



FCC RADIO TEST REPORT

FCC ID: 2AEDNA40

Product : 2.4GHz Wireless keyboard

Trade Name : N/A

Model Name: SL-680008-BK BK

Serial Model : N/A

Report No. : POCE- 20170503126R

Prepared for

Winspeed Co., Ltd

14 F-1, No. 2, Jian-Ba Rd., Chung-Ho District, New Taipei, China

Prepared by

Shenzhen POCE Technology Co., Ltd.

Room 502, Bldg. 1, Xinghua Garden, Baoan Road Xixiang,
Baoan District, Shenzhen, China

TEST RESULT CERTIFICATION

Applicant's name : Winspeed Co., Ltd

Address : 14 F-1, No.2, Jian-Ba Rd., Chung-Ho District, New Taipei, China

Manufacturer's Name : Winspeed Co., Ltd

Address : 14 F-1, No.2, Jian-Ba Rd., Chung-Ho District, New Taipei, China

Product description

Product name : 2.4GHz Wireless keyboard

Model and/or type reference : SL-680008-BK BK

Trade Name : N/A

Serial Model : N/A

Standards : FCC Part 15.249

Test procedure ANSI C63.10: 2013

This device described above has been tested by POCE, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

This report shall not be reproduced except in full, without the written approval of POCE, this document may be altered or revised by POCE, personal only, and shall be noted in the revision of the document.

Date of Test :

Date (s) of performance of tests : 1 May. 2017 ~ 7 May. 2017

Date of Issue : 7 May. 2017

Test Result : **Pass**

Testing Engineer :



(Ken Li)

Technical Manager :



(Jimmy Yao)

Authorized Signatory :



(Terry Yang)

Table of Contents	Page
1 . SUMMARY OF TEST RESULTS	4
1.1 TEST FACILITY	5
1.2 MEASUREMENT UNCERTAINTY	5
2 . GENERAL INFORMATION	6
2.1 GENERAL DESCRIPTION OF EUT	6
2.2 DESCRIPTION OF TEST MODES	8
2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	9
2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)	10
3 . TEST RESULT	12
3.1 ANTENNA REQUIREMENT	12
3.1.1 STANDARD REQUIREMENT	12
3.1.2 EUT ANTENNA	12
3.2 CONDUCTED EMISSION MEASUREMENT	13
3.2.1 POWER LINE CONDUCTED EMISSION LIMITS	13
3.2.2 TEST PROCEDURE	14
3.2.3 DEVIATION FROM TEST STANDARD	14
3.2.4 TEST SETUP	14
3.2.5 TEST RESULT	15
3.3 RADIATED EMISSION MEASUREMENT	16
3.3.1 RADIATED EMISSION LIMITS	16
3.3.2 TEST PROCEDURE	17
3.3.3 DEVIATION FROM TEST STANDARD	17
3.3.4 TEST SETUP	18
3.3.5 TEST RESULTS (BLOW 30MHZ)	20
3.3.6 TEST RESULTS (BETWEEN 30 – 1000 MHZ)	21
3.3.7 TEST RESULTS (ABOVE 1000 MHZ)	23
4 . BANDWIDTH TEST	30
4.1 TEST PROCEDURE	30
4.2 DEVIATION FROM STANDARD	30
4.3 TEST SETUP	30
4.4 TEST RESULTS	31
5 . EUT TEST PHOTO	34
APPENDIX-PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS	

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15, Subpart C (15.249)			
Test Items	Test Requirement	Judgment	Remark
Conducted Emission	15.207	N/A	
Radiated Spurious Emission	15.249(a) 15.209 15.205(a)	Pass	
Fundamental Measurement	15.249(a)	Pass	
Band Edge Emission	15.249(d) 15.209	Pass	
20dB Bandwidth	15.215(c)	Pass	
Antenna Requirement	15.203	Pass	

Remark:N/A: Not Applicable

1.1 TEST FACILITY

Shenzhen POCE Technology Co.,Ltd.

Add.: Room 502, Bldg. 1, Xinghua Garden, Baoan Road Xixiang, Baoan District, Shenzhen, China

FCC FRN Registration No.: 222278

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 1.38\text{dB}$
2	RF power,conducted	$\pm 0.16\text{dB}$
3	Spurious emissions,conducted	$\pm 0.21\text{dB}$
4	All emissions,radiated(<1G)	$\pm 4.68\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	2.4GHz Wireless keyboard	
Trade Name	N/A	
Model Name	SL-680008-BK BK	
Serial Model	N/A	
Model Difference	N/A	
Product Description	The EUT is a 2.4GHz Wireless keyboard	
	Operation Frequency:	2402~2480MHz
	Modulation Type:	GFSK
	Antenna Designation:	PCB Antenna
	Antenna Gain(Peak)	0dBi
	max. Field Strength	85.06dBuV/m@3m (AV)
	Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.	
Channel List	Please refer to the Note 2.	
Adapter	N/A	
Battery	DC 1.5V	

Note:

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

2. Channel:

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.

Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	N/A	N/A	PCB Antenna	NA	0	Antenna

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	2402MHz
Mode 2	2441MHz
Mode 3	2480MHz

For Conducted Emission	
Final Test Mode	Description
N/A	N/A

For Radiated Emission	
Final Test Mode	Description
Mode 1	2402MHz
Mode 2	2441MHz
Mode 3	2480MHz

Note:

(1) The measurements are performed at the highest, middle, lowest available channels.

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

E-1
EUT

2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	2.4GHz Wireless keyboard	N/A	SL-680008-BK BK	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2016.07.06	2017.07.05	1 year
2	Test Receiver	R&S	ESPI	101318	2016.06.07	2017.06.06	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2016.07.06	2017.07.05	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2016.06.07	2017.06.06	1 year
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	2016.06.07	2017.06.06	1 year
6	Horn Antenna	EM	EM-AH-10180	2011071402	2016.07.06	2017.07.05	1 year
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2016.07.06	2017.07.05	1 year
8	Amplifier	EM	EM-30180	060538	2016.12.22	2017.12.21	1 year
9	Loop Antenna	ARA	PLA-1030/B	1029	2016.06.08	2017.06.07	1 year
10	Signal Analyzer	Agilent	N9020A	MY49100060	2016.07.06	2017.07.05	1 year

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2016.06.06	2017.06.05	1 year
2	LISN	R&S	ENV216	101313	2016.08.24	2017.08.23	1 year
3	LISN	EMCO	3816/2	00042990	2016.08.24	2017.08.23	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2016.06.07	2017.06.06	1 year
5	Passive Voltage Probe	R&S	ESH2-Z3	100196	2016.06.07	2017.06.06	1 year
6	Absorbing clamp	R&S	MOS-21	100423	2016.06.08	2017.06.07	1 year

3. TEST RESULT

3.1 ANTENNA REQUIREMENT

3.1.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

3.1.2 EUT ANTENNA

The EUT antenna is PCB Antenna. It comply with the standard requirement.

3.2 CONDUCTED EMISSION MEASUREMENT

3.2.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class B (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	56.00	46.00	CISPR
5.0 -30.0	60.00	50.00	CISPR

0.15 -0.5	66 - 56 *	56 - 46 *	LP002.
0.50 -5.0	56.00	46.00	LP002.
5.0 -30.0	60.00	50.00	LP002.

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

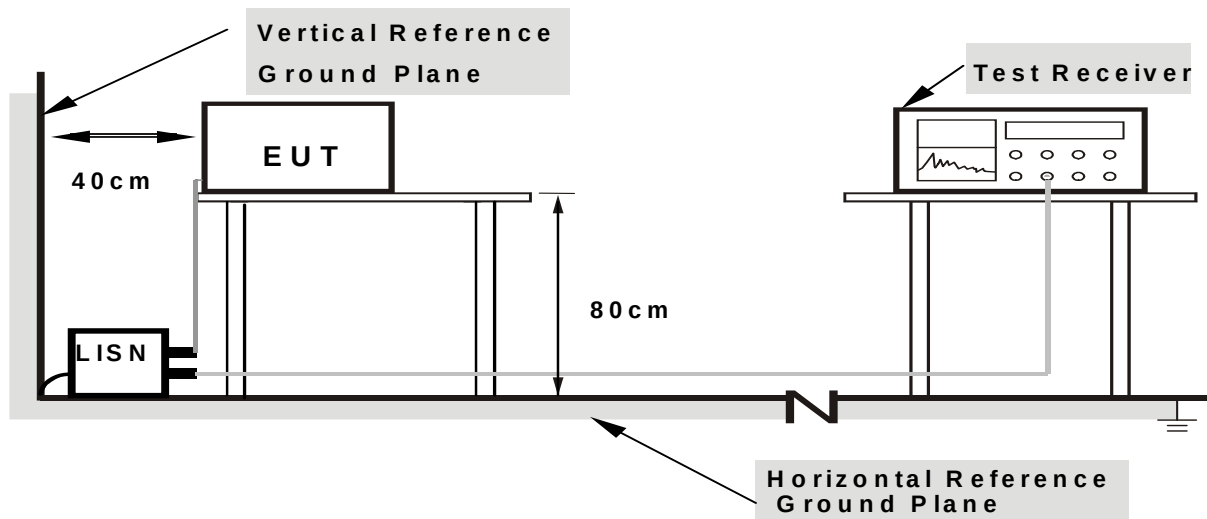
3.2.2 TEST PROCEDURE

- The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- 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.
- 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.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.2.3 DEVIATION FROM TEST STANDARD

No deviation

3.2.4 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.2.5 TEST RESULT

EUT :	2.4GHz Wireless keyboard	Model Name. :	SL-680008-BK BK
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	L
Test Voltage :	N/A	Test Mode :	N/A

N/A

3.3 RADIATED EMISSION MEASUREMENT

3.3.1 Radiated Emission Limits (FCC 15.209)

Frequencies (MHz)	Field Strength (micorvolts/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

Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission level (dBuV/m)=20log Emission level (uV/m).

LIMITS OF RADIATED EMISSION MEASUREMENT (FCC 15.249)

Frequency of Emission (MHz)	Field Strength of fundamental ((millivolts /meter)	Field Strength of Harmonics (microvolts/meter)
2400 - 2483.5	50	500

Notes:

- (1) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1MHz / 1MHz for Peak

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.3.2 TEST PROCEDURE

- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

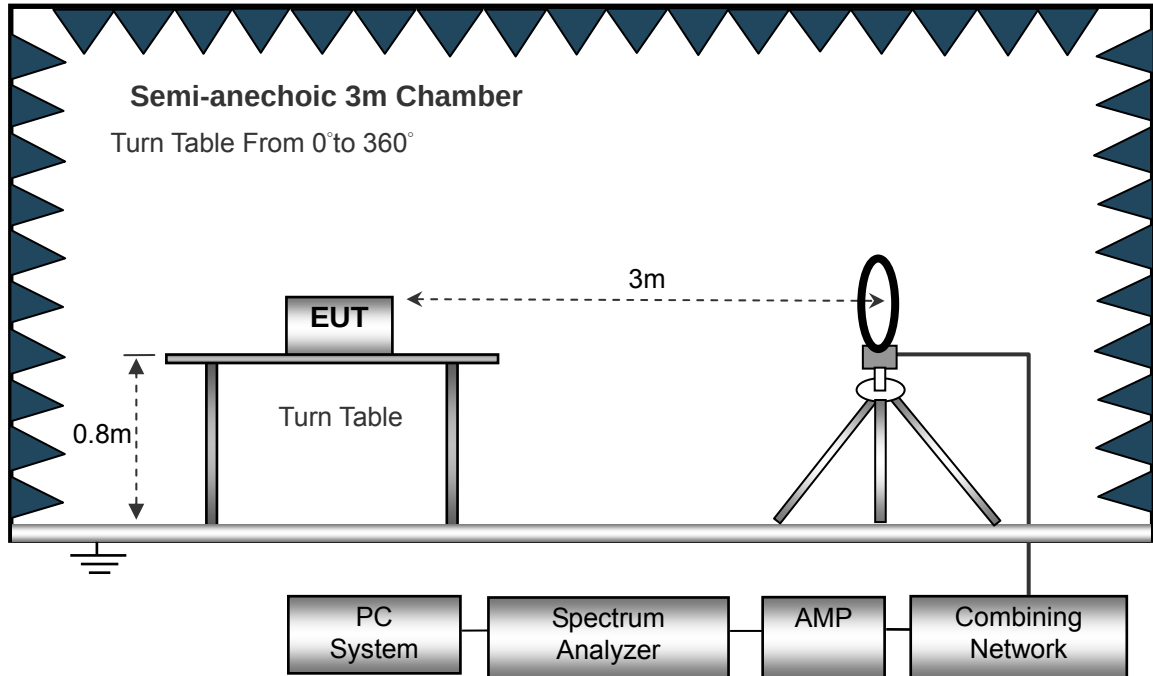
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

3.3.3 DEVIATION FROM TEST STANDARD

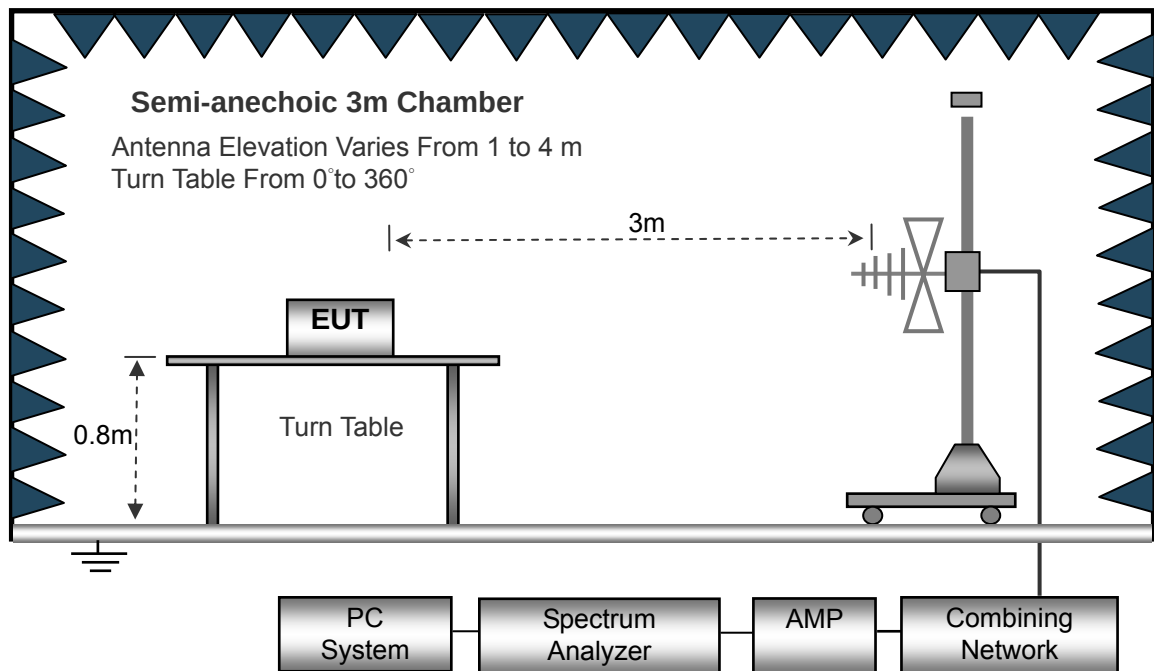
No deviation

3.3.4 TEST SETUP

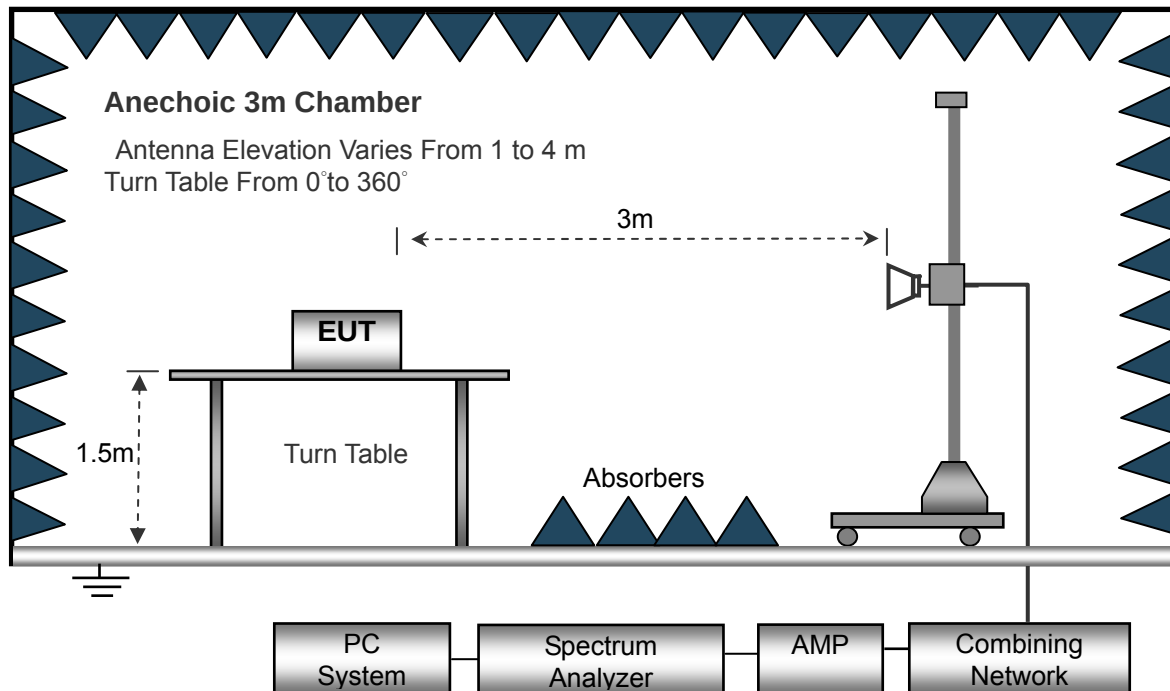
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



3.3.5 TEST RESULTS (BLOW 30MHz)

EUT :	2.4GHz Wireless keyboard	Model Name. :	SL-680008-BK BK
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC1.5V
Test Mode :	TX	Polarization :	--

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

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 = $40 \log (\text{specific distance/test distance})(\text{dB})$;

Limit line = specific limits(dBuv) + distance extrapolation factor.

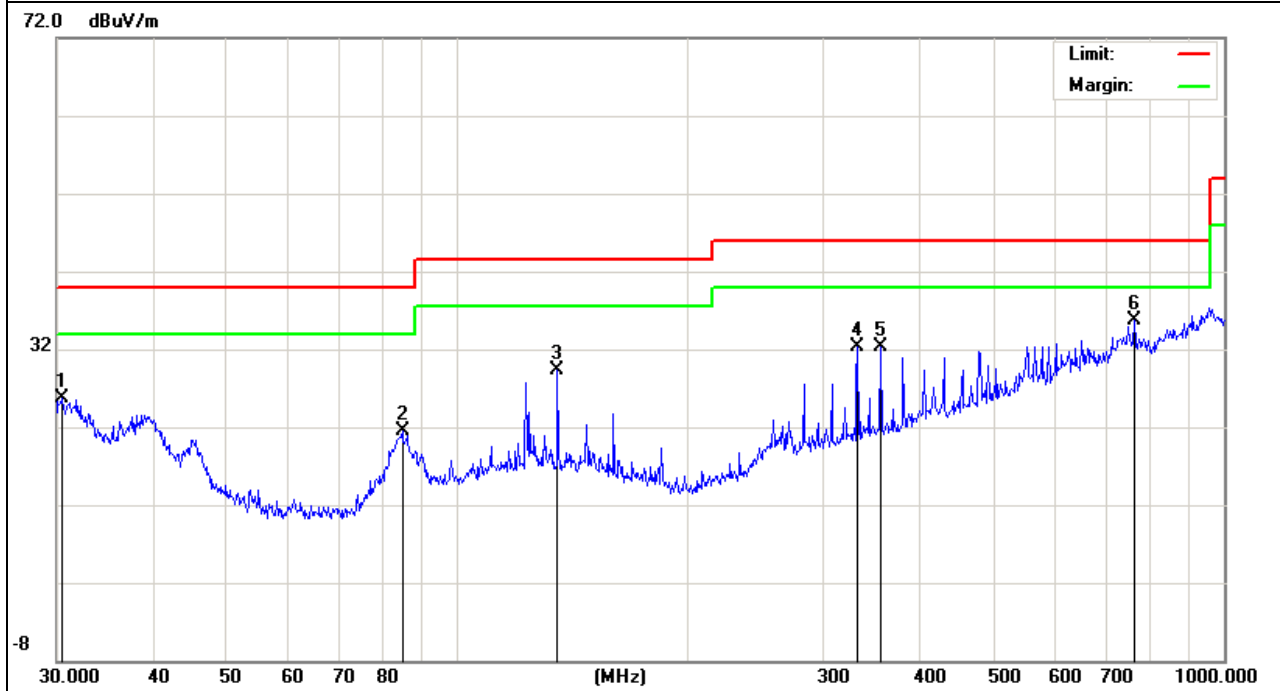
3.3.6 TEST RESULTS (BETWEEN 30 – 1000 MHZ)

EUT :	2.4GHz Wireless keyboard	Model Name :	SL-680008-BK BK
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC1.5V
Test Mode :	TX	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
30.4237	7.52	18.14	25.66	40.00	-14.34	QP
84.7018	12.77	8.65	21.42	40.00	-18.58	QP
135.0319	17.02	12.25	29.27	43.50	-14.23	QP
332.5187	16.39	15.92	32.31	46.00	-13.69	QP
356.6757	15.93	16.41	32.34	46.00	-13.66	QP
763.3757	9.44	26.33	35.77	46.00	-10.23	QP

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

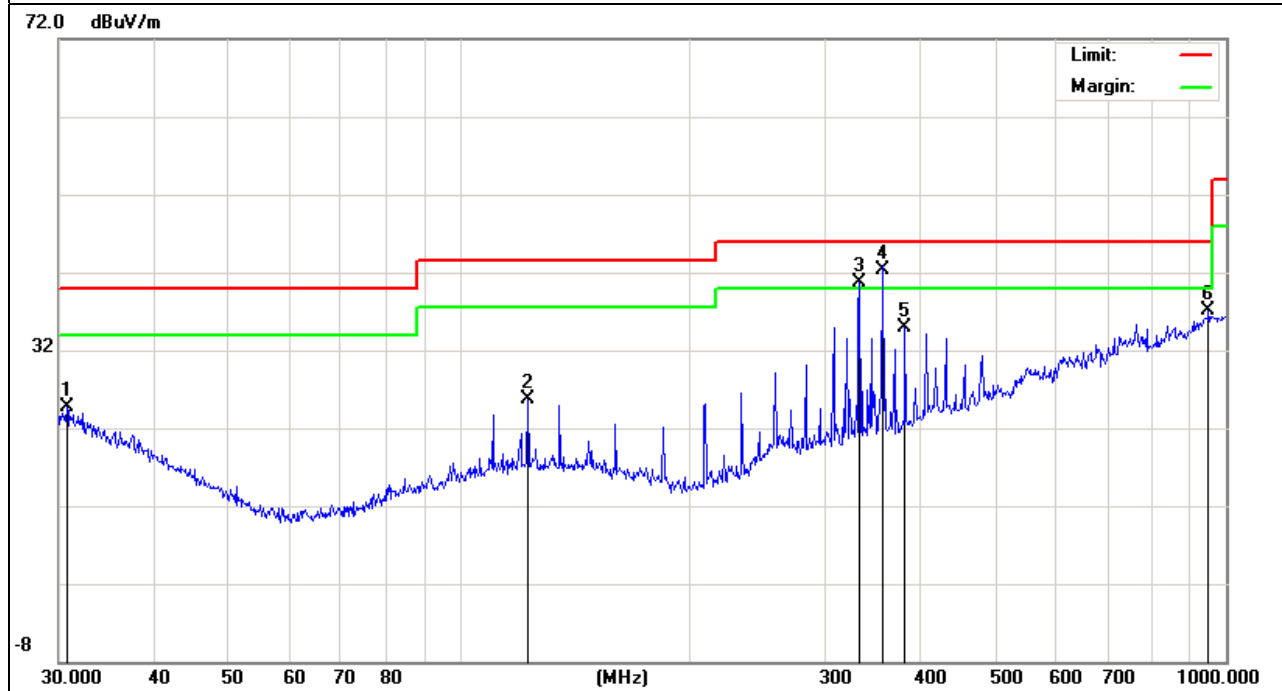


EUT :	2.4GHz Wireless keyboard	Model Name :	SL-680008-BKKB
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC1.5V
Test Mode :	TX	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
30.7454	6.79	18.00	24.79	40.00	-15.21	QP
122.8340	13.47	12.16	25.63	43.50	-17.87	QP
332.5187	24.80	15.92	40.72	46.00	-5.28	QP
356.6757	25.99	16.41	42.40	46.00	-3.60	QP
381.2485	17.68	17.22	34.90	46.00	-11.10	QP
948.7608	7.33	29.75	37.08	46.00	-8.92	QP

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.



3.3.7 TEST RESULTS (ABOVE 1000 MHZ)

EUT :	2.4GHz Wireless keyboard	Model Name :	SL-680008-BK BK
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC1.5V
Test Mode :	TX /2402MHz	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2402	112.63	-12.99	99.64	114.0 0	-14.36	peak
2402	97.96	-12.99	84.97	94	-9.03	AVG
4804	57.27	-3.57	53.7	74	-20.3	peak
4804	41.23	-3.57	37.66	54	-16.34	AVG
9608	55.06	1.78	56.84	74	-17.16	peak
9608	41.23	1.78	43.01	54	-10.99	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No emission above 18GHz.

EUT :	2.4GHz Wireless keyboard	Model Name :	SL-680008-BK BK
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC1.5V
Test Mode :	TX /2402MHz	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2402	114.81	-12.99	101.82	114.0 0	-12.18	peak
2402	97.87	-12.99	84.88	94	-9.12	AVG
4804	62.49	-3.59	58.9	74	-15.1	peak
4804	44.23	-3.59	40.64	54	-13.36	AVG
7206	53.96	-0.96	53	74	-21	peak

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No emission above 18GHz.

EUT :	2.4GHz Wireless keyboard	Model Name :	SL-680008-BKKB
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC1.5V
Test Mode :	TX /2441MHz	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2441	115.13	-12.93	102.2	114.0 0	-11.8	peak
2441	96.45	-12.93	83.52	94	-10.48	AVG
4882	65.25	-3.55	61.7	74	-12.3	peak
4882	43.21	-3.55	39.66	54	-14.34	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.
No emission above 18GHz.

EUT :	2.4GHz Wireless keyboard	Model Name :	SL-680008-BKKB
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC1.5V
Test Mode :	TX /2441MHz	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2441	114.13	-12.93	101.2	114.0 0	-12.8	peak
2441	97.08	-12.93	84.15	94	-9.85	AVG
4882	69.24	-3.55	65.69	74	-8.31	peak
4882	46.21	-3.55	42.66	54	-11.34	AVG

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.
No emission above 18GHz.

EUT :	2.4GHz Wireless keyboard	Model Name :	SL-680008-BK BK
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC1.5V
Test Mode :	TX /2480MHz	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2480	112.82	-12.92	99.9	114.0 0	-14.1	peak
2480	97.98	-12.92	85.06	94	-8.94	AVG
4960	69.42	-3.55	65.87	74	-8.13	peak
4960	50.28	-3.55	46.73	54	-7.27	AVG
7440	56.94	-0.68	56.26	74	-17.74	peak
7440	41.51	-0.68	40.83	54	-13.17	AVG

EUT :	2.4GHz Wireless keyboard	Model Name :	SL-680008-BK BK
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC1.5V
Test Mode :	TX /2480MHz	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2480	114.12	-12.92	101.2	114.0 0	-12.8	peak
2480	96.76	-12.92	83.84	94	-10.16	AVG
4960	62.2	-3.8	58.4	74	-15.6	peak
4960	43.66	-3.8	39.86	54	-14.14	AVG

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
No emission above 18GHz.

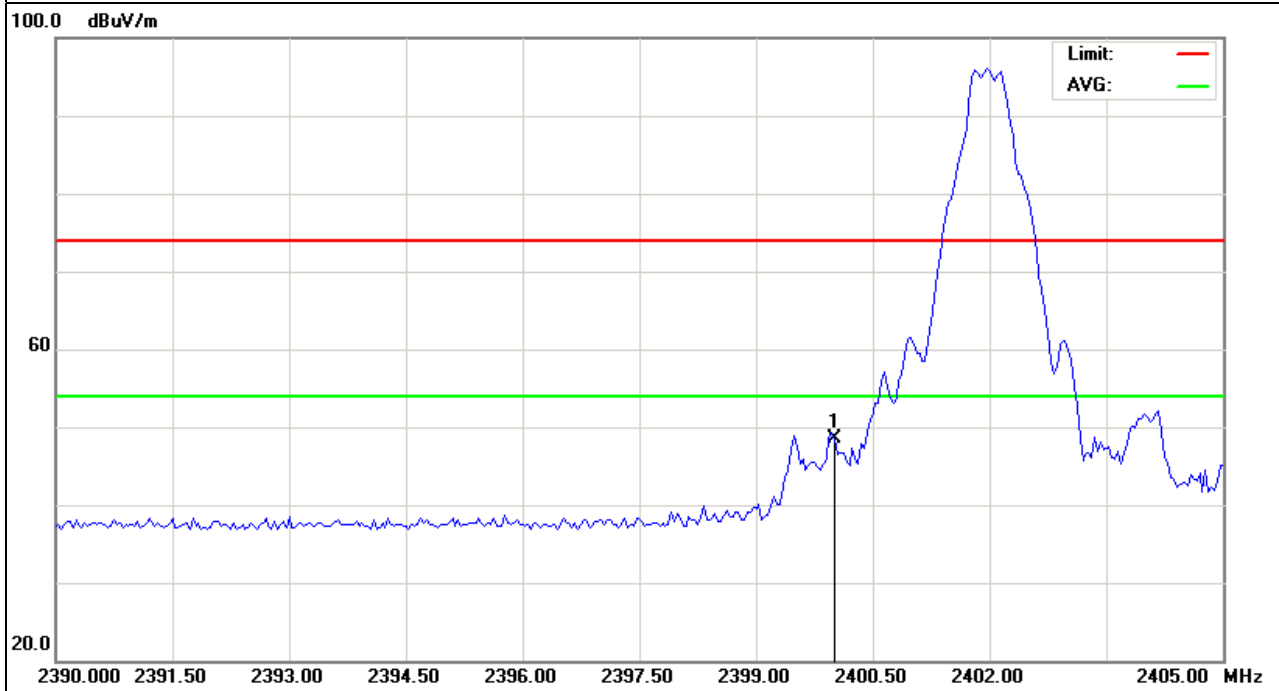
Band Edge Emission:

EUT :	2.4GHz Wireless keyboard	Model Name :	SL-680008-BK BK
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC1.5V
Test Mode :	TX /2402MHz	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2400	61.57	-12.99	48.58	74	-25.42	peak

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

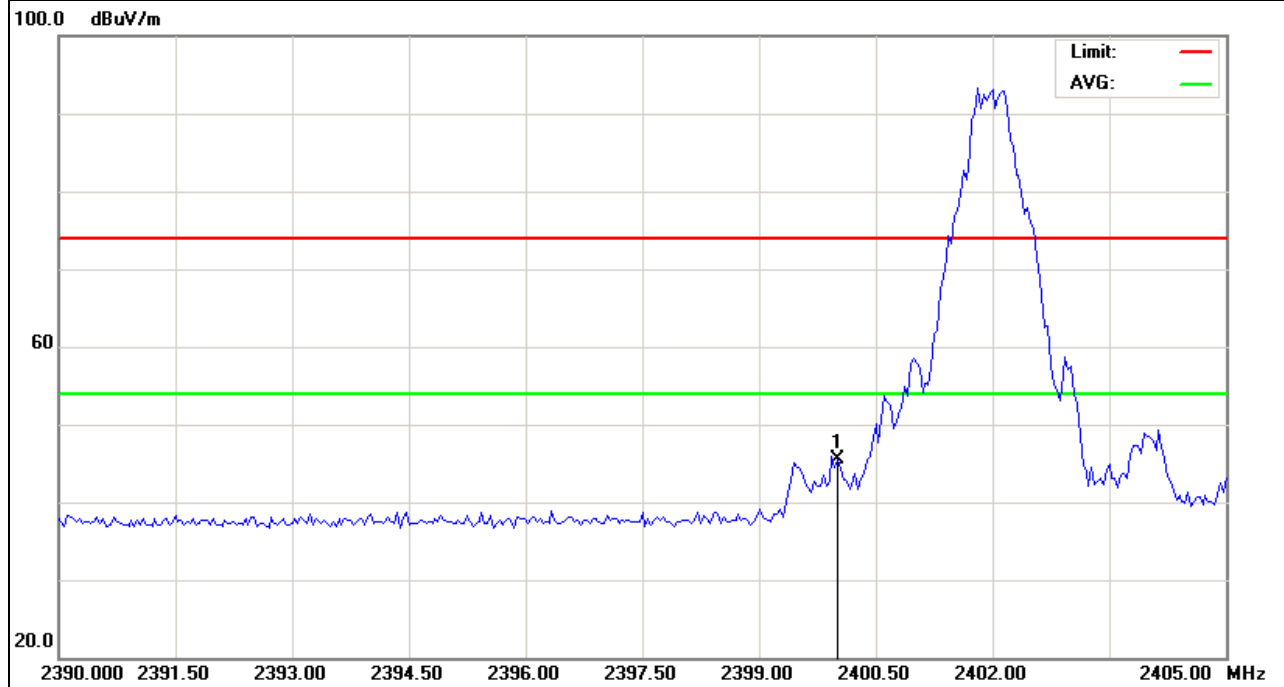


EUT :	2.4GHz Wireless keyboard	Model Name :	SL-680008-BK BK
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC1.5V
Test Mode :	TX /2402MHz	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2400	58.5	-12.99	45.51	74	-28.49	peak

Remark:

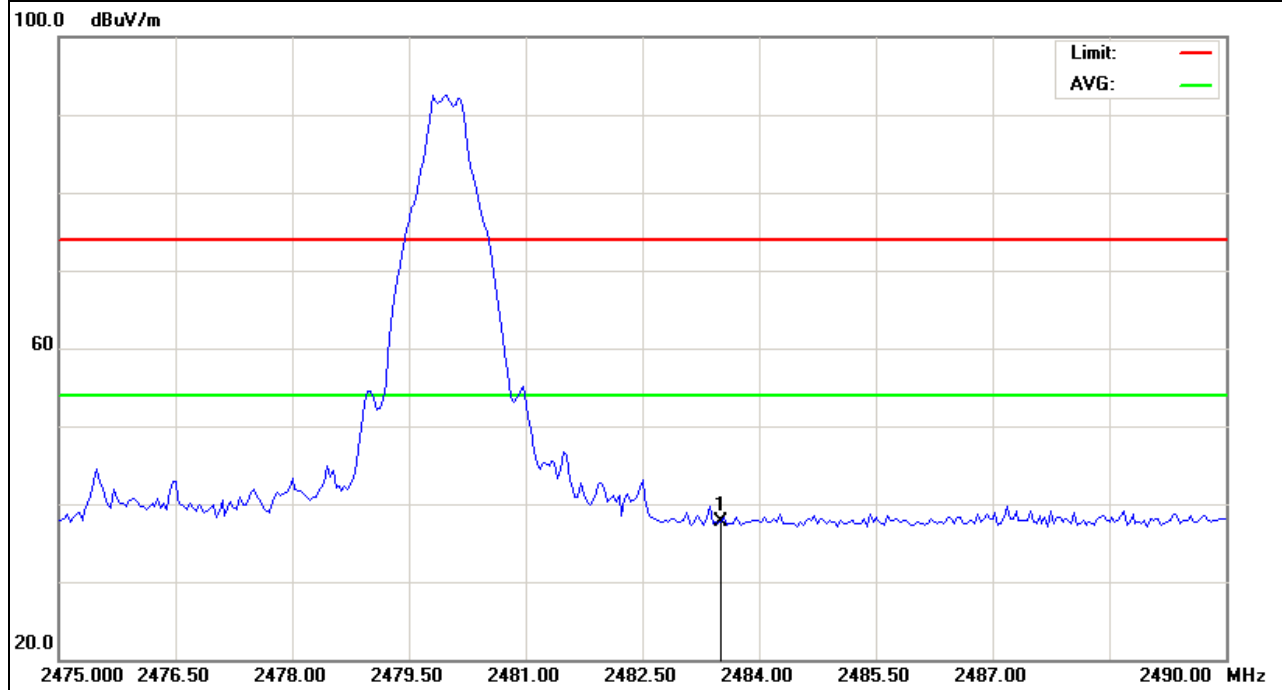
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	2.4GHz Wireless keyboard	Model Name :	SL-680008-BK BK
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC1.5V
Test Mode :	TX /2480MHz	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2483.5	50.58	-12.78	37.8	74	-36.2	peak

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

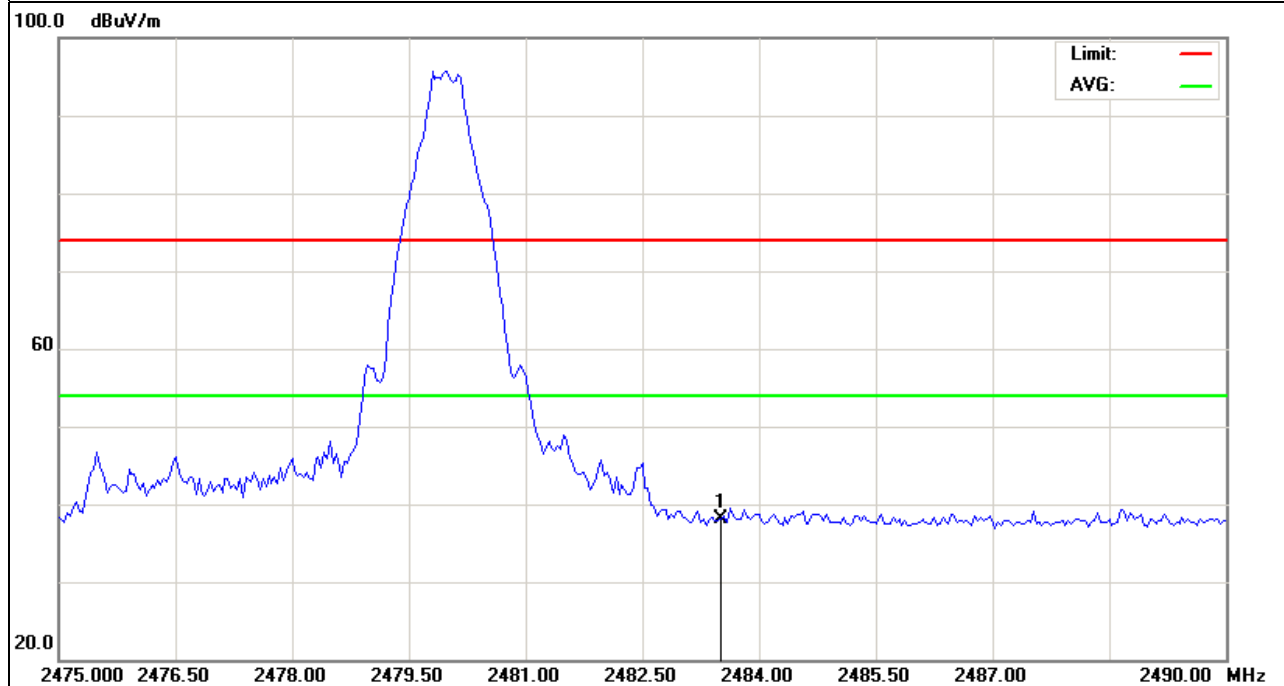


EUT :	2.4GHz Wireless keyboard	Model Name :	SL-680008-BK BK
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC1.5V
Test Mode :	TX /2480MHz	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2483.5	50.86	-12.78	38.08	74	-35.92	
						peak

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.



4. BANDWIDTH TEST

4.1 TEST PROCEDURE

- 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= 100KHz, VBW $\geq$ RBW, Sweep time = Auto.

4.2 DEVIATION FROM STANDARD

No deviation.

4.3 TEST SETUP

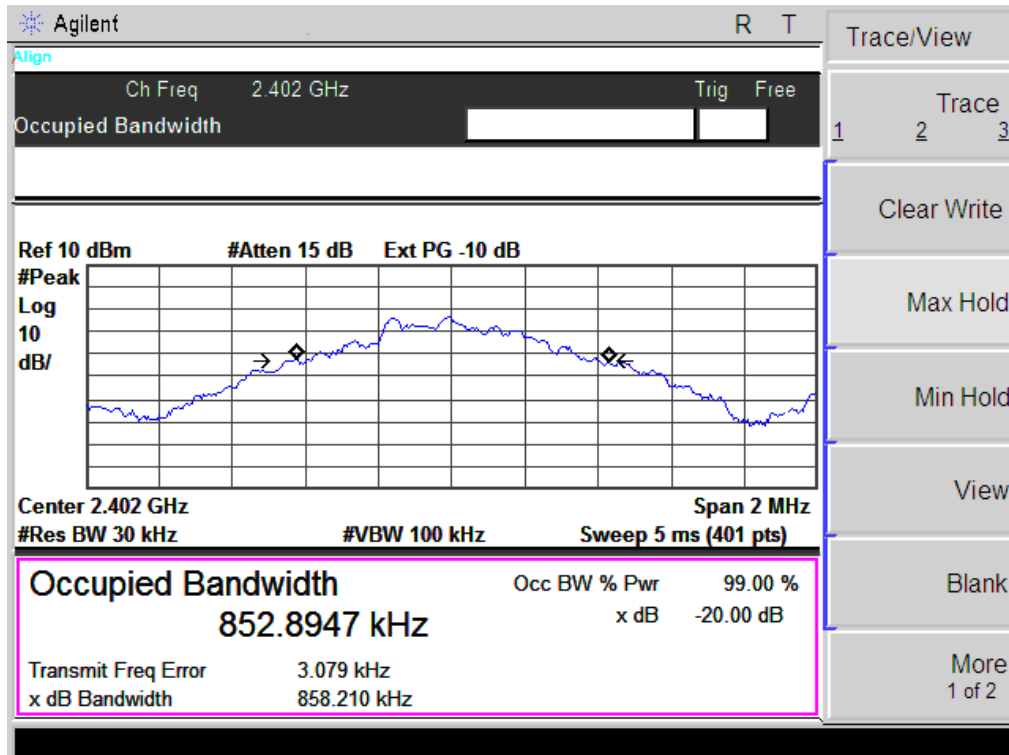


4.4 TEST RESULTS

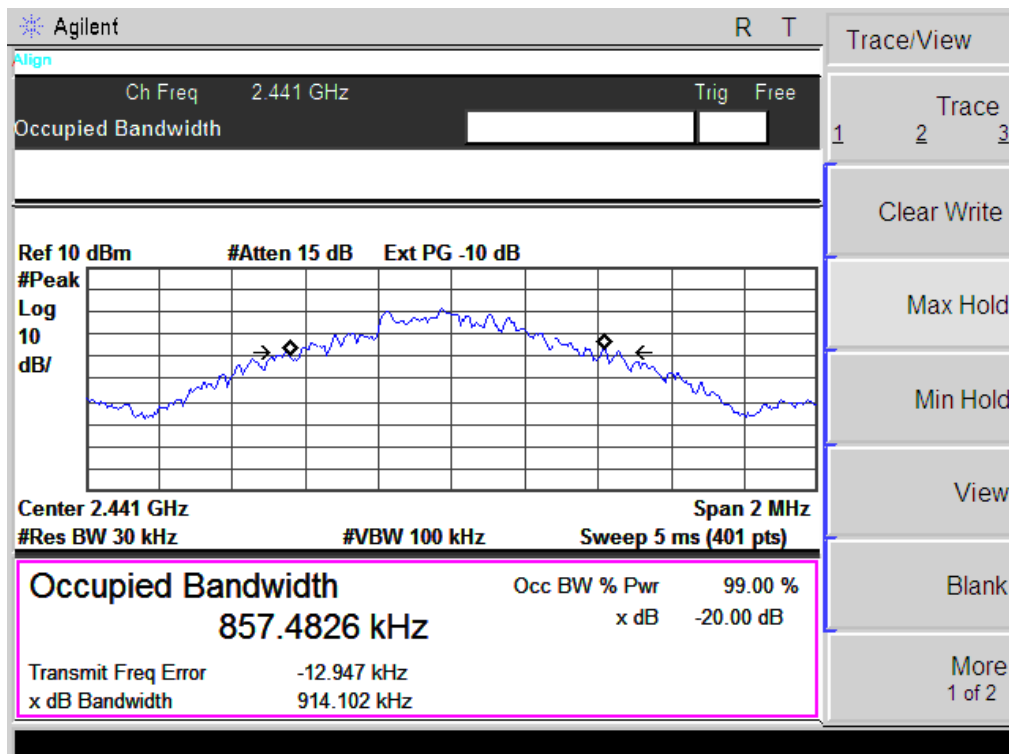
EUT :	2.4GHz Wireless keyboard	Model Name :	SL-680008-BK BK
Temperature :	26 °C	Relative Humidity :	53%
Pressure :	1020 hPa	Test Power :	DC1.5V
Test Mode :	TX CH 1/40/79		

Test Channel	Frequency (MHz)	20 dBc Bandwidth (MHz)	99% Bandwidth (MHz)
CH01	2402	858.210	852.894
CH40	2441	914.102	857.482
CH79	2480	836.397	847.957

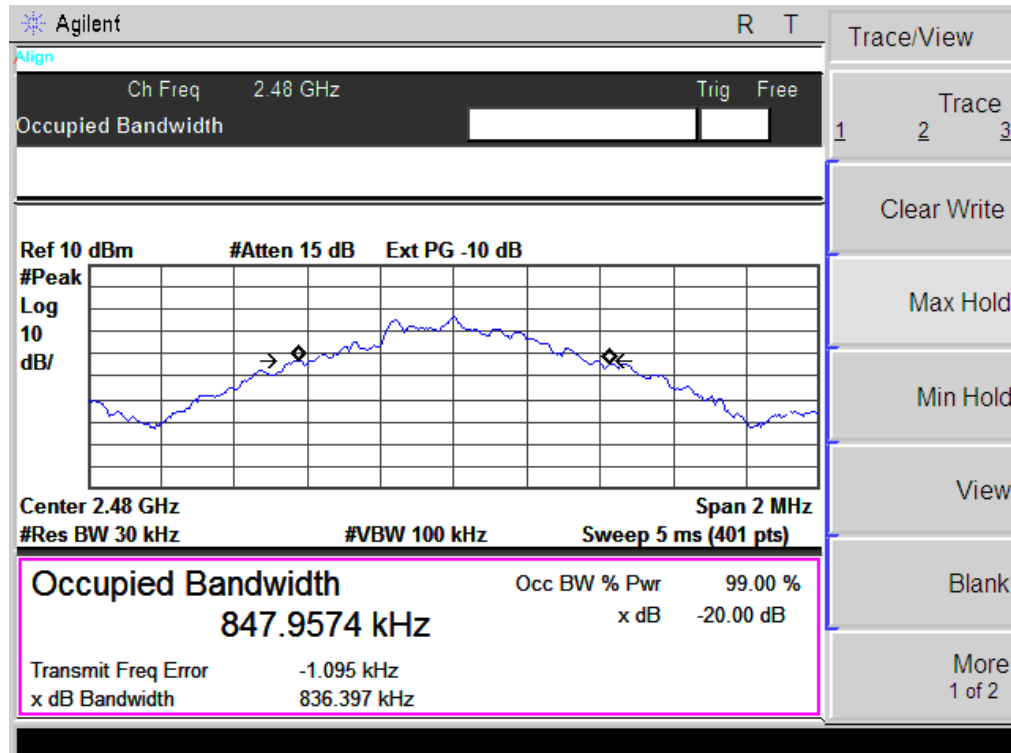
The Lowest Channel:2402MHz



The Middle Channel: 2441MHz



The High Channel:2480MHz



5. EUT TEST PHOTO

Radiated Measurement Photos

