

Report No.: ZR/2020/8007405 Page: 195 of 230

4.8.2.45	11AC20_1	65 ANT 1				_
Spectrum	ר ר					
<b>Ref Level</b> 30.0 <b>Att</b> SGL Count 500,	0 dBm Offset 2 45 dB <b>e SWT</b> /500	2.09 dB 👄 RBW 50 1 ms 👄 VBW 2	0 kHz ? MHz <b>Mode</b> A	auto FFT		, , , , , , , , , , , , , , , , , , ,
●1Rm AvgLog		1				
			м	1[1]	5.9	3.64 dBm 250200 сна
20 dBm					0.0	
10 dBm			M1			
U dBm						
-10 dBm					<u>\</u>	
-20 dBm						
-20 0011						
-30 dBm						
-40 dBm						
50 d0						
-50 aBm						
-60 dBm						
Start 5.81 GHz		1	.001 pts		Sto	op 5.84 GHz
				Ready		XI

Date: 1.SEP.2020 21:31:34



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4.8.2.48	11	AC40_	54 ANT 1					_
Spectrum								(₩
Ref Level 30 Att SGL Count 50	.00 dBm 45 dB 0/500	Offset e SWT	2.20 dB 👄 R 1 ms 👄 V	RBW 1 MHz /BW 3 MHz	Mode Au	ito FFT		
●1Rm AvgLog				-	-			
					M	1[1]	5 26	1.97 dBm 74230 GHz
20 dBm							0120	11200 0112
10 dBm								
0 dBm		,		M1				
							$\langle \rangle$	
-10 dBm								
-20 dBm								
-30 dbiii								
-40 dBm								
-50 dBm								
-60 dBm								
Start 5.24 GH	z			1001	l pts	<u> </u>	 Sto	p 5.3 GHz
						Ready		

Date: 21.AUG.2020 18:21:20



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4.8.2.49	1′	1AC40_	62 ANT 1						
Spectrum									(₩
Ref Level 30	).00 dBm	Offset	2.20 dB 😑 I	RBW 1 MHz					
Att SGL Count 50	45 dB )0/500	● SWI	1 ms 🖷 '	VBW 3 MHZ	Mode A	uto FFT			
⊖1Rm AvgLog	_								
					N	11[1]		5.30	1.81 dBm 74830 GHz
20 dBm									
10 dBm									
0 dBm				M1			_		
o ubiii		ĺ			V			$\langle \cdot \rangle$	
-10 dBm									
-20 dBm									
-30 UBIII									
-40 dBm									
-50 dBm									
-60 dBm									
Start 5.28 GH	lz			100:	l pts			Stop	5.34 GHz
						Ready			1

Date: 21.AUG.2020 18:22:51



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4.8.2.50	11AC4	40_102 ANT	1			_
Spectrum						
RefLevel 30.	00 dBm Of	fset 2.20 dB 👄	RBW 1 MHz			
Att	45 dB 👄 <b>SV</b> 2/500	/T 1 ms 👄	VBW 3 MHz	Mode Au	uto FFT	
IRm AvaLoa	J/ 500					
				М	1[1]	1.22 dBr 5.5125770 GH
20 dBm						 
10 dBm						
0 dBm				M1		 
10 - 10	<u> </u>					
-30 ubiii						
-40 dBm						
-50 dBm						
-60 dBm						 
Start 5.48 GH	z		1001	. pts	<u> </u>	Stop 5.54 GHz
					Ready	4,40

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Spectrum								(₩
Ref Level 30.	00 dBm	Offset	2.20 dB 👄 F	RBW 1 MHz				
Att SGL Count 500	45 dB 🥃 1/500	SWI	1 ms 🖷 🕻	VBW 3 MHZ	Mode A	uto FFT		
●1Rm AvgLog	,							
					M	1[1]	5.55	1.29 dBm 25770 GHz
20 dBm						+ +		
10 dBm								
					M1			
0 dBm								
-10 dBm								
-20 dBm								
-30 dBm								
-40 aBm								
-50 dBm								
30 dbiii								
-60 dBm								
				1004				
start 5.52 GH	z			1001	. pts		stop	5.58 GHZ

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4.8.2.52	11AC40_	134 ANT 1					_
Spectrum							
<b>Ref Level</b> 30.00 <b>Att</b> 4 SGL Count 500/5	dBm Offset 45 dB <b>e SWT</b> 100	2.20 dB 👄 RB 1 ms 👄 VB	WI MHZ WI 3 MHZ	Mode Auto	FFT		
●1Rm AvgLog			-				
				M1[	1]	5.6	1.37 dBm 674230 GHz
20 dBm							
10 dBm							
0 dBm			M1				
	A A		Υ				
-10 dBm							
-20 dBm							
-40 dBm							
-50 dBm							
-60 dBm							
Start 5.64 GHz	I		1001 pt	ts		St	op 5.7 GHz
					Ready		XI

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Spectrum							l ∎
Ref Level 30. Att SGL Count 500	00 dBm Offs 45 dB 👄 SW1 0/500	et 2.20 dB ● RBV Γ 1 ms ● VBV	V 500 kHz V 2 MHz (	Mode Auto FFT			(`
●1Rm AvgLog							
				M1[1]		5.75	-0.14 dBm 24230 GHz
20 dBm							
10 dBm							
0 dBm			M1				
-10 dBm			V				
-20 dbm						$\mathbf{X}$	
-30 UBIII							
-40 dBm							
-50 dBm							
-60 dBm							
Start 5.725 GI		· · · · · ·	1001 pts		· · ·	Stop 3	5.785 GHz

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4.8.2.54	11AC40	_159 ANT 1				
Spectrum						
Ref Level 30 Att SGL Count 50	).00 dBm Offse 45 dB 👄 SWT )0/500	t 2.20 dB 👄 RBW 1 ms 👄 VBW	/ 500 kHz / 2 MHz <b>Mode</b>	e Auto FFT		,
●1Rm AvgLog	1	1 1				
				M1[1]	5	0.20 dBm
20 dBm				+ +		
10 dBm						
0 dBm			M1			
			$\mathbb{V}$			
-10 dBm						
-20 dBm						
-50 0011						
-40 dBm						
-50 dBm						
-60 dBm						
Start 5.765 G	GHz		1001 pts		St	op 5.825 GHz
				Ready		1,70

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Date: 21.AUG.2020 18:53:11



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4.8.2.57	1′	1AC80_1	06 ANT '	1					_
Spectrum									
Ref Level 30 Att	.00 dBm 45 dB	Offset 2 SWT	2.33 dB 👄 🛛 1 ms 👄 🗸	<b>RBW</b> 1 MHz <b>/BW</b> 3 MHz	Mode Au	ito FFT			
SGL Count 50	0/500								
					М	1[1]		5.5	-3.13 dBm
20 dBm								0.0	
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0 dBm					M1				
-10 dBm	-f							<u>}</u>	
-20 dBm									
-30 dBm								$\square$	
-40 dBm									
-50 dBm									
-50 0.5									
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Start 5.47 GH	lz	1	1	1001	L pts	1		Stop	5.59 GHz
	[				-	Read	y 🚺		1

Date: 21.AUG.2020 18:56:20



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4.8.2.58	_ 11AC80_	_122 ANT 1						_
Spectrum	]							(₩
<b>Ref Level</b> 30.0 <b>Att</b> SGL Count 500/	0 dBm Offse 45 dB <b>e SWT</b> '500	et 2.33 dB 👄 RB 1 ms 👄 VB	W 1 MHz W 3 MHz M	Mode Auto Fi	-T			
●1Rm AvgLog								
				M1[1]		1	5.6	-2.97 dBm 03770 GHz
20 dBm								
10 dBm								
0 dBm			M1					
-10 dBm			<u> </u>		$\sim$		}	
-20 dBm								
20 d0m								
							$\sim$	
-40 dBm								
-50 dBm								
-60 dBm								
Start 5.55 GHz			1001 pt	s			Stop	5.67 GHz
			· · ·		Read			1

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Report No.: ZR/2020/8007405 210 of 230 Page:



No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594

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## 4.9 Radiated Spurious Emissions

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专用音

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	i. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates.
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a;
	MCS0 of rate is the worst case of 802.11n(HT20);
	MCS0 of rate is the worst case of 802.11n(HT40);
	MCS0 of rate is the worst case of 802.11ac(HT20);
	MCS0 of rate is the worst case of 802.11ac(HT40);
	MCS0 of rate is the worst case of 802.11ac(HT80)
	For below 1GHz, through Pre-scan, find the 1Mbps of rate of 802.11a at lowest
	channel is the worst case.
	Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass



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## 4.9.1.1 802.11AC20\_Channel 36



#### Suspected List

Susp	ected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	6906.69	48.26	20.87	54.00	5.74	150	18	Horizontal
2	6987.09	56.75	21.27	74.00	17.25	150	219	Horizontal
3	10360.0	39.58	-3.63	54.00	14.42	150	18	Horizontal
4	10360.0	51.46	-3.63	74.00	22.54	150	321	Horizontal
5	15540.0	51.35	0.46	74.00	22.65	150	18	Horizontal
6	15540.0	41.16	0.46	54.00	12.84	150	119	Horizontal
7	17885.0	44.84	-1.51	54.00	9.16	150	321	Horizontal

**Final Data List** 



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## 4.9.1.2 802.11AC20\_Channel 36



#### Suspected List

Susp	ected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	6882.39	57.18	20.84	74.00	16.82	150	241	Vertical
2	6890.79	47.65	20.82	54.00	6.35	150	89	Vertical
3	10360.0	39.71	-3.63	54.00	14.29	150	292	Vertical
4	10360.0	51.29	-3.63	74.00	22.71	150	0	Vertical
5	15540.0	52.54	0.46	74.00	21.46	150	142	Vertical
6	15540.0	40.57	0.46	54.00	13.43	150	142	Vertical
7	17963.1	44.72	-1.29	54.00	9.28	150	292	Vertical

#### **Final Data List**

Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

2) Scan from 9kHz to 40GHz, The disturbance between 9KHz to 30MHz and 18GHz to 40GHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

3) As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.

4) All modes have been tested, but only the worst case data displayed in this report.



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## 4.10 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15 Section 1	15.407(b)				
Test Method:	ANSI C63.10: 2013					
Test Site:	Measurement Distance: 3	Bm (Semi-Anechoic Chamb	er)			
Limit:	Frequency Limit (dBuV/m @3m) Remark					
	30MHz-88MHz	40.0	Quasi-peak Value			
	88MHz-216MHz	43.5	Quasi-peak Value			
	216MHz-960MHz	46.0	Quasi-peak Value			
	960MHz-1GHz	54.0	Quasi-peak Value			
		54.0	Average Value			
	Above IGHZ	74.0	Peak Value			
Test Setup:						
	AE EUT Trumtable) Ground Reference Test Receiver	Plane				



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Test Procedure:	<ul> <li>a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</li> <li>d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.</li> <li>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>f. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel</li> <li>g. Test the EUT in the outermost channels.</li> <li>h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode,And found the X axis positioning which it is worse case.</li> <li>i. Repeat above procedures until all frequencies measured was complete.</li> </ul>
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates.
Final Test Mode:	Through Pre-scan, find the 6Mbps of rate is the worst case of 802.11a; MCS0 of rate is the worst case of 802.11n(HT20); MCS0 of rate is the worst case of 802.11n(HT40); MCS0 of rate is the worst case of 802.11ac(HT20); MCS0 of rate is the worst case of 802.11ac(HT40); MCS0 of rate is the worst case of 802.11ac(HT40); MCS0 of rate is the worst case of 802.11ac(HT80); Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass



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## 4.11 Restricted bands around fundamental frequency

## 4.11.1.1 802.11AC20\_Channel 36



#### Suspected List

Susp	Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5137.21	50.74	15.41	74.00	23.26	150	40	Horizontal
2	5142.12	38.30	15.45	54.00	15.70	150	24	Horizontal
3	5147.72	53.21	15.50	74.00	20.79	150	34	Horizontal
4	5148.77	39.48	15.51	54.00	14.52	150	24	Horizontal
5	5180.00	102.91	15.56	0.00	-102.91	150	29	Horizontal
6	5180.00	92.89	15.56	0.00	-92.89	150	24	Horizontal

**Final Data List** 



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### 4.11.1.2 802.11AC20\_Channel 36

**Test Graph** FCC PART 15 E 130 120 110 100 90 80 \_evel[dBµ\/m] 70 60 50 40 30 20 10 0 5.1G 5.11G 5 12G 5 13G 514G 5 15G 5.16G 5.17G 5.18G 5.19G 5.2G PK Limit AV Limit Vertical PK Frequentty[Hz]/ • QP Detector \* AV Detector

#### Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	5135.81	49.32	15.40	74.00	24.68	150	1	Vertical
2	5137.01	35.33	15.41	54.00	18.67	150	346	Vertical
3	5147.37	35.57	15.50	54.00	18.43	150	346	Vertical
4	5147.92	49.13	15.50	74.00	24.87	150	259	Vertical
5	5180.00	95.52	15.56	0.00	-95.52	150	5	Vertical
6	5180.00	84.62	15.56	0.00	-84.62	150	5	Vertical

**Final Data List** 

Remark:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor All modes have been tested, but only the worst case data displayed in this report.



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## 4.12 Frequencies Stability

### 4.12.1 Frequency Error vs. Voltage:

Test Osnalitiens	Measured Frequency (MHz)			
lest Conditions	5180	5825		
V nom(V)	5180.004369	5825.002322		
V max(V)	5180.006574	5825.003182		
V min(V)	5180.015686	5825.008992		
Max. Deviation Frequency	0.015686	0.008992		
Max. Frequency Error (ppm)	3.028178	1.543737		

#### 4.12.2 Frequency Error vs. Temperature:

Test Canditions (°C)	Measured Frequency (MHz)			
Test Conditions( C)	5180	5825		
-5	5180.005007	5825.004242		
5	5180.014568	5825.006813		
15	5180.016431	5825.014283		
25	5180.026046	5825.017913		
35	5180.033603	5825.020536		
45	5180.038990	5825.027154		
50	5180.039142	5825.027787		
Max. Deviation Frequency	0.039142	0.027787		
Max. Frequency Error (ppm)	7.556327	4.770380		



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## 4.13 Dynamic Frequency Selection

## 4.13.1 DFS Overview

## Table 1: Applicability of DFS Requirements Prior to Use of a Channel

Requirement	Operational Mode				
	Master	Client Without Radar Detection	Client With Radar Detection		
Non-Occupancy Period	Yes	Not required	Yes		
DFS Detection Threshold	Yes	Not required	Yes		
Channel Availability Check Time	Yes	Not required	Not required		
U-NII Detection Bandwidth	Yes	Not required	Yes		

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational	Mode		
1	Master Device or Client	Client Without		
	with Radar Detection	<b>Radar Detection</b>		
DFS Detection Threshold	Yes	Not required		
Channel Closing Transmission Time	Yes	Yes		
Channel Move Time	Yes	Yes		
U-NII Detection Bandwidth	Yes	Not required		
Additional requirements for devices with	Master Device or Client with	<b>Client Without Radar</b>		
multiple bandwidth modes	<b>Radar Detection</b>	Detection		
U-NII Detection Bandwidth and Statistical	All BW modes must be tested	Not required		
Performance Check				
Channel Move Time and Channel Closing	Test using widest BW mode	Test using the widest		
Transmission Time	available	BW mode available for		
		the link		
All other tests	Any single BW mode	Not required		
Note: Frequencies selected for statistical perfe	ormance check (Section 7.8.4) sho	uld include several		
frequencies within the radar detection	bandwidth and frequencies near th	e edge of the radar		
detection bandwidth. For 802.11 device	ces it is suggested to select frequent	ncies in each of the		
bonded 20 MHz channels and the channel center frequency.				



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## 4.13.2 DFS Detection Thresholds

Table 3: DFS Detection Thresholds for Master Devices and Client Devices with Radar Detection

Maximum Transmit PowerValue<br/>(See Notes 1, 2, and 3) $EIRP \ge 200$  milliwatt-64 dBmEIRP < 200 milliwatt and<br/>power spectral density < 10 dBm/MHz</td>-62 dBmEIRP < 200 milliwatt that do not meet the power spectral density<br/>requirement-64 dBmNote 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna.Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the

**Note 2:** Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. **Note3:** EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication

**Note3:** EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.

#### 4.13.3 Response Requirements Table 4: DFS Response Requirement Values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds
	See Note 1.
Channel Closing Transmission Time	200 milliseconds + an
	aggregate of 60
	milliseconds over remaining
	10 second period.
	See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U-
	NII 99% transmission
	power bandwidth. See Note
	3.

**Note 1:** *Channel Move Time* and the *Channel Closing Transmission Time* should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst. **Note 2:** The *Channel Closing Transmission Time* is comprised of 200 milliseconds starting at the beginning of the *Channel Move Time* plus any additional intermittent control signals required to facilitate a *Channel move* (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

**Note 3:** During the *U-NII Detection Bandwidth* detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.



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# 4.13.4Test plots4.13.4.1Radar Waveform Calibration ResultRadar Type 0 (20MHz / 5260MHz)





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Radar Type 0 (80MHz / 5290MHz) Agilent Spectrum Analyzer - Swept SA





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4.13.5	Test Data:			
BW/Channel	Test Item	Test Result	Limit	Results
20MHz / 5260MHz	Channel Move Time	0.25s	<10s	Pass
	Channel Closing Transmission Time	40.3ms	<60ms	Pass
80MHz /	Channel Move Time	0.28s	<10s	Pass
5290MHz	Channel Closing Transmission Time	41.6ms	<60ms	Pass



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#### 4.13.5.1 Test plots

#### 4.13.5.1.1 Test Bandwidth/Channel= 20MHz / 5260MHz







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#### 4.13.5.1.2 Test Bandwidth/ Channel =80MHz/5290MHz



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No.	Item	Measurement Uncertainty
1	Total RF power, conducted	±0.75dB
2	RF power density, conducted	±2.84dB
3	Spurious emissions, conducted	±0.75dB
4	Dedicted Courieus emission test	±4.5dB (30MHz-1GHz)
	Radiated Spurious emission test	±4.8dB (1GHz-25GHz)
5	Conduct emission test	±3.12 dB(9KHz- 30MHz)
6	Temperature test	±1°C
7	Humidity test	±3%
8	DC and low frequency voltages	±0.5%

## **5** Measurement Uncertainty (95% confidence levels, k=2)



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## 6 Equipment List

Conducted Emission						
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (yyyy-mm- dd)	Cal. Due date (yyyy- mm-dd)	
Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2020/5/10	2023/5/9	
LISN	Rohde & Schwarz	ENV216	SEM007-01	2020/7/14	2021/7/14	
LISN	ETS-LINDGREN	Feb-16	SEM007-02	2020/3/2	2021/3/1	
Measurement Software	AUDIX	e3 V5.4.1221d	N/A	N/A	N/A	
Coaxial Cable	SGS	N/A	SEM024-01	2020/6/12	2021/6/11	
8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN- T8-02	EMC0120	2020/2/11	2021/2/10	
4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN- T4-02	EMC0121	2020/2/11	2021/2/10	
2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN- T2-02	EMC0122	2020/2/11	2021/2/10	
EMI Test Receiver	Rohde & Schwarz	ESCI	SEM004-02	2020/3/2	2021/3/1	

RF conducted test						
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (yyyy-mm- dd)	Cal. Due date (yyyy- mm-dd)	
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2020/7/14	2021/7/14	
Signal Analyzer	Rohde & Schwarz	FSV	W025-05	2020/3/2	2021/3/1	
Coaxial Cable	SGS	N/A	SEM031-01	2020/6/12	2021/6/11	
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A	
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2020/7/14	2021/7/14	
Temperature Chamber	GIANT FORCE	ICT-150-40- CP-AR	W027-03	2019/10/27	2020/10/27	
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2020/7/14	2021/7/14	
Master Device	Linksys pte.Ltd	WRT32X	FCC ID:Q87- WRT3200ACM IC ID:3839A- WRT3200ACM	N/A	N/A	



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RE in Chamber							
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (yyyy-mm- dd)	Cal. Due date (yyyy- mm-dd)		
2m Somi Anashaia Chambar		NI/A	SEM001-	2020/8/4	2023/8/3		
Sill Selli-Allechoic Chamber	EIS-LINDGREN	N/A	01	2020/8/5	2023/8/4		
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A		
Coaxial Cable	SGS	N/A	SEM025- 01	2020/6/12	2021/6/11		
MXE EMI Receiver (20Hz- 8.4GHz)	Agilent Technologies	N9038A	SEM004- 05	2020/7/14	2021/7/14		
BiConiLog Antenna (26- 3000MHz)	ETS-LINDGREN	3142C	SEM003- 01	2020/6/27	2023/6/26		
Pre-amplifier (0.1-1.3GHz)	Agilent Technologies	8447D	SEM005- 01	2020/3/2	2021/3/1		

RE in Chamber						
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (yyyy-mm- dd)	Cal. Due date (yyyy- mm-dd)	
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001- 02	2018/3/13	2021/3/12	
Spectrum Analyzer (20Hz- 43GHz)	Rohde & Schwarz	FSU43	SEM004- 08	2020/3/2	2021/3/1	
BiConiLog Antenna (26- 3000MHz)	ETS-Lindgren	3142C	SEM003- 01	2020/6/27	2023/6/26	
Horn Antenna (800MHz- 18GHz)	Rohde & Schwarz	HF907	SEM003- 07	2018/413	2021/412	
Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	SEM003- 15	2017/10/17	2020/10/16	
Amplifier(0.1-1300MHz)	HP	8447D	SEM005- 02	2020/7/14	2021/7/14	
Low Noise Amplifier (100MHz- 18GHz)	Black Diamond Series	BDLNA-0118- 352810	SEM005- 05	2020/7/14	2021/7/14	
Pre-Amplifier(0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	EMC2063	2019/10/20	2020/10/19	
Pre-amplifier(26-40GHz)	Compliance Directions Systems Inc.	PAP-2640-50	SEM005- 08	2020/3/2	2021/3/1	
Band filter	N/A	N/A	N/A	N/A	N/A	
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A	
Coaxial Cable	SGS	N/A	SEM026- 01	2020/6/12	2021/6/11	



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## 7 Photographs - EUT Test Setup Details

Refer to Appendix A - Photographs of EUT Test Setup Details for ZR/2020/80074.

The End



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