

### Appendix A for SHEM190901757501

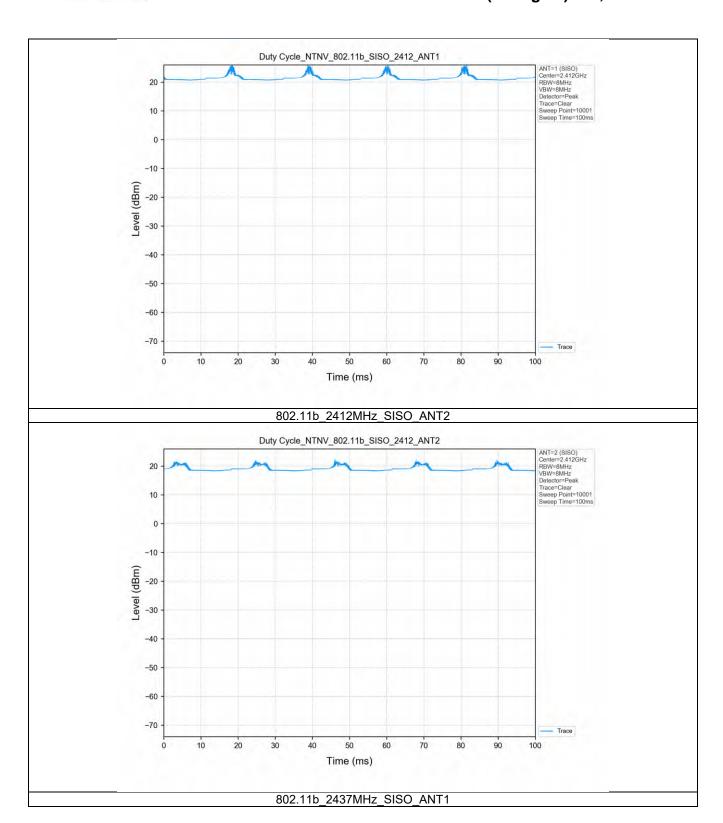
### 1. Duty Cycle

### 1.1 Test Result

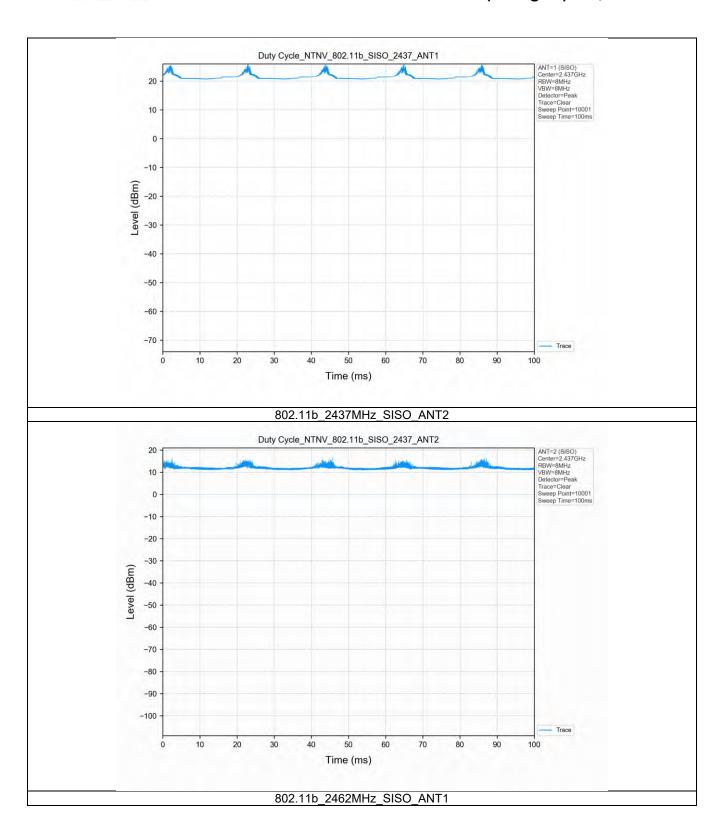
Test Mode	Channel Frequency( MHz)	ТХ Туре	ANT No.	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
802.11b	2412	SISO	1	100.000	100.000	100.00	0.00
			2	100.000	100.000	100.00	0.00
	2437	SISO	1	100.000	100.000	100.00	0.00
	2437		2	100.000	100.000	100.00	0.00
	2462	SISO	1	100.000	100.000	100.00	0.00
			2	100.000	100.000	100.00	0.00
802.11g	2412	SISO	1	100.000	100.000	100.00	0.00
	2412	5150	2	100.000	100.000	100.00	0.00
	2437	SISO	1	100.000	100.000	100.00	0.00
	2431	3130	2	100.000	100.000	100.00	0.00
	2462	SISO	1	100.000	100.000	100.00	0.00
	2402	3130	2	100.000	100.000	100.00	0.00
		0212	1	100.000	100.000	100.00	0.00
	2412	SISO	2	100.000	100.000	100.00	0.00
		MIMO	1	100.000	100.000	100.00	0.00
		SISO	1	100.000	100.000	100.00	0.00
000 11 <sub>m</sub> /UT00)	2437		2	100.000	100.000	100.00	0.00
802.11n(HT20)		MIMO	1	100.000	100.000	100.00	0.00
		SISO	1	100.000	100.000	100.00	0.00
	2462		2	100.000	100.000	100.00	0.00
		MIMO	1	100.000	100.000	100.00	0.00
			2	100.000	100.000	100.00	0.00
	2422	SISO	1	100.000	100.000	100.00	0.00
			2	100.000	100.000	100.00	0.00
		MIMO	1	100.000	100.000	100.00	0.00
			2	100.000	100.000	100.00	0.00
802.11n(HT40)	2437	SISO	1	100.000	100.000	100.00	0.00
			2	100.000	100.000	100.00	0.00
		MIMO	1	100.000	100.000	100.00	0.00
			2	100.000	100.000	100.00	0.00
	2452	SISO	1	100.000	100.000	100.00	0.00
			2	100.000	100.000	100.00	0.00
		MIMO	1	100.000	100.000	100.00	0.00
			2	100.000	100.000	100.00	0.00

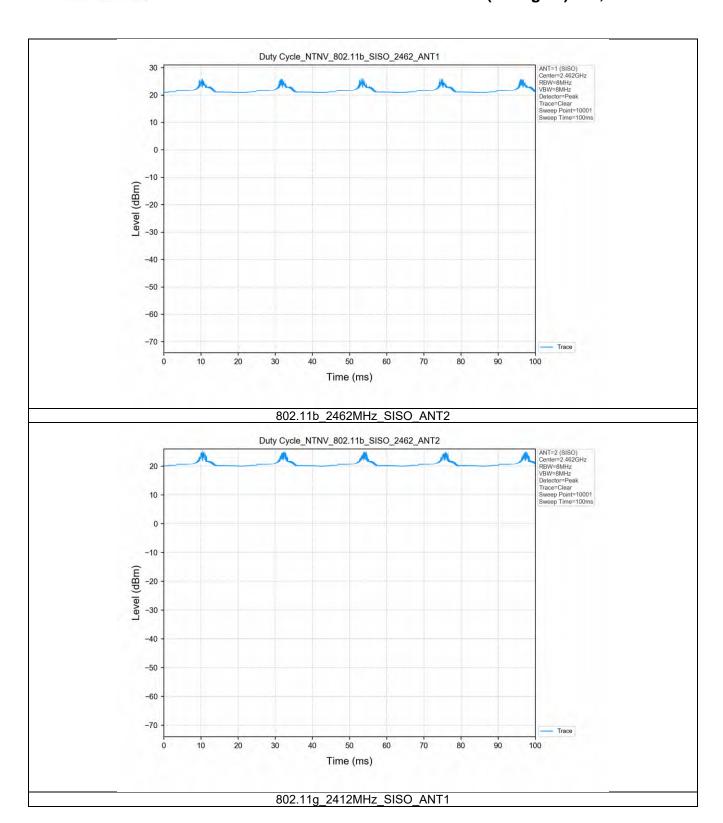
### 1.2 Test Graph

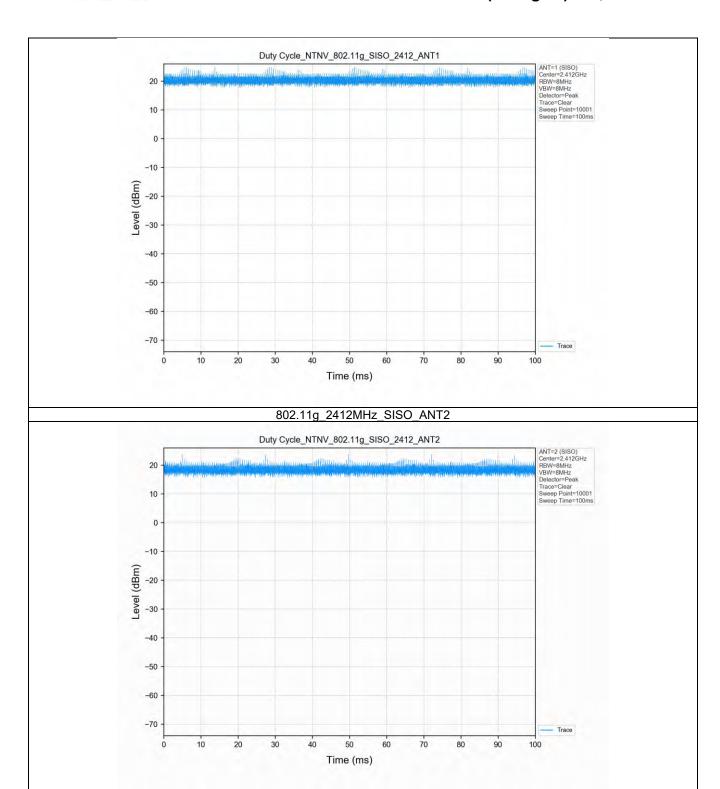
802.11b\_2412MHz\_SISO\_ANT1



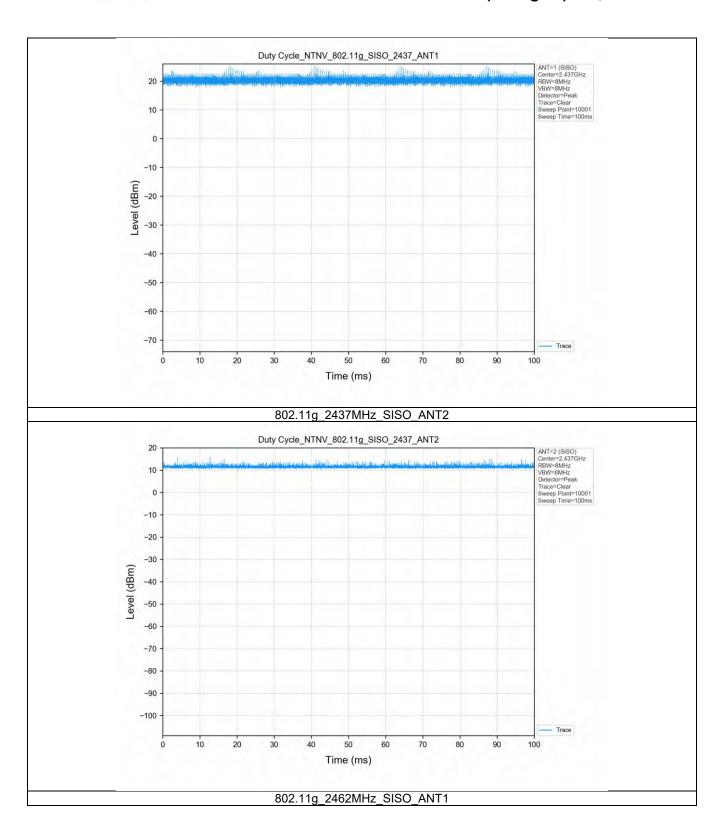


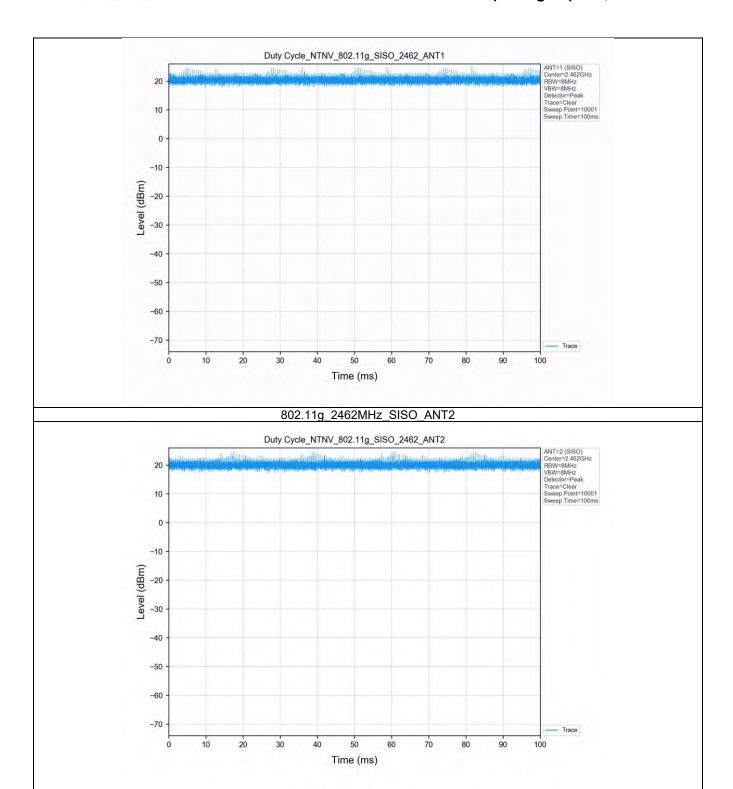




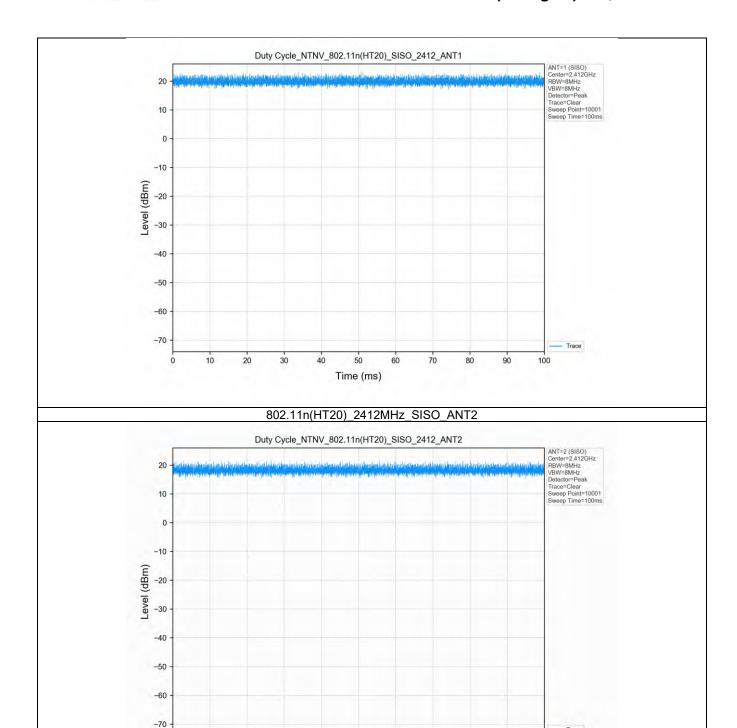


802.11g\_2437MHz\_SISO\_ANT1





802.11n(HT20)\_2412MHz\_SISO\_ANT1



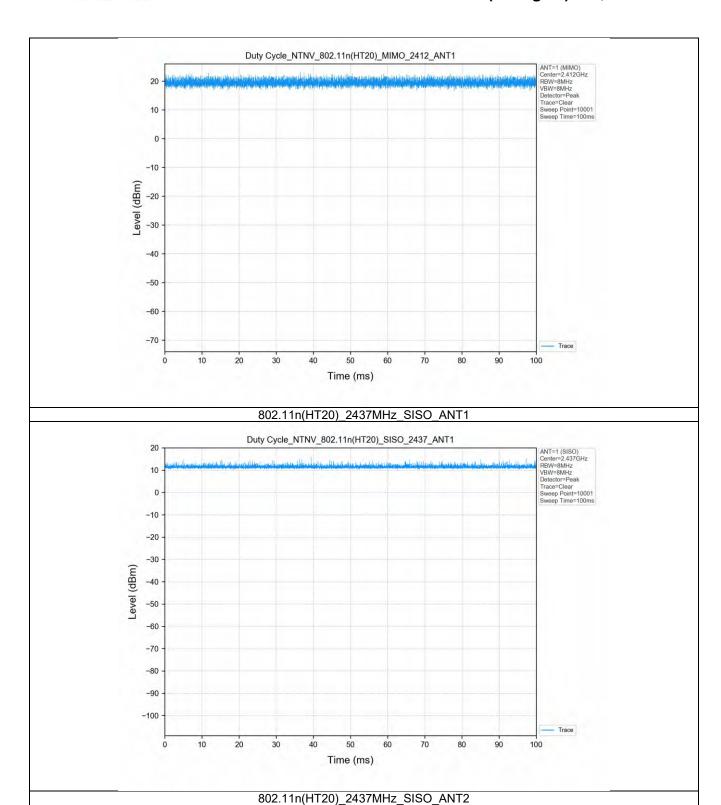
50

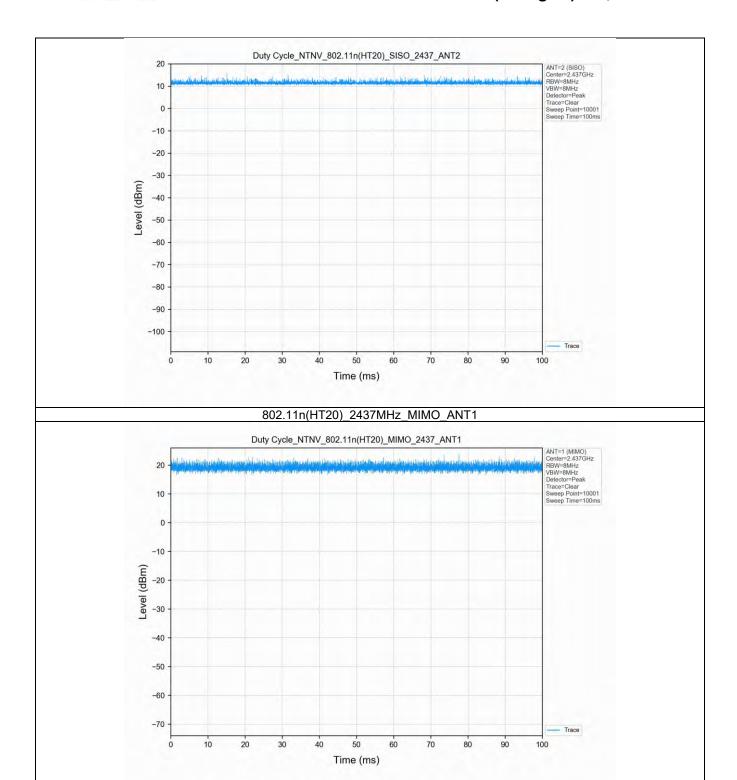
Time (ms)

802.11n(HT20)\_2412MHz\_MIMO\_ANT1

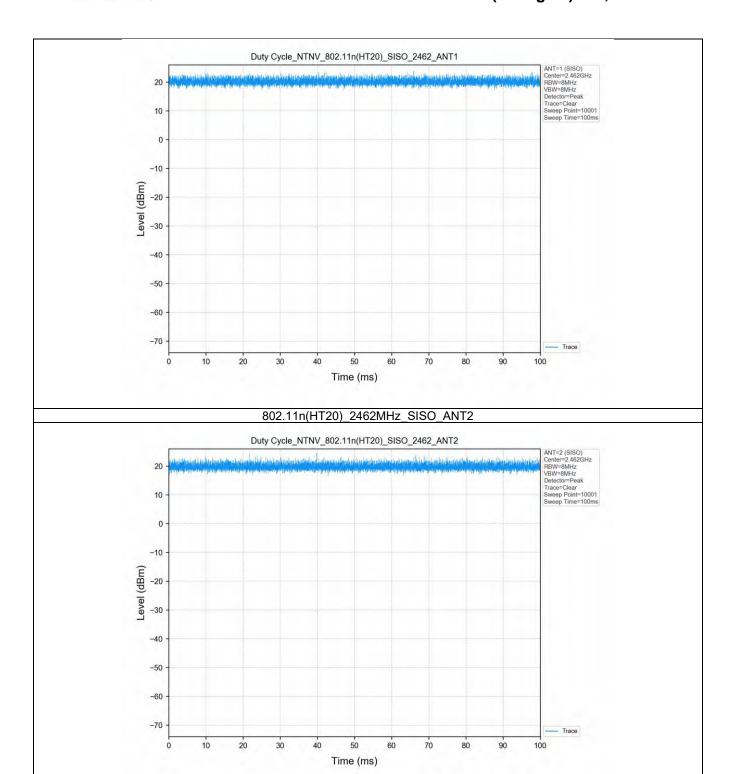
100

30

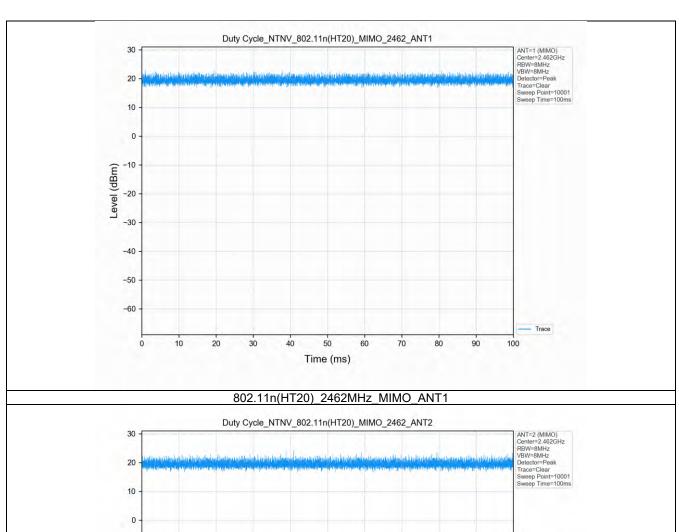


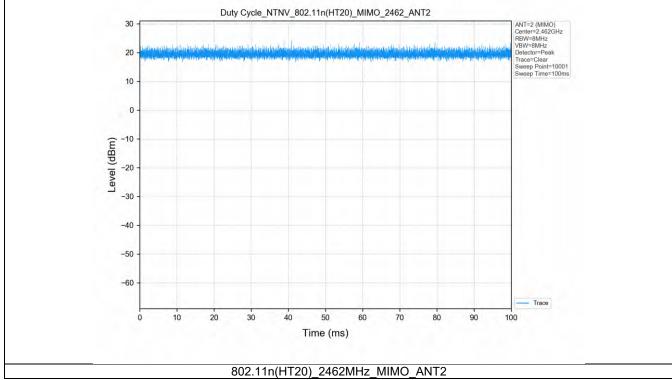


802.11n(HT20)\_2462MHz\_SISO\_ANT1

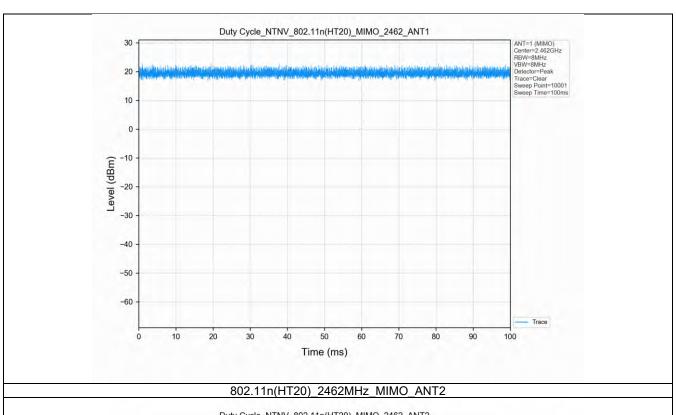


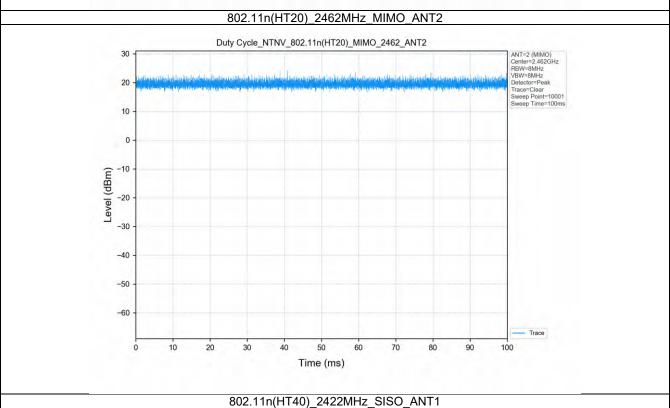
802.11n(HT20)\_2462MHz\_MIMO\_ANT1

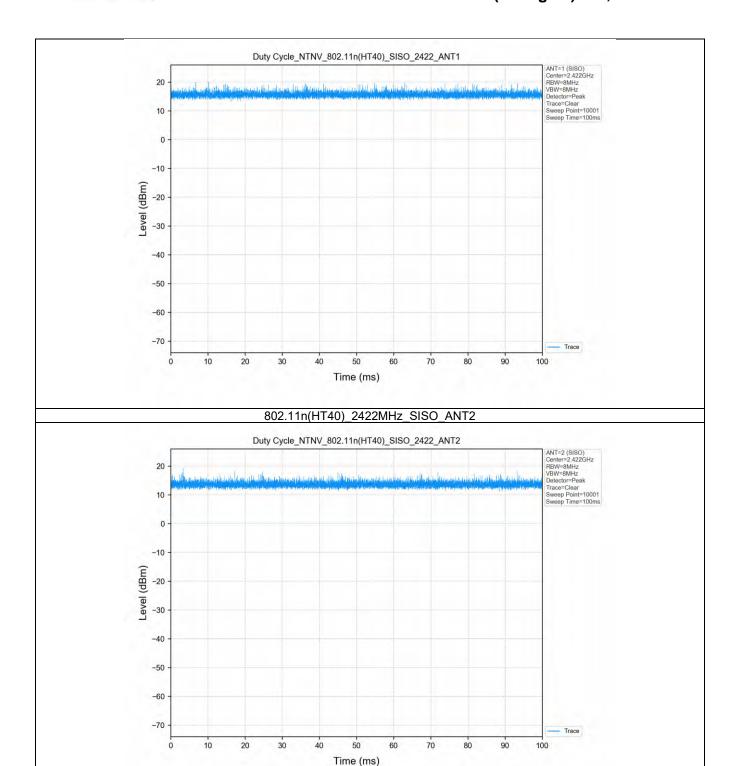










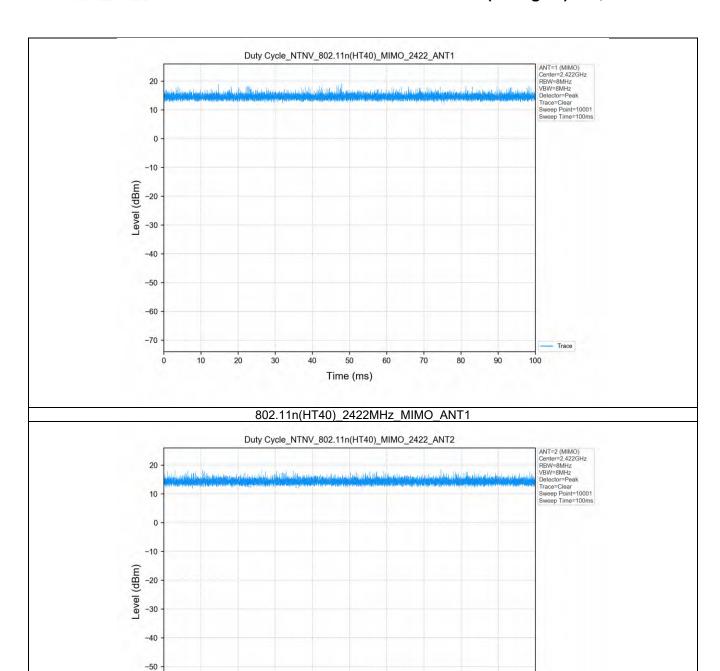


802.11n(HT40)\_2422MHz\_MIMO\_ANT1

-60

-70

## SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.



50 Time (ms)

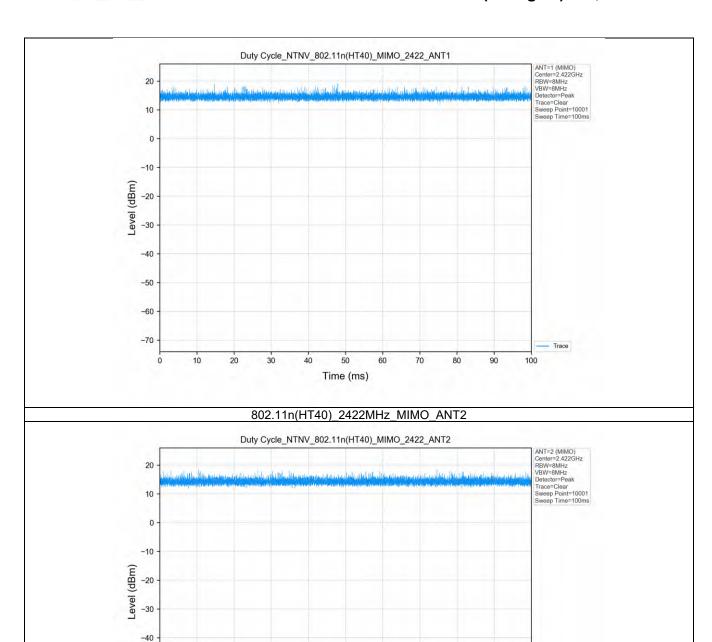
802.11n(HT40)\_2422MHz\_MIMO\_ANT2

-50

-60

-70

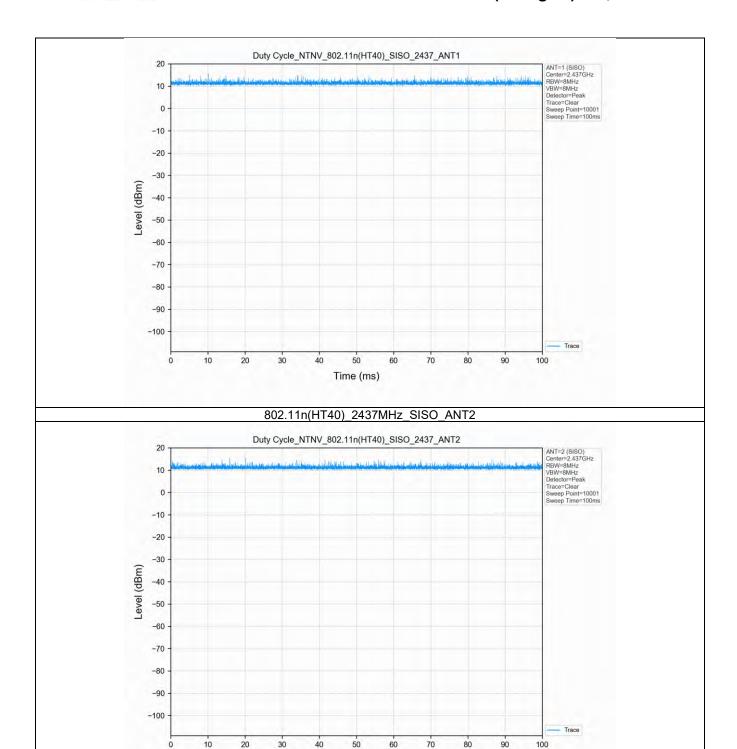
## SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.



50 Time (ms)

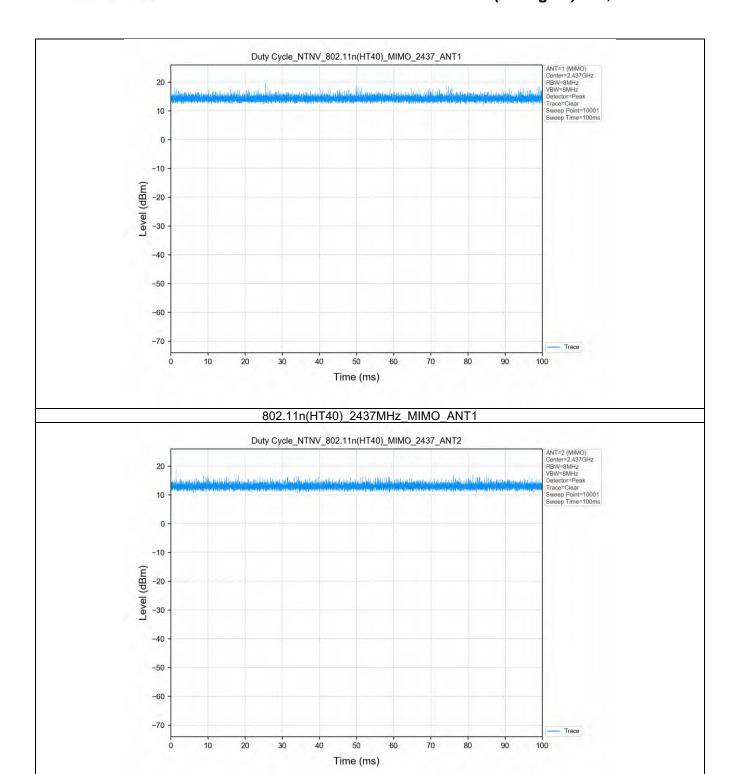
802.11n(HT40)\_2437MHz\_SISO\_ANT1





Time (ms)

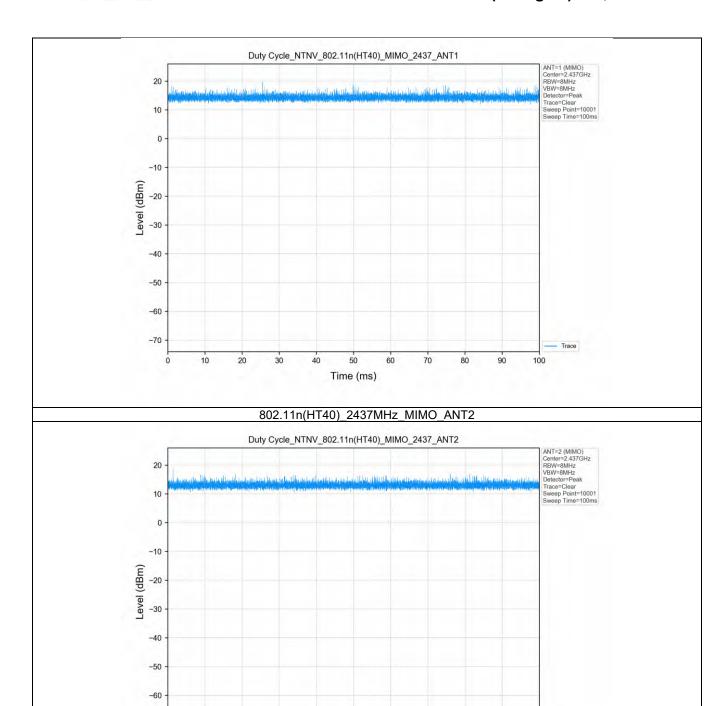
802.11n(HT40)\_2437MHz\_MIMO\_ANT1



802.11n(HT40)\_2437MHz\_MIMO\_ANT2

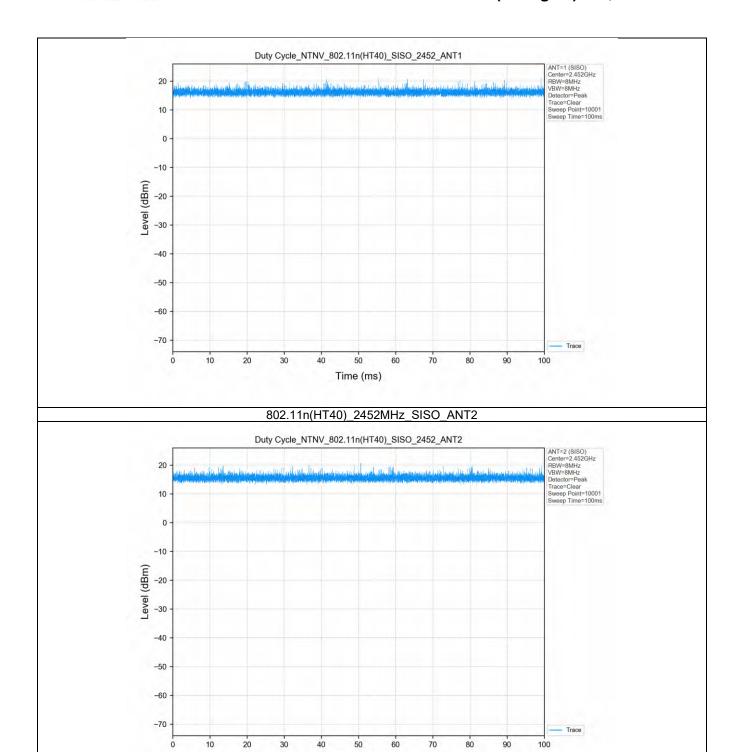
-70

## SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.



50 Time (ms)

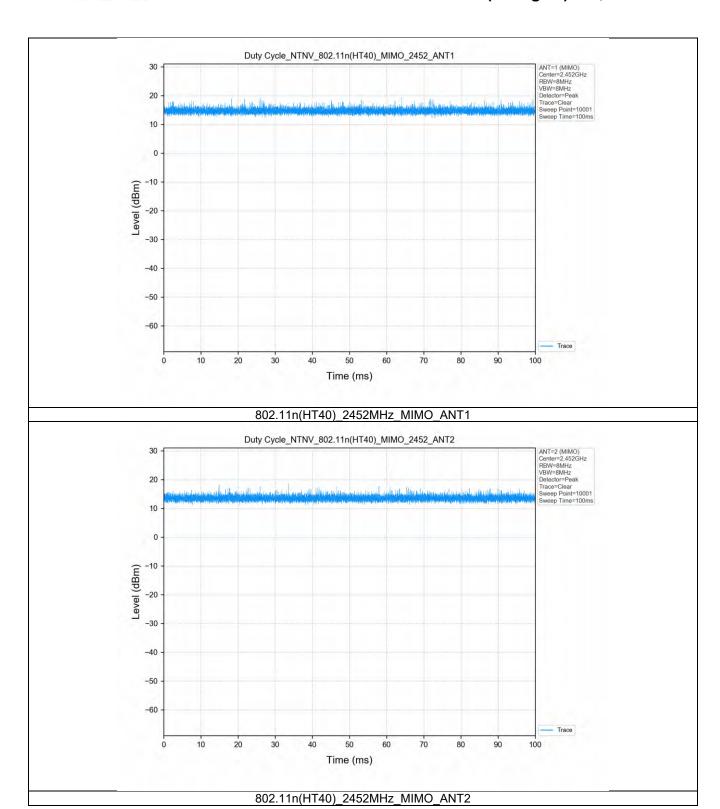
802.11n(HT40)\_2452MHz\_SISO\_ANT1



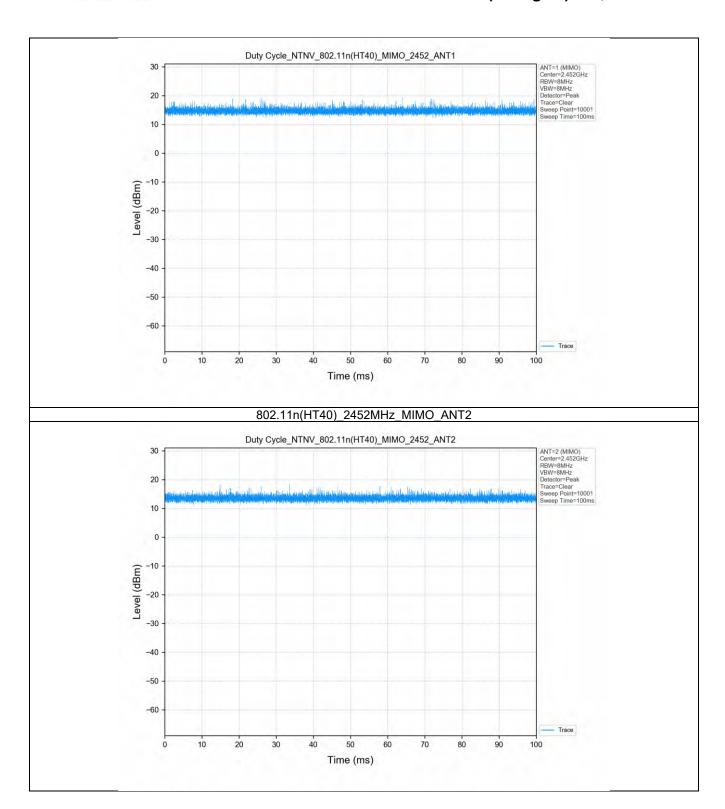
Time (ms)

802.11n(HT40)\_2452MHz\_MIMO\_ANT1











### 2. Bandwidth

### 2.1 Test Result

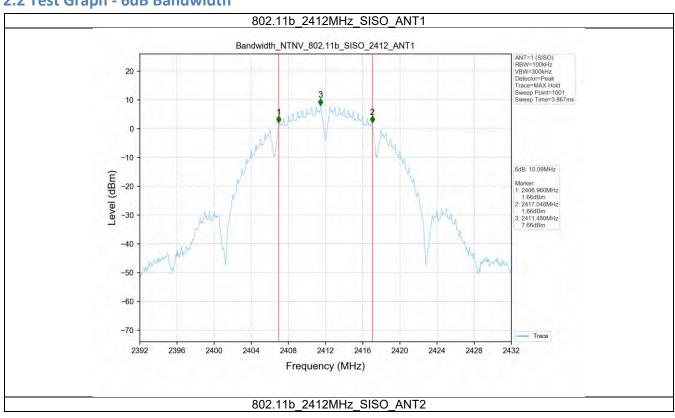
	Frequency	TX Type	ANT No.	6dB Bar	Vordist	
	(MHz)			Test Result (MHz)	Limits (MHz)	Verdict
802.11b	2412	CICO	1	10.090	≥0.5	PASS
	2412	SISO	2	10.080	≥0.5	PASS
	2437	SISO	1	10.100	≥0.5	PASS
	2437		2	10.060	≥0.5	PASS
	2462	SISO	1	10.100	≥0.5	PASS
	2402	3130	2	10.070	≥0.5	PASS
802.11g	2412	SISO	1	16.620	≥0.5	PASS
	2412		2	16.620	≥0.5	PASS
	2437	SISO	1	16.620	≥0.5	PASS
	2437		2	16.590	≥0.5	PASS
	2462	SISO	1	16.620	≥0.5	PASS
	2402	3130	2	16.620	≥0.5	PASS
	2412	SISO	1	17.860	≥0.5	PASS
-			2	17.850	≥0.5	PASS
		MIMO	0	17.850	≥0.5	PASS
	2437	SISO	1	17.850	≥0.5	PASS
802.11n(HT20)			2	17.830	≥0.5	PASS
		MIMO	0	17.830	≥0.5	PASS
	2462	SISO	1	17.830	≥0.5	PASS
			2	17.860	≥0.5	PASS
		MIMO	0	17.850	≥0.5	PASS
	2422	SISO	1	36.500	≥0.5	PASS
802.11n(HT40)			2	36.550	≥0.5	PASS
		MIMO	0	36.550	≥0.5	PASS
	2437	SISO	1	36.480	≥0.5	PASS
			2	36.450	≥0.5	PASS
		MIMO	0	36.500	≥0.5	PASS
	2452	SISO	1	36.460	≥0.5	PASS
			2	36.450	≥0.5	PASS
		MIMO	0	36.440	≥0.5	PASS

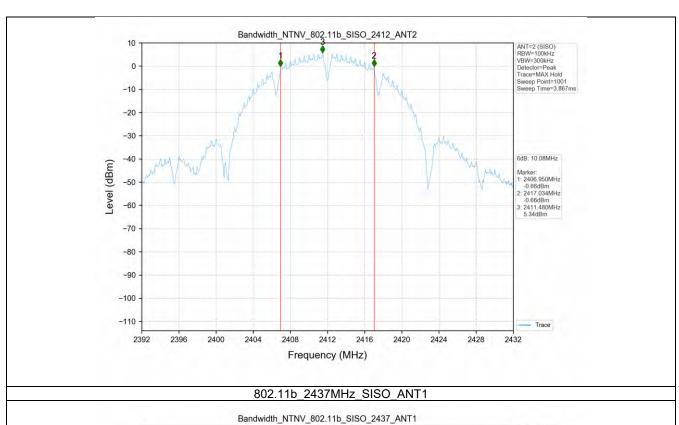
Test Mode	Frequency	TX Type	ANT No.	99% Occupied Bandwidth		
1 est Mode	(MHz)			Test Result (MHz)		
802.11b	2412	SISO	1	15.600	Only for Report Use	
			2	15.060	Only for Report Use	
	2437	SISO	1	15.160	Only for Report Use	
			2	15.070	Only for Report Use	
	2462	SISO	1	15.680	Only for Report Use	
			2	15.080	Only for Report Use	
802.11g	2412	SISO	1	15.640	Only for Report Use	
			2	17.100	Only for Report Use	
	2437	SISO	1	17.020	Only for Report Use	
			2	17.020	Only for Report Use	
	2462	SISO	1	16.990	Only for Report Use	
			2	17.060	Only for Report Use	
802.11n(HT20)	2412	SISO -	1	18.120	Only for Report Use	
			2	18.110	Only for Report Use	
			0	18.080	Only for Report Use	

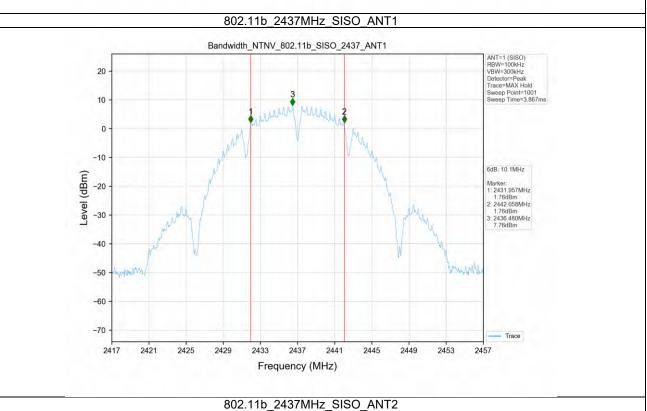


			1	18.090	Only for Report Use
	2437	SISO	2	18.080	Only for Report Use
	2431	141140			
		MIMO 0 18.090		Only for Report Use	
		SISO	1	18.050	Only for Report Use
	2462		2	18.060	Only for Report Use
		MIMO	0	18.070	Only for Report Use
802.11n(HT40)	2422	SISO	1	37.450	Only for Report Use
			2	37.400	Only for Report Use
		MIMO	0	36.790	Only for Report Use
	2437	SISO -	1	37.420	Only for Report Use
			2	37.230	Only for Report Use
		MIMO	0	36.800	Only for Report Use
	2452	SISO	1	36.640	Only for Report Use
			2	36.600	Only for Report Use
		MIMO	0	36.600	Only for Report Use

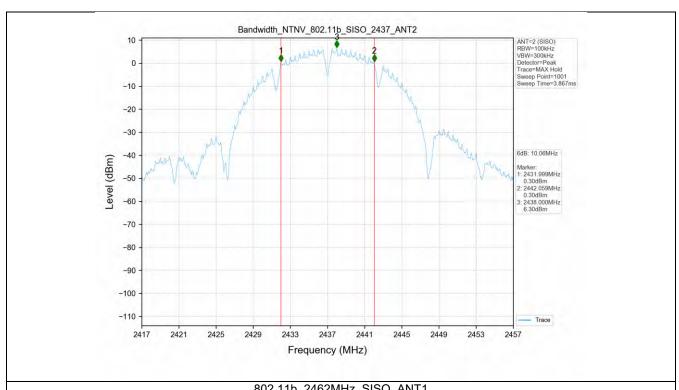
### 2.2 Test Graph - 6dB Bandwidth



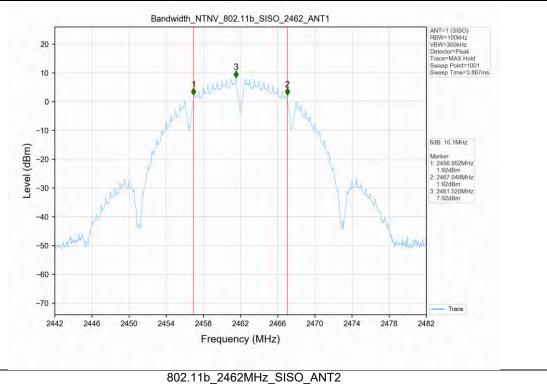


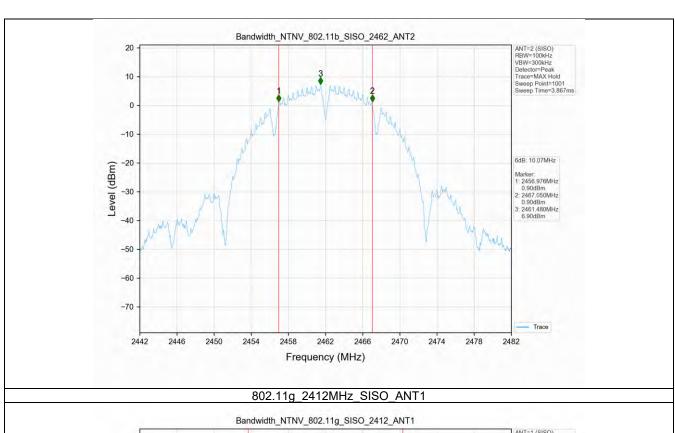






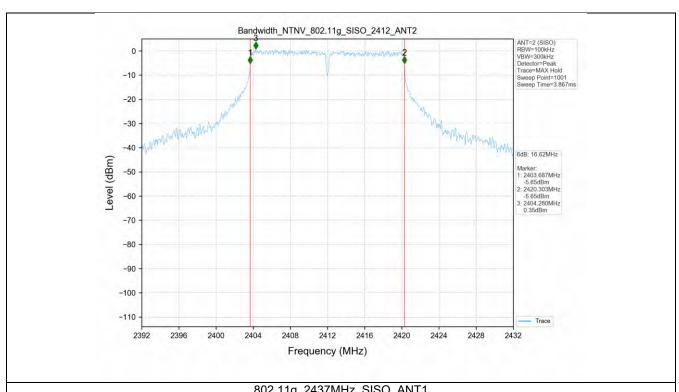
### 802.11b 2462MHz SISO ANT1



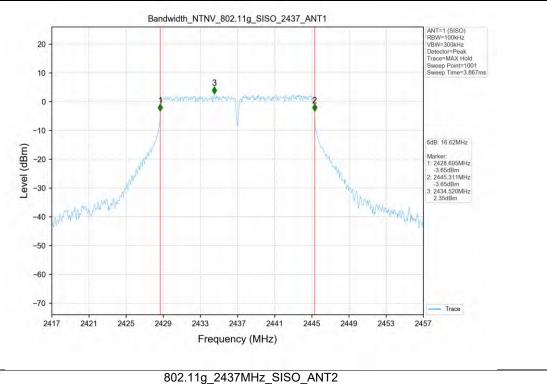


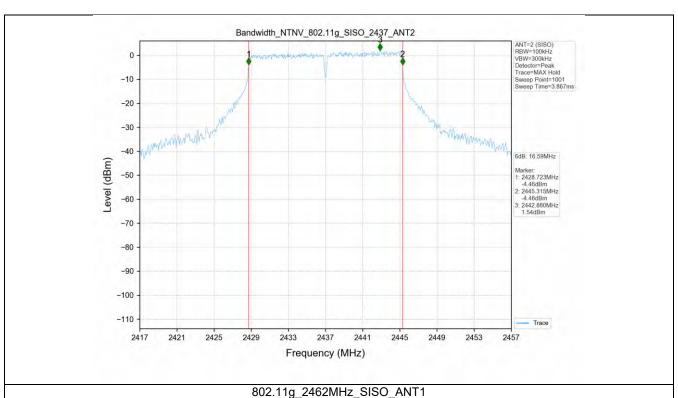
### ANT=1 (SISO) RBW=100kHz VBW=300kHz 20 Detector=Peak Trace=MAX Hold Sweep Point=1001 Sweep Time=3.867ms 10 3 0 -10 6dB: 16.62MHz Level (dBm) -20 -30 My My My My May May My -40 -50 -60 -70 2400 2404 2408 2412 2416 2392 2396 2424 2428 2432 Frequency (MHz)

802.11g\_2412MHz\_SISO\_ANT2

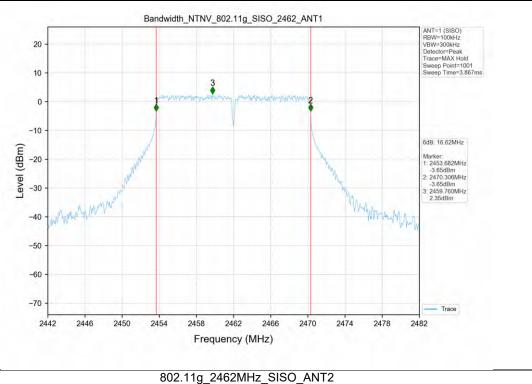


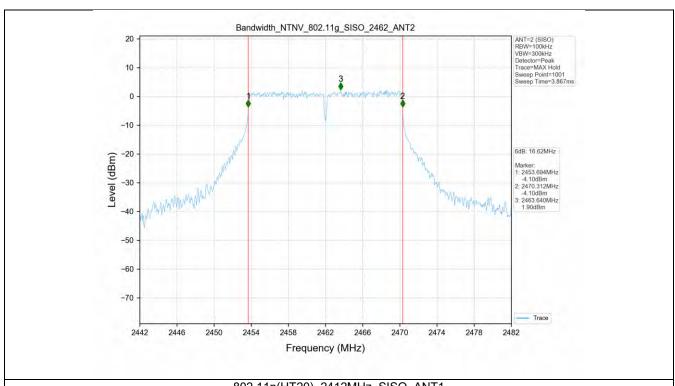




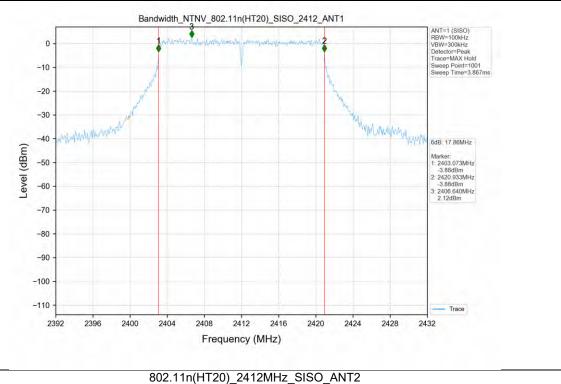


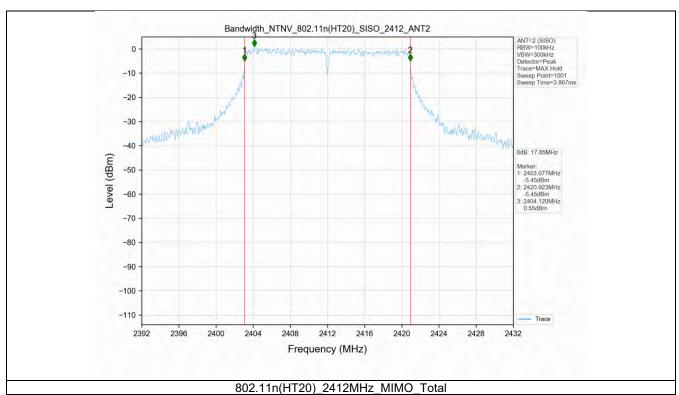


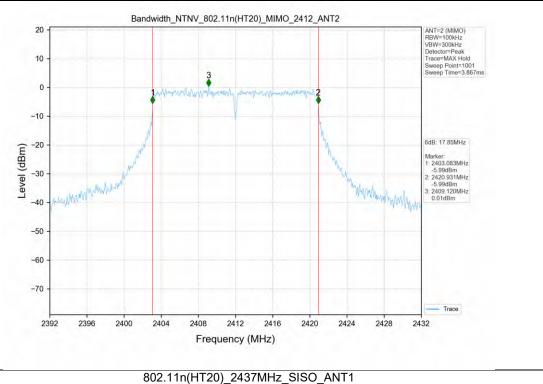


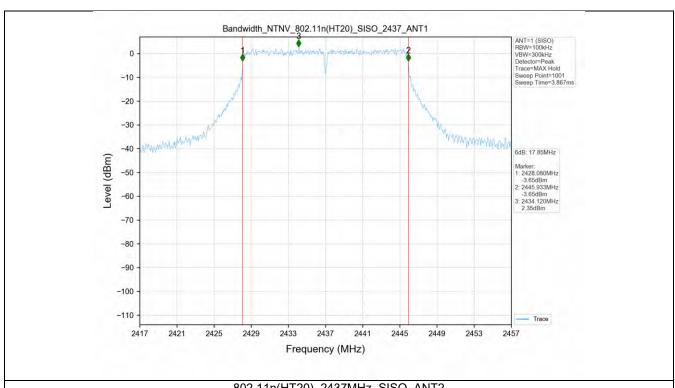


### 802.11n(HT20)\_2412MHz\_SISO\_ANT1

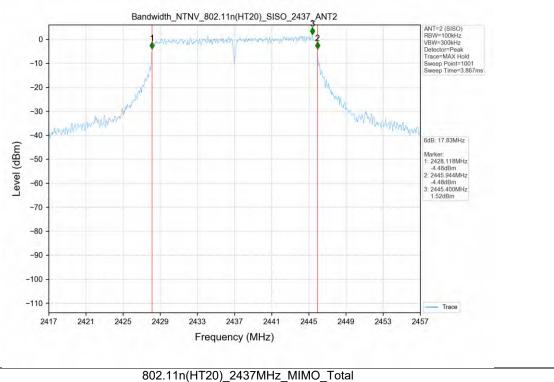


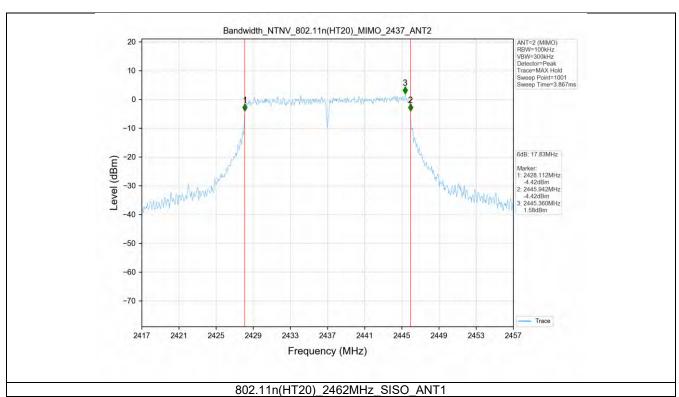


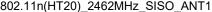


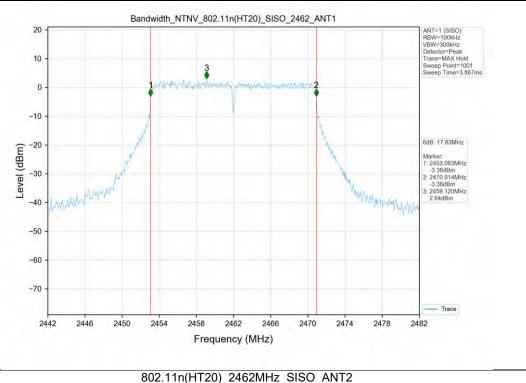


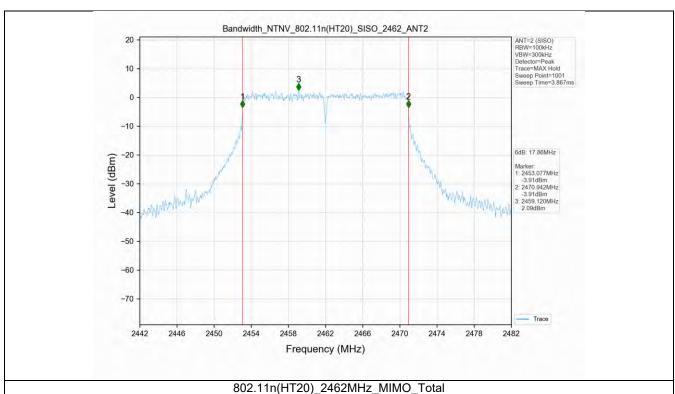
### 802.11n(HT20)\_2437MHz\_SISO\_ANT2

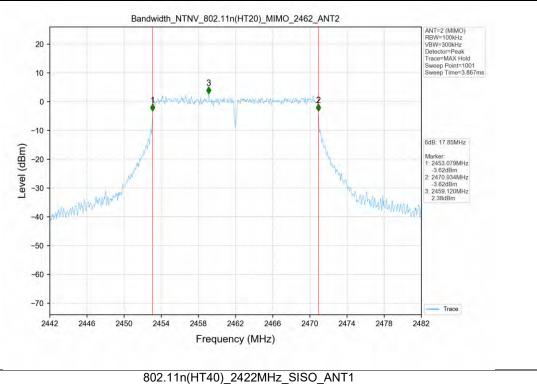


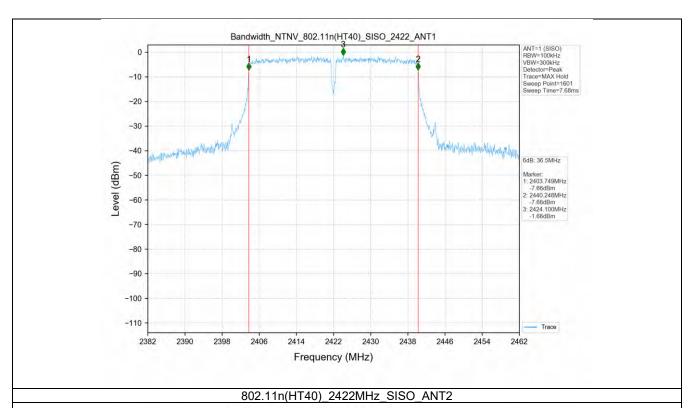


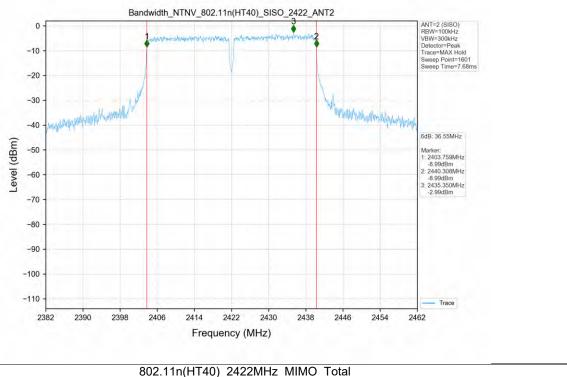


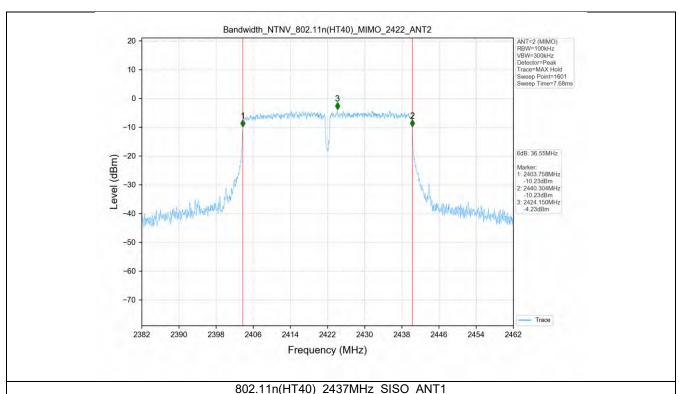


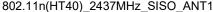


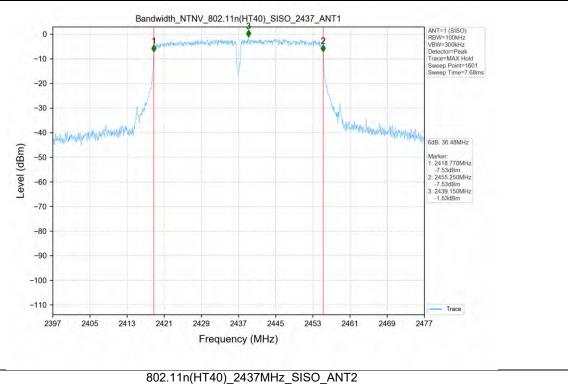


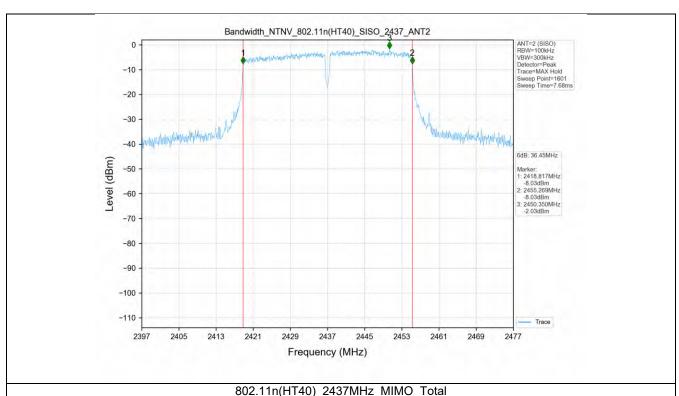


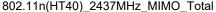


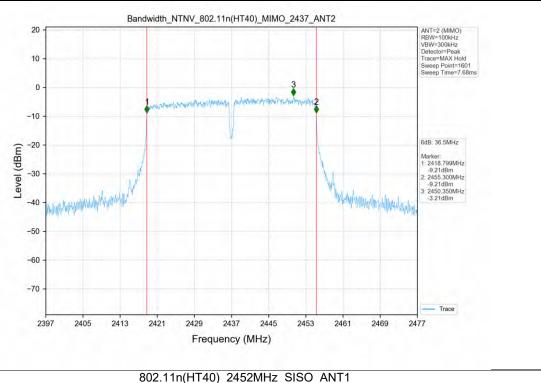


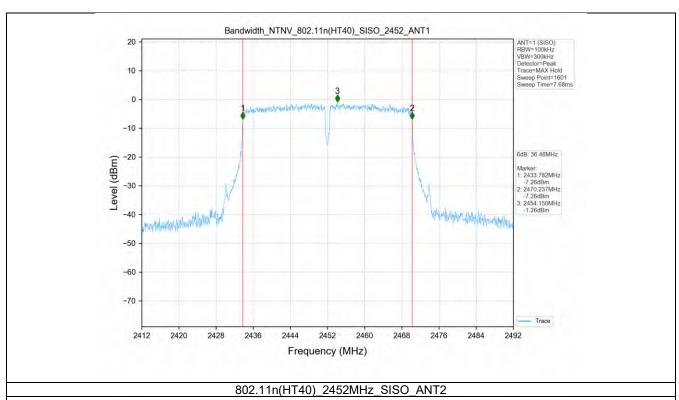


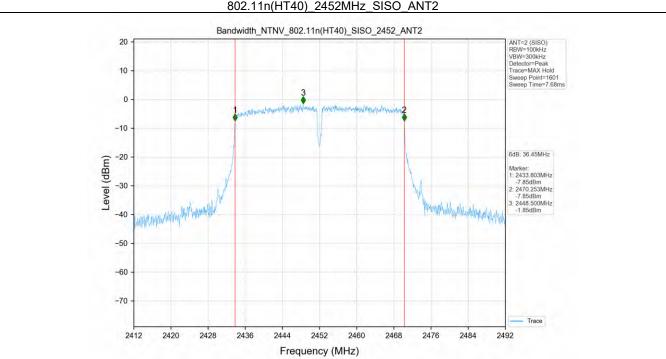






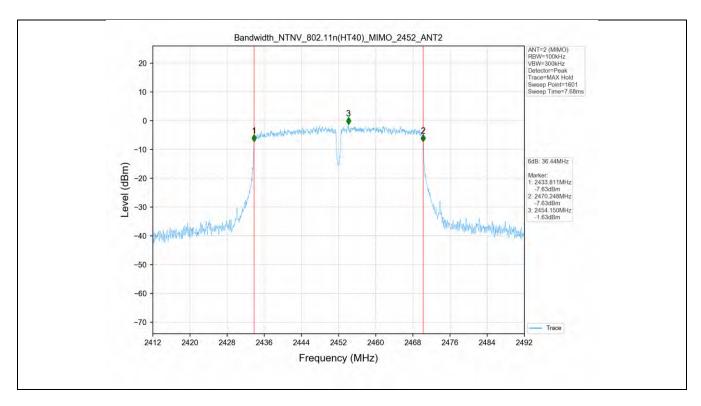




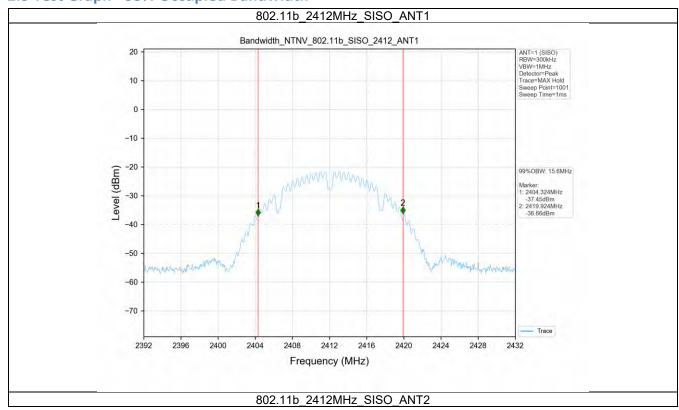


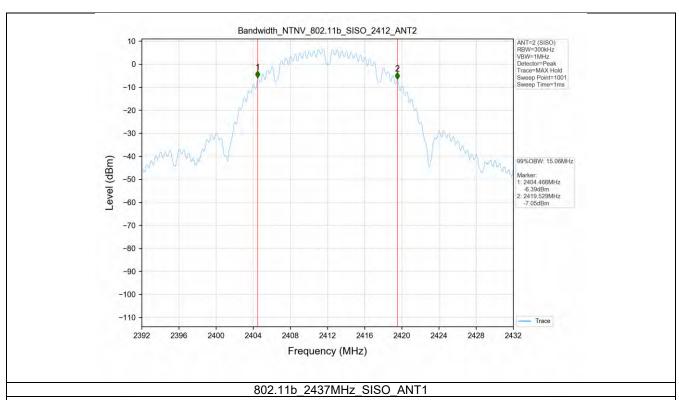
802.11n(HT40) 2452MHz MIMO Total

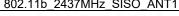


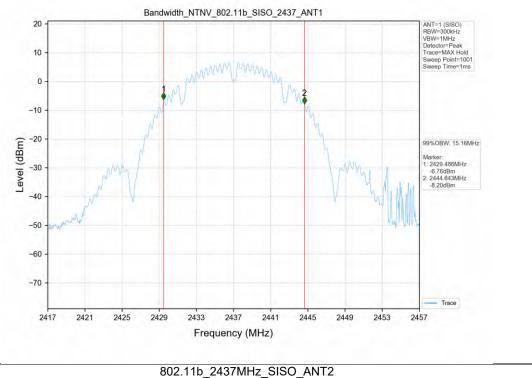


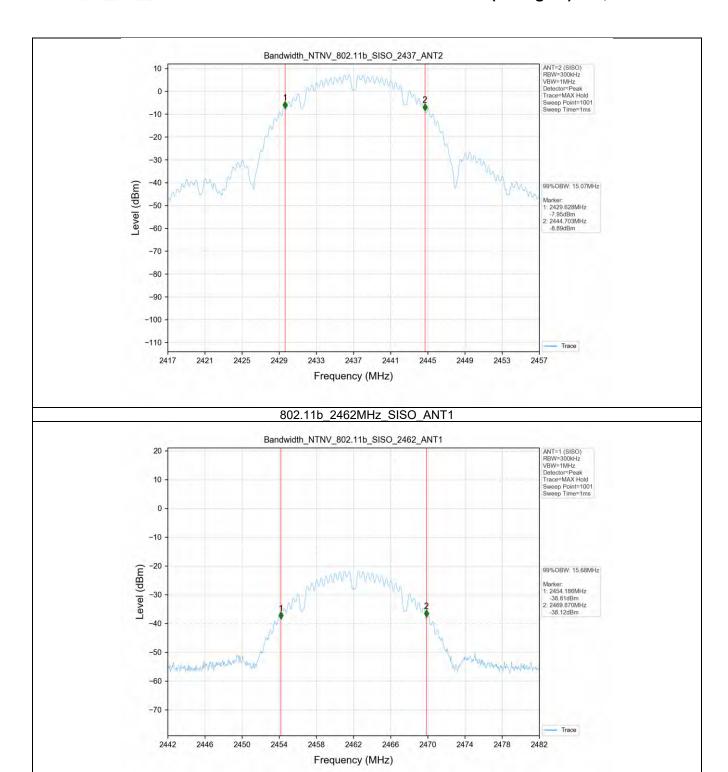
### 2.3 Test Graph - 99% Occupied Bandwidth



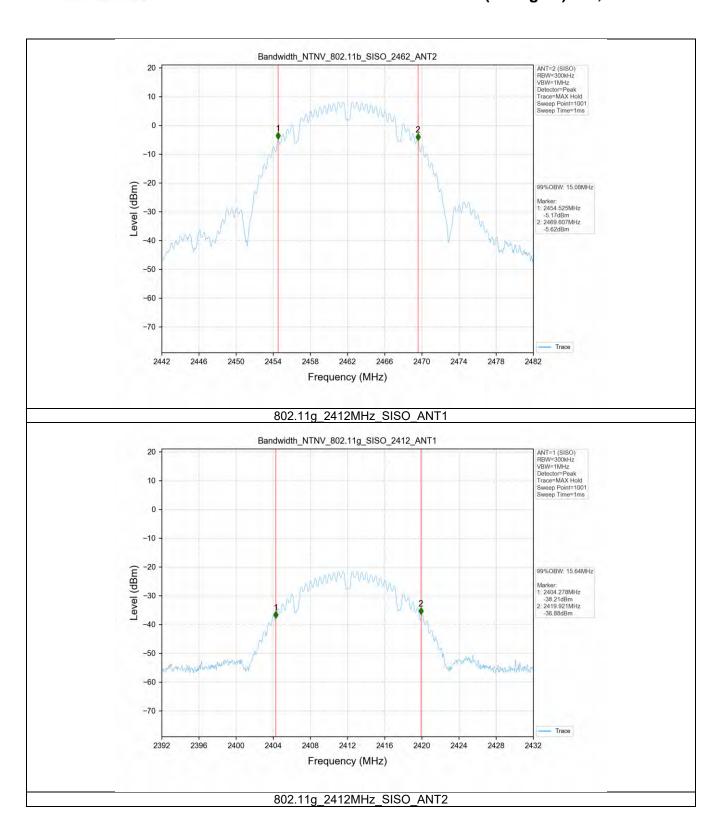


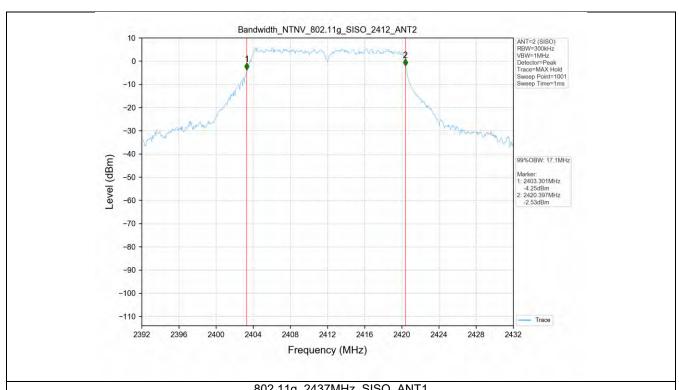


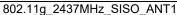


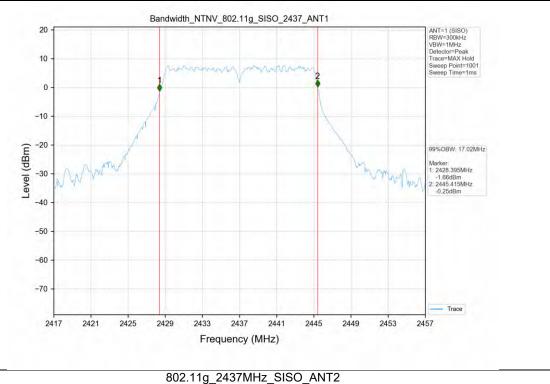


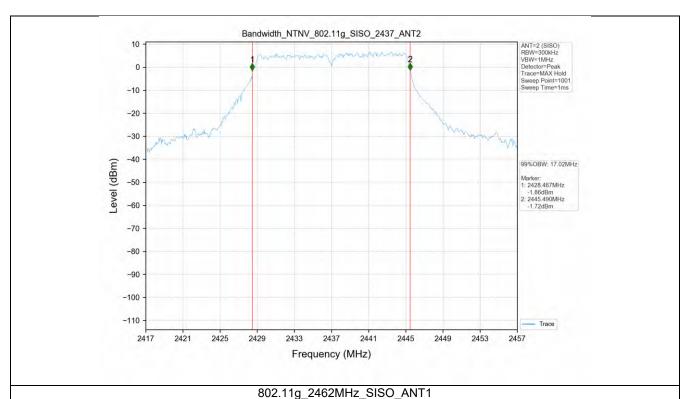
802.11b\_2462MHz\_SISO\_ANT2



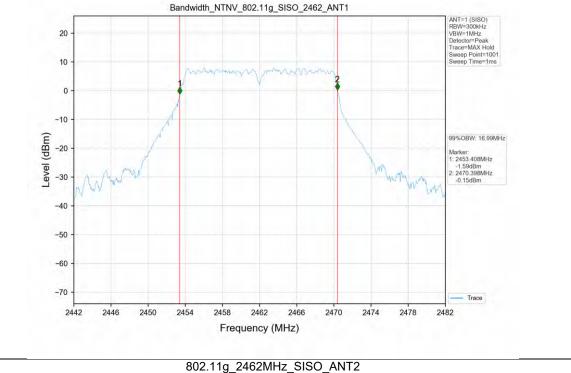


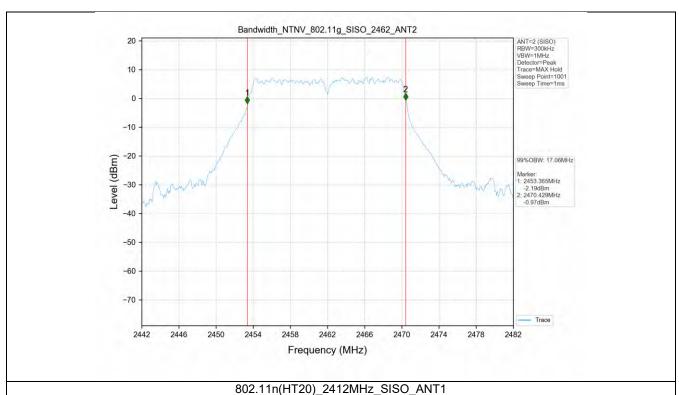




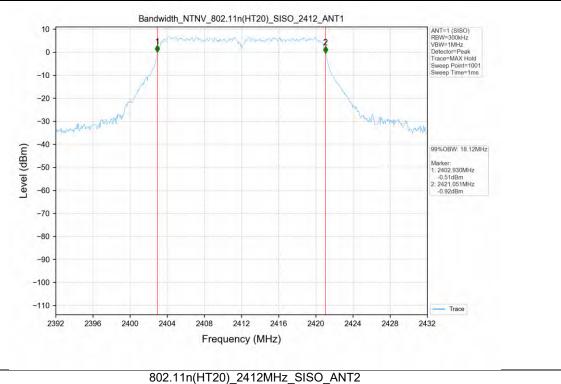


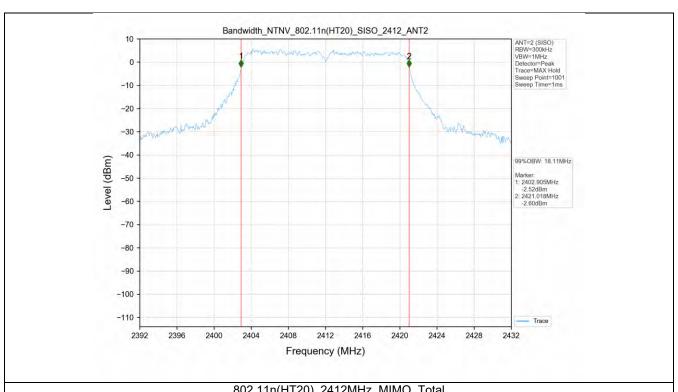
### -1....... NITALY 800 444 - CICO 0460 ANTA

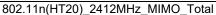


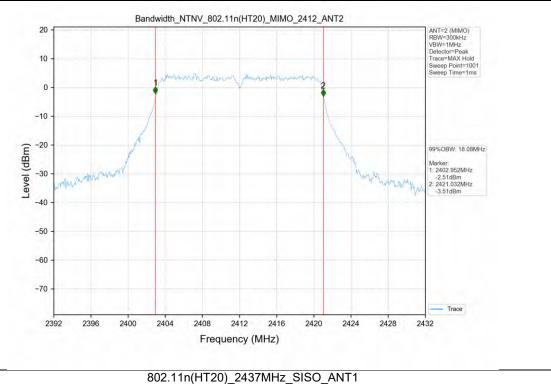


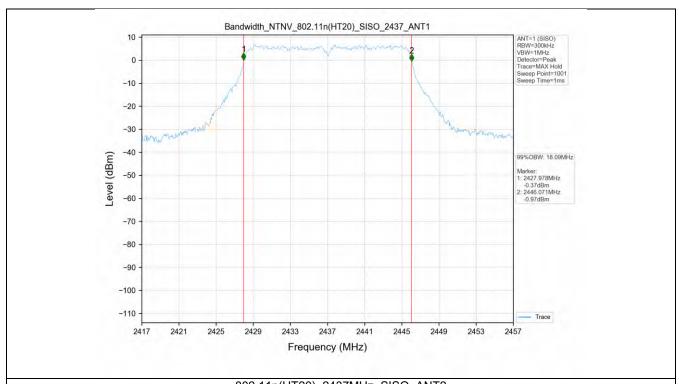




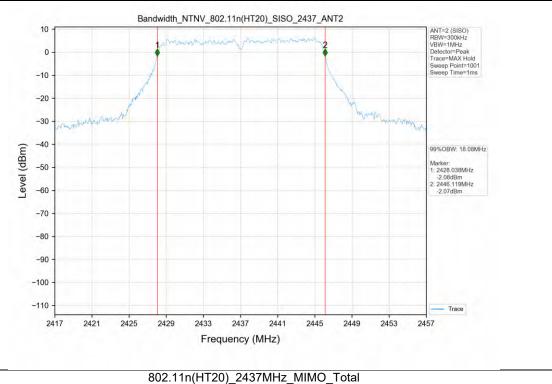


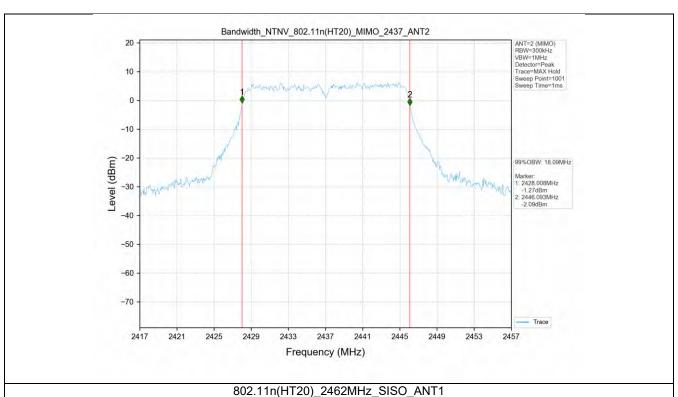


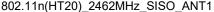


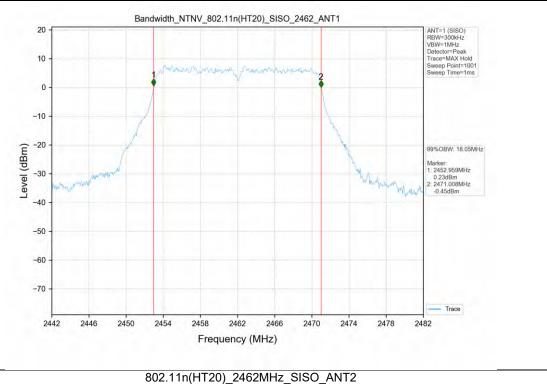


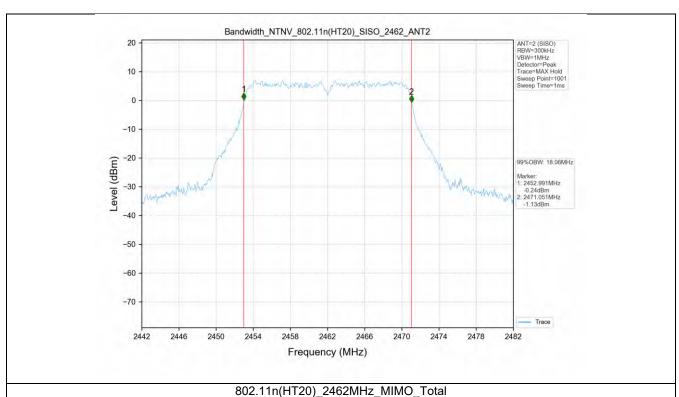
### 802.11n(HT20)\_2437MHz\_SISO\_ANT2

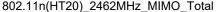


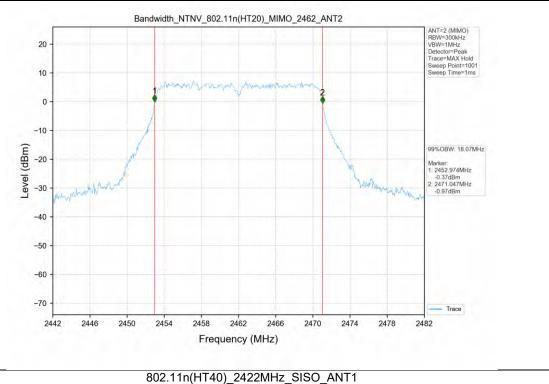


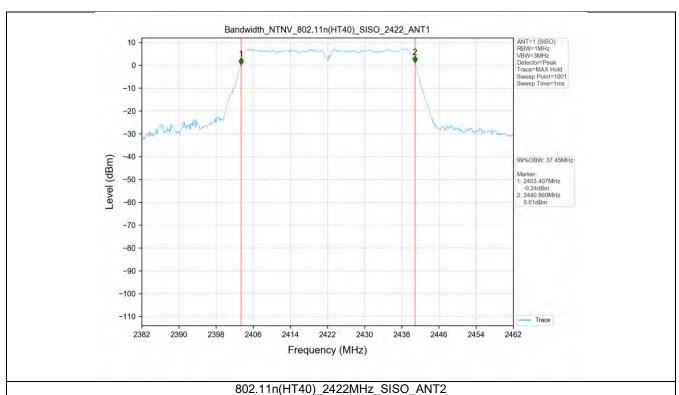




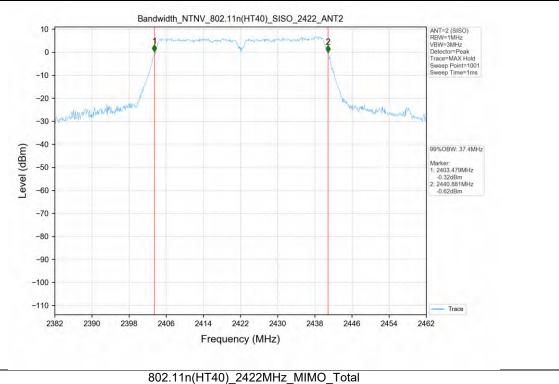


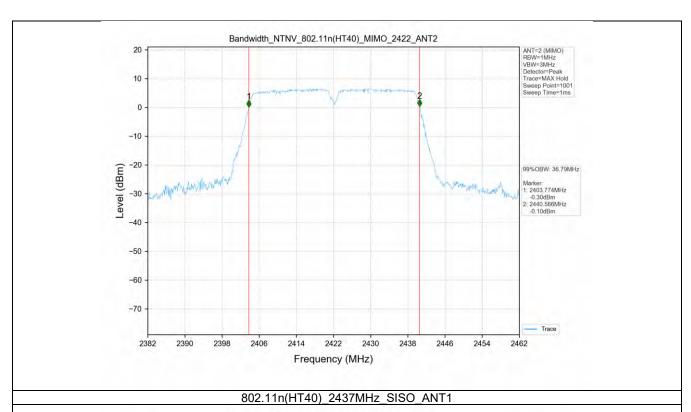


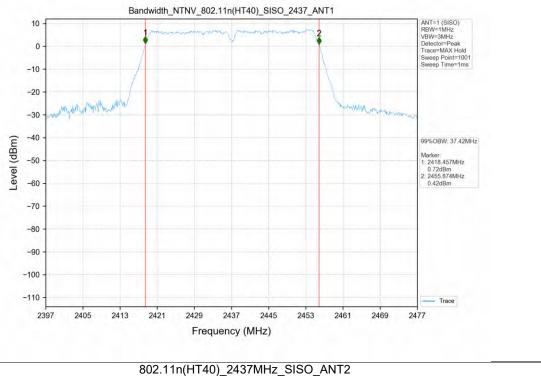


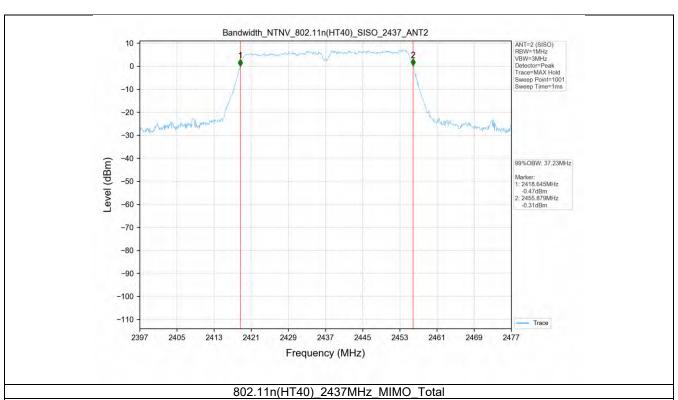






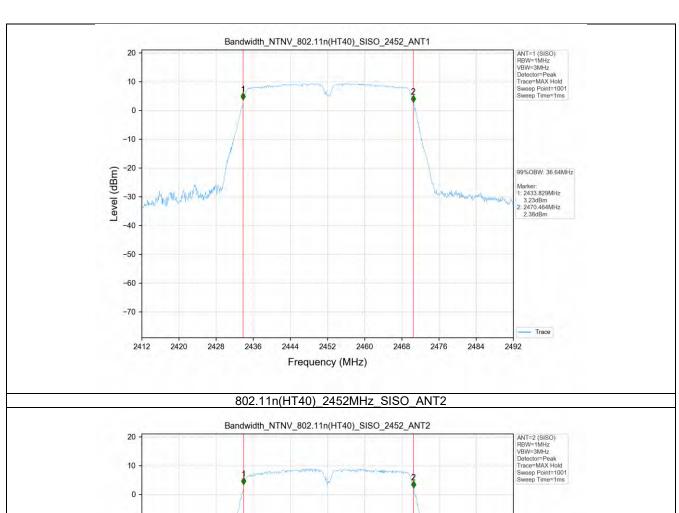


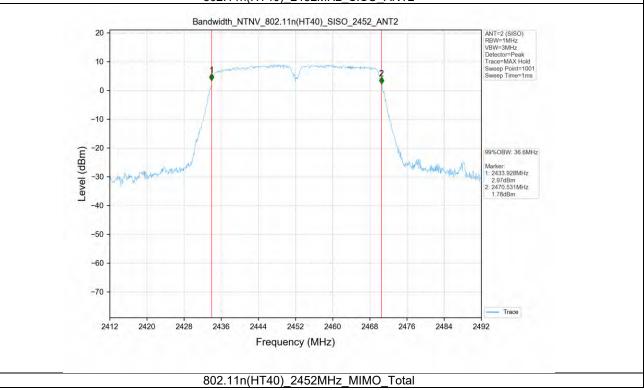




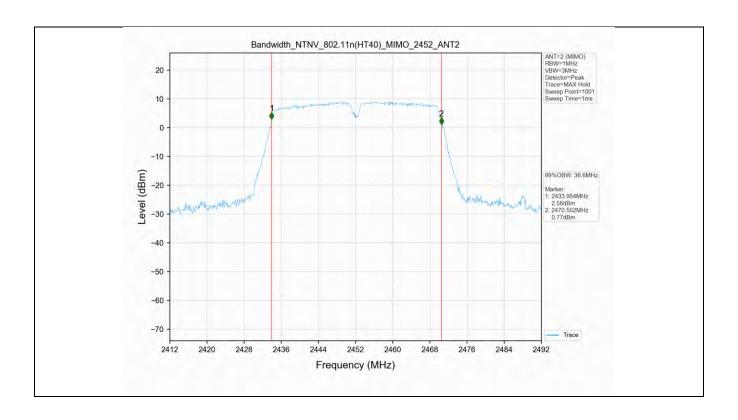
#### Bandwidth\_NTNV\_802.11n(HT40)\_MIMO\_2437\_ANT2 RBW=1MHz VBW=3MHz Detector=Peak Trace=MAX Hold Sweep Point=1001 Sweep Time=1ms 10 0 -10 -20 Level (dBm) 99%OBW: 36.8MHz Marker: 1: 2418.872MHz 0.69dBm 2: 2455.667MHz 0.38dBm -30 -40 -50 -60 -70 2405 2413 2429 2437 2445 2453 2461 2397 2469 2477 Frequency (MHz)

802.11n(HT40)\_2452MHz\_SISO\_ANT1







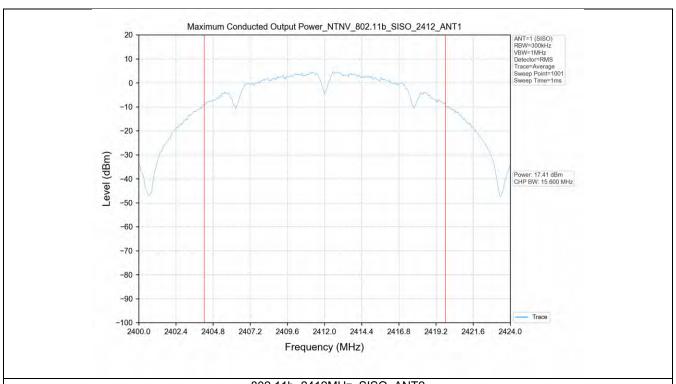


### 3. Maximum Conducted Output Power

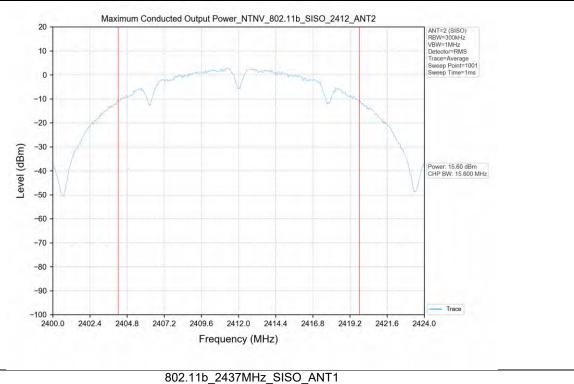
### 3.1 Test Result

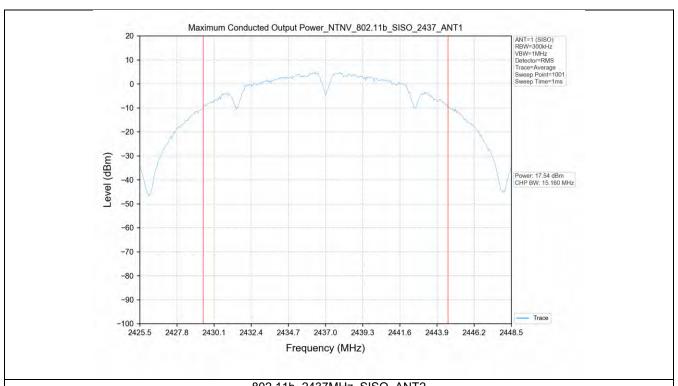
Test Mode	Frequency (MHz)	Тх Туре	Measured Average Output Power (dBm)			Limits (dBm)	Verdict
			Ant 1	Ant 2	Total	LIIIIIIS (UDIII)	verdict
802.11b	2412	SISO	17.41	15.60	/	≤30	PASS
	2437	SISO	17.54	16.04	/	≤30	PASS
	2462	SISO	17.67	17.08	/	≤30	PASS
802.11g	2412	SISO	16.67	15.17	/	≤30	PASS
	2437	SISO	16.75	15.63	/	≤30	PASS
	2462	SISO	16.88	16.62	/	≤30	PASS
802.11n(HT20)	2412	SISO	16.21	14.62	/	≤30	PASS
		MIMO	15.99	13.98	18.11	≤30	PASS
	2437	SISO	16.16	15.44	/	≤30	PASS
		MIMO	15.90	14.23	18.16	≤30	PASS
	2462	SISO	16.66	16.30	/	≤30	PASS
		MIMO	15.87	15.77	18.83	≤30	PASS
802.11n(HT40)	2422	SISO	13.16	12.53	/	≤30	PASS
		MIMO	14.70	13.75	17.26	≤30	PASS
	2437	SISO	13.22	12.81	/	≤30	PASS
		MIMO	14.35	13.15	16.80	≤30	PASS
	2452	SISO	15.89	15.38	1	≤30	PASS
		MIMO	14.53	13.42	17.02	≤30	PASS

### 3.2 Test Graph

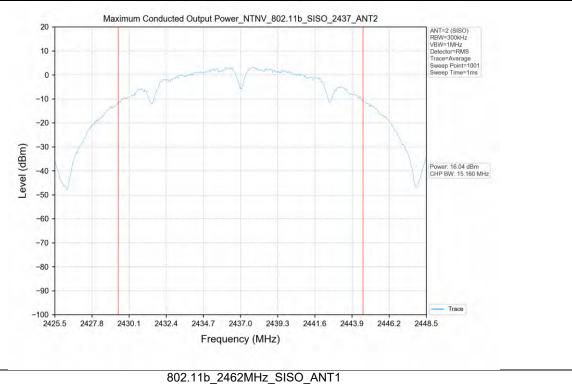


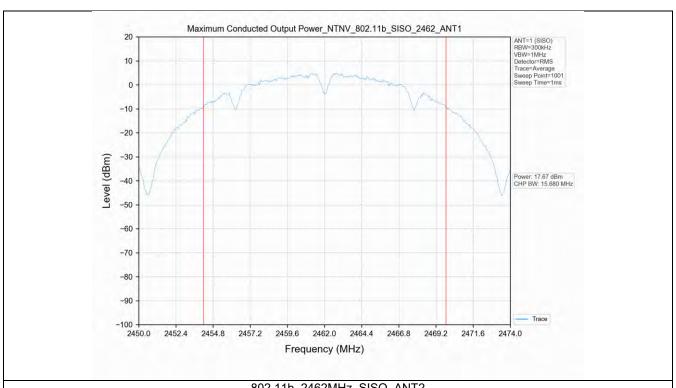
### 802.11b 2412MHz SISO ANT2





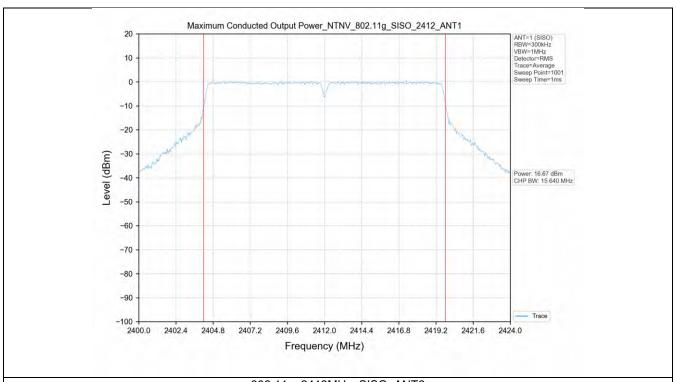
### 802.11b\_2437MHz\_SISO\_ANT2



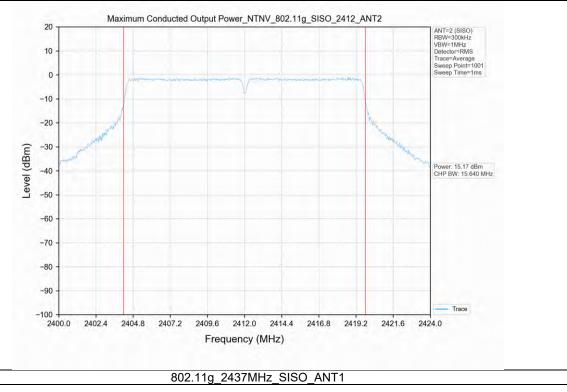


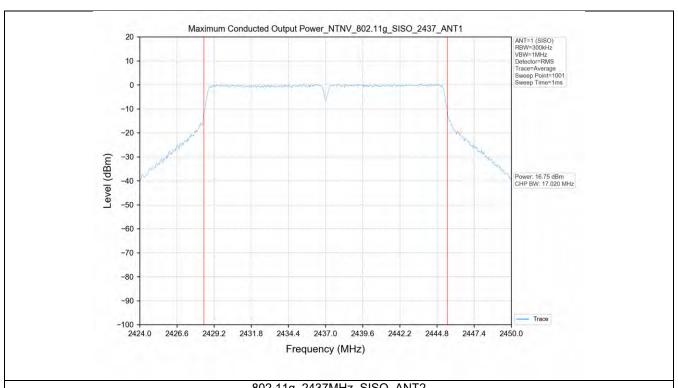
### 802.11b\_2462MHz\_SISO\_ANT2



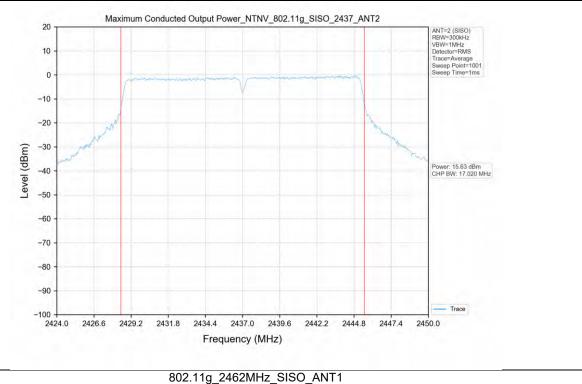


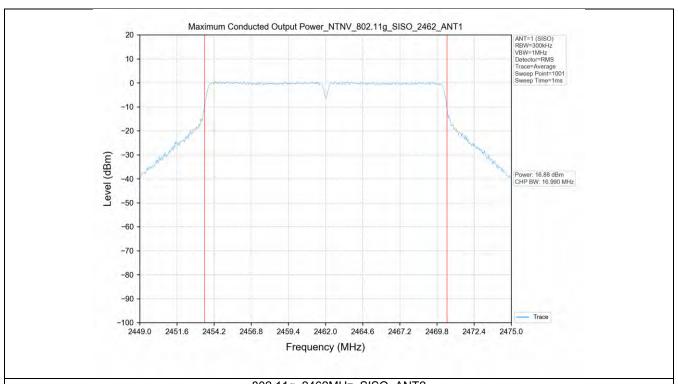
#### 802.11g 2412MHz SISO ANT2



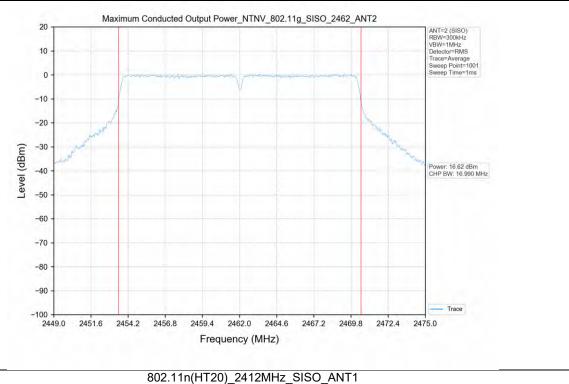


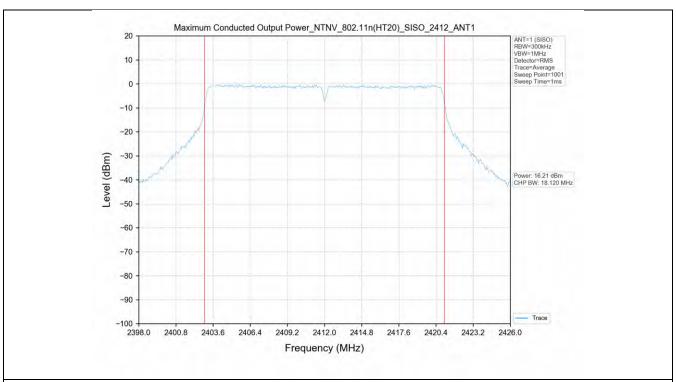
### 802.11g\_2437MHz\_SISO\_ANT2



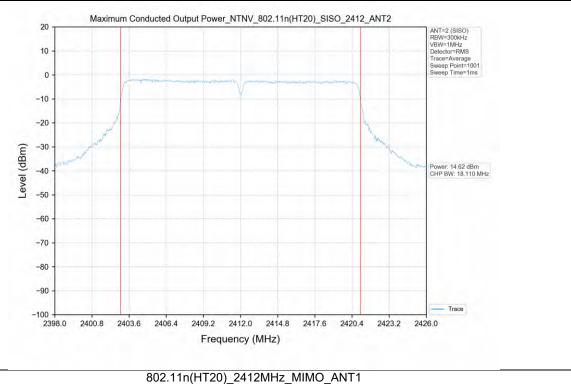


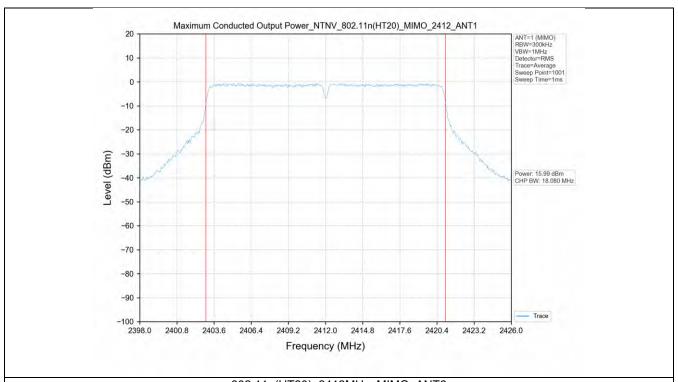
### 802.11g\_2462MHz\_SISO\_ANT2



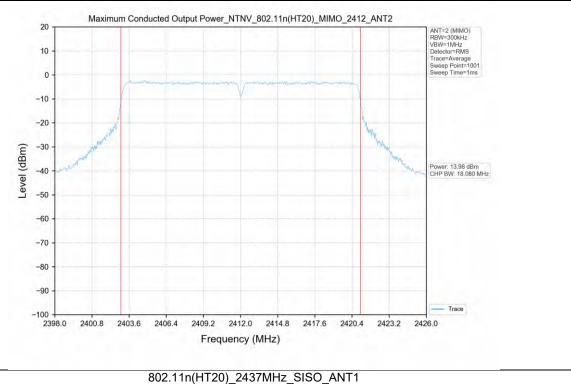


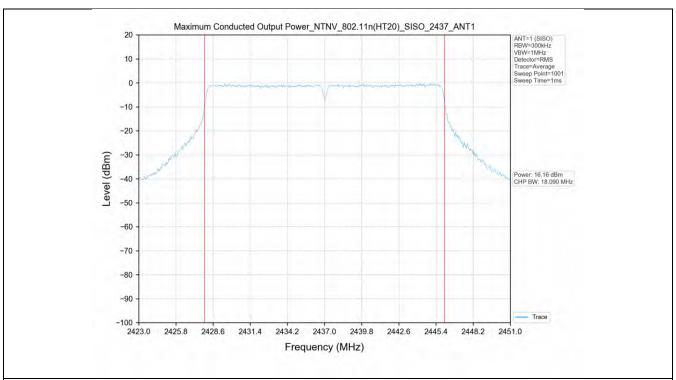
### 802.11n(HT20)\_2412MHz\_SISO\_ANT2



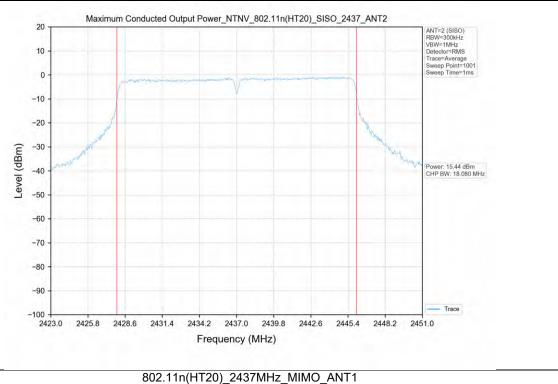


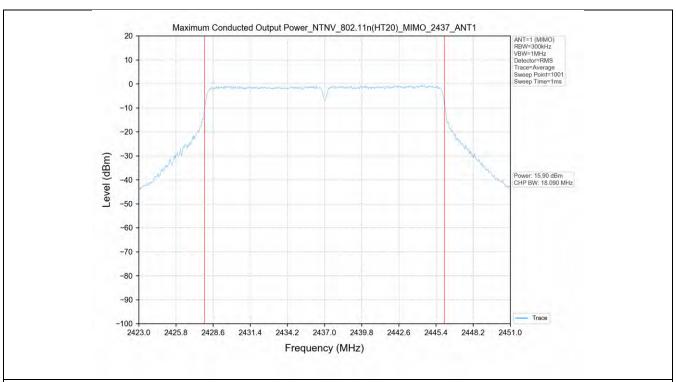
### 802.11n(HT20)\_2412MHz\_MIMO\_ANT2



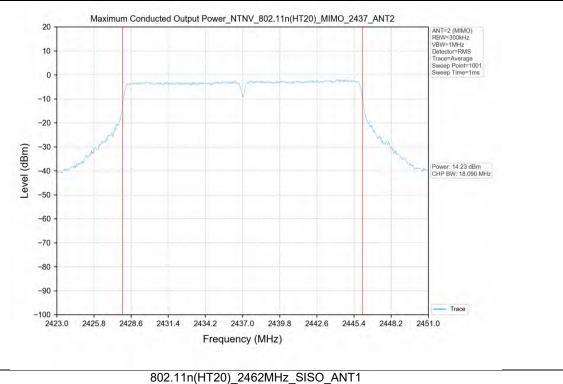


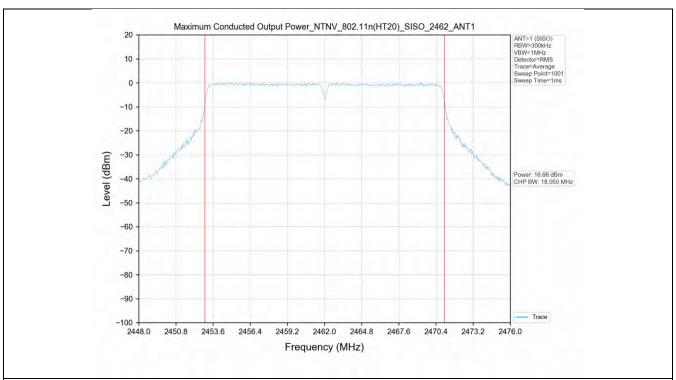
### 802.11n(HT20)\_2437MHz\_SISO\_ANT2



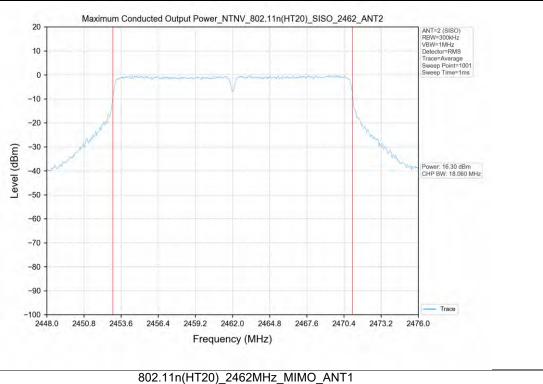


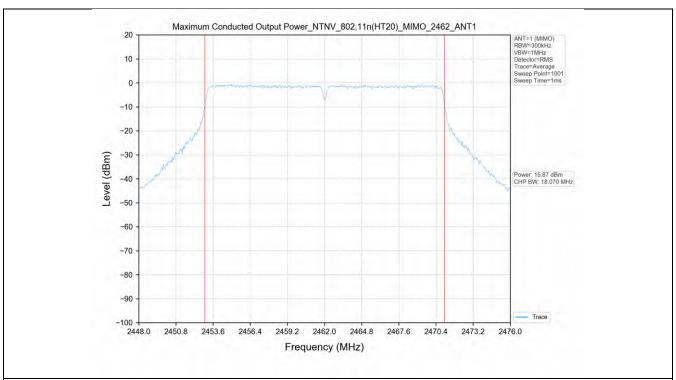
### 802.11n(HT20)\_2437MHz\_MIMO\_ANT2



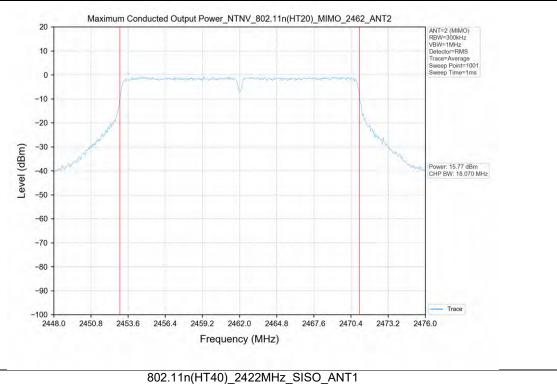


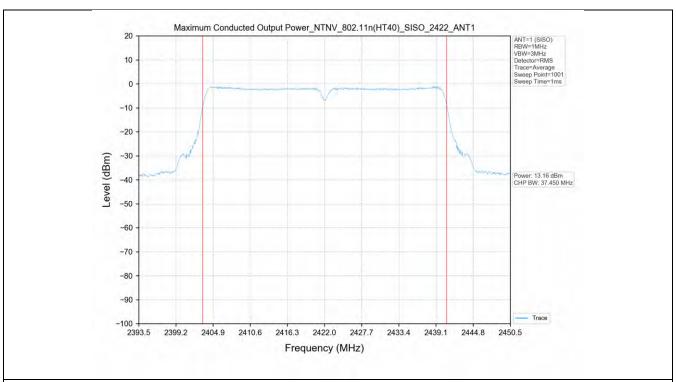
### 802.11n(HT20)\_2462MHz\_SISO\_ANT2



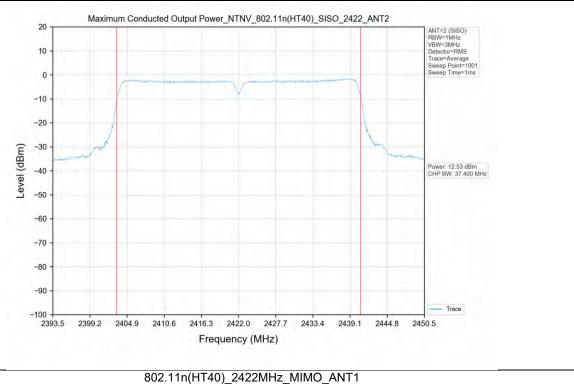


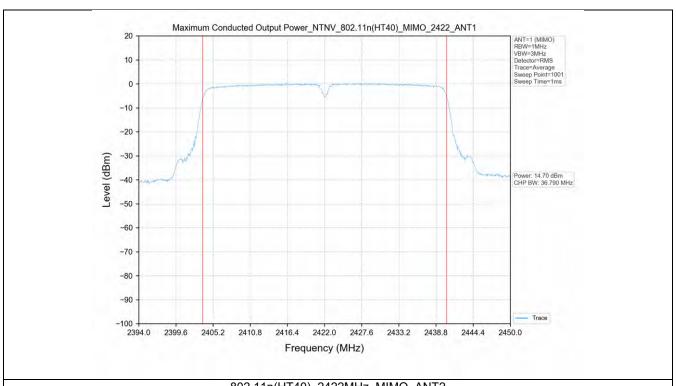
### 802.11n(HT20)\_2462MHz\_MIMO\_ANT2





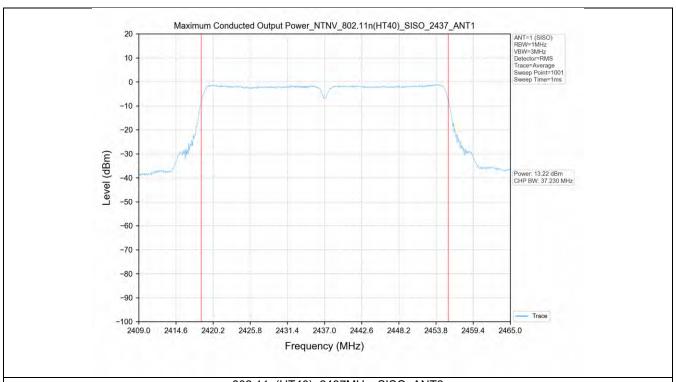
### 802.11n(HT40)\_2422MHz\_SISO\_ANT2



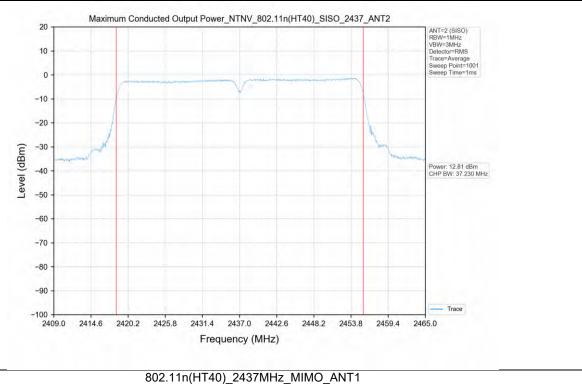


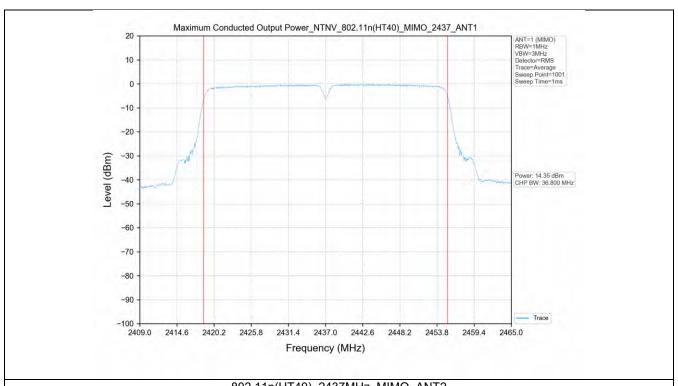
### 802.11n(HT40)\_2422MHz\_MIMO\_ANT2



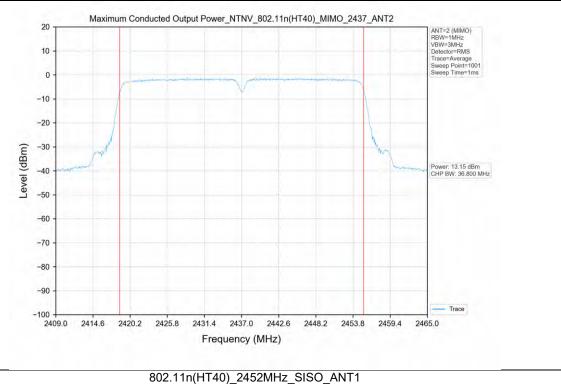


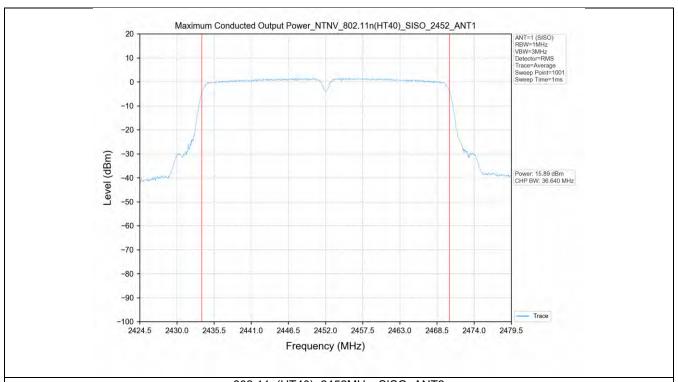
### 802.11n(HT40)\_2437MHz\_SISO\_ANT2



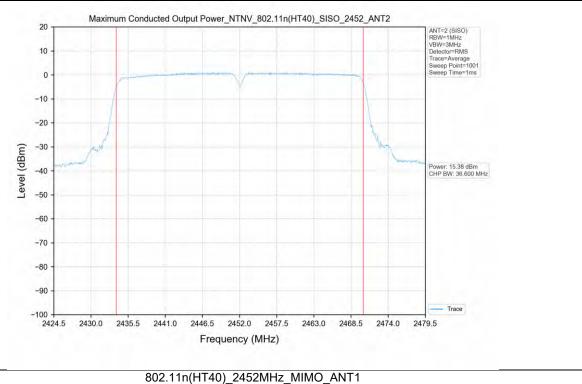


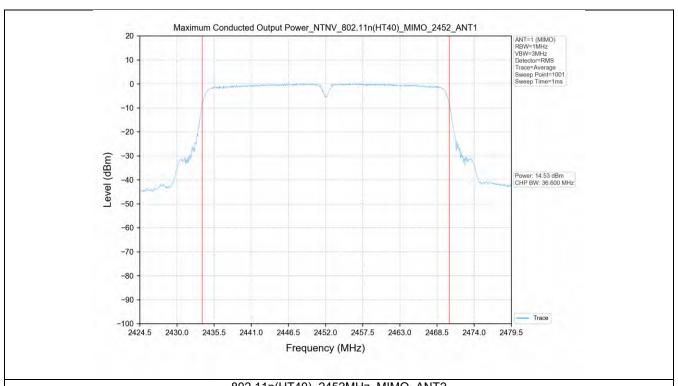
### 802.11n(HT40)\_2437MHz\_MIMO\_ANT2





### 802.11n(HT40) 2452MHz SISO ANT2





### 802.11n(HT40)\_2452MHz\_MIMO\_ANT2

