



REPORT No.: SZ16030122W04

FCC RF TEST REPORT

APPLICANT : Jide Technology Co., Ltd.

PRODUCT NAME : Android Hybrid Laptop

MODEL NAME : Remix Pro

TRADE NAME : Remix OS, Remix Pro, JIDE

BRAND NAME : Remix OS, Remix Pro, JIDE

FCC ID : 2AF86-RP1

STANDARD(S) : 47 CFR Part 15 Subpart E

ISSUE DATE : 2017-01-06



SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

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Change History		
Issue	Date	Reason for change
1.0	2017-01-06	First edition

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TEST REPORT DECLARATION

Applicant	Jide Technology Co., Ltd.
Applicant Address	1801, Building 3, Crystal City, Tiansha Taoyian Road, Nanshan District, Shenzhen China
Manufacturer	Jide Technology Co., Ltd.
Manufacturer Address	1801, Building 3, Crystal City, Tiansha Taoyian Road, Nanshan District, Shenzhen China
Product Name	Android Hybrid Laptop
Model Name	Remix Pro
Brand Name	Remix OS, Remix Pro, JIDE
HW Version	B1.1
SW Version	Wanlong_B2
Test Standards	47 CFR Part 15 Subpart E
Test Date	2016-05-25 to 2016-07-09
Test Result	PASS

Tested by : Su Hang
Su Hang

Reviewed by : Qiu Xiaojun
Qiu Xiaojun

Approved by : Peng Huarui
Peng Huarui



1. GENERAL INFORMATION

1.1 EUT Description

EUT Type	Android Hybrid Laptop
Serial No.....	(n.a, marked #1 by test site)
Hardware Version.....	B1.1
Software Version	Wanlong_B2
Applicant.....	Jide Technology Co., Ltd. 1801, Building 3, Crystal City, Tiansha Taoyian Road, Nanshan District, Shenzhen China
Manufacturer	Jide Technology Co., Ltd. 1801, Building 3, Crystal City, Tiansha Taoyian Road, Nanshan District, Shenzhen China
Frequency Range	802.11b/g/n: 2.400GHz - 2.4835GHz 802.11a/ac/n: 5.150GHz- 5.250GHz 5.725GHz- 5.850GHz
Channel Number	Refer Note(2)
Modulation Type	DSSS, OFDM
Antenna Type.....	FPCB Antenna
Antenna Gain	2.7dBi

Note:

1. The U-NII band is applicable to this report, another bands of operation (2.4GHz) is documented in a separate report.
2. The following tables are the channel number and frequency of the EUT, the black bold channels were selected for test.

20MHz Bandwidth:

Frequency Range	5150~5250MHz				5725~5850MHz				
Channel Number	36	40	44	48	149	153	157	161	165
Frequency (MHz)	5180	5200	5220	5240	5745	5765	5785	5805	5825

3. During test, the duty cycle of the EUT was setting to 100%.
4. For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.
5. The antenna connector of EUT is designed with permanent attachment and no consideration of replacement.



1.2 Test Standards and Results

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

No.	Identity	Document Title
1	47 CFR Part 15 (10-1-15 Edition)	Radio Frequency Devices

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

No.	Section	Description	Result
1	15.203	Antenna Requirement	<u>PASS</u>
2	15.407(a) (e)	Emission Bandwidth	<u>PASS</u>
3	15.407(a)	Maximum conducted output Power	<u>PASS</u>
4	15.407(a)	Peak Power spectral density	<u>PASS</u>
5	15.407(b)	Restricted Frequency Bands	<u>PASS</u>
6	15.407(g)	Frequency Stability	<u>PASS</u>
7	15.407(h)	TPC and DFS	<u>PASS</u> (Note)
8	15.207	Conducted Emission	<u>PASS</u>
9	15.407(b)	Radiated Emission	<u>PASS</u>
10	15.407(f)	RF exposure evaluation	<u>PASS</u>

Note: EUT is a Client Device Without Radar Detection, WIFI hotspot does not support U-NII band; A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

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

These RF tests were performed according to the method of measurements prescribed in KDB789033 D02 v01r02 (08/04/2016) and KDB905462 D07 v01r01 (08/04/2016).

1.3 Test Environment 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 Result: Compliant

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

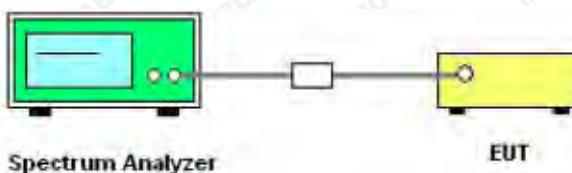
2.2 Emission Bandwidth

2.2.1 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.

2.2.2 Test Description

A. Test Set:



The EUT which is powered by the battery, 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
 - 1) Set RBW = approximately 1% of the emission bandwidth.
 - 2) Set the VBW > RBW.



3) Detector = Peak.

4) Trace mode = max hold.

5) 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.



2.2.3 Test Result

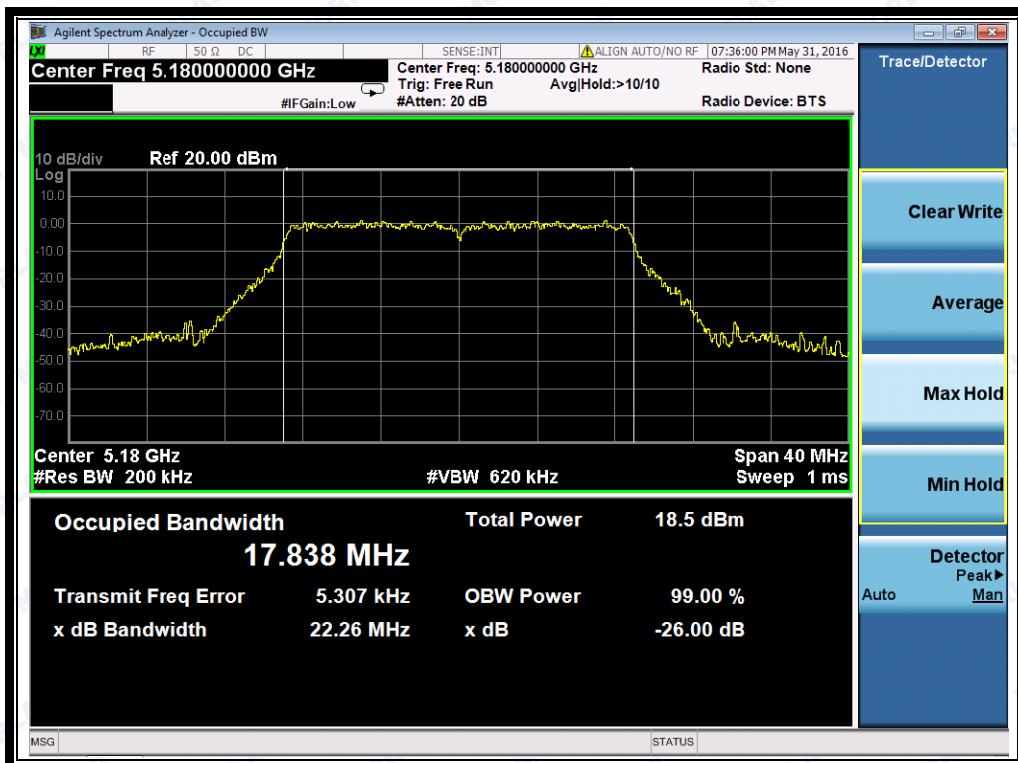
The lowest, middle and highest channels are selected to perform testing to record the 26 dB bandwidth of the Module.

2.2.3.1 802.11n-20MHz Test mode

A. Test Verdict:

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
36	5180	22.26
44	5220	21.84
48	5240	21.79
Channel	Frequency (MHz)	6dB Bandwidth (MHz)
149	5745	17.63
157	5785	17.61
165	5825	17.61

B. Test Plots



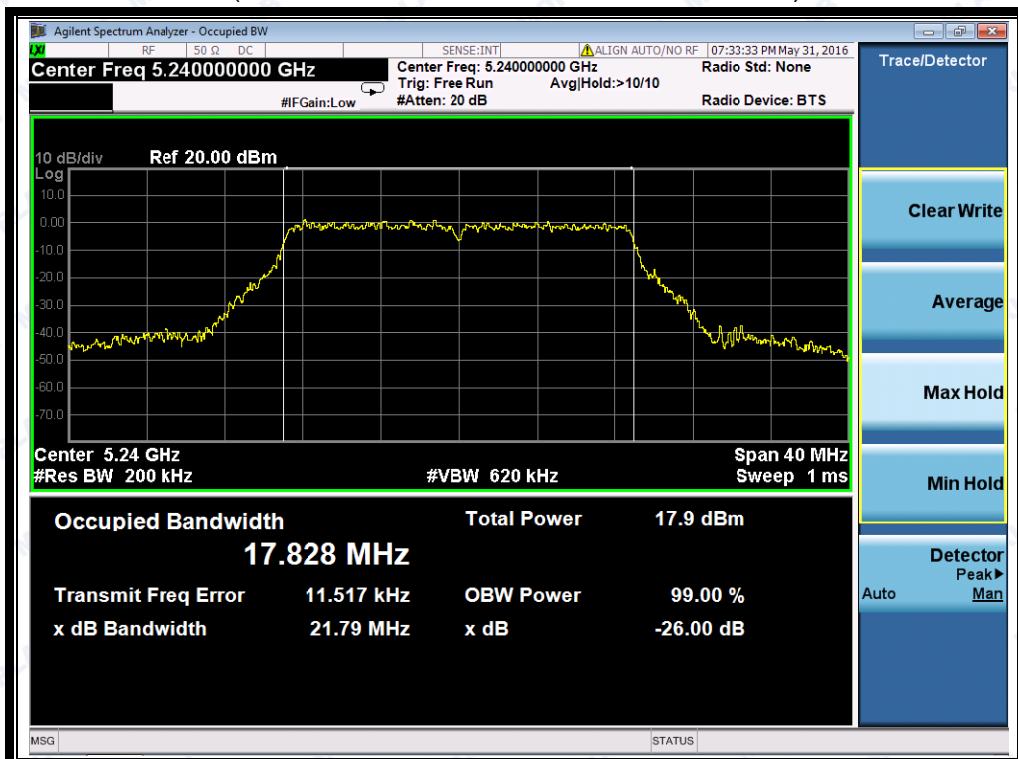
(Channel 36: 5180MHz @ 802.11n-20MHz)



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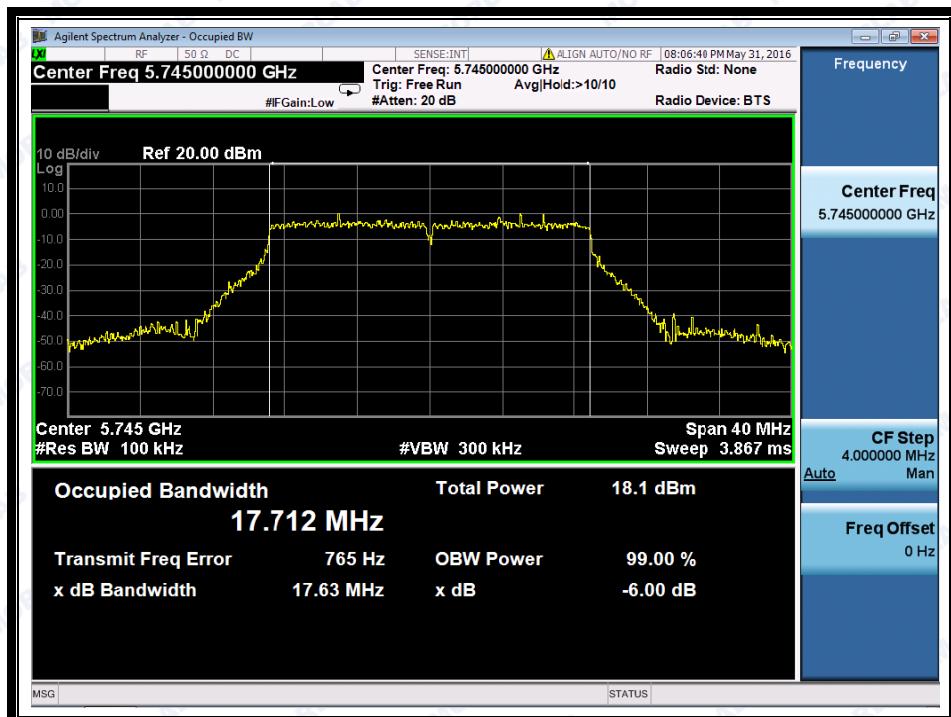
(Channel 44: 5220 MHz @ 802.11n-20MHz)



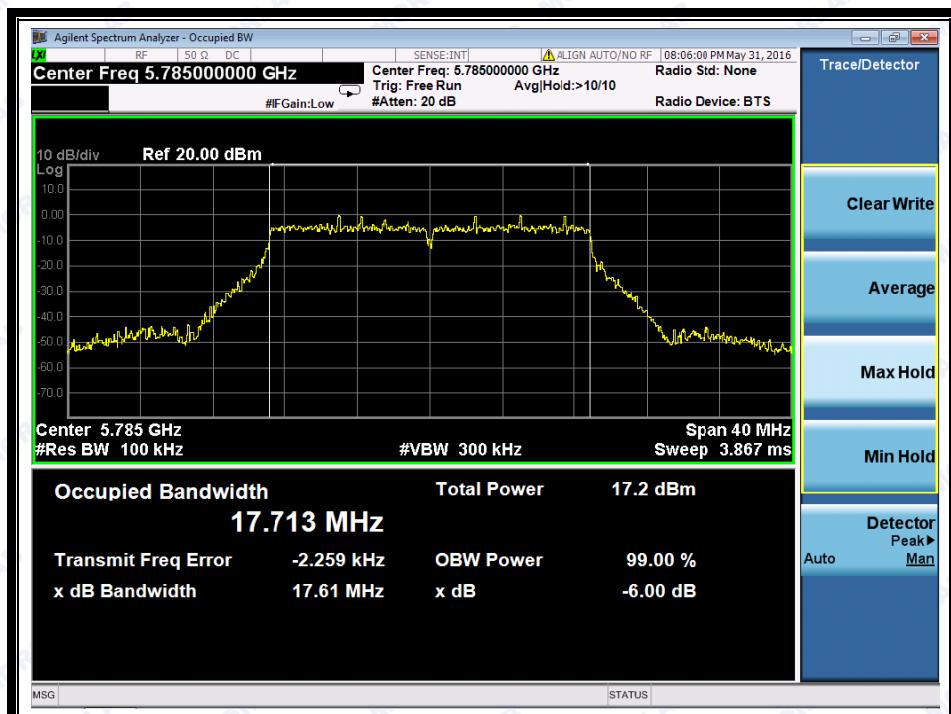
(Channel 48: 5240MHz @ 802.11n-20MHz)



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(Channel 149: 5745MHz @ 802.11n-20MHz)



(Channel 157: 5785MHz @802.11n-20MHz)

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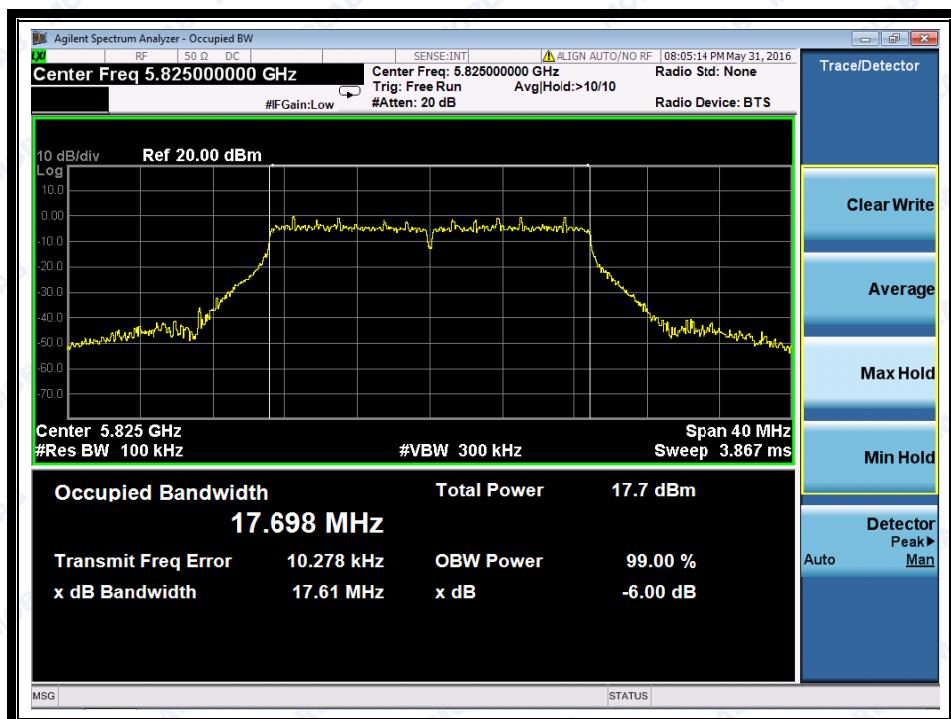
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(Channel 165: 5825MHz @ 802.11n-20MHz)

2.2.3.2 802.11n-40MHz Test mode

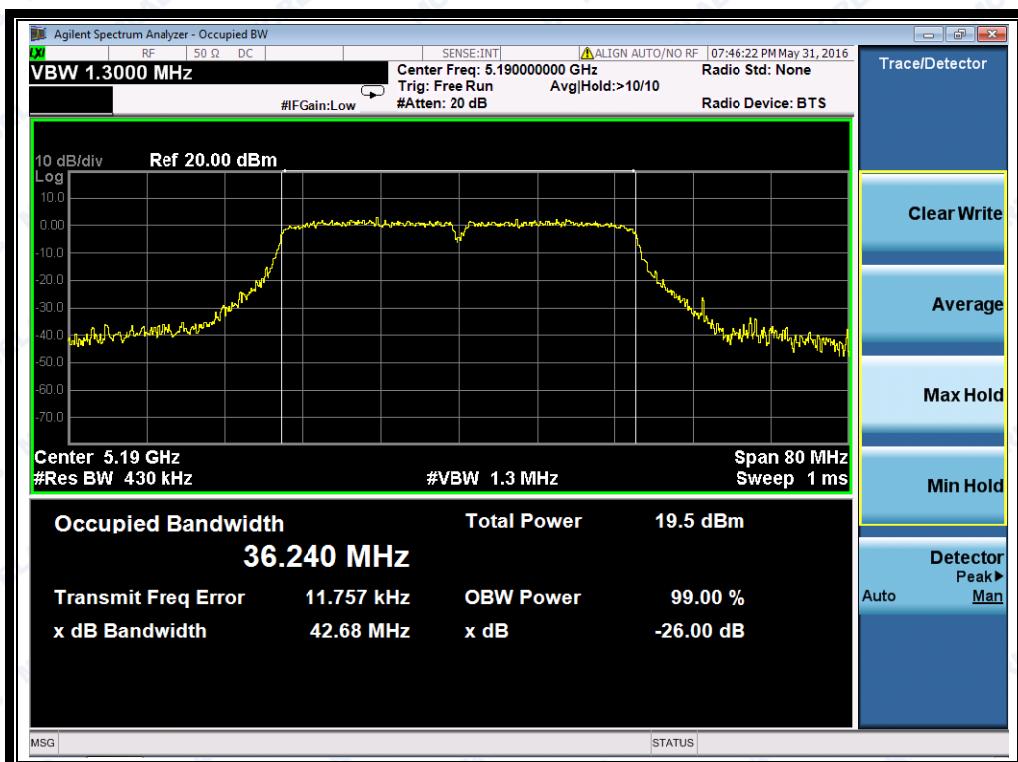
C. Test Verdict:

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
38	5190	42.68
46	5230	43.13
Channel	Frequency (MHz)	6dB Bandwidth (MHz)
151	5755	35.31
159	5795	35.13

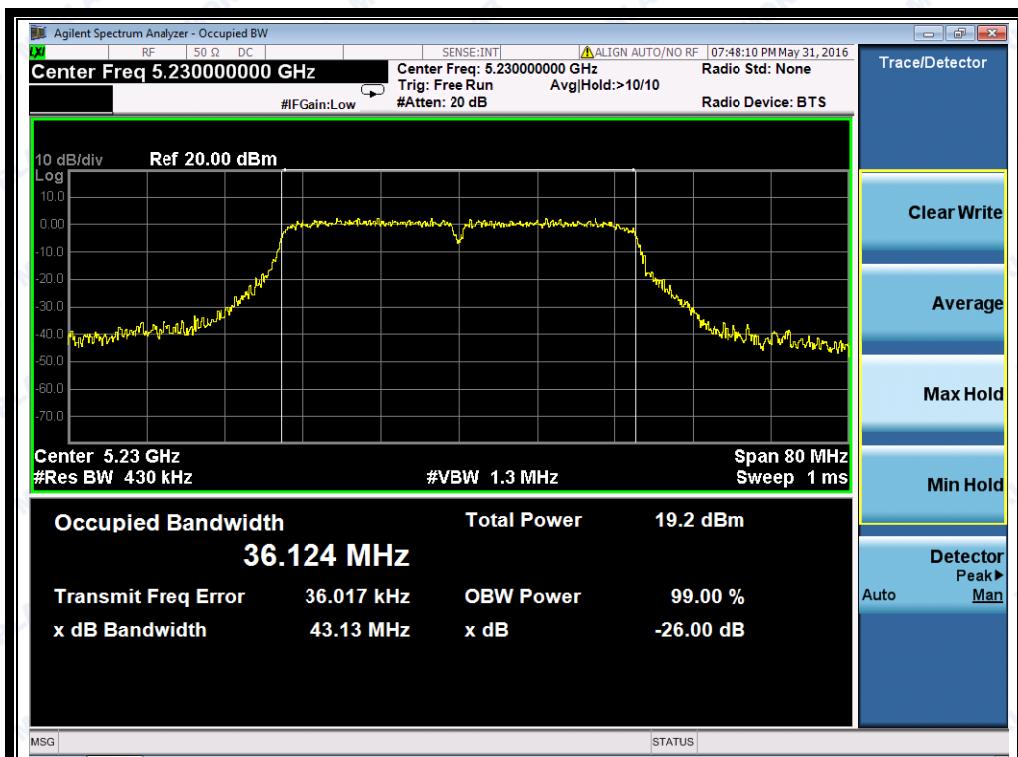
D. Test Plots



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(Channel 38: 5190MHz @ 802.11n-40MHz)



(Channel 46: 5230 MHz @ 802.11n-40MHz)

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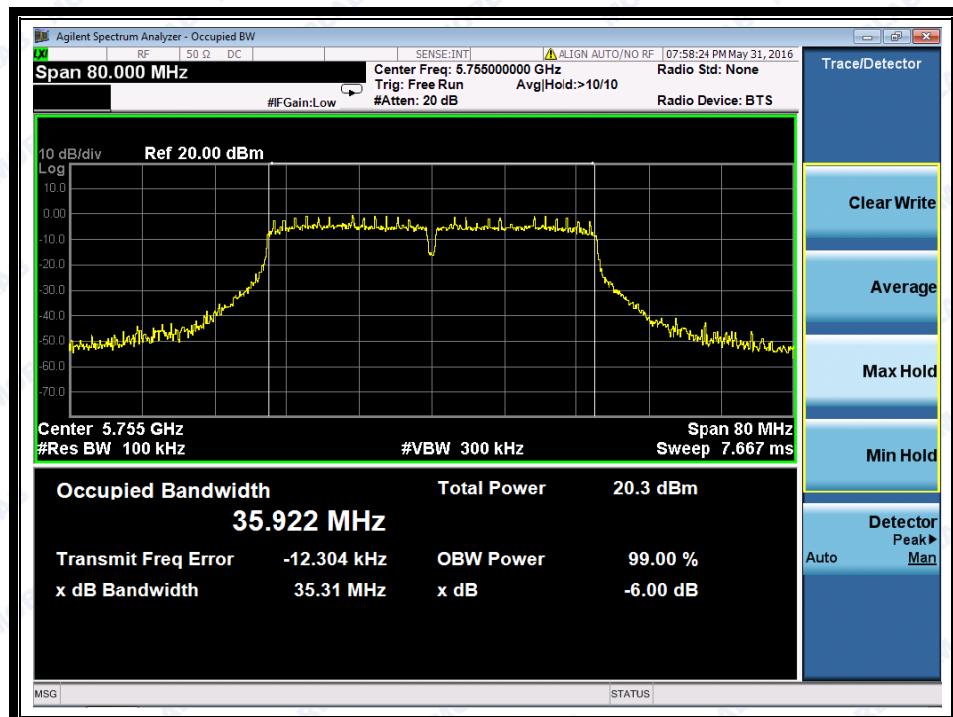
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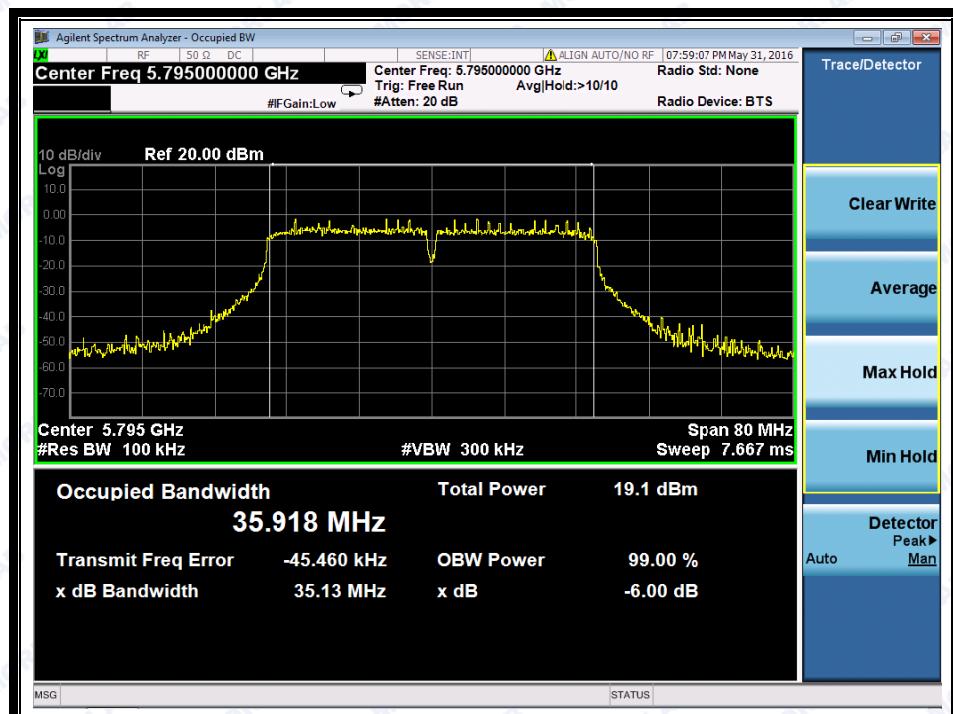
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(Channel 151: 5755MHz @ 802.11n-40MHz)



(Channel 159: 5795MHz @802.11n-40MHz)

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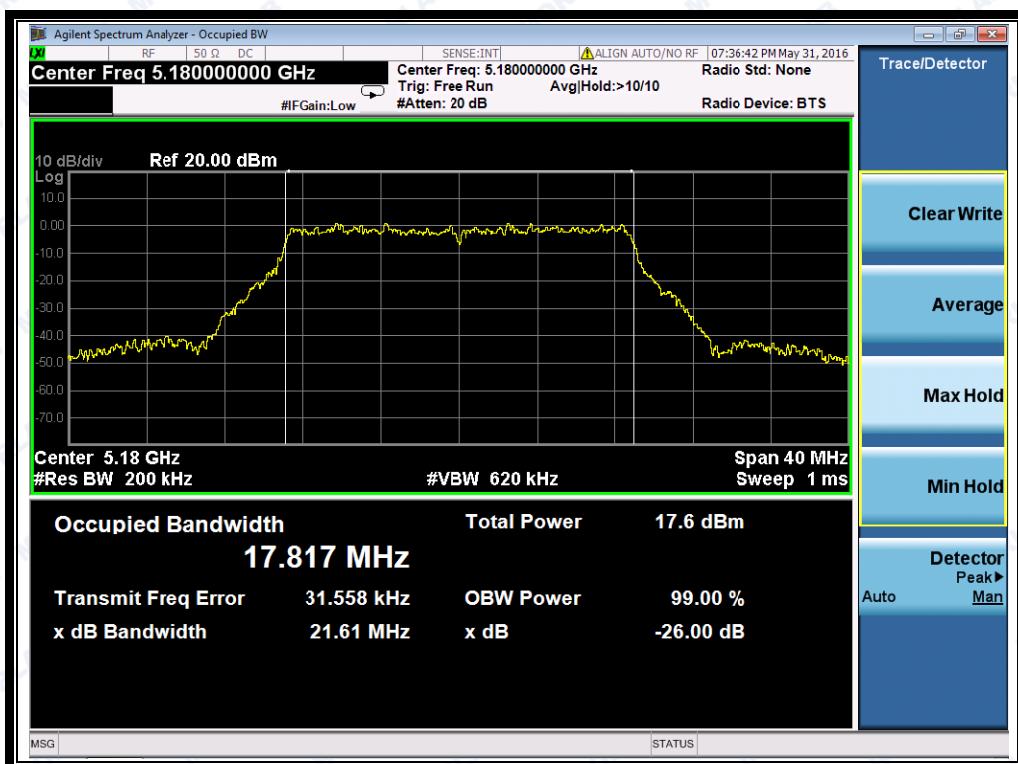
REPORT No.: SZ16030122W04

2.2.3.3 802.11ac-20MHz Test mode

E. Test Verdict:

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
36	5180	21.61
44	5220	21.72
48	5240	21.65
Channel	Frequency (MHz)	6dB Bandwidth (MHz)
149	5745	17.62
157	5785	17.64
165	5825	17.61

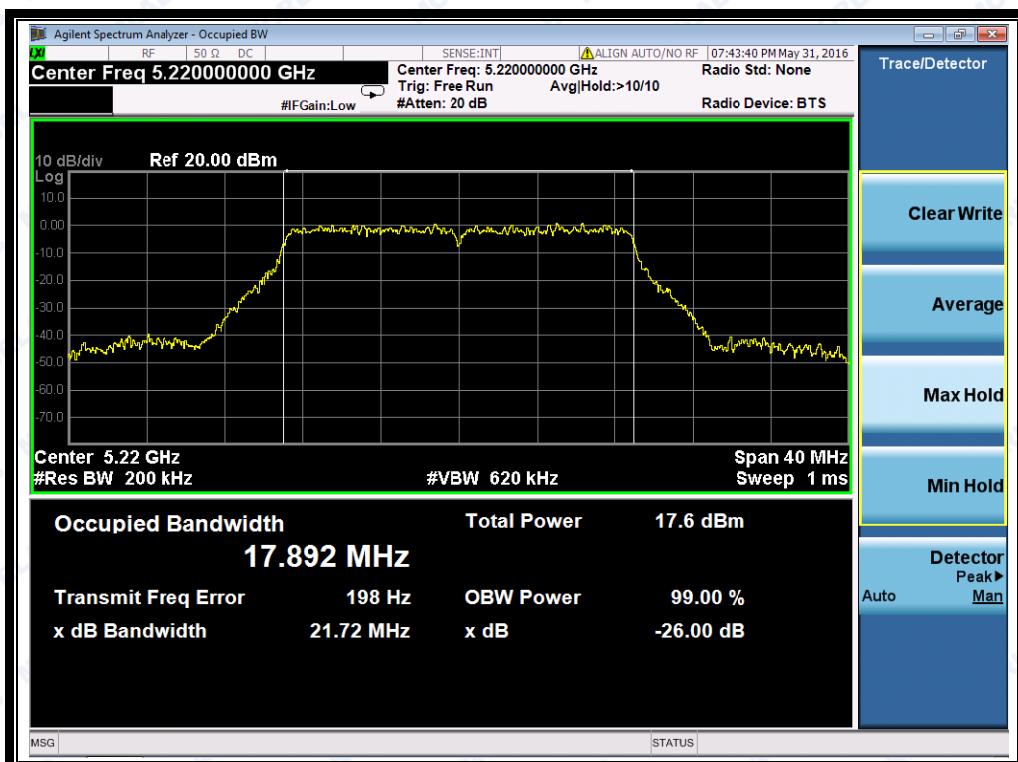
F. Test Plots



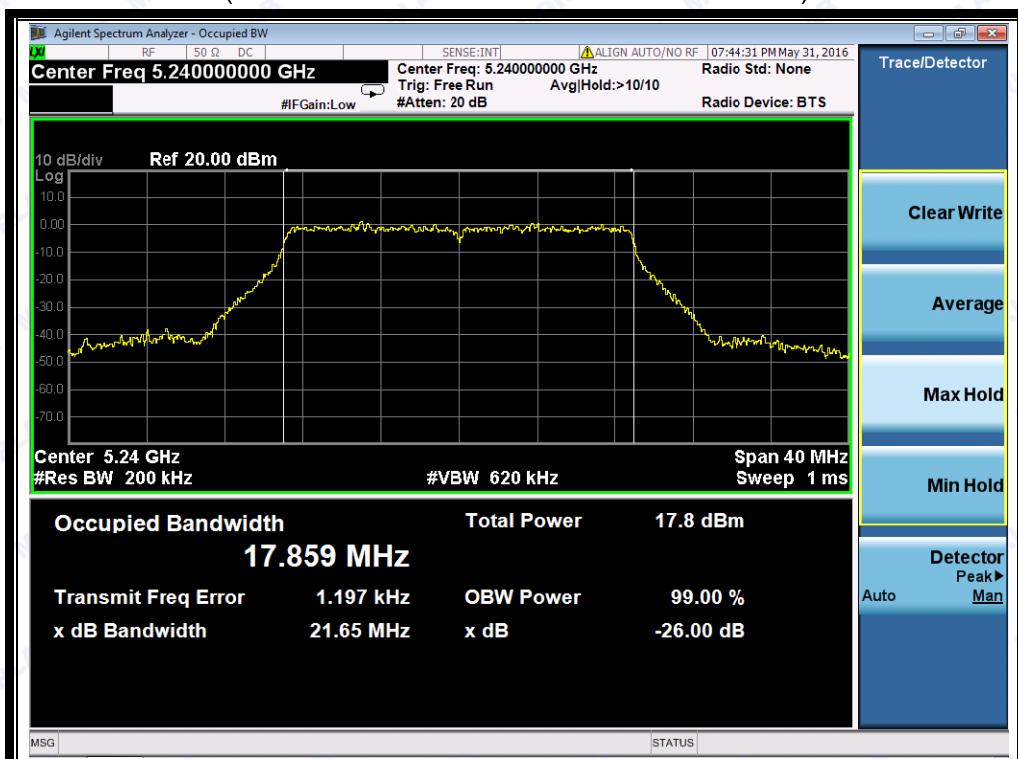
(Channel 36: 5180MHz @ 802.11ac-20MHz)



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(Channel 44: 5220 MHz @ 802.11ac-20MHz)



(Channel 48: 5240MHz @ 802.11ac-20MHz)

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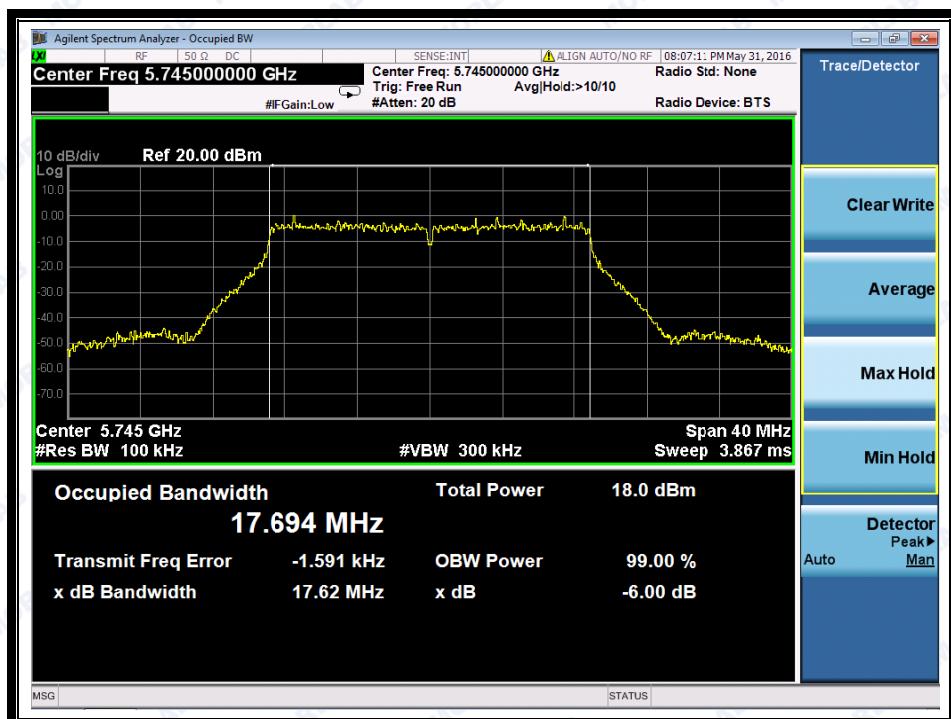
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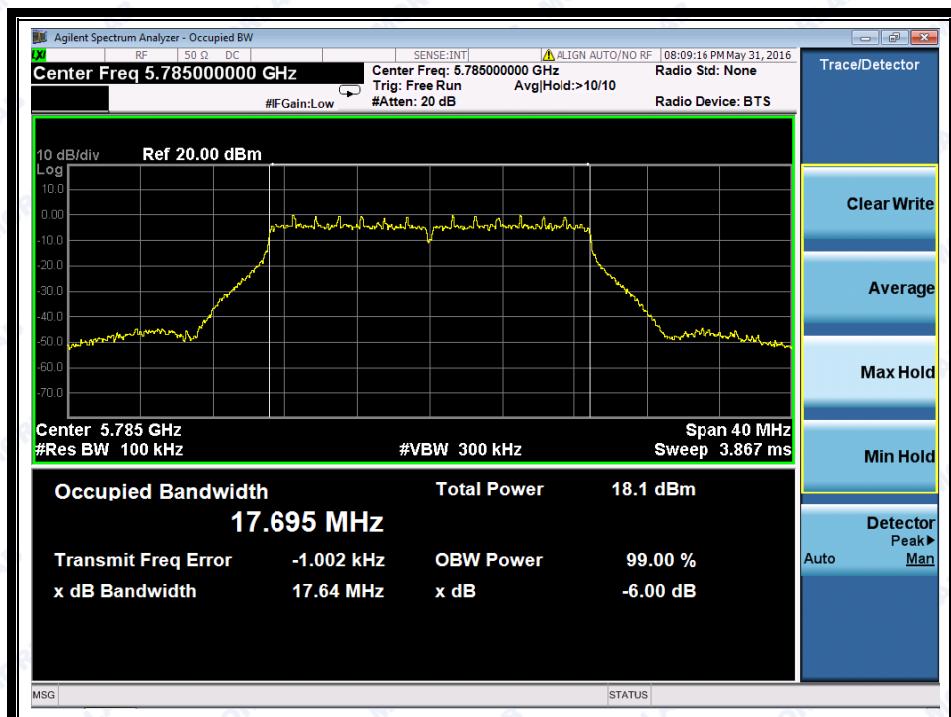
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(Channel 149: 5745MHz @ 802.11ac-20MHz)



(Channel 157: 5785MHz @802.11ac-20MHz)

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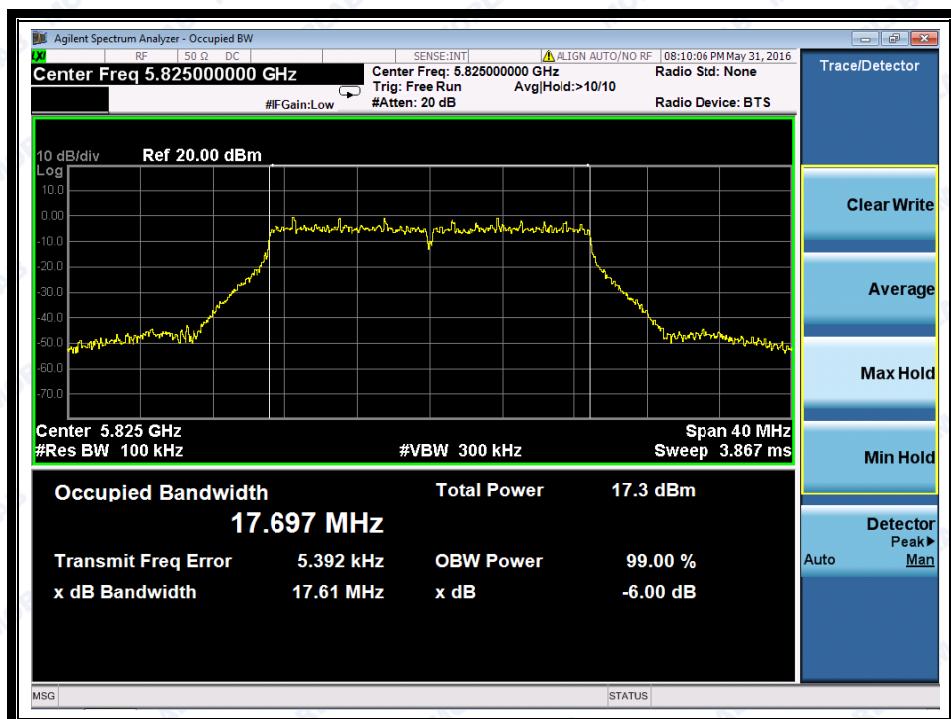
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(Channel 165: 5825MHz @ 802.11ac-20MHz)

2.2.3.4 802.11ac-40MHz Test mode

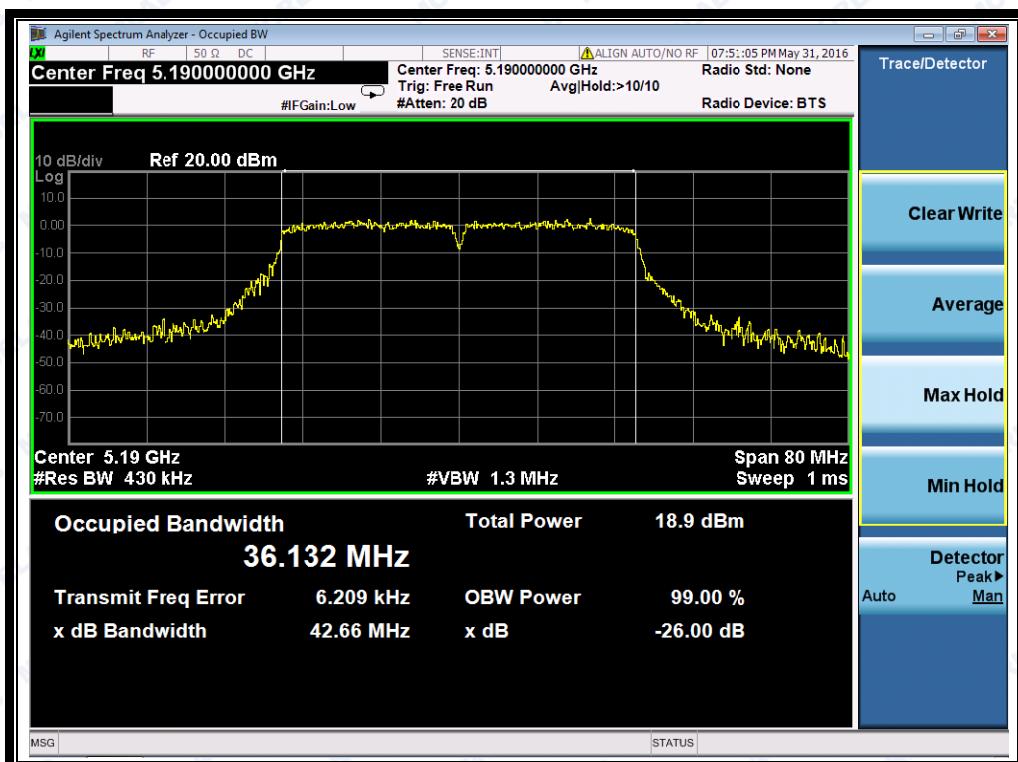
G. Test Verdict:

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
38	5190	42.66
46	5230	42.41
Channel	Frequency (MHz)	6dB Bandwidth (MHz)
151	5755	35.33
159	5795	35.40

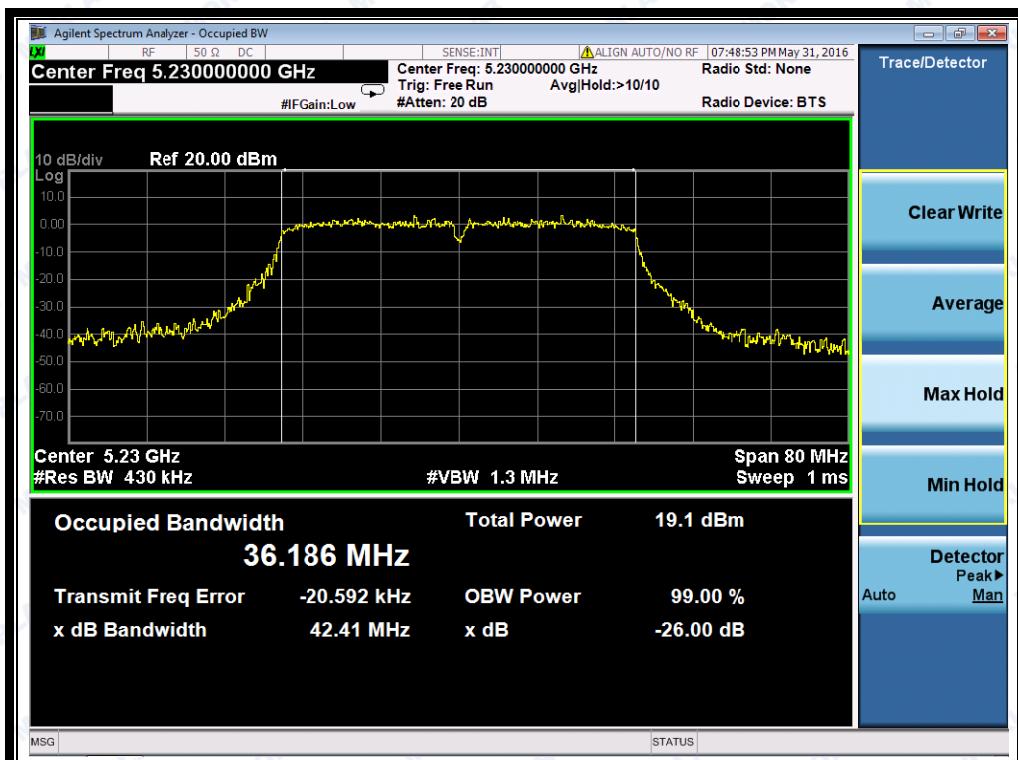
H. Test Plots



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(Channel 38: 5190MHz @ 802.11ac-40MHz)



(Channel 46: 5230 MHz @ 802.11ac-40MHz)

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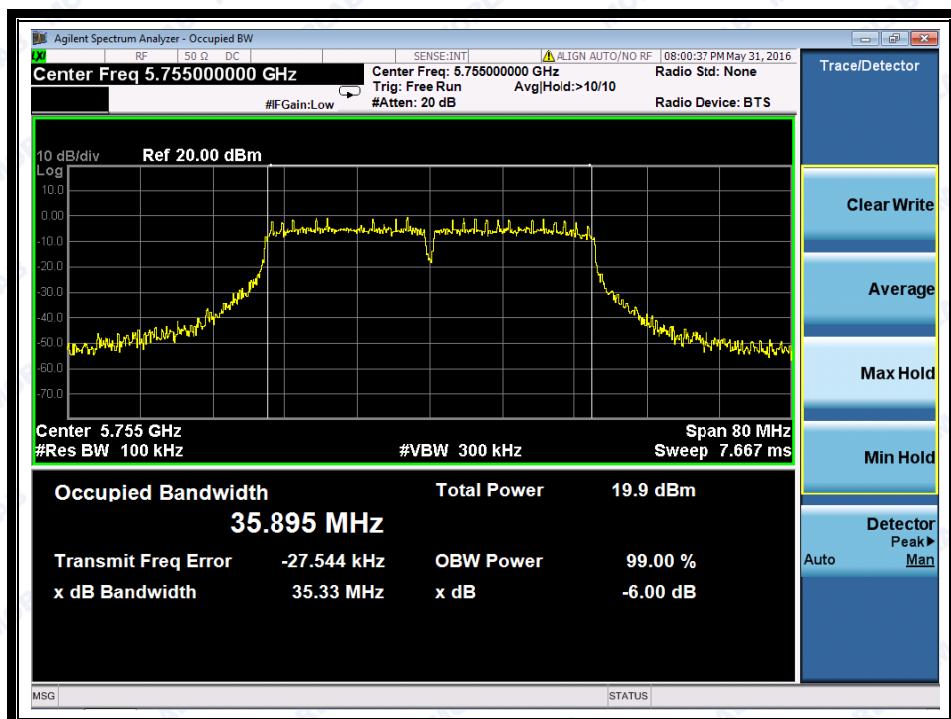
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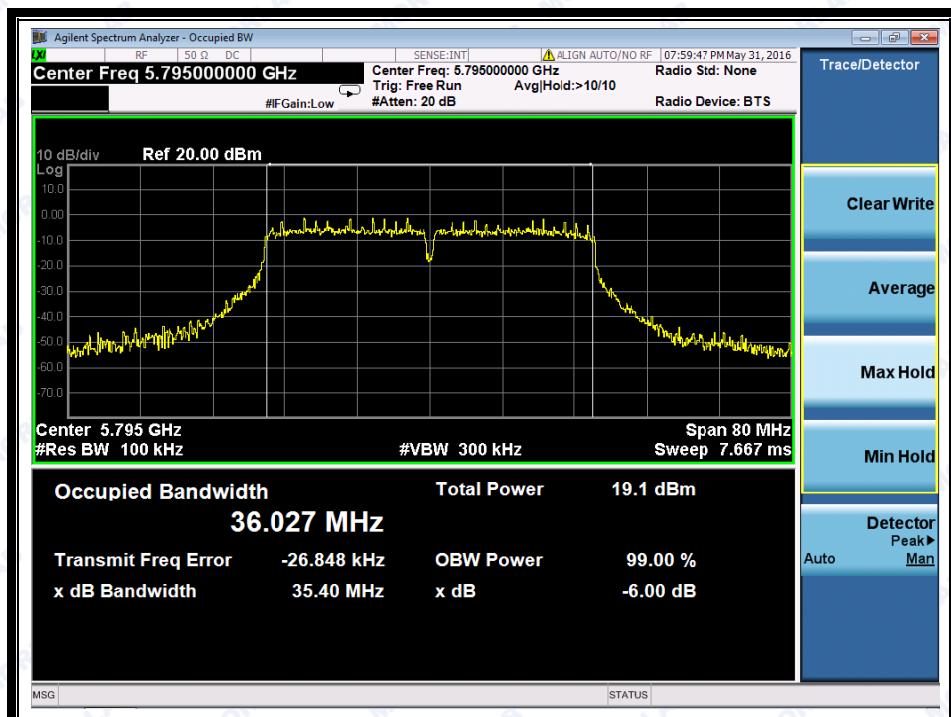
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REPORT No.: SZ16030122W04



(Channel 151: 5755MHz @ 802.11ac-40MHz)



(Channel 159: 5795MHz @ 802.11ac-40MHz)

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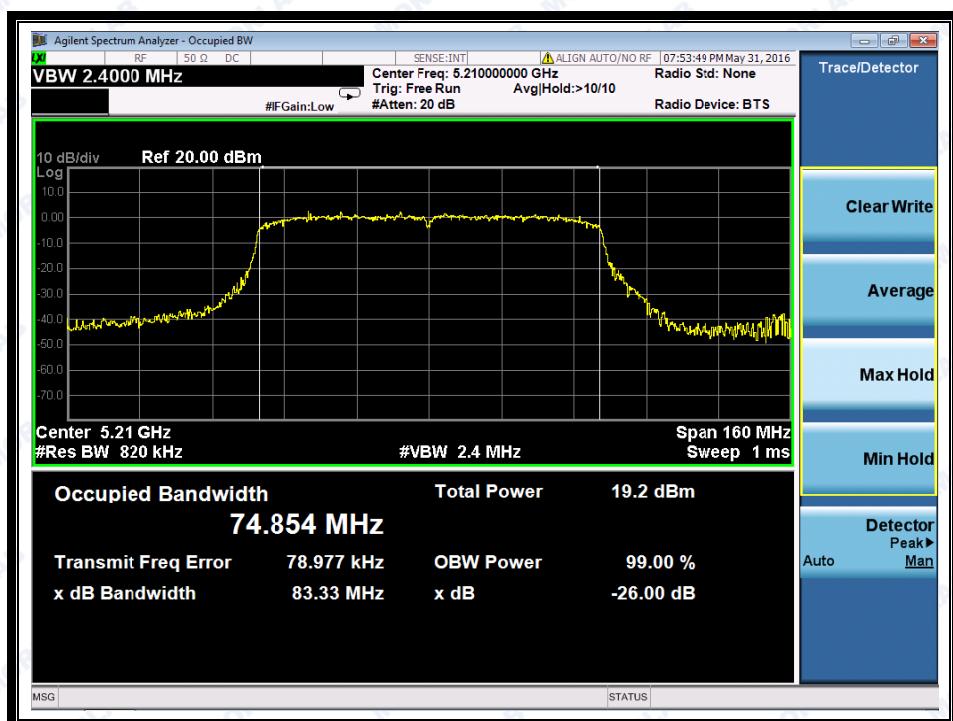
REPORT No.: SZ16030122W04

2.2.3.5 802.11ac-80MHz Test mode

A. Test Verdict:

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
42	5210	83.33
Channel	Frequency (MHz)	6dB Bandwidth (MHz)
155	5775	75.22

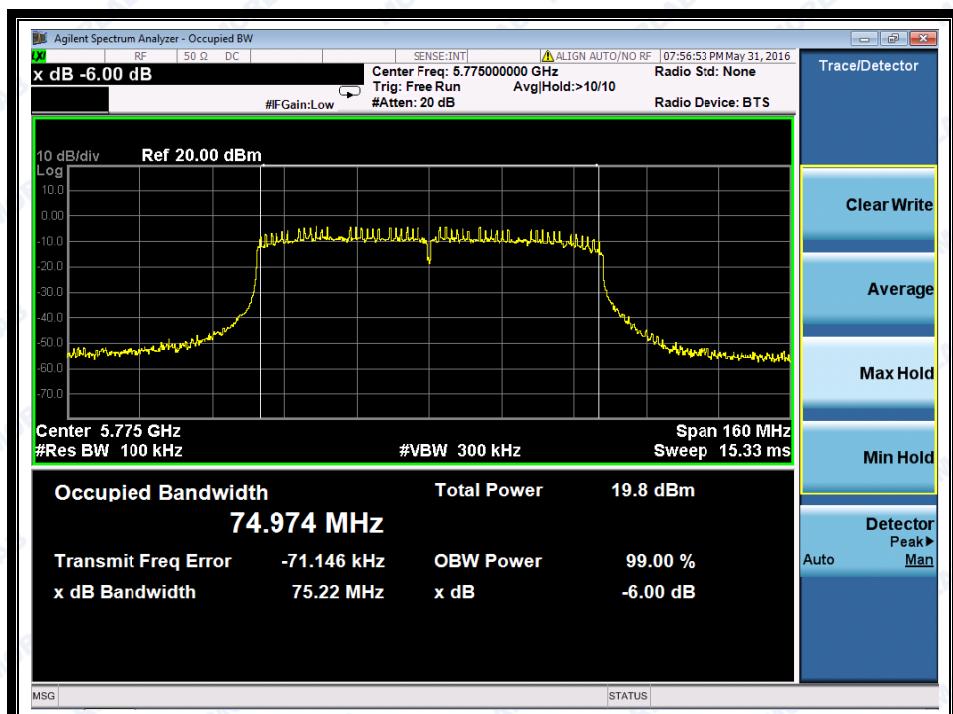
B. Test Plots



(Channel 42: 5210MHz @ 802.11ac)



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(Channel 155: 5775MHz @ 802.11ac)

2.2.3.6 802.11a Test mode

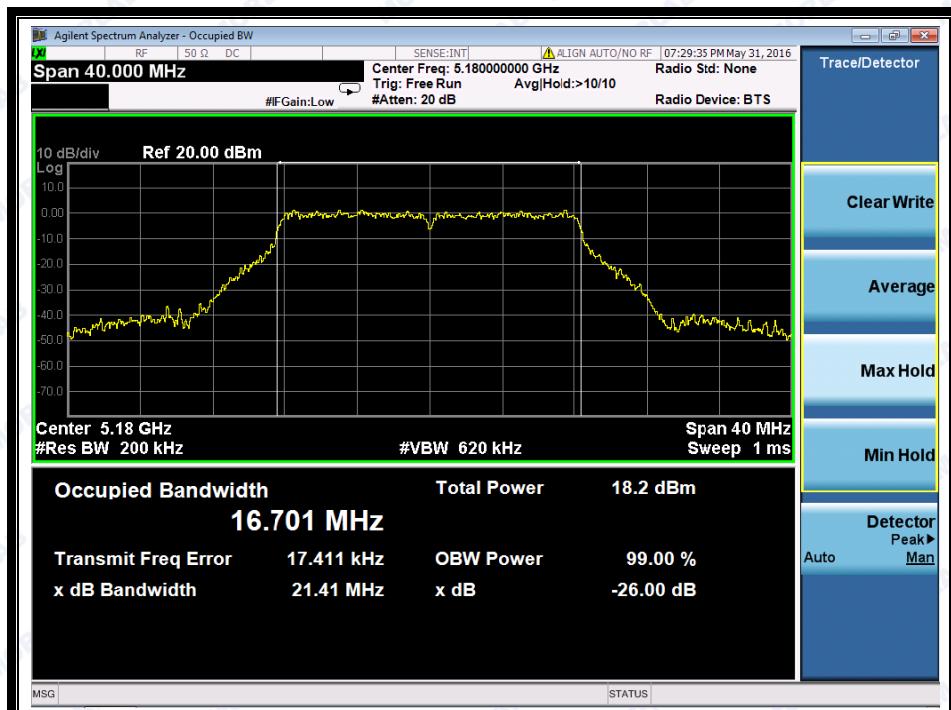
A. Test Verdict:

Channel	Frequency (MHz)	26 dB Bandwidth (MHz)
36	5180	21.41
44	5220	21.32
48	5240	21.70
Channel	Frequency (MHz)	6dB Bandwidth (MHz)
149	5745	16.41
157	5785	16.41
165	5825	16.40

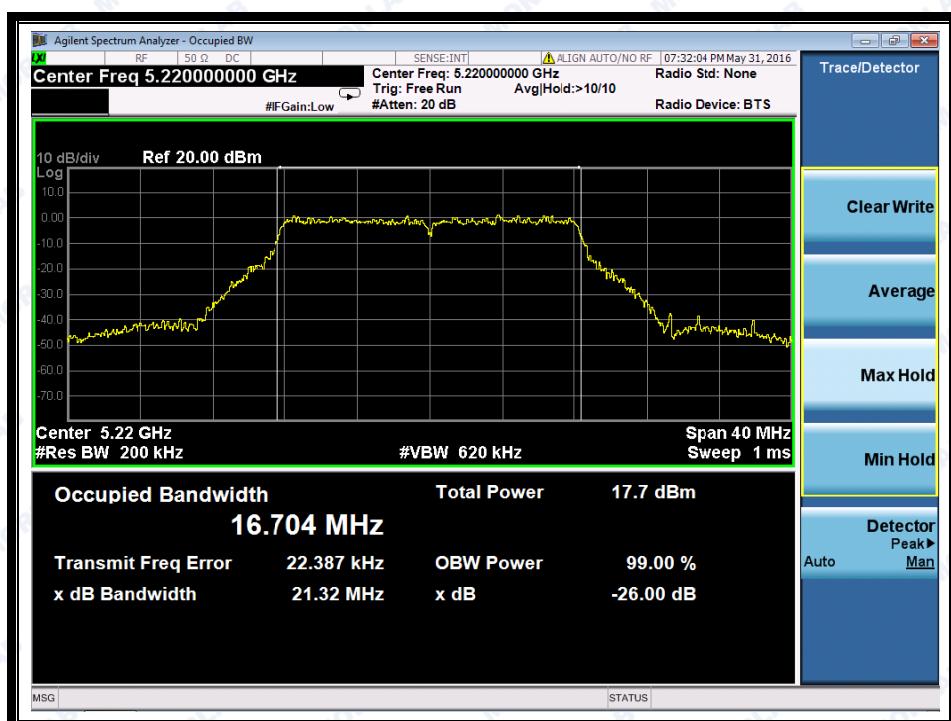
B. Test Plots



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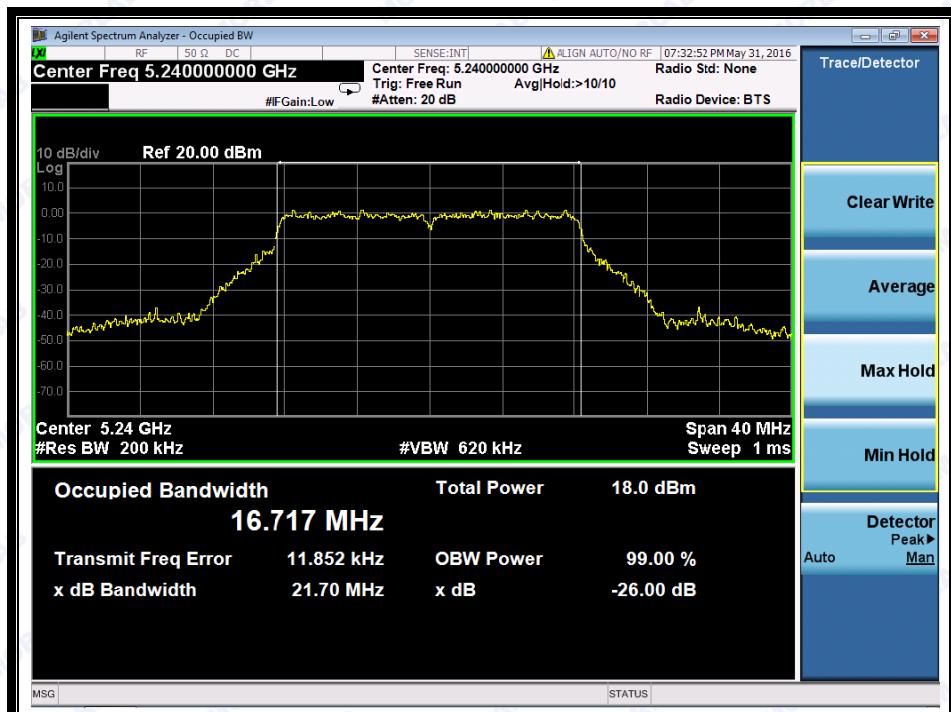
(Channel 36: 5180MHz @ 802.11a)



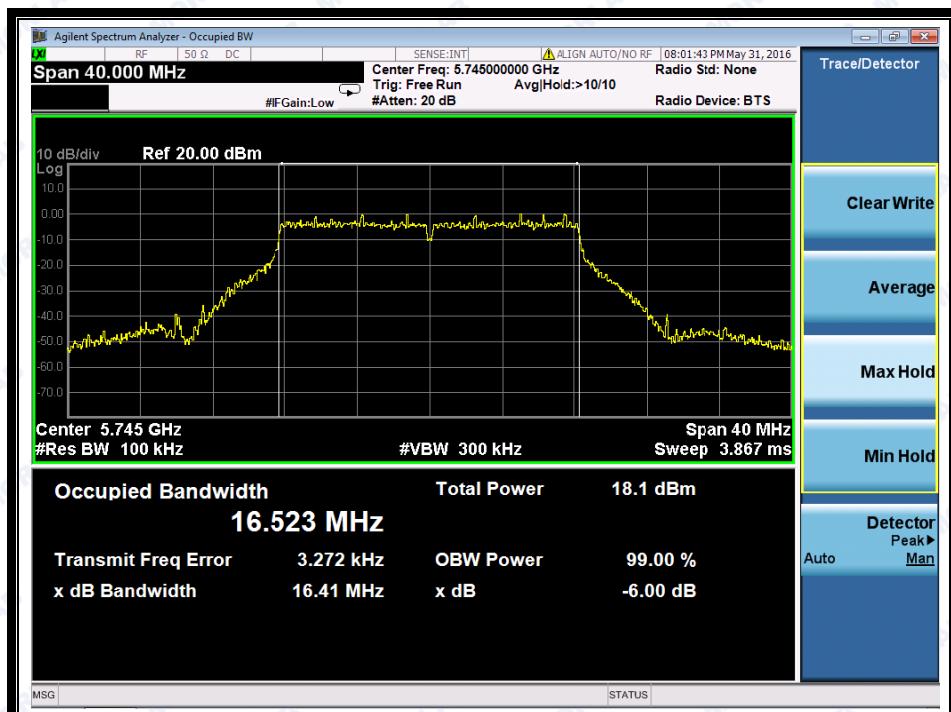
(Channel 44: 5220 MHz @ 802.11a)



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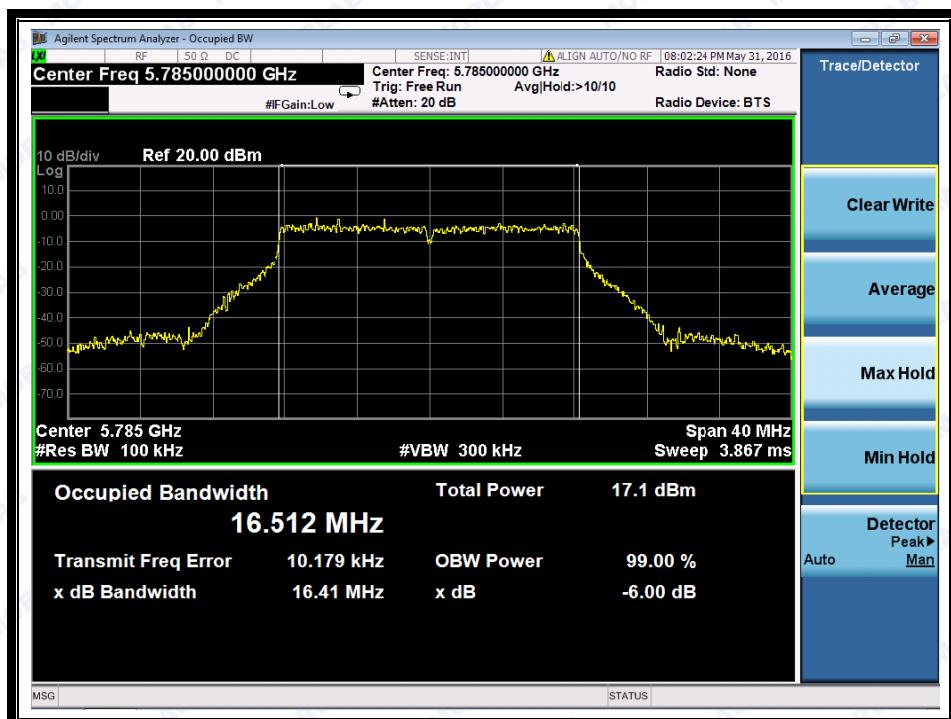
(Channel 48: 5240MHz @ 802.11a)



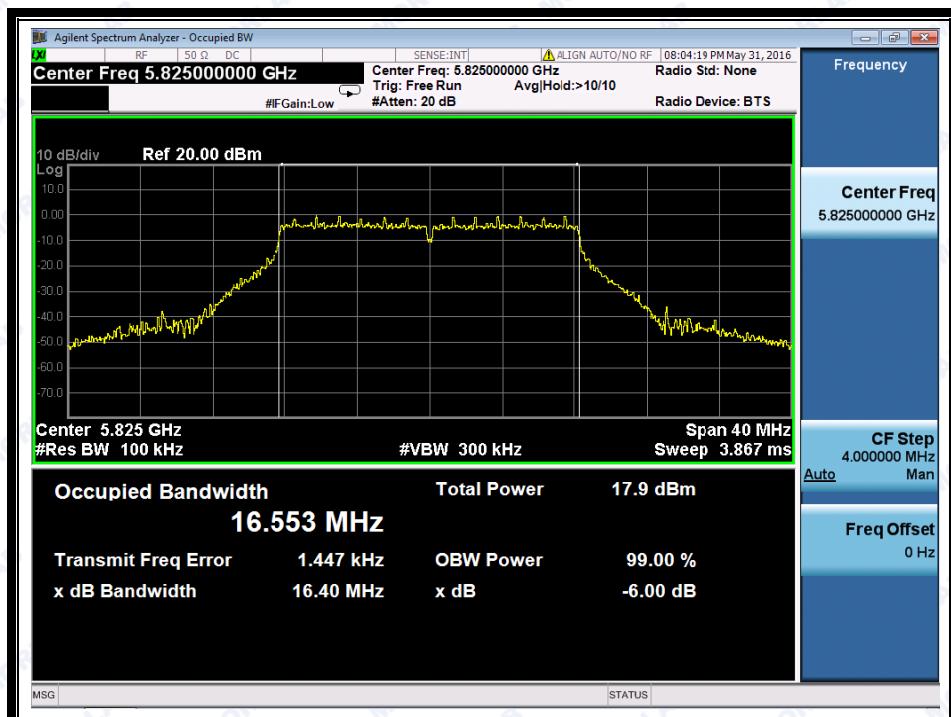
(Channel 149: 5745MHz @ 802.11a)



REPORT No.: SZ16030122W04



(Channel 157: 5785MHz @ 802.11a)



(Channel 165: 5825MHz @ 802.11a)



2.3 Maximum conducted output Power

2.3.1 Requirement

- (1) For mobile and portable 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 250mW 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 6dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

2.3.2 Test Description

Section E) 3) of KDB 789033 defines a methodology using an RF average power meter.

A. Test Setup:



The EUT (Equipment under the test) which is powered by the Battery is coupled to the Power Meter; 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 power meter.

2.3.3 Test Result



REPORT No.: SZ16030122W04

2.3.3.1 802.11n-20MHz Test mode

Channel	Frequency (MHz)	Measured Output Power(dBm)	Limit (dBm)	Verdict
36	5180	20.96	24	PASS
44	5220	20.52		
48	5240	21.21		
149	5745	20.36	30	
157	5785	20.13		
165	5825	20.03		

2.3.3.2 802.11n-40MHz Test mode

Channel	Frequency (MHz)	Measured Output Power(dBm)	Limit (dBm)	Verdict
38	5190	20.84	24	PASS
46	5230	20.89		
151	5755	20.35		
159	5795	20.23	30	

2.3.3.3 802.11ac-20MHz Test mode

Channel	Frequency (MHz)	Measured Output Power(dBm)	Limit (dBm)	Verdict
36	5180	20.73	24	PASS
44	5220	20.81		
48	5240	21.25		
149	5745	20.58	30	
157	5785	20.06		
165	5825	20.09		

2.3.3.4 802.11ac-40MHz Test mode

Channel	Frequency (MHz)	Measured Output Power(dBm)	Limit (dBm)	Verdict
38	5190	20.86	24	PASS
46	5230	20.76		
151	5755	19.87		
159	5795	19.83	30	



REPORT No.: SZ16030122W04

2.3.3.5 802.11ac-80MHz Test mode

Channel	Frequency (MHz)	Measured Output Power(dBm)	Limit (dBm)	Verdict
42	5210	20.98	24	PASS
155	5775	20.14	30	

2.3.3.6 802.11a Test mode

Channel	Frequency (MHz)	Measured Output Power(dBm)	Limit (dBm)	Verdict
36	5180	20.75	24	PASS
44	5220	20.98		
48	5240	21.12		
149	5745	20.96		
157	5785	20.24		
165	5825	20.08		



2.4 Peak Power spectral density

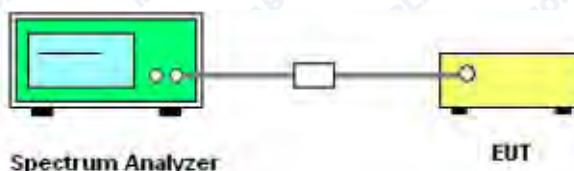
2.4.1 Requirement

- (1) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.
- (2) For the 5.25–5.35 GHz and 5.47–5.725GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.
- (3) For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500KHz band.

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

2.4.2 Test Description

A. Test Set:



The EUT which is powered by the Battery, 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 F) Maximum Power Spectral Density (PSD) Method SA-1 was used in order to prove compliance

- 1) Set span to encompass the entire 26-dB emission bandwidth
- 2) Set RBW = 1 MHz. Set VBW \geq 3 MHz.
- 3) Number of points in sweep \geq 2 Span / RBW. Sweep time = auto.
- 4) Detector = RMS (i.e., power averaging)
- 5) Trace average at least 100 traces in power averaging (i.e., RMS) mode
- 6) Record the max value

2.4.3 Test Result



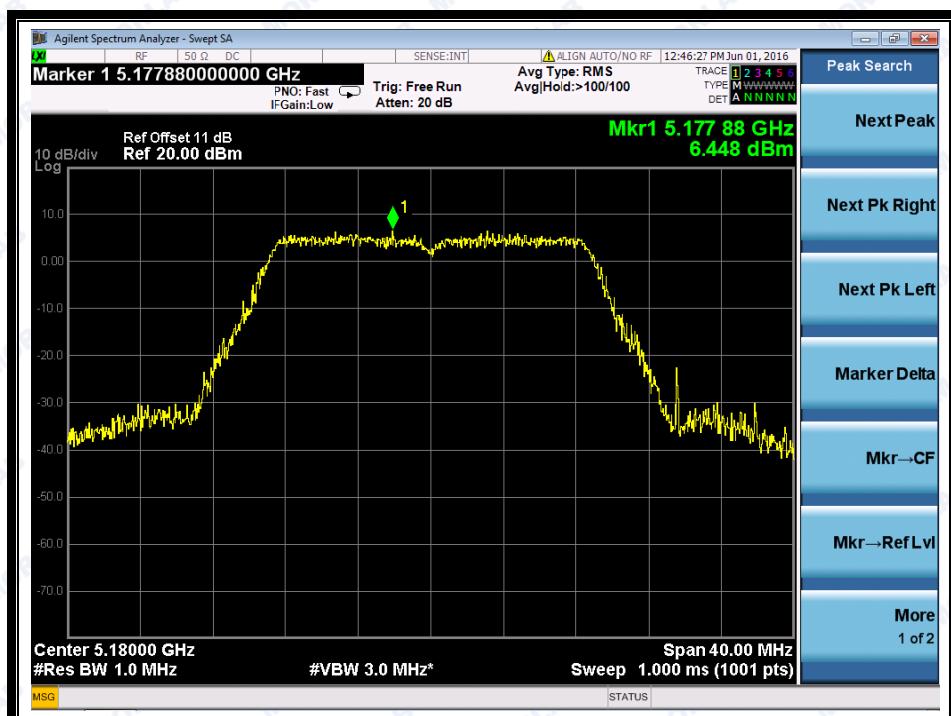
REPORT No.: SZ16030122W04

2.4.3.1 802.11n-20MHz Test mode

A. Test Verdict:

Channel	Frequency (MHz)	Measured PPSD (dBm)	Limit (dBm)	Verdict
36	5180	6.45	11	PASS
44	5220	6.13		
48	5240	5.85		
149	5745	3.92	30	PASS
157	5785	3.98		
165	5825	4.62		

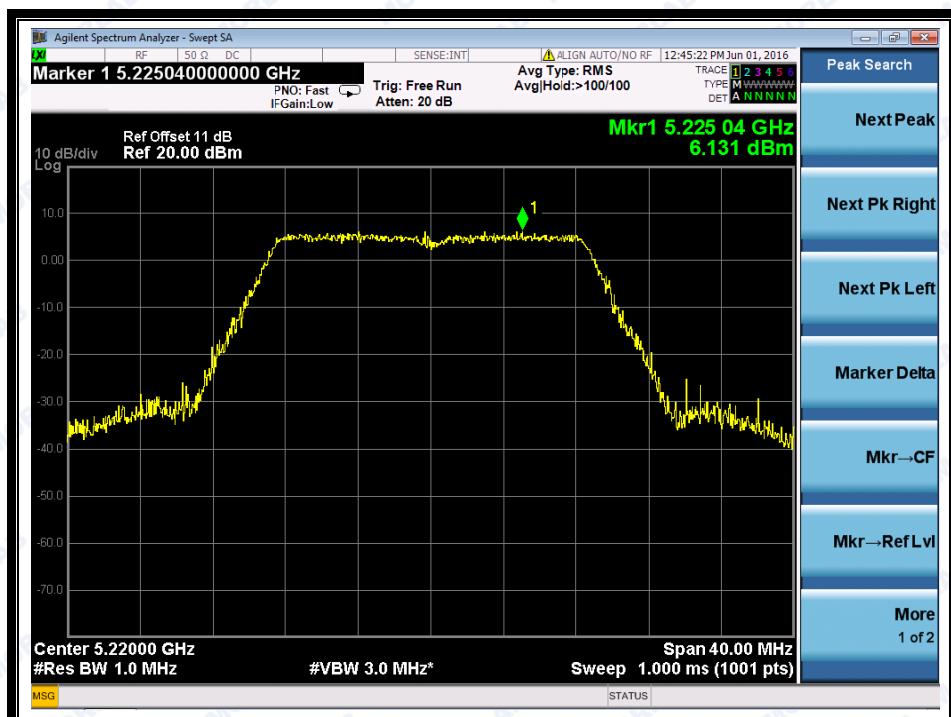
B. Test Plots



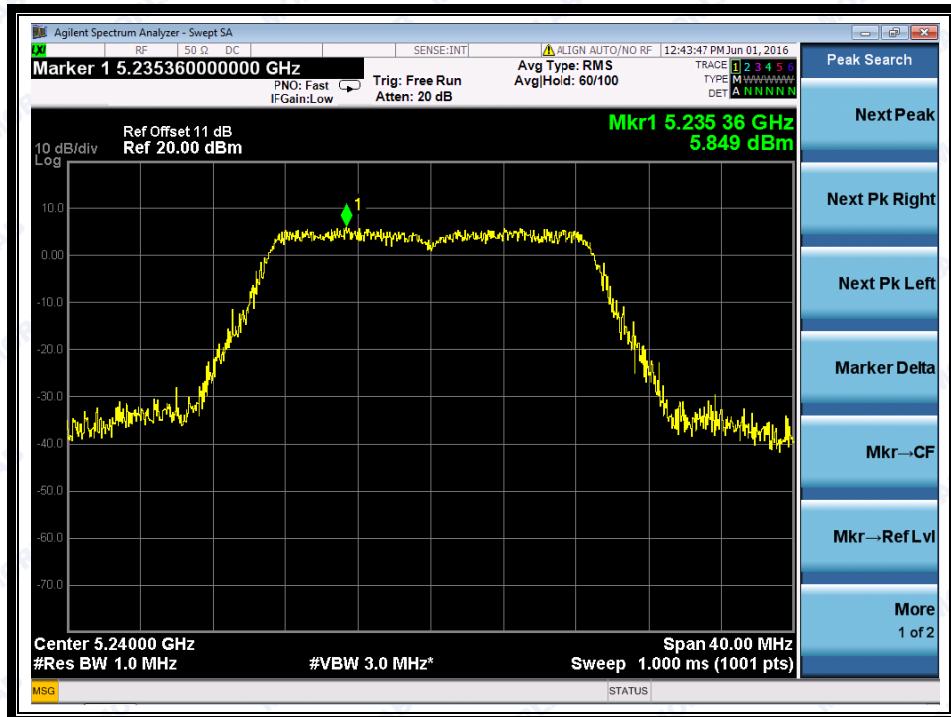
(Channel 36: 5180MHz @ 802.11n-20MHz)



REPORT No.: SZ16030122W04



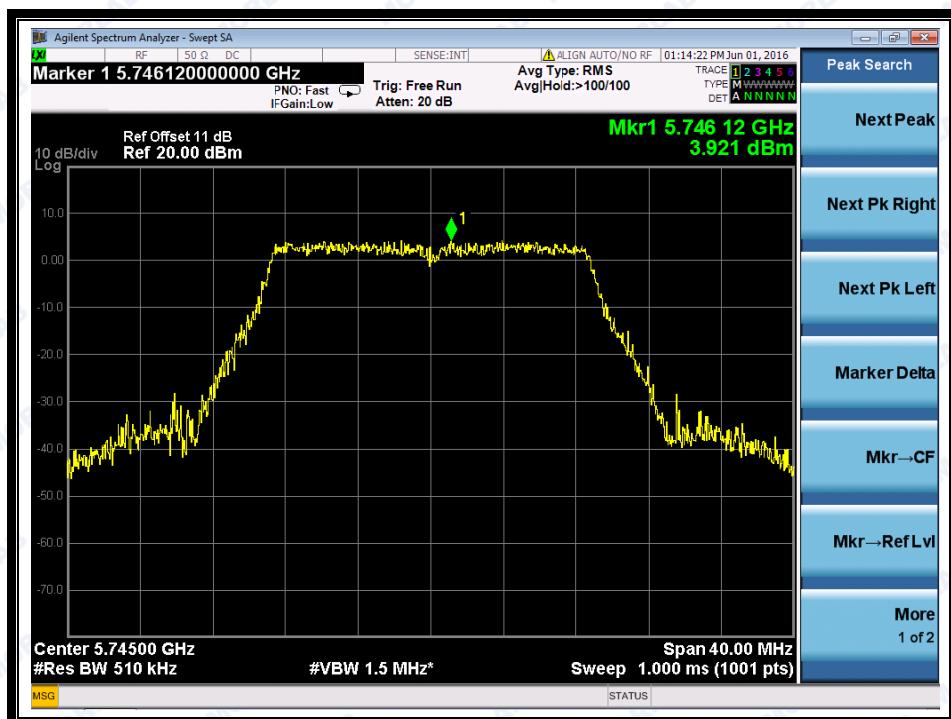
(Channel 44: 5220 MHz @ 802.11n-20MHz)



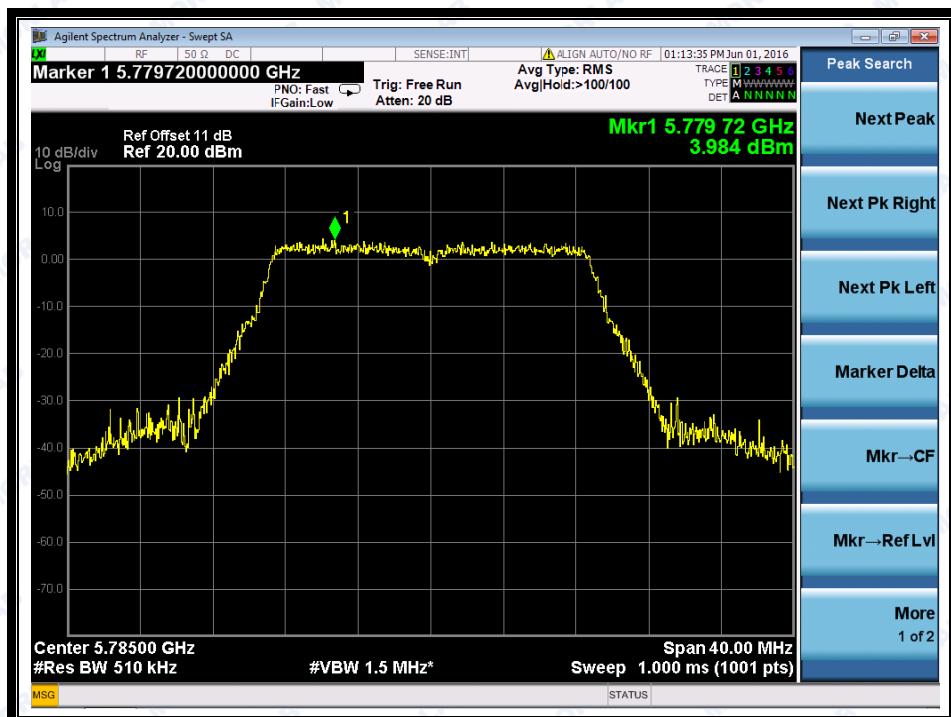
(Channel 48: 5240MHz @ 802.11n-20MHz)



REPORT No.: SZ16030122W04



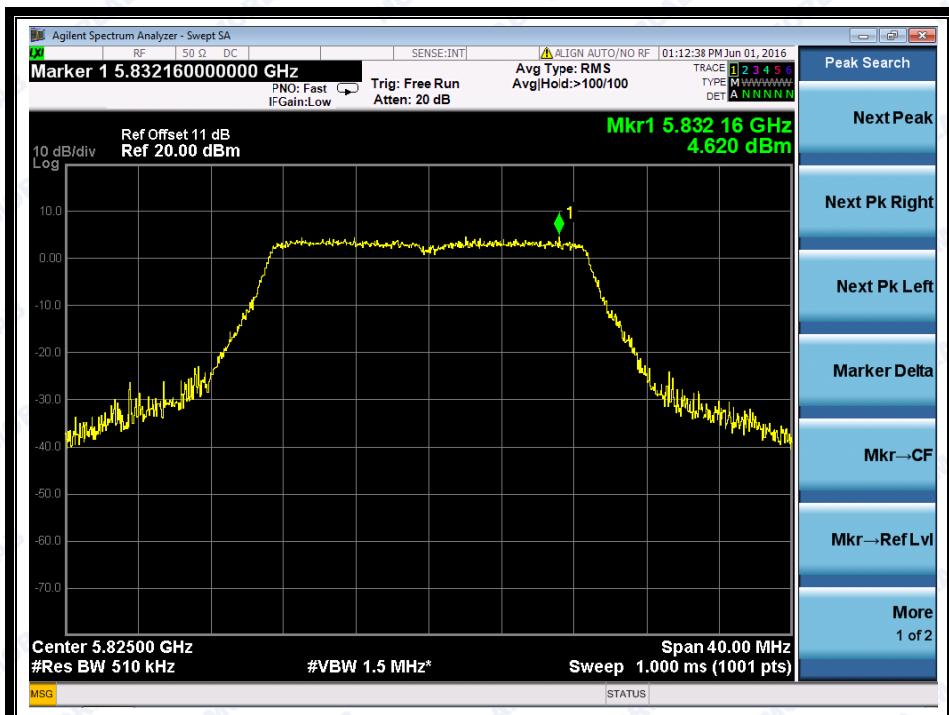
(Channel 149: 5745MHz @ 802.11n-20MHz)



(Channel 157: 5785MHz @802.11n-20MHz)



REPORT No.: SZ16030122W04



(Channel 165: 5825MHz @ 802.11n-20MHz)

2.4.3.2 802.11n-40MHz Test mode

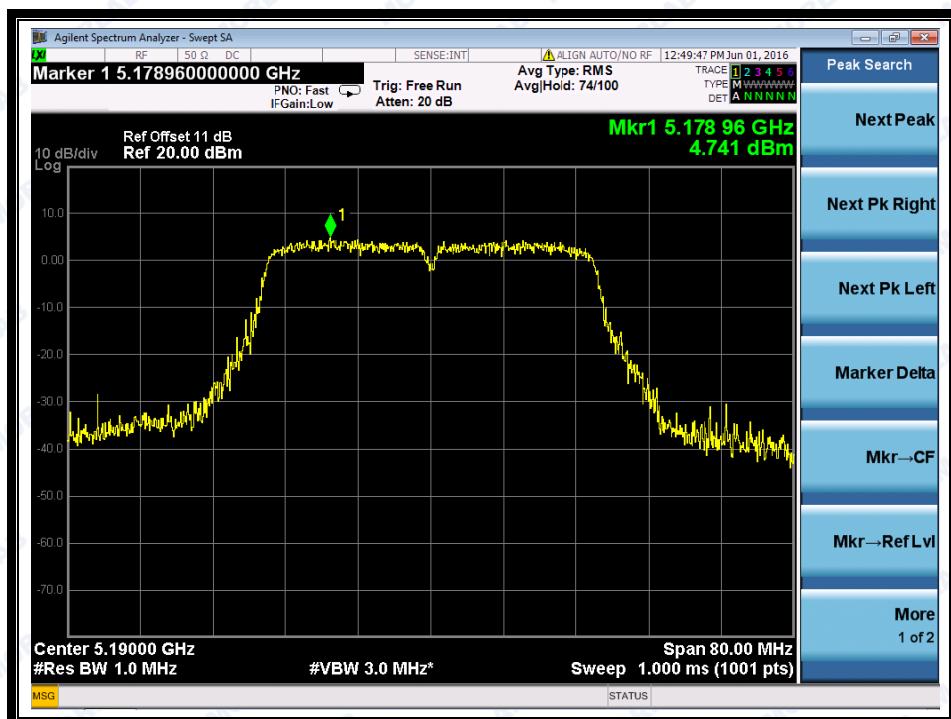
A. Test Verdict:

Channel	Frequency (MHz)	Measured PPSSD (dBm)	Limit (dBm)	Verdict
38	5190	4.74	11	PASS
46	5230	4.24		
151	5755	3.14		
159	5795	3.03		

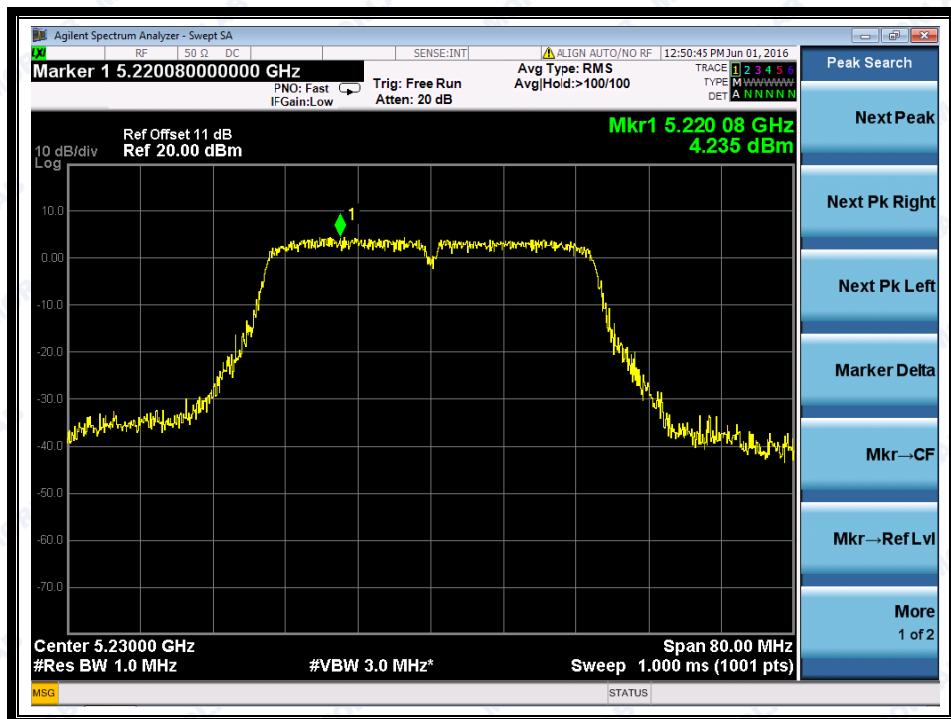
B. Test Plots



REPORT No.: SZ16030122W04



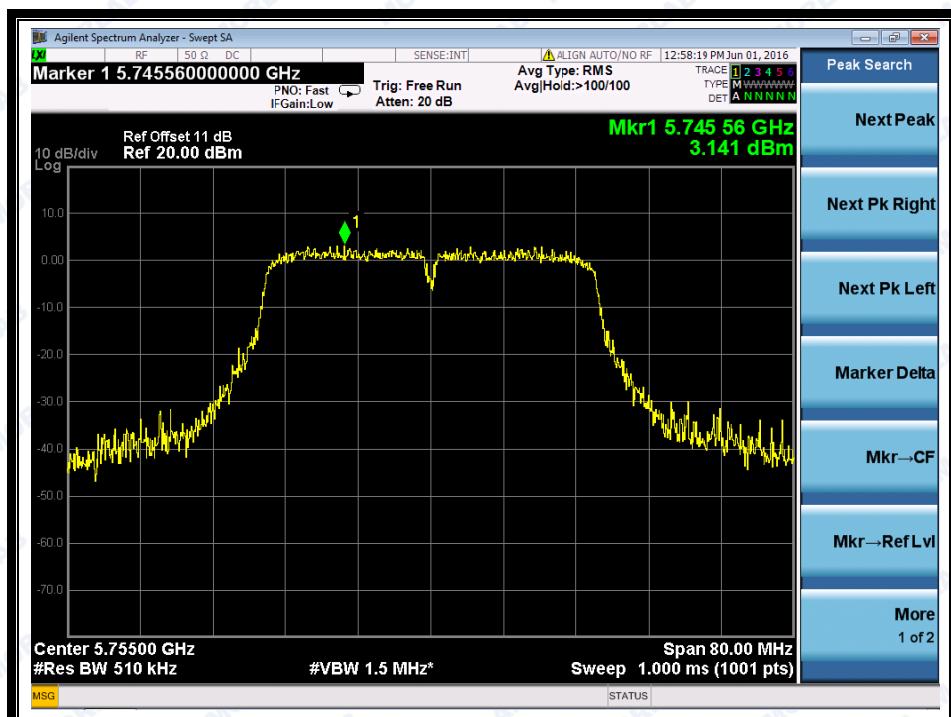
(Channel 38: 5190MHz @ 802.11n-40MHz)



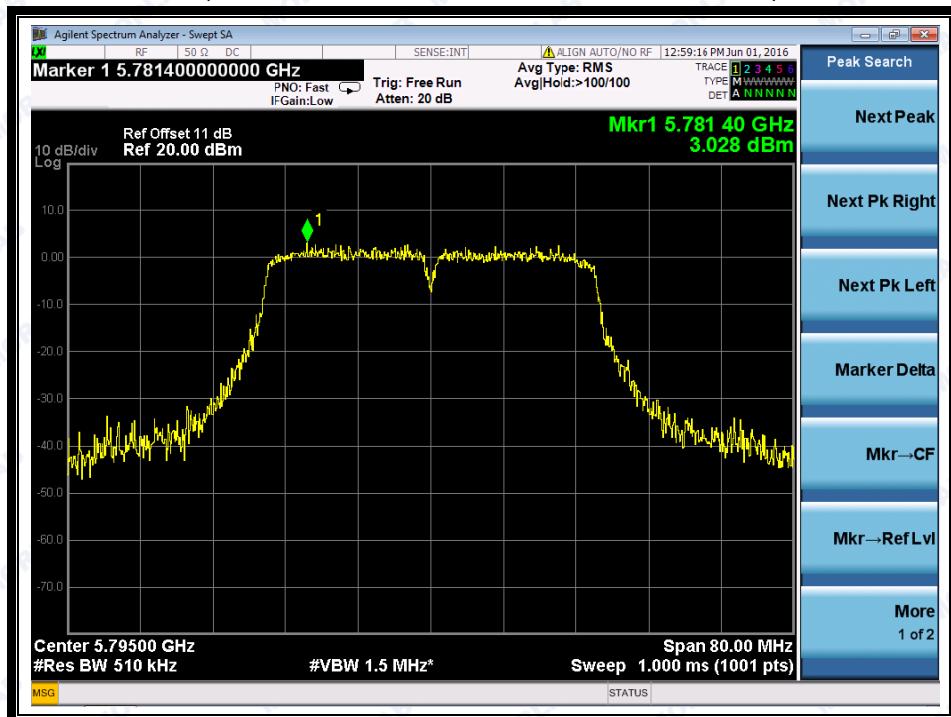
(Channel 46: 5230 MHz @ 802.11n-40MHz)



REPORT No.: SZ16030122W04



(Channel 151: 5755MHz @ 802.11n-40MHz)



(Channel 159: 5795MHz @ 802.11n-40MHz)



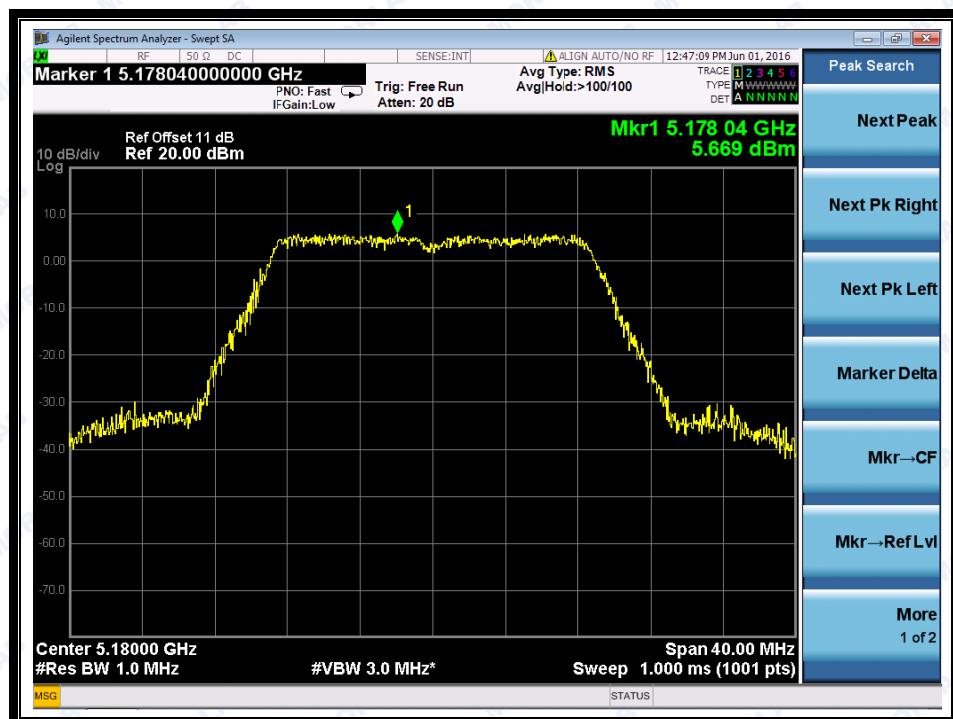
REPORT No.: SZ16030122W04

2.4.3.3 802.11ac-20MHz Test mode

A. Test Verdict:

Channel	Frequency (MHz)	Measured PPSD (dBm)	Limit (dBm)	Verdict
36	5180	5.67	24	PASS
44	5220	5.74		
48	5240	6.19		
149	5745	4.41	30	PASS
157	5785	4.94		
165	5825	4.58		

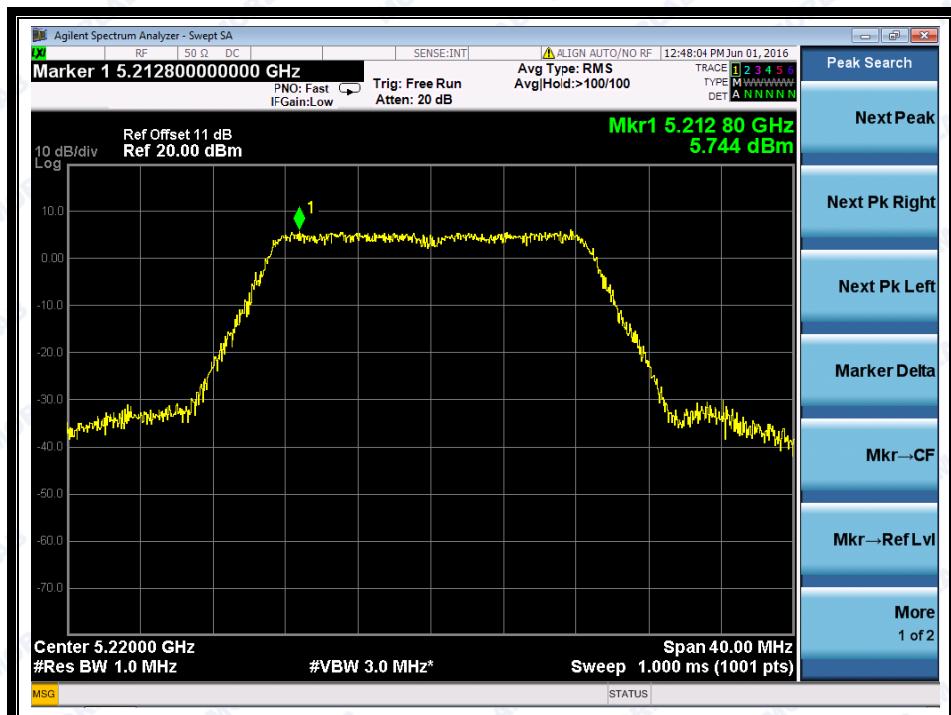
B. Test Plots



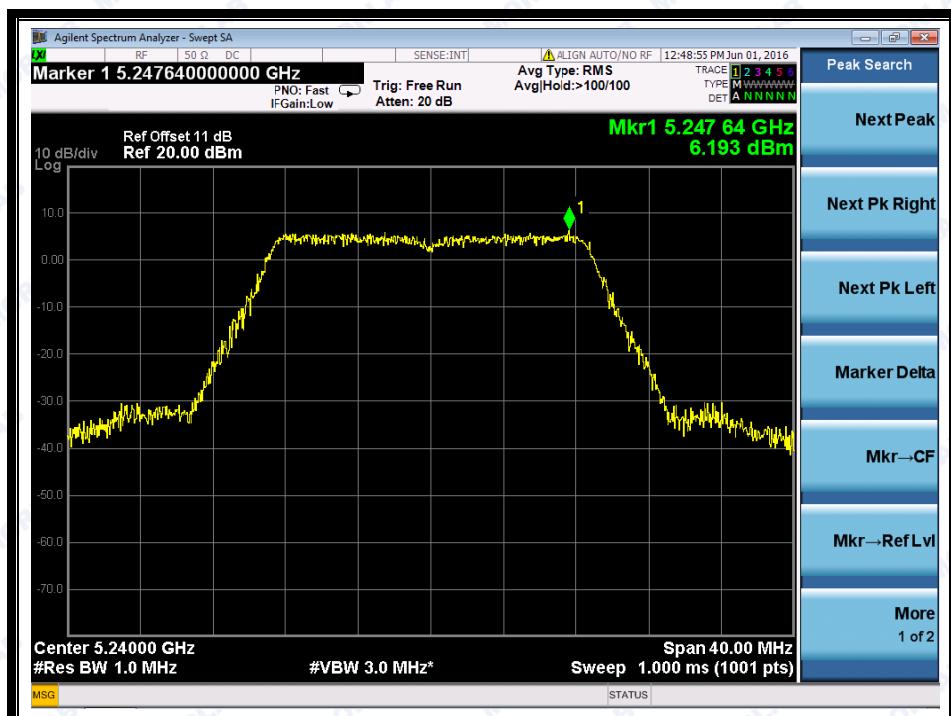
(Channel 36: 5180MHz @ 802.11ac)



REPORT No.: SZ16030122W04



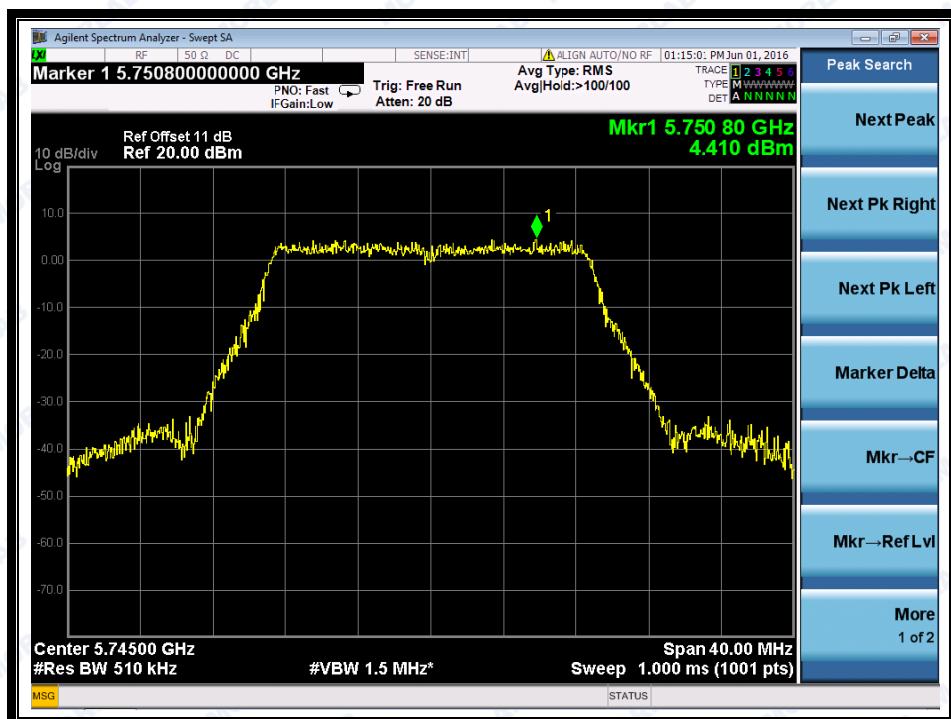
(Channel 44: 5220 MHz @ 802.11ac)



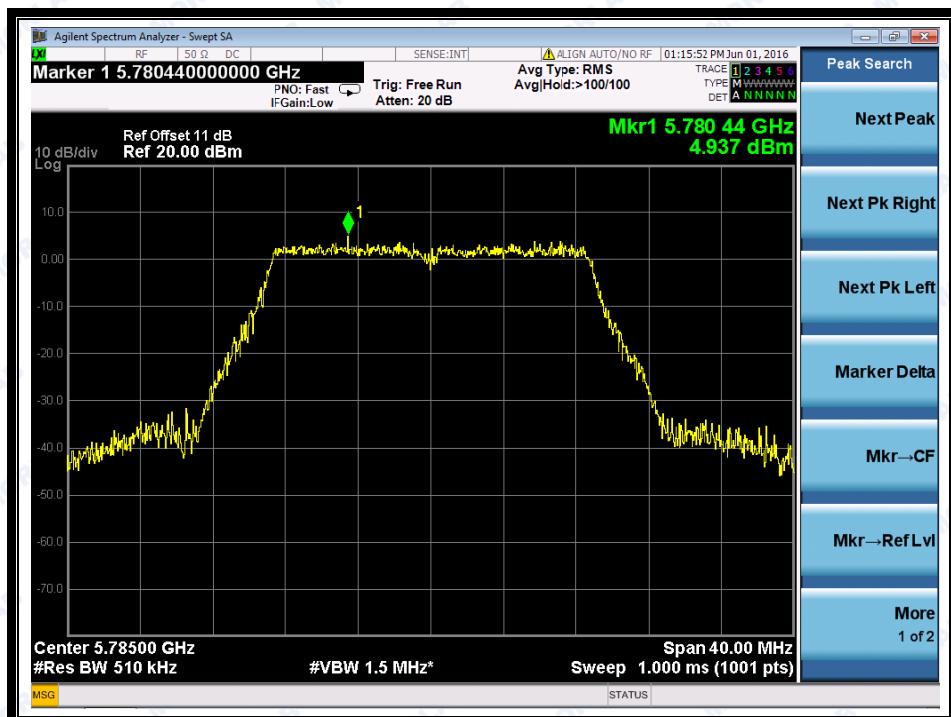
(Channel 48: 5240MHz @ 802.11ac)



REPORT No.: SZ16030122W04



(Channel 149: 5745MHz @ 802.11ac)



(Channel 157: 5785MHz @ 802.11ac)



REPORT No.: SZ16030122W04



(Channel 165: 5825MHz @ 802.11ac)

2.4.3.4 802.11ac-40MHz Test mode

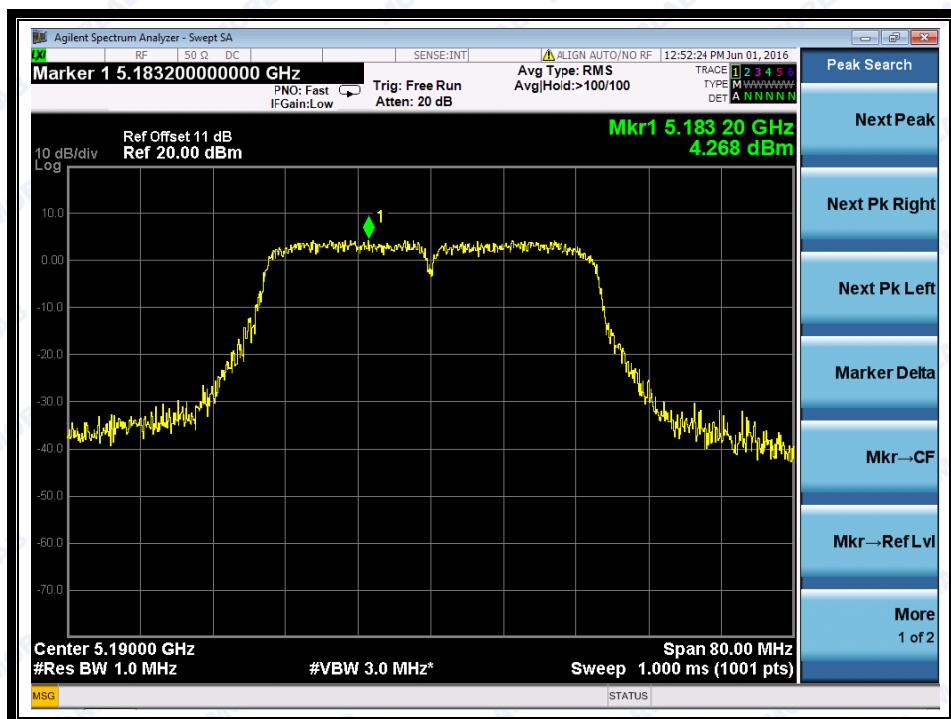
A. Test Verdict:

Channel	Frequency (MHz)	Measured PPSD (dBm)	Limit (dBm)	Verdict
38	5190	4.27	11	PASS
46	5230	5.12		
151	5755	4.10		
159	5795	3.24		

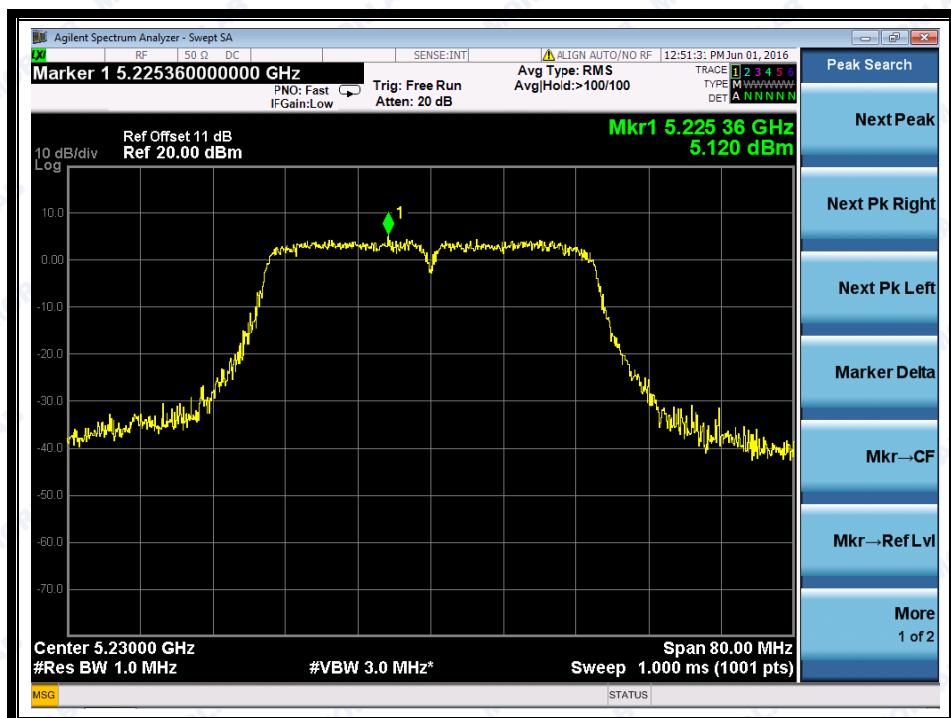
B. Test Plots



REPORT No.: SZ16030122W04



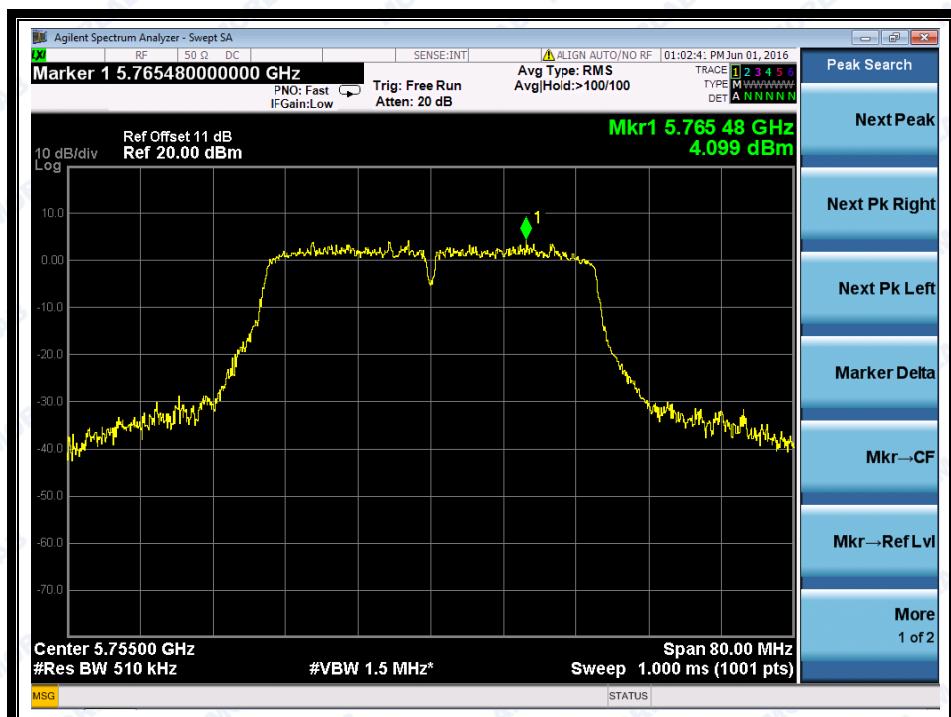
(Channel 38: 5190MHz @ 802.11ac)



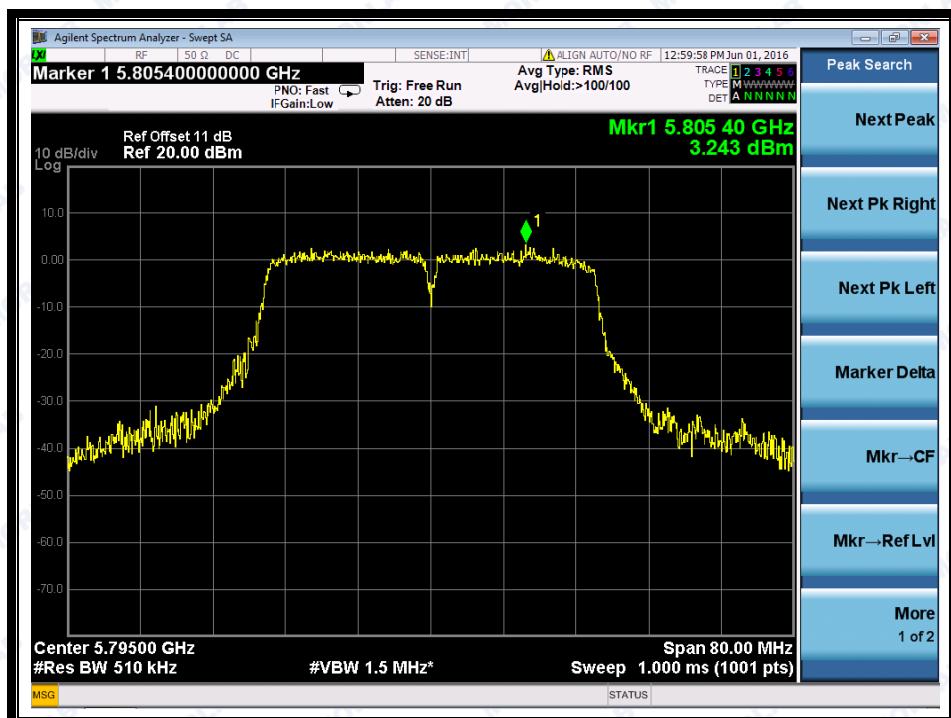
(Channel 46: 5230 MHz @ 802.11ac)



REPORT No.: SZ16030122W04



(Channel 151: 5755MHz @ 802.11ac)



(Channel 159: 5795MHz @ 802.11ac)



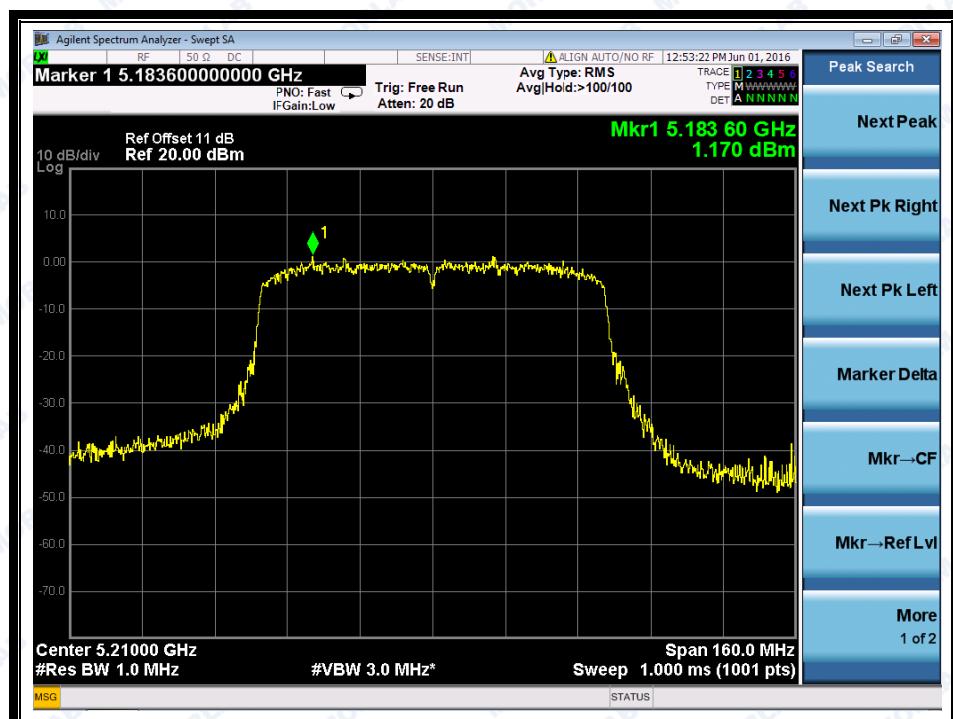
REPORT No.: SZ16030122W04

2.4.3.5 802.11ac-80MHz Test mode

A. Test Verdict:

Channel	Frequency (MHz)	Measured PPSD (dBm)	Limit (dBm)	Verdict
42	5210	1.17	11	PASS
155	5775	-0.62	30	

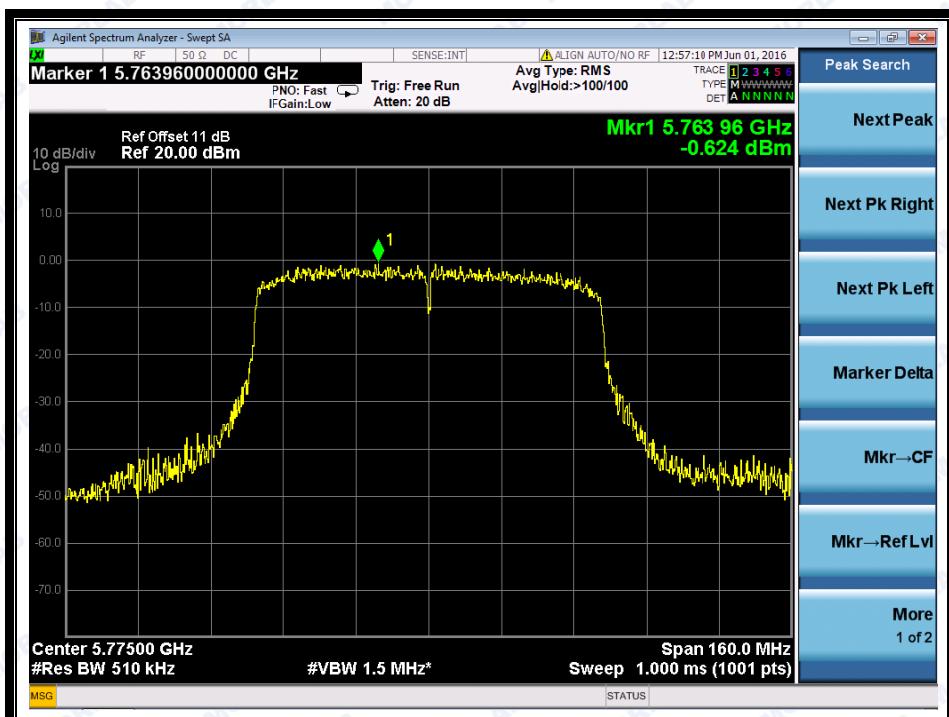
B. Test Plots



(Channel 42: 5210MHz @ 802.11ac)



REPORT No.: SZ16030122W04



(Channel 155: 5775MHz @ 802.11ac)

2.4.3.6

2.4.3.7 802.11a Test mode

A. Test Verdict:

Channel	Frequency (MHz)	Measured PPSD (dBm)	Limit (dBm)	Verdict
36	5180	6.55	11	PASS
44	5220	6.12		
48	5240	5.54		
149	5745	5.38	30	PASS
157	5785	3.83		
165	5825	3.81		

C. Test Plots



REPORT No.: SZ16030122W04



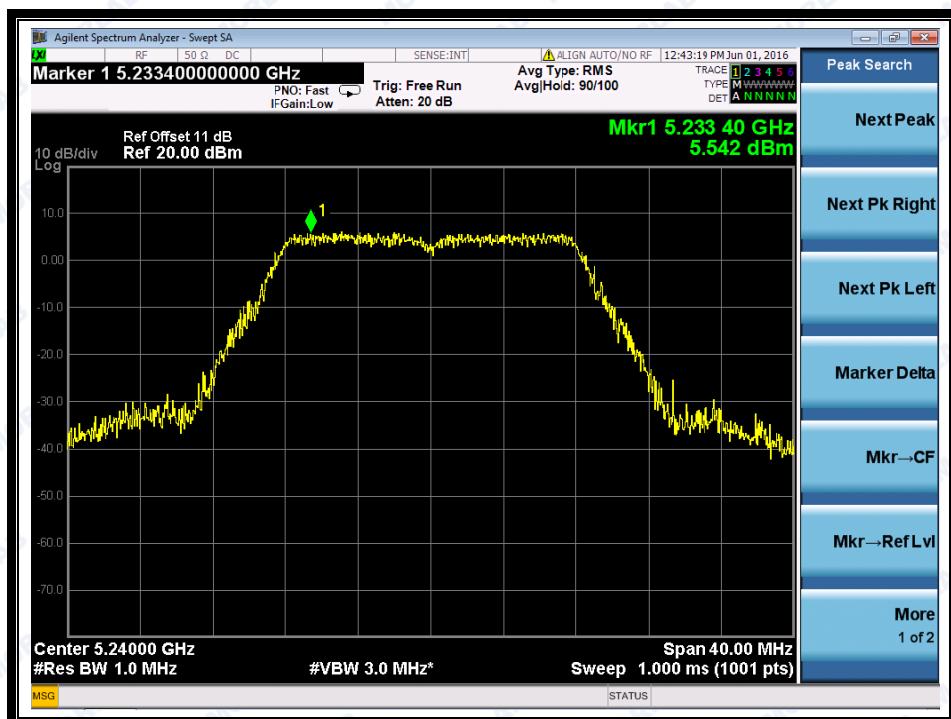
(Channel 36: 5180MHz @ 802.11a)



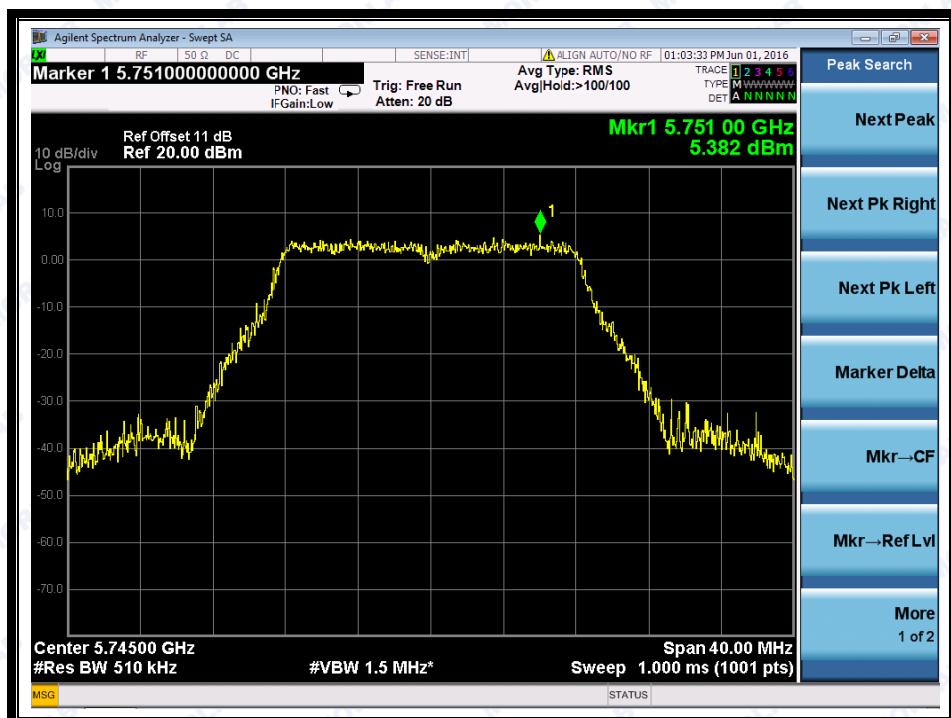
(Channel 44: 5220 MHz @802.11a)



REPORT No.: SZ16030122W04



(Channel 48: 5240MHz @ 802.11a)



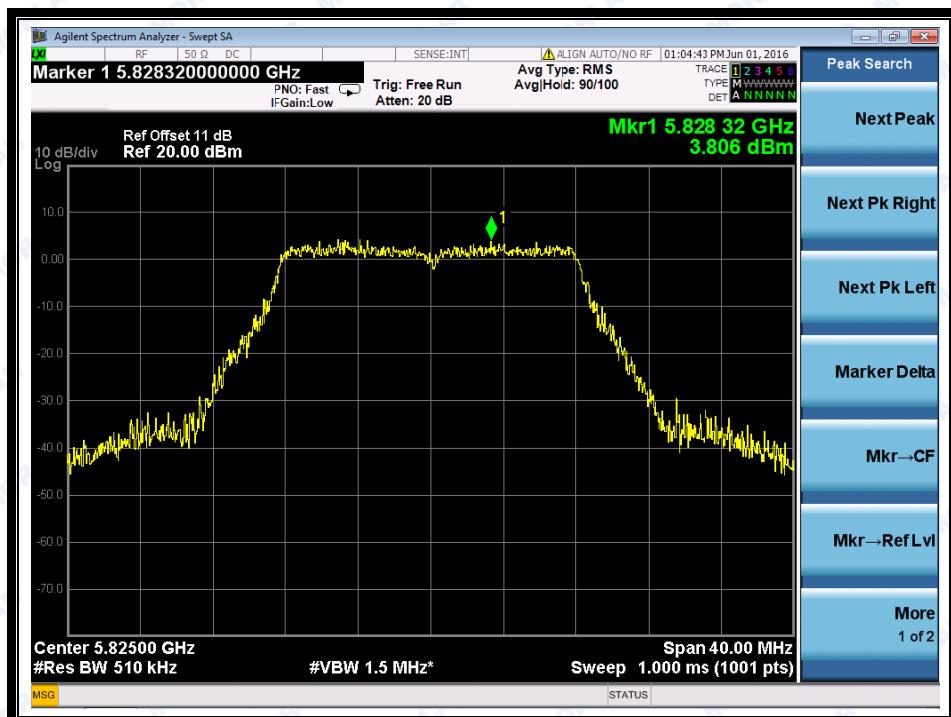
(Channel 149: 5745MHz @ 802.11a)



REPORT No.: SZ16030122W04



(Channel 157: 5785MHz @ 802.11a)



(Channel 165: 5825MHz @ 802.11a)

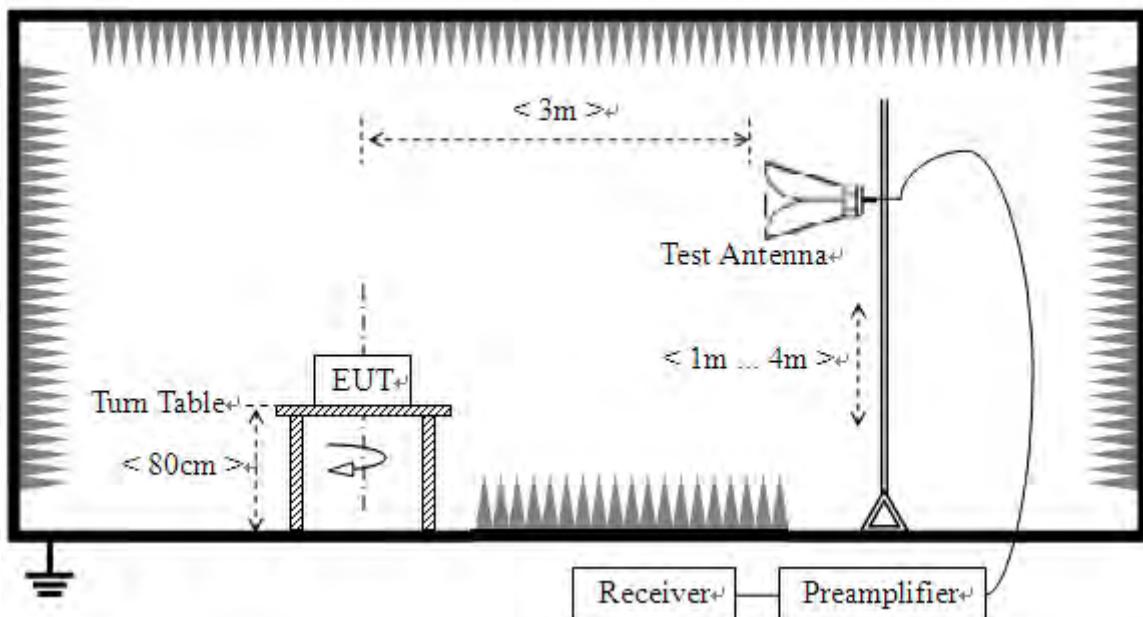
2.5 Restricted Frequency Bands

2.5.1 Requirement

According to FCC section 15.407(b)(7), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in 15.205(a), must also comply with the radiated emission limits specified in 15.209(a).

2.5.2 Test Description

A. Test Setup



The Module is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading.

KDB 789033 Section H) 3)5)6(d)) was used in order to prove compliance

For the Test Antenna:

Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength.



2.5.3 Test Result

The lowest and highest channels are tested to verify Restricted Frequency Bands.

The measurement results are obtained as below:

$$E [\text{dB}\mu\text{V}/\text{m}] = U_R + A_T + A_{\text{Factor}} [\text{dB}]; A_T = \text{L}_{\text{Cable loss}} [\text{dB}] - G_{\text{preamp}} [\text{dB}]$$

A_T : Total correction Factor except Antenna

U_R : Receiver Reading

G_{preamp} : Preamplifier Gain

A_{Factor} : Antenna Factor at 3m

Note: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (vertical) was recorded in this test report.

2.5.3.1 802.11n-20MHz Test mode

The lowest and highest channels are tested to verify the band edge emissions.

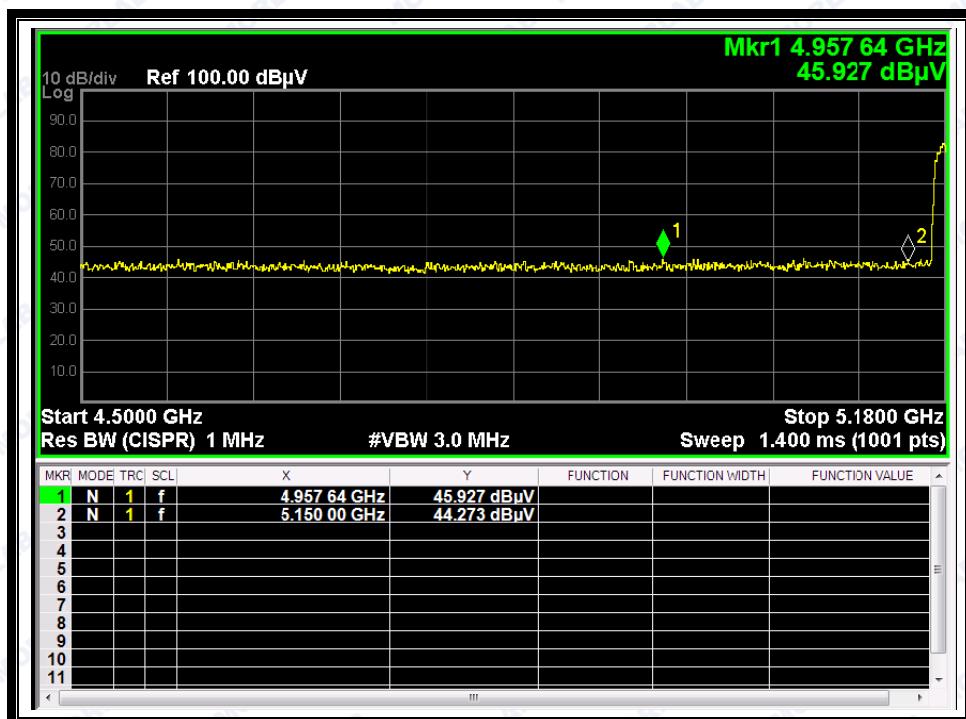
A. Test Verdict:

Channel	Frequency (MHz)	Detector PK/ AV	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
			Detector PK/ AV					
36	4957.64	PK	45.93	-50.65	32.11	27.39	74	Pass
36	5031.76	AV	34.35	-50.65	32.11	15.81	54	Pass
48	5275.66	PK	45.42	-50.65	32.11	26.88	74	Pass
48	5284.62	AV	33.54	-50.65	32.11	15.00	54	Pass

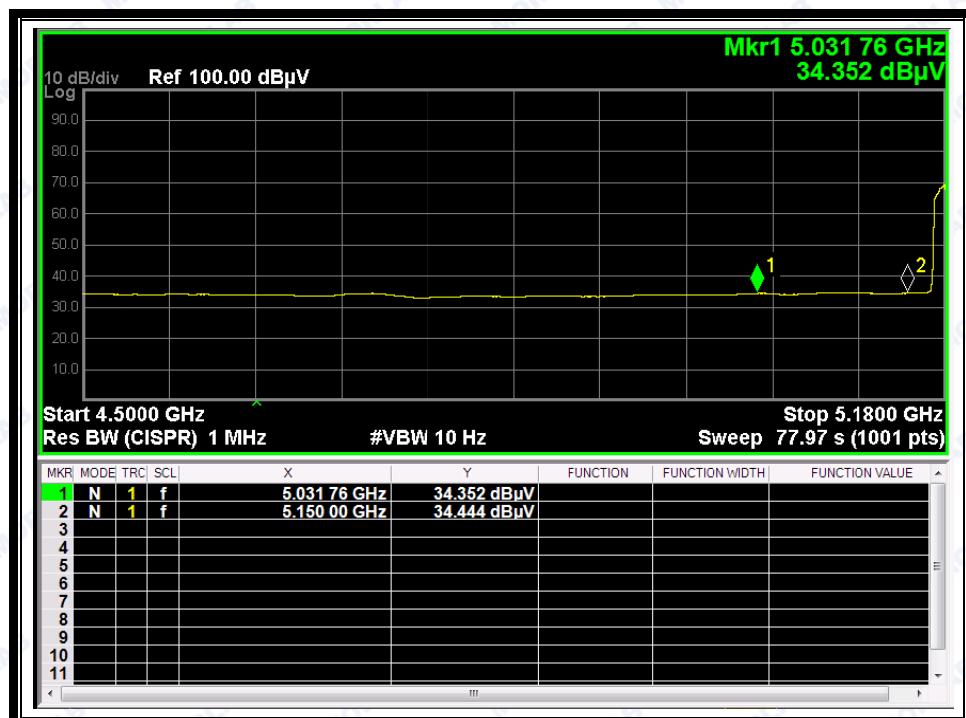
B. Test Plots:



REPORT No.: SZ16030122W04



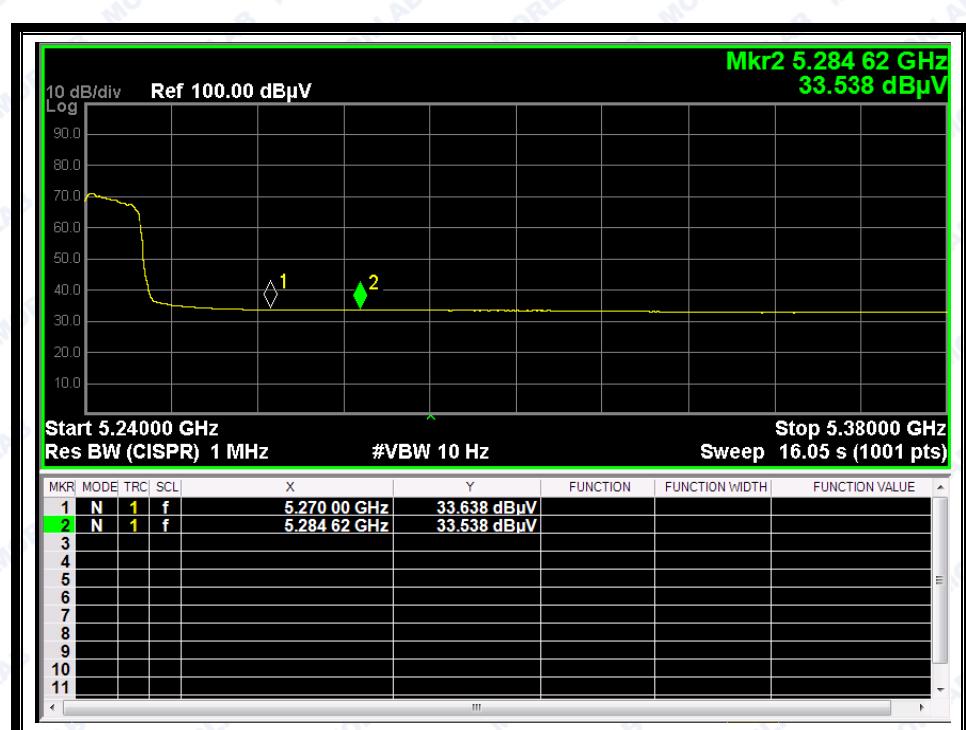
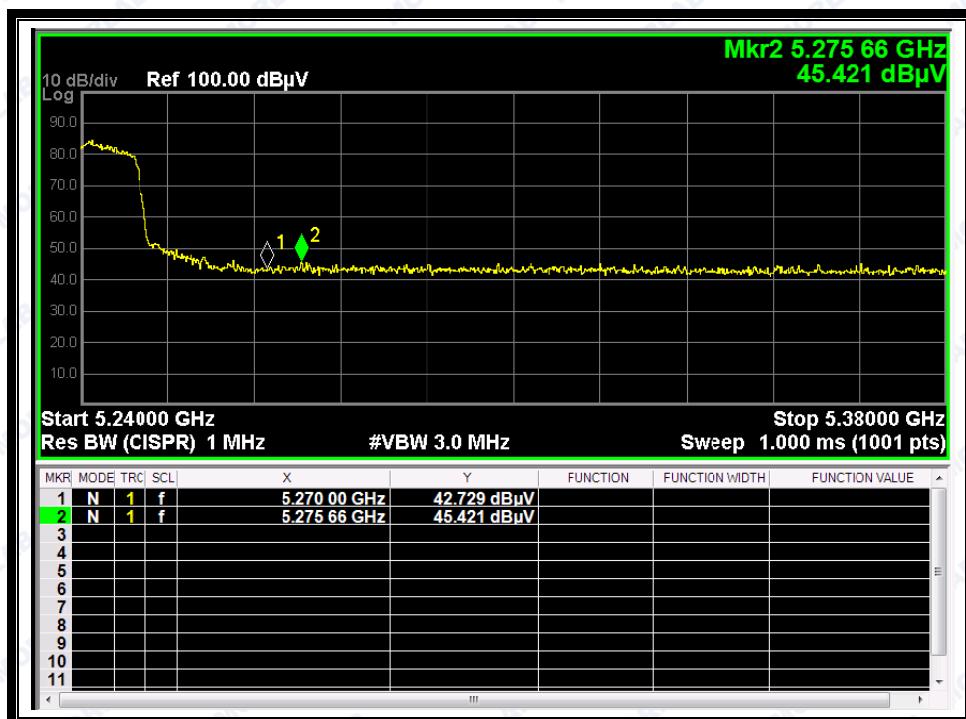
(Channel = 36 PEAK @ 802.11n 20MHz)



(Channel = 36 AVG @ 802.11n 20MHz)



REPORT No.: SZ16030122W04





REPORT No.: SZ16030122W04

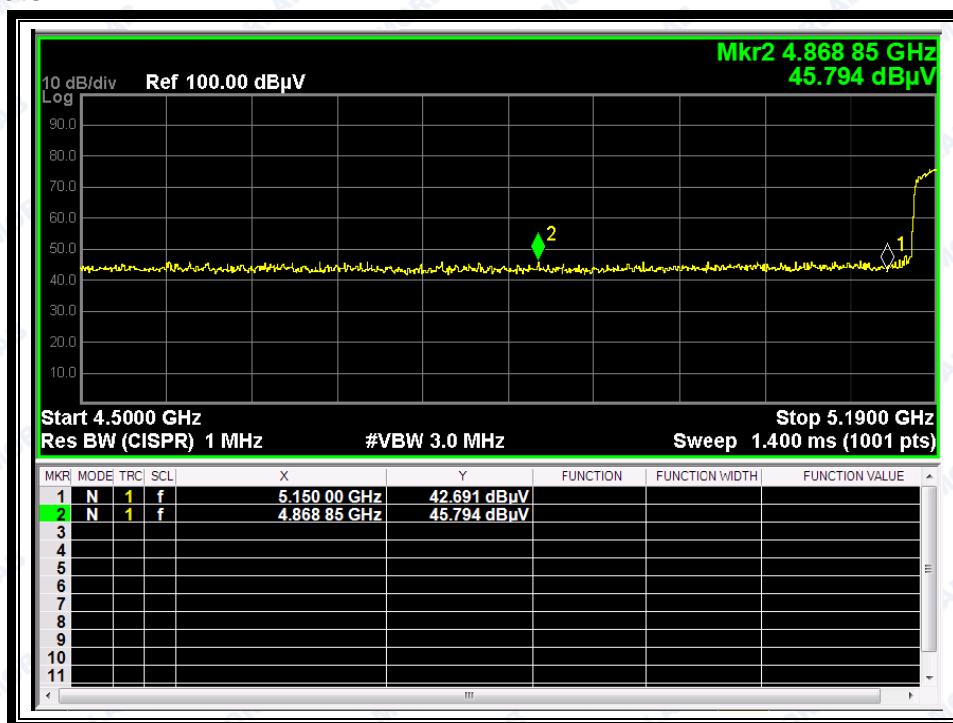
2.5.3.2 802.11n-40MHz Test mode

The lowest and highest channels are tested to verify the band edge emissions.

A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver	A _T (dB)	A _{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
			U _R (dB μ V)					
38	4868.85	PK	45.79	-50.65	32.11	44.72	74	Pass
38	4868.85	AV	33.59	-50.65	32.11	32.52	54	Pass
46	5285.70	PK	43.66	-50.65	32.11	42.98	74	Pass
46	5300.10	AV	33.37	-50.65	32.11	32.69	54	Pass

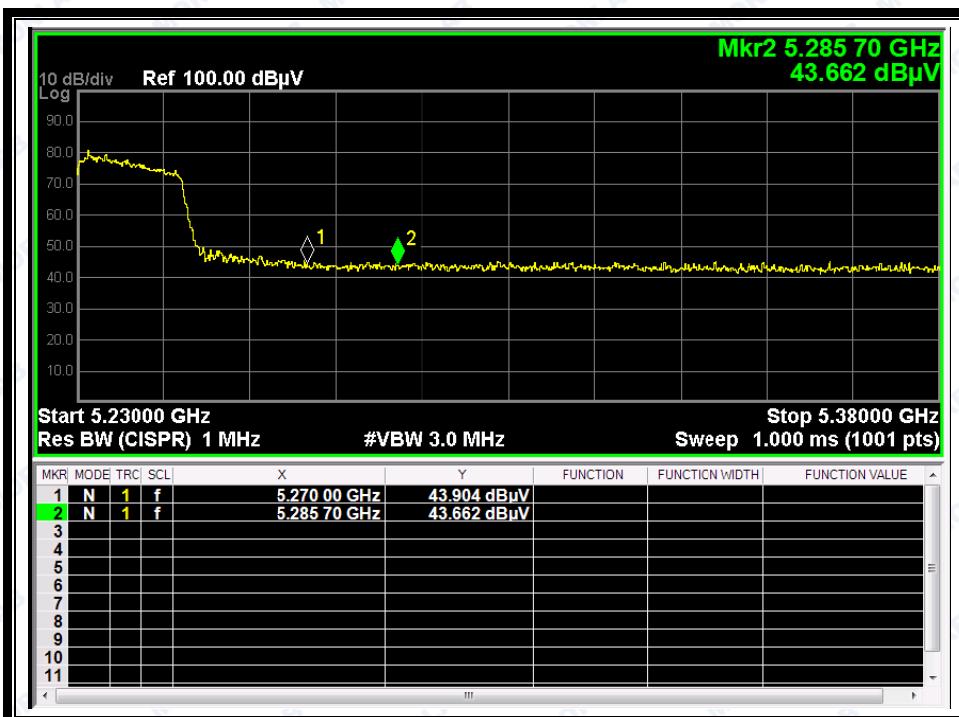
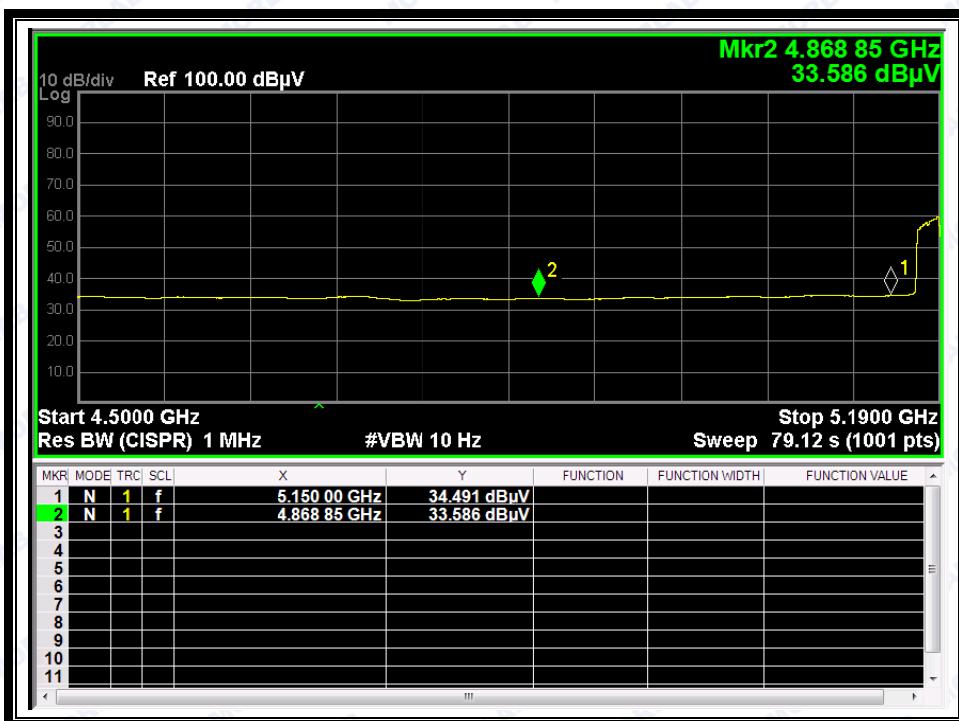
B. Test Plots:



(Channel = 38 PEAK @ 802.11n 40MHz)



REPORT No.: SZ16030122W04





REPORT No.: SZ16030122W04



(Channel = 46 AVG @ 802.11n 40MHz)

2.5.3.3 802.11ac-20MHz Test mode

The lowest and highest channels are tested to verify the band edge emissions.

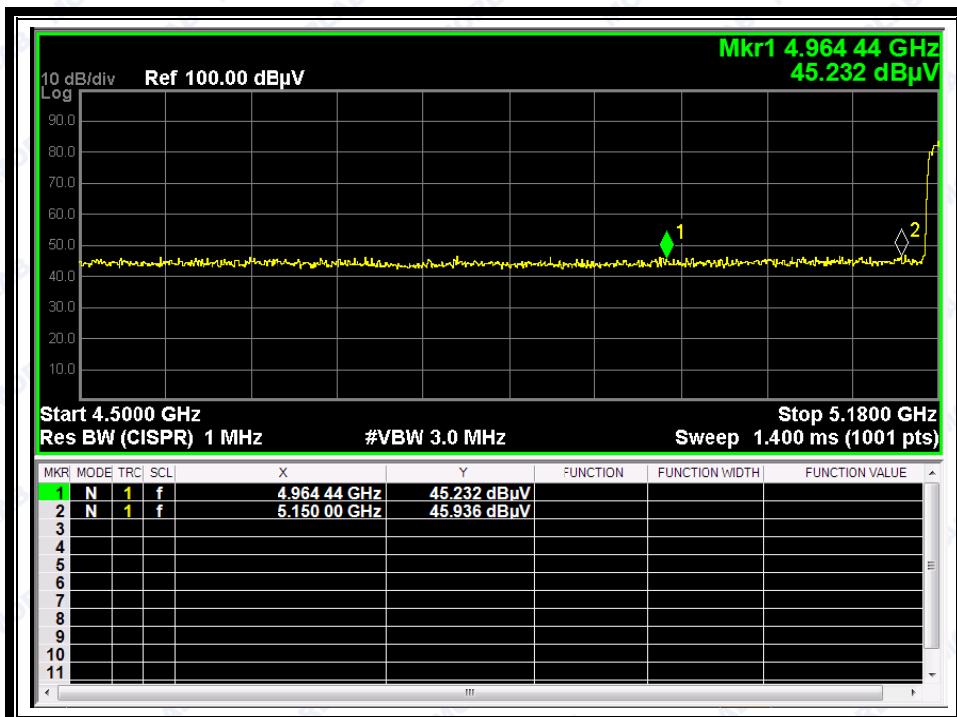
A. Test Verdict:

Channel	Frequency (MHz)	Detector PK/ AV	Receiver Reading U _R (dB μ V)	A _T (dB)	A _{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
			PK					
36	4964.44	PK	45.23	-50.65	32.11	26.69	74	Pass
36	5035.84	AV	34.43	-50.65	32.11	15.89	54	Pass
48	5284.06	PK	44.59	-50.65	32.11	26.05	74	Pass
48	5276.78	AV	33.64	-50.65	32.11	15.10	54	Pass

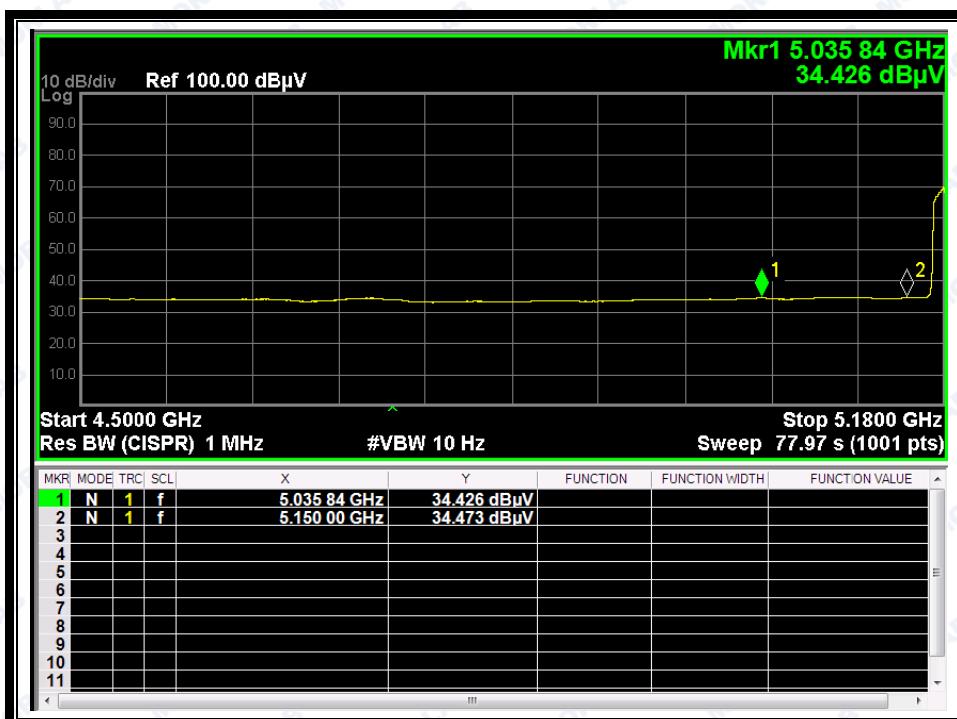


REPORT No.: SZ16030122W04

B. Test Plots:



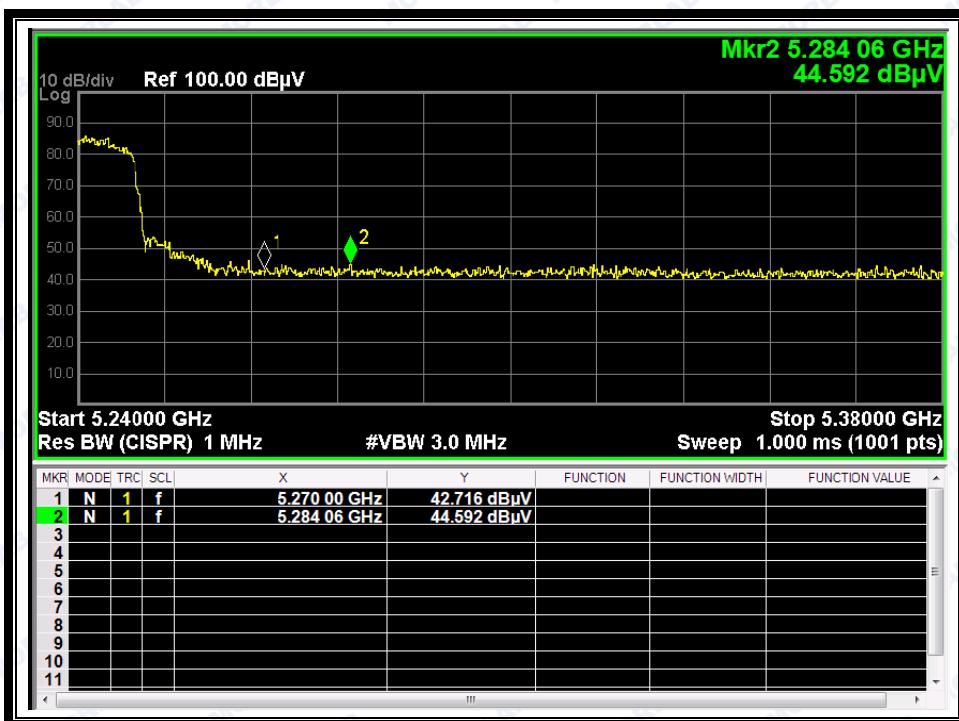
(Channel = 36 PEAK @ 802.11ac)



(Channel = 36 AVG @ 802.11ac)



REPORT No.: SZ16030122W04



(Channel = 48 PEAK @ 802.11ac)



(Channel = 48 AVG @ 802.11ac)

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Http://www.morlab.com

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E-mail: service@morlab.cn



REPORT No.: SZ16030122W04

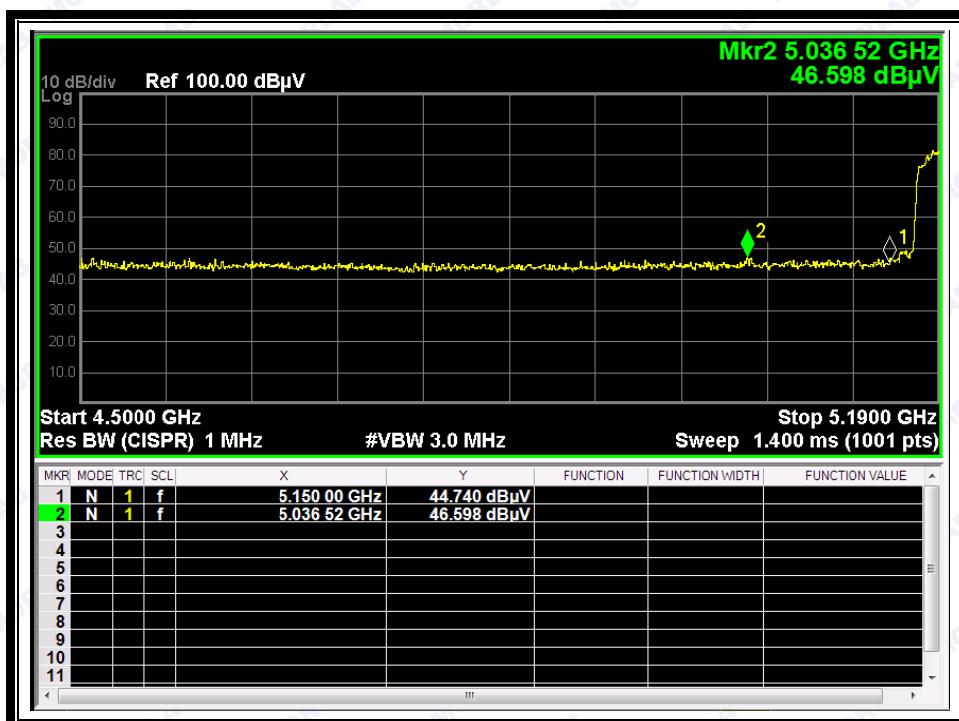
2.5.3.4 802.11ac-40MHz Test mode

The lowest and highest channels are tested to verify the band edge emissions.

A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver	A _T (dB)	A _{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
			U _R (dB μ V)					
38	5036.52	PK	46.60	-50.65	32.11	28.06	74	Pass
38	5036.52	AV	34.33	-50.65	32.11	15.79	54	Pass
46	5275.65	PK	45.11	-50.65	32.11	26.57	74	Pass
46	5275.65	AV	33.52	-50.65	32.11	14.98	54	Pass

B. Test Plots:



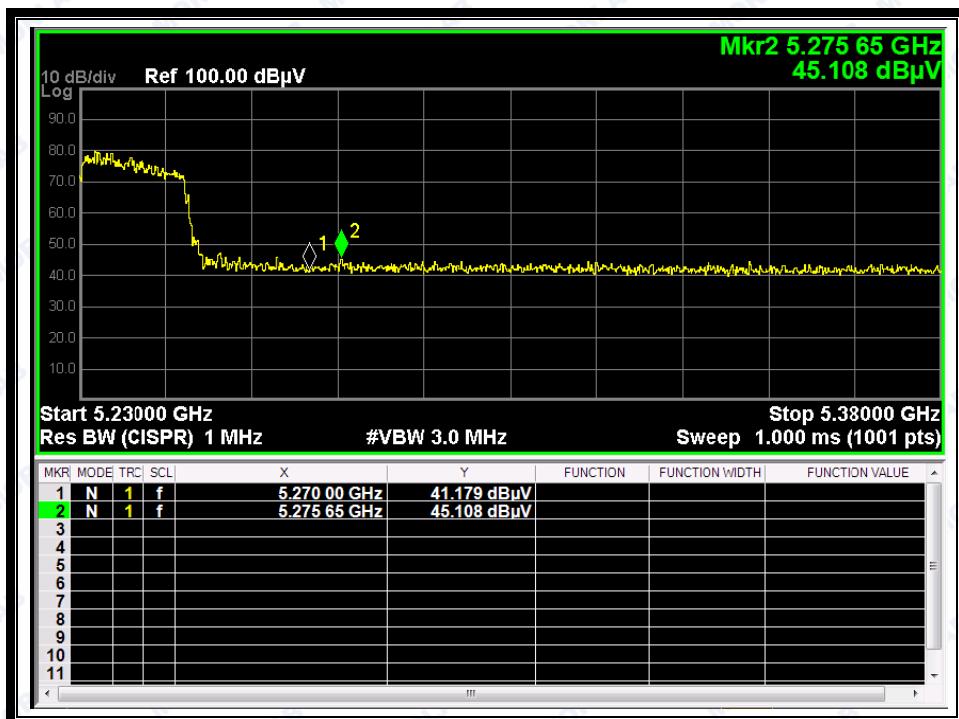
(Channel = 38 PEAK @ 802.11ac)



REPORT No.: SZ16030122W04



(Channel = 38 AVG @ 802.11ac)



(Channel = 46 PEAK @ 802.11ac)



REPORT No.: SZ16030122W04



(Channel = 46 AVG @ 802.11ac)

2.5.3.5 802.11ac-80MHz Test mode

The lowest and highest channels are tested to verify the band edge emissions.

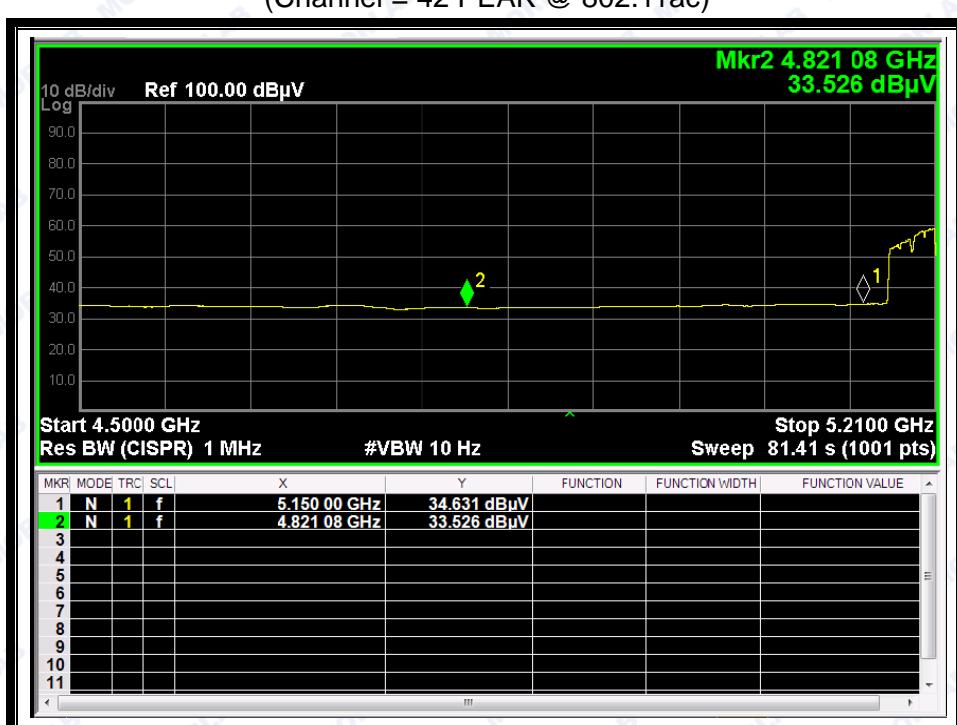
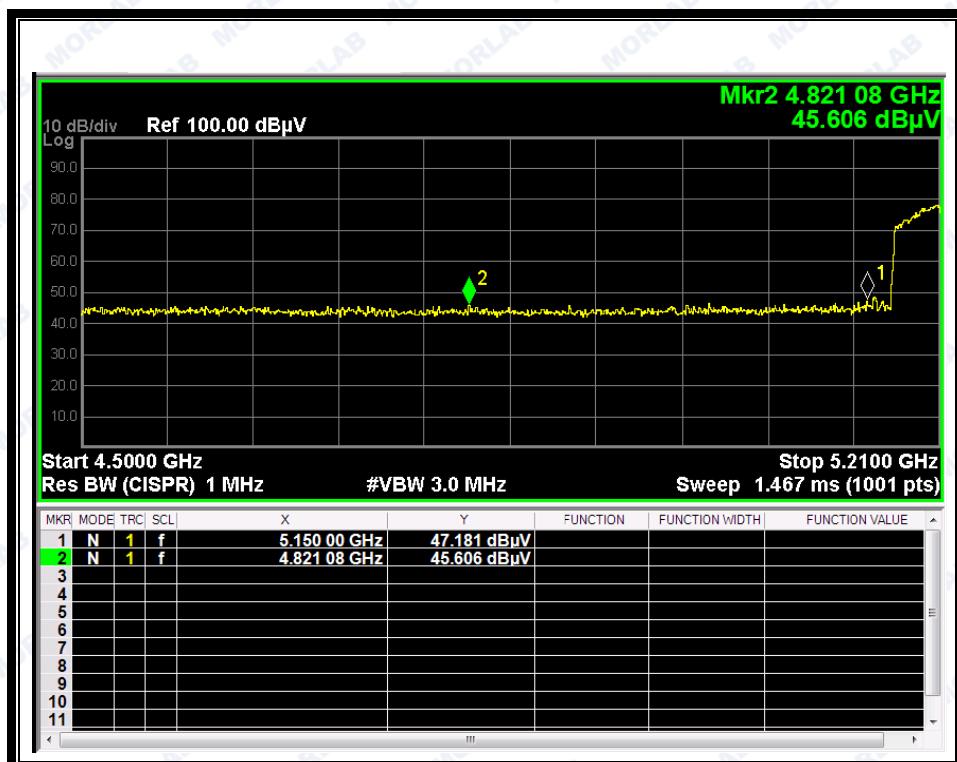
A. Test Verdict:

Channel	Frequency (MHz)	Detector PK/ AV	Receiver Reading U _R (dB μ V)	A _T (dB)	A _{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
42	4821.08	PK	45.61	-50.65	32.11	27.07	74	Pass
42	4821.08	AV	33.53	-50.65	32.11	14.99	54	Pass

B. Test Plots:



REPORT No.: SZ16030122W04





REPORT No.: SZ16030122W04

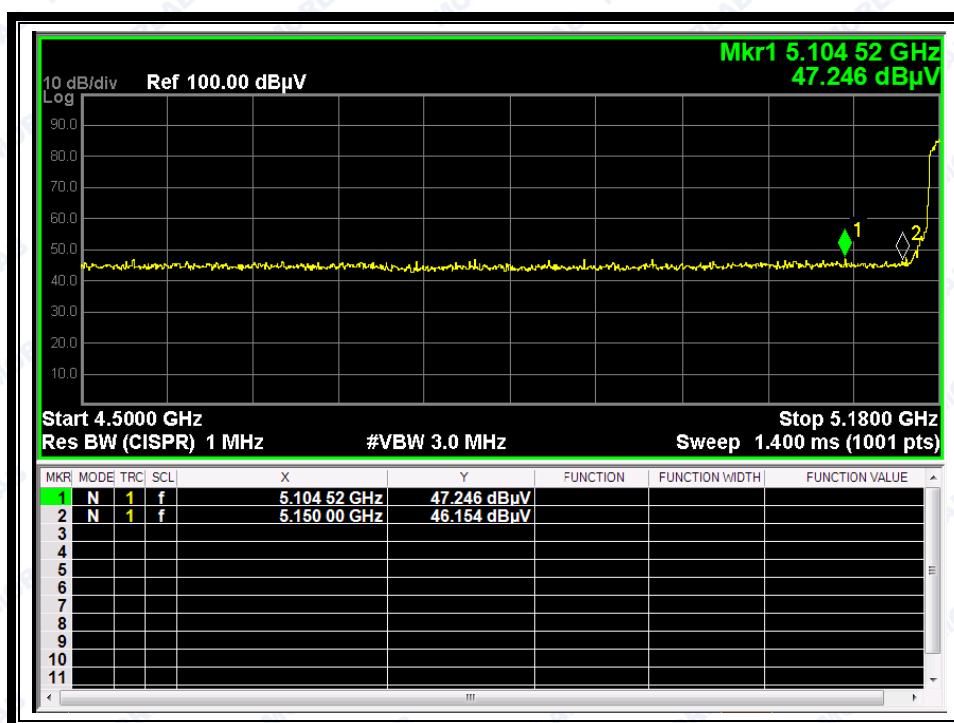
2.5.3.6 802.11a Test mode

The lowest and highest channels are tested to verify the band edge emissions.

A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver	A _T (dB)	A _{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
			Reading U _R (dB μ V)					
36	5104.52	PK	47.25	-50.65	32.11	28.71	74	Pass
36	5082.08	AV	34.47	-50.65	32.11	15.93	54	Pass
48	5275.66	PK	45.42	-50.65	32.11	26.88	74	Pass
48	5284.62	AV	33.54	-50.65	32.11	15.00	54	Pass

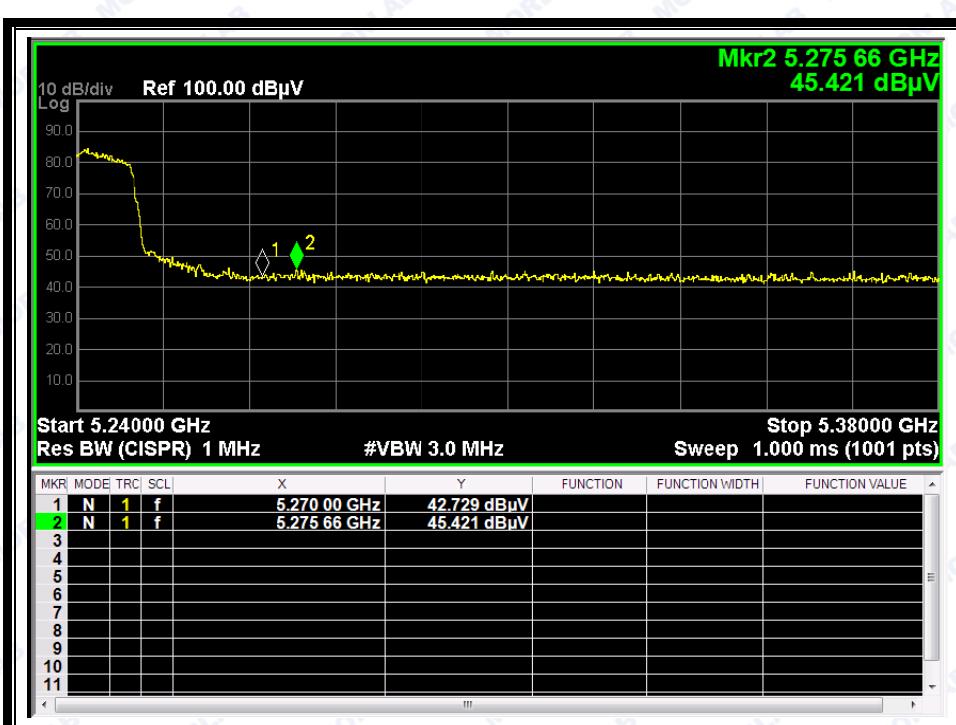
B. Test Plots:



(Channel = 36 PEAK @ 802.11n 20MHz)

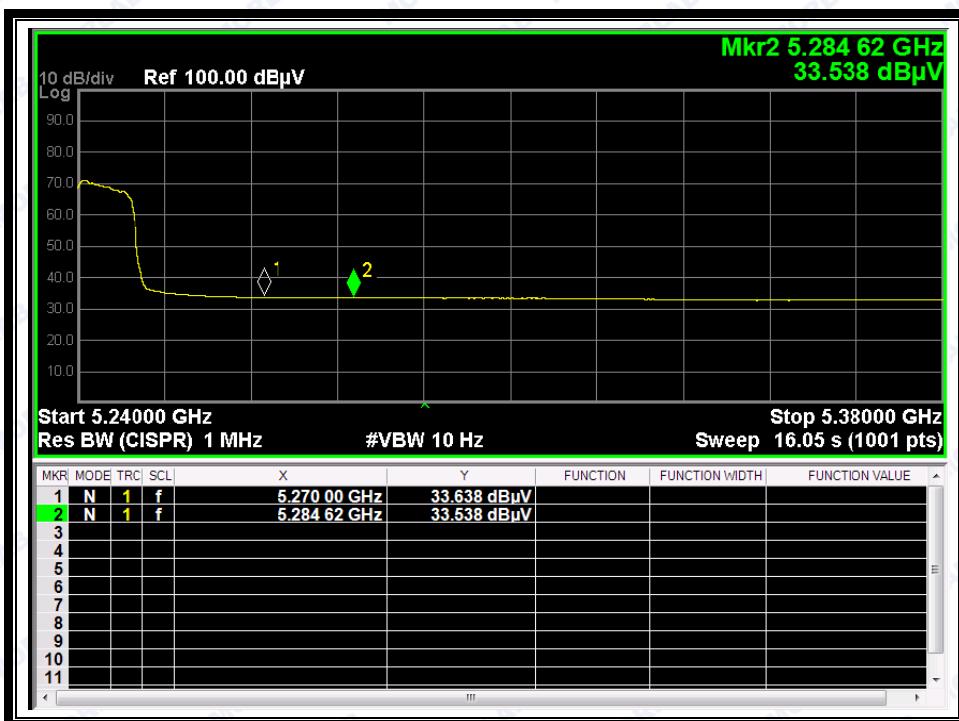


REPORT No.: SZ16030122W04





REPORT No.: SZ16030122W04



(Channel = 48 AVG @ 802.11n 20MHz)

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2.6 Frequency Stability

2.6.1 Requirement

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

2.6.2 Test Procedure

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -30°C and +50°C. The temperature was incremented by 10° intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded. Data for the worst case channel is shown below.

2.6.3 Test Result

Frequency Stability Measurements for UNII Band 1 (Ch. 36)

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq Dev. (Hz)	Deviation (%)
100%	5.0	+20(Ref)	5,179,999,987	13	0.00000025
100%		-30	5,180,000,012	12	0.00000023
100%		-20	5,180,000,007	7	0.00000014
100%		-10	5,179,999,996	4	0.00000008
100%		0	5,179,999,985	15	0.00000029
100%		+10	5,180,000,011	11	0.00000021
100%		+20	5,180,000,005	5	0.00000010
100%		+30	5,180,000,017	17	0.00000033
100%		+40	5,180,000,015	15	0.00000029
100%		+50	5,179,999,981	19	0.00000037
114%	4.75	+20	5,180,000,018	18	0.00000035
BATT.END POINT	5.25	+20	5,179,999,986	14	0.00000027



Frequency Stability Measurements for UNII Band 4 (Ch. 149)

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq Dev. (Hz)	Deviation (%)
100%	5.0	+20(Ref)	5,744,999,996	4	0.00000007
100%		-30	5,744,999,994	6	0.00000010
100%		-20	5,745,000,005	5	0.00000009
100%		-10	5,745,000,007	7	0.00000012
100%		0	5,745,000,010	10	0.00000017
100%		+10	5,745,000,017	17	0.00000030
100%		+20	5,745,000,003	3	0.00000005
100%		+30	5,745,000,001	1	0.00000002
100%		+40	5,744,999,987	13	0.00000023
100%		+50	5,745,000,015	15	0.00000026
114%	4.75	+20	5,745,000,010	10	0.00000017
BATT.ENDP OINT	5.25	+20	5,744,999,986	14	0.00000024

Note: Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

2.7 Conducted Emission

2.7.1 Requirement

According to FCC section 15.207, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 Ω line impedance stabilization network (LISN).

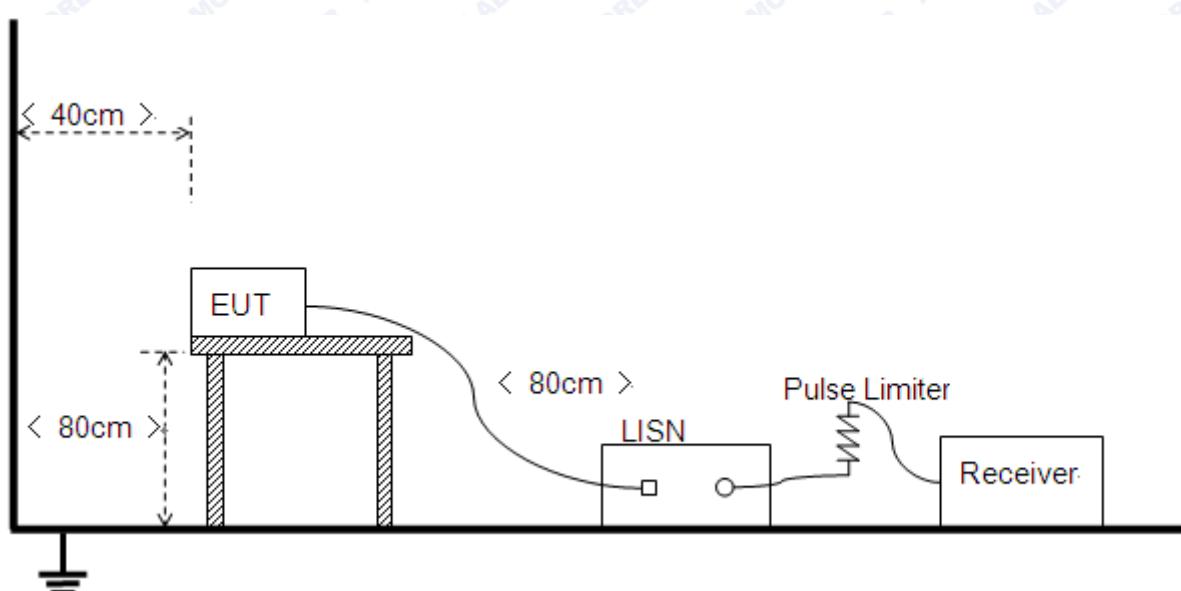
Frequency range (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

NOTE:

- (a) The lower limit shall apply at the band edges.
- (b) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

2.7.2 Test Description

A. Test Setup:



The Table-top EUT was placed upon a non-metallic table 0.8m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. The set-up and test methods were according to ANSI C63.10 2013.

The EUT is powered by the Battery charged with the AC Adapter which is powered by 120V, 60Hz



AC mains supply. The factors of the site are calibrated to correct the reading. During the measurement, the EUT is activated and controlled by the Wi-Fi Service Supplier (SS) via a Common Antenna.

2.7.3 Test Result

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

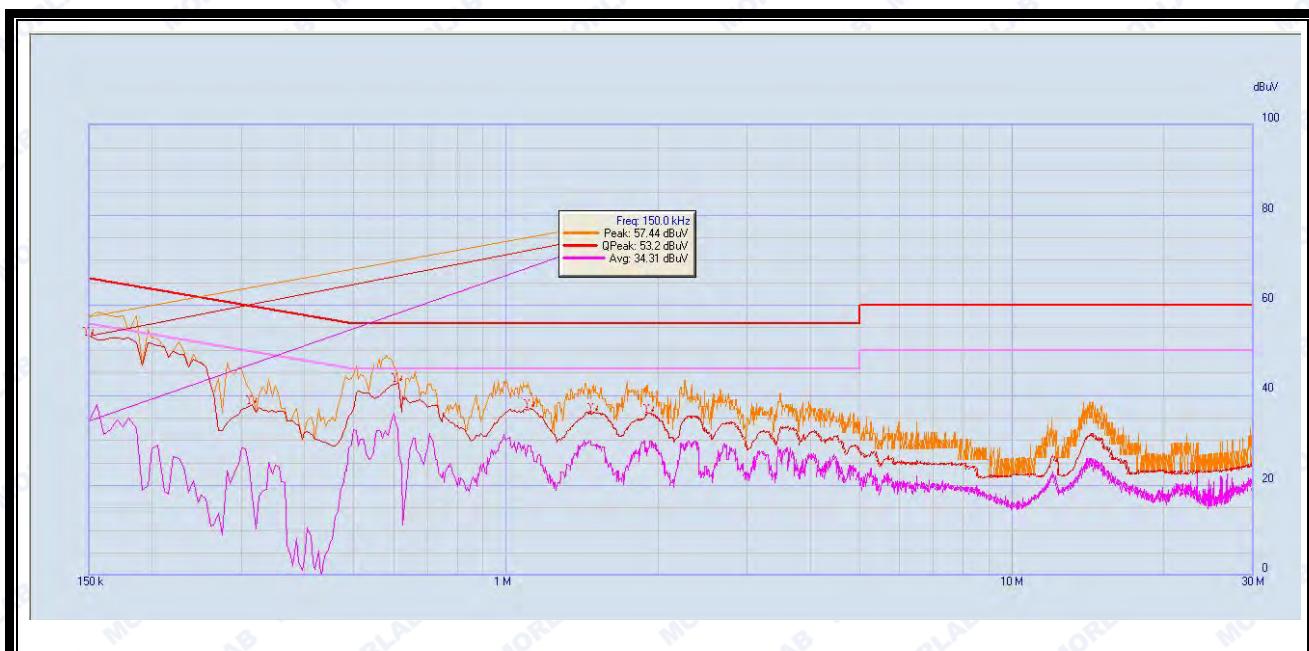
Note: All test modes are performed, only the worst case is recorded in this report.

A. Test setup:

The EUT configuration of the emission tests is EUT + Link.

Note: The test voltage is AC 120V/60Hz.

B. Test Plots:



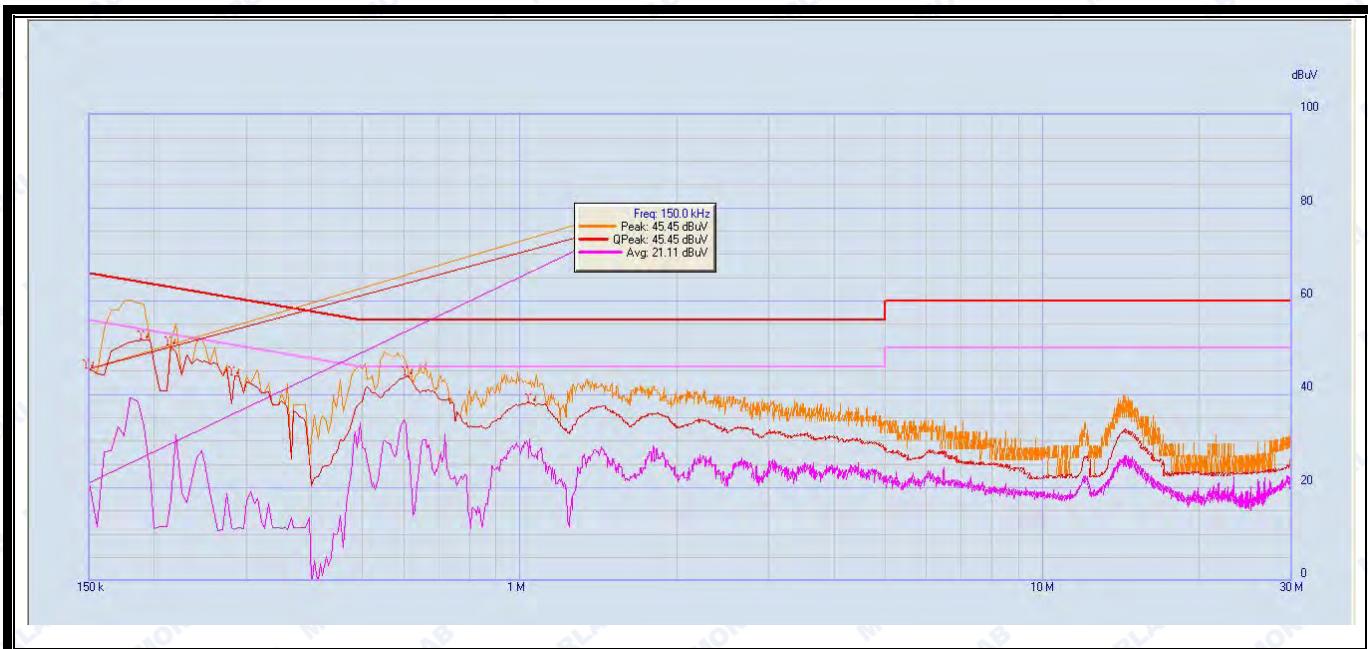
(Plot A: L Phase)

NO.	Fre. (MHz)	Emission Level (dB μ V)		Limit (dB μ V)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.15	53.20	34.31	66	56	Neutral	PASS
2	0.315	37.88	17.70	61.29	51.29		PASS
3	0.61	42.81	32.53	56	46		PASS
4	1.12	36.92	27.45	56	46		PASS
5	1.485	35.97	29.00	56	46		PASS



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6	1.915	36.15	28.71	56	46		PASS
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(Plot B: N Phase)

NO.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power- line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.15	45.45	21.11	66	56	Neutral	PASS
2	0.19	51.75	33.09	64.86	54.86		PASS
3	0.215	50.45	17.32	64.14	54.14		PASS
4	0.285	43.92	10.99	62.14	52.14		PASS
5	0.61	43.96	26.58	56	46		PASS
6	1.055	38.17	27.29	56	46		PASS

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2.8 Radiated Emission

2.8.1 Requirement

The peak emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27dBm/MHz.
- (2) For transmitters operating in the 5.25–5.35 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27dBm/MHz.
- (3) For transmitters operating in the 5.47–5.725 GHz band: all emissions outside of the 5.47–5.725 GHz band shall not exceed an EIRP of -27dBm/MHz.
- (4) For transmitters operating in the 5.725–5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.

The following formula is used to convert the equipment isotropic radiated power(eirp) to field strength (dB μ V/m);

$$E = \frac{1000000 \times \sqrt{30P}}{3} \mu\text{V}/\text{m}$$

where P is the EIRP in Watts

Therefore: -27 dBm/MHz = 68.23 dB μ V/m

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209. According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μ V/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

Note:

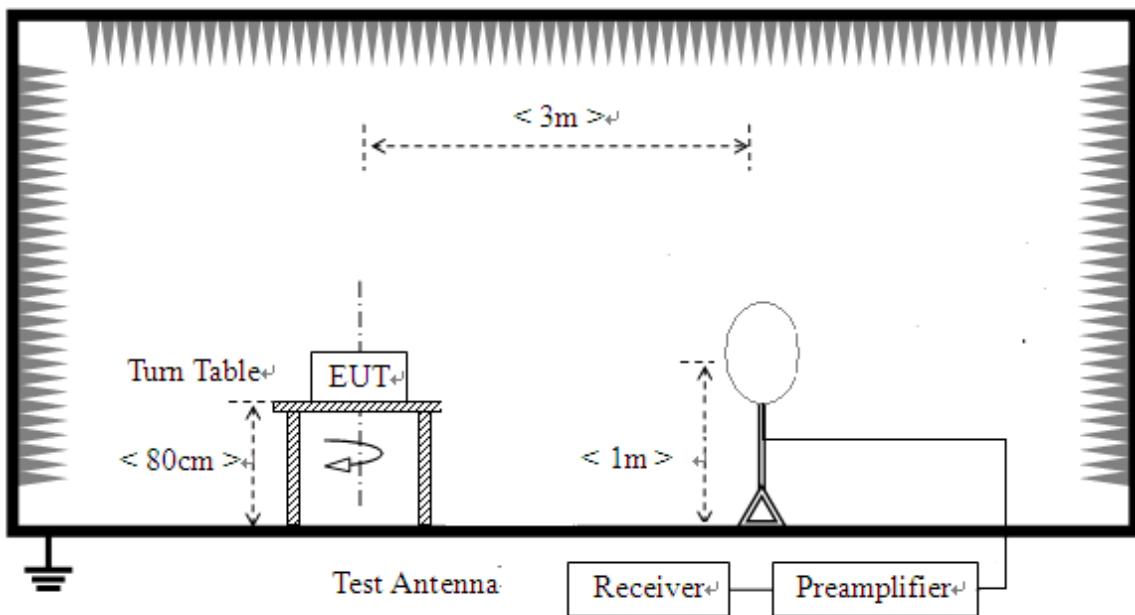
For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.

In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table)

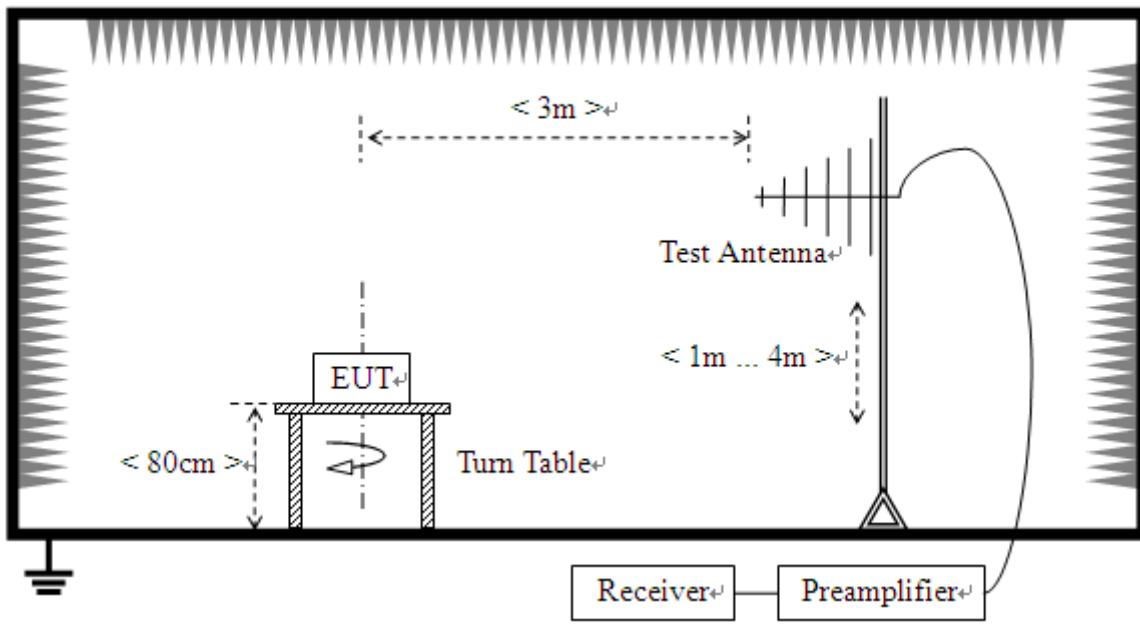
2.8.2 Test Description

A. Test Setup:

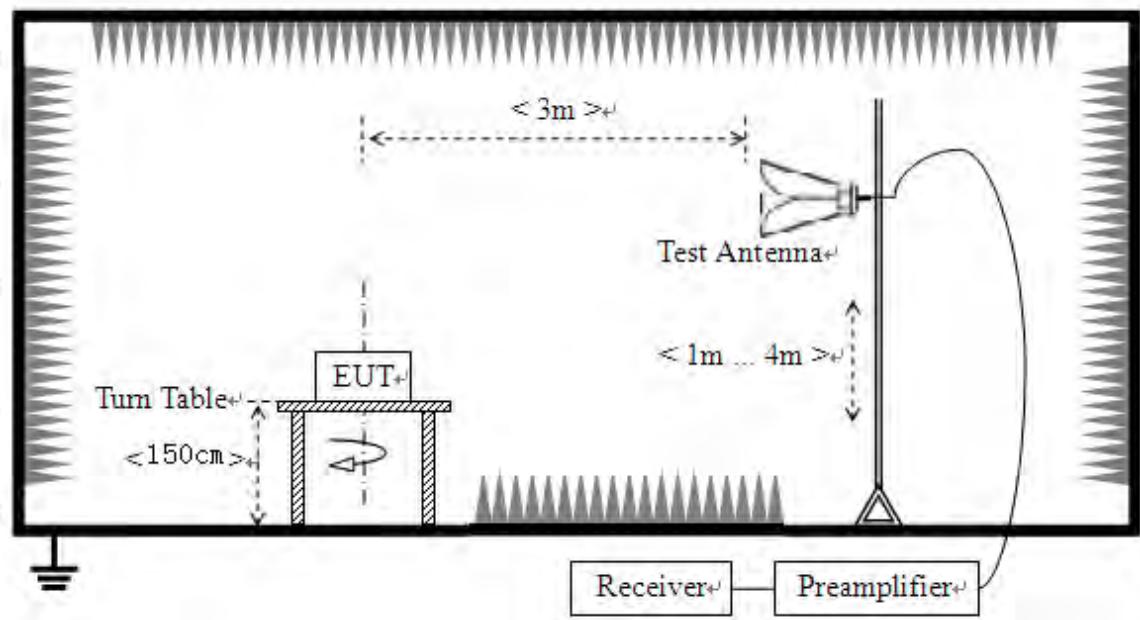
- 1) For radiated emissions from 9kHz to 30MHz



- 2) For radiated emissions from 30MHz to 1GHz



3) For radiated emissions above 1GHz



The RF absorbing material used on the reference ground plane and on the turntable have a maximum height (thickness) of 30 cm (12 in) and have a minimum-rated attenuation of 20 dB at all frequencies from 1 GHz to 18 GHz. Test site have a minimum area of the ground plane covered



with RF absorbing material as specified in Figure 6 of ANSI C63.4: 2014.

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.10 (2013). For radiated emissions below or equal to 1GHz, The EUT was set-up on insulator 80cm above the Ground Plane, For radiated emissions above 1GHz, The EUT was set-up on insulator 150cm above the Ground Plane. The set-up and test methods were according to ANSI C63.10

For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

The EUT is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading

For the Test Antenna:

- (a) In the frequency range of 9kHz to 30MHz, magnetic field is measured with Loop Test Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
- (b) In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Place the test antenna at 3m away from area of the EUT, while keeping the test antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The test antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final test antenna elevation shall be that which maximizes the emissions. The test antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. The emission levels at both horizontal and vertical polarizations should be tested.

2.8.3 Test Result

According to ANSI C63.10, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value



complies with the quasi-peak limit, it is unnecessary to perform an quasi-peak measurement.

The measurement results are obtained as below:

$$E [\text{dB}\mu\text{V/m}] = U_R + A_T + A_{\text{Factor}} [\text{dB}]; A_T = L_{\text{Cable loss}} [\text{dB}] - G_{\text{preamp}} [\text{dB}]$$

A_T : Total correction Factor except Antenna

U_R : Receiver Reading

G_{preamp} : Preamplifier Gain

A_{Factor} : Antenna Factor at 3m

During the test, the total correction Factor A_T and A_{Factor} were built in test software.

Note: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

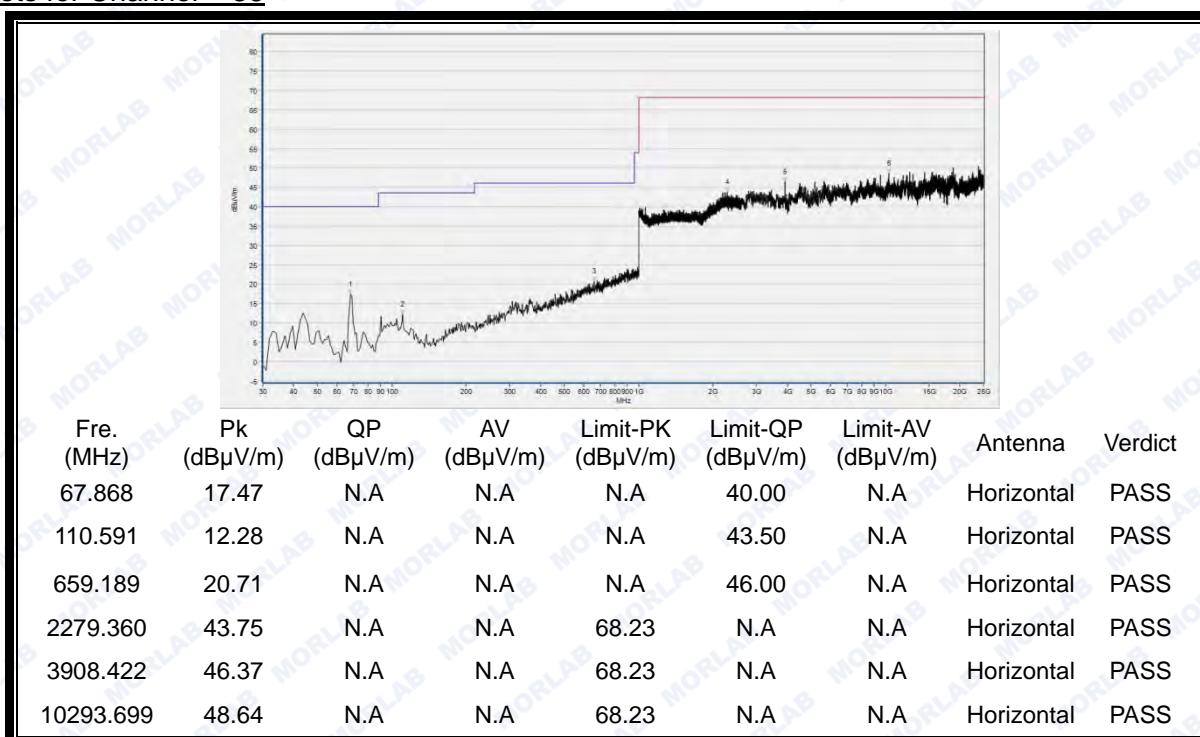
The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

For the frequency, which started from 25G to 40G, was pre-scanned and the result which was 10dB lower than the limit.

2.8.3.1 802.11n-20MHz Test mode

A. Test Plots for the Whole Measurement Frequency Range:

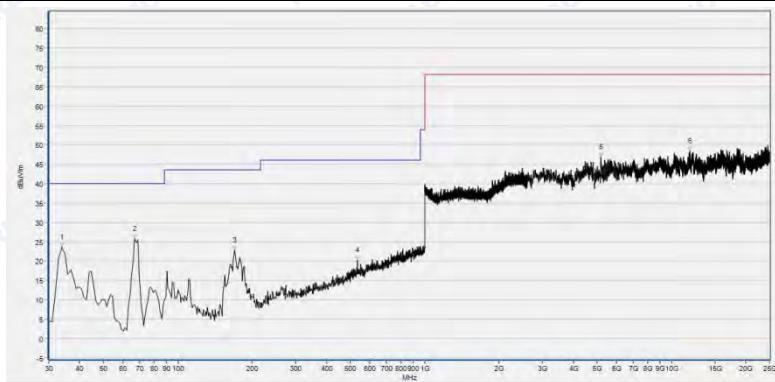
Plots for Channel = 36



(Antenna Horizontal, 30MHz to 25GHz)

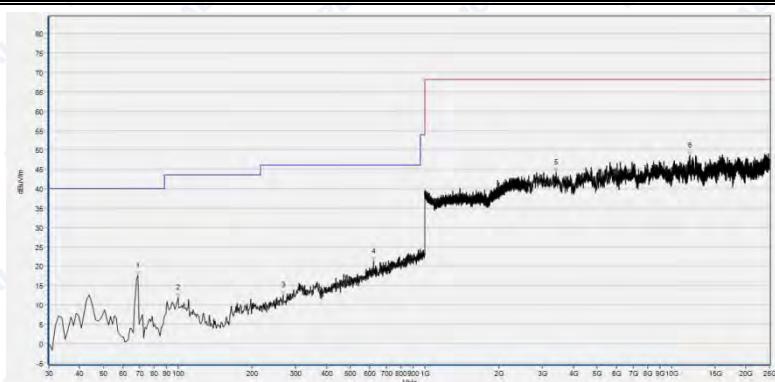


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Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
33.884	23.60	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
66.897	25.79	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
169.820	22.82	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
533.934	20.17	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
5180.996	46.82	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
11870.974	48.47	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

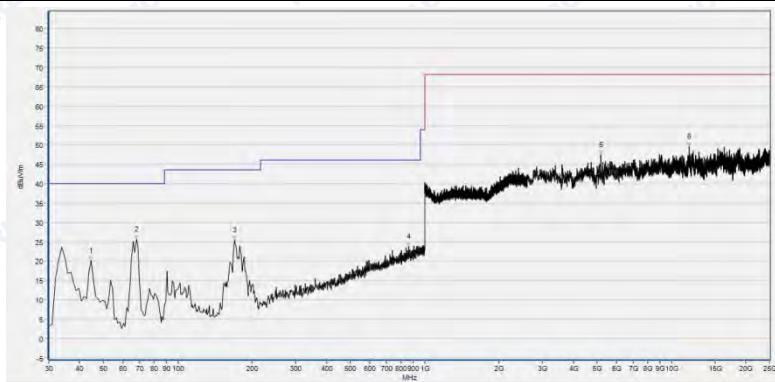
Plot for Channel = 44

Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
68.839	17.61	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
99.910	11.85	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
266.917	12.50	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
619.379	21.25	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
3415.523	44.19	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
11848.570	48.49	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



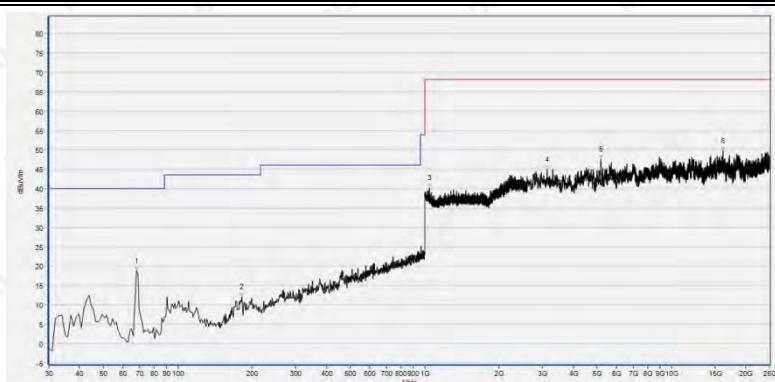
REPORT No.: SZ16030122W04



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
44.565	20.04	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
67.868	25.53	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
169.820	25.42	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
859.209	23.76	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
5180.996	47.33	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
11776.875	49.57	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 48



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
67.868	18.71	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
181.471	11.98	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
1045.348	40.26	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
3137.708	44.95	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5176.515	47.49	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
16199.520	49.77	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

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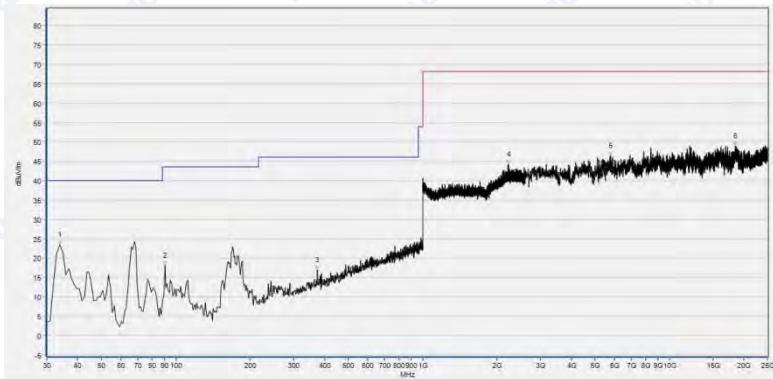
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Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
33.884	23.37	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
90.200	17.98	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
373.724	16.81	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2231.344	44.25	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5767.994	46.32	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
18484.777	48.87	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

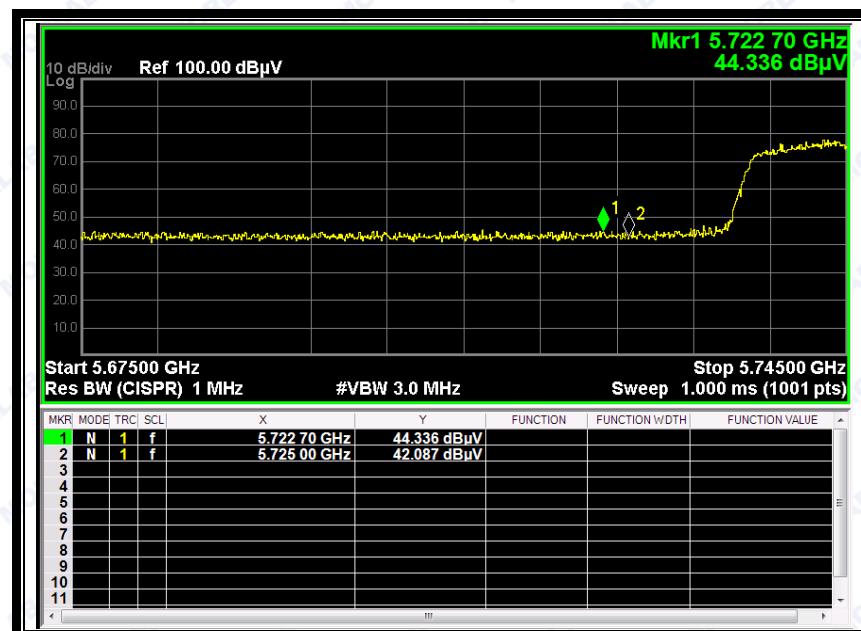
(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 149

Channel	Frequency (MHz)	Antenna	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		Horiz./ Vert.						
149	5722.70	Horizontal	44.34	-50.65	32.11	25.80	78.2	Pass
149	5722.70	Vertical	34.23	-50.65	32.11	15.69	78.2	Pass



REPORT No.: SZ16030122W04



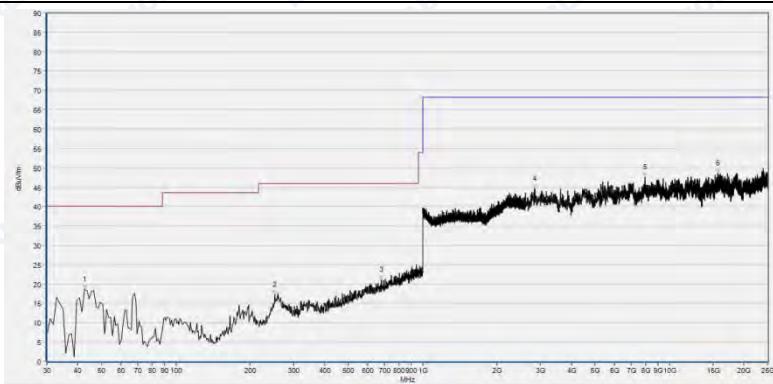
(Channel = 149 Horizontal @ 802.11n)



(Channel = 149 Vertical @ 802.11n)

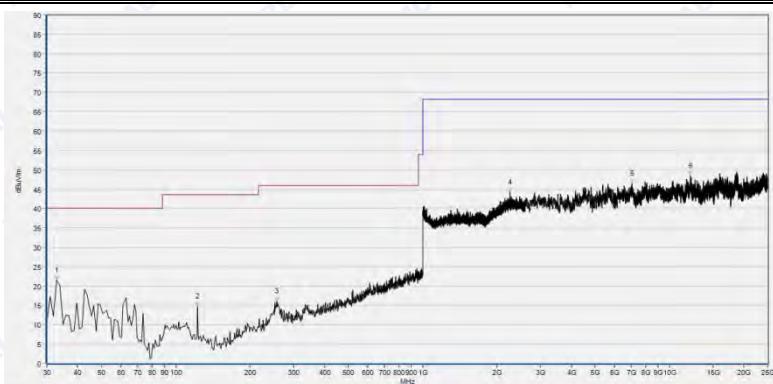


REPORT No.: SZ16030122W04



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
42.623	18.58	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
251.381	17.31	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
677.638	21.04	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2837.487	44.54	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
7932.266	47.66	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
15666.293	48.65	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
32.913	21.42	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
122.242	14.71	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
256.236	16.11	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2258.553	44.25	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
7045.049	46.38	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
12184.637	48.36	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

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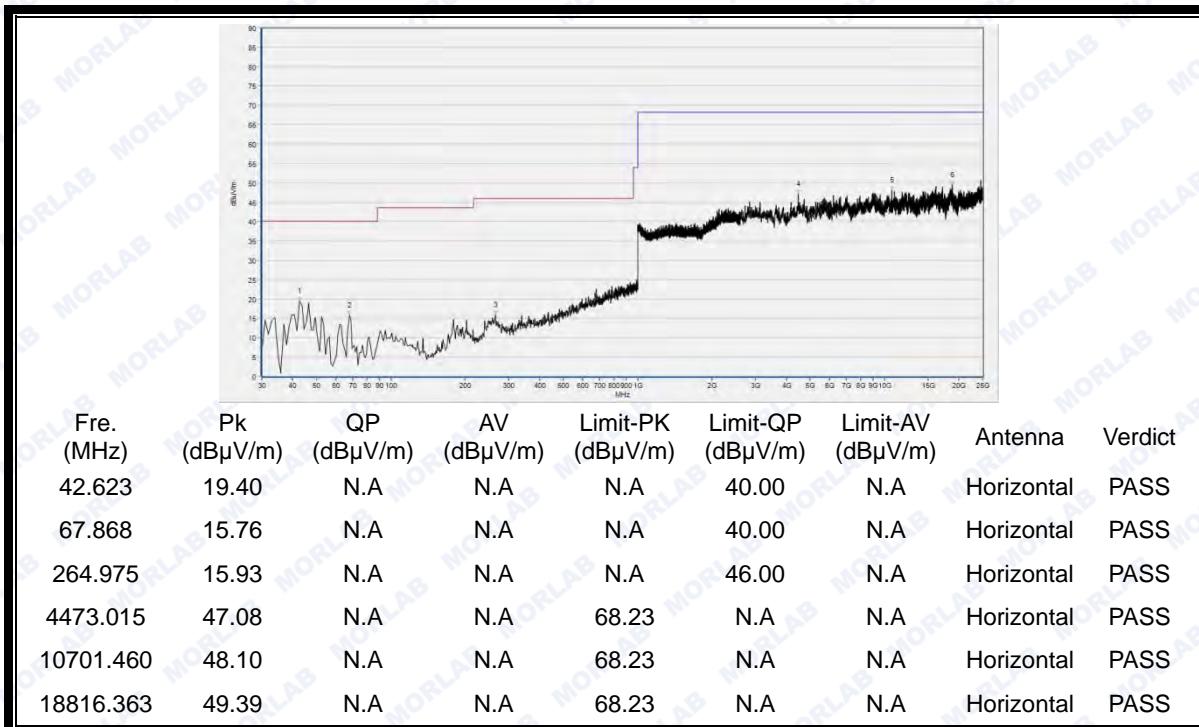
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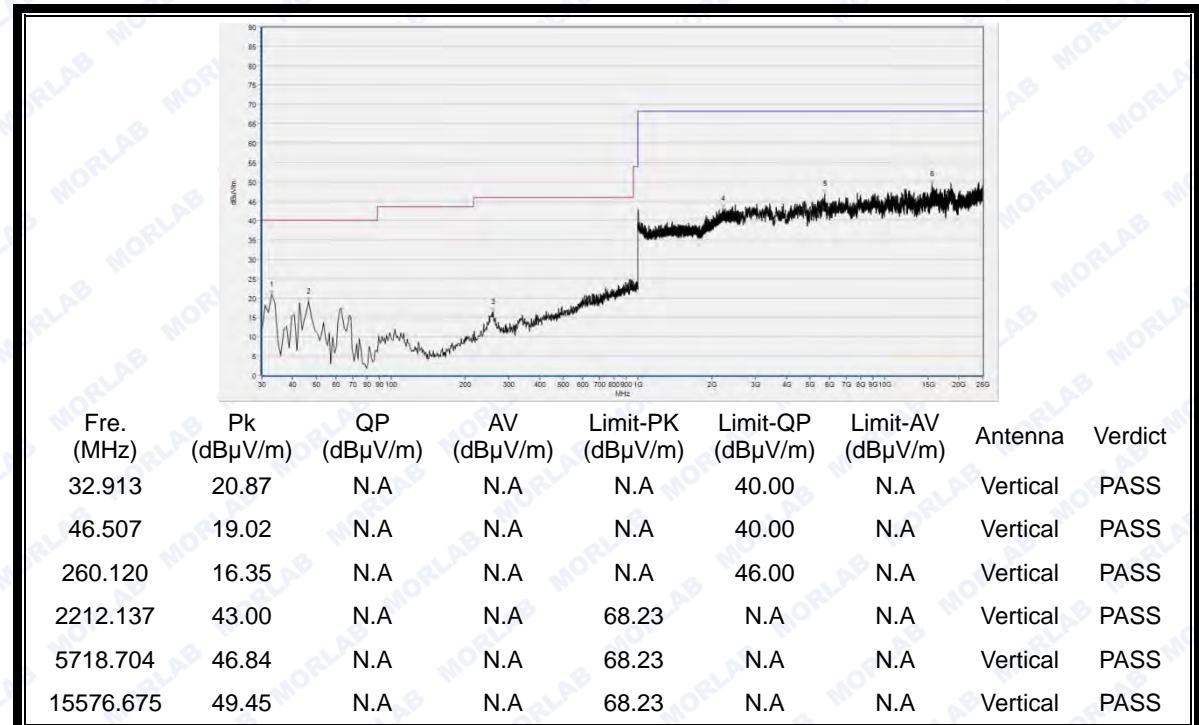


REPORT No.: SZ16030122W04

Plot for Channel = 157



(Antenna Horizontal, 30MHz to 25GHz)



(Antenna Vertical, 30MHz to 25GHz)

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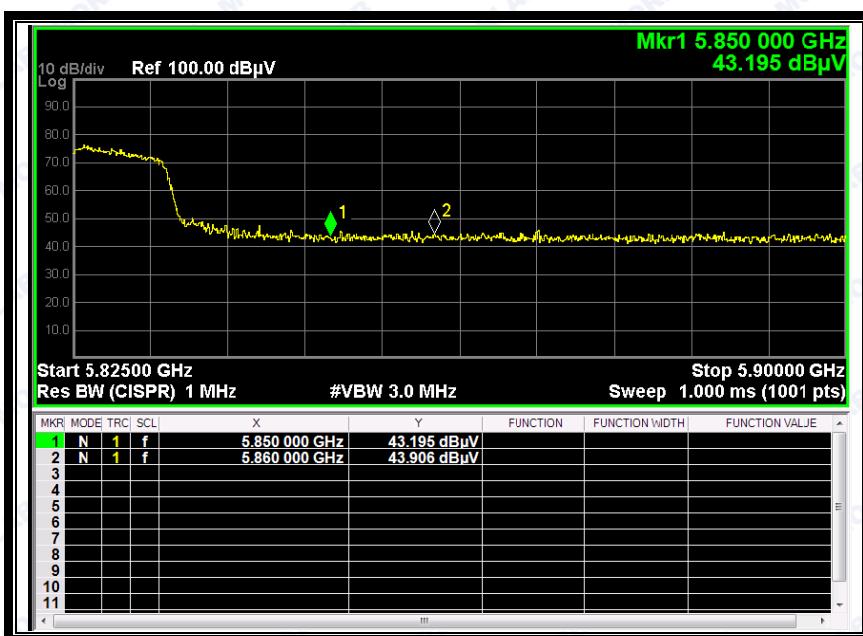
E-mail: service@morlab.cn



REPORT No.: SZ16030122W04

Plot for Channel = 165

Channel	Frequency (MHz)	Antenna	Receiver Reading	A _T (dB)	A _{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		Horiz./ Vert.	U _R (dB μ V)					
165	5850.00	Horizontal	43.20	-50.65	32.11	24.66	78.2	Pass
165	5850.00	Vertical	33.99	-50.65	32.11	15.45	78.2	Pass



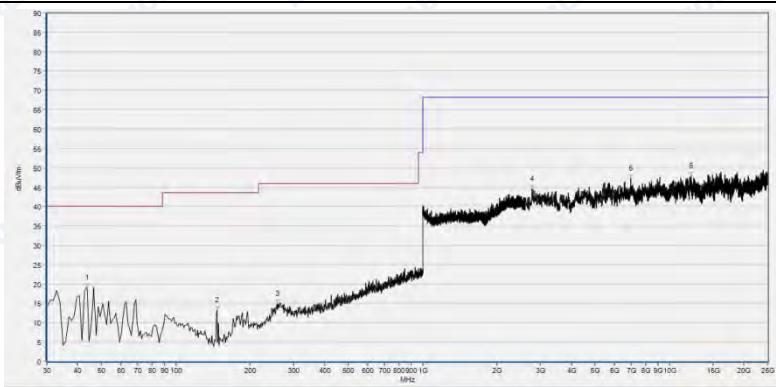
(Channel = 165 Horizontal @ 802.11n)



(Channel = 165 Vertical @ 802.11n)

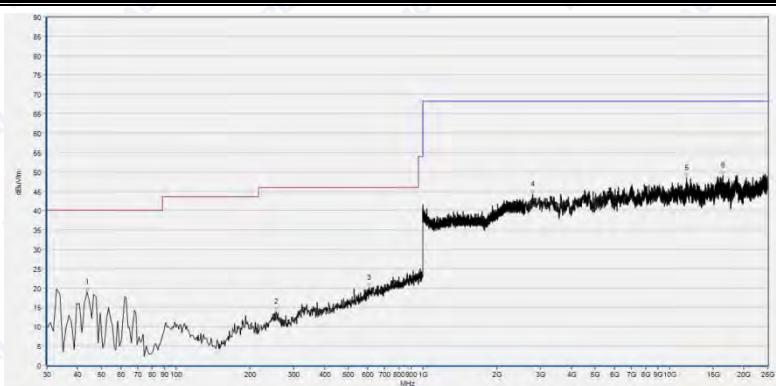


REPORT No.: SZ16030122W04



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
43.594	19.10	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
146.517	13.24	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
258.178	14.85	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2770.274	44.65	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
6950.950	47.18	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
12229.446	47.85	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

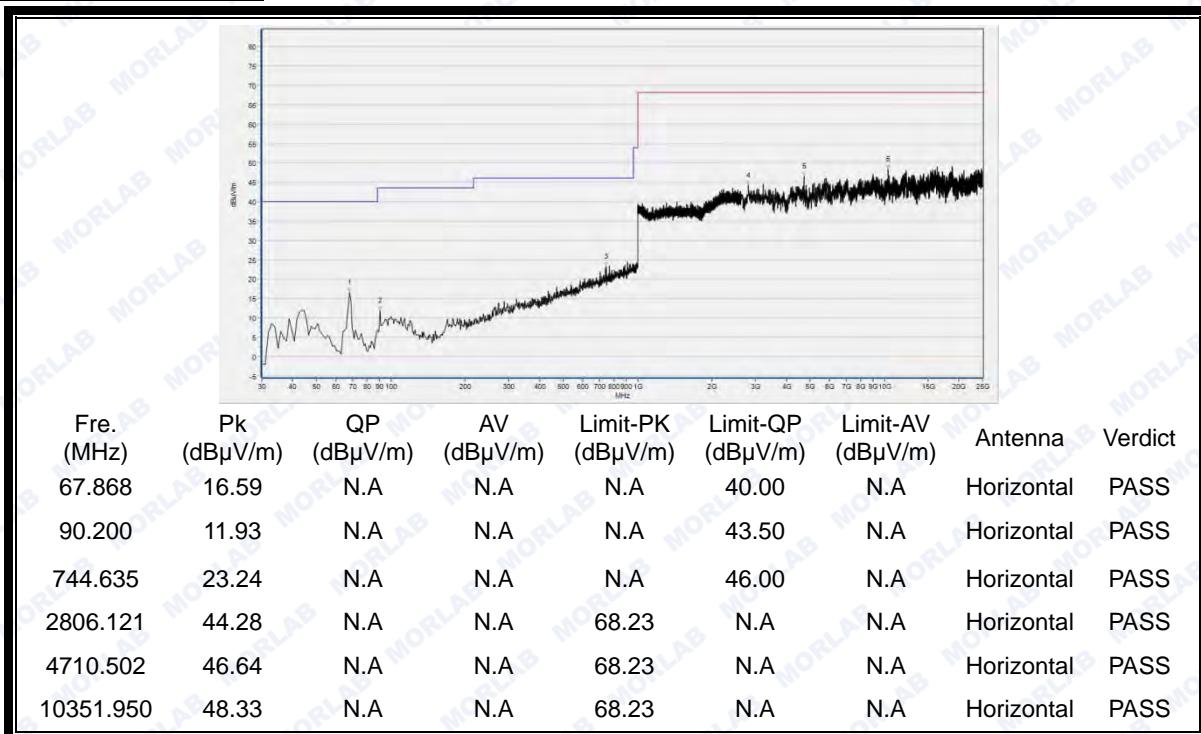


Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
43.594	18.89	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
255.265	13.97	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
606.757	20.05	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2788.198	44.26	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
11723.105	48.39	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
16468.374	49.07	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

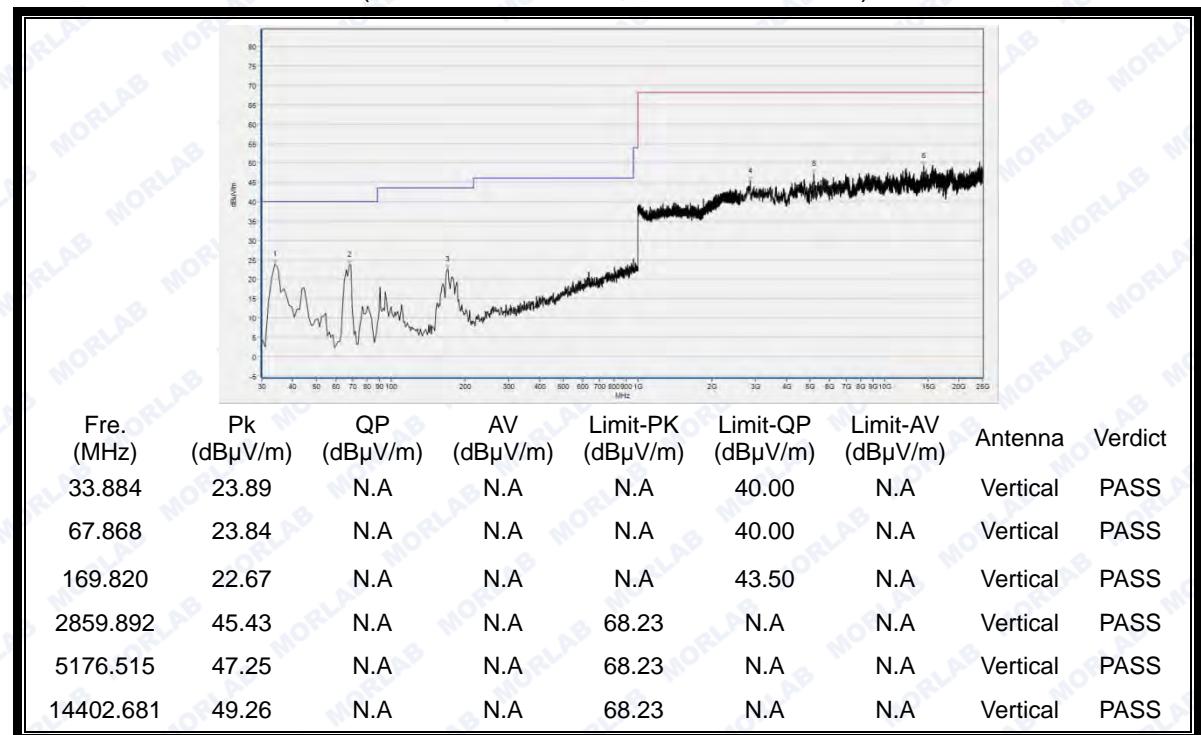
(Antenna Vertical, 30MHz to 25GHz)

**2.8.3.2 802.11ac-20MHz Test mode****B. Test Plots for the Whole Measurement Frequency Range:**

Plots for Channel = 36



(Antenna Horizontal, 30MHz to 25GHz)

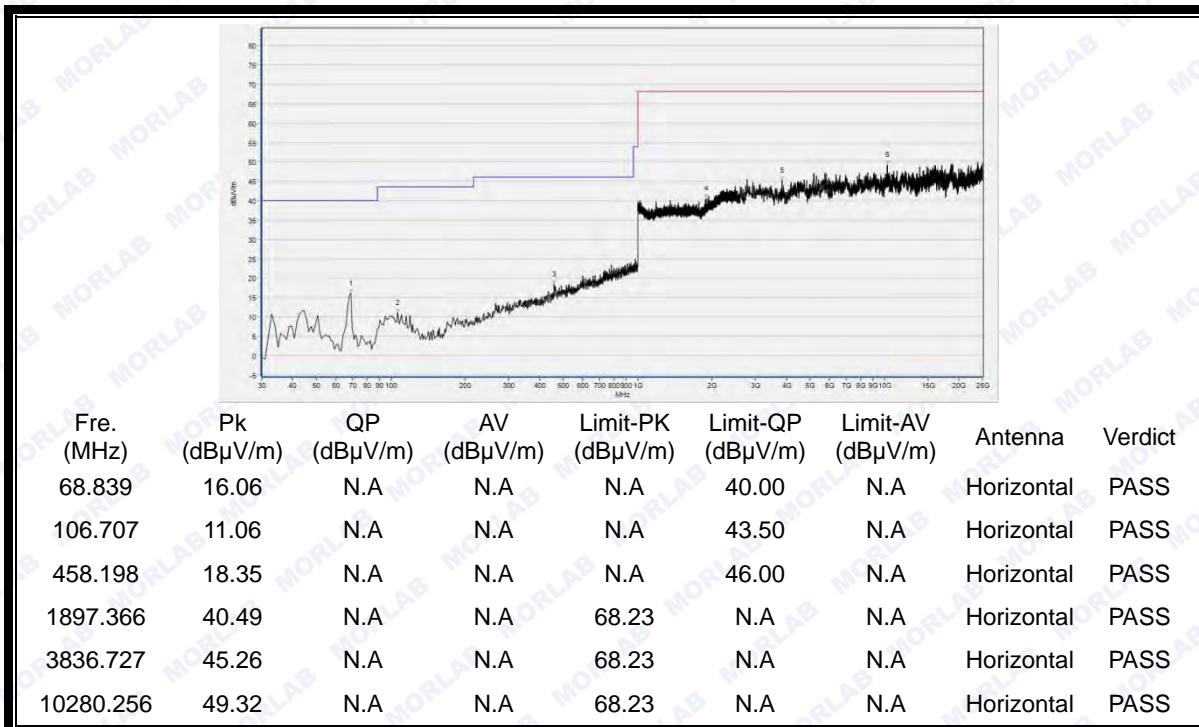


(Antenna Vertical, 30MHz to 25GHz)

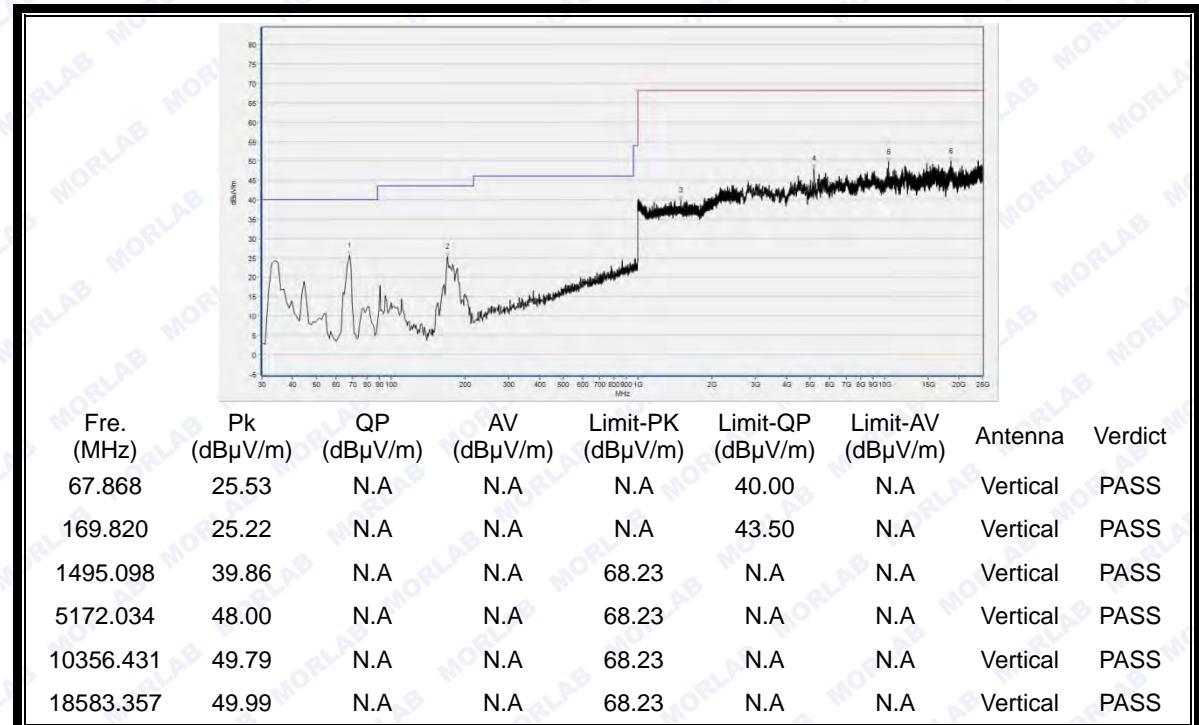


REPORT No.: SZ16030122W04

Plot for Channel = 44



(Antenna Horizontal, 30MHz to 25GHz)



(Antenna Vertical, 30MHz to 25GHz)

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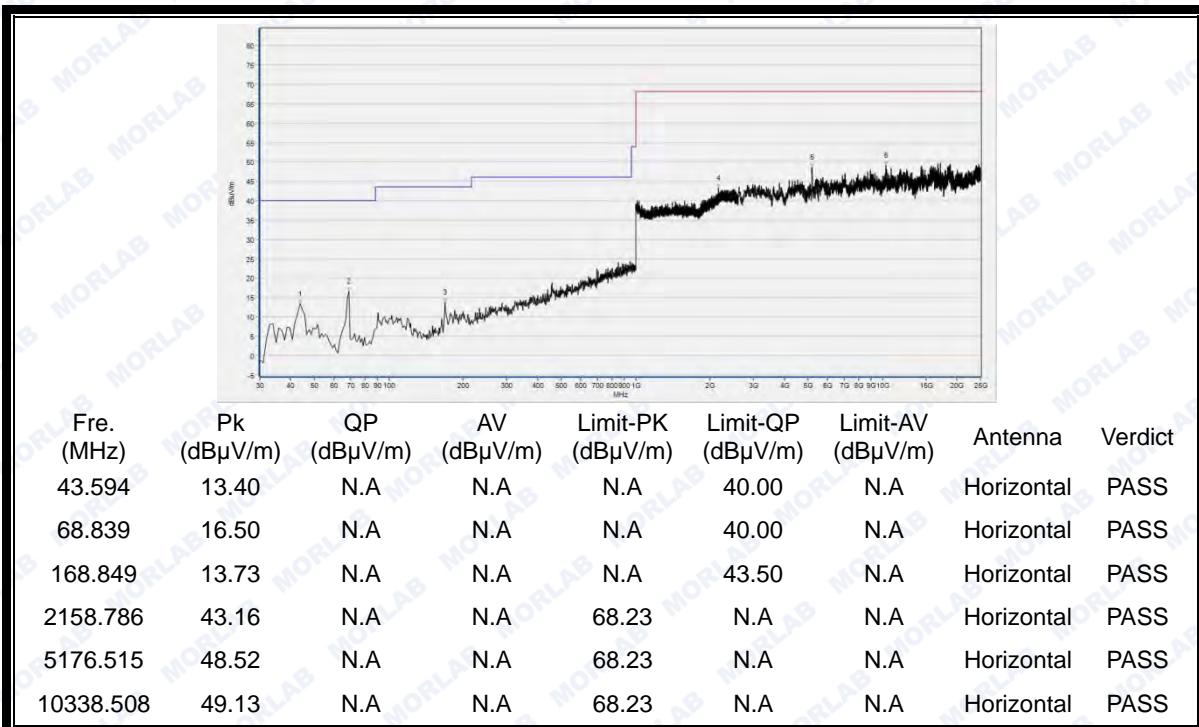
Http://www.morlab.com

E-mail: service@morlab.cn

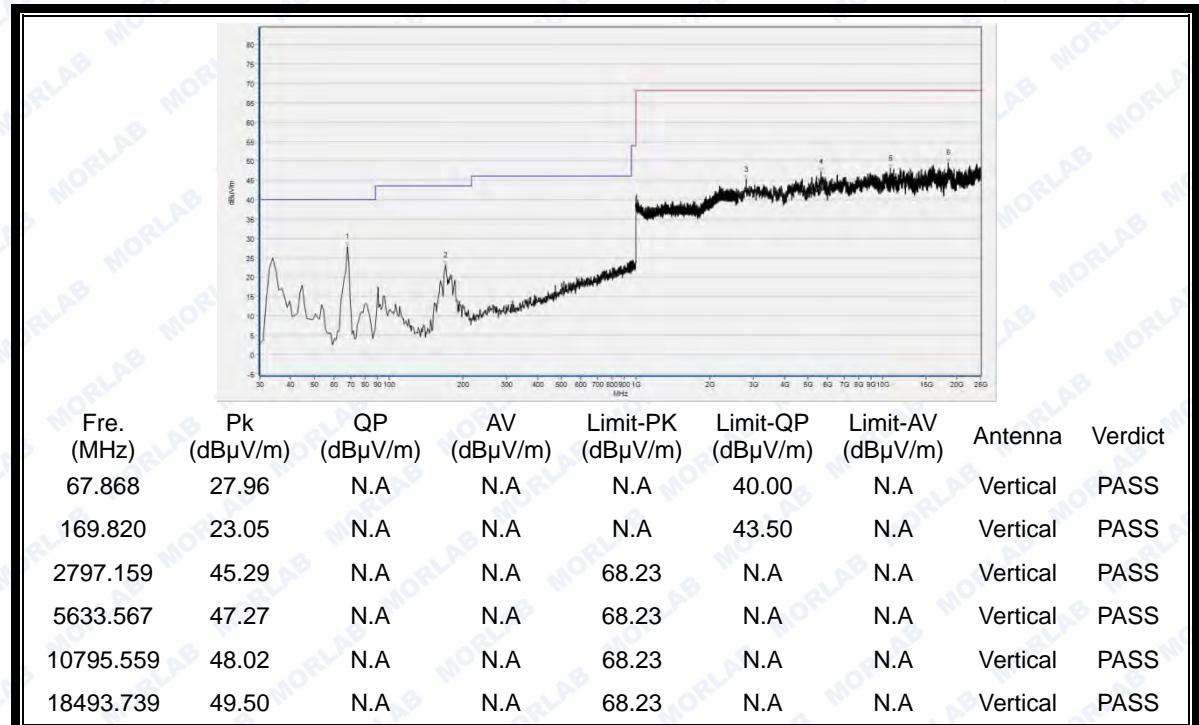


REPORT No.: SZ16030122W04

Plot for Channel = 48



(Antenna Horizontal, 30MHz to 25GHz)



(Antenna Vertical, 30MHz to 25GHz)

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Fax: 86-755-36698525

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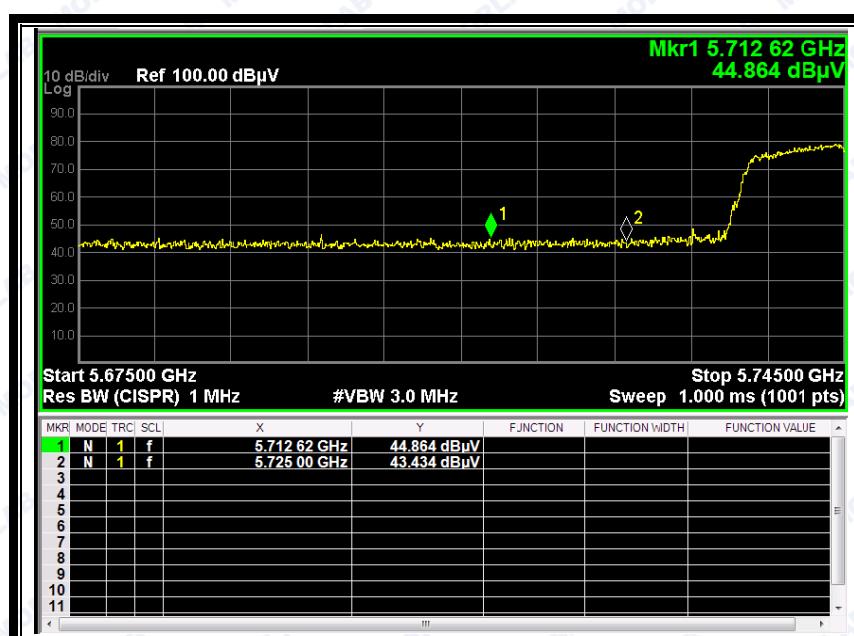
E-mail: service@morlab.cn



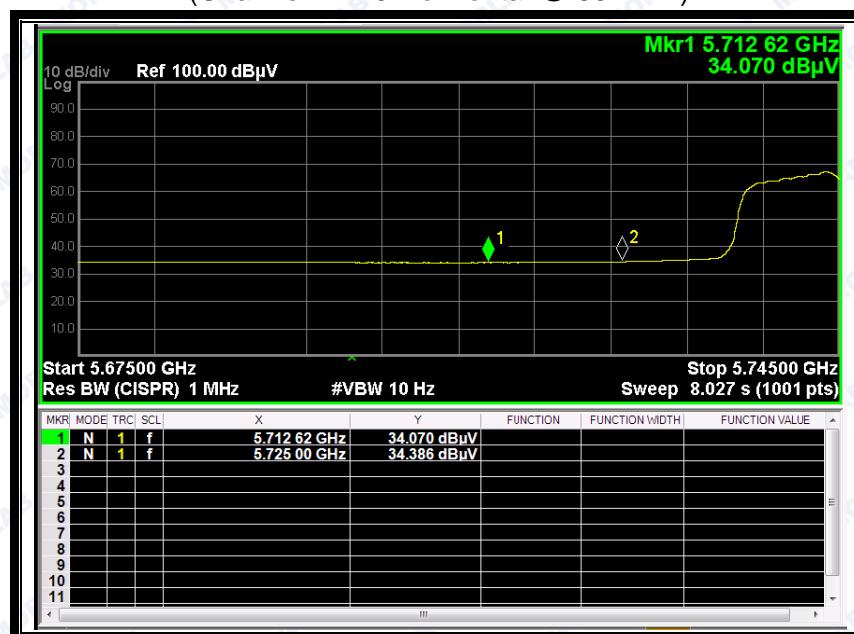
REPORT No.: SZ16030122W04

Plots for Channel = 149

Channel	Frequency (MHz)	Antenna	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		Horiz./ Vert.						
149	5712.62	Horizontal	44.86	-50.65	32.11	26.32	78.2	Pass
149	5712.62	Vertical	34.07	-50.65	32.11	15.53	78.2	Pass



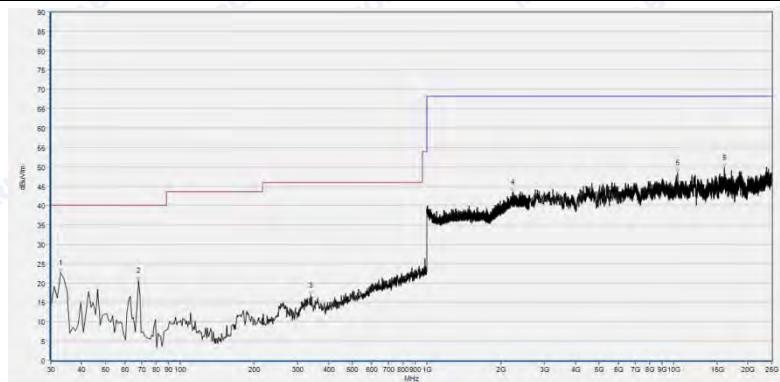
(Channel = 149 Horizontal @ 802.11n)



(Channel = 149 Vertical @ 802.11n)

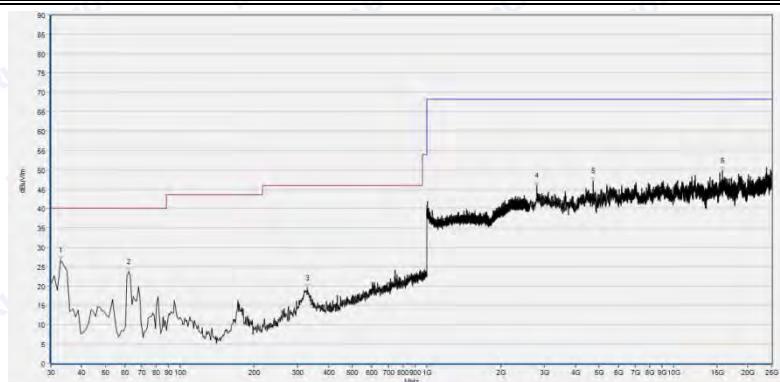


REPORT No.: SZ16030122W04



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
32.913	22.61	N.A.	N.A.	N.A.	40.00	N.A.	Horizontal	PASS
67.868	20.60	N.A.	N.A.	N.A.	40.00	N.A.	Horizontal	PASS
338.769	16.68	N.A.	N.A.	N.A.	46.00	N.A.	Horizontal	PASS
2226.009	43.36	N.A.	N.A.	68.23	N.A.	N.A.	Horizontal	PASS
10414.683	48.44	N.A.	N.A.	68.23	N.A.	N.A.	Horizontal	PASS
16091.978	49.80	N.A.	N.A.	68.23	N.A.	N.A.	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
32.913	26.64	N.A.	N.A.	N.A.	40.00	N.A.	Vertical	PASS
62.042	23.56	N.A.	N.A.	N.A.	40.00	N.A.	Vertical	PASS
328.088	19.39	N.A.	N.A.	N.A.	46.00	N.A.	Vertical	PASS
2792.679	45.94	N.A.	N.A.	68.23	N.A.	N.A.	Vertical	PASS
4728.426	47.11	N.A.	N.A.	68.23	N.A.	N.A.	Vertical	PASS
15751.430	49.71	N.A.	N.A.	68.23	N.A.	N.A.	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

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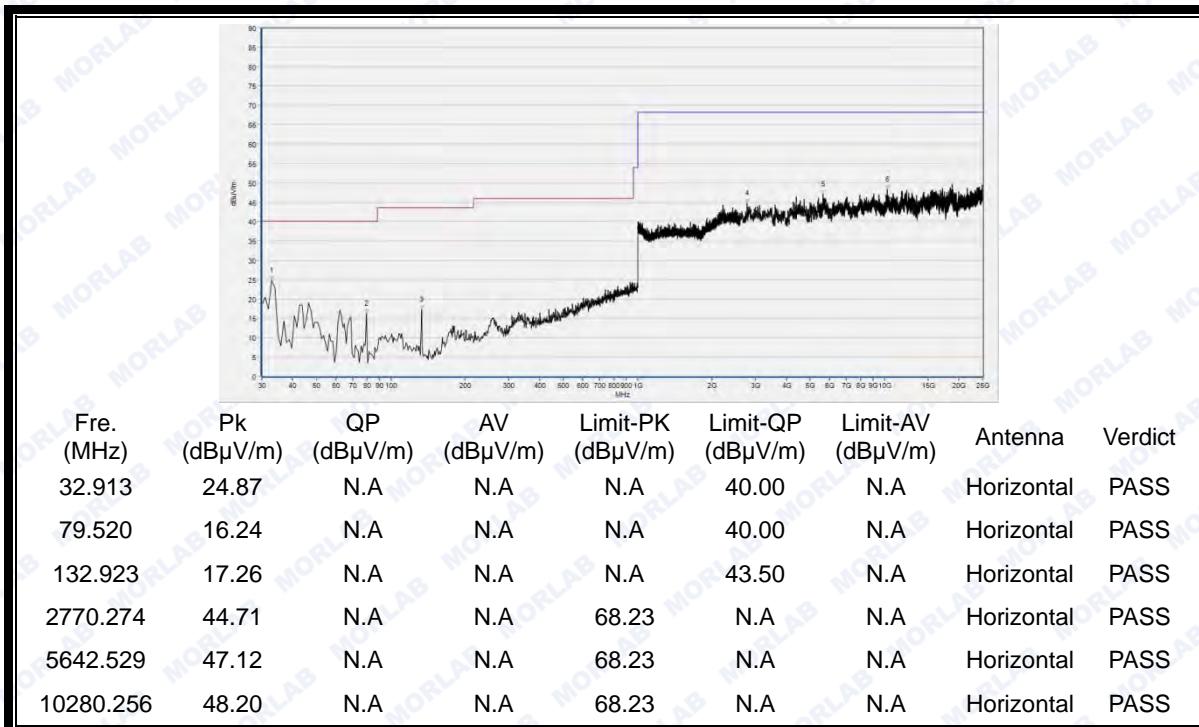
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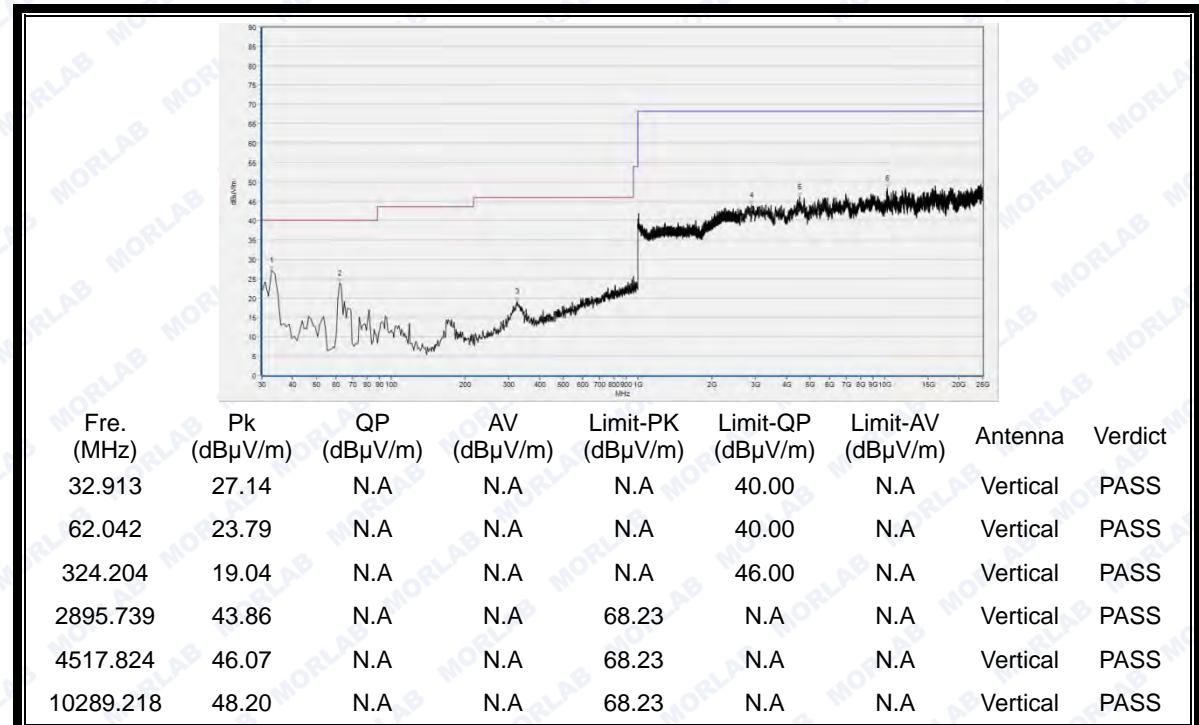


REPORT No.: SZ16030122W04

Plot for Channel = 157



(Antenna Horizontal, 30MHz to 25GHz)



(Antenna Vertical, 30MHz to 25GHz)

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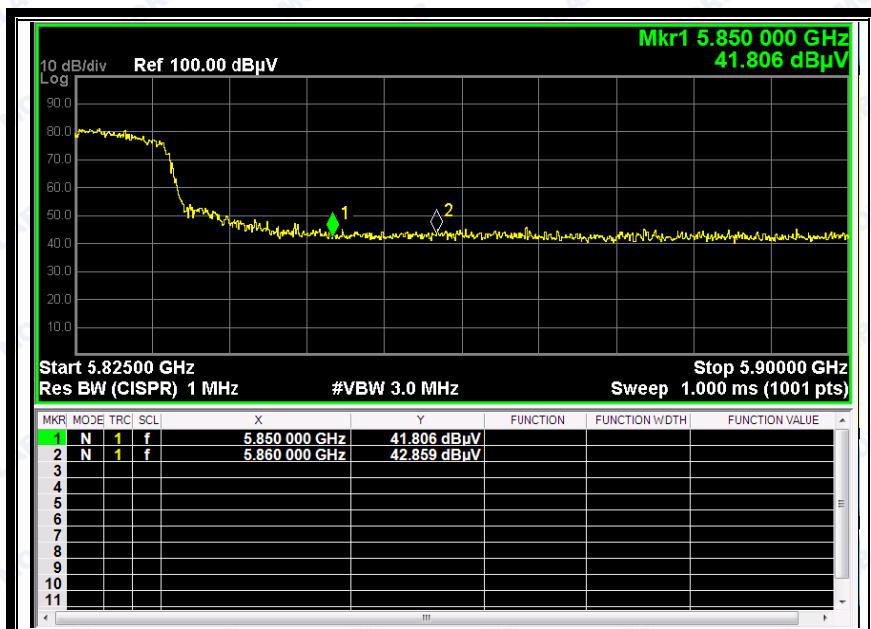
E-mail: service@morlab.cn



REPORT No.: SZ16030122W04

Plot for Channel = 165

Channel	Frequency (MHz)	Antenna	Receiver Reading	A _T (dB)	A _{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		Horiz./ Vert.	U _R (dB μ V)					
165	5850.00	Horizontal	41.81	-50.65	32.11	23.27	78.2	Pass
165	5850.00	Vertical	34.18	-50.65	32.11	15.64	78.2	Pass



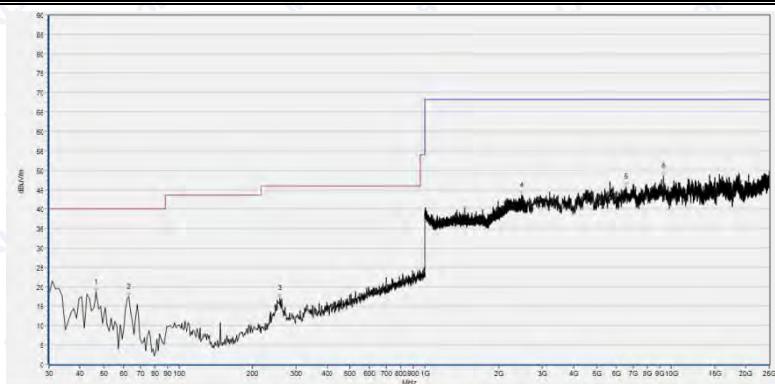
(Channel = 165 Horizontal @ 802.11n)



REPORT No.: SZ16030122W04

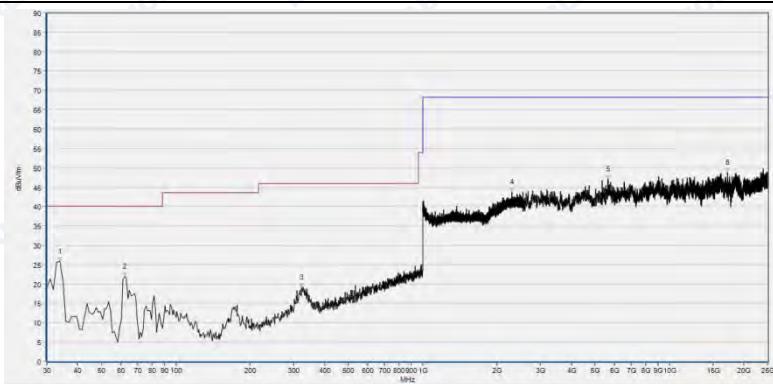


(Channel = 165 Vertical @ 802.11n)



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
46.507	18.65	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
63.013	17.39	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
258.178	17.11	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2469.823	43.56	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
6538.708	45.79	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
9325.825	48.42	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



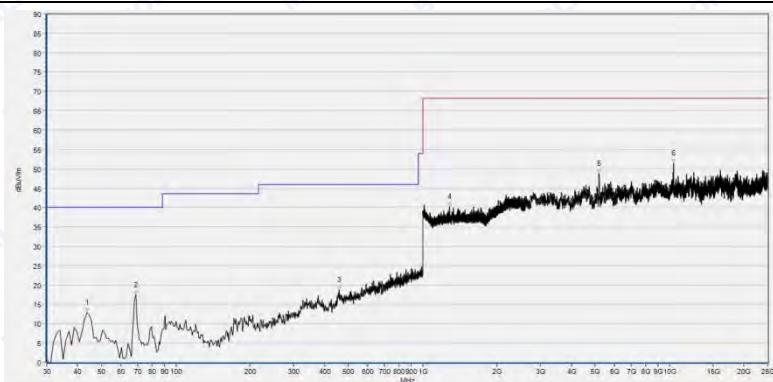
Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
33.884	25.80	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
62.042	22.00	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
323.233	19.18	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2298.033	43.75	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5642.529	47.06	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
17127.065	48.77	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

2.8.3.3 802.11a-20MHz Test mode

A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 36

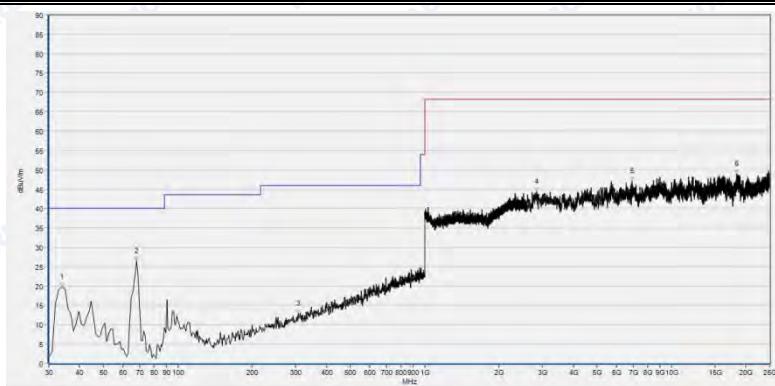


Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
43.594	12.94	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
68.839	17.43	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
459.169	18.73	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1287.029	40.17	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5185.477	48.84	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
10360.912	51.48	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)

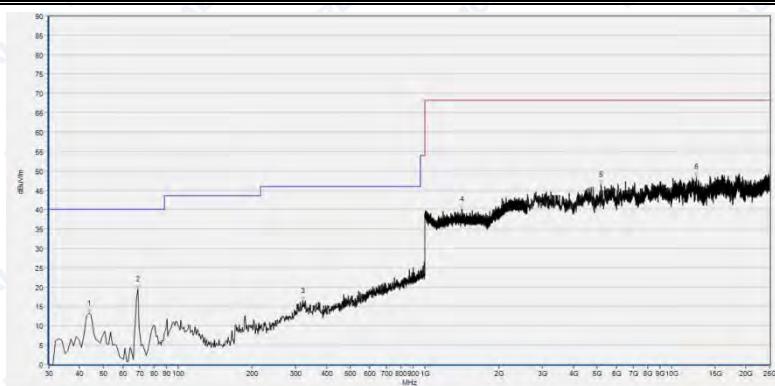


REPORT No.: SZ16030122W04



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
33.884	19.84	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
67.868	26.43	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
306.727	12.98	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2846.449	44.33	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
6915.103	47.10	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
18305.541	48.96	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

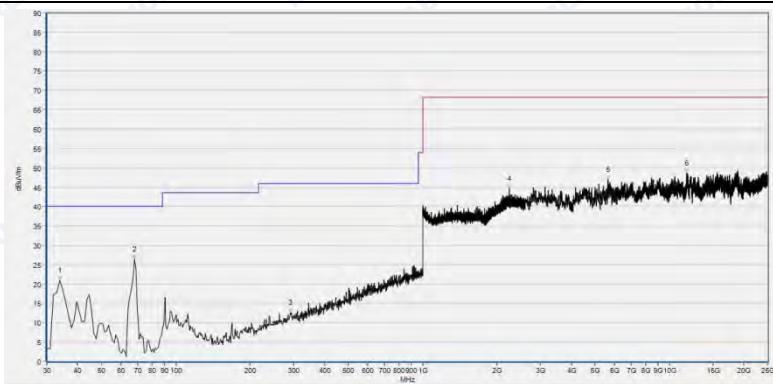
Plot for Channel = 44

Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
43.594	13.20	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
68.839	19.51	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
320.320	16.36	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1412.404	40.11	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5185.477	46.41	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
12614.803	48.37	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



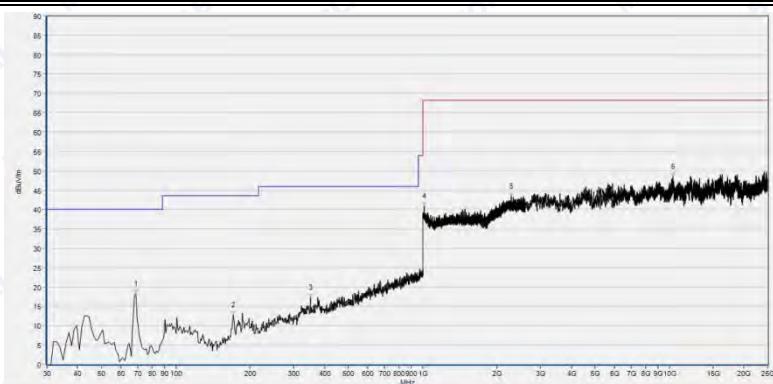
REPORT No.: SZ16030122W04



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
33.884	20.96	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
67.868	26.39	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
290.220	12.51	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2240.947	44.51	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
5638.048	46.89	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
11705.181	48.53	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 48

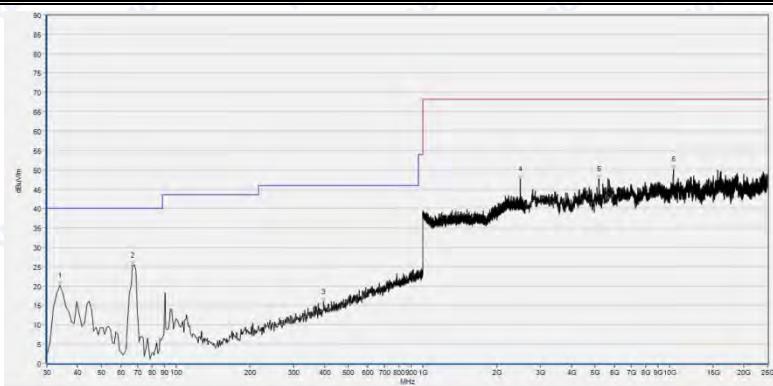


Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
68.839	18.32	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
170.791	12.68	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
350.420	17.33	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
1016.005	40.93	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
2277.759	43.39	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
10338.508	48.40	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



REPORT No.: SZ16030122W04



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
33.884	20.16	N.A.	N.A.	N.A.	40.00	N.A.	Vertical	PASS
66.897	25.29	N.A.	N.A.	N.A.	40.00	N.A.	Vertical	PASS
397.027	16.00	N.A.	N.A.	N.A.	46.00	N.A.	Vertical	PASS
2479.960	47.60	N.A.	N.A.	68.23	N.A.	N.A.	Vertical	PASS
5176.515	47.66	N.A.	N.A.	68.23	N.A.	N.A.	Vertical	PASS
10356.431	50.15	N.A.	N.A.	68.23	N.A.	N.A.	Vertical	PASS

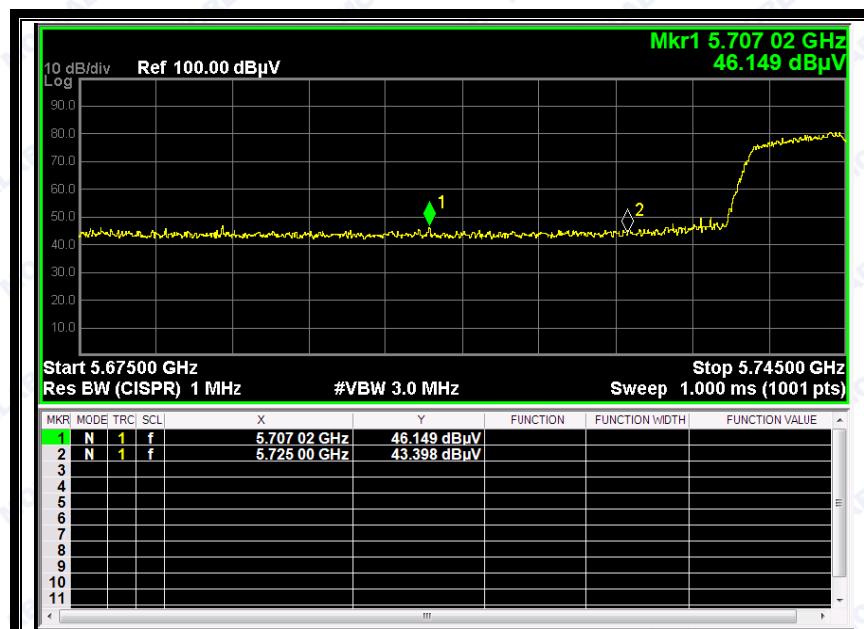
(Antenna Vertical, 30MHz to 25GHz)

Plots for Channel = 149

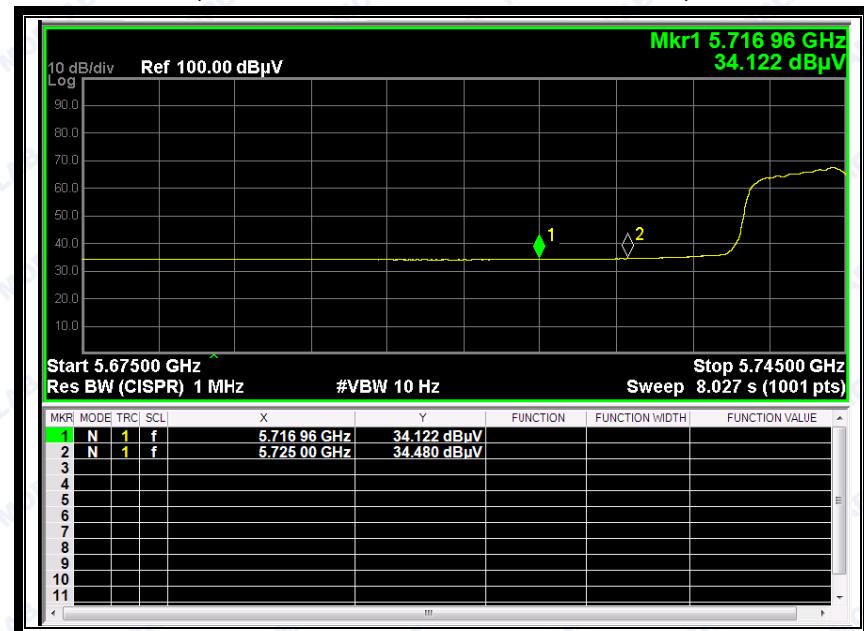
Channel	Frequency (MHz)	Antenna	Receiver	A _T (dB)	A _{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
			Reading U _R (dBuV)					
149	5707.02	Horizontal	46.15	-50.65	32.11	27.61	78.2	Pass
149	5716.96	Vertical	34.12	-50.65	32.11	15.58	78.2	Pass



REPORT No.: SZ16030122W04



(Channel = 149 Horizontal @ 802.11a)



(Channel = 149 Vertical @ 802.11a)

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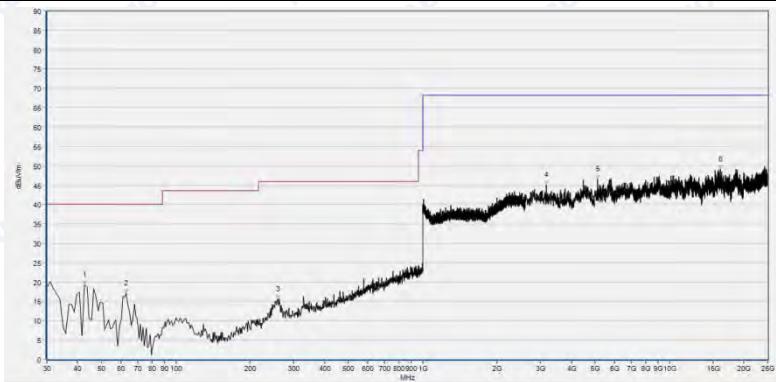
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Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China

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REPORT No.: SZ16030122W04



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
42.623	19.28	N.A.	N.A.	N.A.	40.00	N.A.	Horizontal	PASS
63.013	17.01	N.A.	N.A.	N.A.	40.00	N.A.	Horizontal	PASS
259.149	15.56	N.A.	N.A.	N.A.	46.00	N.A.	Horizontal	PASS
3169.074	45.06	N.A.	N.A.	68.23	N.A.	N.A.	Horizontal	PASS
5113.783	46.53	N.A.	N.A.	68.23	N.A.	N.A.	Horizontal	PASS
16100.940	49.04	N.A.	N.A.	68.23	N.A.	N.A.	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
63.013	23.01	N.A.	N.A.	N.A.	40.00	N.A.	Vertical	PASS
174.675	15.46	N.A.	N.A.	N.A.	43.50	N.A.	Vertical	PASS
338.769	19.10	N.A.	N.A.	N.A.	46.00	N.A.	Vertical	PASS
2309.770	43.75	N.A.	N.A.	68.23	N.A.	N.A.	Vertical	PASS
5696.299	46.86	N.A.	N.A.	68.23	N.A.	N.A.	Vertical	PASS
14653.611	52.97	N.A.	N.A.	68.23	N.A.	N.A.	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

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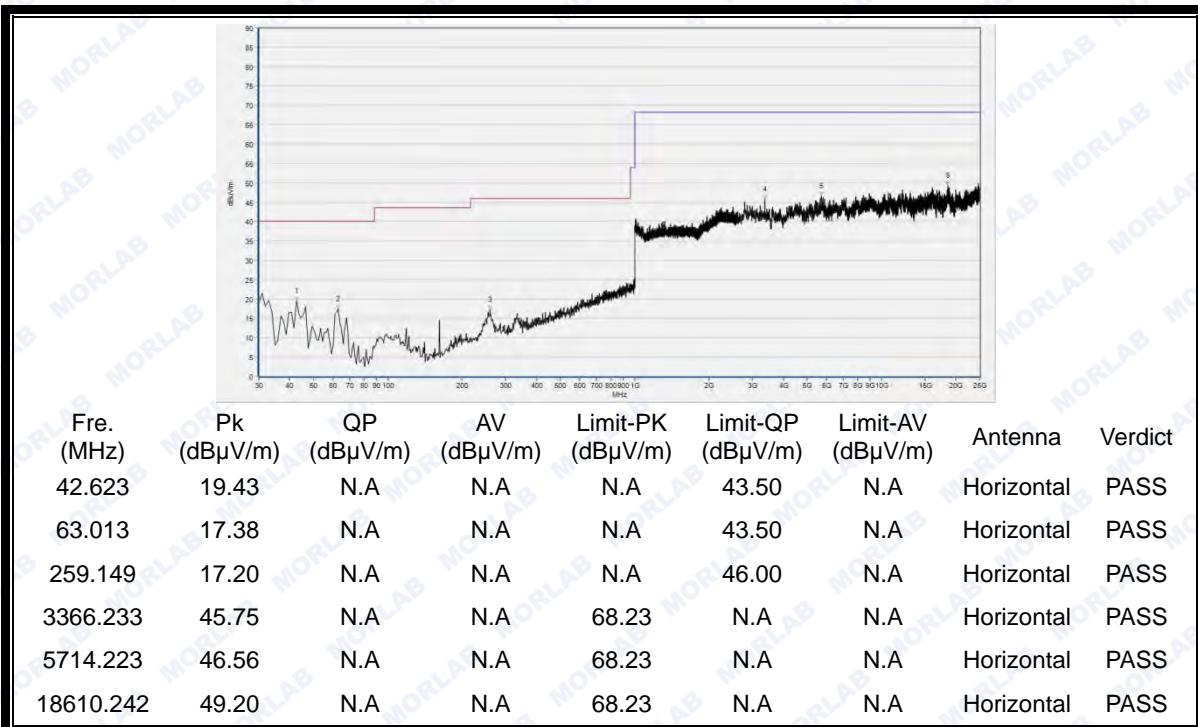
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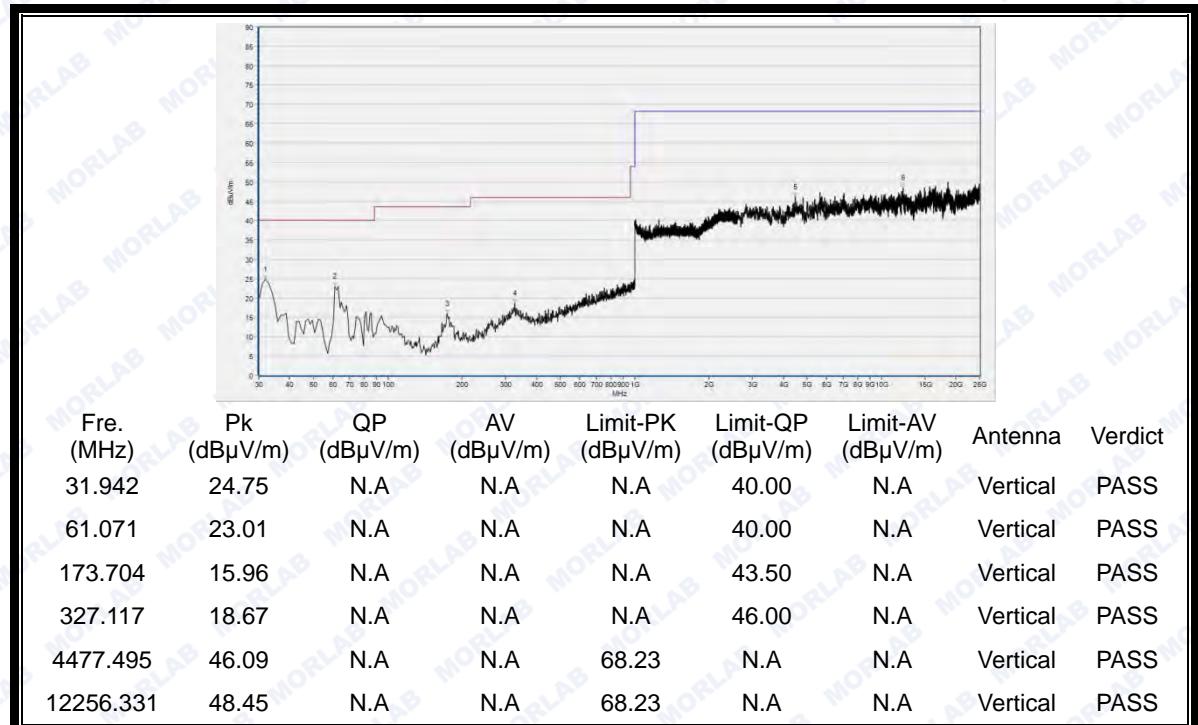


REPORT No.: SZ16030122W04

Plot for Channel = 157



(Antenna Horizontal, 30MHz to 25GHz)



(Antenna Vertical, 30MHz to 25GHz)

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REPORT No.: SZ16030122W04

Plot for Channel = 165

Channel	Frequency (MHz)	Antenna	Receiver Reading	A _T (dB)	A _{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		Horiz./ Vert.	U _R (dB μ V)					
165	5850.00	Horizontal	41.47	-50.65	32.11	22.93	78.2	Pass
165	5850.00	Vertical	34.00	-50.65	32.11	15.46	78.2	Pass



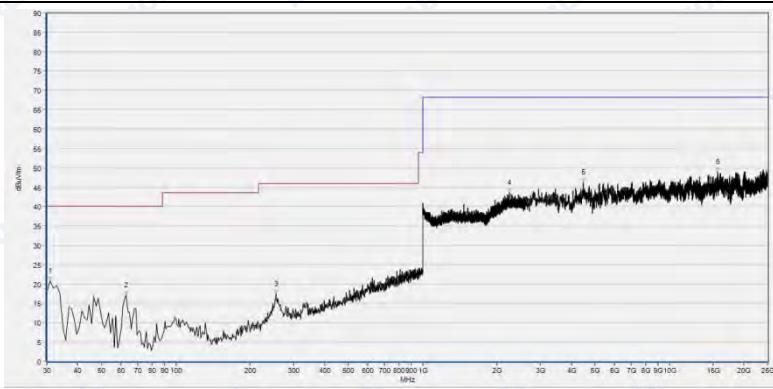
(Channel = 165 Horizontal @ 802.11a)



(Channel = 165 Vertical @ 802.11a)

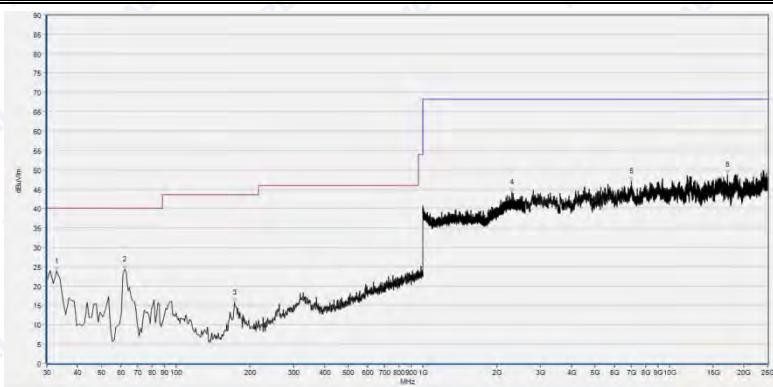


REPORT No.: SZ16030122W04



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
30.971	20.71	N.A.	N.A.	N.A.	40.00	N.A.	Horizontal	PASS
63.013	17.14	N.A.	N.A.	N.A.	40.00	N.A.	Horizontal	PASS
254.294	17.41	N.A.	N.A.	N.A.	46.00	N.A.	Horizontal	PASS
2239.880	43.53	N.A.	N.A.	68.23	N.A.	N.A.	Horizontal	PASS
4481.976	46.31	N.A.	N.A.	68.23	N.A.	N.A.	Horizontal	PASS
15693.179	48.97	N.A.	N.A.	68.23	N.A.	N.A.	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
32.913	23.77	N.A.	N.A.	N.A.	40.00	N.A.	Vertical	PASS
62.042	24.37	N.A.	N.A.	N.A.	40.00	N.A.	Vertical	PASS
172.733	15.72	N.A.	N.A.	N.A.	43.50	N.A.	Vertical	PASS
2297.499	44.23	N.A.	N.A.	68.23	N.A.	N.A.	Vertical	PASS
7009.202	47.02	N.A.	N.A.	68.23	N.A.	N.A.	Vertical	PASS
17144.989	48.78	N.A.	N.A.	68.23	N.A.	N.A.	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

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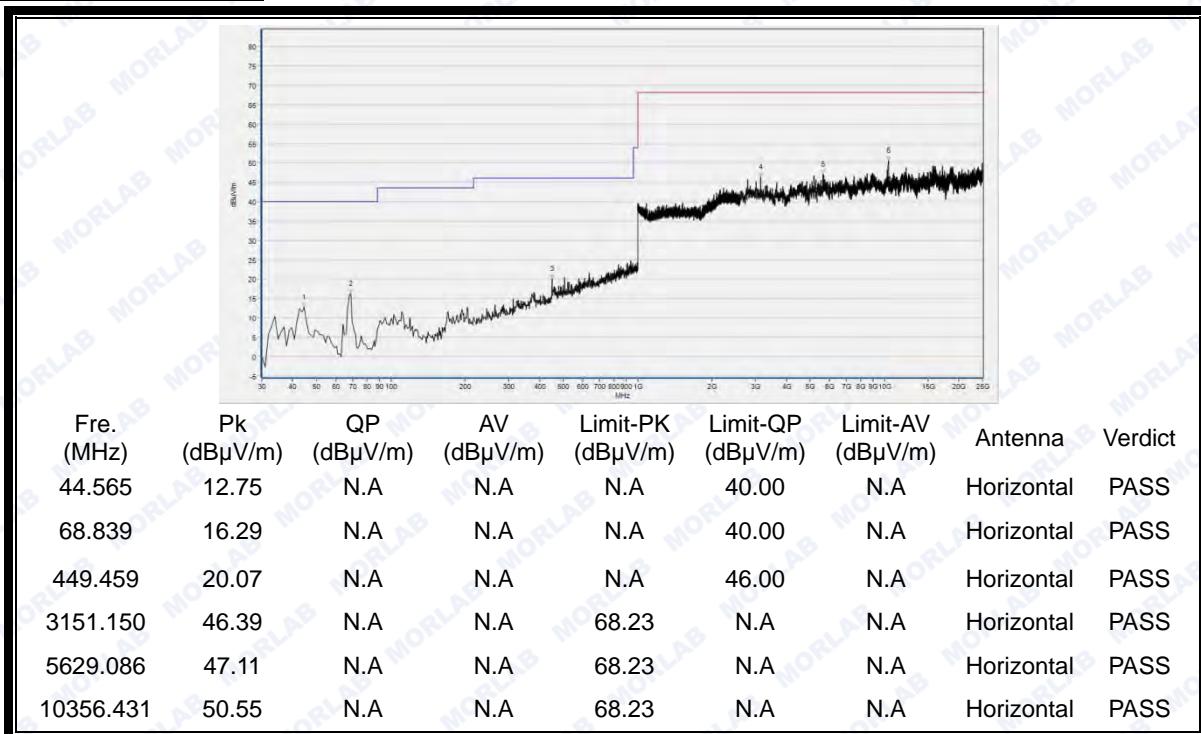
Fax: 86-755-36698525

Http://www.morlab.com

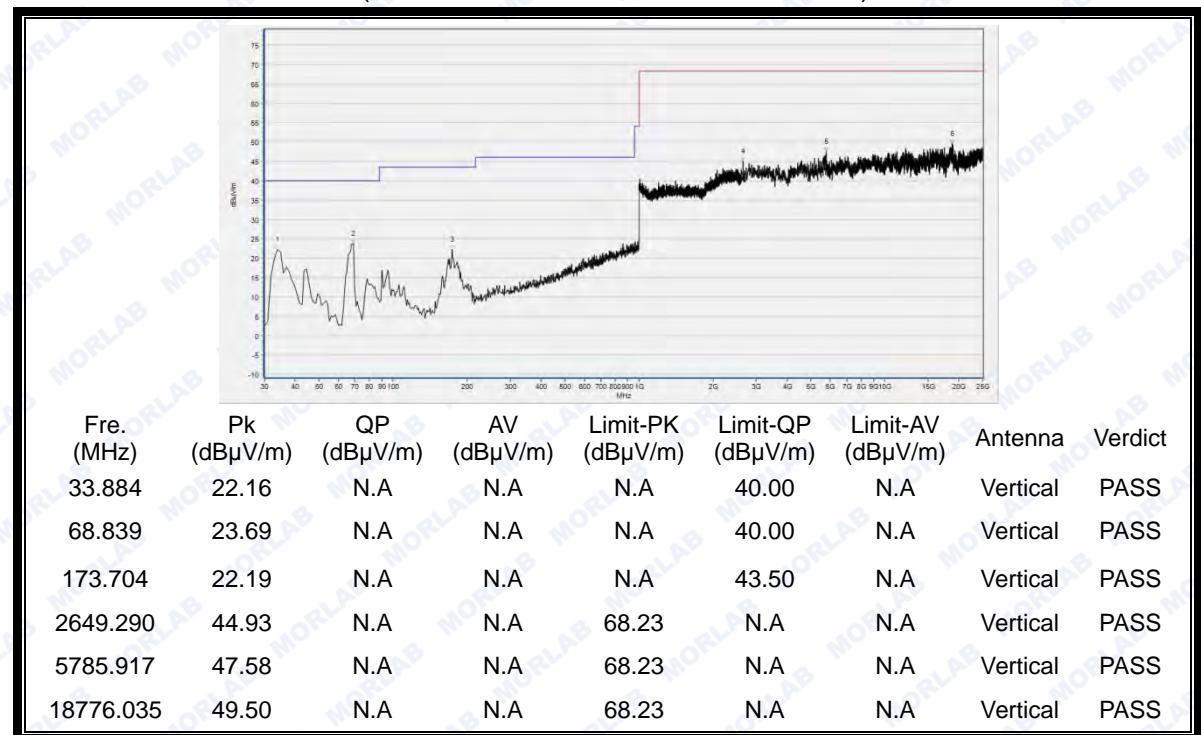
E-mail: service@morlab.cn

**2.8.3.4 802.11n-40MHz Test mode****A. Test Plots for the Whole Measurement Frequency Range:**

Plots for Channel = 38



(Antenna Horizontal, 30MHz to 40GHz)

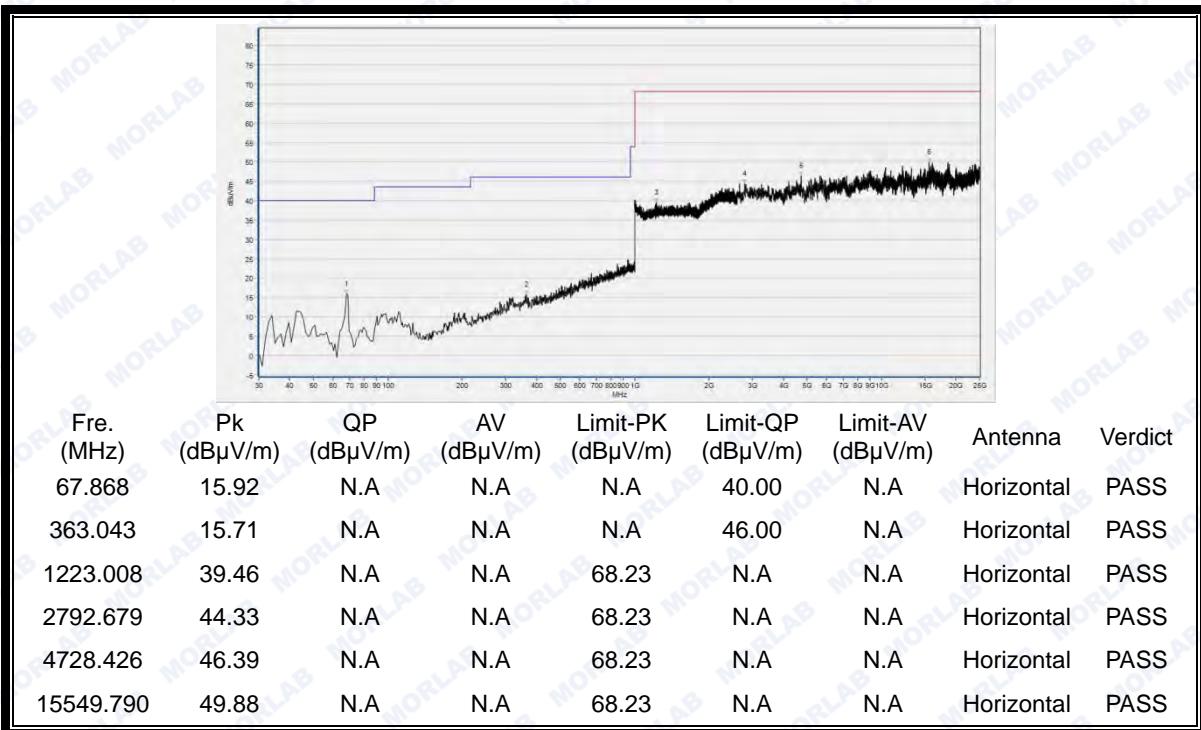


(Antenna Vertical, 30MHz to 40GHz)

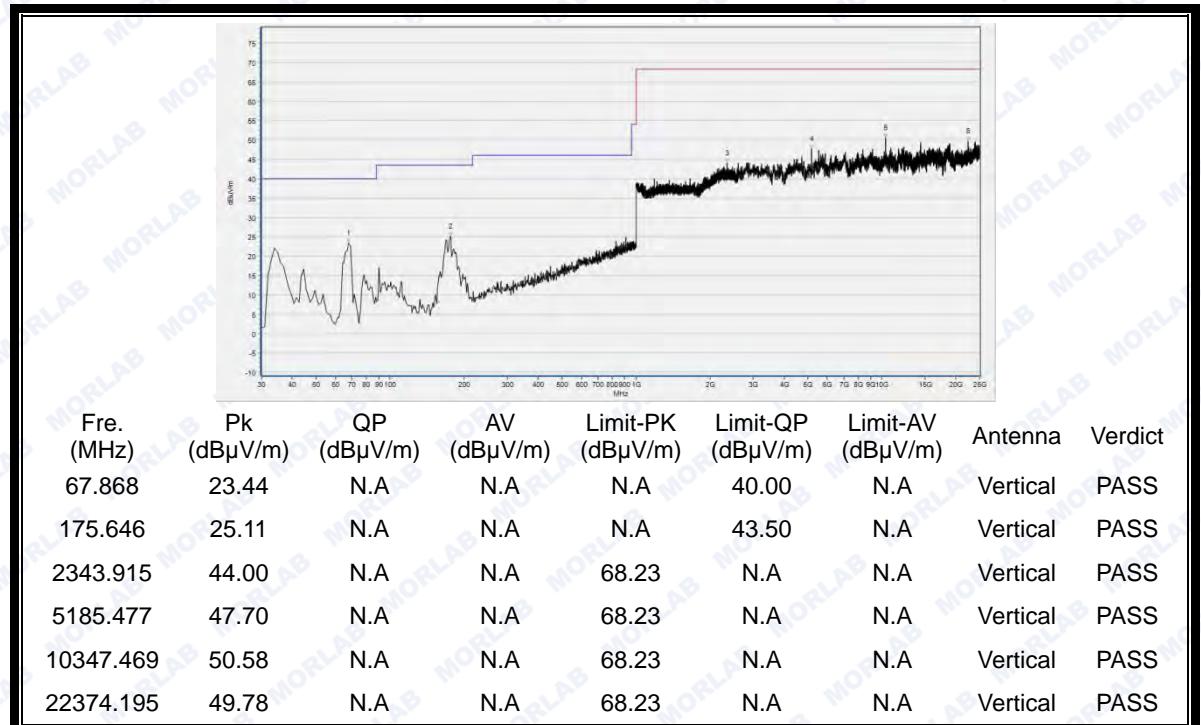


REPORT No.: SZ16030122W04

Plot for Channel = 46



(Antenna Horizontal, 30MHz to 25GHz)



(Antenna Vertical, 30MHz to 40GHz)

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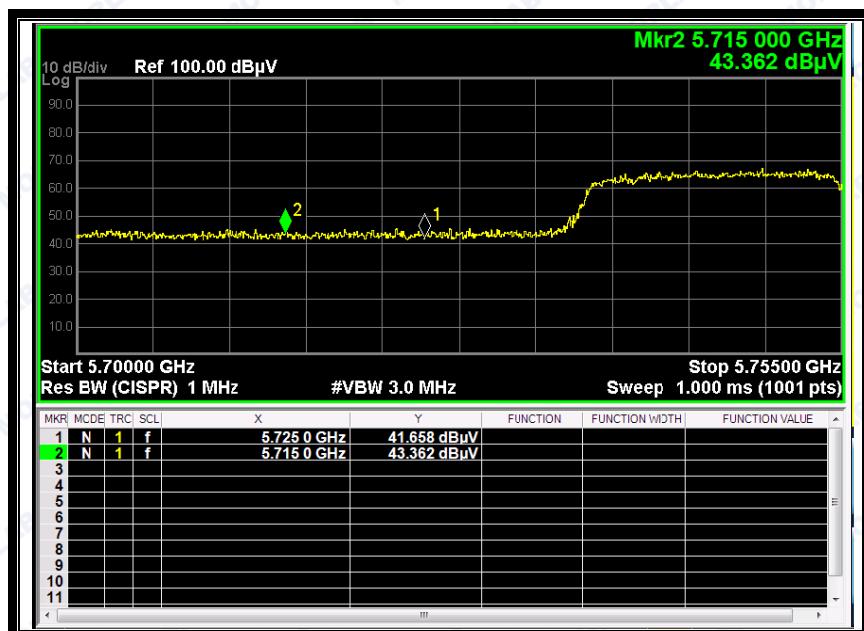
E-mail: service@morlab.cn



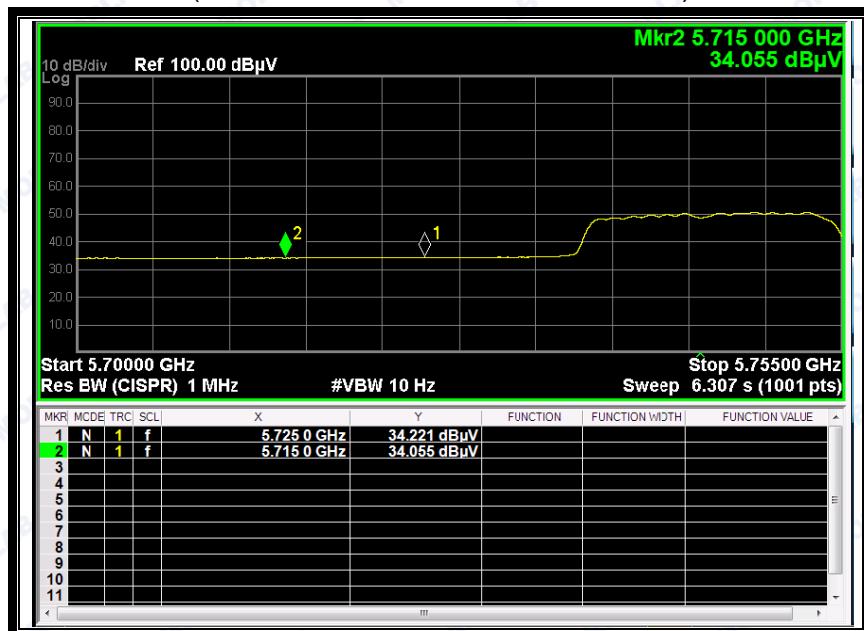
REPORT No.: SZ16030122W04

Plot for Channel = 151

Channel	Frequency (MHz)	Antenna	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		Horiz./ Vert.						
151	5715.00	Horizontal	43.36	-50.65	32.11	24.82	78.2	Pass
151	5715.00	Vertical	34.06	-50.65	32.11	15.52	78.2	Pass



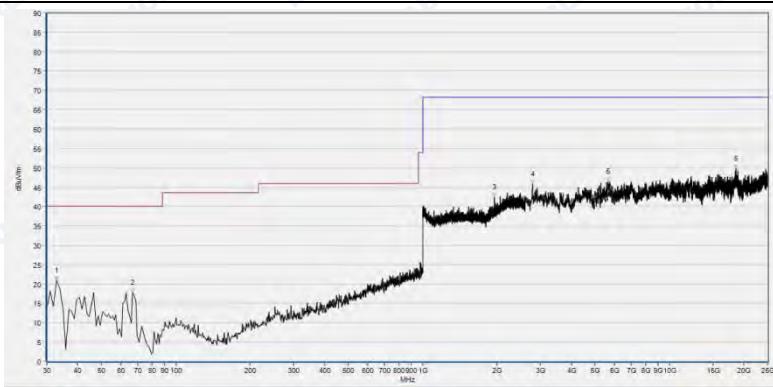
(Channel = 151 Horizontal @ 802.11n)



(Channel = 151 Vertical @ 802.11n)

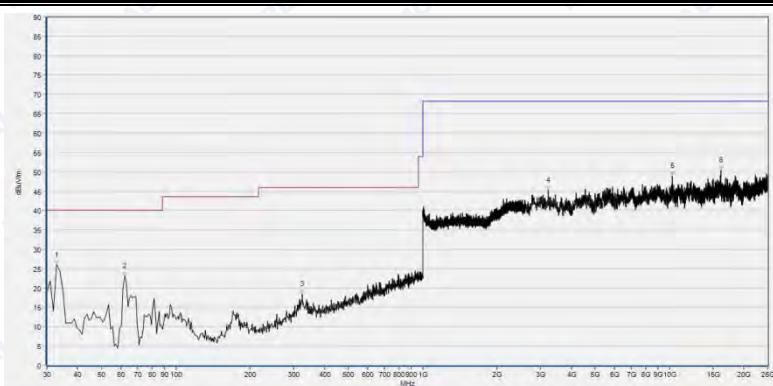


REPORT No.: SZ16030122W04



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
32.913	20.88	N.A.	N.A.	N.A.	40.00	N.A.	Horizontal	PASS
66.897	17.74	N.A.	N.A.	N.A.	40.00	N.A.	Horizontal	PASS
1953.384	42.33	N.A.	N.A.	68.23	N.A.	N.A.	Horizontal	PASS
2783.717	45.81	N.A.	N.A.	68.23	N.A.	N.A.	Horizontal	PASS
5629.086	46.36	N.A.	N.A.	68.23	N.A.	N.A.	Horizontal	PASS
18596.799	49.78	N.A.	N.A.	68.23	N.A.	N.A.	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
32.913	25.94	N.A.	N.A.	N.A.	40.00	N.A.	Vertical	PASS
62.042	23.16	N.A.	N.A.	N.A.	40.00	N.A.	Vertical	PASS
325.175	18.42	N.A.	N.A.	N.A.	46.00	N.A.	Vertical	PASS
3231.806	45.18	N.A.	N.A.	68.23	N.A.	N.A.	Vertical	PASS
10284.737	48.89	N.A.	N.A.	68.23	N.A.	N.A.	Vertical	PASS
16114.383	50.50	N.A.	N.A.	68.23	N.A.	N.A.	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

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Plots for Channel = 159

Channel	Frequency (MHz)	Antenna	Receiver Reading U_R (dB μ V)	A_T (dB)	A_Factor (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		Horiz./ Vert.						
159	5850.00	Horizontal	42.26	-50.65	32.11	23.72	78.2	Pass
159	5850.00	Vertical	33.95	-50.65	32.11	15.41	78.2	Pass



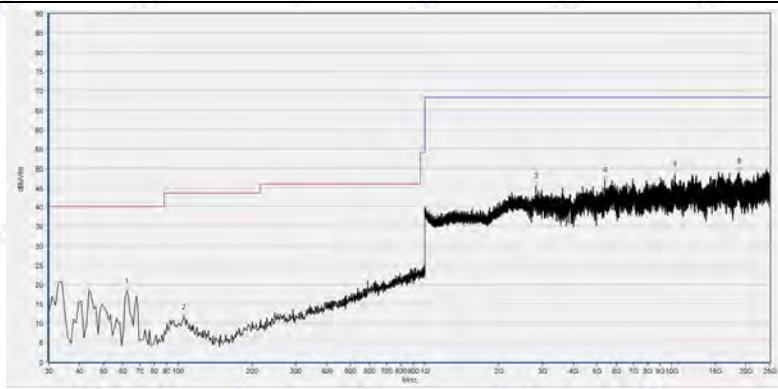
(Channel = 151 Horizontal @ 802.11n)



(Channel = 151 Vertical @ 802.11n)

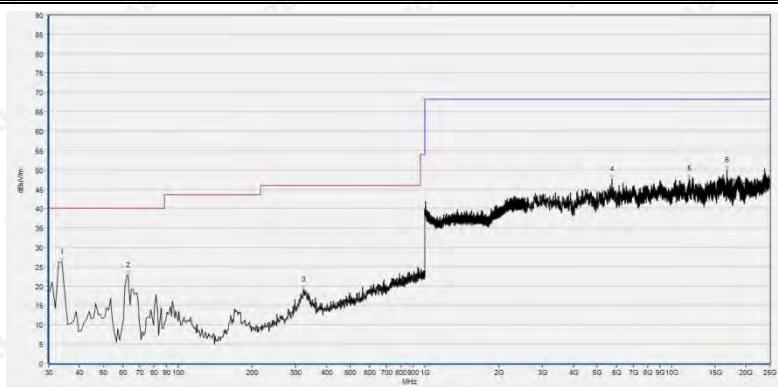


REPORT No.: SZ16030122W04



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
62.042	18.04	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
105.736	11.55	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
3061.532	38.89	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
8151.830	42.71	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18027.726	44.11	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
12717.864	46.04	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
33.884	26.07	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
63.013	22.75	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
322.262	19.10	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
5723.185	47.63	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
11772.394	47.78	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
16808.922	49.94	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

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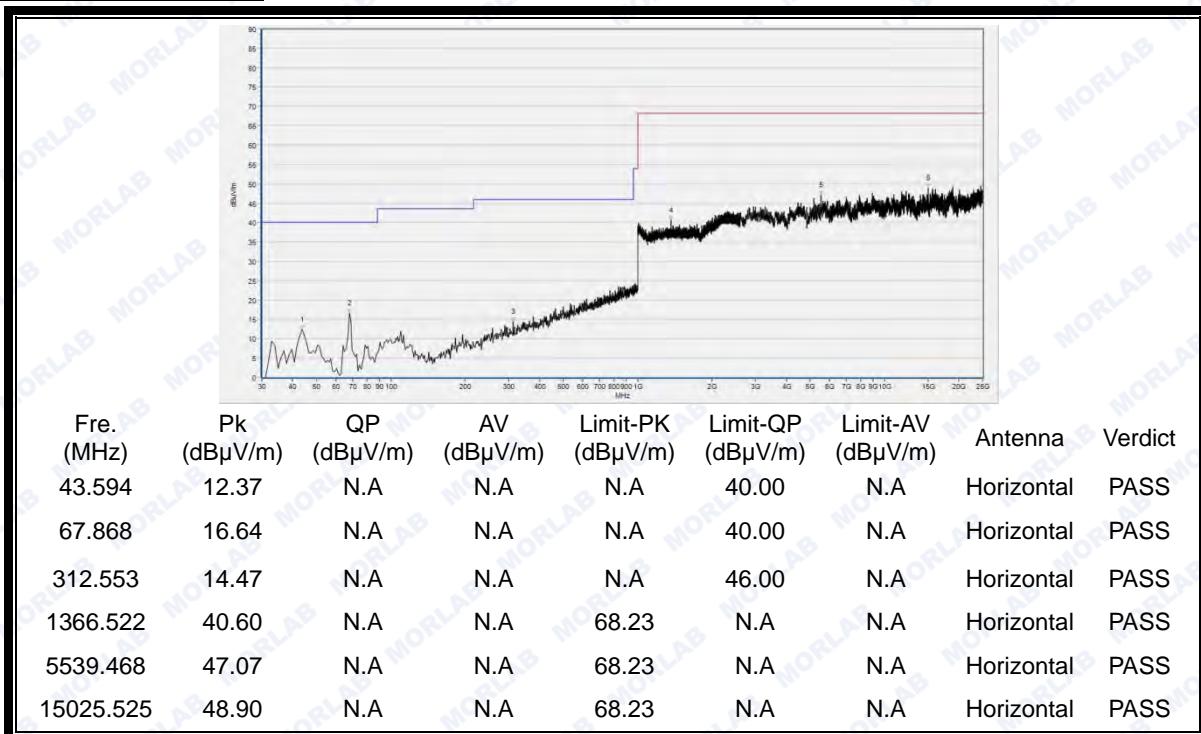
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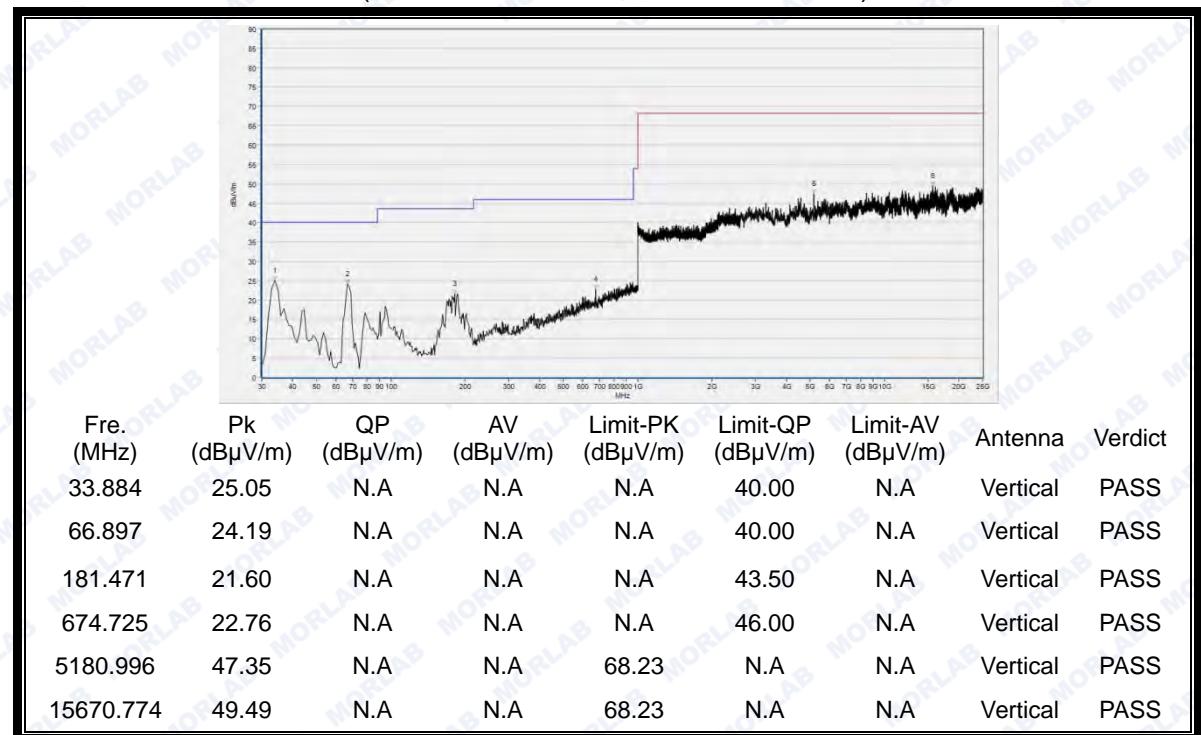
E-mail: service@morlab.cn

**2.8.3.5 802.11ac-40MHz Test mode****A. Test Plots for the Whole Measurement Frequency Range:**

Plots for Channel = 38



(Antenna Horizontal, 30MHz to 40GHz)

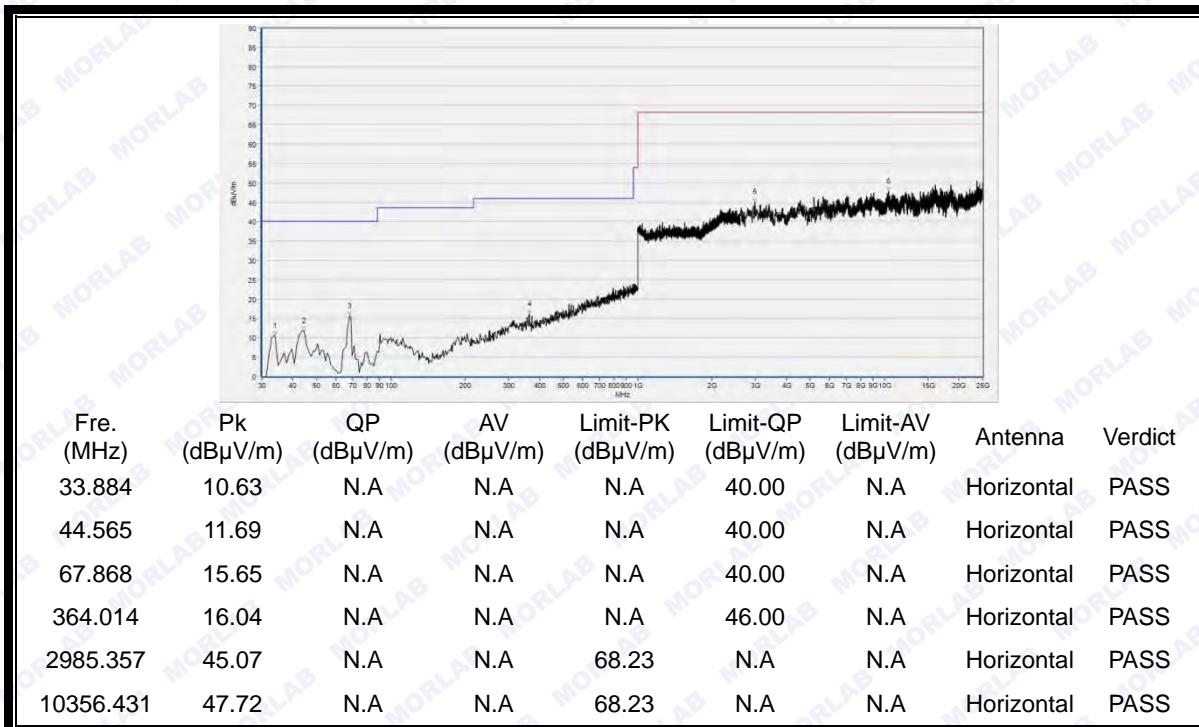


(Antenna Vertical, 30MHz to 40GHz)

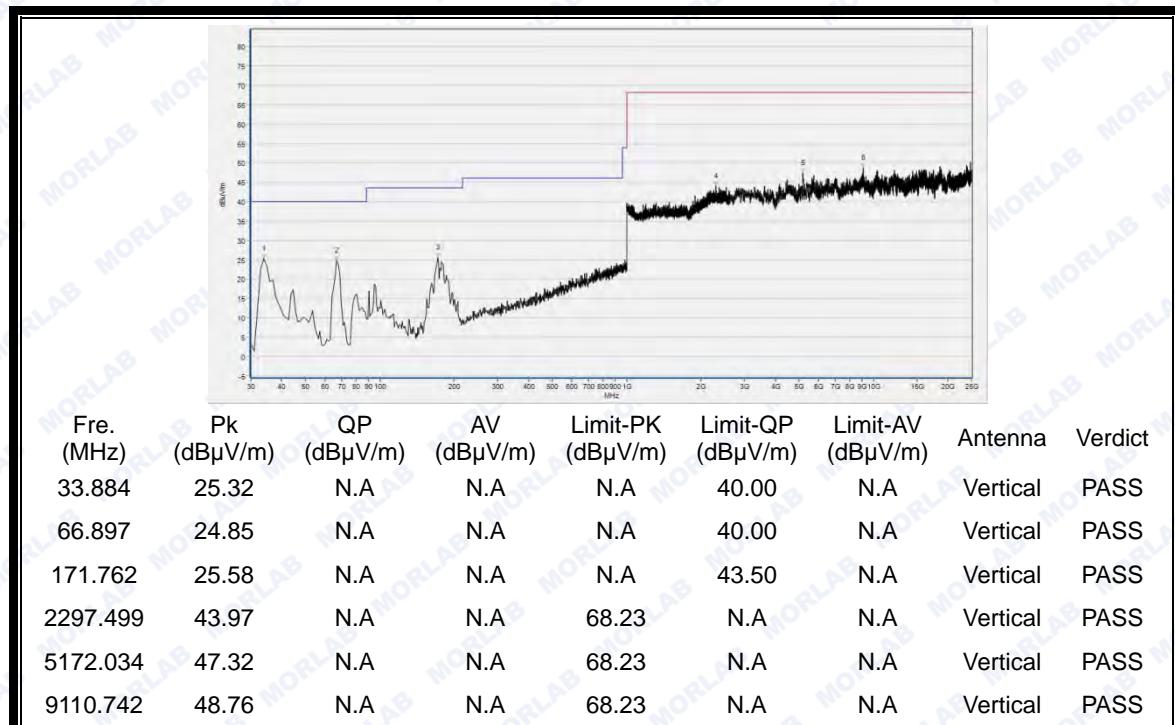


REPORT No.: SZ16030122W04

Plot for Channel = 46



(Antenna Horizontal, 30MHz to 25GHz)



(Antenna Vertical, 30MHz to 40GHz)

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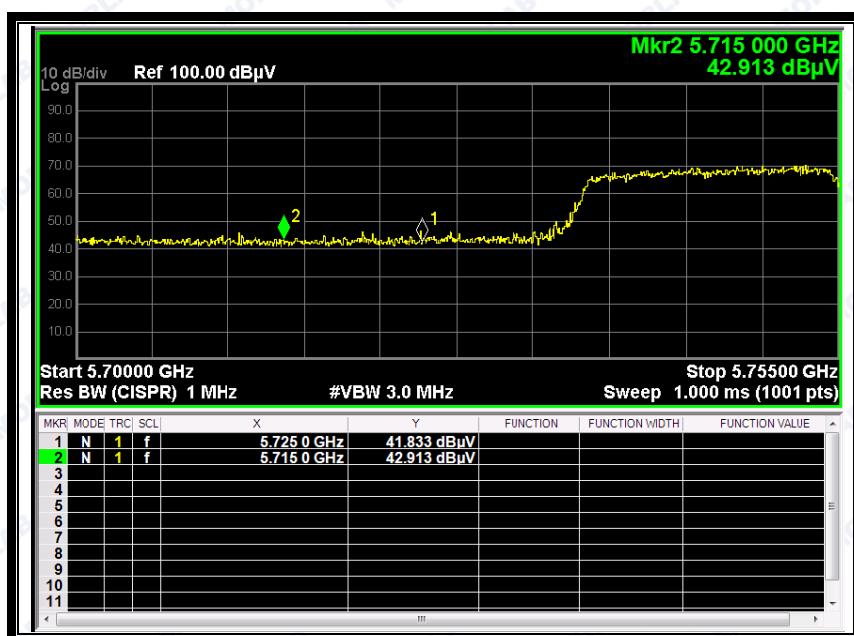
E-mail: service@morlab.cn



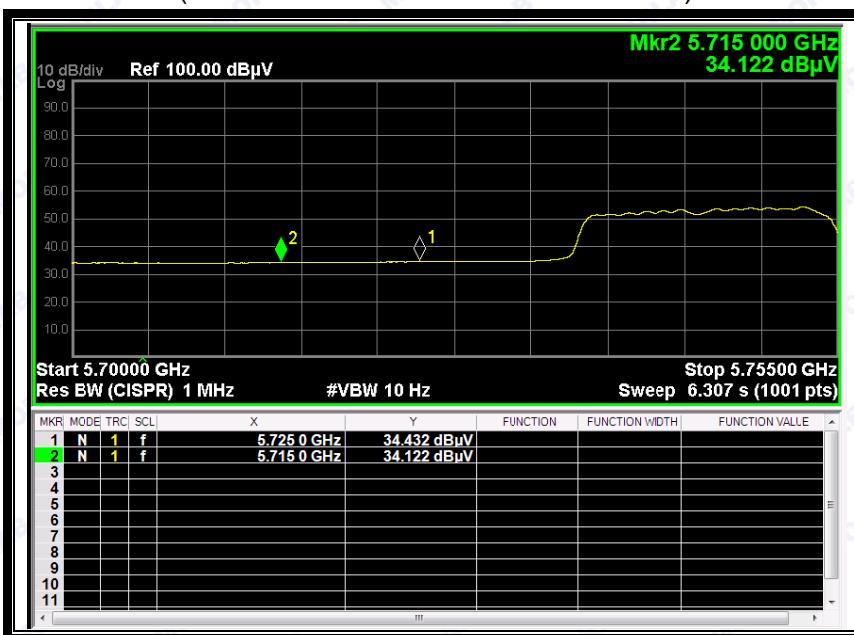
REPORT No.: SZ16030122W04

Plot for Channel = 151

Channel	Frequency (MHz)	Antenna	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		Horiz./ Vert.						
151	5715.00	Horizontal	42.91	-50.65	32.11	24.37	78.2	Pass
151	5715.00	Vertical	34.12	-50.65	32.11	15.58	78.2	Pass



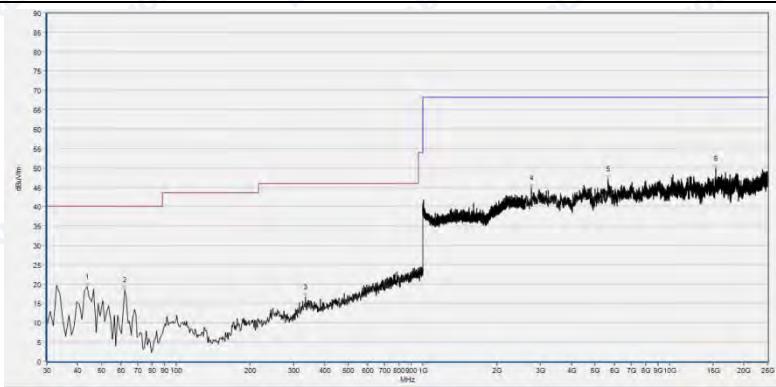
(Channel = 151 Horizontal @ 802.11ac)



(Channel = 151 Vertical @ 802.11ac)

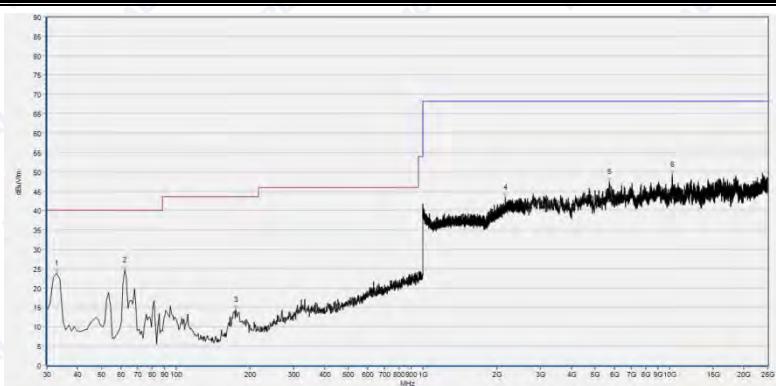


REPORT No.: SZ16030122W04



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
43.594	19.19	N.A.	N.A.	N.A.	40.00	N.A.	Horizontal	PASS
62.042	18.39	N.A.	N.A.	N.A.	40.00	N.A.	Horizontal	PASS
334.885	16.55	N.A.	N.A.	N.A.	46.00	N.A.	Horizontal	PASS
2752.350	44.70	N.A.	N.A.	68.23	N.A.	N.A.	Horizontal	PASS
5647.009	47.18	N.A.	N.A.	68.23	N.A.	N.A.	Horizontal	PASS
15375.035	49.72	N.A.	N.A.	68.23	N.A.	N.A.	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
32.913	23.78	N.A.	N.A.	N.A.	40.00	N.A.	Vertical	PASS
62.042	24.59	N.A.	N.A.	N.A.	40.00	N.A.	Vertical	PASS
174.675	14.45	N.A.	N.A.	N.A.	43.50	N.A.	Vertical	PASS
2161.987	43.34	N.A.	N.A.	68.23	N.A.	N.A.	Vertical	PASS
5709.742	47.51	N.A.	N.A.	68.23	N.A.	N.A.	Vertical	PASS
10275.775	49.19	N.A.	N.A.	68.23	N.A.	N.A.	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

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REPORT No.: SZ16030122W04

Plots for Channel = 159

Channel	Frequency (MHz)	Antenna	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		Horiz./ Vert.						
159	5850.00	Horizontal	43.92	-50.65	32.11	25.38	78.2	Pass
159	5850.00	Vertical	33.95	-50.65	32.11	15.41	78.2	Pass



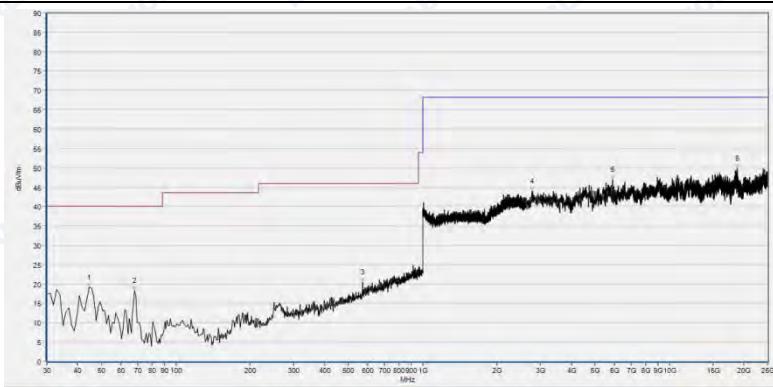
(Channel = 151 Horizontal @ 802.11ac)



(Channel = 151 Vertical @ 802.11ac)

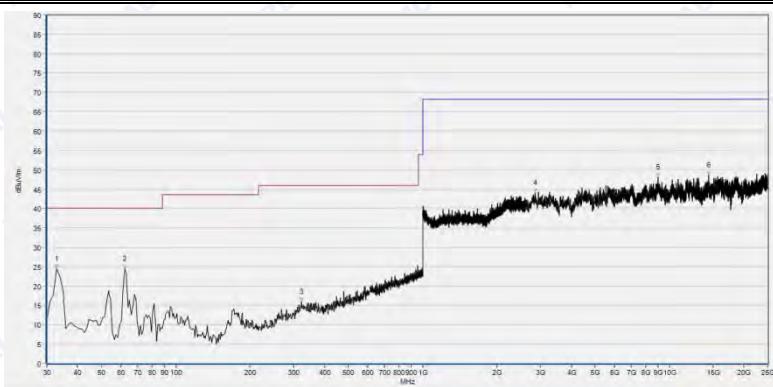


REPORT No.: SZ16030122W04



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
44.565	19.15	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
67.868	18.33	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
571.802	20.46	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2765.793	43.90	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5880.016	46.93	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
18749.150	49.83	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 40GHz)



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
32.913	24.39	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
62.042	24.42	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
323.233	15.95	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2850.930	44.06	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
8958.392	48.18	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
14389.238	48.60	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 40GHz)

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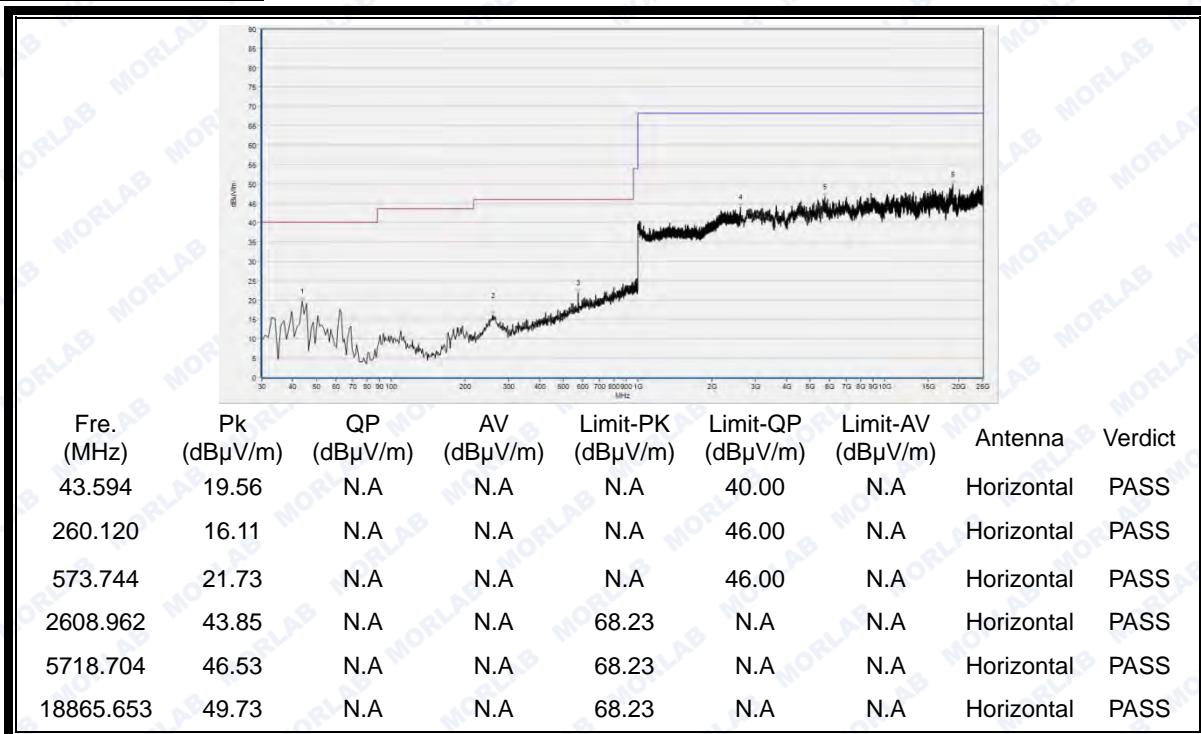
Fax: 86-755-36698525

Http://www.morlab.com

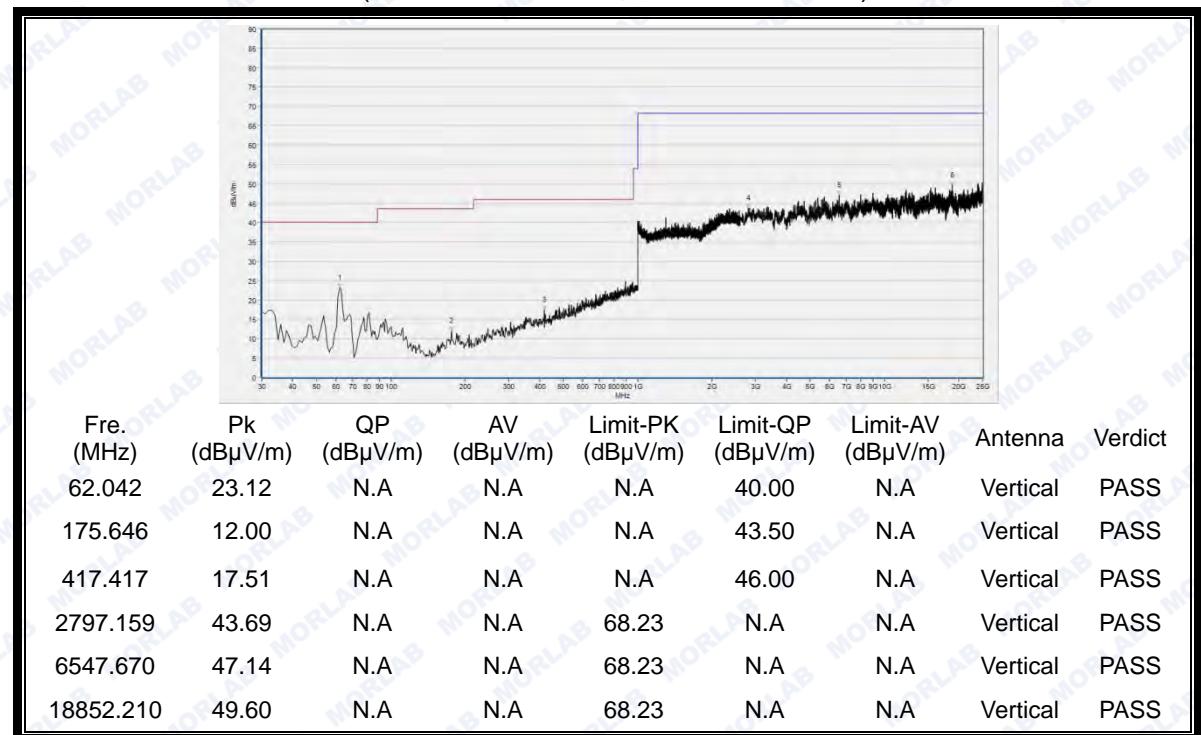
E-mail: service@morlab.cn

**2.8.3.6 802.11ac-80MHz Test mode****A. Test Plots for the Whole Measurement Frequency Range:**

Plots for Channel = 42



(Antenna Horizontal, 30MHz to 40GHz)



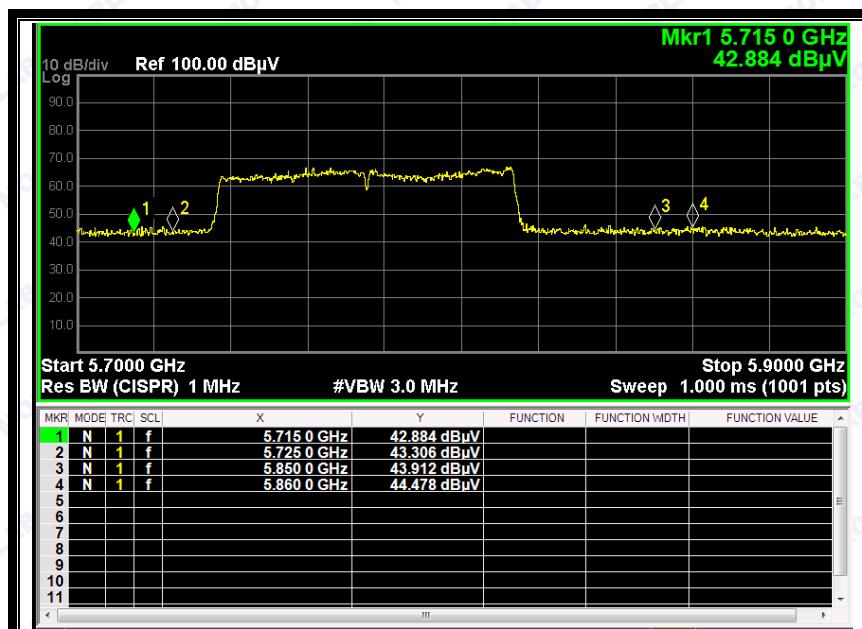
(Antenna Vertical, 30MHz to 40GHz)



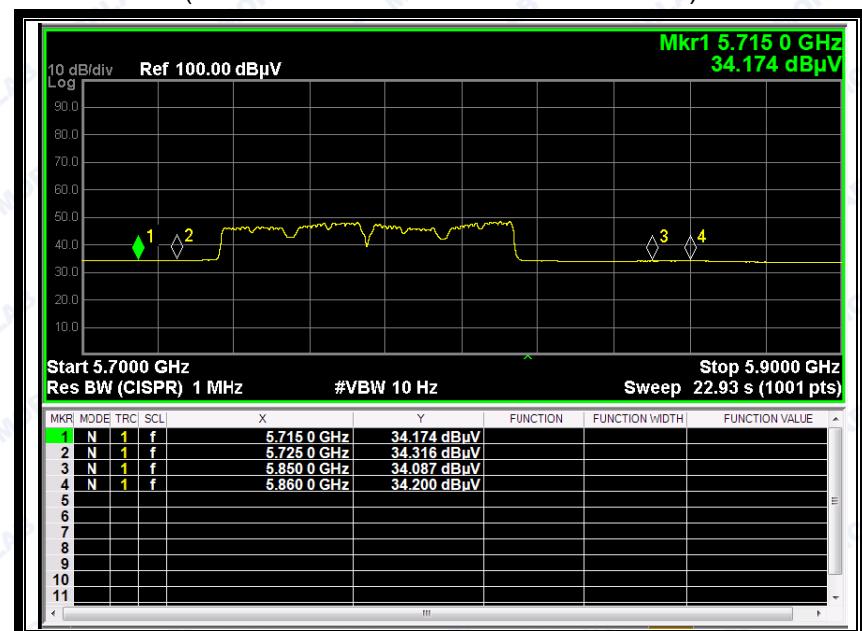
REPORT No.: SZ16030122W04

Plot for Channel = 155

Channel	Frequency (MHz)	Antenna	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		Horiz./ Vert.						
155	5715.00	Horizontal	42.88	-50.65	32.11	24.34	78.2	Pass
155	5715.00	Vertical	34.17	-50.65	32.11	15.63	78.2	Pass



(Channel = 155 Horizontal @ 802.11ac)



(Channel = 155 Vertical @ 802.11ac)

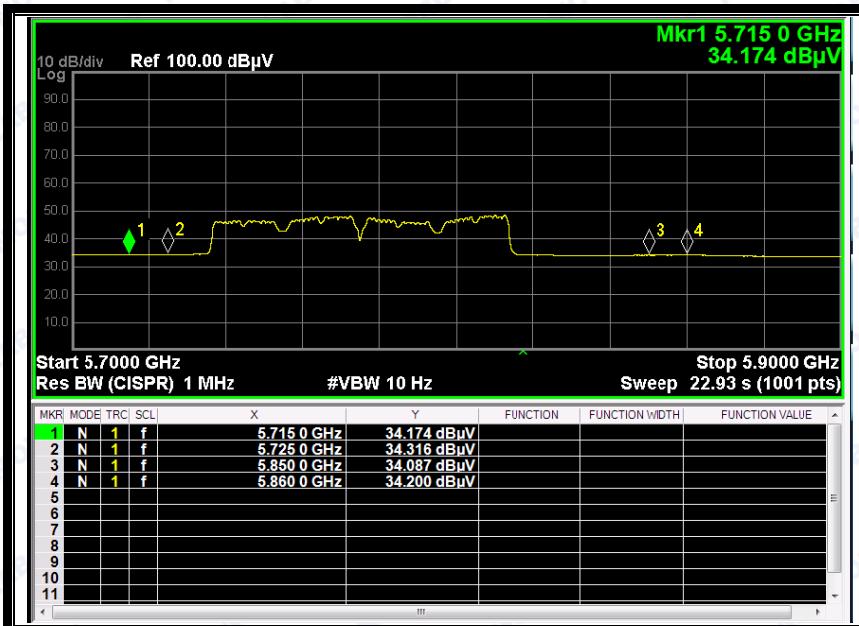


REPORT No.: SZ16030122W04

Channel	Frequency (MHz)	Antenna	Receiver Reading U_R (dB μ V)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dB μ V/m)	Limit (dB μ V/m)	Verdict
		Horiz./ Vert.						
155	5850.00	Horizontal	44.48	-50.65	32.11	25.94	78.2	Pass
155	5850.00	Vertical	34.20	-50.65	32.11	15.66	78.2	Pass



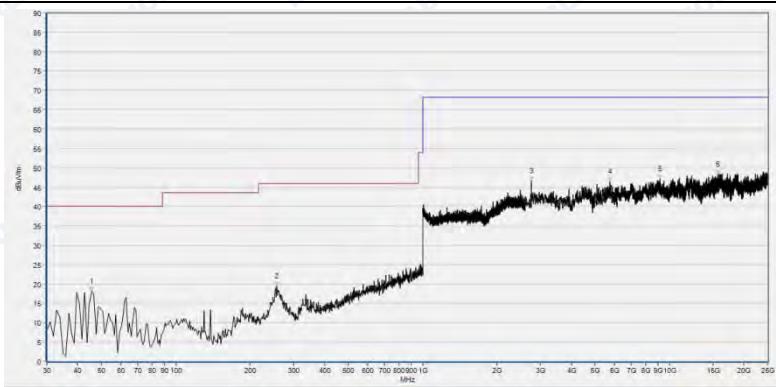
(Channel = 155 Horizontal @ 802.11ac)



(Channel = 155 Vertical @ 802.11ac)

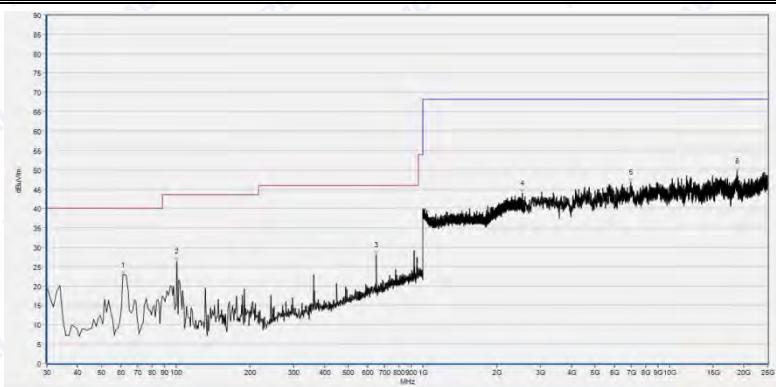


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Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
45.536	18.05	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
256.236	19.39	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2756.831	46.52	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
5732.146	46.48	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
9137.628	47.13	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS
15666.293	48.31	N.A	N.A	68.23	N.A	N.A	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk (dB μ V/m)	QP (dB μ V/m)	AV (dB μ V/m)	Limit-PK (dB μ V/m)	Limit-QP (dB μ V/m)	Limit-AV (dB μ V/m)	Antenna	Verdict
61.071	22.74	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
100.881	26.31	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
647.538	28.00	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2533.845	43.96	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
6982.316	46.83	N.A	N.A	68.23	N.A	N.A	Vertical	PASS
18749.150	49.62	N.A	N.A	68.23	N.A	N.A	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)



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2.9 RF exposure evaluation

2.9.1 Requirement

According to § 1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy lever in excess of Commission's guideline.

2.9.2 Result

Please refer to SAR report.



ANNEX A GENERAL INFORMATION

1.1 Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Department:	Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Responsible Test Lab Manager:	Mr. Su Feng
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

1.2 Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

1.3 Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.1, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10 2013 and CISPR Publication 22; the FCC registration number is 695796.

1.4 Maximum measurement uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Test items	Uncertainty
Peak Output Power	±2.22dB
Power spectral density (PSD)	±2.22dB
Bandwidth	±5%
Restricted Frequency Bands	±5%
Radiated Emission	±2.95dB
Conducted Emission	±2.44dB

This uncertainty represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2



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1.5 Test Equipments Utilized

1.5.1 Conducted Test Equipments

Conducted Test Equipment

No.	Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
1	Spectrum Analyzer	MY45101810	E4407B	Agilent	2016.03.02	2017.03.01
2	USB Wideband Power Sensor	MY54210011	U2021XA	Agilent	2016.03.02	2017.03.01
3	EXA Signal Analyzer	MY53470836	N9010A	Agilent	2015.12.07	2016.12.06
4	RF cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
5	Attenuator	(n.a.)	10dB	Resnet	N/A	N/A
6	SMA connector	CN01	RF03	HUBER-SUHNER	N/A	N/A
7	System Simulator	6K00006210	MT8852B	Anritsu	2016.03.02	2017.03.01

1.5.2 Conducted Emission Test Equipments

Conducted Emission Test Equipments

No.	Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
1	Receiver	595WX11007	PMM9010	Narda S.T.S/PMM	2016.03.02	2017.03.01
2	LISN	812744	NSLK 8127	Schwarzbeck	2016.03.02	2017.03.01
3	Pulse Limiter (20dB)	9391	VTSD 9561-D	Schwarzbeck	2016.03.02	2017.03.01
4	Coaxial cable(BNC) (30MHz-26GHz)	CB01	EMC01	Morlab	N/A	N/A

1.5.3 Auxiliary Test Equipment

Auxiliary Test Equipment

No.	Equipment Name	Model No.	Brand Name	Manufacturer	Cal.Date	Cal.Due Date
1	Computer	T430i	Think Pad	Lenovo	N.A	N.A



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1.5.4 Radiated Test Equipments

Radiated Test Equipments

No.	Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal.Due Date
1	System Simulator	GB45360846	8960-E5515C	Agilent	2016.03.02	2017.03.01
2	Receiver	MY54130016	N9038A	Agilent	2016.03.02	2017.03.01
3	Test Antenna - Bi-Log	N/A	VULB9163	Schwarzbeck	2016.03.02	2017.03.01
4	Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2016.03.02	2017.03.01
5	Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2016.03.02	2017.03.01
6	Test Antenna - Horn	71688	BBHA 9120D	Schwarzbeck	2016.03.02	2017.03.01
7	Coaxial cable (N male) (9KHz-30MHz)	CB04	EMC04	Morlab	N/A	N/A
8	Coaxial cable(N male) (30MHz-26GHz)	CB02	EMC02	Morlab	N/A	N/A
9	Coaxial cable(N male) (30MHz-26GHz)	CB03	EMC03	Morlab	N/A	N/A
10	1-18GHz pre-Amplifier	MA02	TS-PR18	Rohde&Schwarz	2016.03.02	2017.03.01
11	18-26.5GHz pre-Amplifier	MA03	TS-PR18	Rohde&Schwarz	2016.03.02	2017.03.01

1.5.5 Climate Chamber

Climate Chamber						
No.	Equipment Name	Serial No.	Type	Manufacturer	Cal.Date	Cal.Due Date
1	Climate Chamber	2004012	HL4003T	Yinhe	2016.03.25	2017.03.24

1.5.6 Vibration Table

Vibration Table						
No.	Equipment Name	Serial No.	Type	Manufacturer	Cal.Date	Cal.Due Date
1	Vibration Table	N/A	ACT2000-S015L	CMI-COM	2016.03.25	2017.03.24

1.5.7 Anechoic Chamber

Anechoic Chamber						
No.	Equipment Name	Serial No.	Type	Manufacturer	Cal.Date	Cal.Due Date
1	Anechoic Chamber	N/A	9m*6m*6m	Changning	2016.03.25	2017.03.24

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

MORLAB GROUP

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