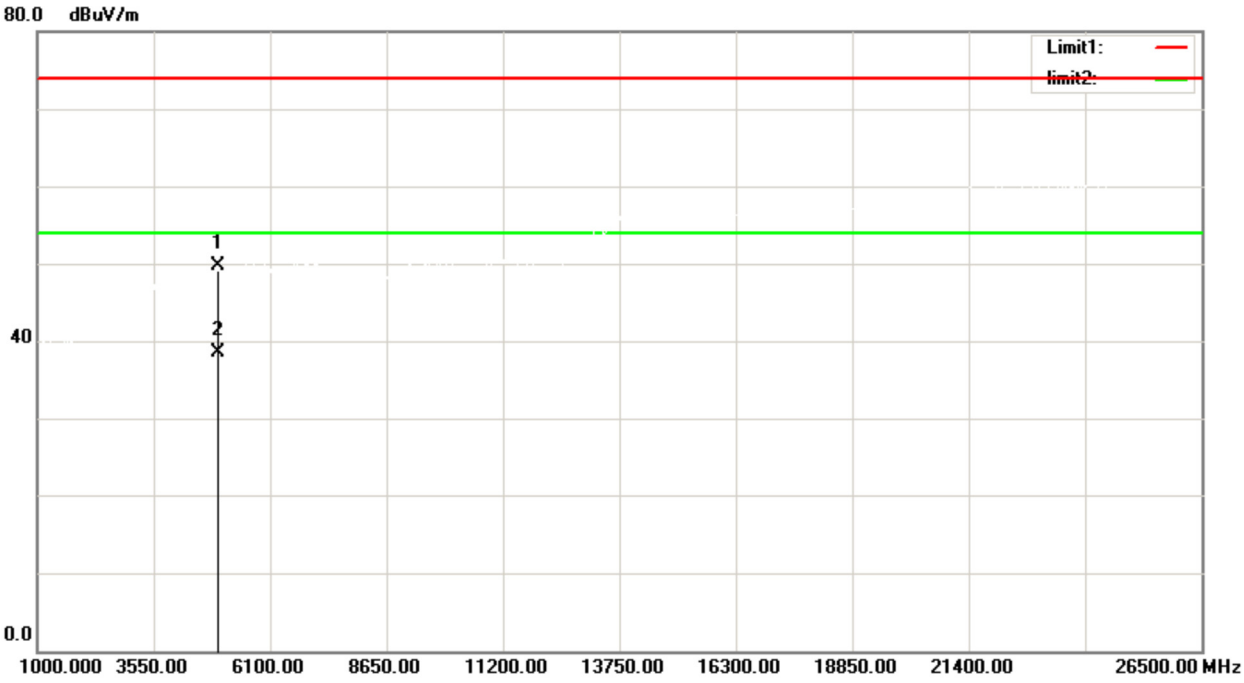
Test Mode:	TX 2480 MHz_CH78_1Mbps

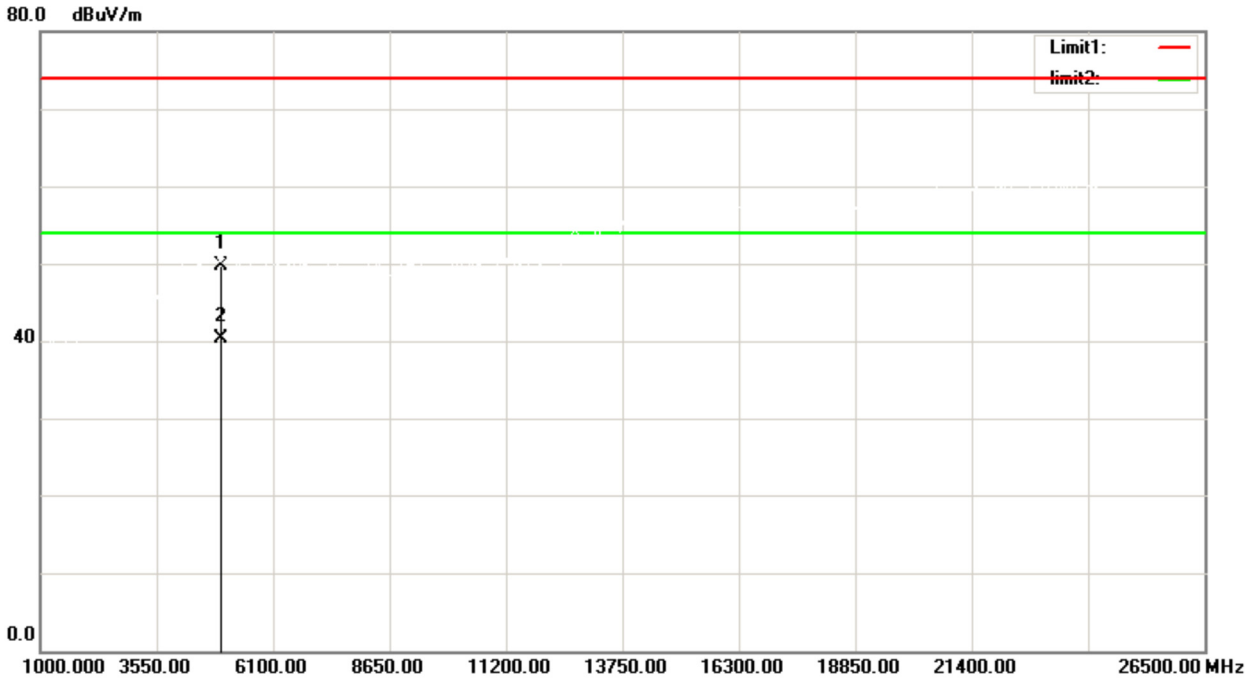
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1		4960.000	51.44	-1.76	49.68	74.00	-24.32	peak	150	23	
2	*	4960.000	40.33	-1.76	38.57	54.00	-15.43	AVG	150	23	

Test Mode:	TX 2480 MHz_CH78_1Mbps

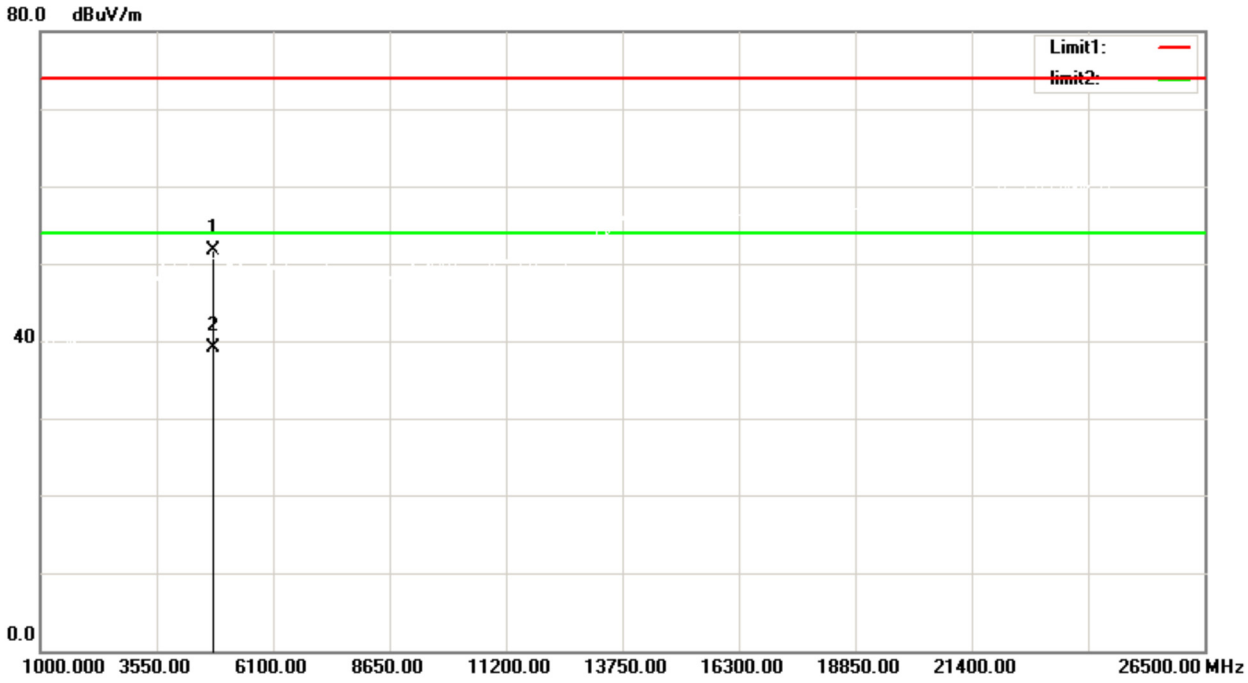
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1		4960.000	51.44	-1.76	49.68	74.00	-24.32	peak	150	36	
2	*	4960.000	42.07	-1.76	40.31	54.00	-13.69	AVG	150	36	

Test Mode:	TX 2402 MHz_CH00_3Mbps

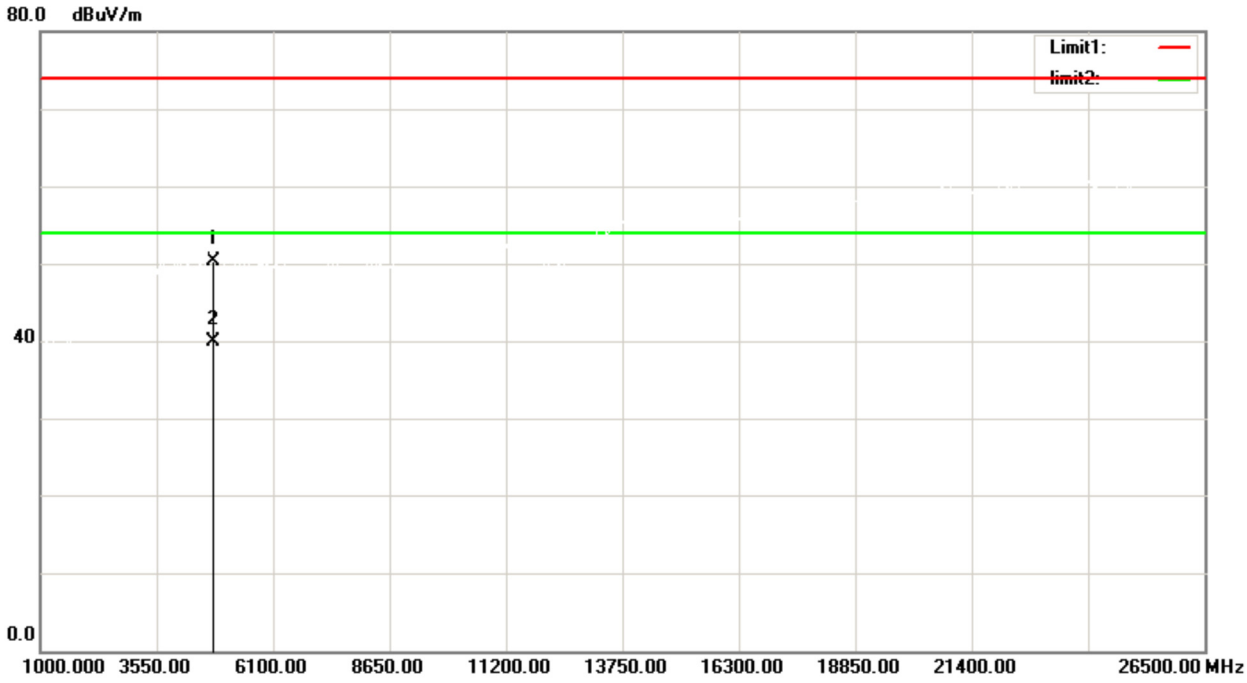
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1		4804.000	53.59	-1.90	51.69	74.00	-22.31	peak	150	104	
2	*	4804.000	40.92	-1.90	39.02	54.00	-14.98	AVG	150	104	

Test Mode:	TX 2402 MHz_CH00_3Mbps

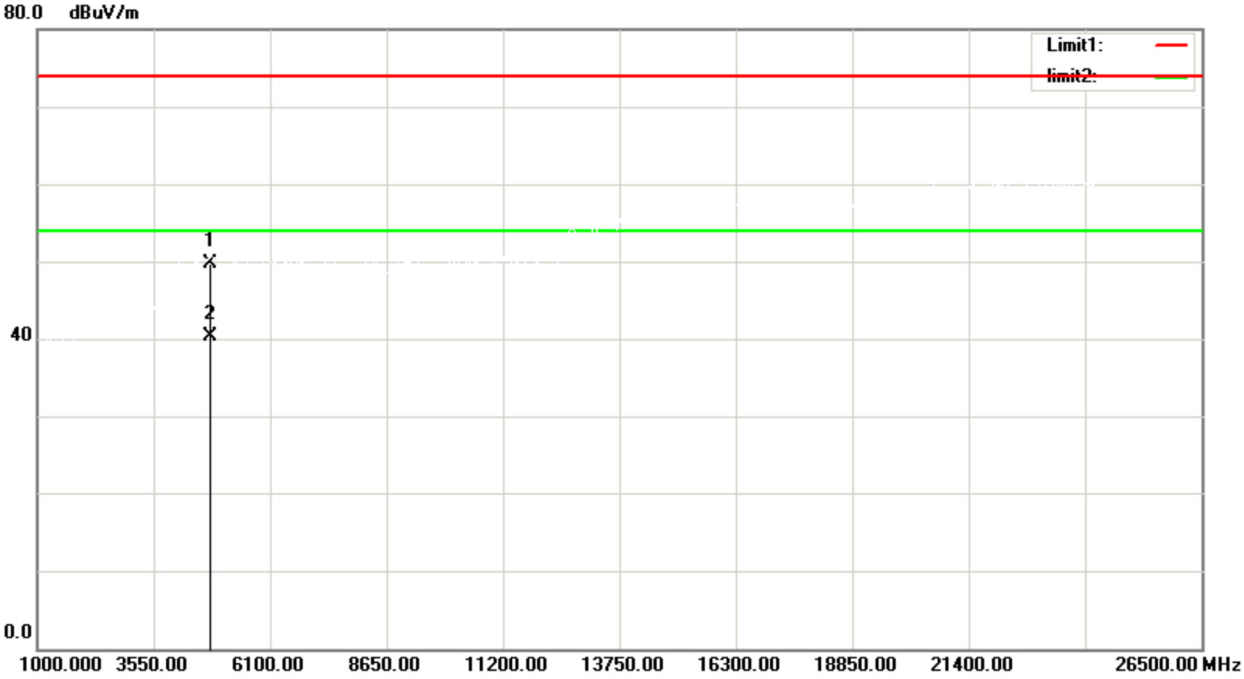
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1		4804.000	52.26	-1.90	50.36	74.00	-23.64	peak	150	11	
2	*	4804.000	41.77	-1.90	39.87	54.00	-14.13	AVG	150	11	

Test Mode:	TX 2441 MHz_CH39_3Mbps

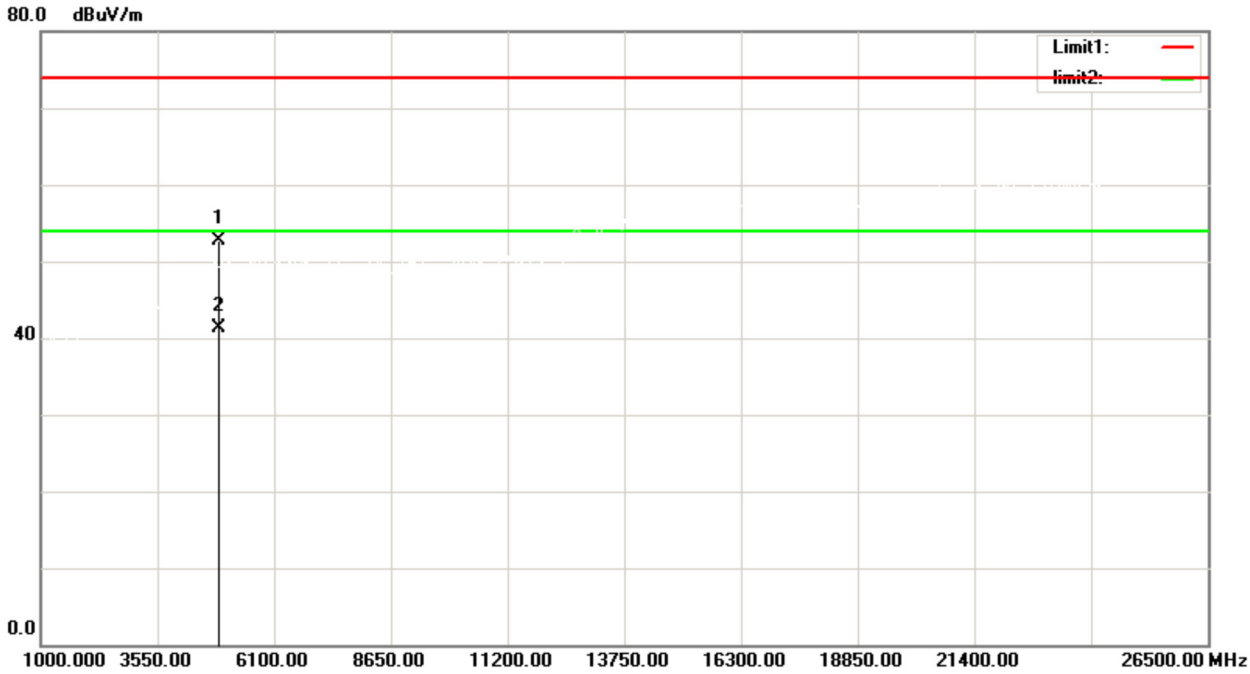
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1		4804.000	51.58	-1.90	49.68	74.00	-24.32	peak	150	250	
2	*	4804.000	42.23	-1.90	40.33	54.00	-13.67	AVG	150	250	

Test Mode:	TX 2441 MHz_CH39_3Mbps

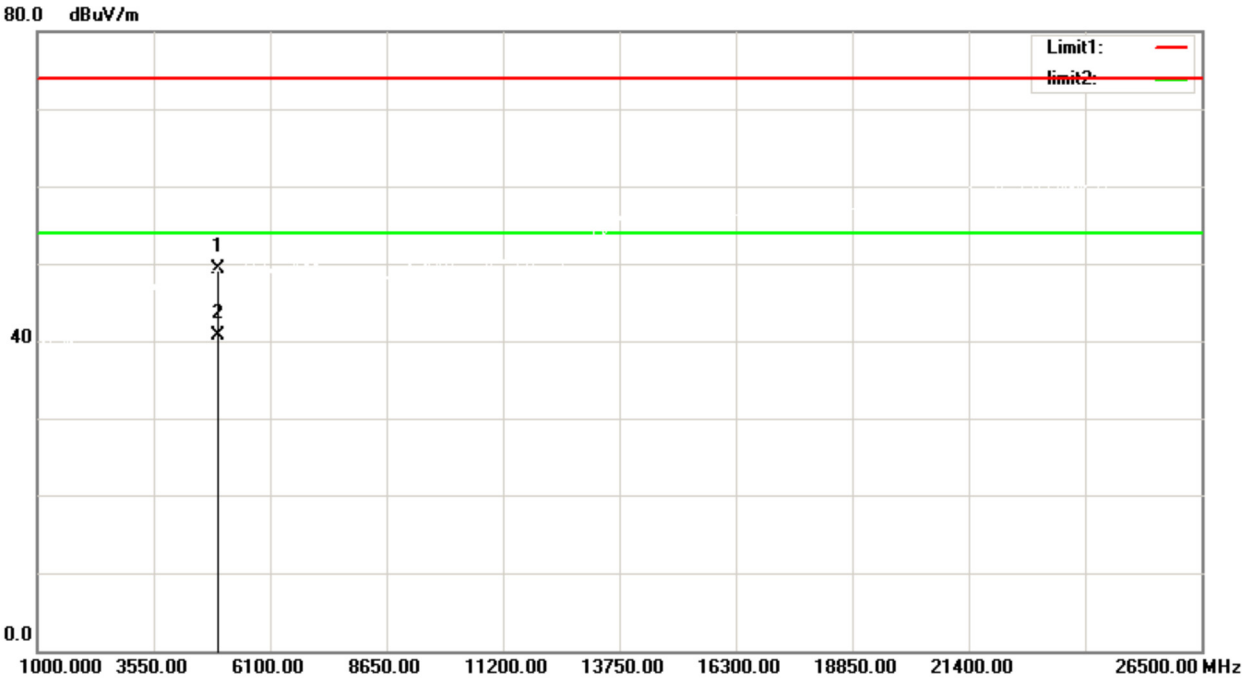
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1		4884.000	54.84	-2.15	52.69	74.00	-21.31	peak	150	269	
2	*	4884.000	43.48	-2.15	41.33	54.00	-12.67	AVG	150	269	

Test Mode:	TX 2480 MHz_CH78_3Mbps

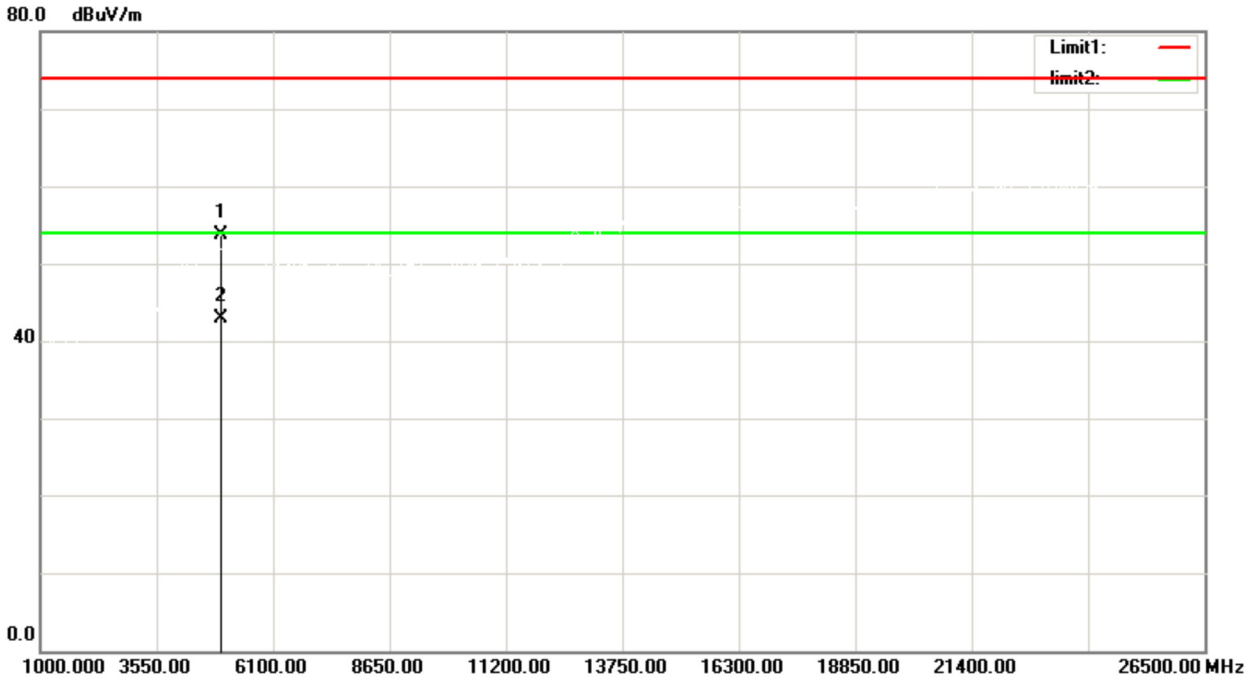
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1		4960.000	51.12	-1.76	49.36	74.00	-24.64	peak	150	98	
2	*	4960.000	42.56	-1.76	40.80	54.00	-13.20	AVG	150	98	

Test Mode:	TX 2480 MHz_CH78_3Mbps

Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1		4960.000	55.42	-1.76	53.66	74.00	-20.34	peak	150	10	
2	*	4960.000	44.64	-1.76	42.88	54.00	-11.12	AVG	150	10	

6 NUMBER OF HOPPING FREQUENCY

6.1 LIMIT

FCC Part15, Subpart C (15.247)	
Section	Test Item
15.247(a)(1)(iii)	Number of Hopping Frequency

6.2 TEST PROCEDURE AND SETTING

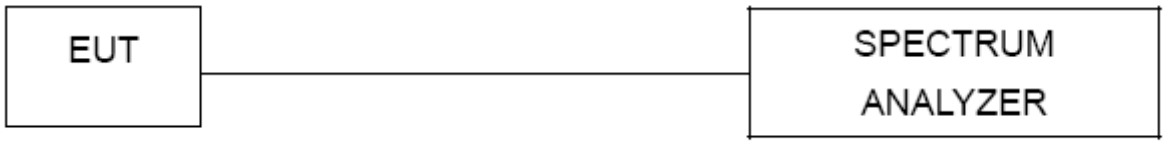
a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. Spectrum Setting: RBW=100 kHz, VBW=300 kHz, Sweep time = Auto.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> Operating Frequency Range
RBW	100kHz
VBW	300kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

6.3 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum analyzer	KEYSIGHT	N9010A	MY55150427	2025/05/22
2	Attenuator	Mini-Circuits	BW-S10W2	101109	N/A
3	RF Cable	Mi-cable	C10-01-01-1	100309	N/A

6.4 TEST SETUP

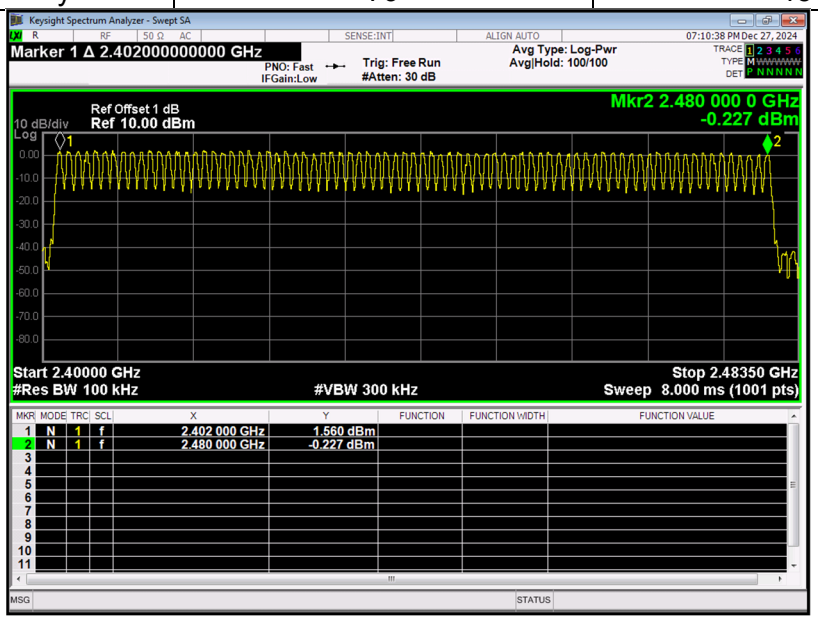


6.5 EUT OPERATION CONDITIONS

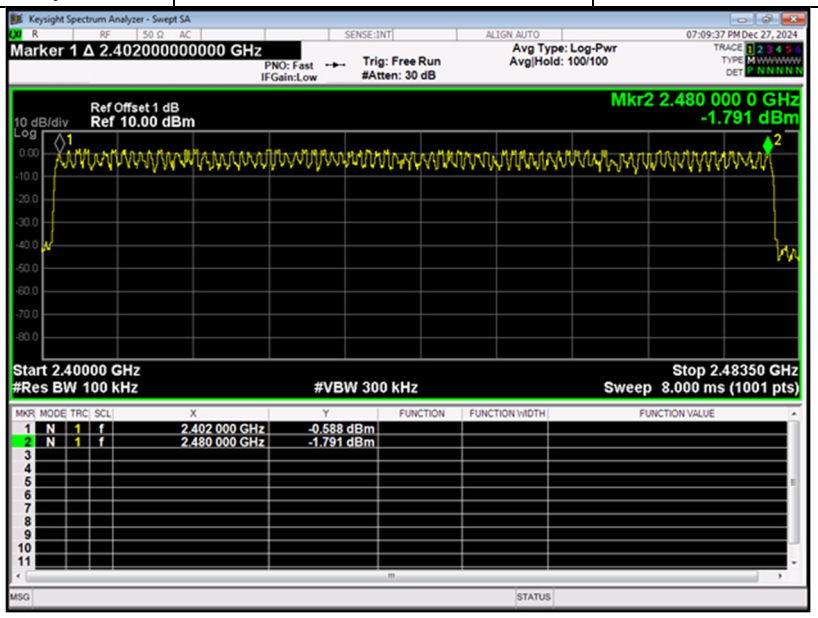
The EUT tested system was configured as the statements of 4.5 unless otherwise a special operating condition is specified in the follows during the testing.

6.6 TEST RESULTS

Hopping Mode_1Mbps		
Number of Hopping Frequency	Measurement result(CH)	Limit(CH)
	79	≥15



Hopping Mode_3Mbps		
Number of Hopping Frequency	Measurement result(CH)	Limit(CH)
	79	≥15



7 AVERAGE TIME OF OCCUPANCY

7.1 LIMIT

FCC Part15, Subpart C (15.247)		
Section	Test Item	Limit
15.247(a)(1)(iii)	Average Time of Occupancy	0.4sec

7.2 TEST PROCEDURE AND SETTING

a. The transmitter output (antenna port) was connected to the spectrum analyzer
b. Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz
c. Use a video trigger with the trigger level set to enable triggering only on full pulses
d. Sweep Time is more than once pulse time
e. Set the center frequency on any frequency would be measure and set the frequency span to zero span
f. Measure the maximum time duration of one single pulse
g. Set the EUT for DH1, DH3 and DH5 packet transmitting
h. Measure the maximum time duration of one single pulse
i. DH1 Packet permit maximum 1600 / 79 /2 = 10.12 hops per second in each channel (1 time slot TX, 1 time slot RX).So, the dwell time is the time duration of the pulse times 10.12 x 31.6 = 320 within 31.6 seconds
j. DH3 Packet permit maximum 1600 / 79 / 4 = 5.06 hops per second in each channel (3 time slots TX, 1 time slot RX).So, the dwell time is the time duration of the pulse times 5.06 x 31.6 = 160 within 31.6 seconds
k. DH5 Packet permit maximum 1600/ 79 / 6 = 3.37 hops per second in each channel (5 time slots TX, 1 time slot RX).So, the dwell time is the time duration of the pulse times 3.37 x 31.6 = 106.6 within 31.6 seconds

7.3 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum analyzer	KEYSIGHT	N9010A	MY55150427	2025/05/22
2	Attenuator	Mini-Circuits	BW-S10W2	101109	N/A
3	RF Cable	Mi-cable	C10-01-01-1	100309	N/A

7.4 TEST SETUP

7.5 EUT OPERATION CONDITIONS

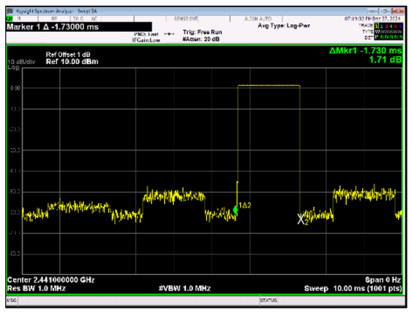
The EUT tested system was configured as the statements of 4.5 unless otherwise a special operating condition is specified in the follows during the testing.

7.6 TEST RESULTS

TX Mode_1Mbps				
Mode	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
DH1	2441	0.423	135.4	400
DH3	2441	1.730	276.8	400
DH5	2441	3.000	319.8	400

DH1

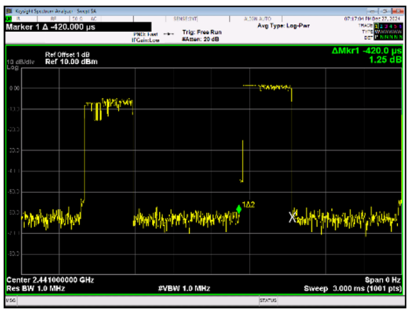
DH3



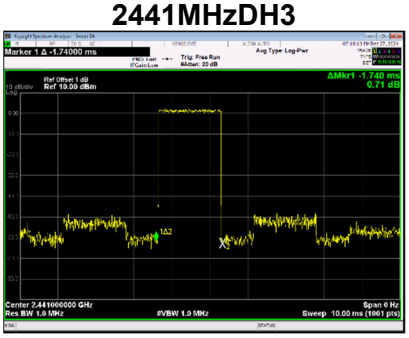
DH5

TX Mode_3Mbps				
Mode	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
DH1	2441	0.420	134.4	400
DH3	2441	1.740	278.4	400
DH5	2441	3.060	326.2	400

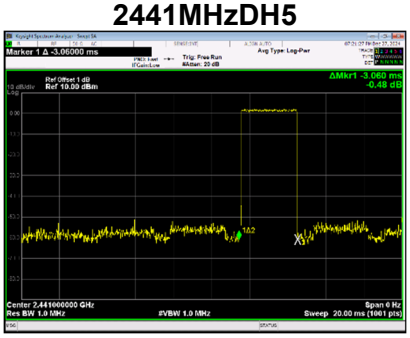
2441MHzDH1



2441MHzDH3



2441MHzDH5



8 HOPPING CHANNEL SEPARATION MEASUREMENT

8.1 LIMIT

Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

8.2 TEST PROCEDURE AND SETTING

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

b. Span = wide enough to capture the peaks of two adjacent channels
Resolution (or IF) Bandwidth (RBW) ≥ 1% of the span
Video (or Average) Bandwidth (VBW) ≥ RBW
Sweep = Auto
Detector function = Peak
Trace = Max Hold

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RBW	10 kHz
VBW	30 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

8.3 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum analyzer	KEYSIGHT	N9010A	MY55150427	2025/05/22
2	Attenuator	Mini-Circuits	BW-S10W2	101109	N/A
3	RF Cable	Mi-cable	C10-01-01-1	100309	N/A

8.4 TEST SETUP

8.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.5 unless otherwise a special operating condition is specified in the follows during the testing.

8.6 TEST RESULTS

TX Mode_1Mbps				
Channel	Frequency (MHz)	Channel Separation(MHz)	Limit (MHz)	Result
CH00	2402	1.008	>(25KHz or 2/3*20dB Bandwidth)	PASS
CH39	2441	1.002	>(25KHz or 2/3*20dB Bandwidth)	PASS
CH78	2480	0.996	>(25KHz or 2/3*20dB Bandwidth)	PASS

2402MHz

2441MHz

2480MHz

TX Mode_3Mbps				
Channel	Frequency (MHz)	Channel Separation(MHz)	Limit (MHz)	Result
CH00	2402	1.002	>(25KHz or 2/3*20dB Bandwidth)	PASS
CH39	2441	1.008	>(25KHz or 2/3*20dB Bandwidth)	PASS
CH78	2480	0.993	>(25KHz or 2/3*20dB Bandwidth)	PASS

2402MHz

2441MHz

2480MHz

9 BANDWIDTH TEST

9.1 LIMIT

FCC Part15, Subpart C (15.247)	
Section	Test Item
15.247(a)(1)	Bandwidth

9.2 TEST PROCEDURE AND SETTING

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. Spectrum Setting: RBW= 30 kHz, VBW=100 kHz, Sweep Time = Auto.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth
RBW	30kHz
VBW	100kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

9.3 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum analyzer	KEYSIGHT	N9010A	MY55150427	2025/05/22
2	Attenuator	Mini-Circuits	BW-S10W2	101109	N/A
3	RF Cable	Mi-cable	C10-01-01-1	100309	N/A

9.4 TEST SETUP

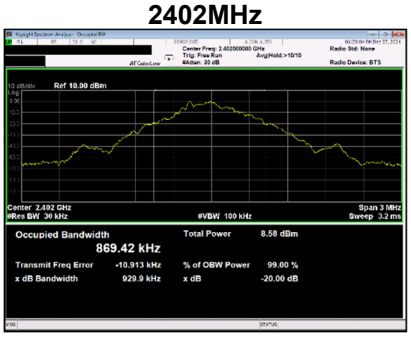
9.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.5 unless otherwise a special operating condition is specified in the follows during the testing.

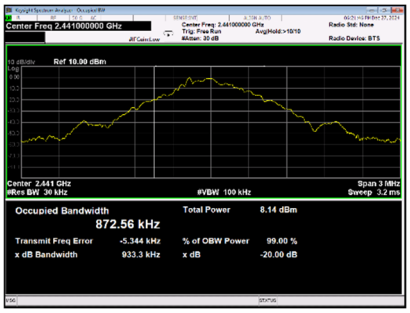
9.6 TEST RESULTS

TX Mode_1Mbps				
Channel	Frequency (MHz)	20dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)	Result
CH00	2402	0.929	0.8694	PASS
CH39	2441	0.933	0.8725	PASS
CH78	2480	0.877	0.8664	PASS

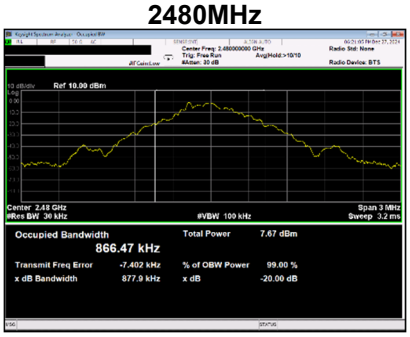
2402MHz



2441MHz

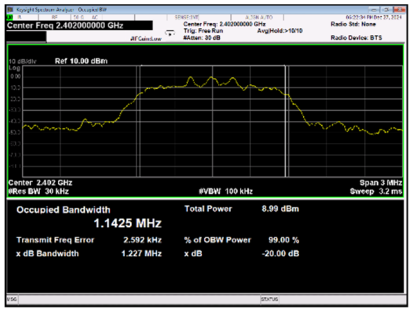


2480MHz

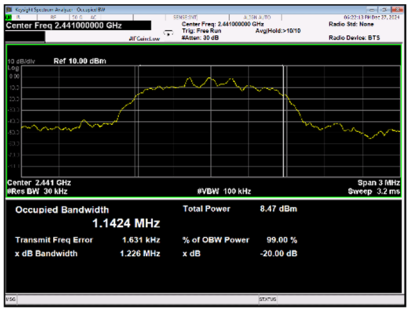


TX Mode_3Mbps				
Channel	Frequency (MHz)	20dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)	Result
CH00	2402	1.227	1.1425	PASS
CH39	2441	1.226	1.1424	PASS
CH78	2480	1.229	1.1413	PASS

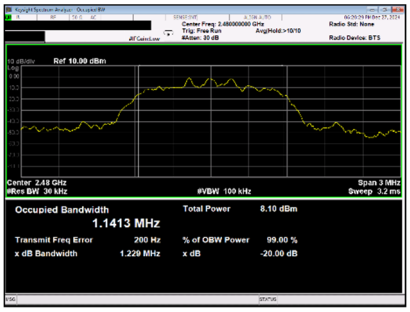
2402MHz



2441MHz



2480MHz



10 MAXIMUM OUTPUT POWER

10.1 LIMIT

FCC Part15 , Subpart C (15.247)		
Section	Test Item	Limit
15.247(a)(1)	Maximum Output Power	0.125Watt or 21dBm

Note:
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB band width of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

10.2 TEST PROCEDURE AND SETTING

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. Spectrum Setting: RBW= 1MHz/3MHz, VBW= 1MHz/3MHz, Sweep time = Auto.

10.3 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum analyzer	KEYSIGHT	N9010A	MY55150427	2025/05/22
2	Attenuator	Mini-Circuits	BW-S10W2	101109	N/A
3	RF Cable	Mi-cable	C10-01-01-1	100309	N/A

10.4 TEST SETUP

10.5 EUT OPERATION CONDITIONS

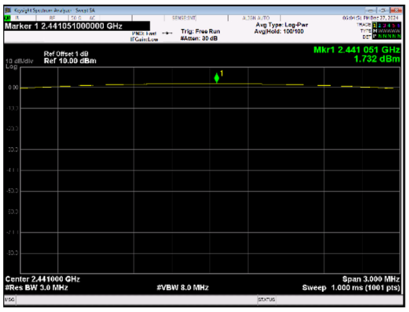
The EUT tested system was configured as the statements of 4.5 unless otherwise a special operating condition is specified in the follows during the testing.

10.6 TEST RESULTS

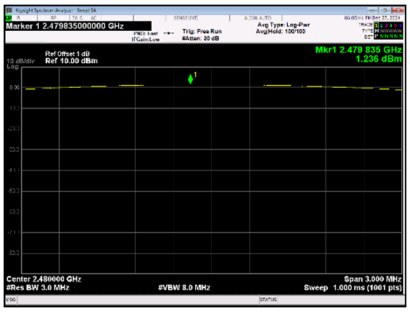
TX Mode_1Mbps				
Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Result
CH00	2402	2.147	0.001639	PASS
CH39	2441	1.732	0.001490	PASS
CH78	2480	1.236	0.001329	PASS
Limit	21dBm /0.125W			

CH00

CH39



CH78

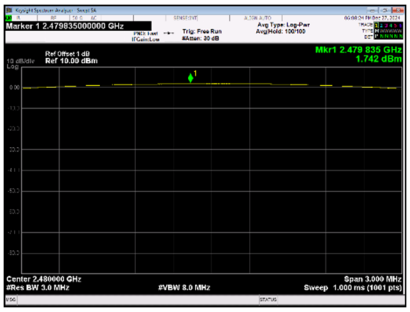


TX Mode_2Mbps				
Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Result
CH00	2402	2.723	0.001872	PASS
CH39	2441	2.290	0.001694	PASS
CH78	2480	1.742	0.001493	PASS
Limit	21dBm /0.125W			

CH00

CH39

CH78



TX Mode_3Mbps				
Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Result
CH00	2402	3.090	0.002037	PASS
CH39	2441	2.612	0.001825	PASS
CH78	2480	2.095	0.001620	PASS
Limit	21dBm /0.125W			

CH00

CH39

CH78

11 CONDUCTED SPURIOUS EMISSION

11.1 LIMIT

For FCC

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak Output Power limits. If the transmitter complies with the Output Power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required.

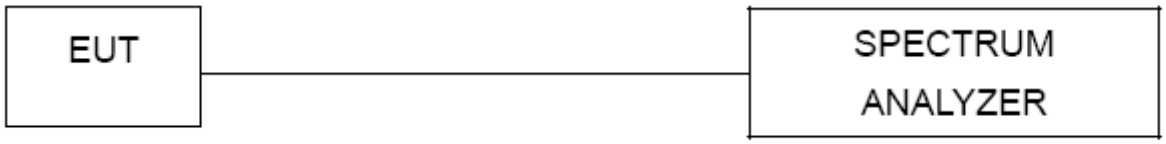
11.2 TEST PROCEDURE AND SETTING

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. Spectrum Setting: RBW= 100 kHz, VBW=300 kHz, Sweep time = Auto.

11.3 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum analyzer	KEYSIGHT	N9010A	MY55150427	2025/05/22
2	Attenuator	Mini-Circuits	BW-S10W2	101109	N/A
3	RF Cable	Mi-cable	C10-01-01-1	100309	N/A

11.4 TEST SETUP



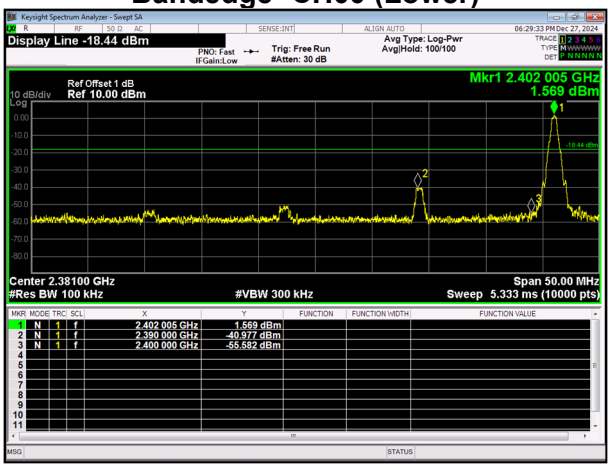
11.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.5 unless otherwise a special operating condition is specified in the follows during the testing.

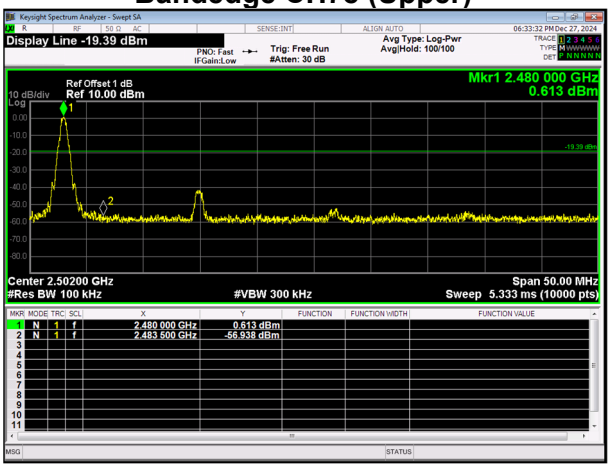
11.6 TEST RESULTS

TX Mode_1Mbps

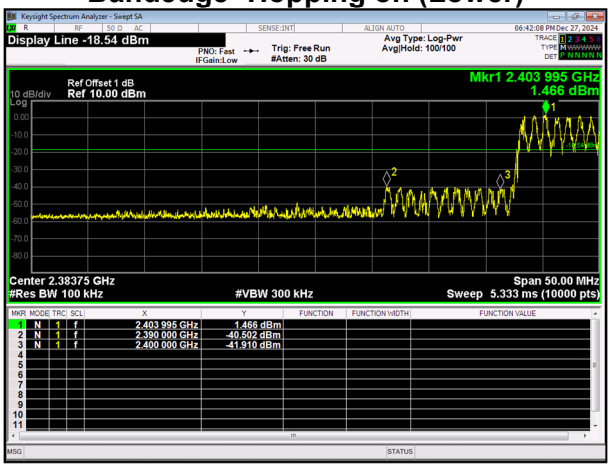
Bandedge- CH00 (Lower)



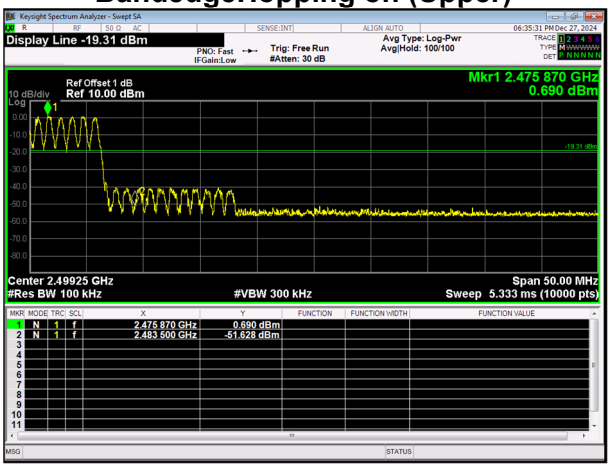
Bandedge CH78 (Upper)



Bandedge- Hopping on (Lower)

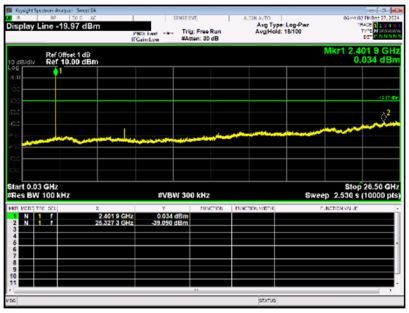


BandedgeHopping on (Upper)

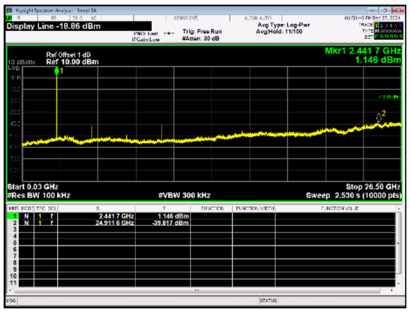


10th Harmonic of the fundamental frequency

CH00



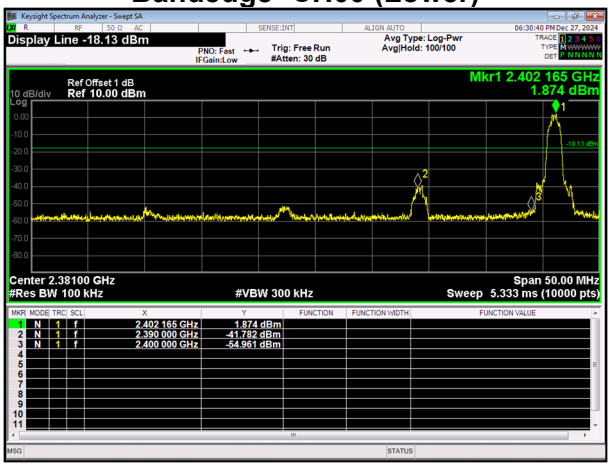
CH39



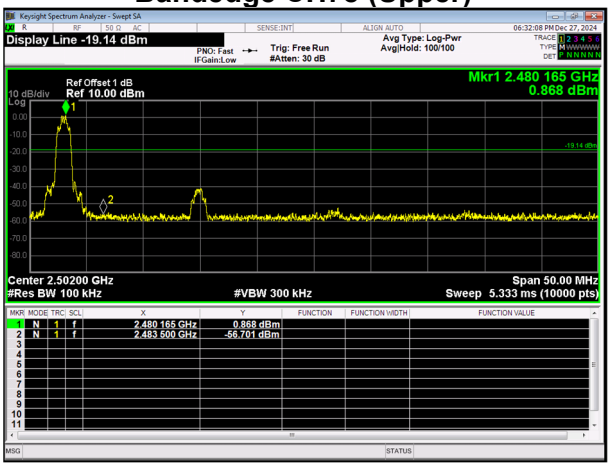
CH78

TX Mode_3Mbps

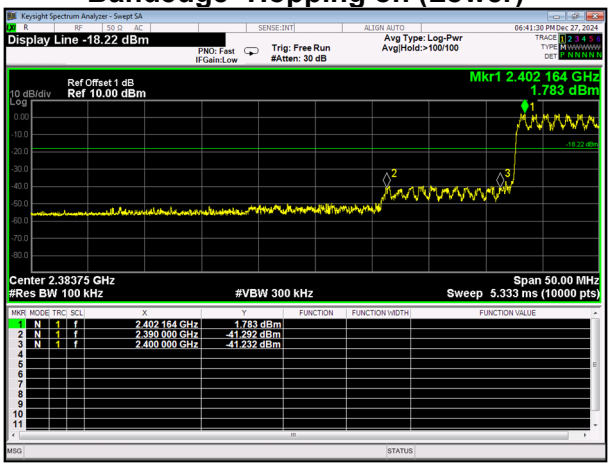
Bandedge- CH00 (Lower)



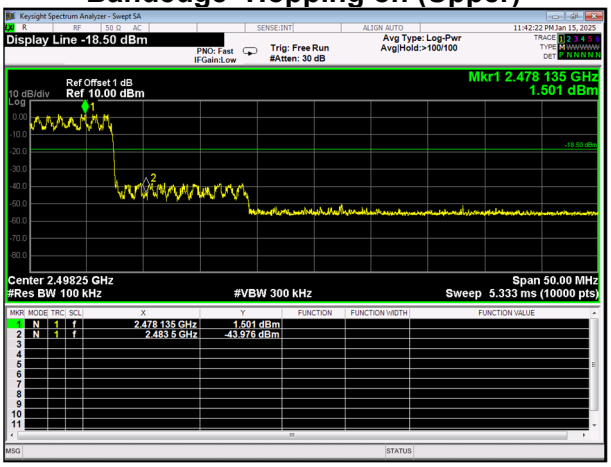
Bandedge CH78 (Upper)



Bandedge- Hopping on (Lower)

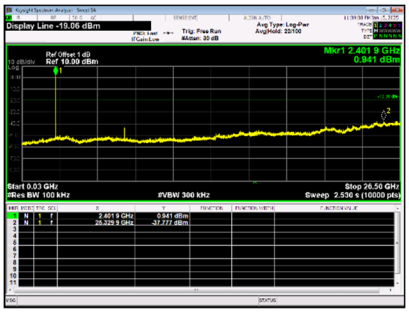


Bandedge- Hopping on (Upper)

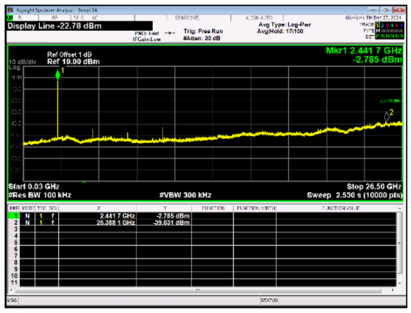


10th Harmonic of the fundamental frequency

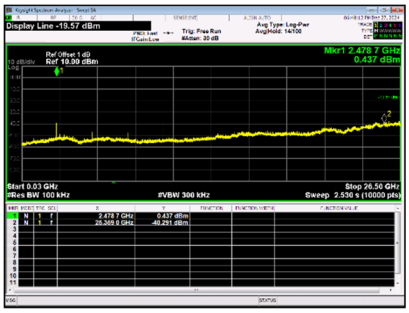
CH00



CH39



CH78



END OF TEST REPORT