Audix Technology Corp.
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New Taipei City244, Taiwan

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FCC 15.407 NII
(Class II Permissive Change)
5 GHz Test Report

for

Texas Instruments Incorporated

12500 TI Boulevard Dallas,TX 75243-4136 USA

Product Name	**:**	**TI-nspire CX Wireless Network Adapter v2**
Model Name	**:**	**TINAVWNA2**
FCC ID	**:**	**V7R-TINAVWNA2**

Prepared by: **:** **AUDIX Technology Corporation, EMC Department**

Testing Laboratory
1724

TESTING
NVLAP LAB CODE 200077-0

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TEST REPORT CERTIFICATION
(Class II Permissive Change)

Applicant	:	Texas Instruments Incorporated
Manufacturer	:	Inventec Appliances(JiangNing) Corporation
EUT Description		
(1) Product	:	TI-nspire CX Wireless Network Adapter v2
(2) Model	:	TINAVWNA2
(3) Brand	:	TEXAS INSTRUMENTS
(4) Rating	:	DC 3.0-5.9V

Applicable Standards:

47 CFR FCC Part 15 Subpart E
ANSI C63.10:2013
KDB 789033 D02 General UNII Test Procedures New Rules v01r04

Audix Technology Corp. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.
Audix Technology Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens and samples.

Date of Report: 2017. 11. 14

Reviewed by:  (Tina Huang/Administrator)

Approved by:  (Ben Cheng/Manager)

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1. REVISION RECORD OF TEST REPORT

Edition No	Issued Data	Revision Summary	Report Number
0	2017. 11. 14	Original Report	EM-F170713

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2. SUMMARY OF TEST RESULTS

Rule	Description	Results
15.207	Conducted Emission	**N/A** Note
15.205	Radiated Band Edge and Radiated Spurious Emission	**PASS**
15.407(a)(5)/15.407(e)	Emission Bandwidth Measurement	**N/A** Note
15.407(a)	Maximum Output	**PASS**
15.407(b)	Conducted Band Edges and Conducted Spurious Emission	**N/A** Note
15.407(a)	Power Spectral Density	**N/A** Note
15.203	Antenna Requirement	**Compliance**
15.407	Frequency Stability	**N/A** Note
Note: The Class II Permissive Change is not influence on this report.		

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3. GENERAL INFORMATION

3.1. Description of Application

Applicant	Texas Instruments Incorporated 12500 TI Boulevard Dallas,TX 75243-4136 USA
Manufacturer	Inventec Appliances(JiangNing) Corporation No.133, Jiang-Jun Road, Jiangning Economic and Technological Development Zone, Nanjing 211153, P.R.C.
Product	TI-nspire CX Wireless Network Adapter v2
Model	TINAVWNA2
Brand	TEXAS INSTRUMENTS

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3.2. Description of EUT

Test Model	TINAVWNA2
Serial Number	N/A
Firmware Version	N/A
Power Rating	DC 3.0-5.9V
RF Features	WLAN:802.11a/b/g/n
Transmit Type	1T1R
Device Category	☐Outdoor Access Point ☐Fixed point-to-point Access Point ☐Indoor Access Point ▒Mobile and Portable client device
Sample Status	Production
Date of Receipt	2017. 10. 18
Date of Test	2017. 11.10
I/O Ports List	• USB Port x1
Accessories Supplied	None

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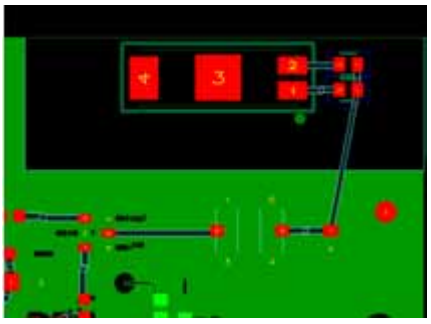
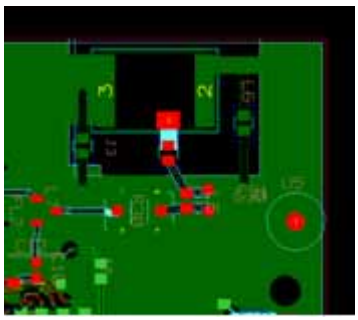
3.3. Information for Class II Change Permissive

The difference with original FCC ID: V7R-TINAVWNA2 is to updated information include manufacturer of ANT, matching circuit and attached location & components which changed on PCB. The Radiated Band Edge, Radiated Spurious Emission and Maximum Peak Output should be re-test.

- Antenna Information

	Manufacturer	Type	Antenna Gain	Different
Original Antenna	MURATA	Chip Dielectric Antenna	1.5dBi at 2.4GHz band 1.5dBi at 5GHz band	**1.Frequency range:** 2403 ~2518MHz 5125 ~5695MHz **2. Size:** 7x2.5x1.2mm **3. Matching circuit:** L5=2.7nH, L6=DNP, C24=1pF
New Antenna	ACON	Coupling Ceramics Chip Antenna	3.79dBi at 2.4GHz band 2.24dBi for 5GHz band I 3.29dBi for 5GHz Band III	**1.Frequency range:** 2400 ~2500MHz 5000 ~6000MHz **2. Size:** 5.2x3.7x0.7mm **3. Matching circuit:** L5=1nH, L6=2.7nH, L7=0ohm, R30=0.3Nf, C31=DNP

- Antenna location and components change

Original Antenna	New Antenna
	

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3.4. Antenna Information

No.	Antenna Part Number	Manufacture	Antenna Type	Frequency (MHz)	Max Gain (dBi)
1	ACM3-5036-A1-CC-S	ACON	Coupling Ceramics Chip Antenna	2400	2.24
				2442	3.58
				2450	3.79
				2484	4.10
				2500	3.90
				5150	1.80
				5250	2.24
				5350	3.16
				5500	3.30
				5600	3.20
				5725	3.02
				5785	3.29
				5850	2.45

3.5. EUT Specifications Assessed in Current Report

Mode	UNII Band	Fundamental Range (MHz)	Channel Number
802.11a	I	5180-5240	4
	III	5745-5825	5
802.11n-HT20	I	5180-5240	4
	III	5745-5825	5

Mode	Modulation	Data Rate (Mbps)
802.11a	OFDM (BPSK/QPSK/16QAM/64QAM)	Up to 54
802.11n-HT20	OFDM (BPSK/QPSK/16QAM/64QAM)	Up to 72.2

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Channel List					
802.11a/802.11n-HT20					
UNII Band	Channel Number	Frequency (MHz)	UNII Band	Channel Number	Frequency (MHz)
I	36	5180	III	149	5745
	40	5200		153	5765
	44	5220		157	5785
	48	5240		161	5805
				165	5825

Note Test modes are presented at section 3.7.

3.6. Description of Key Components

None

3.7. Test Configuration

Mode	Duty Cycle (x)	T (ms)	Duty Cycle Factor (dB)
802.11a	1.00	---	0
802.11n-HT20	1.00	---	0

Note: When duty cycle is less than 98% (0.98) that duty cycle factor 10log(1/x) is needed to add in conducted test items measured in average detector.

Item		Mode	Data Rate	Test Channel
Radiated Test Case	Radiated Band Edge Note1 & 2	802.11a	6 Mbps	36/48
		802.11n-HT20	MCS0	36/48
	Radiated Spurious Emission Note1	802.11a	6 Mbps	157
		802.11n-HT20	MCS0	149

Item		Mode	Data Rate	Test Channel
Conducted Test Case	Maximum output power	802.11a	6 Mbps	36/40/48/149/157/165
		802.11n-HT20	MCS0	36/40/48/149/157/165

Note 1:
☐ Mobile Device,
■ Portable Device, and 3 axis were assessed.
- ■ Lie
- ☐ Side
- ☐ Stand

Note 2: Low, mid, and high channels were measured, only the worst channel of each modulation was presented in this report.

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3.8. Tested Supporting System List

3.8.1. Support Peripheral Unit

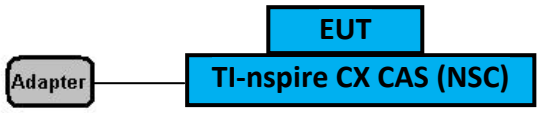
No.	Product	Brand	Model No.	Serial No.	Approval
1.	TI-nspire CX CAS (NSC)	TEXAS INSTRUMENTS	T1	N/A	N/A

3.8.2. Cable Lists

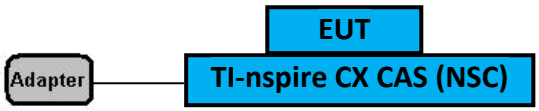
No.	Cable Description Of The Above Support Units
1.	AC/DC Power Adapter: Texas Instruments, Model: AC9212U-US USB Cable: Unshielded, Detachable, 1.5m

3.9. Setup Configuration

3.9.1. EUT Configuration for Radiated Emission



3.9.2. EUT Configuration for RF Conducted Test Items



3.10. Operating Condition of EUT

Test program “TINspireComputerLink-3.9.0.455” is used for enabling WLAN function under continues transmitting and choosing data rate/ channel.

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3.11.Description of Test Facility

Name of Test Firm	Audix Technology Corporation / EMC Department No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan Tel: +886-2-26092133 Fax: +886-2-26099303 Website : www.audixtech.com Contact e-mail: sales@audixtech.com
Accreditations	The laboratory is accredited by following organizations under ISO/IEC 17025:2005 (1) NVLAP(USA) NVLAP Lab Code 200077-0 (2) TAF(Taiwan) No. 1724 (3) FCC OET Designation No. TW1004 & TW1090 & TW1724
Test Facilities	(1) No. 7 Shielding Room (2) Semi-Anechoic Chamber (IC Test Site Registration No.: 5183B-1) (3) Fully Anechoic Chamber (IC Test Site Registration No.: 5183B-4)

3.12.Measurement Uncertainty

Test Item	Frequency Range	Uncertainty
Radiation Test (Distance: 3m)	30MHz~1000MHz	± 3.68dB
	Above 1GHz	± 5.82dB

Remark：Uncertainty = $ku_c(y)$

Test Item	Uncertainty
Maximum output power	± 0.33dB

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4. MEASUREMENT EQUIPMENT LIST

4.1. Radiated Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A-526	MY53400071	2017. 09. 13	1 Year
2.	Spectrum Analyzer	Agilent	N9010A-526	MY52220368	2016. 12. 01	1 Year
3.	Test Receiver	R & S	ESCS30	100338	2017. 06. 19	1 Year
4.	Amplifier	HP	8447D	2944A06305	2017. 02. 16	1 Year
5.	Amplifier	Sonoma	310N	187161	2017. 06. 08	1 Year
6.	Bilog Antenna	CHASE	CBL6112D	33821	2017. 01. 21	1 Year
7.	Loop Antenna	R&S	HFH2-Z2	891847/27	2016. 12. 23	1 Year
8.	Double-Ridged Waveguide Horn	ETS-Lindgren	3117	00135902	2017. 03. 08	1 Year
9.	Horn Antenna	COM-POWER	AH-840	101092	2017. 05. 04	1 Year
10.	5G Notch Filter	Microware Circuits	N0452502	459775	2016. 12. 28	1 Year
11.	5G Notch Filter	Microware Circuits	N0257881	459776	2017. 02. 03	1 Year
12.	Test Software	Audix	e3	V.6.110601	N.C.R.	N.C.R.

4.2. RF Conducted Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
1.	Power Meter	Anritsu	ML2495A	1145008	2017. 11. 03	1 Year
2.	Power Sensor	Anritsu	MA2411B	1126096	2017. 11. 03	1 Year

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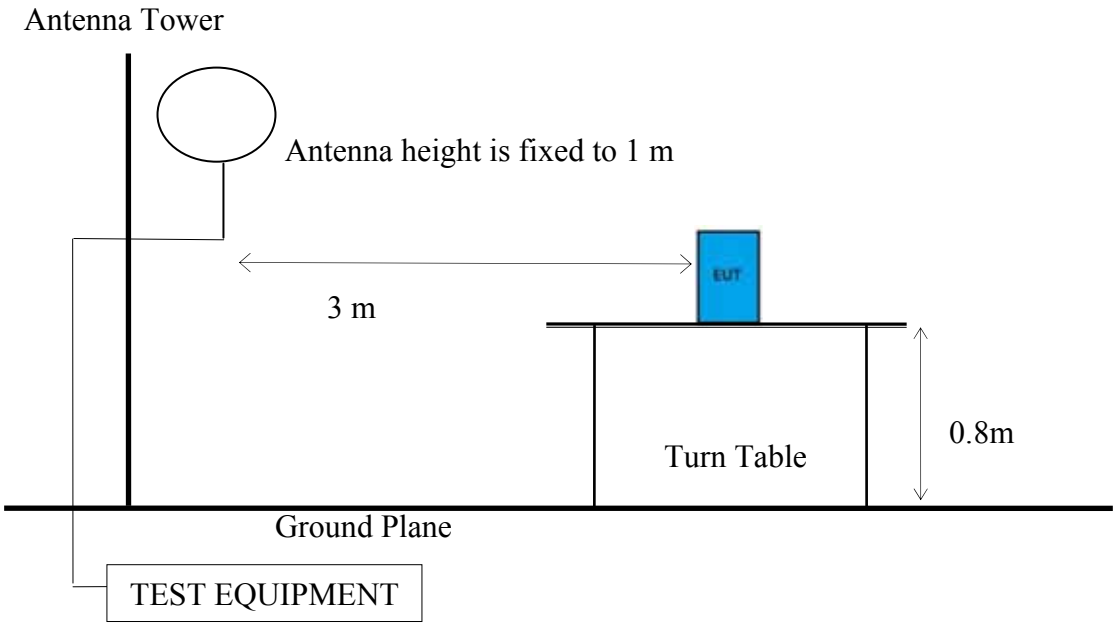
5. RADIATED EMISSION

5.1. Block Diagram of Test Setup

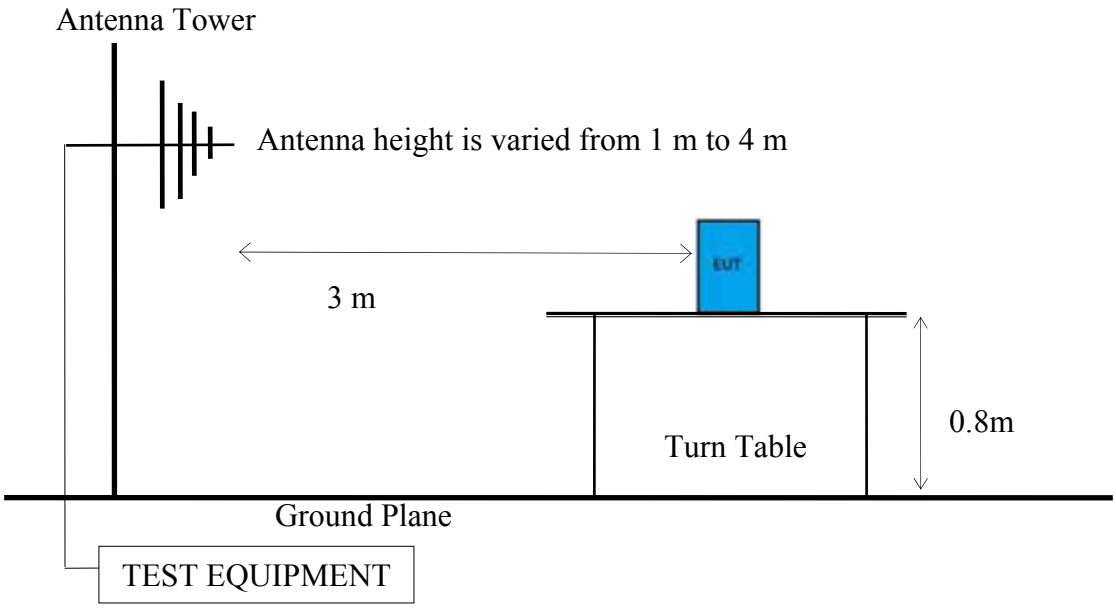
5.1.1. Block Diagram of EUT

Indicated as section 3.10

5.1.2. Setup Diagram for 9kHz-30MHz



5.1.3. Setup Diagram for 30-1000 MHz



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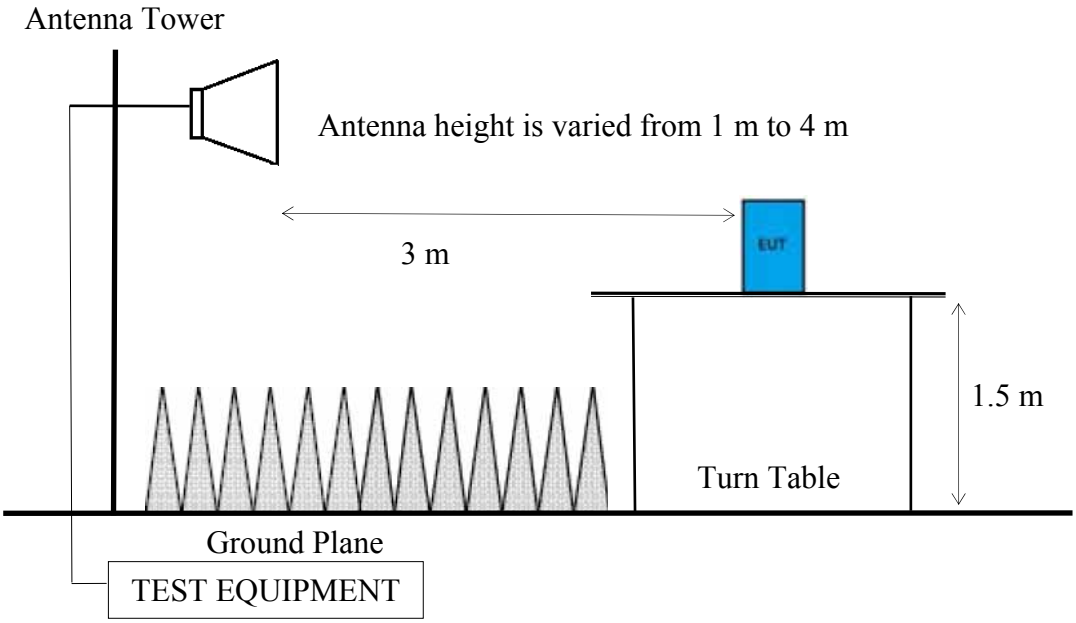
5.1.4. Setup Diagram for above 1GHz



5.2. Radiated Emission Limits

Radiated emissions fall in restricted bands, as defined in Section 15.205 must be in compliance with the radiated emission limits specified in 15.209 as below.

5.2.1. General Limit

Frequency (MHz)	Distance (m)	Limits	
		dBμV/m	μV/m
0.009 - 0.490	300	67.6	2400/kHz
0.490 - 1.705	30	87.6	24000/kHz
1.705 - 30	30	29.5	30
30 - 88	3	40.0	100
88- 216	3	43.5	150
216- 960	3	46.0	200
Above 960	3	54.0	500
Above 1000	3	74.0 dBμV/m (Peak) 54.0 dBμV/m (Average)	

Remark：(1) dBμV/m = 20 log (μV/m)
(2) The tighter limit applies to the edge between two frequency bands.
(3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
(4) Fundamental and emission fall within operation band are exempted from this section.
(5) Pursuant to ANSI C63.10: 6.6.4.3, if the maximized peak measured value complies with the average limit, then it is unnecessary to perform an average measurement.

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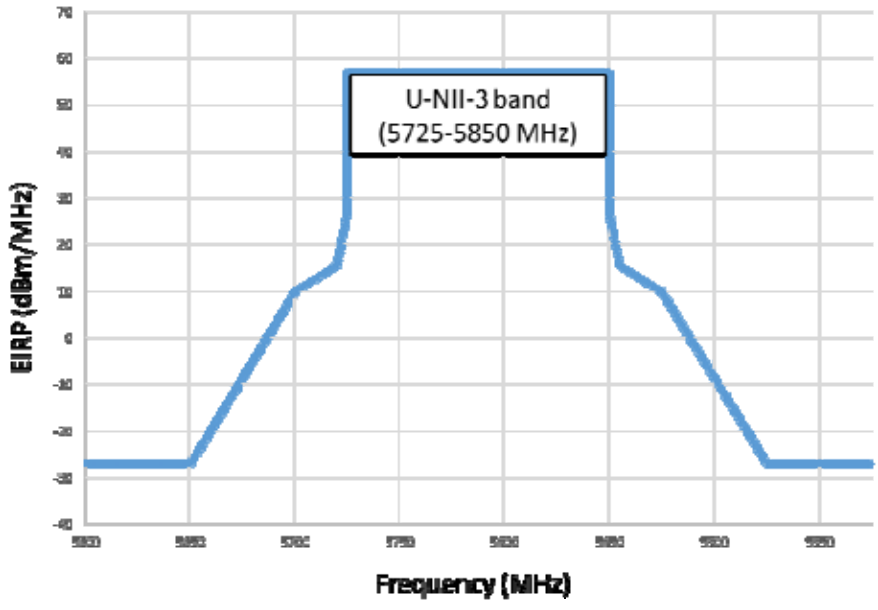
5.2.2. Limit for non-restricted frequency above 1 GHz

Frequency Band (MHz)	E.I.R.P. Limit	Field Strength Limit at 3 m
5150 to 5250	-27 dBm	68.2
5250 to 5350		68.2
5470 to 5725		68.2

Note: Field Strength at 3 m= E.I.R.P. + 95.2 dB

Frequency Band (MHz)	Field Strength Limit at 3 m	
5725 to 5850	☒	15.407(b)(4)(i) All emissions shall be limited to a level of 68.2 dBμV/m at 75 MHz or more above or below the band edge increasing linearly to 105.2dBμV/m 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 110.8 dBμV/m 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 68.2 dBμV/m at the band edge.
	☐	15.407(b)(4)(ii) ,compliance with the emission limits in § 15.247(d) Shall be at least 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power,. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c))



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5.3. Test Procedure

Frequency Range 9kHz~30MHz:
The EUT setup on the turn table which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna fixed to 1 m to find the maximum emission level.
In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

(1) RBW = 9kHz with peak and average detector.
(2) Detector: average and peak (9kHz-490kHz)
Q.P. (490kHz-30MHz)

Frequency Range 30MHz ~ 40GHz:
The EUT setup on the turn find table which has 80 cm (for 30-1000 MHz) and 1.5m (for above 1GHz) height to the ground. The turn table rotated 360 degrees and antenna varied from 1 m to 4 m to find the maximum emission level. Both horizontal and vertical polarization are required. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

Frequency below 1 GHz:
Spectrum Analyzer is used for pre-testing with following setting:
(1)RBW = 120KHz
(2)VBW ≥ 3 x RBW.
(3)Detector = Peak.
(4)Sweep time = auto.
(5)Trace mode = max hold.
(6)Allow sweeps to continue until the trace stabilizes.
(7)When peak-detected value is lower than limit that the measurement using the Q.P. detector is not required. Otherwise using Q.P. for finally measurement.

Frequency above 1GHz to 10th harmonic (up to 40 GHz):
Peak Detector:
(1)RBW = 1MHz
(2)VBW ≥ 3 x RBW.
(3)Detector = Peak.
(4)Sweep time = auto.
(5)Trace mode = max hold.
(6)Allow sweeps to continue until the trace stabilizes.
(7)When peak-detected value is lower than limit that the measurement using the average detector is not required. Otherwise using average detector for finally measurement.

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Average Detector:

■**Option 1:**

(1)RBW = 1MHz

(2)VBW ≥ 1/ T.

Modulation Type	T (ms)	1/ T (kHz)	VBW Setting
802.11a	---	---	10Hz
802.11n-HT20	---	---	10Hz

N/A: 1/ T is not implemented when duty cycle presented in section 3.8 is ≥98 %.

(1)Detector = Peak.

(2)Sweep time = auto.

(3)Trace mode = max hold.

(4)Allow sweeps to continue until the trace stabilizes.

☐**Option 2:**

Average Emission Level= Peak Emission Level+ D.C.C.F.

5.4. Measurement Result Explanation

■Peak Emission Level=Antenna Factor + Cable Loss + Meter Reading

■Average Emission Level l=Antenna Factor + Cable Loss + Meter Reading

☐Average Emission Level= Peak Emission Level+ DCCF

Duty Cycle Correction Factor (DCCF)= 20log (TX_{on}/TX_{on+off}) presented in section 3.7

☐ERP= Peak Emission Level-95.2dB-2.14dB

5.5. Test Results

Please refer to Appendix A.

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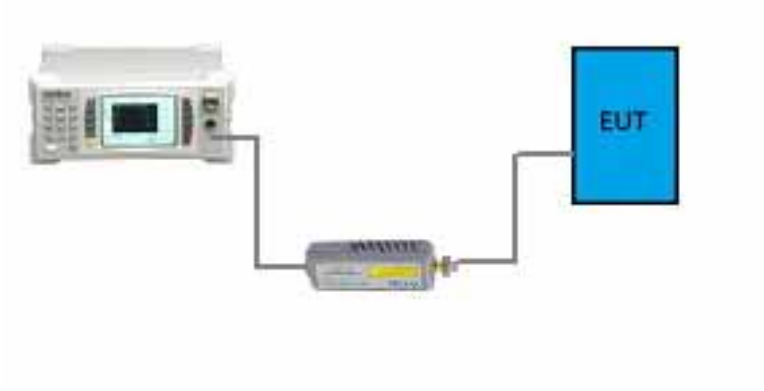
6. MAXIMUM OUTPUT POWER

6.1. Block Diagram of Test Setup



6.2. Specification Limits

Frequency Band (MHz)	Category	Limit
5150 to 5250	Outdoor Access Point	1 W(30 dBm)/ Max e.i.r.p. ≤125 mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon
	Fixed point-to-point Access Point	1 W(30 dBm)
	Indoor Access Point	1 W(30 dBm)
	Mobile and Portable client device	250 mW(24 dBm)
5250 to 5350	N/A	250 mW or 11 dBm + 10 log B[Note1]
5470 to 5725		250 mW or 11 dBm + 10 log B [Note1]
5725 to 5850		1 W(30 dBm)

Note 1: B is the 26 dB emission bandwidth, which presented in section 7 and appendix A.1.

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6.3. Test Procedure

Following measurement procedure is reference to KDB 789033 D02 General UNII Test Procedures New Rules v01r04:

■**Method AVGPM (Measurement using an RF average power meter):**

EUT is connected to power sensor and record the maximum average output power and duty cycle factor is added when duty cycle presented in section 3.7 is < 98%.

□**Method AVGSA-2 (Spectrum channel power)**

(1) Set span to at least 1.5 times the OBW
(2) Set RBW = 1 MHz
(3) Set the video bandwidth (VBW) ≥ 3 MHz.
(4) Detector = RMS.
(5) Trace mode = trace average at least 100 traces
(6) Sweep = auto couple.
(7) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function with band limits set equal to the OBW band edges.
(8) Duty cycle factor is added when duty cycle presented in section 3.7 is < 98%.

6.4. Test Results

Please refer to Appendix A

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7. DEVIATION TO TEST SPECIFICATIONS

【NONE】

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APPDNDIX A

TEST DATA AND PLOTS

(Model: TINAVWNA2)

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A.1 RADIATED EMISSION

Test Date	2017/11/10	Temp./Hum.	25℃/52%
Test Voltage	DC 5V (Via AC/DC Power Adapter)		

A.1.1 Emissions within Restricted Frequency Bands

A.2.1.1 Frequency 9kHz~30MHz

The emissions (9kHz~30MHz) not reported for there is no emission be found.

A.2.1.2 Frequency Below 1 GHz

Mode	802.11n-HT20	UNII Band	II-2C
		Frequency	TX 5745MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
101.78	17.60	2.29	3.80	23.69	43.50	19.81	Peak
244.37	18.79	3.76	3.01	25.56	46.00	20.44	Peak
312.27	19.84	4.48	6.42	30.74	46.00	15.26	Peak
738.10	25.28	7.29	2.34	34.91	46.00	11.09	Peak
779.81	25.72	7.50	4.86	38.08	46.00	7.92	Peak
935.98	27.18	8.41	3.15	38.74	46.00	7.26	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
101.78	17.60	2.29	2.54	22.43	43.50	21.07	Peak
330.70	20.34	4.72	4.09	29.15	46.00	16.85	Peak
561.56	24.09	6.63	2.03	32.75	46.00	13.25	Peak
756.53	25.47	7.38	3.18	36.03	46.00	9.97	Peak
953.44	27.35	8.52	1.45	37.32	46.00	8.68	Peak
991.27	27.73	8.76	1.29	37.78	54.00	16.22	Peak

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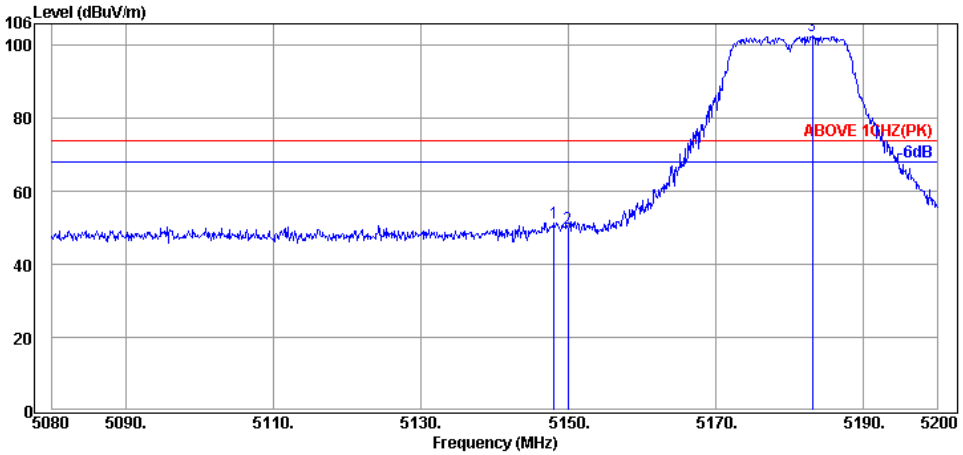
A.2.1.3 Frequency Above 1 GHz to 10th harmonics

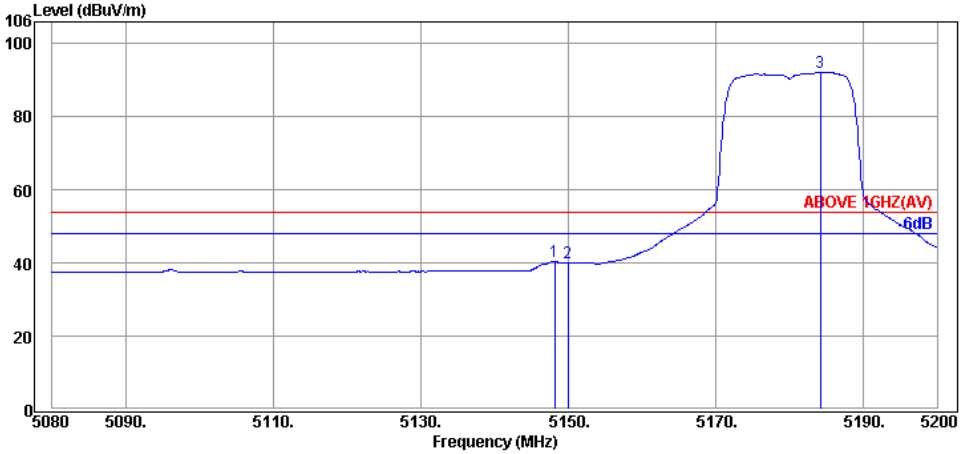
Band Edge:

Mode	802.11a	UNII Band	I
		Frequency	TX 5180MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5148.04	34.45	9.83	7.19	51.47	74.00	22.53	Peak
5149.96	34.45	9.83	5.48	49.76	74.00	24.24	Peak
5183.08	34.48	9.88	58.22	102.58	---	---	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5148.16	34.45	9.83	-3.90	40.38	54.00	13.62	Average
5149.96	34.45	9.83	-4.18	40.10	54.00	13.90	Average
5184.16	34.48	9.88	47.75	92.11	---	---	Average

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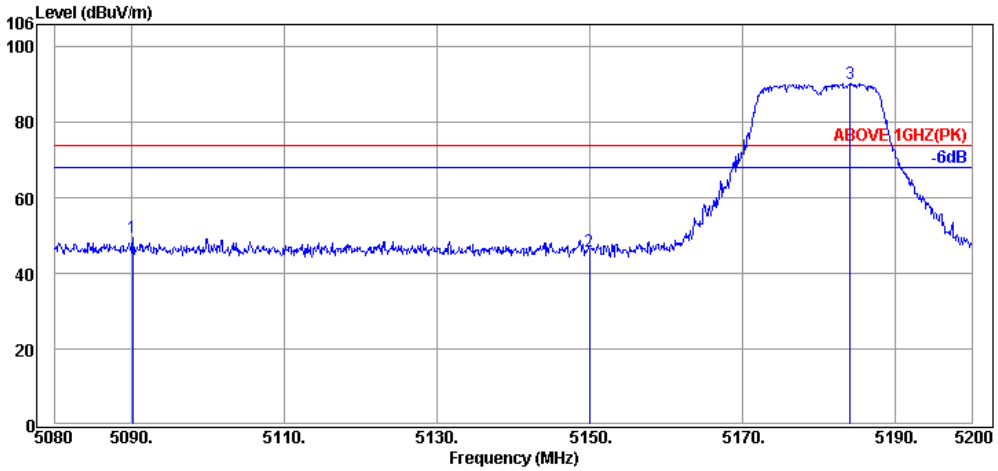
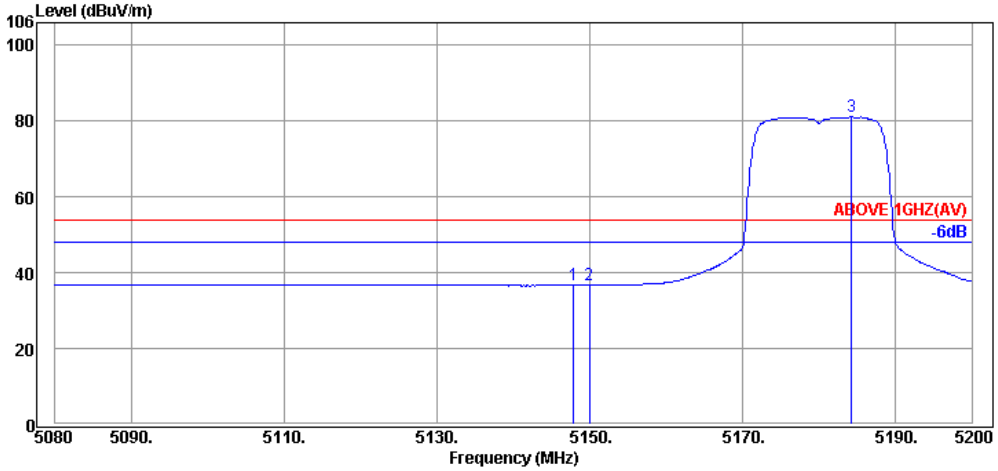
Mode	802.11a	UNII Band	I
		Frequency	TX 5180MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5090.20	34.40	9.76	5.53	49.69	74.00	24.31	Peak
5149.96	34.45	9.83	1.48	45.76	74.00	28.24	Peak
5184.04	34.48	9.88	46.04	90.40	---	---	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5147.92	34.45	9.83	-7.45	36.83	54.00	17.17	Average
5149.96	34.45	9.83	-7.46	36.82	54.00	17.18	Average
5184.28	34.48	9.88	36.71	81.07	---	---	Average

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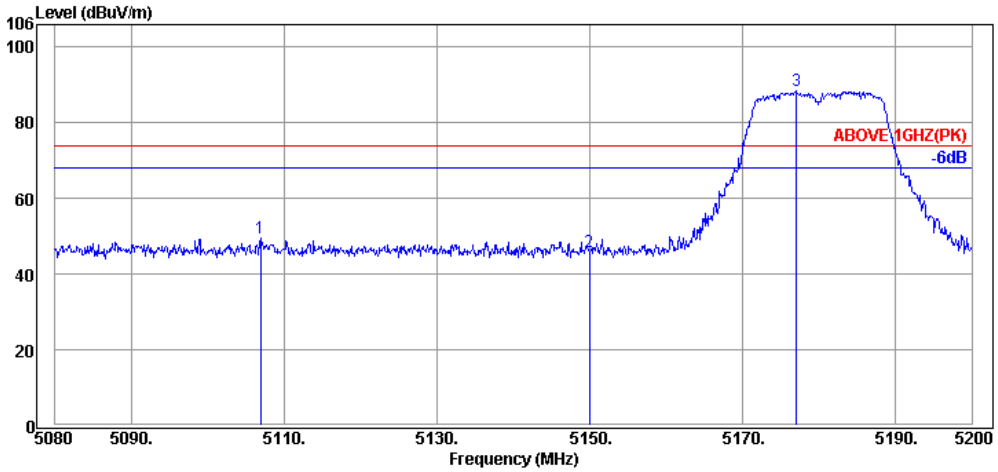
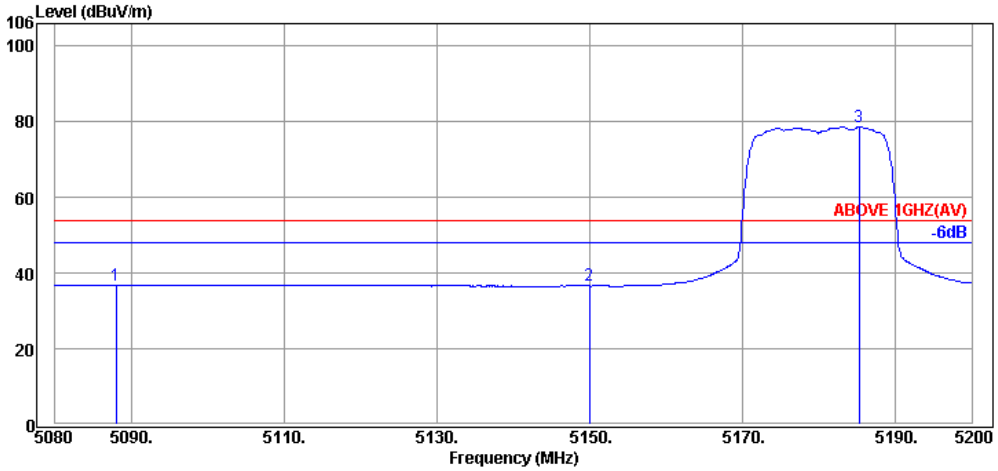
Mode	802.11n-HT20	UNII Band	I
		Frequency	TX 5180MHz



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector
5106.88	34.42	9.78	5.20	49.40	74.00	24.60	Peak
5149.96	34.45	9.83	1.68	45.96	74.00	28.04	Peak
5177.08	34.48	9.88	44.29	88.65	---	---	Peak



Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector
5088.04	34.38	9.73	-7.24	36.87	54.00	17.13	Average
5149.96	34.45	9.83	-7.65	36.63	54.00	17.37	Average
5185.24	34.48	9.88	34.30	78.66	---	---	Average

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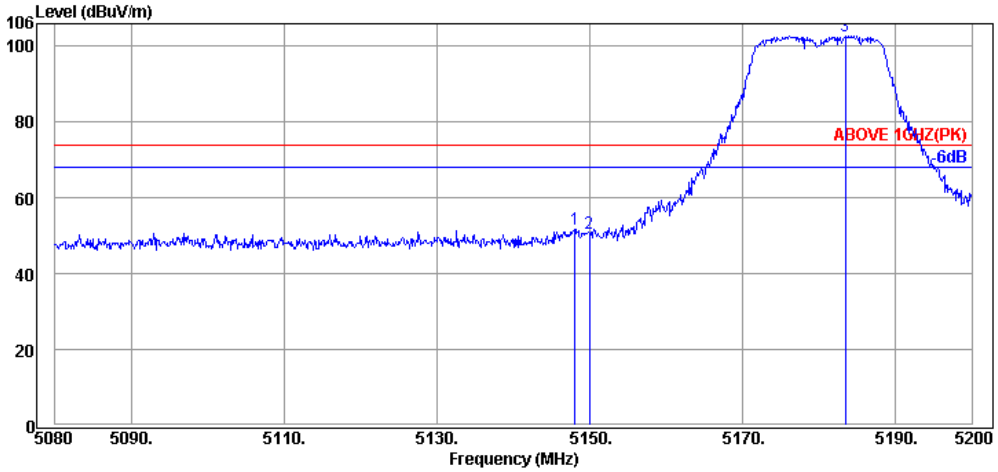
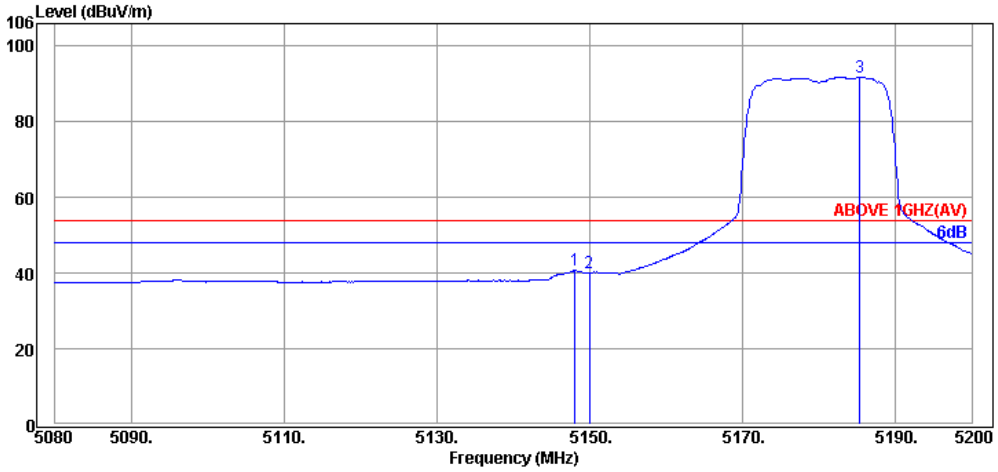
Mode	802.11n-HT20	UNII Band	I
		Frequency	TX 5180MHz



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5148.04	34.45	9.83	7.41	51.69	74.00	22.31	Peak
5149.96	34.45	9.83	6.28	50.56	74.00	23.44	Peak
5183.44	34.48	9.88	58.37	102.73	---	---	Peak



Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5148.04	34.45	9.83	-3.64	40.64	54.00	13.36	Average
5149.96	34.45	9.83	-4.08	40.20	54.00	13.80	Average
5185.36	34.48	9.88	47.61	91.97	---	---	Average

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A.1.2 Emissions outside the frequency band:

The emissions (up to 40GHz) not reported for there is no emission be found.

Mode	802.11a	UNII Band	III
		Frequency	TX 5785MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
11570.00	38.56	16.20	-7.38	47.38	54.00	6.62	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
11570.00	38.56	16.20	-5.64	49.12	54.00	4.88	Peak

Mode	802.11n-HT20	UNII Band	III
		Frequency	TX 5745MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
11490.00	38.48	16.13	-6.98	47.63	54.00	6.37	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
11490.00	38.48	16.13	-6.33	48.28	54.00	5.72	Peak

A.1.3 Emissions in Non-restricted Frequency Bands:

Pursuant to KDB 789033 D02 General UNII Test Procedures New Rules v01r04 that emission levels below the 15.209 general radiated emissions limits is not required.

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A.2 MAXIMUM PEAK OUTPUT POWER

Test Date	2017/11/10	Temp./Hum.	23℃/55%
Cable Loss	1.3dB	Test Voltage	DC 5V (Via AC/DC Power Adapter)

A.2.1 Average Output Power

Mode	UNII Band	Centre Frequency (MHz)	Average Output Power(dBm)	10log (1/X)	Total Average Output Power		Limit
					(dBm)	(W)	
802.11a	I	5180	9.26	0	9.26	0.008433	< 250 mW (24 dBm)
		5200	10.11		10.11	0.010257	
		5240	10.63		10.63	0.011561	
	III	5745	11.03		11.03	0.012677	< 1 W (30 dBm)
		5785	11.65		11.65	0.014622	
		5825	11.74		11.74	0.014928	
802.11n-HT20	I	5180	9.17	0	9.17	0.008260	< 250 mW (24 dBm)
		5200	10.12		10.12	0.010280	
		5240	10.36		10.36	0.010864	
	III	5745	11.68		11.68	0.014723	< 1 W (30 dBm)
		5785	10.65		10.65	0.011614	
		5825	11.08		11.08	0.012823	

Note: The results have been included cable loss.

A.2.2 Peak Output Power (Reference only)

Mode	UNII Band	Centre Frequency (MHz)	Average Output Power(dBm)		Limit
			(dBm)	(W)	
802.11a	I	5180	13.29	0.021330	< 250 mW (24 dBm)
		5200	14.63	0.029040	
		5240	14.98	0.031477	
	III	5745	21.22	0.132434	< 1 W (30 dBm)
		5785	19.28	0.084723	
		5825	19.66	0.092470	
802.11n-HT20	I	5180	13.28	0.021281	< 250 mW (24 dBm)
		5200	13.53	0.022542	
		5240	14.52	0.028314	
	III	5745	21.04	0.127057	< 1 W (30 dBm)
		5785	18.92	0.077983	
		5825	19.16	0.082414	

Note: The results have been included cable loss.

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APPDNDIX B

TEST PHOTOGRAPHS

(Model: TINAVWNA2)

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APPDNDIX C

EUT PHOTOGRAPHS

(Model: TINAVWNA2)