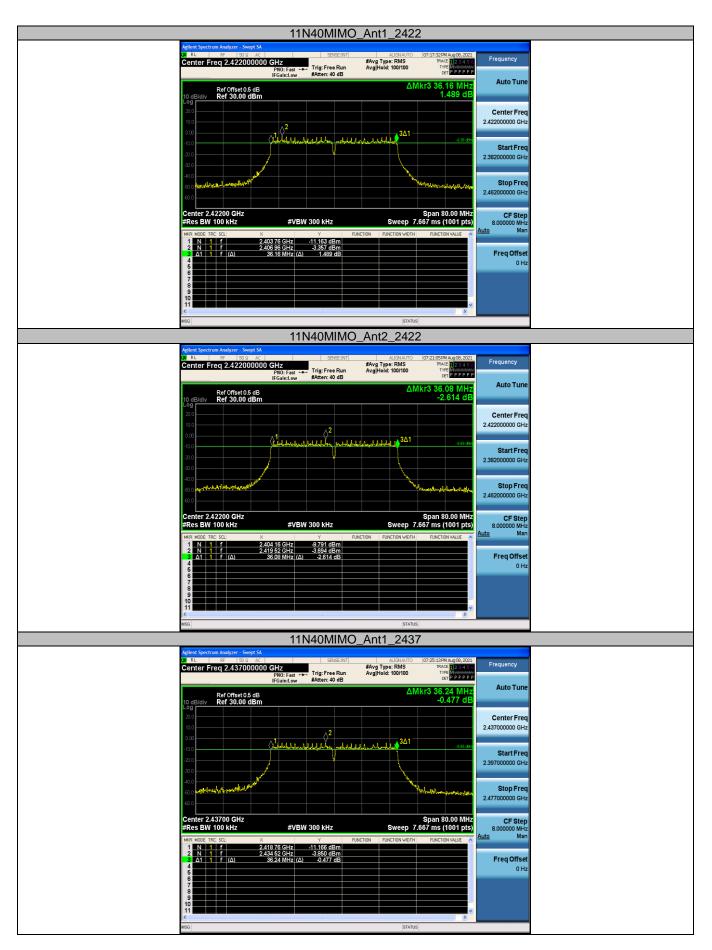


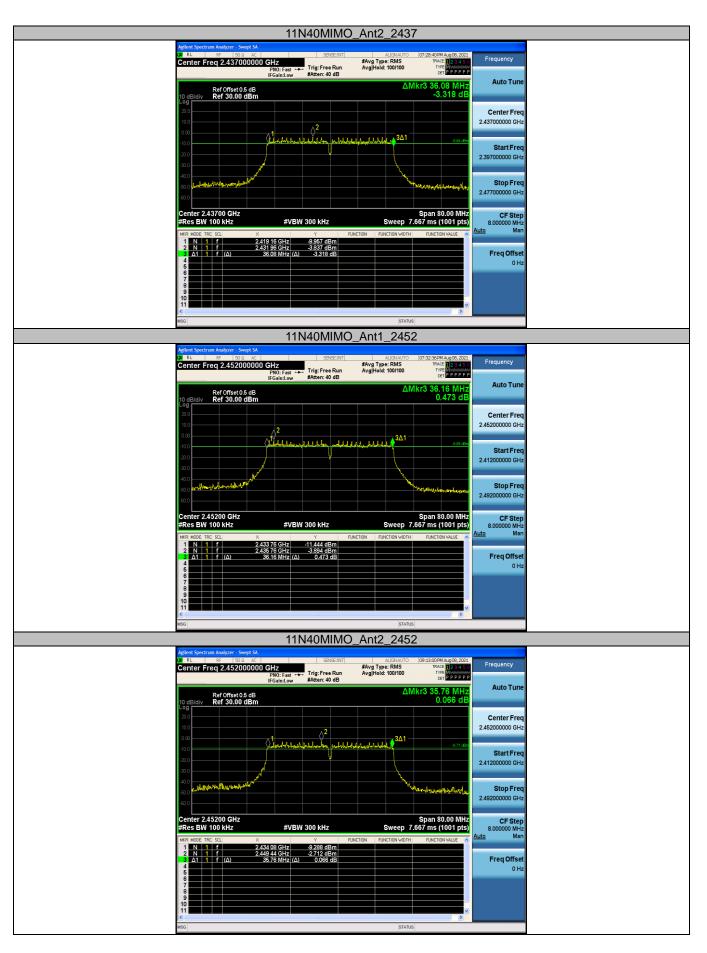
EN



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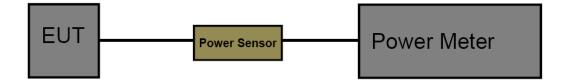
## 3.6. Peak Output Power

<u>Limit</u>

### FCC CFR Title 47 Part 15 Subpart C Section 15.247 (b)(3)/ RSS-247 5.4:

Section	Section Test Item Limit		Frequency Range(MHz)	
CFR 47 FCC 15.247(b)(3)	Maximum conducted output power	1 Watt or 30dBm	2400~2483.5	
ISED RSS-247 5.4 d	EIRP	4 Watt or 36dBm	2400~2483.5	

## Test Configuration



### Test Procedure

- 1. The maximum conducted output power may be measured using a broadband Peak RF power meter.
- 2. Peak power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor.
- 3. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.
- 4. Record the measurement data.

### Test Mode

Please refer to the clause 2.4.



## Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
	Ant1	2412	18.79	<=30	PASS
	Ant2	2412	18.82	<=30	PASS
11B	Ant1	2437	18.12	<=30	PASS
ПВ	Ant2	2437	18.69	<=30	PASS
	Ant1	2462	18.29	<=30	PASS
	Ant2	2462	18.06	<=30	PASS
	Ant1	2412	21.53	<=30	PASS
	Ant2	2412	21.62	<=30	PASS
11G	Ant1	2437	20.90	<=30	PASS
ПĞ	Ant2	2437	21.35	<=30	PASS
	Ant1	2462	20.47	<=30	PASS
	Ant2	2462	20.90	<=30	PASS
	Ant1	2412	18.34	<=30	PASS
	Ant2	2412	18.49	<=30	PASS
	total	2412	21.4	<=30	PASS
	Ant1	2437	18.37	<=30	PASS
11N20MIMO	Ant2	2437	17.79	<=30	PASS
	total	2437	21.1	<=30	PASS
	Ant1	2462	17.32	<=30	PASS
	Ant2	2462	17.87	<=30	PASS
	total	2462	20.6	<=30	PASS
	Ant1	2422	17.79	<=30	PASS
	Ant2	2422	17.92	<=30	PASS
	total	2422	20.9	<=30	PASS
	Ant1	2437	17.57	<=30	PASS
11N40MIMO	Ant2	2437	17.70	<=30	PASS
	total	2437	20.6	<=30	PASS
	Ant1	2452	17.16	<=30	PASS
	Ant2	2452	18.65	<=30	PASS
	total	2452	21.0	<=30	PASS

Note: Test results increased RF cable loss by 0.5dB.



# 3.7. Power Spectral Density

## <u>Limit</u>

## FCC CFR Title 47 Part 15 Subpart C Section 15.247 (e)/ RSS-247 5.2 b:

Test Item	Limit	Frequency Range(MHz)
Power Spectral Density	8dBm(in any 3 kHz)	2400~2483.5

## **Test Configuration**



### Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.

2. The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v05r02.

3. Spectrum Setting:

Set analyzer center frequency to DTS channel center frequency.

Set the span to 1.5 times the DTS bandwidth.

Set the RBW to: 3 kHz

Set the VBW to: 10 kHz

Detector: PK

Sweep time: Auto

Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

## Test Mode

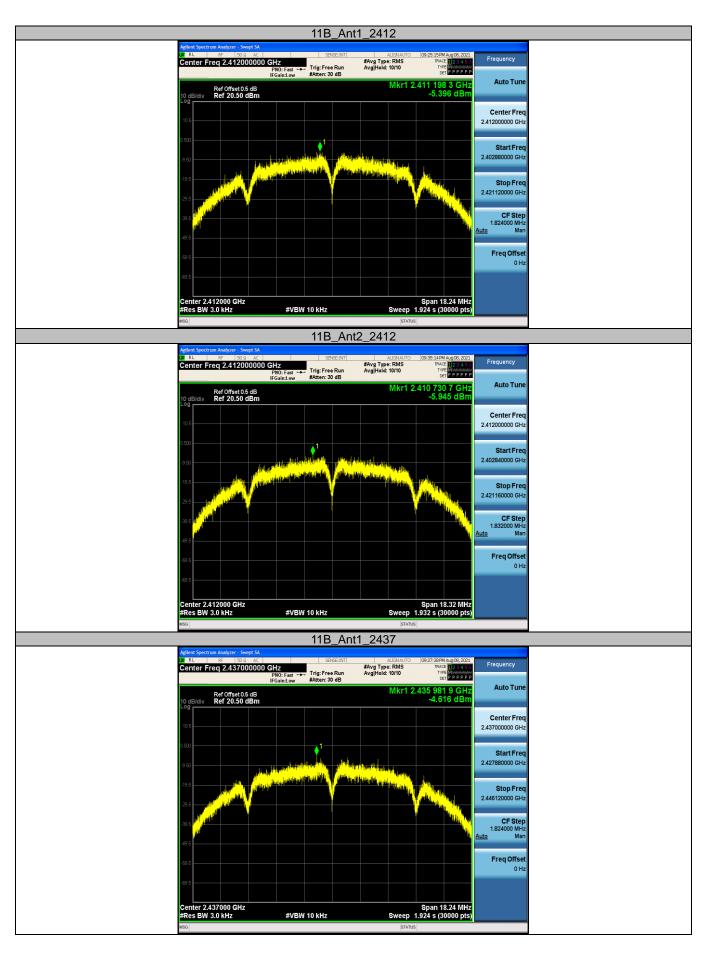
Please refer to the clause 2.4.



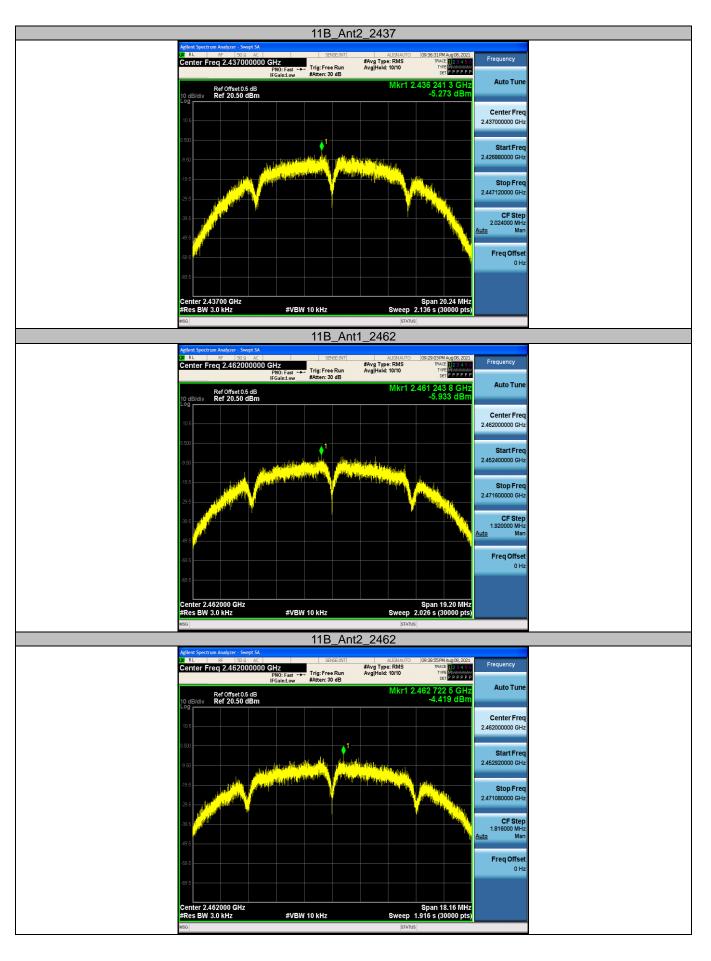
### Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
	Ant1	2412	-5.4	<=8	PASS
	Ant2	2412	-5.95	<=8	PASS
11 D	Ant1	2437	-4.62	<=8	PASS
11B	Ant2	2437	-5.27	<=8	PASS
	Ant1	2462	-5.93	<=8	PASS
	Ant2	2462	-4.42	<=8	PASS
	Ant1	2412	-9.47	<=8	PASS
	Ant2	2412	-10.07	<=8	PASS
11G	Ant1	2437	-10.94	<=8	PASS
110	Ant2	2437	-10.74	<=8	PASS
	Ant1	2462	-10.87	<=8	PASS
	Ant2	2462	-10.32	<=8	PASS
	Ant1	2412	-13.84	<=8	PASS
	Ant2	2412	-14.53	<=8	PASS
	total	2412	-11.16	<=8	PASS
	Ant1	2437	-14.34	<=8	PASS
11N20MIMO	Ant2	2437	-14.83	<=8	PASS
	total	2437	-11.57	<=8	PASS
	Ant1	2462	-14.77	<=8	PASS
	Ant2	2462	-15.71	<=8	PASS
	total	2462	-12.20	<=8	PASS
	Ant1	2422	-16.81	<=8	PASS
	Ant2	2422	-17.83	<=8	PASS
	total	2422	-14.28	<=8	PASS
	Ant1	2437	-17.22	<=8	PASS
11N40MIMO	Ant2	2437	-18.05	<=8	PASS
	total	2437	-14.60	<=8	PASS
	Ant1	2452	-17.54	<=8	PASS
	Ant2	2452	-17.3	<=8	PASS
	total	2452	-14.41	<=8	PASS

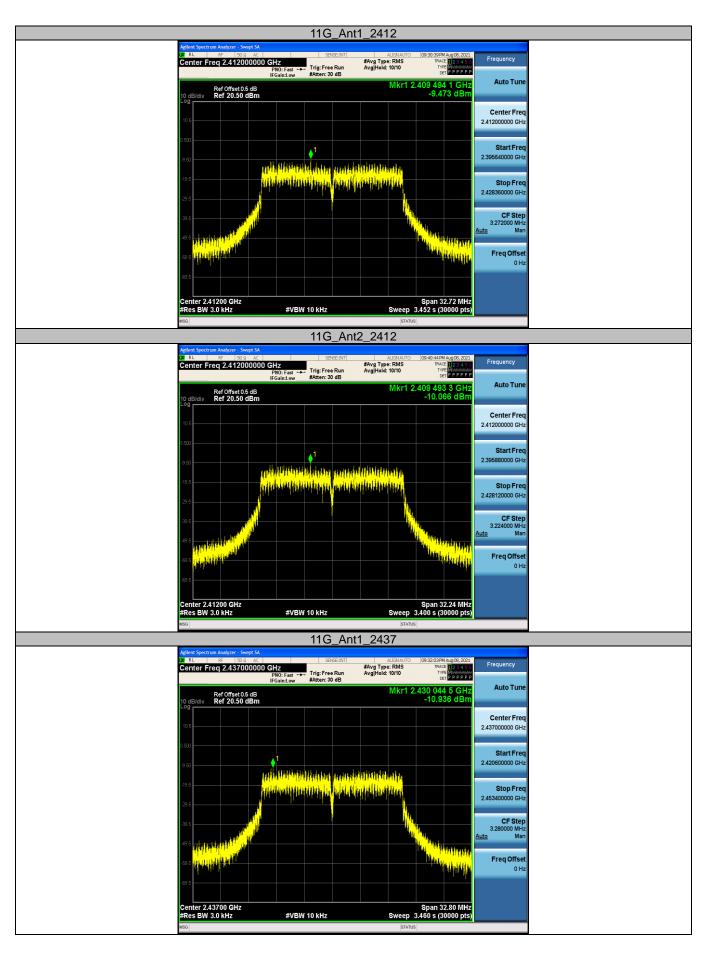






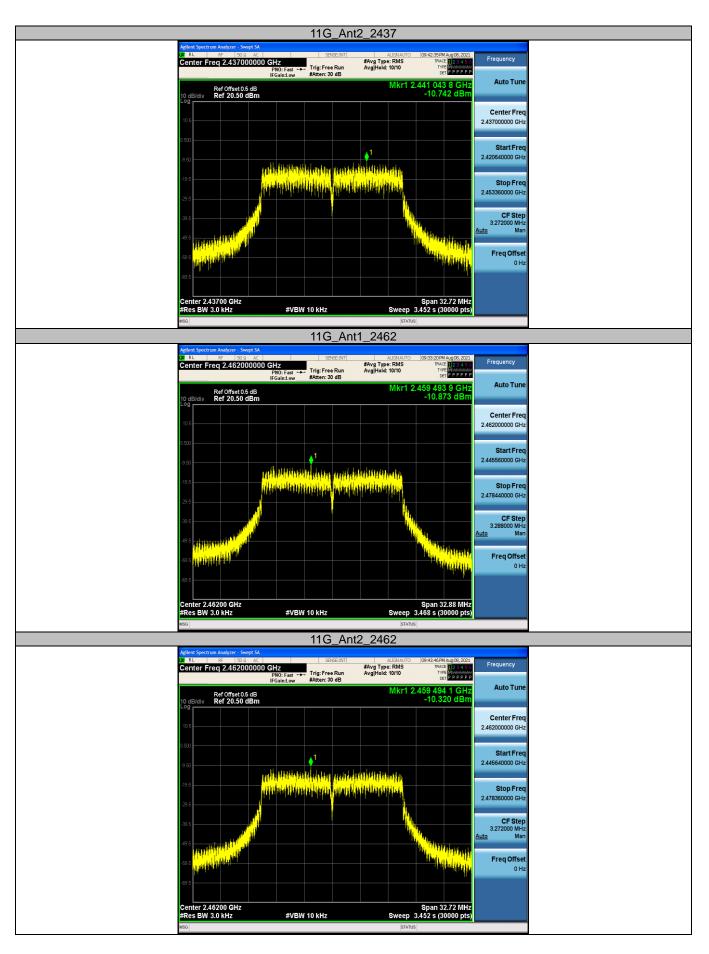




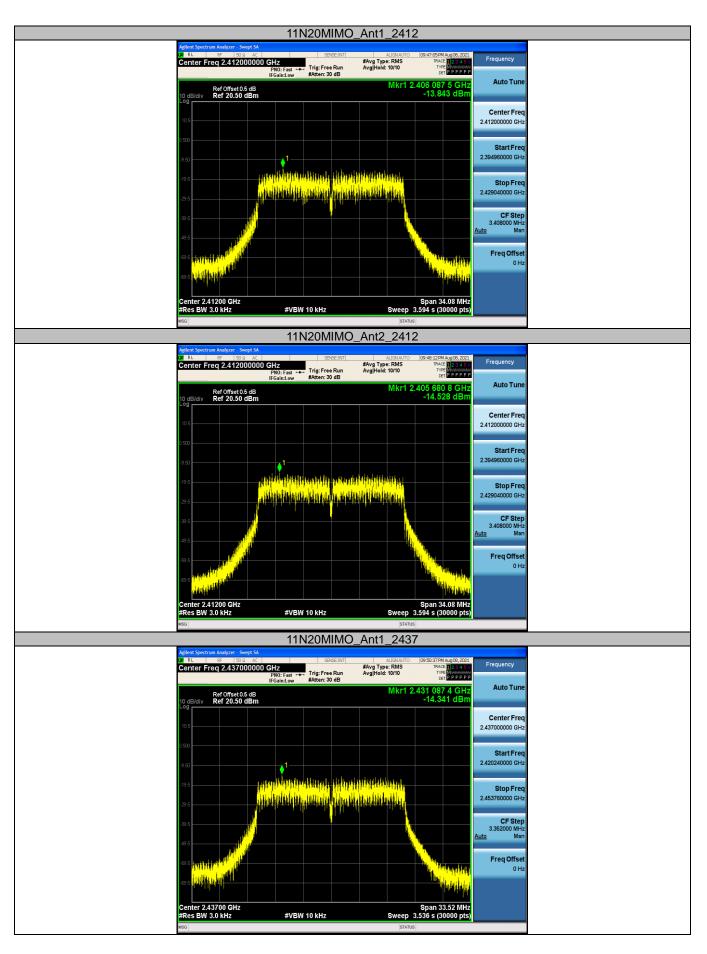




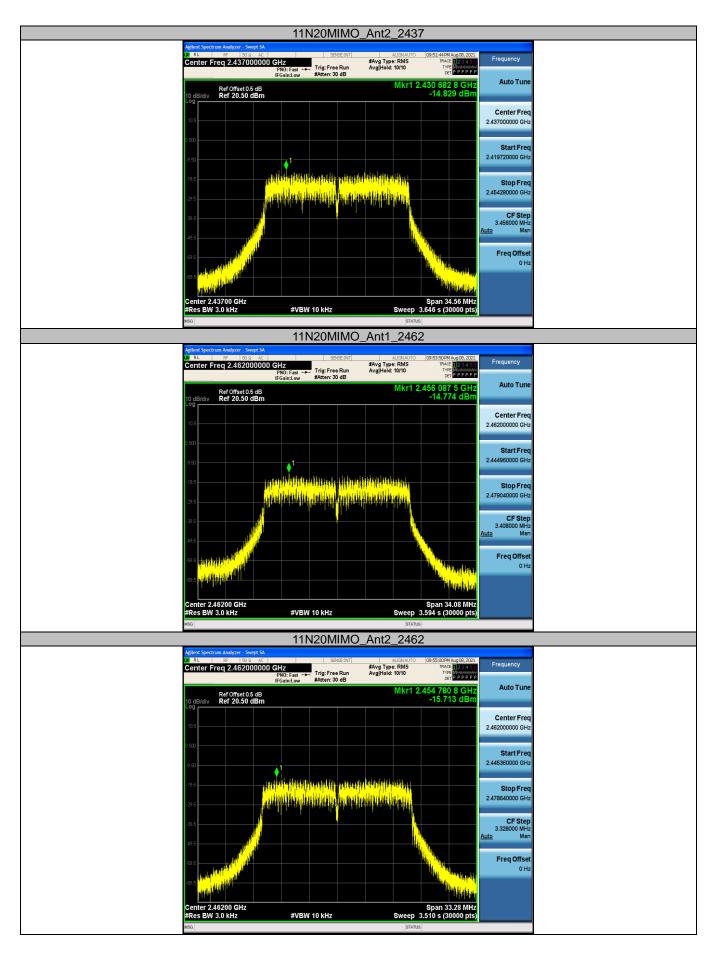




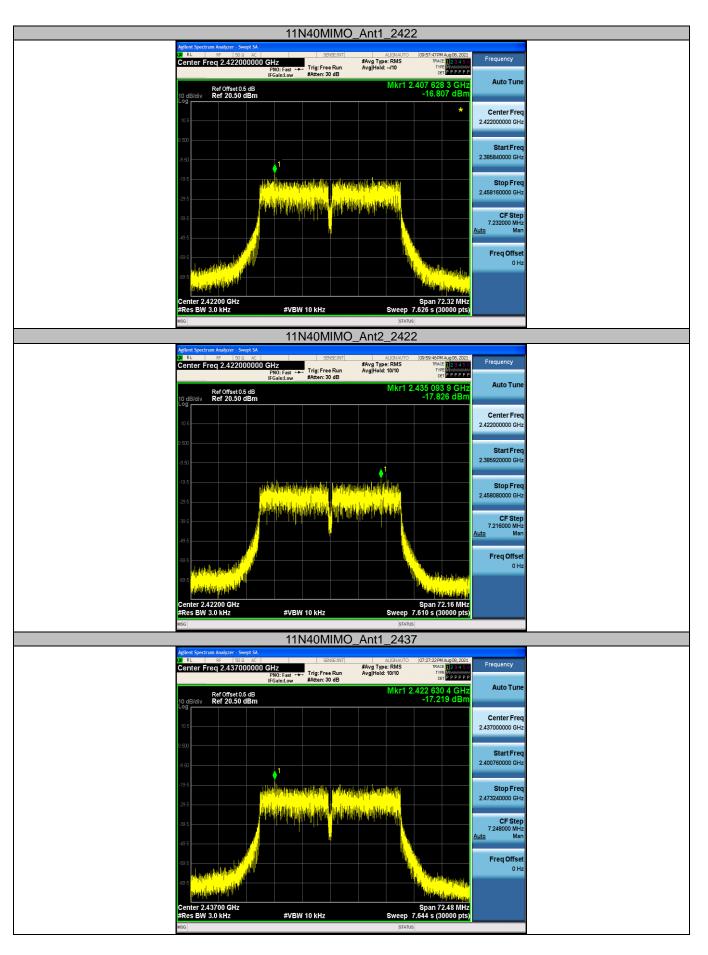




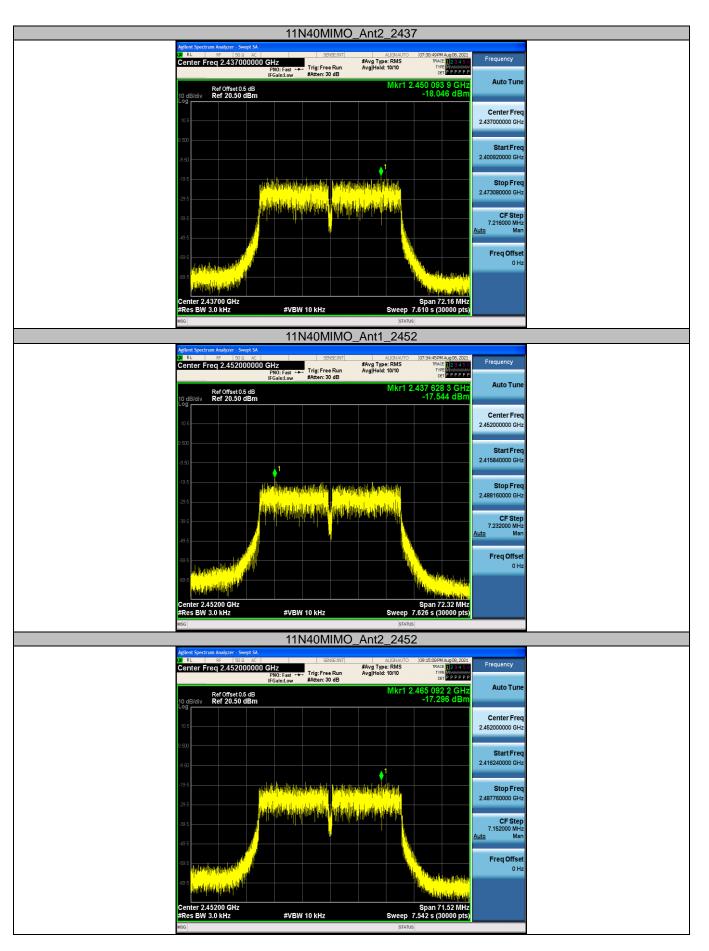












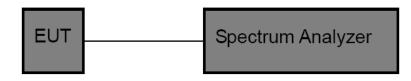


## 3.8. Duty Cycle

<u>Limit</u>

None, for report purposes only.

### **Test Configuration**



### Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.

2. The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v05r02.

3. Spectrum Setting:

Set analyzer center frequency to DTS channel center frequency. Set the span to 0Hz Set the RBW to 10MHz Set the VBW to 10MHz Detector: peak Sweep time: auto Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

## Test Mode

Please refer to the clause 2.4.



#### Test Result

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
	Ant1	2412	8.19	8.25	99.27	0.12	1.00
	Ant2	2412	8.19	8.25	99.27	0.12	1.00
11B	Ant1	2437	8.19	8.25	99.27	0.12	1.00
ПВ	Ant2	2437	8.19	8.25	99.27	0.12	1.00
	Ant1	2462	8.19	8.25	99.27	0.12	1.00
	Ant2	2462	8.19	8.25	99.27	0.12	1.00
	Ant1	2412	1.36	1.41	96.45	0.71	1.00
	Ant2	2412	1.36	1.41	96.45	0.71	1.00
110	Ant1	2437	1.36	1.41	96.45	0.71	1.00
11G	Ant2	2437	1.36	1.41	96.45	0.71	1.00
	Ant1	2462	1.36	1.41	96.45	0.71	1.00
	Ant2	2462	1.36	1.41	96.45	0.71	1.00
	Ant1	2412	0.66	0.71	92.96	1.41	2.00
	Ant2	2412	0.66	0.71	92.96	1.41	2.00
441120141140	Ant1	2437	0.66	0.71	92.96	1.41	2.00
11N20MIMO	Ant2	2437	0.66	0.71	92.96	1.41	2.00
	Ant1	2462	0.66	0.71	92.96	1.41	2.00
	Ant2	2462	0.66	0.71	92.96	1.41	2.00
	Ant1	2422	0.34	0.39	87.18	2.56	3.00
	Ant2	2422	0.34	0.39	87.18	2.56	3.00
	Ant1	2437	0.34	0.39	87.18	2.56	3.00
11N40MIMO	Ant2	2437	0.34	0.39	87.18	2.56	3.00
	Ant1	2452	0.34	0.39	87.18	2.56	3.00
	Ant2	2452	0.34	0.39	87.18	2.56	3.00



			0.442			
	gilent Spectrum Analyzer - Swept SA	11B_Ant1	_2412			
	RL RF 50Ω AC	SENSE:INT Trig Delay-2.000 ms Trig: Video Gain:Low #Atten: 40 dB	ALIGN AUTO #Avg Type: RMS	06:31:51 PM Aug 06, 2021 TRACE 2 3 4 5 6 TYPE WWWWWWW DET P P P P P P	Frequency	
	Ref Offset 0.5 dB 0 dB/div Ref 30.00 dBm	Gain:Low #Atten: 40 dB	ΔΝ	/kr3 8.249 ms -0.19 dB	Auto Tune	
	0g 01 20.0 01 10.0 01		3∆1	TRICLYE	Center Freq 2.412000000 GHz	
	10.0				Start Freq	
	20.0				2.412000000 GHz	
	40.0				<b>Stop Freq</b> 2.412000000 GHz	
F	Center 2.412000000 GHz Res BW 8 MHz	#VBW 8.0 MHz		Span 0 Hz 26 ms (8000 pts)	CF Step 8.000000 MHz Auto Man	
	MKR  MODE  TRC  SCL  X    1  N  1  t  5;    2  Δ1  1  t  Δ)  8;    3  Δ1  1  t  (Δ)  8;    4  4  5;  1  1  5;	Y  FUNC    148 ms  20.81 dBm    188 ms  (Δ)  -0.40 dB    249 ms  (Δ)  -0.19 dB	TION FUNCTION WIDTH	FUNCTION VALUE	Freq Offset	
	5 6 7 8				0 Hz	
	9 10 11	ш		~		
AR	SG	11B_Ant2	status 2_2412			
a de la constante de	gilent Spectrum Analyzer - Swept SA RL RF 50 Ω AC Center Freq 2.412000000 GI	SENSE:INT	ALIGN AUTO	10:03:35 PM Aug 06, 2021	Frequency	
	۱ ۱۴ ـــــــــــــــــــــــــــــــــــ	NO: Fast ↔ Trig: Video Gain:Low #Atten: 40 dB		TRACE 2 3 4 5 6 TYPE 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Auto Tune	
	Ref Offset 0.5 dB 10 dB/div Ref 30.00 dBm 20.0		3∆1	3.12 dB	Center Freq	
	0.00			INGLYL	2.412000000 GHz	
	20.0				Start Freq 2.412000000 GHz	
	40.0				<b>Stop Freq</b> 2.412000000 GHz	
C	Center 2.412000000 GHz Res BW 8 MHz	#VBW 8.0 MHz	Sweep 20	Span 0 Hz 26 ms (8000 pts)	CF Step 8.000000 MHz	
	MKR  MODE  TRC  SCL  ×    1  N  1  t  4.9    2  Δ1  1  t  (Δ)  8,3    3  Δ1  1  t  (Δ)  8,3    4	Y  FUNC    905 ms  17.95 dBm    190 ms  1.74 dB    249 ms  (Δ)    3.12 dB	TION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Man <b>Freq Offset</b> 0 Hz	
	7 8 9 10 11			*		
j 3 M	sg	11R Apt1				
A	gilent Spectrum Analyzer - Swept SA	11B_Ant1		OS AN A DATA THE REAL PROPERTY OF		
	RL RF 50Ω AC Center Freq 2.437000000 GI F	SENSE:INT Trig Delay-2.000 ms Trig: Video #Atten: 40 dB	#Avg Type: RMS	06:41:14 PM Aug 06, 2021 TRACE 2 3 4 5 6 TYPE W	Frequency	
	Ref Offset 0.5 dB 0 dB/div Ref 30.00 dBm	3Δ1	ΔΝ	/lkr3 8.249 ms 4.75 dB	Auto Tune	
	20.0			TRIOLVL	Center Freq 2.437000000 GHz	
	10.0				<b>Start Freq</b> 2.437000000 GHz	
					<b>Stop Freq</b> 2.437000000 GHz	
C F	Center 2.437000000 GHz Res BW 8 MHz	#VBW 8.0 MHz		Span 0 Hz 26 ms (8000 pts)	CF Step 8.000000 MHz Auto Man	
	MKR  MODE  TRC  SCL  X    1  N  1  t  1.1    2  Δ1  1  t  (Δ)  8.    3  Δ1  1  t  (Δ)  8.	Y  FUNC    910 ms  13.98 dBm    190 ms  (Δ)  4.83 dB    249 ms  (Δ)  4.75 dB	TION FUNCTION WIDTH	FUNCTION VALUE	Auto Man Freq Offset	
				3	0 Hz	
	8 9 10 11			~		
Att a start of the	SG		STATUS			



11B_Ant2_2437		
Agitent Spectrum Analyzer - Swept SA. 201 RL 87 50.0 AC SBREEDT ALEANNTO 100. Center Freq 2.4370000000 GHz Trig Delay-2.000 ms #Avg Type: RMS	TRACE 123456	Frequency
PND: Fast	cr3 8.249 ms 21.17 dB	Auto Tune
10 dBldiv Ref 30.00 dBm		Center Freq 2.437000000 GHz
1000 <b>1</b> 100 <b>1</b> 1		Start Freq
		2.437000000 GHz
40.0 40.0		Stop Freq 2.437000000 GHz
	Span 0 Hz 6 ms (8000 pts)	CF Step 8.000000 MHz Auto Man
1  N  1  t  2.138 ms  -2.71 dBm    2  Δ1  1  t  (Δ)  8.190 ms  (Δ)  21.92 dB    3  Δ1  1  t  (Δ)  8.249 ms  (Δ)  21.17 dB    4		Freq Offset 0 Hz
	=	UTIZ
10 11 ≪ MSG STATUS	~	
Aglerit Spectrum Analyzer - Swept SA		
	5:50:46 PM Aug 06, 2021 TRACE 1 2 3 4 5 6 TYPE WWWWWWW DET P P P P P P	Frequency
Ref Offset 0.5 dB  ∆Mk    10 dB/div  Ref 30.00 dBm	(r3 8.249 ms 0.88 dB	Auto Tune
	TRISLA	Center Freq 2.462000000 GHz
		Start Freq 2.462000000 GHz
-300		Stop Freq
Center 2.462000000 GHz	Span 0 Hz	2.462000000 GHz CF Step
Res BW 8 MHz  #VBW 8.0 MHz  Sweep 20.26    Msr Mode TRC SQL  X  Y  RARCTION  RUNCTION  <	6 ms (8000 pts)	8.000000 MHz Auto Man
2 Δ1 1 t (Δ) 8.188 ms (Δ) 0.57 dB 3 Δ1 1 t (Δ) 8.249 ms (Δ) 0.88 dB 4 5		Freq Offset 0 Hz
9 9 10		
11 € € MSG STATUS	>	
11B_Ant2_2462    Agilent Spectrum Analyzer - Swept SA    Ø  R  R  50: 8  ALIGNAUTO  10:	121-32DM Aurola 2004	
Center Freq 2.462000000 GHz Trig Udeo PNO: Fast	TRACE 123456 TYPE WWWWWWWWWW DET PPPPPP	Frequency Auto Tune
Ref Offset05 dB  ΔMk    10 dB/div  Ref 30.00 dBm  3Δ1	(r3 8.246 ms -2.89 dB	
		Center Freq 2.462000000 GHz
-100 -200 -300		Start Freq 2.462000000 GHz
		Stop Freq 2.462000000 GHz
Center 2.462000000 GHz Res BW 8 MHz #VBW 8.0 MHz Sweep 20.26	Span 0 Hz 6 ms (8000 pts)	CF Step 8.000000 MHz
MER. MODE  InC. SL.  X  Y  Function  Function width    1  N  1  t  6.257 ms  20.46 dBm  2.01 dB  4.11 dB    2  Δ1  t  t  0.388 ms  0.30.41 dB  4.11 dB	FUNCTION VALUE	<u>Auto</u> Man
3  Δ1  1  t  (Δ)  8.246 ms  (Δ)  -2.89 dB    4  -	=	Freq Offset 0 Hz
	~	
KG STATUS	>	



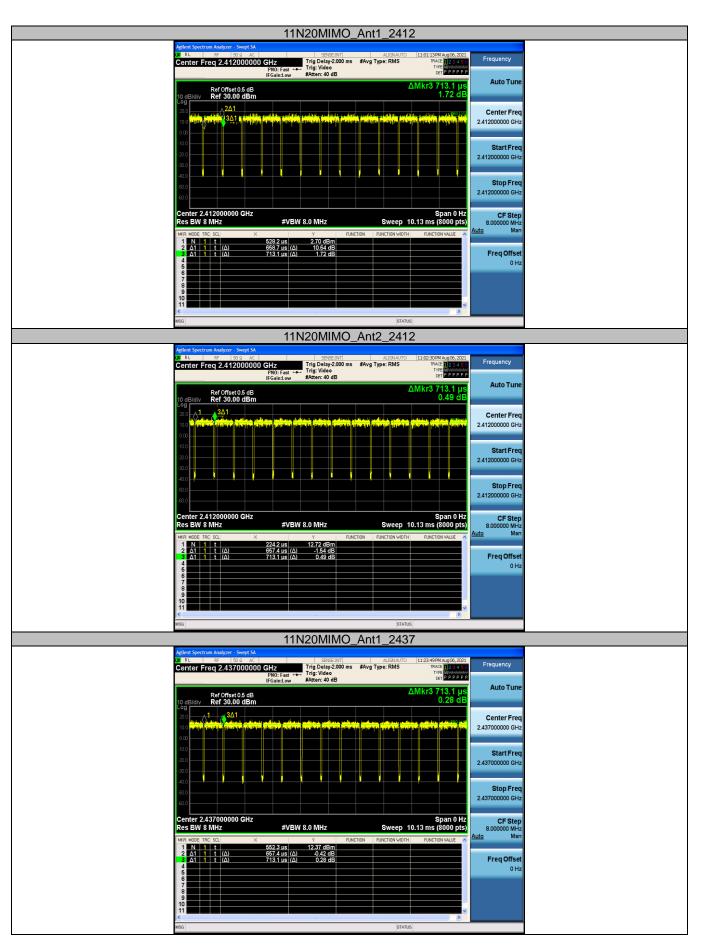
11G_Ant1_2412 Agilent Spectrum Analyzer - Swept SA	
RL  BF  50.0  ALIGNANTO  07-06-14PM Aug06, 2001    Center Freq 2.412000000 GHz  Trig Delay-2.000 ms  #Avg Type: RMS  TRACE  2002 Figure 1000    PN0: Fast →  Trig: Video  Trig: Video  Trig: Video  Trig: Video	Frequency
IFGaint.ew  #Atten: 40 dB  Certonne    Ref Offset 0.5 dB  AMkr3 1.414 ms  -0.63 dB    10 dB/div  Ref 30.00 dBm  -0.63 dB	Auto Tune
	Center Freq 2.412000000 GHz
	Start Freq
	2.412000000 GHz
	Stop Freq 2.412000000 GHz
Center 2.412000000 GHz Span 0 Hz Res BW 8 MHz #VBW 8.0 MHz Sweep 10.13 ms (8000 pts)	CF Step 8.000000 MHz
MKR MODE TRC SL  X  Y  FUNCTION  FUNCTION WDTH  FUNCTION VALUE    1  N  1  t  1.164 ms  1522 dBm    2  Δ1  t  (Δ)  1.3558 ms (Δ)  1.40 dB    3  Δ1  t  (Δ)  1.414 ms (Δ)  -0.63 dB	Auto Man
	Freq Offset 0 Hz
7 8 9 10	
11 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	
11G_Ant2_2412 Aglient Spectrum Analyzer - Swept SA	
RL  RF  SD R  ALIGNANTO  ID2959PM Aug06, 2021    Center Freq 2.412000000 GHz  Trig Delay2.000 m# #Avg Type: RMS  Tract Press    PN0: Exet →  Trig: Video  Trig: Video	Frequency
Ref Offset 0.5 dB	Auto Tune
10 defailing Ref 30.00 dBm8.18 dB Log 10 defailer	Center Freq 2.412000000 GHz
	Start Freq
	2.412000000 GHz
	Stop Freq 2.412000000 GHz
Center 2.412000000 GHz Span 0 Hz Res BW 8 MHz #VBW 8.0 MHz Sweep 10.13 ms (8000 pts)	CF Step 8.000000 MHz
Mode  FL  XL  X  T  Function  Function <t< td=""><td>Auto Man Freq Offset</td></t<>	Auto Man Freq Offset
3  Δ1  1  t  (Δ)  -8.18 dB    4  - <t< td=""><td>0 Hz</td></t<>	0 Hz
11G_Ant1_2437	
Aglent Spectrum Analyzer - Swept SA U RL RF S0 a AC SPECENTI ALISIAUTO (07:32:45PM Aug06;201 Center Freq 2.437000000 CHz PR0: Fast → Trig Delay-2.000 ms #Avg Type: RMS Trace PR0: Fast → Trig: Video #Atten: 40 dB cFip PP PP A	Frequency
If GainLow  #Atten: 40 dB  CertPPPPP    Ref Offset 0.5 dB  ΔMkr3 1.412 ms    10 dB/div  Ref 30.00 dBm  -0.43 dB	Auto Tune
	Center Freq 2.437000000 GHz
	Start Freq
	2.437000000 GHz
	<b>Stop Freq</b> 2.437000000 GHz
Center 2.437000000 GHz Span 0 Hz Res BW 8 MHz #VBW 8.0 MHz Sweep 10.13 ms (8000 pts)	CF Step 8.000000 MHz
MVR double The Sci  X  Y  Function  Function  Model The Sci  X  Y  Function	<u>Auto</u> Man
2 A 1 C (A) 1.356 mt (A) -2.79 de A 1 C (A) 1.412 ms (A) -0.43 de 6	Freq Offset 0 Hz
10	
STRIUS	

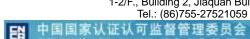




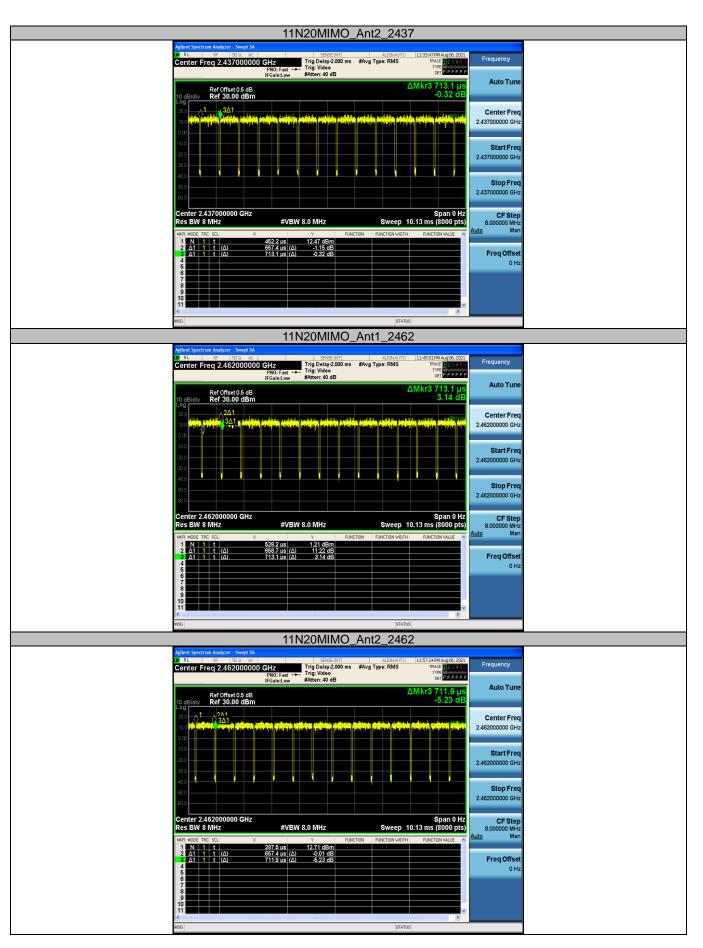








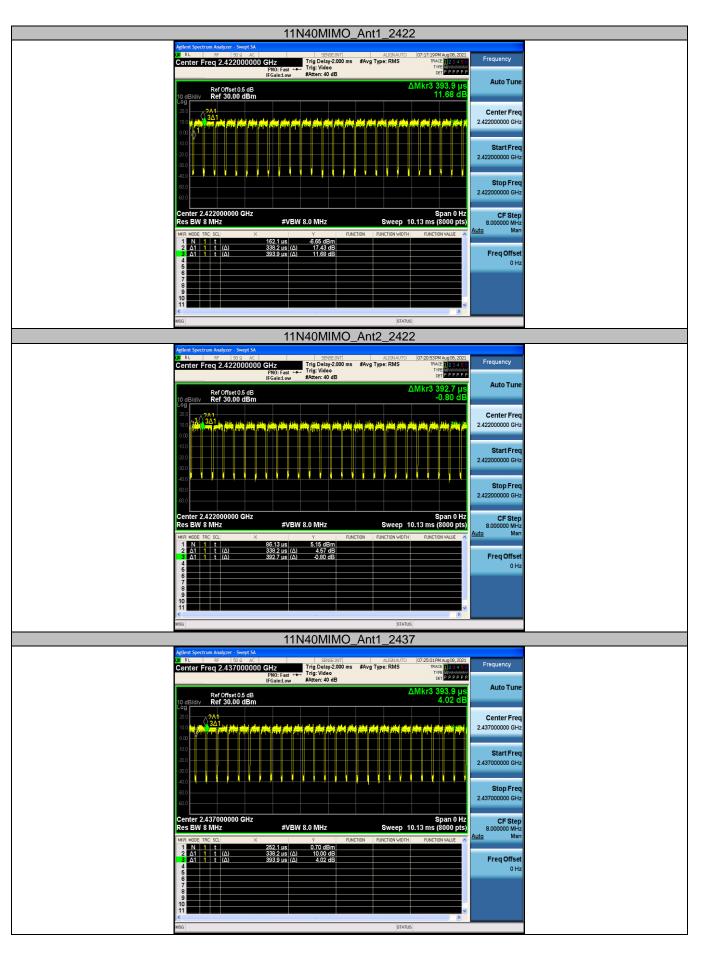






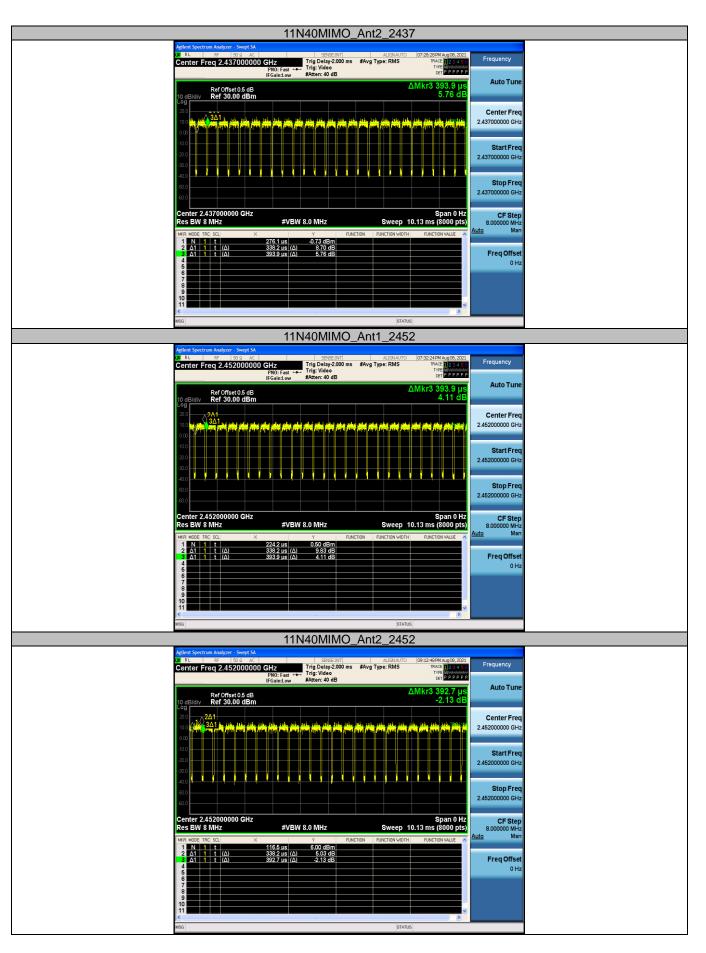


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# 3.9. Antenna Requirement

## <u>Requirement</u>

### FCC CFR Title 47 Part 15 Subpart C Section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

### FCC CFR Title 47 Part 15 Subpart C Section 15.247(c) (1)(i):

(i) Systems operating in the 2400~2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

### Test Result

Complies

Directional gain =  $G_{ANT} = 5$ dBi

Note: All transmit signals are completely uncorrelated with each other in MIMO transmitting modes (Manufacturer's Declaration).