

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART E REQUIREMENT **CLASS II PC REPORT**

OF				
Max-Stream AC600 Wi-Fi Micro USB Adapter				
LINKSYS				
WUSB6100M				
N/A				
Q87-WUSB6100M				
E2/2016/90029				
Oct. 07, 2016				
§15.407				
Linksys LLC 121 Theory Drive, Irvine, CA 92617, USA				
SGS Taiwan Ltd.				
Electronics & Communication Laboratory No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan 333				



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VERIFICATION OF COMPLIANCE

Applicant:	Linksys LLC
Applicant.	121 Theory Drive, Irvine, CA 92617, USA
Product Name:	Max-Stream AC600 Wi-Fi Micro USB Adapter
Brand Name:	LINKSYS
Model No.:	WUSB6100M
Model Difference:	N/A
FCC ID:	Q87-WUSB6100M
File Number:	E2/2016/90029
Date of Test:	Sep. 09, 2016 ~ Oct. 03, 2016
Data of FUT Dessived.	Son 00 2016

Date of EUT Received: Sep. 09, 2016

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10: 2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits.

The test results of this report relate only to the tested sample identified in this report.

Test By:	Aken Huang	Date:	Oct. 07, 2016
Prepared By:	Aken Huang / Engineer Tiffany Kao	Date:	Oct. 07, 2016
Approved By:	Tiffany Kao / Clerk Jim Chang Jim Chang / Asst. Manager	Date:	Oct. 07, 2016

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Revision History

Report Number	Revision	Description	Issue Date
E2/2016/90029	Rev.00	Initial creation of document	Oct. 07, 2016

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1. GENERAL INFORMATION

1.1 Product Description

General:

Product Name:	Max-Stream AC600 Wi-Fi Micro USB Adapter
Brand Name:	LINKSYS
Model No.:	WUSB6100M
Model Difference:	N/A
Product SW/HW version:	N/A / N/A
Radio SW/HW version:	N/A / N/A
Test SW Version:	N/A
RF power setting in TEST SW:	N/A
Class II Permissive change:	Enable U-NII-2-A and U-NII-2-C via software.
Power Supply:	5.0Vdc from USB Port

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WLAN 5GHz:

Wi-Fi	Frequency Range	Channels	Rated Power (Avg.)	Modulation Technology	
11a	5250~5350	4	19.91 dBm (Avg.)	OFDM	
IIa	5470~5725	11	19.98 dBm (Avg.)	OFDM	
11n /	HT / VHT20 5250~5350	4	VHT: 19.98 dBm (Avg.)	OFDM	
ac_20M	HT / VHT20 5470~5725	11	VHT: 19.89 dBm (Avg.)	OFDM	
11n / ac 40M	HT / VHT40 5250~5350	2	VHT: 19.81 dBm (Avg.)	OFDM	
	HT / VHT40 5470~5725	5	VHT: 19.94 dBm (Avg.)		
1100 0014	VHT80 5250~5350	1	17.62 dBm (Avg.)	OFDM	
11ac_80M	VHT80 5470~5725	2	19.67 dBm (Avg.)	OFDM	
Antenna Designation Antenna Designation Metal Antenna, Supplier: INPAQ 5GHz Gain: 2.34dBi (5250MHz-5350MHz 5GHz Gain: 2.45dBi (5470MHz-5725MHz		,			
Modulation type			odulation type 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 802.11ac only		
Transition Rate:			802.11 a: 6/9/12/18/24/36/48/54 M 802.11 n_20MHz: 6.5 – 72.2Mbps 802.11 n_40MHz: 13.5 – 150Mbp 802.11 ac_20MHz: 6.5 –86.7Mbp 802.11 ac_40MHz: 13.5 –200Mbp 802.11 ac_80MHz: 29.3 – 433Mb	Abps s s s os	

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1.2 Product Feature of Equipment Under Test

The equipment under Test (Hereafter Called: EUT) is supporting, Wi-Fi 802.11bgn feature, and below is details of information.

Product Feature			
Product Name: Max-Stream AC600 Wi-Fi Micro USB Adapter			
Brand Name: LINKSYS			
Model No.:	WUSB6100M		
Model Difference:	N/A		
FCC ID:	Q87-WUSB6100M		
Wi-Fi- Specification	802.11a/b/g/n/ac		

Note: The above EUT information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

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1.3 Test Methodology of Applied Standards

FCC Part 15, Subpart E §15.407 FCC KDB 789033 D02 General UNII Test Procedures New Rules FCC KDB 644545 D03 Guidance for IEEE 802.11ac v01 ANSI C63.10:2013 Note:

- 1. All test items have been performed and record as per the above standards.
- 2. The composite system is compliance with FCC Subpart B is authorized under the certification procedure.

1.4 Test Facility

SGS Taiwan Ltd. Electronics & Communication Laboratory No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan 333 (TAF code 0513)

FCC Registration Numbers are: 735305

Canada Registration Number: 4620A-5.

Special Accessories 1.5

There are no special accessories used while test was conducted.

Equipment Modifications 1.6

There was no modification incorporated into the EUT.

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SYSTEM TEST CONFIGURATION 2.

EUT Configuration 2.1

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

An engineering test mode (software/firmware) that applicant provided was utilized to manipulate the EUT into transmit, selection of the test channel, and modulation scheme.

2.3 **Test Procedure**

2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz,. The CISPR Quasi-Peak and Average detector mode is employed according to \$15.207. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

2.3.2 Radiated Emissions

The EUT is a placed on as turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plan. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuation factor between EUT conducted port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly EUT RF output level. Note:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor. Following shows an offset computation example with cable loss 0.8dB, and 10dB attenuator.

offset = RF cable loss (dB)+ attenuation factor(dB)=10.8(dB)

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2.5 Configuration of Tested System

Fig. 2-1 Radiated Emission

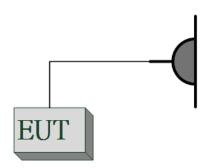
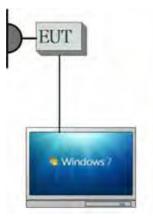


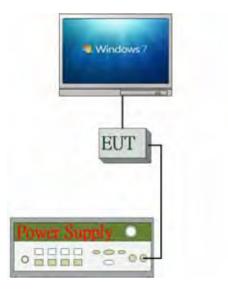
Fig. 2- 2 AC Power Line Conducted Emission



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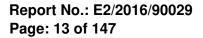


Fig. 2-3 Conducted Emission



Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	WLAN Test Software	N/A	N/A	N/A	N/A	N/A
2.	Notebook	Lenovo	L430	R9-YYG88	shield	Un-shield
3.	DC Power Supply	Agilent	E3640A	MY53140006	N/A	Un-shielded

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SUMMARY OF TEST RESULT 3.

FCC Rules	Description Of Test	Result
§15.207	AC Power Line Conducted Emission	Compliant
§15.403(i) §15.407(e)	26 dB Emission Bandwidth	Compliant
§15.407(a)	Maximum Conducted Output Power	Compliant
§15.407(a)	Power Spectral Density	Compliant
§15.407(b)	Undesirable Radiated Emissions	Compliant
§15.407(c)	Transmission in case of Absence of Information	Compliant
§15.407(g)	Frequency Stability	Compliant
§15.203 §15.407(a)	Antenna Requirement	Compliant

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DESCRIPTION OF TEST MODES 4.

4.1 Operated in U-NII Bands

Operated band in 5250 MHz ~5350 MHz:

4 channels are provided for 802.11a, 802.11n HT20, 802.11ac VHT20

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n_HT40, 802.11ac_VHT40

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac_VHT80

CHANNEL	FREQUENCY
58	5290 MHz

Operated band in 5470 MHz ~5725 MHz:

11 channels are provided for 802.11a, 802.11n HT20, 802.11ac VHT20

-				
	CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
	100	5500 MHz	124	5620 MHz
	104	5520 MHz	128	5640 MHz
	108	5540 MHz	132	5660 MHz
	112	5560 MHz	136	5680 MHz
	116	5580 MHz	140	5700 MHz
	120	5600 MHz		

5 channels are provided for 802.11n HT40, 802.11ac VHT40

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz		

2 channesl are provided for 802.11ac VHT80

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
106	5530 MHz	122	5610 MHz

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4.2 The Worst Test Modes and Channel Details

- 1. The EUT has been tested under operating condition.
- Test program used to control the EUT for staying in continuous transmitting mode is programmed.
- 3. Investigation has been done on all the possible configurations for searching the worst case.
- 4. The given UE is pre-scanned among 802.11n and ac modes, and 802.11ac yields the highest reading that generates the highest emission. Therefore, 802.11ac as the mode of test configuration is chosen to carry out the relevantly mandatory test items.

MODE BA 802.11a 52 802.11a 52 MODE FR BA 802.11a 52 802.11a 52	REQUENCY		ON TEST (BE	LOW 1 GHz)							
MODE BA 802.11a 52 802.11a 52 MODE FR BA 802.11a 52 802.11a 52						RADIATED EMISSION TEST (BELOW 1 GHz)					
802.11a 55 MODE FR BA 802.11a 802.11a2_HT20 52	AND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT					
MODE FR BA 802.11a 802.11ac_HT20 52	5260~5320	52 to 64	52,60,64	OFDM	6	MAIN					
802.11a 802.11ac_HT20	500~5700	100 to 140	100,116,140	OFDM	6	MAIN					
802.11a 802.11ac_HT20	RADI	ATED EMISSI	ON TEST (AB	OVE 1 GHz)							
802.11ac_HT20 52	REQUENCY AND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT					
002.1140_11120				OFDM	6	MAIN					
802.11ac_VHT20	5260~5320	52 to 64	52,60,64	OFDM	MCS0	MAIN					
802.11ac_HT40 802.11ac_VHT40 52	5270~5310	54 to 62	54,62	OFDM	MCS0	MAIN					
802.11ac_VHT80	5290	58	58	OFDM	MCS0	MAIN					
802.11a	500~5700	~5700 100 to 140	100,116,140	OFDM	6	MAIN					
802.11ac_HT20 802.11ac_VHT20	500*5700	100 10 140	100,110,140	OFDM	MCS0	MAIN					
802.11ac_HT40 802.11ac_VHT40 55	5510~5710	102 to 142	102,110,134	OFDM	MCS0	MAIN					
802.11ac_VHT80 55		106 to 122	106,122	OFDM	MCS0	MAIN					

RADIATED EMISSION TEST:

Note:

The field strength of radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for 802.11a/n/ac WLAN Transmitter for channel Low, Mid and High, the worst case E2 position was reported.

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ANTENNA PORT CONDUCTED MEASUREMENT:

	CONDUCTED TEST					
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11a				OFDM	6	MAIN
802.11ac_HT20 802.11ac_VHT20	5260~5320	52 to 64	52,60,64	OFDM	MCS0	MAIN
802.11ac_HT40 802.11ac_VHT40	5270~5310	54 to 62	54,62	OFDM	MCS0	MAIN
802.11ac_VHT80	5290	58	58	OFDM	MCS0	MAIN
802.11a	802.11a			OFDM	6	MAIN
802.11ac_HT20 802.11ac_VHT20	5500~5700	100 to 140	100,116,140	OFDM	MCS0	MAIN
802.11ac_HT40 802.11ac_VHT40	5510~5670	102 to 134	102,110,134	OFDM	MCS0	MAIN
802.11ac_VHT80	5530~5610	106 to 122	106,122	OFDM	MCS0	MAIN

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MEASUREMENT UNCERTAINTY 5.

Test Items	Uncertainty
AC Power Line Conducted Emission	+/- 2.586 dB
26dB & 6dB Emission Bandwidth	+/- 123.36 Hz
The Maximum Output Power Measurement	+/- 0.96 dB
Peak Power Spectral Density Measurement	+/- 1.67 dB
Frequency Stability	+/- 123.36 Hz
Temperature	+/- 0.65 °C
Humidity	+/- 4.6 %
DC / AC Power Source	DC= +/- 0.13%, AC=+/- 0.2%

Radiated Spurious Emission:

	9kHz-30MHz: +/-2.87dB	
	30MHz - 180MHz: +/- 3.37dB	
Measurement uncertainty	180MHz -417MHz: +/- 3.19dB	
(Polarization : Vertical)	0.417GHz-1GHz: +/- 3.19dB	
	1GHz - 18GHz: +/- 4.04dB	
	18GHz - 40GHz: +/- 4.04dB	

	9kHz-30MHz: +/-2.87dB
	30MHz - 167MHz: +/- 4.22dB
Measurement uncertainty	167MHz -500MHz: +/- 3.44dB
(Polarization : Horizontal)	0.5GHz-1GHz: +/- 3.39dB
	1GHz - 18GHz: +/- 4.08dB
	18GHz - 40GHz: +/- 4.08dB

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

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6. CONDUCTED EMISSION TEST

6.1. Standard Applicable

Frequency range within 150 kHz to 30 MHz shall not exceed the Limit table as below.

Frequency range	Limits dB(uV)				
MHz	Quasi-peak	Average			
0.15 to 0.50	66 to 56	56 to 46			
0.50 to 5	56	46			
5 to 30	60	50			
Note					
1. The lower limit shall apply at the transition frequencies					
2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50					
MHz.					

6.2. Measurement Equipment Used

	Conducted Emission Test Site									
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.					
TYPE		NUMBER	NUMBER	CAL.						
EMI Test Receiver	R&S	ESCI 3	101311	06/18/2015	06/17/2016					
Coaxial Cables	N/A	N30N30-1042-15 0cm	N/A	02/07/2016	02/06/2017					
LISN	Schwarzbeck	NSLK 8127	8127-648	06/09/2015	06/08/2016					
LISN	Rolf-Heine	NNB-2/16Z	99012	03/04/2016	03/03/2017					
Test Software	Farad	EZ-EMC	Ver. SGS-03A2	N.C.R.	N.C.R.					

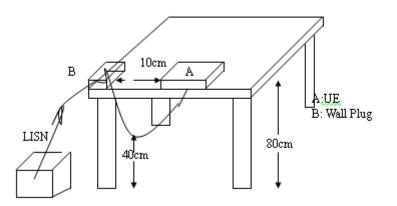
6.3. EUT Setup

- 1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.10:2013.
- 2. The AC/DC Power adaptor of EUT was plug-in LISN. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
- 3. The LISN was connected with 120Vac/60Hz power source.

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6.4. Test SET-UP



6.5. Measurement Procedure

- 1. The EUT was placed on a table which is 0.8m above ground plane.
- 2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 3. Repeat above procedures until all phases of power being supplied by given UE are completed.

6.6. Measurement Result

Note: Refer to next page for measurement data and plots. Note2: The * reveals the worst-case results that closet to the limit

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AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode: Operation mode Temperature: 21

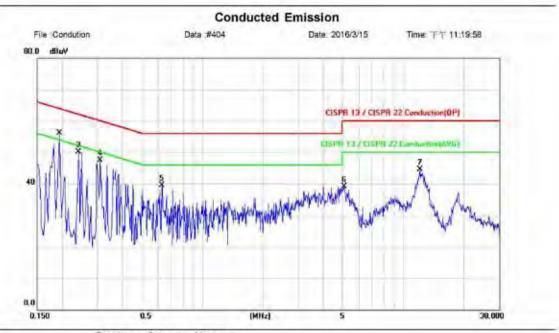
Test Date: Mar. 15, 2016

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Temperature 23 L Site : Conduction Room Phase: N AC 120V/60Hz Humidity: 41 % Limit: CISPR 13 / CISPR 22 Conduction(QP) Power Mode Note:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Līmit	Over			
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	
1		0,1940	35.42	19.58	54.98	63.86	-8.88	QP		
2		0.1940	16.45	19.56	36 01	53.86	-17.85	AVG		
3		0.2420	30,56	19.60	50.16	62.03	-11.87	peak		
4		0.3100	27.81	19.65	47.46	59.97	-12.51	peak		
5		0.6300	19.79	19,80	39.59	56.00	-16.41	peak		
6		5.0740	19.23	19.79	39.02	60.00	-20.98	peak		
7		12,1380	24.66	19,85	44.51	60.00	-15.49	peak		

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7. DUTY CYCLE TEST SIGNAL

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle.

All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

Formula:

Duty Cycle = Ton / (Ton+Toff)

Measurement Procedure:

- 1. Set span = Zero
- 2. RBW = 8MHz
- 3. VBW = 8MHz,
- 4. Detector = Peak

Duty Cycle:

Mode	Duty Cycle (%)	Duty Factor (dB) =10*log (1/Duty
802.11a	96.13	0.17
802.11ac_20	95.68	0.19
802.11ac_40	91.50	0.39
802.11ac_80	83.19	0.80

Duty Cycle Factor: $10 * \log(1/0.9613) = 0.17$ Duty Cycle Factor: $10 * \log(1/0.9568) = 0.19$ Duty Cycle Factor: $10 * \log(1/0.915) = 0.39$ Duty Cycle Factor: $10 * \log(1/0.8319) = 0.8$

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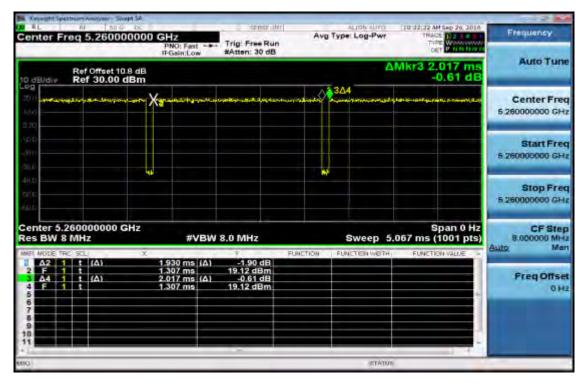
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DUTY CYCLE TEST SIGNAL Measurement Result 802.11a

Rungent Spectrem Analyzer - Shapt SA RL RI Sp. CP DC center Freq 5.260000000	GHZ PNO: Fast Trig: Free Run IFGain:Low #Atten: 30 dB	Aug Type: Log-Pwr	09-32122 AM Sep 20, 2018 TRADE 112 3 4 9 1 TYPE WARNING OF PLUS 1000	Frequency
Ref Offset 10.8 dB		ΔΝ	1kr3 2.147 ms 0.17 dB	Auto Tune
	موم وهدي ويرون وله المراجع مرمو الموام المراجع	304	anana katalon na manana k	Center Free 5 260000000 GH
pb m				Start Free 5 260000000 GH
				Stop Fre 5 260000000 GH
enter 5.260000000 GHz es BW 8 MHz	#VBW 8.0 MHz		Span 0 Hz 00 ms (1001 pts)	CF Step 8.000000 MH Auto Mar
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	2.054 ms (Δ) -1.51 dB 1.047 ms 18.43 dBm 2.147 ms (Δ) 0.17 dB 1.047 ms 18.48 dBm	CTION FUNCTION WOTH	FORCTONIVALLE	Freq Offse 0 H

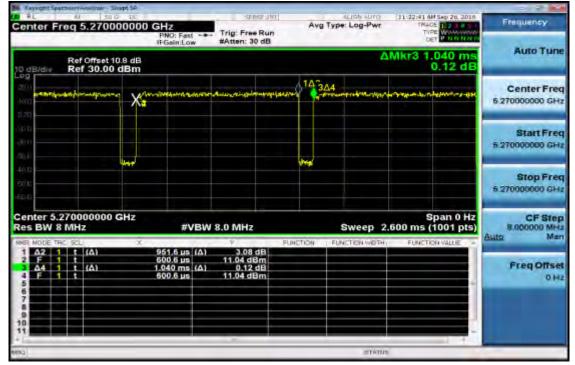
802.11ac VHT20



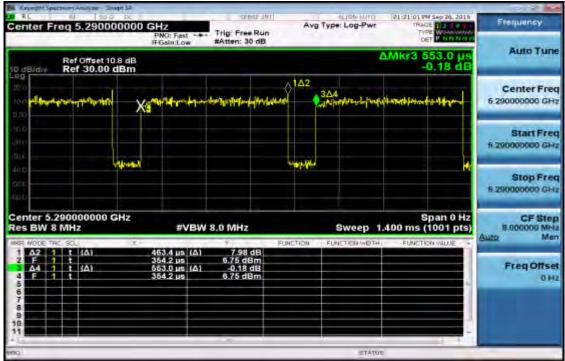
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802.11ac VHT 40



802.11 ac VHT 80



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8. 26dB EMISSION BANDWIDTH MEASUREMENT

8.1 Standard Applicable

There is no limit bandwidth for U-NII-1, U-NII-2-A and U-NII-2-C. The minimum of 6dB Bandwidth measurement is 0.5 MHz for U-NII-3

8.2 Measurement Procedure

- 7 Place the EUT on the table and set it in transmitting mode.
- 8 The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules.
- 9 Remove the antenna from the EUT and then connect a low loss RF cable from the Antenna port to the spectrum analyzer.
 - a. 26dB Band width Measurement: Set the spectrum analyzer as 1% of emission BW Sweep=auto, Detector = Peak, Trace Mode = Max Hold, Manually readjust RBW until the RBW/EBW ratio is 1% based on EBW as observed on the result of pre-sequence measurement.
 - b. Mark the peak frequency and –26dB (upper and lower) frequency.
 - 4. Repeat the procedures as list above until all test default channels (low, middle, and high) are completed.
 - 5. Minimum Emission Bandwidth for the band 5.725-5.850GHz.
 - a. Set the spectrum analyzer as RBW = 100 kHz, VBW = 3*RBW, Span = 30M/50MHz, Detector=Peak,

Sweep=auto

- b. Mark the peak frequency and –6dB (upper and lower) frequency.
- 6. Repeat above procedures until all test default channel measured were complete.

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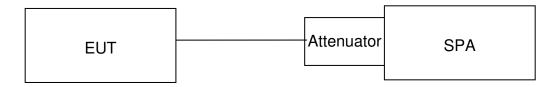
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8.3 **Measurement Equipment Used**

	SGS Conducted Room								
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due				
Spectrum Ana- lyzer	KEYSIGHT	N9010A	MY54510568	04/14/2016	04/13/2017				
Power Meter	Power Meter Anritsu M		1326001	06/23/2016	06/22/2017				
Power Sensor	Anritsu	MA2411B	1315048	06/23/2016	06/22/2017				
Power Sensor	Anritsu	MA2411B	1315049	06/23/2016	06/22/2017				
Coaxial Cable 30cm	WOKEN	00100A1F1A195C	RF01	12/12/2015	12/11/2016				
DC Block	PASTERNACK	PE8210	RF29	12/12/2015	12/11/2016				
Splitter	RF-LAMBAD	RFLT2W1G18G	RF35	12/12/2015	12/11/2016				
Attenuator	WOKEN	218FS-10	RF23	12/12/2015	12/11/2016				
DC Power Supply	Agilent	E3640A	MY53140006	05/04/2016	05/03/2017				

Test Set-up 8.4



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8.5 Measurement Result 26dB Bandwidth

802.11a Main

Frequency (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5260	42.33	16.266
5300	42.28	16.261
5320	41.71	16.202
5500	38.22	15.822
5580	38.46	15.850
5700	35.67	15.523

802.11ac_VHT20_Main

Frequency (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5260	46.85	16.707
5300	45.27	16.558
5320	44.79	16.512
5500	42.15	16.247
5580	43.03	16.337
5700	29.56	14.707

802.11ac _VHT40_Main

Frequency (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5270	94.96	19.776
5310	92.68	19.670
5510	54.97	17.401
5550	89.97	19.541
5670	77.65	18.901

802.11ac VHT80 Main

Frequency (MHz)	26dB BW (MHz)	10 Log (B) (dB)		
5290	149.47	21.745		
5530	111.86	20.487		
5610	174.87	22.427		

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802.11a, 5250~5350 MHz (Main) 26dB Band Width Test Data CH-Low (5260MHz)

Center Free 5 26000000 CH 5 260000000 CH 5 26000000 CH 5 2600000 CH 5 260000 CH 5 260000 CH 5 260000 CH 5 2600000 CH 5 260000 CH 5 260000 CH 5 260000 CH 5 26000 CH 5 2600 CH 5 26000 CH 5 2600	Center Freq 5.260000000 0	Hz Center	tter Freq: 5.260000000 GHz Radi g: Free Run Avg Hold: 50/50			None None Ice: BTS	Frequency
Image: Conter Free Second Conter Free Image: Conter Free Second Conter Image: Conter Free<	10 dE/div Ref 20.00 dBm						
Center 5.26 GHz Res BW 510 kHz #VBW 1.5 MHz Span 50 MHz Sweep 1 ms CF Ster Sweep 1 ms 5.000000 MH Autz Ma 28.535 MHz Transmit Freq Error 848 Hz OBW Power 99.00 %	100 000 100 100	ser and a series of the series		4.94.,-4.4)m	andin to a starting to a st	u-sendere	Center Freq 5 26000000 GHz
28.535 MHz Transmit Freq Error 848 Hz OBW Power 99.00 %	Center 5.26 GHz #Res BW 510 kHz						CF Step 5,000000 MHz Auto Mar
	28. Transmit Freq Error	535 MHz 848 Hz	OBW Power	r 99.00 %			Freq Offset 0 Hz

26dB Band Width Test Data CH-Mid (5300MHz)

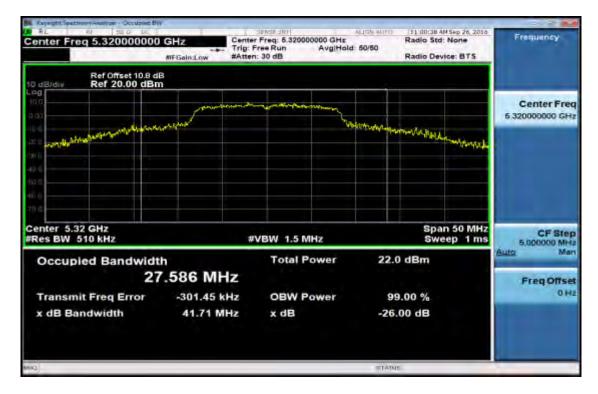


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26dB Band Width Test Data CH-High (5320MHz)



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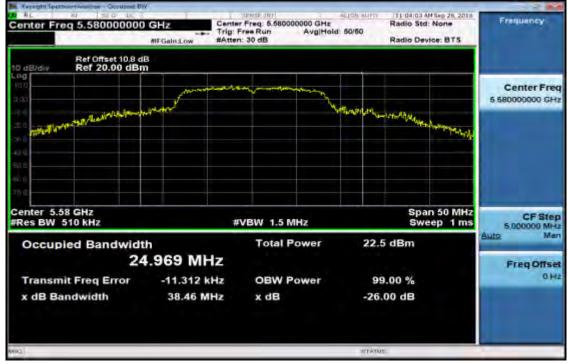


802.11a, 5470~5725 MHz (Main) 26dB Band Width Test Data CH-Low (5500MHz)

11.54	5.500000000	-te- Tri	SUBST JUNI ALTON EURO [1]:02:02 AM Sep 26, 20 Center Freq: 5.500000000 GHz Radio Std: None Trig: Free Run Avg Hold: 50/50 #Atten: 30 dB Radio Device: BTS			None	Frequency
0 dEVdiv	Ref Offset 10.8 dB Ref 20.00 dBm						
	and and a second second	1	1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -		manip	Ar Marcana	Center Free 5 500000000 GHz
enter 5.5 C Res BW 51			#VBW 1.5 MH	z		n 50 MHz ep 1 ms	CF Step 5.00000 MH
Occupie	ed Bandwidt 22	h .514 MHz	Total Po	22.0 dBm		Freq Offset	
Transmit x dB Ban	Freq Error dwidth	297.17 kHz 38.22 MHz	OBW Por x dB		99.00 % 6.00 dB		0 H2

TANK

26dB Band Width Test Data CH-Mid (5580MHz)



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26dB Band Width Test Data CH-High (5700MHz)

Keynight Spacesure An									22.2
Center Freq 5.	700000000	GHz MFGain:Low			0000 GHz AvgiHol	d: 50/50	Radio Std		Frequency
	ef Offset 10.8 dB								
(a.a. a.a.)		and the second	nm	ne marine s	1 may	- Dana			Center Fred 5 700000000 GHz
2010 4010 5010	ant a har and the said					and a start of the	browned	and mall	
00.0 70.0									
Center 5.7 GH #Res BW 360 F			#1	BW 1.1 M	Hz			eep 1 ms	CF Step 5,000000 MH
Occupied Bandwidth 17.987 MHz				Total P	ower	20.5 dBm			Auto Men Freg Offset
			5.283 kHz 5.67 MHz		OBW Power x dB		0.00 % 00 dB		0.04
EXEM						TATM	5		

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802.11ac VHT20, 5250~5350 MHz (Main) 26dB Band Width Test Data CH-Low (5260 MHz)

RL RI Sectore and Sectore B RL RI Sectore Course B Center Freq 5.26000000	GHz Cent	sense ator ter Freq: 5.280000000 GHz : Free Run AvgiHo en: 30 dB	Radio Std		Frequency				
10 dB/div Ref 20.00 dB	Ref Offset 10.8 dB Vdiv Ref 20.00 dBm								
Log 107 003 -100 -201 Append Mary Mary Mary Mary Mary Mary Mary Mary	r.ord	an a channe a	hereminet	nor word	RULANN	Center Freq 5 260000000 GHz			
Center 5.26 GHz #Res BW 510 kHz		#VBW 1.5 MHz			n 50 MHz ep 1 ms	CF Step			
Occupied Bandwidth 29.718 MHz				5 dBm	ep ins	5.000000 MHz Auto Man Freg Offset			
Transmit Freq Error 7.408 k x dB Bandwidth 46.85 M				9.00 % .00 dB		OHz			
-			TAN	r.					

26dB Band Width Test Data CH-Mid (5300 MHz)



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26dB Band Width Test Data CH-High (5320 MHz)

Center Freq 5.32000000	Center Fr Trig: Free	stress stril stress string Inter Freq: 5.220000000 GHz g: Free Run Avg Hold: 50/50 tten: 30 dB			Radio Std Radio Dev		Frequency		
10 dB/div Ref 20.00 dB									
Log 100 0.01 .100 .010 .010 .010 .000 .000	- North	internation of	forman en	- mark	niten - Angel	ulyprolype	1000-livnic	Center Free 5 320000000 GH	
Center 5.32 GHz #Res BW 510 kHz		#VB	W 1.5 M	Hz			n 50 MHz sep 1 ms	CF Step 5,00000 MH	
	łz	Total Power 2			.0 dBm		Auto Me		
Transmit Freq Error x dB Bandwidth	-361.20 H 44.79 M		OBW Po	ower		99.00 % 5.00 dB		OH	
eic)					STAT	WE.			

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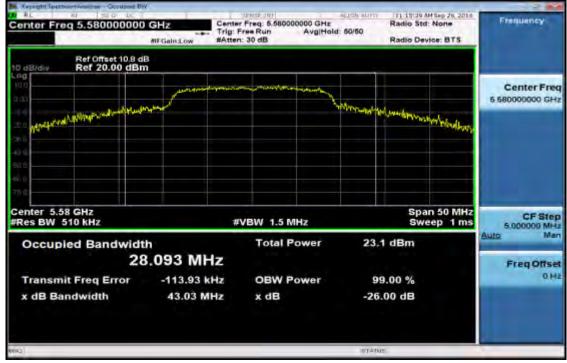
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802.11ac VHT20, 5470~5725 MHz (Main) 26dB Band Width Test Data CH-Low (5500 MHz)

Center Free 5 500000000 GH 5 500000000 GH	Center Freq 5.5000000	MFGain:Low	Center Freq: 5.50000000				Frequency	
Center Face Center 5.5 GHz Center 5.5 GHz CEF Step Sweep 1 ms Cather Free Sweep 1 ms Center 5.5 GHz CF Step Sweep 1 ms Center 5.5 GHz CF Step Sweep 1 ms CF Step Sweep 1 ms Center 5.5 GHz CF Step Sweep 1 ms Center 5.5 GHz CF Step Sweep 1 ms Sweep 1 ms CF Step Sweep 1 ms Sweep 1 ms Swee	IO dB/div Ref 20.00 dB							
Image: State of the state	107 0.00 110 110 110			man	anteriore a	and the second	Center Freq 5 500000000 GHz	
Occupied Bandwidth Total Power 21.9 dBm Auto Mar 23.838 MHz Freq Error 54.585 kHz OBW Power 99.00 %	Center 5.5 GHz						CF Step	
Transmit Freq Error 54.585 kHz OBW Power 99.00 %	Occupied Bandwidth 23.838 MHz Transmit Freq Error 54.585 kHz			er 21		ep 1 ms	5,000000 MHz Auto Man	
			z OBW Pow					

26dB Band Width Test Data CH-Mid (5580 MHz)



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26dB Band Width Test Data CH-High (5700 MHz)

¥.					
Trig: I	Free Run Avgille	E Radio Str old: 50/50	d: None	Frequency	
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			Center Free 5 700000000 GH	
- April -		Manual Marshall	Marmona		
#	VBW 910 kHz			CF Ster 5,000000 MH	
	Total Power	20.0 dBm		Auto Mar Freq Offse	
5.734 kHz 29.56 MHz	OBW Power x dB	99.00 % -26.00 dB		0.00	
	B m HFGainLow Center #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter #Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##Atter ##At	B m #FGain:Low Center Freq. 6.70000000 GHI Trig: Free Run #Atten: 30 dB B m #VBW 910 kHz th Total Power 7.888 MHz 5.734 kHz OBW Power	B HEGain:Low Extension of the store of the	GHZ GHZ GHZ GHZ GHZ GHZ GHZ GHZ	

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## 802.11ac VHT40, 5250~5350 MHz (Main) 26dB Band Width Test Data CH-Low (5270 MHz)

Trig:					Senter Street St			Radio Std		Frequency	
10 dB/div	Ref Offset 10.8 dB Ref 20.00 dBm										
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101							TAN			1	

## 26dB Band Width Test Data CH-High (5310MHz)



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## 802.11ac VHT40, 5470~5725 MHz (Main) 26dB Band Width Test Data CH-Low (5510 MHz)



# 26dB Band Width Test Data CH-Mid (5550 MHz)



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# 26dB Band Width Test Data CH-High (5670 MHz)

Keynight Spectraminer - Occupied By     RL      RL      RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL     RL	V	SENSE JUT		ALISS AUTO	Can depute	M Sep 26, 2016	
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Transmit Freq Error x dB Bandwidth	-926.11 kH: 77.65 MH	OBW	OBW Power x dB		99.00 % -26.00 dB		Freq Offse 0 H

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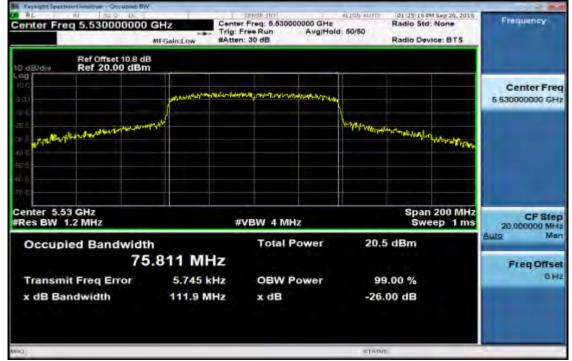
## 802.11ac VHT80, 5250~5350 MHz 26dB Band Width Test Data CH-Mid (5290 MHz)

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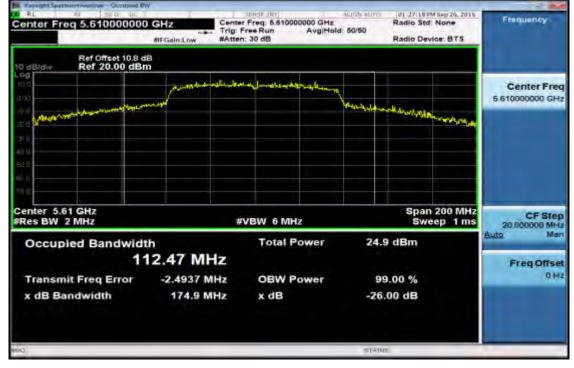
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## 802.11ac VHT80, 5470~5725 MHz (Main) 26dB Band Width Test Data CH-Low (5530 MHz)



# 26dB Band Width Test Data CH-High (5610 MHz)



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#### MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT 9.

#### **Standard Applicable** 9.1

FCC

OPERZTION Band	EUT CATEGORY	LIMIT
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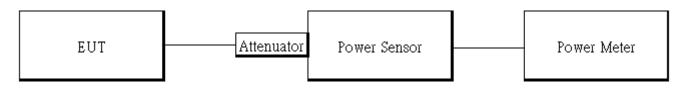
### 9.2 Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter
- 4. Power Meter is used as the auxiliary test equipment to conduct the output power measurement.
- 5. Record the max. reading and add 10 log(1/duty cycle).
- 6. Repeat above procedures until all frequency (low, middle, and high channel) measured were complete.

### 9.3 Measurement Equipment Used

	S	GS Conducted	Room		
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Spectrum Analyzer	KEYSIGHT	N9010A	MY54510568	04/14/2016	04/13/2017
Power Meter	Anritsu	ML2496A	1326001	06/23/2016	06/22/2017
Power Sensor	Anritsu	MA2411B	1315048	06/23/2016	06/22/2017
Power Sensor	Anritsu	MA2411B	1315049	06/23/2016	06/22/2017
Coaxial Cable 30cm	WOKEN	00100A1F1A195C	RF01	12/12/2015	12/11/2016
DC Block	PASTERNACK	PE8210	RF29	12/12/2015	12/11/2016
Splitter	RF-LAMBAD	RFLT2W1G18G	RF35	12/12/2015	12/11/2016
Attenuator	WOKEN	218FS-10	RF23	12/12/2015	12/11/2016
DC Power Supply	Agilent	E3640A	MY53140006	05/04/2016	05/03/2017

#### 9.4 Test Set-up



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### 9.5 Measurement Result Conducted output power (FCC)

#### 802.11a Main

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)		REQUIRED LIMIT (dBm)		RESULT
52	5260	MCS0	19.91	97.949	23.98	or 11+10log(B) =	27.27	PASS
60	5300	MCS0	19.66	92.470	23.98	or 11+10log(B) =	27.26	PASS
64	5320	MCS0	19.74	94.189	23.98	or 11+10log(B) =	27.20	PASS
100	5500	MCS0	19.98	99.541	23.98	or 11+10log(B) =	26.82	PASS
116	5580	MCS0	19.61	91.411	23.98	or 11+10log(B) =	26.85	PASS
1 40	5700	MCS0	18.67	73.621	23.98	or 11+10log(B) =	26.52	PASS

#### 802.11n_HT20_Main

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)		REQUIRED LIMIT (dBm)		RESULT
52	5260	MCS0	19.53	89.743	23.98	or 11+10log(B) =	27.71	PASS
60	5300	MCS0	19.72	93.756	23.98	or 11+10log(B) =	27.56	PASS
64	5320	MCS0	19.69	93.111	23.98	or 11+10log(B) =	27.51	PASS
100	5500	MCS0	19.67	92.683	23.98	or 11+10log(B) =	27.25	PASS
116	5580	MCS0	19.77	94.842	23.98	or 11+10log(B) =	27.34	PASS
140	5700	MCS0	17.42	55.208	23.98	or 11+10log(B) =	25.71	PASS

#### 802.11ac VHT20 Main

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)		REQUIRED LIMIT (dBm)		RESULT
52	5260	MCS0	19.73	93.972	23.98	or 11+10log(B) =	27.71	PASS
60	5300	MCS0	19.98	99.541	23.98	or 11+10log(B) =	27.56	PASS
64	5320	MCS0	19.81	95.719	23.98	or 11+10log(B) =	27.51	PASS
100	5500	MCS0	19.87	97.051	23.98	or 11+10log(B) =	27.25	PASS
116	5580	MCS0	19.89	97.499	23.98	or 11+10log(B) =	27.34	PASS
140	5700	MCS0	17.64	58.076	23.98	or 11+10log(B) =	25.71	PASS

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#### 802.11n_HT40_Main

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)		REQUIRED LIMIT (dBm)		RESULT
54	5270	MCS0	19.47	88.512	23.98	or 11+10log(B) =	30.78	PASS
62	5310	MCS0	19.73	93.972	23.98	or 11+10log(B) =	30.67	PASS
102	5510	MCS0	16.79	47.753	23.98	or 11+10log(B) =	28.40	PASS
110	5550	MCS0	19.82	95.940	23.98	or 11+10log(B) =	30.54	PASS
134	5670	MCS0	18.98	79.068	23.98	or 11+10log(B) =	29.90	PASS

#### 802.11ac_VHT40_Main

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)		REQUIRED LIMIT (dBm)		RESULT
54	5270	MCS0	19.63	91.833	23.98	or $11+10\log(B) =$	30.78	PASS
62	5310	MCS0	19.81	95.719	23.98	or $11+10\log(B) =$	30.67	PASS
102	5510	MCS0	16.93	49.317	23.98	or 11+10log(B) =	28.40	PASS
110	5550	MCS0	19.94	98.628	23.98	or 11+10log(B) =	30.54	PASS
134	5670	MCS0	19.15	82.224	23.98	or 11+10log(B) =	29.90	PASS

#### 802.11ac_VHT80_Main

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)		REQUIRED LIMIT (dBm)		RESULT
58	5290	MCS0	17.62	57.810	23.98	or 11+10log(B) =	32.75	PASS
106	5530	MCS0	16.01	39.902	23.98	or 11+10log(B) =	31.49	PASS
122	5610	MCS0	19.67	92.683	23.98	or 11+10log(B) =	33.43	PASS

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## **10. PEAK POWER SPECTRAL DENSITY**

### **10.1 Standard Applicable**

#### FCC

OPERZTION Band	EUT CATEGORY	LIMIT
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#### **10.2 Measurement Procedure**

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to Spectrum.
- 4. For U-NII1, U-NII-2A, U-NII-2C Band:

Set RBW=1MHz, VBW=3MHz, where span is enough to capture the entire bandwidth, Sweep time = Auto (601 pts), detector = sample, traces 100 sweeps of video averaging. (SA-2 with the omission of procedure x, the integration with 26dB EBW bandwidth) For U-NII-3 Band:

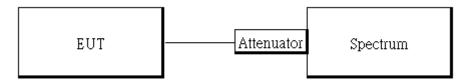
Set RBW=500 kHz, VBW≥ 3RBW, where span is enough to capture the entire bandwidth. Sweep time = Auto (601 pts), detector = sample, traces 100 sweeps of video averaging. (SA-2 with the omission of procedure x, the integration with 26dB EBW bandwidth)

- 5. User the cursor on spectrum to peak search the highest level of trace
- 6. Record the max. reading and add 10 log(1/duty cycle).
- 7. Repeat above procedures until all default test channel (low, middle, and high) was complete.

#### **10.3 Measurement Equipment Used**

	SGS Conducted Room										
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due						
Spectrum Analyzer	KEYSIGHT	N9010A	MY54510568	04/14/2016	04/13/2017						
DC Block	PASTERNACK	PE8210	RF29	12/12/2015	12/11/2016						
Attenuator	WOKEN	218FS-10	RF23	12/12/2015	12/11/2016						

#### 10.4 Test Set-up



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#### **10.5 Measurement Result**

POWER DENSITY 802.11a MODE				
Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (d B)	
5260	3.71	11	-7.29	
5300	3.06	11	-7.94	
5320	3.37	11	-7.63	
5500	3.27	11	-7.73	
5580	4.55	11	-6.45	
5700	2.74	11	-8.26	

POWER DENSITY 802.11ac VHT20 MODE				
Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)	
5260	3.83	11	-7.17	
5300	3.70	11	-7.30	
5320	3.59	11	-7.41	
5500	3.62	11	-7.38	
5580	3.36	11	-7.64	
5700	0.54	11	-10.46	

POWER DENSITY 802.11ac VHT40 MODE					
Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)		
5270	-0.93	11	-11.93		
5310	-1.33	11	-12.33		
5510	-3.87	11	-14.87		
5550	0.7	11	-10.30		
5670	-1.20	11	-12.20		

POWER DENSITY 802.11ac VHT80 MODE					
Frequency (MHz)	PPSD Limit Margi (dBm) (dBm) (dB				
5290	-9.66	11	-20.66		
5530	-9.76	11	-20.76		
5610	-4.38	11	-15.38		

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# 802.11a 5250~5350 MHz Peak Power Spectral Density Data Plot (CH Low 5260 MHz)



# Peak Power Spectral Density Data Plot (CH Mid 5300 MHz)

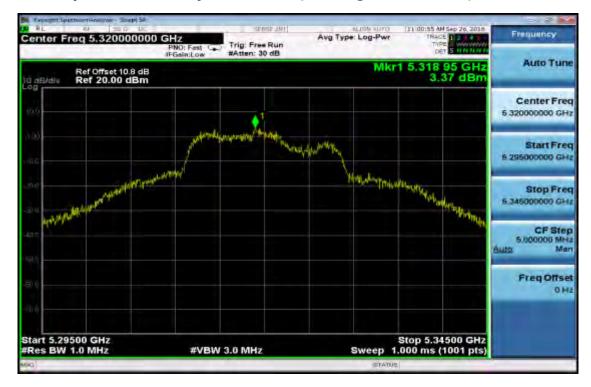


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# Peak Power Spectral Density Data Plot (CH High 5320 MHz)



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# 802.11a 5470~5725 MHz Peak Power Spectral Density Data Plot (CH Low 5500 MHz)



# Peak Power Spectral Density Data Plot (CH Mid 5580 MHz)



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# Peak Power Spectral Density Data Plot (CH High 5700 MHz)

Evenent Spectrum - Smapt S2					10.2 10
Center Freq 5.70000000	PNO: Fast	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	11:05:41 AM Sep 20, 2010 IMAGE 1 2 2 4 3 TYPE II WARNING GET 5 HIM AND	Frequency
Ref Offset 10,8 dB	IFGain:Low	AAden: JO OD	Mkr	1 5.698 75 GHz 2.74 dBm	Auto Tun
10.0		•1			Center Fre 5 70000000 GH
1.00 ICC	Multilash	Will a work of the star	-which		Start Fre 5 675000000 GH
no 20 months appendix	workingst		Withour your	harehal	Stop Fre 5,725000000 GH
an of the state of				Pitter of some and the second se	CF Ste 5,000000 MP Auto Mo
e) ()					Freq Offse
Start 5.67500 GHz Res BW 1.0 MHz	#VBW	3.0 MHz	Sween 1	Stop 5.72500 GHz 000 ms (1001 pts)	
(ce			STATUS		-

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# 802.11ac VHT20, 5250~5350 MHz Peak Power Spectral Density Data Plot (CH Low 5260MHz)



# Peak Power Spectral Density Data Plot (CH Mid 5300 MHz)



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# Peak Power Spectral Density Data Plot (CH High 5320 MHz)

Repught Spectromy-Analyzer - Sloupt SA RL RJ Sa G Do		SURGE AVT	ALION AUTO	11112:40 AM Sep 20, 2010	
enter Freq 5.3200000	PNO: Fast	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	TRACE 1244	Frequency
dE/div Ref Offset 10.8 dB	IFGain:Low	AAden. 30 db	Mk	1 5.323 15 GHz 3.59 dBm	Auto Tune
0 0		•			Center Free 5 320000000 GH
δ 	p. Marian	negilier and	-warming way		Start Free 5 295000000 GH
and the thread for the many the bar	Parker 1			Arman's whether on the second	Stop Free 5 345000000 GH
					CF Ster 5.000000 MH Auto Ma
0					Freq Offse 0 H
art 5.29500 GHz tes BW 1.0 MHz	**/814	3.0 MHz	Swaar	Stop 5.34500 GHz 1.000 ms (1001 pts)	
	***	3.0 MHZ	STATU		

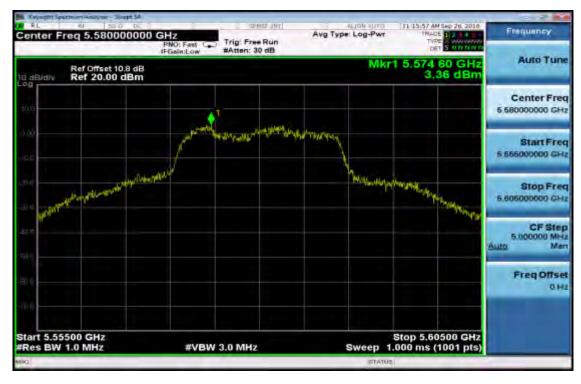
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# 802.11ac VHT20, 5470~5725 MHz Peak Power Spectral Density Data Plot (CH Low 5500 MHz)



# Peak Power Spectral Density Data Plot (CH Mid 5580MHz)



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# Peak Power Spectral Density Data Plot (CH High 5700 MHz)

Keynight Spectrum Analyzer - Simpt S							
enter Freq 5.700000	PNO: Fast	Trig: Free Run	Avg Type:	Log-Pwr		Sep 20, 2010	Frequency
Ref Offset 10.8 d dE/d/v Ref 20.00 dB	IFGain:Low	#Atten: 30 dB		Mkr1	5.703 0.0	70 GHz 54 dBm	Auto Tuni
10							Center Free 5 700000000 GH
ω 	1000 May	and the state of t	the working				Start Fre 5.67500000 GH
	poprotection			-laws makes	delle a.		Stop Fre 5,725009000 GH
and the second in the standing					ur yalashi	Man Humer	CF Ste 5.000000 MH Auto Ma
0							Freq Offse 0 H
art 5.67500 GHz Res BW 1.0 MHz	#VBW :	3.0 MHz	s			500 GHz	
2			-	STATUS	-		

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## 802.11ac VHT40, 5250~5350 MHz Peak Power Spectral Density Data Plot (CH Low 5270 MHz)

Reynoldt Spectrum Henry ter - Skrept SA RL RJ SE G DC		SURG AVI	ALION NUTO	31:24:00 AM Sep 20, 2010	
enter Freg 5.27000000	PNO: Fast	Trig: Free Run #Atten: 30 dB	Avg Type: Log-Pwr	THE DET S NO NUMBER	Frequency
Ref Offset 10.8 dB			M	-0.93 dBm	Auto Tuni
0.0 					Center Free 5 270000000 GH
w	parante	we we have a property	Niwithophy.		Start Fre 5 220000000 GH
a pigme 191 mar and and the W	etterne [		A. Show of	Stranger Wir Marshangers	Stop Fre 5 32000000 GH
					CF Ste 10.000000 MH Auto Ma
0 Q					Freq Offse 0 H
tart 5.22000 GHz Res BW 1.0 MHz	#VBM	3.0 MHz	Sweep 1	Stop 5.32000 GHz .000 ms (1001 pts)	
		5.0 14112	STATUR		

# Peak Power Spectral Density Data Plot (CH High 5310 MHz)



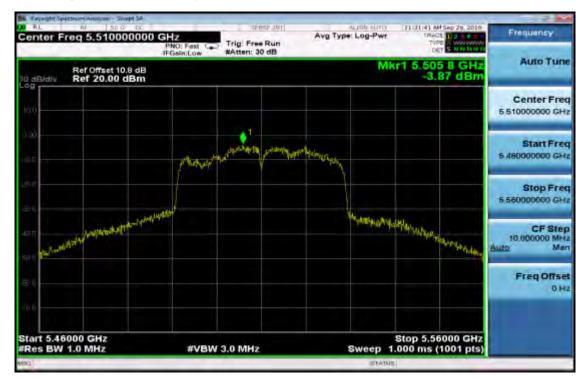
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# 802.11ac VHT40, 5470~5725 MHz Peak Power Spectral Density Data Plot (CH Low 5510 MHz)



# Peak Power Spectral Density Data Plot (CH Mid 5550 MHz)



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# Peak Power Spectral Density Data Plot (CH High 5670 MHz)



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# 802.11ac VHT80, 5250~5350 MHz Peak Power Spectral Density Data Plot (CH Mid 5290 MHz)



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# 802.11ac VHT80, 5470~5725 MHz Peak Power Spectral Density Data Plot (CH Low 5530 MHz)



## 802.11ac VHT80, 5470~5725 MHz Peak Power Spectral Density Data Plot (CH High 5610 MHz)



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# 11. UNDESIRABLE RADIATED EMISSION MEASUREMENT1

#### 11.1 Standard Applicable

The maximum 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 e.i.r.p. of -27 dBm/MHz.
- For transmitters operating in the 5.725-5.85 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

APPLICABLE TO	LIMIT				
FCC KDB 789033 D02 General UNII Test Procedures New Rules	FIELD STRE	NGTH AT 3m			
	PK: 74 (dBμV/m)	AV 54 (dBµV/m)			
APPLICABLE TO	EIRP LIMIT	FIELD STRENGTH AT 3m			
15.407(b)(1)					
15.407(b)(2)	PK: -27 (dBm/MHz)	PK: 68.3 (dBµV/m)			
15.407(b)(3)					
15.407(b)(4)(i)	PK:-27 (dBm/MHz) *1 PK:10 (dBm/MHz) *2 PK:15.6 (dBm/MHz) *3 PK:27 (dBm/MHz) *4	PK: 68.2(dBµV/m) *1 PK:105.2 (dBµV/m) *2 PK: 110.8(dBµV/m) *3 PK:122.2 (dBµV/m) *4			
*1 beyond 75 MHz or more above o	f the bandedge.				

*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

*4 from 5 MHz above or below the band edge increasing linearly to a level of 27

dBm/MHz at the band edge.

 $EIRP = ((E^*d)^2) / 30$ , where E is the field in V/m, d is the measurement distance (3m), EIRP is the equivalent isotropically radiated power in Watts.

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Unwanted spurious emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

Frequency (MHz)	Field strength (microvolts/meter)	Distance (meters)
0.009-0.490	2400/F(KHz)	300
0.490-1.705	24000/F(KHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

#### Note:

1. The lower limit shall apply at the transition frequencies.

2. Emission level  $(dB\mu V/m) = 20 \log Emission level (dB\mu V/m)$ 

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Unwanted spurious emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

Frequency (MHz)	Field strength (microvolts/meter)	Distance (meters)
0.009-0.490	2400/F(KHz)	300
0.490-1.705	24000/F(KHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

#### Note:

3. The lower limit shall apply at the transition frequencies.

4. Emission level  $(dB\mu V/m) = 20 \log Emission level (dB\mu V/m)$ 

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### 11.2 Measurement Equipment Used

		SGS SAC-			
Name of Equipment	Manufacturer	Model	Serial Num- ber	Calibration Date	Calibration Due
EMI Test Receiver	R&S	ESU 40	100363	04/12/2016	04/11/2017
Loop Antenna	ETS-Lindgren	6502	00143303	12/23/2015	12/22/2016
Broadband Anten- na	TESEQ	CBL 6112D	35240	10/28/2015	10/27/2016
Horn Antenna	ETS-Lindgren	3117	00143272	12/16/2015	12/15/2016
Horn Antenna	Schwarzbeck	BBHA9170	185	07/18/2016	07/17/2017
Pre Amplifier	EMC Instru- ments	EMC330	980096	12/12/2015	12/11/2016
Pre Amplifier	EMC Instru- ments	EMC0011830	980199	12/12/2015	12/11/2016
Pre Amplifier	R&S	SCU-18	10204	12/12/2015	12/11/2016
Pre Amplifier	EMC Instru- ments	EMC184045B	980135	12/12/2015	12/11/2016
Coaxial Cable	Huber+Suhner	RG 214/U	966Rx 9K-30M	12/12/2015	12/11/2016
Coaxial Cable	Huber+Suhner	RG 214/U SUCOFLEX 104	966Rx 30M-3G	12/12/2015	12/11/2016
Coaxial Cable	Huber+Suhner	SUCOFLEX 104	966Rx 1G-18G	12/12/2015	12/11/2016
Coaxial Cable	Huber+Suhner	mini 141-12 SUCOFLEX 104	966Rx 18G-40G	12/12/2015	12/11/2016
Coaxial Cable	Huber+Suhner	SUCOFLEX 104	966Tx 30M-18G	12/12/2015	12/11/2016
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	966Tx 18G-40G	12/12/2015	12/11/2016
Attenuator	WOKEN	218FS-10	RF27	12/12/2015	12/11/2016
Site NSA	SGS	966 Chamber C	SAC-C	03/04/2016	03/03/2017
Site VSWR	SGS	966 Chamber C	SAC-C	03/04/2016	03/03/2017
DC Power Supply	HOLA	DP-3003	D7070035	05/04/2016	05/03/2017
Controller	MF	MF-7802	N/A	N.C.R.	N.C.R.
Antenna Master	MF	N/A	N/A	N.C.R.	N.C.R.
Turn Table	MF	N/A	N/A	N.C.R.	N.C.R.
Test Software	World-Pallas	Dr. E	V 3.0 Lite	N.C.R.	N.C.R.

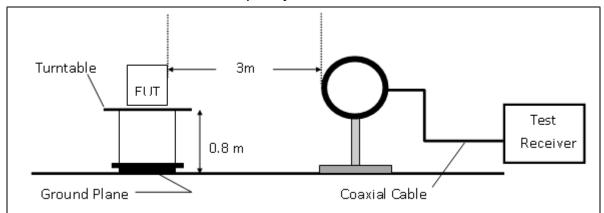
Note: N.C.R refers to Not Calibrated Required.

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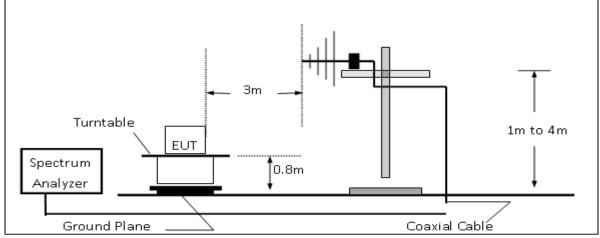


### 11.3 Test SET-UP

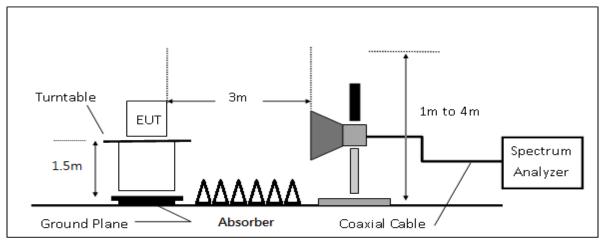
(A) Radiated Emission Test Set-UP Frequency Below 30MHz.



### (B) Radiated Emission Test Set-Up, Frequency form 30MHz to 1000MHz



(C) Radiated Emission Test Set-UP Frequency Over 1 GHz



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### 11.4 Measurement Procedure

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules.
- The EUT was placed on a turn table with 0.8m for frequency< 1GHz and 1.5m for frequen-3. cy> 1GHz above ground plane.
- The turn table shall rotate 360 degrees to determine the position of maximum emission 4. level.
- 5. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
- Set the spectrum analyzer as RBW=120 kHz and VBW=300 kHz for Peak Detector (PK) 6. and Quasi-peak (QP) at frequency below 1 GHz.
- Set the spectrum analyzer as RBW=1 MHz, VBW=3 MHz for Peak Detector at frequency 7. above 1 GHz.
- Set the spectrum analyzer as RBW=1 MHz, VBW=10 Hz (Duty cycle > 98%) or VBW ≥ 8. 1/T (Duty cycle < 98%) for Average Detector at frequency above 1 GHz.
- 9. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 10. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 11. Repeat above procedures until all frequency measured were complete.

# 11.5 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

#### FS = RA + AF + CL - AG

Actual FS(dB $\mu$ V/m) = SPA. Reading level(dB $\mu$ V) + Factor(dB)

Factor(dB) = Antenna Factor(dB $\mu$ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

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### Note :

"F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency."E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.

# 11.6 Test Results of Radiated Spurious Emissions form 9 KHz to 30 MHz

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

### 11.7 Measurement Result

Note: Refer to next page spectrum analyzer data chart and tabular data sheets.

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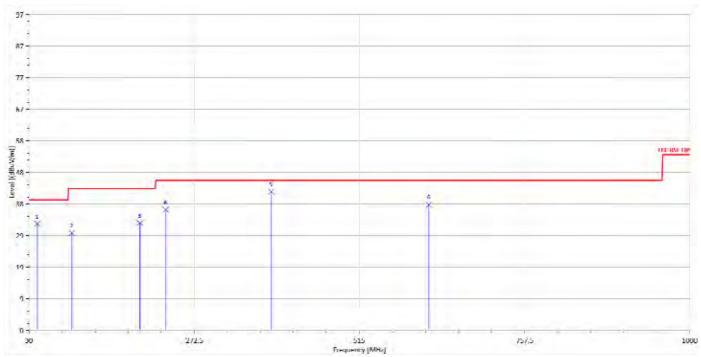
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# **Radiated Spurious Emission Measurement Result Below 1GHz Worst-Case Data:**

#### 802.11a 5250~5350 MHz

Operation Mode :	802.11a	Test Date :	2016/9/14
Fundamental Frequency :	5300 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Mid	Test Engineer :	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical



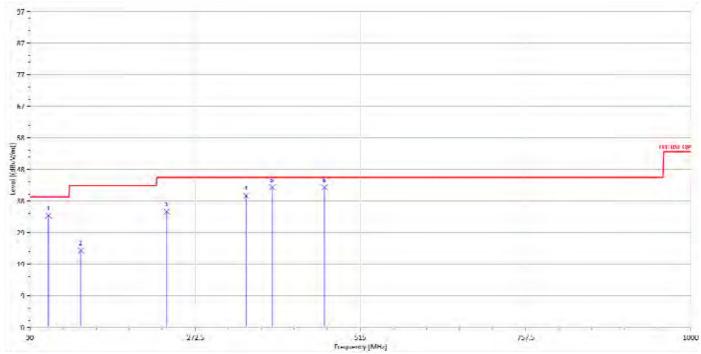
Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
42.61	S	Peak	47.34	-14.63	32.71	40	-7.29
93.05	S	Peak	48.77	-18.95	29.82	43.5	-13.68
192.96	S	Peak	51.01	-18.05	32.96	43.5	-10.54
230.79	S	Peak	53.26	-16.17	37.09	46	-8.91
385.99	S	Peak	52.70	-10.18	42.53	46	-3.47
616.85	S	Peak	45.16	-6.58	38.58	46	-7.42

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Operation Mode :	802.11a	Test Date:	2016/9/14
Fundamental Frequency :	5300 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Mid	Test Engineer :	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Horizontal



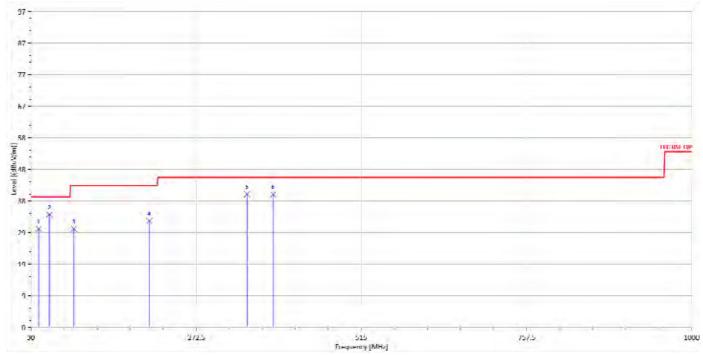
Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
57.16	S	Peak	56.32	-21.98	34.34	40	-5.66
104.69	S	Peak	40.76	-17.17	23.59	43.5	-19.91
230.79	S	Peak	51.72	-16.17	35.56	46	-10.44
347.19	S	Peak	52.02	-11.64	40.38	46	-5.62
385.99	S	Peak	53.12	-10.18	42.95	46	-3.05
462.62	S	Peak	51.08	-8.14	42.94	46	-3.06

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#### 802.11a, 5470~5725 MHz

Operation Mode :	802.11a	Test Date:	2016/9/14	
Fundamental Frequency :	5580 MHz	Temp. / Humi.:	22.7deg_C/57RH	
Operation Band :	Tx CH Mid	Test Engineer:	Pony	
EUT Pol. :	E2	Measurement Antenna Pol.:	Vertical	

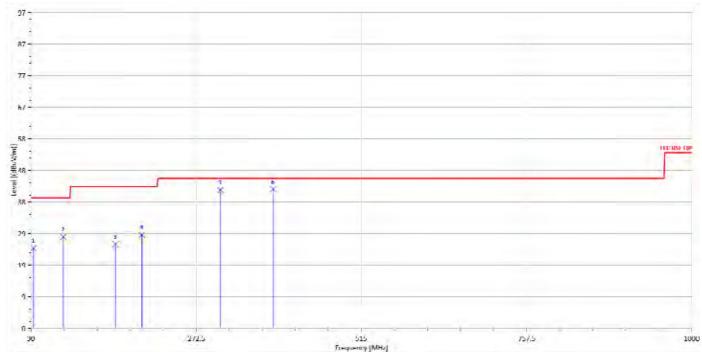


F	Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin
	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4	11.64	S	Peak	44.16	-13.95	30.21	40	-9.79
5	57.16	S	Peak	56.63	-21.98	34.65	40	-5.35
9	93.05	S	Peak	49.14	-18.95	30.19	43.5	-13.31
2	03.63	S	Peak	50.03	-17.34	32.69	43.5	-10.81
3	47.19	S	Peak	52.47	-11.64	40.84	46	-5.16
3	85.99	S	Peak	50.97	-10.18	40.79	46	-5.21

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Operation Mode :	802.11a	Test Date :	2016/9/14
Fundamental Frequency :	5580 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Mid	Test Engineer :	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Horizontal



			the day of Long				
Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
33.88	S	Peak	33.91	-9.27	24.64	40	-15.36
77.53	S	Peak	49.24	-21.17	28.07	40	-11.93
154.16	S	Peak	42.79	-16.97	25.82	43.5	-17.68
192.96	S	Peak	46.68	-18.05	28.63	43.5	-14.87
308.39	S	Peak	55.18	-12.74	42.44	46	-3.56
385.99	S	Peak	52.87	-10.18	42.69	46	-3.31

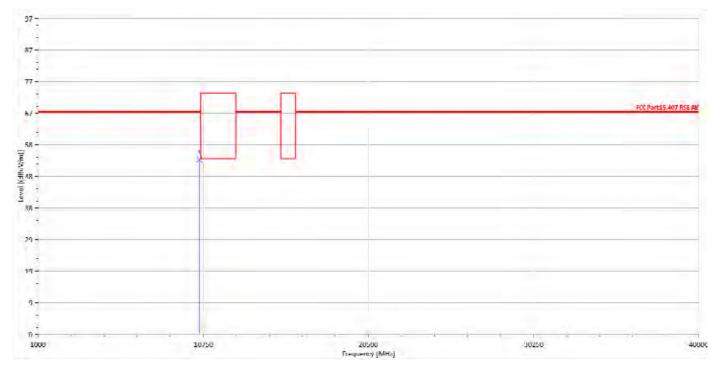
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#### Above 1GHz Worst-Case Data:

#### Radiated Spurious Emission Measurement Result 802.11a, 5250MHz-5350MHz

Operation Mode :	802.11a	Test Date :	2016/9/14
Fundamental Frequency :	5260 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Low	Test Engineer :	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical



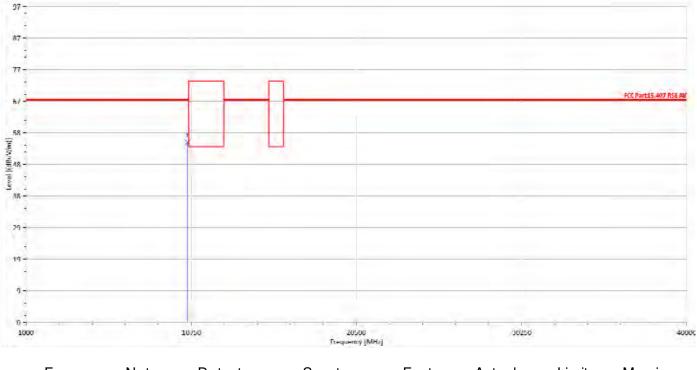
F	req.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
			Mode	Reading Level		FS	@3m	
Ν	ЛНz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
105	20.00	Н	Peak	36.27	17.39	53.66	68.3	-14.64

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Operation Mode :	802.11a	Test Date:	2016/9/14
Fundamental Frequency :	5260 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Low	Test Engineer :	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Horizontal



	⊢req.	Note	Detector	Spectum	⊢actor	Actual	Limit	Margın	
			Mode	Reading Level		FS	@3m		
_	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
	10520.00	Н	Peak	37.79	17.39	55.18	68.3	-13.12	-

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Operation Mode :	802.11a	Test Date:	2016/9/14
Fundamental Frequency :	5300 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Mid	Test Engineer :	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical

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	Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
			Mode	Reading Level		FS	@3m	
	MHz				40			dD
		F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
10	00.00	Н	Peak	36.29	17.41	53.70	74	-20.30

Average

Н

10600.00

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17.41

42.06

54

-11.94



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Operation Mode :	802.11a	Test Date:	2016/9/14
Fundamental Frequency :	5300 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Mid	Test Engineer :	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Horizontal

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Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	-
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
10600.00	Н	Peak	38.43	17.41	55.84	74	-18.16

26.42

Average

17.41

43.83

54

-10.17

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Operation Mode :	802.11a	Test Date:	2016/9/14
Fundamental Frequency :	5320 MHz	Temp. / Humi.:	22.7deg_C/57RH
Operation Band :	Tx CH High	Test Engineer :	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical

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Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
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10640.00	Н	Peak	37.35	17.56	54.91	74	-19.09
MHz 10640.00	F/H/E/S H	Mode PK/QP/AV Peak	Reading Level dBµV 37.35	dB 17.56	FS <u>dBµV/m</u> 54.91	@3m <u>dBµV/m</u> 74	dB -19.09

Average

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10640.00

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17.56

42.29

54

-11.71



Operation Mode :	802.11a	Test Date:	2016/9/14
Fundamental Frequency :	5320 MHz	Temp. / Humi.:	22.7deg_C/57RH
Operation Band :	Tx CH High	Test Engineer :	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Horizontal

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Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Lev		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
10640.00	Н	Peak	38.16	17.56	55.72	74	-18.28
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17.56

43.75

54

-10.25

Average

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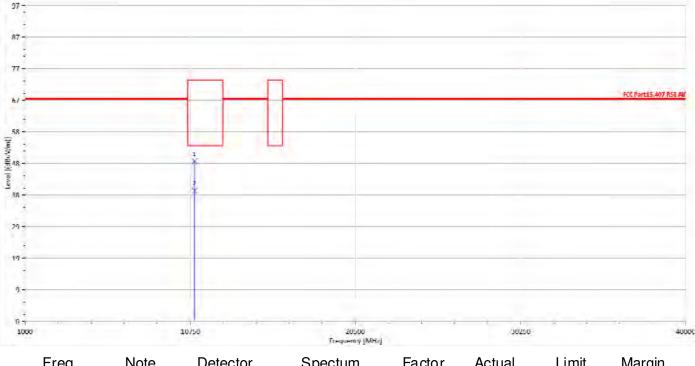
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## Radiated Spurious Emission Measurement Result 802.11a, 5470~5725 MHz

Operation Mode :	802.11a	Test Date :	2016/9/14
Fundamental Frequency :	5500 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Low	Test Engineer :	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical



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		Mode	Reading Level		FS	@3m		
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	_
11000.00	Н	Peak	30.09	19.11	49.20	74	-24.80	-
11000.00	Н	Average	20.98	19.11	40.09	54	-13.91	

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Operation Mode :	802.11a	Test Date:	2016/9/14
Fundamental Frequency :	5500 MHz	Temp. / Humi. :	22.7deg C/57RH
Operation Band : EUT Pol. :		•	Pony Horizontal

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1000		10/50	20500 Frequency (MHz)		/30250		4000
Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
11000.00	Н	Peak	31.68	19.11	50.79	74	-23.21

21.02

Average

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19.11

40.13

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Operation Mode :	802.11a	Test Date:	2016/9/14
Fundamental Frequency :	5580 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Mid	Test Engineer :	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical

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Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
11160.00	Н	Peak	30.34	19.26	49.60	74	-24.40

19.26

40.36

Average

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11160.00

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Operation Mode :	802.11a	Test Date:	2016/9/14
Fundamental Frequency :	5580 MHz	Temp. / Humi.:	22.7deg_C/57RH
Operation Band :	Tx CH Mid	Test Engineer :	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Horizontal

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•		Mode	Reading Level		FS	@3m	0
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
11160.00	Н	Peak	30.02	19.26	49.28	74	-24.72

19.26

40.37

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-13.63

Average

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Operation Mode :	802.11a	Test Date:	2016/9/14
Fundamental Frequency :	5700 MHz	Temp. / Humi.:	22.7deg_C/57RH
Operation Band :	Tx CH High	Test Engineer :	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical

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Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
11400.00	H	Peak	30.78	18.78	49.55	74	-24.45
11100.00		roun	00.70	10.70	10.00	7 4	21.40

Average

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11400.00

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18.78

40.10

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Operation Mode :	802.11a	Test Date:	2016/9/14
Fundamental Frequency :	5700 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH High	Test Engineer :	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Horizontal

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PCC Parties	407 RSE AV
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20 -	
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1000 10/50 20500 30250 Trequency (MHz)	4000
Freq. Note Detector Spectum Factor Actual Limit Marg	in
Mode Reading Level FS @3m	
MHz F/H/E/S PK/QP/AV dB dBµV/m dB	
11400.00 H Peak 30.31 18.78 49.08 74 -24.9	2

Average

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11400.00

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18.78

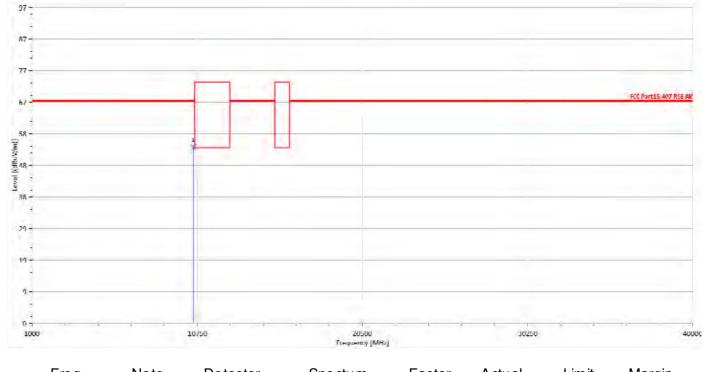
40.12

54



# Radiated Spurious Emission Measurement Result 802.11ac VHT20, 5250~5350 MHz

Operation Mode :	802.11ac20	Test Date :	2016/9/14
Fundamental Frequency :	5260 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Low	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Vertical

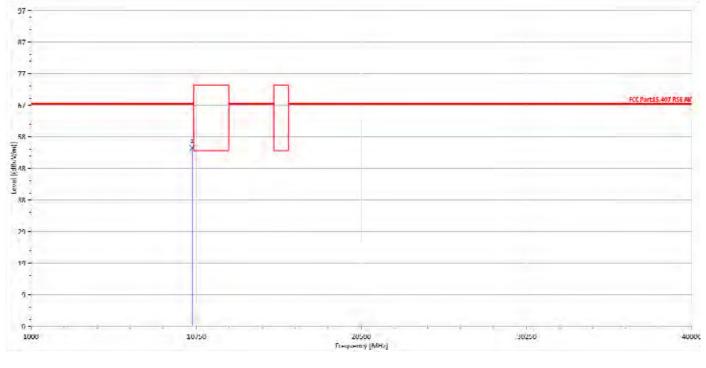


	⊢req.	Note	Detector	Spectum	Factor	Actual	Limit	Margin	
			Mode	Reading Level		FS	@3m		
_	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	_
_	10520.00	Н	Peak	36.73	17.39	54.12	68.3	-14.18	_

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Operation Mode :	802.11ac20	Test Date :	2016/9/14
Fundamental Frequency :	5260 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Low	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Horizontal



Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin	
		Mode	Reading Level		FS	@3m		
 MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
 10520.00	H	Peak	37.31	17.39	54.70	68.3	-13.60	

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-12.07

54

Operation Mode :	802.11ac20	Test Date :	2016/9/14
Fundamental Frequency :	5300 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Mid	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Vertical

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Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
10600.00	Н	Peak	37.47	17.41	54.87	74	-19.13
			-				

24.52

Average

Н

10600.00

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17.41

41.93



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Operation Mode :	802.11ac20	Test Date :	2016/9/14
Fundamental Frequency :	5300 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Mid	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Horizontal

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Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
•		Mode	Reading Level		FS	@3m	Ũ
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
10600.00		Peak	38.74	17.41	56.14	74	-17.86
10000.00		rean	JU.7 T	17.71	50.17	1 7	17.00

26.16

Average

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17.41

43.57

54

-10.43



Н

-12.17

54

Operation Mode :	802.11ac20	Test Date :	2016/9/14
Fundamental Frequency :	5320 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH High	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Vertical

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F	req.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
			Mode	Reading Lev	el	FS	@3m	
Ν	ЛНz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
106	640.00	Н	Peak	36.20	17.56	53.76	74	-20.24

24.27

Average

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17.56

41.83



Operation Mode :	802.11ac20	Test Date :	2016/9/14
Fundamental Frequency :	5320 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH High	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Horizontal

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MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	_
10640.00	Н	Peak	36.76	17.56	54.32	74	-19.68	-
10640.00	Н	Average	25.63	17.56	43.19	54	-10.81	
10640.00	Н	Average	25.63	17.56	43.19	54	-10.81	

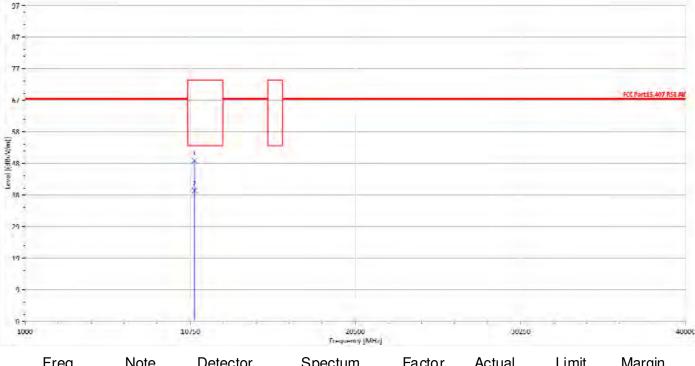
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# Radiated Spurious Emission Measurement Result 802.11ac VHT20, 5470~5725 MHz

Operation Mode :	802.11ac20	Test Date :	2016/9/14
Fundamental Frequency :	5500 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Low	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical



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			Mode	Reading Level		FS	@3m		
_	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	_
-	11000.00	Н	Peak	30.25	19.11	49.36	74	-24.64	-
	11000.00	Н	Average	21.02	19.11	40.13	54	-13.87	

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Operation Mode :	802.11ac20	Test Date :	2016/9/14
Fundamental Frequency :	5500 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Low	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Horizontal

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MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
11000.00	Н	Peak	31.57	19.11	50.68	74	-23.32

Average

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11000.00

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19.11

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Operation Mode :	802.11ac20	Test Date :	2016/9/14
Fundamental Frequency :	5580 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Mid	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Vertical

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Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	-
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
11160.00	<u>H</u>	Peak	30.42	19.26	49.68	<u>74</u>	-24.32
11100.00		i can	00.42	10.20	+0.00	<i>,</i> <del>,</del> <del>,</del>	27.02

Average

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11160.00

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19.26

40.40

54



Operation Mode :	802.11ac20	Test Date :	2016/9/14
Fundamental Frequency :	5580 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Mid	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Horizontal

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1000		10750	20500 Frequency (MHz)		30250		400
Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	-
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
11160.00		Peak	31.48	19.26	50.74	74	-23.26
11100.00	, п	reak	31.40	19.20	50.74	74	-23.20

Average

Н

11160.00

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19.26

40.43

54



Operation Mode :	802.11ac20	Test Date :	2016/9/14
Fundamental Frequency :	5700 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH High	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Vertical

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1000		10/50	20500 Frequency (MHz)		30250		-40
Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
-		Mode	Reading Level		FS	@3m	-
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
11400.00	Н	Peak	31.90	18.78	50.67	74	-23.33
			0.100		00.07	••	-0.00

Average

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11400.00

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18.78

40.07

54



Operation Mode :	802.11ac20	Test Date :	2016/9/14
Fundamental Frequency :	5700 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH High	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Horizontal

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Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz			_	dB	dBµV/m	dBµV/m	dB
	F/H/E/S	PK/QP/AV	dBµV	uБ	ασμν/π	ασμν/π	uБ

Average

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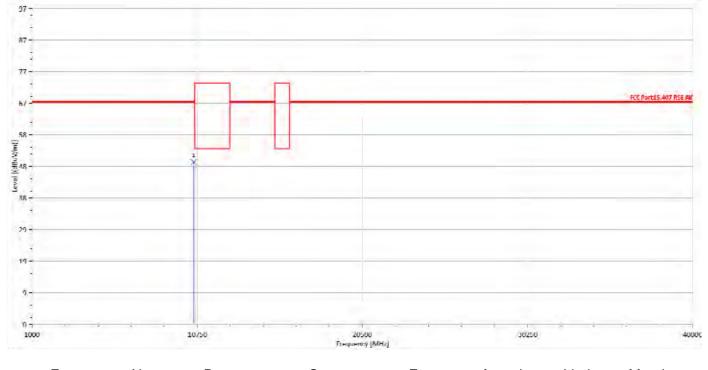
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# Radiated Spurious Emission Measurement Result 802.11ac VHT40, 5250~5350 MHz

Operation Mode :	802.11ac40	Test Date :	2016/9/14
Fundamental Frequency :	5270 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Low	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Vertical



	Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin	
			Mode	Reading Level		FS	@3m		
_	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	_
_	10540.00	Н	Peak	32.49	17.34	49.82	68.3	-18.48	

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Operation Mode :	802.11ac40	Test Date :	2016/9/14
Fundamental Frequency : Operation Band :	5270 MHz Tx CH Low	Temp. / Humi.: Test Engineer:	22.7deg_C/57RH Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Horizontal

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	Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin	
			Mode	Reading Level		FS	@3m		
_	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
	10540.00	Н	Peak	33.22	17.34	50.55	68.3	-17.75	

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Freq	. Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
10620.	00 H	Peak	31.63	17.52	49.15	74	-24.85

22.38

Average

17.52

39.90

54

-14.10

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Operation Mode :	802.11ac40	Test Date :	2016/9/14
Fundamental Frequency :	5310 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH High	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Horizontal

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1000		10/50	20500 Trequency (MHz)		30250		4000
Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
10620.00	Н	Peak	34.06	17.52	51.58	74	-22.42

17.52

40.60

Average

Н

10620.00

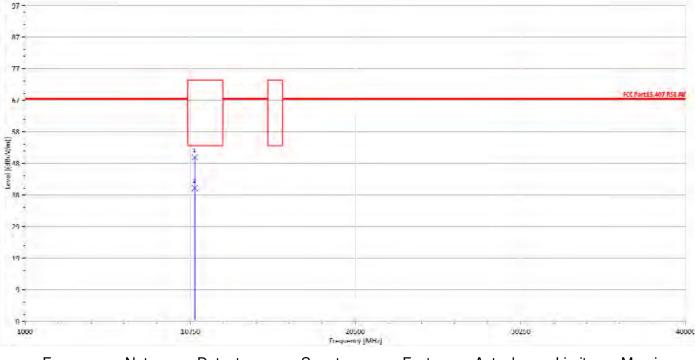
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54



## Radiated Spurious Emission Measurement Result 802.11ac VHT40, 5470~5725 MHz

Operation Mode :	802.11ac40	Test Date :	2016/9/14
Fundamental Frequency :	5510 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Low	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical



⊢req.	Note	Detector	Spectum	Factor	Actual	Limit	Margın	
		Mode	Reading Level		FS	@3m		
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	_
11020.00	Н	Peak	30.43	19.93	50.36	74	-23.64	
11020.00	Н	Average	20.93	19.93	40.86	54	-13.14	
	MHz 11020.00	MHz F/H/E/S 11020.00 H	Mode MHz F/H/E/S PK/QP/AV 11020.00 H Peak	ModeReading LevelMHzF/H/E/SPK/QP/AVdBµV11020.00HPeak30.43	ModeReading LevelMHzF/H/E/SPK/QP/AVdBµVdB11020.00HPeak30.4319.93	Mode         Reading Level         FS           MHz         F/H/E/S         PK/QP/AV         dBμV         dB         dBμV/m           11020.00         H         Peak         30.43         19.93         50.36	Mode         Reading Level         FS         @3m           MHz         F/H/E/S         PK/QP/AV         dBμV         dB         dBμV/m         dBμV/m           11020.00         H         Peak         30.43         19.93         50.36         74	Mode         Reading Level         FS         @3m           MHz         F/H/E/S         PK/QP/AV         dBμV         dB         dBμV/m         dBμV/m         dB           11020.00         H         Peak         30.43         19.93         50.36         74         -23.64

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Operation Mode :	802.11ac40	Test Date :	2016/9/14
Fundamental Frequency :	5510 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Low	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Horizontal

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		Mode	Reading Level		FS	(@3m	
MHz	F/H/E/S	Mode PK/QP/AV	Reading Level dBµV	dB	FS dBµV/m	@3m dBµV/m	dB

19.93

40.91

Average

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11020.00

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-12.79

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Operation Band : Tx CH Mid Test Engineer : Pony	Operation Mode :	802.11ac40	Test Date :	2016/9/14
EUT POL. EZ IVIEASUREMENT ANTENNA POL. VENICAT	Fundamental Frequency :	5550 MHz	Temp. / Humi. :	22.7deg_C/57RH
	Operation Band :	Tx CH Mid	Test Engineer:	Pony
	EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical

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		Mode	Reading Level		FS	@3m	
							15
MHz	F/H/E/S	PK/QP/AV Peak	dBµV 30.38	dB 20.30	<u>dBµV/m</u> 50.69	<u>dBµV/m</u> 74	dB -23.31
11100.00	Н						

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Average

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11100.00

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20.30

41.21



-12.75

54

Operation Mode :	802.11ac40	Test Date :	2016/9/14
Fundamental Frequency :	5550 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Mid	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Horizontal

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		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
11100.00	Н	Peak	29.84	20.30	50.14	74	-23.86

20.95

Average

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11100.00

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20.30

41.25



Operation Mode :	802.11ac40	Test Date :	2016/9/14
Fundamental Frequency :	5670 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH High	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Vertical

Freq. Note Detector Spectum Factor Actual Limit Margin	7-								-
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		4. A	10/50	20500 Frequency (MHz)		30250		(1)	4000
Mada Daading Laval ES @2m	Freq.	Note			Factor			Margin	
Nidde Reading Level FS @311			Mode	Reading Level		FS	@3m		
MHz F/H/E/S PK/QP/AV dB dBµV/m dB	MHz	F/H/E/S	PK/QP/AV		dB	dBµV/m		dB	
11340.00 H Peak 30.72 18.44 49.16 74 -24.84	11340.00	Н			18.44			-24.84	-

18.44

39.67

54

-14.33

Average

Н

11340.00

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Operation Mode :	802.11ac40	Test Date :	2016/9/14
Fundamental Frequency :	5670 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH High	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Horizontal

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	10/50	20500 Trequency (MHz)		30250		400
Note	Detector	Spectum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
		~				
F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
	Note		10/50 20/50 Traquetty [MHz] Note Detector Spectum	Note Detector Spectum Factor	10/50 20500 Trequency [MHz] 20500 Note Detector Spectum Factor Actual	Note Detector Spectum Factor Actual Limit

18.44

40.96

54

-13.04

Average

Н

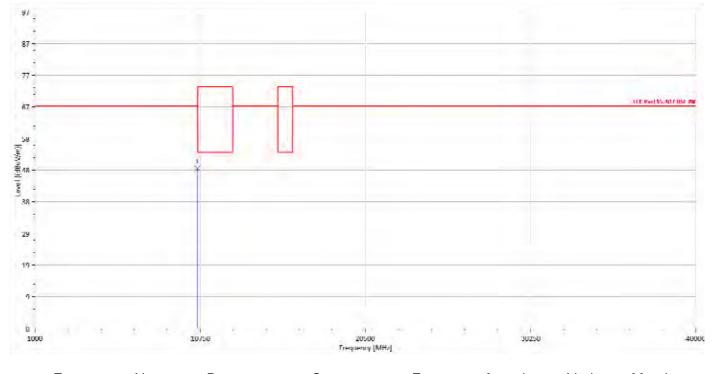
11340.00

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## Radiated Spurious Emission Measurement Result 802.11ac VHT80, 5250~5350 MHz

Operation Mode :	802.11ac80	Test Date :	2016/9/14
Fundamental Frequency :	5290 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH High	Test Engineer :	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical



	Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin	
			Mode	Reading Level		FS	@3m		
_	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	_
	10580.00	Н	Peak	29.63	17.37	47.00	68.3	-21.30	

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Operation Mode :	802.11ac80	Test Date :	2016/9/14
Fundamental Frequency :	5290 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH High	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Horizontal

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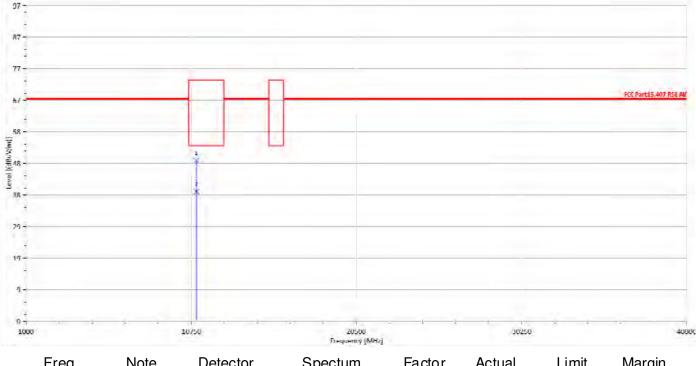
⊢req.	Note	Detector	Spectum	⊢actor	Actual	Limit	Margın	
		Mode	Reading Level		FS	@3m		
 MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	_
 10580.00	Н	Peak	31.65	17.37	49.02	68.3	-19.28	-

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## Radiated Spurious Emission Measurement Result 802.11ac VHT80, 5470~5725 MHz

Operation Mode :	802.11ac80	Test Date :	2016/9/14
Fundamental Frequency :	5530 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Low	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical



	Freq.	Note	Delector	Specium	Facior	Actual		iviargin	
			Mode	Reading Level		FS	@3m		
_	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	_
-	11060.00	Н	Peak	30.51	18.91	49.43	74	-24.57	
	11060.00	Н	Average	20.90	18.91	39.81	54	-14.19	

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-14.20

54

Operation Mode :	802.11ac80	Test Date :	2016/9/14
Fundamental Frequency : Operation Band :	5530 MHz Tx CH Low	Temp. / Humi. : Test Engineer :	22.7deg_C/57RH Ponv
EUT Pol. :	E2	Measurement Antenna Pol. :	Horizontal

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Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB

20.89

18.91

39.80

Average

Н

11060.00



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0-7 1000 10/50 20500 // Тенриенту [МНи]	10250	4000
Freq. Note Detector Spectum Factor Actual		Margin
Mode Reading Level FS	@3m	
MHz F/H/E/S PK/QP/AV dBµV dB dBµV/r		dB

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Average

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11220.00

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18.63

39.55

54

-14.45



Operation Mode :	802.11ac80	Test Date :	2016/9/14
Fundamental Frequency :	5610 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	Tx CH Mid	Test Engineer:	Pony
EUT Pol. :	E2	Measurement Antenna Pol.:	Horizontal

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Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
11220.00	<u> </u>	Peak	30.40	18.63	49.03	74	-24.97
11220.00	11	i can	50.40	10.00	49.00	/ 4	-24.37

20.93

Average

Н

11220.00

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18.63

39.56

54

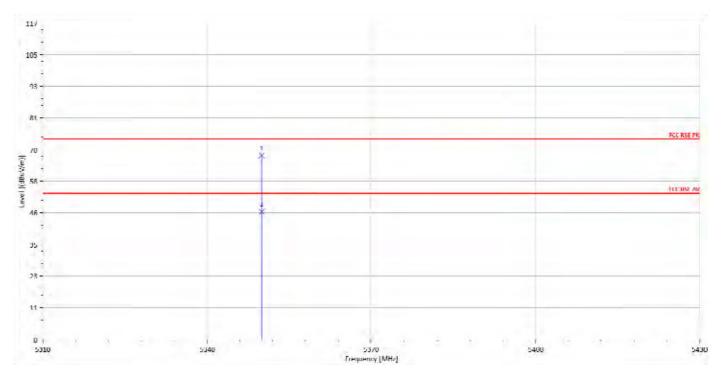
-14.44



## Band edge falling to restricted band

### 802.11a mode

Operation Mode :	802.11a	Test Date :	2016/9/14
Fundamental Frequency :	5320 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BE CH High	Test Engineer :	Ashton
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical



Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
 MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
 5350.00	E	Peak	56.44	11.67	68.11	74	-5.89
5350.00	Е	Average	35.56	11.67	47.23	54	-6.77

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Operation Mode :	802.11a	Test Date:	2016/9/14
Fundamental Frequency :	5320 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BECHHigh	Test Engineer :	Ashton
EUT Pol. :	E2	Measurement Antenna Pol. :	Horizontal

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117 -				

Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.0	D E	Peak	60.48	11.67	72.15	74	-1.85
5350.0	D E	Average	37.73	11.67	49.40	54	-4.60



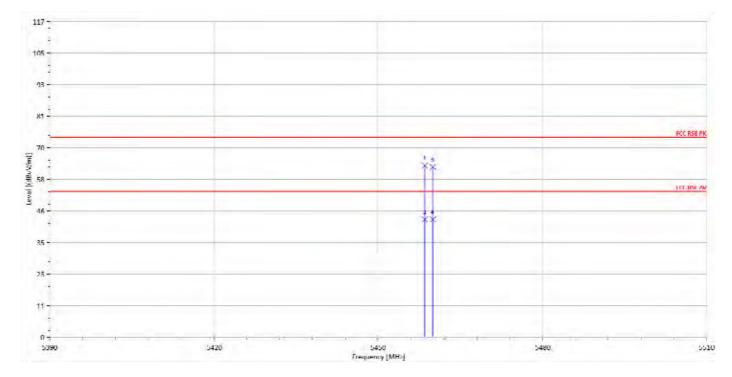
Operation Mode :	802.11a	Test Date :	2016/9/14
Fundamental Frequency :	5500 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BE CH Low	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol.:	Vertical

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Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5456.60	S	Peak	47.86	11.69	59.55	74	-14.45
	_						
5456.60	S	Average	31.59	11.69	43.28	54	-10.72
5460.00	Е	Peak	47.44	11.66	59.09	74	-14.91
5460.00	Е	Average	31.64	11.66	43.30	54	-10.70



Operation Mode :	802.11a	Test Date :	2016/9/14
Fundamental Frequency :	5500 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BE CH Low	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol.:	Horizontal



Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5458.52	S	Peak	51.95	11.67	63.62	74	-10.38
5458.52	S	Average	32.02	11.67	43.69	54	-10.31
5460.00	E	Peak	51.50	11.66	63.16	74	-10.84
5460.00	Е	Average	32.05	11.66	43.71	54	-10.29

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Operation Mode :	802.11a	Test Date:	2016/9/14
Fundamental Frequency :	5500 MHz	Temp. / Humi.:	22.7deg_C/57RH
Operation Band :	BE CH Low RSE	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol.:	Vertical
117 -	1		

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5390	5420	5450 Trequency (MHz)	5480	5510

	Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin	
			Mode	Reading Level		FS	@3m		
	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
-	5469.56	S	Peak	51.89	11.57	63.46	68.3	-4.84	
	5470.00	Е	Peak	50.37	11.57	61.94	68.3	-6.36	



Operation Mode :	802.11a	Test Date:	2016/9/14
Fundamental Frequency :	5500 MHz	Temp. / Humi.:	22.7deg_C/57RH
Operation Band :	BE CH Low RSE	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol.:	Horizontal
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5390	5420	5450 Frequency (MHz)	5480	551

Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
5468.48	S	Peak	55.58	11.58	67.16	68.3	-1.14	
5470.00	Е	Peak	54.92	11.57	66.49	68.3	-1.81	



Operation Mode :	802.11a	Test Date :	2016/9/14
Fundamental Frequency :	5700 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BE CH High	Test Engineer :	Ashton
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical

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5810	5780	5750 Trequency [MRb]	5720	0 <del>1</del> 5690

	Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin	
			Mode	Reading Level		FS	@3m		
_	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
	5725.00	E	Peak	49.90	12.01	61.91	68.3	-6.39	
	5725.28	S	Peak	50.82	12.01	62.83	68.3	-5.47	



Operation Mode :	802.11a	Test Date:	2016/9/14
Fundamental Frequency :	5700 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BE CH High	Test Engineer :	Ashton
EUT Pol. :	E2	Measurement Antenna Pol. :	Horizontal

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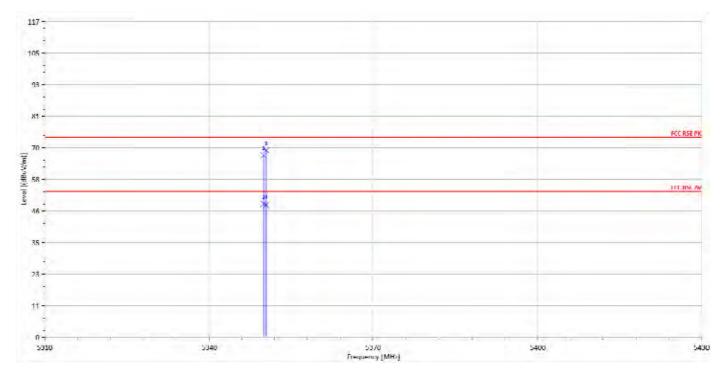
Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
5725.00	E	Peak	53.93	12.01	65.94	68.3	-2.36	
5726.00	S	Peak	54.14	12.01	66.16	68.3	-2.14	

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## 802.11ac20 VHT mode

Operation Mode :	802.11ac20	Test Date :	2016/9/14
Fundamental Frequency :	5320 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BE CH High	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol.:	Vertical



Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	E	Peak	55.65	11.67	67.33	74	-6.67
5350.00	E	Average	37.66	11.67	49.33	54	-4.67
5350.44	S	Peak	57.54	11.68	69.22	74	-4.78
5350.44	S	Average	37.34	11.68	49.02	54	-4.98

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Operation Mode :	802.11ac20	Test Date :	2016/9/14
Fundamental Frequency :	5320 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BECHHigh	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol.:	Horizontal

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Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
5350.00	E	Peak	60.47	11.67	72.14	74	-1.86	
5350.00	Е	Average	40.01	11.67	51.68	54	-2.32	



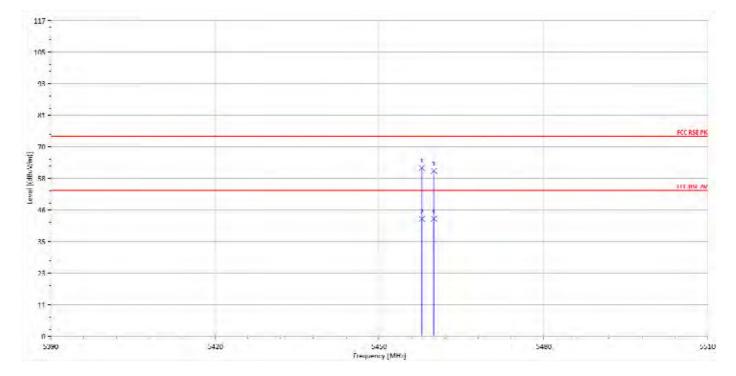
Operation Mode :	802.11ac20	Test Date :	2016/9/14
Fundamental Frequency :	5500 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BE CH Low	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical

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2380	5420	5450 Frequency [MHbj	5480	551

Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµ V/m	dBµV/m	dB
5460.00	E	Peak	48.16	11.66	59.82	74	-14.18
5460.00	Е	Average	31.75	11.66	43.41	54	-10.59



Operation Mode :	802.11ac20	Test Date :	2016/9/14
Fundamental Frequency :	5500 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BE CH Low	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol. :	Horizontal



Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5457.80	S	Peak	50.75	11.68	62.43	74	-11.57
5457.80	S	Average	31.88	11.68	43.56	54	-10.44
5460.00	Е	Peak	49.65	11.66	61.31	74	-12.69
5460.00	Е	Average	31.94	11.66	43.60	54	-10.40



Operation Mode :	802.11ac20	Test Date:	2016/9/14
Fundamental Frequency :	5500 MHz	Temp. / Humi.:	22.7deg_C/57RH
Operation Band :	BE CH Low RSE	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol.:	Vertical
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5390	5420	5450 Trequency [MRz]	5480	551

	Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
			Mode	Reading Level		FS	@3m	
_	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	d Bµ V/m	dB
-	5470.00	Ē	Peak	52.39	11.57	63.96	68.3	-4.34



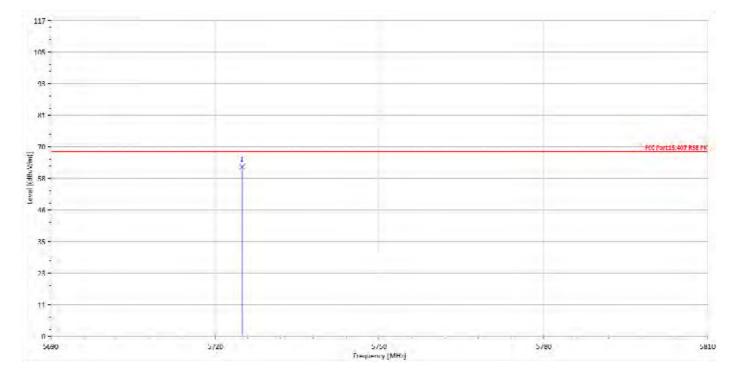
Operation Mode :	802.11ac20	Test Date:	2016/9/14
Fundamental Frequency :	5500 MHz	Temp. / Humi.:	22.7deg_C/57RH
Operation Band :	BE CH Low RSE	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol.:	Horizontal
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Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
5468.96	S	Peak	55.12	11.58	66.69	68.3	-1.61	
5470.00	Е	Peak	53.65	11.57	65.22	68.3	-3.08	



Operation Mode :	802.11ac20	Test Date :	2016/9/14
Fundamental Frequency :	5700 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BE CH High	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol.:	Vertical



	Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
			Mode	Reading Level		FS	@3m	
_	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
	5725.00	E	Peak	50.89	12.01	62.90	68.3	-5.40

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Operation Mode :	802.11ac20	Test Date :	2016/9/14
Fundamental Frequency :	5700 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BE CH High	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol. :	Horizontal

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n <del>-</del> 5490	5/20	5750 Trequency [MHz]	5/80	1180

	Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin	
			Mode	Reading Level		FS	@3m		
	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
-	5725.00	E	Peak	53.75	12.01	65.77	68.3	-2.53	
	5725.40	S	Peak	54.89	12.01	66.91	68.3	-1.39	



## 802.11ac40 VHT mode

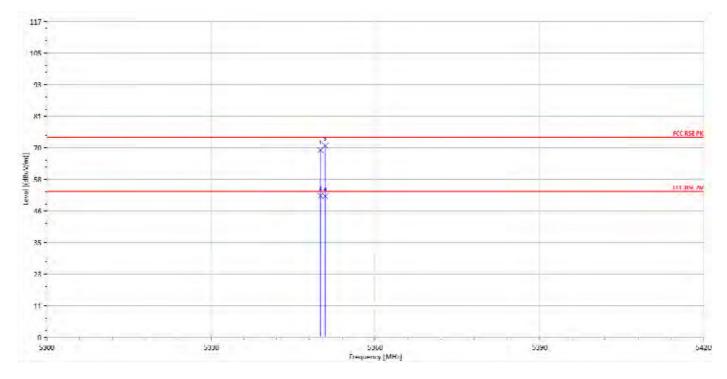
Operation Mode :	802.11ac40	Test Date :	2016/9/14
Fundamental Frequency :	5310 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BECHHigh	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol.:	Vertical

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Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	E	Peak	54.97	11.67	66.64	74	-7.36
5350.00	Е	Average	37.75	11.67	49.42	54	-4.58



Operation Mode :	802.11ac40	Test Date :	2016/9/14
Fundamental Frequency :	5310 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BECHHigh	Test Engineer :	Ashton
EUT Pol. :	E2	Measurement Antenna Pol. :	Horizontal



Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5350.00	E	Peak	57.59	11.67	69.26	74	-4.74
5350.00	E	Average	40.77	11.67	52.44	54	-1.56
5350.88	S	Peak	59.24	11.69	70.93	74	-3.07
5350.88	S	Average	40.48	11.69	52.17	54	-1.83

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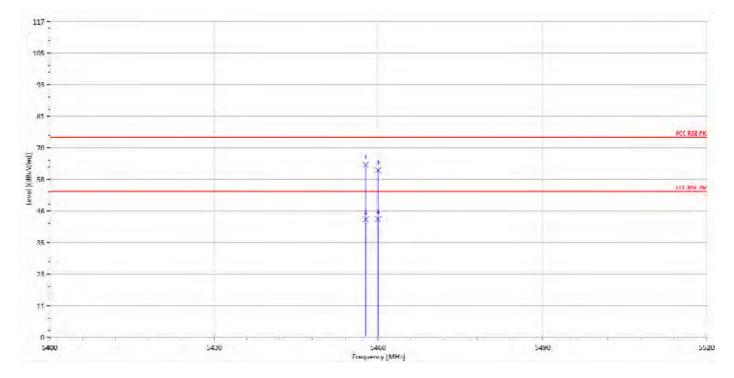
Operation Mode :	802.11ac40	Test Date :	2016/9/14
Fundamental Frequency :	5510 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BE CH Low	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical

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Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5458.32	S	Peak	49.36	11.67	61.04	74	-12.96
5458.32	S	Average	31.67	11.67	43.34	54	-10.66
5460.00	E	Peak	45.49	11.66	57.14	74	-16.86
5460.00	Е	Average	31.70	11.66	43.36	54	-10.64



Operation Mode :	802.11ac40	Test Date :	2016/9/14
Fundamental Frequency :	5510 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BE CH Low	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol. :	Horizontal



Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5457.72	S	Peak	52.34	11.68	64.02	74	-9.98
5457.72	S	Average	31.99	11.68	43.67	54	-10.33
5460.00	E	Peak	50.28	11.66	61.94	74	-12.06
5460.00	E	Average	32.09	11.66	43.75	54	-10.25

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5400

Operation Mode :	802.11ac40	Test Date :	2016/9/14
Fundamental Frequency : Operation Band : EUT Pol. :	5510 MHz BE CH Low RSE E2	Temp. / Humi. : Test Engineer : Measurement Antenna Pol. :	22.7deg_C/57RH Ashton Vertical
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Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµ V/m	dBµV/m	dB
5469.72	S	Peak	52.91	11.57	64.48	68.3	-3.82
5470.00	Е	Peak	51.77	11.57	63.34	68.3	-4.96

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5490

5520



Operation Mode :	802.11ac40	Test Date :	2016/9/14
Fundamental Frequency :	5510 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BE CH Low RSE	Test Engineer :	Ashton
EUT Pol. :	E2	Measurement Antenna Pol. :	Horizontal

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Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin
PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
Peak	54.99	11.58	66.57	68.3	-1.73
Peak	53 50	11.57	65.07	68.3	-3.23
	Mode <u>PK/QP/AV</u> Peak	Mode Reading Level PK/QP/AV dBµV	ModeReading LevelPK/QP/AVdBµVdBPeak54.9911.58	ModeReading LevelFSPK/QP/AVdBµVdBdBµV/mPeak54.9911.5866.57	Mode         Reading Level         FS         @3m           PK/QP/AV         dBµV         dB         dBµV/m         dBµV/m           Peak         54.99         11.58         66.57         68.3



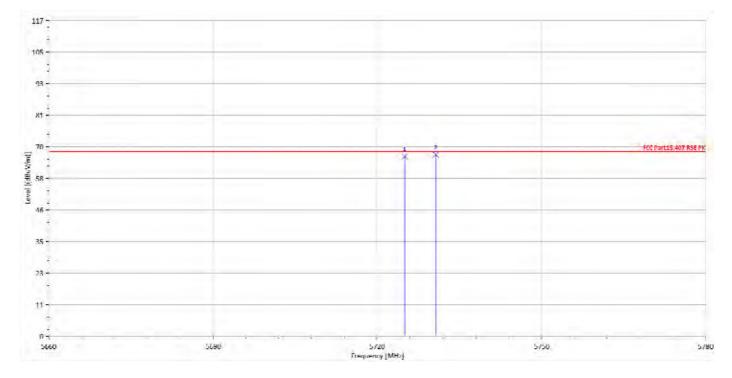
Operation Mode :	802.11ac40	Test Date :	2016/9/14
Fundamental Frequency :	5670 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	BE CH High	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical

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105 -				
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	Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin	
			Mode	Reading Level		FS	@3m		
_	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	d Bµ V/m	dB	
_	5725.00	E	Peak	48.77	12.01	60.78	68.3	-7.52	
	5725.16	S	Peak	52.76	12.01	64.77	68.3	-3.53	



Operation Mode :	802.11ac40	Test Date :	2016/9/14
Fundamental Frequency :	5670 MHz	Temp. / Humi. :	22.7deg C/57RH
Operation Band :	BECHHigh	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol.:	Horizontal



Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	d Bµ V/m	dB
5725.00	E	Peak	54.55	12.01	66.56	68.3	-1.74
5730.68	S	Peak	55.21	12.00	67.21	68.3	-1.09

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## 802.11ac80 VHT mode

Operation Mode :	802.11ac80	Test Date :	2016/9/14
Fundamental Frequency :	5290 MHz	Temp. / Humi. :	22.7deg C/57RH
Operation Band :	BECHHigh	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol.:	Vertical

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5280	5305	5730 Frequency (MBb)	5355	-63

	Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin	
			Mode	Reading Level		FS	@3m		
	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	d Bµ V/m	dB	
-	5350.00	E	Peak	52.62	11.68	64.30	74	-9.70	
	5350.00	Е	Average	38.09	11.68	49.77	54	-4.23	



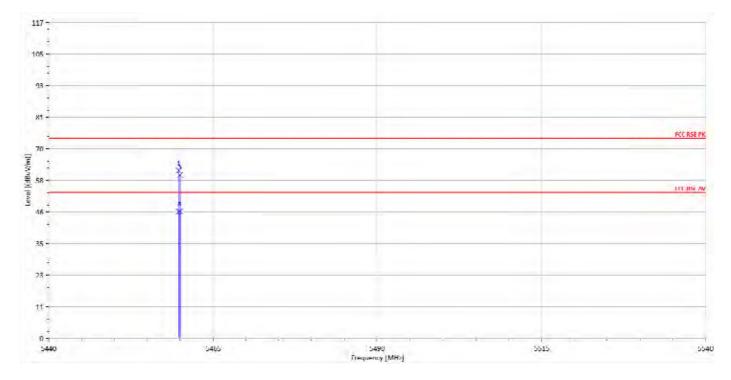
Operation Mode :	802.11ac80	Test Date :	2016/9/14
Fundamental Frequency :	5290 MHz	Temp. / Humi. :	22.7deg C/57RH
Operation Band :	BECH High	Test Engineer:	Ashton
EUT Pol. :	E2	Measurement Antenna Pol.:	Horizontal

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Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin
 MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
 5350.00	Е	Peak	55.40	11.69	67.09	74	-6.91
5350.00	Е	Average	40.40	11.69	52.09	54	-1.91
5354.50	S	Peak	56.34	11.68	68.03	74	-5.97
5354.50	S	Average	40.55	11.68	52.23	54	-1.77



Operation Mode :	802.11ac80	Test Date :	2016/9/14
Fundamental Frequency : Operation Band :	5530 MHz BE CH Low	Temp. / Humi. : Test Engineer:	22.7deg_C/57RH Ashton
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical

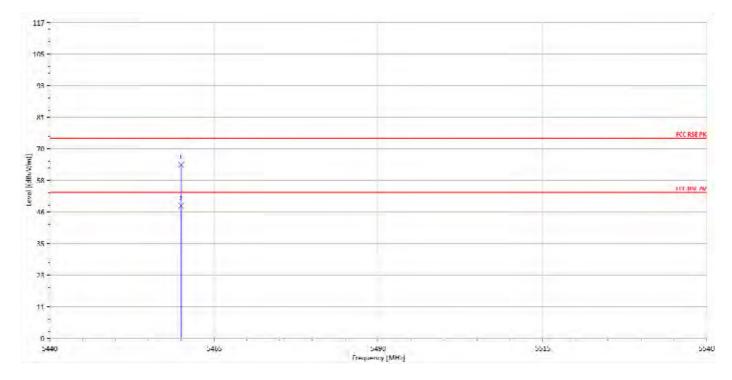


Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5459.80	S	Peak	50.54	11.66	62.20	74	-11.80
5459.80	S	Average	35.29	11.66	46.95	54	-7.05
5460.00	E	Peak	48.83	11.66	60.49	74	-13.51
5460.00	E	Average	35.36	11.66	47.02	54	-6.98

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Operation Mode :	802.11ac80	Test Date :	2016/9/14
Fundamental Frequency :	5530 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band : EUT Pol. :	BE CH Low E2	Test Engineer: Measurement Antenna Pol.:	Ashton Horizontal



Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin	
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
5460.00	E	Peak	52.68	11.66	64.34	74	-9.66	
5460.00	Е	Average	37.36	11.66	49.02	54	-4.98	

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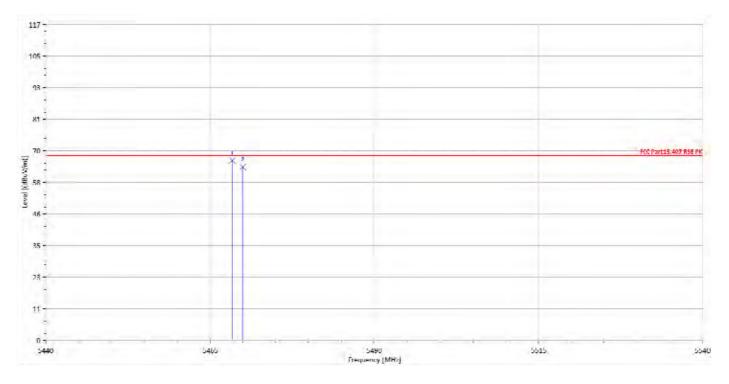
Operation Mode :	802.11ac80	Test Date :	2016/9/14
Fundamental Frequency :	5530 MHz	Temp. / Humi. :	22.7deg_C/57RH
Operation Band :	<b>BE CH Low RSE</b>	Test Engineer :	Ashton
EUT Pol. :	E2	Measurement Antenna Pol. :	Vertical
EUT FUI		Measurement Antenna Foi.	Vertical
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Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
5465.80	S	Peak	51.65	11.61	63.25	68.3	-5.05
5470.00	Е	Peak	48.92	11.57	60.49	68.3	-7.81



Operation Mode :	802.11ac8
Fundamental Frequency :	5530 MHz
Operation Band :	BE CH Lov
EUT Pol. :	E2

0 **w** RSE Test Date : Temp. / Humi. : Test Engineer : Measurement Antenna Pol. : 2016/9/14 22.7deg_C/57RH Ashton Horizontal



Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin	
		Mode	Reading Level		FS	@3m		
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
5468.40	S	Peak	54.96	11.58	66.55	68.3	-1.75	
5470.00	E	Peak	52.68	11.57	64.25	68.3	-4.05	

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# 12. TRANSMISSION IN THE ABSENCE OF DATA

# 12.1 Standard Applicable

## According to §15.407(c)

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

## 12.2 Result

No non-compliance noted:

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ASK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

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# **13. FREQUENCY STABILITY**

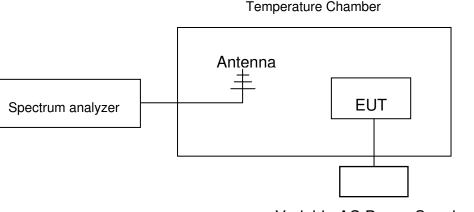
# 13.1 Standard Applicable

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.

# **13.2 Measurement Procedure**

- 1. The EUT was placed inside temperature chamber and powered and powered by nominal DC voltage.
- 2. Set EUT as normal operation.
- 3. Turn the EUT on and couple its output to spectrum.
- 4. Turn the EUT off and set the chamber to the highest temperature specified.
- 5. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT and measure the operating frequency.
- 6. Repeat step with the temperature chamber set to the lowest temperature.

# 13.3 Test SET-UP



Variable AC Power Supply

## 13.4 Measurement Equipment Used:

SGS Conducted Room										
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due					
Spectrum Analyzer	KEYSIGHT	N9010A	MY54510568	04/14/2016	04/13/2017					
DC Power Supply	Agilent	E3640A	MY53140006	05/04/2016	05/03/2017					
Temperature Chamber	TERCHY	MHK-120LK	1020582	06/16/2016	06/15/2017					

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#### 13.5 **Measurement Result**

Test Date	2016.09.26		
Test By	Wayne		

		52	5260	5,260.04610	-0.00000876
4.75V ) 5.25V		60	5300	5,300.05970	-0.00001126
	4 75\/	64	5320	5,320.04550	-0.00000855
	4.75V	100	5500	5,500.04320	-0.00000785
		116	5580	5,580.05380	-0.00000964
		140	5700	5,700.04830	-0.00000847
		52	5260	5,260.05970	-0.00001135
		60	5300	5,300.04720	-0.00000891
	5 251/	64	5320	5,320.05630	-0.00001058
	J.2JV	100	5500	5,500.04400	-0.00000800
		116	5580	5,580.04250	-0.00000762
		140	5700	5,700.05910	-0.00001037



Test Date	2016.09.26		
Test By	Wayne		

0	4.75V	54 62 102 110 134	5270 5310 5510 5550 5670	5,270.03950 5,310.02330 5,510.03500 5,550.03060 5,670.02910	-0.00000750 -0.00000439 -0.00000635 -0.00000551 -0.00000513
0	5.25V	54 62 102 110	5270 5310 5510 5550	5,270.02360 5,310.03250 5,510.03400 5,550.02410	-0.00000448 -0.00000612 -0.00000617 -0.00000434
		134	5670	5,670.02340	-0.00000413



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Test Date 2016.09.26 Test By Wayne

4.75V	58 106 122 58	5290 5530 5610 5290	5,290.02140 5,530.03600 5,610.03960 5,290.02640	-0.00000405 -0.00000651 -0.00000706 -0.00000499
5.25V	106	5530	5,530.02650	-0.00000499
	122	5610	5,610.02900	-0.00000517
	58	5290	5,290.07120	-0.00001346
5V	106	5530	5,530.07600	-0.00001374
	122	5610	5,610.08860	-0.00001579
	58	5290	5,290.03230	-0.00000611
4.75V	106	5530	5,530.03930	-0.00000711
	122	5610	5,610.03940	-0.00000702
	58	5290	5,290.03250	-0.00000614
5.25V	106	5530	5,530.03880	-0.00000702
	122	5610	5,610.03110	-0.00000554



# **14. ANTENNA REQUIREMENT**

# 14.1 Standard Applicable

According to §15.203, an intentional radiator shall be designed to ensure that no antenna other than furnished by the responsible party shall be used with the device. According to §15.407, 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.

# 14.2 Antenna Connected Construction

PIFA antenna designs are used.

The antenna is designed with permanent attached and no consideration of replacement. Please see EUT photo and antenna spec. for details.

The antenna gain is less than 6dBi. Therefore, it is not necessary to reduce maximum output power limit.

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