

Page: 1 of 183

# ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

# INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART E AND INDUSTRY CANADA RSS 247 REQUIREMENT

OF

**Product Name: Tablet** 

**Brand Name: TomTom** 

Model No.: 4FI722

**Model Difference:** N/A

FCC ID: S4L4FI722

IC: 5767A-4FI722

Report No.: E2/2016/80015-01

**Issue Date:** Mar. 23, 2017

**FCC Rule Part:** §15.407

**IC Rule Part** RSS-247 issue 1 May 2015

**Prepared for:** TomTom International B.V.

De Ruijerterkade 154, 1011 AC Amsterdam, The

**Neth-erlands** 

Prepared by: SGS Taiwan Ltd.

**Electronics & Communication Laboratory** 

No.2, Keji 1st Rd., Guishan District, Taoyuan City,

Taiwan 333

1. Tech-Com (Shanghai) Computer Co., Ltd Manufacturer:

> No. 68, Sanzhuang Road, Songjiang Export Processing Zone, Shanghai 201613, P. R. China

2. Tech-Giant (Shanghai) Computer Co., Ltd. A, B, C Building, No. 68, Sanzhuang Road **Songjiang Export Processing Zone Shanghai** 

201613, P. R. China





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Page: 2 of 183

# VERIFICATION OF COMPLIANCE

**Applicant:** TomTom International B.V.

De Ruijerterkade 154, 1011 AC Amsterdam, The Neth-erlands

Manufacturer: 1. Tech-Com (Shanghai) Computer Co., Ltd

No. 68, Sanzhuang Road, Songjiang Export Processing Zone.

Shanghai 201613, P. R. China

2. Tech-Giant (Shanghai) Computer Co., Ltd.

A, B, C Building, No. 68, Sanzhuang Road Songjiang Export

Processing Zone Shanghai 201613, P. R. China

**Product Name: Tablet Brand Name: TomTom** 4FI722 Model No.: **Model Difference:** N/A

FCC ID: S4L4FI722 IC: 5767A-4FI722

E2/2016/80015-01 File Number:

Date of test: Aug. 01, 2016 ~ Aug. 26, 2016

Date of EUT Received: Aug. 01, 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:	Jerry Lu	Date:	Mar. 23, 2017	
	Jerry Lu / Sr.Engineer			
Prepared By:	Allen Tsai	Date:	Mar. 23, 2017	
Approved By:	Allen Tsai / Sr. Engineer  Thum Chang	Date:	Mar. 23, 2017	

Jim Chang / Asst. Manager

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Page: 3 of 183

# **Revision History**

Report Number	Revision	Description	Issue Date
E2/2016/80015-01	Rev.00	Initial creation of document	Mar. 23, 2017

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Page: 4 of 183

## **Table of Contents**

1.	GENERAL INFORMATION	5
2.	SYSTEM TEST CONFIGURATION	9
3.	SUMMARY OF TEST RESULT	.11
4.	DESCRIPTION OF TEST MODES	.12
5.	MEASUREMENT UNCERTAINTY	.16
6.	CONDUCTED EMISSION TEST	.17
7.	DUTY CYCLE TEST SIGNAL	.21
8.	26dB & 6dB EMISSION BANDWIDTH MEASUREMENT	24
9.	MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT	.38
10.	PEAK POWER SPECTRAL DENSITY	44
11.	UNDESIRABLE RADIATED EMISSION MEASUREMENT	54
12.	TRANSMISSION IN THE ABSENCE OF DATA	176
13.	FREQUENCY STABILITY	177
1/1	ANTENNA REQUIREMENT	183

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Page: 5 of 183

## **GENERAL INFORMATION**

# 1.1 Product Description

General:

eneral.				
Product Name:	Tablet			
Brand Name:	TomTom			
Model No.:	4FI722			
Model Difference:	N/A			
Hardware Version:	PR1.1			
Software Version:	14.451			
Car charger	Model No.: 4UFI0	Brand: TomTom		
USB cable	Model No.: 4UUC.001.24	Brand: TomTom		
MIC cable	Model No.: P7051-13	Brand: TomTom		
MIC	Model No.: NEIM1100106	Brand: TomTom		
Car cable	Model No.: NA	Brand: TomTom		
Video cradle	Model No.: 4FI75	Brand: TomTom		
Daimler cradle	Model No.: 4FI77	Brand: TomTom		
Basic cradle	Model No.: 4FI74	Brand: TomTom		
Power Supply:	3.8VDC from Rechargeabl port	e Li-ion battery, 5VDC from USB		
	Battery: Model No.: UZ6	Brand: TomTom		

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Page: 6 of 183

#### FCC WLAN 5GHz:

Wi-Fi	Frequency Range	Channels	Rated Power (Avg.)	Modulation Technology
	5150~5250	4	11.99 dBm	
11a	5250~5350	4	11.93 dBm	OFDM
l IIa	5470~5725	12	11.84 dBm	OFDIVI
	5725-5850	5	11.93 dBm	
	HT20 5150~5250	4	11.97 dBm	
11n	HT20 5250~5350	4	11.88 dBm	OFDM
1111	HT20 5470~5725	12	11.95 dBm	OFDIVI
	HT20 5725-5850	5	11.80 dBm	
	HT40 5150~5250	2	11.89 dBm	
11n	HT40 5250~5350	2	11.83 dBm	OFDM
	HT40 5470~5725	6	11.98 dBm	OFDIVI
	HT40 5725-5850	2	11.42 dBm	

#### IC WLAN 5GHz:

Wi-Fi	Frequency Range	Channels	Rated Power (Avg.) / (EIRP)	Modulation Technology
	5150~5250	4	14.87dBm (EIRP)	
	5250~5350	4	11.93 dBm	
11a	5500~5580	5	11.84 dBm	OFDM
	5700~5700	1	11.67 dBm	
	5745-5825	5	11.93 dBm	
	HT20 5150~5250	4	14.85dBm (EIRP)	
	HT20 5250~5350	4	11.88 dBm	
11n	HT20 5500~5580	5	11.95 dBm	OFDM
	HT20 5660~5720	4	11.71 dBm	
	HT20 5745-5825	5	11.80 dBm	
	HT40 5150~5250	2	14.77dBm (EIRP)	
	HT40 5250~5350	2	11.83 dBm	
11n	HT40 5510~5550	2	11.98 dBm	OFDM
	HT40 5670~5670	1	11.31 dBm	
	HT40 5755-5795	2	11.42 dBm	

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Page: 7 of 183

Antenna Designation	Chip Antenna, Model No.: ACM3-5036, Supplier: INPAQ 5GHz Gain: 2.88dBi (5150MHz-5250MHz) 5GHz Gain: 3.80dBi (5250MHz-5350MHz) 5GHz Gain: 3.64dBi (5470MHz-5725MHz) 5GHz Gain: 3.64dBi (5725MHz-5850MHz)
Modulation type	64QAM, 16QAM, QPSK, BPSK for OFDM
Transition Rate:	802.11 a: 6/9/12/18/24/36/48/54 Mbps 802.11 n_20MHz: 6.5 – 144.4Mbps 802.11 n_40MHz: 13.5 – 300Mbps

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Page: 8 of 183

# 1.2 Test Methodology of Applied Standards

FCC Part 15, Subpart E §15.407

FCC KDB 789033 D02 General UNII Test Procedures New Rules

RSS-247 issue 1 May 2015

RSS-Gen issue4 Nov. 2014

ANSI C63.10:2013

#### Note:

1. All test items have been performed and record as per the above standards.

# 1.3 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

# 1.4 Special Accessories

There are no special accessories used while test was conducted.

# 1.5 Equipment Modifications

There was no modification incorporated into the EUT.

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Page: 9 of 183

## SYSTEM TEST CONFIGURATION

# 2.1 EUT Configuration

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.

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Page: 10 of 183

# **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 1.8dB, and 10dB attenuator.

= RF cable loss (dB)+ attenuation factor(dB)=11.9(dB)

# 2.5 Configuration of Tested System

Fig. 2-1 Radiated & Conducted (Antenna Port) Configuration Emission

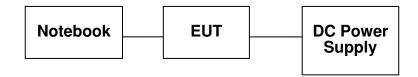


Table 2-1 Equipment Used in Tested System

Ite m	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	WLAN Test Software	DRTU	N/A	N/A	N/A	N/A
2.	DC Power Supply	Agilent	E3634A	MY53180030	N/A	Un-shield
3.	Notebook	Lenovo	L412	LR-957X7	shield	Un-shield

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Page: 11 of 183

# **SUMMARY OF TEST RESULT**

FCC Rules	IC Rules	Description Of Test	Result
§15.207	RSS-Gen §8.8	AC Power Line Conducted Emission	Compliant
§15.403(i) §15.407(e)	RSS-247 §6.2.1~ 4 (1) RSS-Gen §6.6	26 dB & 6dB & 99% Emission Bandwidth	Compliant
§15.407(a)	RSS-247 §6.2.1~ 4 (1)	Maximum Conducted Output Power	Compliant
§15.407(a)	RSS-247 §6.2.1~ 4 (1)	Power Spectral Density	Compliant
§15.407(b)	RSS-247 §6.2.1~ 4 (2)	Undesirable Radiated Emissions	Compliant
§15.407(c)	RSS-247 §6.4	Transmission in case of Absence of Information	Compliant
§15.407(g)	RSS-Gen §6.11	Frequency Stability	Compliant
§15.203 §15.407(a)	RSS- Gen §6.7 RSS- Gen §8.3	Antenna Requirement	Compliant

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Page: 12 of 183

## **DESCRIPTION OF TEST MODES**

# 4.1 Operated in U-NII Bands

Operated band in 5150 MHz ~5250 MHz:

4 channels are provided for 802.11a, 802.11n HT20

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n\_HT40

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

Operated band in 5250 MHz ~5350 MHz:

4 channels are provided for 802.11a, 802.11n HT20

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

2 channels are provided for 802.11n HT40

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CHANNEL		FREQUENCY	CHANNEL	FREQUENCY		
	54	5270 MHz	62	5310 MHz		

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Page: 13 of 183

# Operated band in 5470 MHz ~5725 MHz:

11 channels are provided for FCC 802.11a, 802.11n HT20

provided for 1 00 002:114, 002:1111_11120					
CHANNEL	CHANNEL FREQUENCY		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	144	5720 MHz		

5 channels are provided for 802.11n HT40, 802

CHANNEL	CHANNEL FREQUENCY		FREQUENCY		
102	5510 MHz	126	5630 MHz		
110	5550 MHz	134	5670 MHz		
118	5590 MHz	142	5710 MHz		

# Note: Channels from 5600MHz ~ 5650MHz are disabled when this product is marketed withing Canada.

Operated band in 5725 MHz ~5850 MHz:

5 channels are provided for 802.11a, 802.11n\_HT20

CHANNEL FREQUENCY		CHANNEL	FREQUENCY
149	5745 MHz	161	5805 MHz
153	5765 MHz	165	5825 MHz
157	5785 MHz		

2 channels are provided for 802.11n HT40

•	CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
	151	5755 MHz	159	5795 MHz

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Page: 14 of 183

#### 4.2 The Worst Test Modes and Channel Details

- 1. The EUT has been tested under operating condition.
- 2. 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.

#### **RADIATED EMISSION TEST:**

ADIATED EMISSION TEST.					
RADIATED EMISSION TEST (BELOW 1 GHz)					
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11a	5180~5240	36 to 48	36,44,48	OFDM	6
802.11a	5260~5320	52 to 64	52,60,64	OFDM	6
802.11a	5500~5720	100 to 140	100,116,140	OFDM	6
802.11a	5745~5825	149 to 165	149,157,165	OFDM	6
RADIATED EMISSION TEST (ABOVE 1 GHz)					
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11a	5180~5240	36 to 48	36,44,48	OFDM	6
802.11n_HT20	3100~3240	30 10 40	30,44,40	OFDM	MCS0
802.11n_HT40	5190~5230	38 to 46	38,46	OFDM	MCS0
802.11a	5260~5320	F0 1: 04	50.00.04	OFDM	6
802.11n_HT20	3200~3320	52 to 64	52,60,64	OFDM	MCS0
802.11n_HT40	5270~5310	54 to 62	54,62	OFDM	MCS0

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Page: 15 of 183

MODE	FREQUENCY BAND (MHz)		TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11a	5500. 5700	100 to 144	100 116 140	OFDM	6
802.11n_HT20	5500~5720	100 to 144	100,116,140	OFDM	MCS0
802.11n_HT40	5510~5710	102 to 142	102,110,134	OFDM	MCS0
802.11a	5745~5825	140 +- 405	140 157 105	OFDM	6
802.11n_HT20	0/40~5825	149 to 165	149,157,165	OFDM	MCS0
802.11n_HT40	5755~5795	151 to 159	151,159	OFDM	MCS0

#### 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 H position was reported.

#### ANTENNA PORT CONDUCTED MEASUREMENT:

	CONDUCTED TEST					
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	
802.11a	5180~5240	36 to 48	36,44,48	OFDM	6	
802.11n_HT20	3180~3240	30 10 40	30,44,40	OFDM	MCS0	
802.11n_HT40	5190~5230	38 to 46	38,46	OFDM	MCS0	
802.11a	E260-E220	52 to 64	52,60,64	OFDM	6	
802.11n_HT20	5260~5320			OFDM	MCS0	
802.11n_HT40	5270~5310	54 to 62	54,62	OFDM	MCS0	
802.11a	5500~5720	100 to 144	100,116,140,144	OFDM	6	
802.11n_HT20	3300~3720	100 10 144	100,110,140,144	OFDM	MCS0	
802.11n_HT40	5510~5710	102 to 142	102,110,134,142	OFDM	MCS0	
802.11a	5745~5825	149 to 165	165 149,157,165	OFDM	6	
802.11n_HT20	5745~5625	143 (0 100		OFDM	MCS0	
802.11n_HT40	5755~5795	151 to 159	151,159	OFDM	MCS0	

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Page: 16 of 183

#### MEASUREMENT UNCERTAINTY

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

	9kHz – 30MHz: +/- 2.87 dB
	30MHz - 167MHz: +/- 4.22dB
Measurement uncertainty	167MHz -500MHz: +/- 3.44dB
(Polarization : <b>Horizontal</b> )	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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Page: 17 of 183

#### 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 7	100950	12/12/2015	12/11/2016			
Coaxial Cables	N/A	N30N30-1042-150 cm	N/A	02/07/2016	02/06/2017			
LISN	Schwarzbec k	NSLK 8127	8127-648	03/11/2016	03/10/2017			
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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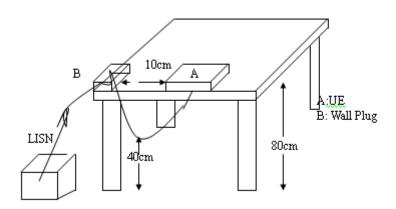
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Page: 18 of 183

#### 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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Page: 19 of 183

Operation Mode: Operation mode Test By: Vito

Temperature: 20

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Page: 20 of 183

Site: Conduction Room

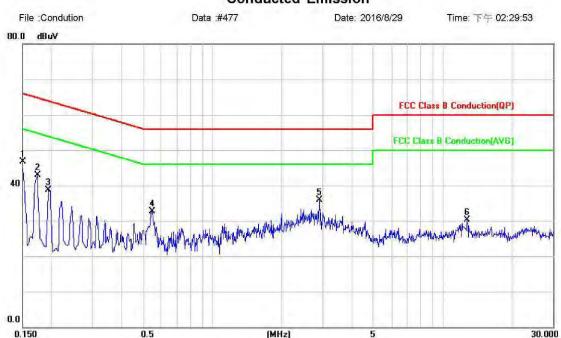
Limit: FCC Class B Conduction(QP)

Mode: UZ6A

Note:

Phase: Temperature: 22°C AC 120V/60Hz Humidity: 63 % Power:

#### Conducted Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1500	26.92	19.73	46.65	66.00	-19.35	peak	
2	1 -	0.1740	23.08	19.73	42.81	64.77	-21.96	peak	
3	1	0.1940	18.96	19.72	38.68	63.86	-25.18	peak	1 6
4		0.5460	12.75	19.91	32.66	56.00	-23.34	peak	
5		2.9100	16.04	19.95	35.99	56.00	-20.01	peak	7 (2)
6		12.7460	10.02	20.24	30.26	60.00	-29.74	peak	
_									

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Page: 21 of 183

#### **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 Cycle )
802.11a	87.24	0.59
802.11n_20	86.57	0.63
802.11n_40	100.00	0.00

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Page: 22 of 183

# **DUTY CYCLE TEST SIGNAL Measurement Result** 802.11a



## 802.11n HT20



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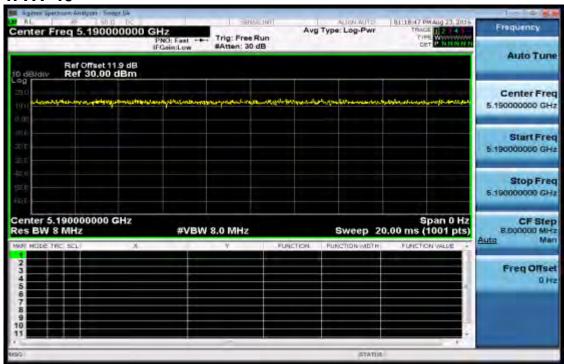
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Page: 23 of 183

# 802.11 n HT 40



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Page: 24 of 183

#### 26dB & 6dB 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

- 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 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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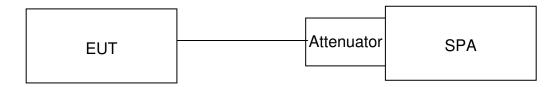


Page: 25 of 183

# **Measurement Equipment Used**

Conducted Emission Test Site							
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.		
TYPE		NUMBER	NUMBER	CAL.			
Spectrum Analyzer	KEYSIGHT	N9010A	MY54510568	04/14/2016	04/13/2017		
Coaxial Cable 30cm	WOKEN	00100A1F1A1 95C	RF01	12/12/2015	12/11/2016		
Coaxial Cable 30cm	WOKEN	00100A1F1A1 95C	RF01	12/12/2015	12/11/2016		
DC Block	PASTERNACK	PE8210	RF29	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		

## 8.4 Test Set-up



# 8.5 Measurement Result 26dB Bandwidth

802.11a 802.11n\_HT20

Frequency (MHz)	26dB BW	10 Log (B) (dB)	Frequency (MHz)	26dB BW	10 Log (B) (dB)	802.11n _HT	40	
(101112)	(MHz)	(db)	(101112)	(MHz)	(GD)	Francis mark	26dB	10 L o # (D)
5180	21.56	13.336	5180	21.82	13.388	Frequency (MHz)	BW	10 Log (B) (dB)
5220	21.80	13.384	5220	22.03	13.430	(1911 12)	(MHz)	(ub)
5240	21.71	13.367	5240	21.89	13.403	5190	43.30	16.365
5260	21.73	13.371	5260	22.17	13.457	5230	42.42	16.275
5300	21.69	13.362	5300	22.49	13.520	5270	43.57	16.392
5320	21.69	13.362	5320	21.88	13.401	5310	42.86	16.321
5500	21.92	13.408	5500	22.39	13.500	5510	43.18	16.353
5580	21.56	13.337	5580	22.27	13.477	5550	44.89	16.521
5700	22.28	13.479	5700	22.58	13.537	5670	43.34	16.369

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Page: 26 of 183

802.11a

#### 802.11n\_HT20

1	6dB	401 a = (D)	-	6dB		802.11n_HT4	2.11n_HT40		
Frequency (MHz)	BW (MHz)	10 Log (B) (dB)	Frequency (MHz)	BW (MHz)	10 Log (B) (dB)	Frequency (MHz)	BW	10 Log (B) (dB)	
5745	16.37	12.140	5745	17.62	12.461	(101112)	(MHz)	(ub)	
5785	16.36	12.138	5785	17.60	12.456	5755	35.17	15.462	
5825	16.37	12.140	5825	17.61	12.458	5795	35.07	15.450	

#### 99% Bandwidth

802 11a

802.	11	n	Η٦	<b>72</b> 0
002				

99% BW (MHz)	10 Log(B) (dB)
16.368	12.140
16.327	12.129
16.367	12.140
16.332	12.130
16.605	12.202
16.197	12.094
16.494	12.173
16.330	12.130
16.166	12.086
	BW (MHz) 16.368 16.327 16.367 16.332 16.605 16.197 16.494 16.330

002.1111_11120					
99% BW (MHz)	10 Log(B) (dB)				
17.522	12.436				
17.529	12.438				
17.701	12.480				
17.152	12.343				
17.373	12.399				
17.898	12.528				
17.430	12.413				
17.568	12.447				
17.302	12.381				
	99% BW (MHz) 17.522 17.529 17.701 17.152 17.373 17.898 17.430 17.568				

Frequency (MHz)	99% BW (MHz)	10 Log(B) (dB)		
5190	35.109	15.454		
5230	36.013	15.565		
5270	36 010	15 564		

5310 35.997 15.563 5510 15.584 36.175 5550 36.029 15.567 15.577 5670 36.118

802.11a

#### 802.11n HT20

Frequency (MHz)	6dB BW (MHz)	10 Log(B) (dB)
5745	16.417	12.153
5785	16.382	12.144
5825	16.355	12.137

Frequency (MHz)	6dB BW (MHz)	10 Log(B) (dB)
5745	17.530	12.438
5785	17.551	12.443
5825	17.702	12.480

### 802.11n \_HT40

802.11n HT40

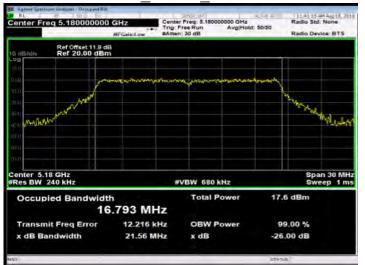
Frequency (MHz)	6dB BW (MHz)	10 Log(B) (dB)
5755	35.724	15.530
5795	35.876	15.548

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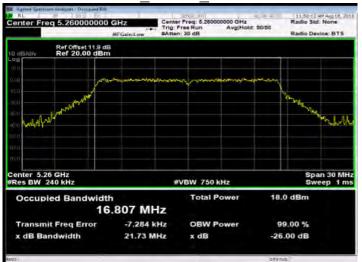


Page: 27 of 183

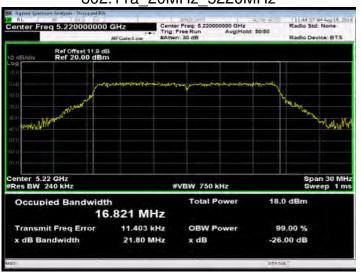
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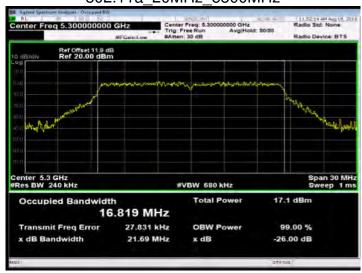
#### 802.11a 20MHz 5260MHz



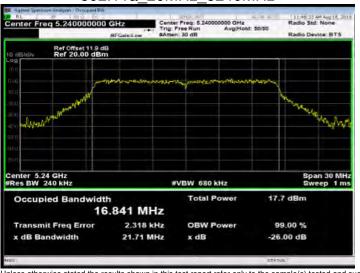
### 802.11a 20MHz 5220MHz



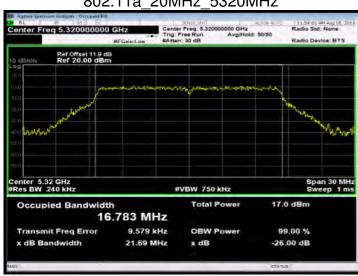
#### 802.11a 20MHz 5300MHz



# 802.11a 20MHz 5240MHz



# 802.11a 20MHz 5320MHz



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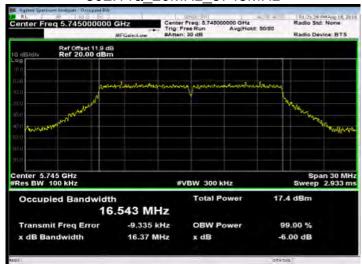


Page: 28 of 183

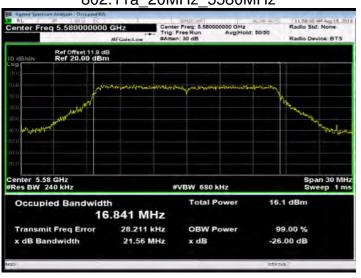
## 802.11a 20MHz 5500MHz

# Radio Device: BTS Ref Offset 11.9 dB Ref 20.00 dBm #VBW 680 kHz Total Power Occupied Bandwidth 16.786 MHz 7.991 kHz Transmit Freq Error **OBW Power** 99.00 % 21.92 MHz -26.00 dB x dB Bandwidth x dB

#### 802.11a 20MHz 5745MHz



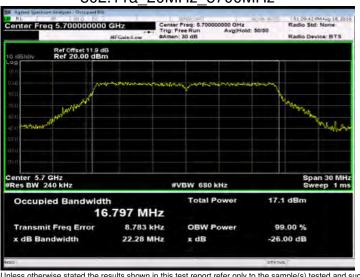
### 802.11a 20MHz 5580MHz



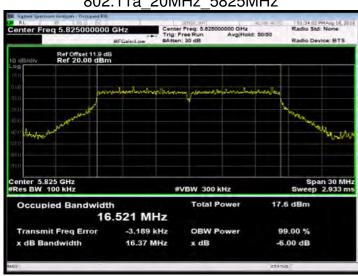
#### 802.11a 20MHz 5785MHz



# 802.11a\_20MHz\_5700MHz



# 802.11a 20MHz 5825MHz



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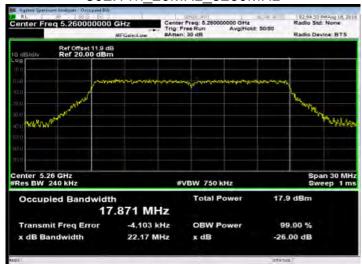


Page: 29 of 183

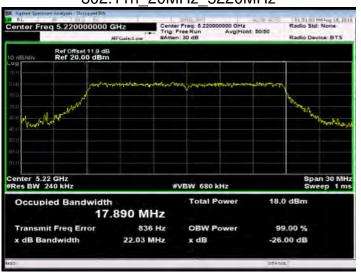
# 802.11n\_20MHz\_5180MHz

# Radio Device: BTS Ref Offset 11.9 dB Ref 20.00 dBm #VBW 750 kHz Total Power Occupied Bandwidth 17.918 MHz 39.590 kHz Transmit Freq Error **OBW Power** 99.00 % 21.82 MHz -26.00 dB x dB Bandwidth x dB

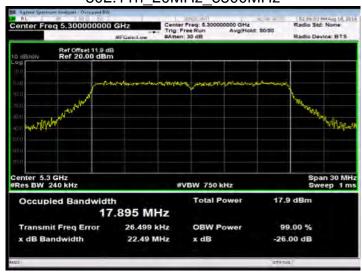
#### 802.11n 20MHz 5260MHz



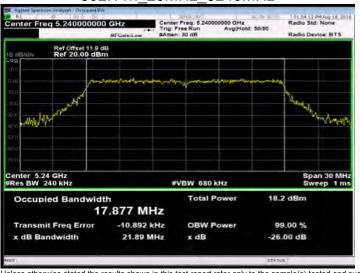
### 802.11n 20MHz 5220MHz



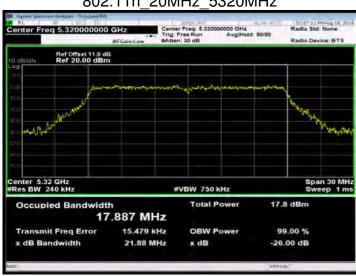
802.11n 20MHz 5300MHz



# 802.11n 20MHz 5240MHz



802.11n 20MHz 5320MHz



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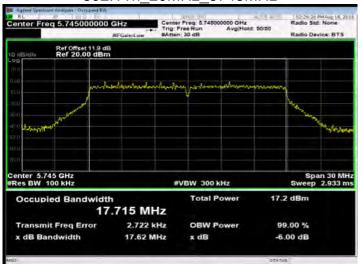


Page: 30 of 183

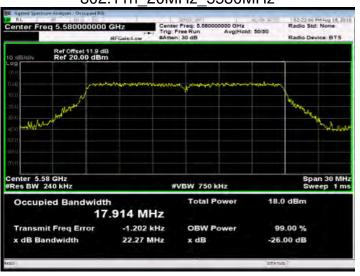
## 802.11n 20MHz 5500MHz

# Radio Device: BTS Ref Offset 11.9 dB Ref 20.00 dBm #VBW 750 kHz Total Power Occupied Bandwidth 17.903 MHz 28.916 kHz Transmit Freq Error **OBW Power** 99.00 % 22.39 MHz x dB Bandwidth -26.00 dB x dB

#### 802.11n 20MHz 5745MHz



### 802.11n 20MHz 5580MHz



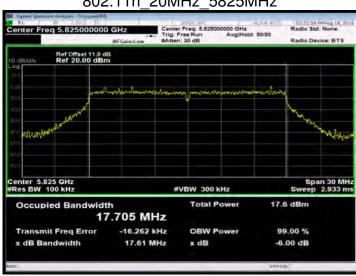
802.11n 20MHz 5785MHz



# 802.11n 20MHz 5700MHz



802.11n 20MHz 5825MHz



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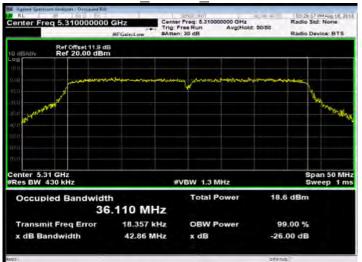


Page: 31 of 183

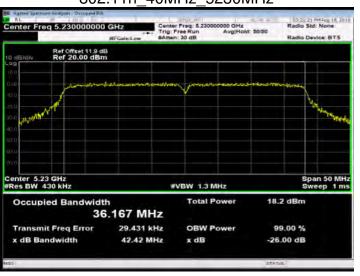
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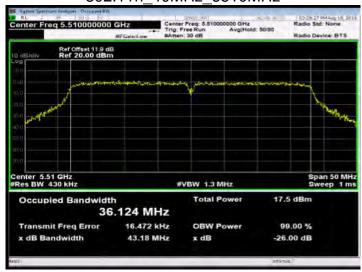
#### 802.11n 40MHz 5310MHz



### 802.11n 40MHz 5230MHz



802.11n 40MHz 5510MHz



## 802.11n 40MHz 5270MHz



802.11n 40MHz 5550MHz



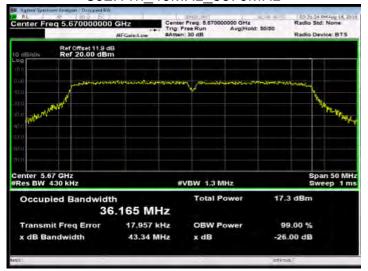
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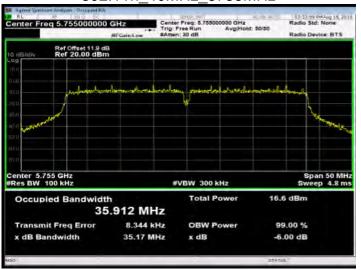


Page: 32 of 183

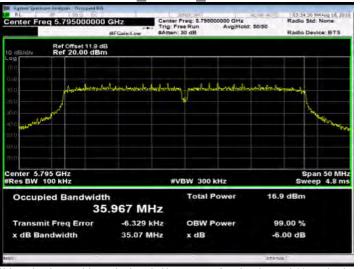
## 802.11n 40MHz 5670MHz



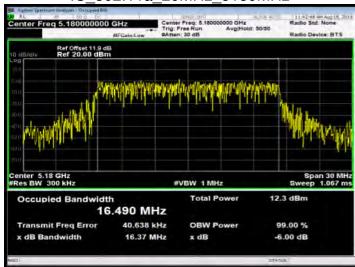
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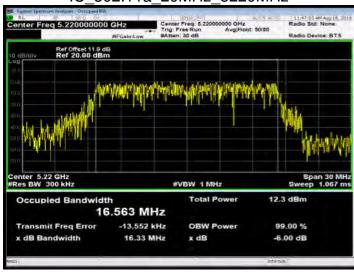
## 802.11n 40MHz 5795MHz



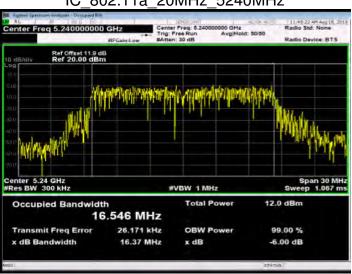
### IC 802.11a 20MHz 5180MHz



#### IC 802.11a 20MHz 5220MHz



# IC 802.11a 20MHz 5240MHz



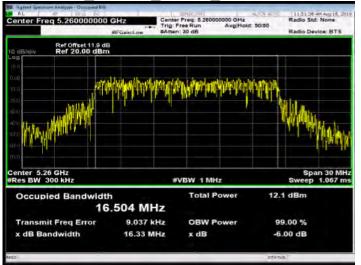
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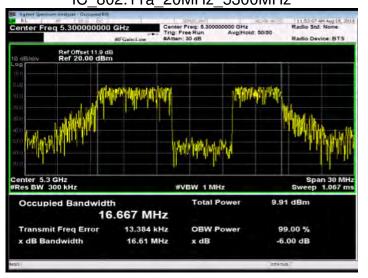


Page: 33 of 183

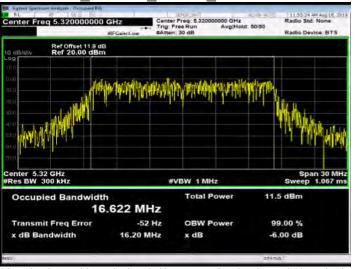
## IC 802.11a 20MHz 5260MHz



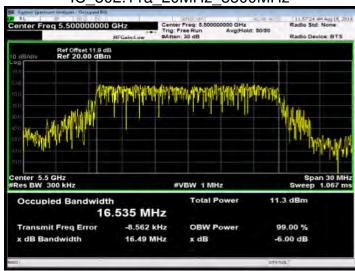
# IC 802.11a 20MHz 5300MHz



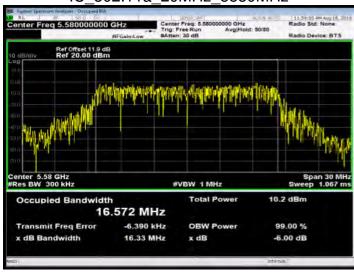
## IC 802.11a 20MHz 5320MHz



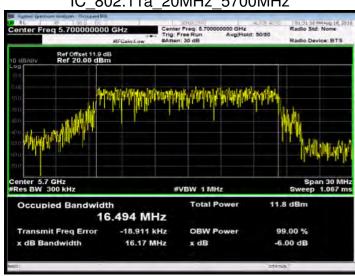
### IC 802.11a 20MHz 5500MHz



# IC 802.11a 20MHz 5580MHz



# IC 802.11a 20MHz 5700MHz



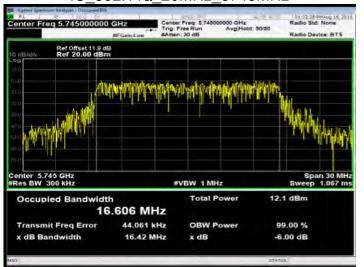
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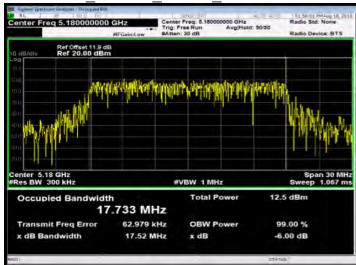


Page: 34 of 183

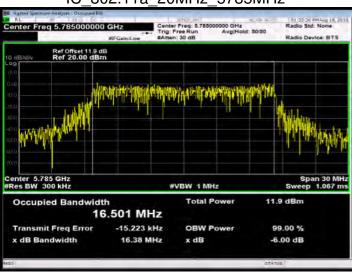
## IC 802.11a 20MHz 5745MHz



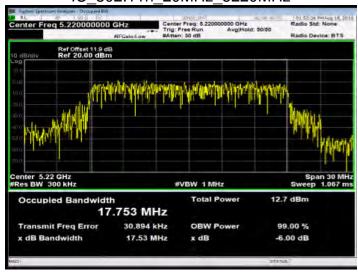
#### IC 802.11n 20MHz 5180MHz



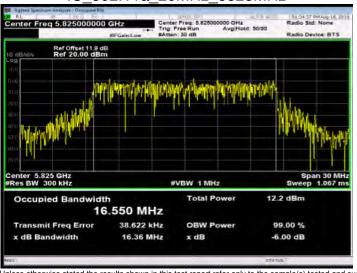
# IC 802.11a 20MHz 5785MHz



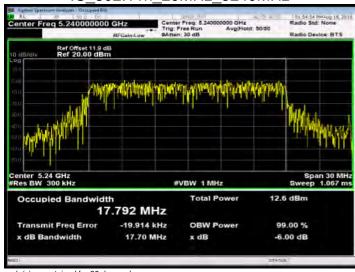
IC 802.11n 20MHz 5220MHz



# IC 802.11a 20MHz 5825MHz



IC 802.11n 20MHz 5240MHz



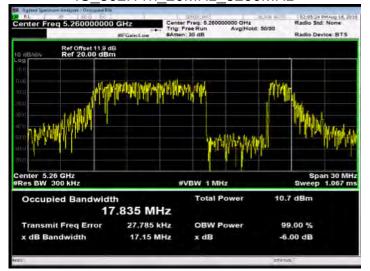
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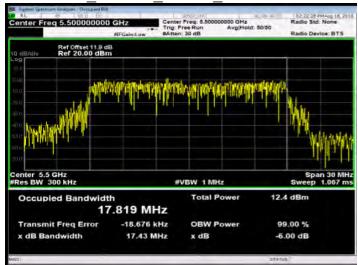


Page: 35 of 183

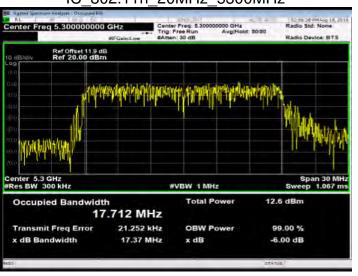
## IC 802.11n 20MHz 5260MHz



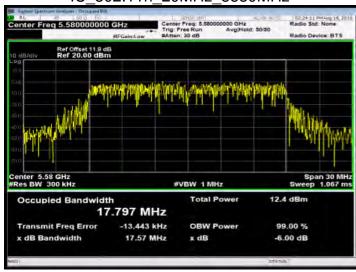
# IC 802.11n 20MHz 5500MHz



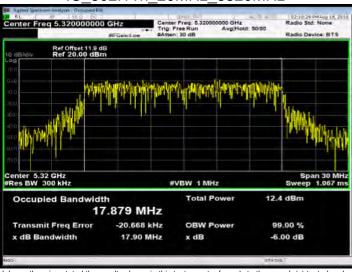
# IC 802.11n 20MHz 5300MHz



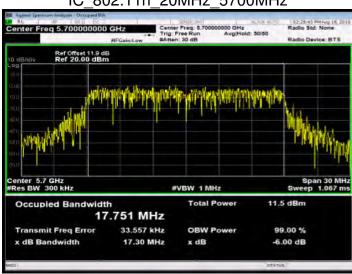
IC 802.11n 20MHz 5580MHz



# IC 802.11n 20MHz 5320MHz



IC 802.11n 20MHz 5700MHz



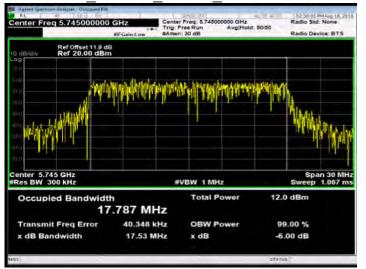
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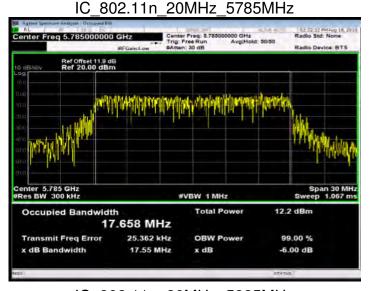
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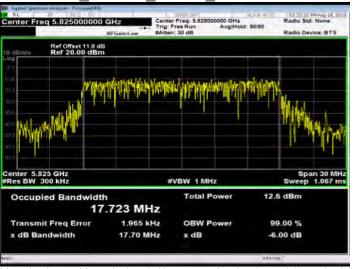
Page: 36 of 183

#### IC 802.11n 20MHz 5745MHz

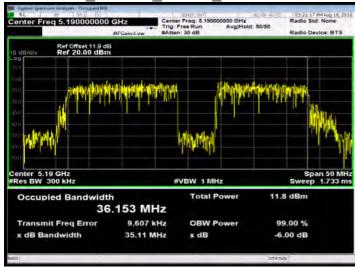




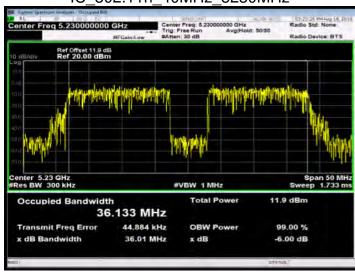
## IC 802.11n 20MHz 5825MHz



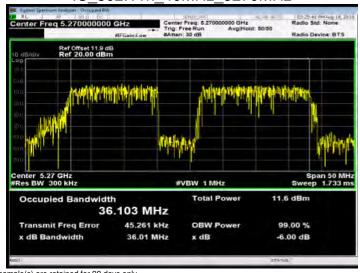
### IC 802.11n 40MHz 5190MHz



#### IC 802.11n 40MHz 5230MHz



## IC 802.11n 40MHz 5270MHz



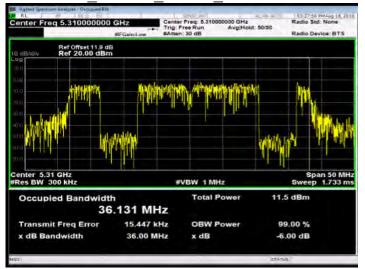
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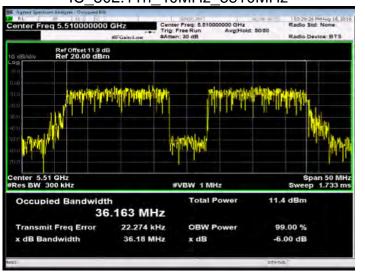


Page: 37 of 183

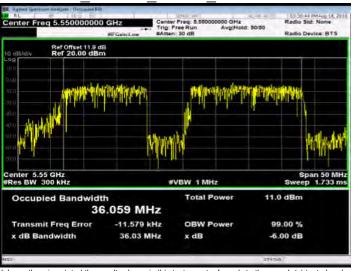
# IC 802.11n 40MHz 5310MHz



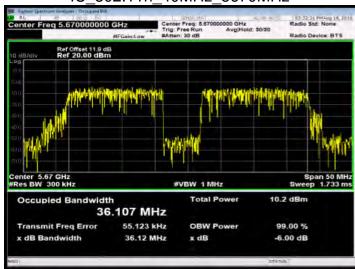
# IC 802.11n 40MHz 5510MHz



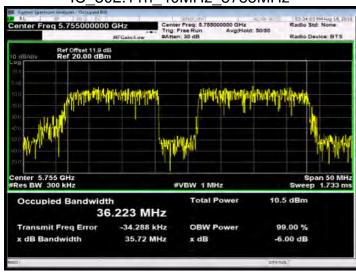
# IC 802.11n 40MHz 5550MHz



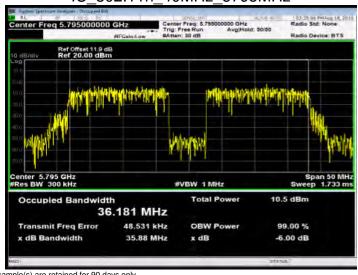
# IC 802.11n 40MHz 5670MHz



#### IC 802.11n 40MHz 5755MHz



# IC 802.11n 40MHz 5795MHz



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Page: 38 of 183

# MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

# Standard Applicable

**FCC** 

OPERZTION Band	EUT CATEGORY	LIMIT
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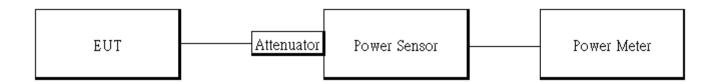
Page: 39 of 183

#### 9.3 **Measurement Equipment Used**

Refer to section 8.3 for details.

	Conduct	ed Emission	Test Site		
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE		NUMBER	NUMBER	CAL.	
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	00100A1F1A1 95C	RF01	12/12/2015	12/11/2016
Coaxial Cable 30cm	WOKEN	00100A1F1A1 95C	RF01	12/12/2015	12/11/2016
DC Block	PASTERNACK	PE8210	RF29	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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Page: 40 of 183

#### Measurement Result

# **FCC**

#### 802 11a

802.11a								
СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)		REQUIRED LIMIT (dBm)		RESULT
36	5180	MCS0	11.98	15.776		23.98		PASS
44	5220	MCS0	11.99	15.812		23.98		PASS
48	5240	MCS0	11.95	15.668		23.98		PASS
52	5260	MCS0	11.83	15.241	23.98	or 11+10log(B) =	24.37	PASS
60	5300	MCS0	11.93	15.596	23.98	or 11+10log(B) =	24.36	PASS
64	5320	MCS0	11.68	14.723	23.98	or 11+10log(B) =	24.36	PASS
100	5500	MCS0	11.84	15.276	23.98	or 11+10log(B) =	24.41	PASS
116	5580	MCS0	11.79	15.101	23.98	or 11+10log(B) =	24.34	PASS
140	5700	MCS0	11.67	14.689	23.98	or 11+10log(B) =	24.48	PASS
149	5745	MCS0	11.93	15.596		30		PASS
157	5785	MCS0	11.79	15.101		30		PASS
165	5825	MCS0	11.74	14.928		30		PASS

# 802.11n\_HT20

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL POWER (mW)		REQUIRED LIMIT (dBm)		RESULT
36	5180	MCS0	11.97	15.740		23.98		PASS
44	5220	MCS0	11.83	15.241		23.98		PASS
48	5240	MCS0	11.89	15.453		23.98		PASS
52	5260	MCS0	11.75	14.962	23.98	or 11+10log(B) =	24.46	PASS
60	5300	MCS0	11.88	15.417	23.98	or 11+10log(B) =	24.52	PASS
64	5320	MCS0	11.87	15.382	23.98	or 11+10log(B) =	24.40	PASS
100	5500	MCS0	11.95	15.668	23.98	or 11+10log(B) =	24.50	PASS
116	5580	MCS0	11.94	15.631	23.98	or 11+10log(B) =	24.48	PASS
140	5700	MCS0	11.71	14.825	23.98	or 11+10log(B) =	24.54	PASS
149	5745	MCS0	11.69	14.757		30		PASS
157	5785	MCS0	11.77	15.031		30		PASS
165	5825	MCS0	11.80	15.136		30		PASS

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Page: 41 of 183

# 802.11n\_HT40

СН	Frequency (MHz)	Data Rate	TOTAL POWER (dBm)	TOTAL PO WER (mW)		REQUIRED LIMIT (dBm)		RESULT
38	5190	MCS0	11.79	15.101		23.98		PASS
46	5230	MCS0	11.89	15.453		23.98		PASS
54	5270	MCS0	11.79	15.101	23.98	or 11+10log(B) =	27.39	PASS
62	5310	MCS0	11.83	15.241	23.98	or 11+10log(B) =	27.32	PASS
102	5510	MCS0	11.96	15.704	23.98	or 11+10log(B) =	27.35	PASS
110	5550	MCS0	11.98	15.776	23.98	or 11+10log(B) =	27.52	PASS
134	5670	MCS0	11.79	15.101	23.98	or 11+10log(B) =	27.37	PASS
151	5755	MCS0	11.31	13.521		30		PASS
159	5795	MCS0	11.42	13.868		30		PASS

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Page: 42 of 183

# IC

#### 802.11a

СН	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)		REQUIRED LIMIT (dBm)		RESULT
52	5260	11.83	15.241	23.98	or $11+10\log(B) =$	23.13	PASS
60	5300	11.93	15.596	23.98	or $11+10\log(B) =$	23.20	PASS
64	5320	11.68	14.723	23.98	or $11+10\log(B) =$	23.09	PASS
100	5500	11.84	15.276	23.98	or $11+10\log(B) =$	23.17	PASS
116	5580	11.79	15.101	23.98	or $11+10\log(B) =$	23.13	PASS
140	5700	11.67	14.689	23.98	or $11+10\log(B) =$	23.09	PASS
149	5745	11.93	15.596		30		PASS
157	5785	11.79	15.101		30		PASS
165	5825	11.74	14.928		30		PASS

# 802.11n HT20

СН	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)		REQUIRED LIMIT (dBm)		RESULT
52	5260	11.75	14.962	23.98	or $11+10\log(B) =$	23.34	PASS
60	5300	11.88	15.417	23.98	or $11+10\log(B) =$	23.40	PASS
64	5320	11.87	15.382	23.98	or $11+10\log(B) =$	23.53	PASS
100	5500	11.95	15.668	23.98	or $11+10\log(B) =$	23.41	PASS
116	5580	11.94	15.631	23.98	or $11+10\log(B) =$	23.45	PASS
140	5700	11.71	14.825	23.98	or $11+10\log(B) =$	23.38	PASS
149	5745	11.69	14.757		30		PASS
157	5785	11.77	15.031		30		PASS
165	5825	11.80	15.136		30		PASS

# 802.11n HT40

СН	Frequency (MHz)	TOTAL POWER (dBm)	TOTAL POWER (mW)		REQUIRED LIMIT (dBm)		RESULT
54	5270	11.79	15.101	23.98	or 11+10log(B) =	26.56	PASS
62	5310	11.83	15.241	23.98	or $11+10\log(B) =$	26.56	PASS
102	5510	11.96	15.704	23.98	or $11+10\log(B) =$	26.58	PASS
110	5550	11.98	15.776	23.98	or $11+10\log(B) =$	26.57	PASS
134	5670	11.79	15.101	23.98	or $11+10\log(B) =$	26.58	PASS
151	5755	11.31	13.521		30		PASS
159	5795	11.42	13.868		30		PASS

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Page: 43 of 183

#### 802.11a

СН	Frequency (MHz)	TOTAL POWER (dBm)	Antenna Gain (dBi)	EIRP (dBm)		REQUIRED LIMIT (dBm)		RESULT
36	5180	11.98	2.880	14.86	23.01	or 10+10log(B)=	22.14	PASS
44	5220	11.99	2.880	14.87	23.01	or 10+10log(B)=	22.13	PASS
48	5240	11.95	2.880	14.83	23.01	or 10+10log(B)=	22.14	PASS
52	5260	11.83	3.800	15.63	30	or 17+10log(B)=	29.13	PASS
60	5300	11.93	3.800	15.73	30	or 17+10log(B)=	29.20	PASS
64	5320	11.68	3.800	15.48	30	or 17+10log(B)=	29.09	PASS
100	5500	11.84	3.640	15.48	30	or 17+10log(B)=	29.17	PASS
116	5580	11.79	3.640	15.43	30	or 17+10log(B)=	29.13	PASS
140	5700	11.67	3.640	15.31	30	or 17+10log(B)=	29.09	PASS

#### 802.11n HT20

СН	Frequency (MHz)	TOTAL POWER (dBm)	Antenna Gain (dBi)	EIRP (dBm)		REQUIRED LIMIT (dBm)		RESULT
36	5180	11.97	2.880	14.85	23.01	or 10+10log(B)=	22.44	PASS
44	5220	11.83	2.880	14.71	23.01	or 10+10log(B)=	22.44	PASS
48	5240	11.89	2.880	14.77	23.01	or 10+10log(B)=	22.48	PASS
52	5260	11.75	3.800	15.55	30	or 17+10log(B)=	29.34	PASS
60	5300	11.88	3.800	15.68	30	or 17+10log(B)=	29.40	PASS
64	5320	11.87	3.800	15.67	30	or 17+10log(B)=	29.53	PASS
100	5500	11.95	3.640	15.59	30	or 17+10log(B)=	29.41	PASS
116	5580	11.94	3.640	15.58	30	or 17+10log(B)=	29.45	PASS
140	5700	11.71	3.640	15.35	30	or $17+10\log(B)=$	29.38	PASS

# 802.11n HT40

СН	Frequency (MHz)	TOTAL POWER (dBm)	Antenna Gain (dBi)	EIRP (dBm)		REQUIRED LIMIT (dBm)		RESULT
38	5190	11.79	2.880	14.67	23.01	or 10+10log(B)=	25.45	PASS
46	5230	11.89	2.880	14.77	23.01	or 10+10log(B)=	25.56	PASS
54	5270	11.79	3.800	15.59	30	or 17+10log(B)=	32.56	PASS
62	5310	11.83	3.800	15.63	30	or 17+10log(B)=	32.56	PASS
102	5510	11.96	3.640	15.60	30	or 17+10log(B)=	32.58	PASS
110	5550	11.98	3.640	15.62	30	or 17+10log(B)=	32.57	PASS
134	5670	11.79	3.640	15.43	30	or 17+10log(B)=	32.58	PASS

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Page: 44 of 183

# 10. PEAK POWER SPECTRAL DENSITY

# 10.1 Standard Applicable

**FCC** 

OPERATION Band	EUT CATEGORY	LIMIT
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U-NII-1

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Page: 45 of 183

#### 10.2 Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 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.

Note: For the test of PSD at MIMO mode, the highest emission of worst case employing Measure and add 10 log (N) technical is reported on this report after the comparison between Main Antenna at single transmitting mode and Aux that yields the higher value. The MIMO transmitting mode produces higher value of outcome

# 10.3 Measurement Equipment Used

Conducted Emission Test Site								
EQUIPMENT MFR MODEL SERIAL LAST								
TYPE		NUMBER	NUMBER	CAL.				
Spectrum Analyzer	KEYSIGHT	N9010A	MY54510568	04/14/2016	04/13/2017			
Coaxial Cable 30cm	WOKEN	00100A1F1A1 95C	RF01	12/12/2015	12/11/2016			
Coaxial Cable 30cm	WOKEN	00100A1F1A1 95C	RF01	12/12/2015	12/11/2016			
DC Block	PASTERNACK	PE8210	RF29	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			

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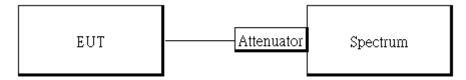
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Page: 46 of 183

# 10.4 Test Set-up



# 10.5 Measurement Result

POWER DENSITY 802.11a MODE					
Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)		
5180	-1.59	17	-18.59		
5220	-3.35	17	-20.35		
5240	-1.58	17	-18.58		
5260	-1.23	11	-12.23		
5300	-2.90	11	-13.90		
5320	-5.28	11	-16.28		
5500	-3.75	11	-14.75		
5580	-3.92	11	-14.92		
5700	-3.19	11	-14.19		
5745	5.68	30	-24.32		
5785	4.97	30	-25.03		
5825	5.47	30	-24.53		

POWER DENSITY 802.11n HT20 MODE					
Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)		
5180	-3.53	17	-20.53		
5220	-4.45	17	-21.45		
5240	-2.46	17	-19.46		
5260	-3.89	11	-14.89		
5300	-3.40	11	-14.40		
5320	-4.63	11	-15.63		
5500	-4.42	11	-15.42		
5580	-3.86	11	-14.86		
5700	-5.32	11	-16.32		
5745	4.76	30	-25.24		
5785	4.98	30	-25.02		
5825	5.12	30	-24.88		

POWER DENSITY 802.11n HT40 MODE					
Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)		
5190	-3.4	17	-20.40		
5230	-3.68	17	-20.68		
5270	-3.95	11	-14.95		
5310	-4.16	11	-15.16		
5510	-3.3	11	-14.30		
5550	-4.23	11	-15.23		
5670	-3.54	11	-14.54		
5755	1.39	30	-28.61		
5795	1.48	30	-28.52		

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Page: 47 of 183

# **EIRP**

EIRP spectral density 802.11a MODE						
Freq. (MHz)	PPSD (dBm)	Ant. Gain (dBi)	EIRP SD (dBm)	Limit (dBm)	Margin (dB)	
5180	-1.59	2.88	1.29	10	-11.59	
5220	-3.35	2.88	-0.47	10	-13.35	
5240	-1.58	2.88	1.30	10	-11.58	

EIRP spectral density 802.11n HT20 MODE						
Freq. (MHz)	PPSD (dBm)	Ant. Gain (dBi)	EIRP SD (dBm)	Limit (dBm)	Margin (dB)	
5180	-3.53	2.88	-0.65	10	-13.53	
5220	-4.45	2.88	-1.57	10	-14.45	
5240	-2.46	2.88	0.42	10	-12.46	

EIRP spectral density 802.11n HT40 MODE						
Freq. (MHz)	PPSD (dBm)	Ant. Gain (dBi)	EIRP SD (dBm)	Limit (dBm)	Margin (dB)	
5180	-3.40	2.88	-0.52	10	-13.40	
5220	-3.68	2.88	-0.80	10	-13.68	

Note: offset 11.9dB offset

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Page: 48 of 183

# 802.11a 20MHz 5180MHz



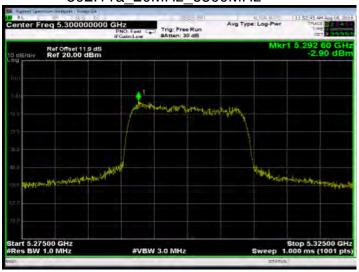
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# 802.11a\_20MHz\_5220MHz



802.11a\_20MHz\_5300MHz



# 802.11a 20MHz 5240MHz



802.11a\_20MHz\_5320MHz



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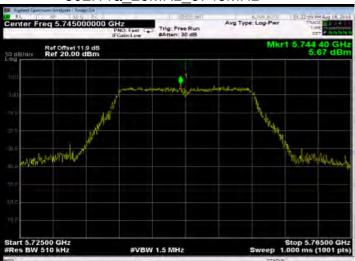


Page: 49 of 183

# 802.11a 20MHz 5500MHz



# 802.11a 20MHz 5745MHz



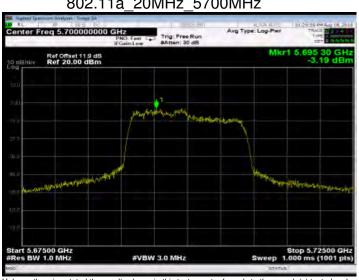
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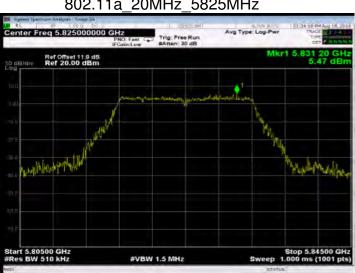
802.11a\_20MHz\_5785MHz



# 802.11a 20MHz 5700MHz



802.11a\_20MHz\_5825MHz



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Page: 50 of 183

# 802.11n 20MHz 5180MHz



# 802.11n 20MHz 5260MHz



# 802.11n\_20MHz\_5220MHz



802.11n\_20MHz\_5300MHz



# 802.11n 20MHz 5240MHz



802.11n\_20MHz\_5320MHz



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Page: 51 of 183

# 802.11n 20MHz 5500MHz



# 802.11n 20MHz 5745MHz



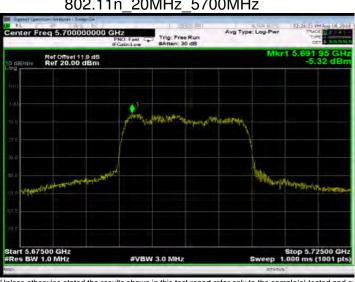
# 802.11n\_20MHz\_5580MHz



802.11n\_20MHz\_5785MHz



# 802.11n 20MHz 5700MHz



802.11n\_20MHz\_5825MHz



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Page: 52 of 183

# 802.11n 40MHz 5190MHz



# 802.11n 40MHz 5310MHz



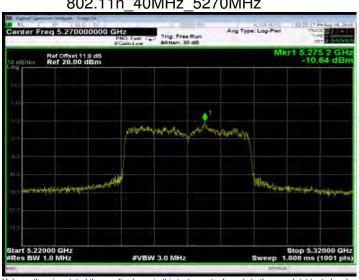
# 802.11n\_40MHz\_5230MHz



802.11n\_40MHz\_5510MHz



# 802.11n 40MHz 5270MHz





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Page: 53 of 183

# 802.11n 40MHz 5670MHz



# 802.11n\_40MHz\_5755MHz



# 802.11n 40MHz 5795MHz



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Page: 54 of 183

# 11. UNDESIRABLE RADIATED EMISSION MEASUREMENT

# 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.
- 2. 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	LII	ИІТ
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

<sup>\*1</sup> beyond 75 MHz or more above of the bandedge.

 $EIRP = ((E*d)^2) / 30$ , 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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<sup>\*2</sup> below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

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

<sup>\*4</sup> from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.



Page: 55 of 183

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

eri mine epeemed de seien 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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Page: 56 of 183

# 11.2 Measurement Equipment Used

SGS 966 Chamber No.C							
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.		
TYPE		NUMBER	NUMBER	CAL.			
EMI Test Receiver	R&S	ESCI7	100760	05/04/2015	05/03/2016		
Spectrum Analyzer	Agilent	E4446A	MY51100003	01/29/2015	01/28/2016		
EXA Spectrum Ana-	Agilent	N9010A	MY50420195	12/22/2014	12/21/2015		
Spectrum Analyzer	R&S	FSV-30	101398	09/23/2015	09/22/2016		
Loop Antenna	ETS.LINDGREN	6502	00143303	12/9/2014	12/08/2015		
Bilog Antenna	SCHWAZBECK	VULB9168	378	12/23/2014	12/22/2015		
Horn antenna	ETS.LINDGREN	3117	123995	05/05/2015	05/04/2016		
Horn Antenna	Schwarzbeck	BBHA9170	184	12/25/2014	12/24/2015		
Pre-Amplifier	EMC Instruments Corp.	EMC0126530	980038	01/02/2015	01/01/2016		
Pre-Amplifier	Agilent	8447D	2944A07676	01/02/2015	01/01/2016		
Pre-Amplifier	Agilent	8449B	3008A00578	01/02/2015	01/01/2016		
Pre-Amplifier	EMC Instruments Corp.	EMC184045	980135	01/02/2015	01/01/2016		
5150-5350 Band Reject Filter	Micro-Tronics	BRM50703	1	01/02/2015	01/01/2016		
5470-5725 Band Reject Filter	Micro-Tronics	BRM50704	1	01/02/2015	01/01/2016		
5725-5875 Band Reject Filter	Micro-Tronics	BRM50705	1	01/02/2015	01/01/2016		
1GHz High Pass Fil- ter	Micro-Tronics	HPM50108	32	01/02/2015	01/01/2016		
2GHz High Pass Fil- ter	Micro-Tronics	HPM50110	36	01/02/2015	01/01/2016		
Attenuator	Mini-Circuit	BW-S10W2+	002	01/02/2015	01/01/2016		
Turn Table	HD	DT420	N/A	N.C.R	N.C.R		
Antenna Tower	ChamPro	AM-BS-4500-B	060776-ABS	N.C.R	N.C.R		
Controller	ChamPro	EM1000	060776	N.C.R	N.C.R		
Low Loss Cable	Huber Suhner	966_Rx	9	01/02/2015	01/01/2016		
3m Site NSA	SGS	966 chamber	N/A	07/01/2015	06/30/2016		

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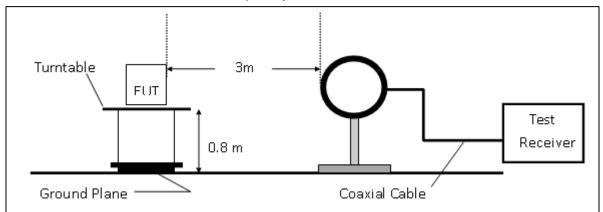
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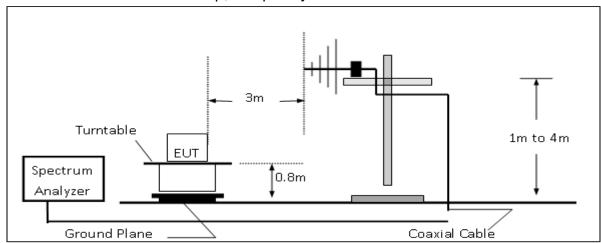
Page: 57 of 183

# 11.3 Test SET-UP

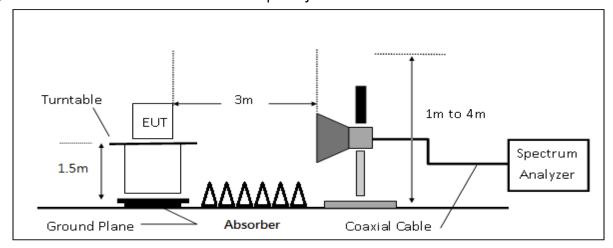
(A) Radiated Emission Test Set-UP Frequency Below 30MHz.



(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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Page: 58 of 183

# 11.4 Measurement Procedure

- 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 level.
- 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 ≥ 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:

FS = RA + AF + CL - AG

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

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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Page: 59 of 183

#### 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**

Refer to attach tabular data sheets.

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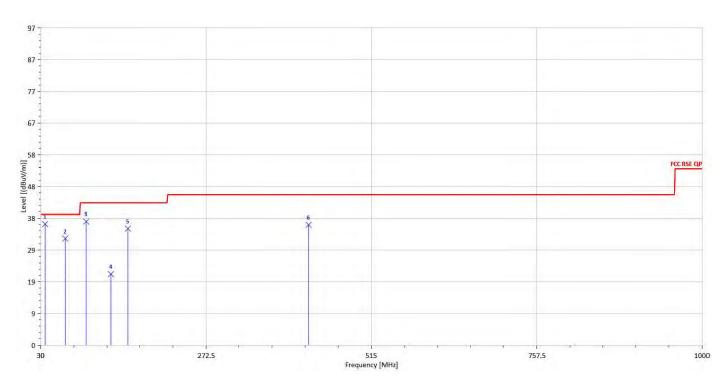
Page: 60 of 183

# **Radiated Spurious Emission Measurement Result Below 1GHz Worst-Case Data:** 802.11a 5150~5250 MHz

802.11a Operation Mode: Test Date: 2016/8/14

Fundamental Frequency: 5220 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Pony EUT Pol.: Measurement Antenna Pol.: Н 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
36.79	S	Peak	48.02	-10.93	37.08	40	-2.92
65.89	S	Peak	54.89	-22.29	32.60	40	-7.40
96.93	S	Peak	56.12	-18.27	37.86	43.5	-5.64
132.82	S	Peak	37.52	-15.76	21.76	43.5	-21.74
158.04	S	Peak	53.08	-17.40	35.68	43.5	-7.82
422.85	S	Peak	46.21	-9.36	36.86	46	-9.14

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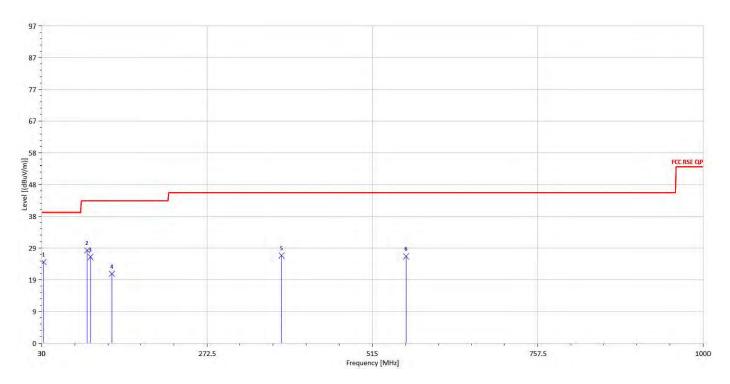


Page: 61 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5220 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Pony EUT Pol.: Η 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
32.91	S	Peak	33.62	-8.75	24.87	40	-15.13
96.93	S	Peak	46.59	-18.27	28.32	43.5	-15.18
101.78	S	Peak	43.88	-17.52	26.36	43.5	-17.14
132.82	S	Peak	37.02	-15.76	21.26	43.5	-22.24
382.11	S	Peak	37.11	-10.33	26.78	46	-19.22
564.47	S	Peak	33.05	-6.50	26.55	46	-19.45

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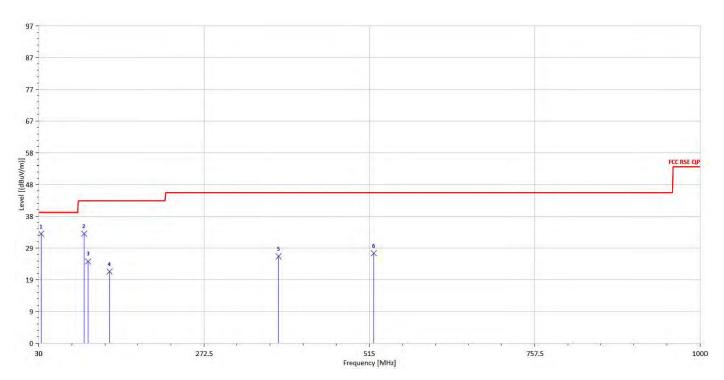
Page: 62 of 183

# 802.11a 5250~5350 MHz

Operation Mode: Test Date: 802.11a 2016/8/14

Temp. / Humi.: Fundamental Frequency: 5300 MHz 22.7deg\_C/57RH

Operation Band: Test Engineer: Tx CH Mid Pony EUT Pol.: Measurement Antenna Pol.: Н 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
33.88	S	Peak	42.73	-9.27	33.46	40	-6.54
96.93	S	Peak	51.77	-18.27	33.50	43.5	-10.00
102.75	S	Peak	42.45	-17.40	25.05	43.5	-18.45
133.79	S	Peak	37.77	-15.82	21.95	43.5	-21.55
382.11	S	Peak	36.87	-10.33	26.54	46	-19.46
521.79	S	Peak	34.70	-7.26	27.44	46	-18.56

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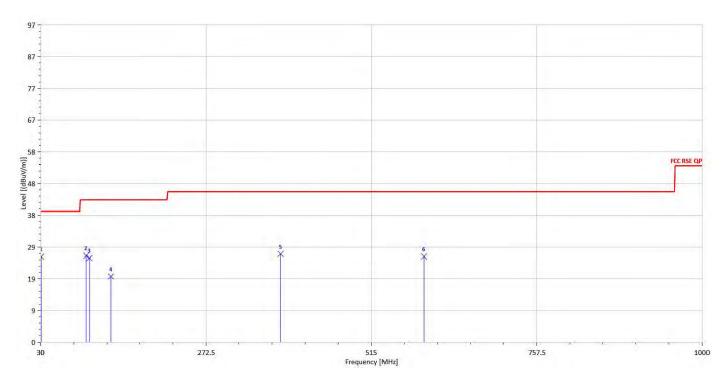


Page: 63 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5300 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
30.97	S	Peak	33.87	-7.70	26.16	40	-13.84
96.93	S	Peak	44.70	-18.27	26.43	43.5	-17.07
101.78	S	Peak	43.25	-17.52	25.73	43.5	-17.77
132.82	S	Peak	35.87	-15.76	20.11	43.5	-23.39
382.11	S	Peak	37.29	-10.33	26.96	46	-19.04
592.60	S	Peak	32.28	-6.08	26.20	46	-19.80

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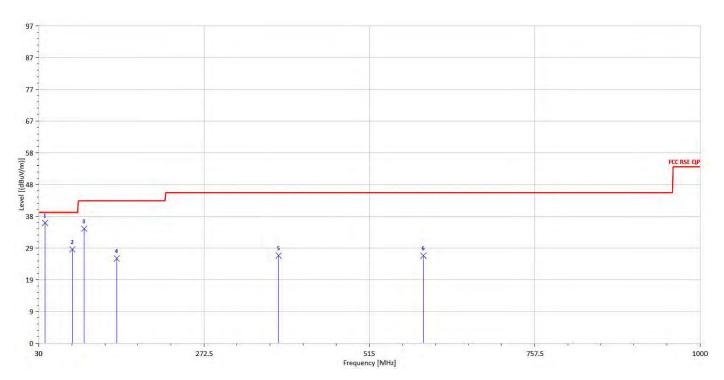
Page: 64 of 183

# 802.11a, 5470~5725 MHz

Operation Mode: Test Date: 802.11a 2016/8/14

Temp. / Humi.: Fundamental Frequency: 5580 MHz 22.7deg\_C/57RH

Operation Band: Test Engineer: Tx CH Mid Pony EUT Pol.: Measurement Antenna Pol.: Н 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
39.70	S	Peak	49.45	-12.63	36.82	40	-3.18
79.47	S	Peak	49.67	-21.01	28.66	40	-11.34
96.93	S	Peak	53.28	-18.27	35.01	43.5	-8.49
144.46	S	Peak	42.28	-16.39	25.89	43.5	-17.61
382.11	S	Peak	37.08	-10.33	26.75	46	-19.25
594.54	S	Peak	32.50	-5.76	26.74	46	-19.26

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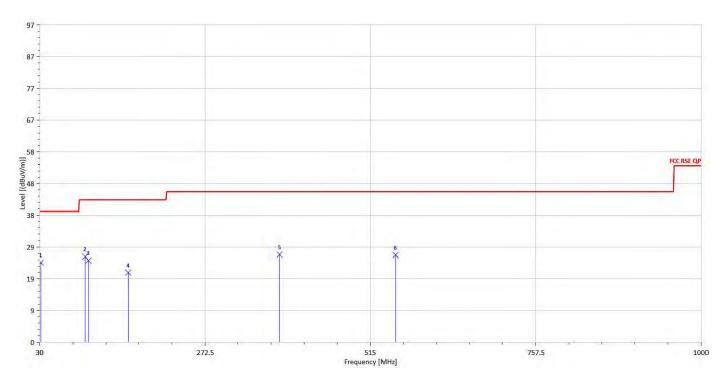


Page: 65 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5580 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Pony Tx CH Mid Test Engineer: EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
31.94	S	Peak	32.57	-8.22	24.35	40	-15.65
96.93	S	Peak	44.43	-18.27	26.16	43.5	-17.34
101.78	S	Peak	42.51	-17.52	24.98	43.5	-18.52
159.98	S	Peak	38.82	-17.52	21.29	43.5	-22.21
382.11	S	Peak	37.13	-10.33	26.80	46	-19.20
551.86	S	Peak	33.30	-6.66	26.64	46	-19.36

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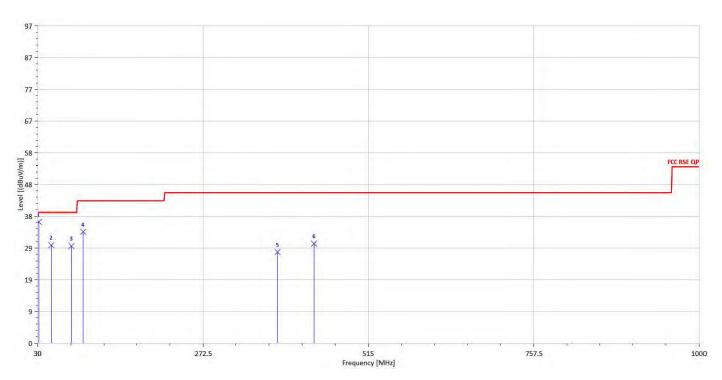
Page: 66 of 183

# 802.11a, 5725~5850 MHz

Operation Mode: Test Date: 802.11a 2016/8/14

Temp. / Humi.: Fundamental Frequency: 5785 MHz 22.7deg\_C/57RH

Operation Band: Test Engineer: Tx CH Mid Pony EUT Pol.: Measurement Antenna Pol.: Н Vertical



Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
31.94	S	Peak	45.36	-8.22	37.14	40	-2.86
50.37	S	Peak	49.49	-19.55	29.94	40	-10.06
79.47	S	Peak	50.67	-21.01	29.66	40	-10.34
96.93	S	Peak	52.35	-18.27	34.08	43.5	-9.42
382.11	S	Peak	38.14	-10.33	27.81	46	-18.19
435.46	S	Peak	39.62	-9.20	30.42	46	-15.58

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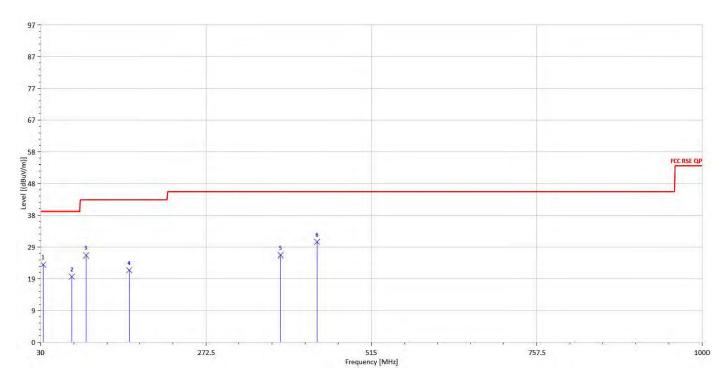


Page: 67 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5785 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Test Engineer: Tx CH Mid Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
33.88	S	Peak	33.03	-9.27	23.76	40	-16.24
75.59	S	Peak	41.44	-21.38	20.06	40	-19.94
96.93	S	Peak	44.81	-18.27	26.54	43.5	-16.96
159.98	S	Peak	39.58	-17.52	22.05	43.5	-21.45
382.11	S	Peak	36.91	-10.33	26.58	46	-19.42
435.46	S	Peak	39.87	-9.20	30.67	46	-15.33

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Page: 68 of 183

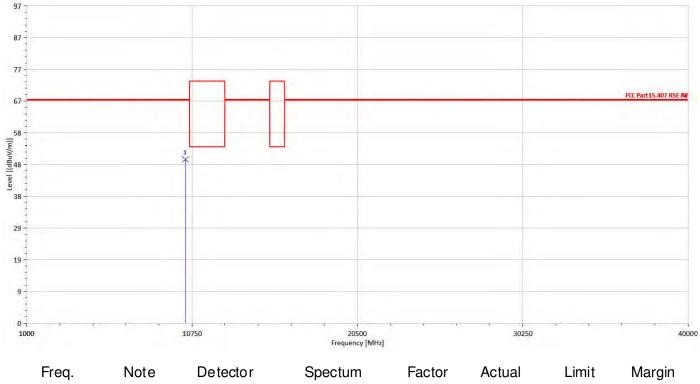
# **Above 1GHz Worst-Case Data:**

# Radiated Spurious Emission Measurement Result 802.11a, 5150~5250 MHz

Operation Mode: Test Date: 802.11a 2016/8/14

Fundamental Frequency: Temp. / Humi.: 22.7deg\_C/57RH 5180 MHz

Operation Band: Tx CH Low Test Engineer: Ashton EUT Pol.: 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	dΒμV	dB	dBµV/m	dBµV/m	dB
10360.00	Н	Peak	29.93	20.18	50.11	68.3	-18.19

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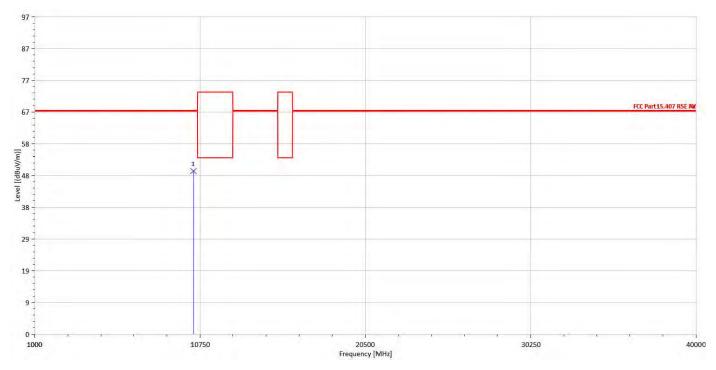


Page: 69 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5180 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Pony Tx CH Low Test Engineer: EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB	
•	10360.00	Н	Peak	29.73	20.18	49.90	68.3	-18.40	•

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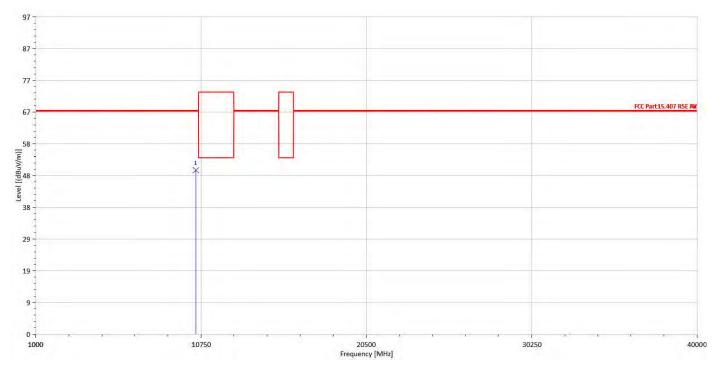


Page: 70 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5220 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Ashton EUT Pol.: Η Measurement Antenna Pol.: Vertical



	Freq.	Note	De tecto r Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin	
	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dΒμV/m	dBµV/m	dB	
-	10440.00	Н	Peak	29.87	20.29	50.16	68.3	-18.14	

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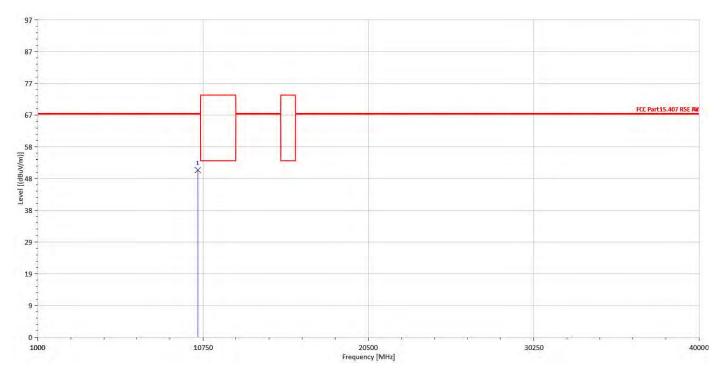


Page: 71 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5220 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Ashton EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
10440.00	Н	Peak	30.84	20.29	51.13	68.3	-17.17

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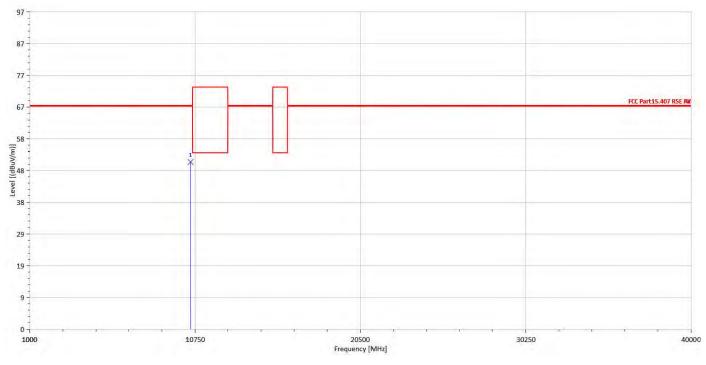


Page: 72 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5240 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Test Engineer: Tx CH High **Ashton** EUT Pol.: Н 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	dΒμV	dB	dBµV/m	dBµV/m	dB	
10480.00	Н	Peak	30.49	20.68	51.17	68.3	-17.13	

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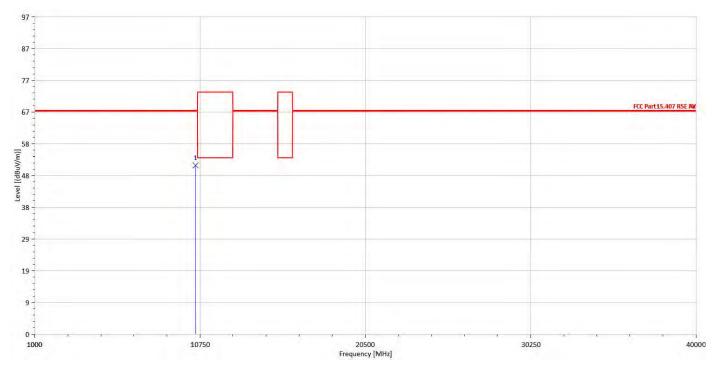


Page: 73 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5240 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Tx CH High Test Engineer: **Ashton** EUT Pol.: Η Measurement Antenna Pol. : Horizontal



	Freq.	Note	De tecto r Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin	
_	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dΒμV/m	dΒμV/m	dB	
•	10480.00	Н	Peak	30.97	20.68	51.65	68.3	-16.65	

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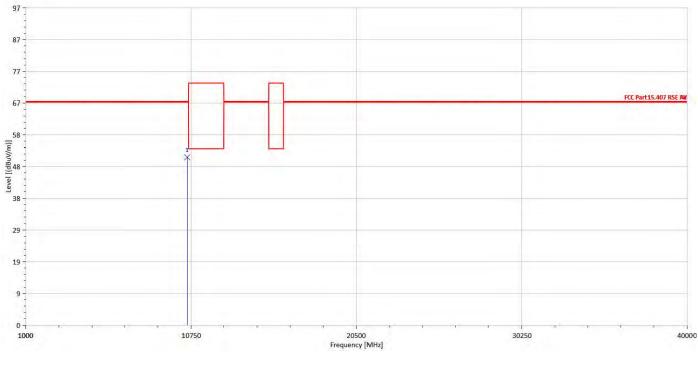
Issue Date: Mar. 23, 2017 Page: 74 of 183

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

Operation Mode: 802.11a Test Date: 2016/8/14

Temp. / Humi.: Fundamental Frequency: 5260 MHz 22.7deg\_C/57RH

Test Engineer: Operation Band: Tx CH Low Pony EUT Pol.: Measurement Antenna Pol.: Н Vertical



	Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
			Mode	Reading Level		FS	@3m	
	MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
•	10520.00	Н	Peak	31.27	20.10	51.37	68.3	-16.93

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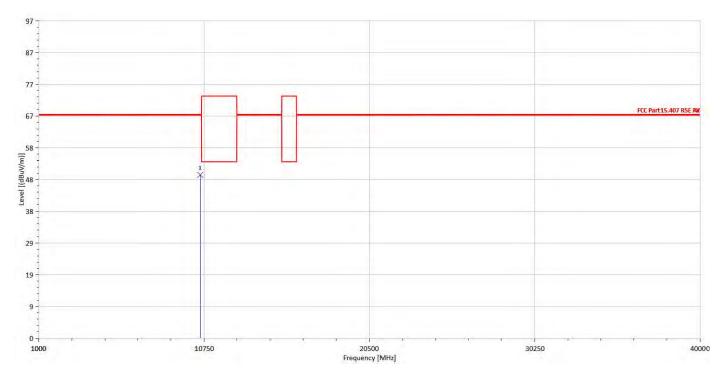


Page: 75 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5260 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Low Test Engineer: Ashton EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
10520.00	Н	Peak	29.86	20.10	49.96	68.3	-18.34

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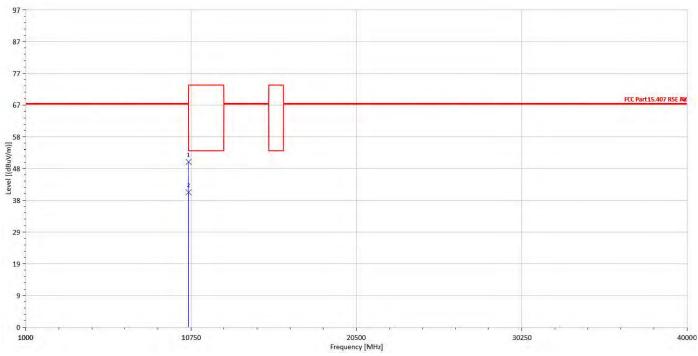


Page: 76 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5300 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Ashton EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
10600.00	Н	Peak	30.39	20.17	50.56	74	-23.44
10600.00	Н	Average	21.02	20.17	41.19	54	-12.81

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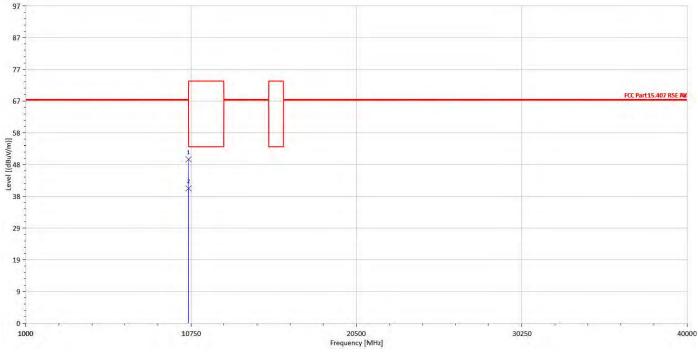


Page: 77 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5300 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Ashton EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB	
	10600.00	Н	Peak	29.96	20.17	50.13	74	-23.87	
	10600.00	Н	Average	20.98	20.17	41.15	54	-12.85	

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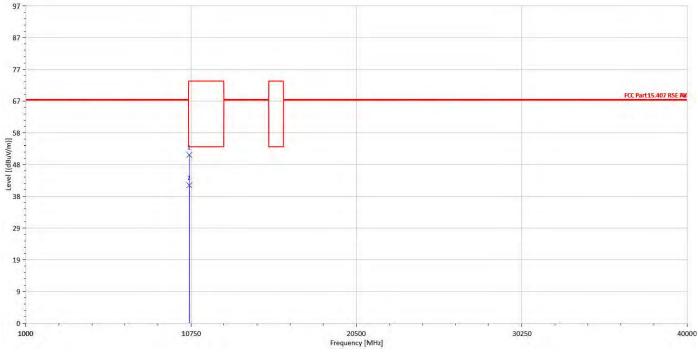


Page: 78 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5320 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Tx CH High Test Engineer: **Ashton** EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
10640.00	Н	Peak	31.15	20.34	51.49	74	-22.51
10640.00	Н	Average	21.78	20.34	42.12	54	-11.88

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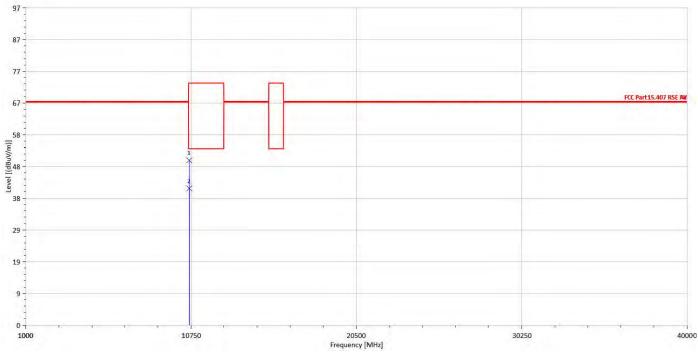


Page: 79 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5320 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Tx CH High Test Engineer: **Ashton** EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB	
10640.00	Н	Peak	30.10	20.34	50.45	74	-23.55	•
10640.00	Н	Average	21.45	20.34	41.79	54	-12.21	

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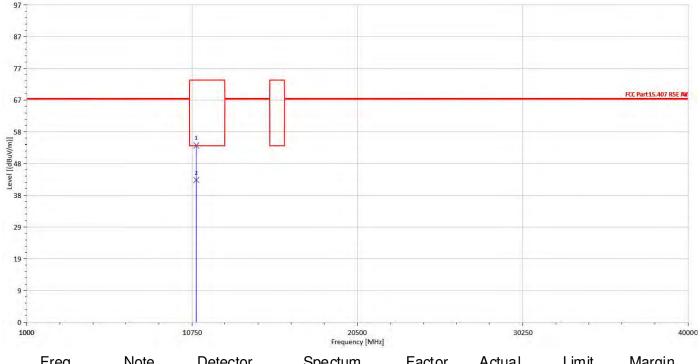
Page: 80 of 183

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

Operation Mode: 802.11a Test Date: 2016/8/14

Temp. / Humi.: Fundamental Frequency: 5500 MHz 22.7deg\_C/57RH

Test Engineer: Operation Band: Tx CH Low Ashton EUT Pol.: Measurement Antenna Pol.: Н Vertical



Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
11000.0	00 H	Peak	31.92	22.11	54.03	74	-19.97
11000.0	00 H	Average	21.33	22.11	43.44	54	-10.56

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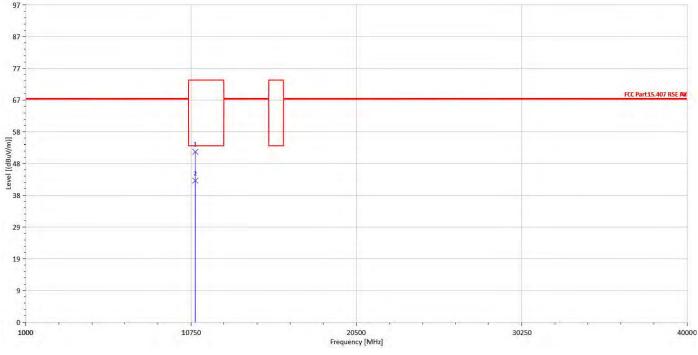


Page: 81 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5500 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Low Test Engineer: Ashton EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
1	1000.00	Н	Peak	30.04	22.11	52.15	74	-21.85
1	1000.00	Н	Average	21.15	22.11	43.26	54	-10.74

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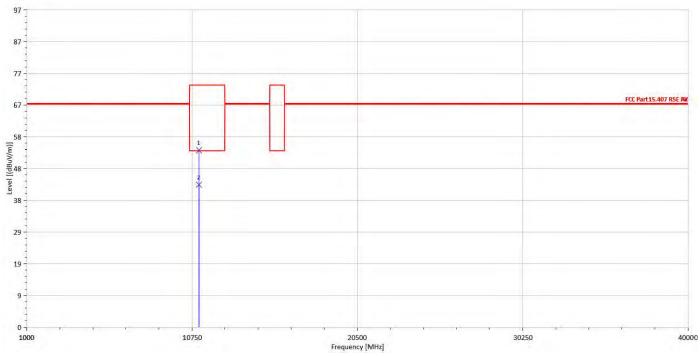


Page: 82 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5580 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Ashton EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
1	1160.00	Н	Peak	32.06	22.04	54.09	74	-19.91
1	1160.00	Н	Average	21.48	22.04	43.52	54	-10.48

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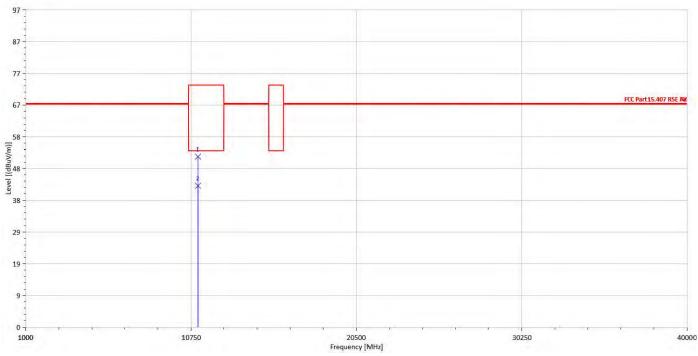


Page: 83 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5580 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Ashton EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB	_
11160.00	Н	Peak	30.16	22.04	52.19	74	-21.81	•
11160.00	Н	Average	21.15	22.04	43.19	54	-10.81	

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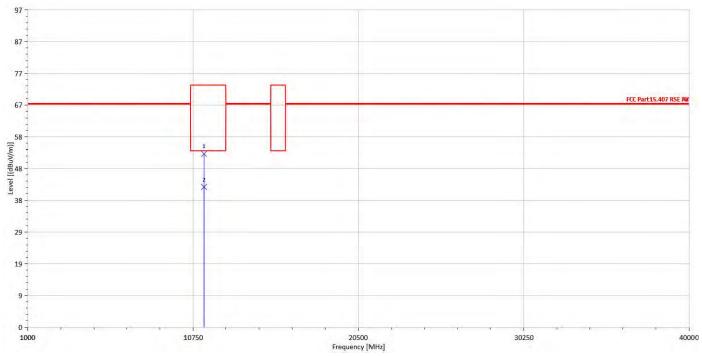


Page: 84 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5700 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Tx CH High Test Engineer: **Ashton** EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
11400.00	Н	Peak	31.83	21.22	53.05	74	-20.95
11400.00	Н	Average	21.62	21.22	42.84	54	-11.16

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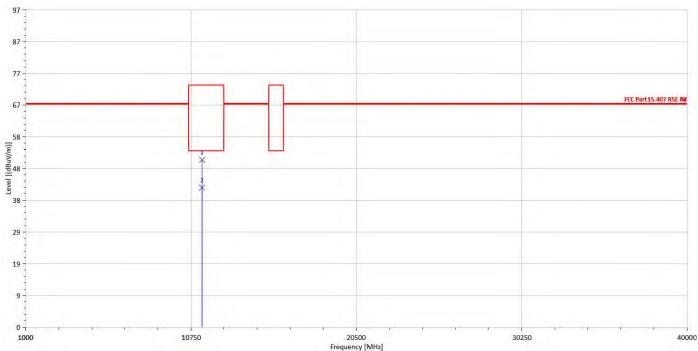


Page: 85 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5700 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Tx CH High Test Engineer: **Ashton** EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB	
•	11400.00	Н	Peak	30.01	21.22	51.23	74	-22.77	
	11400.00	Н	Average	21.41	21.22	42.63	54	-11.37	

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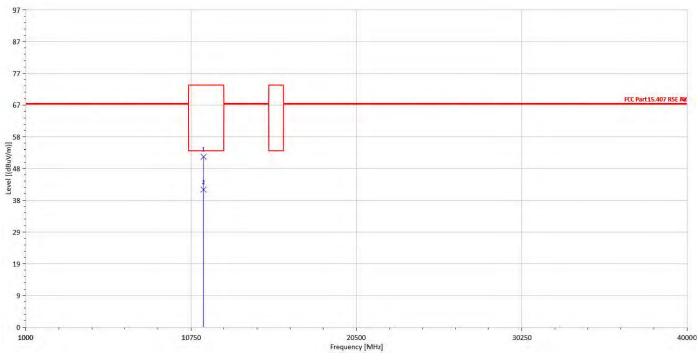
Page: 86 of 183

#### Radiated Spurious Emission Measurement Result 802.11a, 5725~5850 MHz

Operation Mode: 802.11a Test Date: 2016/8/14

Temp. / Humi.: Fundamental Frequency: 5745 MHz 22.7deg\_C/57RH

Test Engineer: Operation Band: Tx CH Low Ashton EUT Pol.: Measurement Antenna Pol.: Н Vertical



Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
11490.00	Н	Peak	31.46	20.70	52.16	74	-21.84
11490.00	Н	Average	21.29	20.70	41.99	54	-12.01

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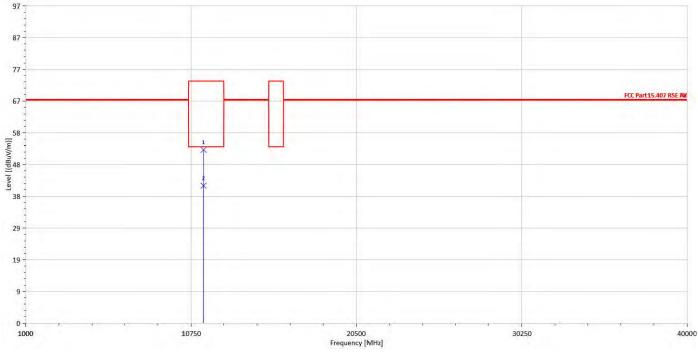


Page: 87 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5745 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Low Test Engineer: Ashton EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB	
•	11490.00	Н	Peak	32.35	20.70	53.06	74	-20.94	
	11490.00	Н	Average	21.28	20.70	41.98	54	-12.02	

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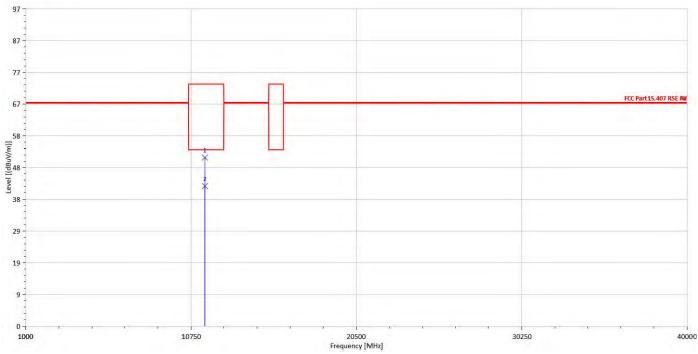


Page: 88 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5785 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Ashton EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
11570.00	Н	Peak	30.16	21.44	51.60	74	-22.40
11570.00	Н	Average	21.36	21.44	42.80	54	-11.20

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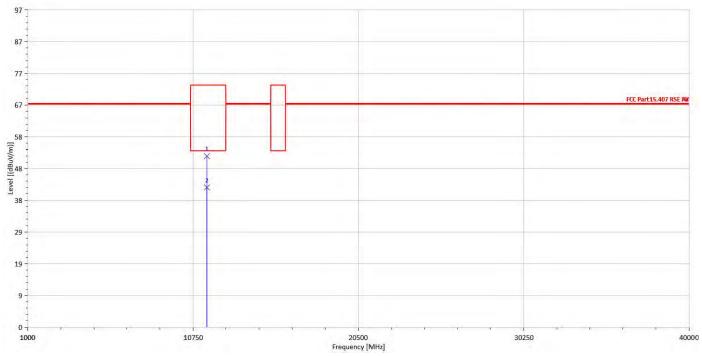


Page: 89 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5785 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Ashton EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
11570.00	Н	Peak	30.87	21.44	52.32	74	-21.68
11570.00	Н	Average	21.25	21.44	42.69	54	-11.31

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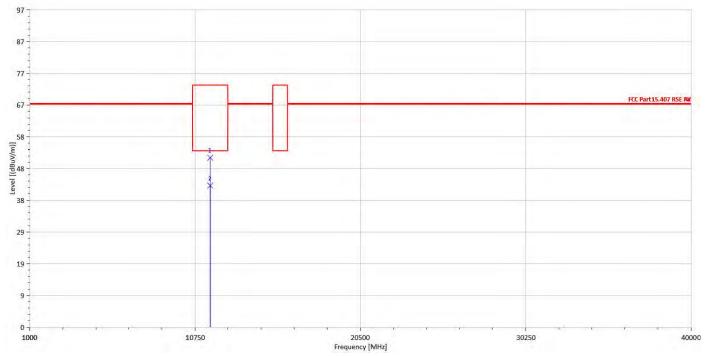


Page: 90 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5825 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Tx CH High Test Engineer: **Ashton** EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
11650.00	Н	Peak	29.83	22.02	51.86	74	-22.14
11650.00	Н	Average	21.21	22.02	43.23	54	-10.77

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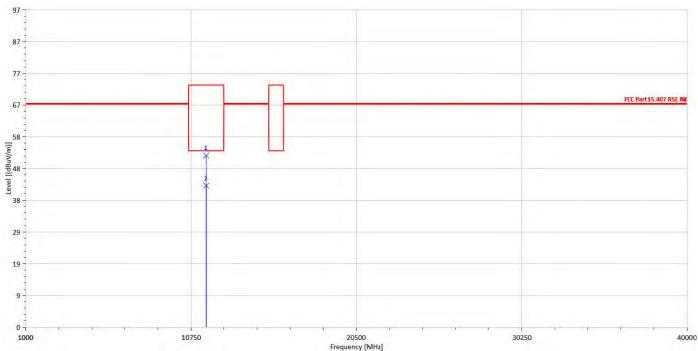


Page: 91 of 183

Operation Mode: 802.11a Test Date: 2016/8/14

Fundamental Frequency: 5825 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Tx CH High Test Engineer: **Ashton** EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB	_
11650.00	Н	Peak	30.50	22.02	52.53	74	-21.47	•
11650.00	Н	Average	21.21	22.02	43.23	54	-10.77	

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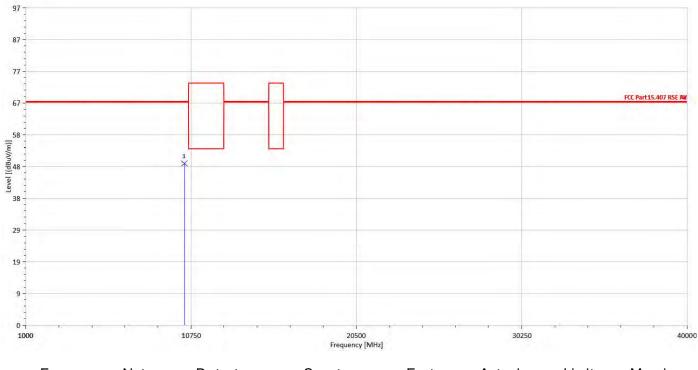
Page: 92 of 183

## Radiated Spurious Emission Measurement Result 802.11n HT20, 5150~5250 MHz

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 22.7deg\_C/57RH 5180 MHz Temp. / Humi.:

Operation Band: Tx CH Low Test Engineer: Pony EUT Pol.: Measurement Antenna Pol.: Н Vertical



Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
10360.00	Н	Peak	29.28	20.18	49.46	68.3	-18.84

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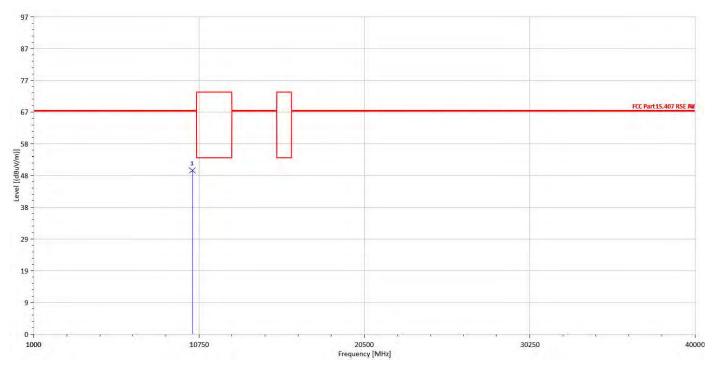


Page: 93 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5180 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Low Test Engineer: Pony EUT Pol.: Η Measurement Antenna Pol.: Horizontal



	Freq.	Note	De tecto r Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin	
	MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB	
•	10360.00	Н	Peak	29.93	20.18	50.11	68.3	-18.19	

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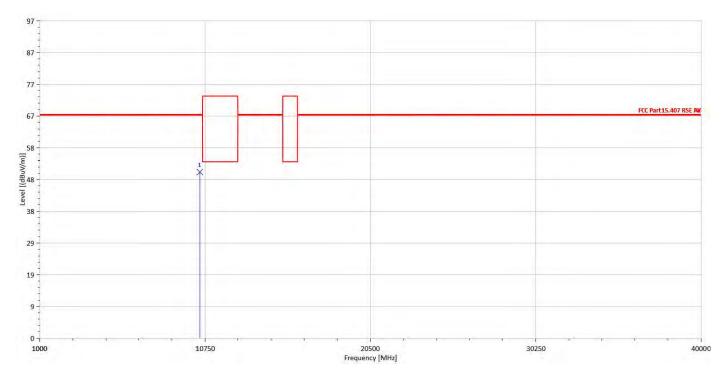


Page: 94 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5220 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Pony EUT Pol.: Η Measurement Antenna Pol.: Vertical



Fı	eq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
			Mode	Reading Level		FS	@3m	
N	lHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
104	40.00	Н	Peak	30.54	20.29	50.83	68.3	-17.47

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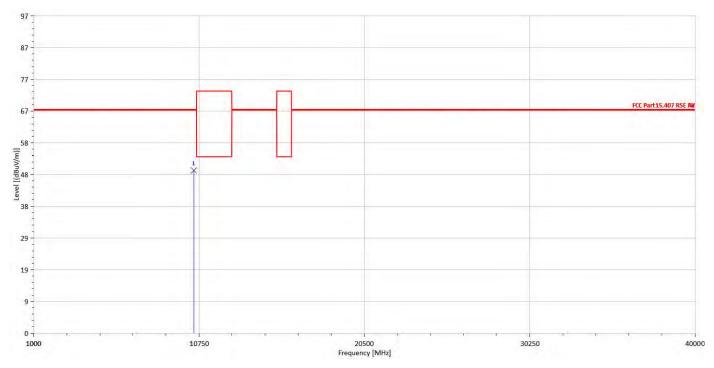


Page: 95 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5220 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Pony EUT Pol.: Η Measurement Antenna Pol.: Horizontal



Freq.	Note	De tecto r 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	
10440.00	H	Peak	29.50	20.29	49.79	68.3	-18.51	

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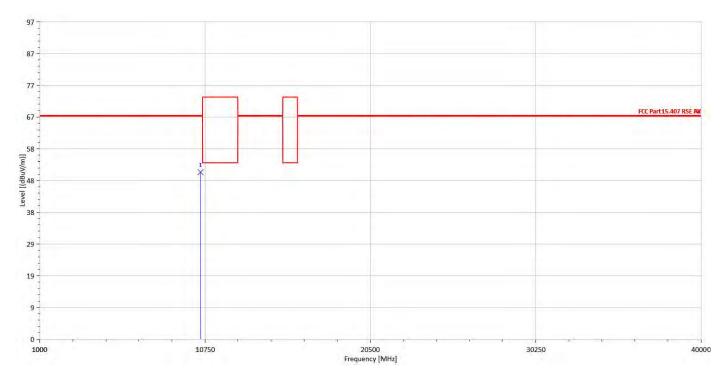


Page: 96 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5240 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Pony Tx CH High Test Engineer: EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
10480.00	Н	Peak	30.42	20.68	51.10	68.3	-17.20

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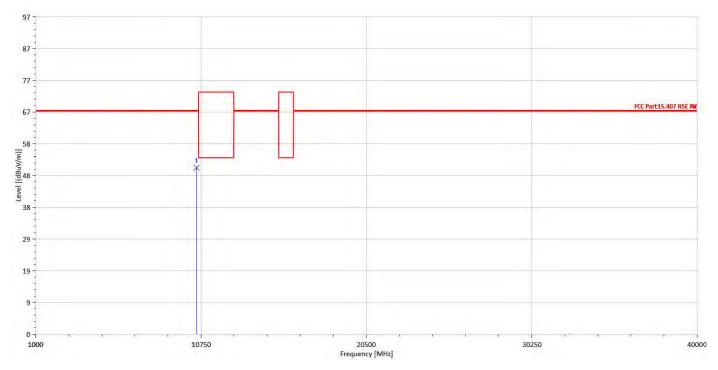


Page: 97 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5240 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH High Test Engineer: Pony EUT Pol.: Η Measurement Antenna Pol.: Horizontal



	Freq.	Note	De tecto r Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin	
_	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dΒμV/m	dB	
•	10480.00	Н	Peak	30.24	20.68	50.92	68.3	-17.38	

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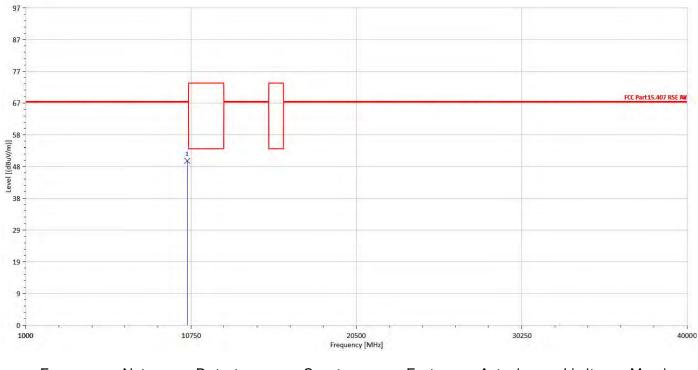
Page: 98 of 183

#### Radiated Spurious Emission Measurement Result 802.11n HT20, 5250~5350 MHz

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 22.7deg\_C/57RH 5260 MHz Temp. / Humi.:

Operation Band: Tx CH Low Test Engineer: Pony EUT Pol.: Measurement Antenna Pol.: Н Vertical



	Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
			Mode	Reading Level		FS	@3m	
_	MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
	10520.00	Н	Peak	30.16	20.10	50.26	68.3	-18.04

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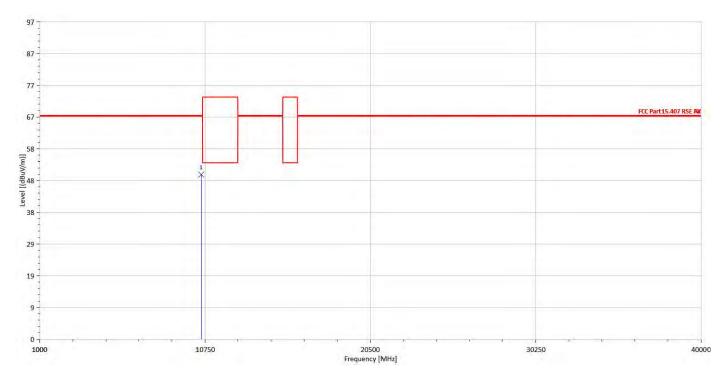


Page: 99 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5260 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Low Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
10520.00	) Н	Peak	30.26	20.10	50.36	68.3	-17.94

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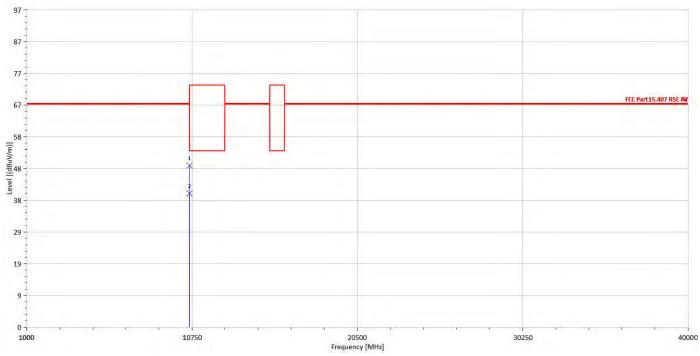


Page: 100 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5300 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
10600.00	Н	Peak	29.29	20.17	49.45	74	-24.55
10600.00	Н	Average	20.69	20.17	40.86	54	-13.14

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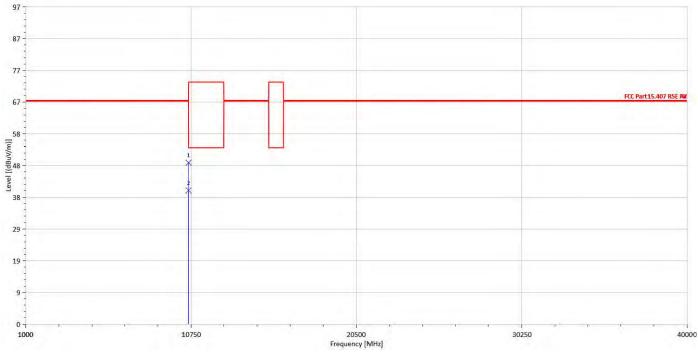


Page: 101 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5300 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
10600.00	Н	Peak	29.23	20.17	49.40	74	-24.60
10600.00	Н	Average	20.70	20.17	40.87	54	-13.13

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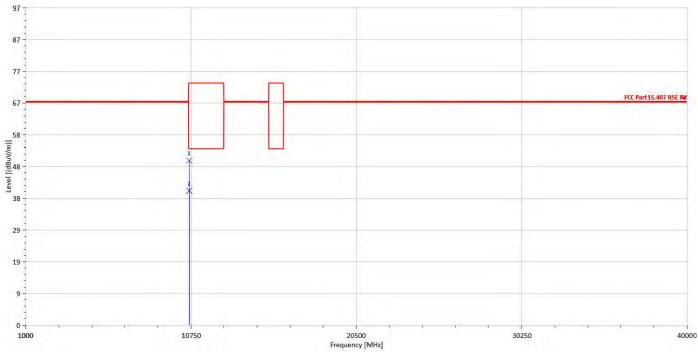


Page: 102 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5320 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Pony Tx CH High Test Engineer: EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB	
	10640.00	Н	Peak	30.03	20.34	50.37	74	-23.63	
	10640.00	Н	Average	20.70	20.34	41.04	54	-12.96	

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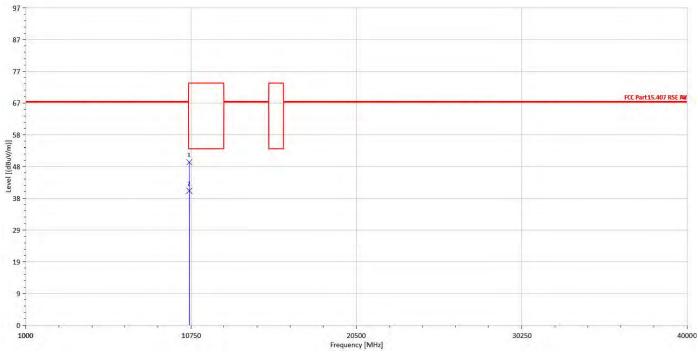


Page: 103 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5320 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH High Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
10640.00	Н	Peak	29.50	20.34	49.84	74	-24.16
10640.00	Н	Average	20.70	20.34	41.04	54	-12.96

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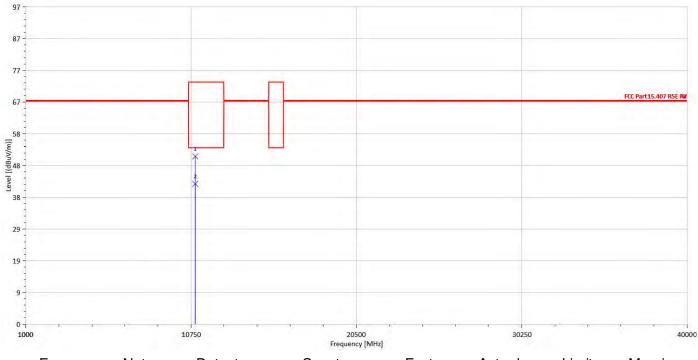
Page: 104 of 183

# Radiated Spurious Emission Measurement Result 802.11n HT20, 5470~5725 MHz

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5500 MHz Temp. / Humi.: 22.7deg\_C/57RH

Operation Band: Tx CH Low Test Engineer: Pony EUT Pol.: Measurement Antenna Pol.: Н Vertical



Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
11000.00	Н	Peak	29.25	22.11	51.35	74	-22.65
11000.00	Н	Average	20.75	22.11	42.86	54	-11.14

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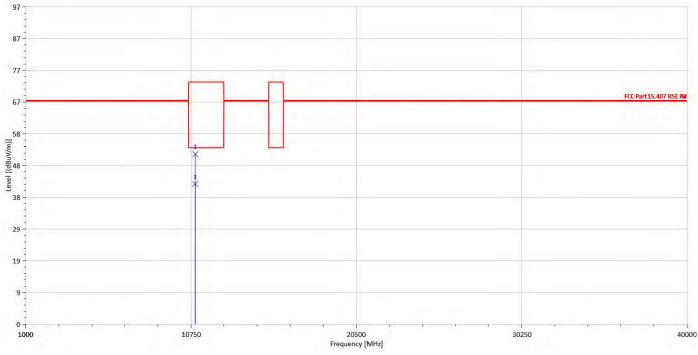


Page: 105 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5500 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Low Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
11000.00	Н	Peak	29.93	22.11	52.04	74	-21.96
11000.00	Н	Average	20.74	22.11	42.85	54	-11.15

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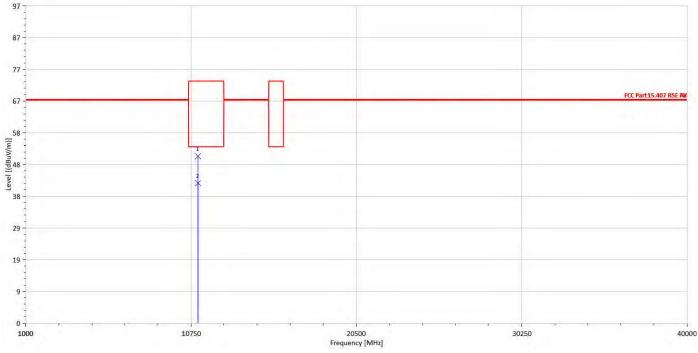


Page: 106 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5580 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
11160.00	Н	Peak	29.07	22.04	51.10	74	-22.90
11160.00	Н	Average	20.73	22.04	42.77	54	-11.23

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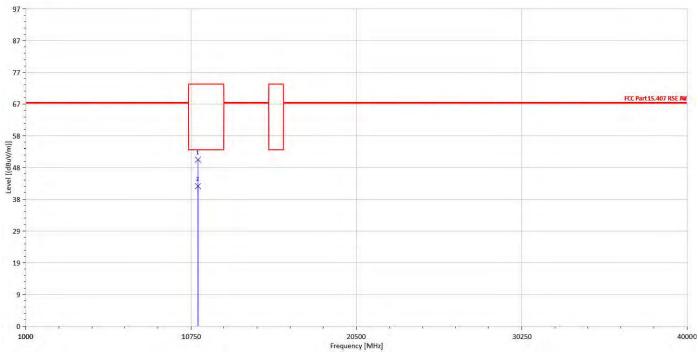


Page: 107 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5580 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
11160.00	Н	Peak	28.91	22.04	50.95	74	-23.05
11160.00	Н	Average	20.73	22.04	42.77	54	-11.23

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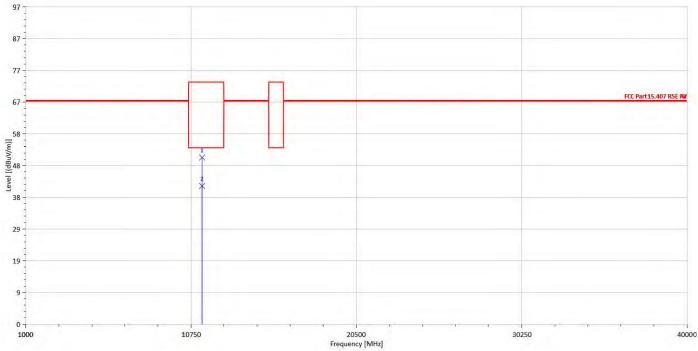


Page: 108 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5700 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Pony Tx CH High Test Engineer: EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB	
•	11400.00	Н	Peak	29.78	21.22	51.00	74	-23.00	
	11400.00	Н	Peak	20.99	21.22	42.21	74	-31.79	

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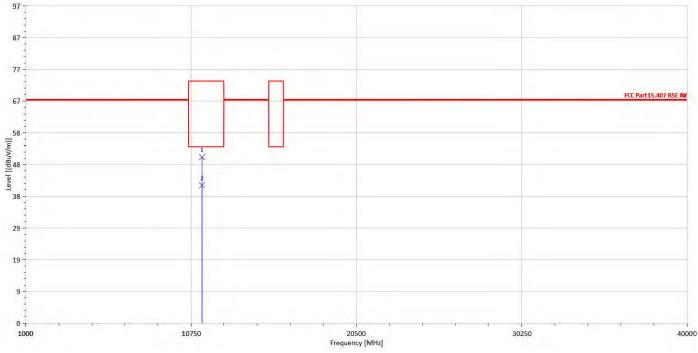


Page: 109 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5700 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH High Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
11400.00	Н	Peak	29.57	21.22	50.79	74	-23.21
11400.00	Н	Average	20.89	21.22	42.11	54	-11.89

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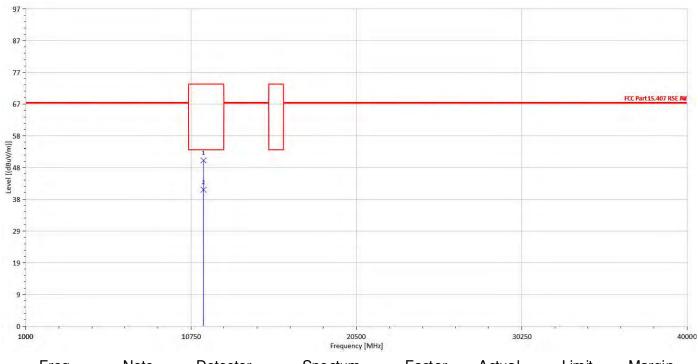
Page: 110 of 183

## Radiated Spurious Emission Measurement Result 802.11n HT20, 5725~5850 MHz

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5745 MHz Temp. / Humi.: 22.7deg\_C/57RH

Operation Band: Tx CH Low Test Engineer: Pony EUT Pol.: Measurement Antenna Pol.: Н Vertical



Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
11490.00	Н	Peak	30.03	20.70	50.74	74	-23.26
11490.00	Н	Average	20.98	20.70	41.68	54	-12.32

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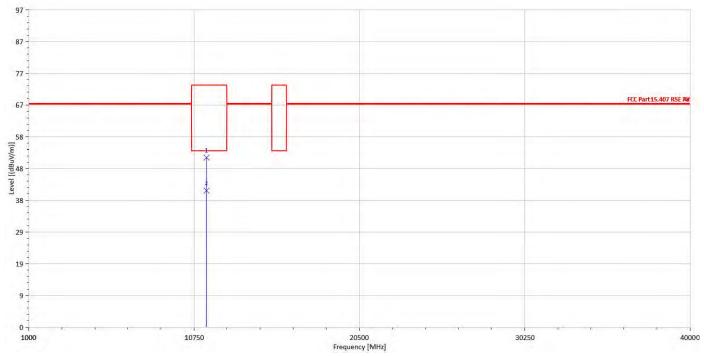


Page: 111 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5745 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Low Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
11490.00	Н	Peak	31.20	20.70	51.91	74	-22.09
11490.00	Н	Average	20.99	20.70	41.69	54	-12.31

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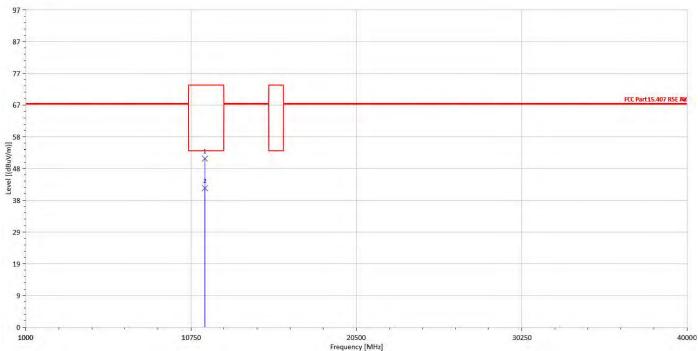


Page: 112 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5785 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB	_
•	11570.00	Н	Peak	30.13	21.44	51.57	74	-22.43	
	11570.00	Н	Average	21.02	21.44	42.46	54	-11.54	

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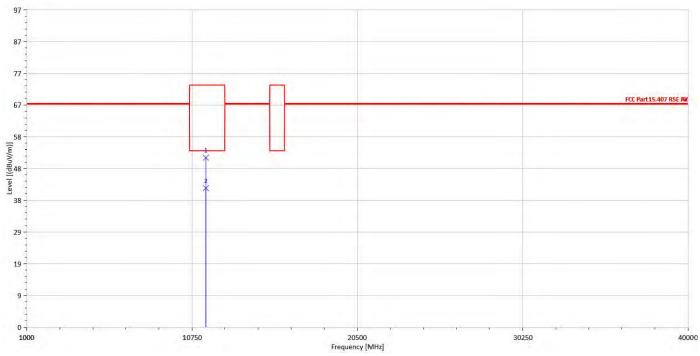


Page: 113 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5785 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Pony EUT Pol.: Η Measurement Antenna Pol.: Horizontal



Fre	q. Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MH	z F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
11570	).00 H	Peak	30.44	21.44	51.88	74	-22.12
11570	).00 H	Average	21.02	21.44	42.46	54	-11.54

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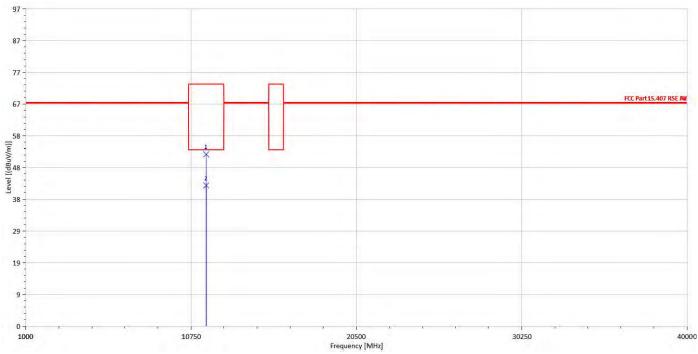


Page: 114 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5825 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Pony Tx CH High Test Engineer: EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
11650.00	Н	Peak	30.59	22.02	52.61	74	-21.39
11650.00	Н	Average	20.98	22.02	43.00	54	-11.00

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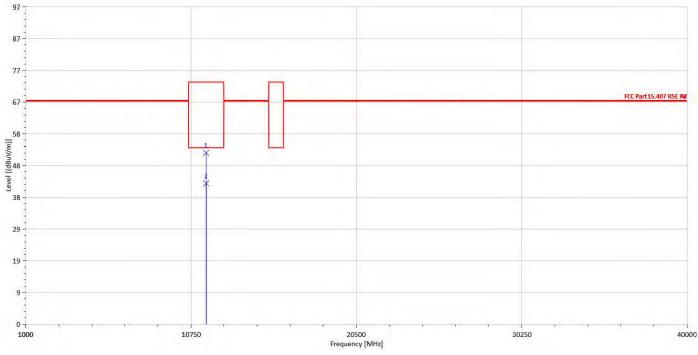


Page: 115 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5825 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH High Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
11650.00	Н	Peak	30.40	22.02	52.43	74	-21.57
11650.00	Н	Average	20.98	22.02	43.00	54	-11.00

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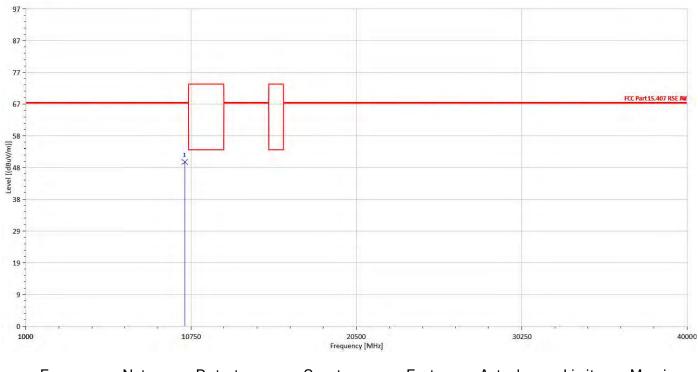
Page: 116 of 183

### Radiated Spurious Emission Measurement Result 802.11n HT40, 5150~5250 MHz

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 22.7deg\_C/57RH 5190 MHz Temp. / Humi.:

Operation Band: Tx CH Low Test Engineer: Pony EUT Pol.: Measurement Antenna Pol.: Н Vertical



	Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
			Mode	Reading Level		FS	@3m	
	MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
_	10380.00	Н	Peak	29.31	20.95	50.26	68.3	-18.04

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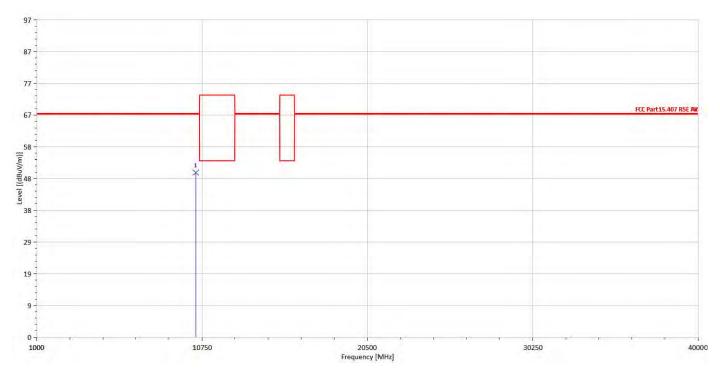


Page: 117 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5190 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Low Test Engineer: Pony EUT Pol.: Η Measurement Antenna Pol.: Horizontal



	Freq.	Note	De tecto r 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	
•	10380.00	H	Peak	29.42	20.95	50.37	68.3	-17.93	

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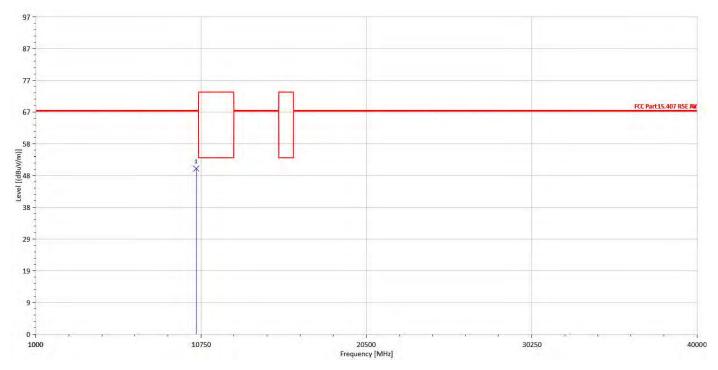


Page: 118 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5230 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH High Test Engineer: Pony EUT Pol.: Η Measurement Antenna Pol.: Vertical



	Freq.	Note	De tecto r Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin	
	MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dΒμV/m	dBµV/m	dB	
•	10460.00	Н	Peak	29.71	20.95	50.67	68.3	-17.63	

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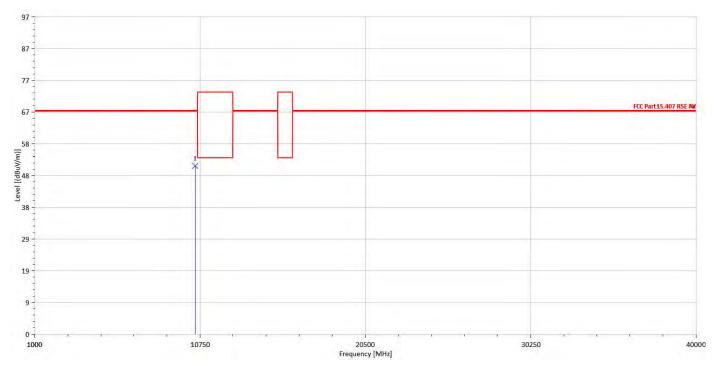


Page: 119 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5230 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH High Test Engineer: Pony EUT Pol.: Η Measurement Antenna Pol.: Horizontal



Freq.	Note	De tecto r Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB	
10460.00	Н	Peak	30.56	20.95	51.51	68.3	-16.79	

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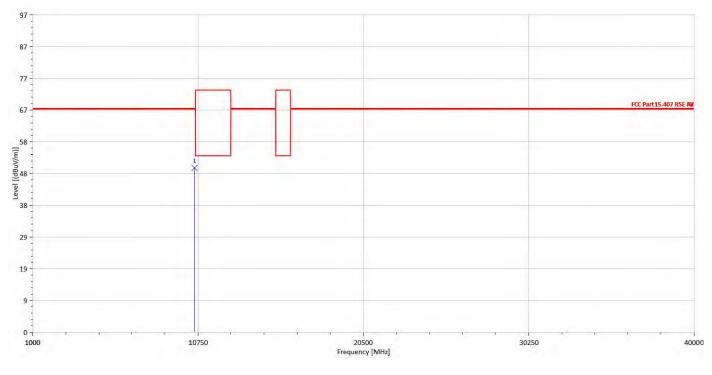
Page: 120 of 183

### Radiated Spurious Emission Measurement Result 802.11n HT40, 5250~5350 MHz

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 22.7deg\_C/57RH 5270 MHz Temp. / Humi.:

Operation Band: Tx CH Low Test Engineer: Pony EUT Pol.: Measurement Antenna Pol.: Н Vertical



Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin	
		Mode	Reading Level		FS	@3m		
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB	
10540.00	Н	Peak	30.19	20.06	50.25	68.3	-18.05	

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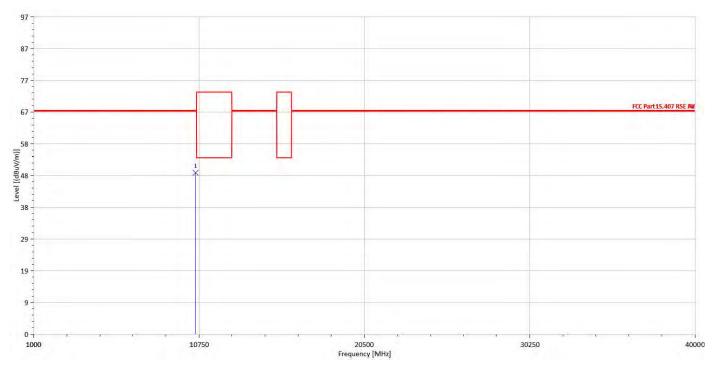


Page: 121 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5270 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Low Test Engineer: Pony EUT Pol.: Η Measurement Antenna Pol.: Horizontal



Freq.	Note	De tecto r Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB	
10540.00	Н	Peak	29.30	20.06	49.37	68.3	-18.93	

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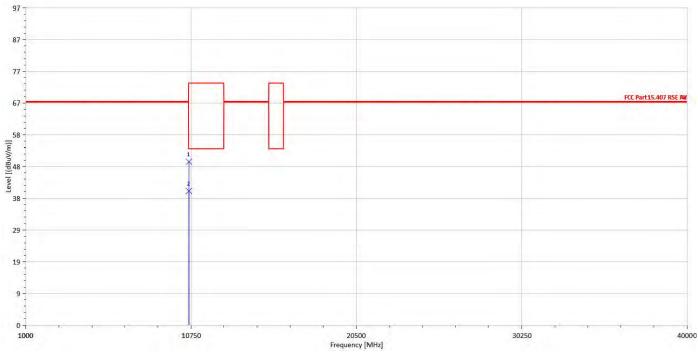


Page: 122 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5310 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Pony Tx CH High Test Engineer: EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB	
	10620.00	Н	Peak	29.73	20.29	50.02	74	-23.98	
	10620.00	Н	Average	20.70	20.29	40.99	54	-13.01	

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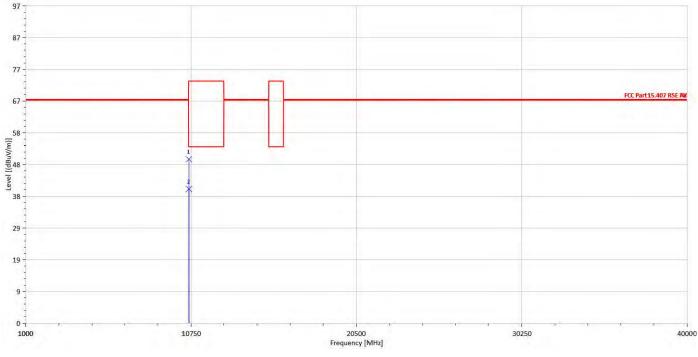


Page: 123 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5310 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH High Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
10620.00	Н	Peak	29.87	20.29	50.16	74	-23.84
10620.00	Н	Average	20.70	20.29	40.99	54	-13.01

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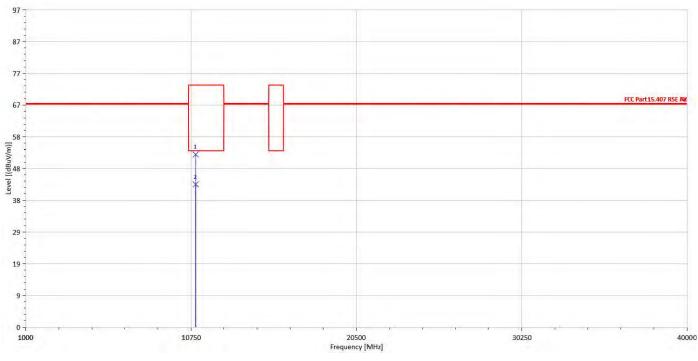
Page: 124 of 183

## Radiated Spurious Emission Measurement Result 802.11n HT40, 5470~5725 MHz

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 22.7deg\_C/57RH 5510 MHz Temp. / Humi.:

Operation Band: Tx CH Low Test Engineer: Pony EUT Pol.: Measurement Antenna Pol.: Н Vertical



	Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
			Mode	Reading Level		FS	@3m	
_	MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
-	11020.00	Н	Peak	29.96	22.90	52.86	74	-21.14
	11020.00	Н	Average	20.74	22.90	43.64	54	-10.36

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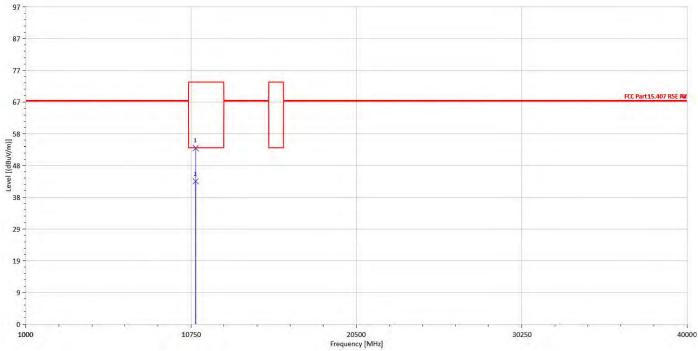


Page: 125 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5510 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Low Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB		
11020.00	Н	Peak	30.95	22.90	53.85	74	-20.15		
11020.00	Н	Average	20.75	22.90	43.65	54	-10.35		

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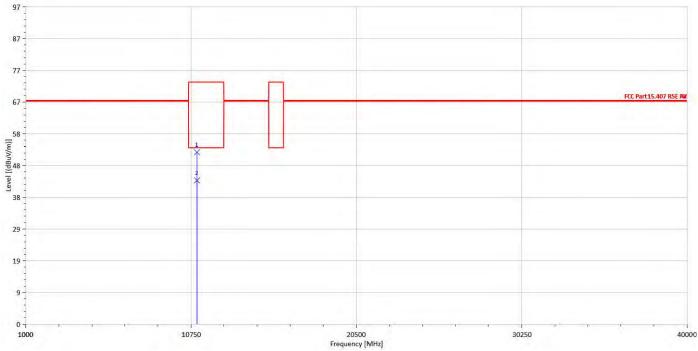


Page: 126 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5550 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB	
•	11100.00	Н	Peak	29.47	23.16	52.64	74	-21.36	
	11100.00	Н	Average	20.75	23.16	43.91	54	-10.09	

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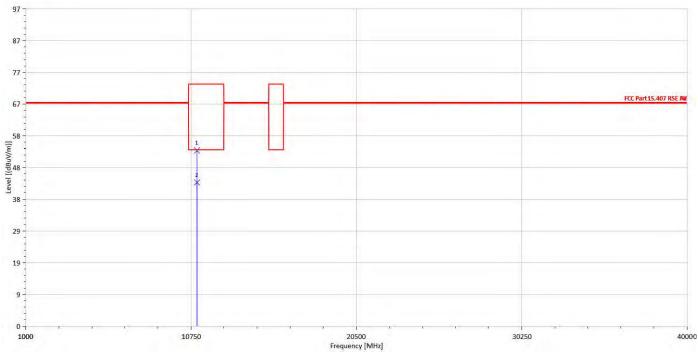


Page: 127 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5550 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH Mid Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
11100.00	Н	Peak	30.58	23.16	53.74	74	-20.26
11100.00	Н	Average	20.75	23.16	43.91	54	-10.09

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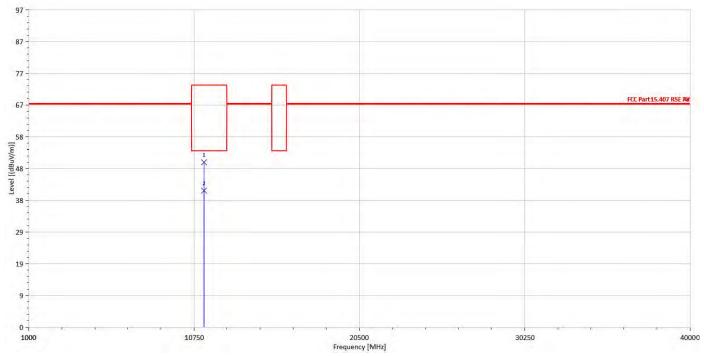


Page: 128 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5670 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Pony Tx CH High Test Engineer: EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
11340.00	Н	Peak	29.49	20.97	50.45	74	-23.55
11340.00	Н	Average	20.74	20.97	41.71	54	-12.29

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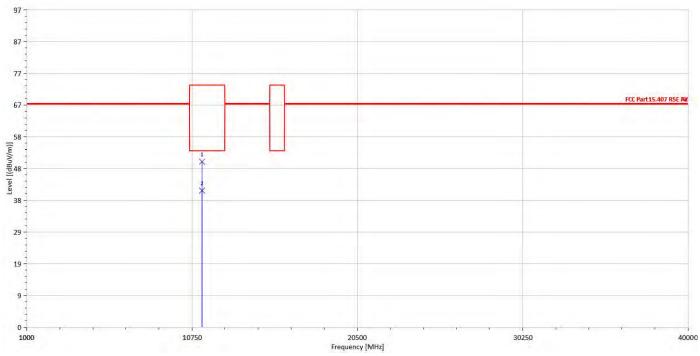


Page: 129 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5670 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH High Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
11340.00	Н	Peak	29.69	20.97	50.65	74	-23.35
11340.00	Н	Average	20.74	20.97	41.71	54	-12.29

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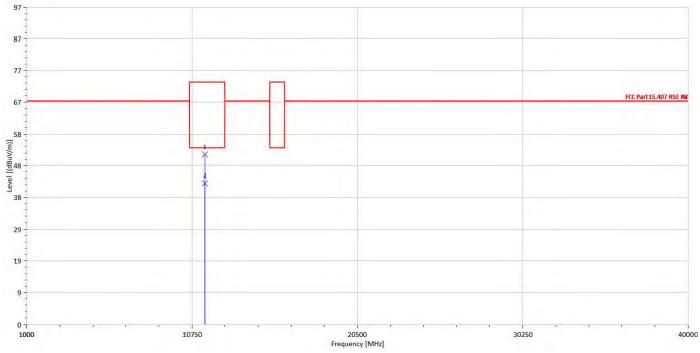
Page: 130 of 183

# Radiated Spurious Emission Measurement Result 802.11n HT40, 5725~5850 MHz

Test Date: Operation Mode: 802.11n40 2016/8/14

Fundamental Frequency: Temp. / Humi.: 5755 MHz 22.7deg\_C/57RH

Operation Band: Tx CH Low Test Engineer: Ponv EUT Pol.: Н 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	dΒμV	dB	dBµV/m	dBµV/m	dB
11510.00	Н	Peak	29.79	22.17	51.96	74	-22.04
11510.00	Н	Average	20.99	22.17	43.16	54	-10.84

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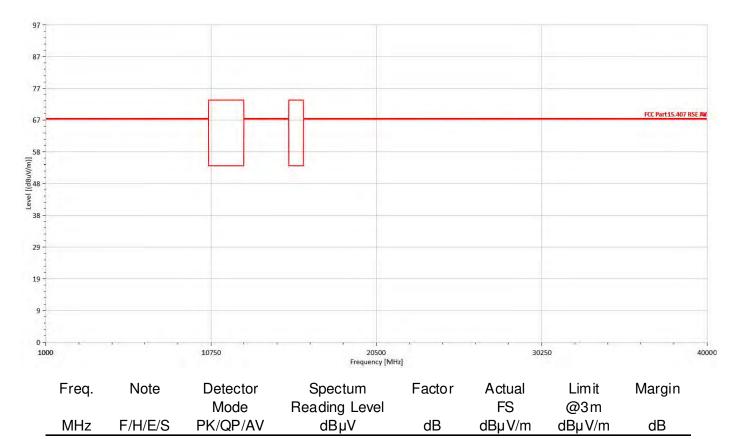


Page: 131 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5755 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Pony Tx CH Low Test Engineer: EUT Pol.: Η Measurement Antenna Pol.: Horizontal



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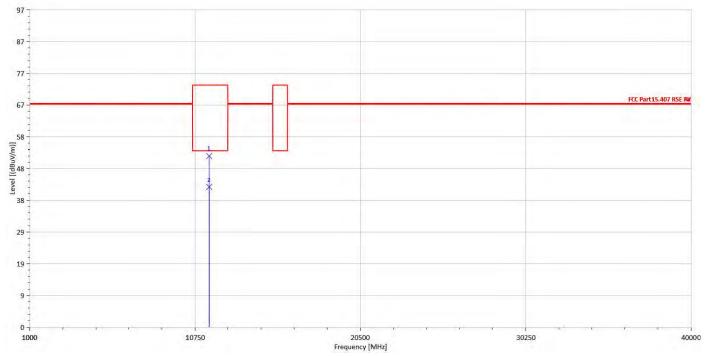


Page: 132 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5795 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Pony Tx CH High Test Engineer: EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
11590.00	Н	Peak	30.52	21.84	52.37	74	-21.63
11590.00	Н	Average	21.01	21.84	42.85	54	-11.15

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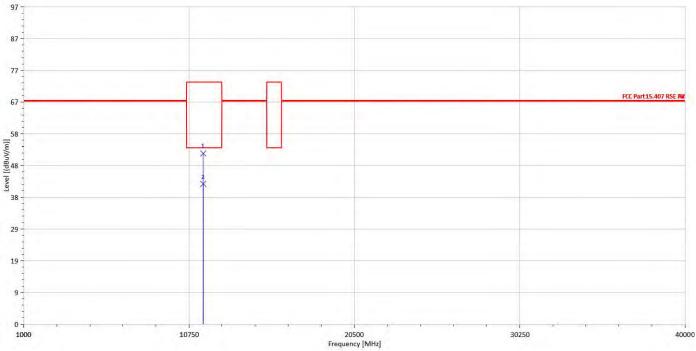


Page: 133 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5795 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Tx CH High Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB	
11590.00	Н	Peak	30.40	21.84	52.25	74	-21.75	
11590.00	Н	Average	21.01	21.84	42.85	54	-11.15	

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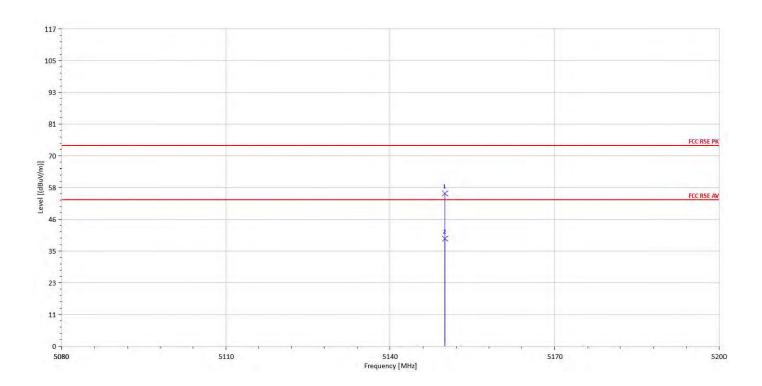
Page: 134 of 183

# Band edge falling to restricted band 802.11a mode

Operation Mode: Test Date: 2016/8/11 802.11a

Fundamental Frequency: 5180 MHz Temp. / Humi.: 22.7deg\_C/57RH

Operation Band: BE CH Low Test Engineer: Pony EUT Pol.: 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	dΒμV	dB	dBµV/m	dBµV/m	dB
5150.00	E	Peak	48.13	8.19	56.33	74	-17.67
5150.00	E	Average	31.49	8.19	39.68	54	-14.32

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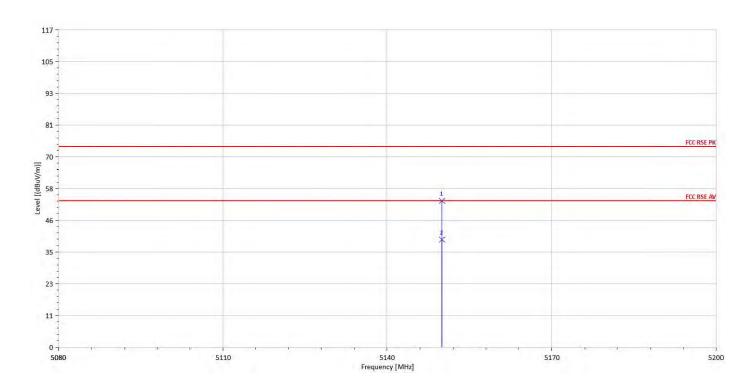


Page: 135 of 183

Operation Mode: 802.11a Test Date: 2016/8/11

Fundamental Frequency: 5180 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: BE CH Low Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
5150.00	Н	Peak	45.74	8.19	53.94	74	-20.06
5150.00	Н	Average	31.49	8.19	39.68	54	-14.32

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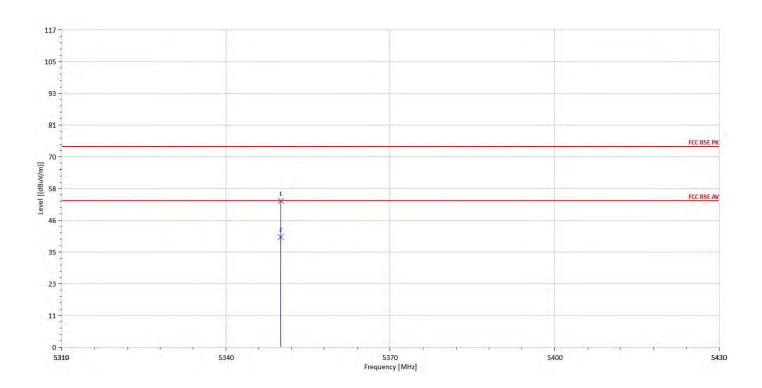


Page: 136 of 183

Operation Mode: 802.11a Test Date: 2016/8/11

Fundamental Frequency: 5320 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH High Test Engineer: EUT Pol.: Н 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	dΒμV/m	dΒμV/m	dB
5350.00	E	Peak	44.95	8.96	53.91	74	-20.09
5350.00	E	Average	31.69	8.96	40.65	54	-13.35

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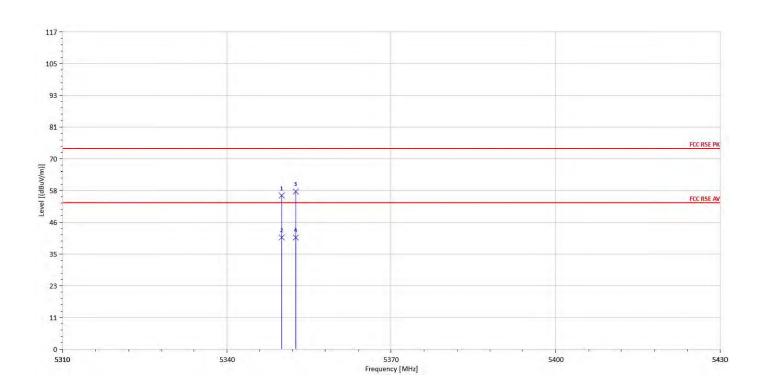


Page: 137 of 183

Operation Mode: 802.11a Test Date: 2016/8/11

Fundamental Frequency: 5320 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH High Test Engineer: EUT Pol.: Н 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	dΒμV	dB	dBµV/m	dBµV/m	dB
	5350.00	Е	Peak	47.72	8.96	56.69	74	-17.31
	5350.00	Е	Average	32.27	8.96	41.23	54	-12.77
	5352.60	S	Peak	49.18	8.99	58.17	74	-15.83
	5352.60	S	Average	32.22	8.99	41.21	54	-12.79

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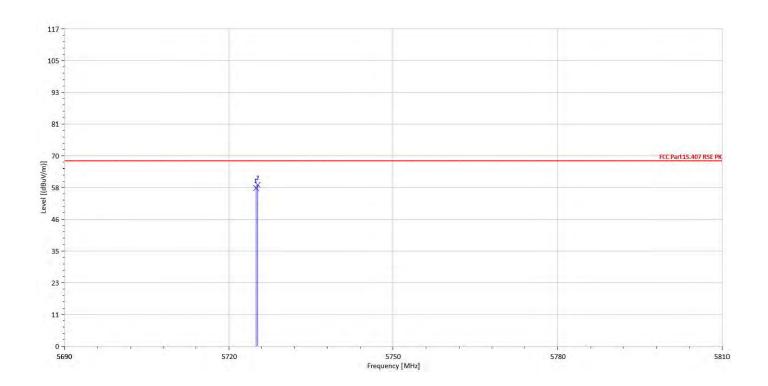


Page: 138 of 183

Operation Mode: 802.11a Test Date: 2016/8/11

Fundamental Frequency: 5500 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Test Engineer: BE CH Low Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
5447.84	S	Peak	45.76	9.02	54.79	74	-19.21
5447.84	S	Average	33.55	9.02	42.57	54	-11.43
5460.00	E	Peak	43.52	8.88	52.41	74	-21.59
5460.00	E	Average	31.92	8.88	40.80	54	-13.20

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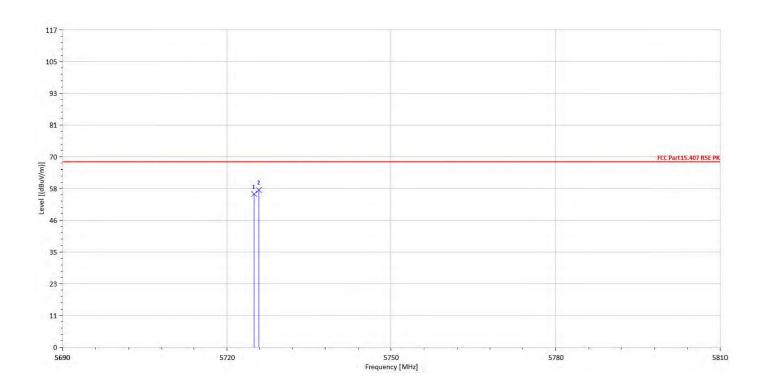


Page: 139 of 183

Operation Mode: 802.11a Test Date: 2016/8/11

Fundamental Frequency: 5500 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: BE CH Low Test Engineer: Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
5447.60	S	Peak	44.56	9.03	53.59	74	-20.41
5447.60	S	Average	33.03	9.03	42.06	54	-11.94
5460.00	E	Peak	42.52	8.88	51.40	74	-22.60
5460.00	E	Average	31.55	8.88	40.43	54	-13.57

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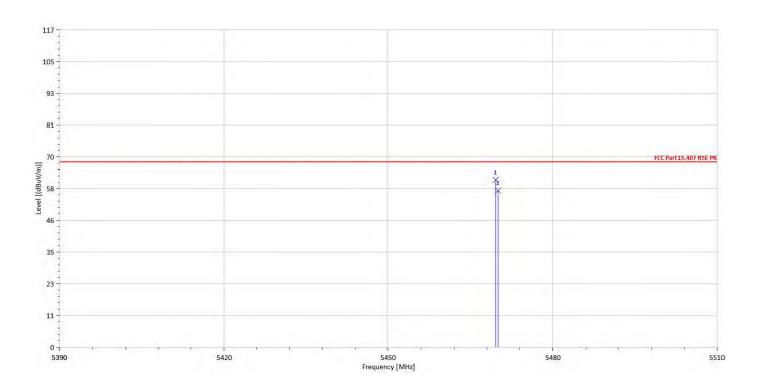


Page: 140 of 183

Operation Mode: 802.11a Test Date: 2016/8/11

Fundamental Frequency: 5500 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH Low RSE Test Engineer: EUT Pol.: Η 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
5469.56	S	Peak	52.99	8.79	61.78	68.3	-6.52
5470.00	E	Peak	49.02	8.79	57.81	68.3	-10.49

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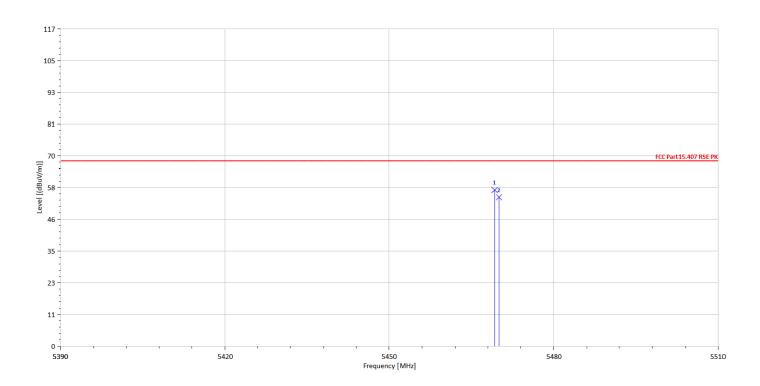


Page: 141 of 183

Operation Mode: 802.11a Test Date: 2016/8/11

Fundamental Frequency: 5500 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH Low RSE Test Engineer: EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
5469.20	S	Peak	48.82	8.80	57.62	68.3	-10.68
5470.00	E	Peak	46.12	8.79	54.91	68.3	-13.39

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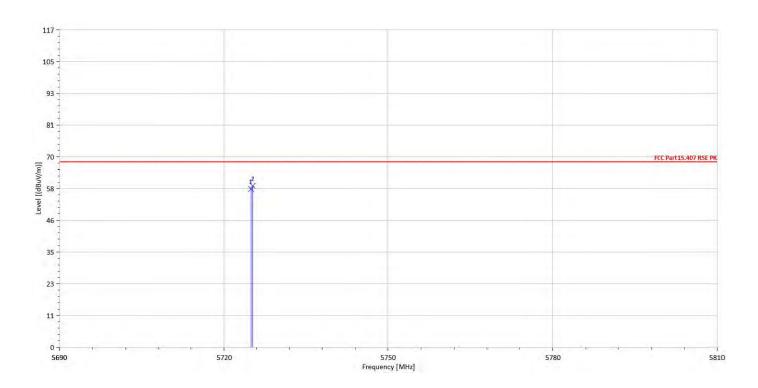


Page: 142 of 183

Operation Mode: 802.11a Test Date: 2016/8/11

Fundamental Frequency: 5700 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH High Test Engineer: EUT Pol.: Н 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	dΒμV/m	dΒμV/m	dB
5725.00	E	Peak	49.06	9.30	58.36	68.3	-9.94
5725.28	S	Peak	50.20	9.30	59.50	68.3	-8.80

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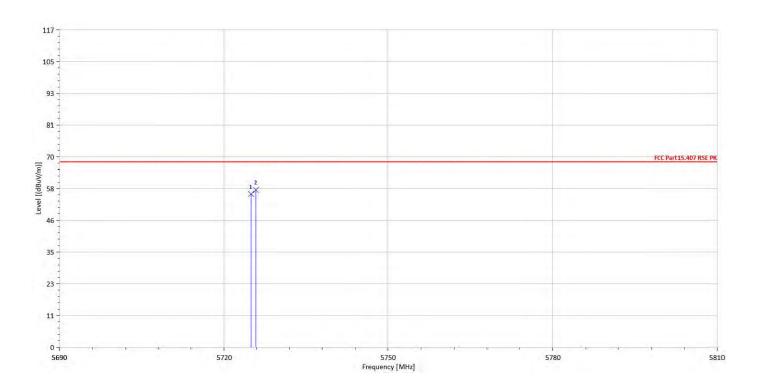


Page: 143 of 183

Operation Mode: 802.11a Test Date: 2016/8/11

Fundamental Frequency: 5700 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH High Test Engineer: EUT Pol.: Н 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
5725.00	E	Peak	47.19	9.30	56.49	68.3	-11.81
5725.88	S	Peak	48.69	9.30	57.99	68.3	-10.31

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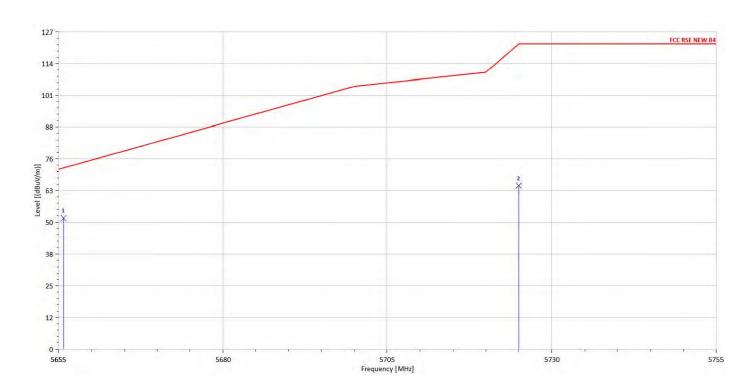


Page: 144 of 183

Operation Mode: 802.11a Test Date: 2016/8/11

Fundamental Frequency: 5745 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Test Engineer: BE CH Low Pony EUT Pol.: Measurement Antenna Pol. : Η Vertical



Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5655.80	S	Peak	43.17	9.27	52.44	72.52186	-20.09
5725.00	E	Peak	56.22	9.30	65.52	122.23	-56.71

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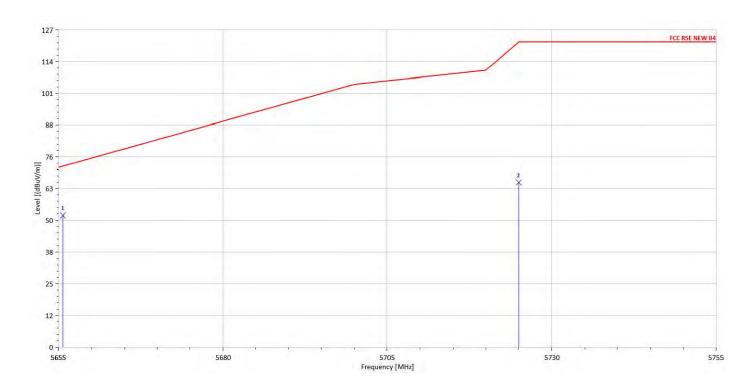


Page: 145 of 183

Operation Mode: 802.11a Test Date: 2016/8/11

Fundamental Frequency: 5745 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Test Engineer: BE CH Low Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBμV/m	dB
5655.70	S	Peak	43.47	9.27	52.74	72.44815	-19.71
5725.00	E	Peak	56.67	9.30	65.98	122.23	-56.25

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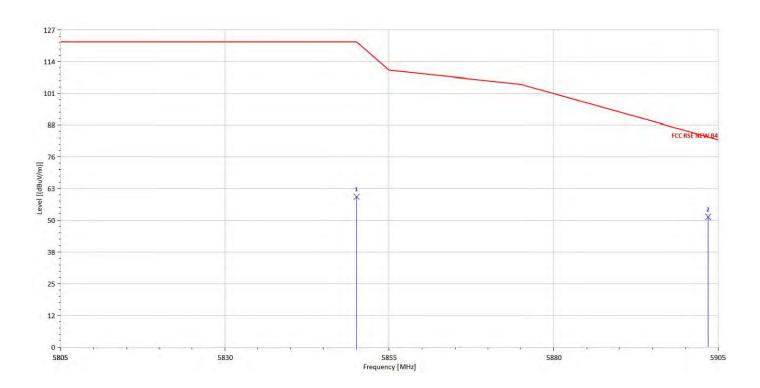


Page: 146 of 183

Operation Mode: 802.11a Test Date: 2016/8/11

Fundamental Frequency: 5825 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH High Test Engineer: EUT Pol.: Н 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	dΒμV	dB	dBµV/m	dBμV/m	dB
5850.00	Е	Peak	50.71	9.49	60.20	122.23	-62.03
5903.50	S	Peak	42.38	9.76	52.15	84.14001	-31.99

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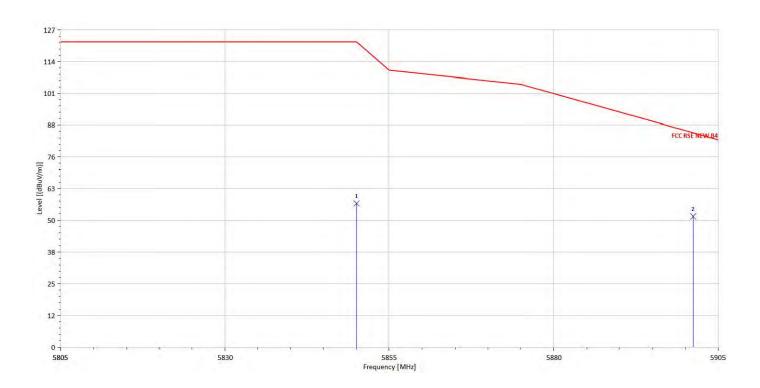


Page: 147 of 183

Operation Mode: 802.11a Test Date: 2016/8/11

Fundamental Frequency: 5825 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH High Test Engineer: EUT Pol.: Н 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	dΒμV	dB	dBµV/m	dBµV/m	dB
5850.00	Е	Peak	48.01	9.49	57.50	122.23	-64.73
5901.20	S	Peak	42.64	9.74	52.38	85.84186	-33.47

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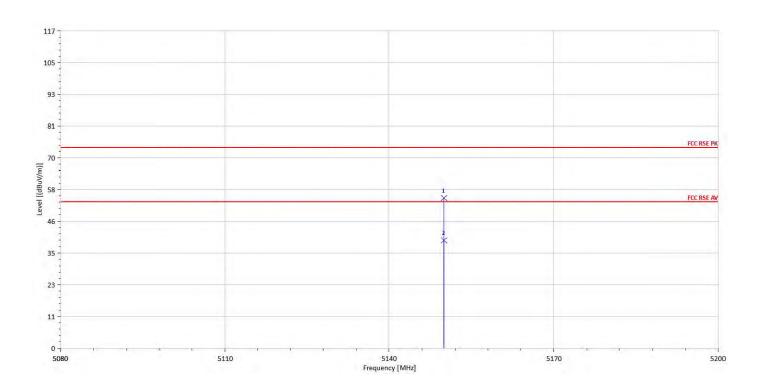
Page: 148 of 183

### 802.11n20 HT mode

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: Temp. / Humi.: 5180 MHz 22.7deg C/57RH

Operation Band: Test Engineer: BE CH Low Pony EUT Pol.: Measurement Antenna Pol. : Н Vertical



Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5150.00	E	Peak	47.18	8.19	55.37	74	-18.63
5150.00	Е	Average	31.57	8.19	39.76	54	-14.24

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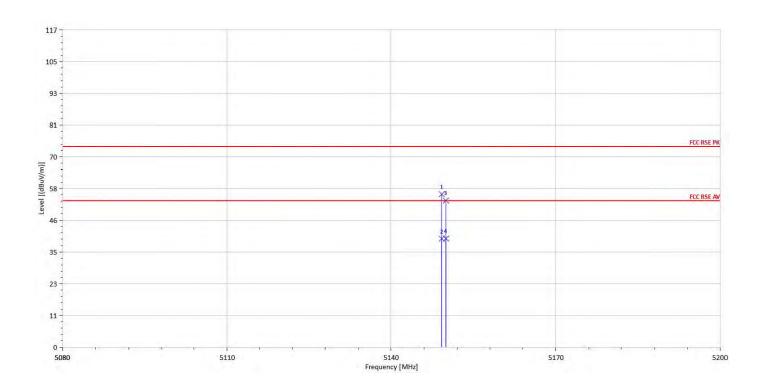


Page: 149 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5180 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Test Engineer: BE CH Low Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
5149.24	S	Peak	48.23	8.19	56.42	74	-17.58
5149.24	S	Average	31.84	8.19	40.03	54	-13.97
5150.00	E	Peak	45.87	8.19	54.06	74	-19.94
5150.00	E	Average	31.88	8.19	40.07	54	-13.93

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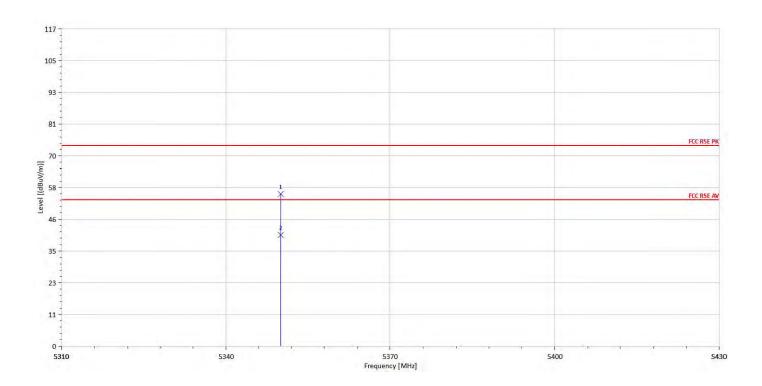


Page: 150 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5320 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH High Test Engineer: EUT Pol.: Н 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	dΒμV	dB	dBµV/m	$dB\mu V/m$	dB
5350.00	E	Peak	47.16	8.96	56.12	74	-17.88
5350.00	E	Average	32.05	8.96	41.01	54	-12.99

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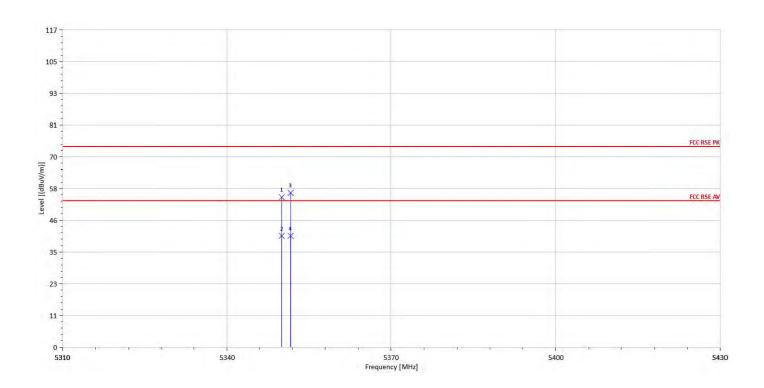


Page: 151 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5320 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH High Test Engineer: EUT Pol.: Н 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	dΒμV/m	dBμV/m	dB
5350.00	E	Peak	46.31	8.96	55.28	74	-18.72
5350.00	Е	Average	32.13	8.96	41.09	54	-12.91
5351.64	S	Peak	47.92	8.99	56.91	74	-17.09
5351.64	S	Average	32.11	8.99	41.10	54	-12.90

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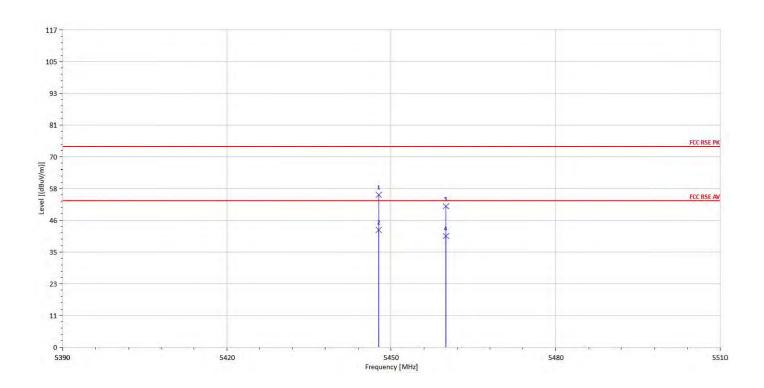


Page: 152 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5500 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Test Engineer: BE CH Low Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
5447.72	S	Peak	47.15	9.03	56.17	74	-17.83
5447.72	S	Average	34.26	9.03	43.29	54	-10.71
5460.00	E	Peak	43.06	8.88	51.94	74	-22.06
5460.00	E	Average	32.14	8.88	41.02	54	-12.98

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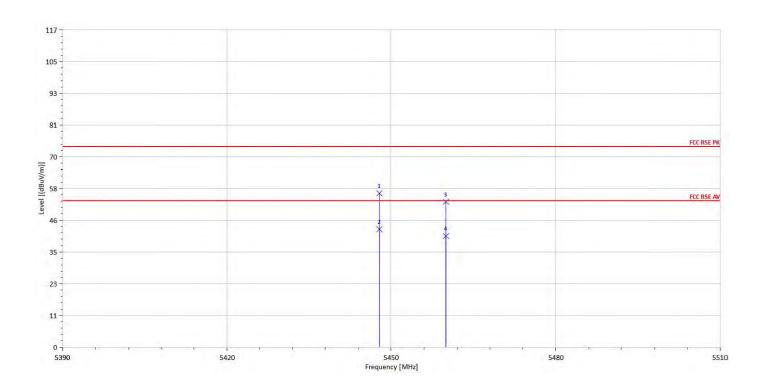


Page: 153 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5500 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Test Engineer: BE CH Low Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
5447.84	S	Peak	47.76	9.02	56.79	74	-17.21
5447.84	S	Average	34.51	9.02	43.53	54	-10.47
5460.00	E	Peak	44.72	8.88	53.61	74	-20.39
5460.00	Е	Average	32.13	8.88	41.01	54	-12.99

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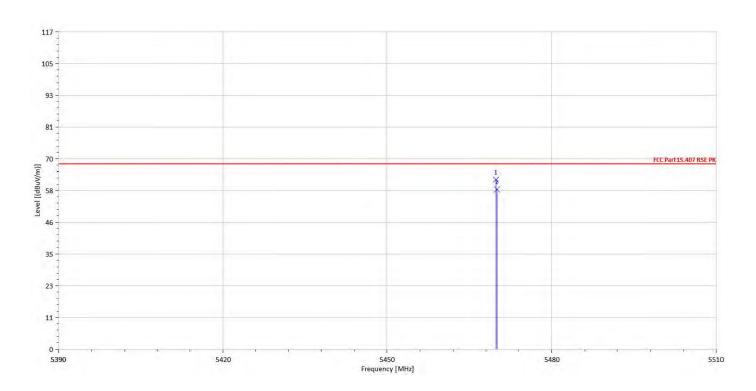


Page: 154 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5500 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: BE CH Low RSE Test Engineer: Pony EUT Pol.: Η 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
5469.80	S	Peak	53.80	8.79	62.59	68.3	-5.71
5470.00	E	Peak	50.16	8.79	58.94	68.3	-9.36

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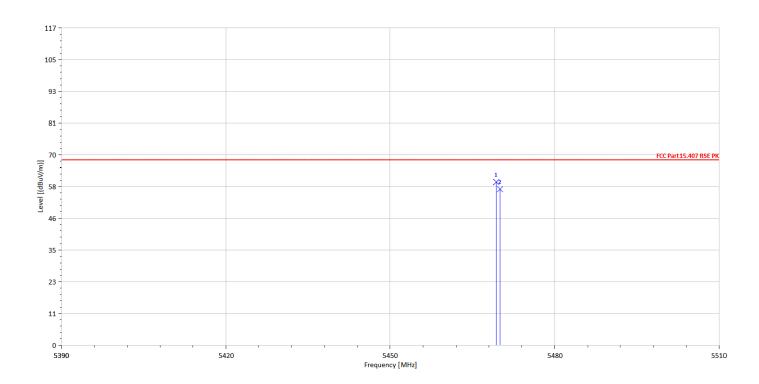


Page: 155 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5500 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: BE CH Low RSE Pony Test Engineer: EUT Pol.: Η 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
5469.32	S	Peak	51.41	8.79	60.20	68.3	-8.10
5470.00	E	Peak	48.74	8.79	57.53	68.3	-10.77

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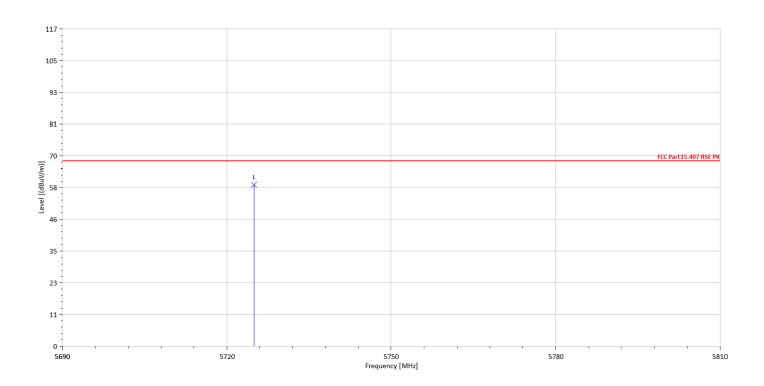


Page: 156 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5700 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH High Test Engineer: EUT Pol.: Н 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	dΒμV	dB	dBµV/m	dBµV/m	dB
5725.00	E	Peak	50.28	9.30	59.58	68.3	-8.72

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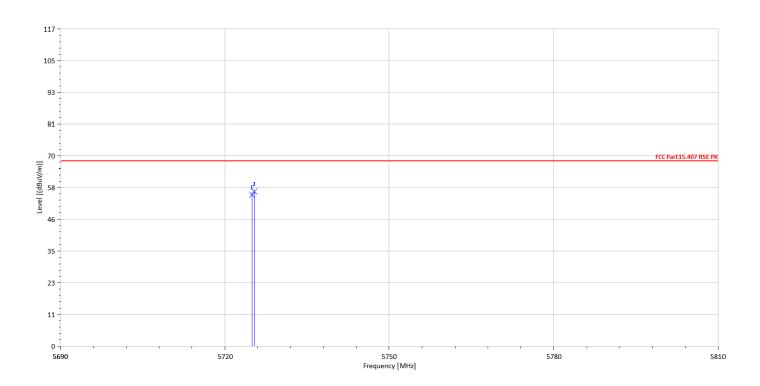


Page: 157 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5700 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH High Test Engineer: EUT Pol.: Н 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	dΒμV/m	dΒμV/m	dB
5725.00	E	Peak	46.56	9.30	55.86	68.3	-12.44
5725.40	S	Peak	47.78	9.30	57.08	68.3	-11.22

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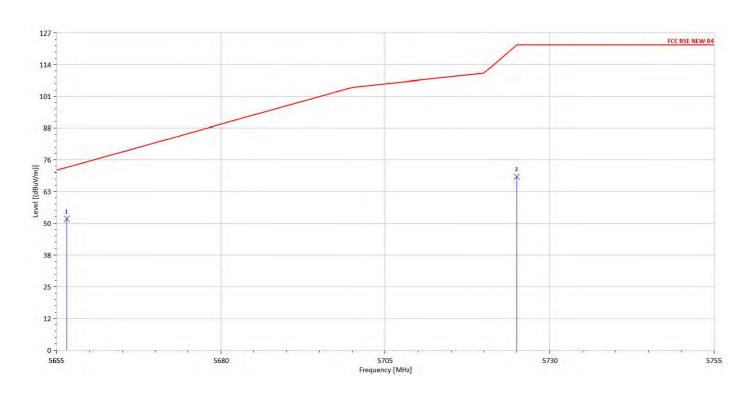


Page: 158 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5745 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Test Engineer: BE CH Low Pony EUT Pol.: Measurement Antenna Pol. : Η Vertical



Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	$dB\mu V/m$	dBµV/m	dB
5656.60	S	Peak	43.35	9.26	52.61	73.11407	-20.51
5725.00	E	Peak	60.21	9.30	69.51	122.23	-52.72

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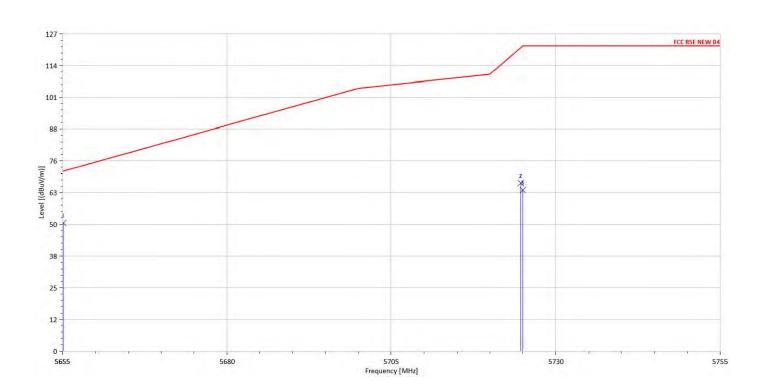


Page: 159 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5745 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Test Engineer: BE CH Low Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
5655.15	S	Peak	42.15	9.28	51.43	72.03732	-20.61
5724.70	S	Peak	58.03	9.30	67.33	121.5464	-54.22
5725.00	Е	Peak	55.22	9.30	64.52	122.23	-57.71

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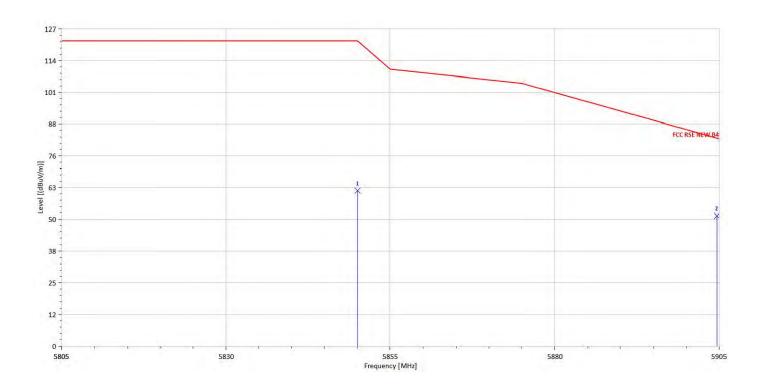


Page: 160 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5825 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH High Test Engineer: EUT Pol.: Н 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	dΒμV	dB	dBµV/m	dBμV/m	dB
5850.00	Е	Peak	52.78	9.49	62.27	122.23	-59.96
5904.70	S	Peak	42.37	9.78	52.15	83.25186	-31.11

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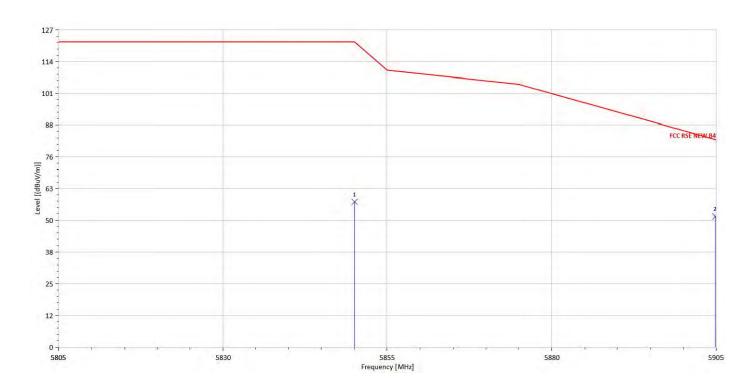


Page: 161 of 183

Operation Mode: 802.11n20 Test Date: 2016/8/14

Fundamental Frequency: 5825 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH High Test Engineer: EUT Pol.: Н 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	dΒμV	dB	dBµV/m	dBµV/m	dB
5850.00	E	Peak	48.67	9.49	58.16	122.23	-64.07
5904.90	S	Peak	42.57	9.78	52.35	83.10407	-30.75

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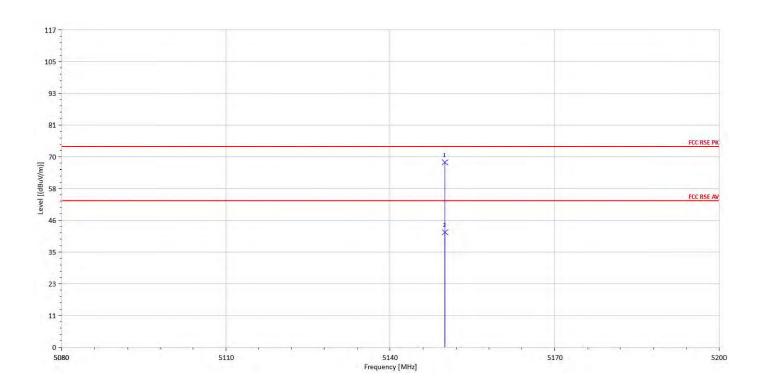
Page: 162 of 183

### 802.11n40 HT mode

Operation Mode: Test Date: 2016/8/14 802.11n40

Fundamental Frequency: Temp. / Humi.: 5190 MHz 22.7deg C/57RH

Operation Band: Test Engineer: BE CH Low Pony EUT Pol.: Measurement Antenna Pol.: Н Vertical



Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5150.00	E	Peak	59.92	8.19	68.11	74	-5.89
5150.00	Е	Average 4 1	34.21	8.19	42.40	54	-11.60

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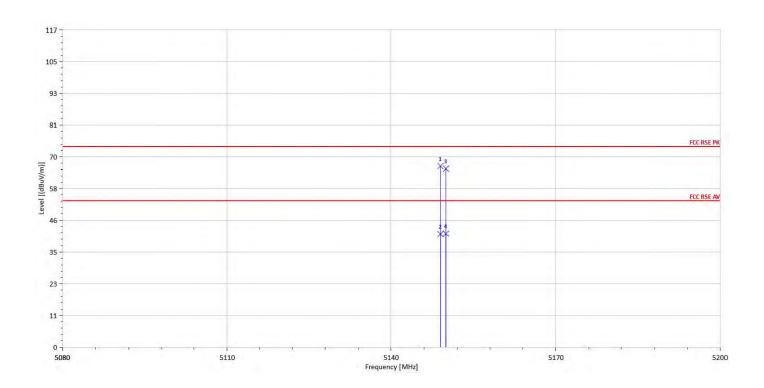


Page: 163 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5190 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Test Engineer: BE CH Low Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
5149.00	S	Peak	58.54	8.19	66.72	74	-7.28
5149.00	S	Average	33.55	8.19	41.74	54	-12.26
5150.00	Е	Peak	57.63	8.19	65.82	74	-8.18
5150.00	Е	Average	33.71	8.19	41.90	54	-12.10

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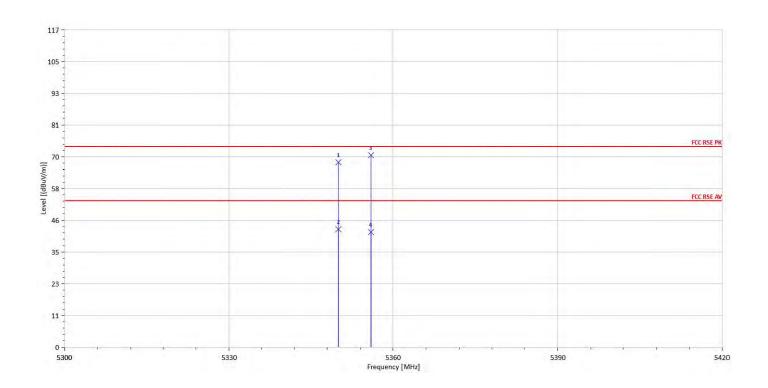


Page: 164 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5310 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH High Test Engineer: EUT Pol.: Measurement Antenna Pol.: Н Vertical



Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5350.00	E	Peak	59.18	8.96	68.14	74	-5.86
5350.00	E	Average	34.58	8.96	43.54	54	-10.46
5355.92	S	Peak	61.81	8.96	70.76	74	-3.24
5355.92	S	Average	33.52	8.96	42.48	54	-11.52

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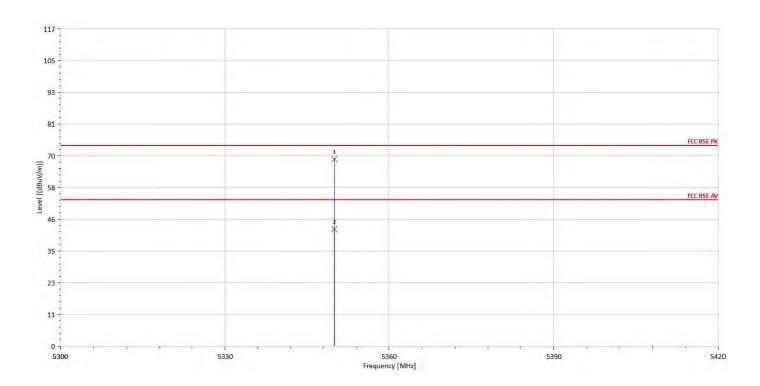


Page: 165 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5310 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH High Test Engineer: EUT Pol.: Н 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	dΒμV	dB	dΒμV/m	dBμV/m	dB
5350.00	E	Peak	59.97	8.96	68.94	74	-5.06
5350.00	E	Average	34.21	8.96	43.17	54	-10.83

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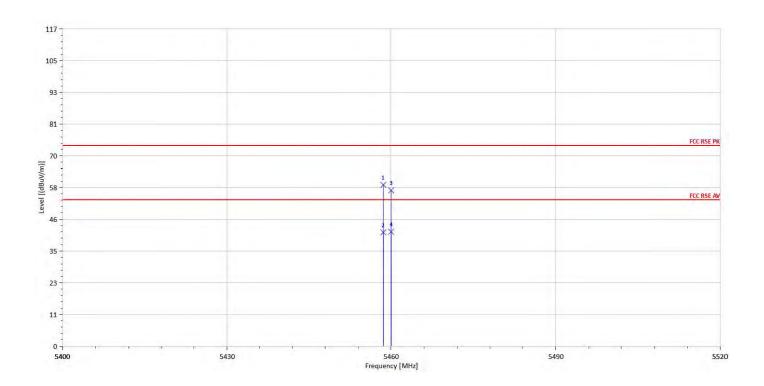


Page: 166 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5510 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Test Engineer: BE CH Low Pony EUT Pol.: Measurement Antenna Pol. : Η 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	۸D
IVITZ	F/□/⊑/ろ	FN/QF/AV	ασμν	uБ	ασμν/π	ασμν/ΙΙΙ	dB
5458.56	S	Peak	50.61	8.90	59.51	74	-14.49
5458.56	S	Average	33.10	8.90	42.00	54	-12.00
5460.00	Е	Peak	48.58	8.88	57.46	74	-16.54
5460.00	E	Average	33.35	8.88	42.23	54	-11.77

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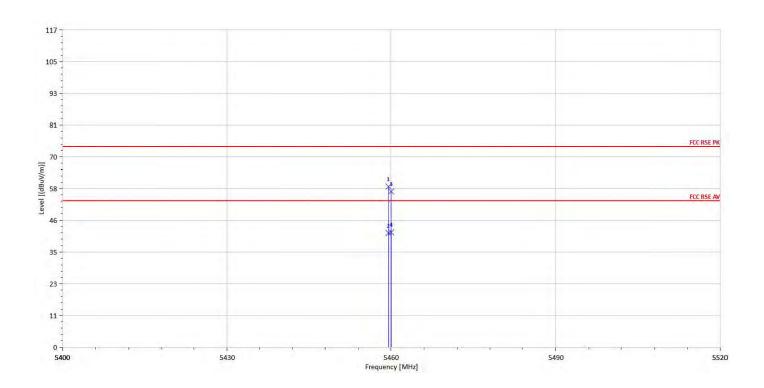


Page: 167 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5510 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Test Engineer: BE CH Low Pony EUT Pol.: Η Measurement Antenna Pol. : Horizontal



Freq.	Note	Detector Mode	Spectum Reading Level	Factor	Actual FS	Limit @3m	Margin
N 41 1-	E/L/E/O		•	-ID	_	•	-ID
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5459.52	S	Peak	50.38	8.89	59.27	74	-14.73
5459.52	S	Average	33.24	8.89	42.13	54	-11.87
5460.00	E	Peak	48.54	8.88	57.43	74	-16.57
5460.00	E	Average	33.50	8.88	42.38	54	-11.62

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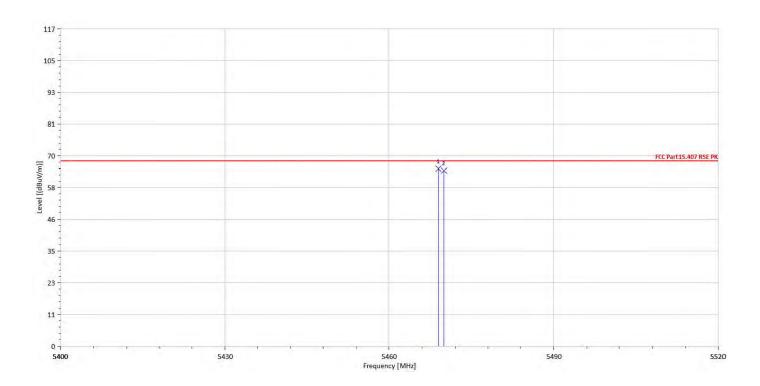


Page: 168 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5510 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: BE CH Low RSE Test Engineer: Pony EUT Pol.: Н 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
5469.00	S	Peak	56.66	8.80	65.46	68.3	-2.84
5470.00	E	Peak	55.96	8.79	64.75	68.3	-3.55

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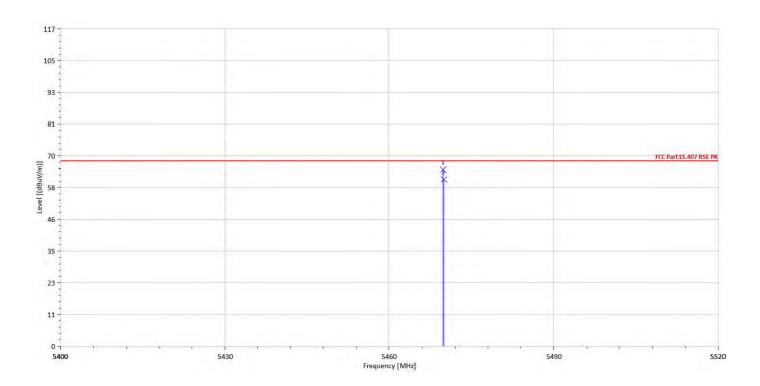


Page: 169 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5510 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: BE CH Low RSE Pony Test Engineer: EUT Pol.: Н 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	dΒμV	dB	dBµV/m	dBµV/m	dB
5469.84	S	Peak	56.31	8.79	65.10	68.3	-3.20
5470.00	E	Peak	52.75	8.79	61.54	68.3	-6.76

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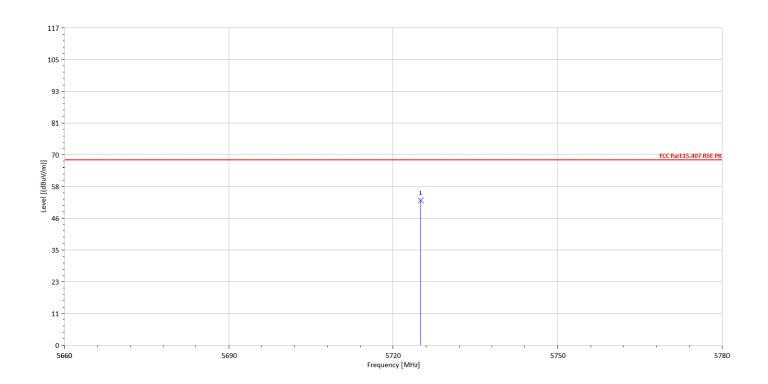


Page: 170 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5670 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH High Test Engineer: EUT Pol.: Н 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	dΒμV	dB	dΒμV/m	dBµV/m	dB
5725.00	Ē	Peak	44.02	9.30	53.32	68.3	-14.98

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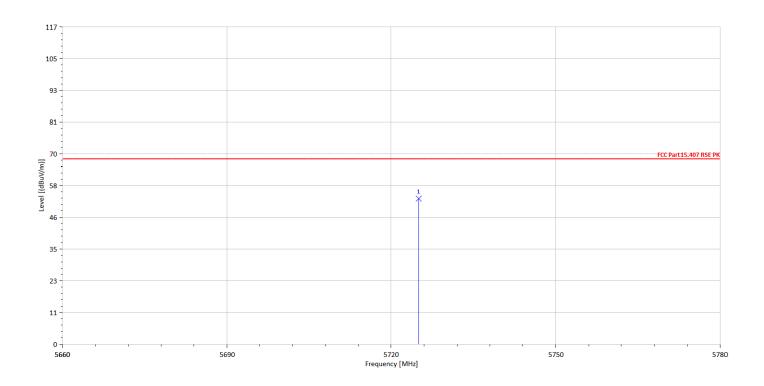


Page: 171 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5670 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH High Test Engineer: EUT Pol.: Н 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	dΒμV	dB	dBµV/m	dBµV/m	dB
5725.00	E	Peak	44.33	9.30	53.63	68.3	-14.67

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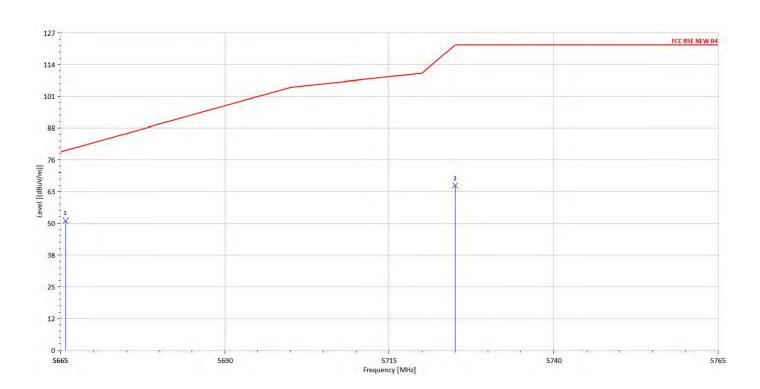


Page: 172 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5755 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Test Engineer: BE CH Low Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
5665.80	S	Peak	42.71	9.18	51.90	79.92186	-28.02
5725.00	Е	Peak	56.68	9.30	65.99	122.23	-56.24

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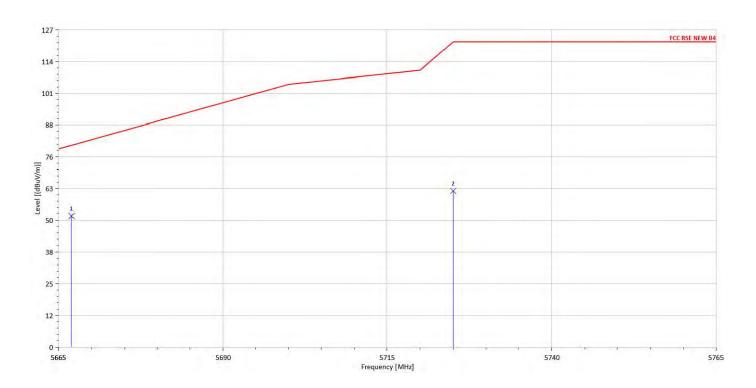


Page: 173 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5755 MHz Temp. / Humi.: 22.7deg C/57RH

Operation Band: Test Engineer: BE CH Low Pony EUT Pol.: Η 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	dΒμV	dB	dBµV/m	dBµV/m	dB
5667.00	S	Peak	43.31	9.18	52.49	80.81001	-28.32
5725.00	E	Peak	53.24	9.30	62.54	122.23	-59.69

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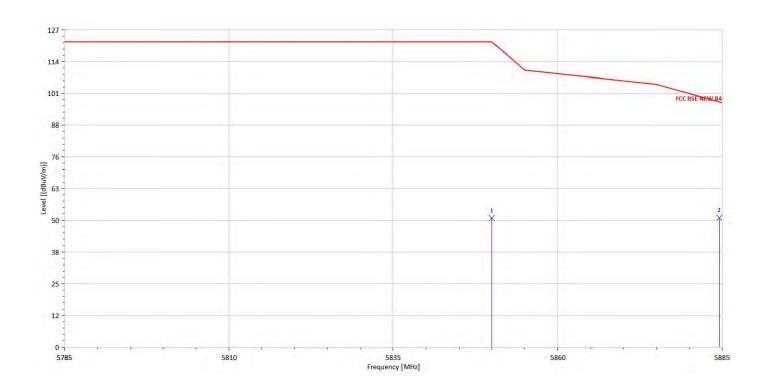


Page: 174 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5670 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH High Test Engineer: EUT Pol.: Measurement Antenna Pol.: Н Vertical



Freq.	Note	Detector	Spectum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
5725.00	Е	Peak	44.02	9.30	53.32	68.3	-14.98

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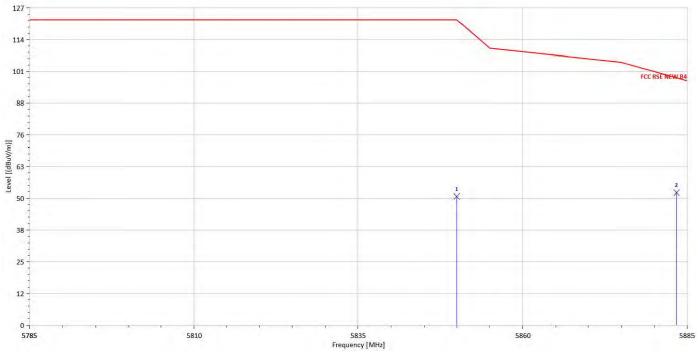


Page: 175 of 183

Operation Mode: 802.11n40 Test Date: 2016/8/14

Fundamental Frequency: 5795 MHz Temp. / Humi. : 22.7deg C/57RH

Operation Band: Pony BE CH High Test Engineer: EUT Pol.: Н 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	dΒμV	dB	dBµV/m	dBµV/m	dB
5850.00	Е	Peak	42.10	9.49	51.59	122.23	-70.64
5883.40	S	Peak	43.44	9.63	53.07	99.01408	-45.95

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Page: 176 of 183

### TRANSMISSION IN THE ABSENCE OF DATA

# 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:

Refer to the theory of operation.

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Page: 177 of 183

### 13. FREQUENCY STABILITY

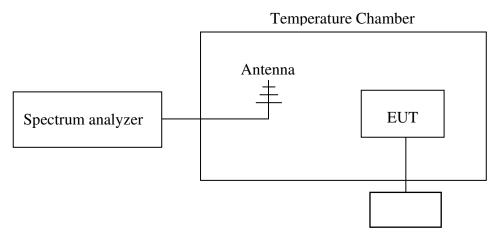
# **Standard Applicable**

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

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Page: 178 of 183

## **Measurement Equipment Used**

Conducted Emission Test Site							
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.		
Spectrum Analyzer	KEYSIGHT	N9010A	MY54510568	04/14/2016	04/13/2017		
Coaxial Cable 30cm	WOKEN	00100A1F1A19 5C	RF01	12/12/2015	12/11/2016		
Coaxial Cable 30cm	WOKEN	00100A1F1A19 5C	RF01	12/12/2015	12/11/2016		
DC Block	PASTERNAC K	PE8210	RF29	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		

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0.00000071

Page: 179 of 183

#### 13.5 **Measurement Result**

Test Date 2016.08.18 Test By Wayne

5 179 99630

	30	3100	3,17 3.3 30 30	0.00000071
	44	5220	5,219.95470	0.00000868
	48	5240	5,239.95680	0.00000824
	52	5260	5,259.95740	0.00000810
	60	5300	5,299.95900	0.00000774
4.37V	64	5320	5,319.94970	0.00000945
	100	5500	5,499.95980	0.00000731
	116	5580	5,579.94640	0.00000961
	140	5700	5,699.94420	0.00000979
	149	5745	5,744.94190	0.00001011
	157	5785	5,784.94030	0.00001032
	165	5825	5,824.94780	0.00000896

5180

36

-20

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Page: 180 of 183

36	5180	5,179.98070	0.00000373
44	5220	5,219.98800	0.00000230
48	5240	5,239.98720	0.00000244
52	5260	5,259.98520	0.00000281
60	5300	5,299.98370	0.00000308

25

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Page: 181 of 183

Test Date 2016.08.18

Test By Wayne

	38	5190	5,189.98070	0.00000372
	46	5230	5,229.98230	0.00000338
	54	5270	5,269.98020	0.00000376
	62	5310	5,309.98410	0.00000299
4.37V	102	5510	5,509.99840	0.00000029
	110	5550	5,549.98000	0.00000360
	134	5670	5,669.98570	0.00000252
	151	5755	5,754.99860	0.00000024

-20



Page: 182 of 183

38	5190	5,189.98270	0.00000333
46	5230	5,229.98370	0.00000312
54	5270	5,269.98290	0.00000324
62	5310	5,309.98250	0.00000330

25

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Page: 183 of 183

### 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

A PIFA antenna design is 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.

~ End of Report ~

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