

# **RADIO TEST REPORT**

Product	:	AX1800 Dual-Band USB 3.0 Adapter	
Model Name	:	EW-7822UMX	
FCC ID	:	NDD9578222102	
Test Regulation	:	FCC 47 CFR Part 15 Subpart E (Section 15.407)	
<b>Received Date</b>	:	2022/3/14	
Test Date	:	2022/3/14 ~ 2022/3/25	
Issued Date	:	2022/5/18	
Applicant	:	Edimax Technology Co., Ltd. No.278, Xinhu 1st Rd., Neihu Dist, Taipei City, Taiwan	
Issued By	:	Underwriters Laboratories Taiwan Co., Ltd. Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan	



The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report are responsible of the test sample(s) provided by the client only and are not to be used to indicate applicability to other similar products.



# **REVISION HISTORY**

## Original Test Report No.: 4790327571-US-R0-V0

Rev. Original	Test report No. 4790327571-US-R0-V0	Date 2022/5/18	Page revised	Contents
		2022/5/18	-	Initial issue
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#### 1. Attestation of Test Results

STANDARD Test R		
	APPLICABLE STANDARDS	
DATE of TESTED:	2022/3/14 ~ 2022/3/25	
SAMPLE STAGE:	Identical Prototype	
MODEL:	EW-7822UMX	
BRAND:	Edimax	
EUT DESCRIPTION:	AX1800 Dual-Band USB 3.0 Adapter	
MANUFACTURER:	Edimax Technology Co., Ltd. No.278, Xinhu 1st Rd., Neihu Dist, Taipei City	r, Taiwan
APPLICANT:	Edimax Technology Co., Ltd. No.278, Xinhu 1st Rd., Neihu Dist, Taipei City	r, Taiwan

FCC 47 CFR PART 15 Subpart E (Section 15.407)

ts PASS

Underwriters Laboratories Taiwan Co., Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by Underwriters Laboratories Taiwan Co., Ltd. based on interpretations and/or observations of test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Underwriters Laboratories Taiwan Co., Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Underwriters Laboratories Taiwan Co., Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Prepared By:

Ciu

Cindy Hsin Project Handler Date : 2022/5/18

Approved and Authorized By:

Eric Lee Date : 2022/5/18 Senior Laboratory Engineer

Underwriters Laboratories Taiwan Co., Ltd.

Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan Telephone :+886-2-7737-3000 Facsimile (FAX) :+886-3-583-7948



## 2. Summary of Test Results

Summary of Test Results				
FCC Clause	Result			
15.407(e)	6dB Bandwidth	PASS		
15.403(i)	26dB Bandwidth	PASS		
2.1049	Occupied Bandwidth	See Note 1		
15.407(a)(1/2/3)	Conducted Output Power	PASS		
15.407(a)(1/2/3)	Power Spectral Density	PASS		
15.407(g)	Frequency Stability	PASS		
15.407(b) (1/2/3/4(i/ii)/9)	Radiated Emissions and Band Edge Measurement	PASS		
15.407(b)(9)	AC Power Conducted Emission	PASS		
15.203	Antenna Requirement	PASS		
15.407(h)	Dynamic Frequency Selection	N/A		

Note:

1. The Occupied Bandwidth was reference only.



## **3.** Test Methodology and Reference Procedures

The tests documented in this report were performed in accordance with 47 CFR FCC Part 2, KDB 789033 D02 General UNII Test Procedure New Rules v02r01, KDB414788 D01 Radiated Test Site v01r01, ANSI C63.10-2013 and KDB 662911 D01 Multiple Transmitter Output v02r01.

#### 4. Facilities and Accreditation

Test Location	Underwriters Laboratories Taiwan Co., Ltd.	
Address	Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan	
Accreditation Certificate	Underwriters Laboratories Taiwan Co., Ltd. is accredited by TAF, Laboratory Code 3398.	



## 5. Measurement Uncertainty

For statement of conformity, accuracy method (Section 8.2.4 and 8.2.5 of ISO Guide 98-4) was applied as decision rule for measurement in this test report.

The following uncertainties have been calculated to provide a confidence level of 95 % using a coverage factor k=2.

Measurement	Frequency	Uncertainty
Conducted disturbance at mains terminals ports	150kHz ~ 30MHz	±3.1 dB
RF Conducted	9 kHz - 40GHz	±1.9 dB
Radiated disturbance below 30MHz	9 kHz - 30 MHz	±1.9 dB
Radiated disturbance below 1 GHz	30MHz ~ 1GHz	±5.4 dB
Radiated disturbance above 1 GHz	1GHz ~ 40GHz	±4.7 dB



## 6. Equipment under Test

## 6.1. Description of EUT

Product	AX1800 Dual-Band USB 3.0 Adapter		
Brand Name	Edimax		
Model Name	EW-7822UMX		
<b>Operating Frequency</b>	5180 ~ 5240 MHz, :	5745 ~ 5825 MHz	
Modulation	1024QAM, 256QA	M, 64QAM, 16QAM, QPSK, BPSK	
Transfer Rate	802.11a: up to 54 Mbps 802.11n: up to MCS15 802.11ac: up to MCS 9 802.11ax: up to MCS11		
	5180 ~ 5240 MHz	4 for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20) 2 for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40)	
Number of Channel	5745 ~ 5825 MHz	1 for 802.11ac (VHT80), 802.11ax (HE80) 5 for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20) 2 for 802.11n (HT40), 802.11ac (VHT40), 802.11ax	
		(HE40) 1 for 802.11ac (VHT80), 802.11ax (HE80)	
Maximum Output	5180 ~ 5240 MHz: 17.43 dBm		
Power	5745 ~ 5825 MHz: 14.92 dBm		
Normal Voltage	5Vdc from host equipment		
Sample ID	Conducted Test: 4753438 Radiated Test: 4753438		



Note:

1. Simultaneously transmission condition:

Condition	Technology	
1	WLAN (2.4GHz) WLAN (5GHz)	
Note:		

1. The emission of the simultaneous operation has been evaluated and no non-compliance was found.

2. We have confirmed that the simultaneous (co-location) tests were not just compliant with

FCC rules but did not introduce new emissions that are within 20dB of the applicable limit.

2. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

<b>Modulation Mode</b>	<b>Tx,Rx</b> Function
802.11a	2TX,2RX
802.11n (HT20)	2TX,2RX
802.11n (HT40)	2TX,2RX
802.11ac (VHT20)	2TX,2RX
802.11ac (VHT40)	2TX,2RX
802.11ac (VHT80)	2TX,2RX
802.11ax (HE20)	2TX,2RX
802.11ax (HE40)	2TX,2RX
802.11ax (HE80)	2TX,2RX

\* The modulation and bandwidth are similar for 802.11n mode for HT20 / HT40 and 802.11ac mode for VHT20 / VHT40 / VHT80 and 802.11ax mode for HE20 / HE40 / HE80, therefore investigated worst case to representative mode in test report.

3. The above EUT information is declared by manufacturer and for more detailed features description, please refer the manufacturer's or user's manual.



### 6.2. Channel List

#### FOR 5180 ~ 5240MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency
42	5210MHz

#### FOR 5745 ~ 5825MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz	-	-

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency
155	5775MHz



## 6.3. Test Condition

Test Item	Test Site No.	Environmental Condition	Input Power	Test Date	Tested by
Antenna Port Conducted Measurement	SR4	23~26°C/ 62~67%RH	5Vdc	2022/03/14~ 2022/03/18	Patrick Kuan
Radiated Spurious Emission	966-2	23~26°C/ 62~67%RH	5Vdc	2022/03/15~ 2022/03/25	Patrick Kuan
AC power Line Conducted Emission	SR1	23~26°C/ 62~67%RH	5Vdc	2022/03/23~ 2022/03/25	Patrick Kuan

FCC Test Firm Registration Number: 498077



### 6.4. Description of Available Antennas

Ant. No.	Transmitter Circuit	Brand Name	Model Name	Ant. Type	Maximum Gain (dBi)
1	Chain (0)	LYNwave	7822ant-1	Printed	4.5
2	Chain (1)	LYNwave	7822ant-2	Printed	5.6

Note: The above antenna information was provided from customer and for more detailed features description, please refer the manufacturer's specification or user's manual.



## 6.5. Test Mode Applicability and Tested Channel Detail

- The EUT power source types: 5Vdc from Host. Therefore the test data of the 5Vdc was recorded in this report.
- For AC power line conducted emissions, the pre-scan has been determined by AC power 120Vac/60Hz (worst case)
- The fundamental of the EUT was investigated in three orthogonal axes X-Y/Y-Z/X-Z, it was determined that X-Y plane was worst-case. Therefore, all final radiated testing was performed with the EUT in X-Y plane.
- For Antenna Port Conducted Measurement, this item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel), parallel and perpendicular are the worst orientations, therefore testing was performed on these two orientations only.
- For below 1 GHz radiated emission and AC power line conducted emission have performed all modes of operation were investigated and the worst-case emissions are reported.
- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Test item	Mode	Frequency Band (MHz)	Modulation Technology	Available Channel	Test Channel	Data Rate
	802.11a		OFDM	36 to 48	36, 44, 48	6Mbps
	802.11ax20	5180-5240		36 to 48	36, 44, 48	HE0
	802.11ax40	5180-5240	OFDM/OFDMA	38 to 46	38, 46	HE0
Radiated Emissions	802.11ax80			42	42	HE0
(Above 1GHz)	802.11a		OFDM	149 to 165	149, 157, 165	6Mbps
<b>( ( ( ( ( ( ( ( ( (</b>	802.11ax20	5745 5975		149 to 165	149, 157, 165	HE0
	802.11ax40	5745-5825	OFDM/OFDMA	151 to 159	151, 159	HE0
	802.11ax80			155	155	HE0
Radiated Emissions (Below 1GHz)	802.11a	5180-5240	OFDM	36 to 48	48	6Mbps
AC Power Line Conducted Emission	802.11a	5180-5240	OFDM	36 to 48	48	6Mbps
	802.11a		OFDM	36 to 48	36, 44, 48	6Mbps
	802.11ax20	5190 5240		36 to 48	36, 44, 48	HE0
	802.11ax40	5180-5240	OFDM/OFDMA	38 to 46	38, 46	HE0
Antenna Port	802.11ax80			42	42	HE0
Conducted Measurement	802.11a		OFDM	149 to 165	149, 157, 165	6Mbps
	802.11ax20	5745 5975		149 to 165	149, 157, 165	HE0
	802.11ax40	5745-5825	OFDM/OFDMA	151 to 159	151, 159	HE0
	802.11ax80			155	155	HE0

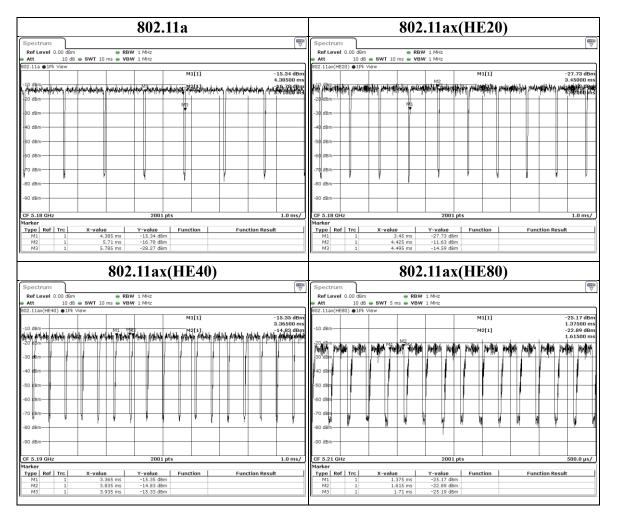
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### 6.6. Duty cycle

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle	Duty Factor (dB)	VBW Set (above 1GHz)
802.11a	1.325	1.400	0.95	0.24	1kHz
802.11ax(HE20)	0.975	1.045	0.93	0.30	2kHz
802.11ax(HE40)	0.470	0.570	0.82	0.84	3kHz
802.11ax(HE80)	0.240	0.335	0.72	1.45	5.1kHz





## 7. Test Equipment

Test Equipment List						
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Expired date	
	R	adiated Spurious	Emission			
Spectrum Analyzer	Keysight	N9010A	MY56070827	2021/11/9	2022/11/8	
EMI Test Receiver	Rohde & Schwarz	ESR7	101754	2021/12/10	2022/12/9	
Loop Antenna	ETS lindgren	6502	00213440	2021/12/23	2022/12/22	
Trilog- Broadband Antenna with 5dB Attenuator	Schwarzbeck & EMCI	VULB 9168 & N-6-05	774 & AT- N0538	2022/2/8	2023/2/7	
Horn Antenna (1-18 GHz)	Schwarzbeck	BBHA 9120 D	01690	2021/12/13	2022/12/12	
Horn Antenna (18-40 GHz)	Schwarzbeck	BBHA 9170	781	2021/12/17	2022/12/16	
Preamplifier (30-1000 MHz)	EMCI	EMC330E	980405	2021/6/8	2022/6/7	
Preamplifier (1-18 GHz)	EMCI	EMC051835BE	980406	2022/2/16	2023/2/15	
Preamplifier (18-40GHz)	EMCI	EMC184040SEE	980426	2021/5/19	2022/5/18	
Cables	Hanyitek	K1K50-UP0264- K1K50-2500	170214-4 & 170425-2	2021/12/3	2022/12/2	
Cables	Hanyitek	K1K50-UP0264- K1K50-2500	170214-1 & 170214-2	2021/12/3	2022/12/2	



	Test Equipment List						
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Expired date		
	Antenna	a Port Conduc	ted Measuremen	t			
Spectrum Analyzer	Keysight	N9010A	MY56070834	2021/10/29	2022/10/28		
Pulse Power Sensor	Anritsu	MA2411B	1531202	2021/12/22	2022/12/21		
Power Meter	Anritsu	ML2495A	1645002	2021/12/22	2022/12/21		
Temperature &Humidity Test Chamber	GIANT FORCE	GTH-150- 40-CP-AR	MAA1701-010	2021/3/22	2022/3/21		
	AC po	wer Line Con	ducted Emission				
EMI Test Receiver	Rohde & Schwarz	ESR7	101753	2021/11/15	2022/11/14		
Two-Line V- Network	Rohde & Schwarz	ENV216	102136	2021/8/30	2022/8/29		
Impuls-Begrenzer Pulse Limiter	Rohde & Schwarz	ESH3-Z2	102219-Qt	2021/8/26	2022/8/25		
Cables	TITAN	CFD200	T0732ACFD20 020A300-1	2022/3/16	2023/3/15		

UL Software					
Description Name Version					
Radiated measurement	e3	6.191211 (V6)			
Conducted measurement	RF Conducted Test Tools	ver 2.4.0.620b			
AC power Line Conducted Emission	EZ_EMC	UL-3A1.2			



## 8. Description of Test Setup

### **Support Equipment**

ID	Equipment	Brand Name	Model Name	S/N	Remark
А	Laptop	Lenovo	T430	PB-8XTN7	Provide by lab

#### I/O Cables

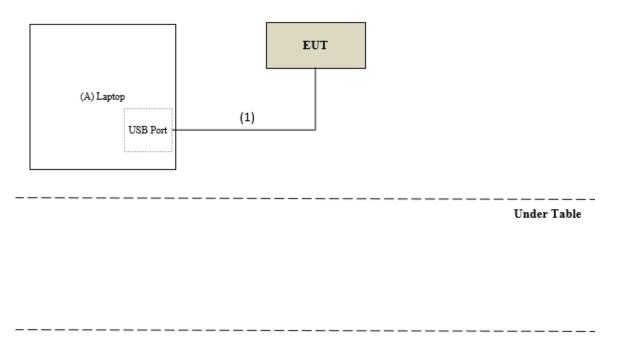
ID	Equipment	Brand Name	Model Name	Length (m)	Remark
1	USB Cable	fujiei	Z08145	1m	Provide by lab

#### **Test Setup**

Controlled using a bespoke application (AX Series MP Toolkit\_vesion: mp\_v1.0.33) on a test Notebook. The application was used to enable a continuous transmission mode and to select the test channels, data rates, modulation schemes and power setting as required.



#### **Setup Diagram for Test**



Remote Site



## 9. Test Results

#### 9.1. 6dB Bandwidth

#### **Requirements**

The minimum 6 dB bandwidth shall be at least 500 kHz.

#### Test procedure

- a. Set resolution bandwidth (RBW) = 100kHz
- b. Set the video bandwidth (VBW)  $\geq$  3 x RBW, Detector = Peak.
- c. Trace mode = max hold.
- d. Sweep = auto couple.
- e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

#### Test Setup



The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.

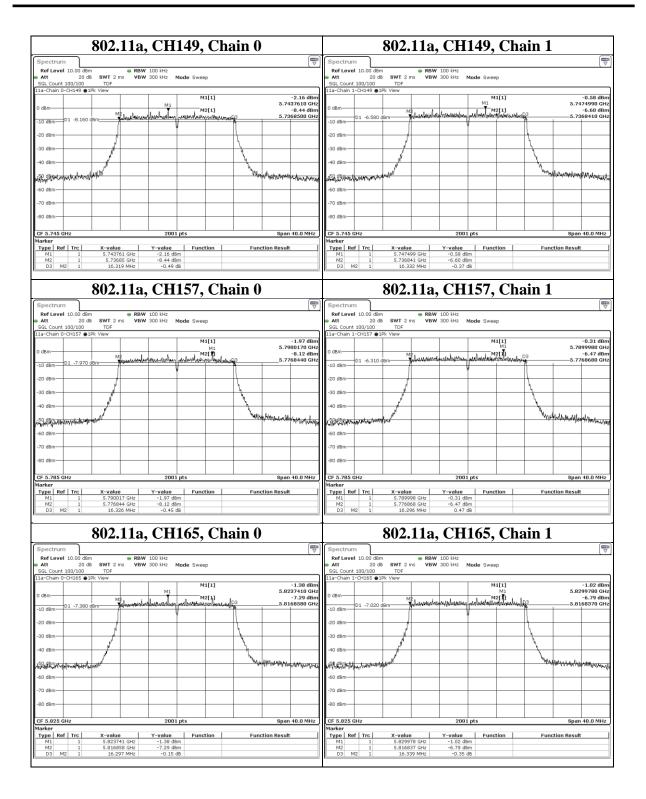


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#### Test Data

Mode	СН	Freq	6dB BW	/ (MHz)	Limit	Result
widde	Сп	(MHz)	Chain 0	Chain 1	(MHz)	Kesuit
	149	5745	16.319	16.332	0.5	Pass
802.11a	157	5785	16.326	16.296	0.5	Pass
	165	5825	16.297	16.339	0.5	Pass





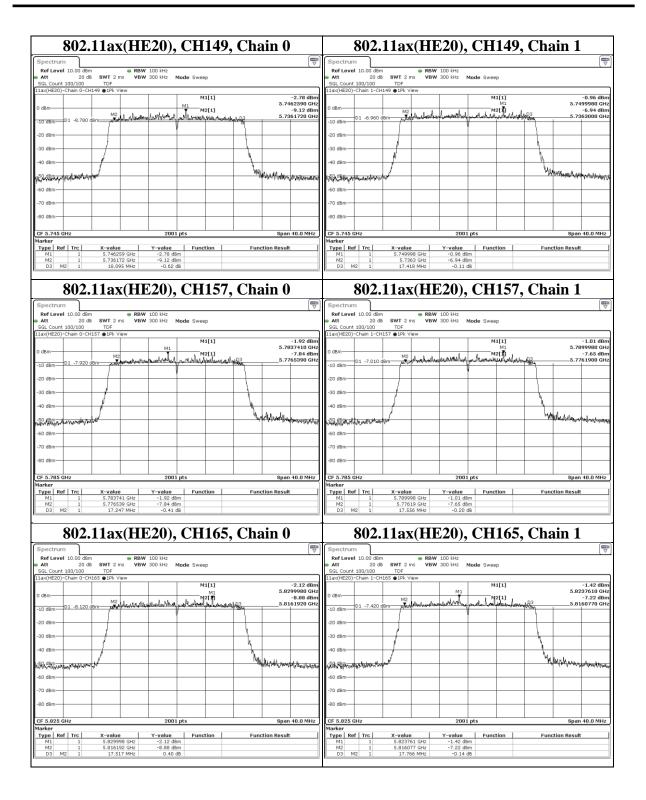
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Mode	СН	Freq	6dB BW	/ (MHz)	Limit	Result
Widde	Сп	(MHz)	Chain 0	Chain 1	(MHz)	Kesult
	149	5745	18.095	17.418	0.5	Pass
802.11ax(HE20)	157	5785	17.247	17.556	0.5	Pass
	165	5825	17.517	17.766	0.5	Pass







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Mode	СН	Freq	6dB BW	/ (MHz)	Limit	Result
widde	Сп	(MHz)	Chain 0	Chain 1	(MHz)	Kesuit
$902.11_{ov}(\text{UE}40)$	151	5755	37.548	36.965	0.5	Pass
802.11ax(HE40)	159	5795	37.592	37.222	0.5	Pass

802.11a	<b>x(HE40)</b> ,	CH151	, Cha	in O	)		802.1	l 1ax	x(HE	E <b>40),</b>	CH	151,	Cha	ain 1	L	
pectrum						Spectrun	J								9	
Ref Level 10.00 dBm	<ul> <li>RBW 100 kHz</li> </ul>						10.00 dBm		RBW							
Att 20 dB SWT 2 GL Count 100/100 TDF	ms <b>VBW</b> 300 kHz M	dode Sweep				Att SGL Count	20 dB	SWT 2 n TDF	ns <b>VBW</b>	300 kHz 1	Mode Swee	p				
ax(HE40)-Chain 0-CH151 @1Pk \	/iew						Chain 1-CH15		iew							
		M1[1]			-5.25 dBm						M	1[1]			-3.92 d	
dBm-	MI	M2[1]			500020 GHz -11.86 dBm	0 dBm					M1	0[1]		5.7	599980 C	
	Level described	M2[1]			-11.86 dBm 364680 GHz			M2	لمانطا	سيراولون	ี เป็	عرين بليم الينا	ba	5.7	-9.82 a 363180 G	
0.dBm D1 -11.250 dBm M2	and a second state of the second second	Halala Marine Address	M LLB3			10 dBm	D1 -9.920 dB	m <b>X,hil</b>	a ha	بمنظم البابلانيط	الوفر المالياتين	W. Walter Lawlinghold		-	1	
0 dBm						-20 dBm-										
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dBm			-			-60 dBm									-	
dBm						-70 dBm										
ubiii						-70 ubiii										
dBm			_			-80 dBm										
5.755 GHz	2001	pts		Span	1 80.0 MHz	CF 5.755 0	Hz			2001	pts			Spa	n 80.0 M	
ker						Marker										
pe Ref Trc X-valu		Function	Fund	tion Result	t	Type Re M1		X-value		Y-value	Func	tion	Fun	ction Resul	lt	
M1 1 5.7500	102 GHz -5.25 dB						1	5.75999		-3.92 dB						
M2 1 5 7364	69 CH7 -11 96 dB						1			-0 82 de						
D3 M2 1 37.5	48 MHz 0.13 c	IB	, Cha	in 0		M2 D3 M			5 MHz	-9.82 de -0.02	dB	159.	Cha	ain 1	[	
D3 M2 1 37.5		IB	, Cha	in 0		M2 D3 M	<sup>2</sup> 1 802.1	36.96	5 MHz	-0.02	dB	159,	Cha	ain 1	L	
B02.11ax	• RBW 100 kHz	CH159	, Cha	in O		M2 D3 M Spectrun	<sup>2</sup> 1 802.1	36.96 1ax	• RBW	-0.02 ( <b>C40),</b>	СН		Cha	ain 1		
BO2.112 802.112 ectrum of Lovel 5.00 dBm tt 15 dB SWT 2 m	<sup>48 MH2</sup> 0.13 c	CH159	, Cha	in 0		M2 D3 M Spectrun Ref Level	2 1 802.1	36.96 1ax	• RBW	-0.02 E <b>40),</b>	СН		Cha	ain 1		
B3         M2         1         37.5           802.11ax           øectrum           øf Løvel 5.00 dBm           tt         15 dB         swrt 2 m           Jorder 15 dB           TOF	48 MHz 0.13 c K(HE40), * RBW 100 KHz * VBW 300 KHz M	CH159	, Cha	in 0		M2 D3 M Spectrun Ref Level SGL Count	2 1 802.1	36.96	K MHz	-0.02 ( <b>C40),</b>	СН		Cha	ain 1		
B3         M2         1         37.5 <b>802.11a</b> ectrum           of Level 5.00 dBm           tt         15 dB         SWT 2 m           Loomt 100/100         TOF           («HE40)-Chain 0-CH159         01Pk	48 MHz 0.13 c K(HE40), * RBW 100 KHz * VBW 300 KHz M	CH159	, Cha	in 0		M2 D3 M Spectrun Ref Level SGL Count	2 1 802.1	36.96	K MHz	-0.02 ( <b>C40),</b>	CH Mode Swee		Cha	ain 1		
B3         M2         1         97.5 <b>802.11a</b> M2         0         88           M2         0         88           M2         0         88         1         97.5           M2         0         0         88         1         97.5           M2         0         0         0         0         0         1 <td>48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew</td> <td>CH159 ade Sweep </td> <td></td> <td>5.79</td> <td>-5.36 dBm 925210 GHz</td> <td>M2 D3 M Spectrun Ref Level Att SGL Count 11ax(HE40)</td> <td>2 1 802.1</td> <td>36.96</td> <td>K MHz</td> <td>-0.02 ( <b>C40),</b></td> <td>Mode Swee</td> <td>ip 1[1]</td> <td>Cha</td> <td>5.7</td> <td>-4.29 d</td>	48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew	CH159 ade Sweep 		5.79	-5.36 dBm 925210 GHz	M2 D3 M Spectrun Ref Level Att SGL Count 11ax(HE40)	2 1 802.1	36.96	K MHz	-0.02 ( <b>C40),</b>	Mode Swee	ip 1[1]	Cha	5.7	-4.29 d	
B3         M2         1         37.5 <b>802.11a</b> dectrum           of Lovel 5.00 dBm           tt         15 dB         SWT 2 m           Lowel 10 dBm           Lowel 10 dBm           Colspan="2">Colspan="2"           Colspan="2"	48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew	CH159 ade Sweep 		5.79	-5.36 dBm 925210 GHz -11.49 dBm	M2 D3 M Spectrun Ref Level SGL Count	2 1 802.1	36.96	SS MHZ	-0.02 ( <b>C40),</b>	Mode Swee	:p 1[1]	Cha	5.7	-4.29 c 999980 -10.93 c	
03         M2         1         37.5           802.11a:           sectrum           f Level 5.00 dBm           t         15 dB           t         15 dB           count 10/01 OFF           t           Count 10/01 OFF           (HE40)-Chain 0-CH159 • 1Pk V           M2           dBm—01 -11.360 dBm	48 MH2 0.13 ( <b>K(HE40),</b> <b>RBW</b> 100 kH2 <b>VBW</b> 300 kH2 M 7/ew M1	CH159 ade Sweep 		5.79	-5.36 dBm 925210 GHz	M2 D3 M Spectrun Ref Level Att SGL Count 11ax(HE40)- 0 dBm-	2 1 802.1	36.96	K MHz	-0.02 ( <b>C40),</b>	Mode Swee	:p 1[1]	Cha	5.7	-4.29 c 999980 -10.93 c	
03         M2         1         37.5           802.11a:           arctrum           arctrum           arctrum           arctrum           arctrum           arctrum           arctrum           arctrum           arctrum           colspan="2">arctrum           arctrum           arctrum           arctrum           arctrum           arctrum           arctrum <td colspa<="" td=""><td>48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew</td><td>CH159 ade Sweep </td><td></td><td>5.79</td><td>-5.36 dBm 925210 GHz -11.49 dBm</td><td>M2 D3 M Spectrun Ref Level Att SGL Count 11ax(HE40) 0 dBm -10 dBm</td><td>2 1 802.1 10.00 dBm 20 dB 100/100 Chain 1-CH19</td><td>36.96</td><td>SS MHZ</td><td>-0.02 ( <b>C40),</b></td><td>Mode Swee</td><td>:p 1[1]</td><td>Cha</td><td>5.7</td><td>-4.29 ( 999980 -10.93 (</td></td>	<td>48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew</td> <td>CH159 ade Sweep </td> <td></td> <td>5.79</td> <td>-5.36 dBm 925210 GHz -11.49 dBm</td> <td>M2 D3 M Spectrun Ref Level Att SGL Count 11ax(HE40) 0 dBm -10 dBm</td> <td>2 1 802.1 10.00 dBm 20 dB 100/100 Chain 1-CH19</td> <td>36.96</td> <td>SS MHZ</td> <td>-0.02 ( <b>C40),</b></td> <td>Mode Swee</td> <td>:p 1[1]</td> <td>Cha</td> <td>5.7</td> <td>-4.29 ( 999980 -10.93 (</td>	48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew	CH159 ade Sweep 		5.79	-5.36 dBm 925210 GHz -11.49 dBm	M2 D3 M Spectrun Ref Level Att SGL Count 11ax(HE40) 0 dBm -10 dBm	2 1 802.1 10.00 dBm 20 dB 100/100 Chain 1-CH19	36.96	SS MHZ	-0.02 ( <b>C40),</b>	Mode Swee	:p 1[1]	Cha	5.7	-4.29 ( 999980 -10.93 (
03         M2         1         37.5 <b>802.11a</b> setrum           t         15.66         8WT 2 m.           to 15.60 dBm           to 15.60 dBm           to 200 dBm           dBm - 01 -11.360 dBm           dBm - 01 -11.360 dBm	48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew	CH159 ade Sweep 		5.79	-5.36 dBm 925210 GHz -11.49 dBm	M2 D3 M Spectrun Ref Level Att SGL Count 11ax(HE40)- 0 dBm-	2 1 802.1 10.00 dBm 20 dB 100/100 Chain 1-CH19	36.96	SS MHZ	-0.02 ( <b>C40),</b>	Mode Swee	:p 1[1]	Cha	5.7	-4.29 ( 999980 -10.93 (	
03         M2         1         37.5 <b>802.11a</b> setrum           t         15.66         8WT 2 m.           to 15.60 dBm           to 15.60 dBm           to 200 dBm           dBm - 01 -11.360 dBm           dBm - 01 -11.360 dBm	48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew	CH159 ade Sweep 		5.79	-5.36 dBm 925210 GHz -11.49 dBm	M2 D3 M Spectrun Ref Level Att SGL Count 11ax(HE40) 0 dBm -10 dBm	2 1 802.1 10.00 dBm 20 dB 100/100 Chain 1-CH19	36.96	SS MHZ	-0.02 ( <b>C40),</b>	Mode Swee	:p 1[1]		5.7	-4.29 ( 999980 -10.93 (	
33         M2         1         37.5 <b>802.11a</b> Setrum           t         15.68           to 0.68m           to 0.68m           to 0.68m           to 0.6100           dBm 0.1           dBm 0.1           dBm 0.1           dBm 0.1           dBm 0.1           dBm 0.1	48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew	CH159 ade Sweep 		5.79	-5.36 dBm 925210 GHz -11.49 dBm	M2         M2           D3         M           Spectrum         Ref Level           Att         SGL Count           11ax(HE40)*         0 d8m           -20 d8m         -30 d8m	2 1 802.1 10.00 dBm 20 dB 100/100 Chain 1-CH19	36.96	ss MHz (HF s RBW vBW	-0.02 ( <b>C40),</b>	Mode Swee	:p 1[1]	Cha	5.7	-4.29 ( 999980 -10.93 (	
03         M2         1         37.5           802.11a:           sectrum           flavel 5.00 dBm           t         15 dB         SWT 2 m           count 10/2100 TOF           count 10/2100 TOF           Count 10/2100 TOF           dBm           01 -11.360 dBm           M2           dBm           dBm           dBm           dBm           dBm           dBm           dBm           dBm	48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew	CH159 ade Sweep 		5.79	-5.36 dBm 925210 GHz -11.49 dBm 664490 GHz	M2 D3 M Spectrun Ref Level Att SGL Count 11ax(HE40)- 0 dBm -10 dBm -20 dBm	2 1 802.1 10.00 dBm 20 dB 100/100 Chain 1-CH19	36.96	ss MHz (HF s RBW vBW	-0.02 ( <b>C40),</b>	Mode Swee	:p 1[1]		5.7	-4.29 ( 999980 -10.93 ( 764690	
B         M2         1         37.5           802.11ax         37.5         37.5           ectrum         1         37.5           of Level 5.00 dBm         15.60 BWT 2 m.         20.01 100/100 TOF           cture 15.00 dBm         15.60 BWT 2 m.         20.01 100/100 TOF           c(HE40)-Chain 0-CH159 0-104 M         100 Mm         M2           dBm         01 - 11.360 dBm         M2	48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew	CH159 ade Sweep 		5.79	-5.36 dBm 925210 GHz -11.49 dBm 664490 GHz	M2 D3 M Ref Level Att SGL Count 11ax(HE40) 0 dBm -10 dBm -30 dBm -40 dBm	2 1 802.1	36.90	ss MHz (HF s RBW vBW	-0.02 ( <b>C40),</b>	Mode Swee	:p 1[1]		5.7	-4.29 ( 999980 -10.93 ( 764690	
Base         M2         1         37.5           802.11ax         37.5         37.5           ectrum         1         37.5         37.5           flevel 5.00 dBm         15.00 dBm         15.60 BWT 2 m         20.10 MWT 2 m           count 100/100         TOF         70.00 MWT 2 m         20.00 MWT 2 m           dBm         01         -11.360 dBm         M2	48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew	CH159 ade Sweep 		5.79	-5.36 dBm 925210 GHz -11.49 dBm	M2 D3 M Ref Level Att SGL Count 11ax(HE40) 0 dBm -10 dBm -30 dBm -40 dBm	2 1 802.1 10.00 dBm 20 dB 100/100 Chain 1-CH19	36.90	ss MHz (HF s RBW vBW	-0.02 ( <b>C40),</b>	Mode Swee	:p 1[1]		5.7	-4.29 ( 999980 -10.93 ( 764690	
03         M2         1         37.5           802.11a:           ectrum           ectrum           15.00 dBm           15.00 dBm           1.00 dBm           Colspan="2">Colspan="2">Colspan="2"           Colspan="2">Colspan="2"           Colspan="2"           Colspan="2"           Colspan="2"           Colspan="2"           Colspan="2"           Colspan="2"           Colspan="2"           Colspan="2"           Colspan="2"           M2           Colspan="2"	48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew	CH159 ade Sweep 		5.79	-5.36 dBm 925210 GHz -11.49 dBm 664490 GHz	M2 D3 M Ref Level Att SGL Count 11ax(HE40) 0 dBm -10 dBm -30 dBm -40 dBm	2 1 802.1	36.90	ss MHz (HF s RBW vBW	-0.02 ( <b>C40),</b>	Mode Swee	:p 1[1]		5.7	-4.29 c 999980 -10.93 c 764690	
D3         M2         1         37.5           802.11a         37.5         37.5           ectrum         1         37.5           etudel 5.00 dBm         15.65         8WT 2 m           td         15.65         8WT 2 m           .0 cont 100/10         TOF         100 m           x(re40)-chain 0-ch159         918 v           .0 m         01         -11.360           .0 m         .01         .01           .0 m         .01         .11.360           .0 m         .01         .01           .0 m         .01         .11.360           .0 m         .01         .01           .0 m         .01         .01 <td>48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew</td> <td>CH159 ade Sweep </td> <td></td> <td>5.79</td> <td>-5.36 dBm 925210 GHz -11.49 dBm 664490 GHz</td> <td>M2         M2           D3         M           Spectrun         Ref Lavei           Att         SG. Count           13m/(H=40)         0 dBm           -20 dBm         -30 dBm           -30 dBm         -60 dBm           -60 dBm         -60 dBm</td> <td>2 1 802.1</td> <td>36.90</td> <td>ss MHz (HF s RBW vBW</td> <td>-0.02 ( <b>C40),</b></td> <td>Mode Swee</td> <td>:p 1[1]</td> <td></td> <td>5.7</td> <td>-4.29 d 999988 d -10.93 d 764690 d</td>	48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew	CH159 ade Sweep 		5.79	-5.36 dBm 925210 GHz -11.49 dBm 664490 GHz	M2         M2           D3         M           Spectrun         Ref Lavei           Att         SG. Count           13m/(H=40)         0 dBm           -20 dBm         -30 dBm           -30 dBm         -60 dBm           -60 dBm         -60 dBm	2 1 802.1	36.90	ss MHz (HF s RBW vBW	-0.02 ( <b>C40),</b>	Mode Swee	:p 1[1]		5.7	-4.29 d 999988 d -10.93 d 764690 d	
D3         M2         1         37.5 <b>802.11a</b> ectrum           etrum           etrum </td <td>48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew</td> <td>CH159 ade Sweep </td> <td></td> <td>5.79</td> <td>-5.36 dBm 925210 GHz -11.49 dBm 664490 GHz</td> <td>M2 D3 M Ref Level Att SGL Count 11ax(HE40) 0 dBm -20 dBm -20 dBm -30 dBm -50 dBm -50 dBm</td> <td>2 1 802.1</td> <td>36.90</td> <td>ss MHz (HF s RBW vBW</td> <td>-0.02 ( <b>C40),</b></td> <td>Mode Swee</td> <td>:p 1[1]</td> <td></td> <td>5.7</td> <td>-4.29 d 999988 d -10.93 d 764690 d</td>	48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew	CH159 ade Sweep 		5.79	-5.36 dBm 925210 GHz -11.49 dBm 664490 GHz	M2 D3 M Ref Level Att SGL Count 11ax(HE40) 0 dBm -20 dBm -20 dBm -30 dBm -50 dBm -50 dBm	2 1 802.1	36.90	ss MHz (HF s RBW vBW	-0.02 ( <b>C40),</b>	Mode Swee	:p 1[1]		5.7	-4.29 d 999988 d -10.93 d 764690 d	
03         M2         1         37.5           802.11a:           ectrum           ectrum           15.00 dBm           15.00 dBm           1.50 dBm           (HE40)-Chain 0-CH159 0-IPk V           M2           dBm           01 -11.360 dBm           M2           dBm	48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew	CH159 ade Sweep 		5.79	-5.36 dBm 925210 GHz -11.49 dBm 664490 GHz	M2         M2           D3         M           Spectrun         Ref Lavei           Att         SG. Count           13ax(HE40)         0 dBm           -20 dBm         -30 dBm           -30 dBm         -60 dBm           -50 dBm         -70 dBm	2 1 802.1	36.90	SS MHZ	-0.02 ( <b>C40),</b>	Mode Swee	:p 1[1]		5.7	-4.29 c 999980 -10.93 c 764690	
D3         M2         1         37.5           802.11ax	48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew	CH159 ade Sweep 		5.79	-5.36 dBm 925210 GHz -11.49 dBm 664490 GHz	M2         M2           D3         M           Spectrun         Ref Lavei           Att         SG. Count           13m/(H=40)         0 dBm           -20 dBm         -30 dBm           -30 dBm         -60 dBm           -60 dBm         -60 dBm	2 1 802.1	36.90	SS MHZ	-0.02 ( <b>C40),</b>	Mode Swee	:p 1[1]		5.7	-4.29 c 999980 -10.93 c 764690	
D3         M2         1         37.5           802.11ax	48 MHz 0.13 c x(HE40), * RBW 100 HHz vBW 300 kHz M * VBW 100 kHz M *	CH159 ade sweepM1[1]M2[1]1		5.79 	-5.36 dBm 255210 GHz 255210 GHz 11.49 dBm 764490 GHz	M2         M2           D3         M           Spectrum         Ref Level           Att         SG. Count           11ax(HE40)         0 dBm           -20 dBm         -30 dBm           -30 dBm         -60 dBm           -70 dBm         -80 dBm           -80 dBm         -80 dBm	2 1 802.1 3 db 10.00 dBm 20 db 100/100 Chain 1-CH15 D1 -10.290 d	36.90	SS MHZ	-0.02 (	Made Sweet	:p 1[1]		5.7 5.7	-4.29 c 999980 -10.93 c 764690	
B3         M2         1         37.5           802.11a	48 MHz 0.13 c <b>K(HE40),</b> <b>RBW</b> 100 KHz <b>VBW</b> 300 KHz M /iew	CH159 ade sweepM1[1]M2[1]1		5.79 	-5.36 dBm 925210 GHz -11.49 dBm 664490 GHz	M2         M2           D3         M           Spectrun         Ref Lavei           Att         SG. Count           13ax(HE40)         0 dBm           -20 dBm         -30 dBm           -30 dBm         -60 dBm           -50 dBm         -70 dBm	2 1 802.1 3 db 10.00 dBm 20 db 100/100 Chain 1-CH15 D1 -10.290 d	36.90	SS MHZ	-0.02 ( <b>C40),</b>	Made Sweet	:p 1[1]		5.7 5.7	-4.29 c 999980 -10.93 c 764690	
D3         M2         1         37.5           802.11a         37.5         37.5           ectrum         1         37.5           eftexel         5.00 dBm         15.6           status         15.60 dBm         15.6           (HE40)-Chain 0-CH159 e1Pk //         Bm         01 -11.360 dBm           dBm         01 -11.360 dBm         M2	(HE40),     (	CH159 ode Sweep M1[1] M2		5.79 	(T2)     (T2)	M2         M2           0.3         M           Spectrum         Ref Lavei           Att         SG. Count           11ax(HE40)         0 dBm           -20 dBm         -30 dBm           -30 dBm         -40 dBm           -60 dBm         -60 dBm           -70 dBm         -80 dBm           -80 dBm         -70 dBm	2 1 802.1 1 10.00 dBm 20 dB 20 dB 10/100 Chain 1-CH15 Chain 1-CH15 Chain 1-CH15	36.92 36.92	RBW RBW RBW RBW RBW RBW RBW RBW RBW RBW	-0.02 1	CH	ip 1[1] 2[1]		5.7 5.7	-4.29 c 999980 -10.93 c 764690	
D3         M2         1         37.5           802.11ax         37.5         37.5           Sectrum         15.65         9WT 2         37.5           Generation 10.50         15.65         9WT 2         37.5           Sectrum         0.1         11.360         8WT 2         37.5           Sectrum         M2         1         77.7         37.5           Sectrum         M2         1         1.1         37.5           Sectrum         M2         1         1.1         37.6           Sectrum         M2         1         5.75         37.75           Sectrum         M2         1         5.75         5.75	Contract of the second se	CH159 ade sweepM1[1]M2[1]1		5.79 	(T2)     (T2)	M2         M2           D3         M           Spectrum         Ref Level           Att         SG. Count           11ax(HE40)         0 dBm           -20 dBm         -30 dBm           -30 dBm         -60 dBm           -70 dBm         -60 dBm           -80 dBm         -80 dBm	2 1 802.1 1 10.00 dBm 20 dB 20 dB 10/100 Chain 1-CH15 Chain 1-CH15 Chain 1-CH15	36.92 36.92	S MH2	-0.02 ( 240), 100 kH2 300 kH2 100 k	Mode Sweet	ip 1[1] 2[1]		5.7 5.7	-4.29 c 999980 -10.93 c 764690	
03         M2         1         37.5           802.11a:           ectrum           ectrum           15.00 dBm           tt         15 dB         SWT 2 n           1.5 dB         SWT 2 n           Colspan="2">Colspan="2">Colspan="2"           dBm         0.1         -11.360         M2           dBm         M2         M2 <td colspa<="" td=""><td>(HE40),     (HE40),     (</td><td>CH159  CH159  dde Sweep  M1[1]  M1[1]  M2[1]  M2[1]</td><td></td><td>5.79 </td><td>(T2)     (T2)     (T2)</td><td>M2         M2           0.3         M           Spectrum         Ref Lavei           Att         SG. Count           11ax(HE40)         0 dBm           -20 dBm         -30 dBm           -30 dBm         -40 dBm           -60 dBm         -60 dBm           -70 dBm         -80 dBm           -80 dBm         -70 dBm</td><td>2 1 802.1 10.00 dBm 20 dB 100/100 Chain 1-CH11 00 1 -10.290 d 01 -10.290 d</td><td>36.9¢</td><td>S MH2</td><td>-0.02 1</td><td>Mode Sweet</td><td>ip 1[1] 2[1]</td><td></td><td>5.7 5.7</td><td>-4.29 (999980) -10.93 (764690)</td></td>	<td>(HE40),     (HE40),     (</td> <td>CH159  CH159  dde Sweep  M1[1]  M1[1]  M2[1]  M2[1]</td> <td></td> <td>5.79 </td> <td>(T2)     (T2)     (T2)</td> <td>M2         M2           0.3         M           Spectrum         Ref Lavei           Att         SG. Count           11ax(HE40)         0 dBm           -20 dBm         -30 dBm           -30 dBm         -40 dBm           -60 dBm         -60 dBm           -70 dBm         -80 dBm           -80 dBm         -70 dBm</td> <td>2 1 802.1 10.00 dBm 20 dB 100/100 Chain 1-CH11 00 1 -10.290 d 01 -10.290 d</td> <td>36.9¢</td> <td>S MH2</td> <td>-0.02 1</td> <td>Mode Sweet</td> <td>ip 1[1] 2[1]</td> <td></td> <td>5.7 5.7</td> <td>-4.29 (999980) -10.93 (764690)</td>	(HE40),     (	CH159  CH159  dde Sweep  M1[1]  M1[1]  M2[1]  M2[1]		5.79 	(T2)     (T2)	M2         M2           0.3         M           Spectrum         Ref Lavei           Att         SG. Count           11ax(HE40)         0 dBm           -20 dBm         -30 dBm           -30 dBm         -40 dBm           -60 dBm         -60 dBm           -70 dBm         -80 dBm           -80 dBm         -70 dBm	2 1 802.1 10.00 dBm 20 dB 100/100 Chain 1-CH11 00 1 -10.290 d 01 -10.290 d	36.9¢	S MH2	-0.02 1	Mode Sweet	ip 1[1] 2[1]		5.7 5.7	-4.29 (999980) -10.93 (764690)



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: NDD9578222102

Mode	СН	Freq	6dB BW	/ (MHz)	Limit	Result
Widde	Сп	(MHz)	Chain 0	Chain 1	(MHz)	Kesult
802.11ax(HE80)	155	5775	77.317	45.873	0.5	Pass

802.11ax(HE80), CH155, Chain 0	802.11ax(HE80), CH155, Chain 1
Spectrum 🕎	Spectrum 👘
RefLevel 5.00 dBm	RefLevel 10.00 dBm
Att 15 dB SWT 2 ms VBW 300 kHz Mode Sweep SGL Count 100/100 TDF	Att 20 dB SWT 2 ms VBW 300 kHz Mode Sweep SGL Count 100/100 TDF
11ax(HE80)-Chain 0-CH155 ●1Pk View	11ax(HE80)-Chain 1-CH155 ●1Pk View
M1[1] -7.23 dBm	M1[1] -3.74 dBn
0 dBm M1 5.8125010 GHz	0.d8m M1 5.8100220 GH
-10 dbm 01 - 13.230 dbm 900 1101 111 111 111 111 111 111 111 11	
-10 dBm D1 -13.230 dBm Mithing and a state of the state o	-10 dBm D1 -9.740 dBm
-20 dBm	-10 dBm 01 -9.740 dBm
	-20 dBm
-30 dBm	
	-30 dBm
-40 dBm Wh	
	-40 dBm
Sterney with here the set of the	so den la contra la
-60 dBm	-50 Barrishandaran Provinsi Andrew Provinsi An
	-60 dBm
-70 dBm	
	-70 dBm
-80 dBm	
	-80 dBm-
-90 dBm	
CF 5.775 GHz 2001 pts Span 160.0 MHz	CF 5.775 GHz 2001 pts Span 160.0 MHz
Marker	Marker
Type Ref Trc X-value Y-value Function Function Result	Type Ref Trc X-value Y-value Function Function Result
M1 1 5.812501 GHz -7.23 dBm M2 1 5.736251 GHz -15.40 dBm	M1 1 5.810022 GHz -3.74 dBm
M2 1 5.736251 GHz -15.40 dBm D3 M2 1 77.317 MHz 2.22 dB	M2 1 5.767494 GHz -9.79 dBm D3 M2 1 45.873 MHz -0.07 dB



### 9.2. 26dB Bandwidth

#### Test procedure

- a. Set RBW = approximately 1% of the emission bandwidth.
- b. Set the VBW > RBW.
- c. Detector = Peak.
- d. Trace mode = max hold.
- e. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

#### **Test Setup**



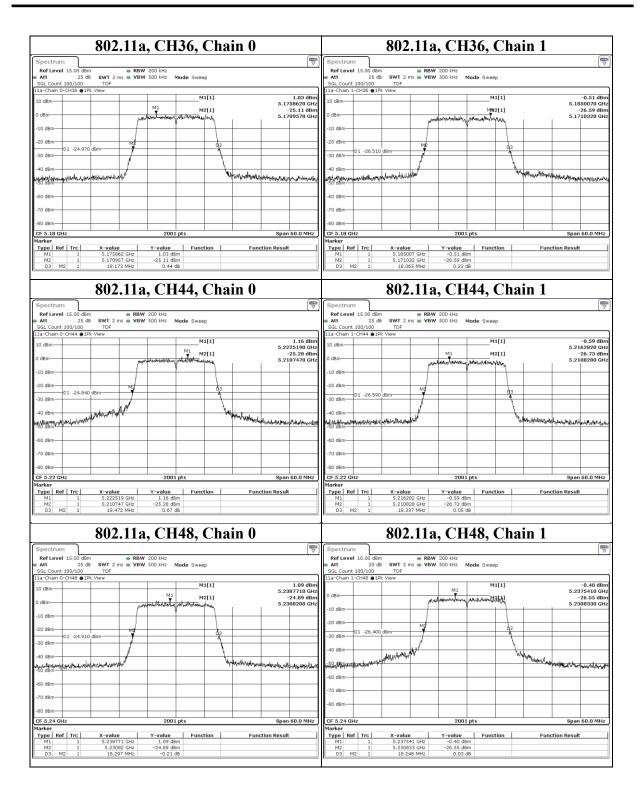
The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.

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#### Test Data

Mode	CH Freq		26dB BV	W (MHz)	Limit	D agult
widde	Сп	(MHz)	Chain 0	Chain 1	(MHz)	Result
	36	5180	18.173	18.065	N/A	Pass
802.11a	44	5220	18.472	18.337	N/A	Pass
	48	5240	18.297	18.248	N/A	Pass





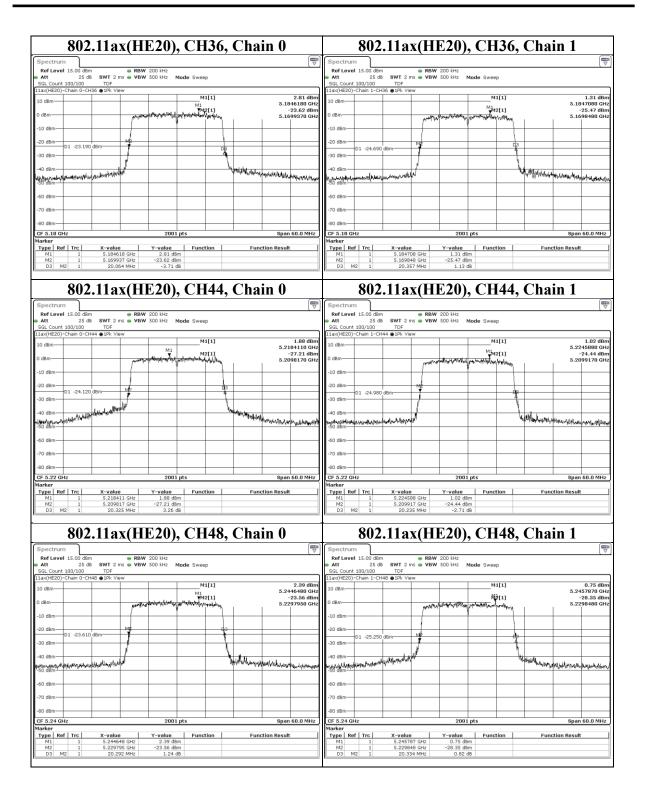
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Mode	СН	Freq	26dB BV	W (MHz)	Limit	Degult
Widde	Сп	(MHz)	Chain 0	Chain 1	(MHz)	Result
	36	5180	20.064	20.357	N/A	Pass
802.11ax(HE20)	44	5220	20.325	20.235	N/A	Pass
	48	5240	20.292	20.334	N/A	Pass



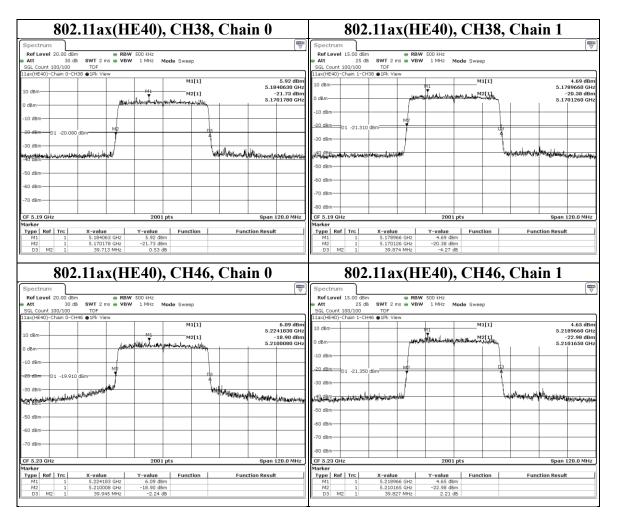


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Mode	de CH F		26dB BV	26dB BW (MHz)		Degult
Mode	Сп	(MHz)	Chain 0	Chain 1	(MHz)	Result
802.11ax(HE40)	38	5190	39.713	39.874	N/A	Pass
	46	5230	39.945	39.827	N/A	Pass





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Mode	СН	Freq	26dB BW (MHz)		Limit	Degult
Widde	Сп	(MHz)	Chain 0	Chain 1	(MHz)	Result
802.11ax(HE80)	42	5210	81.129	81.442	N/A	Pass

802.11ax(HE80),	CH42, Chain 0	802.11ax(HE80), CH42, Chain 1
Spectrum Ref Level 15.00 dBm	(TTP)           (TTP)           (M1[1]           1.66 dBm           5.229710 GHz           -22.46 dBm           -22.46 dBm           5.169489 GHz           -25.46 dBm           -25.46 dBm <th>SU2.11ax(HESU), CH42, Chain 1           Spectrum           Ref Lavel 15.00 dBm           Ref Lavel 15.00 dBm           Ref Lavel 15.00 dBm           SGL Count 100/100           TOF           IAX(HED)           MILII           0 dBm           10 dBm           MILII           1.27 dBm           0           1.27 dBm           1.27 dBm           0           0           0           0           0           0           0           0         0     &lt;</th>	SU2.11ax(HESU), CH42, Chain 1           Spectrum           Ref Lavel 15.00 dBm           Ref Lavel 15.00 dBm           Ref Lavel 15.00 dBm           SGL Count 100/100           TOF           IAX(HED)           MILII           0 dBm           10 dBm           MILII           1.27 dBm           0           1.27 dBm           1.27 dBm           0           0           0           0           0           0           0           0         0     <
-70 dBm -80 dBm CF 5.21 GHz 2001		-70 dBm
Marker		Marker
Type         Ref         Trc         X-value         Y-value           M1         1         5.22871 GHz         1.66 dBr           M2         1         5.169488 GHz         -25.46 dBr           D3         M2         1         81.129 MHz         -1.27 dBr	n	Type         Ref         Trc         X-value         Y-value         Function         Function Result           M1         1         5.18241 GHz         1.27 dBm

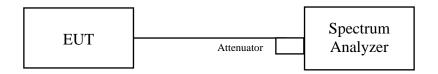


### 9.3. Occupied Bandwidth

#### Test procedure

- a. Set center frequency to the nominal EUT channel center frequency.
- b. Set span = 1.5 times to 5.0 times the OBW.
- c. Set  $\overrightarrow{RBW} = 1\%$  to 5% of the OBW
- d. Set  $VBW \ge 3 \times RBW$
- e. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
- f. Use the 99% power bandwidth function of the instrument (if available).
- g. If the instrument does not have a 99% power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

#### **Test Setup**



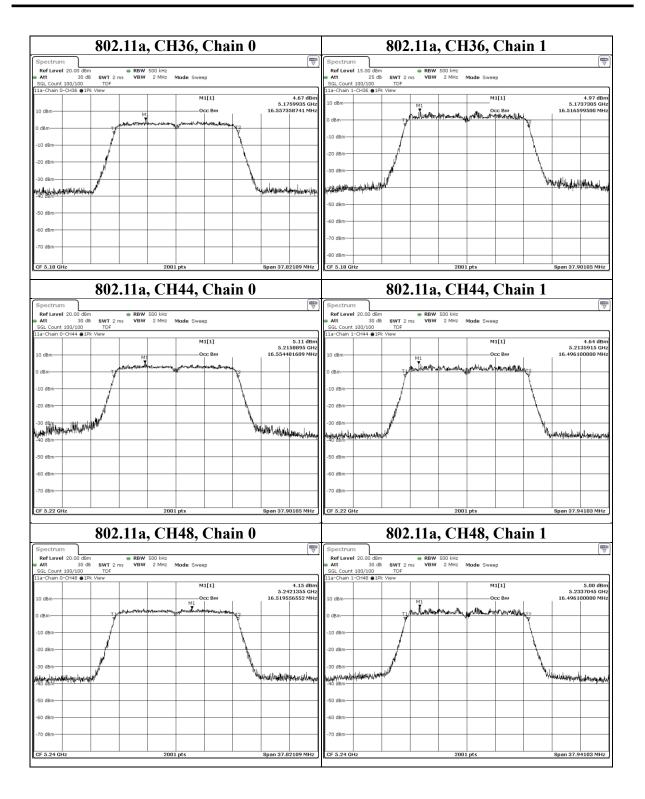
The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.

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#### Test Data

Mode	CII	Freq	OBW	(MHz)	Limit	Dervilt
Mode	CH	(MHz)	Chain 0	Chain 1	(MHz)	Result
802.11a	36	5180	16.557	16.517	N/A	Pass
	44	5220	16.554	16.496	N/A	Pass
	48	5240	16.52	16.496	N/A	Pass
	149	5745	16.554	16.493	N/A	Pass
	157	5785	16.556	16.498	N/A	Pass
	165	5825	16.538	16.496	N/A	Pass

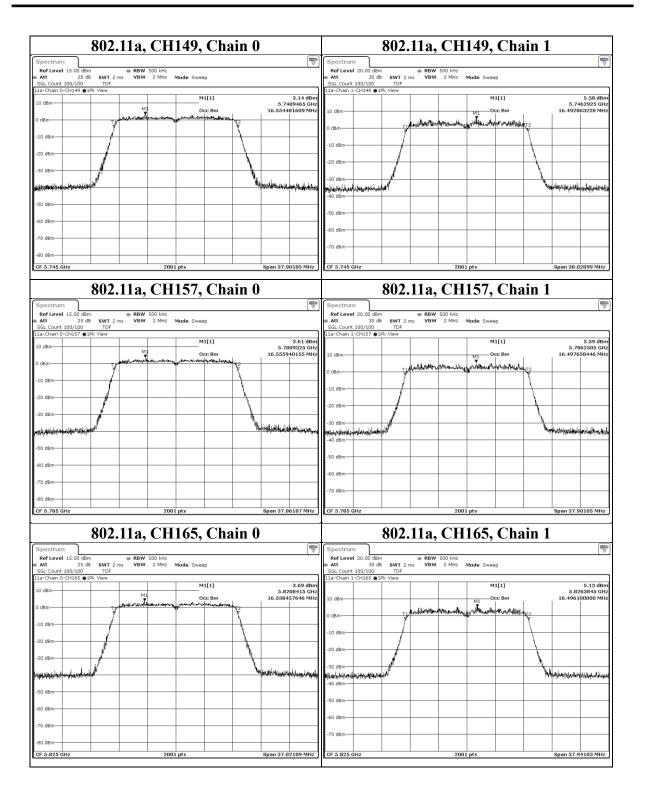




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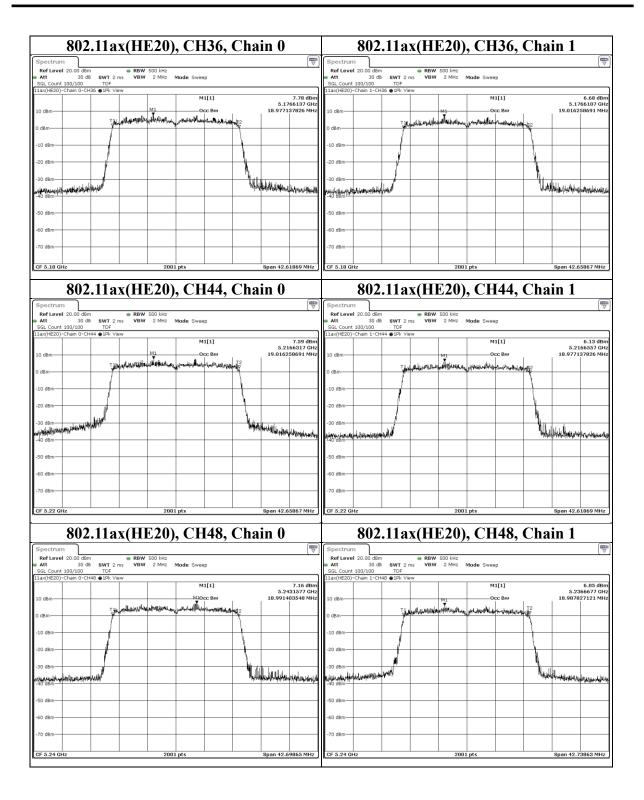
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Mode	СН	Freq	OBW	(MHz)	Limit	Result
Widde	СП	(MHz)	Chain 0	Chain 1	(MHz)	Kesult
	36	5180	18.977	19.016	N/A	Pass
	44	5220	19.016	18.977	N/A	Pass
$902.11_{ov}$ (HE20)	48	5240	18.991	18.988	N/A	Pass
802.11ax(HE20)	149	5745	18.952	19.013	N/A	Pass
	157	5785	18.991	19.013	N/A	Pass
	165	5825	18.97	18.998	N/A	Pass

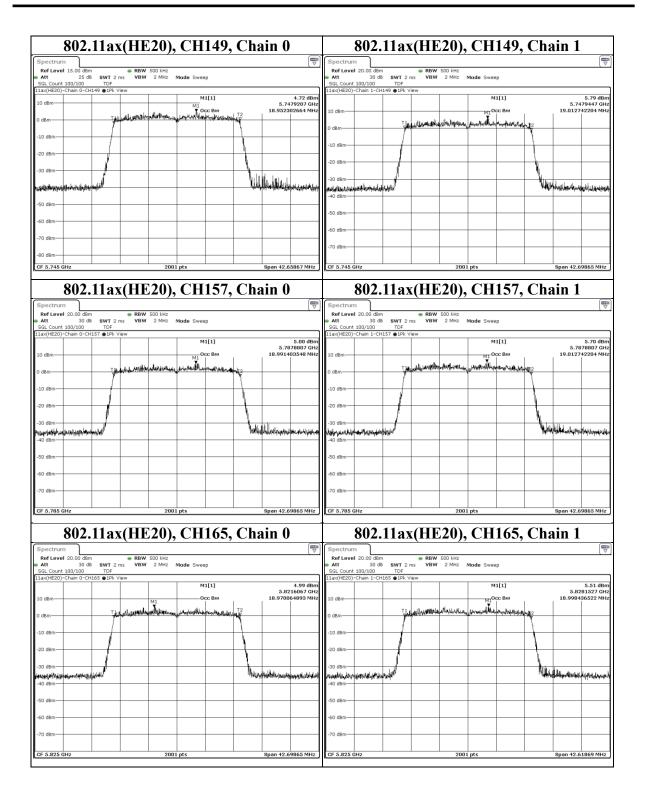




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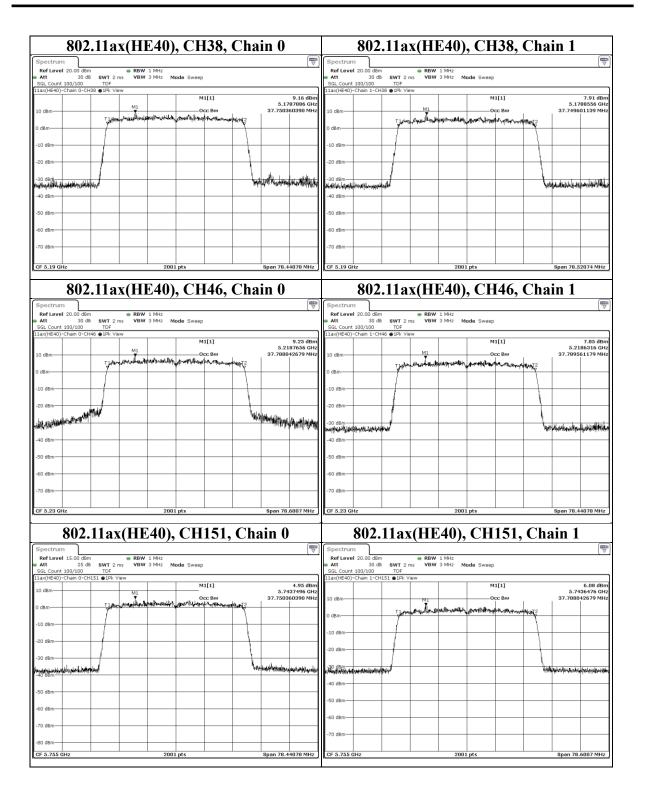
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Mode	СН	Freq	OBW	(MHz)	Limit	Result
Ivioue	Сп	(MHz)	Chain 0	Chain 1	(MHz)	Kesult
	38	5190	37.75	37.75	N/A	Pass
$902.11_{ov}(\text{UE}40)$	46	5230	37.788	37.79	N/A	Pass
802.11ax(HE40)	151	5755	37.75	37.788	N/A	Pass
	159	5795	37.751	37.788	N/A	Pass





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802.11ax(HE40), CH159, Chain 0	802.11ax(HE40), CH159, Chain 1
Spectrum 🕎	Spectrum
Ref Level 15.00 dBm	Ref Level 20.00 dBm
Att 25 dB SWT 2 ms VBW 3 MHz Mode Sweep	Att 30 dB SWT 2 ms VBW 3 MHz Mode Sweep
SGL Count 100/100 TDF	SGL Count 100/100 TDF
11ax(HE40)-Chain 0-CH159 ●1Pk View	11ax(HE40)-Chain 1-CH159  PIPk View
10 dBm M1[1] 4.84 dBm 5.7837996 GHz	M1[1] 5.71 dBn 5.7838837 GH
	10 day 0cc But 0.27 799042670 MH
0 dBm T1 about Press un brister and the prover a mental method of 2	
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	o dollar
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	-10 dBm
-20 dBm	
	-20 dBm-
-30 dBm	
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	-40 dBm-
-50 dBm	
	-50 dBm-
-60 d8m	
	-60 dBm
-70 dBm	-00 UDIN
*/0 dbii	
	-70 dBm
-80 dBm	
CF 5.795 GHz 2001 pts Span 78.36082 MHz	CF 5.795 GHz 2001 pts Span 78.6007 MHz
	B



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Mode	СН	Freq	OBW	(MHz)	Limit	Result
Ivioue	Сп	(MHz)	Chain 0	Chain 1	(MHz)	Kesult
$902.11_{ov}(\text{UE}90)$	42	5210	78.521	78.841	N/A	Pass
802.11ax(HE80)	155	5775	78.521	77.961	N/A	Pass

ðU2	2.11ax(H	E80), (	CH42,	Cha	in O			802.	<b>11a</b> :	x(Hl	E <b>80)</b>	, CH	[42,	Cha	in 1	
Spectrum							Spectrun	n			ĺ.					E
Ref Level 20.00 dB		N 3 MHz						20.00 dBm		RBW						( -
Att 30 c	dB SWT 2 ms VBN TDF	W 10 MHz Mode	Sweep				<ul> <li>Att</li> </ul>	30 dB	SWT 2 n	ns VBW	10 MHz N	Mode Swee	р			
SGL Count 100/100 11ax(HE80)-Chain 0-C							SGL Count 11ax(HE80)	-Chain 1-CH42	TDF P 1Pk Vie	w						
			M1[1]		8.	.59 dBm	, , , , , , , , , , , , , , , , , , , ,					M	1[1]			7.03 dBn
					5.22943											293500 GH
10 dBm				1.	78.5207396	530 MHz	10 dBm					-	CO/BW	1	78.8405	79710 MH:
	T Jackson allowed and	-	~All_~All_All_All_	T <sup>2</sup>					T MAD	An weller	**********	mall all at	will be a series	HPAT2		
0 dBm							0 dBm							Ň		
				1					1							
-10 dBm							-10 dBm		1							
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-40 dBm							-40 dBm-									
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-60 dBm							-60 dBm									
-60 gBW							-60 GBW-									
-70 dBm							70 40									
-70 dBm							-70 dBm									
CF 5.21 GHz		2001 pts			Span 160.		CF 5.21 G	17			2001	l pts			Snan	160.0 MHz
					apan 100.	.0 MHz	CF 3.21 G	12			2001	r pts			opun	
						.0 MHz										
802	.11ax(H	E80), C	CH155,	Cha		.0 MHz		<sup></sup> 802.1	l1ax	(HE			155,	Cha		
802	.11ax(H	E <b>80), C</b>	сн155,	Cha				802.1	l1ax	(HE			155,	Cha		
			СН155,	Cha		.0 MHz	Spectrum	802.1	l1ax	• RBW	.80),		155,	Cha		
Spectrum Ref Level 20.00 dB Att 30 c	3m ● RBN dB SWT 2 ms VBN	W 3 MHz		Cha			Spectrum Ref Leve Att	802.1	SWT 2 n		3 MHz	СН		Cha		
Spectrum Ref Level 20.00 dB Att 30 c SGL Count 100/100	3m	W 3 MHz		, Cha			Spectrum Ref Leve Att SGL Count	802.1	SWT 2 n TDF	e RBW	3 MHz	СН		Cha		
Spectrum Ref Level 20.00 dB Att 30 d	3m	W 3 MHz	9 Sweep	, Cha	in 0		Spectrum Ref Leve Att SGL Count	802.1	SWT 2 n TDF	e RBW	3 MHz	CH	p	Cha		
Spectrum Ref Level 20.00 dB Att 30 c SGL Count 100/100 11ax(HE80)-Chain 0-C	3m	W 3 MHz	Sweep M1[1]	Cha	tin 0 8. 5.79395	(₩) 19 dBm 510 GHz	Spectrum Ref Leve Att SGL Count 11ax(HE80)	802.1	SWT 2 n TDF 55 ●1Pk Vi	ew	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	tin 1	(
Spectrum Ref Level 20.00 dB Att 30 c SGL Count 100/100	3m	W 3 MHz	9 Sweep	Cha	tin 0	(₩) 19 dBm 510 GHz	Spectrum Ref Leve Att SGL Count	802.1	SWT 2 n TDF 55 ●1Pk Vi	ew	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	tin 1	10.81 dBn 944300 GH;
Spectrum           Ref Level         20.00 dB           Att         30 c           SGL Count         100/100           11ax(HE80)-Chain 0-C         10 dBm	Sm ® RB1 d8 SWT 2 ms VB1 TDF CH155 ●1Pk View	W 3 MHz	M1[1]	Cha	tin 0 8. 5.79395	(₩) 19 dBm 510 GHz	Spectrum Ref Leve Att SGL Count 11ax(HE80)	802.1	SWT 2 n TDF 55 ●1Pk Vi	ew	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	tin 1	(
Spectrum Ref Level 20.00 dB Att 30 c SGL Count 100/100 11ax(HE80)-Chain 0-C	Sm ® RB1 d8 SWT 2 ms VB1 TDF CH155 ●1Pk View	W 3 MHz W 10 MHz Mode	M1[1]	Cha	tin 0 8. 5.79395	(₩) 19 dBm 510 GHz	Spectrum Ref Leve Att SGL Count 11ax(HE80)	802.1	SWT 2 n TDF 55 ●1Pk Vi	e RBW	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	tin 1	(
Spectrum           Ref Level 20.00 dB           Att         30 d           SGL Count 100/100           11ax(HEB0)-Chain 0-C           10 dBm           0 dBm	Sm ® RB1 d8 SWT 2 ms VB1 TDF CH155 ●1Pk View	W 3 MHz W 10 MHz Mode	M1[1]	Cha	tin 0 8. 5.79395	(₩) 19 dBm 510 GHz	Spectrum Ref Leve Att SGL Count 11ax(HE80) 10 dBm	802.1	SWT 2 n TDF 55 ●1Pk Vi	ew	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	tin 1	(
Spectrum           Ref Level         20.00 dB           Att         30 c           SGL Count         100/100           11ax(HE80)-Chain 0-C         10 dBm	Sm ® RB1 d8 SWT 2 ms VB1 TDF CH155 ●1Pk View	W 3 MHz W 10 MHz Mode	M1[1]	Cha	tin 0 8. 5.79395	(₩) 19 dBm 510 GHz	Spectrum Ref Leve Att SGL Count 11ax(HE80)	802.1	SWT 2 n TDF 55 ●1Pk Vi	ew	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	tin 1	(
Spectrum           Rof Level 20.00 dB           Att 300           SGL Count 100/100           SGL Count 100/100           11ax(HEB0)-Chain 0-C           10 dBm           -10 dBm	Sm ® RB1 d8 SWT 2 ms VB1 TDF CH155 ●1Pk View	W 3 MHz W 10 MHz Mode	M1[1]	, Cha	tin 0 8. 5.79395	(₩) 19 dBm 510 GHz	Spectrum Refleve Att SGL Count 11ax(HE80) 10 dBm- -10 dBm-	802.1	SWT 2 n TDF 55 ●1Pk Vi	ew	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	tin 1	(
Spectrum           Ref Level 20.00 dB           Att         30 d           SGL Count 100/100           11ax(HEB0)-Chain 0-C           10 dBm           0 dBm	Sm ® RB1 d8 SWT 2 ms VB1 TDF CH155 ●1Pk View	W 3 MHz W 10 MHz Mode	M1[1]	, Cha	tin 0 8. 5.79395	(₩) 19 dBm 510 GHz	Spectrum Ref Leve Att SGL Count 11ax(HE80) 10 dBm	802.1	SWT 2 n TDF 55 ●1Pk Vi	ew	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	tin 1	10.81 dBn 944300 GH;
Spectrum           Ref Lavel 20.00 db           att         30           SGL Count 100/100           Ilax(HE80)-Chan O-C           10 dBm           -10 dBm           -20 dBm           -20 dBm	em eRbit B SWT 2 ns VBV TDF H155 ● IPk View TJAB VBV	W 3 MHz W 10 MHz Mode	M1[1]	94% Q2	tin 0 8. 5.79395	.19 dBm 510 GHz 530 MHz	Spectrun Ref Leve Att SGL Count 11ax(HEBO) 10 dBm- -10 dBm- -20 dBm-	802.1	SWT 2 n TDF 55 ●1Pk Vi	ew	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	5.79 77.9610	(
Spectrum           Ref Level 20.00 dB           Att 30 c           SGL Count 100/100           11ax(HEB0)-Chain 0-C           10 dBm           -10 dBm           -20 dBm	em eRbit B SWT 2 ns VBV TDF H155 ● IPk View TJAB VBV	W 3 MHz W 10 MHz Mode	M1[1]	94% Q2	8. 5.79395 78.5207396	.19 dBm 510 GHz 530 MHz	Spectrum Refleve Att SGL Count 11ax(HE80) 10 dBm- -10 dBm-	802.1	SWT 2 n TDF 55 ●1Pk Vi	ew	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	5.79 77.9610	10.81 dBn 144300 GH2 19490 MH2
Spectrum           Ref Level 20.00 db           Att 30 G           SGL Count 100/100           Ital(HEBD)-Chain 0-C           10 dBm           -10 dBm           -20 dBm           -20 dBm           -30 dBm	em eRbit B SWT 2 ns VBV TDF H155 ● IPk View TJAB VBV	W 3 MHz W 10 MHz Mode	M1[1]	94% Q2	8. 5.79395 78.5207396	.19 dBm 510 GHz 530 MHz	Spectrun Ref Leve SGL Count 11ax(HEBO) 10 dBm- -10 dBm- -20 dBm- -30 dBm-	802.1	SWT 2 n TDF 55 ●1Pk Vi	ew	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	5.79 77.9610	10.81 dBm 144300 GH2 19490 MH2
Spectrum           Ref Lavel 20.00 db           att         30           SGL Count 100/100           Ilax(HE80)-Chan O-C           10 dBm           -10 dBm           -20 dBm           -20 dBm	em eRbit B SWT 2 ns VBV TDF H155 ● IPk View TJAB VBV	W 3 MHz W 10 MHz Mode	M1[1]	94% Q2	8. 5.79395 78.5207396	.19 dBm 510 GHz 530 MHz	Spectrun Ref Leve Att SGL Count 11ax(HEBO) 10 dBm- -10 dBm- -20 dBm-	802.1	SWT 2 n TDF 55 ●1Pk Vi	ew	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	5.79 77.9610	10.81 dBm 144300 GH2 19490 MH2
Spectrum           Ref Level 20.00 db           std. 20.01 db           sGL Count 100/100           11av(HEB)-Chain 0-C           10 dbm           -10 dbm           -20 dbm           -30 dbm           -40 dbm	em eRbit B SWT 2 ns VBV TDF H155 ● IPk View TJAB VBV	W 3 MHz W 10 MHz Mode	M1[1]	94% Q2	8. 5.79395 78.5207396	.19 dBm 510 GHz 530 MHz	Spectrum           Ref Leve           Att           SGL Count           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm	802.1	SWT 2 n TDF 55 ●1Pk Vi	ew	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	5.79 77.9610	10.81 dBm 144300 GH2 19490 MH2
Spectrum           Ref Level 20.00 db           Att 30 G           SGL Count 100/100           Ital(HEBD)-Chain 0-C           10 dBm           -10 dBm           -20 dBm           -20 dBm           -30 dBm	em eRbit B SWT 2 ns VBV TDF H155 ● IPk View TJAB VBV	W 3 MHz W 10 MHz Mode	M1[1]	94% Q2	8. 5.79395 78.5207396	.19 dBm 510 GHz 530 MHz	Spectrun Ref Leve SGL Count 11ax(HEBO) 10 dBm- -10 dBm- -20 dBm- -30 dBm-	802.1	SWT 2 n TDF 55 ●1Pk Vi	ew	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	5.79 77.9610	10.81 dBm 144300 GH2 19490 MH2
Spectrum           Ref Level 20.00 db           Att 30.0 db           SGL Count 100/100           Ilau(HEB0)~Chain 0~C           10 dBm           -10 dBm           -20 dBm           -40 dBm           -50 dBm           -50 dBm	em eRbit B SWT 2 ns VBV TDF H155 ● IPk View TJAB VBV	W 3 MHz W 10 MHz Mode	M1[1]	94% Q2	8. 5.79395 78.5207396	.19 dBm 510 GHz 530 MHz	Spectrum           Ref Leve           Att           SGL Count           11ax(HE80)           10 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm	802.1	SWT 2 n TDF 55 ●1Pk Vi	ew	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	5.79 77.9610	10.81 dBm 144300 GH2 19490 MH2
Spectrum           Ref Level 20.00 db           std. 20.01 db           sGL Count 100/100           11av(HEB)-Chain 0-C           10 dbm           -10 dbm           -20 dbm           -30 dbm           -40 dbm	em eRbit B SWT 2 ns VBV TDF H155 ● IPk View TJAB VBV	W 3 MHz W 10 MHz Mode	M1[1]	94% Q2	8. 5.79395 78.5207396	.19 dBm 510 GHz 530 MHz	Spectrum           Ref Leve           Att           SGL Count           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm	802.1	SWT 2 n TDF 55 ●1Pk Vi	ew	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	5.79 77.9610	10.81 dBm 144300 GH2 19490 MH2
Spectrum           Ref Level 20.00 H           Att 30 G           SGL Court 100/100           I134(HEB)-Chain 0-C           10 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm           -60 dBm	em eRbit B SWT 2 ns VBV TDF H155 ● IPk View TJAB VBV	W 3 MHz W 10 MHz Mode	M1[1]	94% Q2	8. 5.79395 78.5207396	.19 dBm 510 GHz 530 MHz	Spectrum           Ref Leve           Att           SGL Count           11ax(HEBD)           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm           -60 dBm	802.1	SWT 2 n TDF 55 ●1Pk Vi	ew	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	5.79 77.9610	10.81 dBm 144300 GHz 19490 MHz
Spectrum           Ref Level 20.00 db           Att 30.0 db           SGL Count 100/100           Ilau(HEB0)~Chain 0~C           10 dBm           -10 dBm           -20 dBm           -40 dBm           -50 dBm           -50 dBm	em eRbit B SWT 2 ns VBV TDF H155 ● IPk View TJAB VBV	W 3 MHz W 10 MHz Mode	M1[1]	94% Q2	8. 5.79395 78.5207396	.19 dBm 510 GHz 530 MHz	Spectrum           Ref Leve           Att           SGL Count           11ax(HE80)           10 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm	802.1	SWT 2 n TDF 55 ●1Pk Vi	ew	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	5.79 77.9610	10.81 dBm 144300 GH2 19490 MH2
Spectrum           Ref Level 20.00 H           Att 30 G           SGL Court 100/100           I134(HEB)-Chain 0-C           10 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm           -60 dBm	em eRbit B SWT 2 ns VBV TDF H155 ● IPk View TJAB VBV	W 3 MHz W 10 MHz Mode	M1[1] OCCAN ML 1 OCCAN ML 1 OCCAN ML 1 ML	94% Q2	8. 5.79395 78.5207396	.19 dBm 510 GHz 530 MHz	Spectrum           Ref Leve           Att           SGL Count           11ax(HEBD)           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm           -60 dBm	802.1	SWT 2 n TDF 55 ●1Pk Vi	ew	3 MH2 10 MH2 N	CH Mode Swee	p 1[1]	Cha	5.79 77.9610	10.81 dBn 144300 GH



# **9.4.** Conducted output power

# **Requirements**

Operation Band		EUT Category	Limit				
		Outdoor Access Point	1 Watt (30 dBm) Max. e.i.r.p $\leq$ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon If G <sub>TX</sub> > 6 dBi, then P <sub>Out</sub> = 30 - (G <sub>TX</sub> - 6)				
U-NII-1		Fixed point-to-point Access Point	1 Watt (30 dBm) If $G_{TX} > 23$ dBi, then $P_{Out} = 30 - (G_{TX} - 23)$				
		Indoor Access Point	1 Watt (30 dBm) If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$				
	$\checkmark$	Client device	250mW (24 dBm) If $G_{TX} > 6$ dBi, then $P_{Out} = 23.98 - (G_{TX} - 6)$				
U-NII-2A			250mW (24 dBm) or 11 dBm+10 log B* If $G_{TX} > 6$ dBi, then $P_{Out} = 23.98 - (G_{TX} - 6)$				
U-NII-2C			250mW (24 dBm) or 11 dBm+10 log B* If $G_{TX} > 6$ dBi, then $P_{Out} = 23.98 - (G_{TX} - 6)$				
U-NII-3	$\checkmark$		For Point-to-multipoint systems (P2M): 1 Watt (30 dBm). If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ For Point-to-point systems (P2P): 1 Watt (30 dBm)				

Note:

1.  $P_{Out} = maximum$  conducted output power in dBm,

- 2.  $G_{TX}$  = the maximum transmitting antenna directional gain in dBi.
- 3. B is the 26 dB emission bandwidth in megahertz
- 4. Directional Gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + ... + 10^{Gn/20})^2 / \text{Nant}] \text{ dBi}.$

Nant: Number of Transmit Antennas G1, G2,..., Gn: Gain of Individual Antennas

5. Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for  $N_{ANT} \le 4$ ; Array Gain = 0 dB (i.e., no array gain) for channel widths  $\ge 40$  MHz for any  $N_{ANT}$ ; Array Gain = 5 log( $N_{ANT}/N_{SS}$ ) dB or 3 dB, whichever is less for 20-MHz channel widths with  $N_{ANT} \ge 5$ .



# Test Procedure

#### For Average Power Measurement

#### **Test method PM-G**

#### For 802.11a, 802.11ax (HE20), 802.11ax (HE40)

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst and set the detector to AVERAGE. Duty factor is not added to measured value.

#### **Test method SA-1**

#### For 802.11ax (HE80)

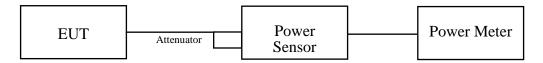
- a. Set span to encompass the entire 26 dB EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- b. Set sweep trigger\*.
- c. Set RBW = 1 MHz.
- d. Set VBW  $\geq$  3 MHz
- e. Number of points in sweep  $\geq 2$  Span / RBW.
- f. Sweep time  $\leq$  (number of points in sweep) \* T
- g. Using emission bandwidth to determine the frequency span for integration the channel bandwidth.
- h. Detector = RMS.
- i. Trace mode = max hold.
- j. Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.

\* If transmit duty cycle < 98%, use a video trigger with the trigger level set to enable triggering only on full power pulses and add 10 log (1/duty cycle). Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle  $\geq$  98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run."



# Test Setup

#### For Average Power Measurement



The loss between RF output port of the EUT and the input port of the Power Meter has been taken into consideration.



The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.



# <u>Test Data</u>

#### 802.11a

Channel	Channel Frequency	Maximum Power	Conducted (dBm)	Total Power	Total Power	Power Limit	Pass/Fail
	(MHz)	Chain 0	Chain 1	(mW)	(dBm)	(dBm)	
36	5180	14.21	14.32	53.456	17.28	23.98	PASS
44	5220	14.34	14.42	54.828	17.39	23.98	PASS
48	5240	14.36	14.47	55.335	17.43	23.98	PASS
149	5745	12.25	11.40	30.62	14.86	30	PASS
157	5785	12.37	11.39	31.046	14.92	30	PASS
165	5825	12.28	11.23	30.2	14.80	30	PASS

Note: The directional gain = 5.6 dBi < 6 dBi, so the power limit shall not be reduced.

#### 802.11ax (HE20)

Channel	Channel Frequency	Maximum Power		Total Power	Total Power	Power Limit	Pass/Fail
	(MHz)	Chain 0	Chain 1	(mW)	(dBm)	(dBm)	
36	5180	13.77	13.47	46.026	16.63	23.98	PASS
44	5220	13.34	13.12	42.073	16.24	23.98	PASS
48	5240	13.29	13.11	41.783	16.21	23.98	PASS
149	5745	11.60	10.88	26.73	14.27	30	PASS
157	5785	11.96	10.94	28.119	14.49	30	PASS
165	5825	11.82	10.63	26.792	14.28	30	PASS

Note: The directional gain = 5.6 dBi < 6 dBi, so the power limit shall not be reduced



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#### 802.11ax (HE40)

Channel	Channel Frequency		Maximum Conducted Power (dBm)		Total Power	Power Limit	Pass/Fail
	(MHz)	Chain 0	Chain 1	(mW)	(dBm)	(dBm)	
38	5190	13.67	13.50	45.709	16.60	23.98	PASS
46	5230	13.83	13.57	46.881	16.71	23.98	PASS
151	5755	11.68	10.95	27.164	14.34	30	PASS
159	5795	11.70	10.78	26.73	14.27	30	PASS

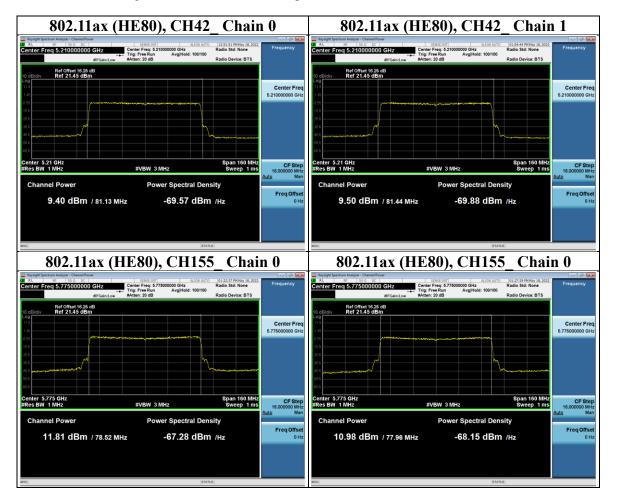
Note: The directional gain = 5.6 dBi < 6 dBi, so the power limit shall not be reduced



#### 802.11ax (HE80)

Channel	Channel Frequency (MHz)	Maximum Conducted Power (dBm)		Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
	(1/112)	Chain 0	Chain 1	(111))	(ubiii)	(uDiii)			
42	5210	9.40	9.50	17.62	12.46	23.98	PASS		
155	5775	11.81	10.98	27.733	14.43	30	PASS		

Note: The directional gain = 5.6 dBi < 6 dBi, so the power limit shall not be reduced





# 9.5. Power Spectral Density

### **Requirements**

<b>Operation Band</b>		EUT Category	Limit	
		Outdoor Access Point	17dBm/ MHz If $G_{TX} > 6$ dBi, then PSD = 17 - ( $G_{TX} - 6$ )	
	I fixed point to point		17dBm/ MHz If G <sub>TX</sub> > 23 dBi, then PSD = $17 - (G_{TX} - 23)$	
U-NII-1	$\checkmark$	Indoor Access Point	17dBm/ MHz If G <sub>TX</sub> > 6 dBi, then PSD = $17 - (G_{TX} - 6)$	
		Client device	11dBm/ MHz If $G_{TX} > 6$ dBi, then PSD = $11 - (G_{TX} - 6)$	
U-NII-2A			11dBm/ MHz If $G_{TX} > 6$ dBi, then PSD = $11 - (G_{TX} - 6)$	
U-NII-2C			11dBm/ MHz If $G_{TX} > 6$ dBi, then PSD = $11 - (G_{TX} - 6)$	
U-NII-3			For Point-to-multipoint systems (P2M): $30dBm/500kHz$ . If $G_{TX} > 6 dBi$ , then PSD = $30 - (G_{TX} - 6)$ For Point-to-point systems (P2P): $30dBm/$ 500kHz	

Note:

- 1. PSD = power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz
- 2.  $G_{TX}$  = the maximum transmitting antenna directional gain in dBi. 3. Directional Gain = 10 log[ $(10^{G1/20} + 10^{G2/20} + ... + 10^{Gn/20})^2$  / Nant] dBi.

Nant: Number of Transmit Antennas G1, G2,..., Gn: Gain of Individual Antennas

Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total 4. power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.



# Test procedure

### For U-NII-1, U-NII-2A, U-NII-2C band:

#### Using method as below:

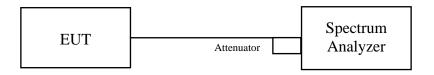
- a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
- b. Set RBW = 1 MHz, Set  $VBW \ge 3$  RBW, Detector = RMS
- c. Sweep time = auto, trigger set to "free run".
- d. Trace average at least 100 traces in power averaging mode.
- e. Record the max value. (if Duty cycle <98 %, add 10 log (1/duty cycle))

#### For U-NII-3 band:

#### Using method as below:

- a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
- b. Set RBW = 300 kHz, Set VBW  $\geq$  1 MHz, Detector = RMS
- c. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
- d. Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10 \log (500 \text{ kHz}/300 \text{kHz})$
- e. Sweep time = auto, trigger set to "free run".
- f. Trace average at least 100 traces in power averaging mode.
- g. Record the max value. (if Duty cycle <98 %, add 10 log (1/duty cycle))

### **Test Setup**



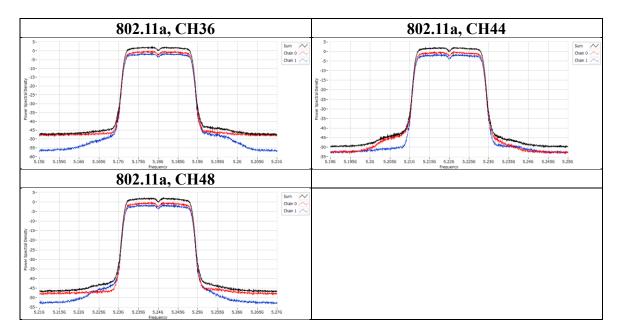
The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.



# Test Data

Mode (U-NII-1)	СН	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
	36	5180	8.08	2.39	8.92	Pass
802.11a	44	5220	8.08	2.28	8.92	Pass
	48	5240	8.08	2.34	8.92	Pass

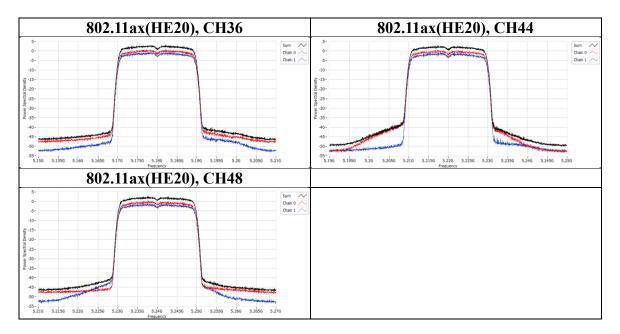
Mode	СН	Freq	PSD per Chain (dBm/MHz)		
(U-NII-1)	Cn	(MHz)	Chain 0	Chain 1	
	36	5180	0.099	-1.117	
802.11a	44	5220	0.008	-1.263	
	48	5240	0.108	-1.108	





Mode (U-NII-1)	СН	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
	36	5180	8.08	3.25	8.92	Pass
802.11ax(HE20)	44	5220	8.08	2.75	8.92	Pass
	48	5240	8.08	2.75	8.92	Pass

Mode	СН	Freq	PSD per Chain (dBm/MHz)		
(U-NII-1)	Ch	(MHz)	Chain 0	Chain 1	
802.11ax(HE20)	36	5180	0.996	-0.562	
	44	5220	0.605	-0.917	
	48	5240	0.692	-0.844	





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Mode (U-NII-1)	СН	Freq (MHz)	Directional Gain (dBi)	Gain Total PSD (dBm/MHz)		Result
$902.11_{\rm ev}(\rm UE40)$	38	5190	8.08	1.29	8.92	Pass
802.11ax(HE40)	46	5230	8.08	1.51	8.92	Pass

Mode	CII	Freq	PSD per Chain (dBm/MHz)		
(U-NII-1)	СН	(MHz)	Chain 0	Chain 1	
802.11ax(HE40) -	38	5190	-0.927	-2.265	
	46	5230	-0.618	-1.81	

802.11ax(HE40), CH38				802.	11ax(HE40),	<b>CH46</b>	
5- 0- 3- - - - - - - - - - - - - -			Sum X Chan 0 Chan 1				Sum Chain 0 Chain 1
-45- -50- -55- 5.136 5.146 5.156	5.166 5.176 5.186 5.196 5.26 Frequency	5.216 5.226 5.236 5.246 5.259	-45- -50- -55- 5.176	5.186 5.196 5.26 5.	216 5.226 5.236 5.246 5.2 Frequency	56 5.266 5.276 5.286 5.	296



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Mode (U-NII-1)	СН	Freq (MHz)	Directional Gain (dBi)	Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
802.11ax(H E80)	42	5210	8.08	-4.51	8.92	Pass

Mode	СН	Freq	PSD per Chai	n (dBm/MHz)
(U-NII-1)	Сп	(MHz)	Chain 0	Chain 1
802.11ax(HE80)	42	5210	-6.771	-7.289

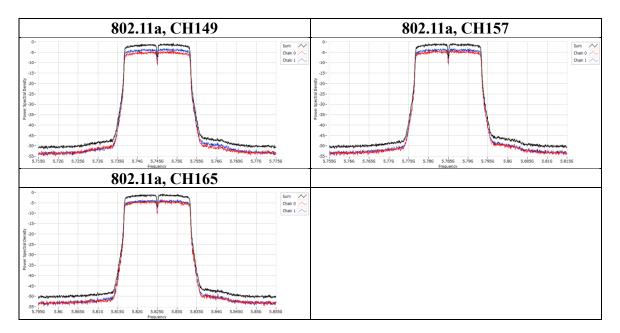
R 30- 8 35- 8 40- 4 45-	802.11ax(HE80), CH42	
200- 200-	-3- -10-	Chain 0 🔨
4 45-	20- 20- 20- 20- 20- 20- 20- 20-	
	5	



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Mode (U-NII-3)	СН	Freq (MHz)	BWCF	Directional Gain (dBi)	Total PSD	Limit (dBm/500kHz)	Result
	149	5745	2.22	8.08	1.61	27.92	Pass
802.11a	157	5785	2.22	8.08	1.57	27.92	Pass
	165	5825	2.22	8.08	1.48	27.92	Pass

Mode	СН	Freq	PSD per Chain (dBm/MHz)		
(U-NII-3)	Ch	(MHz)	Chain 0	Chain 1	
802.11a	149	5745	-4.08	-2.943	
	157	5785	-3.931	-2.857	
	165	5825	-3.812	-3.362	

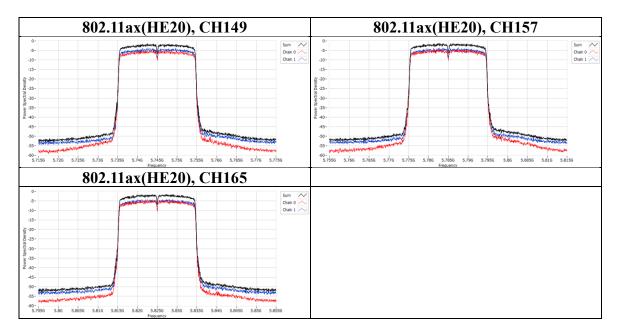




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Mode (U-NII-3)	СН	Freq (MHz)	BWCF	Directional Gain (dBi)	Total PSD	Limit (dBm/500kHz)	Result
90 <b>2</b> 11 av(	149	5745	2.22	8.08	0.80	27.92	Pass
802.11ax(	157	5785	2.22	8.08	1.05	27.92	Pass
HE20)	165	5825	2.22	8.08	0.71	27.92	Pass

Mode	СН	Freq	PSD per Chain (dBm/MHz)		
(U-NII-3)	Ch	(MHz)	Chain 0	Chain 1	
802.11ax(HE20)	149	5745	-4.774	-3.561	
	157	5785	-4.142	-3.441	
	165	5825	-4.402	-4.094	





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Mode (U-NII-3)	СН	Freq (MHz)	BWCF	Directional Gain (dBi)	Total PSD	Limit (dBm/500kHz)	Result
802.11ax(	151	5755	2.22	8.08	-1.72	27.92	Pass
HE40)	159	5795	2.22	8.08	-1.83	27.92	Pass

Mode	СП	Freq	PSD per Chain (dBm/MHz)		
(U-NII-3)	СН	(MHz)	Chain 0	Chain 1	
802.11ax(HE40)	151	5755	-7.313	-6.233	
	159	5795	-7.299	-6.507	

802.11ax(H	IE40), CH151			802.11ax(HF	E40), CH	159
0- -3- -10- -15- -200 -200 -200 -200 -200 -200 -200 -2			0- -3- -10- -15- -3- -3- -3- -3- -3- -3- -3- -			Sum Chan 0 Chan 1 Chan 1
-50-	have been a second and the second second	ter grot	-50 - -55 - -60 -	www.esterner.	and the second sec	Service State State State
-60- 5.69G 5.7G 5.71G 5.72G 5.73G 5.74G 5.75G	5.76G 5.77G 5.78G 5.79G 5.8G 5	.81G 5.82G	5.736 5.746 5.756	5.76G 5.77G 5.78G 5.79G 5	86 5.816 5.826 5.830	G 5.84G 5.85G 5.86G



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Mode (U-NII-3)	СН	Freq (MHz)	BWCF	Directional Gain (dBi)	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Result
802.11ax( HE80)	155	5775	2.22	8.08	-2.27	27.92	Pass

Mode	CII	Freq	PSD per Chain (dBm/MHz)		
(U-NII-3)	СН	(MHz)	Chain 0	Chain 1	
802.11ax(HE80)	155	5775	-9.134	-6.314	

802.11ax(HE80), CH155
0- 3- 10- 10- 15- 15- 15- 15- 15- 15- 15- 15
≥ 20- 2 35- 2
94 43- 30- 33-



# 9.6. Frequency Stability

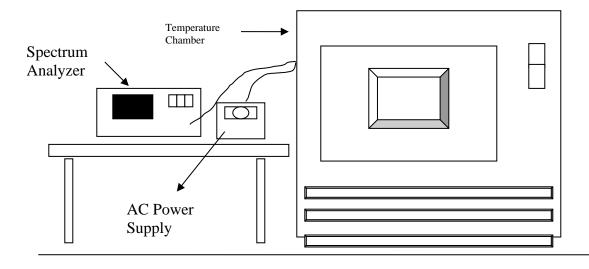
### **Requirements**

The frequency of the carrier signal shall be maintained within band of operation.

### Test procedure

- a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- b. Turn the EUT on and couple its output to a spectrum analyzer.
- c. Turn the EUT off and set the chamber to the highest temperature specified.
- d. 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.
- e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- f. 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.

# Test Setup





# Test Data

	Frequency Stability Versus Temp.								
<b>Operating Frequency: 5180 MHz</b>									
	0 Minute		2 Mi	inute	5 Minute		10 M	inute	
TEMP. (°C)	Supply (Vac)	Measured Frequency (MHz)	Freq. Drift (ppm)						
50	120	5179.9991	-0.17	5179.9983	-0.33	5179.999	-0.19	5180.0007	0.14
40	120	5180.0039	0.75	5180.0025	0.48	5180.0007	0.14	5180.003	0.58
30	120	5179.9884	-2.24	5179.9898	-1.97	5179.9887	-2.18	5179.9889	-2.14
20	120	5179.994	-1.16	5179.9927	-1.41	5179.9939	-1.18	5179.9951	-0.95
10	120	5179.9747	-4.88	5179.9777	-4.31	5179.975	-4.83	5179.9781	-4.23
0	120	5180.0197	3.80	5180.0204	3.94	5180.0197	3.80	5180.0174	3.36
-10	120	5179.9907	-1.80	5179.9895	-2.03	5179.988	-2.32	5179.9882	-2.28
-20	120	5179.9804	-3.78	5179.9805	-3.76	5179.9813	-3.61	5179.9784	-4.17
-30	120	5179.9781	-4.23	5179.9764	-4.56	5179.9775	-4.34	5179.9749	-4.85
	Power	<b>0 M</b> i	inute	2 Mi	inute	5 Minute		10 Minute	
TEMP. (°C)	Supply (Vac)	Measured Frequency (MHz)	Freq. Drift (ppm)						
20	138	5179.9936	-1.24	5179.9928	-1.39	5179.993	-1.35	5179.996	-0.77
20	120	5179.994	-1.16	5179.9927	-1.41	5179.9939	-1.18	5179.9951	-0.95
20	102	5179.995	-0.97	5179.9917	-1.60	5179.9939	-1.18	5179.9948	-1.00



# 9.7. Radiated Spurious Emission

### **Requirements**

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequency(MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

NOTE:

- 1. The lower limit shall apply at the transition frequencies.
- 2. Emission level  $(dBuV/m) = 20 \log Emission level (uV/m)$ .
- 3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



Applic	able To	Limit			
789033 D02 General UNII Test Procedure New Rules v02r01		Field Strength at 3m			
		PK:74 (dBµV/m)	AV:54 (dBµV/m)		
Frequency Band Applicable To		EIRP Limit	Equivalent Field Strength at 3m		
5150~5250 MHz	15.407(b)(1)				
5250~5350 MHz	15.407(b)(2)	PK:-27 (dBm/MHz)	PK:68.2(dBµV/m)		
5470~5725 MHz	15.407(b)(3)				
5725~5850 MHz	5725~5850 MHz 15.407(b)(4)(i)		PK: 68.2(dBμV/m) <sup>*1</sup> PK:105.2 (dBμV/m) <sup>*2</sup> PK: 110.8(dBμV/m) <sup>*3</sup> PK:122.2 (dBμV/m) <sup>*4</sup>		
*1 boyond 75 MHz or m	ore above of the band edge	2			

Limits of unwanted emission out of the restricted bands

\*1 beyond 75 MHz or more above of the band edge.

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

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

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

#### Note:

The following formula is used to convert the effective isotropic radiated power (eirp) to field strength:

 $E = \frac{1000000\sqrt{30P}}{3} \mu V/m, \text{ where P is the eirp (Watts).}$ 



# **Test Procedures**

[For  $9 \text{ kHz} \sim 30 \text{ MHz}$ ]

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. For measurement below 30MHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

[For above 30 MHz]

- The EUT was placed on the top of a rotating table 0.8 meters (for  $30MHz \sim 1GHz$ ) / 1.5 meters a. (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
- f. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

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Note:

- a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
- b. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
- c. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle < 98%) or 10Hz (Duty cycle  $\geq 98\%$ ) for Average detection (AV) at frequency above 1GHz.

Configuration	Average				
Configuration	RBW	VBW			
802.11a		1kHz			
802.11ax(HE20)		2kHz			
802.11ax(HE40)	1MHz	3kHz			
802.11ax(HE80)		5.1kHz			

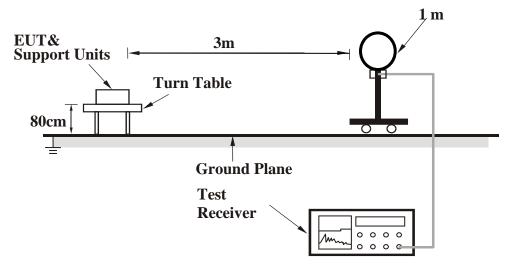
Note: Refer to section 6.6 for duty cycle.

- d. All modes of operation were investigated (includes all external accessories) and the worst-case emissions are reported, the other emission levels were low against the limit.
- e. Test data of Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
- f. Test data of Margin(dB) = Result value (dBuV/m) Limit value (dBuV/m).
- g. Test data of Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) Preamp Factor (dB).
- h. Test data of Notation "@" = Fundamental Frequency
- i. Test data of Notation " \* " = Only required peak limit or the peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.

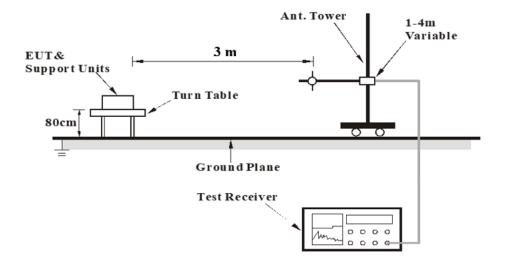


# Test Setup

<Frequency Range 9 kHz ~ 30 MHz>

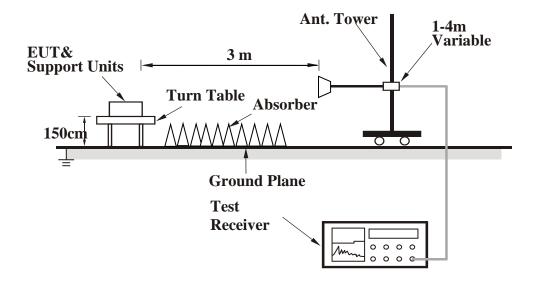


<Frequency Range 30 MHz ~ 1 GHz >



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<Frequency Range above 1 GHz>



For the actual test configuration, please refer to the Setup Configurations.



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# Test Data

#### Above 1 GHz

Above I GI				-						
Mode 8	802.11a			Channel 36						
D 1 '	Notation	Frequency	Reading	Correct	Result	Limit	Margin	Domonic		
Polarization	Notation	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	Remark		
		5149.1	48.72	19.4	68.12	74	-5.88	PK		
		5149.8	32.67	19.4	52.07	54	-1.93	AVG		
	a	5180	94.96	19.31	114.27	N/A	N/A	PK		
Horizontal	a	5180	84.3	19.31	103.61	N/A	N/A	AVG		
	*	10360	34.52	17.51	52.03	68.2	-16.17	PK		
		15540	33.47	23.06	56.53	74	-17.47	PK		
		15540	23.31	23.06	46.37	54	-7.63	AVG		
		5040.95	37.02	19.01	56.03	74	-17.97	PK		
		5094.5	29.9	19.4	49.3	54	-4.7	AVG		
	(a)	5180	83.71	19.31	103.02	N/A	N/A	PK		
Vertical	(a)	5180	77.96	19.31	97.27	N/A	N/A	AVG		
	*	10360	40.04	17.51	57.55	68.2	-10.65	PK		
		15540	37.64	23.06	60.7	74	-13.3	РК		
		15540	26.66	23.06	49.72	54	-4.28	AVG		