

Table of Contents

1.	MAXIMUM PEAK CONDUCTED OUTPUT POWER	2
1.1	TEST DATAS	2
1.2	TEST PLOTS	2
2.	99% BANDWIDTH	4
2.1	TEST DATAS	4
2.2	TEST PLOTS	4
3.	CONDUCTED POWER SPECTRAL DENSITY	6
3.1	TEST DATAS	6
3.2	TEST PLOTS	6
4.	6dB BANDWIDTH	8
4.1	TEST DATAS	8
4.2	TEST PLOTS	8
5.	CONDUCTED SPURIOUS EMISSIONS	10
5.1	TEST PLOTS	10
6.	RADIATED SPURIOUS EMISSIONS	14
6.1	TEST DATAS	14
6.2	BANEDGE	ERROR! BOOKMARK NOT DEFINED.
6.2.1	<i>Test Datas</i>	32
7.	CONDUCTED EMISSIONS ON AC MAINS	34
7.1	TEST DATAS	34

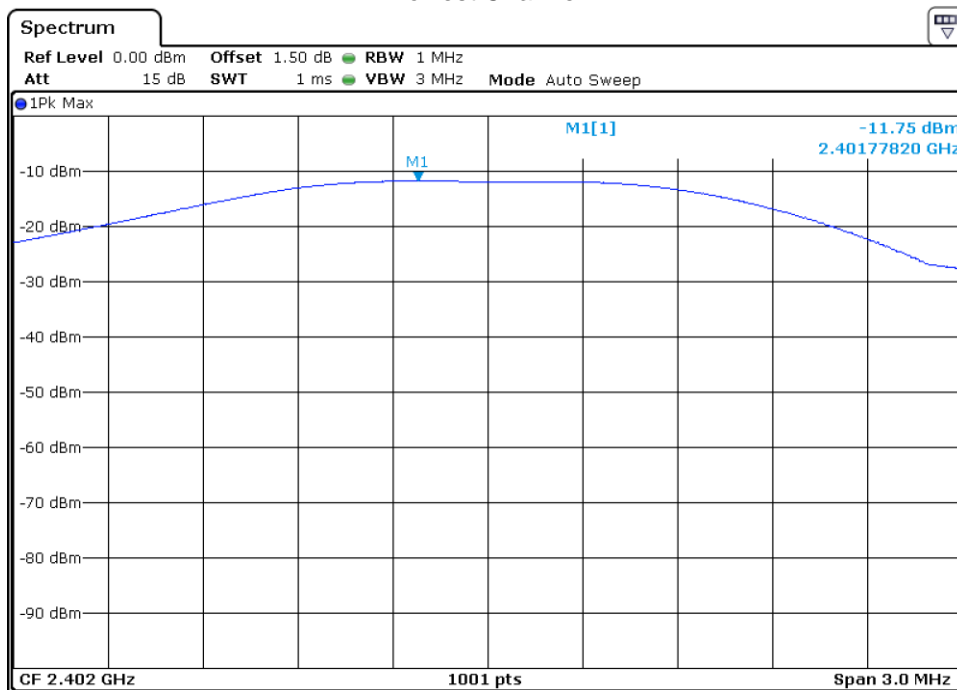
1. Maximum Peak Conducted Output Power

1.1 Test Data

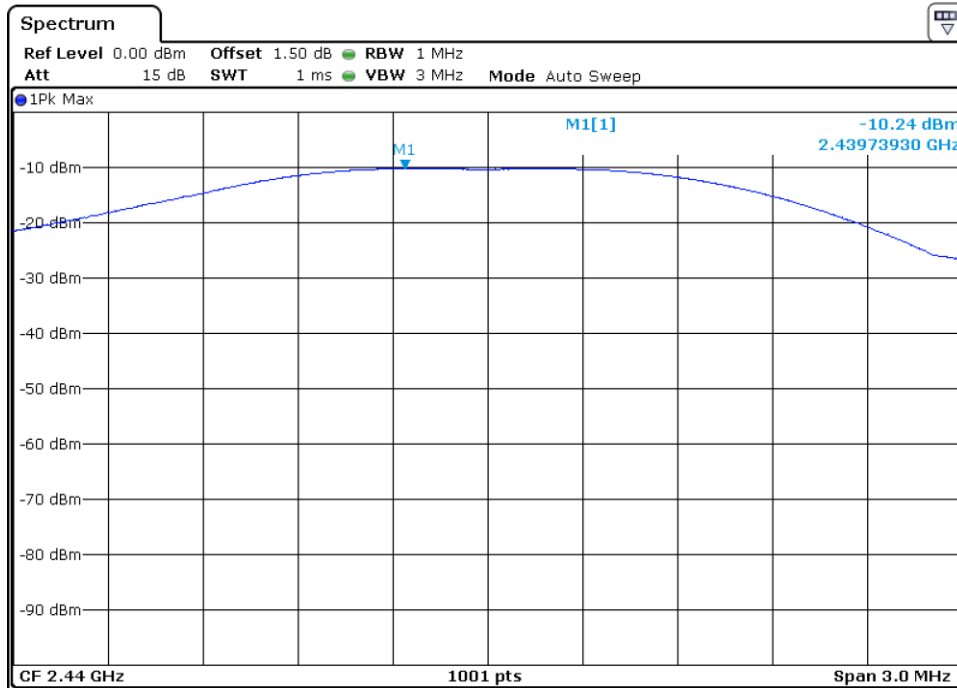
Test Mode	Frequency MHz	Reading dBm	Output Power mW	Limit mW
GFSK(BLE)	2402	-11.75	0.07	1000
	2440	-10.24	0.09	1000
	2480	-9.28	0.12	1000

1.2 Test Plots

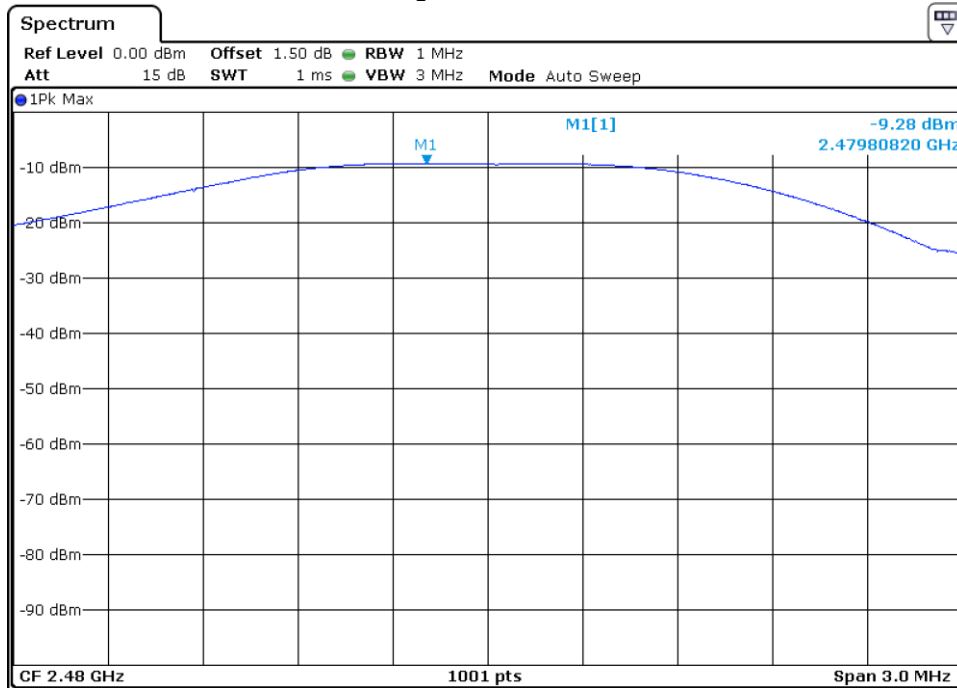
Lowest Channel



Middle Channel



Highest Channel



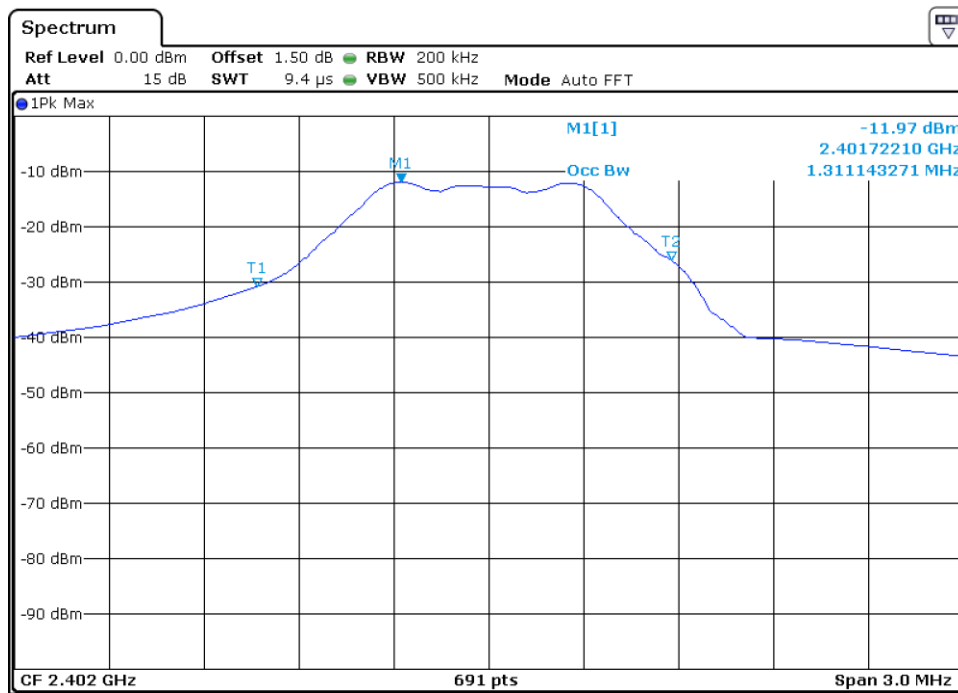
2. 99% Bandwidth

2.1 Test Data

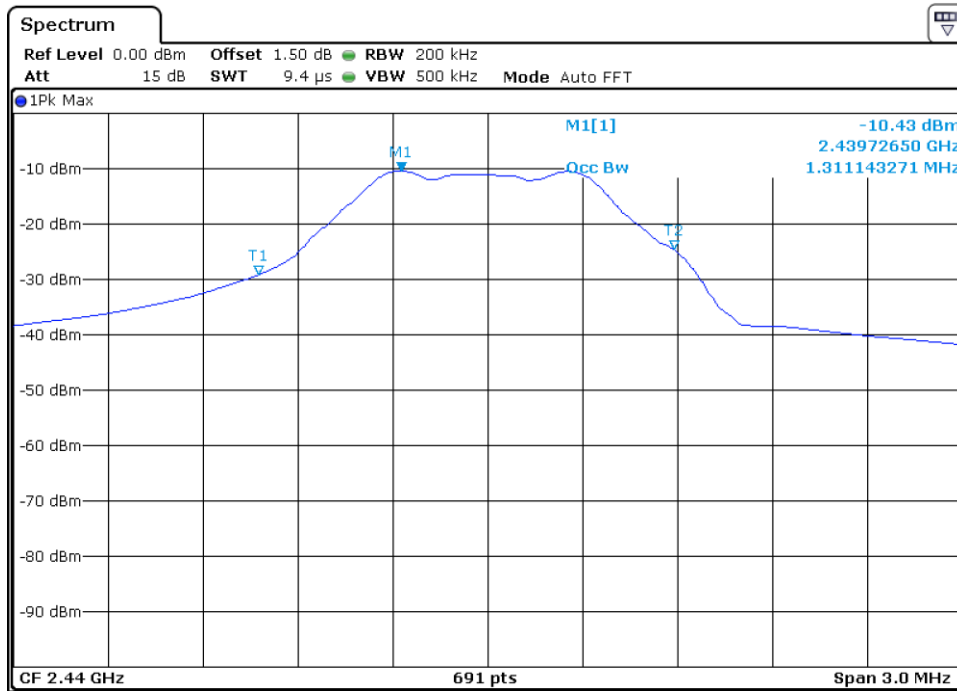
Test Mode	Test Channel MHz	99% Bandwidth kHz	Limit kHz
GFSK(BLE)	2402	1311	N/A
	2440	1311	N/A
	2480	1320	N/A

2.2 Test Plots

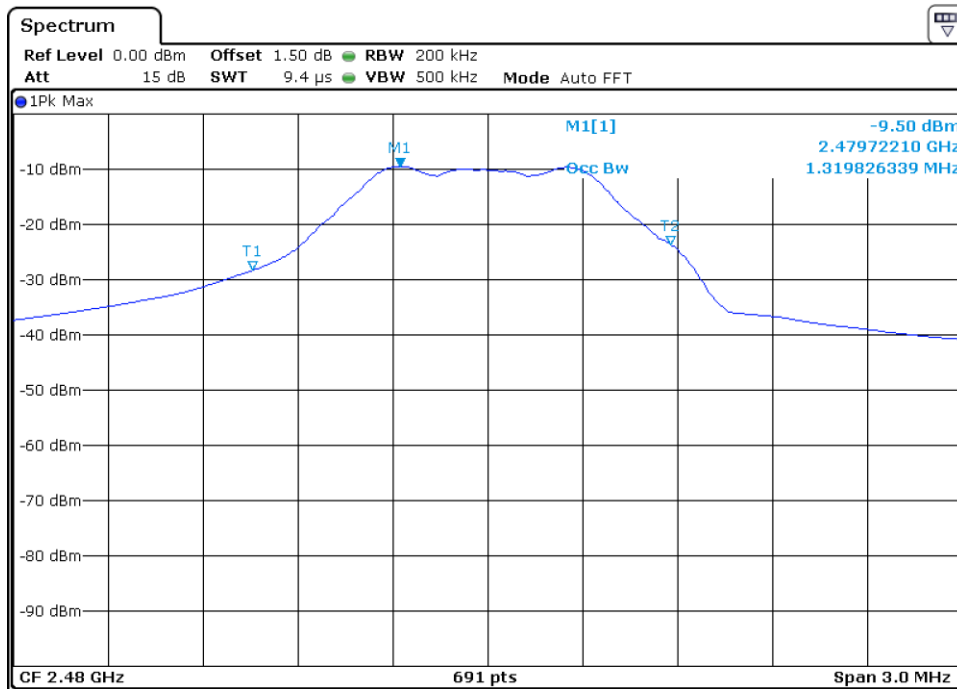
Lowest Channel



Middle Channel



Highest Channel



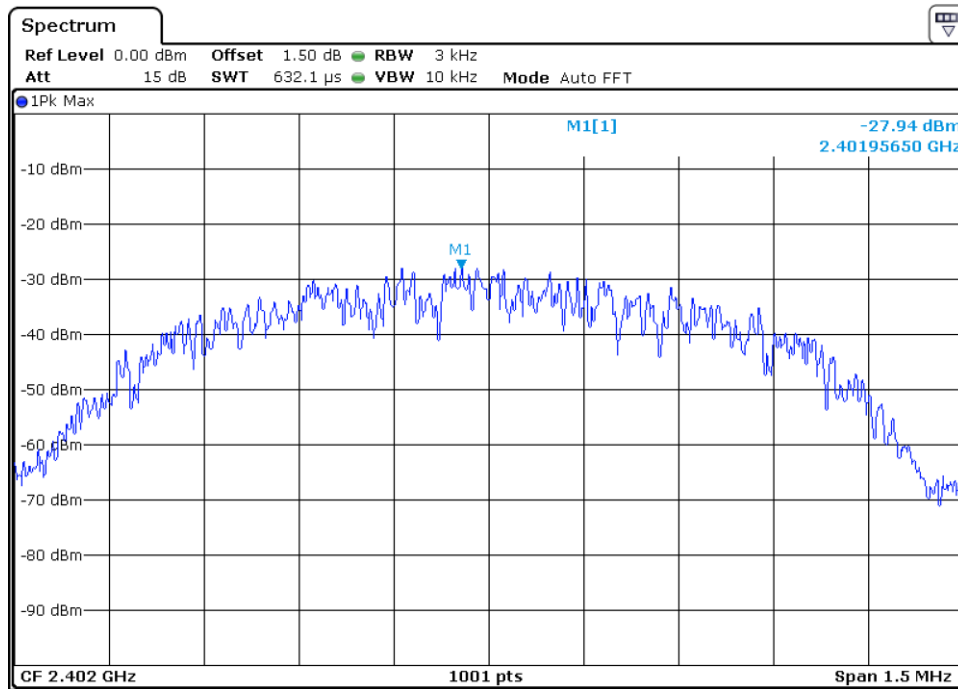
3. Conducted Power Spectral Density

3.1 Test Data

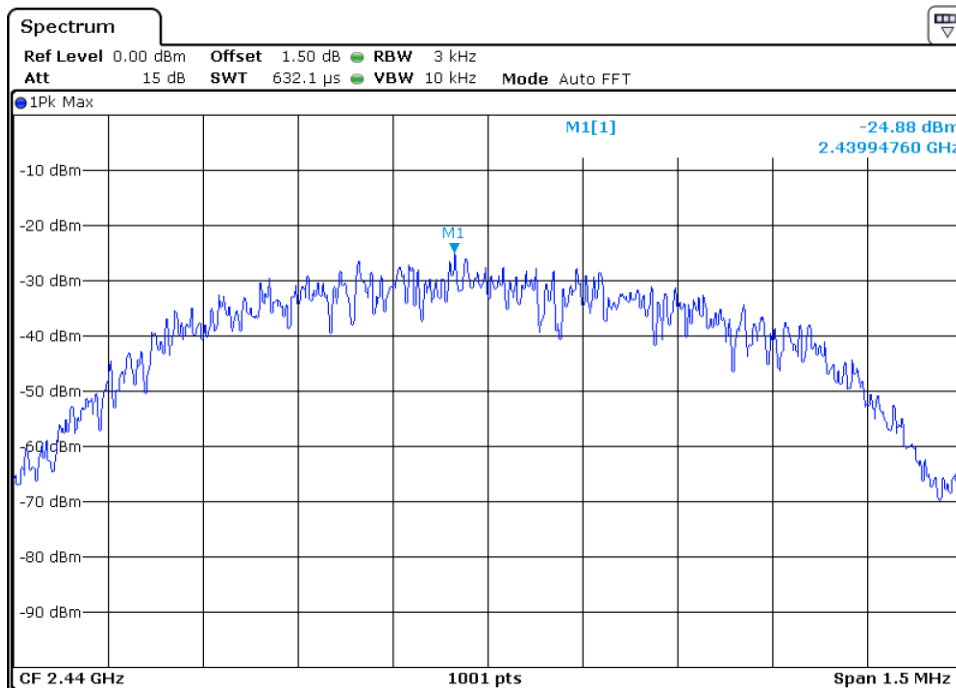
Test Mode	Test Channel MHz	Power Spectral Density dBm/3kHz	Limit dBm/3kHz
GFSK(BLE)	2402	-27.94	8
	2440	-24.88	8
	2480	-24.90	8

3.2 Test Plots

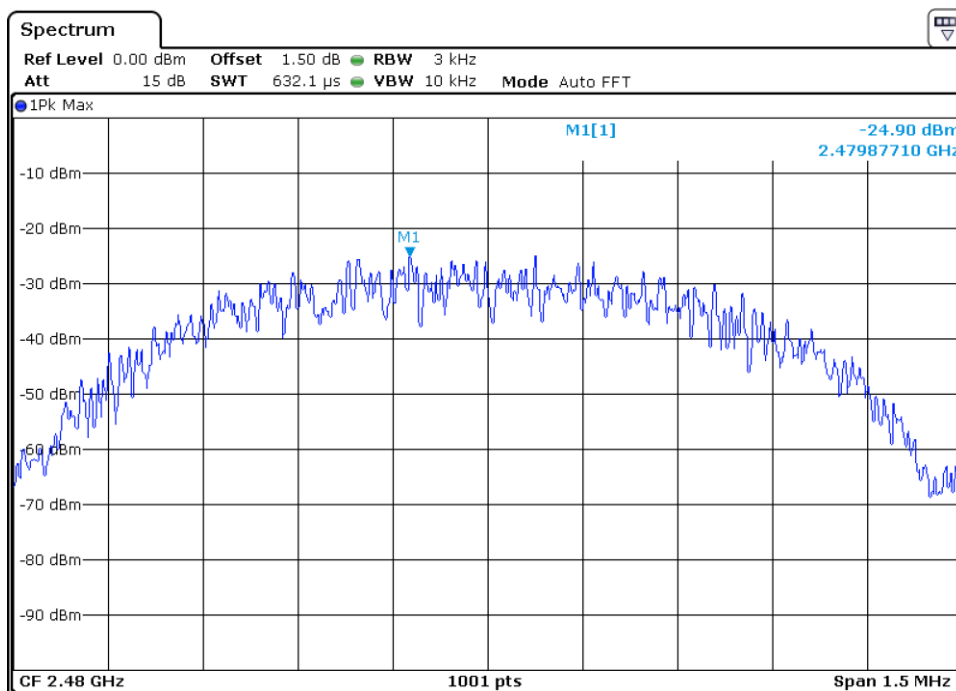
Lowest Channel



Middle Channel



Highest Channel



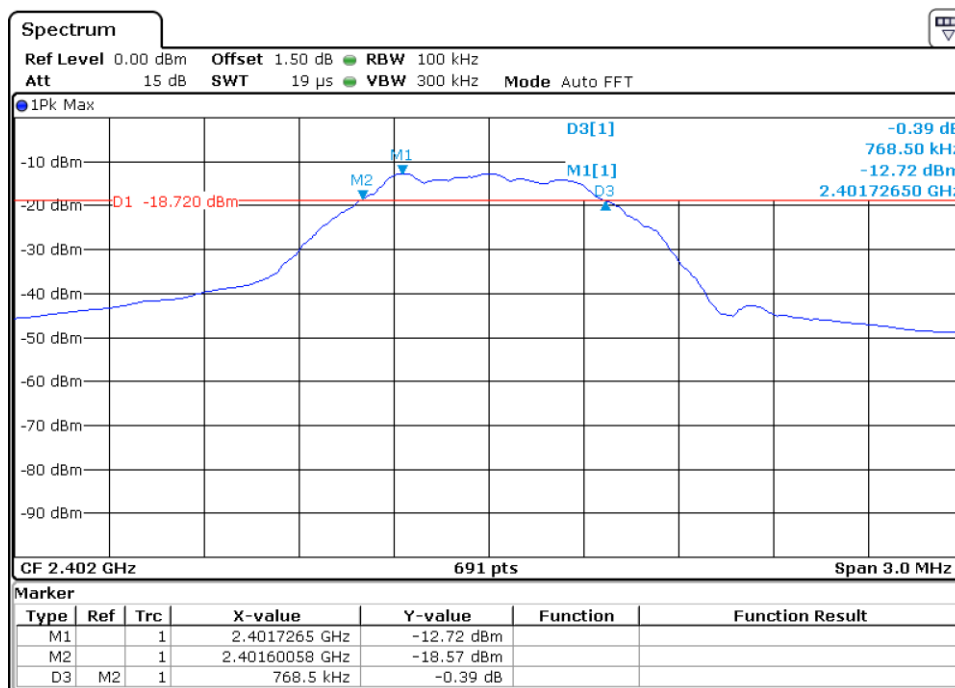
4. 6dB Bandwidth

4.1 Test Data

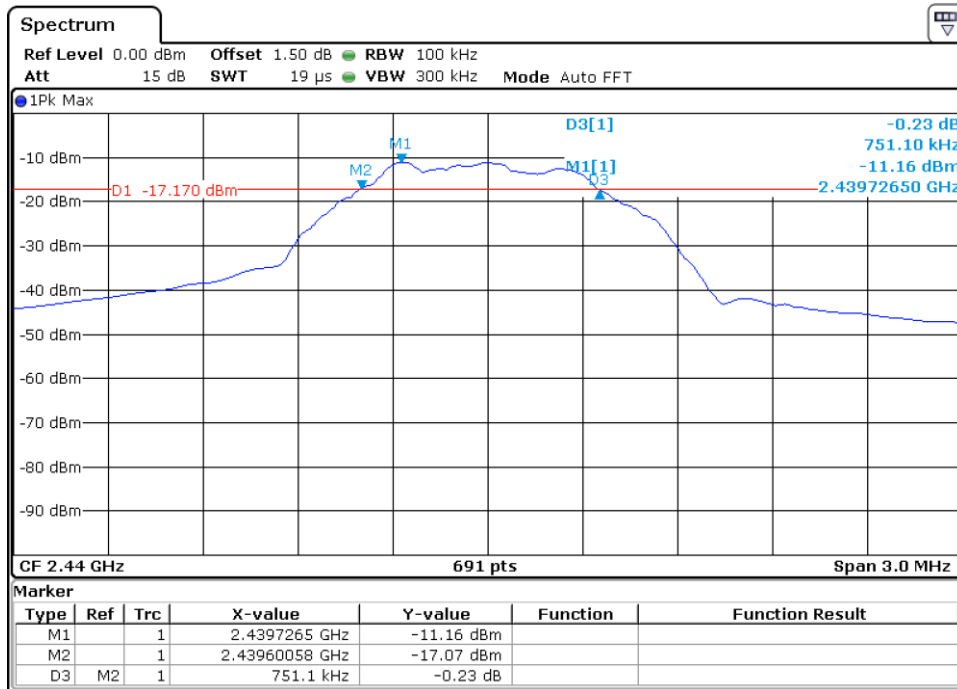
Test Mode	Test Channel MHz	6 dB Bandwidth kHz	Limit kHz
GFSK(BLE)	2402	768.5	≥500
	2440	751.1	≥500
	2480	764.1	≥500

4.2 Test Plots

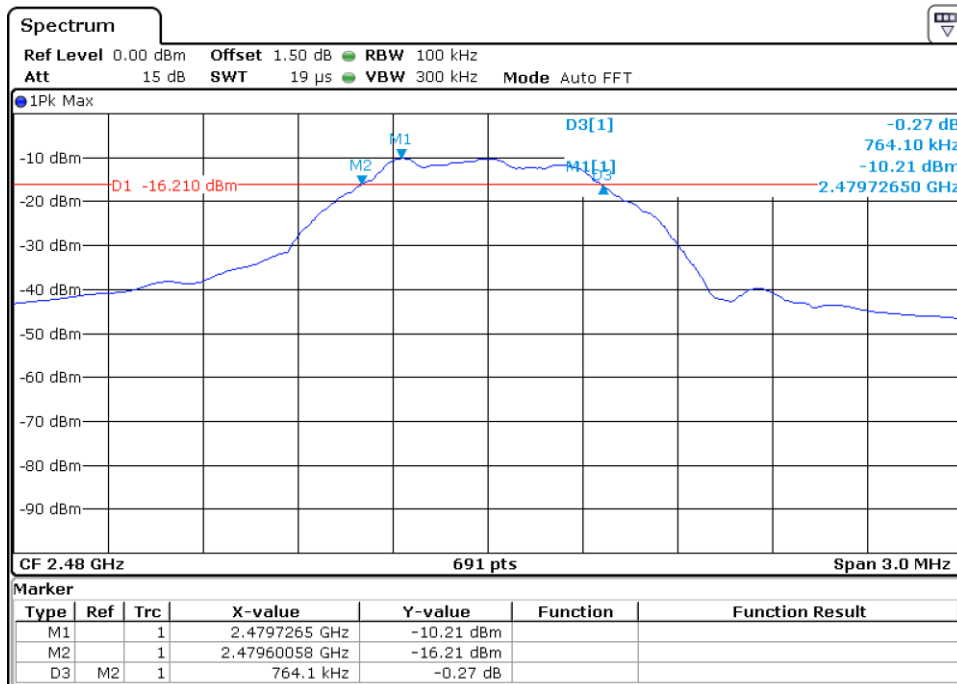
Lowest Channel



Middle Channel



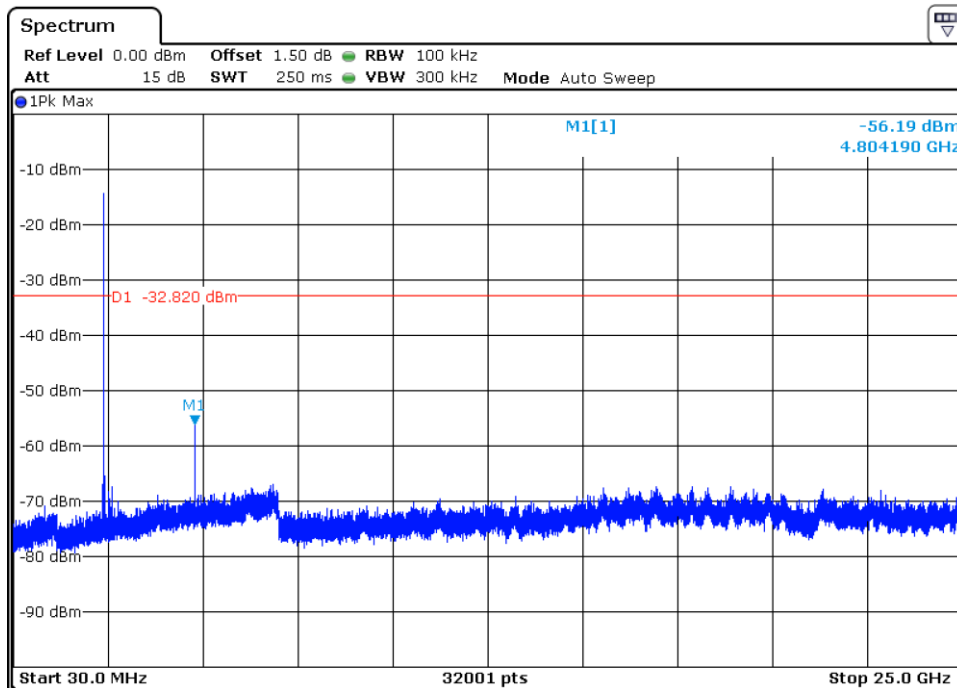
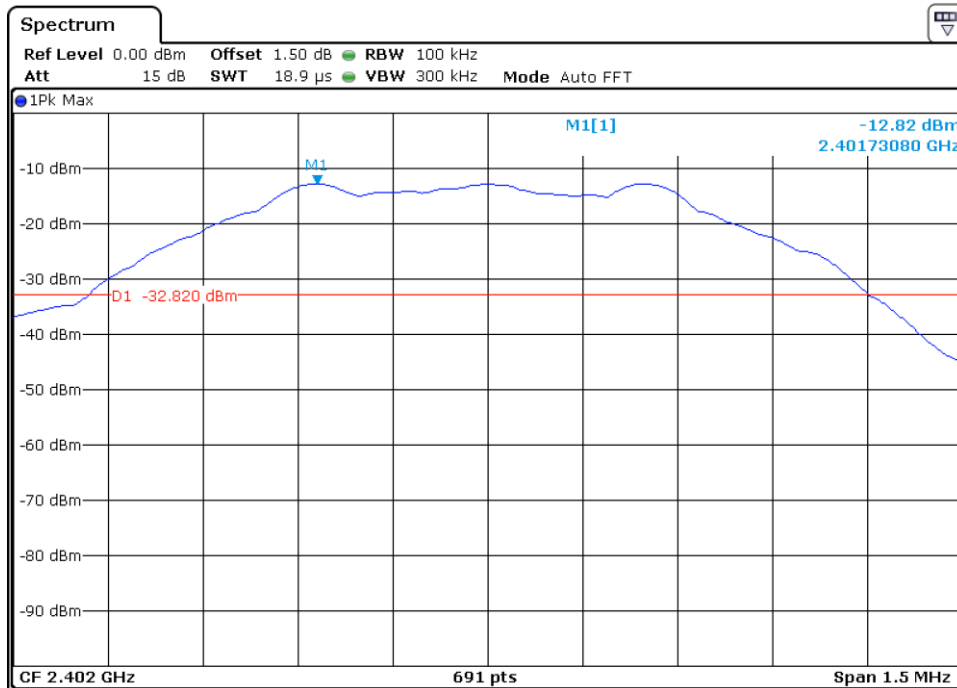
Highest Channel

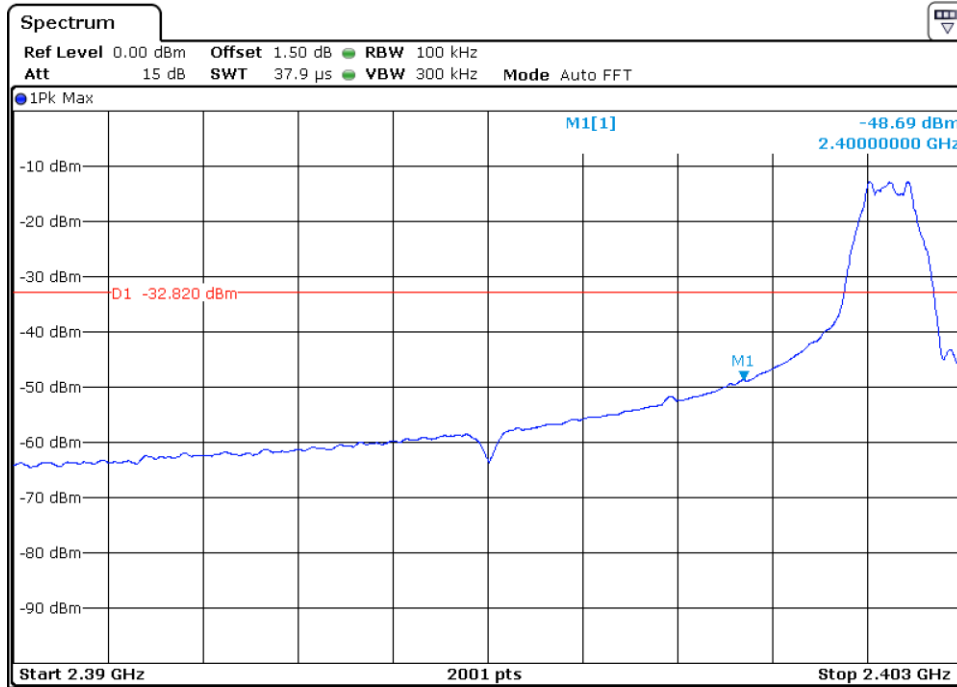


5. Conducted Spurious Emissions

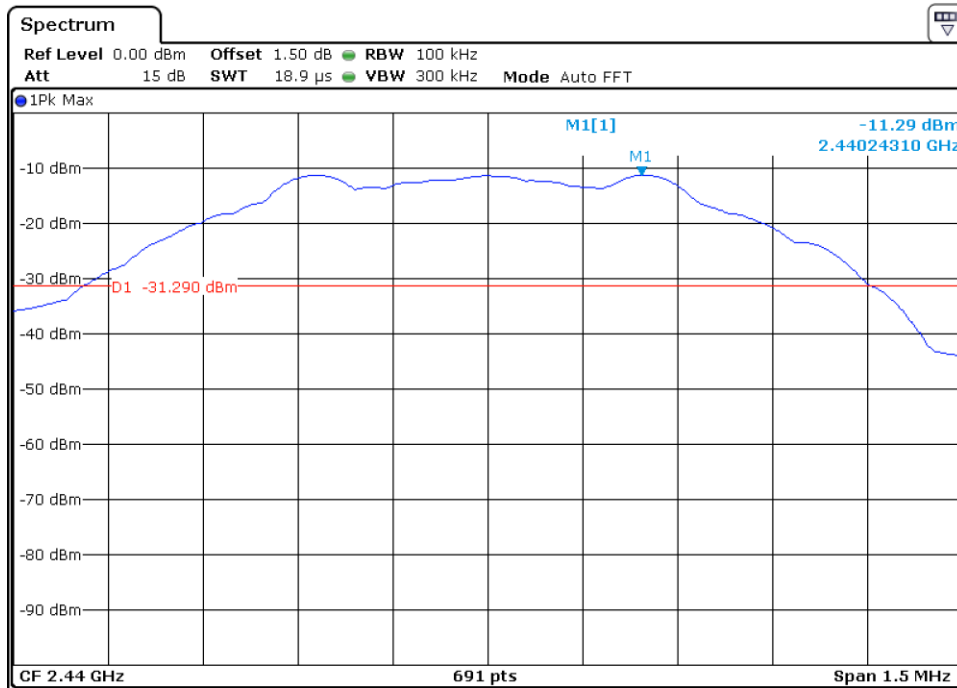
5.1 Test Plots

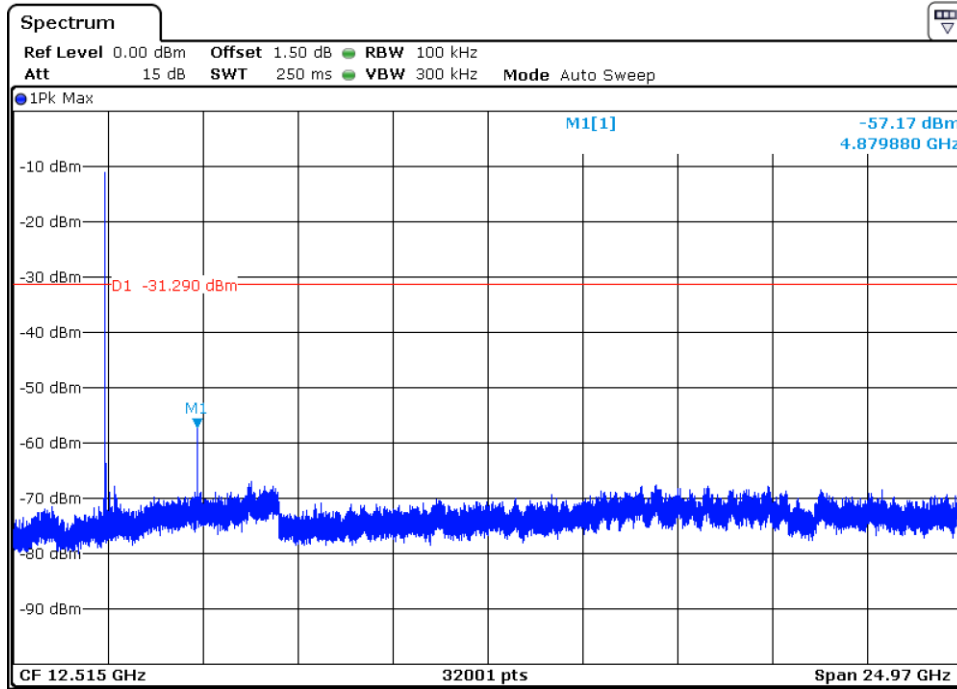
Lowest Channel



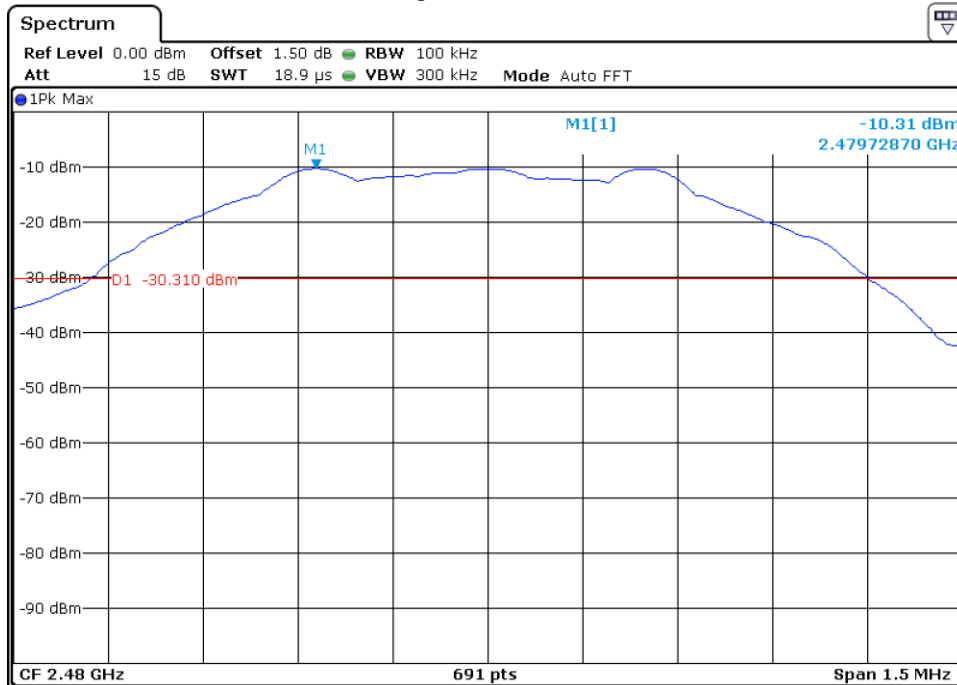


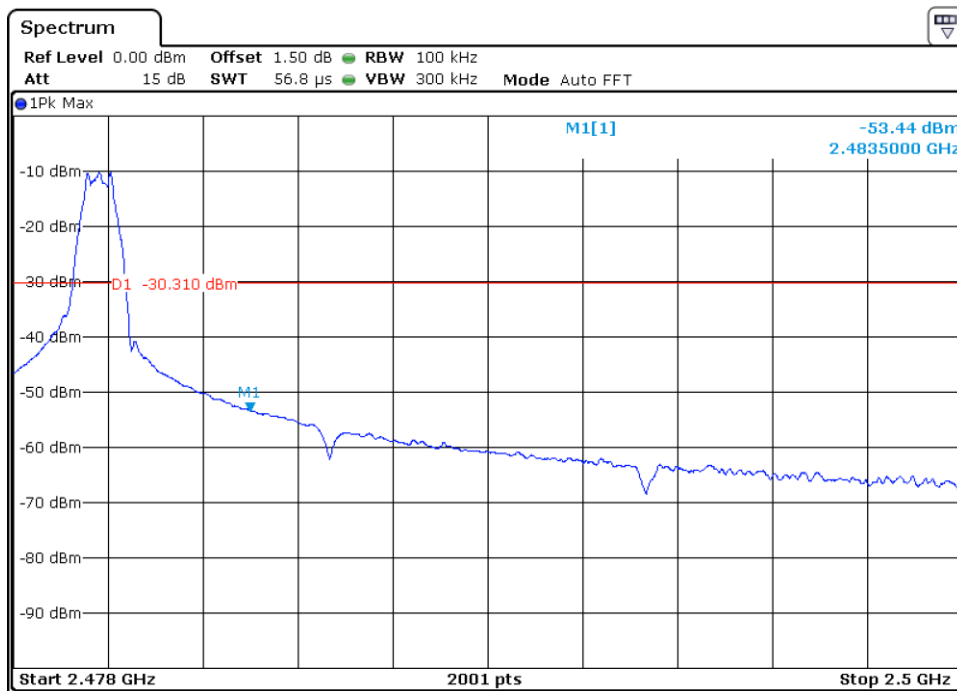
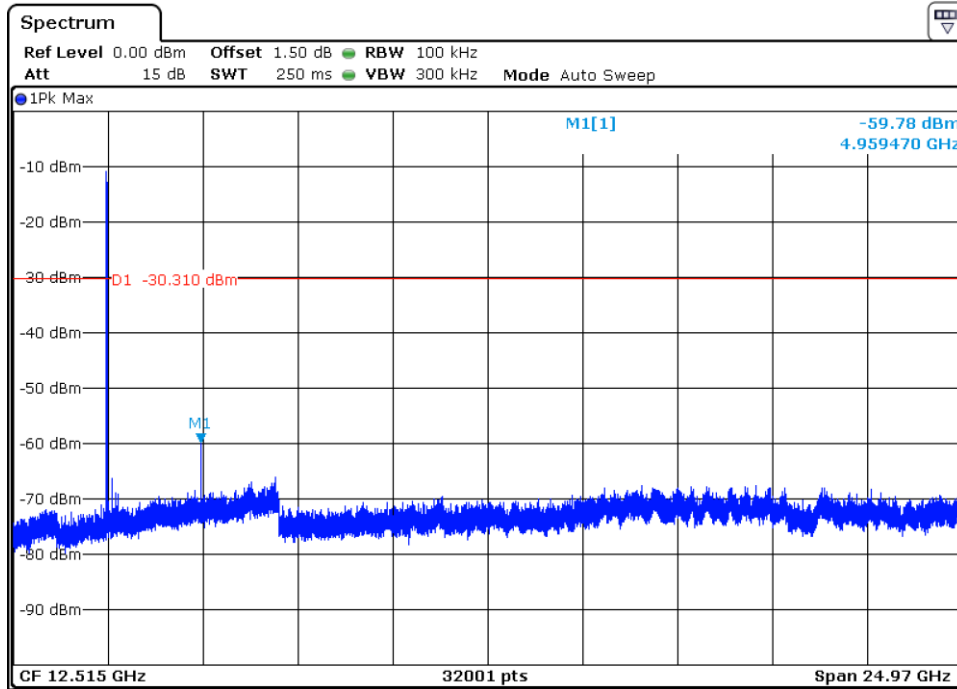
Middle Channel





Highest Channel





6. Radiated Spurious Emissions

6.1 Test Data

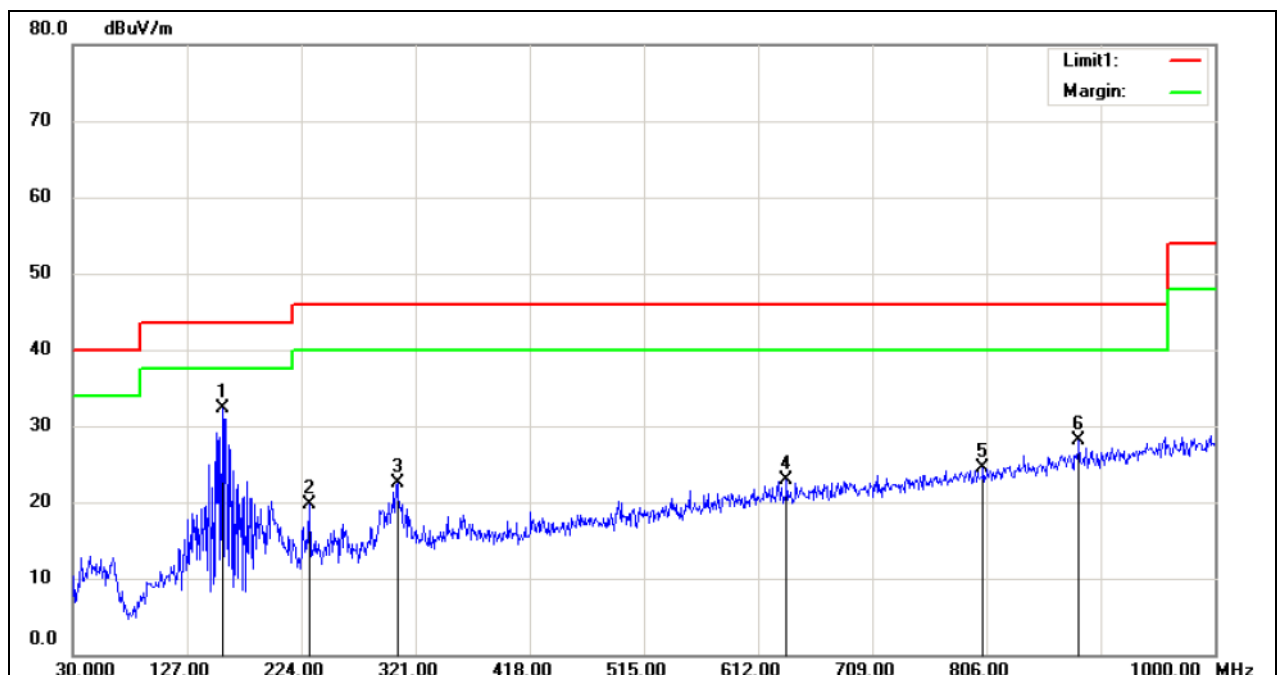
Spurious Emissions of 30MHz to 1GHz

EUT: Bluetooth Stereo Speaker with Powerbank

Tested Model: NS-SPBTBRICK-SB

Operating Condition: Transmitting-Low channel (2402MHz)

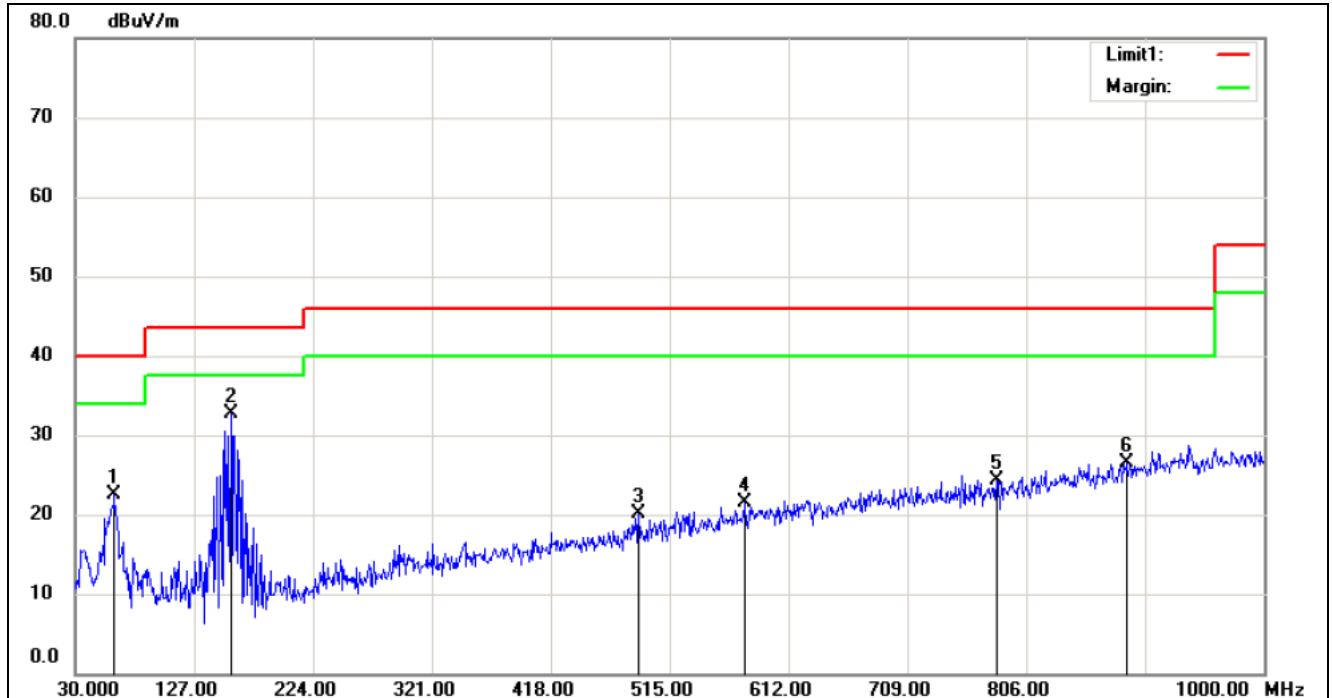
Antenna Position: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	157.0700	50.07	-17.79	32.28	43.50	-11.22	QP		
2		230.7900	33.18	-13.40	19.78	46.00	-26.22	QP		
3		305.4800	33.75	-11.25	22.50	46.00	-23.50	QP		
4		636.2500	26.15	-3.29	22.86	46.00	-23.14	QP		
5		803.0900	25.24	-0.69	24.55	46.00	-21.45	QP		
6		884.5700	27.28	0.90	28.18	46.00	-17.82	QP		

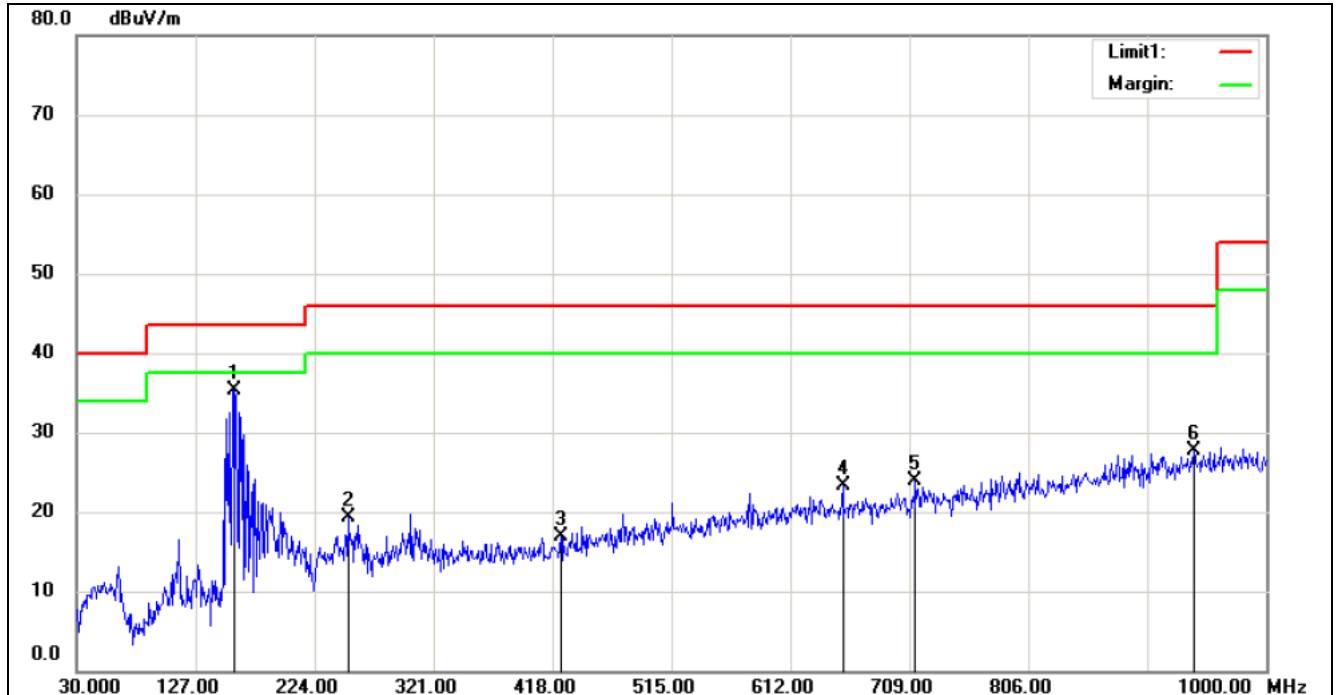
Produkte
 Products

Antenna Position: Vertical



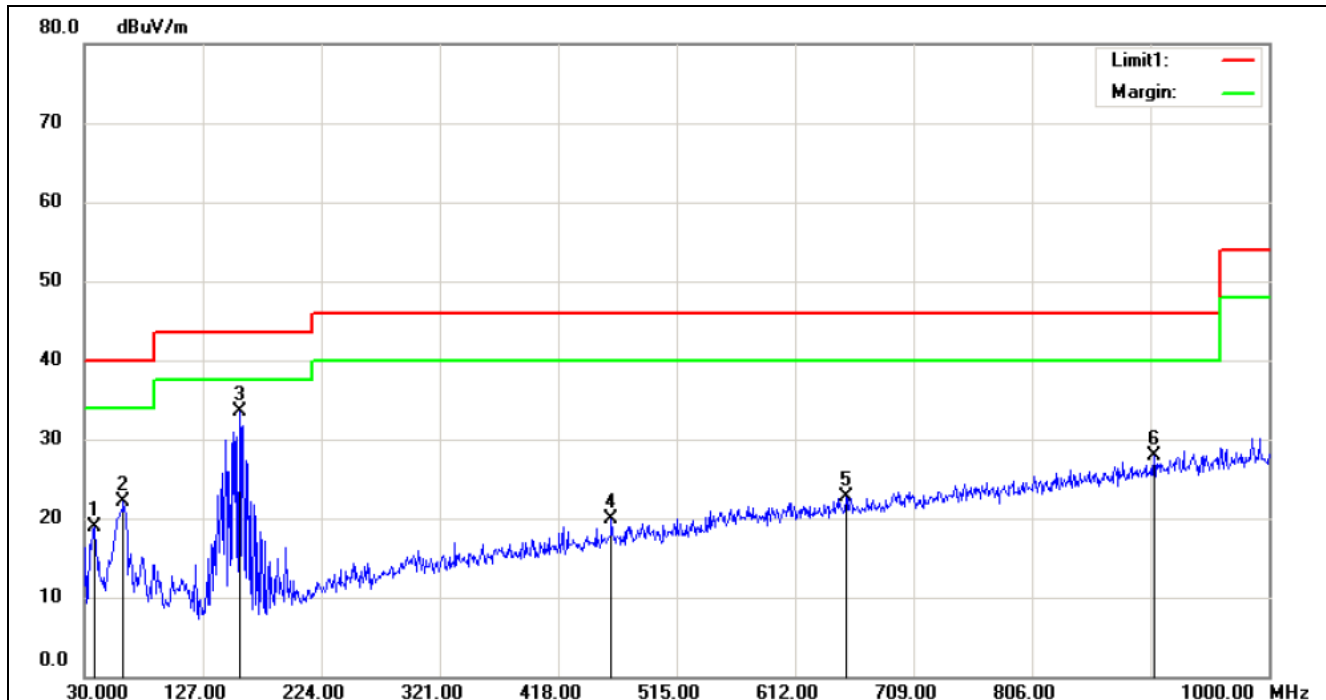
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		62.0100	37.57	-15.07	22.50	40.00	-17.50	QP			
2	*	157.0700	50.50	-17.79	32.71	43.50	-10.79	QP			
3		489.7800	26.82	-6.68	20.14	46.00	-25.86	QP			
4		576.1100	25.90	-4.45	21.45	46.00	-24.55	QP			
5		781.7500	25.31	-1.02	24.29	46.00	-21.71	QP			
6		888.4500	25.58	0.98	26.56	46.00	-19.44	QP			

EUT: Bluetooth Stereo Speaker with Powerbank
 Tested Model: NS-SPBTBRICK-SB
 Operating Condition: Transmitting-Middle channel (2440MHz)
 Antenna Position: Horizontal



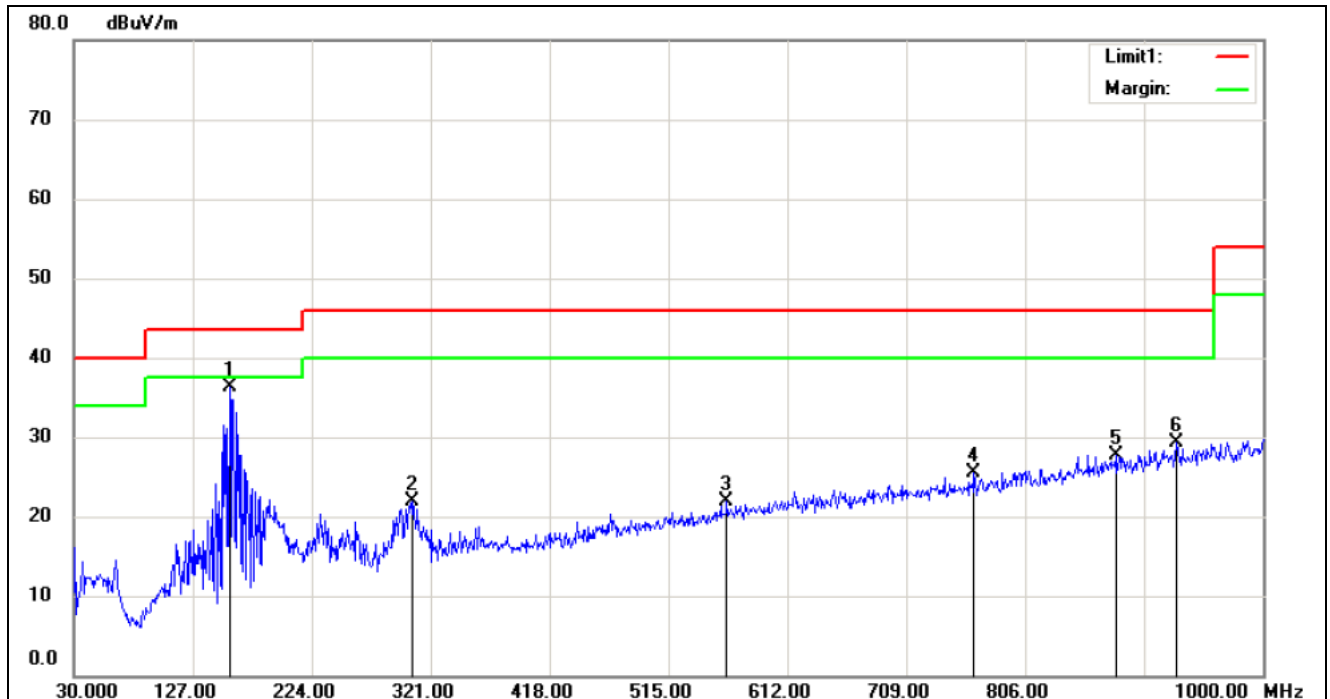
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	159.0100	52.95	-17.63	35.32	43.50	-8.18	QP			
2		251.1600	32.15	-12.77	19.38	46.00	-26.62	QP			
3		424.7900	25.12	-8.15	16.97	46.00	-29.03	QP			
4		654.6800	26.29	-3.06	23.23	46.00	-22.77	QP			
5		713.8500	25.99	-2.14	23.85	46.00	-22.15	QP			
6		940.8300	25.66	1.97	27.63	46.00	-18.37	QP			

Test Specification: Vertical



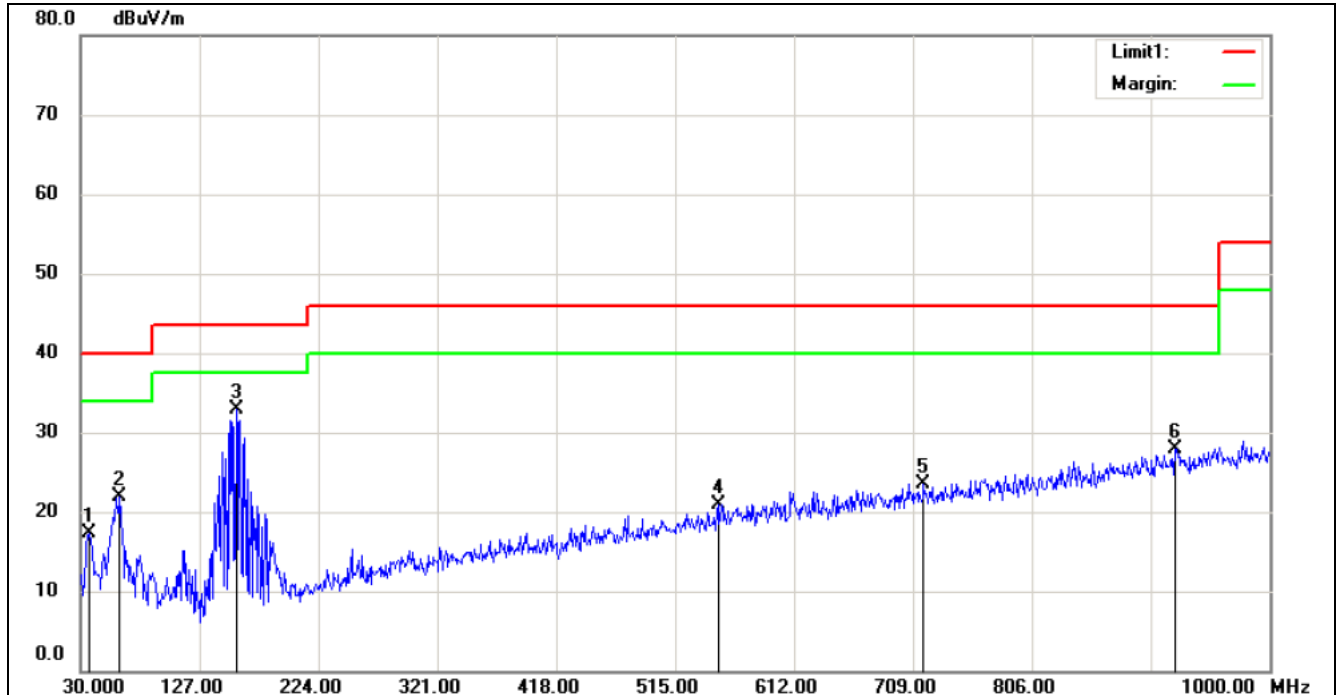
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		37.7600	33.88	-14.93	18.95	40.00	-21.05	QP		
2		62.0100	37.16	-15.07	22.09	40.00	-17.91	QP		
3	*	157.0700	51.24	-17.79	33.45	43.50	-10.05	QP		
4		461.6500	27.21	-7.34	19.87	46.00	-26.13	QP		
5		653.7100	25.71	-3.08	22.63	46.00	-23.37	QP		
6		905.9100	26.53	1.31	27.84	46.00	-18.16	QP		

EUT: Bluetooth Stereo Speaker with Powerbank
 Tested Model: NS-SPBTBRICK-SB
 Operating Condition: Transmitting-High channel (2480MHz)
 Antenna Position: Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Detector	Comment
1	*	157.0700	54.01	-17.79	36.22	43.50	-7.28			QP	
2		306.4500	33.10	-11.21	21.89	46.00	-24.11			QP	
3		562.5300	26.66	-4.82	21.84	46.00	-24.16			QP	
4		764.2900	26.86	-1.28	25.58	46.00	-20.42			QP	
5		879.7200	26.90	0.82	27.72	46.00	-18.28			QP	
6		929.1900	27.48	1.74	29.22	46.00	-16.78			QP	

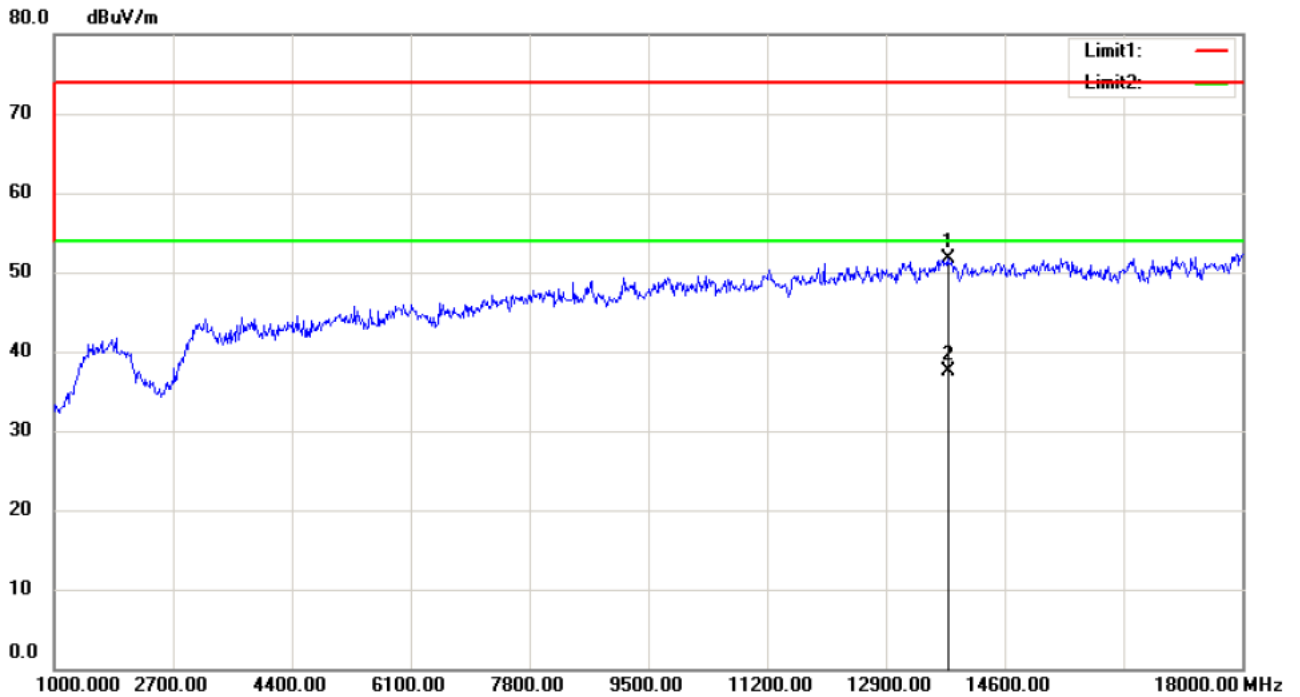
Test Specification: Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		36.7900	32.71	-15.37	17.34	40.00	-22.66	QP		
2		62.0100	37.02	-15.07	21.95	40.00	-18.05	QP		
3	*	157.0700	50.60	-17.79	32.81	43.50	-10.69	QP		
4		549.9200	25.99	-5.14	20.85	46.00	-25.15	QP		
5		717.7300	25.57	-2.06	23.51	46.00	-22.49	QP		
6		922.4000	26.34	1.62	27.96	46.00	-18.04	QP		

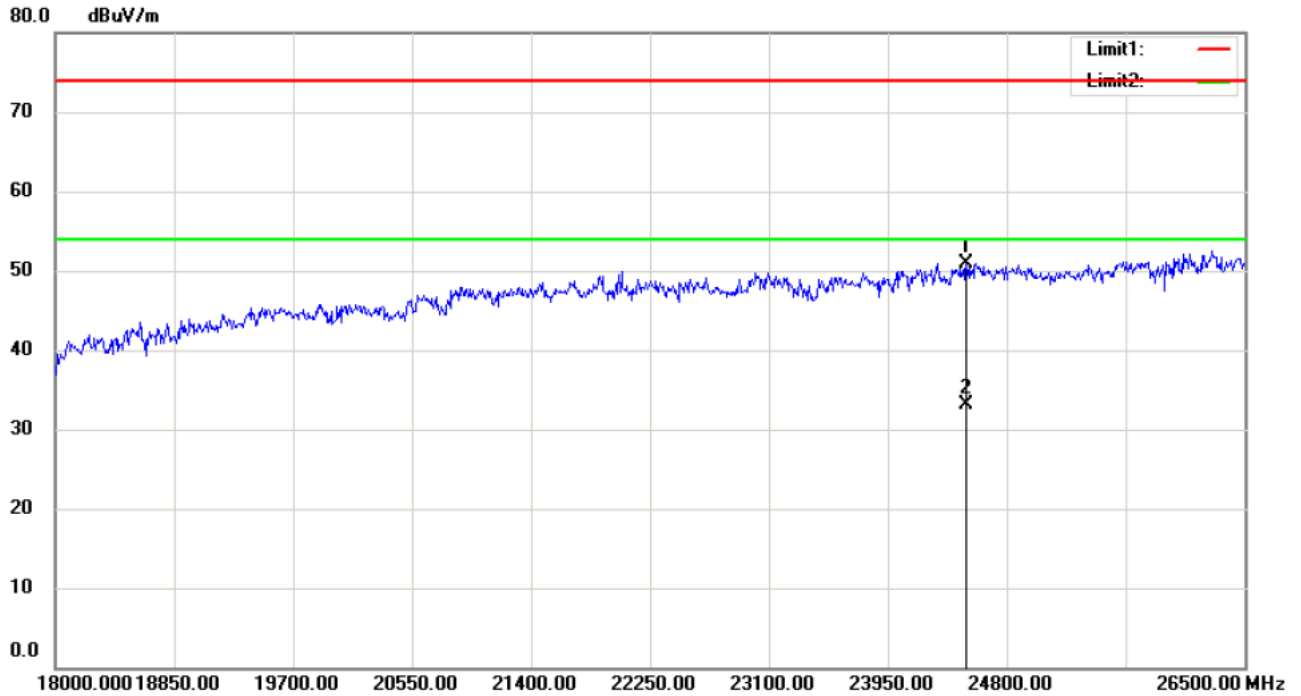
Radiated Spurious Emissions Above 1GHz

EUT: Bluetooth Stereo Speaker with Powerbank
 Tested Model: NS-SPBTBRICK-SB
 Operating Condition: Transmitting-Low channel (2402MHz)
 Antenna Position: Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		13784.00	53.28	-1.60	51.68	74.00	-22.32			peak
2	*	13784.00	39.10	-1.60	37.50	54.00	-16.50			AVG

Produkte
 Products

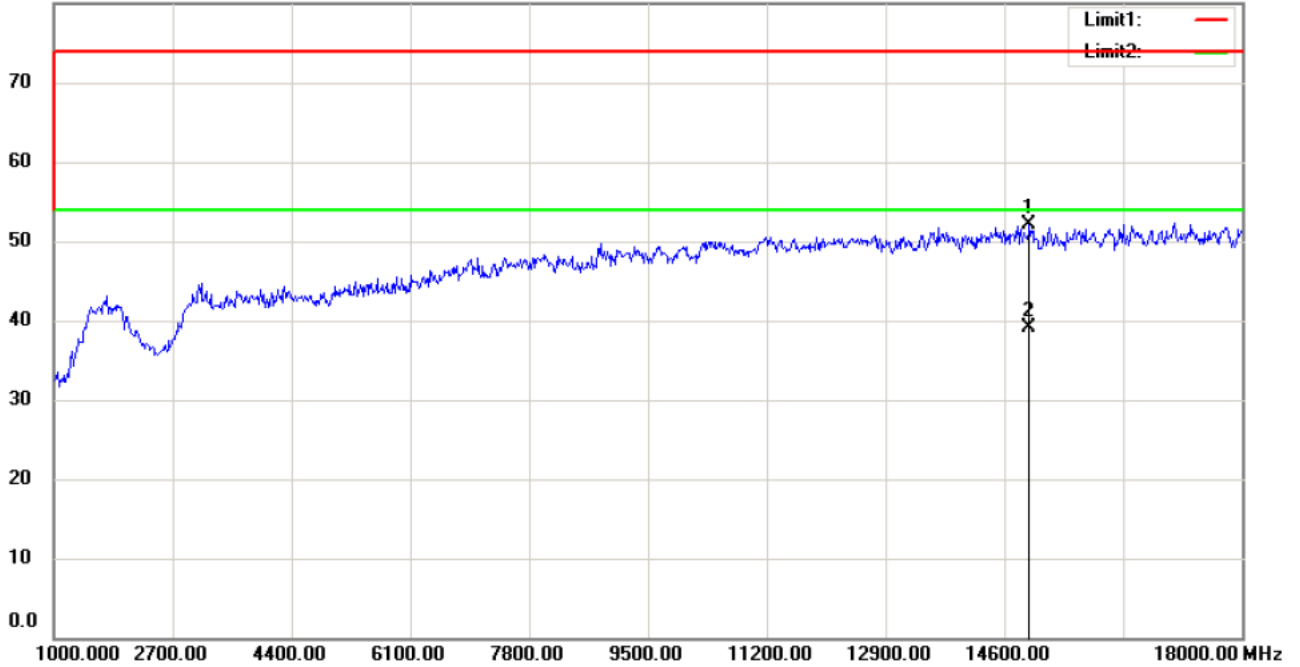


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		24511.00	88.02	-37.07	50.95	74.00	-23.05			peak
2	*	24511.00	70.27	-37.07	33.20	54.00	-20.80			AVG

Produkte
 Products

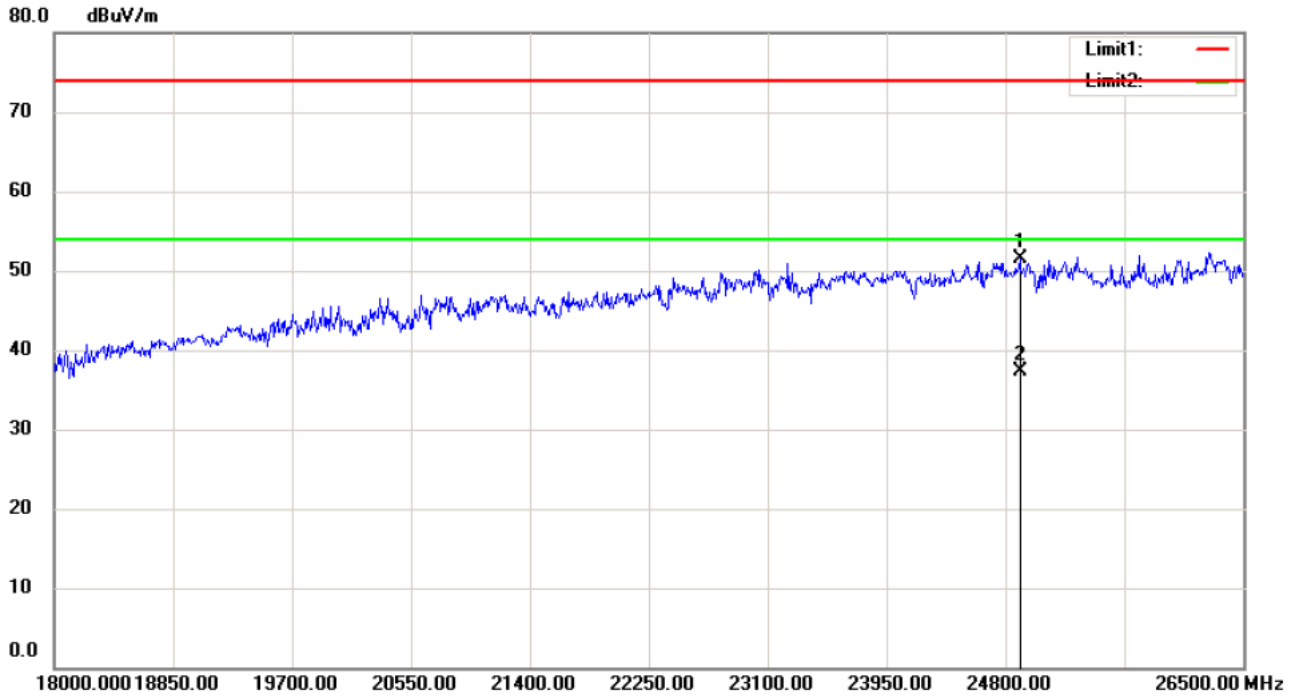
Test Specification: Vertical

80.0 dBuV/m



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		14957.00	54.77	-2.60	52.17	74.00	-21.83			peak
2	*	14957.00	41.80	-2.60	39.20	54.00	-14.80			AVG

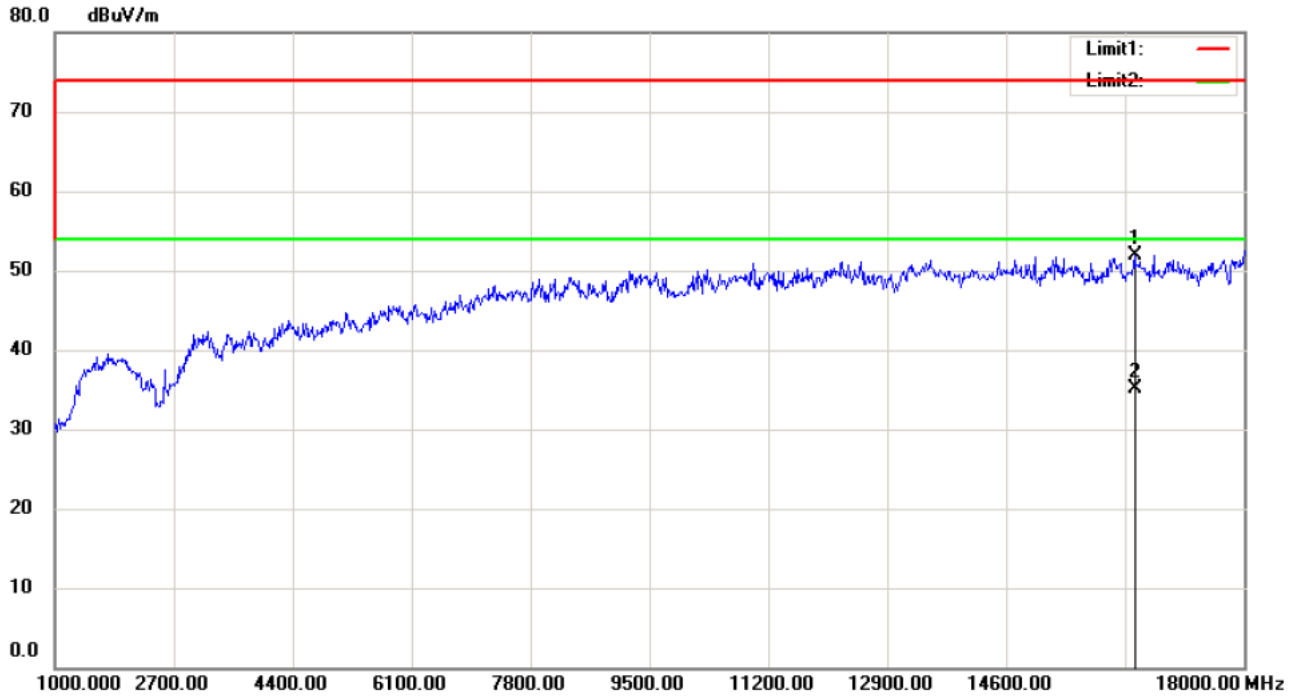
Produkte
 Products



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		24902.00	88.54	-37.02	51.52	74.00	-22.48	peak		
2	*	24902.00	74.42	-37.02	37.40	54.00	-16.60	AVG		

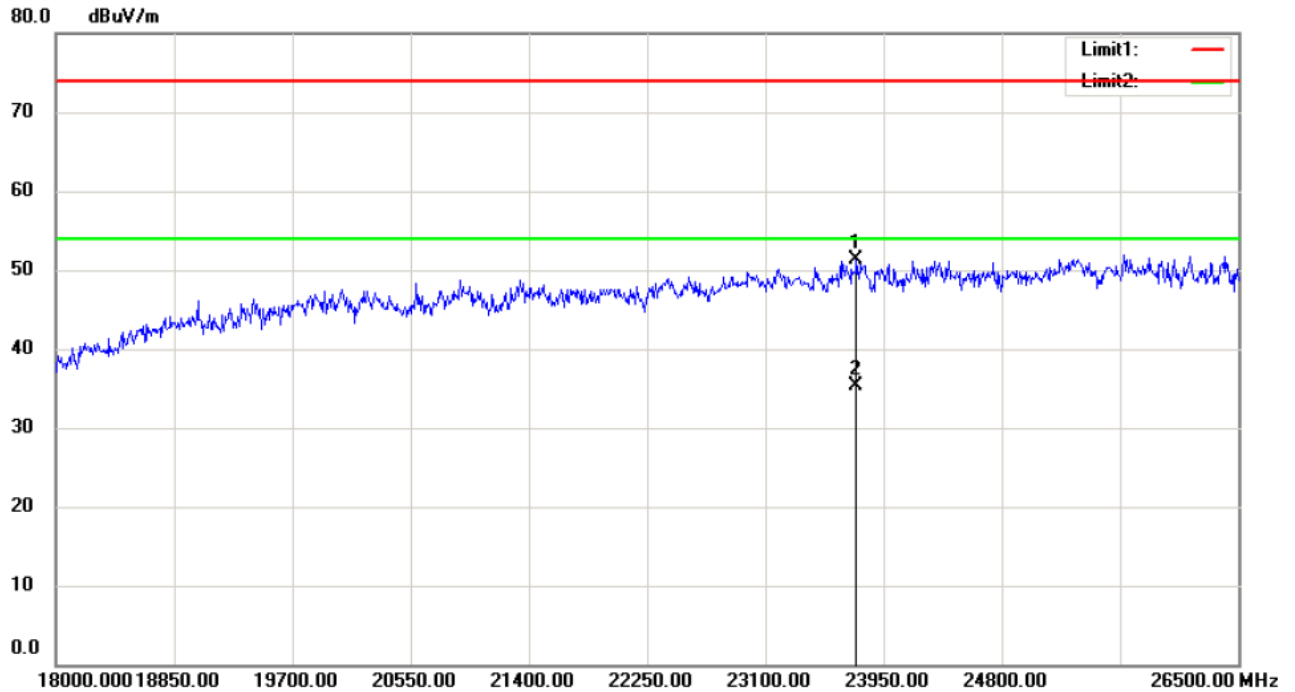
Produkte
Products

EUT: Bluetooth Stereo Speaker with Powerbank
 Tested Model: NS-SPBTBRICK-SB
 Operating Condition: Transmitting-Middle channel (2440MHz)
 Antenna Position: Horizontal



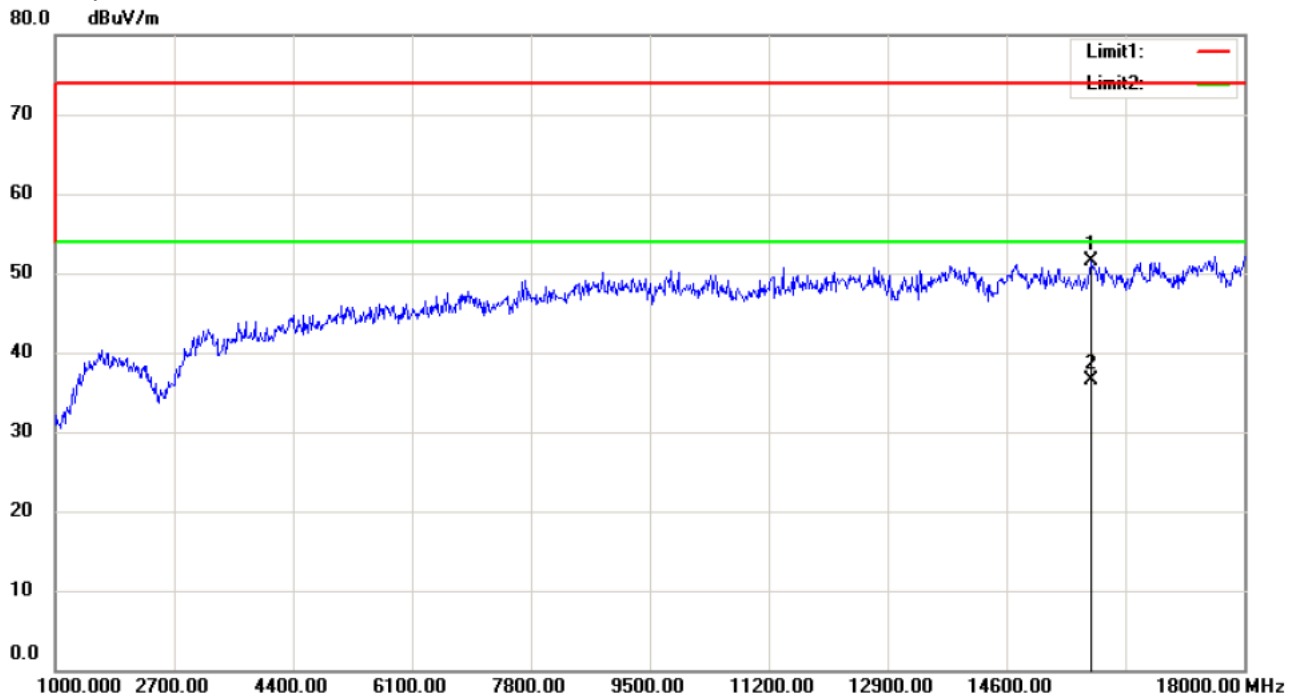
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		16436.00	55.91	-4.04	51.87	74.00	-22.13	peak		
2	*	16436.00	39.24	-4.04	35.20	54.00	-18.80	AVG		

Produkte
 Products



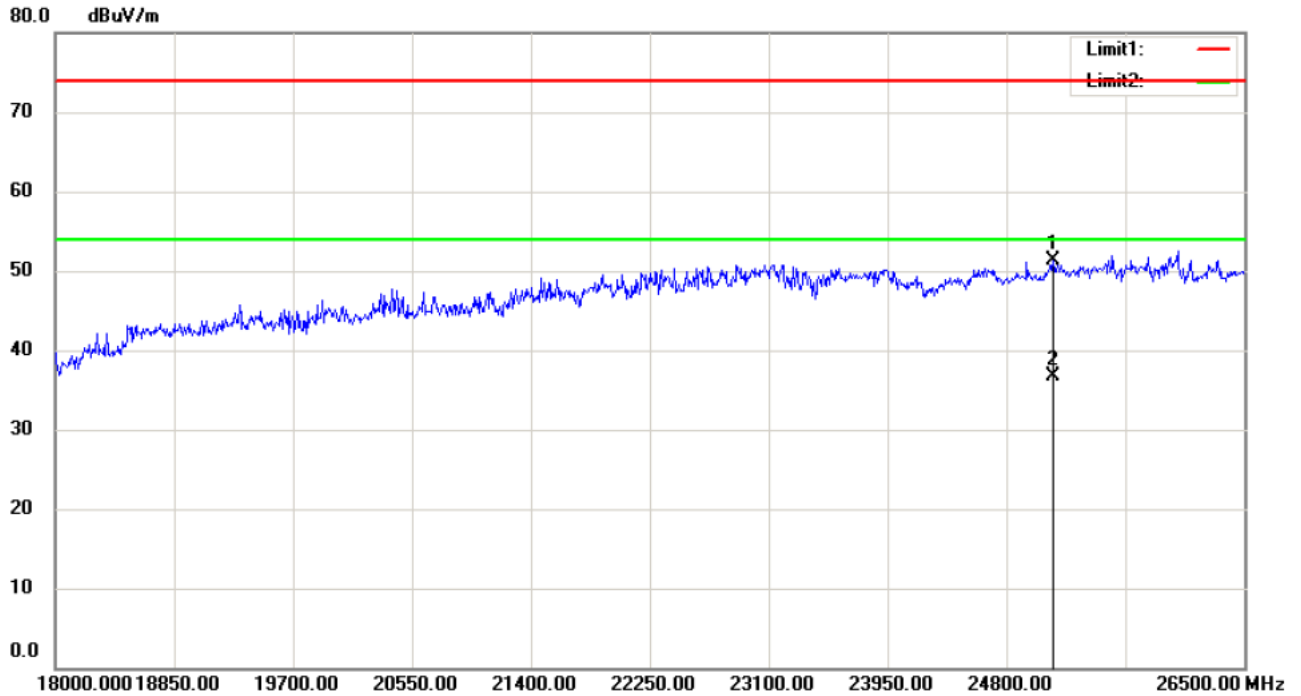
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		23754.50	88.65	-37.39	51.26	74.00	-22.74	peak			
2	*	23754.50	72.69	-37.39	35.30	54.00	-18.70	AVG			

Test Specification: Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		15807.00	57.36	-5.79	51.57	74.00	-22.43	peak			
2	*	15807.00	42.39	-5.79	36.60	54.00	-17.40	AVG			

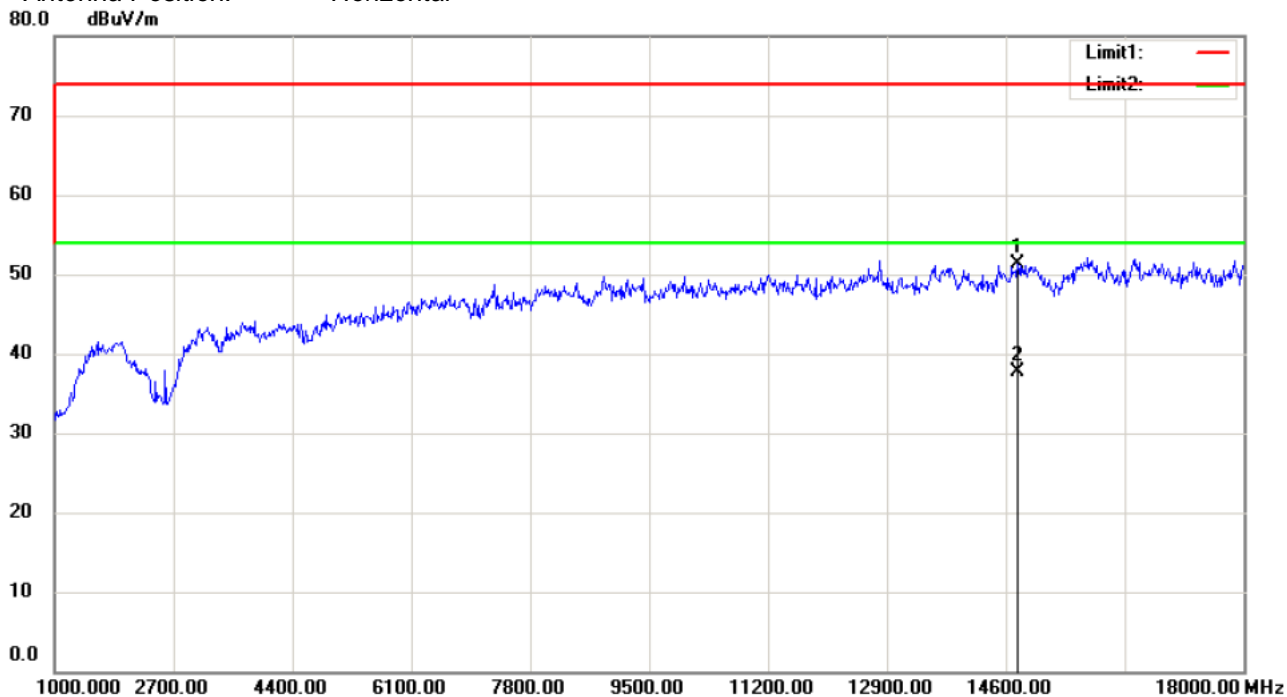
Produkte
 Products



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		25131.50	88.15	-36.85	51.30	74.00	-22.70	peak		
2	*	25131.50	73.55	-36.85	36.70	54.00	-17.30	AVG		

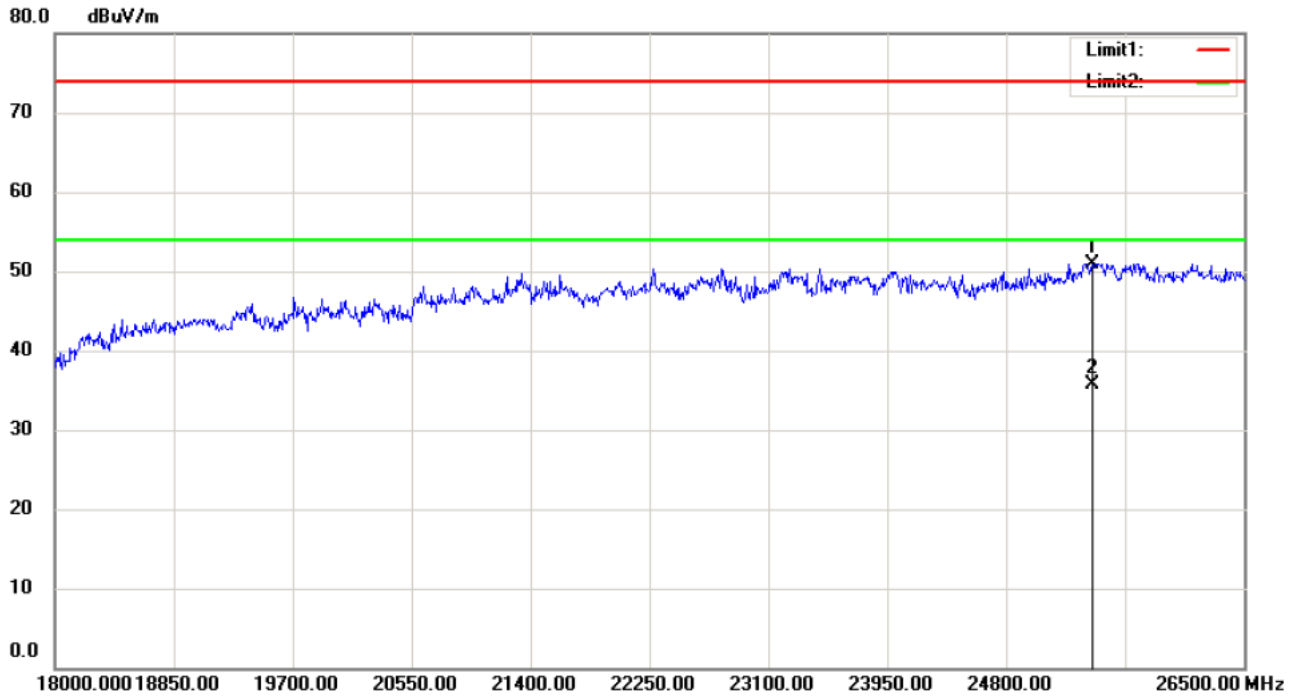
Produkte
Products

EUT: Bluetooth Stereo Speaker with Powerbank
 Tested Model: NS-SPBTBRICK-SB
 Operating Condition: Transmitting-High channel (2480MHz)
 Antenna Position: Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		14770.00	53.57	-2.22	51.35	74.00	-22.65	peak		
2	*	14770.00	40.02	-2.22	37.80	54.00	-16.20	AVG		

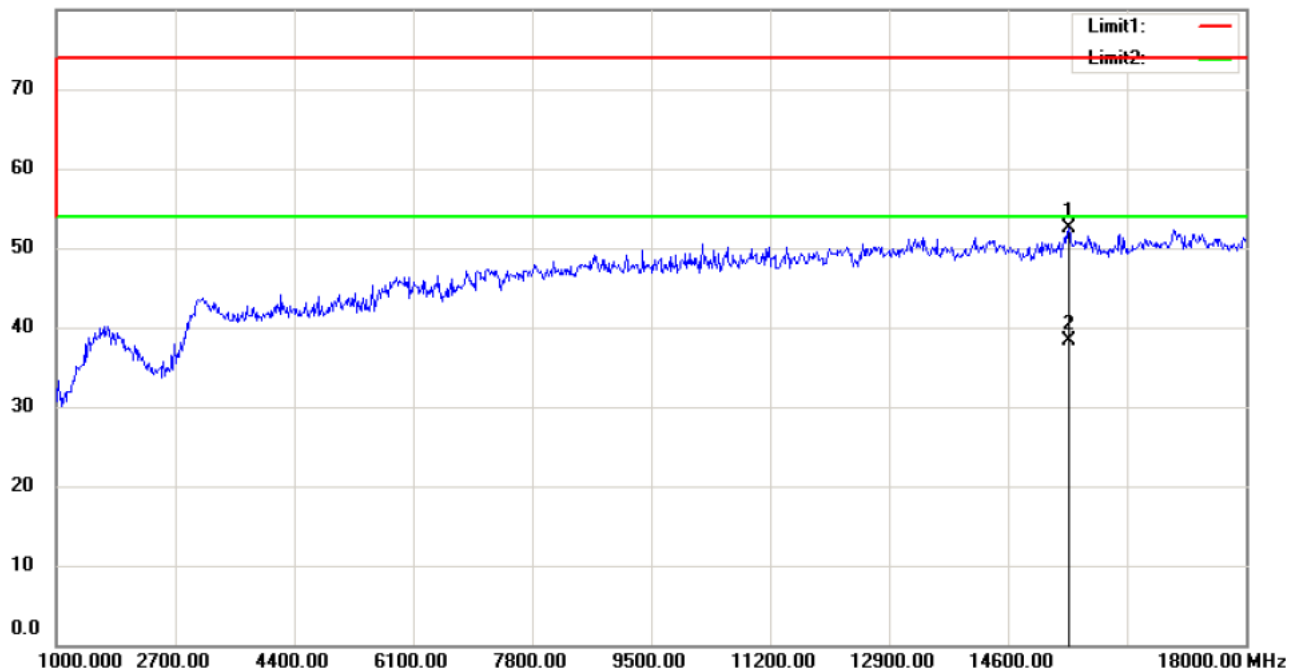
Produkte
 Products



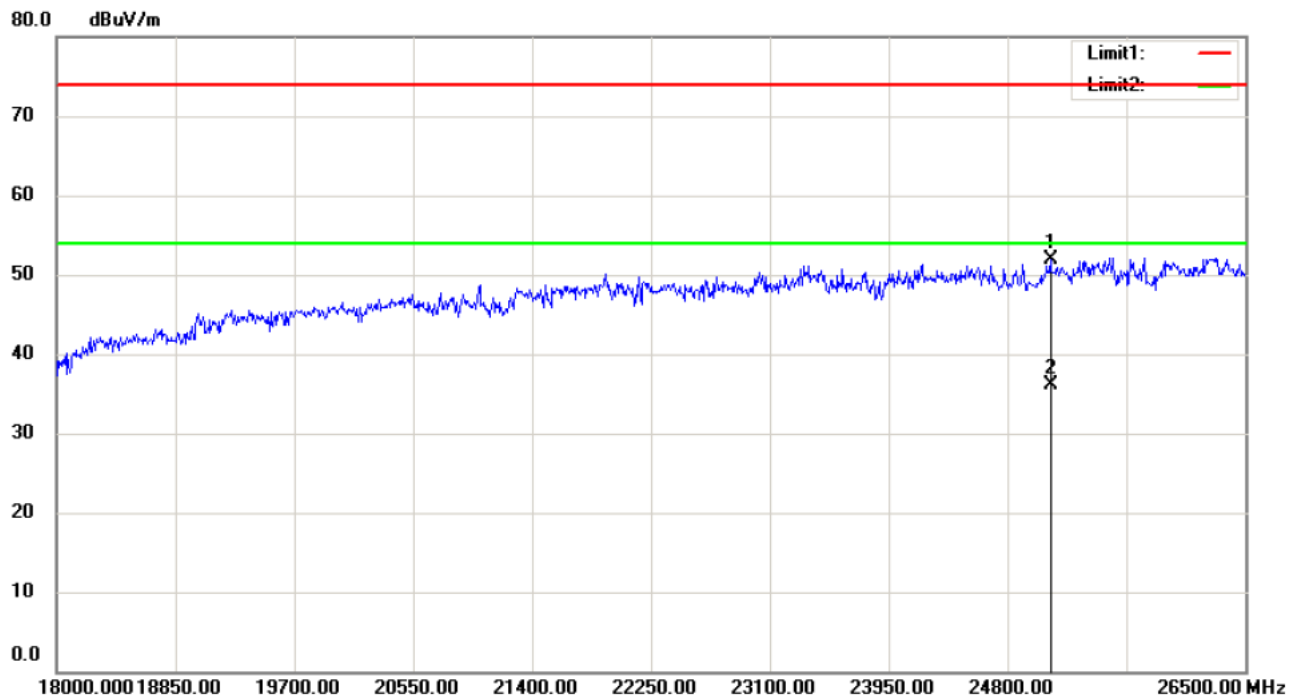
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		25420.50	87.45	-36.50	50.95	74.00	-23.05	peak			
2	*	25420.50	72.30	-36.50	35.80	54.00	-18.20	AVG			

Test Specification: Vertical

80.0 dBuV/m



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		15467.00	56.94	-4.48	52.46	74.00	-21.54	peak			
2	*	15467.00	42.78	-4.48	38.30	54.00	-15.70	AVG			



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree	Comment
1		25106.00	88.71	-36.88	51.83	74.00	-22.17	peak			
2	*	25106.00	73.08	-36.88	36.20	54.00	-17.80	AVG			

Note:

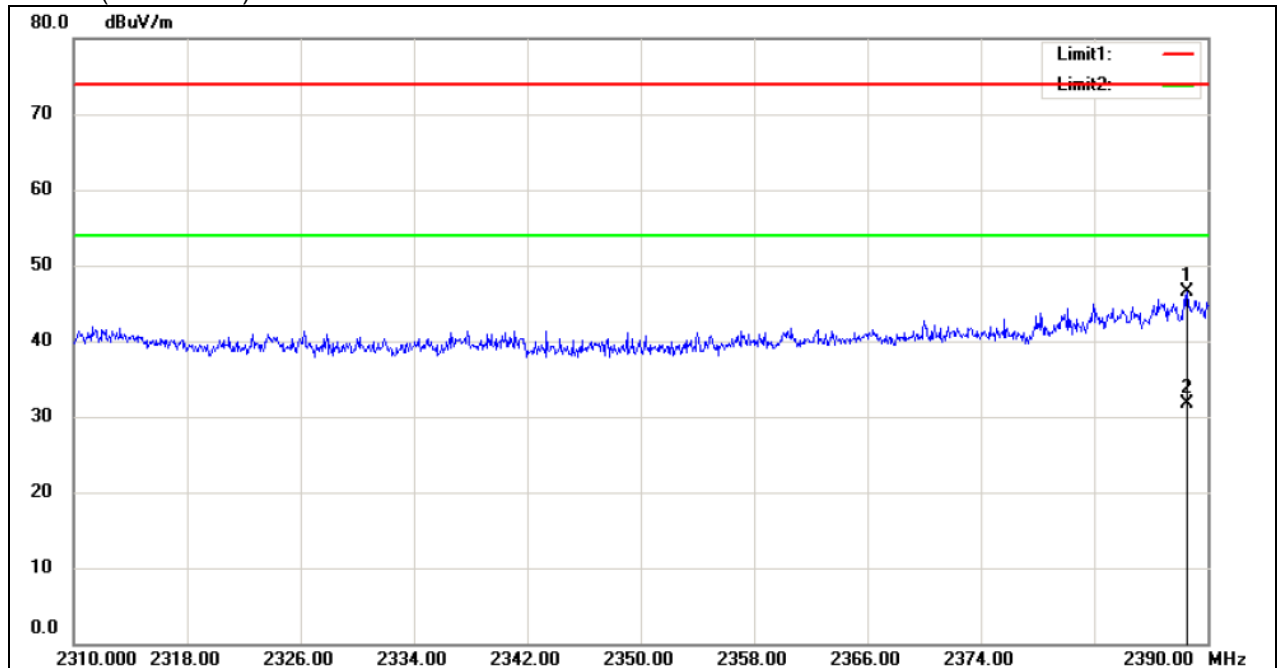
- 1, The EUT was rotated through three orthogonal axes to determine the attitude that maximizes the emissions. After that the EUT was manually handled to find the orientation that has the maximum emission, which is the orientation shown in the test set-up photos.
- 2, Testing is carried out with frequency rang 9kHz to the tenth harmonics.
- 3, The margin is greater than 20 dB are not shown in this Appendix.

Produkte
 Products

6.2 Restricted bands

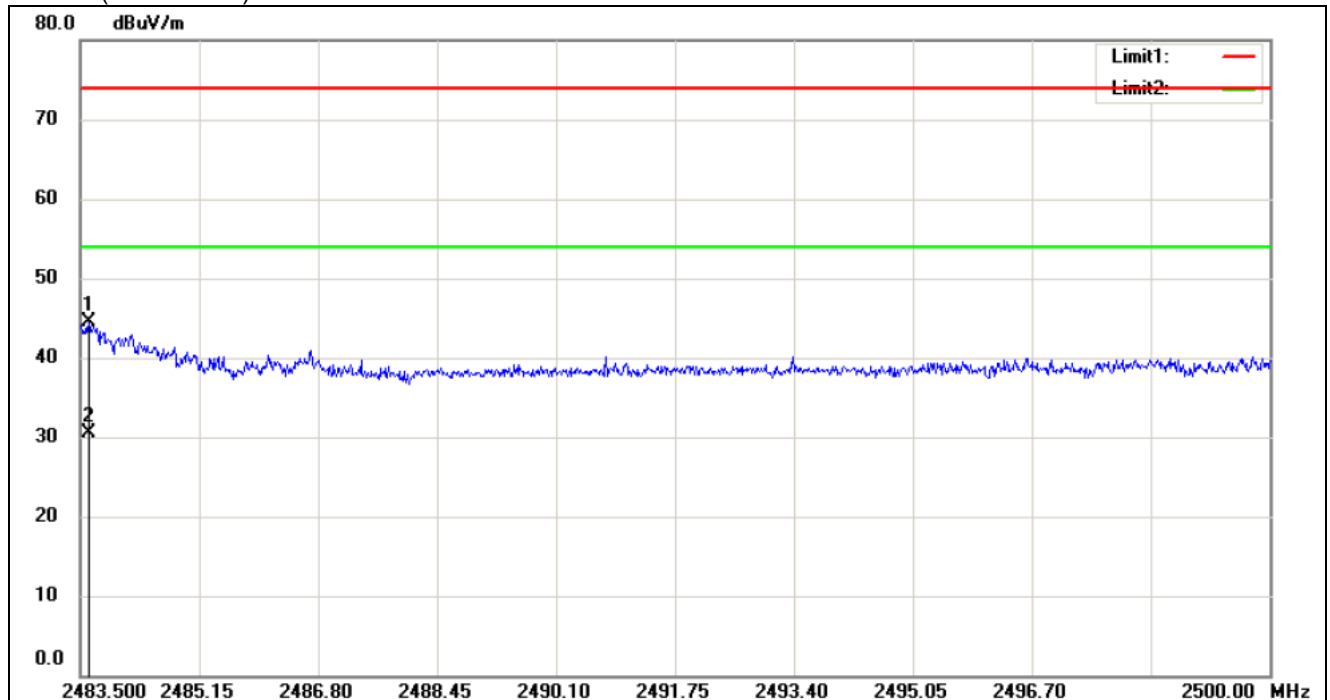
6.2.1 Test Datas

Lowest Channel
 Vertical (Worst case)



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree	Comment
1		2388.560	63.69	-17.16	46.53	74.00	-27.47	peak			
2	*	2388.560	48.86	-17.16	31.70	54.00	-22.30	AVG			

Highest Channel
Vertical (Worst case)



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		2483.615	61.19	-16.75	44.44	74.00	-29.56	peak			
2	*	2483.615	47.35	-16.75	30.60	54.00	-23.40	AVG			

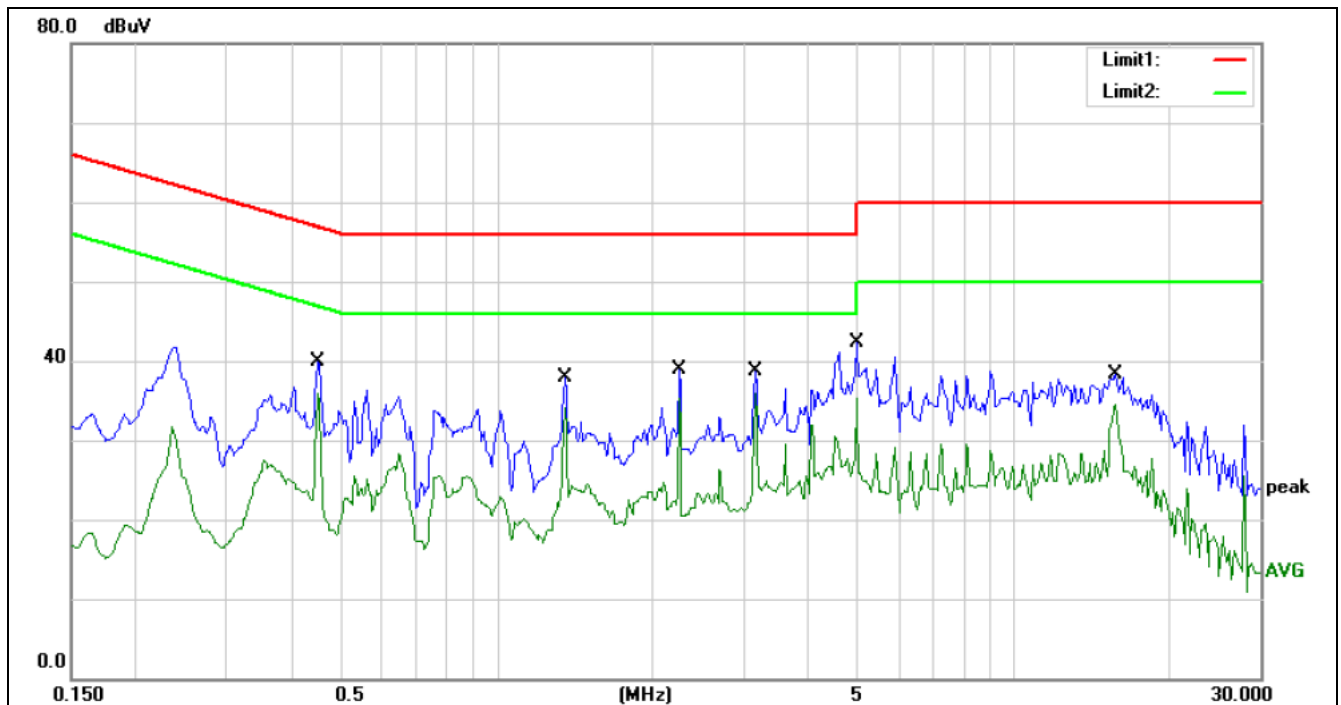
Note:

1, The EUT was rotated through three orthogonal axes to determine the attitude that maximizes the emissions. After that the EUT was manually handled to find the orientation that has the maximum emission, which is the orientation shown in the test set-up photos.

7. Conducted Emissions on AC Mains

7.1 Test Data

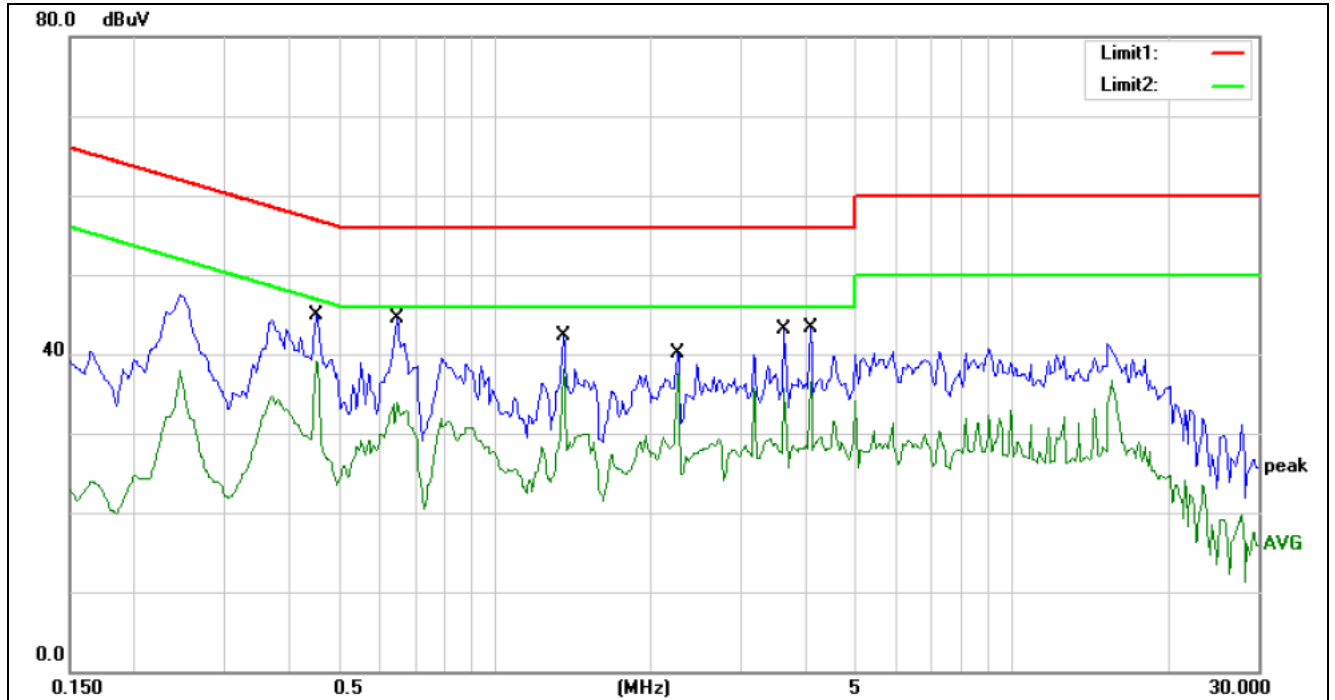
EUT: *Bluetooth Stereo Speaker with Powerbank*
 Tested Model: *NS-SPBTBRICK-SB*
 Operating Condition: *Transmitting*
 Line: *Neutral*



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.4500	40.00	0.00	40.00	56.88	-16.88	QP	
2		0.4500	35.88	0.00	35.88	46.88	-11.00	AVG	
3		1.3550	37.84	0.00	37.84	56.00	-18.16	QP	
4		1.3550	34.11	0.00	34.11	46.00	-11.89	AVG	
5		2.2550	38.98	0.00	38.98	56.00	-17.02	QP	
6		2.2550	35.31	0.00	35.31	46.00	-10.69	AVG	
7		3.1600	38.71	0.00	38.71	56.00	-17.29	QP	
8	*	3.1600	35.98	0.00	35.98	46.00	-10.02	AVG	
9		4.9650	42.32	0.00	42.32	56.00	-13.68	QP	
10		4.9650	35.23	0.00	35.23	46.00	-10.77	AVG	
11		15.7200	38.30	0.00	38.30	60.00	-21.70	QP	
12		15.7200	34.43	0.00	34.43	50.00	-15.57	AVG	

Produkte
 Products

Line: *Live*



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.4500	44.89	0.00	44.89	56.88	-11.99	QP	
2	*	0.4500	39.12	0.00	39.12	46.88	-7.76	AVG	
3		0.6450	44.41	0.00	44.41	56.00	-11.59	QP	
4		0.6450	33.97	0.00	33.97	46.00	-12.03	AVG	
5		1.3550	42.33	0.00	42.33	56.00	-13.67	QP	
6		1.3550	33.38	0.00	33.38	46.00	-12.62	AVG	
7		2.2600	40.14	0.00	40.14	56.00	-15.86	QP	
8		2.2600	37.49	0.00	37.49	46.00	-8.51	AVG	
9		3.6200	43.18	0.00	43.18	56.00	-12.82	QP	
10		3.6200	35.73	0.00	35.73	46.00	-10.27	AVG	
11		4.0750	43.22	0.00	43.22	56.00	-12.78	QP	
12		4.0750	36.46	0.00	36.46	46.00	-9.54	AVG	