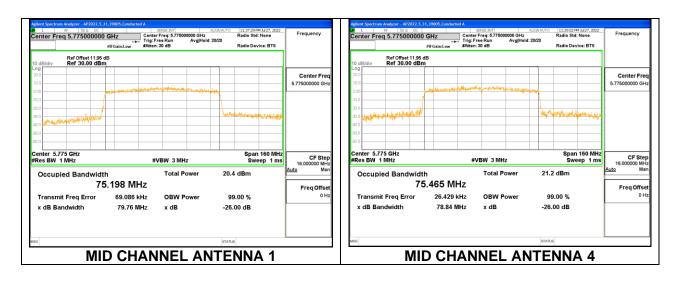
## 9.3.16. 802.11ac VHT80 MODE IN THE 5.8 GHz BAND

### 2TX Antenna 1 + Antenna 4 CDD MODE

Channel	Frequency	99% Bandwidth	99% Bandwidth
		Antenna 1	Antenna 4
	(MHz)	(MHz)	(MHz)
Mid	5775	75.198	75.465

### **MID CHANNEL**



# 9.4. 6 dB BANDWIDTH

# **LIMITS**

FCC §15.407 (e)

RSS-247 6.2.4.1

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

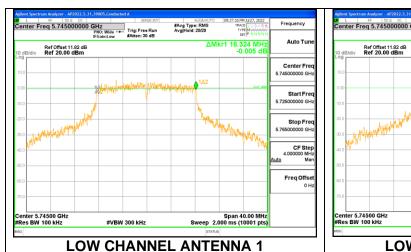
## **RESULTS**

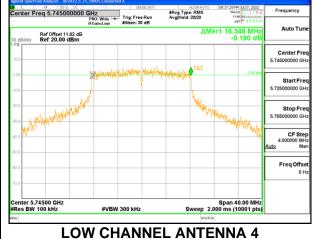
## 9.4.1. 802.11a MODE IN THE 5.8 GHz BAND

### 2TX Antenna 1 + Antenna 4 CDD MODE

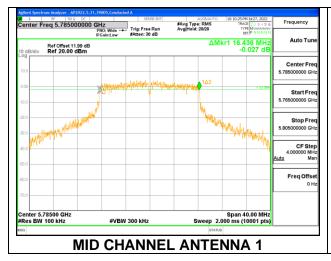
Channel	Frequency	6 dB BW	6 dB BW	Minimum
		Antenna 1	Antenna 4	Limit
	(MHz)	(MHz)	(MHz)	(MHz)
Low	5745	16.324	16.348	0.5
Mid	5785	16.436	16.372	0.5
High	5825	16.412	16.392	0.5

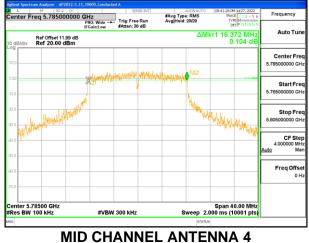
### **LOW CHANNEL**



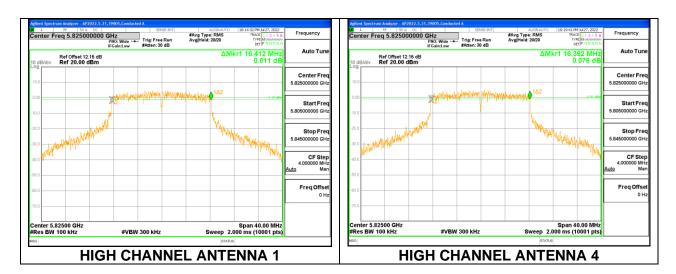


### **MID CHANNEL**





## **HIGH CHANNEL**

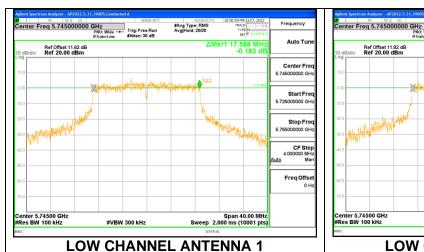


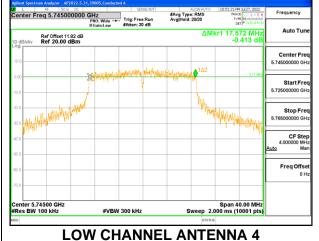
## 9.4.2. 802.11n HT20 MODE IN THE 5.8 GHz BAND

### 2TX Antenna 1 + Antenna 4 CDD MODE

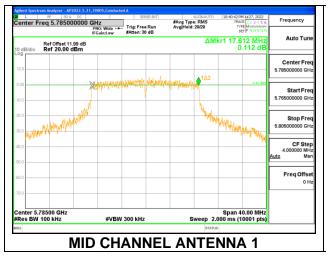
Channel	Frequency	6 dB BW	6 dB BW	Minimum
		Antenna 1	Antenna 4	Limit
	(MHz)	(MHz)	(MHz)	(MHz)
Low	5745	17.588	17.572	0.5
Mid	5785	17.612	17.576	0.5
High	5825	17.176	17.564	0.5

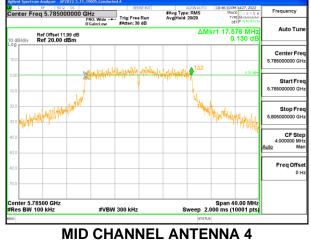
### **LOW CHANNEL**





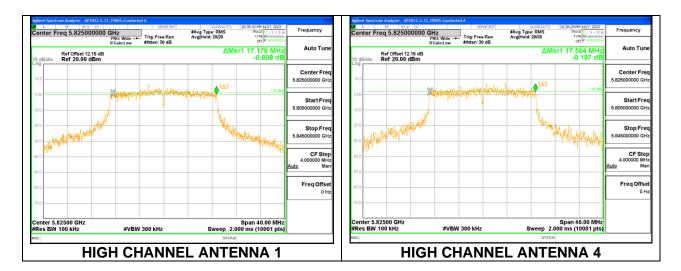
### **MID CHANNEL**





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## **HIGH CHANNEL**

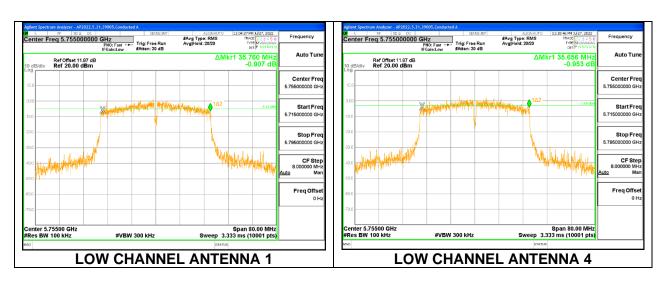


## 9.4.3. 802.11n HT40 MODE IN THE 5.8 GHz BAND

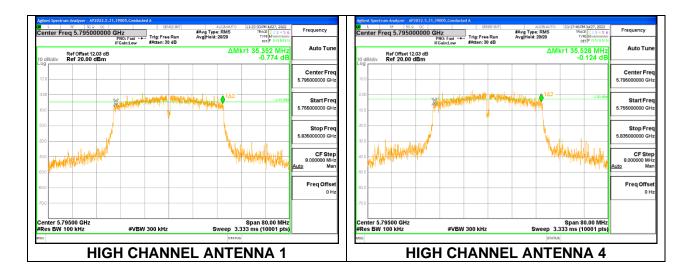
### 2TX Antenna 1 + Antenna 4 CDD MODE

Channel	Frequency	6 dB BW	6 dB BW	Minimum
		Antenna 1	Antenna 4	Limit
	(MHz)	(MHz)	(MHz)	(MHz)
Low	5755	35.760	35.656	0.5
High	5795	35.352	35.528	0.5

### **LOW CHANNEL**



### **HIGH CHANNEL**

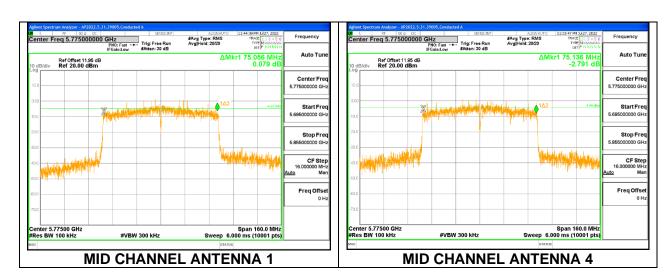


## 9.4.4. 802.11ac VHT80 MODE IN THE 5.8 GHz BAND

### 2TX Antenna 1 + Antenna 4 CDD MODE

Channel	Frequency	6 dB BW	6 dB BW	Minimum
		Antenna 1	Antenna 4	Limit
	(MHz)	(MHz)	(MHz)	(MHz)
Mid	5775	75.056	75.136	0.5

### **MID CHANNEL**



## 9.5. OUTPUT POWER AND PSD

### **LIMITS**

# FCC §15.407

### Band 5.15-5.25 GHz

(iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### Bands 5.25-5.35 GHz and 5.47-5.725 GHz

The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### Band 5.725-5.85 GHz

The maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information.

#### **RSS-247**

#### Band 5.15-5.25 GHz

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10B, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

### Band 5.25-5.35 GHz

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

#### Bands 5.47-5.6 GHz and 5.65-5.725 GHz

The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

#### Band 5.725-5.85 GHz

The maximum conducted output power shall not exceed 1 W. The power spectral density shall not exceed 30 dBm in any 500 kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications and multiple collocated transmitters transmitting the same information.

#### **TEST PROCEDURE**

The measurement method used for output power is KDB 789033 D02 v02r01, Section E.3.b (Method PM-G).

The measurement method used for power spectral density is KDB 789033 D02 v02r01, Section F.

### **DIRECTIONAL ANTENNA GAIN**

#### For 2 TX:

Tx chains are uncorrelated for power and correlated for PSD due to the device supporting CDD in all MIMO modes. The directional gains are as follows:

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### Antenna 1 and Antenna 3:

Band (GHz)	Chain 0 Antenna 1 Gain (dBi)	Chain 1 Antenna 3 Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)	Correlated Chains Directional Gain (dBi)
5.2	3.2	3.2	3.20	6.21
5.3	3.6	3.2	3.40	6.41
5.6	5	4.3	4.66	7.67
5.8	5.2	4.6	4.91	7.92

# Antenna 1 and Antenna 4 (wort-case correlation directional gain in bold):

	Chain 0	Chain 1	Uncorrelated Chains	Correlated Chains
	Antenna 1	Antenna 4	Directional	Directional
Band	Gain	Gain	Gain	Gain
(GHz)	(dBi)	(dBi)	(dBi)	(dBi)
5.2	3.2	4.6	3.96	6.94
5.3	3.6	4.4	4.02	7.02
5.6	5	5.1	5.05	8.06
5.8	5.2	5.1	5.15	8.16

# Antenna 2 and Antenna 3:

	Chain 0	Chain 1	Uncorrelated Chains	Correlated Chains
	Antenna 2	Antenna 3	Directional	Directional
Band	Gain	Gain	Gain	Gain
(GHz)	(dBi)	(dBi)	(dBi)	(dBi)
5.2	3.4	3.2	3.30	6.31
5.3	2.9	3.2	3.05	6.06
5.6	4.3	4.3	4.30	7.31
5.8	4.3	4.6	4.45	7.46

## Antenna 2 and Antenna 4 (wort-case correlation directional gain in bold):

	Chain 0	Chain 1	Uncorrelated Chains	Correlated Chains
	Antenna 2	Antenna 4	Directional	Directional
Band	Gain	Gain	Gain	Gain
(GHz)	(dBi)	(dBi)	(dBi)	(dBi)
5.2	3.4	4.6	4.04	7.03
5.3	2.9	4.4	3.71	6.69
5.6	4.3	5.1	4.72	7.72
5.8	4.3	5.1	4.72	7.72

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# Directional Gain value was determined using the following formula:

Uncorrelated Directional Gain dBi =  $10 \log [(10^{(Ant 1/10)} + 10^{(Ant 2/10)/2}]$ 

Correlated Directional Gain dBi =  $10 \log [(10^{\circ} (Ant 1/20) + 10^{\circ} (Ant 2/20)^{\circ})/2]$ 

Uncorrelated Directional Gain sample calculation:

 $4.04 \text{ dBi} = 10 \log \left[ (10^{3.4}/10) + 10^{4.6}/10)/2 \right]$ 

Correlated Directional Gain sample calculation:

 $7.03 \text{ dBi} = 10 \log \left[ (10^{3.4/20}) + 10^{4.6/20} \right]$ 

### **RESULTS**

# 9.5.1. 802.11a MODE IN THE 5.2 GHz BAND

# 2TX Antenna 2 + Antenna 4 CDD MODE (FCC)

Test Engineer:	ZS16080
Test Date:	2022-27-7

#### **Antenna Gain and Limits**

Channel	Frequency	Directional	Directional	Power	PSD
		Gain	Gain	Limit	Limit
		for Power	for PSD		
	(MHz)	(dBi)	(dBi)	(dBm)	(dBm/1MHz)
Low	5180	4.04	7.03	24.00	9.97
Mid	5200	4.04	7.03	24.00	9.97
High	5240	4.04	7.03	24.00	9.97

Duty Cycle CF (dB)	1.05	Included in Calculations of Corr'd PSD
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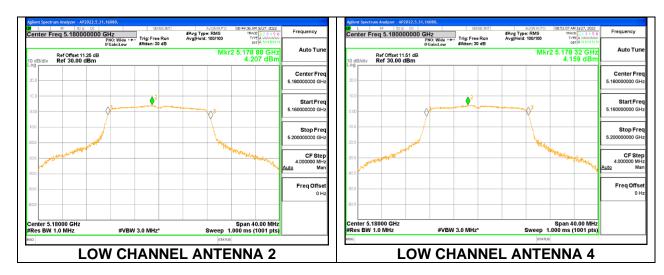
#### **Output Power Results**

Channel	Frequency	Antenna 2	Antenna 4	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5180	16.50	16.50	19.51	24.00	-4.49
Mid	5200	17.00	16.50	19.77	24.00	-4.23
High	5240	16.40	15.85	19.14	24.00	-4.86

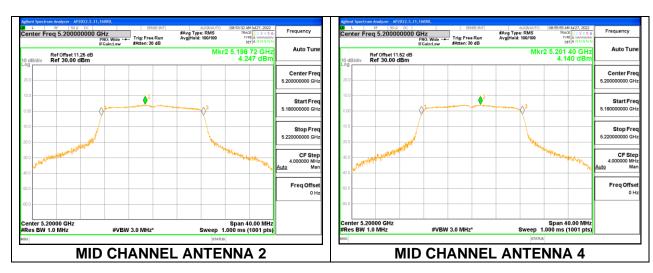
#### **PSD Results**

1 02 11000	OD Results								
Channel	Frequency	Antenna 2	Antenna 4	Total	PSD	PSD			
		Meas	Meas	Corr'd	Limit	Margin			
		PSD	PSD	PSD					
	(MHz)	(dBm/1MHz)	(dBm/1MHz)	(dBm/1MHz)	(dBm/1MHz)	(dB)			
Low	5180	4.207	4.159	8.24	9.97	-1.73			
Mid	5200	4.247	4.140	8.25	9.97	-1.72			
High	5240	3.366	3.795	7.65	9.97	-2.32			

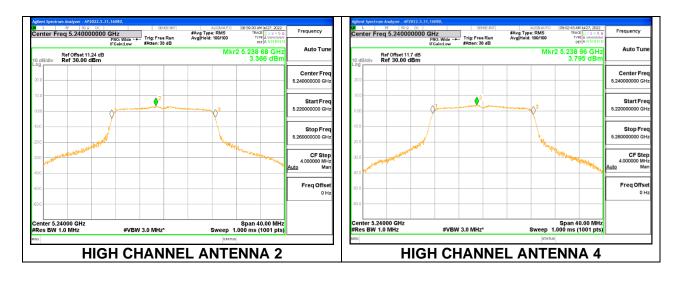
### **LOW CHANNEL**



# **MID CHANNEL**



### **HIGH CHANNEL**



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# <u>(IC)</u>

Test Engineer:	CW20756
Test Date:	2022/02/08

# (Note: IC PSD was tested by radiated method)

### **Bandwidth and Antenna Gain**

Channel	Frequency	Min
		99%
		BW
	(MHz)	(MHz)
Low	5180	16.936
Mid	5200	16.819
High	5240	16.741

### Limits

Channel	Frequency	ISED	ISED
		EIRP	EIRP
		Power	PSD
		Limit	Limit
	(MHz)	(dBm)	(dBm/
			1MHz)
Low	5180	22.29	10.00
Mid	5200	22.26	10.00
High	5240	22.24	10.00

Duty Cycle CF (dB)	1.05	Included in Calculations of Corr'd PSD
Duty Cycle of (ab)	1.00	

# **Output Power Results**

Output I C				
Channel	Frequency	Total	Power	Power
		Corr'd	Limit	Margin
		Power		
	(MHz)	(dBm)	(dBm)	(dB)
Low	5180	17.276	22.29	-5.01
Mid	5200	17.303	22.26	-4.96
High	5240	16.578	22.24	-5.66

#### **PSD** Results

Channel	Frequency	Total	PSD	PSD
		Corr'd	Limit	Margin
		PSD		
	(MHz)	(dBm/	(dBm/	(dB)
		1MHz)	1MHz)	
Low	5180	8.74	10.00	-1.26
Mid	5200	8.67	10.00	-1.33
High	5240	8.64	10.00	-1.36

**HIGH CHANNEL** 

13:47:42 02.08.2022

DATE: 2022-10-13

IC: 5373A-RM039

# 9.5.2. 802.11n HT20 MODE IN THE 5.2 GHz BAND

## 2TX Antenna 2 + Antenna 4 CDD MODE (FCC)

Test Engineer:	ZS16080
Test Date:	2022/27/06

#### **Antenna Gain and Limits**

Channel	Frequency	Directional	Directional	Power	PSD
		Gain for Power	Gain for PSD	Limit	Limit
	(MHz)	(dBi)	(dBi)	(dBm)	(dBm/ 1MHz)
Low	5180	4.04	7.03	24.00	9.97
Mid	5200	4.04	7.03	24.00	9.97
High	5240	4.04	7.03	24.00	9.97

Duty Cycle CF (dB) 1.1	11 Included in	Calculations of Corr'd PSD
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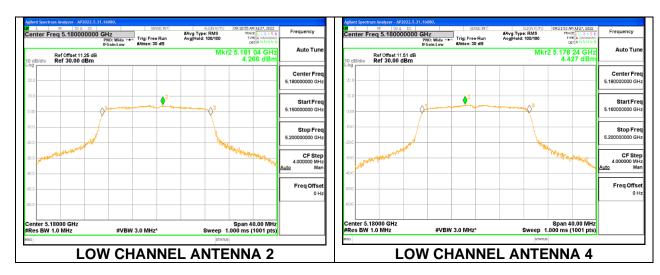
#### **Output Power Results**

Channel	Frequency	Antenna 2	Antenna 4	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5180	16.02	17.28	19.71	24.00	-4.29
Mid	5200	16.20	17.51	19.91	24.00	-4.09
High	5240	15.46	17.02	19.32	24.00	-4.68

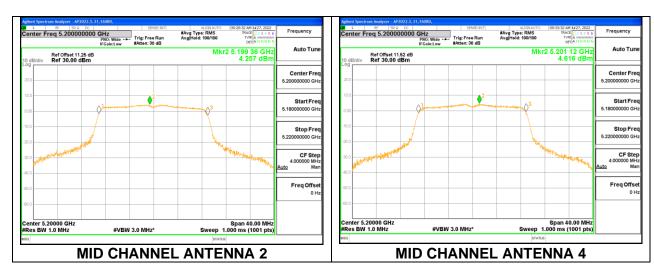
## **PSD Results**

Channel	Frequency	Antenna 2	Antenna 4	Total	PSD	PSD
		Meas PSD	Meas PSD	Corr'd PSD	Limit	Margin
	(MHz)	(dBm/1MHz)	(dBm/1MHz)	(dBm/1MHz)	(dBm/	(dB)
					1MHz)	
Low	5180	4.266	4.427	8.47	9.97	-1.50
Mid	5200	4.257	4.618	8.56	9.97	-1.41
High	5240	3.524	4.103	7.94	9.97	-2.03

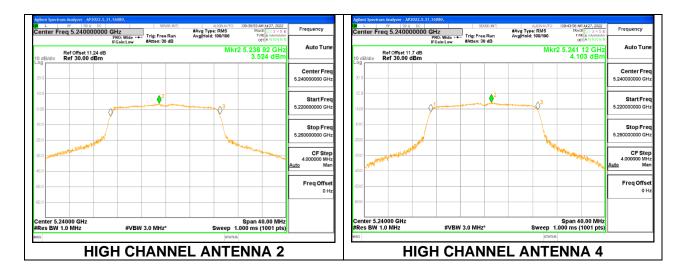
# **LOW CHANNEL**



# **MID CHANNEL**



### **HIGH CHANNEL**



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# <u>(IC)</u>

Test Engineer:	CW20756
Test Date:	2022/02/08

# (Note: IC PSD was tested by radiated method)

Channel	Frequency	Min
		99%
		BW
	(MHz)	(MHz)
Low	5180	17.808
Mid	5200	17.825
High	5240	17.763

#### Limits

Channel	Frequency	ISED	ISED
		EIRP	EIRP
		Power	PSD
		Limit	Limit
	(MHz)	(dBm)	(dBm/
			1MHz)
Low	5180	22.51	10.00
Mid	5200	22.51	10.00
High	5240	22.50	10.00

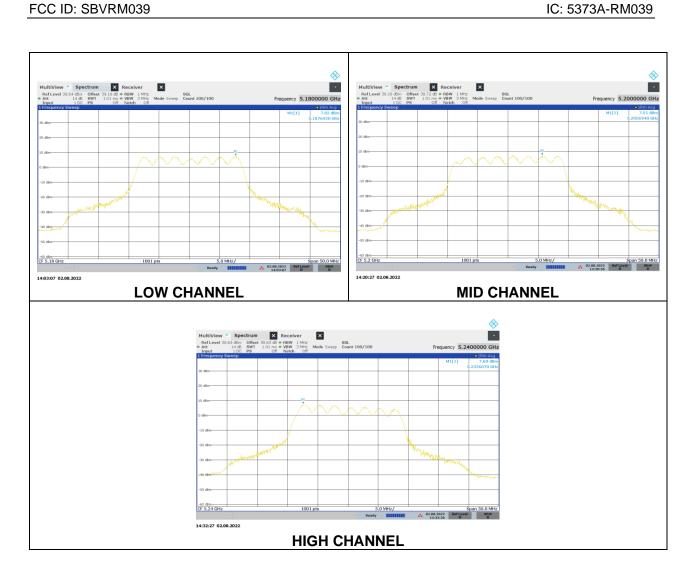
Duty Cycle CF (dB)	1.11	Included in Calculations of Corr'd PSD

# **Output Power Results**

Channel	Frequency	Total	Power	Power
		Corr'd	Limit	Margin
		Power		
	(MHz)	(dBm)	(dBm)	(dB)
Low	5180	18.09	22.51	-4.42
Mid	5200	17.97	22.51	-4.54
High	5240	17.70	22.50	-4.80

#### **PSD Results**

Channel	Frequency	Total	PSD	PSD
		Corr'd	Limit	Margin
		PSD		
	(MHz)	(dBm/	(dBm/	(dB)
		1MHz)	1MHz)	
Low	5180	8.93	10.00	-1.07
Mid	5200	8.62	10.00	-1.38
High	5240	8.79	10.00	-1.21



DATE: 2022-10-13

# 9.5.3. 802.11n HT40 MODE IN THE 5.2 GHz BAND

## 2TX Antenna 2 + Antenna 4 CDD MODE (FCC)

Test Engineer:	16080ZS
Test Date:	2022/05/08

### **Antenna Gain and Limits**

Channel	Frequency	Directional	Directional	Power	PSD
		Gain	Gain	Limit	Limit
		for Power	for PSD		
	(MHz)	(dBi)	(dBi)	(dBm)	(dBm/
					1MHz)
Low	5190	4.04	7.03	24.00	9.97
High	5230	4.04	7.03	24.00	9.97

Duty Cycle CF (dB)	2.07	Included in Calculations of Corr'd PSD
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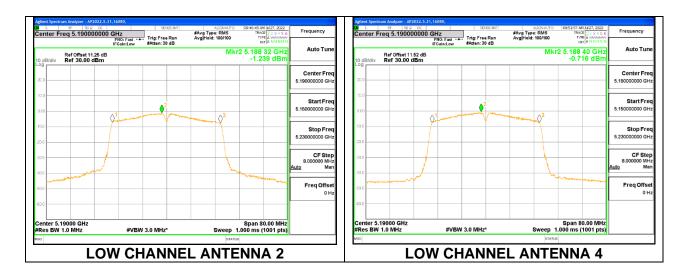
#### **Output Power Results**

Channel	Frequency	Antenna 2	Antenna 4	Total	Power	Power	
		Meas	Meas	Corr'd	Limit	Margin	
		Power	Power	Power			
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)	
Low	5190	14.20	15.13	17.70	24.00	-6.30	
High							

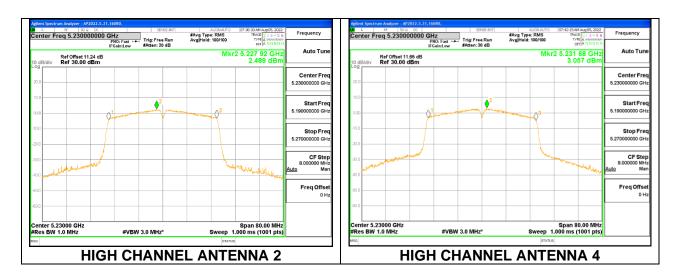
#### **PSD Results**

Channel	Frequency	Antenna 2	Antenna 4	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm/	(dBm/	(dBm/	(dBm/	(dB)
		1MHz)	1MHz)	1MHz)	1MHz)	
Low	5190	-1.239	-0.761	4.09	9.97	-5.88
High	5230	2.489	3.057	7.86	9.97	-2.11

## **LOW CHANNEL**



### **HIGH CHANNEL**



## (IC)

Test Engineer:	CW20756
Test Date:	2022/02/08

(Note: IC PSD was tested by radiated method)

## **Bandwidth and Antenna Gain**

Channel	Frequency	Min
		99%
		BW
	(MHz)	(MHz)
Low	<b>(MHz)</b> 5190	(MHz) 35.611

### Limits

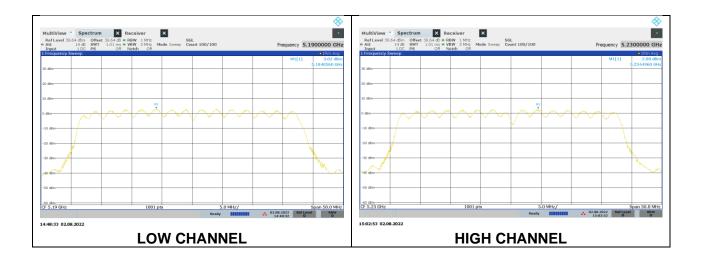
Channel	Frequency	ISED	ISED
		EIRP	EIRP
		Power	PSD
		Limit	Limit
	(MHz)	(dBm)	(dBm/
			1MHz)
Low	5190	23.00	10.00
High	5230	23.00	10.00

### **Output Power Results**

Channel	Frequency	Total Corr'd Power		
	(MHz)	(dBm)	(dBm)	(dB)
Low	5190	17.43	23.00	-5.57
High	5230	17.42	23.00	-5.58

### **PSD Results**

Channel	Frequency	Total	PSD	PSD
		Corr'd	Limit	Margin
		PSD		
	(MHz)	(dBm/	(dBm/	(dB)
		1MHz)	1MHz)	
Low	5190	5.09	10.00	-4.91
High	5230	4.87	10.00	-5.13



## 9.5.4. 802.11ac VHT80 MODE IN THE 5.2 GHz BAND

## 2TX Antenna 2 + Antenna 4 CDD MODE (FCC) MOBILE

Test Engineer:	16080ZS
Test Date:	2022/27/07

#### **Antenna Gain and Limits**

Channel	Frequency	Directional	Directional	Power	PSD
		Gain	Gain	Limit	Limit
		for Power	for PSD		
	(MHz)	(dBi)	(dBi)	(dBm)	(dBm/
					1MHz)
Mid	5210	4.04	7.03	24.00	9.97

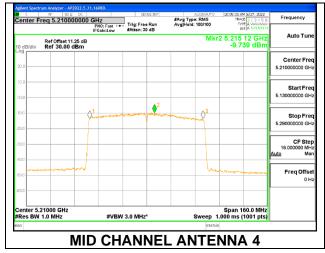
### **Output Power Results**

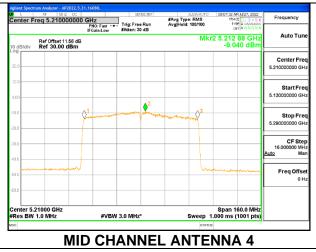
Channel	Frequency	Antenna 2	Antenna 4	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5210	11.42	11.64	14.54	24.00	-9.46

#### **PSD Results**

Channel	Frequency	Antenna 2	Antenna 4	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm/	(dBm/	(dBm/	(dBm/	(dB)
		1MHz)	1MHz)	1MHz)	1MHz)	
Mid	5210	-9.739	-9.040	-3.01	9.97	-12.98

## **MID CHANNEL**





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# <u>(IC)</u>

Test Engineer:	CW20756
Test Date:	2022/02/08

# (Note: IC PSD was tested by radiated method)

## **Bandwidth and Antenna Gain**

Channel	Frequency	Min
		99%
		BW
	(MHz)	(MHz)
Mid	5210	75.246

### Limits

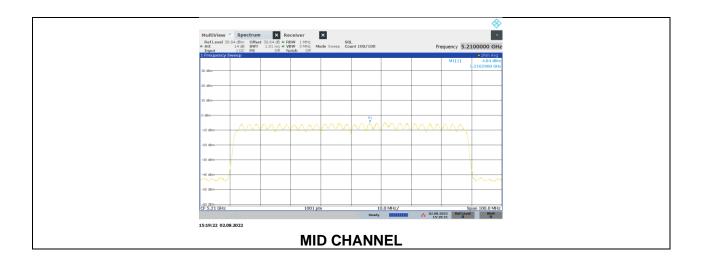
Channel	Frequency	ISED	ISED
		EIRP	EIRP
		Power	PSD
		Limit	Limit
	(MHz)	(dBm)	(dBm/
			1MHz)
Mid	5210	23.00	10.00

### **Output Power Results**

Channel	Frequency	Total	Power	Power
		Corr'd	Limit	Margin
		Power		
	(MHz)	(dBm)	(dBm)	(dB)
Mid	5210	15.02	23.00	-7.98

### **PSD Results**

Channel	Frequency	Total	PSD	PSD
		Corr'd	Limit	Margin
		PSD		
	(MHz)	(dBm/	(dBm/	(dB)
		1MHz)	1MHz)	
Mid	5210	-1.48	10.00	-11.48



# 9.5.5. 802.11a MODE IN THE 5.3 GHz BAND

# 2TX Antenna 1 + Antenna 4 CDD MODE (FCC+IC)

Test Engineer:	16080ZS
Test Date:	2022/27/07

#### **Bandwidth and Antenna Gain**

Channel	Frequency	Min	Min	Directional	Directional
		26 dB	99%	Gain	Gain
		BW	BW	for Power	for PPSD
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)
Low	5260	28.32	16.862	4.02	7.02
Mid	5300	26.24	16.747	4.02	7.02
High	5320	25.84	16.829	4.02	7.02

### Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Low	5260	24.00	23.27	29.27	23.27	9.98	11.00	9.98
Mid	5300	24.00	23.24	29.24	23.24	9.98	11.00	9.98
High	5320	24.00	23.26	29.26	23.26	9.98	11.00	9.98

Duty Cycle CF (dB) 1.05 Included in Calculations of Corr'd PPSD
---

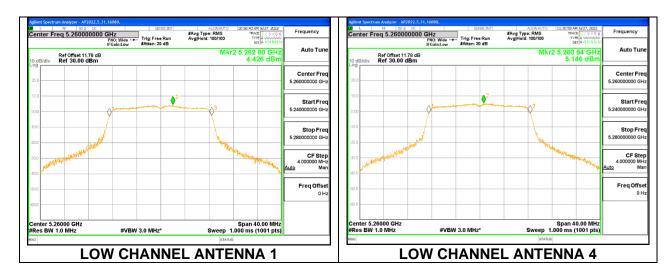
### **Output Power Results**

Channel	Frequency	Antenna 1	Antenna 4	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5260	16.75	16.94	19.86	23.27	-3.41
Mid	5300	17.00	17.83	20.45	23.24	-2.79
High	5320	17.00	17.96	20.52	23.26	-2.74

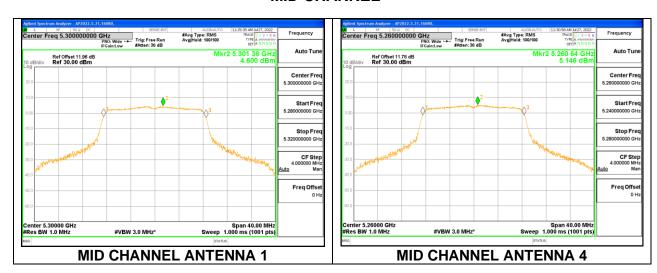
# **PPSD Results**

Channel	Frequency	Antenna 1	Antenna 4	Total	PPSD	PPSD
		Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD		
	(MHz)	(dBm/	(dBm/	(dBm/	(dBm/	(dB)
		1MHz)	1MHz)	1MHz)	1MHz)	
Low	5260	4.426	5.146	8.86	9.98	-1.12
Mid	5300	4.600	5.120	8.93	9.98	-1.05
High	5320	4.295	5.137	8.80	9.98	-1.18

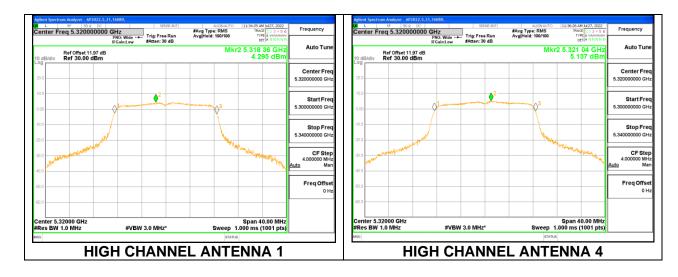
# **LOW CHANNEL**



### **MID CHANNEL**



### **HIGH CHANNEL**



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# 9.5.6. 802.11n HT20 MODE IN THE 5.3 GHz BAND

## 2TX Antenna 1 + Antenna 4 CDD MODE (FCC+IC)

Test Engineer:	16080ZS
Test Date:	2022/27/07

#### **Bandwidth and Antenna Gain**

Channel	Frequency	Min	Min Directional [		Directional
		26 dB	99%	Gain	Gain
		BW	BW	for Power	for PPSD
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)
Low	5260	26.12	18.009	4.02	7.02
Mid	5300	25.00	17.834	4.02	7.02
High	5320	25.60	17.803	4.02	7.02

### Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Low	5260	24.00	23.55	29.55	23.55	9.98	11.00	9.98
Mid	5300	24.00	23.51	29.51	23.51	9.98	11.00	9.98
High	5320	24.00	23.50	29.50	23.50	9.98	11.00	9.98

Duty Cycle CF (dB) 1.11 Included in Calculations of Corr'd PPSD	
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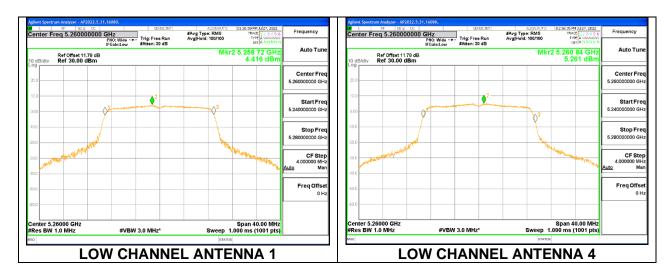
### **Output Power Results**

Channel	Frequency	Antenna 1	Antenna 4	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5260	17.3	17.7	20.51	23.55	-3.04
Mid	5300	17.6	18.51	21.09	23.51	-2.42
High	5320	17.6	18.48	21.07	23.50	-2.43

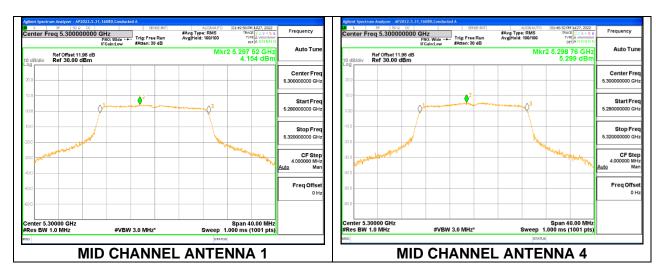
#### **PPSD Results**

Channel	Frequency	Antenna 1	Antenna 4	Total	PPSD	PPSD
		Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD		
	(MHz)	(dBm/	(dBm/	(dBm/	(dBm/	(dB)
		1MHz)	1MHz)	1MHz)	1MHz)	
Low	5260	4.416	5.261	8.98	9.98	-1.00
Mid	5300	4.154	5.299	8.88	9.98	-1.10
High	5320	4.391	5.283	8.98	9.98	-1.00

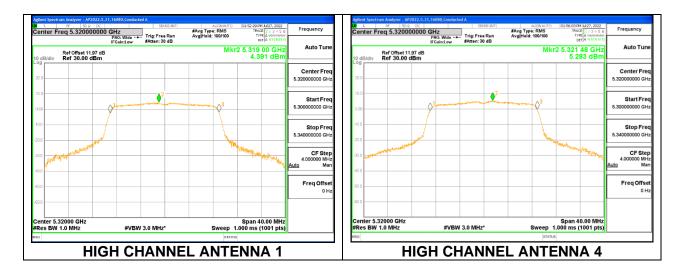
# **LOW CHANNEL**



# **MID CHANNEL**



### **HIGH CHANNEL**



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# 9.5.7. 802.11n HT40 MODE IN THE 5.3 GHz BAND

## 2TX Antenna 1 + Antenna 4 CDD MODE (FCC+IC)

Test Engineer:	16080ZS
Test Date:	2022/05/08

#### **Bandwidth and Antenna Gain**

Channel	Frequency	Min	Min	Directional	Directional
		26 dB	99%	Gain	Gain
		BW	BW	for Power	for PPSD
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)
Low	5270	40.72	35.713	4.02	7.02
High	5310	40.72	35.611	4.02	7.02

### Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Low	5270	24.00	24.00	30.00	24.00	9.98	11.00	9.98
High	5310	24.00	24.00	30.00	24.00	9.98	11.00	9.98

Duty Cycle CF (dB) 2.07	Included in Calculations of Corr'd PPSD
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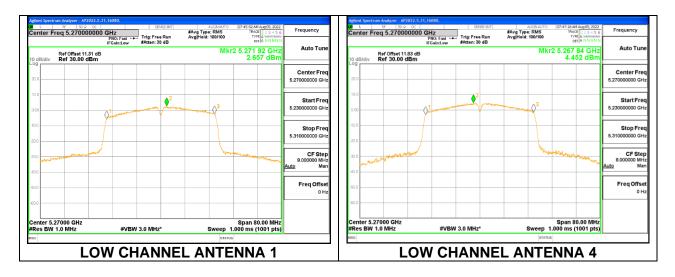
### **Output Power Results**

<del></del>						
Channel	Frequency	Antenna 1	Antenna 4	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5270	13.74	14.72	17.27	24.00	-6.73
High	5310	13.03	14.15	16.64	24.00	-7.36

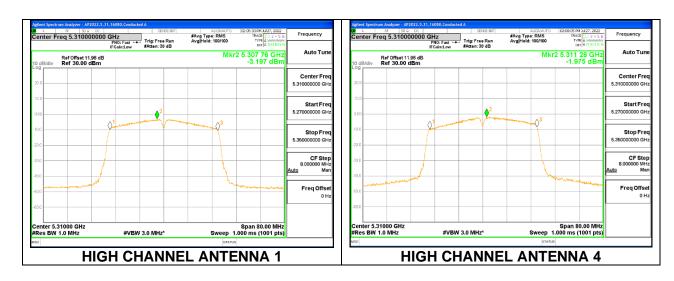
#### **PPSD Results**

Channel	Frequency	Antenna 1	Antenna 4	Total	PPSD	PPSD
		Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD		
	(MHz)	(dBm/	(dBm/	(dBm/	(dBm/	(dB)
		1MHz)	1MHz)	1MHz)	1MHz)	
Low	5270	2.657	4.452	8.73	9.98	-1.25
High	5310	-3.197	-1.975	2.54	9.98	-7.44

## **LOW CHANNEL**



### **HIGH CHANNEL**



# 9.5.8. 802.11ac VHT80 MODE IN THE 5.3 GHz BAND

## 2TX Antenna 1 + Antenna 4 CDD MODE (FCC+IC)

Test Engineer:	16080ZS
Test Date:	2022/07/07

#### **Bandwidth and Antenna Gain**

Channel	Frequency	Min	Min	Directional	Directional
		26 dB	99%	Gain	Gain
		BW	BW	for Power	for PPSD
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)
Mid	5290	80.64	74.982	4.02	7.02

#### Limits

Channel	Frequency	FCC	IC	IC	Power	FCC	IC	PPSD
		Power	Power	EIRP	Limit	PPSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)						
Mid	5290	24.00	24.00	30.00	24.00	9.98	11.00	9.98

Duty Cycle CF (dB) 3.36	Included in Calculations of Corr'd PPSD	
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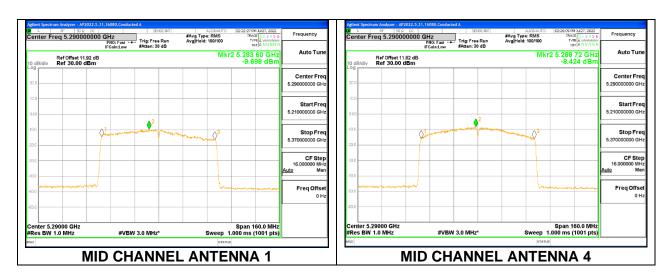
### **Output Power Results**

Channel	Frequency	Antenna 1	Antenna 4	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Mid	5290	10.65	11.62	14.17	24.00	-9.83

### **PPSD Results**

Channel	Frequency	Antenna 1	Antenna 4	Total	PPSD	PPSD
		Meas	Meas	Corr'd	Limit	Margin
		PPSD	PPSD	PPSD		
	(MHz)	(dBm/	(dBm/	(dBm/	(dBm/	(dB)
		1MHz)	1MHz)	1MHz)	1MHz)	
Mid	5290	-9.968	-8.424	-2.76	9.98	-12.74

## **MID CHANNEL**



# 9.5.9. 802.11a MODE IN THE 5.6 GHz BAND

## 2TX Antenna 1 + Antenna 4 CDD MODE (FCC+IC)

Test Engineer:	16080 ZS
Test Date:	2022/27/07

#### **Bandwidth and Antenna Gain**

Channel	Frequency	Min	Min	Directional	Directiona
		26 dB	99%	Gain	Gain
		BW	BW	for Power	for PSD
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)
Low	5500	26.56	16.756	5.05	8.06
Mid	5580	27.49	16.786	5.05	8.06
High	5700	26.12	16.805	5.05	8.06

### Limits

Channel	Frequency	FCC	ISED	ISED	Power	FCC	ISED
		Power	Power	EIRP	Limit	PSD	PSD
		Limit	Limit	Limit		Limit	Limit
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm/1MHz)	(dBm/1MHz)
Low	5500	24.00	23.24	29.24	23.24	8.94	11.00
Mid	5580	24.00	23.25	29.25	23.25	8.94	11.00
High	5700	24.00	23.25	29.25	23.25	8.94	11.00

### **Output Power Results**

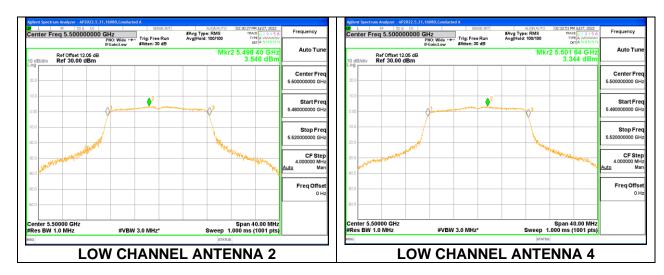
Channel	Frequency	Antenna 1	Antenna 4	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	16.57	16.46	19.53	23.24	-3.72
Mid	5580	16.35	16.67	19.52	23.25	-3.73
High	5700	16.11	16.72	19.44	23.25	-3.82

#### **PSD Results**

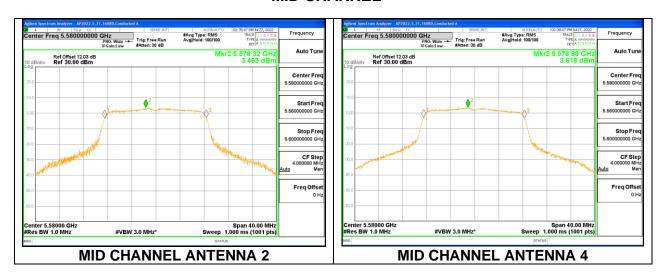
Channel	Frequency	Antenna 1	Antenna 4	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm/	(dBm/	(dBm/	(dBm/	(dB)
		1MHz)	1MHz)	1MHz)	1MHz)	
Low	5500	3.546	3.344	7.506	8.94	-1.43
Mid	5580	3.463	3.618	7.601	8.94	-1.34
High	5700	3.572	4.323	8.024	8.94	-0.92

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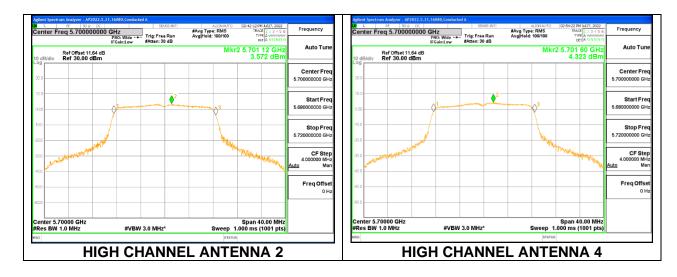
### **LOW CHANNEL**



### **MID CHANNEL**



#### **HIGH CHANNEL**



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# 9.5.10. 802.11n HT20 MODE IN THE 5.6 GHz BAND

## 2TX Antenna 1 + Antenna 4 CDD MODE (FCC+IC)

Test Engineer:	16080ZS
Test Date:	2022/27/07

#### **Bandwidth and Antenna Gain**

Channel	Frequency	Min	Min	Directional	Directional
		26 dB	99%	Gain	Gain
		BW	BW	for Power	for PSD
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)
Low	5500	26.24	17.863	5.05	8.06
Mid	5580	26.16	17.830	5.05	8.06
High	5700	26.08	17.799	5.05	8.06

### Limits

Channel	Frequency	FCC	ISED	ISED	Power	FCC	ISED	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm/	(dBm/	(dBm/
						1MHz)	1MHz)	1MHz)
Low	5500	24.00	23.52	29.52	23.52	8.94	11.00	8.94
Mid	5580	24.00	23.51	29.51	23.51	8.94	11.00	8.94
High	5700	24.00	23.50	29.50	23.50	8.94	11.00	8.94

Duty Cycle CF (dB)	1.11	Included in Calculations of Corr'd PSD
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#### **Output Power Results**

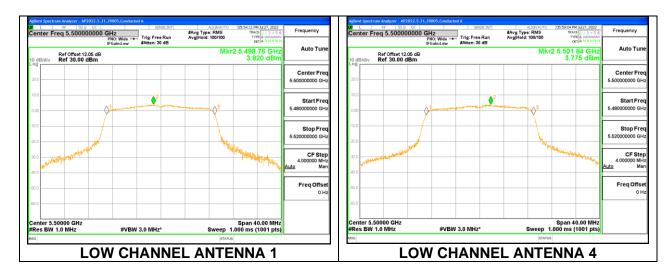
Channel	Frequency	Antenna 1	Antenna 4	Total	Power	Power
		Meas	Meas	Corr'd	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	17.18	16.90	20.05	23.52	-3.47
Mid	5580	16.70	16.80	19.76	23.51	-3.75
High	5700	16.35	17.35	19.89	23.50	-3.61

## **PSD Results**

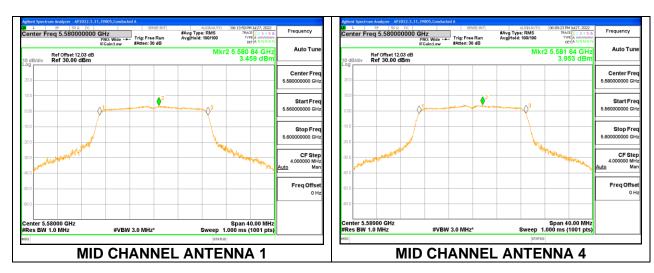
Channel	Frequency	Antenna 1	Antenna 4	Total	PSD	PSD
		Meas	Meas	Corr'd	Limit	Margin
		PSD	PSD	PSD		
	(MHz)	(dBm/ 1MHz)	(dBm/ 1MHz)	(dBm/	(dBm/	(dB)
				1MHz)	1MHz)	
Low	5500	3.820	3.775	7.918	8.94	-1.02
Mid	5580	3.459	3.953	7.833	8.94	-1.11
High	5700	3.588	4.049	7.945	8.94	-1.00

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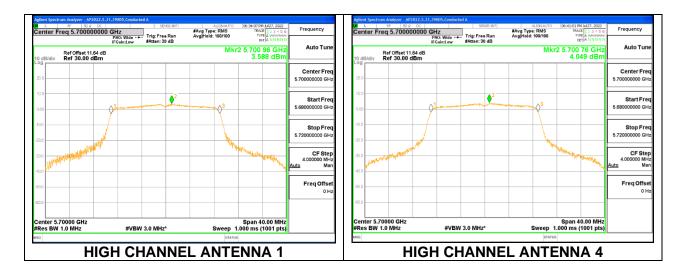
### **LOW CHANNEL**



# **MID CHANNEL**



#### **HIGH CHANNEL**



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# 9.5.11. 802.11n HT40 MODE IN THE 5.6 GHz BAND

## 2TX Antenna 1 + Antenna 4 CDD MODE (FCC+IC)

Test Engineer:	16080 ZS
Test Date:	2022/28/07

## **Bandwidth and Antenna Gain**

Channel	Frequency	Min	Min	Directional	Directional
		26 dB	99%	Gain	Gain
		BW	BW	for Power	for PSD
	(MHz)	(MHz)	(MHz)	(dBi)	(dBi)
Low	5510	40.6400	35.7800	5.05	8.06
Mid	5550	40.8000	35.6640	5.05	8.06
High	5670	40.8800	35.7230	5.05	8.06

#### Limits

Channel	Frequency	FCC	ISED	ISED	Power	FCC	ISED	PSD
		Power	Power	EIRP	Limit	PSD	PSD	Limit
		Limit	Limit	Limit		Limit	Limit	
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm/	(dBm/	(dBm/
						1MHz)	1MHz)	1MHz)
Low	5510	24.00	24.00	30.00	24.00	8.94	11.00	8.94
Mid	5550	24.00	24.00	30.00	24.00	8.94	11.00	8.94
High	5670	24.00	24.00	30.00	24.00	8.94	11.00	8.94

Duty Cycle CF (dB)	2.07	Included in Calculations of Corr'd PSD
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### **Output Power Results**

Catput I office Recalls									
Channel	Frequency	Antenna 1	Antenna 4	Total	Power	Power			
		Meas	Meas	Corr'd	Limit	Margin			
		Power	Power	Power					
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)			
Low	5510	14.55	14.77	17.67	24.00	-6.33			
Mid	5550	13.78	14.64	17.24	24.00	-6.76			
High	5670	15.72	16.37	19.07	24.00	-4.93			

#### **PSD Results**

r ob Nesulis									
Channel	Frequency	Antenna 1	Antenna 4	Total	PSD	PSD			
		Meas	Meas	Corr'd	Limit	Margin			
		PSD	PSD	PSD					
	(MHz)	(dBm/ 1MHz)	(dBm/	(dBm/	(dBm/	(dB)			
			1MHz)	1MHz)	1MHz)				
Low	5510	-2.679	-2.410	2.54	8.94	-6.40			
Mid	5550	-2.486	-1.583	3.07	8.94	-5.87			
High	5670	-1.128	-0.114	4.49	8.94	-4.45			

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