

APPENDIX REPORT

Project No.	SHT2012123404EW	Radio Specification	WIFI 2.4G
Test sample No.	YPHT20121234003	Model No.	T780
Start test date	2021-11-23	Finish date	2021-11-23
Temperature	23.1℃	Humidity	38%
Test Engineer	Xiaoqin Li	Auditor	Xiaodong Zhu

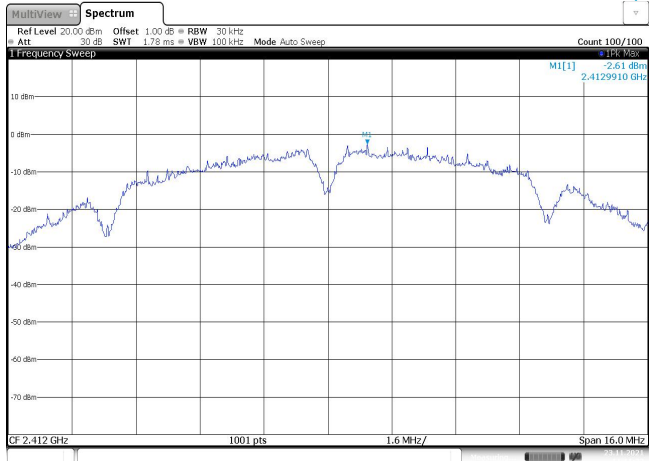
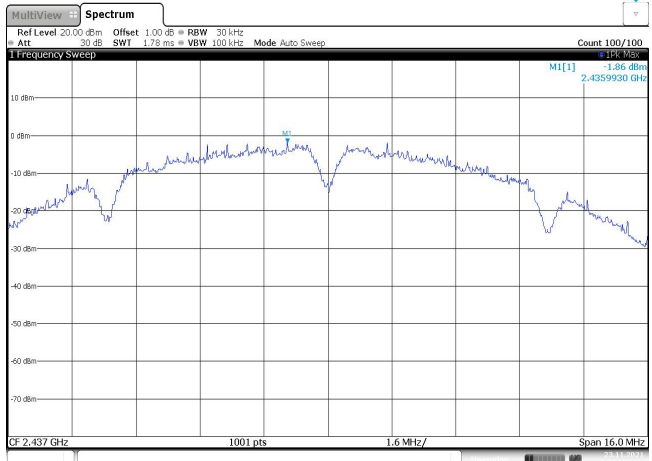
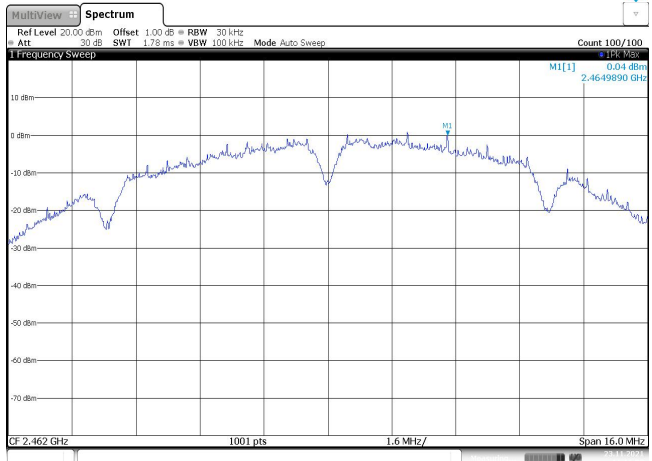
Appendix clause	Test item	Result
A	Conducted Peak Output Power	PASS
B	Power Spectral Density	PASS
C	6 dB Bandwidth	PASS
D	99% Occupied Bandwidth	PASS
E	Duty Cycle	PASS
F	Band edge and Spurious Emissions (conducted)	PASS

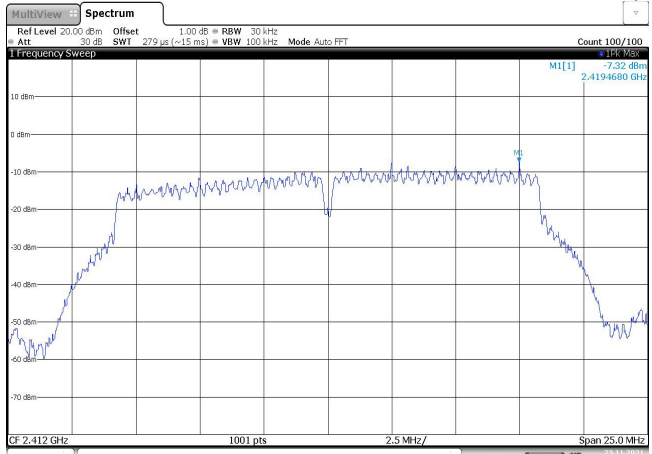
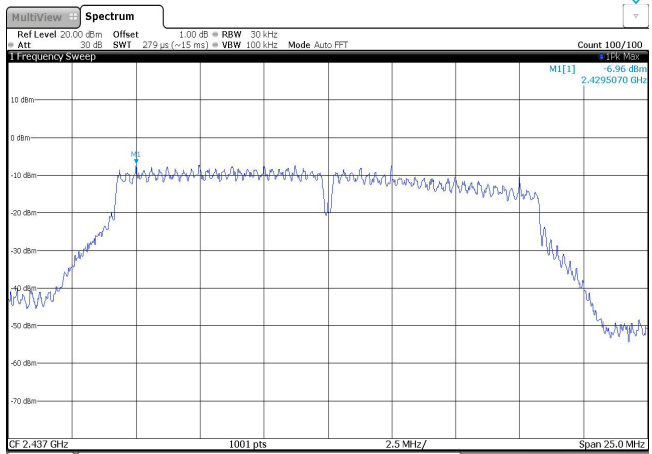
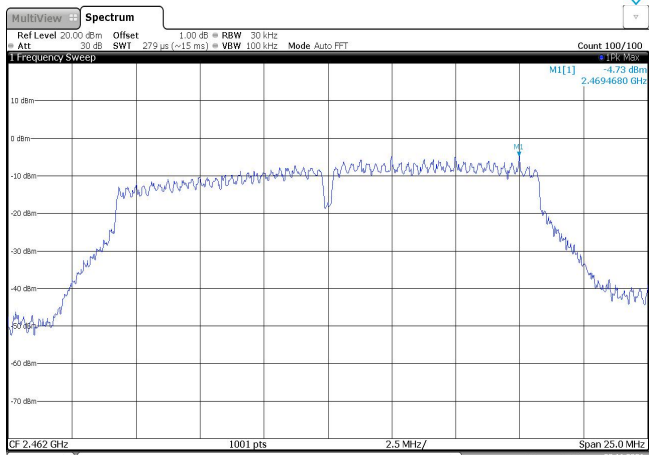
Appendix A: Conducted Peak Output Power

Type	Channel	Peak Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
802.11b	01	12.12	9.70	≤ 30.00	Pass
	06	13.28	10.81		
	11	14.02	11.60		
802.11g	01	16.08	13.54	≤ 30.00	Pass
	06	17.35	14.70		
	11	18.24	15.60		
802.11n (HT20)	01	16.00	13.42	≤ 30.00	Pass
	06	17.30	14.82		
	11	18.16	15.56		
802.11n (HT40)	03	19.77	17.20	≤ 30.00	Pass
	06	19.07	16.64		
	09	18.17	15.72		

Appendix B: Power Spectral Density

Type	Channel	Power Spectral Density (dBm/30KHz)	Limit (dBm/3KHz)	Result
802.11b	01	-2.61	≤8.00	Pass
	06	-1.86		
	11	0.04		
802.11g	01	-7.32	≤8.00	Pass
	06	-6.96		
	11	-4.73		
802.11n(HT20)	01	-9.23	≤8.00	Pass
	06	-7.47		
	11	-5.65		
802.11n(HT40)	03	-6.62	≤8.00	Pass
	06	-7.56		
	09	-9.18		

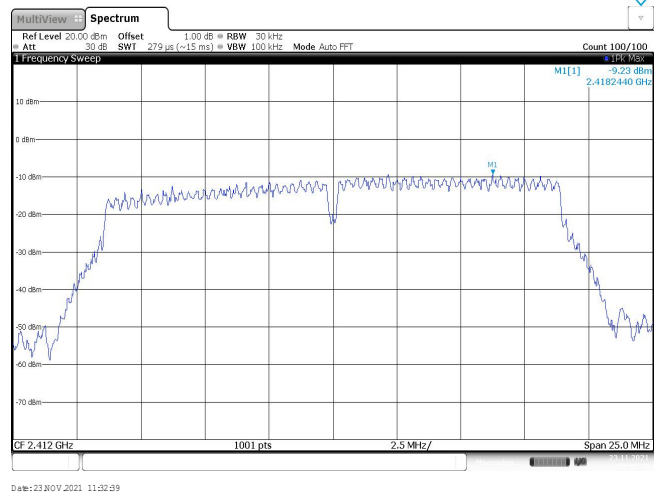
Type:	802.11 b
CH01	 Count 100/100 Ref Level 20.00 dBm Offset 1.00 dB RBW 30 kHz Att 30 dB SWI 1.78 ms VBW 100 kHz Mode Auto Sweep Frequency Sweep M1[1] -2.41 dBm 2.4129910 GHz CF 2.412 GHz 1001 pts 1.6 MHz/ Span 16.0 MHz Date: 23 NOV 2021 11:11:32
CH06	 Count 100/100 Ref Level 20.00 dBm Offset 1.00 dB RBW 30 kHz Att 30 dB SWI 1.78 ms VBW 100 kHz Mode Auto Sweep Frequency Sweep M1[1] -1.40 dBm 2.4359930 GHz CF 2.437 GHz 1001 pts 1.6 MHz/ Span 16.0 MHz Date: 23 NOV 2021 11:15:25
CH11	 Count 100/100 Ref Level 20.00 dBm Offset 1.00 dB RBW 30 kHz Att 30 dB SWI 1.78 ms VBW 100 kHz Mode Auto Sweep Frequency Sweep M1[1] -0.04 dBm 2.4649890 GHz CF 2.462 GHz 1001 pts 1.6 MHz/ Span 16.0 MHz Date: 23 NOV 2021 11:19:03

Type:	802.11 g
CH01	 MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB BW 30 kHz Att 30 dB SWI 279 μs (~15 ms) VBW 100 kHz Mode Auto FFT Frequency Sweep N1[1] -17.23 dBm 2.4194680 GHz CF 2.412 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 23 NOV 2021 11:24:38
CH06	 MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB BW 30 kHz Att 30 dB SWI 279 μs (~15 ms) VBW 100 kHz Mode Auto FFT Frequency Sweep N1[1] -15.96 dBm 2.4295070 GHz CF 2.437 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 23 NOV 2021 11:27:48
CH11	 MultiView Spectrum Ref Level 20.00 dBm Offset 1.00 dB BW 30 kHz Att 30 dB SWI 279 μs (~15 ms) VBW 100 kHz Mode Auto FFT Frequency Sweep N1[1] -17.23 dBm 2.4694680 GHz CF 2.462 GHz 1001 pts 2.5 MHz/ Span 25.0 MHz Date: 23 NOV 2021 11:29:56

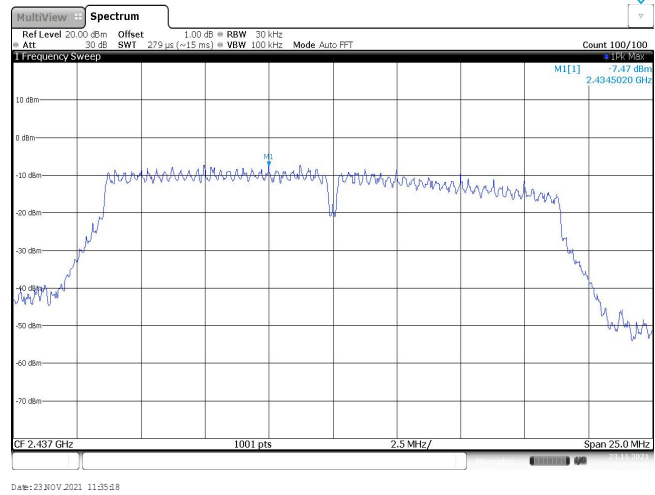
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802.11n(HT20)

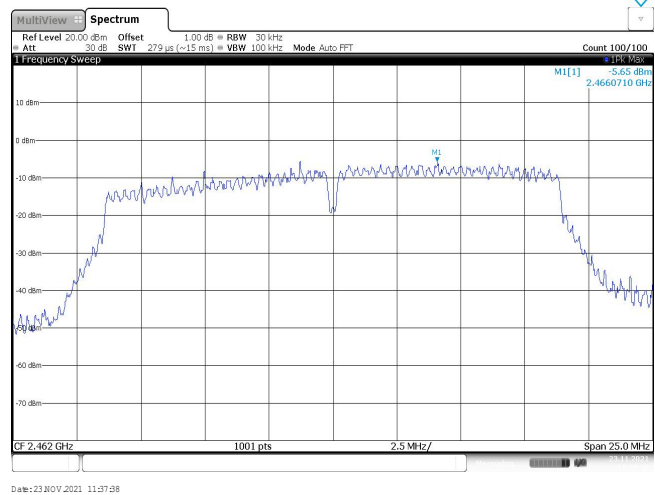
CH01

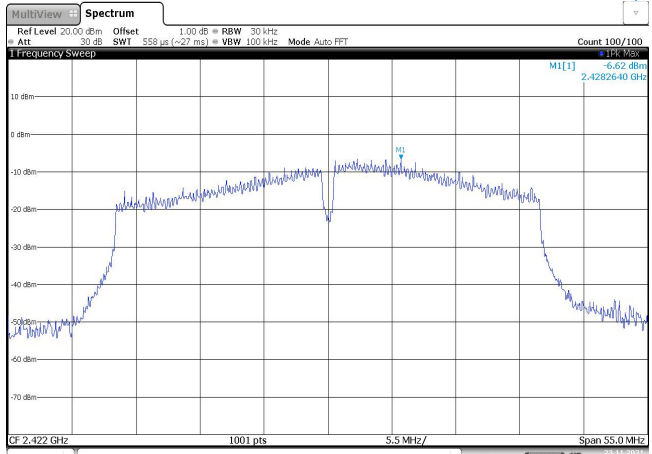
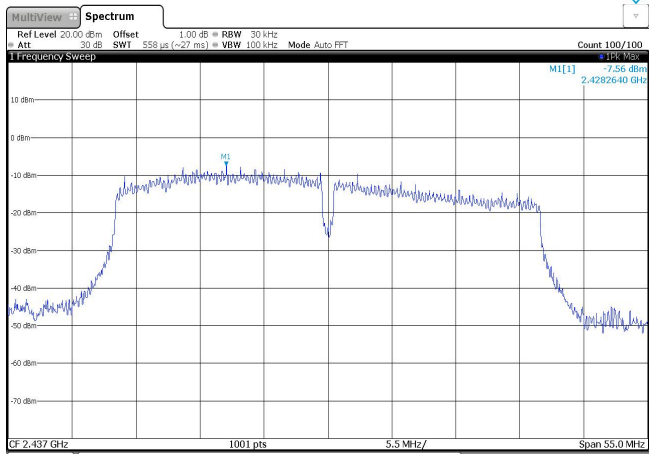
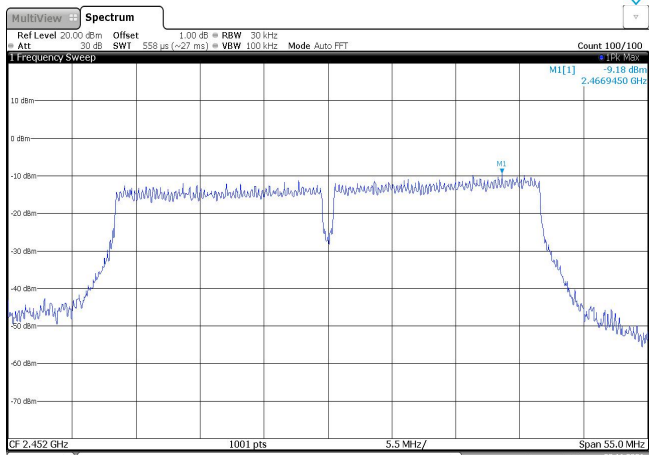


CH06



CH11



Type:	802.11n(HT40)
CH03	 2.422 GHz 1001 pts 5.5 MHz/ Span 55.0 MHz Date: 23 NOV 2021 13:17:56
CH06	 2.437 GHz 1001 pts 5.5 MHz/ Span 55.0 MHz Date: 23 NOV 2021 13:23:06
CH09	 2.452 GHz 1001 pts 5.5 MHz/ Span 55.0 MHz Date: 23 NOV 2021 13:25:25

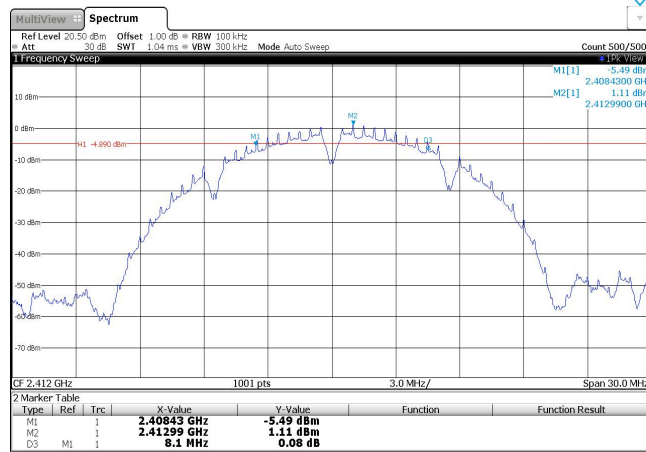
Appendix C: 6dB bandwidth

Type	Channel	6dB Bandwidth (MHz)	Limit (MHz)	Result
802.11b	01	8.10	≥0.5	Pass
	06	8.13		
	11	8.10		
802.11g	01	15.75	≥0.5	Pass
	06	15.78		
	11	14.49		
802.11n(HT20)	01	16.41	≥0.5	Pass
	06	16.41		
	11	15.12		
802.11n(HT40)	03	22.68	≥0.5	Pass
	06	26.46		
	09	35.82		

Type:

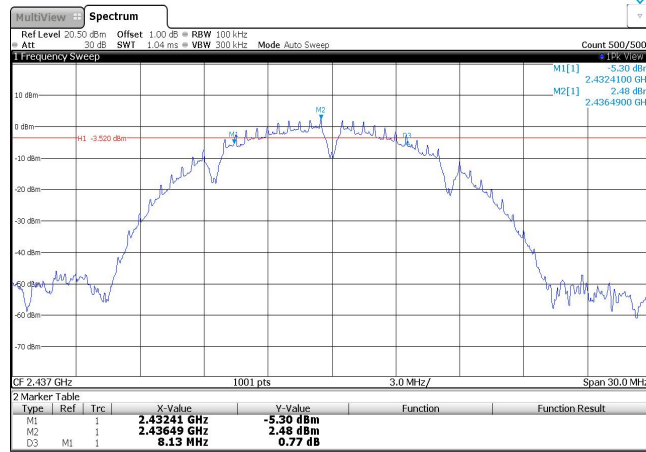
802.11 b

CH01



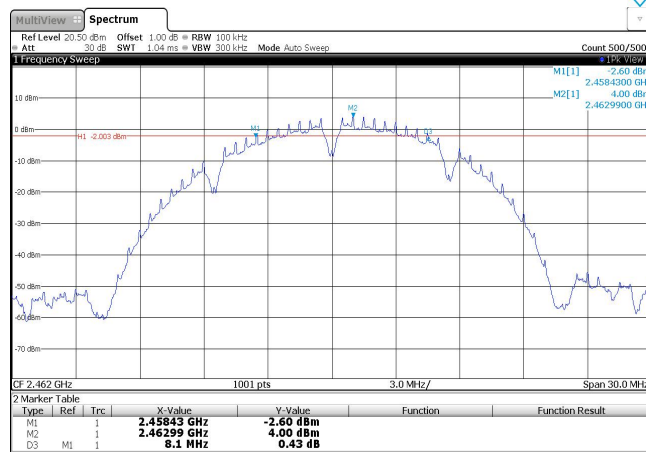
Date: 23 NOV 2021 11:10:41

CH06



Date: 23 NOV 2021 11:13:52

CH11

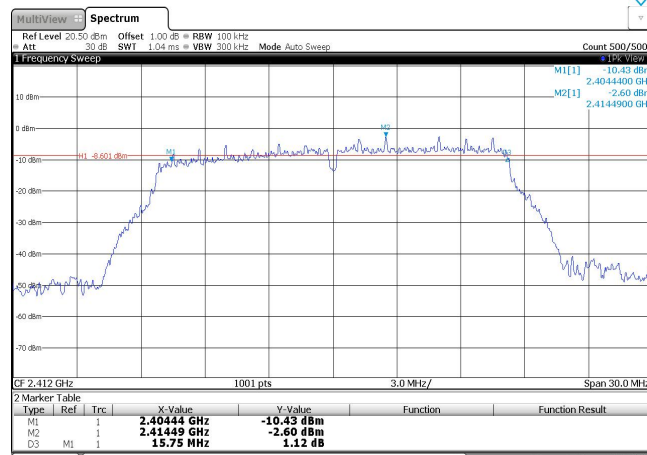


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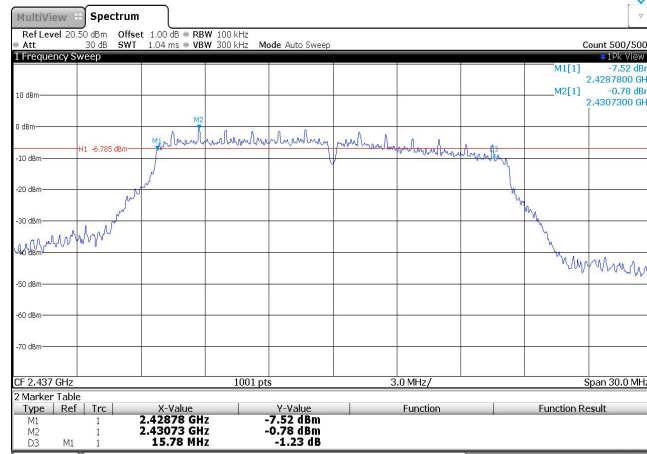
802.11 g

CH01



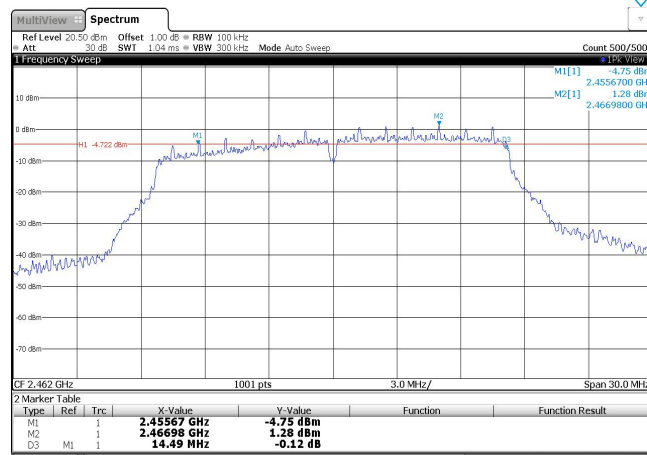
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CH06



Date: 23 NOV 2021 11:27:00

CH11

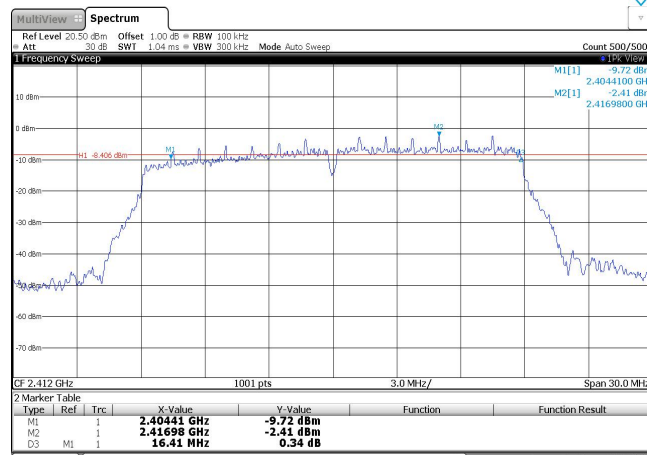


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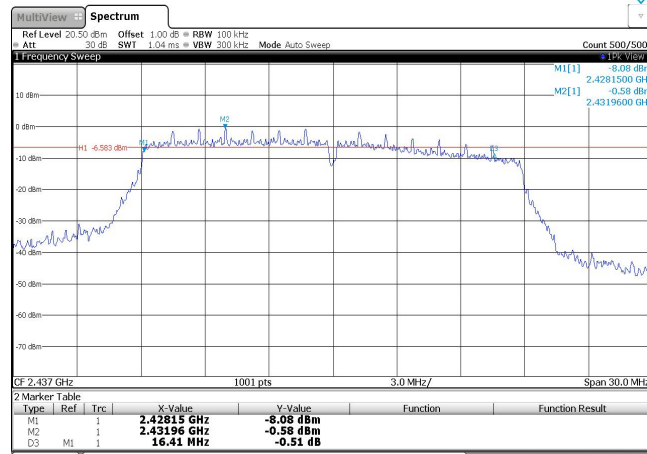
802.11n(HT20)

CH01



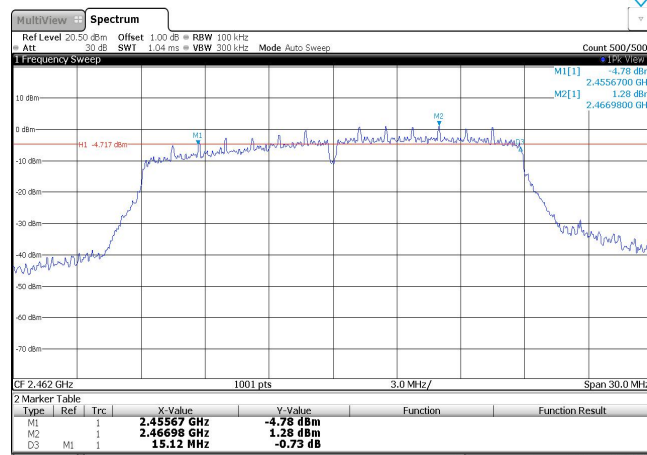
Date: 23 NOV 2021 11:31:50

CH06



Date: 23 NOV 2021 11:34:22

CH11

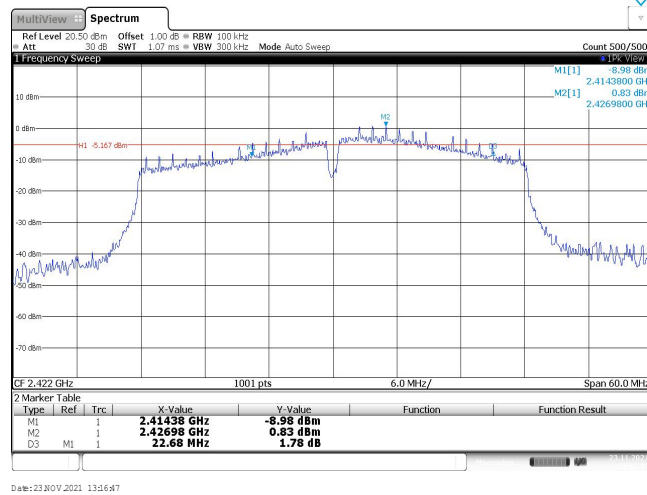


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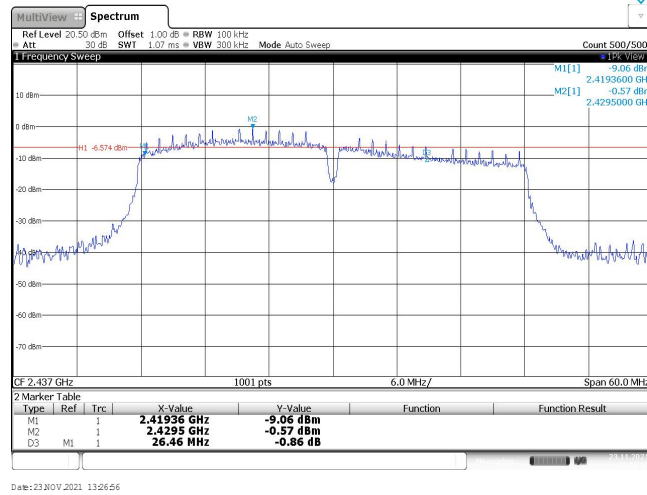
Type:

802.11n(HT40)

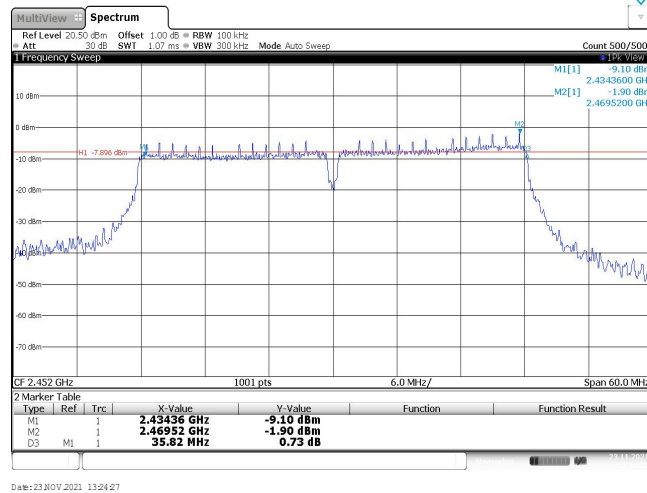
CH03



CH06



CH09



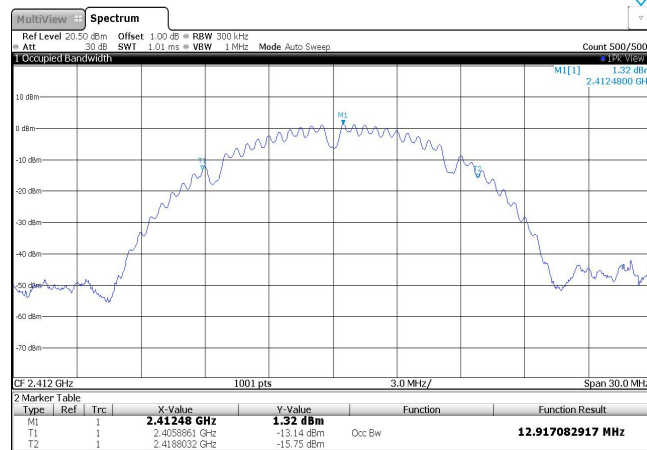
Appendix D: 99% Occupied Bandwidth

Type	Channel	99% Bandwidth (MHz)	Limit (kHz)	Result
802.11b	01	12.92	-	Pass
	06	12.89		
	11	12.77		
802.11g	01	16.90	-	Pass
	06	16.84		
	11	16.72		
802.11n(HT20)	01	17.89	-	Pass
	06	17.86		
	11	17.74		
802.11n(HT40)	03	35.31	-	Pass
	06	35.96		
	09	36.86		

Type:

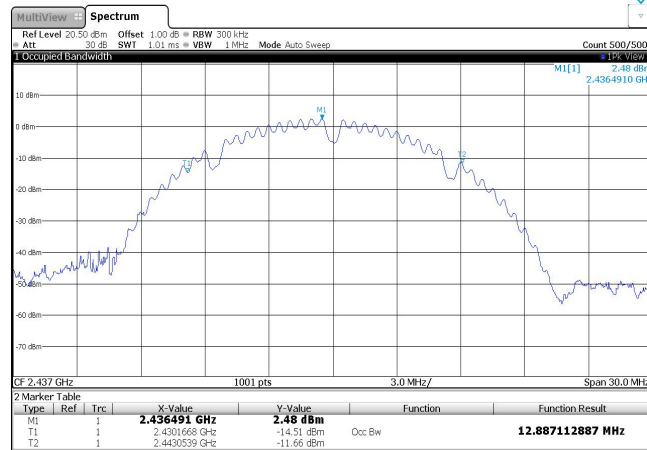
802.11 b

CH01



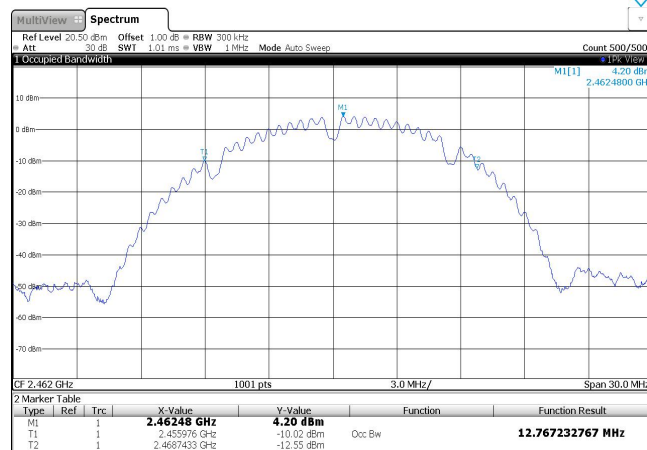
Date: 23 NOV 2021 11:20:49

CH06



Date: 23 NOV 2021 11:14:01

CH11



Date: 23 NOV 2021 11:28:24

Type:

802.11 g

CH01



Date: 23 NOV 2021 11:23:54

CH06



Date: 23 NOV 2021 11:27:49

CH11

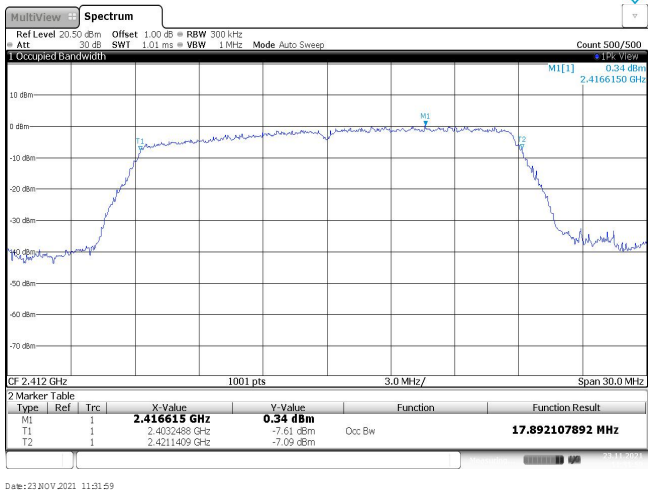


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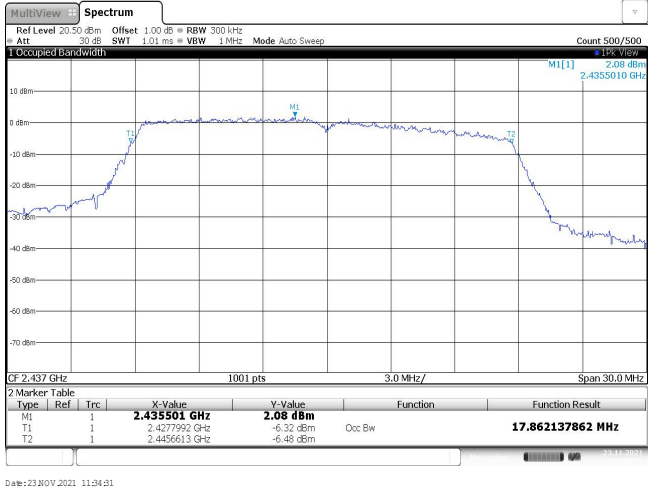
Type:

802.11n(HT20)

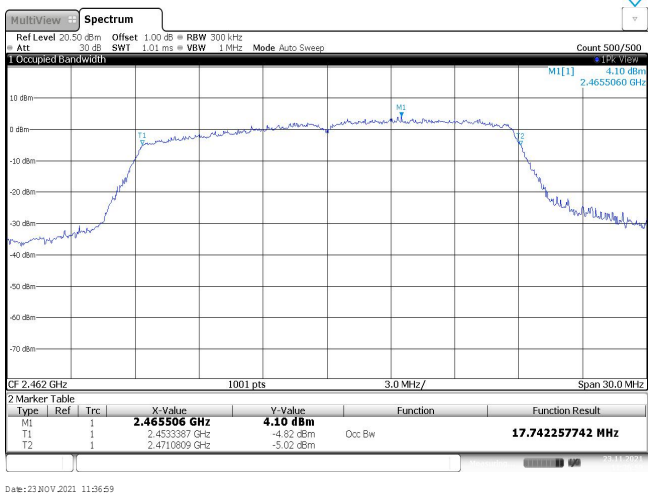
CH01



CH06



CH11



Type:

802.11n(HT40)

CH03



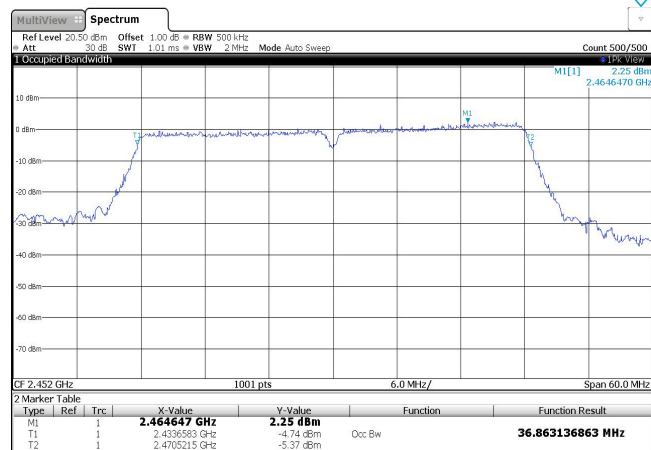
Date: 23 NOV 2021 13:16:56

CH06



Date: 23 NOV 2021 13:22:19

CH09

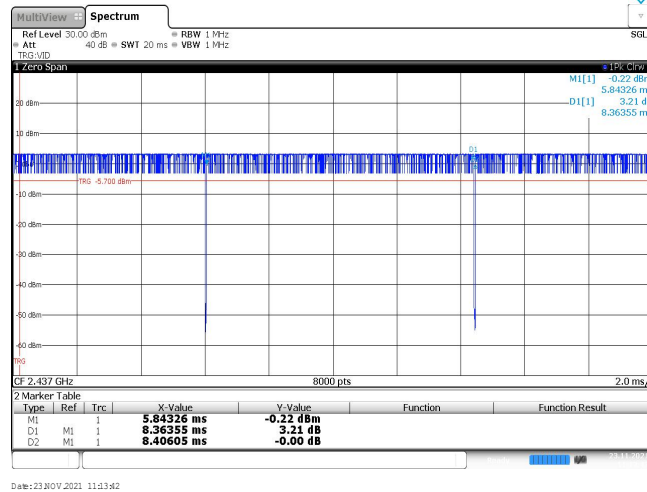


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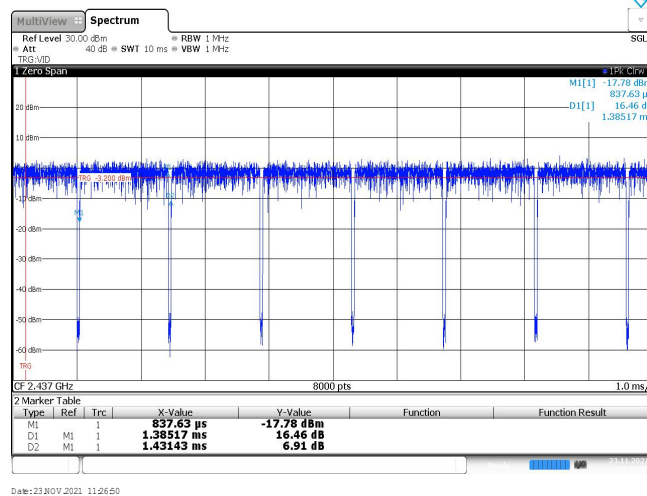
Appendix E: Duty Cycle

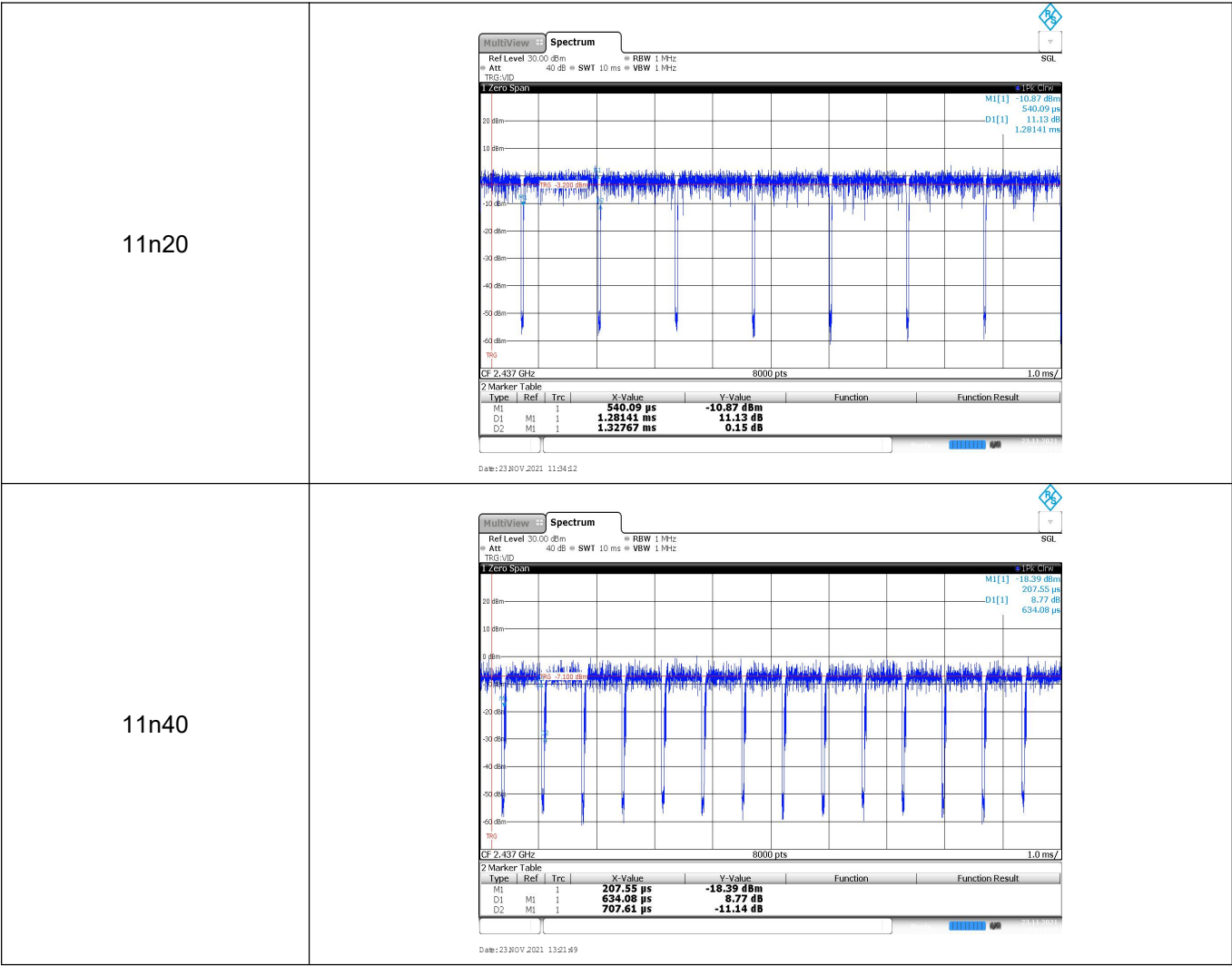
Modulation Type	Test Frequency (MHz)	T _{on} time for single burst (ms)	T _{period} (ms)	Duty cycle	1/T _{on} time (kHz)
11b	2437	8.36	8.41	99.4%	0.1
11g	2437	1.39	1.43	97.2%	0.7
11n20	2437	1.28	1.33	96.2%	0.8
11n40	2437	0.63	0.71	88.7%	1.6

11b



11g





Appendix F: Band edge and Spurious Emissions (conducted)

Test Item:	Bandedge	Type:	802.11 b																																										
CH01	MultViewSpectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWT 1.12 ms VBW 300 kHz Mode Auto Sweep Count 300/300 Frequency Sweep M1 0.91 dBm 2.412990 GHz M2 -53.33 dBm 2.412990 GHz M1 -19.090 dBm 2.31 GHz 1001 pts 11.2 MHz/ 2.422 GHz 2 Marker Table <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-Value</th><th>Y-Value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td>1</td><td></td><td>2.41299 GHz</td><td>0.91 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4 GHz</td><td>-53.33 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.39 GHz</td><td>-62.47 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.31 GHz</td><td>-62.58 dBm</td><td></td><td></td></tr><tr><td>M5</td><td>1</td><td></td><td>2.39848 GHz</td><td>-51.11 dBm</td><td></td><td></td></tr></table> Date: 23 NOV 2021 11:51:42			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.41299 GHz	0.91 dBm			M2	1		2.4 GHz	-53.33 dBm			M3	1		2.39 GHz	-62.47 dBm			M4	1		2.31 GHz	-62.58 dBm			M5	1		2.39848 GHz	-51.11 dBm		
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CH11	MultViewSpectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWT 1.03 ms VBW 300 kHz Mode Auto Sweep Count 300/300 Frequency Sweep M1 4.00 dBm 2.4634850 GHz M2 -61.62 dBm 2.4835000 GHz M1 -16.000 dBm 2.452 GHz 1001 pts 4.8 MHz/ 2.5 GHz 2 Marker Table <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-Value</th><th>Y-Value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td>1</td><td></td><td>2.463485 GHz</td><td>4.00 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>2.4835 GHz</td><td>-61.62 dBm</td><td></td><td></td></tr><tr><td>M3</td><td>1</td><td></td><td>2.5 GHz</td><td>-64.47 dBm</td><td></td><td></td></tr><tr><td>M4</td><td>1</td><td></td><td>2.488 GHz</td><td>-57.29 dBm</td><td></td><td></td></tr></table> Date: 23 NOV 2021 11:59:13			Type	Ref	Trc	X-Value	Y-Value	Function	Function Result	M1	1		2.463485 GHz	4.00 dBm			M2	1		2.4835 GHz	-61.62 dBm			M3	1		2.5 GHz	-64.47 dBm			M4	1		2.488 GHz	-57.29 dBm									
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