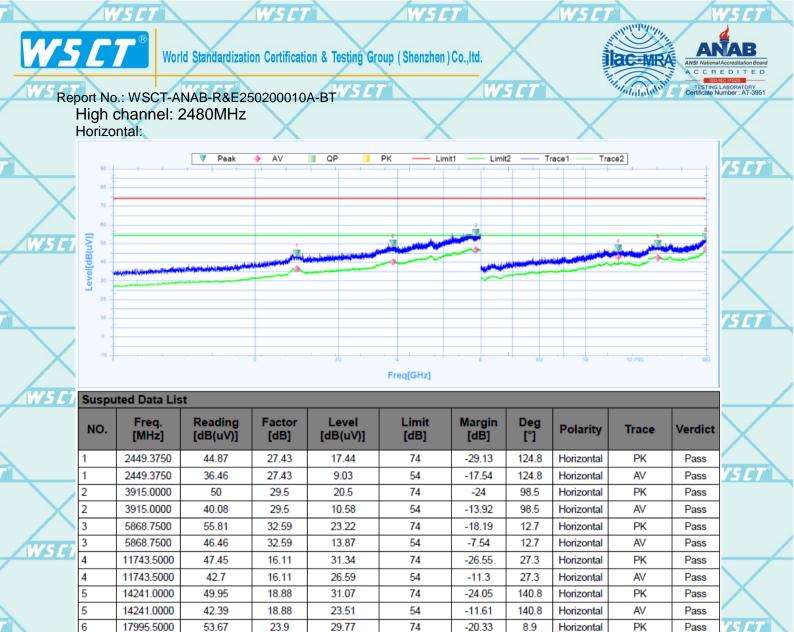
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### Freq[GHz]

	Suspu	Isputed Data List													
	NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict	>			
	1	2465.0000	46.49	27.48	19.01	74	-27.51	6.6	Vertical	PK	Pass				
	1	2465.0000	35.7	27.48	8.22	54	-18.3	6.6	Vertical	AV	Pass	15			
/	2	3884.3750	49.6	29.42	20.18	74	-24.4	0.5	Vertical	PK	Pass				
	2	3884.3750	40.38	29.42	10.96	54	-13.62	0.5	Vertical	AV	Pass				
	3	5234.3750	61.15	31.79	29.36	74	-12.85	226.4	Vertical	PK	Pass				
C1	3	5234.3750	44.85	31.79	13.06	54	-9.15	226.4	Vertical	AV	Pass				
	4	11124.0000	47.16	15.84	31.32	74	-26.84	355.1	Vertical	PK	Pass				
	4	11124.0000	39.42	15.84	23.58	54	-14.58	355.1	Vertical	AV	Pass	$\mathbf{X}$			
	5	14037.0000	50.43	19.09	31.34	74	-23.57	344.3	Vertical	PK	Pass				
	5	14037.0000	42.48	19.09	23.39	54	-11.52	344.3	Vertical	AV	Pass	15			
_	6	17968.5000	54.3	23.71	30.59	74	-19.7	355.8	Vertical	PK	Pass	<u>75</u>			
/	6	17968.5000	46.67	23.71	22.96	54	-7.33	355.8	Vertical	AV	Pass				
X	Mata		X		X			X							

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The emission levels of other frequencies are very lower than the limit and not show in test report.

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Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency. WS [ 2. Data of measurement shown "-"in the above table mean that the reading of emissions is attenuated more than 20 dB 3. below the limits or the field strength is too small to be measured.

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- Measurements were conducted in all three modulation (GFSK, Pi/4 DQPSK, 8DPSK), and the worst case Mode 4. (GFSK) was submitted only.
- 5. EUT has been tested in unfolded states, and the report only reflects data in the unfolded state (worst-case scenario)

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#### **Restricted Bands Requirements** 6.11.3.

5 C 1 Bluetooth (GFSK, Pi/4-DQPSK, 8DPSK)mode have been tested, and the worst result GFSK model was report as below

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	as below					$\sim$			I
$\triangle$	Frequency	Reading	Correct Factor	Emission Level	Limit	Margin	Polar	Detector	1
WSC1	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	H/V		4
	$\mathbf{X}$		X	Low Cha	nnel 🗸				
	2387	63.60	-8.76	54.84	74	19.16	Н	PK	
	2387 _ 7	55.66	-8.76 7	46.90	545 []	7.10	HWS	AV	
	2387	61.57	-8.73	52.84	74	21.16	V	PK	
$\sim$	2387	56.21	-8.73	47.48	54	6.52	V	AV	
hurre	2390	61.94	-8.76	53.18	74	20.82	Н	PK	
<b>W5</b> C1	2390	56.39	-8.76	47.63	54	6.37	H	AV	Í
	2390	63.73	-8.73	55.00	74	19.00	v 🗡	PK	
	2390	54.27	-8.73	45.54	54	8.46	V	AV	
	WSET		ZWSET	High Cha	nnel <sup>WSL7</sup>		WSL		
	2483.5	61.24	-8.17	53.07	74	20.93	Н	PK	
$\wedge$	2483.5	53.27	-8.17	45.10	54	8.90	Н	AV	
WSE	2483.5	60.29	-8.17	52.12	74	21.88	V	PK	7
	2483.5	53.59	-8.17	45.42	54	8.58	V	AV	
	Note: Fred - E	mission frequen	cy in MHz		X				

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Note: Freq. = Emission frequency in MHz

Reading level  $(dB\mu V)$  = Receiver reading Corr. Factor (dB) = Attenuation factor + Cable loss

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

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Margin  $(dB) = Level (dB\mu V) - Limits (dB\mu V)$ 

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