



Report No: FCC 1706166-03 File reference No: 2017-07-10

Applicant: GLORY STAR TECHNICS (SHENZHEN) CO., LTD.

Product: Advertising Displayer

Model No: JAR215-01

Trademark: N/A

Test Standards: FCC Part 15 Subpart E, Paragraph 15.407

Test result:

It is herewith confirmed and found to comply with the

requirements set up by ANSI C63.10,FCC Part 15 Subpart C,

Paragraph 15.247 regulations for the evaluation o

electromagnetic compatibility

Approved By

Jack Chung

Jack Chung

Manager

Dated: July 10, 2017

Results appearing herein relate only to the sample tested

The technical reports is issued errors and omissions exempt and is subject to withdrawal at

# SHENZHEN TIMEWAY TESTING LABORATORIES

Room 512-519, 5/F., East Tower, Building 4, Anhua Industrial Zone, Futian District, Shenzhen, Guangdong, China

Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timeway-lab.com

Date: 2017-07-10



Page 2 of 128

# **Special Statement:**

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAL. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

### **CNAL-LAB Code: L2292**

The EMC Laboratory has been assessed and in compliance with CNAL/AC01:2002 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:1999 General Requirements) for the Competence of testing Laboratories.

## FCC-Registration No.: 899988

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 899988.

# IC-Registration No.: IC5205A-02

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration IC No.: 5205A-02.

Page 3 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



# **Test Report Conclusion**

## Content

1.0	General Details	4
1.1	Test Lab Details.	4
1.2	Applicant Details	4
1.3	Description of EUT	4
1.4	Submitted Sample	6
1.5	Test Duration.	6
1.6	Test Uncertainty.	6
1.7	Test By	6
2.0	List of Measurement Equipment.	7
3.0	Technical Details	8
3.1	Summary of Test Results	8
3.2	Test Standards.	8
4.0	EUT Modification.	8
5.0	Power Line Conducted Emission Test.	9
5.1	Schematics of the Test.	9
5.2	Test Method and Test Procedure.	9
5.3	Configuration of the EUT	9
5.4	EUT Operating Condition.	10
5.5	Conducted Emission Limit.	10
5.6	Test Result.	10
6.0	Undesirable Emission and Restrict band.	13
7.0	Bandwidth Measurement.	41
8.0	Peak Transmit Power Measurement.	95
9.0	Peak Power Spectral Density Measurement	99
10.0	Frequency Stability	122
11.0	Antenna Requirement.	125
12.0	FCC ID Label	126
13.0	Photo of Test Setup and EUT View.	127

Date: 2017-07-10



Page 4 of 128

#### 1.0 General Details

### 1.1 Test Lab Details

Name: SHENZHEN TIMEWAY TESTING LABORATORIES.

Address: Room 512-519,5/F., East Tower, Building 4, Anhua Industrial Zone, Futian District, Shenzhen,

Guangdong China

Telephone: (755) 83448688 Fax: (755) 83442996

Site on File with the Federal Communications Commission – United Sates

Registration Number: 899988

For 3m & 10 m OATS

Site Listed with Industry Canada of Ottawa, Canada

Registration Number: IC: 5205A-02

For 3m & 10 m OATS

### 1.2 Applicant Details

Applicant: GLORY STAR TECHNICS (SHENZHEN) CO., LTD.

Address: 4/Floor, west block, Longzhu Road, Xin WuCun Industry Building, NanShan District, ShenZhen

Telephone: (755)-26001808-305

Fax: (755)-26002933

### 1.3 Description of EUT

Product: Advertising Displayer

Manufacturer: GLORY STAR TECHNICS (SHENZHEN) CO., LTD.

Address: 4/Floor, west block, Longzhu Road, Xin WuCun Industry Building, NanShan

District.ShenZhen

Brand Name: N/A
Additional Brand Name: N/A

Model Number: JAR215-01

Additional Model Number: N/A

Type of Modulation IEEE 802.11a/n (HT20/HT40): OFDM(64QAM, 16QAM, QPSK, BPSK);

IEEE 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM

Frequency Band 1: 5180MHz-5240MHz;

Band 4: 5745MHz-5805MHz

Channel Separation 802.11a/802.11n20:20MHz, 802.11n40:40MHz, 802.11ac: 80MHz

Air Data Rate IEEE 802.11a : 54, 48,36, 24, 18, 12, 9, 6 Mbps

IEEE 802.11n/HT20: mcs0: 6.5Mbps,mcs1:13Mbps,mcs2:19.5Mbps,mcs3:26Mbps,

mcs4:39Mbps, mcs5:52Mbps, mcs6:58.5Mbps, mcs7:65Mbps

IEEE 802.11n/HT40: mcs0:15Mbps,mcs1:30Mbps,mcs2:45Mbps,mcs3:60Mbps,

mcs4:90Mbps,mcs5:120Mbps,mcs6:135Mbps,mcs7:150Mbps

IEEE 802.11ac: Up to 433.3Mbps

Antenna: Integral antennas used.

The report refers only to the sample tested and does not apply to the bulk.

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Date: 2017-07-10



Antenna Gain: Maximum 3.0dBi

Test Mode: During testing, EUT was set to 100% duty cycle. 6Mbps air data rate was the worst case

for 802.11a mode; mcs0 air data rate was the worst case for 802.11n mode; 23.9Mbps air

data rate was the worst case for 802.11ac mode.

Frequency Selection By software Input Voltage: DC12V

Power Adapter Model: LYD1205000UA;

Input: 100-240V, 50/60Hz, 1.6A; Output: 12V, 5A

### Each Channel Operation Frequency

Lacii Chamici Ope	Each Chainlei Operation Frequency					
	Band 1					
802.11a / 11n HT2	20 / 802.11ac VHT20	802.11n HT4	0 / 802.11acVHT40	802.11	ac VHT80	
Channel	Frequency	Channel	Frequency	Channel	Frequency	
36	5180MHz	38	5190 MHz	42	5210 MHz	
40	5200 MHz	46	5230 MHz			
44	5220 MHz					
48	5240 MHz					
		В	and 4			
802.11a / 11n HT2	20 / 802.11ac VHT20	802.11n HT4	0 / 802.11acVHT40	802.11ac VHT80		
Channel	Frequency	Channel	Frequency	Channel	Frequency	
149	5745 MHz	151	5755 MHz	155	5775 MHz	
153	5765 MHz	159	5795 MHz			
157	5785 MHz					
161	5805 MHz					

#### The selected test channels as follows:

The selected test chamies as follows.								
	Band 1							
802.11a /	11n HT20	802.11	n HT40	802.11	ac VHT80			
Channel	Frequency	Channel	Frequency	Channel	Frequency			
36	5180MHz	38	5190 MHz	42	5210 MHz			
40	5200 MHz	46	5230 MHz					
48	5240 MHz							
		В	Band 4					
802.11a /	11n HT20	802.11n HT40		802.11ac VHT80				
Channel	Frequency	Channel	Frequency	Channel	Frequency			
149	5745 MHz	151	5755 MHz	155	5775 MHz			
153	5765 MHz	159	5795 MHz					
161	5805 MHz							

Note: 802.11ac VHT20/VHT40 is similar with 802.11n HT20/HT40.

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Report No.: FCC1706166-04 Page 6 of 128

Date: 2017-07-10



Submitted Sample: 2 Samples

Test Duration 1.5 2017-04-20 to 2017-07-09

1.6 Test Uncertainty Conducted Emissions Uncertainty = 3.6dB Radiated Emissions Uncertainty =4.7dB

1.7 Test Engineer

The sample tested by

Print Name: Terry Tang

Page 7 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



2.0 Test Equipment					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	R&S	ESPI 3	100379	2016-08-22	2017-08-21
TWO	R&S	EZH3-Z5	100294	2016-08-22	2017-08-21
Line-V-NETW		EZN3-Z3	100294	2010-08-22	2017-08-21
TWO	R&S	EZH3-Z5	100253	2016-08-22	2017-08-21
Line-V-NETW		EZII3-Z3	100233	2010-06-22	2017-08-21
	R&S				
Ultra Broadband		HL562	100157	2016-08-23	2017-08-22
ANT					
	R&S	ESDV	100008	2016-08-22	2017-08-21
ESDV Test Receiver					
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2016-08-22	2017-08-21
System Controller	СТ	SC100	-		
Printer	EPSON	РНОТО ЕХЗ	CFNH234850		
Computer	IBM	8434	1S8434KCE99BLXLO*	-	-
Loop Antenna	EMCO	6502	00042960	2016-08-23	2017-08-22
ESPI Test Receiver	R&S	ESI26	838786/013	2016-08-22	2017-08-21
3m OATS		-	N/A	2016-08-24	2017-08-23
Horn Antenna	R&S	BBHA 9170	BBHA9170265	2016-08-24	2017-08-23
Horn Antenna	R&S	BBHA 9120D	9120D-631	2016-08-24	2017-08-23
Power meter	Anritsu	ML2487A	6K00003613	2016-08-22	2017-08-21
Power sensor	Anritsu	MA2491A	32263	2016-08-22	2017-08-21
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2016-08-23	2017-08-21
LISN	AFJ	LS16C	10010947251	2016-08-22	2017-08-21
LISN (Three Phase)	Schwarebeck	NSLK 8126	8126453	2016-08-23	2017-08-22
9*6*6 Anechoic			N/A	2016-08-24	2017-08-23
EMI Test Receiver	RS	ESCS30	100139	2016-08-22	2017-08-21
DE C-1-1-	SCHWARZBEC			2016 00 22	2017 00 22
RF Cable	K			2016-08-23	2017-08-22
Pre-Amplifier	НР	8447D	2727A05017	2016-08-05	2017-08-04
Pre-Amplifier	EM	EM30265		2016-08-05	2017-08-04

Page 8 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



#### 3.0 **Technical Details**

#### 3.1 **Summary of test results**

The EUT has been tested ac	ccording to the following spec	ifications:	
Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.107 & 15.407	<b>Conducted Emission Test</b>	PASS	Complies
FCC Part 15 Subpart E Paragraph 15.407 (b1/4/5/6/7), Part 15.205 and Part 15.209	Undesirable Emission and Restrict band	PASS	Complies
FCC Part 15, Paragraph 15.407 (a1/2/3)	Peak Transmit Power	PASS	Complies
FCC Part 15, Paragraph 15.407 (a)(6)	Peak Power Excursion	PASS	Complies
FCC Part 15, Paragraph 15.407 (a/1/2/3)	Peak Power Spectral Density	PASS	Complies
FCC Part 15, Paragraph 15.407(g)	Frequency Stability	PASS	Complies

#### 3.2 **Test Standards**

FCC Part 15 Subpart & Subpart C, Paragraph 15.247, ANSI C63.10:2013 and ANSI C63.4:2014 789033 D02 General UNII Test Procedures New Rules v01r04

#### 4.0 **EUT Modification**

No modification by SHENZHEN TIMEWAY TESTING LABORATORIES.

Page 9 of 128

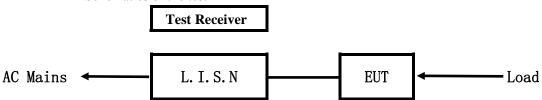
Report No.: FCC1706166-04

Date: 2017-07-10



#### 5. Power Line Conducted Emission Test

### 5.1 Schematics of the test

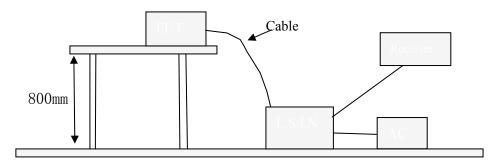


**EUT: Equipment Under Test** 

### 5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.10-2013. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.10-2013.

Test Voltage: 120V~, 60Hz Block diagram of Test setup



### 5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.10-2013. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

#### A. EUT

Device	Manufacturer	Model	FCC
Advertising	GLORY STAR TECHNICS	JAR215-01	24 4 CS 14 D 215 01
Displayer	(SHENZHEN) CO., LTD.	JAR213-01	2AACS-JAR215-01

Report No.: FCC1706166-04 Page 10 of 128

Date: 2017-07-10



#### B. Internal Device

Device	Manufacturer	Model	Rating

# C. Peripherals

Device	Manufacturer	Model	Rating
Power	LIANYUNDA		100-240V, 50/60Hz, 1.6A; Output: 12V, 5A
Supply		LYD1205000UA	

### 5.4 EUT Operating Condition

Operating condition is according to ANSI C63.10 -2013.

- A Setup the EUT and simulators as shown on follow
- B Enable AF signal and confirm EUT active to normal condition

### 5.5 Power line conducted Emission Limit according to Paragraph 15.207 and 15.107

Frequency	Class A Lim	its (dB µ V)	Class B Limits (dB \( \mu \) V)		
(MHz)	Quasi-peak Level	Average Level	Quasi-peak Level	Average Level	
$0.15 \sim 0.50$	79.0	66.0	66.0~56.0*	56.0~46.0*	
$0.50 \sim 5.00$	73.0	60.0	56.0	46.0	
5.00 ~ 30.00	73.0	60.0	60.0	50.0	

Notes:

- 1. \*Decreasing linearly with logarithm of frequency.
- 2. The tighter limit shall apply at the transition frequencies

#### 5.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

Date: 2017-07-10



## A: Conducted Emission on Live Terminal (150kHz to 30MHz)

**EUT Operating Environment** 

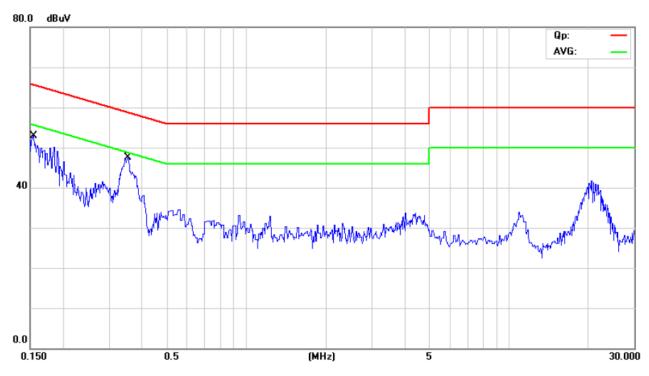
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 KPa

**EUT set Condition: Keeping WIFI Transmitting** 

**Equipment Level: Class B** 

**Results: PASS** 

Please refer to following diagram for individual



No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1541	38.50	9.85	48.35	65.78	-17.43	QP	
2	0.1541	17.50	9.85	27.35	55.78	-28.43	AVG	
3 *	0.3493	34.30	10.09	44.39	58.98	-14.59	QP	
4	0.3493	21.00	10.09	31.09	48.98	-17.89	AVG	

Date: 2017-07-10



## B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

**EUT Operating Environment** 

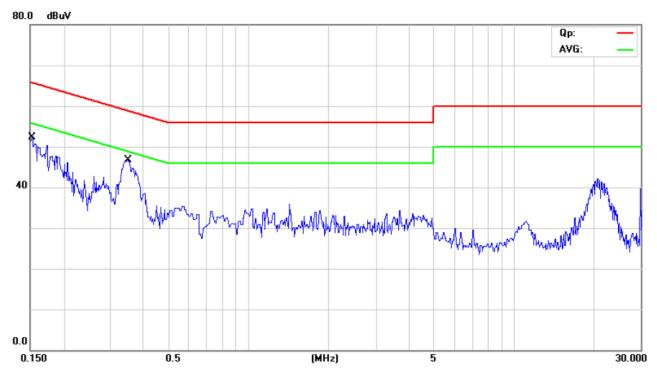
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 KPa

**EUT set Condition: Keeping WIFI Transmitting** 

**Equipment Level: Class B** 

**Results: Pass** 

Please refer to following diagram for individual



No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1524	38.50	9.84	48.34	65.87	-17.53	QP	
2	0.1524	16.70	9.84	26.54	55.87	-29.33	AVG	
3	0.3492	31.40	10.09	41.49	58.98	-17.49	QP	
4 *	0.3492	21.80	10.09	31.89	48.98	-17.09	AVG	

Date: 2017-07-10

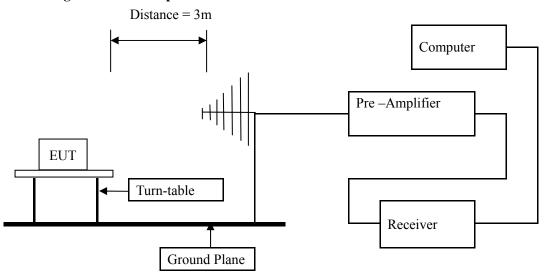


#### 6 Undesirable Emission and Restrict band

- 6.1 Test Method and test Procedure:
- (1) The EUT was tested according to ANSI C63.10-2013. The radiated test was performed at Timeway Laboratory. This site is on file with the FCC laboratory division, Registration No.899988
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.10-2013.
- (3) The frequency spectrum from 30 MHz to 40 GHz was investigated. All readings from 30 MHz to 1 GHz are Quasi-peak values with a resolution bandwidth of 120 kHz. For measurement above 1GHz, peak values with RBW=1MHz, VBW=3MHz and PK detector.

  Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "QP" in the data table.
- (6) The antenna polarization: Vertical polarization and Horizontal polarization.

### **Block diagram of Test setup**



- 6.2 Configuration of The EUT
  Same as section 5.3 of this report
- 6.3 EUT Operating Condition
  Same as section 5.4 of this report.

The report refers only to the sample tested and does not apply to the bulk.

Report No.: FCC1706166-04 Page 14 of 128

Date: 2017-07-10



#### 6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

Frequencies in restricted band are complied to limit on Paragraph 15.209 and 15.109

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

- (1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27dBm/MHz
- (2) For transmitters operating in the 5.725-5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27dBm/MHz.

Note: 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)

- 2. In the Above Table, the higher limit applies at the band edges.
- 3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT

Report No.: FCC1706166-04 Page 15 of 128

Date: 2017-07-10



#### Test result

# General Radiated Emission Data and Harmonics Radiated Emission Data

Radiated Emission In Horizontal (30MHz----1000MHz)

**EUT set Condition: Keeping WIFI Transmitting** 

**Results: Pass** 

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \u03b4 V/m)
482.16	41.18	Н	46.00
625.04	43.96	Н	46.00
770.96	41.42	Н	46.00
648.08	41.34	Н	46.00
648.08	40.46	V	46.00
432.16	43.62	V	46.00
720.08	42.84	V	46.00
864.08	42.32	V	46.00

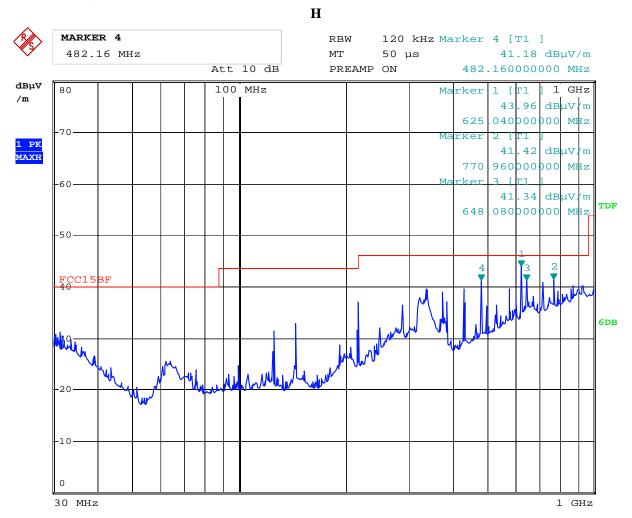
Page 16 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



# Test Figure:



Date: 20.APR.2017 10:01:04

Page 17 of 128

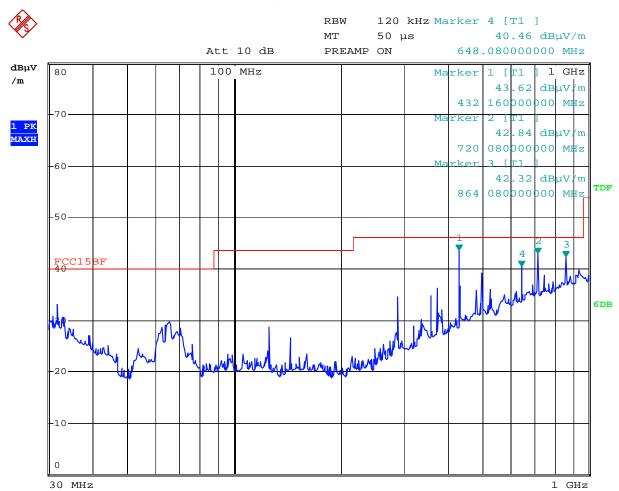
Report No.: FCC1706166-04

Date: 2017-07-10



Test Figure:

V



Date: 20.APR.2017 09:58:34

Date: 2017-07-10



## Operation Mode: Keeping Transmitting under CH36 for 802.11a at 6Mbps

	1 0		
Frequency (MHz)	PK Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \u03b4 V/m)
5180.00	95.52 (PK)	Н	Fundamental Frequency
5180.00	95.01 (PK)	V	Fundamental Frequency
10360	51.50	Н	74(Peak)/ 54(AV)
15540	51.00	V	74(Peak)/ 54(AV)
20720		H/V	74(Peak)/ 54(AV)
25900		H/V	74(Peak)/ 54(AV)
31080		H/V	74(Peak)/ 54(AV)
36260		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11a mode 6Mbps

## Operation Mode: Keeping Transmitting under CH40 for 802.11a at 6Mbps

	1 0		-
Frequency (MHz)	PK Level@3m (dBμV/m)	Antenna Polarity	Limit@3m (dB \u03b4 V/m)
5200.00	96.02 (PK)	Н	Fundamental Frequency
5200.00	96.51 (PK)	V	Fundamental Frequency
10400	51.58	Н	74(Peak)/ 54(AV)
15600	51.63	V	74(Peak)/ 54(AV)
20800		H/V	74(Peak)/ 54(AV)
26000		H/V	74(Peak)/ 54(AV)
31200		H/V	74(Peak)/ 54(AV)
36400		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11a mode 6Mbps

Page 19 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



## Operation Mode: Keeping Transmitting under CH48 for 802.11a at 6Mbps

Frequency (MHz)	PK Level@3m (dBμV/m)	Antenna Polarity	Limit@3m (dB \mu V/m)
5240.00	94.27 (PK)	Н	Fundamental Frequency
5240.00	94.22 (PK)	V	Fundamental Frequency
10480	49.36	Н	74(Peak)/ 54(AV)
15720	49.48	V	74(Peak)/ 54(AV)
20960		H/V	74(Peak)/ 54(AV)
26200		H/V	74(Peak)/ 54(AV)
31440		H/V	74(Peak)/ 54(AV)
36680		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11a mode 6Mbps

### Operation Mode: Keeping Transmitting under CH149 for 802.11a at 6Mbps

	1 0		
Frequency (MHz)	PK Level@3m (dBμV/m)	Antenna Polarity	Limit@3m (dB \u03b4 V/m)
5745.00	95.39 (PK)	Н	Fundamental Frequency
5745.00	95.89 (PK)	V	Fundamental Frequency
11490	51.16	Н	74(Peak)/ 54(AV)
17235	51.29	V	74(Peak)/ 54(AV)
22980		H/V	74(Peak)/ 54(AV)
28725		H/V	74(Peak)/ 54(AV)
34470		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11a mode 6Mbps

Page 20 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



## Operation Mode: Keeping Transmitting under CH153 for 802.11a at 6Mbps

	1 0		<u> </u>
Frequency (MHz)	PK Level@3m (dBμV/m)	Antenna Polarity	Limit@3m (dB \( \mu \)V/m)
5765.00	94.40 (PK)	Н	Fundamental Frequency
5765.00	94.19 (PK)	V	rundamental Frequency
11530	50.20	Н	74(Peak)/ 54(AV)
17295	50.11	V	74(Peak)/ 54(AV)
23060		H/V	74(Peak)/ 54(AV)
28825		H/V	74(Peak)/ 54(AV)
34590		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11a mode 6Mbps

## Operation Mode: Keeping Transmitting under CH161 for 802.11a at 6Mbps

Frequency (MHz)	PK Level@3m (dBμV/m)	Antenna Polarity	Limit@3m (dB \( \mu \)V/m)
5805.00	96.31 (PK)	Н	Fundamental Frequency
5805.00	96.23 (PK)	V	Fundamental Frequency
11610	52.41	Н	74(Peak)/ 54(AV)
17415	52.33	V	74(Peak)/ 54(AV)
23220	-	H/V	74(Peak)/ 54(AV)
29025		H/V	74(Peak)/ 54(AV)
34830		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

- 2. Remark "---" means that the emissions level is too low to be measured
- 3. For 802.11a mode 6Mbps

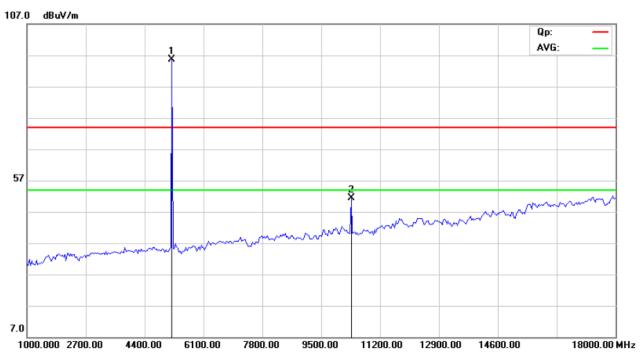
Remark. 802.11a/11nH20/11nH40/11ac VHT80 all have been tested, only 802.11a is the worst case

Date: 2017-07-10

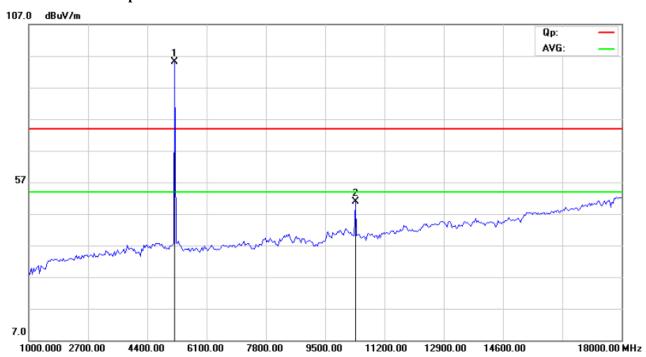


Please refer to the following test plots for details:

# CH36 for 11a at 6Mbps: Horizontal



# CH36 for 11a at 6Mbps: Vertical



The report refers only to the sample tested and does not apply to the bulk.

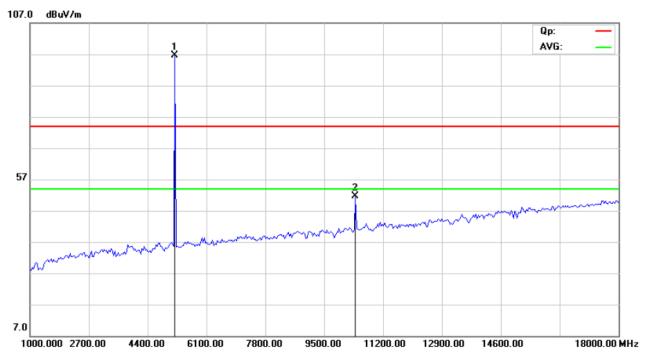
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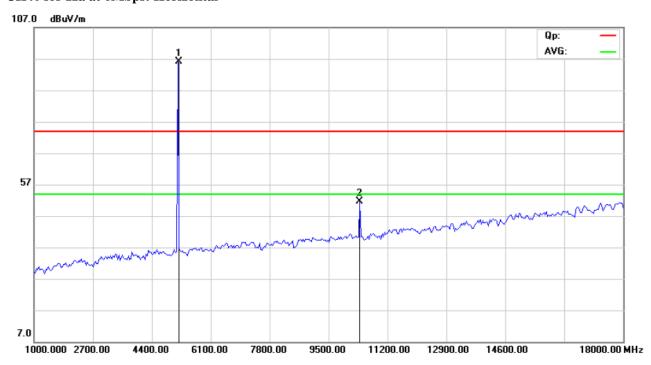
Date: 2017-07-10



# CH40 for 11a at 6Mbps: Vertical



## CH40 for 11a at 6Mbps: Horizontal



The report refers only to the sample tested and does not apply to the bulk.

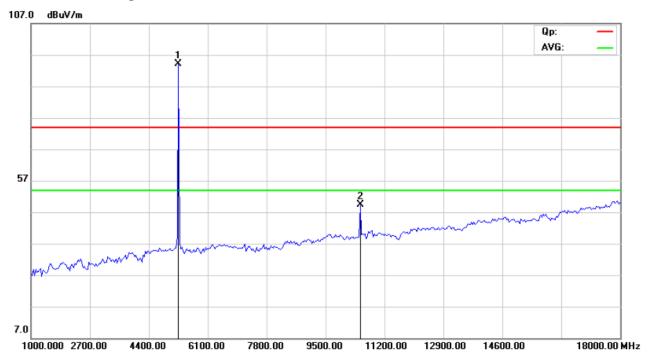
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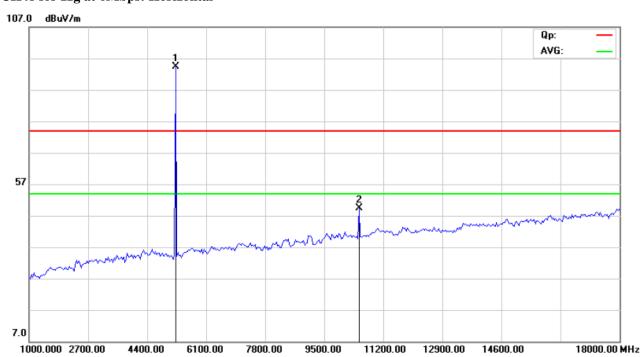
Date: 2017-07-10



## CH48 for 11a at 6Mbps: Vertical



## CH48 for 11g at 6Mbps: Horizontal

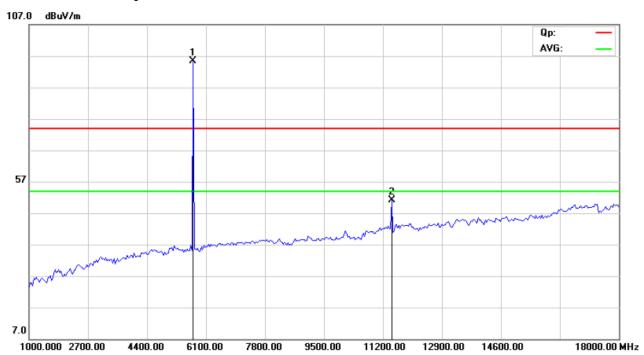


Date: 2017-07-10

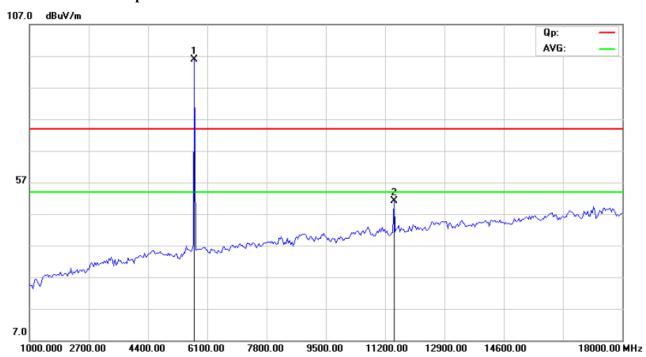


Please refer to the following test plots for details:

# CH149 for 11a at 6Mbps: Horizontal



# CH149 for 11a at 6Mbps: Vertical



The report refers only to the sample tested and does not apply to the bulk.

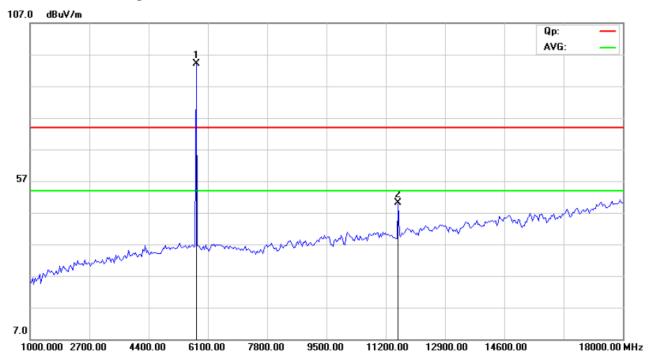
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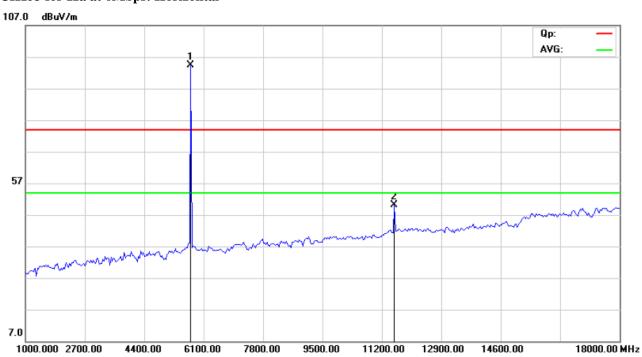
Date: 2017-07-10



## CH153 for 11a at 6Mbps: Vertical



## CH153 for 11a at 6Mbps: Horizontal



The report refers only to the sample tested and does not apply to the bulk.

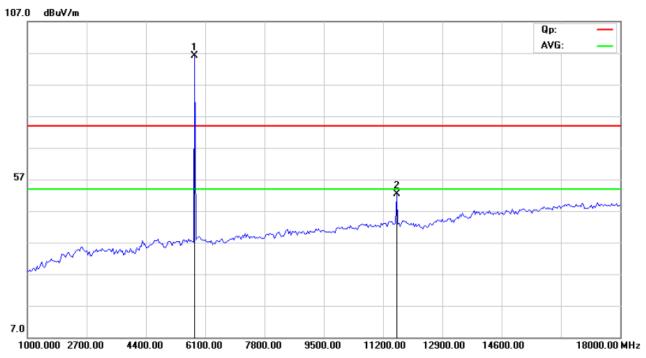
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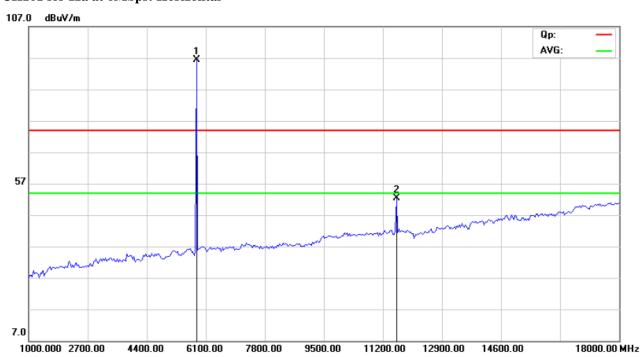
Date: 2017-07-10



# CH161 for 11a at 6Mbps: Vertical



# CH161 for 11a at 6Mbps: Horizontal



Note: 1.For radiated Emissions from 18-40GHz, it is only the floor noise.

2. 802.11a/11nH20/11nH40/11ac VHT80 all have been tested, only 802.11a is the worst case.

The report refers only to the sample tested and does not apply to the bulk.

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In the event of the improper use of the report. The SHENZHEN TIMEWAY TESTING LABORATORIES, reserves the rights to withdraw it and to

Date: 2017-07-10



Restricted band Measurement					
EUT	Advertis	sing Displayer	Test Mode:	Channel 36 (5180MHz)-11a	
Mode	Keeping Transmitting		Input Voltage	120V∼	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	PK	
5150	PK (dBµV/m)	50.5 (PK)	T ::4	27 JD/MIL-	
	EIRP (dBm)	-44.7	Limit	-27dBm/MHz	
Polarity	Horizontal				

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=50.5 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=50.5-95.2=-44.7dBm$ 

2. RBW=1MHz, VBW=3MHz

Restricted band Measurement					
EUT	Advertis	sing Displayer	Test Mode:	Channel 36 (5180MHz)-11a	
Mode	Keeping	Keeping Transmitting		120V∼	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	PK	
5150	PK (dBµV/m)	49.1 (PK)	T ::4	27 10/MII	
	EIRP (dBm)	-46.1	Limit	-27dBm/MHz	
Polarity	1	Vertical		-1	

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=49.1 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 49.1 - 95.2 = -46.1 dBm$ 

Date: 2017-07-10



Restricted band Measurement					
EUT	Advertis	sing Displayer	Test Mode:	Channel 48 (5240MHz)-11a	
Mode	Keeping Transmitting		Input Voltage	120V~	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	PK	
5350	PK (dBµV/m)	49.7 (PK)	T ::4	2740/\di_	
	EIRP (dBm)	-45.5	Limit	-27dBm/MHz	
Polarity	Но	Horizontal			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=49.7 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=49.7-95.2=-45.5dBm$ 

2. RBW=1MHz, VBW=3MHz

Restricted band Measurement					
EUT	Advertis	Advertising Displayer		Channel 48 (5240MHz)-11a	
Mode	Keeping Transmitting		Input Voltage	120V~	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	PK	
5350	PK (dBµV/m)	47.6 (PK)	T ::4	27.10/МП-	
	EIRP (dBm)	-47.6	Limit	-27dBm/MHz	
Polarity	Vertical				

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=47.6dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 47.6 - 95.2 = -47.6 dBm$ 

Date: 2017-07-10



Restricted band Measurement					
EUT	Advertis	sing Displayer	Test Mode:	Channel 149 (5745MHz)-11a	
Mode	Keeping Transmitting		Input Voltage	120V~	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	PK	
5725	PK (dBµV/m)	45.1 (PK)	T ::4	-27dBm/MHz	
	EIRP (dBm)	-50.1	Limit	-2/QBM/MHZ	
Polarity	Но	Horizontal			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=45.1 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=45.1-95.2=-50.1dBm$ 

2. RBW=1MHz, VBW=3MHz

Restricted band Measurement					
EUT	Advertis	sing Displayer	Test Mode:	Channel 149 (5745MHz)-11a	
Mode	Keeping Transmitting		Input Voltage	120V~	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:		Pass	Detector	PK	
5725	PK (dBµV/m)	43.9 (PK)	T ::4	27.10/МП-	
	EIRP (dBm) -51.3		Limit	-27dBm/MHz	
Polarity	V	Vertical			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=43.9 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 43.9 - 95.2 = -51.3 dBm$ 

Date: 2017-07-10



Restricted band Measurement				
EUT	Advertis	sing Displayer	Test Mode:	Channel 161 (5805MHz)-11a
Mode	Keeping Transmitting		Input Voltage	120V~
Temperature	24 deg. C,		Humidity	56% RH
Test Result:		Pass	Detector	PK
5850	PK (dBµV/m)	46.2 (PK)	Limit	27.dD/MIL
	EIRP (dBm)	-49.0	Limit	-27dBm/MHz
Polarity	Но	orizontal		

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=46.2 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=46.2-95.2=-49.0dBm$ 

2. RBW=1MHz, VBW=3MHz

Restricted band Measurement					
EUT	Advertis	sing Displayer	Test Mode:	Channel 161 (5805MHz)-11a	
Mode	Keeping Transmitting		Input Voltage	120V∼	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:		Pass	Detector	PK	
5850	PK (dBµV/m)	43.9 (PK)	T ::4	27.10/МП-	
	EIRP (dBm) -51.3		Limit	-27dBm/MHz	
Polarity	V	Vertical			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=43.9 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 43.9 - 95.2 = -51.3 dBm$ 

Date: 2017-07-10



Restricted band Measurement					
EUT	Advertis	sing Displayer	Test Mode:	Channel 36	
				(5180MHz)-11n/HT20	
Mode	Keeping Transmitting		Input Voltage	120V∼	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:		Pass	Detector	PK	
5150	PK (dBµV/m)	50.1 (PK)	T ::4	27.10/МП-	
	EIRP (dBm) -45.1		Limit	-27dBm/MHz	
Polarity	Horizontal				

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=50.1 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=50.1-95.2=-45.1dBm$ 

2. RBW=1MHz, VBW=3MHz

Restricted band Measurement					
EUT	Advertis	sing Displayer	Test Mode:	Channel 36	
				(5180MHz)-11n/HT20	
Mode	Keeping Transmitting		Input Voltage	120V~	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:		Pass	Detector	PK	
5150	PK (dBµV/m)	48.5 (PK)	T ::4	27.10/МП-	
	EIRP (dBm) -46.7		Limit	-27dBm/MHz	
Polarity	7	/ertical			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=48.5 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 48.5 - 95.2 = -46.7 dBm$ 

Date: 2017-07-10



Restricted band Measurement					
EUT	Advertis	sing Displayer	Test Mode:	Channel 48 (5240MHz)-	
				11n/HT20	
Mode	Keeping Transmitting		Input Voltage	120V~	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:		Pass	Detector	PK	
5250	PK (dBµV/m)	49.0 (PK)	T ::4	-27dBm/MHz	
	EIRP (dBm) -46.2		Limit	-2/dBm/MHZ	
Polarity	Но	Horizontal			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=49.0 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=49.0-95.2=-46.2dBm$ 

2. RBW=1MHz, VBW=3MHz

Restricted band Measurement					
EUT	Advertis	sing Displayer	Test Mode:	Channel 48 (5240MHz)-	
				11n/HT20	
Mode	Keeping Transmitting		Input Voltage	120V~	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:		Pass	Detector	PK	
5250	PK (dBµV/m)	46.1 (PK)	T ::4	27 JD /MII_	
	EIRP (dBm) -49.1		Limit	-27dBm/MHz	
Polarity	7	Vertical		1	

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=46.1dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 46.1 - 95.2 = -49.1 dBm$ 

Date: 2017-07-10



Restricted band Measurement					
EUT	Advertis	sing Displayer	Test Mode:	Channel 149 (5745MHz)-	
				11n/HT20	
Mode	Keeping Transmitting		Input Voltage	120V~	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:		Pass	Detector	PK	
5725	PK (dBµV/m)	45.3 (PK)	T ::4	27.10/МП-	
	EIRP (dBm) -49.9		Limit	-27dBm/MHz	
Polarity	Но	orizontal			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=45.3 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=45.3-95.2=-49.9dBm$ 

2. RBW=1MHz, VBW=3MHz

Restricted band Measurement					
EUT	Advertis	sing Displayer	Test Mode:	Channel 149 (5745MHz)-	
				11n/HT20	
Mode	Keeping Transmitting		Input Voltage	120V~	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:		Pass	Detector	PK	
5725	PK (dBµV/m)	43.2 (PK)	T ::4	27.10/МП-	
	EIRP (dBm) -52.0		Limit	-27dBm/MHz	
Polarity	7	Vertical			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=43.2 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 43.2 - 95.2 = -52.0 dBm$ 

Date: 2017-07-10



Restricted band Measurement					
EUT	Advertis	sing Displayer	Test Mode:	Channel 161 (5805MHz)-	
				11n/HT20	
Mode	Keeping Transmitting		Input Voltage	120V~	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:		Pass	Detector	PK	
5850	PK (dBµV/m)	44.7 (PK)	T ::4	27.10/МП-	
	EIRP (dBm) -50.5		Limit	-27dBm/MHz	
Polarity	Но	Horizontal			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=44.7 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=44.7-95.2=-50.5dBm$ 

2. RBW=1MHz, VBW=3MHz

Restricted band Measurement					
EUT	Advertis	sing Displayer	Test Mode:	Channel 161 (5805MHz)-	
				11n/HT20	
Mode	Keeping Transmitting		Input Voltage	120V~	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:		Pass	Detector	PK	
5850	PK (dBµV/m)	43.9 (PK)	T ::4	27.10/МП-	
	EIRP (dBm) -51.3		Limit	-27dBm/MHz	
Polarity	7	Vertical			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=43.9 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=43.9-95.2=-51.3dBm$ 

Date: 2017-07-10



Restricted band Measurement					
EUT	Advertis	sing Displayer	Test Mode:	Channel 38	
				(5190MHz)-11n/HT40	
Mode	Keeping Transmitting		Input Voltage	120V~	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:		Pass	Detector	PK	
5150	PK (dBµV/m)	46.8 (PK)	T ::4	27 JD /MII_	
	EIRP (dBm) -45.1		Limit	-27dBm/MHz	
Polarity	Но	Horizontal			

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=46.8 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=46.8-95.2=-48.4dBm$ 

2. RBW=1MHz, VBW=3MHz

Restricted band Measurement								
EUT	Advertising Displayer		Test Mode:	Channel 38				
				(5190MHz)-11n/HT40				
Mode	Keeping Transmitting		Input Voltage	120V~				
Temperature	24 deg. C,		Humidity	56% RH				
Test Result:	Pass		Detector	PK				
5150	PK (dBµV/m)	44.9 (PK)	Limit	-27dBm/MHz				
	EIRP (dBm)	-50.3						
Polarity	Vertical							

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=44.9 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=44.9-95.2=-50.3dBm$ 

Date: 2017-07-10



Restricted band Measurement							
EUT	Advertising Displayer		Test Mode:	Channel 46 (5230MHz)-			
				11n/HT40			
Mode	Keeping Transmitting		Input Voltage	120V∼			
Temperature	24 deg. C,		Humidity	56% RH			
Test Result:	Pass		Detector	PK			
5250	PK (dBµV/m)	45.5(PK)	T ::4	-27dBm/MHz			
	EIRP (dBm)	-49.7	Limit				
Polarity	Horizontal						

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=45.5 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=45.5-95.2=-49.7dBm$ 

2. RBW=1MHz, VBW=3MHz

Restricted band Measurement								
EUT	Advertising Displayer		Test Mode:	Channel 46 (5230MHz)-				
				11n/HT40				
Mode	Keeping Transmitting		Input Voltage	120V~				
Temperature	24 deg. C,		Humidity	56% RH				
Test Result:	Pass		Detector	PK				
5250	PK (dBµV/m)	43.8 (PK)	Limit	-27dBm/MHz				
	EIRP (dBm)	-51.4						
Polarity	Vertical							

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=43.8dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 43.8 - 95.2 = -51.4 dBm$ 

Date: 2017-07-10



Restricted band Me	Restricted band Measurement									
EUT	Advertis	sing Displayer	Test Mode:	Channel 151 (5755MHz)-						
				11n/HT40						
Mode	Keeping	g Transmitting	Input Voltage	120V~						
Temperature	24	deg. C,	Humidity	56% RH						
Test Result:		Pass	Detector	PK						
5725	PK (dBµV/m)	43.5 (PK)	T ::4	27.10/МП-						
	EIRP (dBm) -51.7		Limit	-27dBm/MHz						
Polarity	Но	orizontal		-						

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=43.5 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=43.5-95.2=-51.7dBm$ 

2. RBW=1MHz, VBW=3MHz

Restricted band Me	Restricted band Measurement									
EUT	Advertis	sing Displayer	Test Mode:	Channel 151 (5755MHz)-						
				11n/HT40						
Mode	Keeping	g Transmitting	Input Voltage	120V∼						
Temperature	24	deg. C,	Humidity	56% RH						
Test Result:		Pass	Detector	PK						
5725	PK (dBµV/m)	42.1 (PK)	T ::4	27 10 / 444						
	EIRP (dBm) -53.1		Limit	-27dBm/MHz						
Polarity	7	Vertical								

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=42.1 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 42.1 - 95.2 = -53.1dBm$ 

2. RBW=1MHz, VBW=3MHz

Date: 2017-07-10



Restricted band Me	Restricted band Measurement									
EUT	Advertis	sing Displayer	Test Mode:	Channel 159 (5795MHz)-						
				11n/HT40						
Mode	Keeping	g Transmitting	Input Voltage	120V∼						
Temperature	24	deg. C,	Humidity	56% RH						
Test Result:		Pass	Detector	PK						
5850	PK (dBµV/m)	43.3 (PK)	T ::4	27.10/МП-						
	EIRP (dBm) -51.9		Limit	-27dBm/MHz						
Polarity	Но	orizontal								

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=43.3 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=43.3-95.2=-51.9dBm$ 

2. RBW=1MHz, VBW=3MHz

Restricted band Me	Restricted band Measurement									
EUT	Advertis	sing Displayer	Test Mode:	Channel 159 (5795MHz)-						
				11n/HT40						
Mode	Keeping	Transmitting	Input Voltage	120V~						
Temperature	24	deg. C,	Humidity	56% RH						
Test Result:		Pass	Detector	PK						
5850	PK (dBµV/m)	41.7 (PK)	T ::4	27 10 / / / /						
	EIRP (dBm) -53.5		Limit	-27dBm/MHz						
Polarity	7	/ertical								

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=41.7 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 41.7 - 95.2 = -53.5 dBm$ 

2. RBW=1MHz, VBW=3MHz

Date: 2017-07-10



Restricted band Me	Restricted band Measurement										
EUT	Advertising Displayer		Test Mode:	Channel 42							
				(5210MHz)-11ac/VHT80							
Mode	Keeping	Transmitting	Input Voltage	120V~							
Temperature	24	deg. C,	Humidity	56% RH							
Test Result:		Pass	Detector	PK							
5150	PK (dBµV/m)	42.9 (PK)	T ::4	27.lD/MII_							
	EIRP (dBm) -52.3		Limit	-27dBm/MHz							
Polarity	Но	orizontal									

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=42.9 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=42.9-95.2=-52.3dBm$ 

2. RBW=1MHz, VBW=3MHz

3.5150 MHz and 5350MHz all have been tested, only worse case 5150MHz is reported

Restricted band Me	Restricted band Measurement									
EUT	Advertis	sing Displayer	Test Mode:	Channel 42 (5210MHz)-						
				11ac/VHT80						
Mode	Keeping	g Transmitting	Input Voltage	120V~						
Temperature	24	deg. C,	Humidity	56% RH						
Test Result:		Pass	Detector	PK						
5150	PK (dBµV/m)	40.7 (PK)	T ::4	27.10/МП-						
	EIRP (dBm) -54.5		Limit	-27dBm/MHz						
Polarity	7	Vertical		1						

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=40.7 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 40.7 - 95.2 = -54.5 dBm$ 

2. RBW=1MHz, VBW=3MHz

 $3.5150\,\mathrm{MHz}$  and  $5350\mathrm{MHz}$  all have been tested , only worse case  $5150\mathrm{MHz}$  is reported

Date: 2017-07-10



Restricted band Me	Restricted band Measurement									
EUT	Advertis	sing Displayer	Test Mode:	Channel 155 (5775MHz)-						
				11ac/VHT80						
Mode	Keeping	g Transmitting	Input Voltage	120V∼						
Temperature	24	deg. C,	Humidity	56% RH						
Test Result:		Pass	Detector	PK						
5850	PK (dBµV/m)	42.1 (PK)	T ::4	27 10 / 444						
	EIRP (dBm) -51.9		Limit	-27dBm/MHz						
Polarity	Но	orizontal		1						

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=42.1 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2=42.1-95.2=-53.1dBm$ 

2. RBW=1MHz, VBW=3MHz

3.5725 MHz and 5850MHz all have been tested, only worse case 5850MHz is reported

Restricted band Me	Restricted band Measurement									
EUT	Advertis	sing Displayer	Test Mode:	Channel 157 (5775MHz)-						
				11ac/VHT80						
Mode	Keeping	g Transmitting	Input Voltage	120V∼						
Temperature	24	deg. C,	Humidity	56% RH						
Test Result:		Pass	Detector	PK						
5850	PK (dBµV/m)	40.3 (PK)	T ::4	27 10 / / / / /						
	EIRP (dBm) -54.9		Limit	-27dBm/MHz						
Polarity	7	/ertical								

Remark: 1. According to KDB 789033 D02 General UNII Test Procedures New Rules v01 section G) d) (ii), for measurement above 1000MHz@3m distance, the limit of EIRP is calculated as follows:

 $EIRP[dBm] = E[dB\mu V/m] - 95.2$ 

For Example, if  $E[dB\mu V/m]=40.3 dB\mu V/m$ ,

 $EIRP[dBm] = E[dB\mu V/m] - 95.2 = 40.3 - 95.2 = -54.9 dBm$ 

2. RBW=1MHz, VBW=3MHz

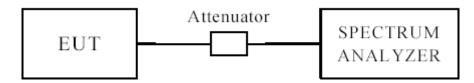
3.5725 MHz and 5850MHz all have been tested, only worse case 5850MHz is reported

Date: 2017-07-10



#### 7.0 Emission Bandwidth

# 7.1 Test Setup



## 7.3 Test Procedure for Emission Bandwidth

- 1. Set RBW = approximately 1% of the emission bandwidth.
- 2. Set VBW> RBW
- 3 Detector = Peak
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.
- 7. Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

### 7.4 Test Procedure for Minimum Bandwidth for the Band 5725-5850MHz

- 1. Set RBW = 100 kHz.
- 2. Set  $VBW \ge 3 \times RBW$ .
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.
- 7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

## 7.5 Test Procedure for 99% Bandwidth

- 1. Set center frequency to the nominal EUT channel center frequency
- 2. Set span = 1.5 times to 5.0 times OBW
- 3. Set RBW= 1% TO 5% of the OBW
- 4. Set  $VBW \ge 3 \times RBW$
- 5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Other, peak detection and max mode (until trace stabilizes) shall be used.
- 6. Use the 99% power bandwidth function of the instrument

The report refers only to the sample tested and does not apply to the bulk.

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Report No.: FCC1706166-04 Page 42 of 128

Date: 2017-07-10



## 7.6 Test Result

EUT		Advertising Displayer		Model		JAR215-01		
Mode		8	302.11a		Input Vol	tage		120V~
Temperati	ure	24	4 deg. C,		Humidity	r		56% RH
Channel		el Frequency (MHz)	Data Transfer Rate (Mbps)				num Limit MHz)	Pass/ Fail
26dB Bar	ndwidth							
36		5180	6	22	22.24			Pass
40		5200	6	22	22.04			Pass
48		5240	6	22	.44			Pass
99% Ban	dwidth							
36		5180	6	17	.23			Pass
40		5200	6	17.23				Pass
48		5240	6	17.15		.15		Pass

Page 43 of 128

Report No.: FCC1706166-04

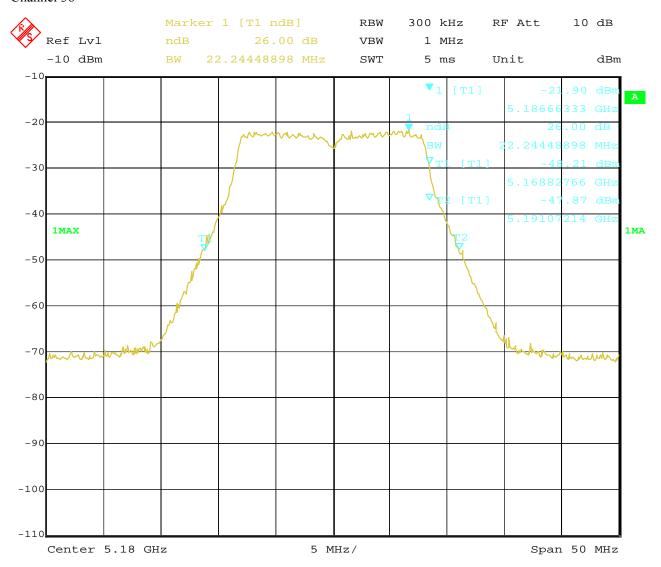
Date: 2017-07-10



Test Figure:

#### 26dB Bandwidth

### Channel 36



22.MAY.2017 12:04:55 Date:

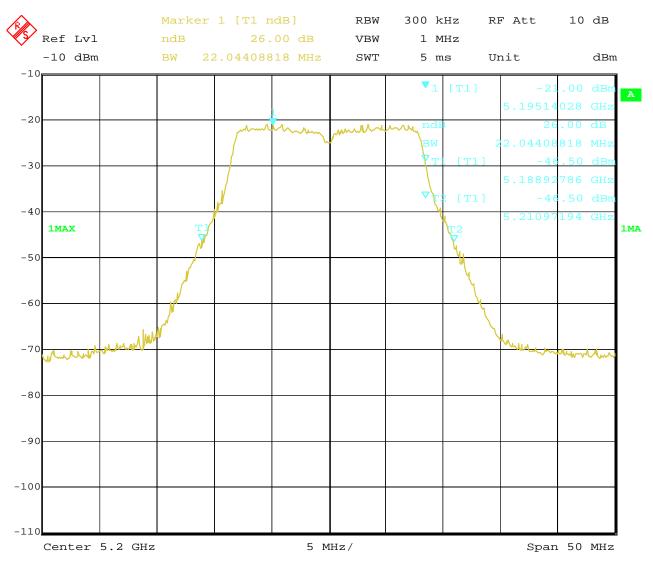
Page 44 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



#### Channel 40



22.MAY.2017 12:07:48 Date:

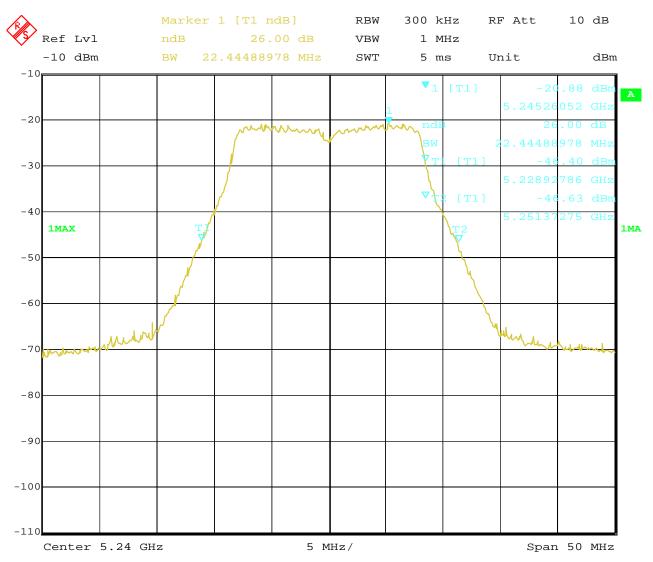
Page 45 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



#### Channel 48



22.MAY.2017 12:12:23 Date:

Page 46 of 128

Report No.: FCC1706166-04

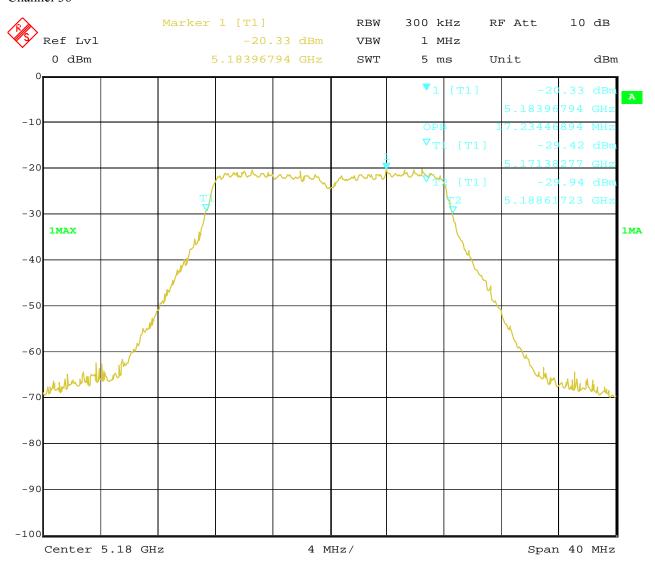
Date: 2017-07-10



Test Figure:

### 99% Bandwidth

### Channel 36



Date: 8.JUL.2017 18:15:53

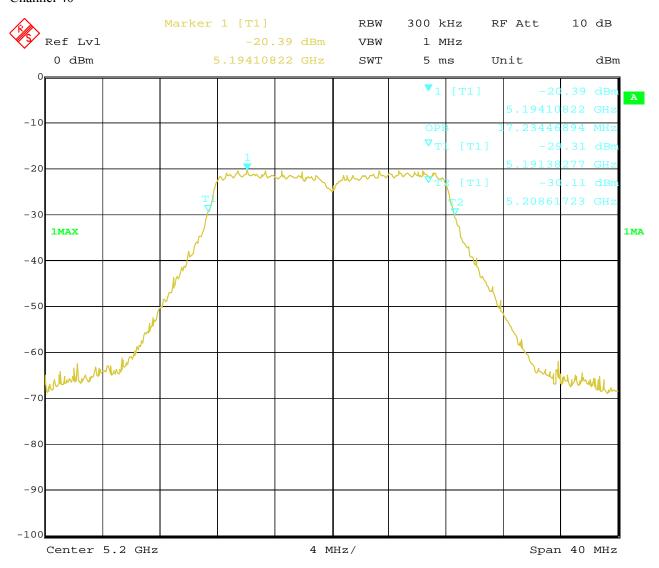
Page 47 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 40



8.JUL.2017 Date: 18:21:32

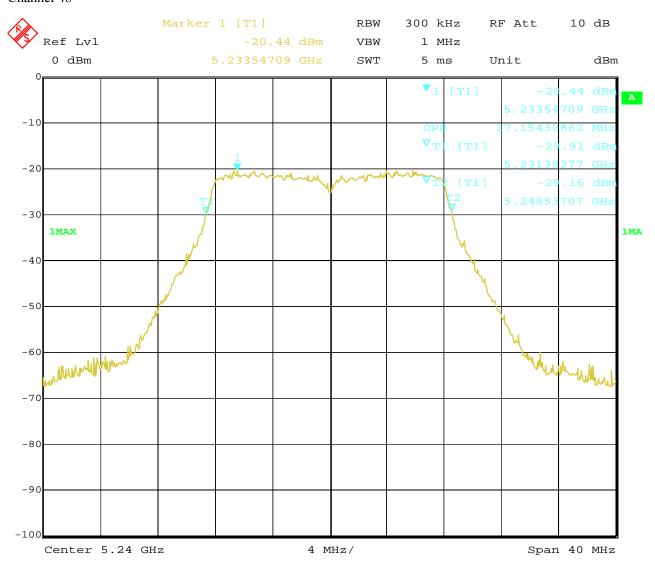
Page 48 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



#### Channel 48



8.JUL.2017 Date: 18:23:41

Page 49 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



EUT		Adverti	sing Displa	yer	Model			JAR215-01
Mode		8	802.11a		Input Vo	ltage		120V~
Temperat	ure	24	4 deg. C,		Humidity	y	56% RH	
Channel		nel Frequency (MHz)	Data Transfer Rate (Mbps)		lwidth [Hz)			Pass/ Fail
26dB Baı	ndwidth							
149		5745	6	23	5.41			Pass
153		5765	6	26	5.53			Pass
161		5805	6	25	5.41			Pass
6dB Ban	dwidth							
149		5745	6	16	5.31		0.5	Pass
153		5765	6	16	5.35		0.5	Pass
161		5805	6	16	5.35		0.5	Pass
99% Ban	dwidth							
149		5745	6	17	7.39			Pass
153		5765	6	17	17.39			Pass
161		5805	6	17	7.39			Pass

Page 50 of 128

Report No.: FCC1706166-04

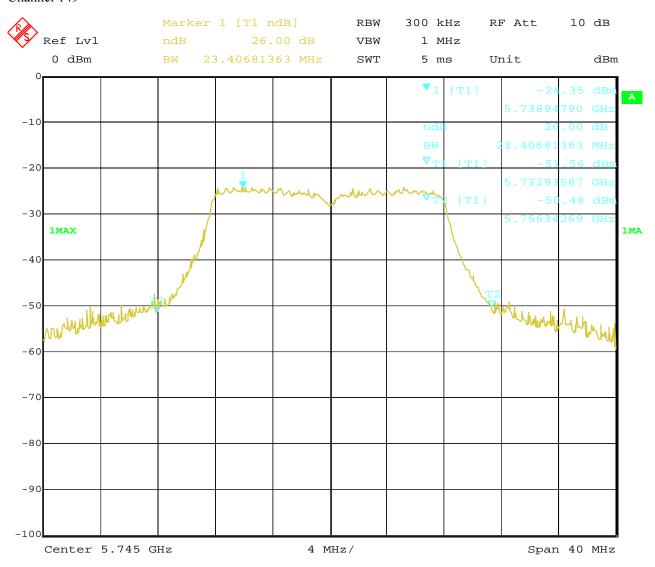
Date: 2017-07-10



Test Figure:

#### 26dB Bandwidth

### Channel 149



8.JUL.2017 18:27:30 Date:

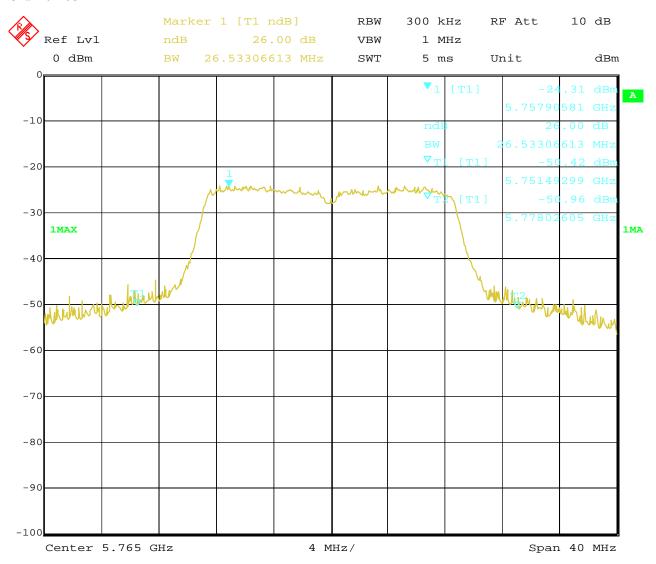
Page 51 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 153



8.JUL.2017 Date: 18:36:01

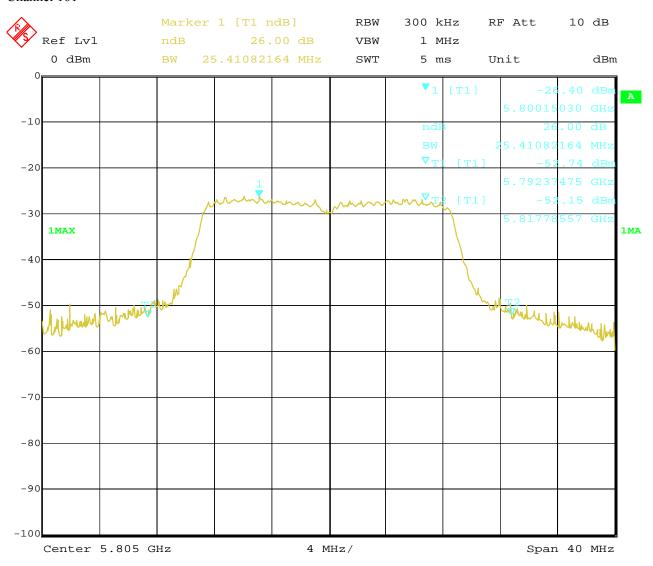
Page 52 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 161



8.JUL.2017 Date: 18:38:32

Page 53 of 128

Report No.: FCC1706166-04

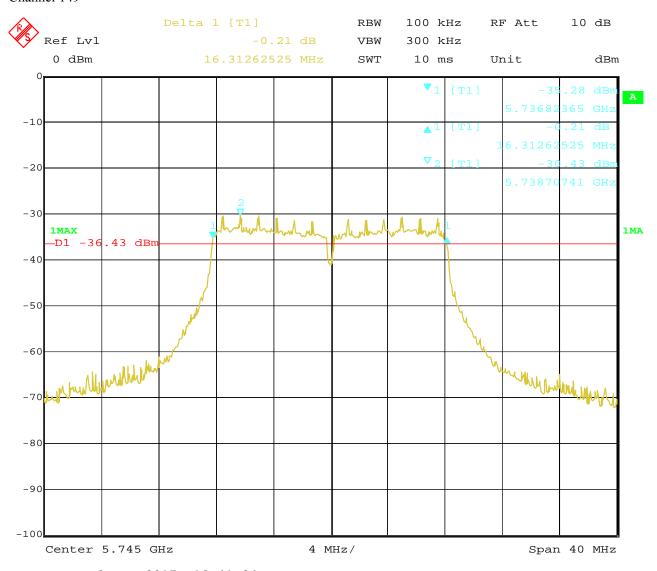
Date: 2017-07-10



Test Figure:

#### 6dB Bandwidth

### Channel 149



Date: 8.JUL.2017 12:41:24

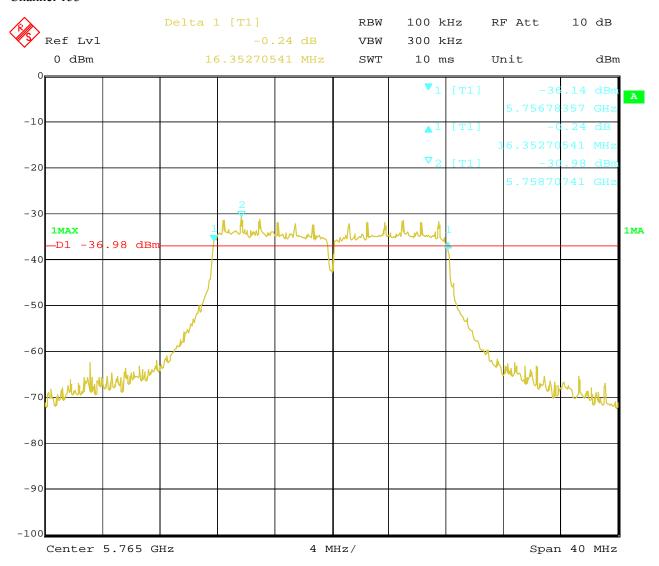
Page 54 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 153



8.JUL.2017 Date: 12:38:31

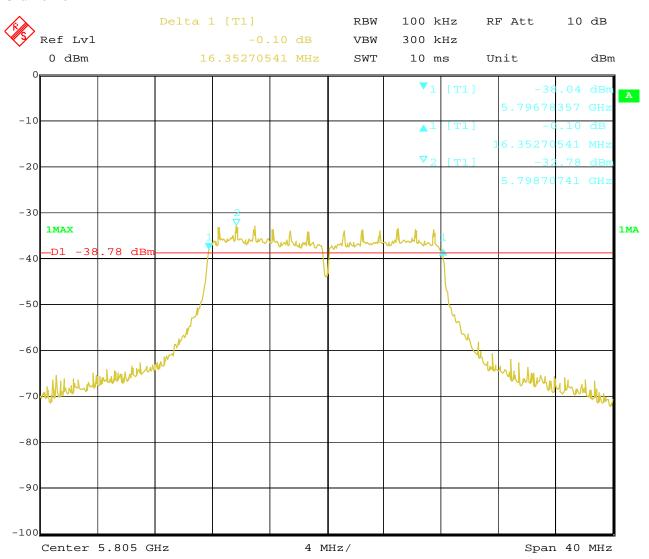
Page 55 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 161



8.JUL.2017 Date: 12:35:36

Page 56 of 128

Report No.: FCC1706166-04

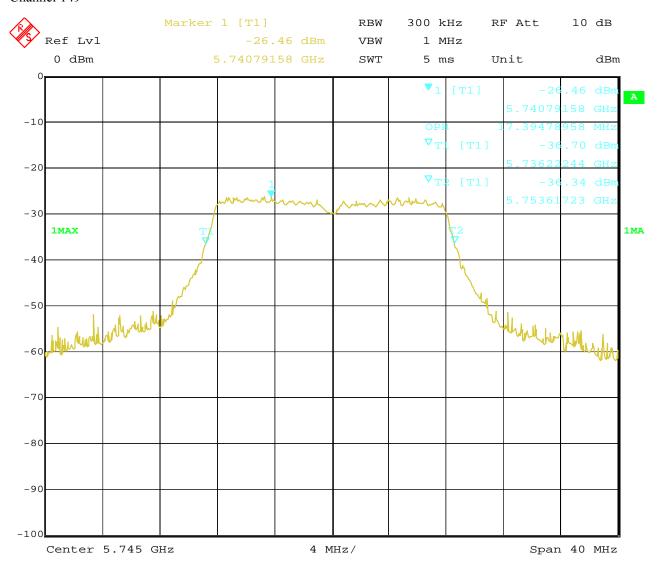
Date: 2017-07-10



Test Figure:

### 99% Bandwidth

### Channel 149



Date: 8.JUL.2017 12:13:19

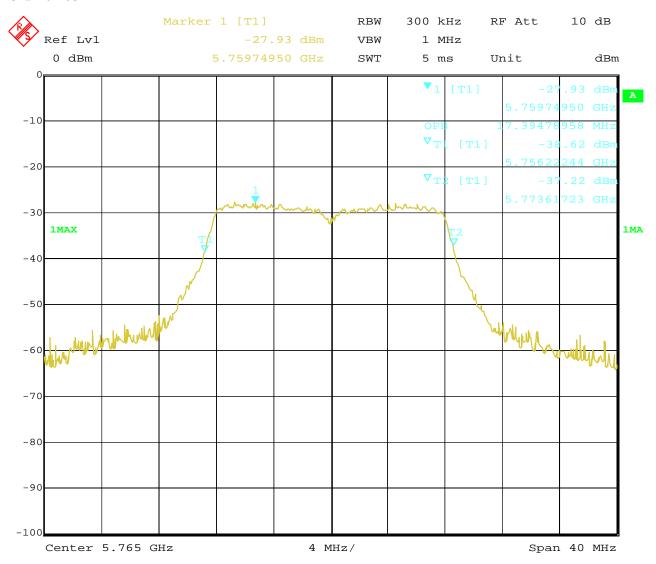
Page 57 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 153



8.JUL.2017 Date: 12:17:53

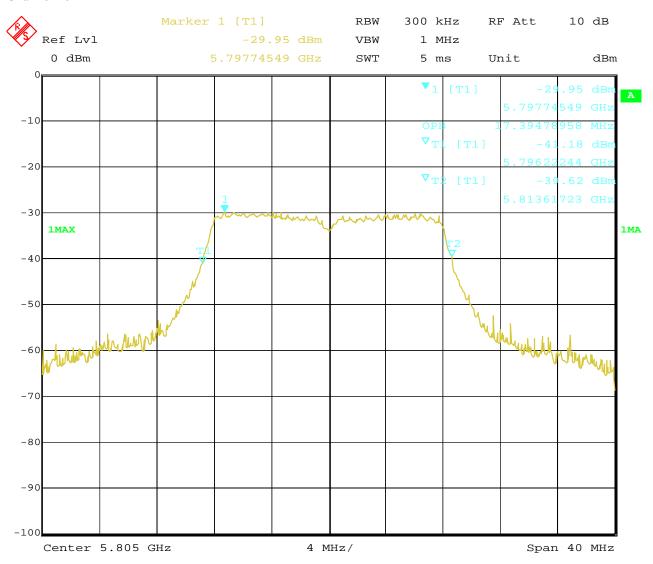
Page 58 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 161



8.JUL.2017 Date: 12:20:41

Page 59 of 128 Report No.: FCC1706166-04

Date: 2017-07-10



EUT		Adverti	sing Displa	yer	Model			JAR215-01		
Mode		802.			Input Voltage			120V~		
Temperat	ure	24	4 deg. C,		Humidity	nidity 56% RH		56% RH		
Channel		el Frequency (MHz)	Data Transfer Rate (Mbps)	Bandwidth (MHz)		Minimum Limit (MHz)				Pass/ Fail
26dB Baı	ndwidth									
36		5180	mcs0	22	.65			Pass		
40		5200	mcs0	22	.75			Pass		
48		5240	mcs0	22	.85			Pass		
99% Ban	dwidth									
36		5180	mcs0	18	.11			Pass		
40		5200	mcs0	18	20			Pass		
48		5240	mcs0	18	3.20			Pass		

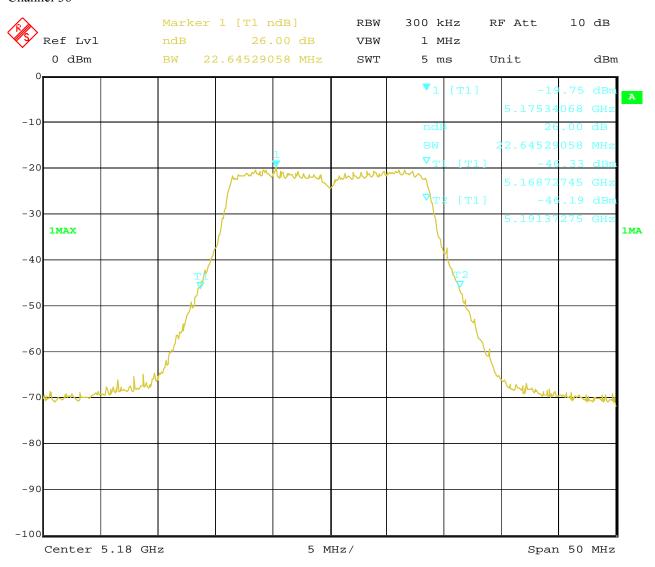
Date: 2017-07-10



Test Configure

#### 26dB Bandwidth

### Channel 36



22.MAY.2017 Date: 10:44:27

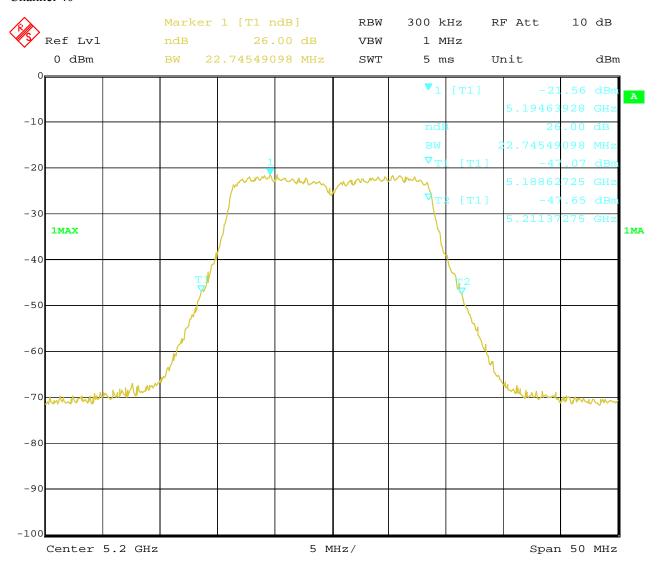
Page 61 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 40



22.MAY.2017 10:50:02 Date:

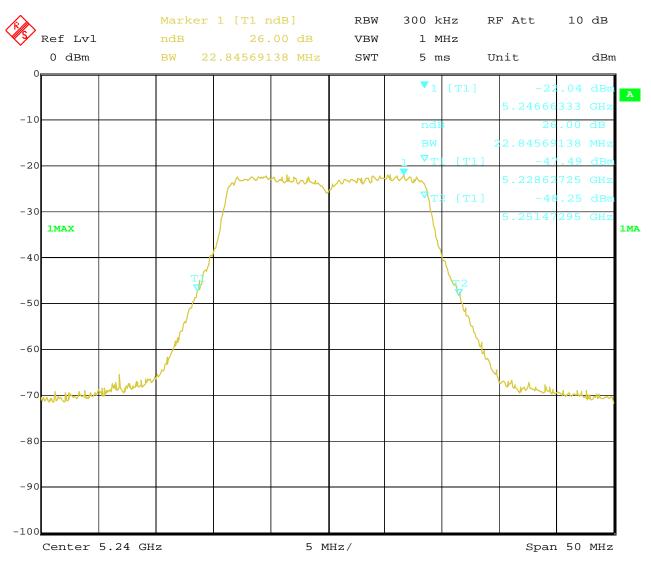
Page 62 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



#### Channel 48



22.MAY.2017 10:54:04 Date:

Page 63 of 128

Report No.: FCC1706166-04

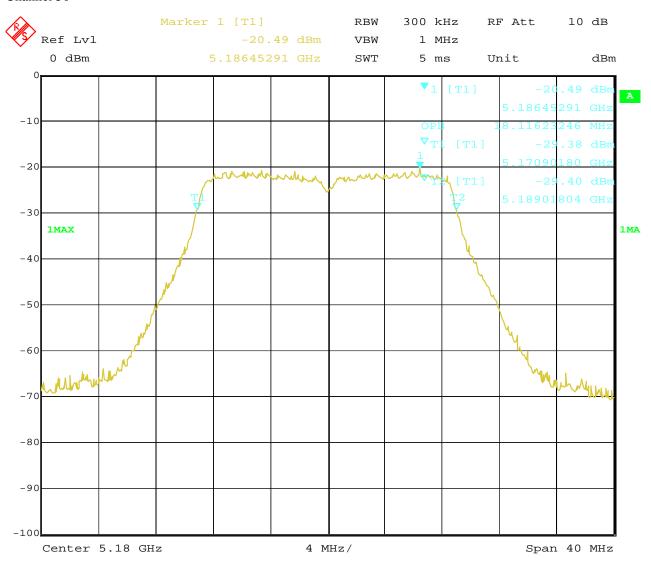
Date: 2017-07-10



Test Configure

### 99% Bandwidth

### Channel 36



Date: 8.JUL.2017 18:41:31

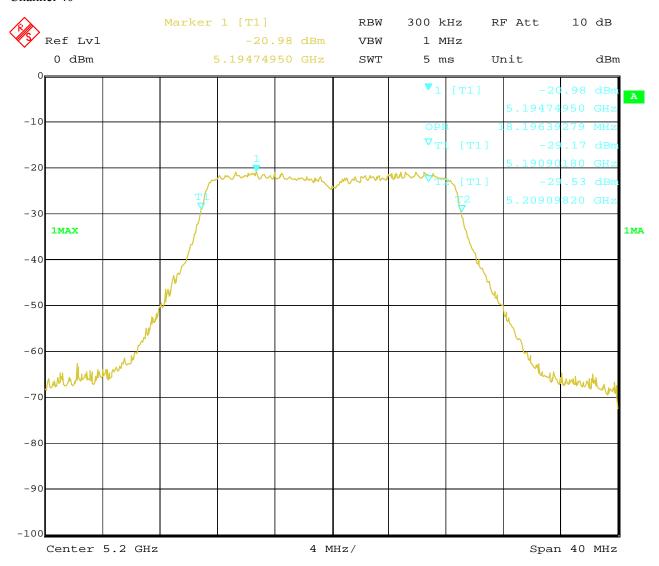
Page 64 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



#### Channel 40



8.JUL.2017 18:39:47 Date:

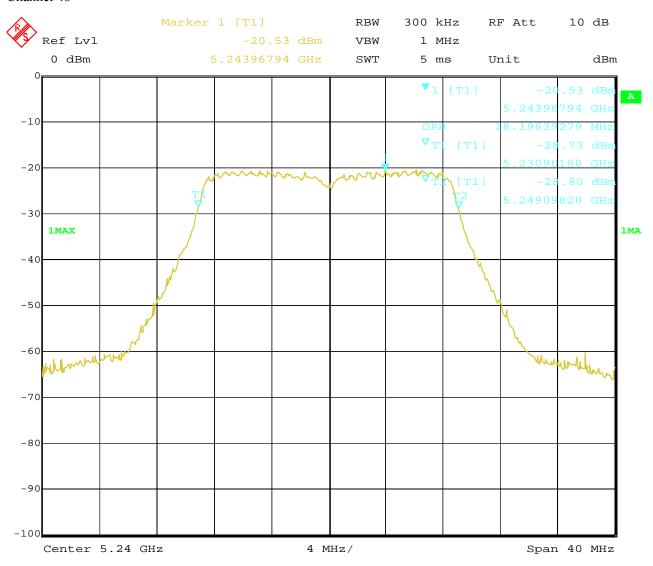
Page 65 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



#### Channel 48



8.JUL.2017 18:37:27 Date:

Page 66 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



EUT		Adverti	sing Displa	yer	Model			JAR215-01
Mode		802.11n HT20 Input Voltage			120V~			
Temperati	ure	24	4 deg. C,		Humidity	I	56% RH	
Channel		el Frequency (MHz)	Data Transfer Rate (Mbps)		dwidth Minimum Limit (MHz) (MHz)		Pass/ Fail	
26dB Bar	ndwidth							
149		5745	6	22	69			Pass
153		5765	6	23	.00			Pass
161		5805	6	23	.00			Pass
6dB Band	dwidth							
149		5745	6	17	.27		0.5	Pass
153		5765	6	17	7.60		0.5	Pass
161		5805	6	17	.31		0.5	Pass
99% Ban	dwidth							
149		5745	6	18	.20			Pass
153		5765	6	18	.20			Pass
161		5805	6	18	.20			Pass

Page 67 of 128

Report No.: FCC1706166-04

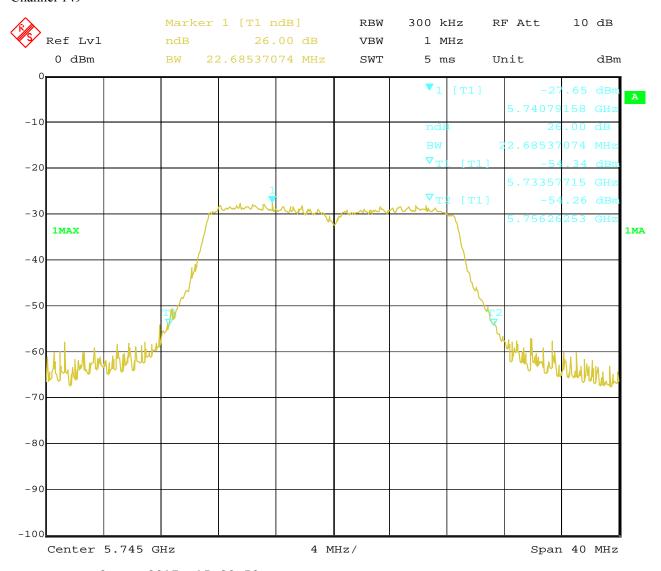
Date: 2017-07-10



Test Configure

#### 26dB Bandwidth

### Channel 149



Date: 8.JUL.2017 15:28:50

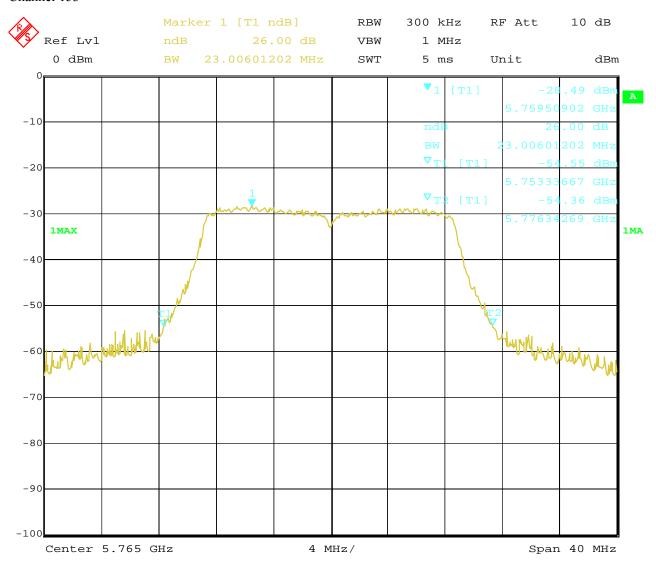
Page 68 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 153



8.JUL.2017 Date: 15:32:49

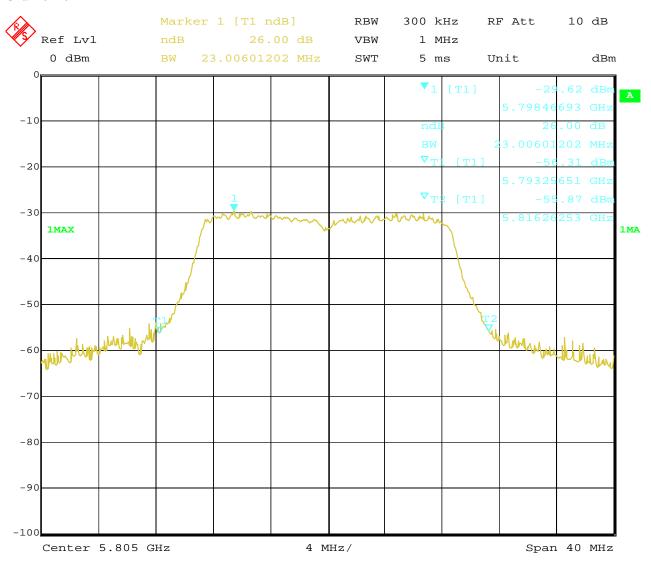
Page 69 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 161



8.JUL.2017 Date: 15:40:04

Page 70 of 128

Report No.: FCC1706166-04

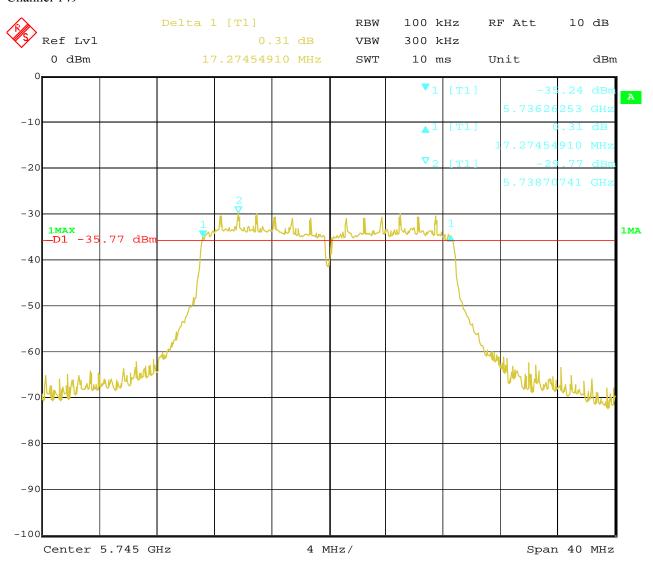
Date: 2017-07-10



Test Configure

#### 6dB Bandwidth

### Channel 149



Date: 8.JUL.2017 15:03:17

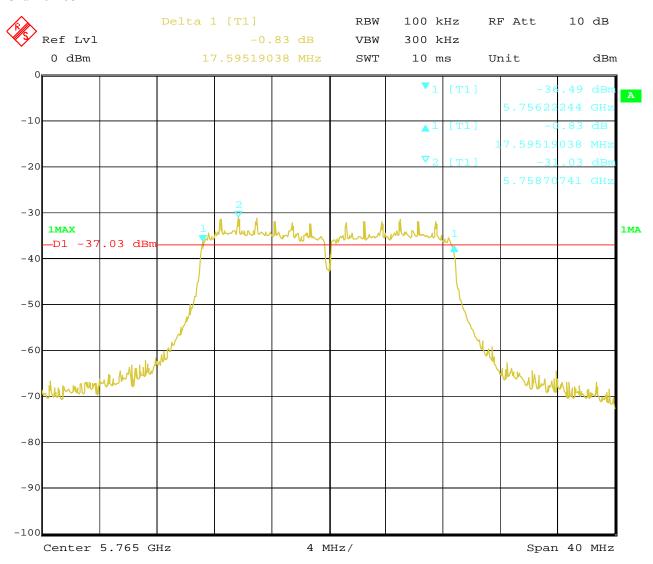
Page 71 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 153



8.JUL.2017 Date: 15:09:11

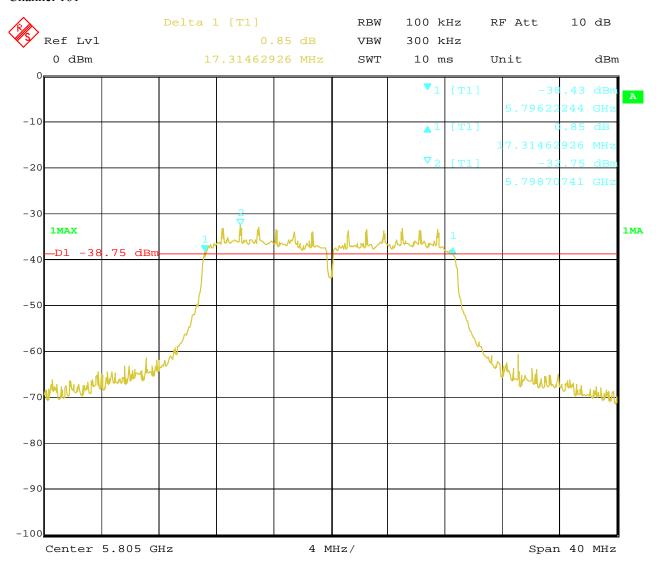
Page 72 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 161



8.JUL.2017 Date: 15:14:10

Page 73 of 128

Report No.: FCC1706166-04

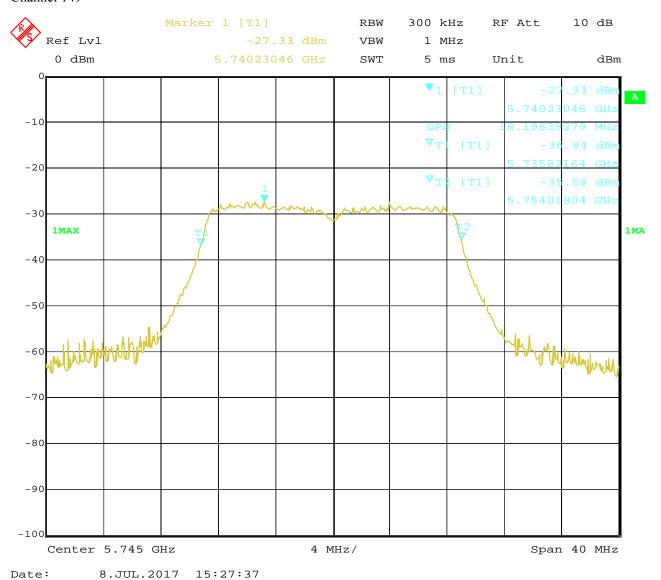
Date: 2017-07-10



### Test Configure

### 99% Bandwidth

### Channel 149



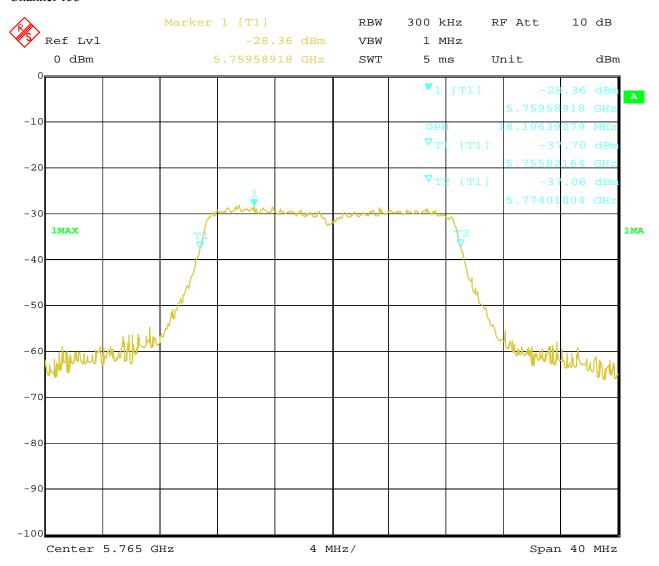
Page 74 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 153



8.JUL.2017 Date: 15:20:13

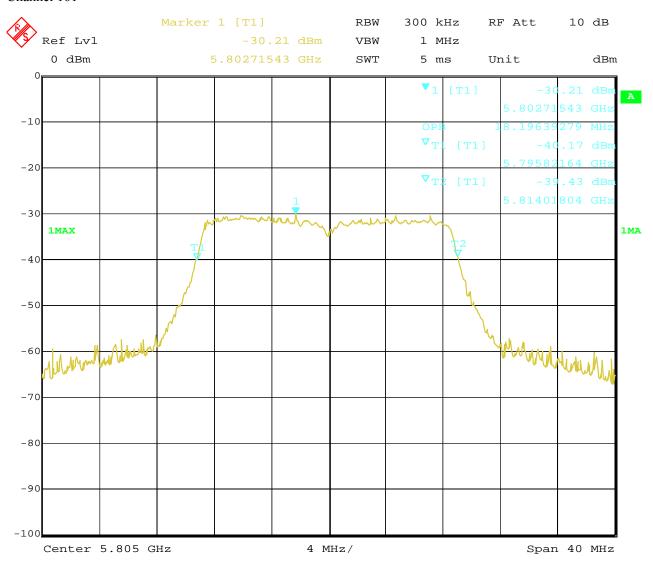
Page 75 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 161



8.JUL.2017 Date: 15:16:15

Page 76 of 128 Report No.: FCC1706166-04

Date: 2017-07-10



EUT		Adverti	sing Displa	yer	Model			JAR215-01
Mode		802	.11n HT40		Input Voltage			120V~
Temperat	ure	24 deg. C,			Humidity			56% RH
Channel	Channel Frequency (MHz)		Data Transfer Rate (Mbps)	Bandwidth (MHz)		Minimum Limit (MHz)		Pass/ Fail
26dB Baı	ndwidth							
38		5190	mcs0	43	.13			Pass
46		5230	mcs0	43	.61	61		Pass
						l		
99% Ban	dwidth							
38		5190	mcs0	36	.39			Pass
46		5230	mcs0	36	.55 -			Pass

Page 77 of 128

Report No.: FCC1706166-04

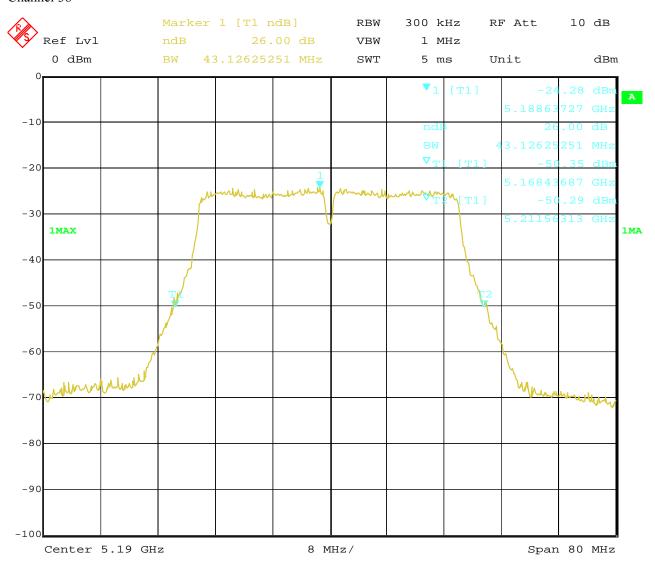
Date: 2017-07-10



Test Configure

#### 26dB Bandwidth

### Channel 38



Date: 8.JUL.2017 11:47:55

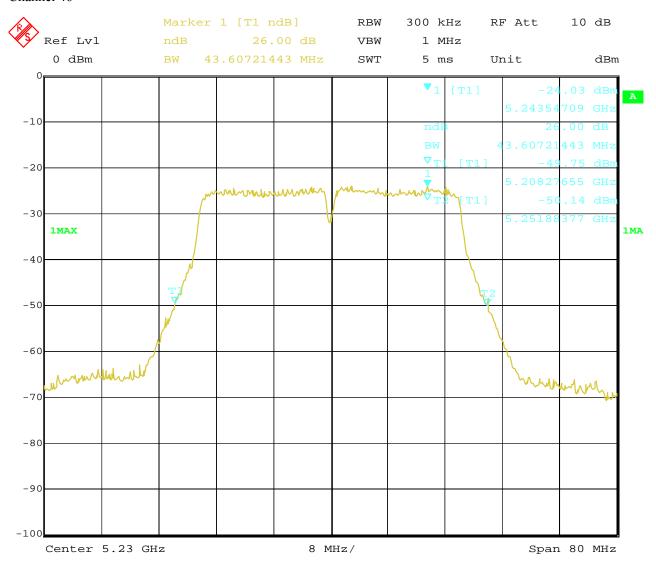
Page 78 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 46



8.JUL.2017 11:51:16 Date:

Page 79 of 128

Report No.: FCC1706166-04

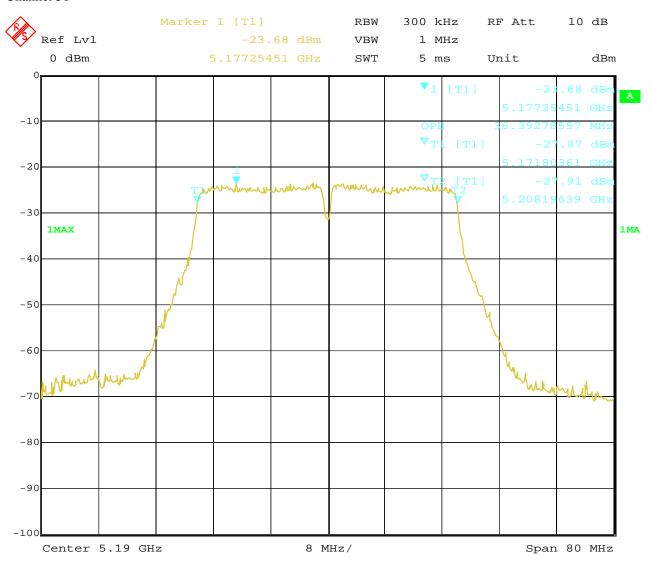
Date: 2017-07-10



Test Configure

### 99% Bandwidth

### Channel 38



Date: 8.JUL.2017 11:46:21

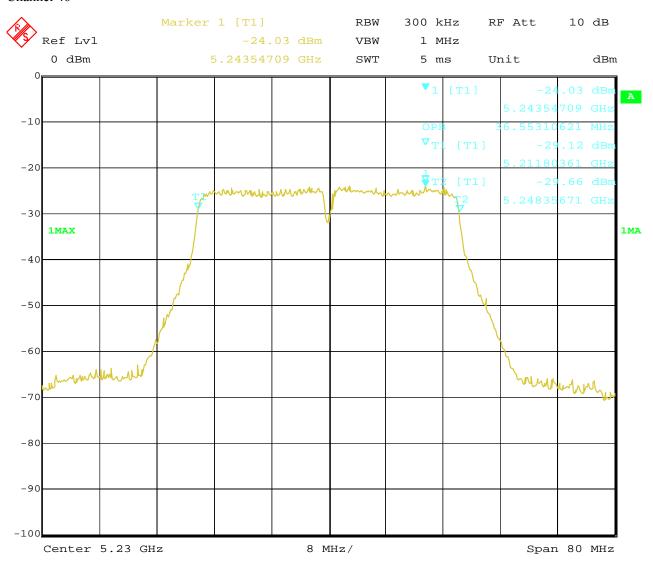
Page 80 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 46



8.JUL.2017 11:51:30 Date:

Page 81 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



EUT		Adverti	sing Displa	yer	Model			JAR215-01	
Mode		802	.11n HT40		Input Volt	tage		120V~	
Temperati	ure	24	4 deg. C,		Humidity			56% RH	
Channel	Channel Frequency (MHz)		Data Transfer Rate (Mbps)	Bandwidth (MHz)		Minimum Limit (MHz)		Pass/ Fail	
26dB Bandwidth									
151		5755	mcs0	43	.29			Pass	
159		5795	mcs0	44.09				Pass	
6dB Band	dwidth								
151		5755	mcs0	36.07		0.5		Pass	
159		5795	mcs0	35	.91		0.5	Pass	
99% Ban	dwidth								
151		5755	mcs0	36	.55	_		Pass	
159		5795	mcs0	36	.55			Pass	

Page 82 of 128

Report No.: FCC1706166-04

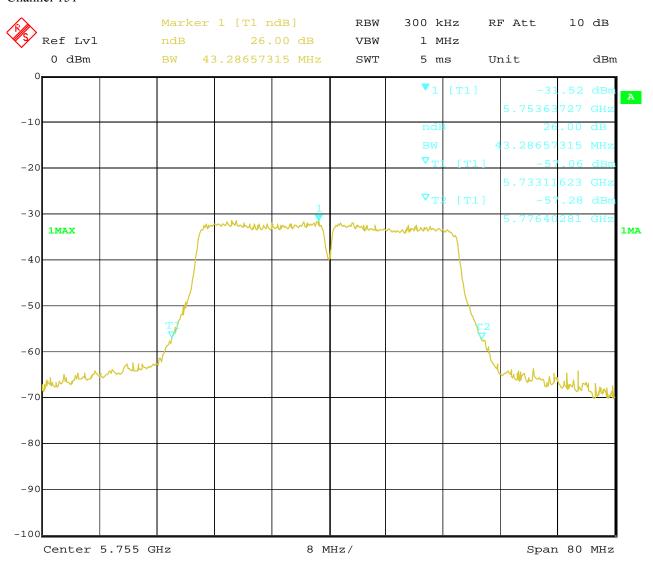
Date: 2017-07-10



Test Configure

#### 26dB Bandwidth

### Channel 151



Date: 8.JUL.2017 15:45:41

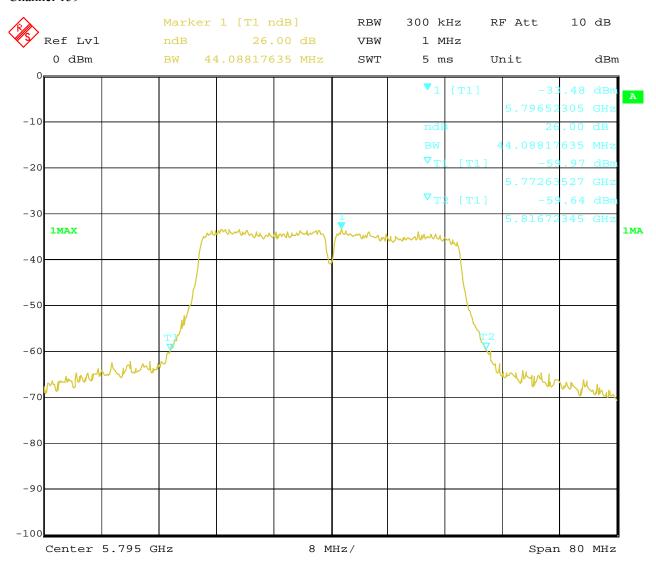
Page 83 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 159



8.JUL.2017 Date: 15:51:01

Page 84 of 128

Report No.: FCC1706166-04

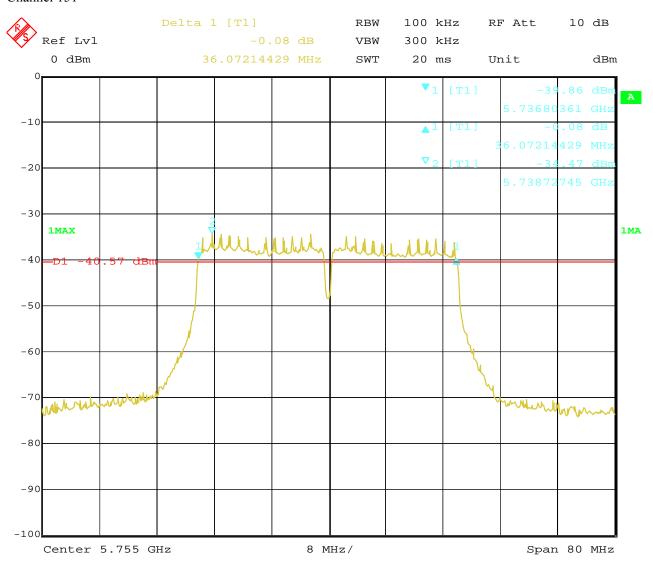
Date: 2017-07-10



Test Configure

#### 6dB Bandwidth

### Channel 151



8.JUL.2017 Date: 16:02:42

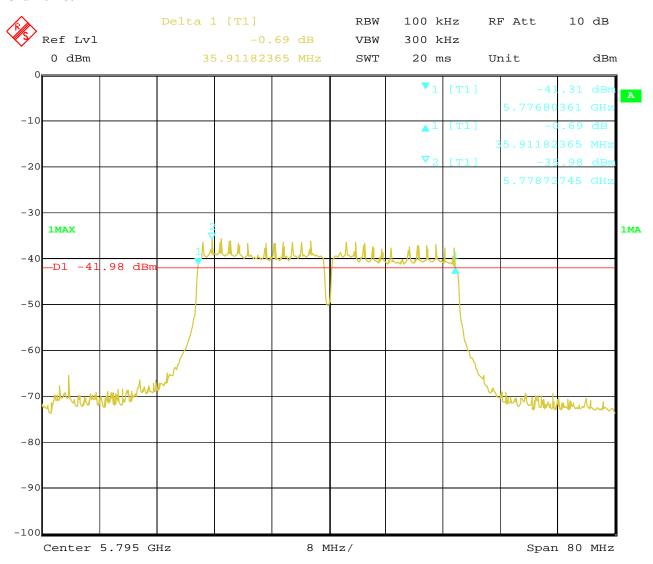
Page 85 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 159



8.JUL.2017 Date: 16:07:34

Page 86 of 128

Report No.: FCC1706166-04

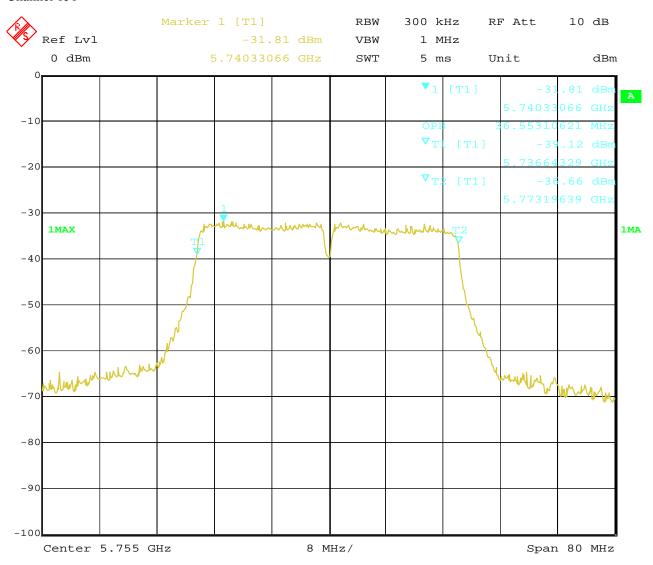
Date: 2017-07-10



Test Configure

### 99% Bandwidth

### Channel 151



Date: 8.JUL.2017 15:57:41

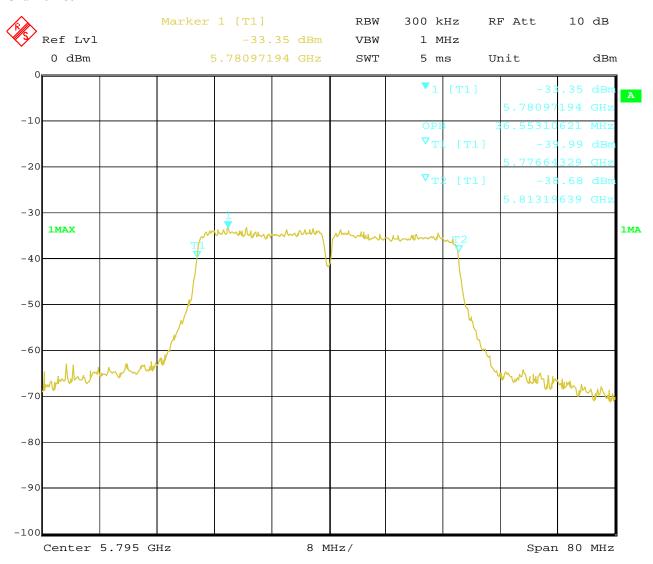
Page 87 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### Channel 159



8.JUL.2017 Date: 15:55:35

Page 88 of 128 Report No.: FCC1706166-04

Date: 2017-07-10



EUT		Adverti	Advertising Displayer			Model		JAR215-01	
Mode		802.11ac VHT80			Input Voltage			120V~	
Temperature		24 deg. C,			Humidity			56% RH	
Channel		el Frequency (MHz)			Pass/ Fail				
26dB Bar	26dB Bandwidth								
42		5210	23.9	83	5.44			Pass	
99% Ban	99% Bandwidth								
42		5210	23.9	75	.75			Pass	

Page 89 of 128

Report No.: FCC1706166-04

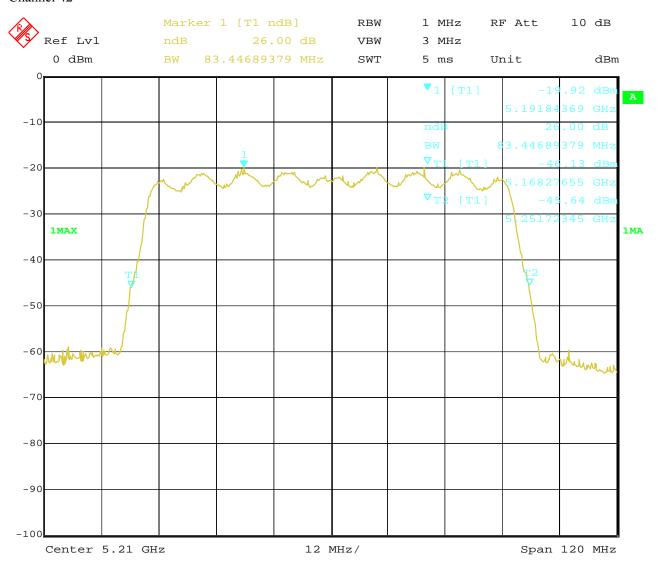
Date: 2017-07-10



Test Configure

#### 26dB Bandwidth

### Channel 42



Date: 8.JUL.2017 12:12:08

Page 90 of 128

Report No.: FCC1706166-04

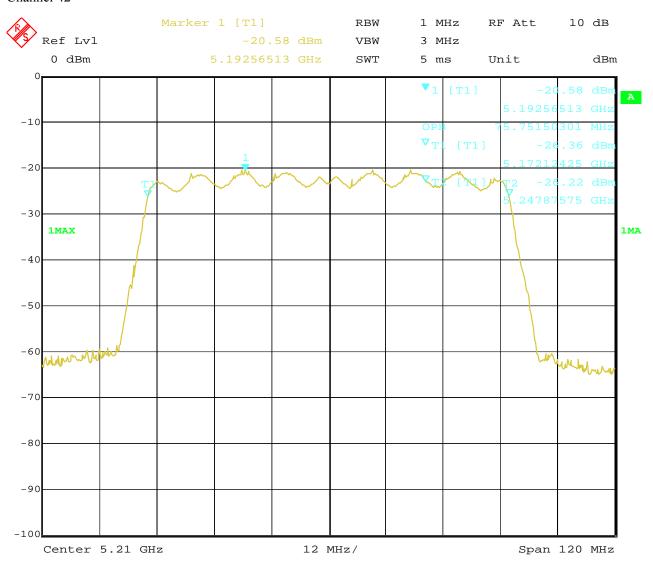
Date: 2017-07-10



## Test Configure

### 99% Bandwidth

### Channel 42



8.JUL.2017 12:08:47 Date:

Page 91 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



EUT		Adverti	sing Displa	yer	Model		J	AR215-01	
Mode		802.1	1ac VHT80	)	Input Volt	tage		120V~	
Temperati	ure	24	4 deg. C,		Humidity			56% RH	
Channel		el Frequency (MHz)	Data Transfer Rate (Mbps)		width Hz)		num Limit MHz)	Pass/ Fail	
26dB Bandwidth									
155	5775		23.9	82.73				Pass	
6dB Band	dwidth								
155		5775	23.9	75	.27	0.5		Pass	
99% Ban	99% Bandwidth								
155		5775	23.9	75	.75			Pass	

Page 92 of 128

Report No.: FCC1706166-04

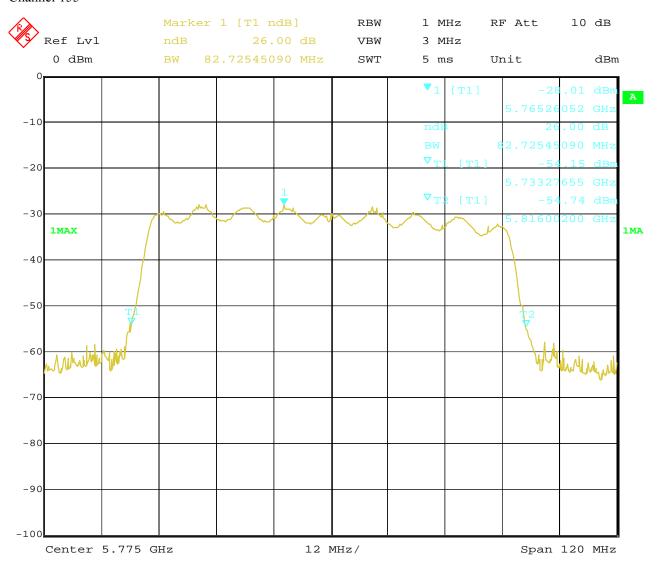
Date: 2017-07-10



Test Configure

#### 26dB Bandwidth

### Channel 155



8.JUL.2017 15:34:09 Date:

Page 93 of 128

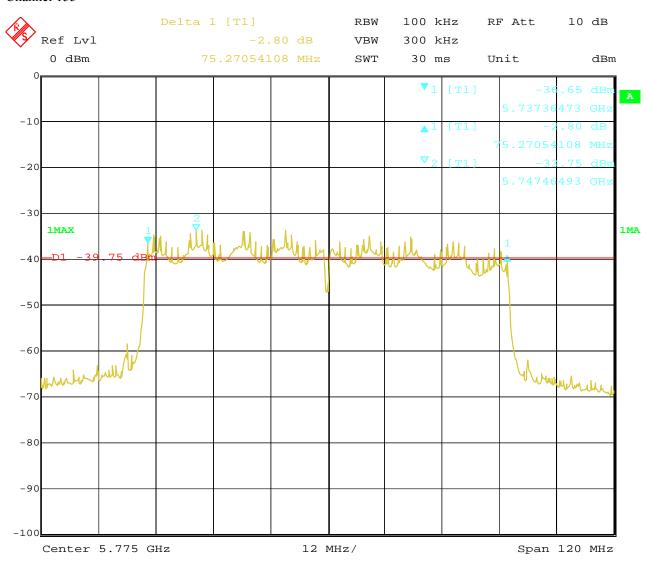
Report No.: FCC1706166-04

Date: 2017-07-10



#### 6dB Bandwidth

#### Channel 155



8.JUL.2017 15:25:23 Date:

Page 94 of 128

Report No.: FCC1706166-04

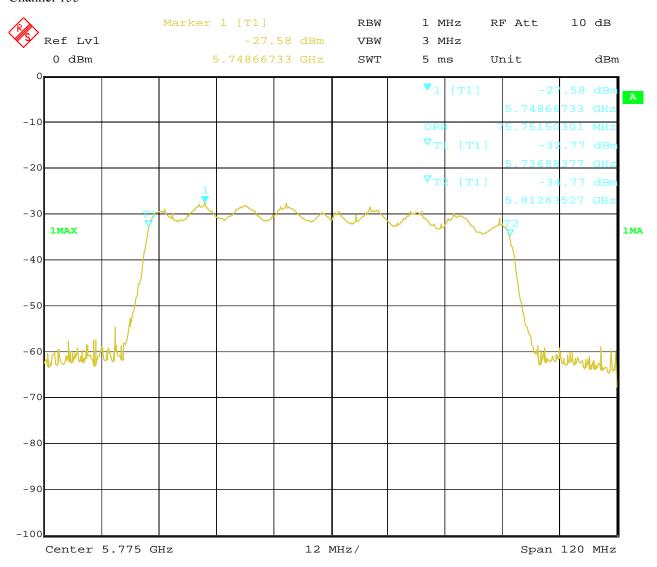
Date: 2017-07-10



Test Configure

### 99% Bandwidth

### Channel 155



8.JUL.2017 12:18:52 Date:

Page 95 of 128

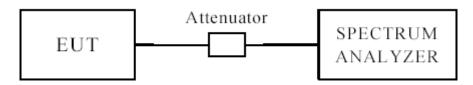
Report No.: FCC1706166-04

Date: 2017-07-10



#### 8.0 Peak Transmit Power Measurement

# 8.1 Test Setup



### 8.2 Limits of Peak Transmit Power Measurement

Operation Band		EUT Category	Limit		
		Outdoor Access Point	1 Watt (30 dBm) ≤ (Max. e.i.r.p 125mW		
			(21 dBm) at any elevation angle above 30		
			degrees as measured from the horizon)		
U-NII-1		Fixed point-to-point Access Point 1 Watt (30 dBm)			
	Indoor Access Point 1 Watt (30 dBm)		1 Watt (30 dBm)		
	√	Mobile and Portable client device	250mW (24 dBm)		
U-NII-2A			250mW (24 dBm) or 11 dBm+10 log B*		
U-NII-2C			250mW (24 dBm) or 11 dBm+10 log B*		
U-NII-3			1 Watt (30 dBm)		

Note: Where B is the 26dB emission bandwidth in MHz.

### **8.3 Test Procedure**

The RF power output was measured with a Spectrum analyzer connected to the RF Antenna connector (conducted measurement) while EUT was operating in transmit mode at the appropriate centre frequency.

Note: the average power was measured

Page 96 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



#### **8.4Test Results**

EU'	T	Advertising Displayer	Model		JAR215-01	
Mod	de	802.11a	Input Voltage	120V~		
Temper	rature	24 deg. C,	Humidity		56% RH	
Channel	Frequency (MHz)		Average Power Output (dBm)		Limit (dBm)	Pass/ Fail
36		5180	5.87		24	Pass
40		5200	5.31		24	Pass
48		5240	4.18		24	Pass
149		5745	-3.04		30	Pass
153		5765	-2.67		30	Pass
161		5805	-1.44		30	Pass

Note: 1. At finial test to get the worst-case emission at 6Mbps for CH36, CH40, CH48, CH149, CH153 and CH161

- 2. The result basic equation calculation as follow: Average Power Output = AV Power Reading + Cable loss + Attenuator
- 3. The worse case was recorded

Report No.: FCC1706166-04 Page 97 of 128

Date: 2017-07-10



EU'	T	Advertising Displayer	Model		JAR215-01		
Mod	de	802.11n HT20	Input Voltage		120V~		
Temperature		24 deg. C,	Humidity		56% RH		
Channel	Frequency (MHz)		Average Power Output (dBm)		Limit (dBm)	Pass/ Fail	
36		5180	5.40		24	Pass	
40		5200	4.89		24	Pass	
48		5240	3.72		24	Pass	
149		5745	-3.02		30	Pass	
153		5765	-2.97		30	Pass	
161	5805		-1.20		30	Pass	

Note: 1. At finial test to get the worst-case emission at mcs0 (6.5Mbps) for CH36, CH40, CH48, CH149, CH153 and CH161

- 2. The result basic equation calculation as follow: Average Power Output = AV Power Reading + Cable loss + Attenuator
- 3. The worse case was recorded

Report No.: FCC1706166-04

Date: 2017-07-10



EU	T	Advertising Displayer	Model		JAR215-01	
Mod	de	802.11n HT40	Input Voltage	120V~		
Temper	rature	24 deg. C,	Humidity	56% RH		
Channel	Frequency		Average	Power	Limit	Pass/ Fail
	(MHz)		Output (dBm)		(dBm)	
38		5190	4.87		24	Pass
46	5230		3.53		24	Pass
151	5755		-3.16		30	Pass
159	5795		-2.05		30	Pass

Note: 1. At finial test to get the worst-case emission at mcs0 (13.5Mbps) for CH38, CH46, CH151, CH159 and CH161

2. The result basic equation calculation as follow:

Average Power Output = AV Power Reading + Cable loss + Attenuator

3. The worse case was recorded

EU	EUT Advertising Displayer		Model		JAR215-01	
Mod	Mode 802.11ac		Input Voltage	120V~		
Temper	rature	24 deg. C,	Humidity	56% RH		
Channel	Frequency		Average Power		Limit	Pass/ Fail
		(MHz)	Output (dBm)		(dBm)	
42		5210	4.90		24	Pass
155		5775	-1.75		30	Pass

Note: 1. At finial test to get the worst-case emission at 23.9Mbps for CH42 and CH155

- 2. The result basic equation calculation as follow:

  Average Power Output = AV Power Reading + Cable loss + Attenuator
- 3. The worse case was recorded

Page 99 of 128

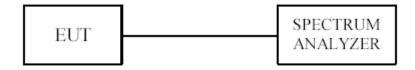
Report No.: FCC1706166-04

Date: 2017-07-10



# 9. Power Power Spectral Density Measurement

# 9.1 Test Setup



# 9.2 Limits of Power Spectral Density Measurement

Operation Band		EUT Category	Limit	
		Outdoor Access Point		
	Fixed point-to-point Access Point		17dBm/MHz	
U-NII-1	Indoor Access Point			
	<b>√</b>	Mobile and Portable client device	11dBm/MHz	
U-NII-2A			11dBm/MHz	
U-NII-2C			11dBm/MHz	
U-NII-3			30dBm/500kHz	

# 9.3 Test Procedure

- 1. The EUT was directly connected to the spectrum analyzer
- 2. Set the RBW = 1MHz.
- 3. Set the VBW = 3MHz.
- 4. Set the span to encompass the entire emissions bandwidth (EBW) of the signal
- 5. Detector = RMS
- 6. Sweep time = auto couple.
- 7. Trace mode =  $\max$  hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level.

Page 100 of 128 Report No.: FCC1706166-04

Date: 2017-07-10



## 9.4Test Result

EUT		Advertising Displayer	Model		JAR215-01	
Mode		802.11a 6Mbps	Input Voltage		120V~	
Temperati	ure	24 deg. C,	Humidity	56% RH		
Channel	Frequency		Final Power Sp	ectral Density	Limit	Pass/ Fail
	(MHz)		(dB	(dBm)		
36	5180		-6.	-6.61		Pass
40		5200	-6.	-6.61		Pass
48		5240	-7.·	-7.42		Pass
149	5745		-16	-16.05		Pass
153	5765		-16	-16.44		Pass
161	•	5805	-15	-15.70		Pass

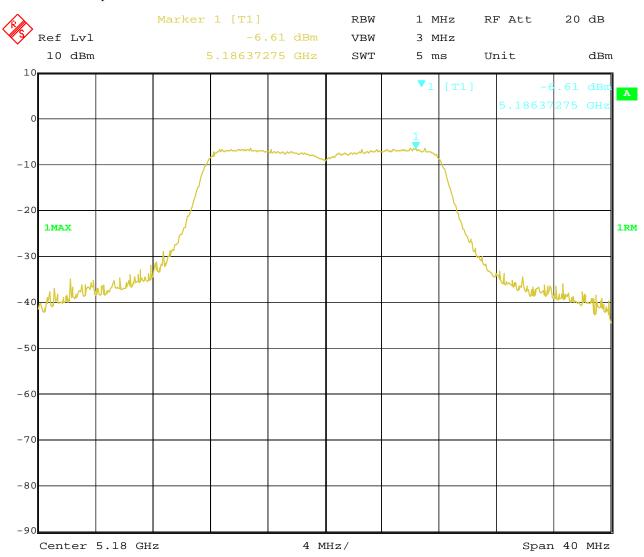
Page 101 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



# 9.5 Plots of Power Spectral Density Measurement

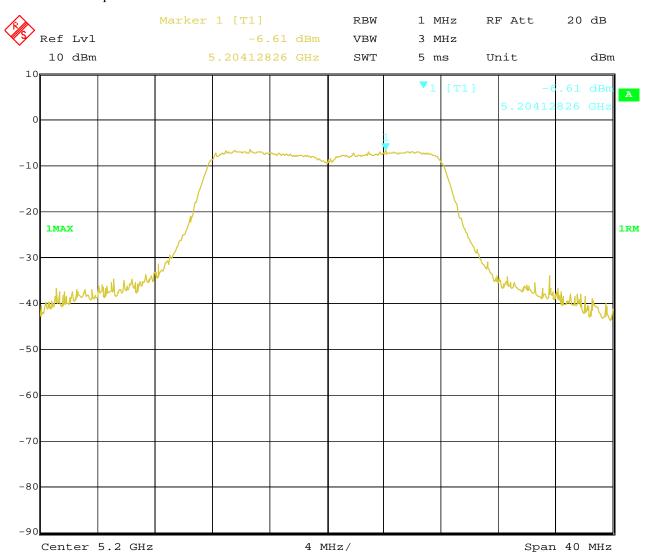


Page 102 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



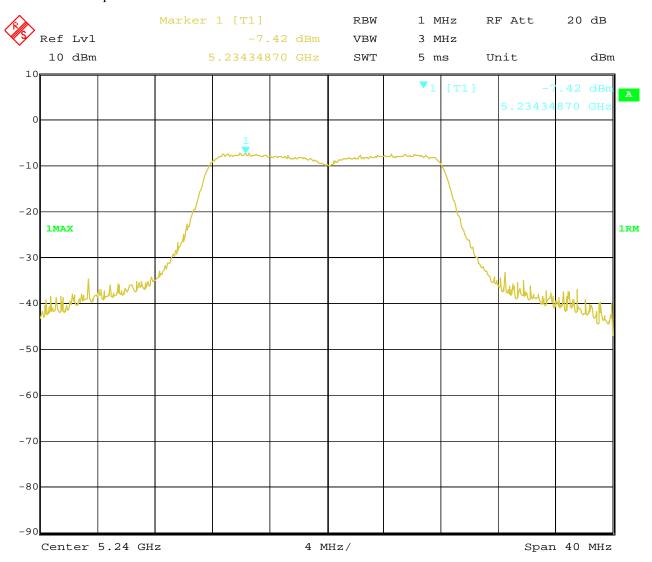


Page 103 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



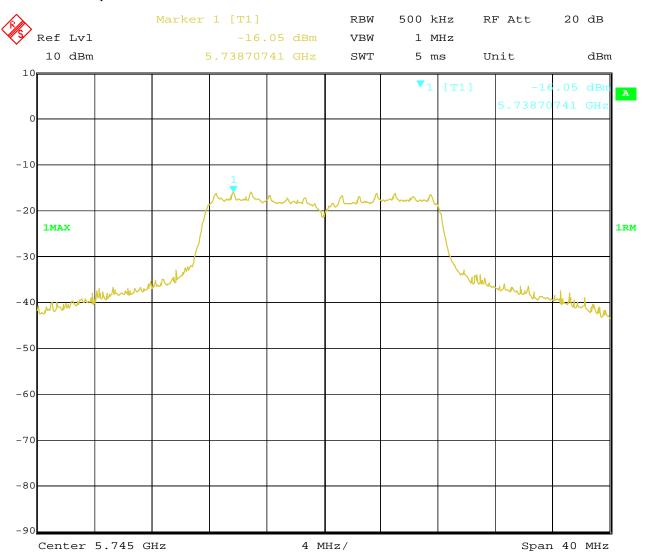


Page 104 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



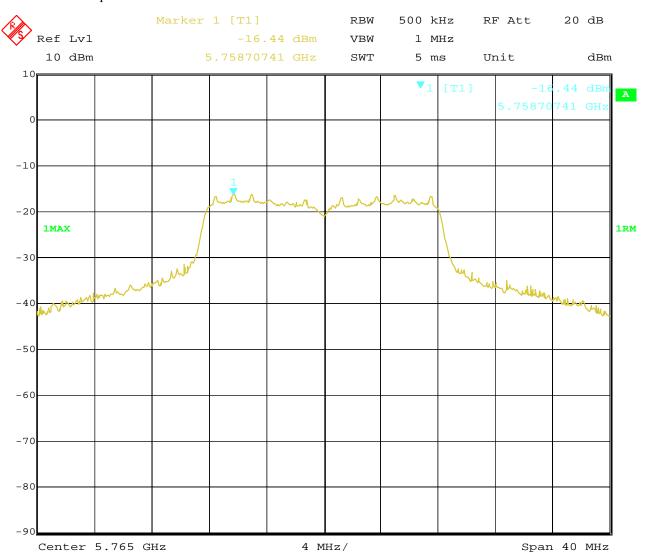


Page 105 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



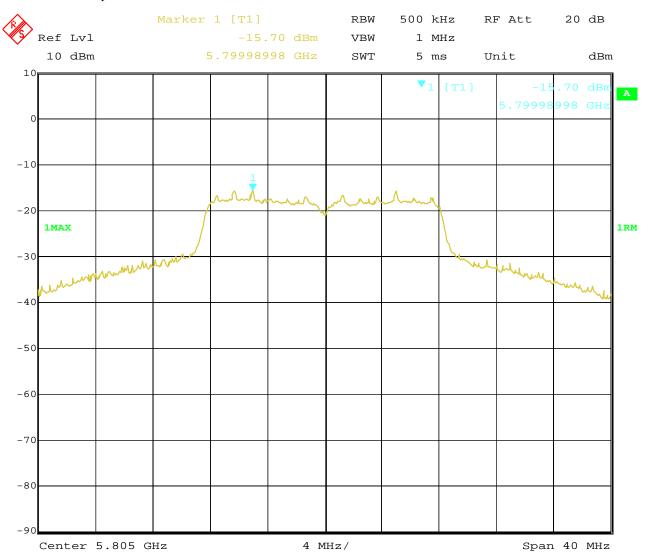


Page 106 of 128

Report No.: FCC1706166-04

Date: 2017-07-10





Page 107 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



EUT	Advertising Displayer		Model		JAR215-01	
Mode	1	802.11n HT20 mcs0	Input Voltage		120V~	
Temperat	ture	24 deg. C,	Humidity	56% RH		
Channel	Frequency		Final Power Sp	ectral Density	Limit	Pass/ Fail
	(MHz)		(dB	(dBm)		
36	5180		-6.	-6.83		Pass
40		5200	-7.:	-7.28		Pass
48		5240	-7.	-7.78		Pass
149	5745		-15	-15.71		Pass
153	5765		-15	-15.96		Pass
161		5805	-16	-16.13		Pass

Page 108 of 128

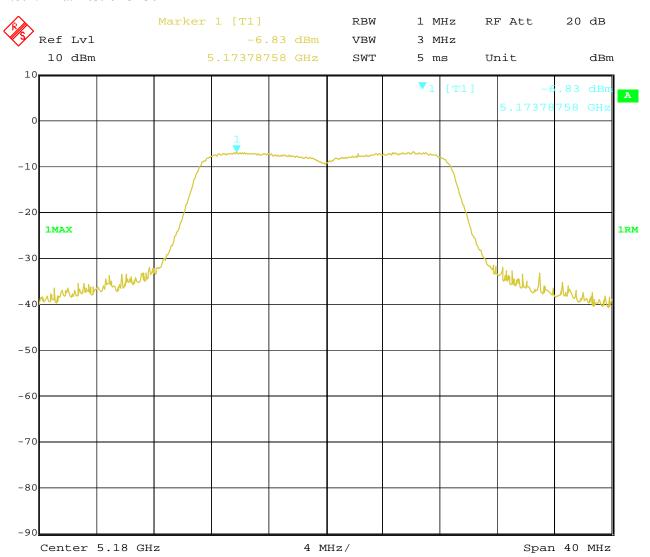
Report No.: FCC1706166-04

Date: 2017-07-10



#### **Test Plots**

1.802.11n at mcs0 of CH36

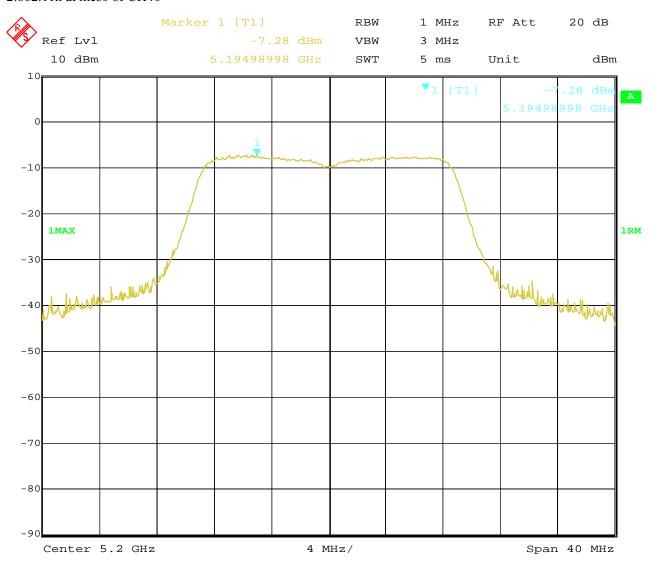


Page 109 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



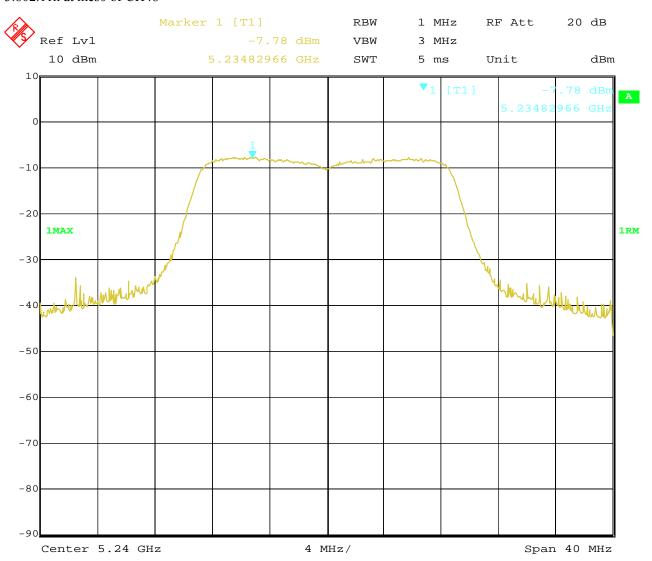


Page 110 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



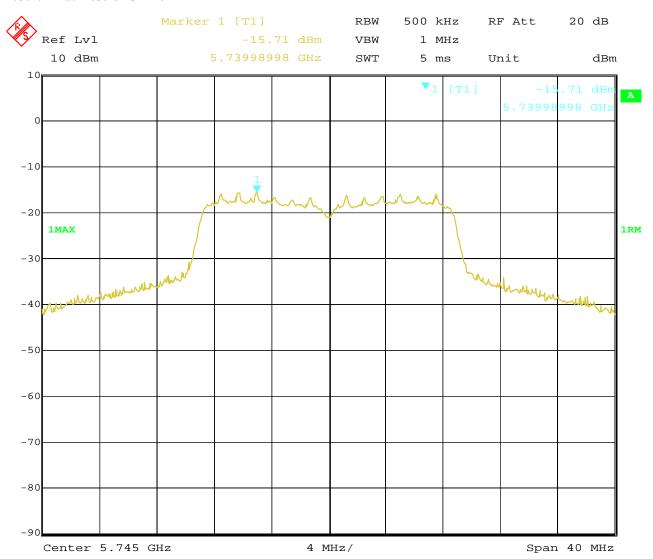


Page 111 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



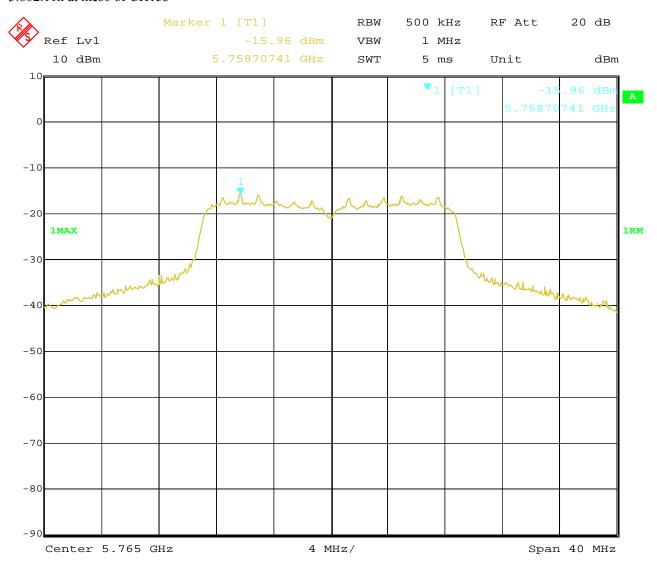


Page 112 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



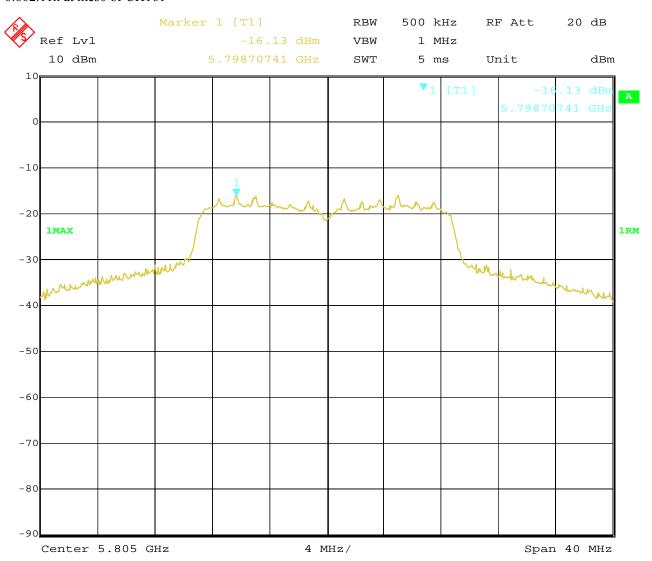


Page 113 of 128

Report No.: FCC1706166-04

Date: 2017-07-10





Page 114 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



EUT		Advertising Displayer	Model	JAR215-01		
Mode		802.11n HT40 mcs0	Input Voltage	120V~		
Temperature		24 deg. C,	Humidity	56% RH		
Channel	Frequency		Final Power Sp	ectral Density	Limit	Pass/ Fail
	(MHz)		(dB	m)	(dBm)	
38	5190		-10	.99	11	Pass
46	5230		-11.	.28	11	Pass
151	5755		-19	.41	30	Pass
159	5795		-19	.61	30	Pass

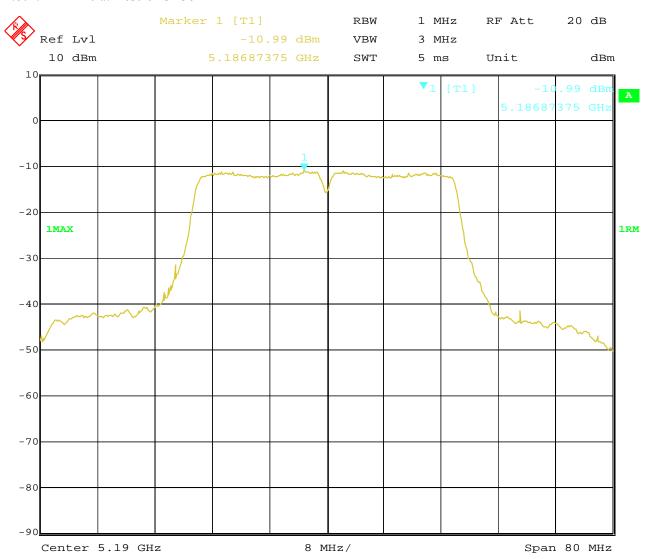
Page 115 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



#### **Test Plots**

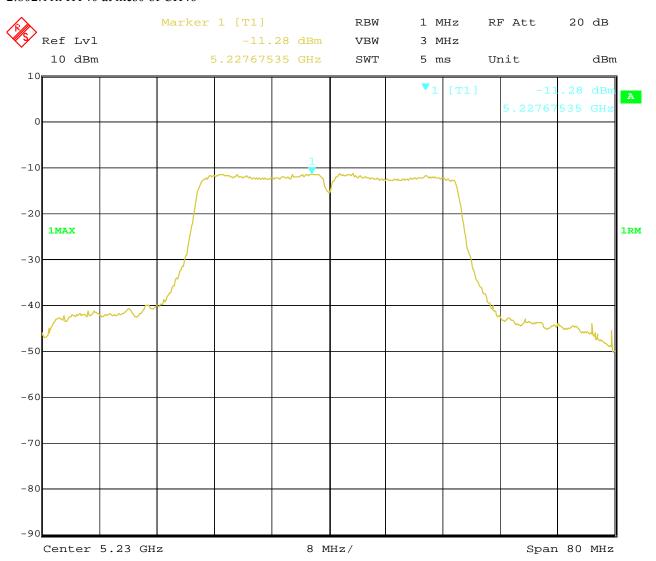


Page 116 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



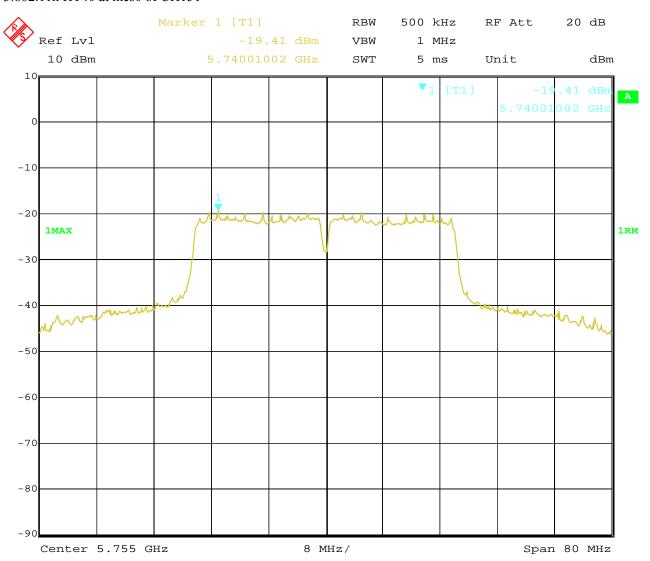


Page 117 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



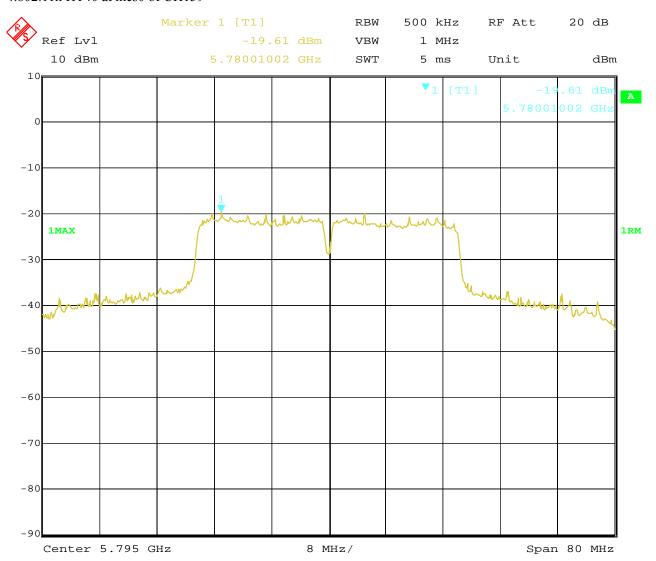


Page 118 of 128

Report No.: FCC1706166-04

Date: 2017-07-10





Page 119 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



EUT		Advertising Displayer	Model	JAR215-01		
Mode		802.11ac VHT80	Input Voltage	120V~		
		23.9Mbps				
Temperature		24 deg. C,	Humidity	56% RH		
Channel		Frequency	Final Power Sp	ectral Density	Limit	Pass/ Fail
	(MHz)		(dB	m)	(dBm)	
42	42 5210		-12.	.56	11	Pass
155 5775		-19.	.86	30	Pass	

Page 120 of 128

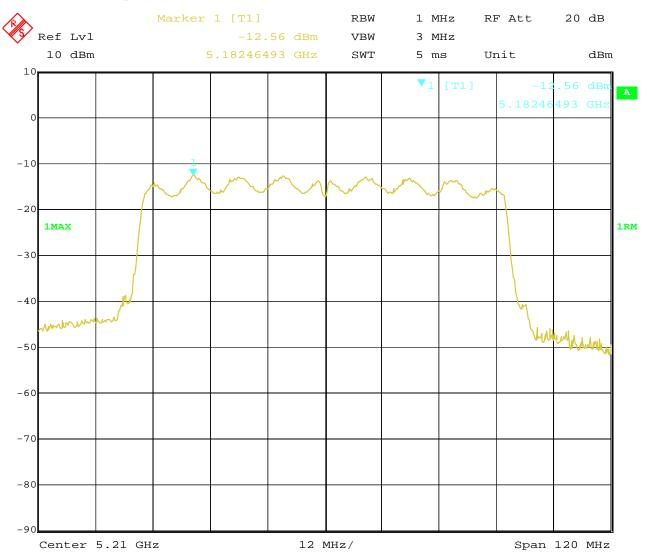
Report No.: FCC1706166-04

Date: 2017-07-10



#### **Test Plots**

1.802.11ac at 23.9Mbps of CH42



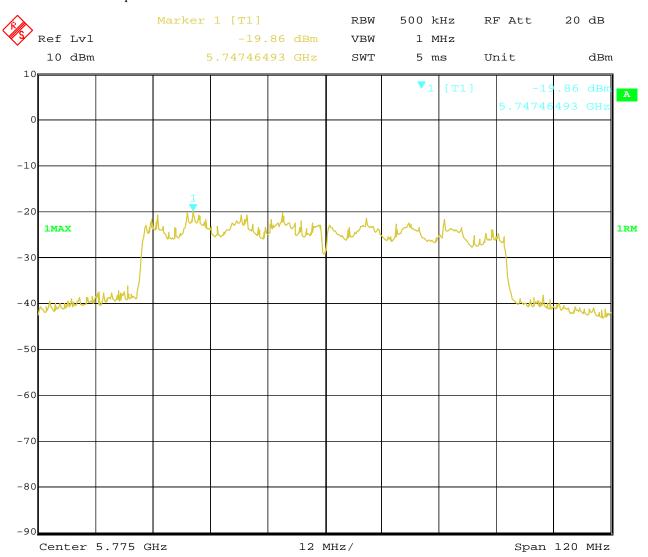
Page 121 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### 2.802.11ac at 23.9Mbps of CH155



Report No.: FCC1706166-04

Date: 2017-07-10



Page 122 of 128

### 10.0 Frequency Stability

# 10.1 Limits of Frequency Stability Measurement

The frequency tolerance of the carrier signal shall be maintained within  $\pm$ 0.02% of the operating frequency over a temperature variation of  $\pm$ 30 degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees

### 10.2 Test Procedure

- 1. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
- 2. Turn the EUT on and couple its output to a spectrum analyzer.
- 3. Turn the EUT off and set the chamber to the highest temperature specified.
- 4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- 5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- 6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

Page 123 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### 11.3 Test Result

### **Channel 36 (5180MHz)**

### Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)
138V	5179.9867
120V	5179.9821
102V	5179.9809
Max. Deviation (MHz)	0.0191
Max. Deviation (ppm)	3.7

Rated working voltage: 120V~

### **Temperature vs. Frequency Stability**

Temperature (°C)	Measurement Frequency (MHz)
-30	5179.9811
-20	5179.9783
-10	5179.9820
0	5179.9818
10	5179.9832
20	5179.9792
30	5179.9808
40	5179.9796
50	5179.9786
Max. Deviation (MHz)	0.0217
Max. Deviation (ppm)	4.2

Page 124 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



### **Channel 149 (5745MHz)**

### Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)
138V	5744.9767
120V	5744.9789
102V	5744.9803
Max. Deviation (MHz)	0.0233
Max. Deviation (ppm)	4.1

Rated working voltage: 120V~

### Temperature vs. Frequency Stability

Temperature (°C)	Measurement Frequency (MHz)
-30	5744.9758
-20	5744.9779
-10	5744.9782
0	5744.9753
10	5744.9765
20	5744.9756
30	5744.9772
40	5744.9780
50	5744.9813
Max. Deviation (MHz)	0.0247
Max. Deviation (ppm)	4.3

Report No.: FCC1706166-04

Date: 2017-07-10



Page 125 of 128

# 11.0 Antenna Requirement

### 11.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitter antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the mount in dB that the directional gain of the antenna exceeds 6 dBi.

### 11.2 Antenna Connected construction

Integral antenna used. The maximum Gain of each antenna is 3.0 dBi for 5G band.

Page 126 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



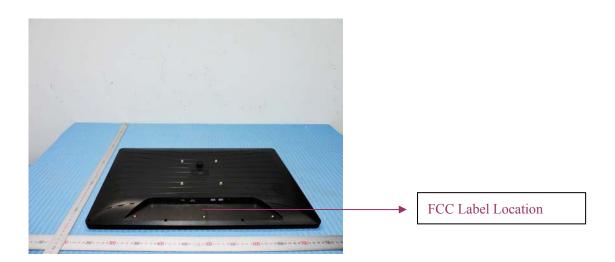
#### 12.0 FCC Label

### FCC ID: 2AACS-JAR215-01

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

#### **Mark Location:**



Page 127 of 128

Report No.: FCC1706166-04

Date: 2017-07-10



#### 13.0 Photo of testing

Conducted Emission Test Setup:

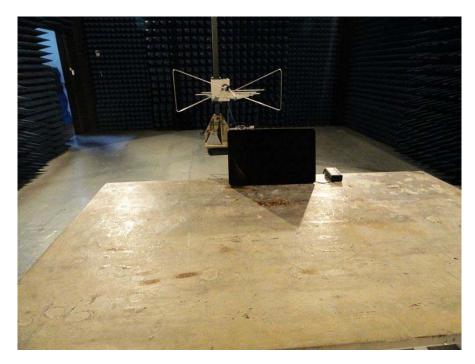


Report No.: FCC1706166-04

Date: 2017-07-10



### Radiated Emission Test Setup:





**Photos of EUT** 

Please see test report FCC1706166-01

## End of the report

The report refers only to the sample tested and does not apply to the bulk.

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