FCC Radio Test Report

FCC ID: 2BKM7-K3

The report concerns: Original Grant

Report Reference No. ..... :	24EFSS12024 10431
Date Sample(s) Received ..... :	2024-12-10
Date of Tested ..... :	From 2024-12-11 to 2025-01-07
Date of issue ..... :	2025-01-07
Testing Laboratory ..... :	DongGuanShuoXin Electronic Technology Co., Ltd.
Address ..... :	Zone A, 1F, No. 6, XinGang Road YuanGang Street, XinAn District, ChangAn Town, DongGuan City, GuangDong, China
Applicant's name ..... :	Gibson, Inc.
Address for ..... :	209 10th Avenue South, Suite 460, Nashville, TN USA 37203
Equipment ..... :	PROFESSIONAL MONITORING SYSTEM
Trade Mark ..... :	KRK SYSTEMS
Model ..... :	K3
Ratings ..... :	I/P: 100-240V~ 50/60Hz 120W MAX

Test Engineer: Jelena OuYang

Responsible Engineer : Leo Chen

Authorized Signatory: Smile Wang

Table of Contents Page

Table of Contents	Page

Table of Contents	Page

1 TEST REPORT DECLARE

Applicant for FCC	Gibson, Inc.
Address for FCC	209 10th Avenue South, Suite 460, Nashville, TN USA 37203
Manufacturer	Gibson, Inc.
Address	209 10th Avenue South, Suite 460, Nashville, TN USA 37203
Factory	EVERVICTORY ELECTRONIC COMPANY LIMITED
Address	Chu Chi Management District, Hu Men Town, Dong-Guan City, Guang-Dong Province, P.R. China
Equipment	PROFESSIONAL MONITORING SYSTEM
Model No.	K3
Trade Mark	KRK SYSTEMS
Standard	FCC Part15, Subpart C (15.247) ANSI C63.10-2013

We Declare:

The equipment described above is tested by DongGuanShuoXin Electronic Technology Co., Ltd(ATT). and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and DongGuanShuoXin Electronic Technology Co., Ltd.(ATT) is assumed of full responsibility for the accuracy and completeness of these tests.

ATT is not responsible for the sampling stage, so the results only apply to the sample as received.

ATT's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. ATT shall have no liability for any declarations, inferences or generalizations drawn by the client or others from ATT issued reports.

2 SUMMARY OF TEST RESULTS

The EUT have been tested according to the applicable standards as referenced below:

Standard(s) Section	Test Item	Judgment	Remark
15.207	AC Power Line Conducted Emissions	PASS	------
15.247(d) 15.205(a) 15.209(a)	Radiated Emission	PASS	------
15.247(a)(1)(iii)	Number of Hopping Frequency	PASS	------
15.247(a)(1)(iii)	Average Time Of Occupancy	PASS	------
15.247(a)(1)	Hopping Channel Separation	PASS	------
15.247(a)(1)	Bandwidth	PASS	------
15.247(a)(1)	Maximum Output Power	PASS	------
15.247(d)	Conducted Spurious Emission	PASS	------
15.203	Antenna Requirement	PASS	Note(2)

Note:

(1) “N/A” denotes test is not applicable in this test report

(2) The device what use a permanently attached antenna were considered sufficient to comply with the provisions of 15.203.

2.1 MEASUREMENT UNCERTAINTY

Test Item	Uncertainty
Uncertainty for Conduction emission test (9kHz-150kHz)	3.7 dB
Uncertainty for Conduction emission test (150kHz-30MHz)	3.3 dB
Uncertainty for Radiation Emission test (30MHz-200MHz)	4.60 dB (Polarize: V)
	4.60 dB (Polarize: H)
Uncertainty for Radiation Emission test (200MHz-1GHz)	6.10 dB (Polarize: V)
	5.08 dB (Polarize: H)
Uncertainty for Radiation Emission test (1GHz-6GHz)	5.01 dB (Polarize: V)
	5.01 dB (Polarize: H)
Uncertainty for Radiation Emission test (6GHz-18GHz)	5.26 dB (Polarize: V)
	5.26 dB (Polarize: H)
Uncertainty for Radiation Emission test (18GHz-40GHz)	5.06 dB (Polarize: V)
	5.06 dB (Polarize: H)
Uncertainty for radio frequency	±0.048kHz
Uncertainty for conducted RF Power	±0.32dB

Note:

This uncertainty represents an expanded uncertainty expressed at approximately the 95%confidence level using a coverage factor of k=2.

Test Facility:

The Test site used by DongGuanShuoXin Electronic Technology Co., Ltd. to collect test data is located on the Zone A, 1F, No. 6, XinGang Road YuanGang Street, XinAn District, ChangAn Town, DongGuan City, GuangDong, China

The test facility is recognized, certified, or accredited by the following organizations:

Item	Registration No.	Expiration Date
CNAS	L3098	2030-08-27
A2LA	4893.01	2026-06-30
Innovation, Science and Economic Development Canada (ISED)	11033A CAB identifer:CN0083	2026-06-30
Federal Communications Commission (FCC)	171688 Designation No.:CN1235	2026-06-30

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	PROFESSIONAL MONITORING SYSTEM	
Brand Name	/	
Test Model	K3	
Series Model	N/A	
Model Difference(s)	N/A	
Hardware Version	1.0	
Software Version	1.0	
Power Source	AC main	
Power Rating	100-240V~ 50/60Hz 120W MAX	
Operation Frequency	2402 MHz ~ 2480 MHz	
Modulation Technology	GFSK, π/4-DQPSK, 8-DPSK	
Bit Rate of Transmitter	1Mbps /2Mbps /3Mbps	
Antenna Information	Antenna Type: PCB	Maximum Peak Gain: -0.58dBi
Max. Output Power	1Mbps: 1.780 dBm (0.001507 W) 2Mbps: 2.616 dBm (0.001826 W) 3Mbps: 3.197 dBm (0.002088 W)	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	27	2429	54	2456
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454		
26	2428	53	2455		

3.2 DESCRIPTION OF TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

Pretest Mode	Description
Mode 1	TX Mode **NOTE (1)**
Mode 2	TX Mode Channel 01_3Mbps

Following mode(s) was (were) found to be the worst case(s) and selected for the final test.

AC power line conducted emissions test	
Final Test Mode	Description
Mode 2	TX Mode Channel 01_3Mbps

Radiated emissions test - Below 1GHz	
Final Test Mode	Description
Mode 2	TX Mode Channel 01_3Mbps

Radiated emissions test - Above 1GHz	
Final Test Mode	Description
Mode 1	TX Mode **NOTE (1)**

Conducted test	
Final Test Mode	Description
Mode 1	TX Mode **NOTE (1)**

Note:

(1) The measurements are performed at the high, middle, low available channels.

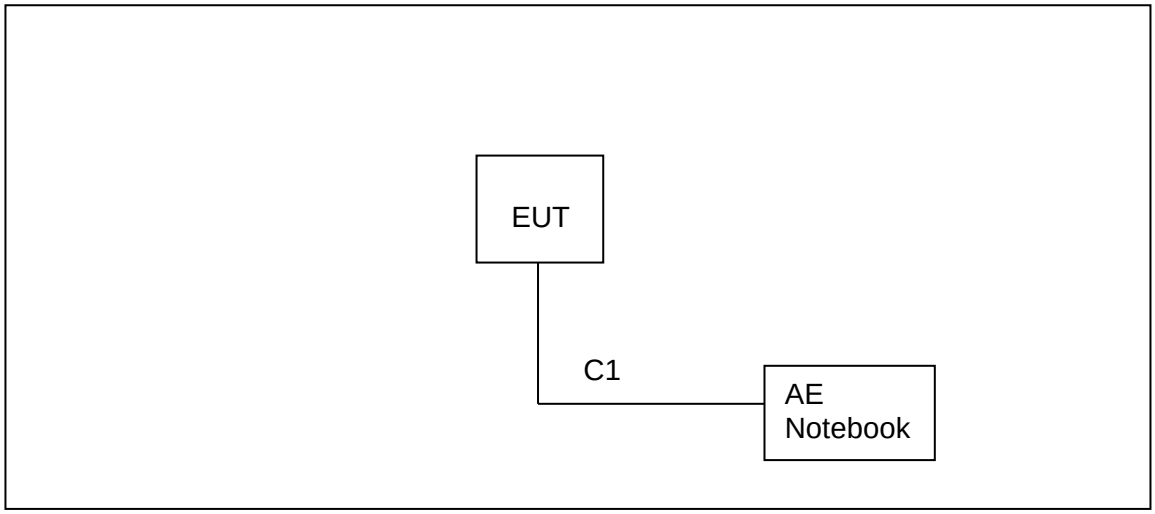
(2) The measurements for Hopping Channel Separation, Bandwidth and Maximum Output Power were tested during 1Mbps, 2Mbps and 3Mbps, the worst case are 1Mbps and 3Mbps, only worst case was documented.

3.3 PARAMETERS OF TEST SOFTWARE

During testing, channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of FHSS

Test Software	FCC_assist1.0.4.exe		
Frequency (MHz)	2402	2441	2480
Parameters(1Mbps)	Default	Default	Default
Parameters(3Mbps)	Default	Default	Default

3.4 BLOCKDIAGRAMSHOWINGTHECONFIGURATIONOFSYSTEMTESTED



3.5 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.
AE	Notebook	Lenovo	/	/

Item	Cable Type	Shielded Type	Ferrite Core	Length
C1	DC Cable	NO	NO	0.8m

3.6 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage
AC Power Line Conducted Emissions	25.4°C	54%	AC 120V/60Hz
Radiated Emissions-9K-30MHz	25.0°C	60%	AC 120V/60Hz
Radiated Emissions-30 MHz to 1GHz	24.2°C	59%	AC 120V/60Hz
Radiated Emissions-Above 1000 MHz	24.2°C	59%	AC 120V/60Hz
Number of Hopping Frequency	24.6°C	48%	AC 120V/60Hz
Average Time Of Occupancy	24.6°C	48%	AC 120V/60Hz
Hopping Channel Separation	24.6°C	48%	AC 120V/60Hz
Bandwidth	24.6°C	48%	AC 120V/60Hz
Maximum Output Power	24.6°C	48%	AC 120V/60Hz
Conducted Spurious Emission	24.6°C	48%	AC 120V/60Hz

4 AC POWER LINE CONDUCTED EMISSIONS TEST

4.1 LIMIT

Frequency of Emission (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56*	56 to 46*
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

4.2 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

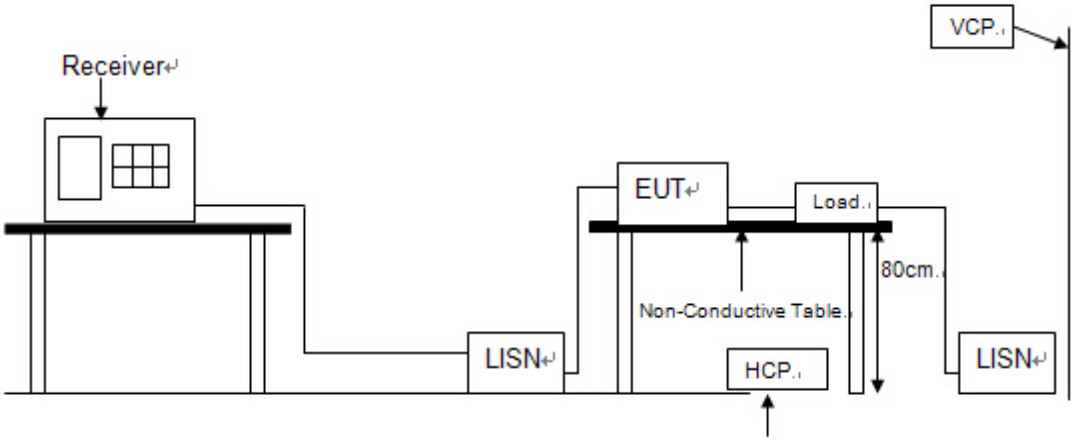
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

d. LISN at least 80 cm from nearest part of EUT chassis.

4.3MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Pulse Limiter	MTS-systemtechnik	MTS-IMP-136	261115-010-0024	11/17/2025
2	EMI Test Receiver	R&S	ESCI	101308	06/05/2025
3	LISN	AFJ	LS16	16011103219	06/05/2025
4	LISN	Schwarzbeck	NSLK 8127	8127-432	06/05/2025
5	MeasurementSoftware	Farad	EZ-EMC (Ver.ATT-03A)	N/A	N/A

4.4 TESTSETUP



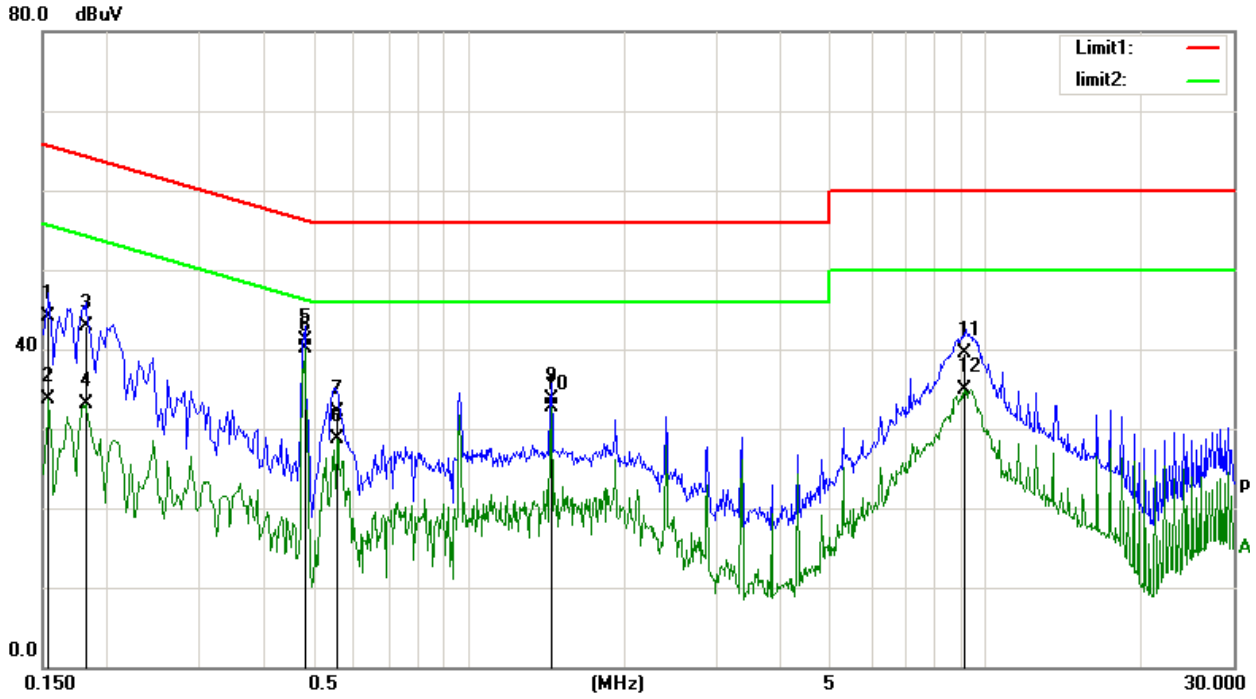
4.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical function (as a customer would normally use it), EUT was programmed to be in continuously transmitting data or hopping on mode.

4.6 TEST RESULTS

Test Mode:	TX Mode Channel 01 _3Mbps

Line

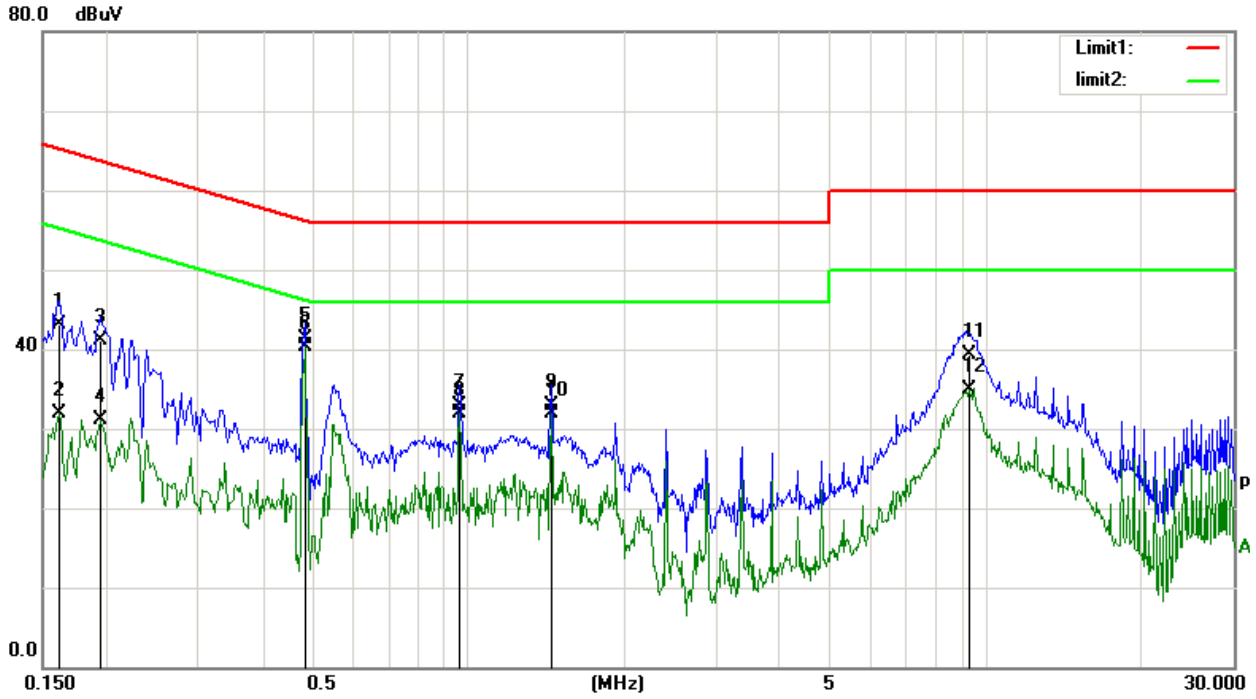


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1539	33.41	10.66	44.07	65.78	-21.71	QP
2	0.1539	23.04	10.66	33.70	55.78	-22.08	AVG
3	0.1819	32.30	10.59	42.89	64.39	-21.50	QP
4	0.1819	22.59	10.59	33.18	54.39	-21.21	AVG
5	0.4818	30.51	10.52	41.03	56.31	-15.28	QP
6	0.4818	29.50	10.52	40.02	46.31	-6.29	AVG
7	0.5580	21.59	10.60	32.19	56.00	-23.81	QP
8	0.5580	18.01	10.60	28.61	46.00	-17.39	AVG
9	1.4415	23.13	10.67	33.80	56.00	-22.20	QP
10	1.4415	22.12	10.67	32.79	46.00	-13.21	AVG
11	9.0777	28.72	10.83	39.55	60.00	-20.45	QP
12	9.0777	24.08	10.83	34.91	50.00	-15.09	AVG

Remarks:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode:	TX Mode Channel 01 _3Mbps

Neutral



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1620	32.55	10.61	43.16	65.36	-22.20	QP
2	0.1620	21.39	10.61	32.00	55.36	-23.36	AVG
3	0.1940	30.46	10.60	41.06	63.86	-22.80	QP
4	0.1940	20.55	10.60	31.15	53.86	-22.71	AVG
5	0.4818	30.74	10.52	41.26	56.31	-15.05	QP
6	0.4818	29.73	10.52	40.25	46.31	-6.06	AVG
7	0.9616	22.51	10.47	32.98	56.00	-23.02	QP
8	0.9616	21.46	10.47	31.93	46.00	-14.07	AVG
9	1.4415	22.22	10.67	32.89	56.00	-23.11	QP
10	1.4415	21.19	10.67	31.86	46.00	-14.14	AVG
11	9.2659	28.50	10.83	39.33	60.00	-20.67	QP
12	9.2659	24.11	10.83	34.94	50.00	-15.06	AVG

Remarks:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

5 RADIATED EMISSION TEST

5.1 LIMIT

In case the emission fall within the restricted band specified on15.205(a) &RSS-Gen 8.10, then the 15.209(a) &RSS-Gen 8.9 limit in the table below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (9 kHz-1000MHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (9 kHz-30 MHz)

Frequency (MHz)	Magnetic field strength (H-Field) (μA/m)	Measurement Distance (meters)
0.009-0.490	6.37/F(kHz)	300
0.490-1.705	6.37/F(kHz)	30
1.705-30.0	0.08	30

LIMITS OF RADIATED EMISSION MEASUREMENT (30 MHz-1000MHz)

Frequency (MHz)	Field Strength (μV/m at 3m)
30-88	100
88-216	150
216-960	200
Above 960	500

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

Frequency (MHz)	(dBuV/m at 3 m)	
	Peak	Average
Above 1000	74	54

Note:

(1) The limit for radiated test was performed according to FCC PART 15C and RSS-247.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

5.2 TEST PROCEDURE AND SETTING

a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
c. The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
g. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn‘t perform. (below 1GHz)
h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn‘t perform. (above 1GHz)
i. The test result is calculated as the following:
   (1) Result = Reading + Correct Factor
   (2) Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain + Attenuator
   (3) Margin = Result - Limit

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	RBW 1MHz VBW 3MHz peak detector for Pk value RMS detector for AV value

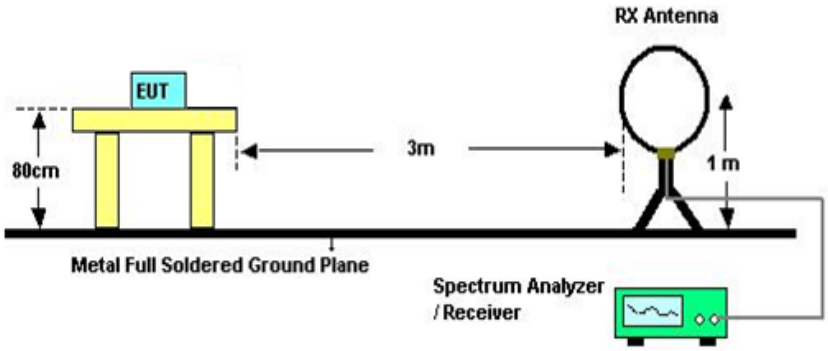
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9 kHz~90 kHz for PK/AVG detector
Start ~ Stop Frequency	90 kHz~110 kHz for QP detector
Start ~ Stop Frequency	110 kHz~490 kHz for PK/AVG detector
Start ~ Stop Frequency	490 kHz~30 MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector

5.3 MEASUREMENT INSTRUMENTS LIST

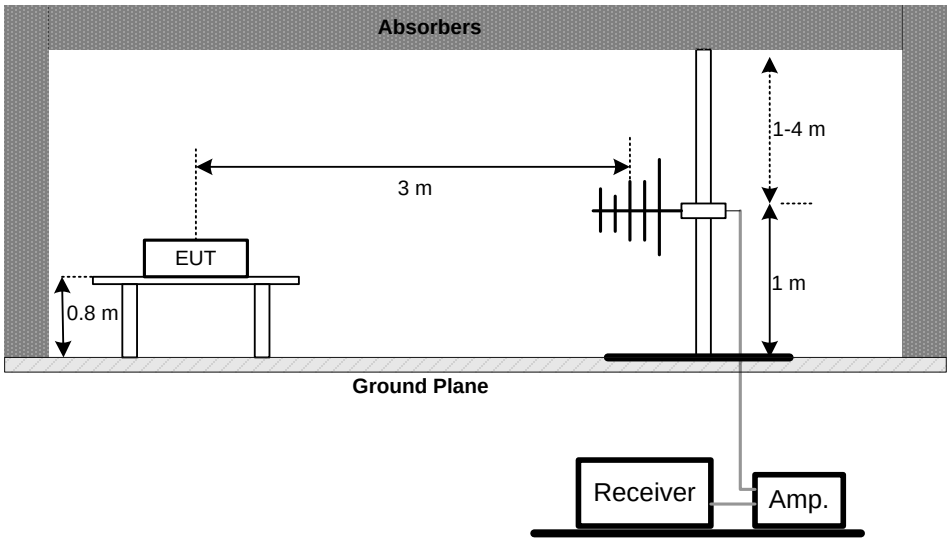
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	EMI Test Receiver	R&S	ESCI	101307	06/05/2025
2	Spectrum Analyzer	Agilent	E4407B	US40240708	11/17/2025
3	Loop antenna	SCHWARZBECK K	FMZB1519	1519-062	01/14/2025
4	Broadband antenna	SCHWARZBECK	VULB9168	VULB9168-192	03/29/2025
5	HORN ANTENNA	SCHWARZBECK	BBHA9120D	9120D 1065	03/29/2025
6	Preamplifier Amplifier	HP	8447F	3113A05680	11/17/2025
7	PRE-AMPLIFIER	EMEC	EM01G26G	980136	03/29/2025
8	RF Cable	R&S	Test Cable 4	4	11/17/2025
9	RF Cable	R&S	Test Cable 5	5	11/17/2025
10	RF Cable	R&S	Test Cable 9	9	04/17/2025
11	RF Cable	R&S	Test Cable 10	10	04/17/2025
12	Measurement Software	Farad	EZ-EMC (Ver.ATT-03A)	N/A	N/A

5.4 TESTSETUP

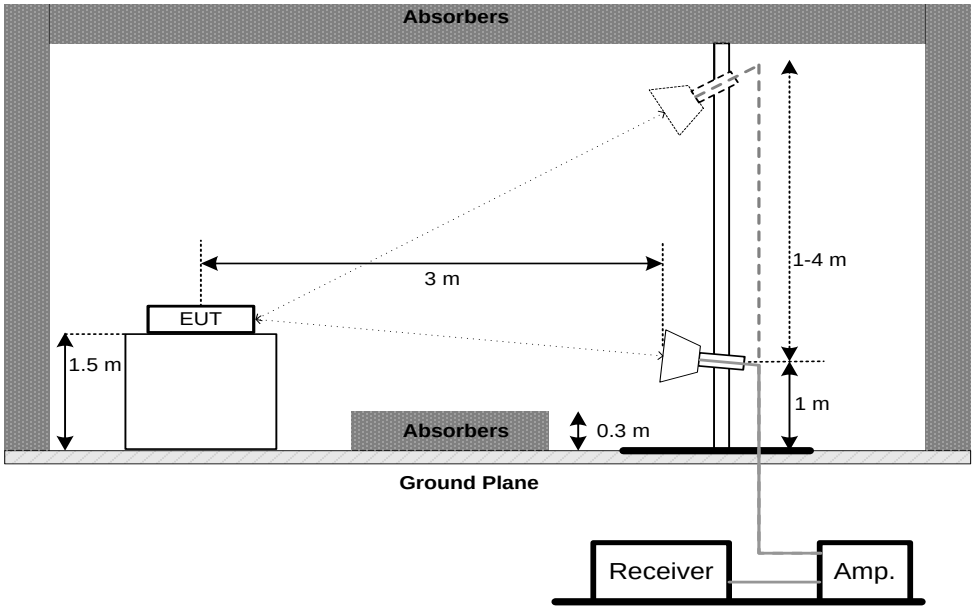
9 kHz-30 MHz



30 MHz to 1 GHz



Above 1 GHz



5.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULTS - 9 kHz TO 30MHz

Test Mode:	TX Mode Channel 01 _3Mbps

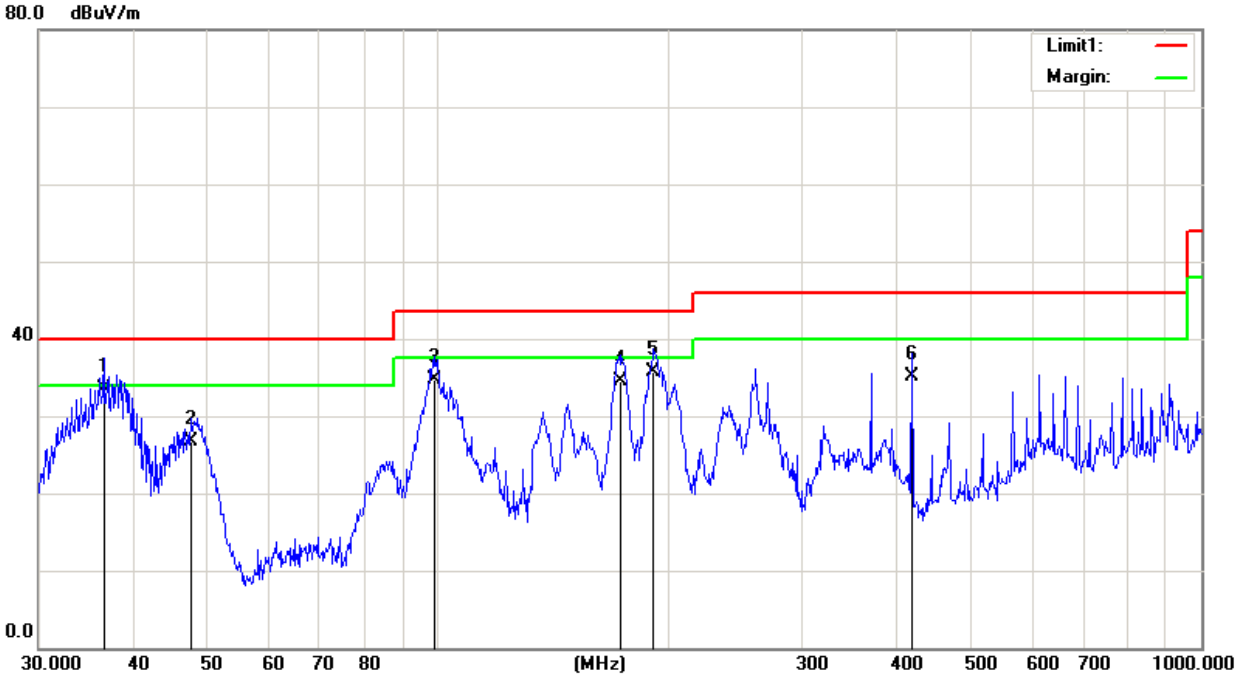
Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	P
--	--	--	--	P

Note:
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =20 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor

5.7 TEST RESULTS- 30 MHz TO 1000MHz

Test Mode:	TX Mode Channel 01 _3Mbps

Vertical

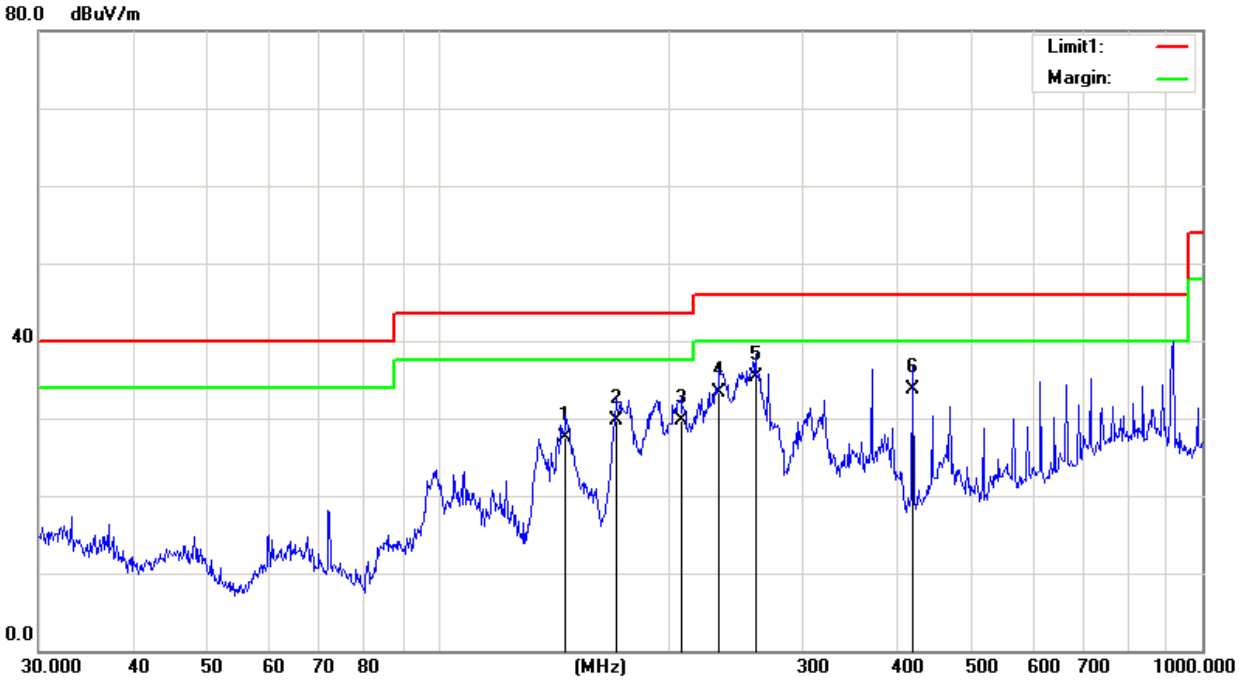


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1	*	36.5092	43.71	-10.29	33.42	40.00	-6.58	QP	100	85	
2		47.4917	40.07	-13.29	26.78	40.00	-13.22	QP	200	12	
3		98.8326	48.35	-13.57	34.78	43.50	-8.72	QP	100	36	
4		173.8135	45.42	-10.84	34.58	43.50	-8.92	QP	300	22	
5		191.7450	47.82	-12.08	35.74	43.50	-7.76	QP	100	18	
6		417.6409	44.82	-9.78	35.04	46.00	-10.96	QP	100	65	

*:Maximum data x:Over limit !:over margin (Reference Only

Test Mode:	TX Mode Channel 01 _3Mbps

Horizontal



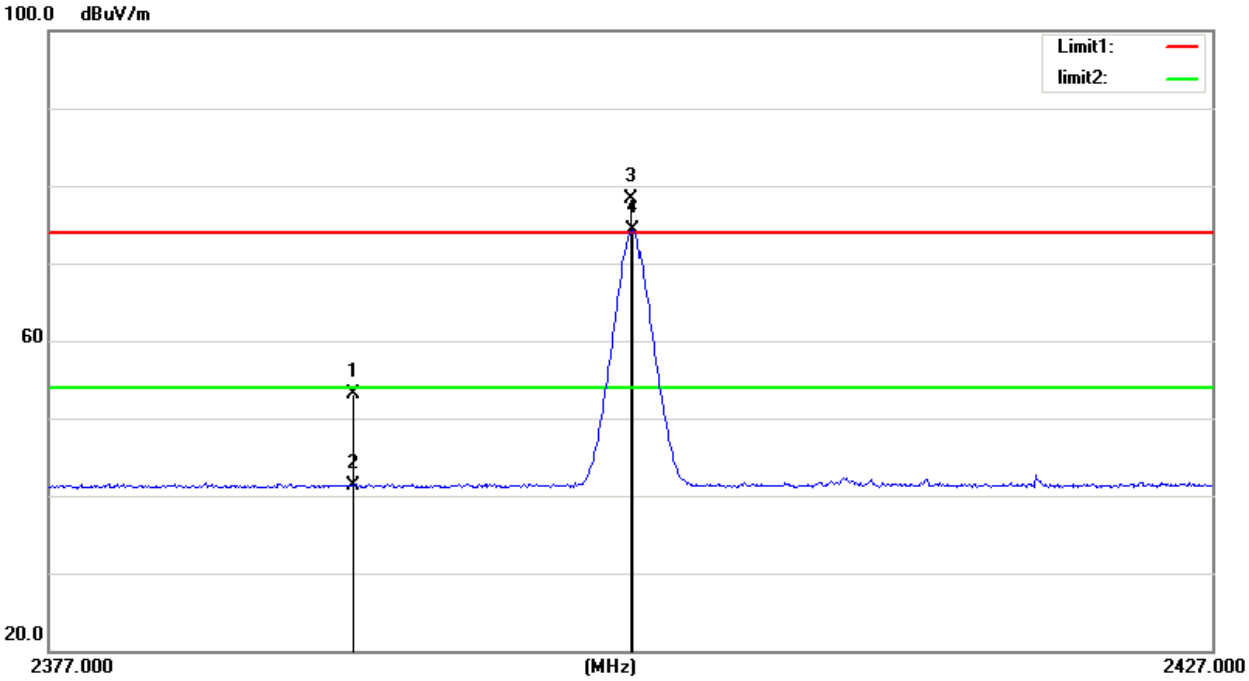
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBi/m	dB	Detector	cm	degree	Comment
1		146.8874	41.01	-13.56	27.45	43.50	-16.05	QP	100	22	
2		170.7926	42.55	-12.88	29.67	43.50	-13.83	QP	300	58	
3		207.8498	40.03	-10.33	29.70	43.50	-13.80	QP	100	9	
4		233.3487	42.61	-9.38	33.23	46.00	-12.77	QP	100	30	
5	*	260.1444	42.15	-6.79	35.36	46.00	-10.64	QP	100	14	
6		417.6409	44.60	-10.85	33.75	46.00	-12.25	QP	100	54	

*:Maximum data x:Over limit !:over margin (Reference Only

5.8 TEST RESULTS - ABOVE 1000MHz (BAND EDGE)

Test Mode:	TX 2402 MHz_CH00_1Mbps

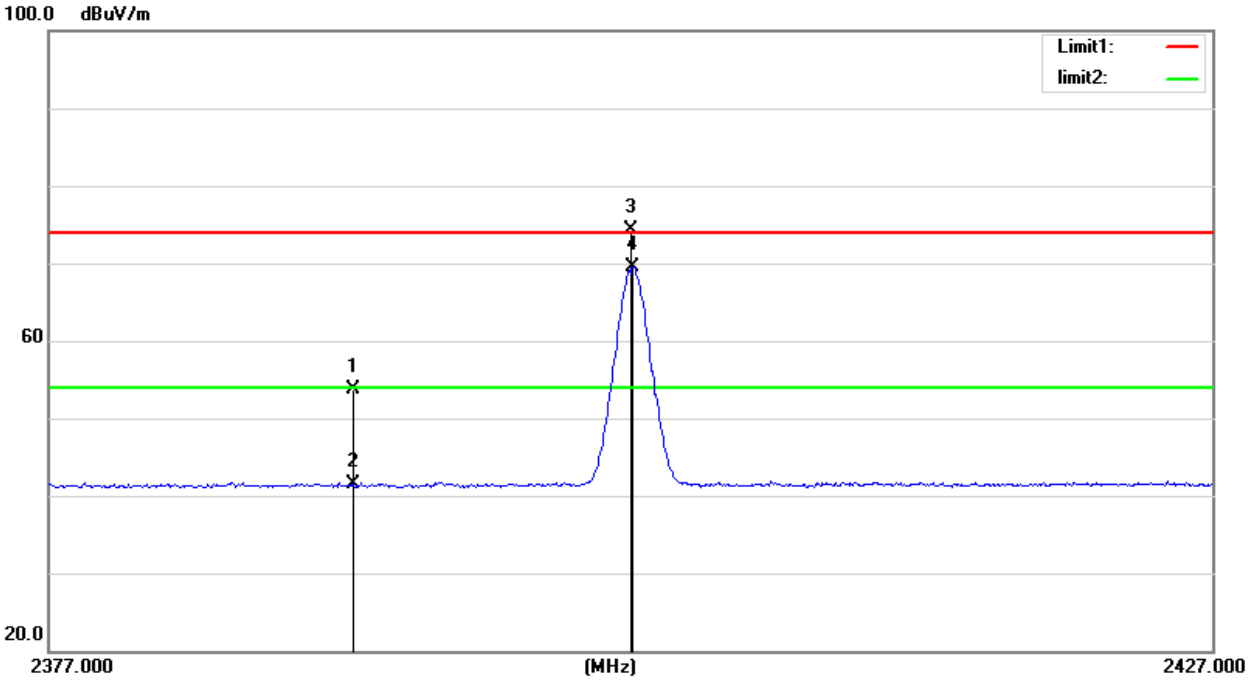
Vertical



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		2390.000	22.96	30.14	53.10	74.00	-20.90	peak	150	360	
2		2390.000	11.16	30.14	41.30	54.00	-12.70	AVG	150	360	
3	X	2401.900	48.23	30.15	78.38	74.00	4.38	peak	150	360	No Limit
4	*	2402.000	44.17	30.15	74.32	54.00	20.32	AVG	150	360	No Limit

Test Mode:	TX 2402 MHz_CH00_1Mbps

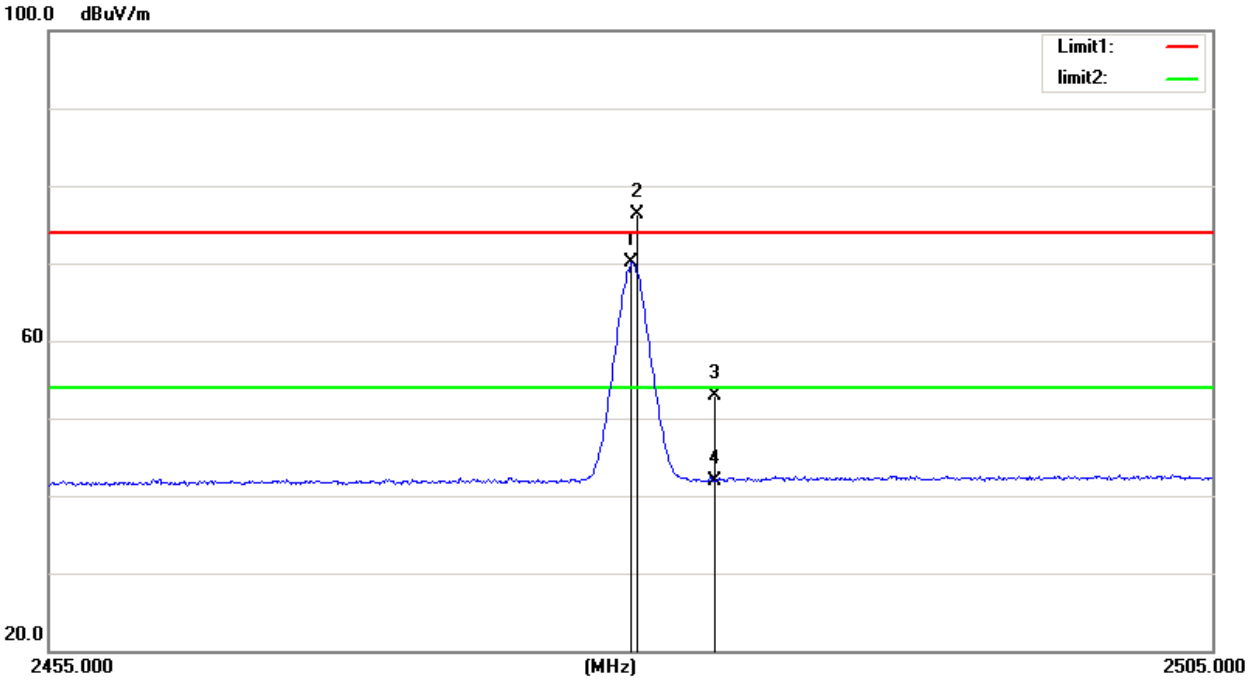
Horizontal



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		2390.000	23.47	30.14	53.61	74.00	-20.39	peak	150	121	
2		2390.000	11.28	30.14	41.42	54.00	-12.58	AVG	150	121	
3	X	2401.900	44.11	30.15	74.26	74.00	0.26	peak	150	121	No Limit
4	*	2402.000	39.42	30.15	69.57	54.00	15.57	AVG	150	121	No Limit

Test Mode:	TX 2480 MHz_CH78_1Mbps

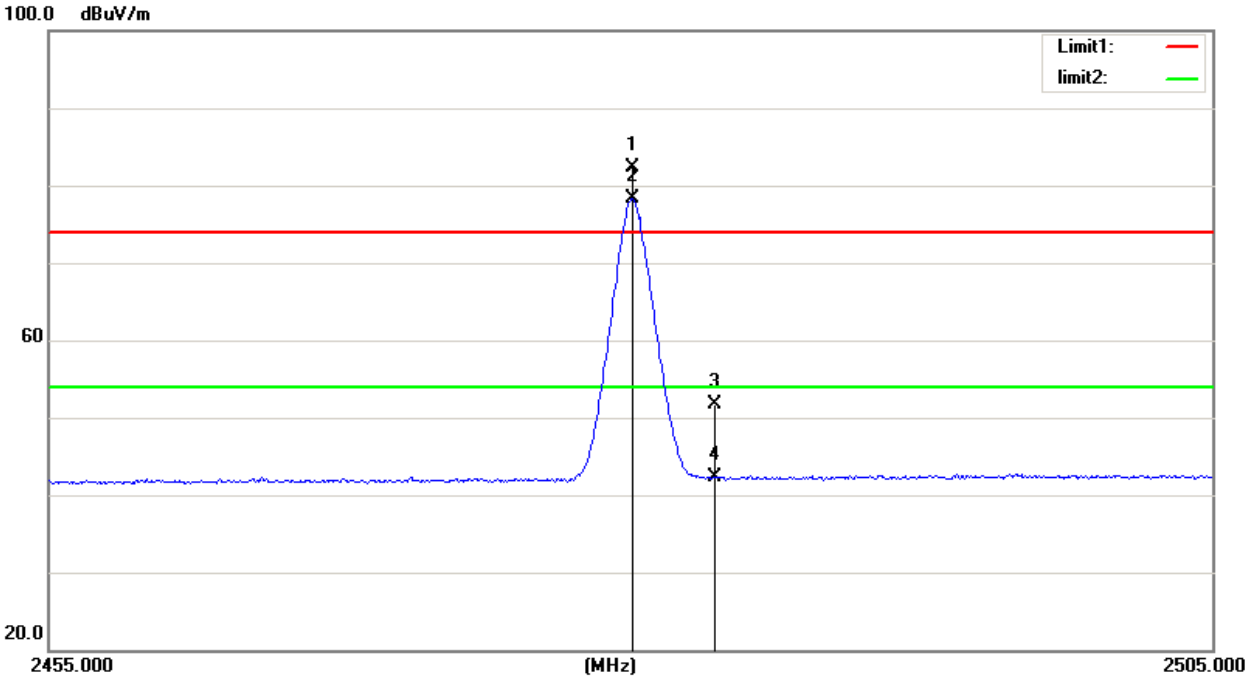
Vertical



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	*	2479.950	39.47	30.67	70.14	54.00	16.14	AVG	150	124	No Limit
2	X	2480.200	45.58	30.67	76.25	74.00	2.25	peak	150	124	No Limit
3		2483.500	22.29	30.71	53.00	74.00	-21.00	peak	150	124	
4		2483.500	11.25	30.71	41.96	54.00	-12.04	AVG	150	124	

Test Mode:	TX 2480 MHz_CH78_1Mbps

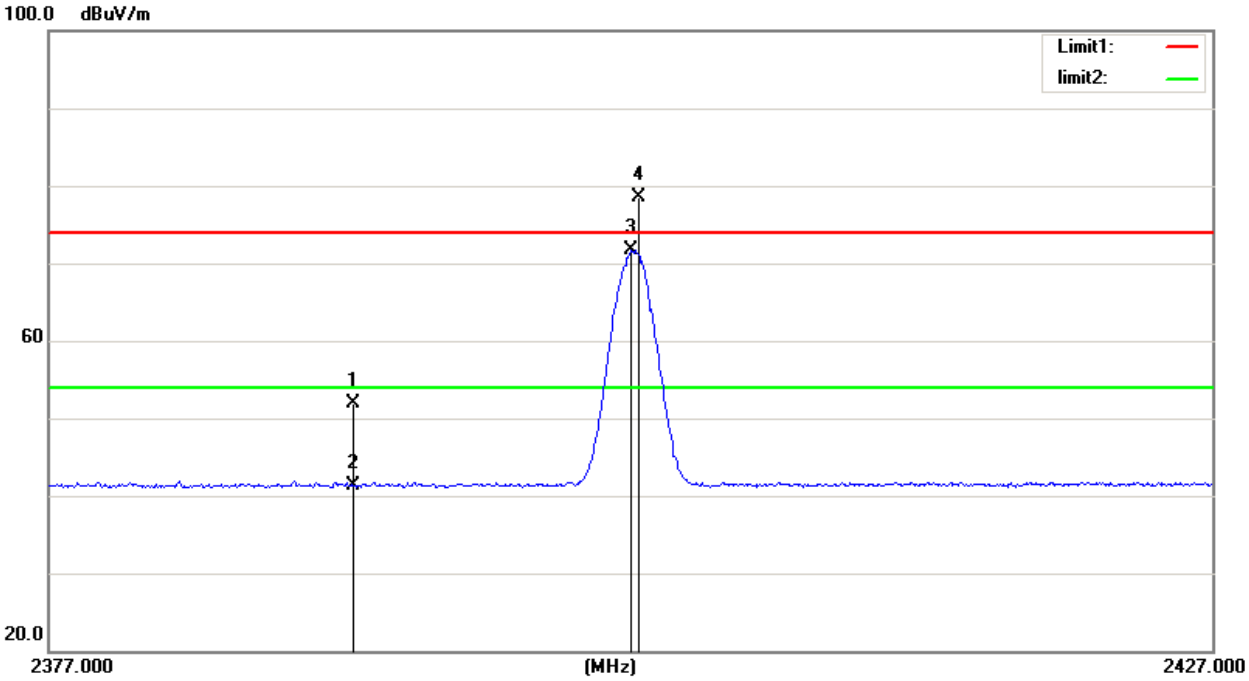
Horizontal



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	X	2480.000	51.67	30.67	82.34	74.00	8.34	peak	150	211	No Limit
2	*	2480.000	47.59	30.67	78.26	54.00	24.26	AVG	150	211	No Limit
3		2483.500	21.08	30.71	51.79	74.00	-22.21	peak	150	211	
4		2483.500	11.54	30.71	42.25	54.00	-11.75	AVG	150	211	

Test Mode:	TX 2402 MHz_CH00_3Mbps

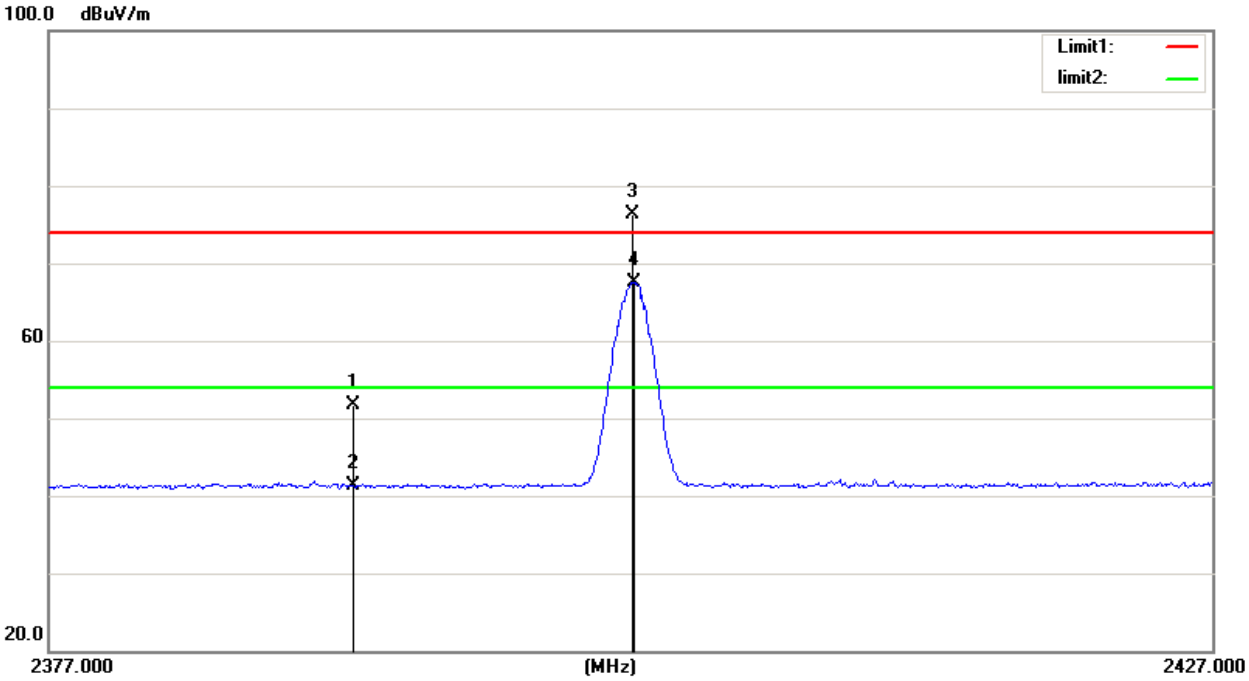
Vertical



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		2390.000	21.82	30.14	51.96	74.00	-22.04	peak	150	328	
2		2390.000	11.07	30.14	41.21	54.00	-12.79	AVG	150	328	
3	*	2401.950	41.48	30.15	71.63	54.00	17.63	AVG	150	328	No Limit
4	X	2402.250	48.33	30.15	78.48	74.00	4.48	peak	150	328	No Limit

Test Mode:	TX 2402 MHz_CH00_3Mbps

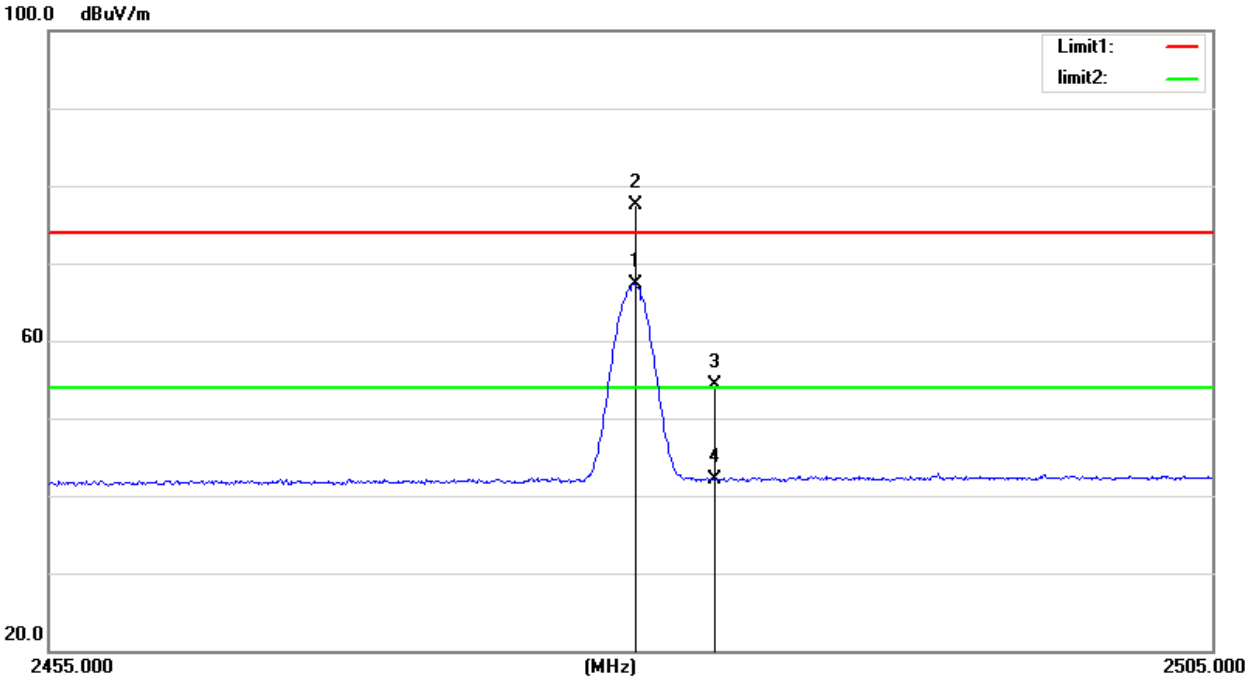
Horizontal



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		2390.000	21.61	30.14	51.75	74.00	-22.25	peak	150	97	
2		2390.000	11.06	30.14	41.20	54.00	-12.80	AVG	150	97	
3	X	2402.000	46.07	30.15	76.22	74.00	2.22	peak	150	97	No Limit
4	*	2402.050	37.42	30.15	67.57	54.00	13.57	AVG	150	97	No Limit

Test Mode:	TX 2480 MHz_CH78_3Mbps

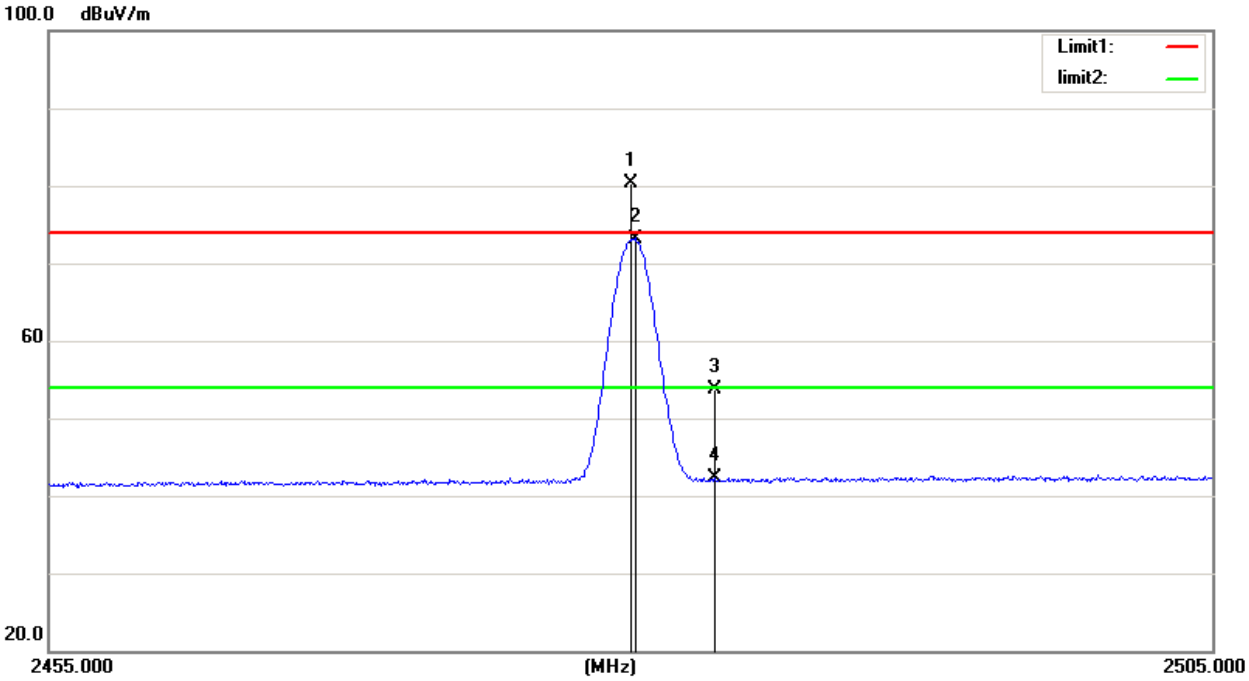
Vertical



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	*	2480.100	36.69	30.67	67.36	54.00	13.36	AVG	150	124	No Limit
2	X	2480.150	46.87	30.67	77.54	74.00	3.54	peak	150	124	No Limit
3		2483.500	23.51	30.71	54.22	74.00	-19.78	peak	150	124	
4		2483.500	11.33	30.71	42.04	54.00	-11.96	AVG	150	124	

Test Mode:	TX 2480 MHz_CH78_3Mbps

Horizontal

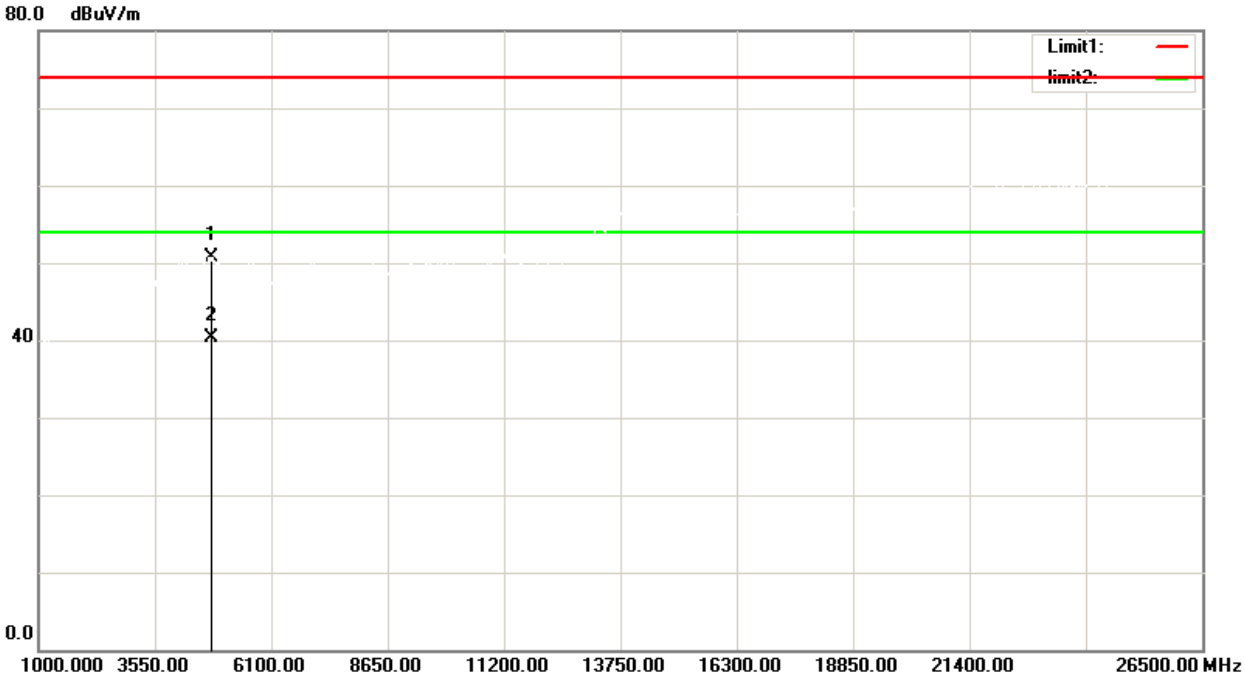


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1	X	2479.850	49.62	30.67	80.29	74.00	6.29	peak	150	259	No Limit
2	*	2480.100	42.53	30.67	73.20	54.00	19.20	AVG	150	259	No Limit
3		2483.500	23.04	30.71	53.75	74.00	-20.25	peak	150	259	
4		2483.500	11.52	30.71	42.23	54.00	-11.77	AVG	150	259	

5.9 TEST RESULTS - ABOVE 1000MHz (HARMONIC)

Test Mode:	TX 2402 MHz_CH00_1Mbps

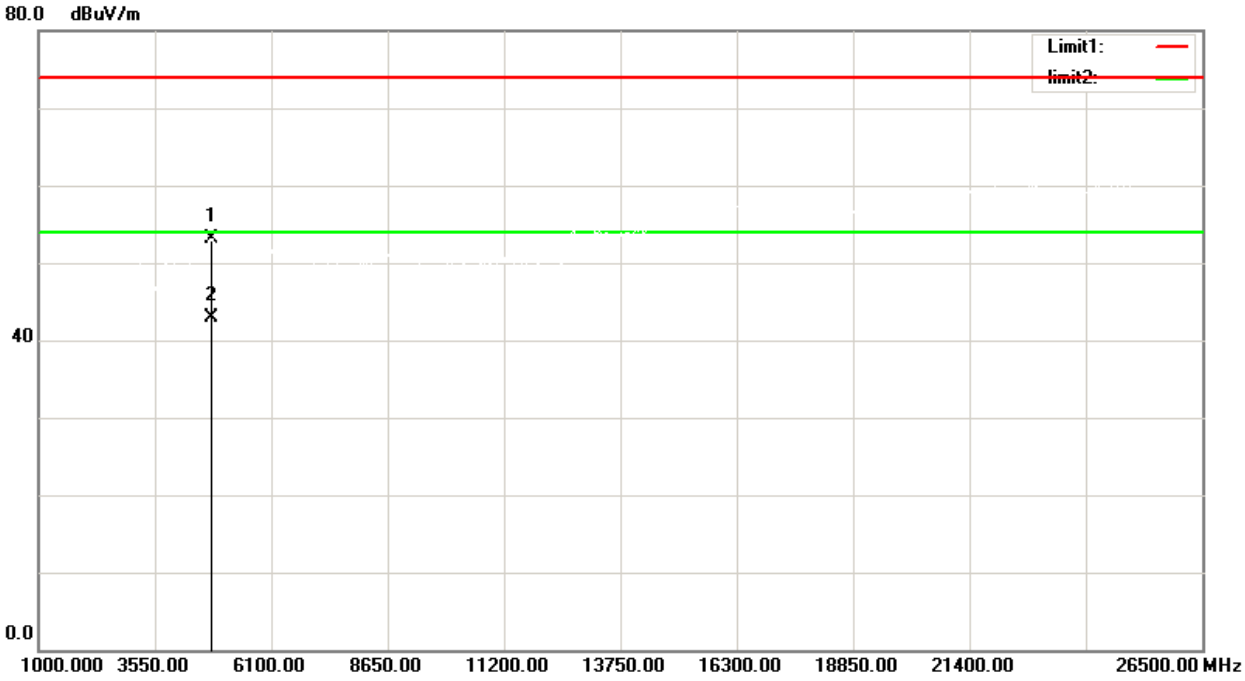
Vertical



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		4804.000	52.55	-1.90	50.65	74.00	-23.35	peak	150	55	
2	*	4804.000	42.23	-1.90	40.33	54.00	-13.67	AVG	150	55	

Test Mode:	TX 2402 MHz_CH00_1Mbps

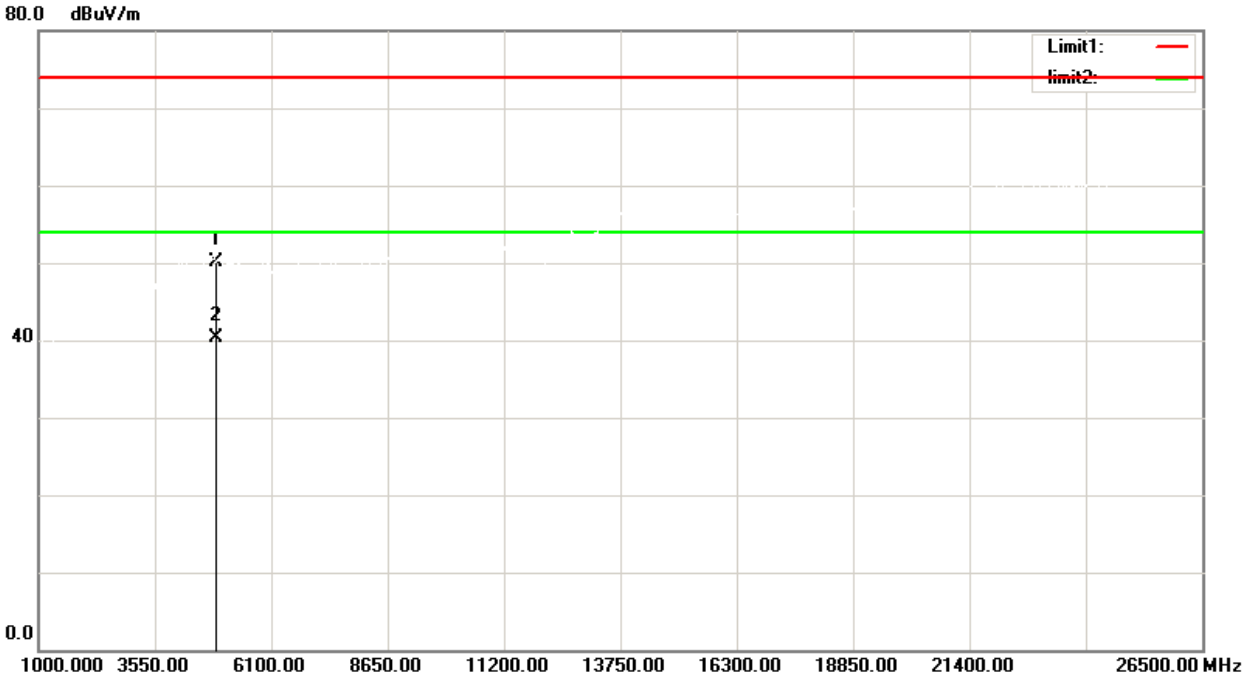
Horizontal



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		4804.000	55.01	-1.90	53.11	74.00	-20.89	peak	150	85	
2	*	4804.000	44.89	-1.90	42.99	54.00	-11.01	AVG	150	85	

Test Mode:	TX 2441 MHz_CH39_1Mbps

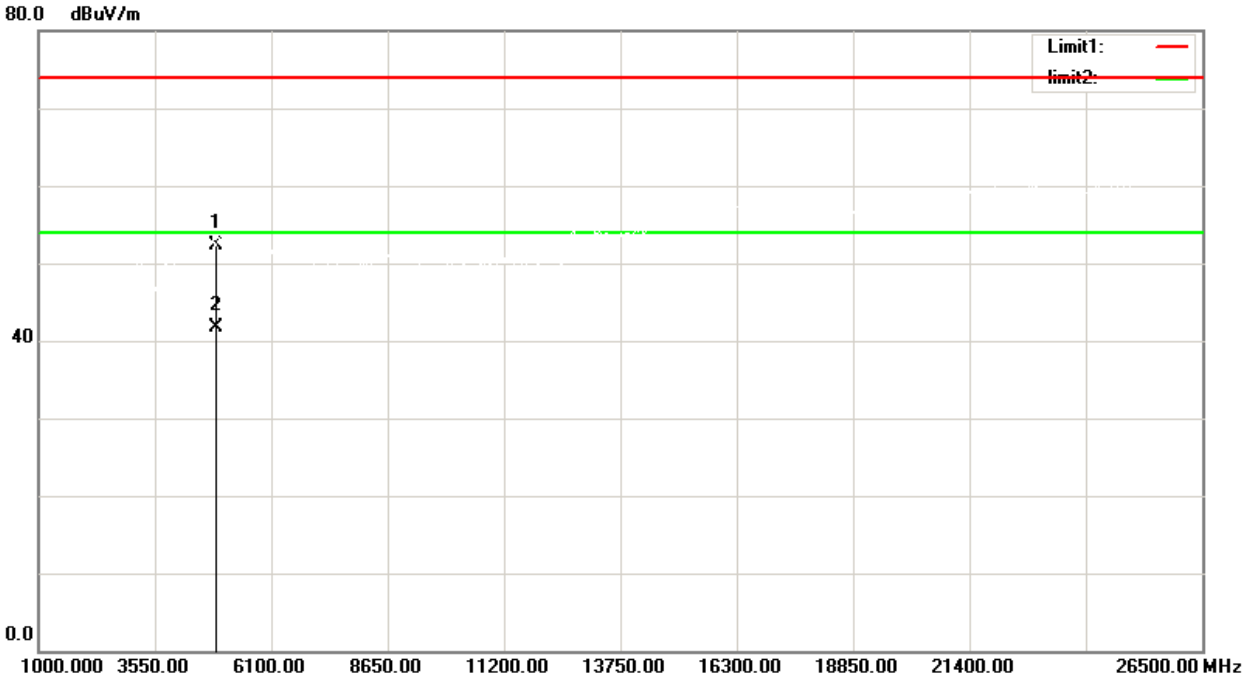
Vertical



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		4884.000	52.25	-2.15	50.10	74.00	-23.90	peak	150	108	
2	*	4884.000	42.51	-2.15	40.36	54.00	-13.64	AVG	150	108	

Test Mode:	TX 2441 MHz_CH39_1Mbps

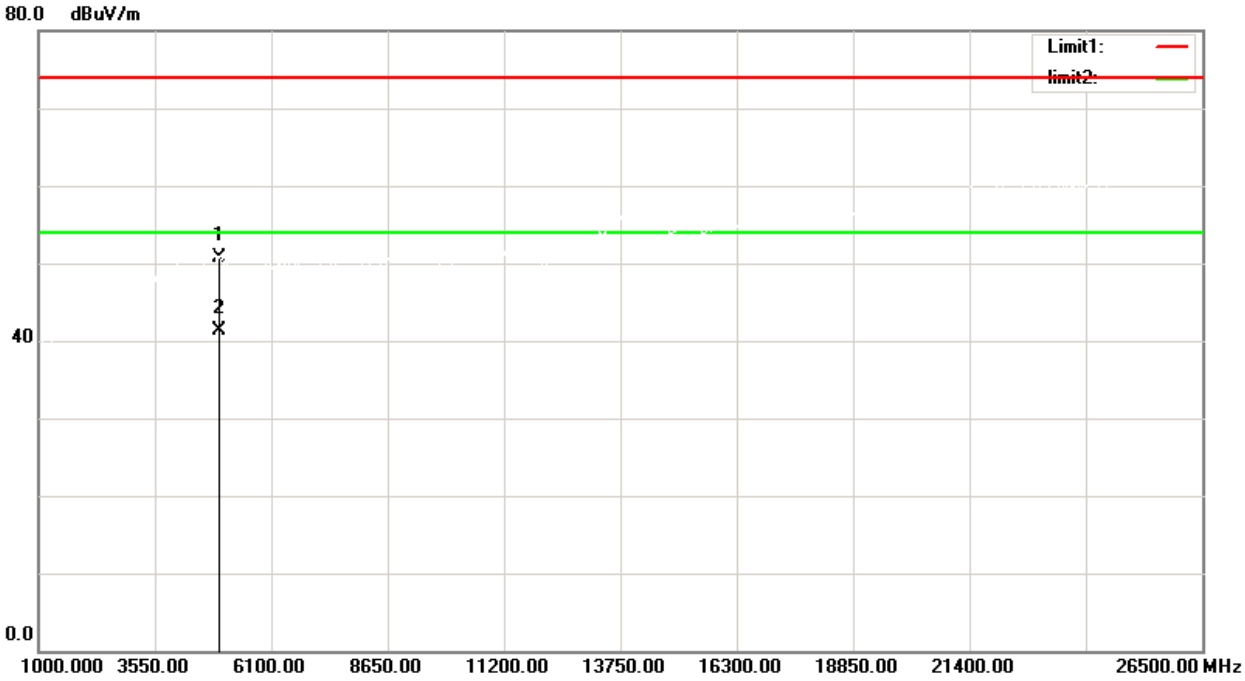
Horizontal



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		4884.000	54.54	-2.15	52.39	74.00	-21.61	peak	150	14	
2	*	4884.000	43.84	-2.15	41.69	54.00	-12.31	AVG	150	14	

Test Mode:	TX 2480 MHz_CH78_1Mbps

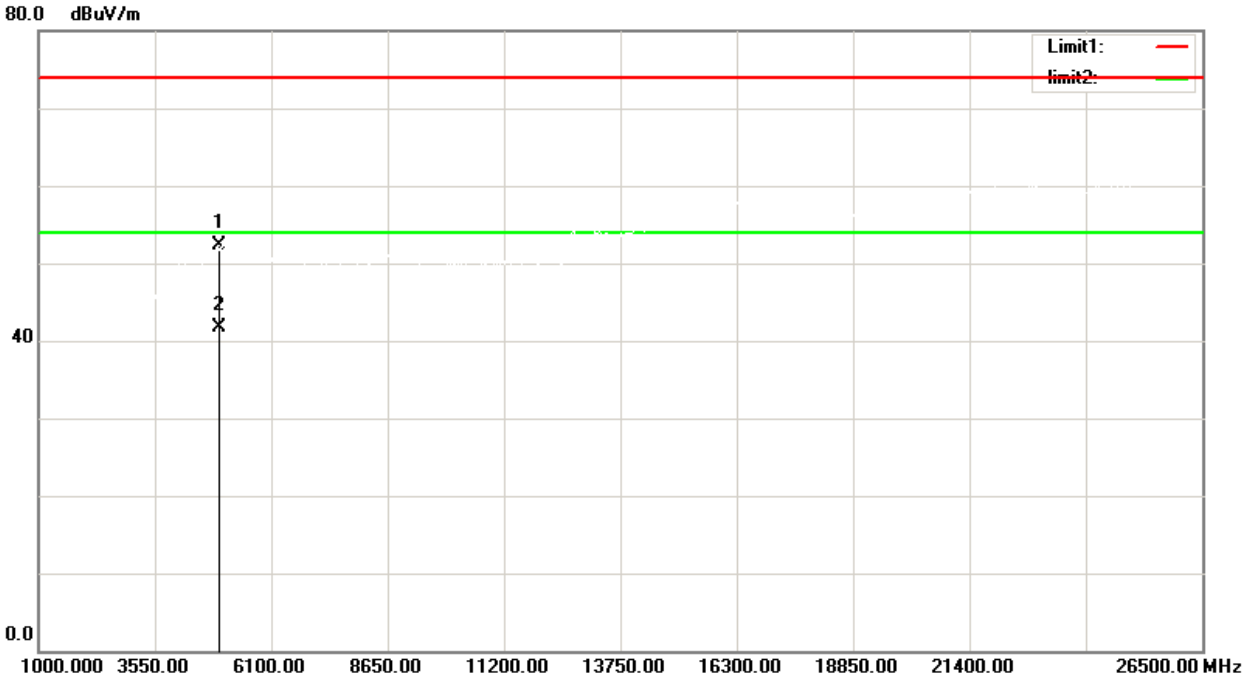
Vertical



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	52.37	-1.76	50.61	74.00	-23.39	peak	150	29	
2	*	4960.000	43.12	-1.76	41.36	54.00	-12.64	AVG	150	29	

Test Mode:	TX 2480 MHz_CH78_1Mbps

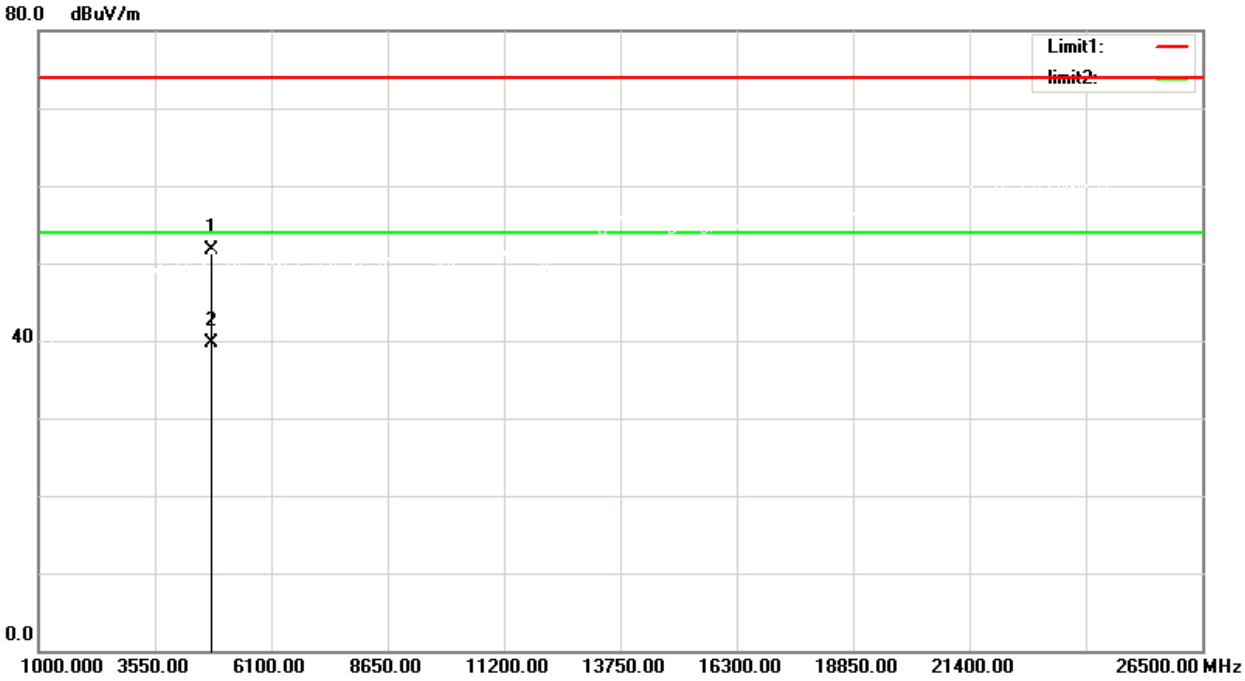
Horizontal



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	54.03	-1.76	52.27	74.00	-21.73	peak	150	11	
2	*	4960.000	43.46	-1.76	41.70	54.00	-12.30	AVG	150	11	

Test Mode:	TX 2402 MHz_CH00_3Mbps

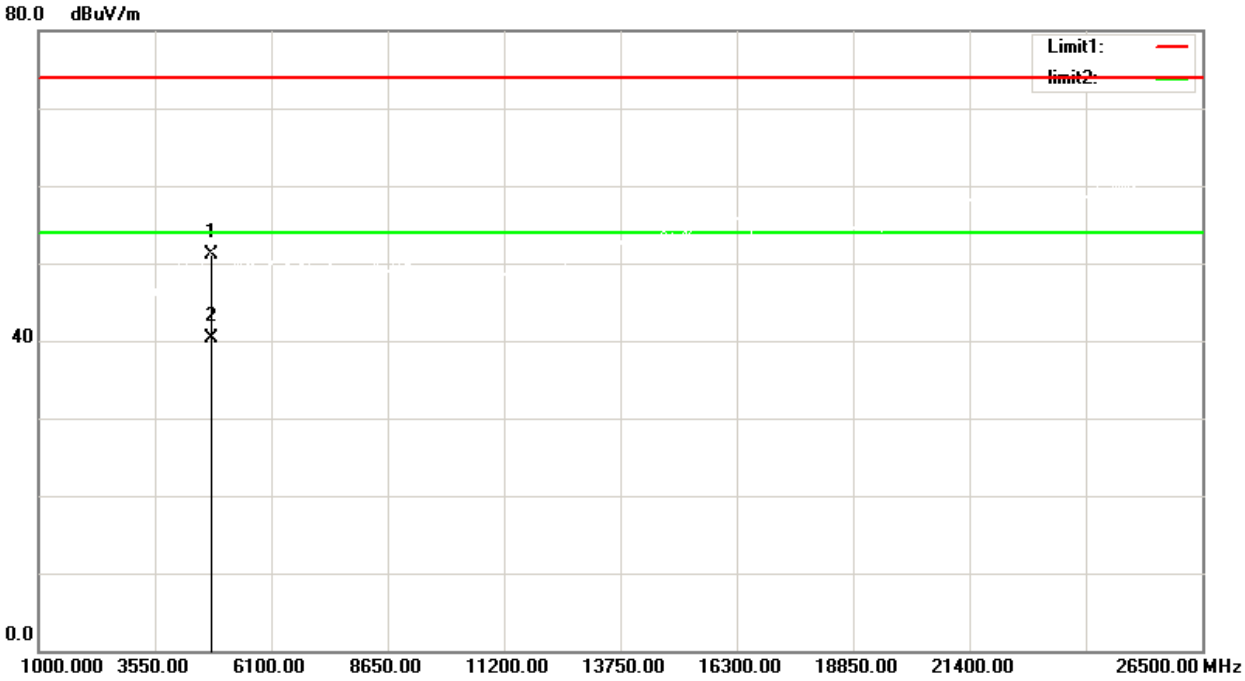
Vertical



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	53.55	-1.90	51.65	74.00	-22.35	peak	150	136	
2	*	4804.000	41.58	-1.90	39.68	54.00	-14.32	AVG	150	136	

Test Mode:	TX 2402 MHz_CH00_3Mbps

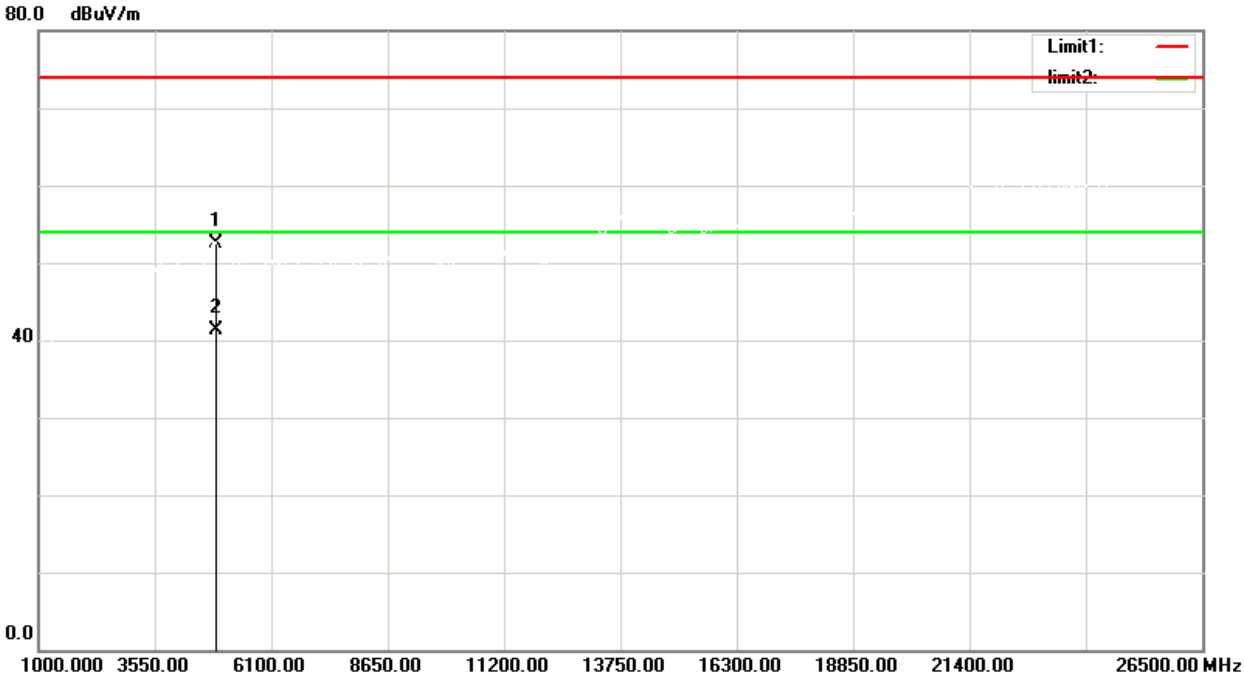
Horizontal



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	53.01	-1.90	51.11	74.00	-22.89	peak	150	148	
2	*	4804.000	42.23	-1.90	40.33	54.00	-13.67	AVG	150	148	

Test Mode:	TX 2441 MHz_CH39_3Mbps

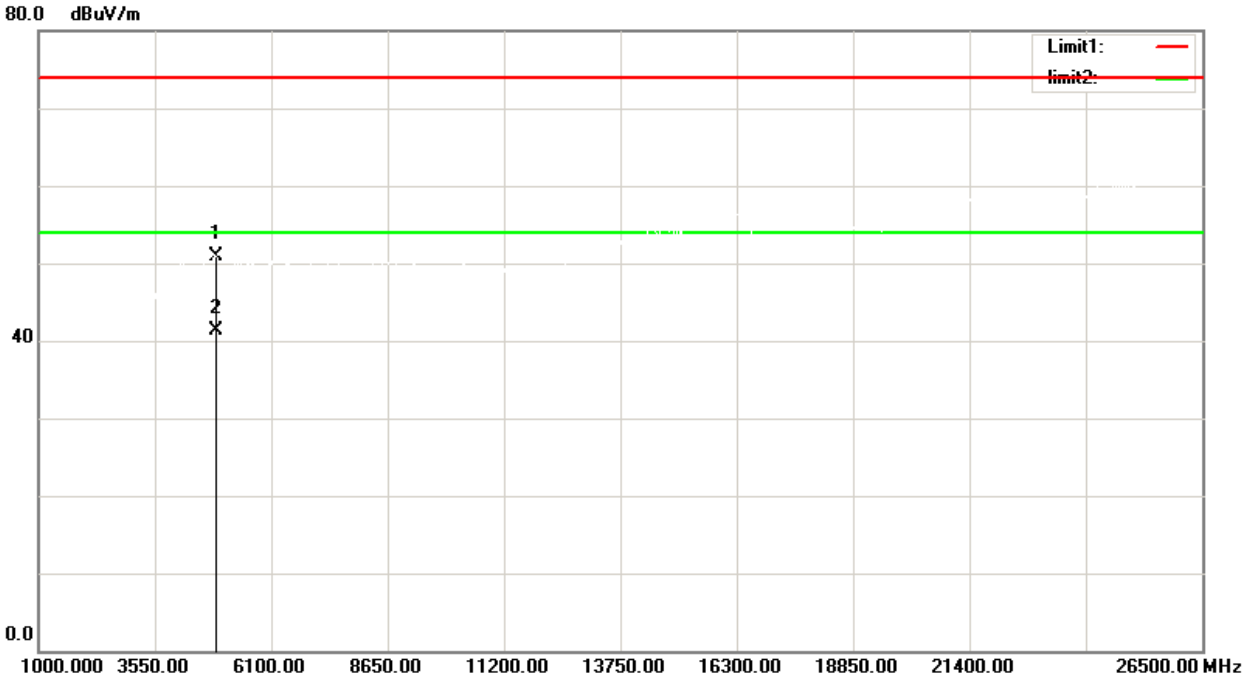
Vertical



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		4884.000	54.75	-2.15	52.60	74.00	-21.40	peak	150	78	
2	*	4884.000	43.40	-2.15	41.25	54.00	-12.75	AVG	150	78	

Test Mode:	TX 2441 MHz_CH39_3Mbps

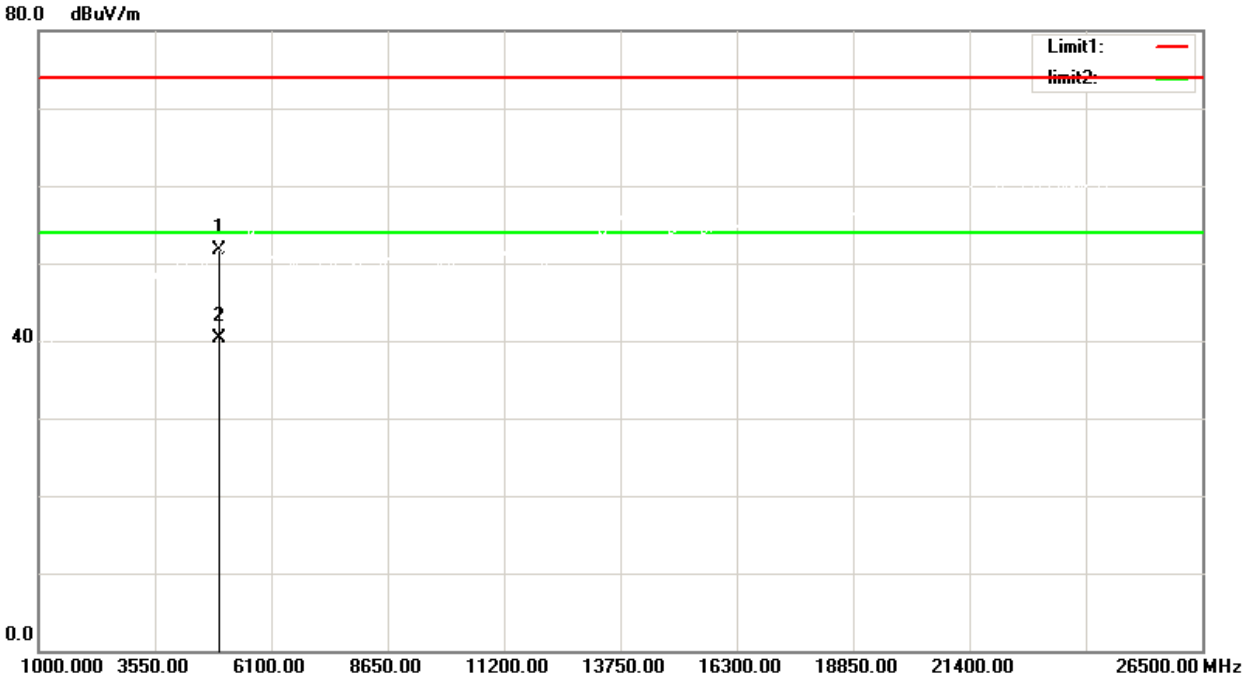
Horizontal



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	53.04	-2.15	50.89	74.00	-23.11	peak	150	41	
2	*	4884.000	43.47	-2.15	41.32	54.00	-12.68	AVG	150	41	

Test Mode:	TX 2480 MHz_CH78_3Mbps

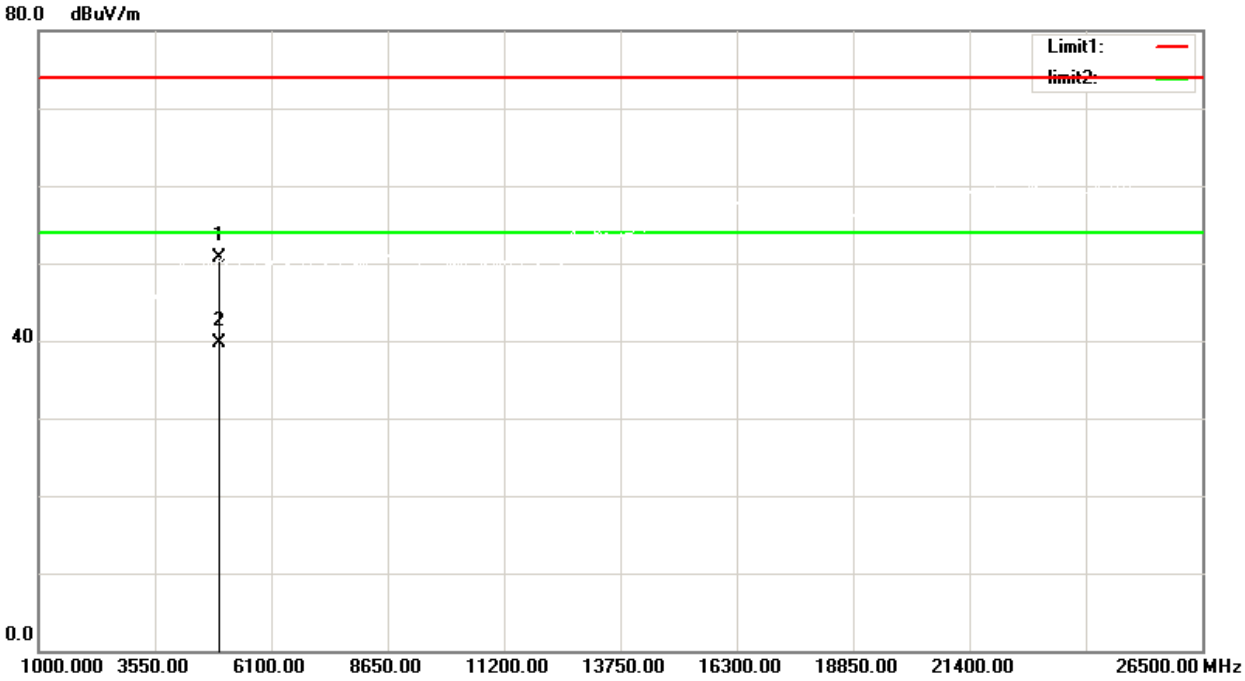
Vertical



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	53.37	-1.76	51.61	74.00	-22.39	peak	150	88	
2	*	4960.000	42.01	-1.76	40.25	54.00	-13.75	AVG	150	88	

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	52.53	-1.76	50.77	74.00	-23.23	peak	150	101	
2	*	4960.000	41.41	-1.76	39.65	54.00	-14.35	AVG	150	101	

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

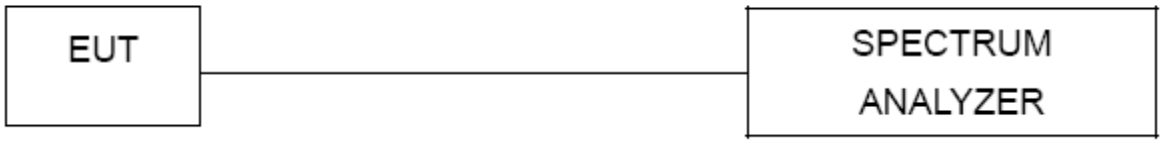
a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. Spectrum Setting: RBW=100 kHz, VBW=300 kHz, Sweep time = Auto.

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

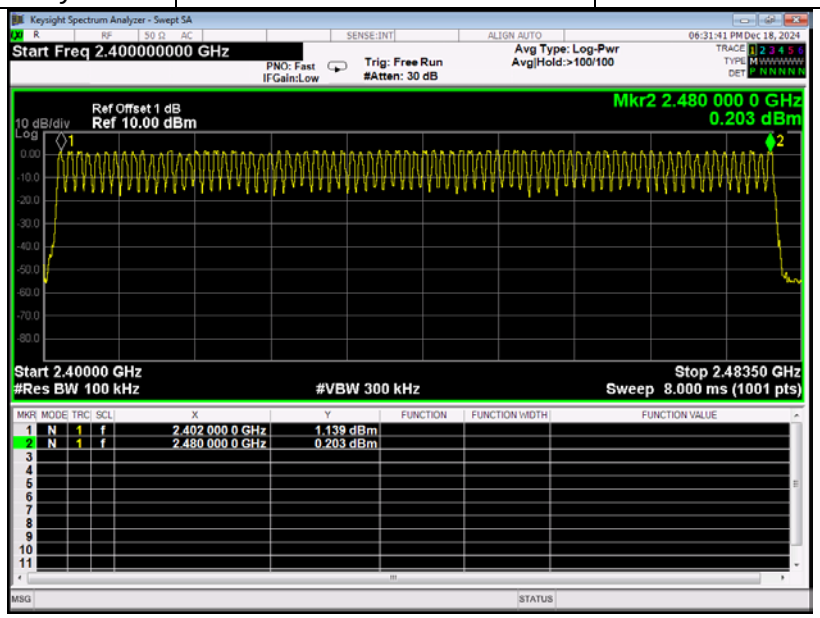


6.5 EUT OPERATION CONDITIONS

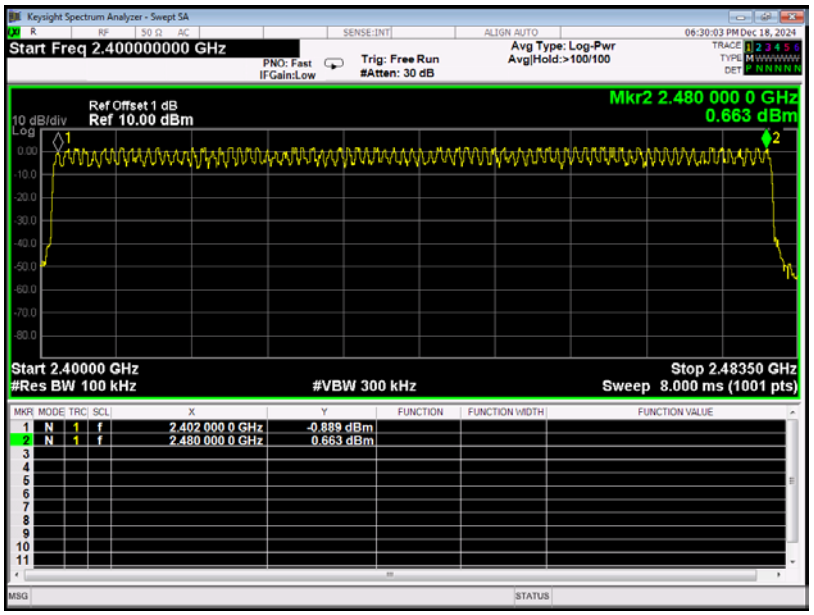
The EUT tested system was configured as the statements of 4.5 unless otherwise a special operating condition is specified in the follows during the testing.

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

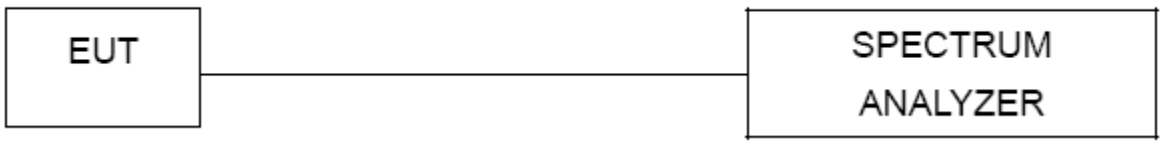
7.2 TEST PROCEDURE AND SETTING

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



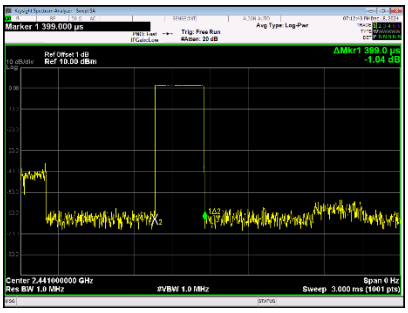
7.5 EUT OPERATION CONDITIONS

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

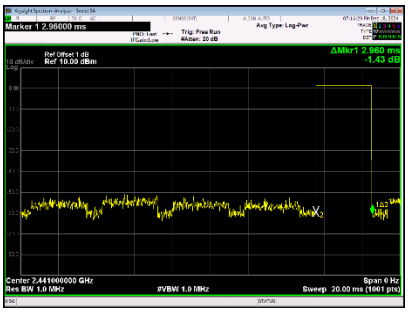
TX Mode_1Mbps				
Mode	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
DH1	2441	0.399	127.7	400
DH3	2441	1.670	267.2	400
DH5	2441	2.960	315.5	400

DH1



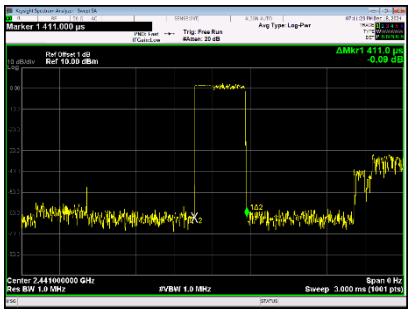
DH3

DH5

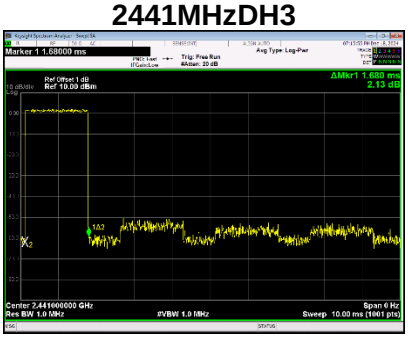


TX Mode_3Mbps				
Mode	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
DH1	2441	0.411	131.5	400
DH3	2441	1.680	268.8	400
DH5	2441	2.960	315.5	400

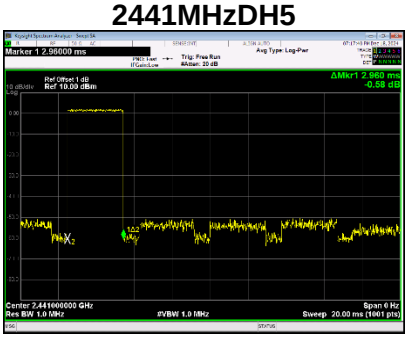
2441MHzDH1



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.

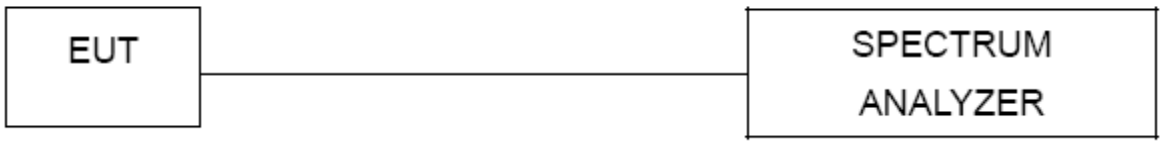
b. Span = wide enough to capture the peaks of two adjacent channels
Resolution (or IF) Bandwidth (RBW) ≥ 1% of the span
Video (or Average) Bandwidth (VBW) ≥ RBW
Sweep = Auto
Detector function = Peak
Trace = Max Hold

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	0.987	>(25KHz or 2/3*20dB Bandwidth)	PASS
CH39	2441	0.986	>(25KHz or 2/3*20dB Bandwidth)	PASS
CH78	2480	0.993	>(25KHz or 2/3*20dB Bandwidth)	PASS

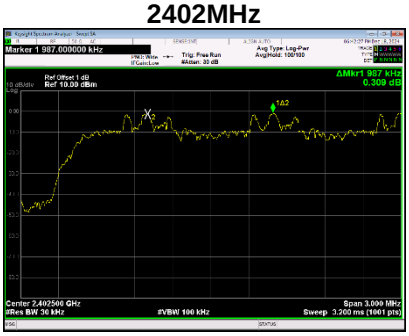
2402MHz

2441MHz

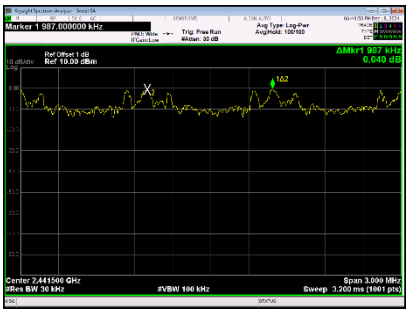
2480MHz

TX Mode_3Mbps				
Channel	Frequency (MHz)	Channel Separation(MHz)	Limit (MHz)	Result
CH00	2402	0.987	>(25KHz or 2/3*20dB Bandwidth)	PASS
CH39	2441	0.987	>(25KHz or 2/3*20dB Bandwidth)	PASS
CH78	2480	1.002	>(25KHz or 2/3*20dB Bandwidth)	PASS

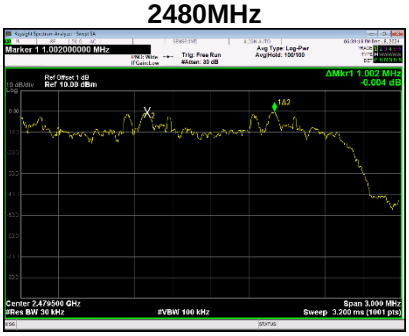
2402MHz



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

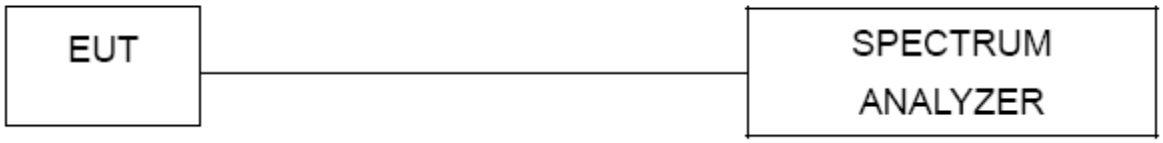
a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
b. Spectrum Setting: RBW= 30 kHz, VBW=100 kHz, Sweep Time = Auto.

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



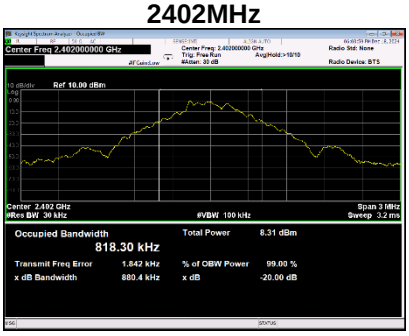
9.5 EUT OPERATION CONDITIONS

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.

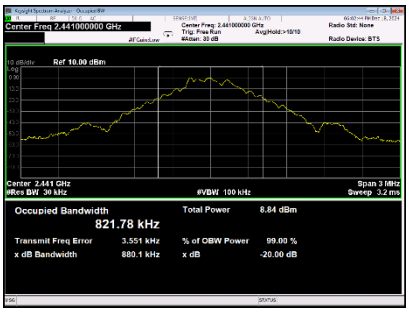
9.6 TEST RESULTS

TX Mode_1Mbps				
Channel	Frequency (MHz)	20dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)	Result
CH00	2402	0.880	0.8183	PASS
CH39	2441	0.880	0.8217	PASS
CH78	2480	0.880	0.8250	PASS

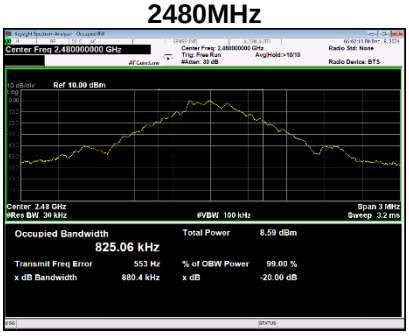
2402MHz



2441MHz

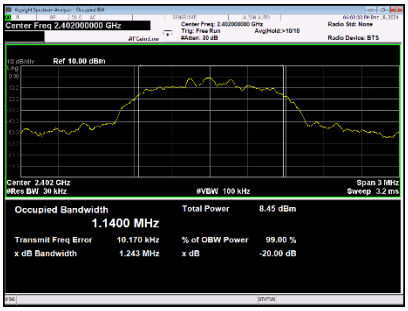


2480MHz

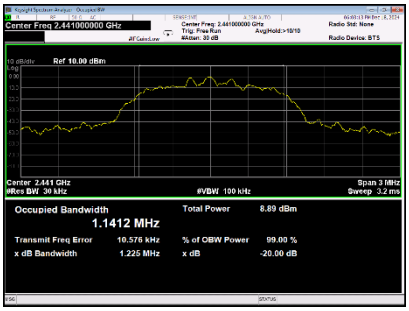


TX Mode_3Mbps				
Channel	Frequency (MHz)	20dB Bandwidth (MHz)	99 % Emission Bandwidth (MHz)	Result
CH00	2402	1.243	1.1400	PASS
CH39	2441	1.225	1.1412	PASS
CH78	2480	1.225	1.1456	PASS

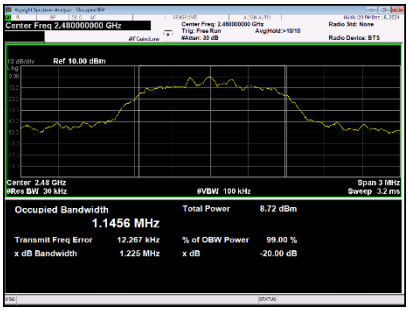
2402MHz



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.

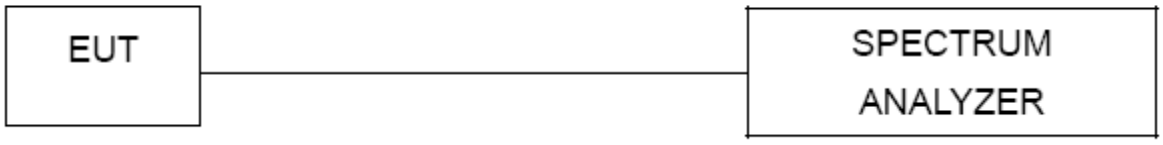
10.2 TEST PROCEDURE AND SETTING

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

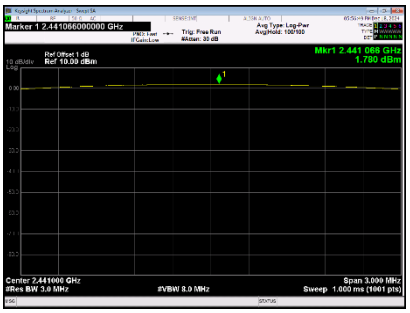
The EUT tested system was configured as the statements of 4.5 unless otherwise a special operating condition is specified in the follows during the testing.

10.6 TEST RESULTS

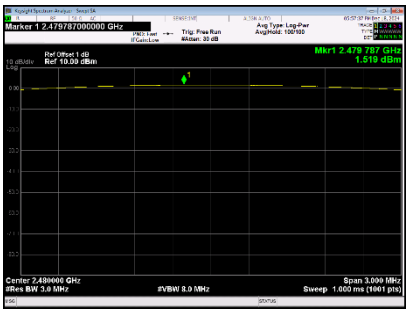
TX Mode_1Mbps				
Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Result
CH00	2402	1.303	0.001350	PASS
CH39	2441	1.780	0.001507	PASS
CH78	2480	1.519	0.001419	PASS
Limit	21dBm /0.125W			

CH00

CH39



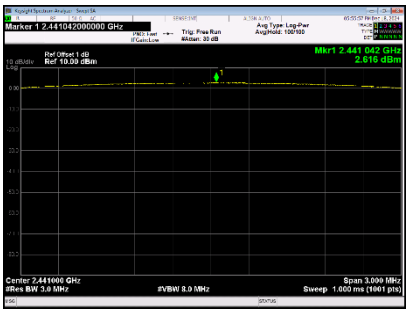
CH78



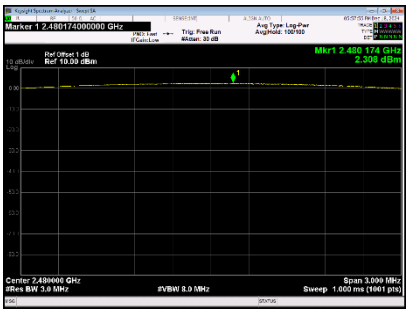
TX Mode_2Mbps				
Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Result
CH00	2402	2.185	0.001654	PASS
CH39	2441	2.616	0.001826	PASS
CH78	2480	2.308	0.001701	PASS
Limit	21dBm /0.125W			

CH00

CH39

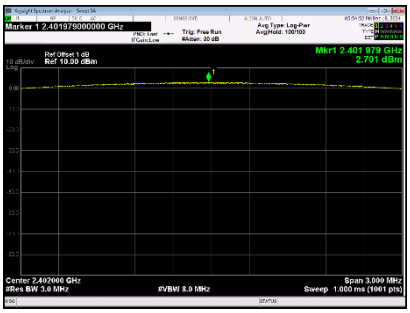


CH78

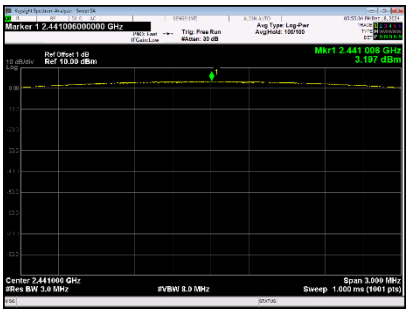


TX Mode_3Mbps				
Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Result
CH00	2402	2.701	0.001863	PASS
CH39	2441	3.197	0.002088	PASS
CH78	2480	2.894	0.001947	PASS
Limit	21dBm /0.125W			

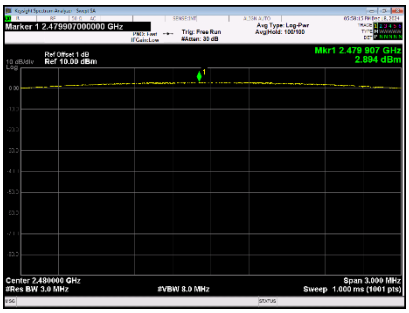
CH00



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

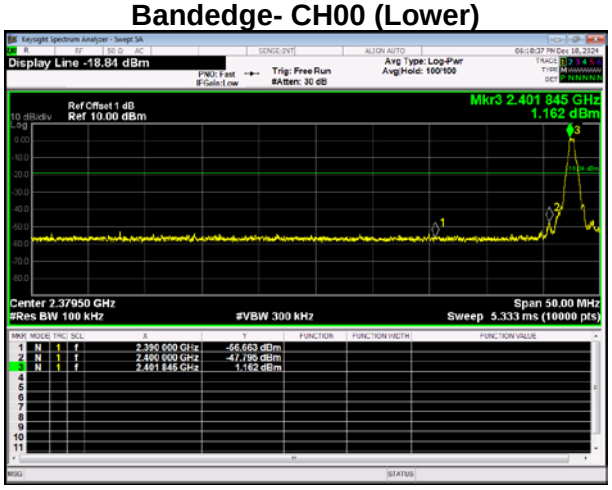
11.5 EUT OPERATION CONDITIONS

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.

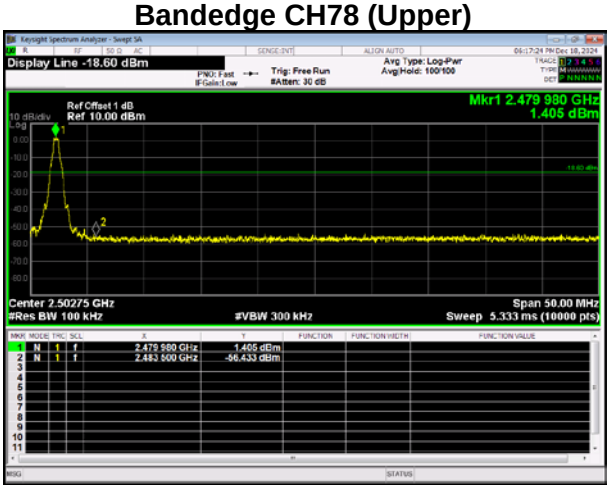
11.6 TEST RESULTS

TX Mode_1Mbps

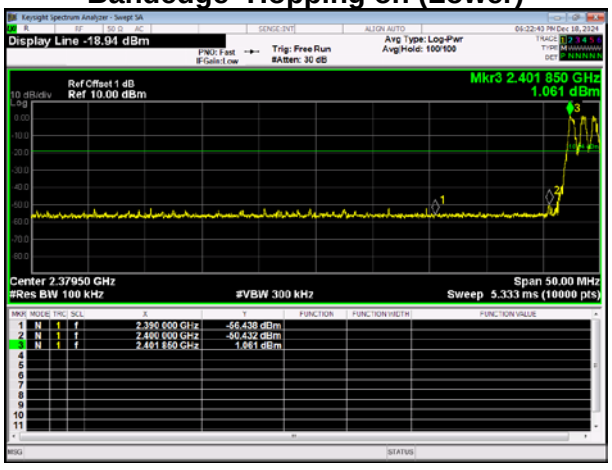
Bandedge- CH00 (Lower)



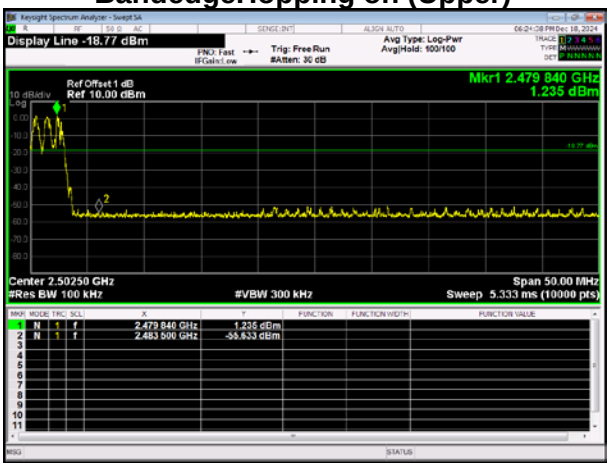
Bandedge CH78 (Upper)



Bandedge- Hopping on (Lower)

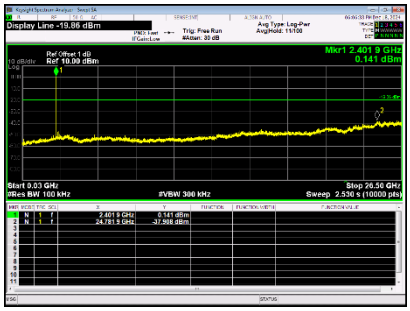


BandedgeHopping on (Upper)

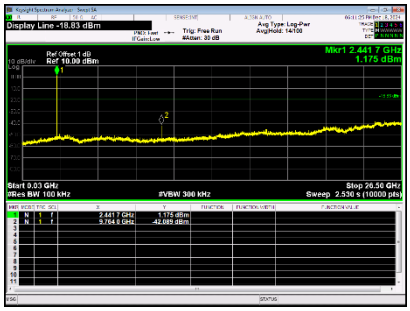


10th Harmonic of the fundamental frequency

CH00



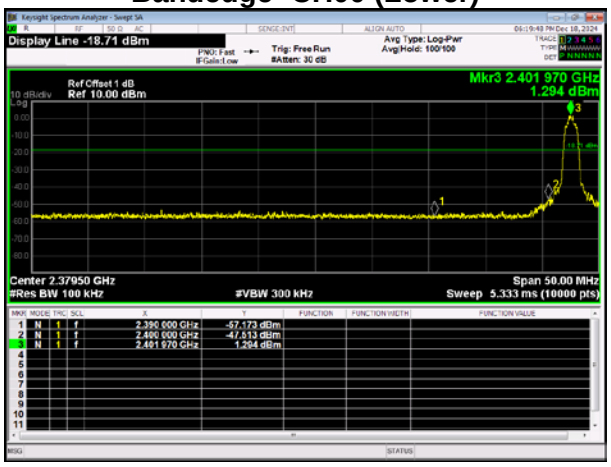
CH39



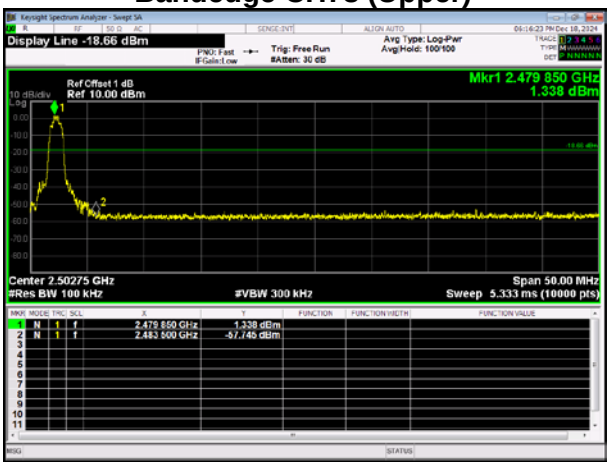
CH78

TX Mode_3Mbps

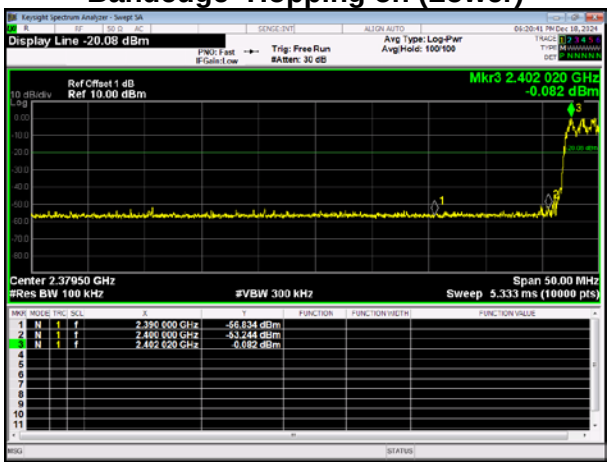
Bandedge- CH00 (Lower)



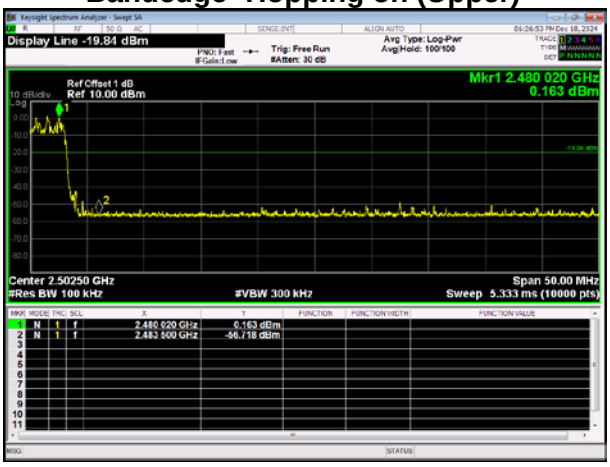
Bandedge CH78 (Upper)



Bandedge- Hopping on (Lower)

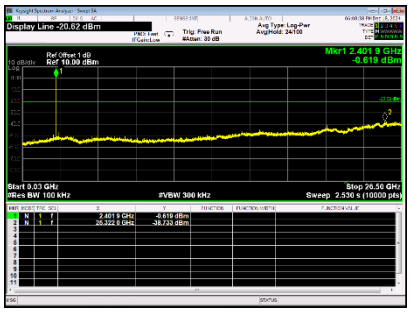


Bandedge- Hopping on (Upper)

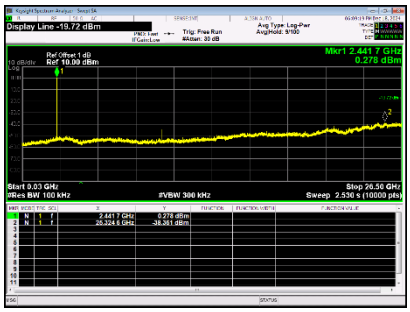


10th Harmonic of the fundamental frequency

CH00



CH39



CH78

END OF TEST REPORT