



REPORT No.: SZ19060355W04

# TEST REPORT

**APPLICANT** : Great Talent Technology Limited  
**PRODUCT NAME** : Android device  
**MODEL NAME** : U2-PLUS-TE-VR  
**BRAND NAME** : UMX  
**FCC ID** : 2ALZM-U2-PLUS-TE-VR  
**STANDARD(S)** : 47 CFR Part 15 Subpart E  
**RECEIPT DATE** : 2019-07-04  
**TEST DATE** : 2019-07-11 to 2019-07-30  
**ISSUE DATE** : 2019-08-05

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Change History		
Version	Date	Reason for change
1.0	2019-08-05	First edition

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# 1. Technical Information

**Note:** Provide by applicant.

## 1.1. Applicant and Manufacturer Information

<b>Applicant:</b>	Great Talent Technology Limited
<b>Applicant Address:</b>	RM602,T3 Software Park, Nanshan, Shenzhen, China
<b>Manufacturer:</b>	Great Talent Technology Limited
<b>Manufacturer Address:</b>	RM602,T3 Software Park, Nanshan, Shenzhen, China

## 1.2. Equipment Under Test (EUT) Description

<b>Product Name:</b>	Android device
<b>Serial No:</b>	(N/A, marked #1 by test site)
<b>Hardware Version:</b>	U2+_P0
<b>Software Version:</b>	U2-PLUS-TE-VR-Z96K04E00V017-user_190726185443
<b>Modulation Type:</b>	OFDM
<b>Modulation Mode:</b>	802.11a, 802.11n(HT20), 802.11n(HT40) 802.11ac(VHT20), 802.11ac(VHT40), 802.11ac(VHT80),
<b>Operating Frequency Range:</b>	5.180 GHz- 5.240 GHz; 5.260 GHz -5.320 GHz ; 5.500 GHz -5.720 GHz ; 5.745GHz- 5.825GHz
<b>Channel Number:</b>	Refer to 1.3
<b>Antenna Type:</b>	FPC Antenna
<b>Antenna Gain:</b>	2.1 dBi



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<b>Accessory Information:</b>	Battery	
	Brand Name:	Guoxia
	Model No.:	BTE-3K01
	Serial No.:	(N/A, marked #1 by test site)
	Capacity:	3000mAh
	Rated Voltage:	3.8V
	Charge Limit:	4.35 V
	AC Adapter	
	Brand Name:	Kingfulin
	Model No.:	TPA-23A050200UU01
	Serial No.:	(N/A, marked #1 by test site)
	Rated Output:	5V=2A
	Rated Input:	100-240V ~ 50/60Hz 0.3A

**Note 1:** WIFI hotspot does not support U-NII band.

**Note 2:** During test, the duty cycle of the EUT was setting to 100%.

**Note 3:** For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

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### 1.3. The channel number and frequency of EUT

<b>Frequency Range: 5180MHz-5240MHz</b>				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	<b>36</b>	<b>5180</b>	40	5200
	<b>44</b>	<b>5220</b>	<b>48</b>	<b>5240</b>
40MHz	<b>38</b>	<b>5190</b>	<b>46</b>	<b>5230</b>
80MHz	<b>42</b>	<b>5210</b>		
<b>Frequency Range: 5260MHz-5320MHz</b>				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	<b>52</b>	<b>5260</b>	56	5280
	<b>60</b>	<b>5300</b>	<b>64</b>	<b>5320</b>
40MHz	<b>54</b>	<b>5270</b>	<b>62</b>	<b>5310</b>
80MHz	<b>58</b>	<b>5290</b>		
<b>Frequency Range: 5500MHz-5720MHz</b>				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	<b>100</b>	<b>5500</b>	105	5520
	108	5540	112	5560
	116	5580	<b>120</b>	<b>5600</b>
	124	5620	128	5640
	132	5660	136	5680
	140	5700	<b>144</b>	<b>5720</b>
40MHz	<b>102</b>	<b>5510</b>	110	5550
	118	5590	<b>126</b>	<b>5630</b>
	134	5670	<b>142</b>	<b>5710</b>
80MHz	<b>106</b>	<b>5530</b>	<b>122</b>	<b>5610</b>
	<b>138</b>	<b>5690</b>		
<b>Frequency Range: 5745-5825MHz</b>				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	<b>149</b>	<b>5745</b>	153	5765
	<b>157</b>	<b>5785</b>	161	5805
	<b>165</b>	<b>5825</b>		
40MHz	<b>151</b>	<b>5775</b>	<b>159</b>	<b>5795</b>
80MHz	<b>155</b>	<b>5775</b>		

**Note 1:** The black bold channels were selected for test.



## 1.4. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart E (U-NII band) for the EUT FCC ID Certification:

No	Identity	Document Title
1	47 CFR Part 15 (5-1-14 Edition)	Radio Frequency Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Test Date	Test Engineer	Result
1	15.203	Antenna Requirement	N/A	N/A	PASS
2	ANSI C63.10	Duty Cycle of the test signal	Jul 15, 2019	Wang Meng	PASS
3	15.407(a)	Maximum conducted output Power	Jul 27, 2019	Wang Meng	PASS
4	15.407(a) (e)	Emission Bandwidth	Jul 15, 2019	Wang Meng	PASS
5	15.407(a)	Peak Power spectral density	Jul 15, 2019	Wang Meng	PASS
6	15.407(g)	Frequency Stability	Jul 30, 2019	Wang Meng	PASS
7	15.207	Conducted Emission	Jul 11, 2019	Peng Xuewei	PASS
8	15.407(b)	Restricted Frequency Bands	Jul 25, 2019	Peng Xuewei	PASS
9	15.407(b)	Radiated Emission	Jul 30, 2019	Peng Xuewei	PASS

**Note1:** The DFS test report was documented in a separate report  
(Report No.: SZ19060355W05).

**Note2:** The tests of Conducted Emission and Radiated Emission were performed according to the method of measurements prescribed in ANSI C63.10 2013.

**Note3:** These RF tests were performed according to the method of measurements prescribed in KDB789033 D02 General UNII Test Procedures New Rules v01r03.

**Note4:** The path loss during the RF test is calibrated to correct the results by the offset setting in the test equipments. The ref offset 11.5dB contains two parts that cable loss 1.5dB and Attenuator 10dB.

## 1.5. Environmental Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 -60
Atmospheric Pressure (kPa):	86-106



## 2. 47 CFR Part 15E Requirements

### 2.1. Antenna requirement

#### 2.1.1. Applicable Standard

According to FCC 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

#### 2.1.2. 2.1.2 Result: Compliant

The EUT has a permanently and irreplaceable attached antenna. Please refer to the EUT internal photos.

### 2.2. Duty Cycle of the test signal

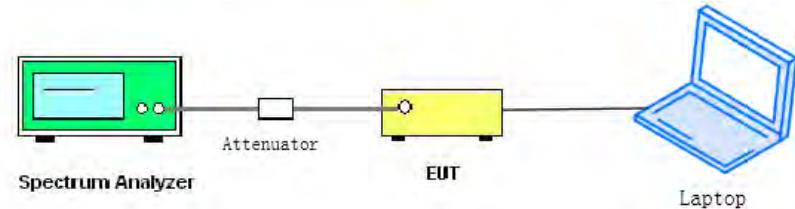
#### 2.2.1. Requirement

Preferably, all measurements of maximum conducted (average) output power will be performed with the EUT transmitting continuously (i.e., with a duty cycle of greater than or equal to 98%). When continuous operation cannot be realized, then the use of sweep triggering/signal gating techniques can be used to ensure that measurements are made only during transmissions at the maximum power control level. Such sweep triggering/signal gating techniques will require knowledge of the minimum transmission duration ( $T$ ) over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation. Sweep triggering/signal gating techniques can then be used if the measurement/sweep time of the analyzer can be set such that it does not exceed  $T$  at any time that data are being acquired (i.e., no transmitter OFF-time is to be considered).

When continuous transmission cannot be achieved and sweep triggering/signal gating cannot be implemented, alternative procedures are provided that can be used to measure the average power; however, they will require an additional measurement of the transmitter duty cycle ( $D$ ). Within this subclause, the duty cycle refers to the fraction of time over which the transmitter is ON and is transmitting at its maximum power control level. The duty cycle is considered to be constant if variations are less than  $\pm 2\%$ ; otherwise, the duty cycle is considered to be nonconstant.

## 2.2.2. Test Description

### A. Test Set:



The EUT is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

### B. Test Procedure

KDB 789033 Section B was used in order to prove compliance.

### 2.2.3. Test Result

#### A. Test Verdict:

Test Mode	Duty Cycle (%) (D)	Duty Factor ( $10^{\log[1/D]}$ )
802.11a	98.09	0.08
802.11n(HT20)	98.37	0.07
802.11n(HT40)	97.97	0.09
802.11ac(VHT20)	96.34	0.16
802.11ac(VHT40)	96.36	0.16
802.11ac(VHT80)	92.80	0.32

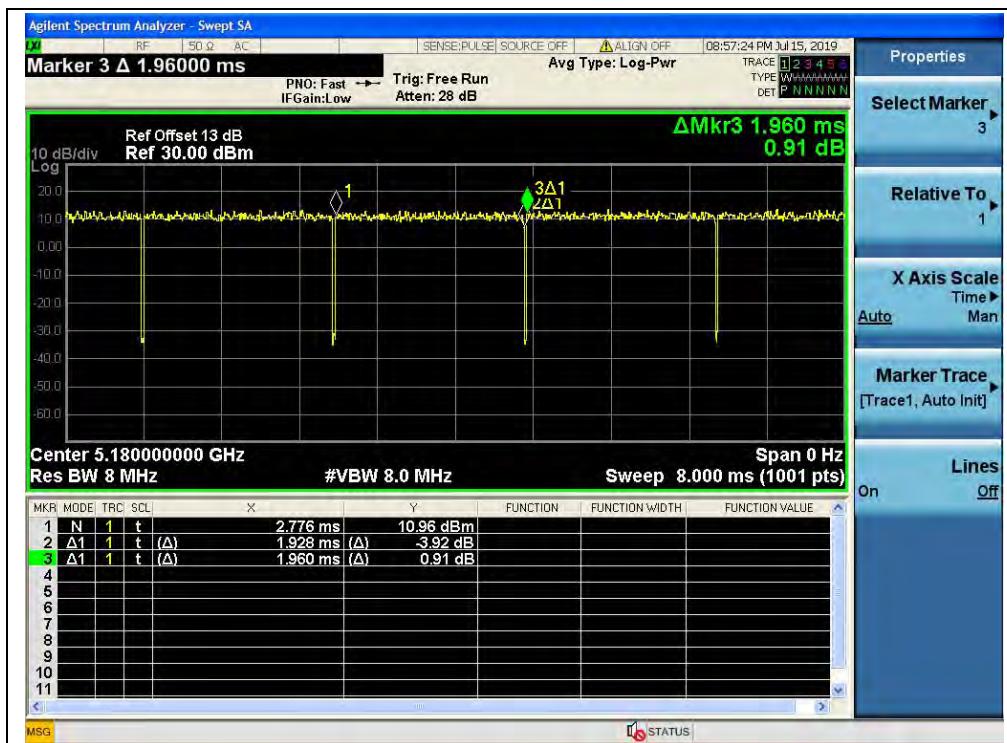
#### B. Test Plots



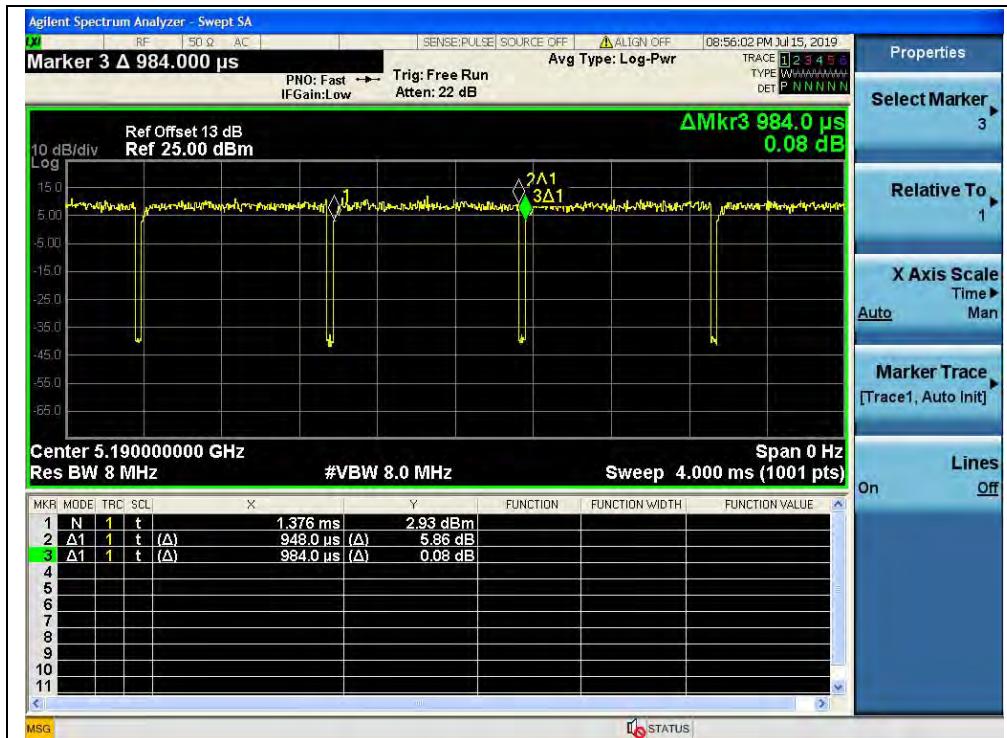
(CH36\_5180MHz\_802.11a)



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(CH36\_5180MHz\_802.11n(HT20))



(CH38\_5190MHz\_802.11n(HT40))

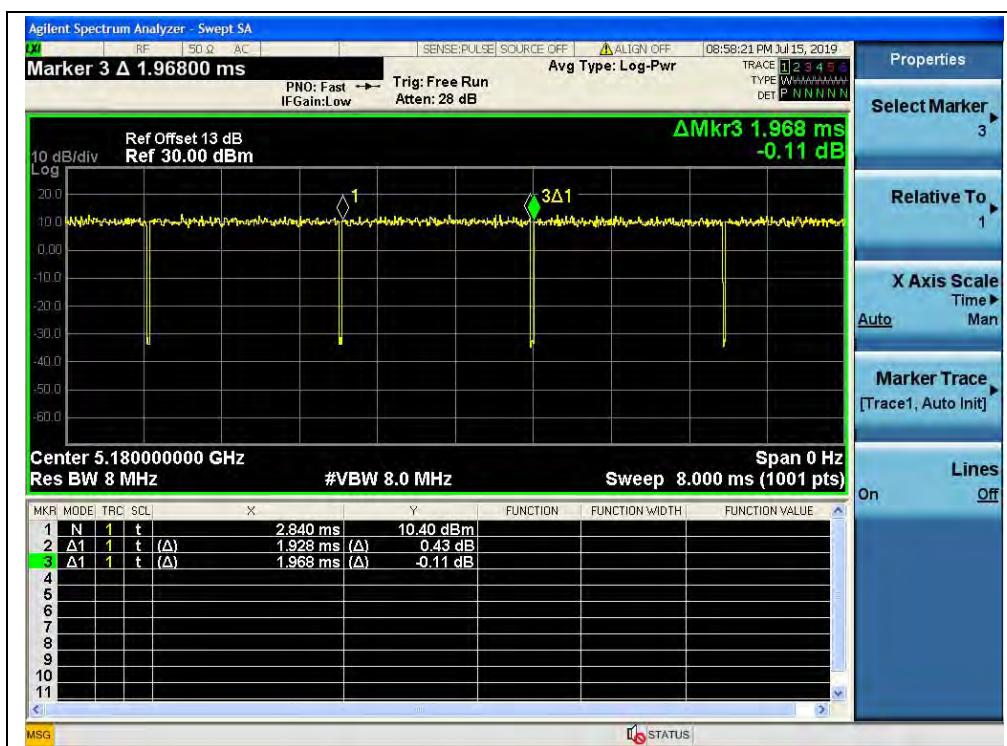
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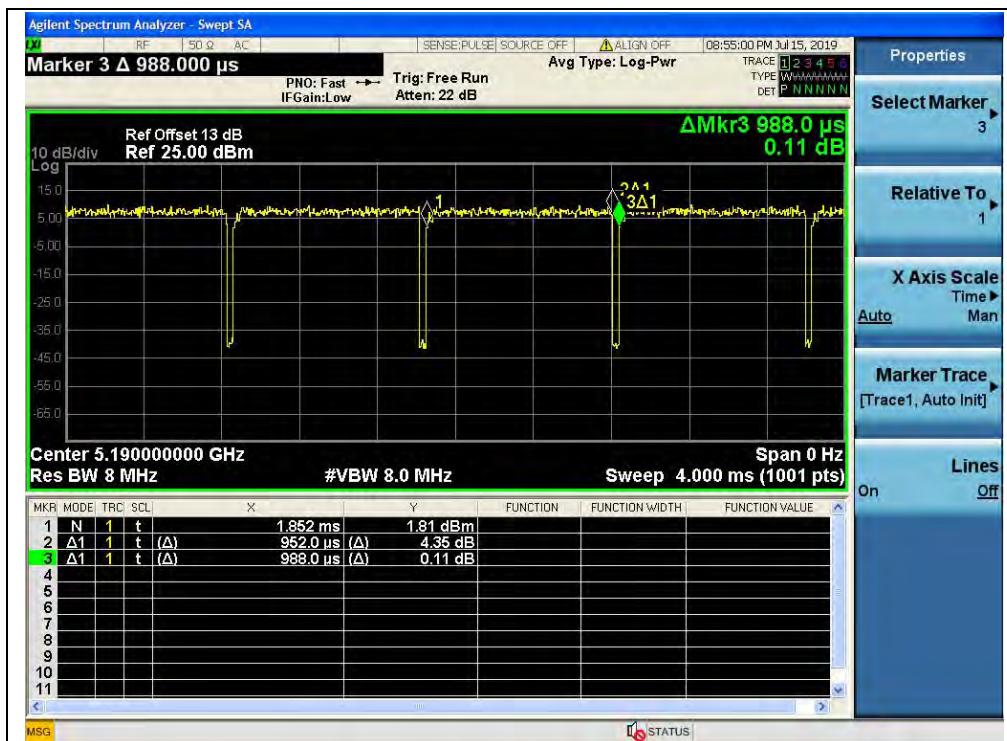
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(CH36\_5180MHz \_802.11ac(VHT20))



(CH38\_5190MHz \_802.11 ac(VHT40))

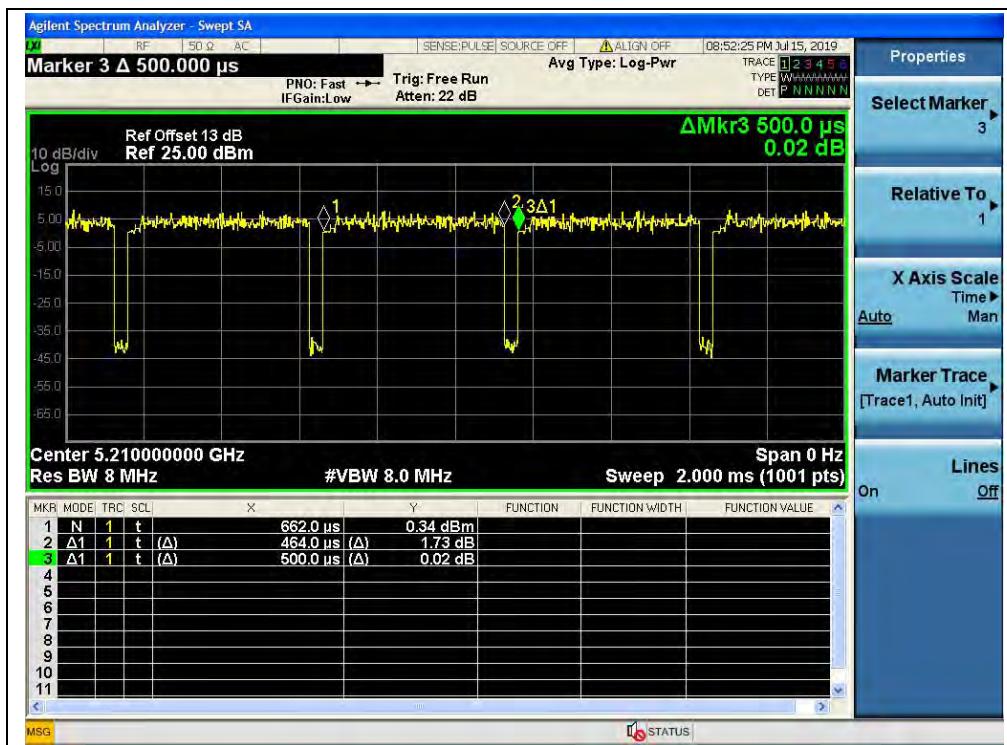
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(CH42\_5210MHz \_802.11 ac(VHT80))

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## 2.3. Maximum conducted output power

### 2.3.1. Requirement

(1) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or  $11 \text{ dBm} + 10 \log B$ , where B is the 26 dB emission bandwidth in megahertz.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

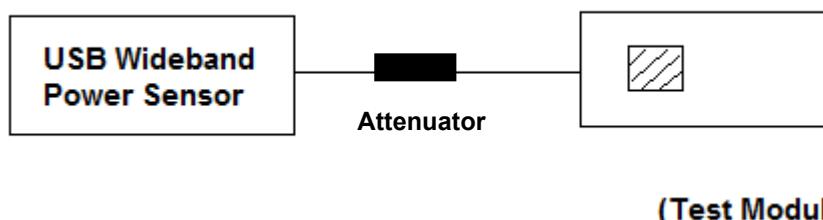
(4) According to KDB662911D01Measure-and-sum technique, the conducted emission level (e.g., transmit power or power in specified bandwidth) is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically to determine the total emission level from the device. Summing is performed in units that are directly proportional to power.

(5) According to KDB 662911 D01, the directional gain =  $G_{\text{ANT}} + 10\log(N_{\text{ANT}})$  dBi, where  $G_{\text{ANT}}$  is the antenna gain in dBi,  $N_{\text{ANT}}$  is the number of outputs.

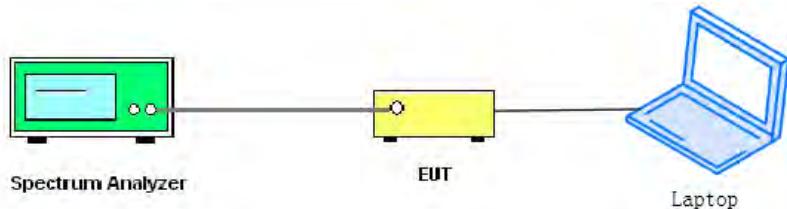
### 2.3.2. Test Description

Section E) 3) of KDB 789033 defines a methodology using a USB Wideband Power Sensor.

#### A. Test Setup:



The EUT (Equipment under the test) which is coupled to the USB Wideband Power Sensor; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading, all test result in USB Wideband Power Sensor.

**For ac (VHT80) mode power**

The EUT (Equipment under the test) is coupled to the Spectrum analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading, all test result in Spectrum analyzer.

**2.3.3. Limits**

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or  $11 \text{ dBm} + 10 \log B$ , where B is the 26 dB emission bandwidth in megahertz.

Mode	Band	Channel (MHz)	26dB BW (MHz)	$11+10\log(26\text{dB BW})$	Limits (dBm)
a	UNII-2a	5260	23.26	24.67	24.00
		5300	23.50	24.71	24.00
		5320	22.51	24.52	24.00
	UNII-2c	5500	23.46	24.70	24.00
		5600	22.89	24.60	24.00
		5720	22.72	24.56	24.00
n20	UNII-2a	5260	24.54	24.90	24.00
		5300	23.34	24.68	24.00
		5320	23.20	24.65	24.00
	UNII-2c	5500	23.18	24.65	24.00
		5600	23.43	24.70	24.00
		5720	23.23	24.66	24.00
ac20	UNII-2a	5260	23.55	24.72	24.00
		5300	23.25	24.66	24.00
		5320	23.39	24.69	24.00
	UNII-2c	5500	23.70	24.75	24.00
		5600	23.31	24.68	24.00
		5720	23.29	24.67	24.00



### 2.3.4. Test Result

#### 802.11a Test mode

Channel	Frequency (MHz)	Measured Peak Power		Limit (dBm)		Verdict	
		dBm	W	dBm	W		
36	5180	14.26	0.027	24	0.25	PASS	
44	5220	14.62	0.029				
48	5240	14.76	0.030				
52	5260	15.32	0.034				
60	5300	15.09	0.032				
64	5320	15.14	0.033				
100	5500	14.35	0.027				
120	5600	14.82	0.030				
144	5720	14.66	0.029				
149	5745	14.95	0.031				
157	5785	14.63	0.029				
165	5825	14.71	0.030				
Channel	Frequency (MHz)	Average Power (dBm)			Limit (dBm)	Verdict	
		Measured	Duty factor Calculated				
		dBm	dBm	W	dBm	W	
36	5180	9.35	9.43	0.009	24	0.25	
44	5220	9.73	9.81	0.010			
48	5240	9.94	10.02	0.010			
52	5260	10.35	10.43	0.011			
60	5300	10.09	10.17	0.010			
64	5320	10.15	10.23	0.011			
100	5500	9.36	9.44	0.009			
120	5600	10.04	10.12	0.010			
144	5720	9.79	9.87	0.010			
149	5745	10.11	10.19	0.010			
157	5785	9.77	9.85	0.010			
165	5825	9.82	9.90	0.010			



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## 802.11n (HT20) Test mode

Channel	Frequency (MHz)	Measured Peak Power		Limit (dBm)		Verdict	
		dBm	W	dBm	W		
36	5180	14.11	0.026	24	0.25	PASS	
44	5220	14.46	0.028				
48	5240	14.41	0.028				
52	5260	14.52	0.028				
60	5300	14.48	0.028				
64	5320	14.69	0.029				
100	5500	13.71	0.023				
120	5600	14.48	0.028				
144	5720	14.44	0.028				
149	5745	14.65	0.029				
157	5785	14.12	0.026	30	1	PASS	
165	5825	13.91	0.025				
Channel	Frequency (MHz)	Average Power (dBm)			Limit (dBm)	Verdict	
		Measured	Duty factor Calculated				
		dBm	dBm	W	dBm		
36	5180	9.16	9.23	0.008	24	0.25	
44	5220	9.51	9.58	0.009			
48	5240	9.47	9.54	0.009			
52	5260	9.57	9.64	0.009			
60	5300	9.44	9.51	0.009			
64	5320	9.65	9.72	0.009			
100	5500	8.75	8.82	0.008			
120	5600	9.52	9.59	0.009			
144	5720	9.45	9.52	0.009			
149	5745	9.53	9.60	0.009	30	1	
157	5785	9.03	9.10	0.008			
165	5825	8.99	9.06	0.008			

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## 802.11n (HT40) Test mode

Channel	Frequency (MHz)	Measured Peak Power		Limit (dBm)		Verdict	
		dBm	W	dBm	W		
38	5190	15.46	0.035	24	0.25	PASS	
46	5230	15.73	0.037				
54	5270	15.76	0.038				
62	5310	15.31	0.034				
102	5510	14.90	0.031				
126	5630	15.71	0.037				
142	5710	15.37	0.034				
151	5755	15.02	0.032				
159	5795	15.34	0.034				
Channel	Frequency (MHz)	Average Power			Limit (dBm)	Verdict	
		Measured	Duty factor Calculated				
		dBm	dBm	W	dBm	W	
38	5190	8.79	8.95	0.008	24	0.25	
46	5230	9.01	9.17	0.008			
54	5270	9.02	9.18	0.008			
62	5310	8.61	8.77	0.008			
102	5510	8.20	8.36	0.007			
126	5630	8.94	9.10	0.008			
142	5710	8.62	8.78	0.008			
151	5755	8.44	8.60	0.007			
159	5795	8.61	8.77	0.008			

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## 802.11ac (VHT20) Test mode

Channel	Frequency (MHz)	Measured Peak Power		Limit (dBm)		Verdict	
		dBm	W	dBm	W		
36	5180	14.04	0.025	24	0.25	PASS	
44	5220	14.52	0.028				
48	5240	14.52	0.028				
52	5260	14.76	0.030				
60	5300	14.84	0.030				
64	5320	14.66	0.029				
100	5500	13.16	0.021				
120	5600	14.45	0.028				
144	5720	13.82	0.024				
149	5745	13.98	0.025		30	1	
157	5785	13.43	0.022				
165	5825	13.18	0.021				
Channel	Frequency (MHz)	Average Power (dBm)			Limit (dBm)	Verdict	
		Measured	Duty factor Calculated				
		dBm	dBm	W	dBm		
36	5180	9.19	9.28	0.008	24	0.25	
44	5220	9.72	9.81	0.010			
48	5240	9.71	9.80	0.010			
52	5260	9.77	9.86	0.010			
60	5300	9.8	9.89	0.010			
64	5320	9.67	9.76	0.009			
100	5500	8.01	8.10	0.006			
120	5600	9.50	9.59	0.009			
144	5720	8.76	8.85	0.008			
149	5745	8.91	9.00	0.008	30	1	
157	5785	8.48	8.57	0.007			
165	5825	8.15	8.24	0.007			

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## 802.11ac (VHT40) Test mode

Channel	Frequency (MHz)	Measured Peak Power		Limit (dBm)		Verdict	
		dBm	W	dBm	W		
38	5190	15.38	0.035	24	0.25	PASS	
46	5230	15.29	0.034				
54	5270	15.31	0.034				
62	5310	15.34	0.034				
102	5510	14.78	0.030				
126	5630	16.02	0.040				
142	5710	15.20	0.033				
151	5755	15.03	0.032				
159	5795	14.73	0.030				
Channel	Frequency (MHz)	Average Power			Limit (dBm)	Verdict	
		Measured	Duty factor Calculated				
		dBm	dBm	W	dBm	W	
38	5190	8.85	9.01	0.008	24	0.25	
46	5230	9.41	9.57	0.009			
54	5270	9.49	9.65	0.009			
62	5310	9.52	9.68	0.009			
102	5510	8.17	8.33	0.007			
126	5630	9.28	9.44	0.009			
142	5710	8.43	8.59	0.007			
151	5755	8.40	8.56	0.007			
159	5795	8.12	8.28	0.007	30	1	



REPORT No.: SZ19060355W04

**802.11ac (VHT80) Test mode**

Channel	Frequency (MHz)	Measured Peak Power (dBm)			Limit(dBm)		Verdict	
		dBm	W		dBm	W		
42	5210	15.61	0.036		24	0.25	PASS	
58	5290	16.13	0.041					
106	5530	15.32	0.034					
138	5690	15.71	0.037					
155	5775	15.14	0.033					
Channel	Frequency (MHz)	Measured Average Power (dBm)			Limit (dBm)		Verdict	
		Measured	Duty factor Calculated					
		dBm	dBm	W	dBm	W		
42	5210	8.87	9.19	0.008	24	30	PASS	
58	5290	9.23	9.55	0.009				
106	5530	8.50	8.82	0.008				
138	5690	9.01	9.33	0.009				
155	5775	8.60	8.92	0.008				

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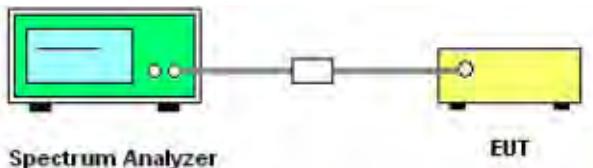
## 2.4. Emission Bandwidth

### 2.4.1. Requirement

For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Determination of the emissions bandwidth is based on the use of measurement instrumentation employing a peak detector function with an instrument resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement. Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

### 2.4.2. Test Description

#### A. Test Set:



The EUT is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

#### B. Test Procedure

1. KDB 789033 Section C) 1) Emission Bandwidth was used in order to prove compliance
  - a) Set RBW = approximately 1% of the emission bandwidth.
  - b) Set the VBW > RBW.
  - c) Detector = Peak.
  - d) Trace mode = max hold.
  - e) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
2. KDB 789033 Section C) 2) minimum emission bandwidth for the band 5.725-5.85GHz was used in order to prove compliance.  
Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.715-5.85 GHz. The following procedure shall be used for measuring this bandwidth:
  - a) Set RBW = 100 kHz.
  - b) Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
  - c) Detector = Peak.



- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

#### 2.4.3. Test Result

##### 802.11a Test mode

###### A. Test Verdict:

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
36	5180	23.73
44	5220	22.98
48	5240	23.34 <small>Note</small>
52	5260	23.26
60	5300	23.50
64	5320	22.51
100	5500	23.46
120	5600	22.89
144	5720	22.72
Channel	Frequency (MHz)	6dB Bandwidth (MHz)
144	5720	16.02
149	5745	15.35
157	5785	15.93
165	5825	15.36

**Note:** The high frequency of the -26dB Bandwidth is 5251.25MHz which is in the DFS frequency range, so DFS testing is required. Please refer to DFS report (Report No.: SZ19060355W05).



## B. Test Plots



(Channel 36, 5180MHz, 802.11a,)



(Channel 44, 5220 MHz, 802.11a,)



REPORT No.: SZ19060355W04



(Channel 48, 5240MHz, 802.11a,)



(Channel 48, 5240MHz, fh of -26dB, 802.11a,)



REPORT No.: SZ19060355W04



(Channel 52, 5260MHz, 802.11a,)



(Channel 60, 5300 MHz, 802.11a,)

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REPORT No.: SZ19060355W04



(Channel 64, 5320MHz, 802.11a,)



(Channel 100, 5500MHz, 802.11a,)

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REPORT No.: SZ19060355W04



(Channel 120, 5600 MHz, 802.11a,)



(Channel 144, 5720MHz, 802.11a,)

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REPORT No.: SZ19060355W04



(Channel 144, 5720MHz, 802.11a.)



(Channel 149, 5745MHz, 802.11a)

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REPORT No.: SZ19060355W04



(Channel 157, 5785MHz, 802.11a)



(Channel 165, 5825MHz, 802.11a)

**802.11n (HT20) Test mode****A. Test Verdict:**

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
36	5180	23.64
44	5220	23.25
48	5240	23.09 <small>Note</small>
52	5260	24.54
60	5300	23.34
64	5320	23.20
100	5500	23.18
120	5600	23.43
144	5720	23.23
Channel	Frequency (MHz)	6dB Bandwidth (MHz)
144	5720	15.67
149	5745	15.95
157	5785	16.27
165	5825	15.43

**Note:** The high frequency of the -26dB Bandwidth is 5251.91MHz which is in the DFS frequency range, so DFS testing is required. Please refer to DFS report (Report No.: SZ19060355W05).

**B. Test Plots**

(Channel 36, 5180MHz, 802.11 n (HT20))



REPORT No.: SZ19060355W04



(Channel 44, 5220 MHz, 802.11 n (HT20))



(Channel 48, 5240MHz, 802.11 n (HT20))



REPORT No.: SZ19060355W04



(Channel 48, 5240MHz, fh of -26dB, 802.11 n (HT20))



(Channel 52, 5260MHz, 802.11 n (HT20))

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REPORT No.: SZ19060355W04



(Channel 60, 5300 MHz, 802.11 n (HT20))



(Channel 64, 5320MHz, 802.11 n (HT20))



REPORT No.: SZ19060355W04



(Channel 100, 5500MHz, 802.11 n (HT20))



(Channel 120, 5600 MHz, 802.11 n (HT20))



REPORT No.: SZ19060355W04



(Channel 144, 5720MHz, 802.11 n (HT20))



(Channel 144, 5720MHz, 802.11 n (HT20))

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REPORT No.: SZ19060355W04



(Channel 149, 5745MHz, 802.11 n (HT20))



(Channel 157, 5785MHz, 802.11 n (HT20))

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(Channel 165, 5825MHz, 802.11 n (HT20))

## 802.11n (HT40) Test mode

### A. Test Verdict:

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
38	5190	41.17
46	5230	41.09 Note
54	5270	41.17
62	5310	41.11
102	5510	41.43
126	5630	41.47
142	5710	41.24

Channel	Frequency (MHz)	6dB Bandwidth (MHz)
142	5710	36.09
151	5755	36.09
159	5795	36.05

**Note:** The high frequency of the -26dB Bandwidth is 5250.82MHz which is in the DFS frequency range, so DFS testing is required. Please refer to DFS report (Report No.: SZ19060355W05).



## B. Test Plots



(Channel 38, 5190MHz, 802.11n (HT40))



(Channel 46, 5230 MHz, 802.11n (HT40))



REPORT No.: SZ19060355W04



(Channel 46, 5230 MHz, fh of -26dB, 802.11n (HT40))



(Channel 54, 5270MHz, 802.11n (HT40))

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REPORT No.: SZ19060355W04



(Channel 62, 5310 MHz, 802.11n (HT40))



(Channel 102, 5510MHz, 802.11n (HT40))



REPORT No.: SZ19060355W04



(Channel 126, 5630 MHz, 802.11n (HT40))



(Channel 142, 5710MHz, 802.11n (HT40))

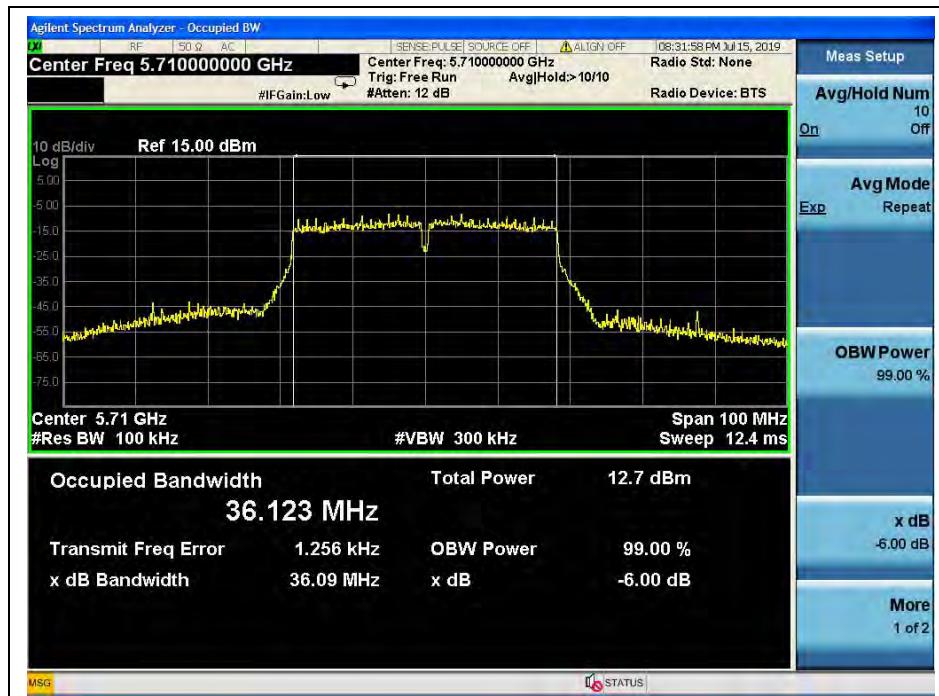
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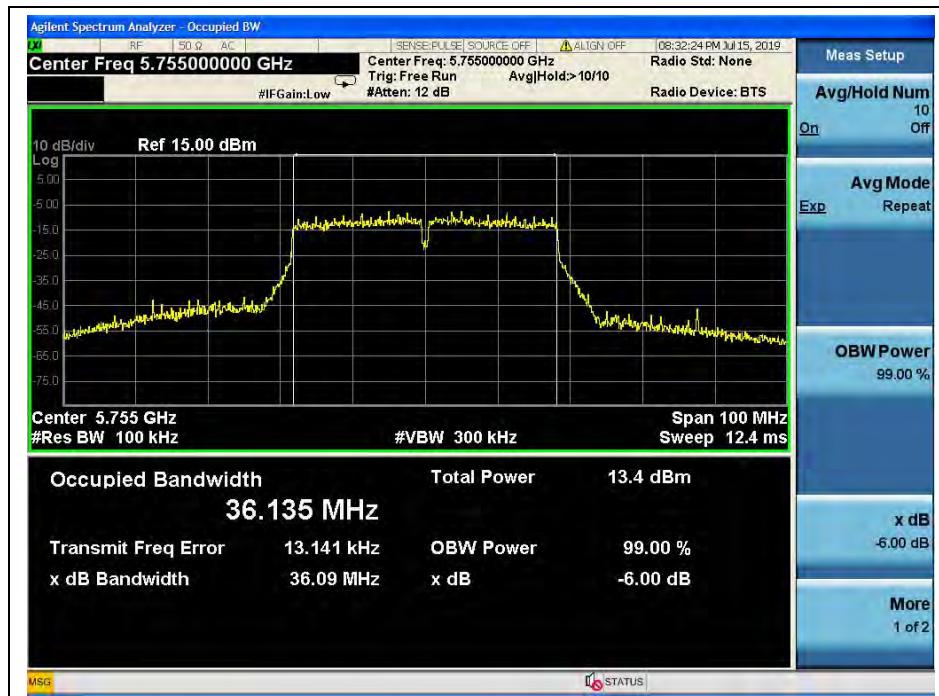
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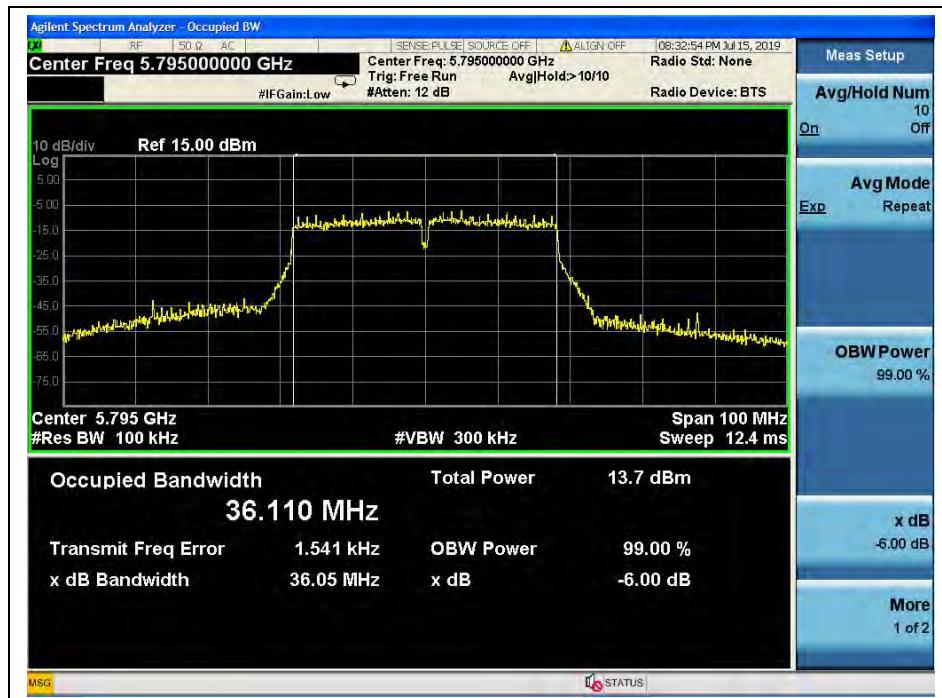
REPORT No.: SZ19060355W04



(Channel 142, 5710MHz, 802.11n (HT40))



(Channel 151, 5755 MHz, 802.11n (HT40))



(Channel 159, 5795MHz, 802.11n (HT40))

## 802.11ac (VHT20) Test mode

### A. Test Verdict:

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
36	5180	23.20
44	5220	24.31
48	5240	23.76 Note
52	5260	23.55
60	5300	23.25
64	5320	23.39
100	5500	23.70
120	5600	23.31
144	5720	23.29
Channel	Frequency (MHz)	6dB Bandwidth (MHz)
144	5720	16.77
149	5745	15.13
157	5785	16.02
165	5825	16.52

**Note:** The high frequency of the -26dB Bandwidth is 5251.49MHz which is in the DFS frequency range, so DFS testing is required. Please refer to DFS report (Report No.: SZ19060355W05).



REPORT No.: SZ19060355W04

## B. Test Plots



(Channel 36, 5180MHz, 802.11 ac (VHT20))



(Channel 44, 5220 MHz, 802.11 ac (VHT20))



REPORT No.: SZ19060355W04



(Channel 48, 5240MHz, 802.11 ac (VHT20))



(Channel 48, 5240MHz, fh of -26dB, ac (VHT20))

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REPORT No.: SZ19060355W04



(Channel 52, 5260MHz, 802.11 ac (VHT20))



(Channel 60, 5300 MHz, 802.11 ac (VHT20))



REPORT No.: SZ19060355W04



(Channel 64, 5320MHz, 802.11 ac (VHT20))



(Channel 100, 5500MHz, 802.11 ac (VHT20))



REPORT No.: SZ19060355W04



(Channel 120, 5600 MHz, 802.11 ac (VHT20))



(Channel 144, 5720MHz, 802.11 ac (VHT20))

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REPORT No.: SZ19060355W04



(Channel 144, 5720MHz, 802.11 ac (VHT20))



(Channel 149, 5745MHz, 802.11 ac (VHT20))



REPORT No.: SZ19060355W04



(Channel 157, 5785MHz, 802.11 ac (VHT20))



(Channel 165, 5825MHz, 802.11 ac (VHT20))

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**802.11ac (VHT40) Test mode****A. Test Verdict:**

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
38	5190	41.14
46	5230	41.12 Note
54	5270	41.48
62	5310	41.24
102	5510	41.44
126	5630	41.19
142	5710	41.18
Channel	Frequency (MHz)	6dB Bandwidth (MHz)
142	5710	36.27
151	5755	36.33
159	5795	36.25

**Note:** The high frequency of the -26dB Bandwidth is 5250.82MHz which is in the DFS frequency range, so DFS testing is required. Please refer to DFS report (Report No.: SZ19060355W05).

**B. Test Plots**

(Channel 38, 5190MHz, 802.11 ac (VHT40))



REPORT No.: SZ19060355W04



(Channel 46, 5230 MHz, 802.11 ac (VHT40))



(Channel 46, 5230 MHz, fh of -26dB, 802. ac (VHT40))



REPORT No.: SZ19060355W04



(Channel 54, 5270MHz, 802.11 ac (VHT40))



(Channel 62, 5310 MHz, 802.11 ac (VHT40))



REPORT No.: SZ19060355W04



(Channel 102, 5510MHz, 802.11 ac (VHT40))



(Channel 126, 5630 MHz, 802.11 ac (VHT40))

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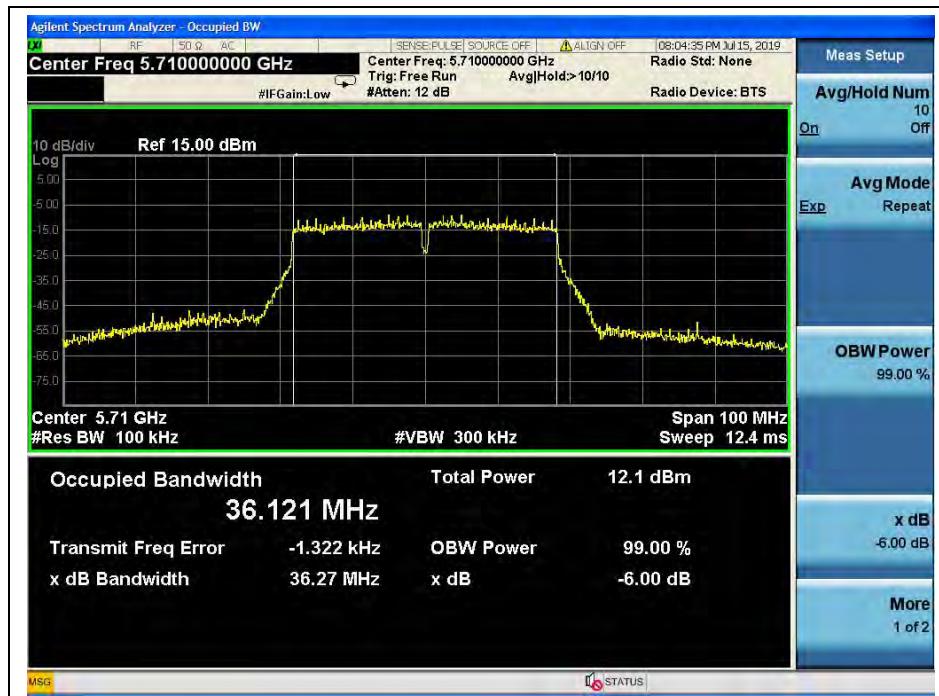
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REPORT No.: SZ19060355W04



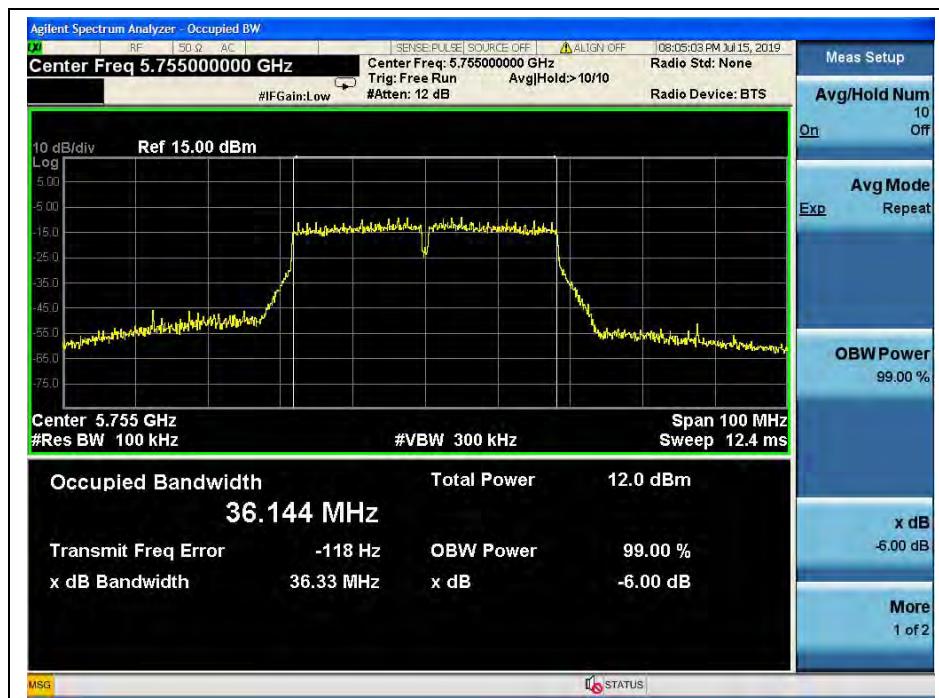
(Channel 142, 5710MHz, 802.11 ac (VHT40))



(Channel 142, 5710MHz, 802.11 ac (VHT40))



REPORT No.: SZ19060355W04



(Channel 151, 5755 MHz, 802.11 ac (VHT40))



(Channel 159, 5795MHz, 802.11ac (VHT40))

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REPORT No.: SZ19060355W04

## 802.11ac (VHT80) Test mode

### A. Test Verdict:

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
42	5210	83.18 Note
58	5290	83.13
106	5530	83.14
122	5610	83.04
138	5690	82.79

Channel	Frequency (MHz)	6dB Bandwidth (MHz)
138	5690	75.14
155	5775	75.14

**Note:** The high frequency of the -26dB Bandwidth is 5252.00MHz which is in the DFS frequency range, so DFS testing is required. Please refer to DFS report (Report No.: SZ19060355W05).

### B. Test Plots



(Channel 42, 5210MHz, 802.11 ac (VHT80))



REPORT No.: SZ19060355W04



(Channel 42, 5210 MHz, fh of -26dB, 802. ac (VHT80))



(Channel 58, 5290 MHz, 802.11 ac (VHT80))

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REPORT No.: SZ19060355W04



(Channel 106, 5530MHz, 802.11 ac (VHT80))



(Channel 122, 5610 MHz, 802.11 ac (VHT80))

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