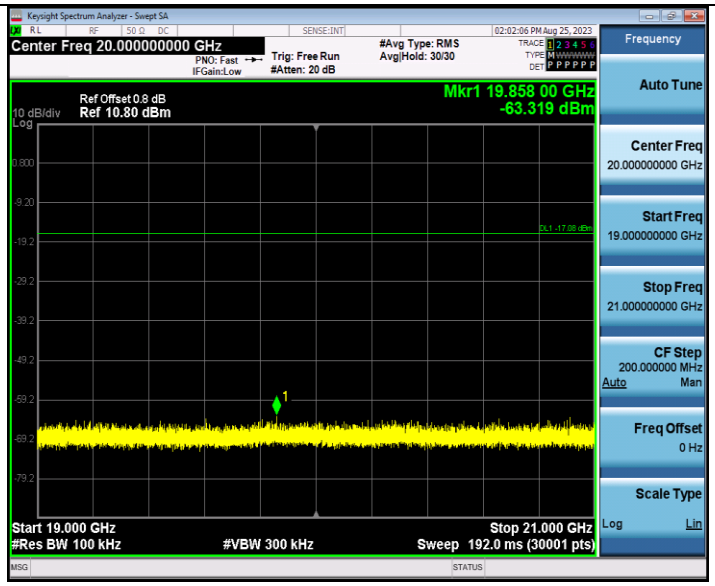
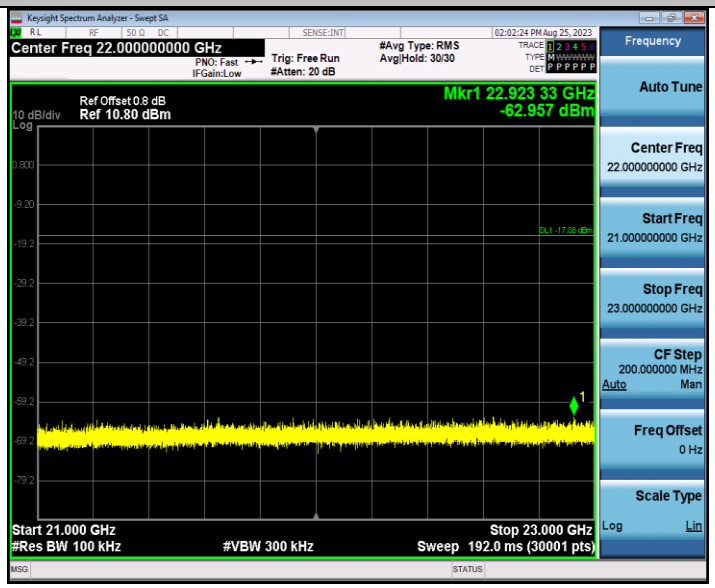
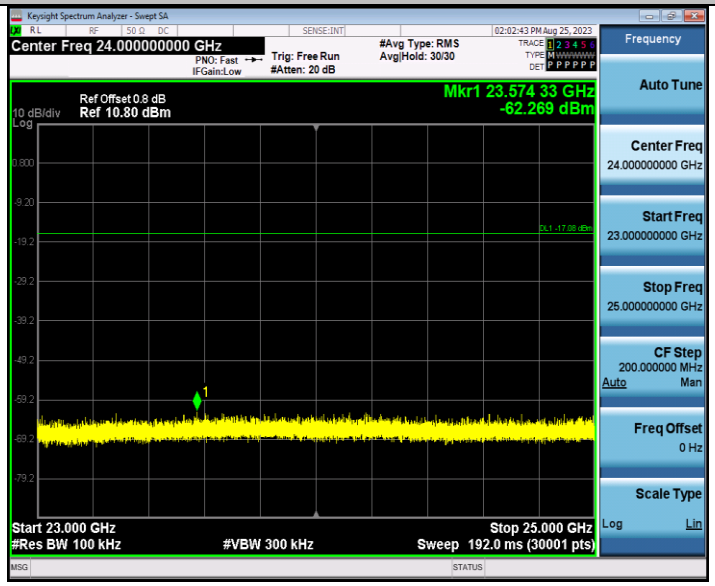


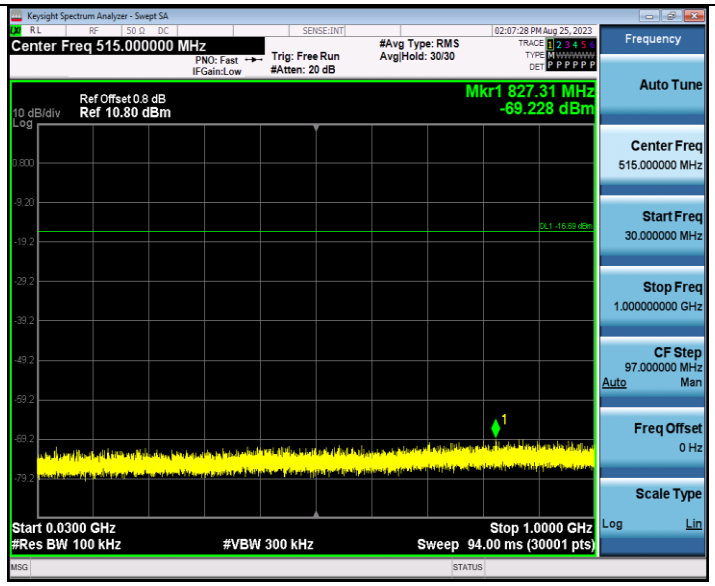
ZIGB_Ant1_2440_21000~23000



ZIGB_Ant1_2440_23000~25000



ZIGB_Ant1_2480_30~1000



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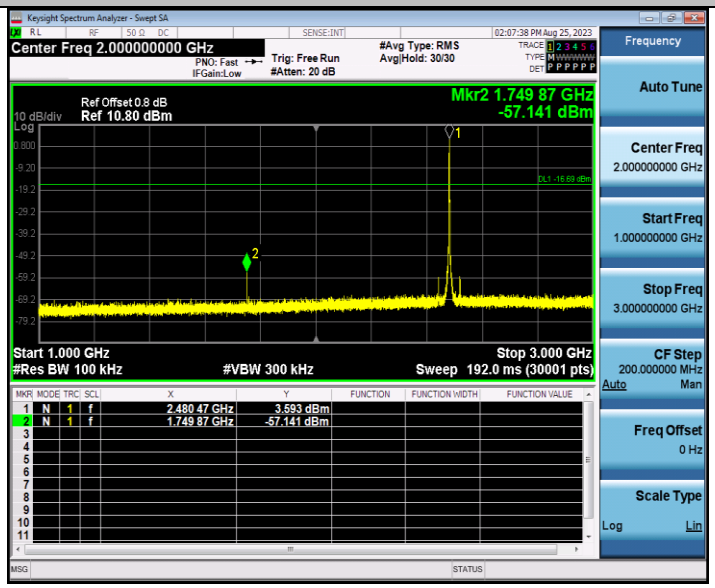
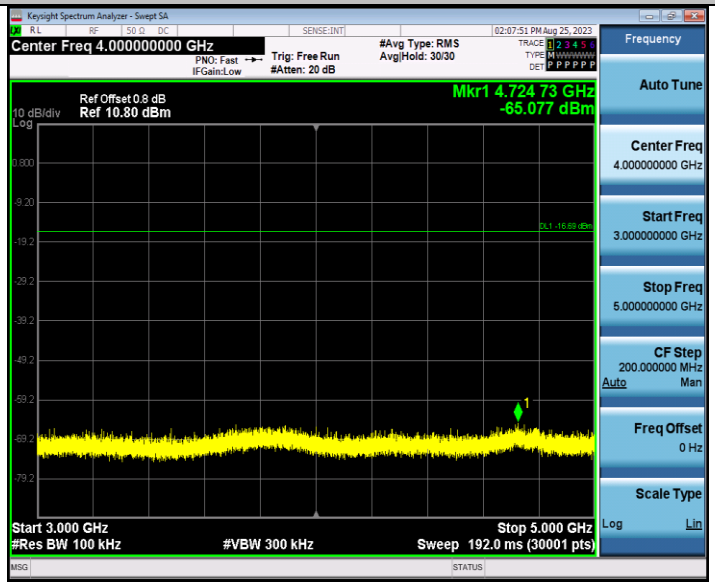
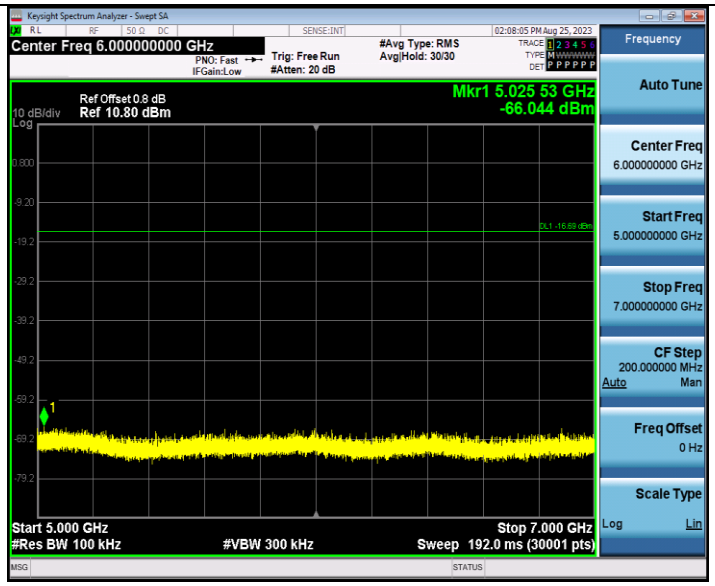


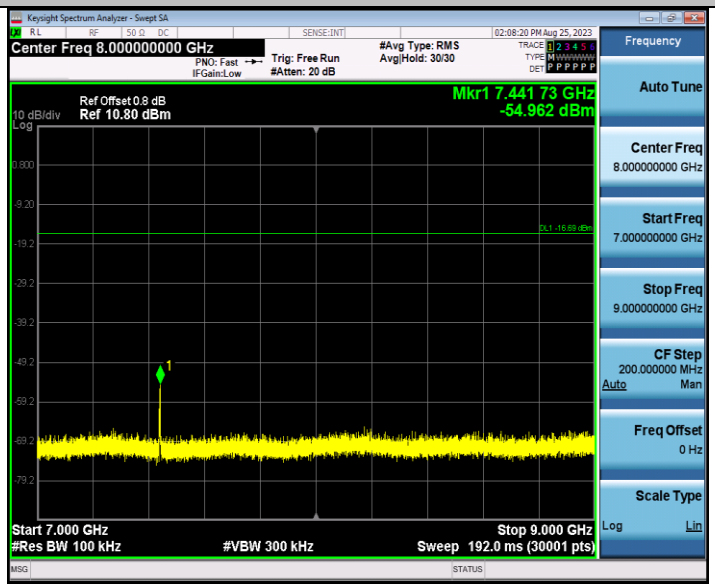
ZIGB_Ant1_2480_3000~5000



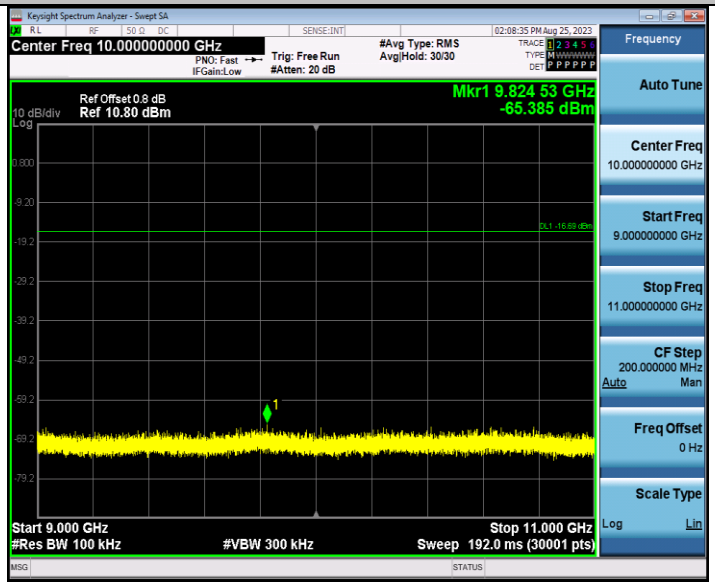
ZIGB_Ant1_2480_5000~7000



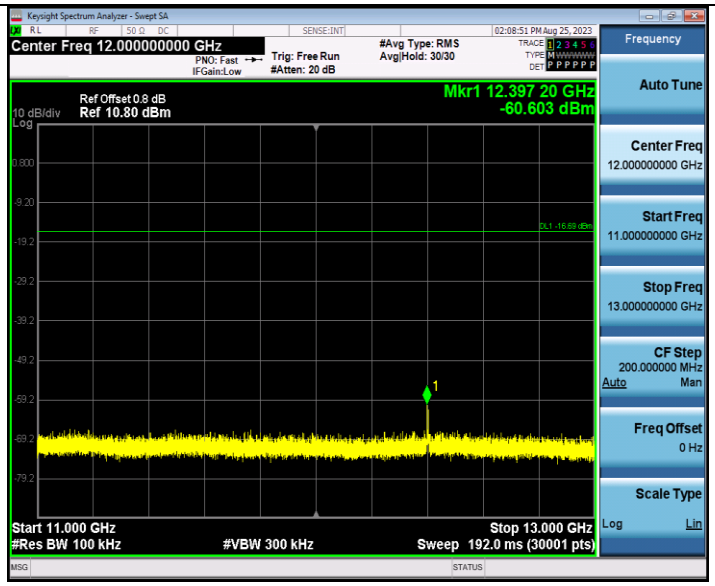
ZIGB_Ant1_2480_7000~9000



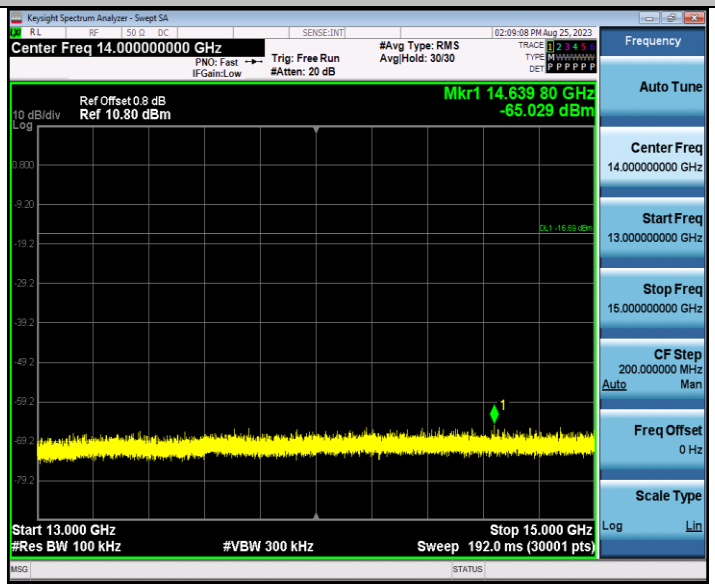
ZIGB_Ant1_2480_9000~11000



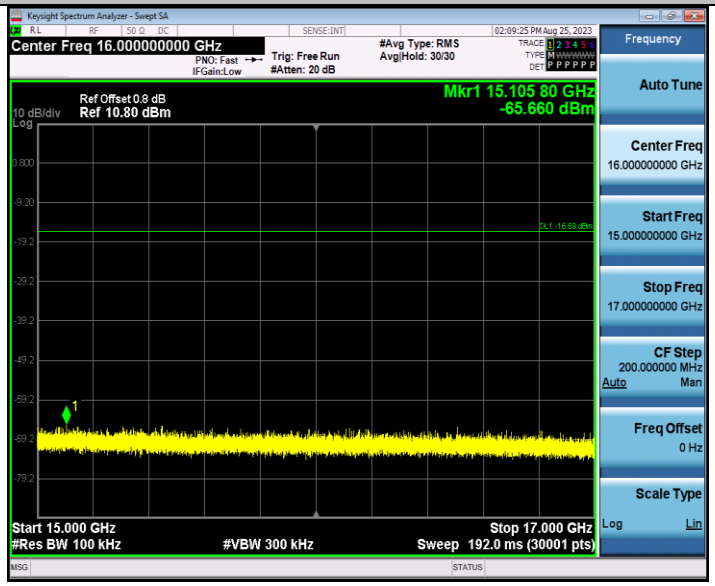
ZIGB_Ant1_2480_11000~13000



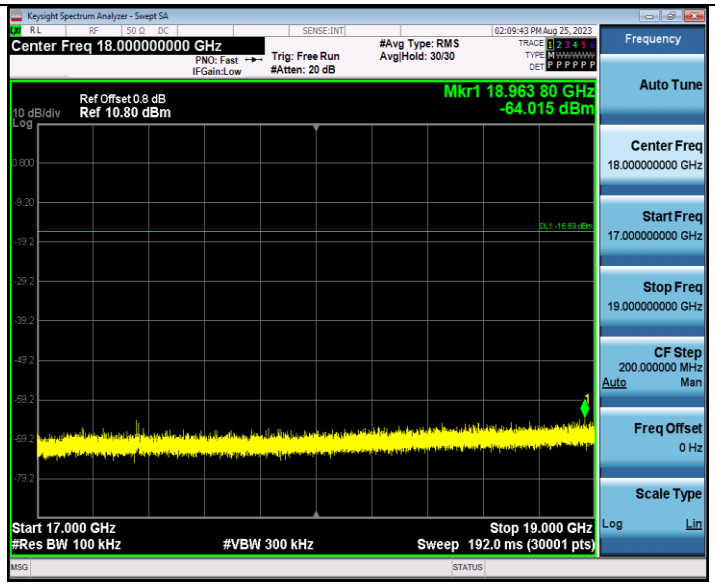
ZIGB_Ant1_2480_13000~15000



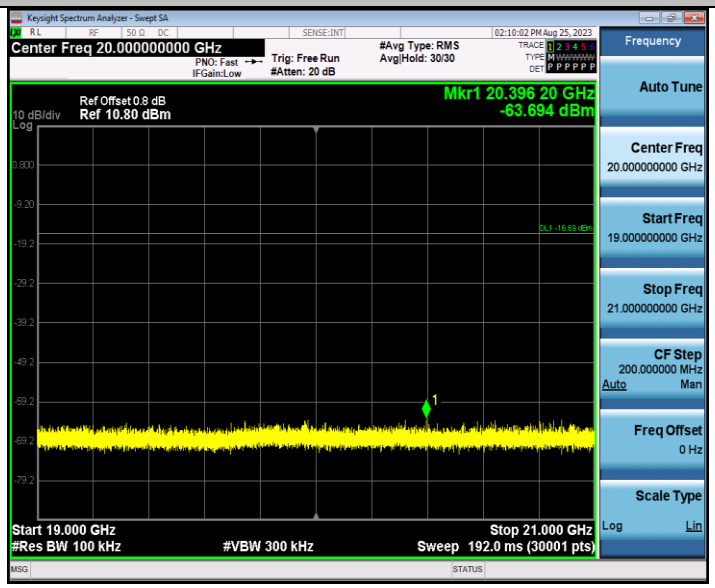
ZIGB_Ant1_2480_15000~17000



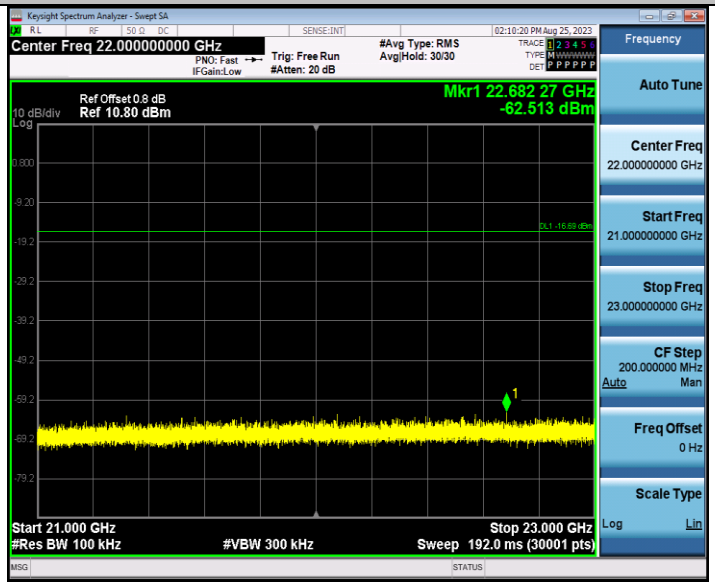
ZIGB_Ant1_2480_17000~19000



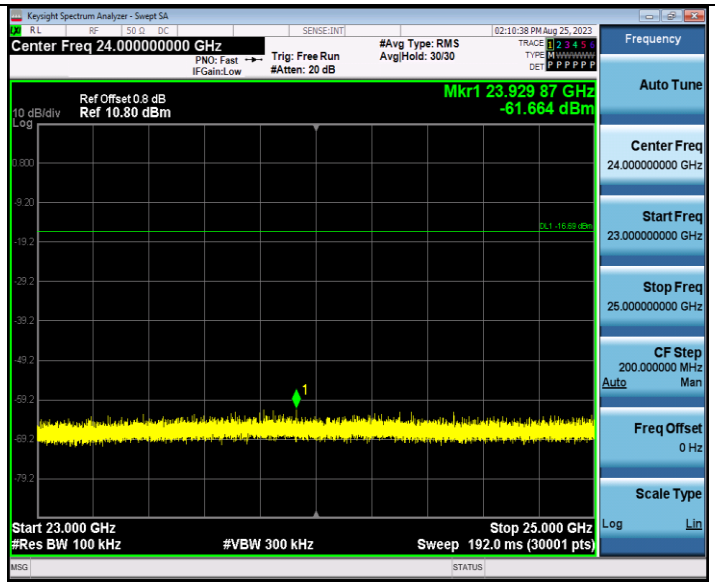
ZIGB_Ant1_2480_19000~21000



ZIGB_Ant1_2480_21000~23000

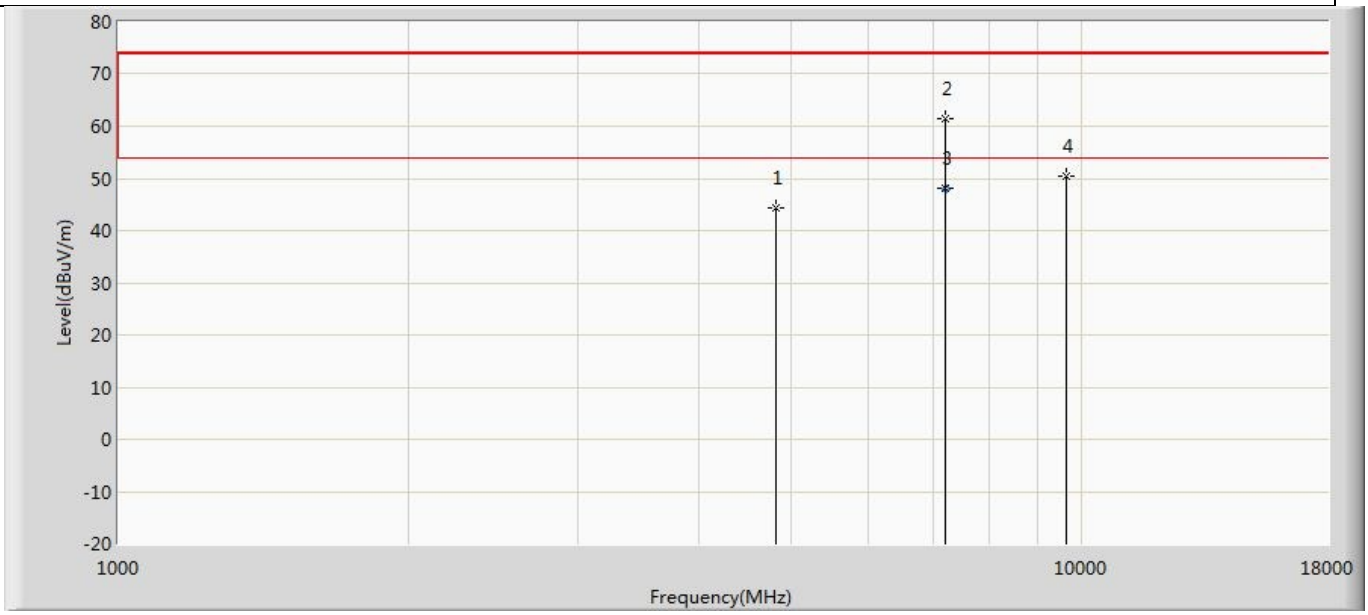


ZIGB_Ant1_2480_23000~25000


Keysight Spectrum Analyzer - Swept SA
Center Freq 24.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 30/30
02:10:38 PM Aug 25, 2023
Ref Offset 0.8 dB
10 dB/div
Ref 10.80 dBm
Log
Mkr1 23.929 87 GHz
-61.664 dBm
Start 23.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 192.0 ms (30001 pts)
Frequency
Auto Tune
Center Freq
24.000000000 GHz
Start Freq
23.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
200.000000 MHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin

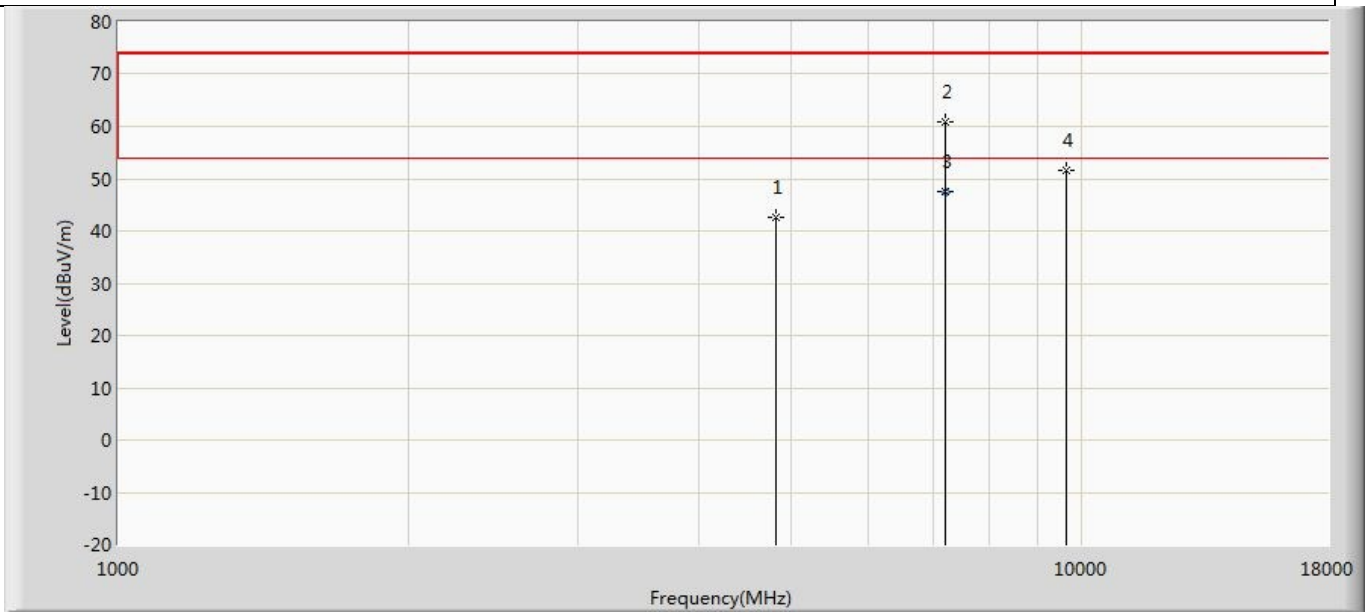
Appendix G: Emissions in Restricted Bands

Profile: 2350863R	Page No.: 7
Engineer: Pengchengyang	
Site: AC5	Time: 2023/08/21 - 20:49
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Hue Connect MSL	Power: 24 VDC
Note: Mode 5：Transmit at 2405MHz by Zigbee	



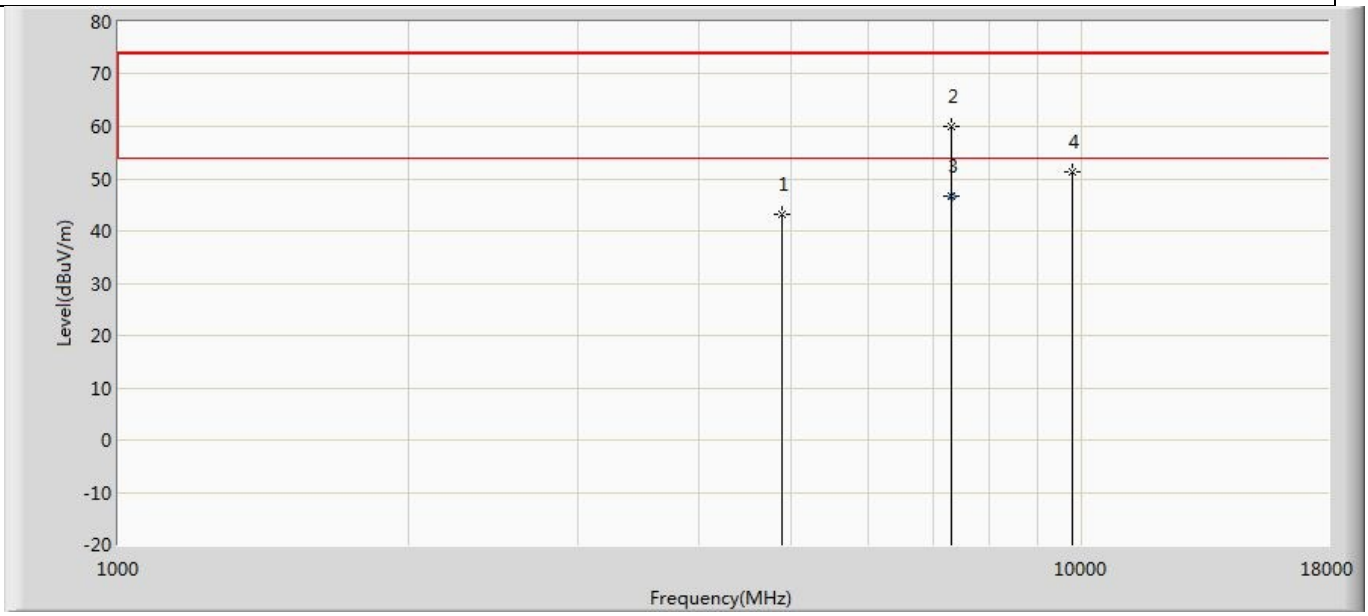
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4810.000	44.486	58.577	-29.514	74.000	-14.092	PK
2		7215.000	61.569	69.943	-12.431	74.000	-8.374	PK
3	*	7215.000	48.219	56.593	-5.781	54.000	-8.374	AV
4		9620.000	50.396	54.090	-23.604	74.000	-3.693	PK

Profile: 2350863R	Page No.: 8
Engineer: Pengchengyang	
Site: AC5	Time: 2023/08/21 - 20:49
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Hue Connect MSL	Power: 24 VDC
Note: Mode 5：Transmit at 2405MHz by Zigbee	



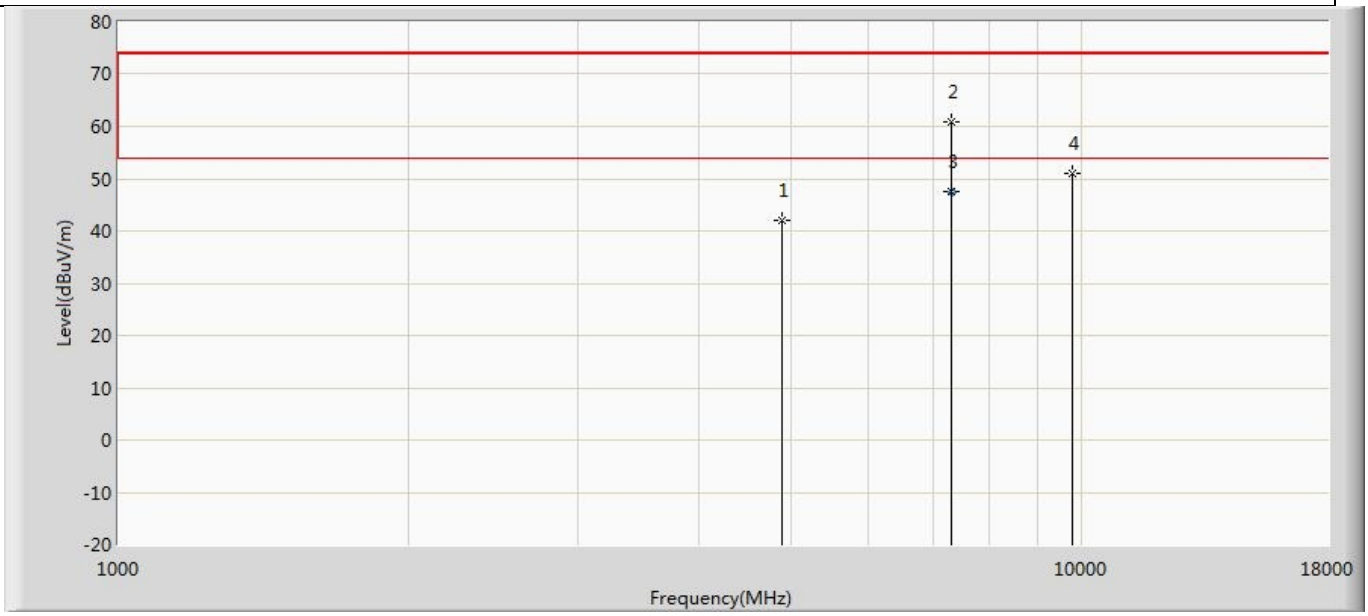
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4810.000	42.669	56.760	-31.331	74.000	-14.092	PK
2		7215.000	61.006	69.380	-12.994	74.000	-8.374	PK
3	*	7215.000	47.656	56.030	-6.344	54.000	-8.374	AV
4		9620.000	51.460	55.154	-22.540	74.000	-3.693	PK

Profile: 2350863R	Page No.: 9
Engineer: Pengchengyang	
Site: AC5	Time: 2023/08/21 - 20:49
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Hue Connect MSL	Power: 24 VDC
Note: Mode 5：Transmit at 2440MHz by Zigbee	



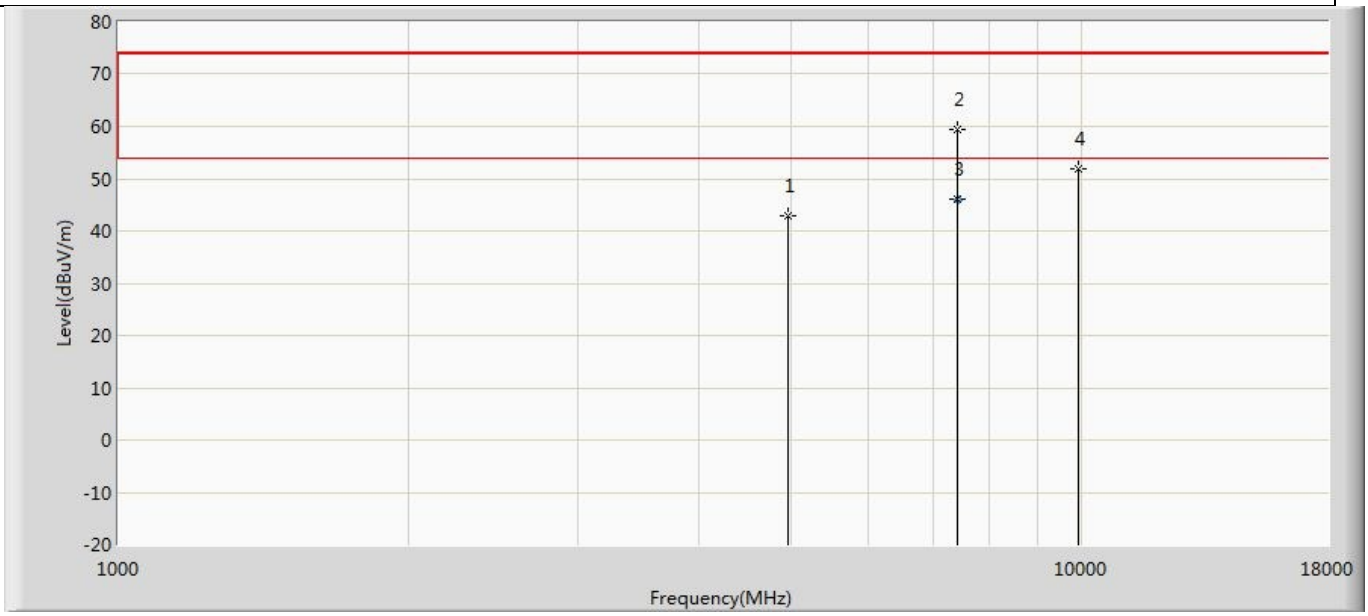
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	43.311	56.996	-30.689	74.000	-13.685	PK
2		7320.000	60.063	68.443	-13.937	74.000	-8.380	PK
3	*	7320.000	46.713	55.093	-7.287	54.000	-8.380	AV
4		9760.000	51.360	54.823	-22.640	74.000	-3.463	PK

Profile: 2350863R	Page No.: 10
Engineer: Pengchengyang	
Site: AC5	Time: 2023/08/21 - 20:49
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Hue Connect MSL	Power: 24 VDC
Note: Mode 5：Transmit at 2440MHz by Zigbee	



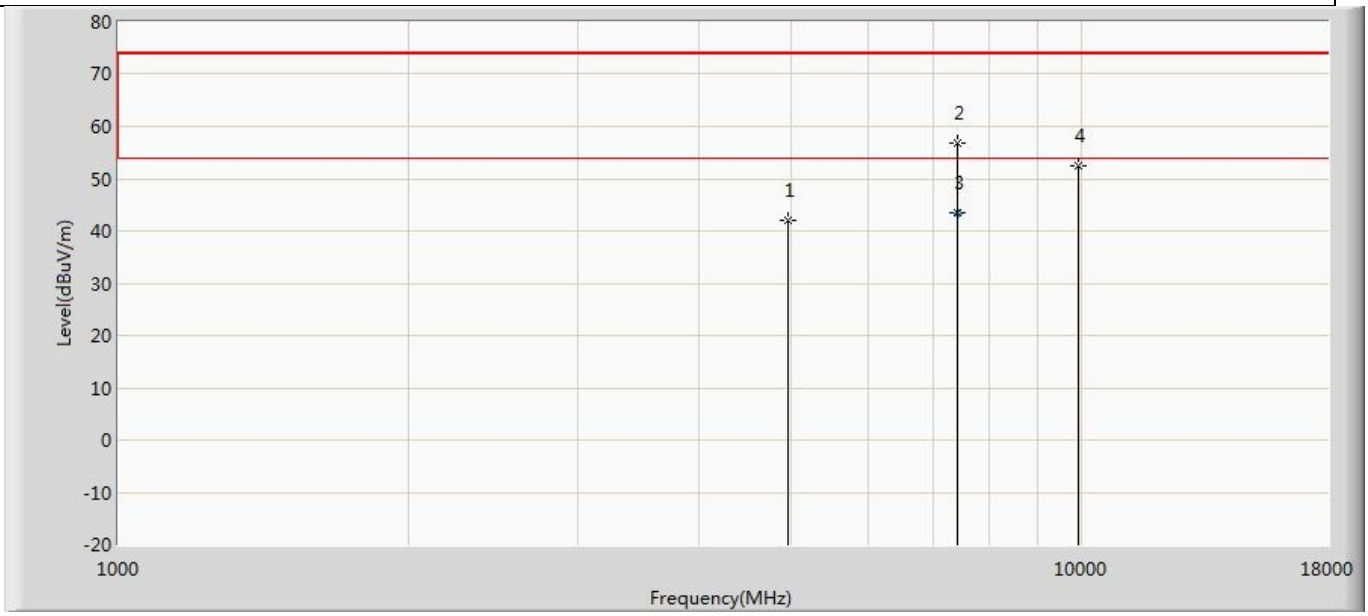
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	42.005	55.690	-31.995	74.000	-13.685	PK
2		7320.000	60.956	69.336	-13.044	74.000	-8.380	PK
3	*	7320.000	47.606	55.986	-6.394	54.000	-8.380	AV
4		9760.000	50.926	54.389	-23.074	74.000	-3.463	PK

Profile: 2350863R	Page No.: 11
Engineer: Pengchengyang	
Site: AC5	Time: 2023/08/21 - 20:49
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Horizontal
EUT: Hue Connect MSL	Power: 24 VDC
Note: Mode 5：Transmit at 2480MHz by Zigbee	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	42.886	56.408	-31.114	74.000	-13.522	PK
2		7440.000	59.538	67.507	-14.462	74.000	-7.969	PK
3	*	7440.000	46.188	54.157	-7.812	54.000	-7.969	AV
4		9920.000	51.795	54.746	-22.205	74.000	-2.951	PK

Profile: 2350863R	Page No.: 12
Engineer: Pengchengyang	
Site: AC5	Time: 2023/08/21 - 20:49
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055(1-18GHz)	Polarity: Vertical
EUT: Hue Connect MSL	Power: 24 VDC
Note: Mode 5：Transmit at 2480MHz by Zigbee	

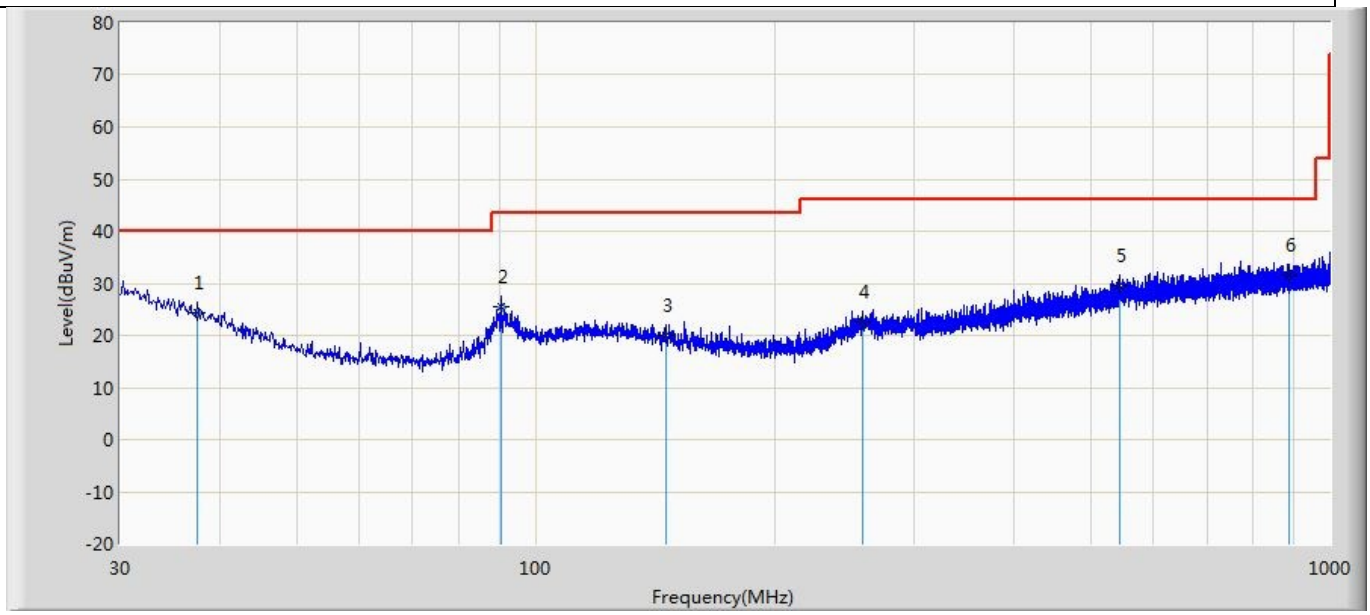


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	42.168	55.690	-31.832	74.000	-13.522	PK
2		7440.000	56.830	64.799	-17.170	74.000	-7.969	PK
3	*	7440.000	43.480	51.449	-10.520	54.000	-7.969	AV
4		9920.000	52.527	55.478	-21.473	74.000	-2.951	PK

Note:
1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, worst case are at least 20dB below the limits, therefore no data appear in the report.
3. The test frequency range, 18GHz~26GHz test result on peak is lower than average limit, all is the noise base, therefore no data appear in the report.
4. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
5. According to FCC15.35(c), a duty cycle correction factor is applied here. For this product , maximum duty cycle will be 21.5% , which is 13.35dB. Hence this margin could cover the highest spurious above.

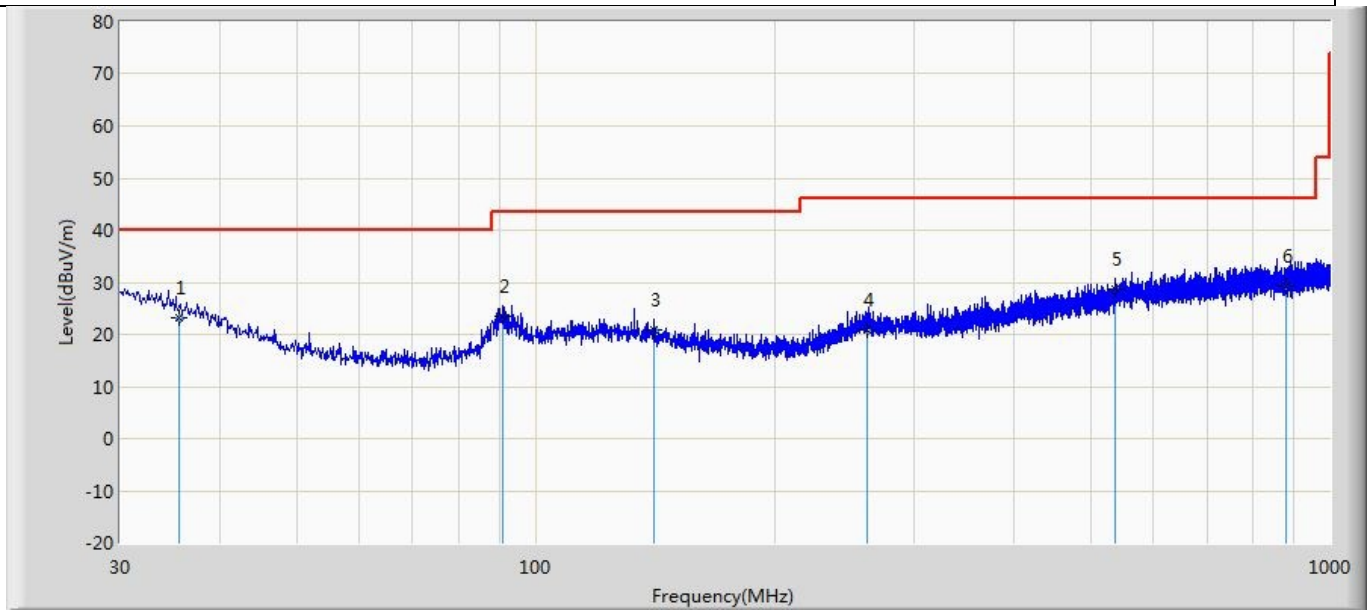
The worst case of Radiated Emission below 1GHz :

Profile: 2350863R	Page No.: 209
Engineer: Yuliu	
Site: AC2	Time: 2023/07/15 - 00:18
Limit: FCC_Part 15.209_RE (3m)	Margin: 0
Probe: AC2_3M(30-1000M)-0050-2933	Polarity: Horizontal
EUT: Hue Connect MSL	Power: 24 VDC
Note: Mode 1：Transmit at 2405MHz by Zigbee	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		37.518	24.433	2.556	-15.567	40.000	21.876	QP
2		90.382	25.461	9.267	-18.039	43.500	16.194	QP
3		145.794	20.059	2.247	-23.441	43.500	17.813	QP
4		257.950	22.685	1.696	-23.315	46.000	20.989	QP
5		543.979	29.501	2.456	-16.499	46.000	27.045	QP
6	*	889.905	31.609	2.341	-14.391	46.000	29.268	QP

Profile: 2350863R	Page No.: 210
Engineer: Yuliu	
Site: AC2	Time: 2023/07/15 - 00:19
Limit: FCC_Part 15.209_RE (3m)	Margin: 0
Probe: AC2_3M(30-1000M)-0050-2933	Polarity: Vertical
EUT: Hue Connect MSL	Power: 24 VDC
Note: Mode 1：Transmit at 2405MHz by Zigbee	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		35.577	23.080	0.405	-16.920	40.000	22.675	QP
2		90.989	23.589	7.248	-19.911	43.500	16.341	QP
3		141.186	20.989	2.982	-22.511	43.500	18.007	QP
4		261.466	20.748	-0.382	-25.252	46.000	21.131	QP
5		536.340	28.725	2.363	-17.275	46.000	26.362	QP
6	*	879.114	29.132	-0.038	-16.868	46.000	29.170	QP

Note:
1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp)

The End