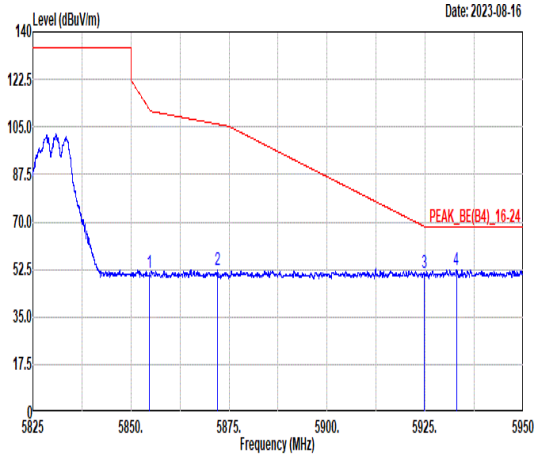
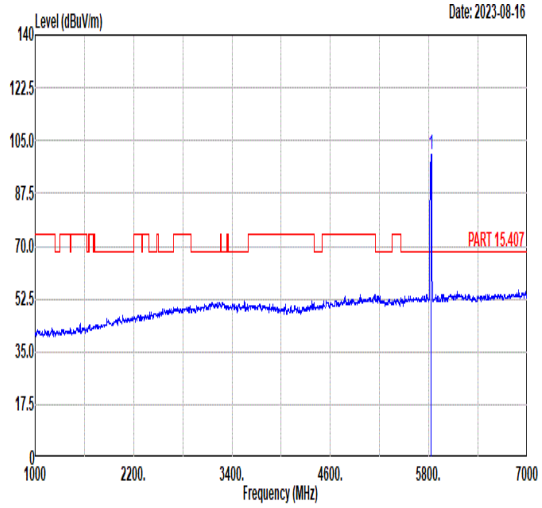
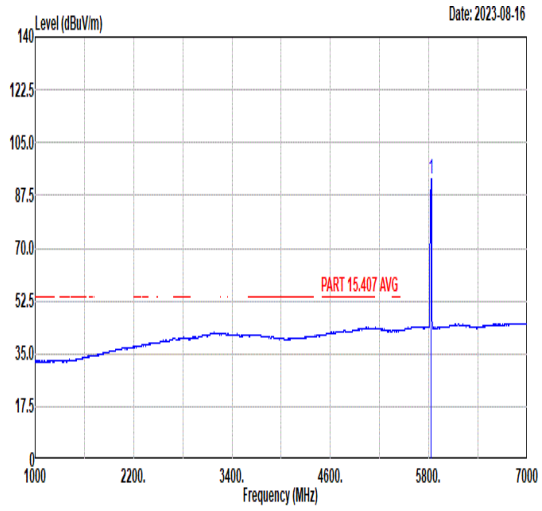
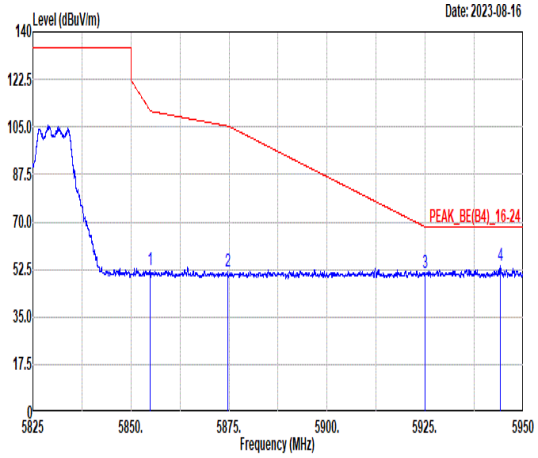
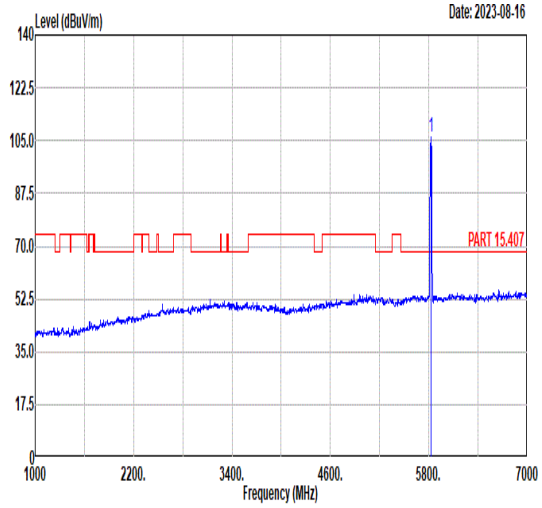
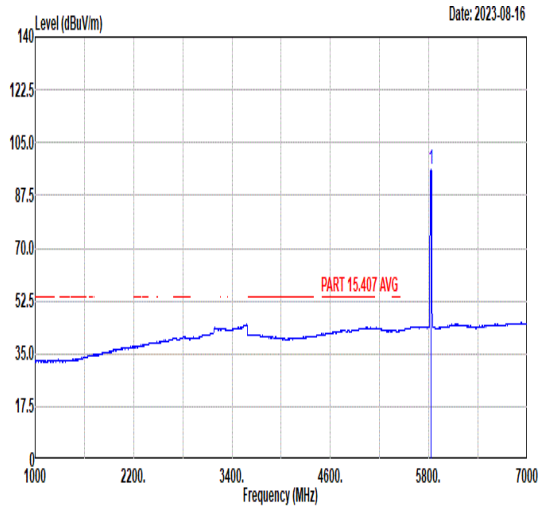
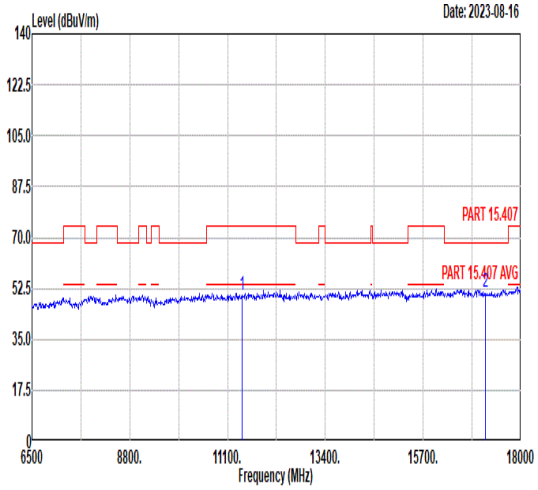
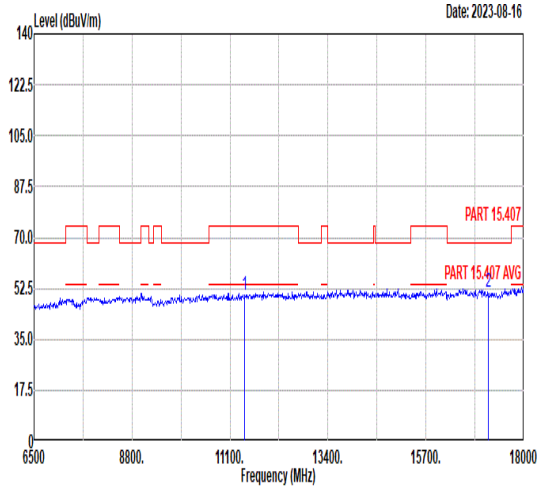
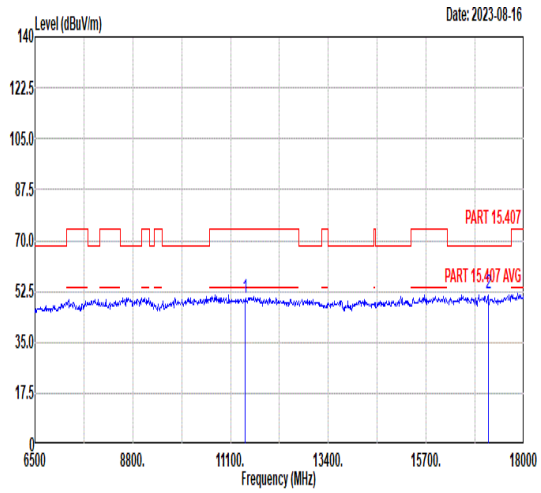
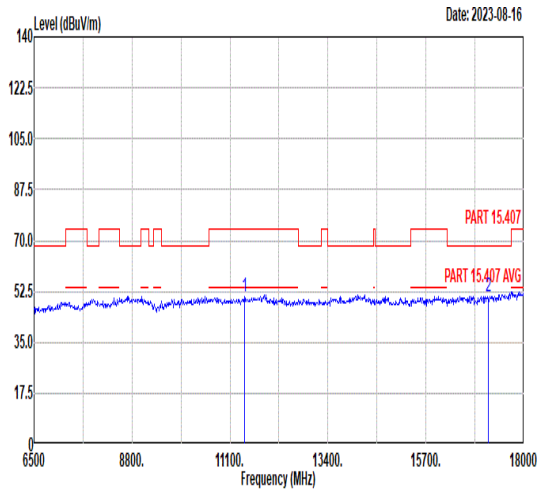
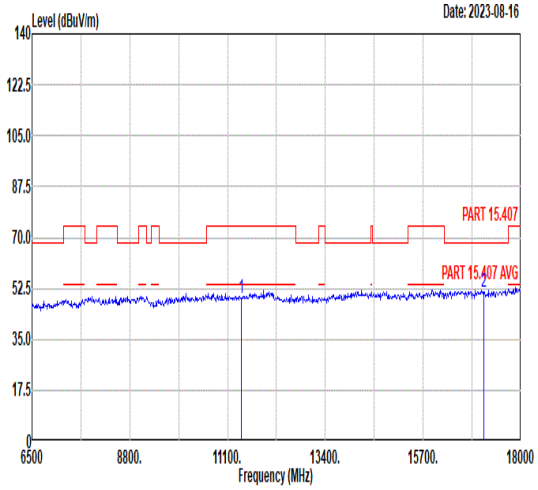
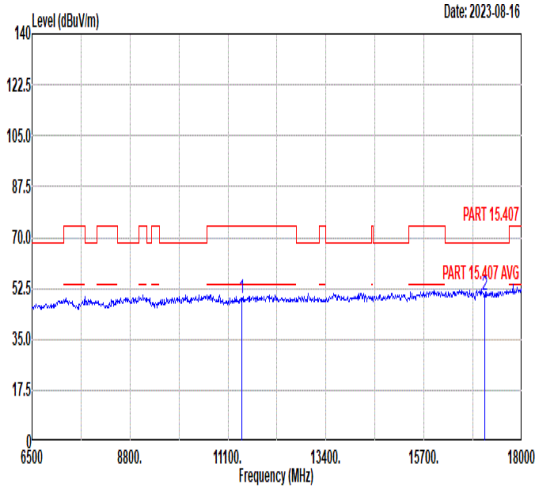
Mode	62	
	Band Edge	
	U-NII-3_5.725-5.85_802.11ax HE20 _CH165_Partial_5825MHz	
ANT	CDD 10+11	
Pol.	Horizontal	Fundamental
Peak	 Freq Level Limit Line Margin Read Level Ant Factor Cable Loss Preamp Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB cm deg 1 5854.69 50.99 111.51 -60.52 36.66 35.30 11.52 32.49 100 11 PEAK 2 5872.08 52.09 106.02 -53.93 37.78 35.32 11.49 32.50 100 11 PEAK 3 5924.69 51.09 68.43 -17.34 36.84 35.39 11.40 32.54 100 11 PEAK 4 5932.94 52.54 68.30 -15.76 38.29 35.41 11.39 32.55 100 11 PEAK	 Freq Level Limit Line Margin Read Level Ant Factor Cable Loss Preamp Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB cm deg 1 5825.00 100.47 ------ ------ 86.11 35.26 11.57 32.47 100 11 PEAK
Avg	Blank	 Freq Level Limit Line Margin Read Level Ant Factor Cable Loss Preamp Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB cm deg 1 5825.00 92.76 ------ ------ 78.40 35.27 11.56 32.47 100 11 AVERAGE

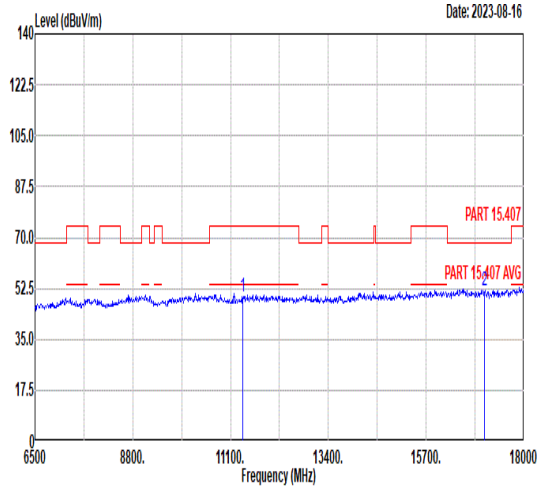
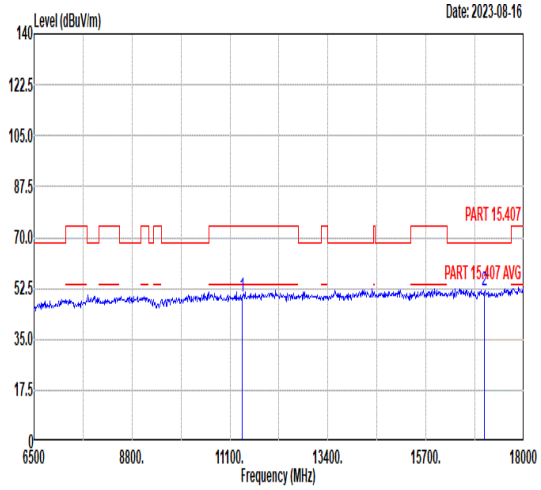
Mode	62
	Band Edge
	U-NII-3_5.725-5.85_802.11ax HE20 _CH165_Partial_5825MHz
ANT	CDD 10+11

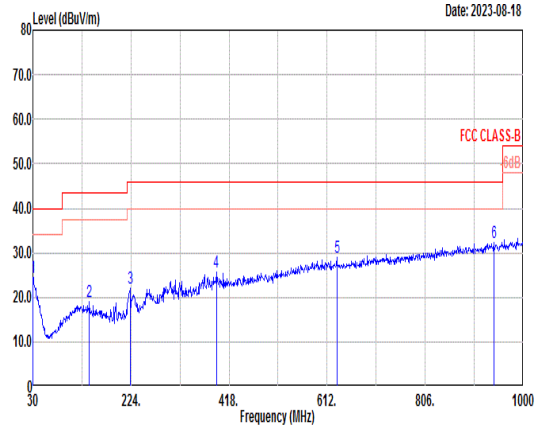
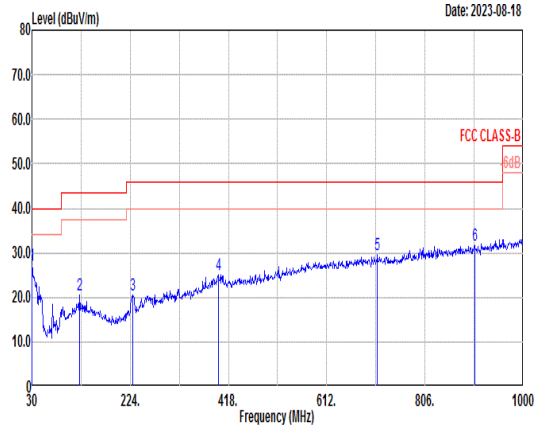
Pol.	Vertical	Fundamental
Peak	 Freq Level Limit Line Margin Read Level Ant Factor Cable Loss Preamp Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB cm deg 1 5854.94 52.10 110.94 -58.84 37.77 35.30 11.52 32.49 396 319 PEAK 2 5874.69 51.68 105.29 -53.61 37.37 35.32 11.49 32.50 396 319 PEAK 3 5924.94 51.44 68.25 -16.81 37.19 35.39 11.40 32.54 396 319 PEAK 4 5944.19 53.76 68.30 -14.54 39.53 35.42 11.37 32.56 396 319 PEAK	 Freq Level Limit Line Margin Read Level Ant Factor Cable Loss Preamp Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB cm deg 1 5825.00 106.05 ------ ------ 91.69 35.26 11.57 32.47 396 319 PEAK
Avg	Blank	 Freq Level Limit Line Margin Read Level Ant Factor Cable Loss Preamp Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB cm deg 1 5825.00 96.09 ------ ------ 81.73 35.26 11.57 32.47 396 319 AVERAGE

Mode	63	
	Harmonic	
	U-NII-2C-3_5.47-5.85_802.11a_CH144_5720MHz	
ANT	MIMO 10+11	
Pol.	Horizontal	Vertical
Peak Avg	 Freq Level Limit Line Margin Read Level Ant Factor Cable Loss Preamp Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB cm deg 1 11440.00 50.20 74.00 -23.80 46.36 39.75 14.80 50.71 -- -- Peak 2 17160.00 51.37 68.30 -16.93 43.24 42.44 17.55 51.86 -- -- Peak	 Freq Level Limit Line Margin Read Level Ant Factor Cable Loss Preamp Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB cm deg 1 11440.00 50.34 74.00 -23.66 46.50 39.75 14.80 50.71 -- -- Peak 2 17160.00 51.15 68.30 -17.15 43.02 42.44 17.55 51.86 -- -- Peak

Mode	64	
	Harmonic	
	U-NII-2C-3_5.47-5.85_802.11ax HE20_CH144_Full_5720MHz	
ANT	CDD 10+11	
Pol.	Horizontal	Vertical
Peak Avg	 Freq Level Limit Line Margin Read Level Ant Factor Cable Loss Preamp Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB cm deg 1 11440.00 50.16 74.00 -23.84 46.32 39.75 14.80 50.71 -- -- Peak 2 17160.00 51.80 68.30 -16.50 43.67 42.44 17.55 51.86 -- -- Peak	 Freq Level Limit Line Margin Read Level Ant Factor Cable Loss Preamp Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB cm deg 1 11440.00 50.75 74.00 -23.25 46.91 39.75 14.80 50.71 -- -- Peak 2 17160.00 50.61 68.30 -17.69 42.48 42.44 17.55 51.86 -- -- Peak

Mode	65	
	Harmonic	
	U-NII-2C-3_5.47-5.85_802.11ax HE40_CH142_Full_5710MHz	
ANT	CDD 10+11	
Pol.	Horizontal	Vertical
Peak Avg	 Freq Level Limit Line Margin Read Level Ant Factor Cable Loss Preamp Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB cm deg 1 11420.00 49.23 74.00 -24.77 45.42 39.74 14.79 50.72 -- -- Peak 2 17130.00 50.98 68.30 -17.32 42.82 42.45 17.54 51.83 -- -- Peak	 Freq Level Limit Line Margin Read Level Ant Factor Cable Loss Preamp Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB cm deg 1 11420.00 49.37 74.00 -24.63 45.56 39.74 14.79 50.72 -- -- Peak 2 17130.00 50.08 68.30 -18.22 41.92 42.45 17.54 51.83 -- -- Peak

Mode	66	
	Harmonic	
	U-NII-2C-3_5.47-5.85_802.11ax HE80_CH138_Full_5690MHz	
ANT	CDD 10+11	
Pol.	Horizontal	Vertical
Peak Avg	 Freq Level Limit Line Margin Read Level Ant Factor Cable Loss Preamp Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB cm deg 1 11380.00 49.90 74.00 -24.10 46.15 39.70 14.77 50.72 -- -- Peak 2 17070.00 52.01 68.30 -16.29 43.79 42.47 17.52 51.77 -- -- Peak	 Freq Level Limit Line Margin Read Level Ant Factor Cable Loss Preamp Factor APos TPos Remark MHz dBuV/m dBuV/m dB dBuV dB/m dB dB cm deg 1 11380.00 49.82 74.00 -24.18 46.07 39.70 14.77 50.72 -- -- Peak 2 17070.00 51.59 68.30 -16.71 43.37 42.47 17.52 51.77 -- -- Peak

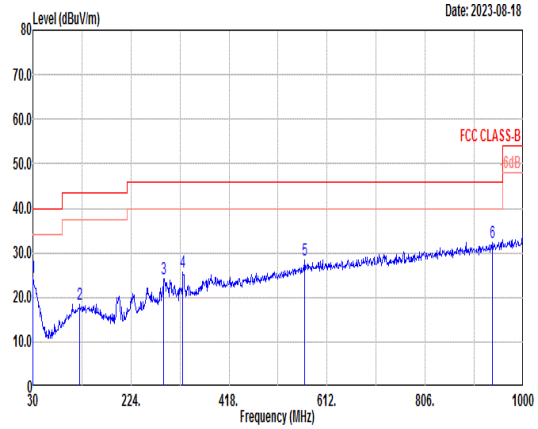
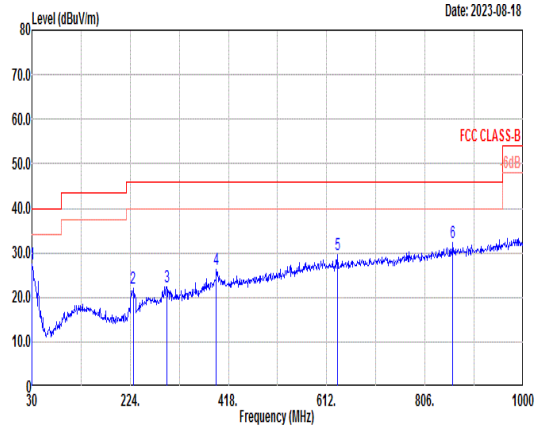
Mode	68	
	LF	
	U-NII-2A_5.25-5.35_802.11ax HE80_CH58_Full_5290MHz	
ANT	CDD 10+11	
Pol.	Horizontal	Vertical
Peak		

Horizontal:

	Freq	Level	Limit Line	Margin	Read Level	Ant Factor	Cable Loss	Preamp Factor	APos	TPos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	dB	dB	cm	deg	
1	30.00	24.49	40.00	-15.51	30.66	25.20	0.53	31.90	---	---	Peak
2	141.55	19.08	43.50	-24.42	31.83	17.50	1.22	31.47	---	---	Peak
3	223.03	22.01	46.00	-23.99	36.19	15.54	1.53	31.25	---	---	Peak
4	392.78	25.71	46.00	-20.29	32.92	21.72	2.08	31.01	---	---	Peak
5	631.40	28.94	46.00	-17.06	31.05	26.24	2.62	30.97	---	---	Peak
6	941.80	32.32	46.00	-13.68	29.53	30.42	3.22	30.85	---	---	Peak

Vertical:

	Freq	Level	Limit Line	Margin	Read Level	Ant Factor	Cable Loss	Preamp Factor	APos	TPos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	dB	dB	cm	deg	
1	30.00	27.27	40.00	-12.73	33.44	25.20	0.53	31.90	---	---	Peak
2	124.09	20.44	43.50	-23.06	33.11	17.80	1.14	31.61	---	---	Peak
3	228.85	20.65	46.00	-25.35	34.23	16.10	1.56	31.24	---	---	Peak
4	397.63	25.12	46.00	-20.88	32.10	21.92	2.10	31.00	---	---	Peak
5	711.91	29.59	46.00	-16.41	30.87	26.84	2.78	30.90	---	---	Peak
6	903.97	31.82	46.00	-14.18	30.53	29.20	3.17	31.08	---	---	Peak

Mode	69	
	LF	
	U-NII-3_5.725-5.85_802.11ax HE20_CH157_Full_5785MHz	
ANT	CDD 10+11	
Pol.	Horizontal	Vertical
Peak		

Horizontal:

	Freq	Level	Limit Line	Margin	Read Level	Ant Factor	Cable Loss	Preamp Factor	APos	TPos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	dB	dB	cm	deg	
1	30.00	24.60	40.00	-15.40	30.77	25.20	0.53	31.90	---	---	Peak
2	123.12	18.34	43.50	-25.16	31.03	17.80	1.13	31.62	---	---	Peak
3	288.02	24.13	46.00	-21.87	34.47	19.02	1.76	31.12	---	---	Peak
4	326.82	25.69	46.00	-20.31	35.12	19.74	1.90	31.07	---	---	Peak
5	567.38	28.50	46.00	-17.50	30.56	26.38	2.49	30.93	---	---	Peak
6	938.89	32.36	46.00	-13.64	29.78	30.24	3.21	30.87	---	---	Peak

Vertical:

	Freq	Level	Limit Line	Margin	Read Level	Ant Factor	Cable Loss	Preamp Factor	APos	TPos	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m	dB	dB	cm	deg	
1	30.00	27.37	40.00	-12.63	33.54	25.20	0.53	31.90	---	---	Peak
2	229.82	22.09	46.00	-23.91	35.57	16.20	1.56	31.24	---	---	Peak
3	295.78	22.47	46.00	-23.53	32.57	19.22	1.79	31.11	---	---	Peak
4	393.75	26.27	46.00	-19.73	33.43	21.76	2.09	31.01	---	---	Peak
5	633.34	29.48	46.00	-16.52	31.51	26.32	2.62	30.97	---	---	Peak
6	861.29	32.35	46.00	-13.65	30.99	29.30	3.08	31.02	---	---	Peak

Appendix D. Radiated Spurious Emission Co-location mode

Test Engineer :	Wenbo Xiao	**Relative Humidity :**	50%
		Temperature :	20~22℃

WIFI 802. 11ax80_CH58+BLE_TX_CH38+LTE Band 13 Co-location

11ax80_CH58 (Band Edge @ 3m)

	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
WIFI 802. 11ax80_CH58+BLE_TX_CH38+LTE Band 13 Co-location		5106.4	48.62	-25.38	74	38.15	34.59	8.43	32.55	100	323	P	H
		5112	41.1	-12.9	54	30.62	34.59	8.43	32.54	100	323	A	H
	*	5290	91.88	-	-	80.39	34.73	9.05	32.29	100	323	P	H
	*	5290	86.04	-	-	74.55	34.73	9.05	32.29	100	323	A	H
		5354.4	51.44	-22.56	74	39.4	34.78	9.46	32.2	100	323	P	H
		5354.64	45.01	-8.99	54	32.97	34.78	9.46	32.2	100	323	A	H
		5137.9	48.66	-25.34	74	38.05	34.61	8.51	32.51	384	212	P	V
		5144.2	41.19	-12.81	54	30.56	34.62	8.51	32.5	384	212	A	V
	*	5290	94.33	-	-	82.84	34.73	9.05	32.29	384	212	P	V
	*	5290	86.48	-	-	74.99	34.73	9.05	32.29	384	212	A	V
		5358.24	52.55	-21.45	74	40.5	34.79	9.46	32.2	384	212	P	V
		5353.68	46.13	-7.87	54	34.09	34.78	9.46	32.2	384	212	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

BLE_TX_CH38 (Band Edge @ 3m)

	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
WIFI 802. 11ax80_CH 58+BLE_T X_CH38+LT E Band 13 Co-location	*	2478	97.13	-	-	93.99	30.81	5.46	33.13	109	65	P	H
	*	2478	95.58	-	-	92.44	30.81	5.46	33.13	109	65	A	H
		2483.64	48.7	-25.3	74	45.53	30.83	5.46	33.12	109	65	P	H
		2483.92	37.03	-16.97	54	33.85	30.84	5.46	33.12	109	65	A	H
	*	2478	95.89	-	-	92.75	30.81	5.46	33.13	369	244	P	V
	*	2478	94.2	-	-	91.06	30.81	5.46	33.13	369	244	A	V
		2483.6	47.09	-26.91	74	43.92	30.83	5.46	33.12	369	244	P	V
		2484	36.21	-17.79	54	33.03	30.84	5.46	33.12	369	244	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

WIFI 802. 11ax80_CH58+BLE_TX_CH38+LTE Band 13 Co-location

(Harmonic @ 3m)

	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
WIFI 802. 11axT80_C H58+BLE_ TX_CH38+L TE Band 13 Co-location		4956	46.13	-27.87	74	35.84	34.44	8.53	32.68	-	-	P	H
		7434	42.97	-31.03	74	48.04	35.95	10.17	51.19	-	-	P	H
		10580	49.4	-18.9	68.3	48.45	39.52	12.23	50.8	-	-	P	H
		15870	50.33	-23.67	74	44.86	42.44	14.73	51.7	-	-	P	H
		4956	47.31	-26.69	74	37.02	34.44	8.53	32.68	-	-	P	V
		7434	43.38	-30.62	74	48.45	35.95	10.17	51.19	-	-	P	V
		10580	49.08	-19.22	68.3	48.13	39.52	12.23	50.8	-	-	P	V
		15870	50.4	-23.6	74	44.93	42.44	14.73	51.7	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

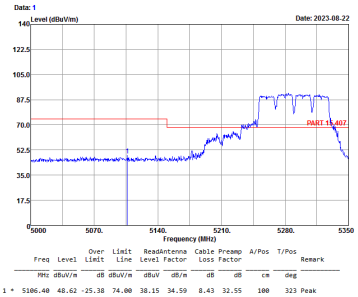
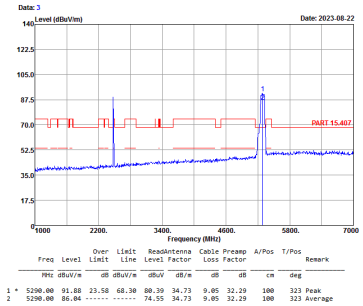
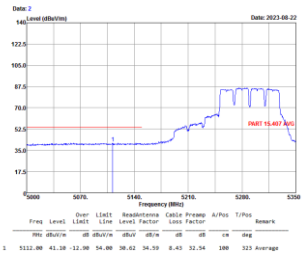
Test Plots:

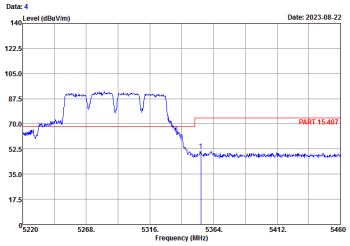
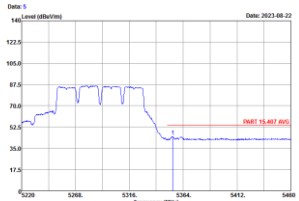
Note symbol

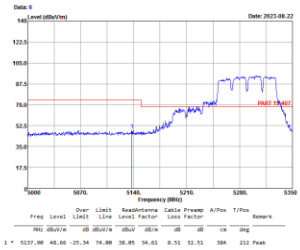
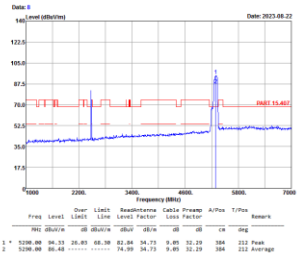
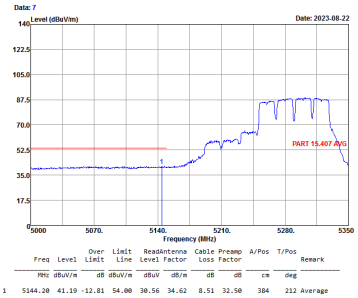
-L	**Low channel location**
-R	**High channel location**

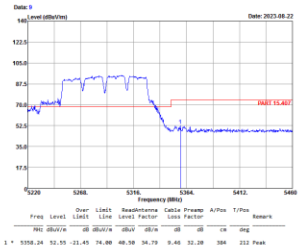
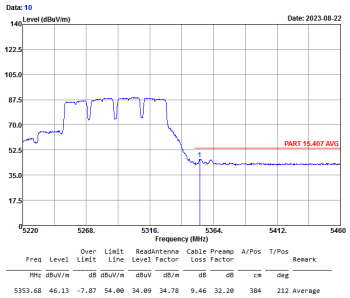
WIFI 802. 11ax80_CH58+BLE_TX_CH38+LTE Band 13 Co-location

WIFI 802. 11ax80_CH58 (Band Edge @ 3m)

	Band Edge @ 3m	
	11ax80_CH58+BLE_TX_CH38+LTE Band 13 Co-location	
	Horizontal	Fundamental
Peak		
Avg.		

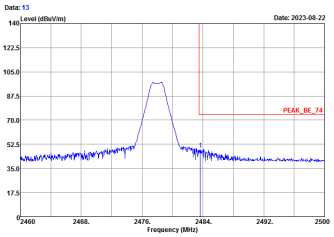
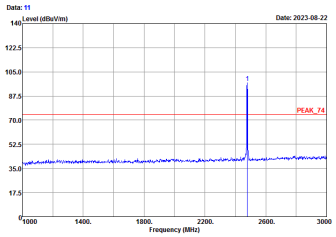
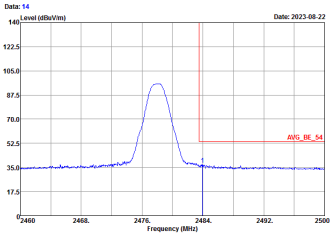
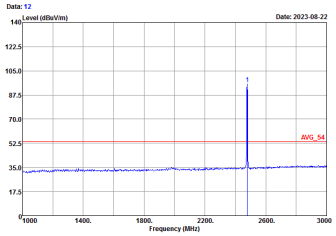
	Band Edge @ 3m	
	11ax80_CH58+BLE_TX_CH38+LTE Band 13 Co-location	
	Horizontal	Fundamental
Peak	 Freq Level Over Limit Limit Line Read Level Antenna Factor Cable Loss Preamp Factor A/Pos T/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 * 5354.40 51.44 -22.56 74.00 39.40 34.78 9.46 32.20 100 323 Peak	
Avg.	 Freq Level Over Limit Limit Line Read Level Antenna Factor Cable Loss Preamp Factor A/Pos T/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 5354.64 45.81 -8.99 54.00 32.97 34.78 9.46 32.20 100 323 Average	

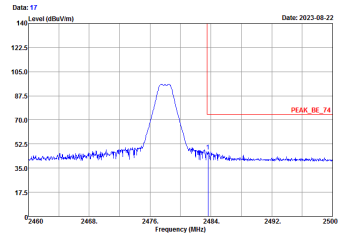
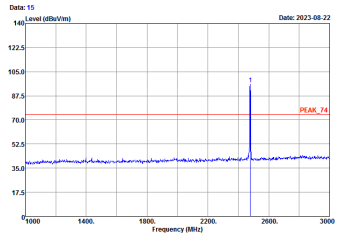
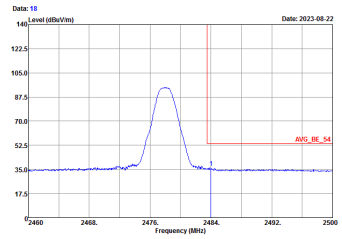
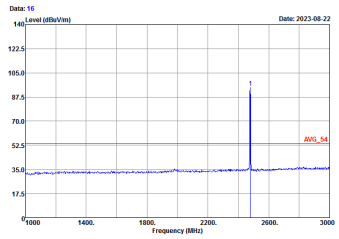
	Band Edge @ 3m	
	11ax80_CH58+BLE_TX_CH38+LTE Band 13 Co-location	
	Vertical	Fundamental
Peak		
Avg.		

	Band Edge @ 3m	
	11ax80_CH58+BLE_TX_CH38+LTE Band 13 Co-location	
	Vertical	Fundamental
Peak		
Avg.		

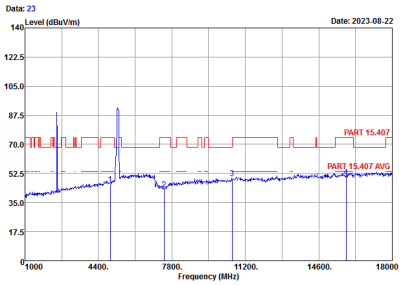
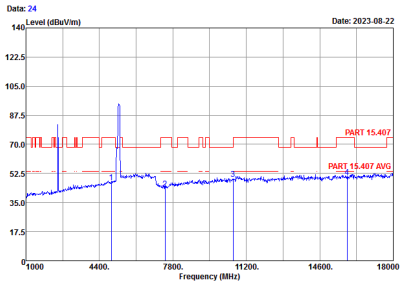
WIFI 802. 11ax80_CH58+BLE_TX_CH38+LTE Band 13 Co-location

BLE_TX_CH38 (Band Edge @ 3m)

	Band Edge @ 3m	
	11ax80_CH58+BLE_TX_CH38+LTE Band 13 Co-location	
	Horizontal	Fundamental
Peak	 Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 * 2483.64 48.70 -25.30 74.00 45.53 30.83 5.46 33.12 109 65 Peak	 Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 * 2478.00 97.13 23.13 74.00 93.99 30.81 5.46 33.13 109 65 Peak
Avg.	 Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 2483.92 37.03 -16.97 54.00 33.85 30.84 5.46 33.12 109 65 Average	 Freq Level Over Limit Limit Line ReadAntenna Level Factor Cable Loss Factor Preamp Factor A/Pos T/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 2478.00 95.58 41.58 54.00 92.44 30.81 5.46 33.13 109 65 Average

	Band Edge @ 3m	
	11ax80_CH58+BLE_TX_CH38+LTE Band 13 Co-location	
	Vertical	Fundamental
Peak	 Freq Level Over Limit Limit Line Readantenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 * 2483.60 47.09 -26.91 74.00 43.92 30.83 5.46 33.12 369 244 Peak	 Freq Level Over Limit Limit Line Readantenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 * 2478.00 95.89 21.89 74.00 92.75 30.81 5.46 33.13 369 244 Peak
Avg.	 Freq Level Over Limit Limit Line Readantenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 2484.00 36.21 -17.79 54.00 33.03 30.84 5.46 33.12 369 244 Average	 Freq Level Over Limit Limit Line Readantenna Level Factor Cable Loss Preamp Factor A/Pos T/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 2478.00 94.20 40.20 54.00 91.06 30.81 5.46 33.13 369 244 Average

WIFI 802. 11ax80_CH58+BLE_TX_CH38+LTE Band 13 Co-location (Harmonic @ 3m)

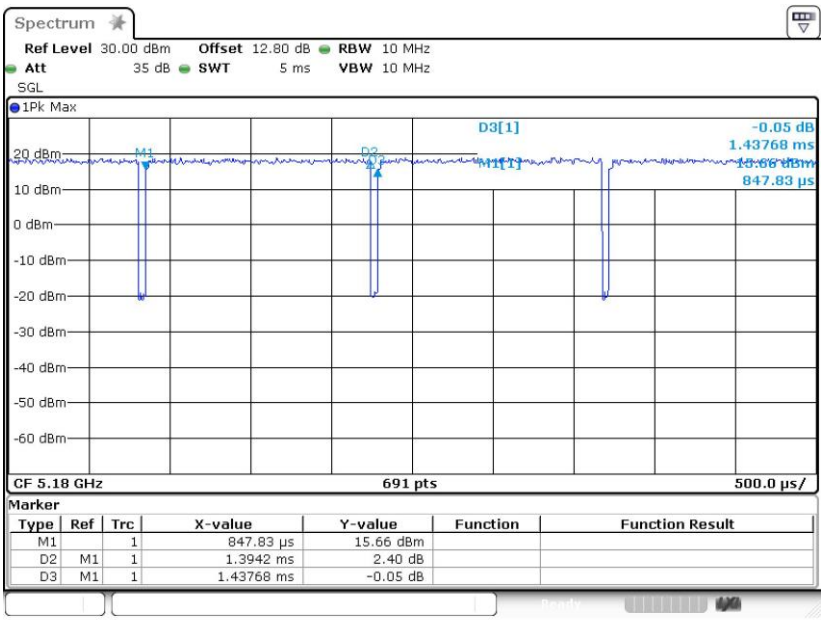
	(Harmonic @ 3m)	
	11ax80_CH58+BLE_TX_CH38+LTE Band 13 Co-location	
	Horizontal	Vertical
Peak	 Freq Level Over Limit Limit Line ReadLevel Antenna Factor Cable Loss Preamp Factor A/Pos T/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 4956.00 46.13 -27.87 74.00 35.84 34.44 8.53 32.68 --- --- Peak 2 7434.00 42.97 -31.03 74.00 48.04 35.95 10.17 51.19 --- --- Peak 3 * 10580.00 49.40 -18.90 68.30 48.45 39.52 12.23 50.80 --- --- Peak 4 15870.00 50.33 -23.67 74.00 44.86 42.44 14.73 51.70 --- --- Peak	 Freq Level Over Limit Limit Line ReadLevel Antenna Factor Cable Loss Preamp Factor A/Pos T/Pos Remark MHz dBuV/m dB dBuV/m dBuV dB/m dB dB cm deg 1 4956.00 47.31 -26.69 74.00 37.02 34.44 8.53 32.68 --- --- Peak 2 7434.00 43.38 -30.62 74.00 48.45 35.95 10.17 51.19 --- --- Peak 3 * 10580.00 49.08 -19.22 68.30 48.13 39.52 12.23 50.80 --- --- Peak 4 15870.00 50.40 -23.60 74.00 44.93 42.44 14.73 51.70 --- --- Peak

Note: the highest signals over limit are BLE and WIFI 5G co-location fundamental signals.

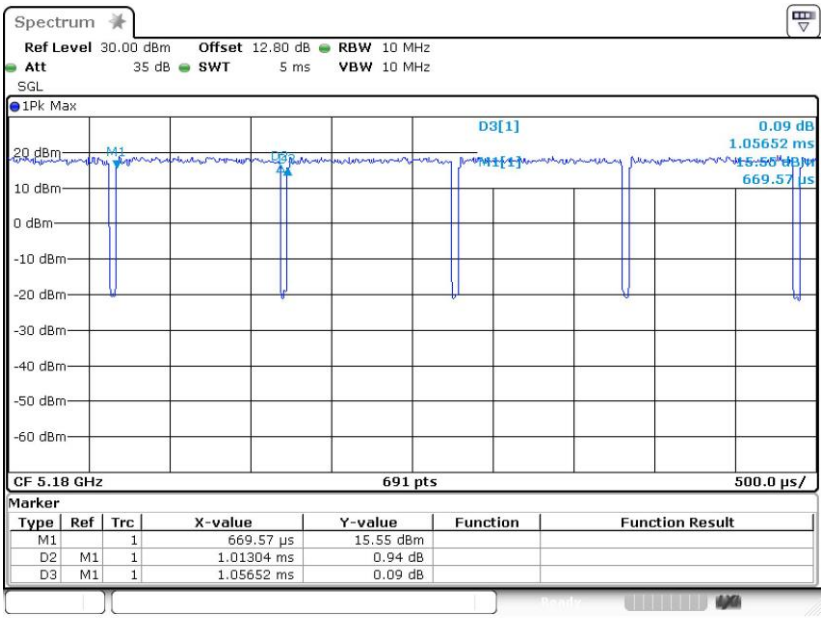
Appendix E. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
10+11	802.11a	96.98	1.394	0.717	1kHz
10+11	802.11ax HE20	95.88	1.013	0.987	1kHz
10+11	802.11ax HE40	92.44	0.532	1.880	3kHz
10+11	802.11ax HE80	86.90	0.289	3.467	10kHz

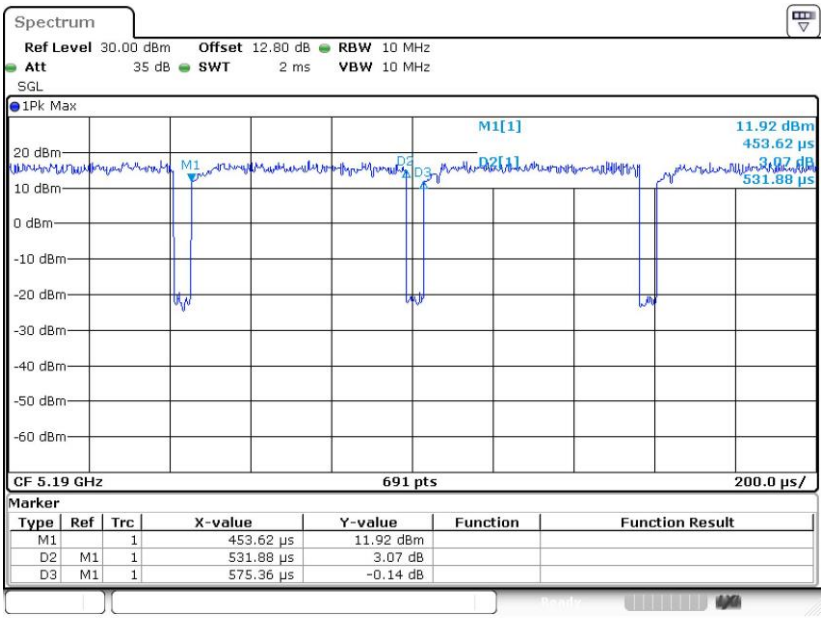
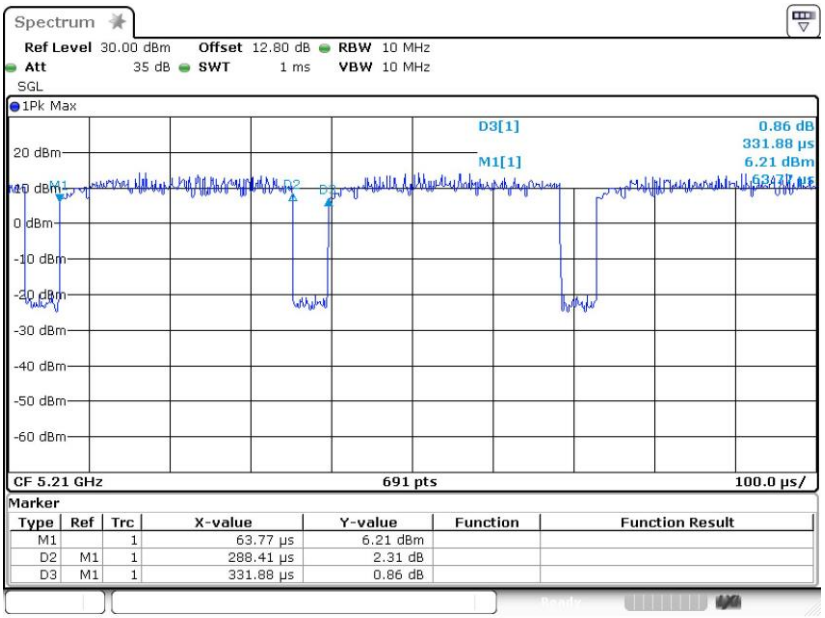
802.11a



802.11ax HE20



802.11ax HE40



802.11ax HE80