

FCC TEST REPORT

FCC ID: 2A16IHV-MS976GT

Product : Wireless mouse

Model Name : HV-MS976GT, HV-MS978GT, HV-MS988GT
HV-MS995GT, HV-MS55GT, HV-MS56GT
HV-MS57GT, HV-MS58GT, HV-MS59GT
HV-MS60GT

Brand : HAVIT

Report No. : PTC801715160722E-FC01

Prepared for

Guangzhou Havit Technology Co.,LTD

ROOM 1307,13F,PHASE 2 B,C BUILDING OF POLY WORLD TRADE CENTER,

NO.1000,XINGANG EAST ROAD,HAIZHU,GuangDong,China

Prepared by

DongGuan Precise Testing Service Co.,Ltd.

Building D, Baoding Technology Park, Guangming Road 2, Guangming Community

Dongcheng District, Dongguan, Guangdong, China

TEST RESULT CERTIFICATION

Applicant's name : Guangzhou Havit Technology Co.,LTD
Address : ROOM 1307,13F,PHASE 2 B,C BUILDING OF POLY WORLD TRADE CENTER,
NO.1000,XINGANG EAST ROAD,HAIZHU,GuangDong,China

Manufacture's name : Guangzhou Havit Technology Co.,LTD
Address : ROOM 1307,13F,PHASE 2 B,C BUILDING OF POLY WORLD TRADE CENTER,
NO.1000,XINGANG EAST ROAD,HAIZHU,GuangDong,China

Product name : Wireless mouse
Model name : HV-MS976GT, HV-MS978GT,HV-MS988GT
HV-MS995GT,HV-MS55GT,HV-MS56GT
HV-MS57GT,HV-MS58GT,HV-MS59GT
HV-MS60GT

Standards : FCC CFR47 Part 15 Section 15.249

Test procedure : ANSI C63.10:2013

Test Date : Sept.6, 2016 – Sept. 12, 2016

Date of Issue : Sept. 12, 2016

Test Result : Pass

This device described above has been tested by PTC, 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 PTC, this document may be altered or revised by PTC, personal only, and shall be noted in the revision of the document.

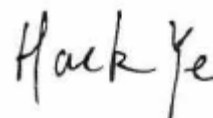
Testing Engineer

August Qiu



Technical Manager

Hack Ye



Authorized Signatory

Chris Du



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)	9
2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS	10
3 . TEST RESULT	11
3.1 ANTENNA REQUIREMENT	11
3.1.1 STANDARD REQUIREMENT	11
3.1.2 EUT ANTENNA	11
3.2 CONDUCTED EMISSION MEASUREMENT	12
3.2.1 POWER LINE CONDUCTED EMISSION LIMITS	12
3.2.2 TEST PROCEDURE	13
3.2.3 DEVIATION FROM TEST STANDARD	13
3.2.4 TEST SETUP	13
3.2.5 TEST RESULT	14
POWERED BY BATTERY, NOT APPLICABLE FOR THIS TEST PROJECT	14
3.3 RADIATED EMISSION MEASUREMENT	15
3.3.1 RADIATED EMISSION LIMITS	15
3.3.2 TEST PROCEDURE	16
3.3.3 DEVIATION FROM TEST STANDARD	16
3.3.4 TEST SETUP	17
3.3.5 TEST RESULTS (BLOW 30MHZ)	19
3.3.6 TEST RESULTS (BETWEEN 30 – 1000 MHZ)	20
3.3.7 TEST RESULTS (ABOVE 1000 MHZ)	22
4 . BANDWIDTH TEST	32
4.1 TEST PROCEDURE	32
4.2 DEVIATION FROM STANDARD	32
4.3 TEST SETUP	32
4.4 TEST RESULTS	33
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
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

Dongguan Precise Testing Service Co., Ltd.

Add. : Building D, Baoding Technology Park, Guangming Road 2 Dongcheng District, Dongguan, Guangdong, China

FCC FRN Registration No.: 371540

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	Wireless mouse	
Trade Name	HAVIT	
Model Name	HV-MS976GT	
Serial Model	HV-MS978GT,HV-MS988GT,HV-MS995GT, HV-MS55GT,HV-MS56GT,HV-MS57GT, HV-MS58GT,HV-MS59GT ,HV-MS60GT	
Model Difference	All the same,only model name is different	
Product Description	The EUT is a wireless mouse	
	Operation Frequency:	2402~2480MHz
	Modulation Type:	GFSK
	Antenna Designation:	PCB printed 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 3V	

Note:

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

2. Channel:

1	2	3	4	5	6	7	8
2402	2426	2441	2463	2407	2422	2445	2466
9	10	11	12	13	14	15	16
2414	2436	2459	2473	2419	2439	2453	2480

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 generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible 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

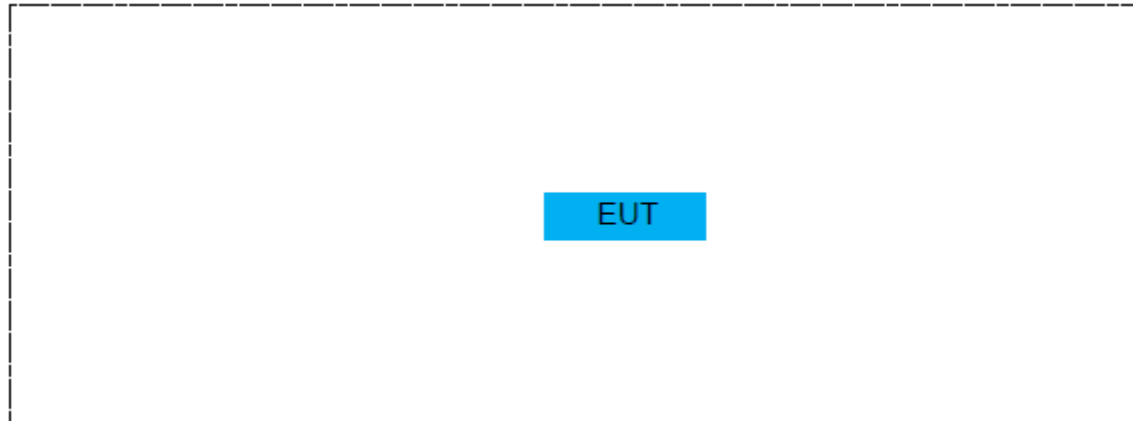
For Conducted Emission	
Final Test Mode	Description
N/A	N/A

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



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
EUT	wireless mouse	HAVIT	HV-MS976GT	N/A	

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

RF Conducted Test

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	EMC Analyzer (9k~26.5GHz)	Agilent	E4407B	MY45109572	Aug.04, 2016	Aug.03, 2017	1 year
2	EXA Signal Analyzer	Keysight	N9010A	MY50520207 526B25MPB W7X	Aug.04, 2016	Aug.03, 2017	1 year
3	EMI Test Receiver	R&S	ESCI	101155	July 15, 2016	July 14, 2017	1 year

Radiated Emissions

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	EMI Test Receiver	Rohde&Schwarz	ESCI	101417	July 15, 2016	July 14, 2017	1 year
2	Trilog Broadband Antenna	SCHWARZB ECK	VULB9160	9160-3355	July 15, 2016	July 14, 2017	1 year
3	Amplifier	EM	EM-30180	060538	July 15, 2016	July 14, 2017	1 year
4	Horn Antenna	SCHWARZB ECK	BBHA9120 D	9120D-1 246	July 15, 2016	July 14, 2017	1 year
5	Loop Antenna	SCHWARZB ECK	FMZB1516	9130D-1 243	July 15, 2016	July 14, 2017	1 year
6	3m Anechoic Chamber	CHENGYU	966	PTC-002	June 6, 2014	June 6, 2017	3 year

Conducted Emissions

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	EMI Test Receiver	R&S	ESCI	101155	July 15, 2016	July 14, 2017	1 year
2	LISN	SCHWARZB ECK	NSLK 8128	8128-289	July 15, 2016	July 14, 2017	1 year
3	Cable	LARGE	RF300	-	July 15, 2016	July 14, 2017	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

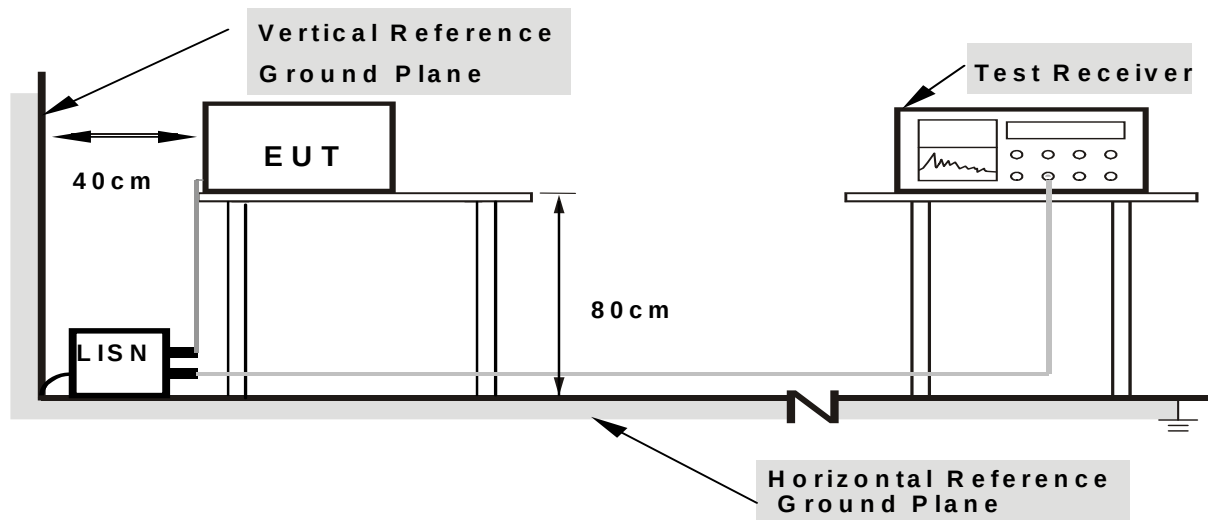
3.2.2 TEST PROCEDURE

- 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 :	wireless mouse	Model Name. :	HV-MS976GT
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	L
Test Voltage :	N/A	Test Mode :	N/A

Powered by battery, not applicable for this test project

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

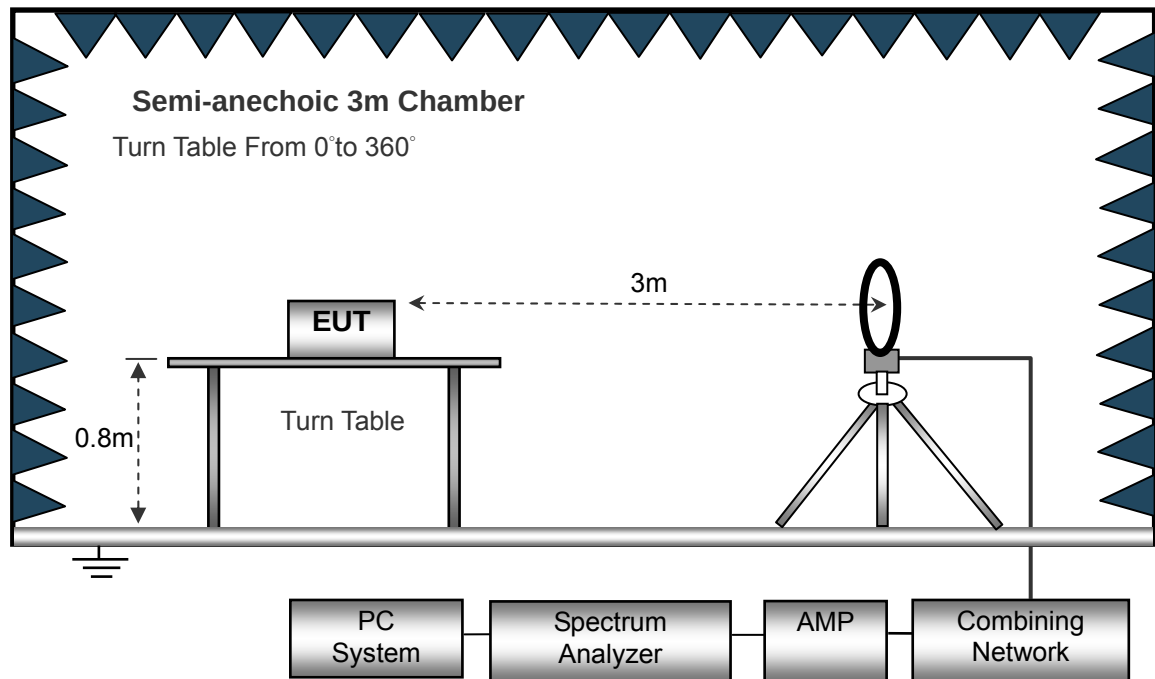
1. The EUT is placed on a turntable, which is 0.8m above ground plane for below 1GHz and 1.5m for above 1GHz.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table,

3.3.3 DEVIATION FROM TEST STANDARD

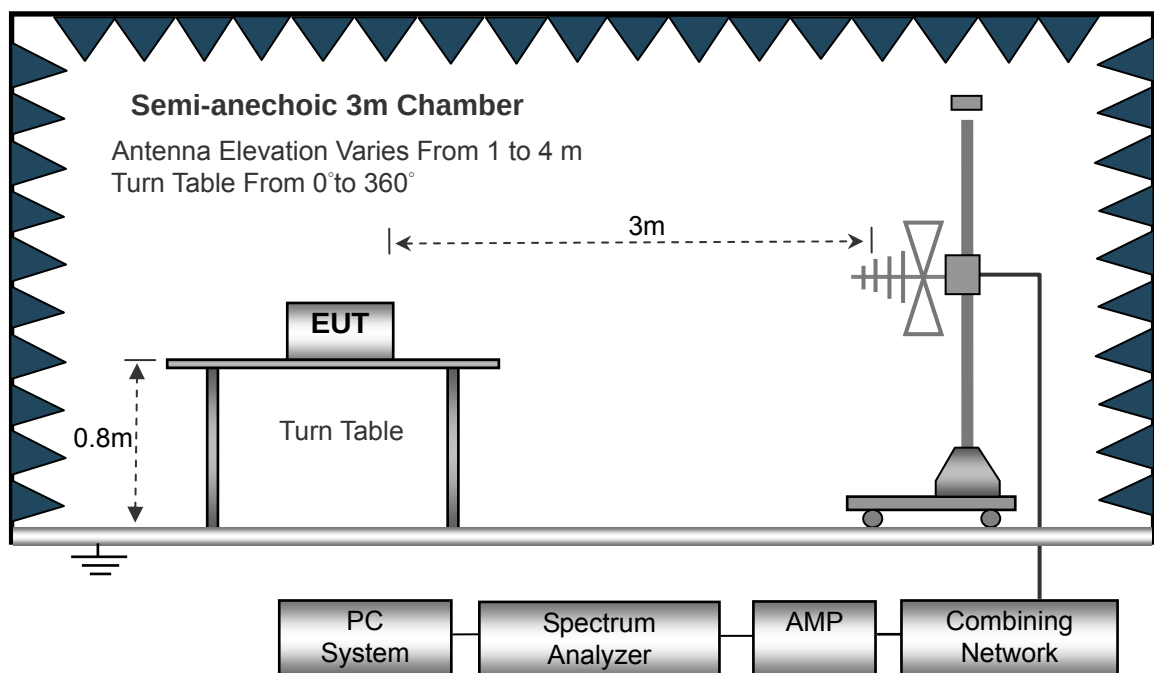
No deviation

3.3.4 TEST SETUP

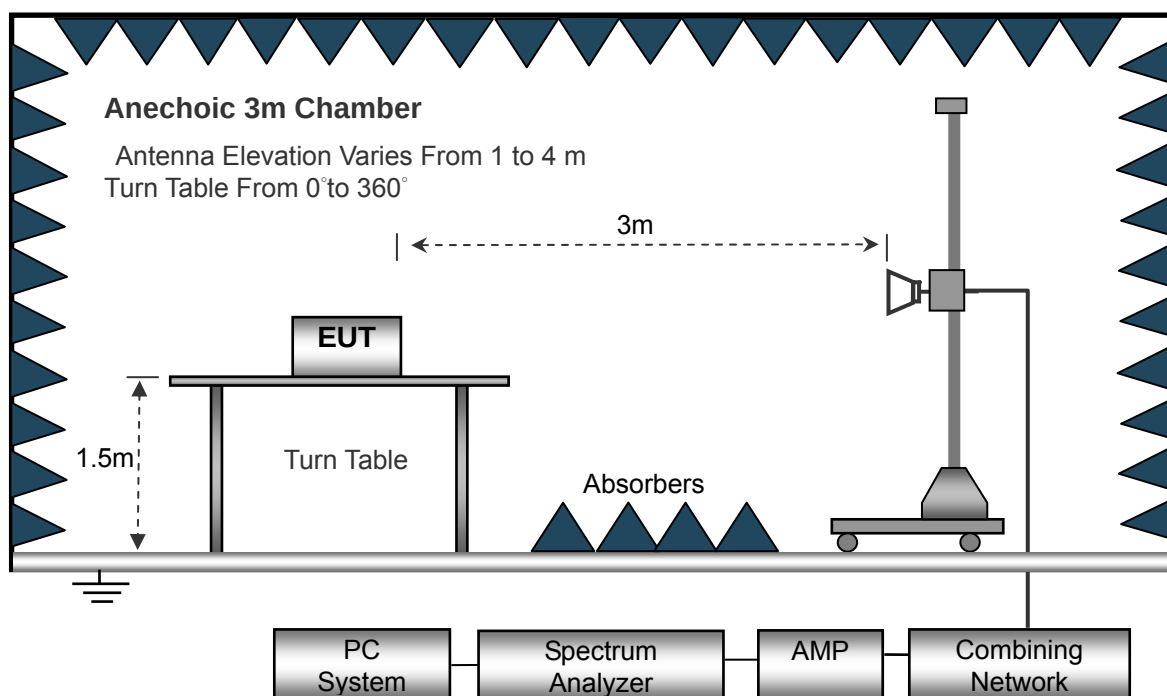
(A) Radiated Emission Test-Up Frequency Below 30MHz



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



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



3.3.5 TEST RESULTS (BLOW 30MHz)

EUT :	wireless mouse	Model Name. :	HV-MS976GT
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3V
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.

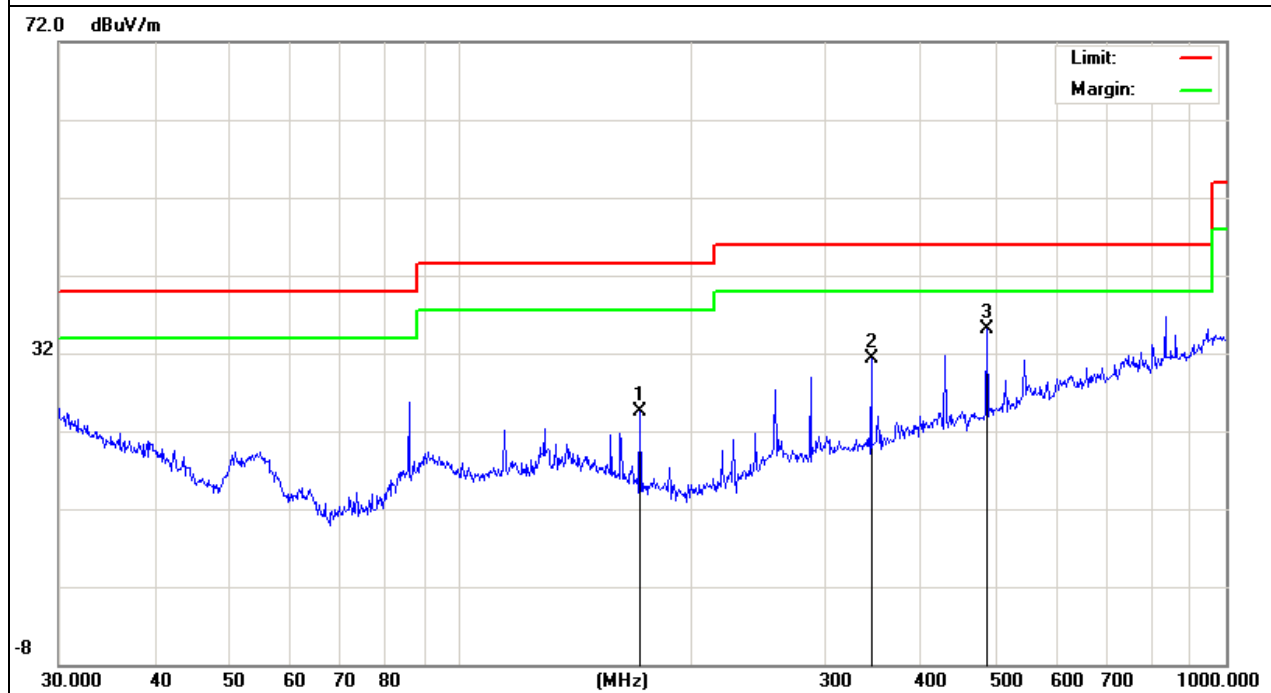
3.3.6 TEST RESULTS (BETWEEN 30 – 1000 MHZ)

EUT :	wireless mouse	Model Name :	HV-MS976GT
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC3V
Test Mode :	Mode 1	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
171.9945	14.6	9.89	24.49	43.5	-19.01	peak
344.3854	16.17	15.22	31.39	46	-14.61	peak
487.315	16.08	19.01	35.09	46	-10.91	peak

Remark:

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

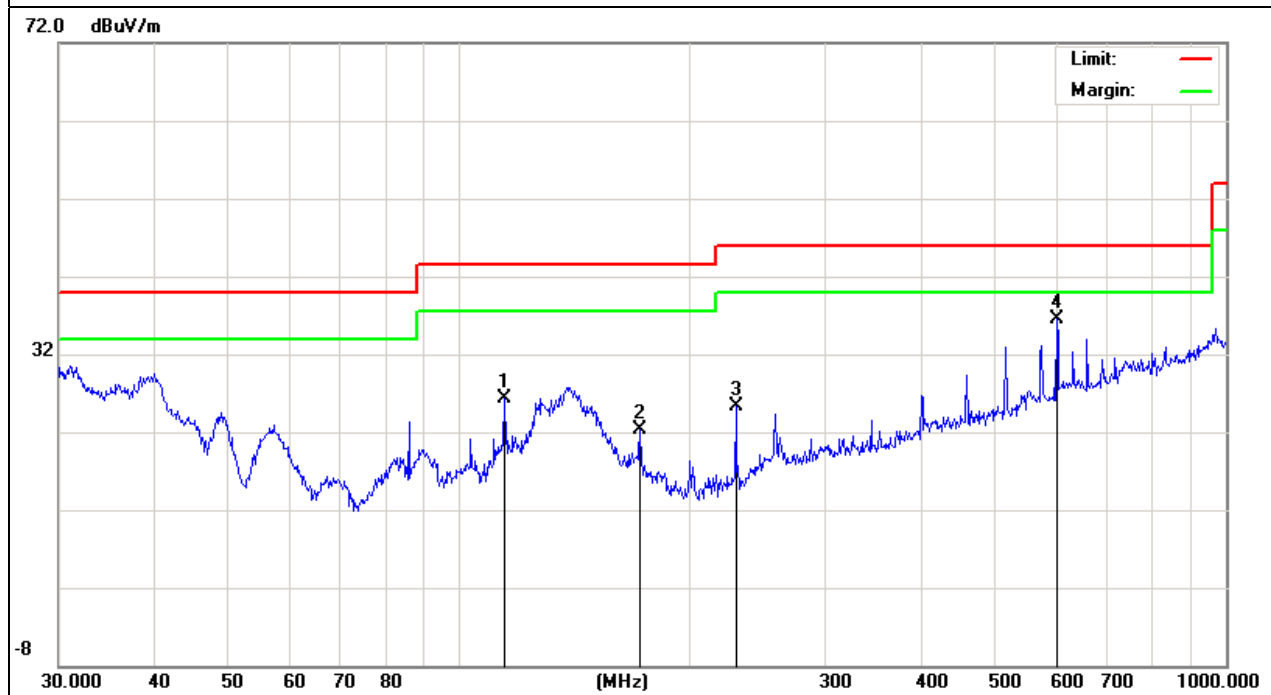


EUT :	wireless mouse	Model Name :	HV-MS976GT
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3V
Test Mode :	Mode 1	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
114.5146	14.58	11.66	26.24	43.5	-17.26	peak
171.9945	12.46	9.89	22.35	43.5	-21.15	peak
229.2931	14.95	10.39	25.34	46	-20.66	peak
601.4265	15.29	21.15	36.44	46	-9.56	peak

Remark:

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



Note: All modes were tested, the worst mode data (Mode 1) was shown.

3.3.7 TEST RESULTS (ABOVE 1000 MHZ)

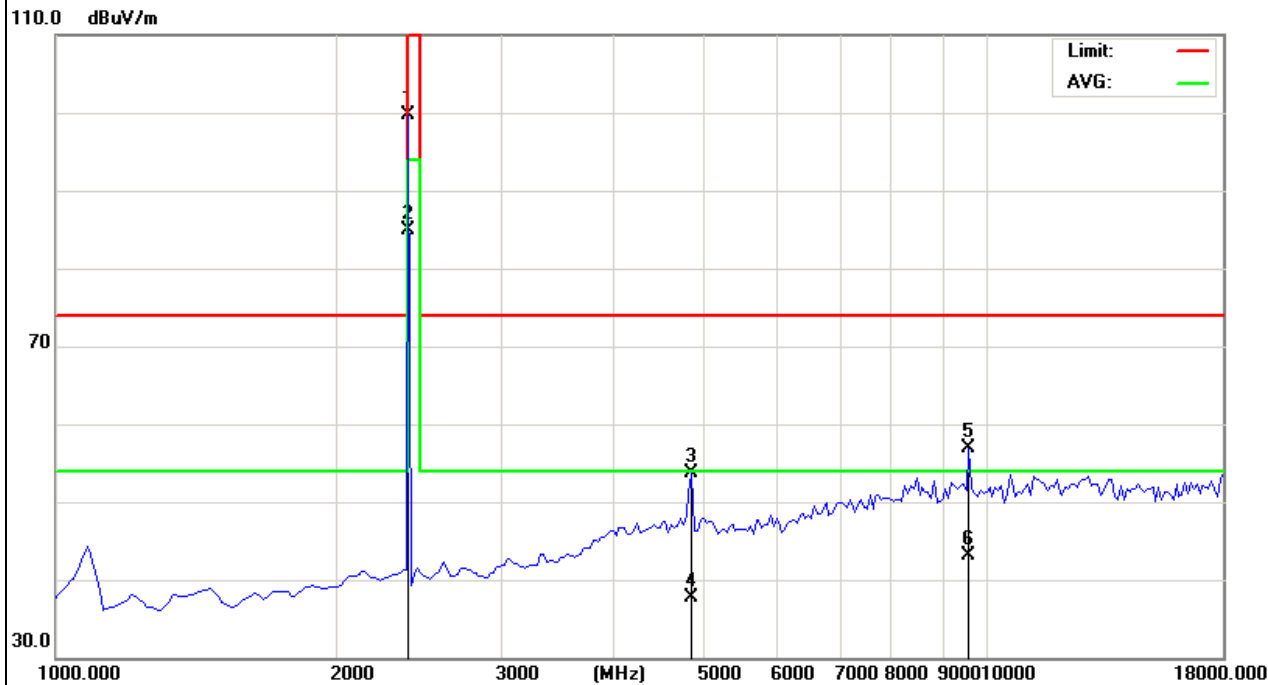
EUT :	wireless mouse	Model Name :	HV-MS976GT
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3V
Test Mode :	TX /2402MHz	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
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.



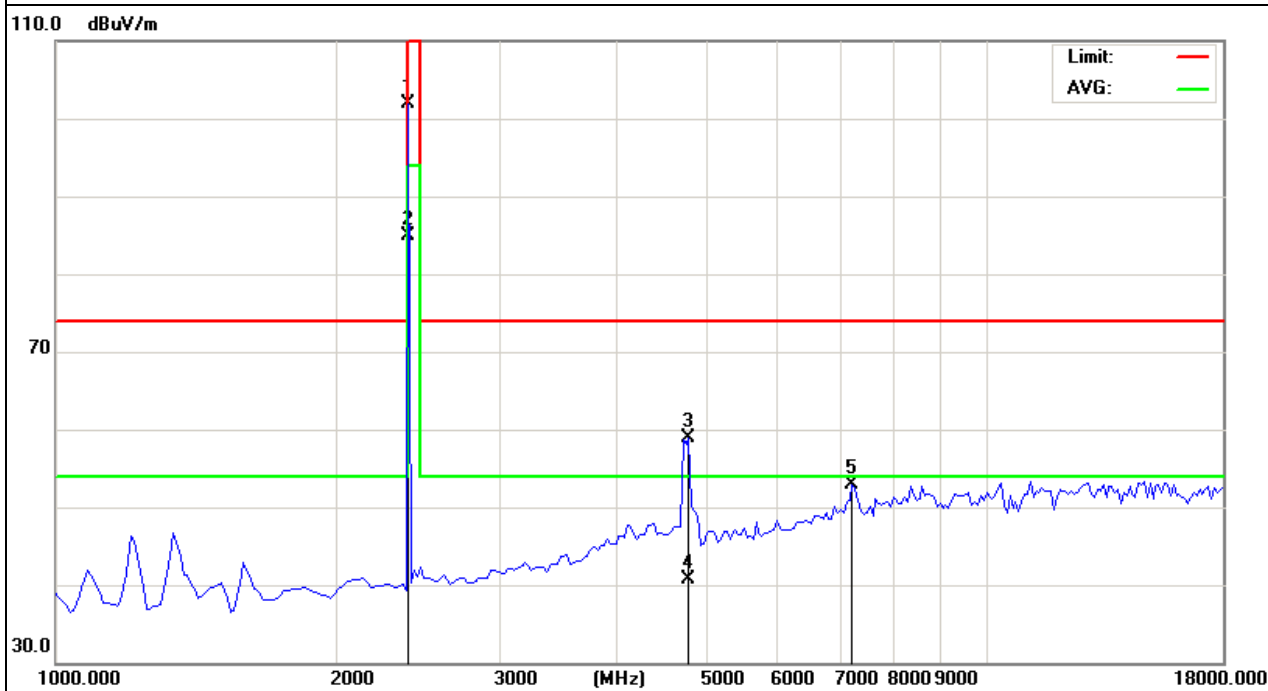
EUT :	wireless mouse	Model Name :	HV-MS976GT
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3V
Test Mode :	TX /2402MHz	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
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.



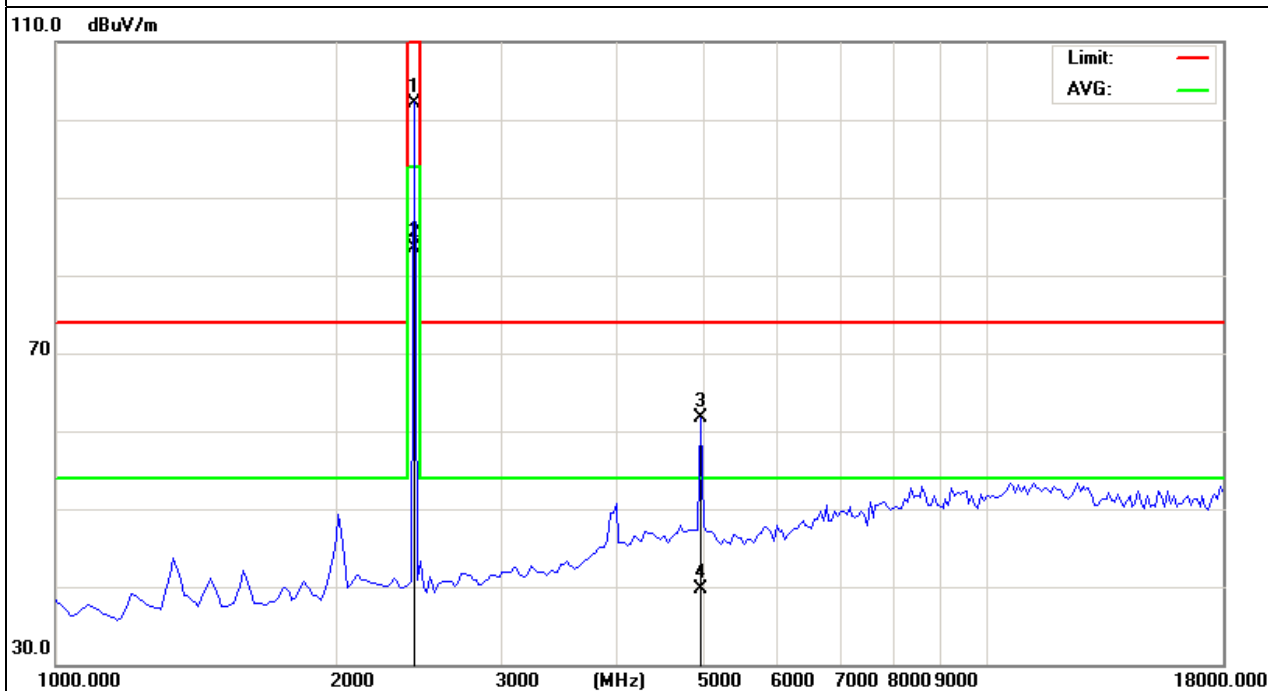
EUT :	wireless mouse	Model Name :	HV-MS976GT
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3V
Test Mode :	TX /2441MHz	Polarization :	Horizontal

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.



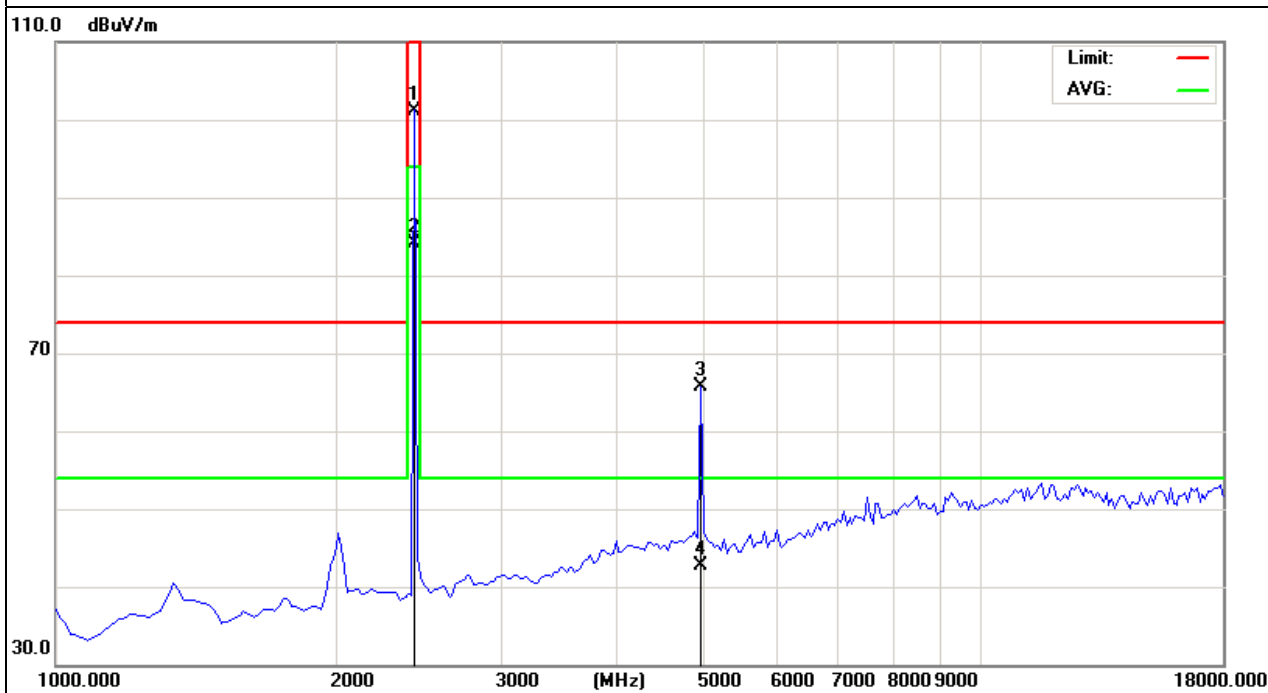
EUT :	wireless mouse	Model Name :	HV-MS976GT
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3V
Test Mode :	TX /2441MHz	Polarization :	Vertical

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.



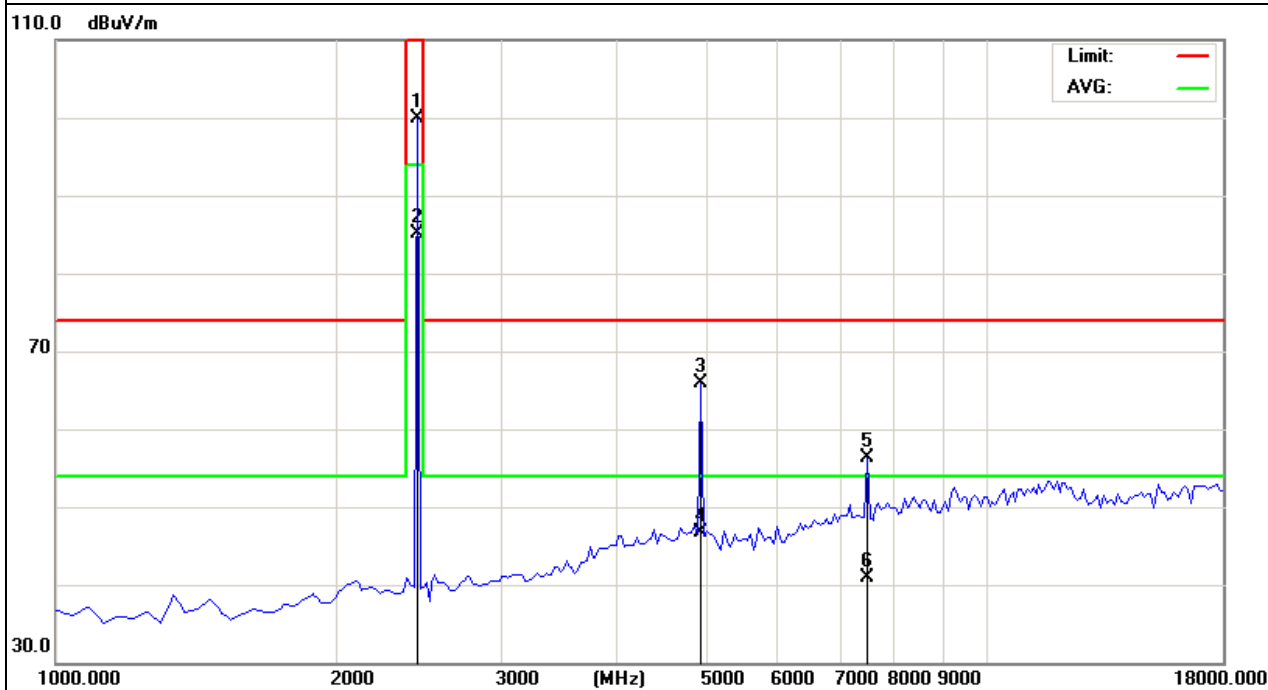
EUT :	wireless mouse	Model Name :	HV-MS976GT
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3V
Test Mode :	TX /2480MHz	Polarization :	Horizontal

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

Remark:

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

No emission above 18GHz.



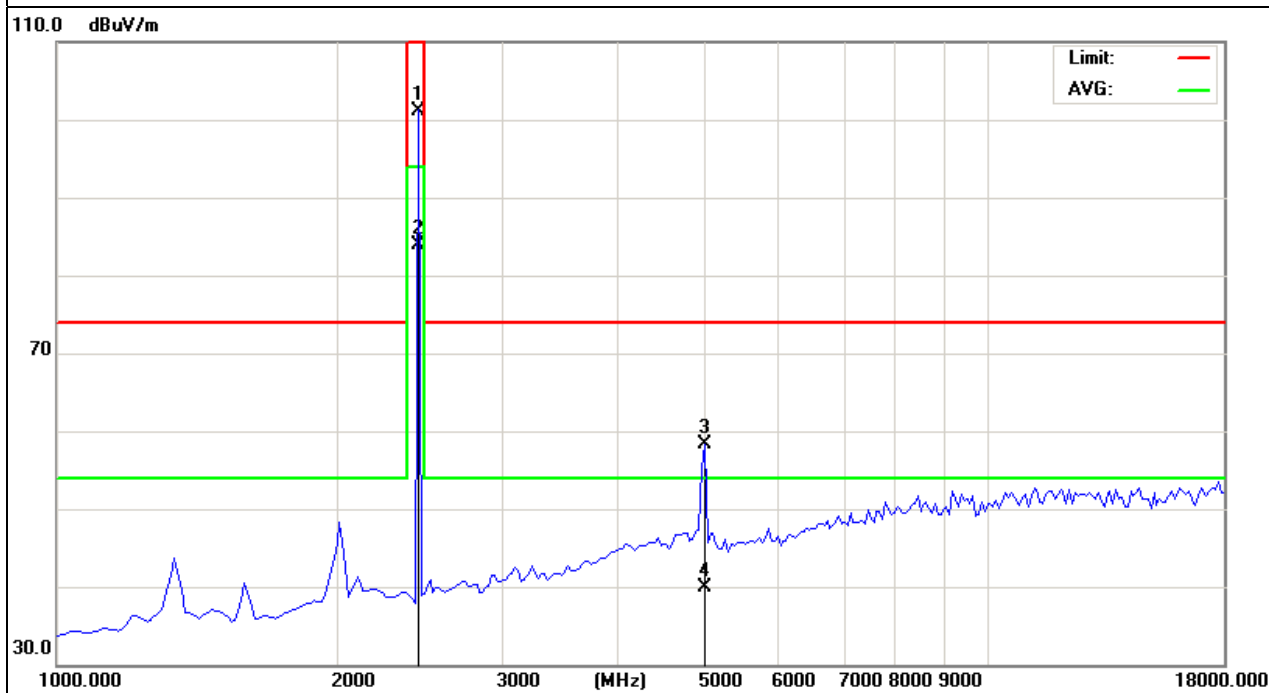
EUT :	wireless mouse	Model Name :	HV-MS976GT
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3V
Test Mode :	TX /2480MHz	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
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.



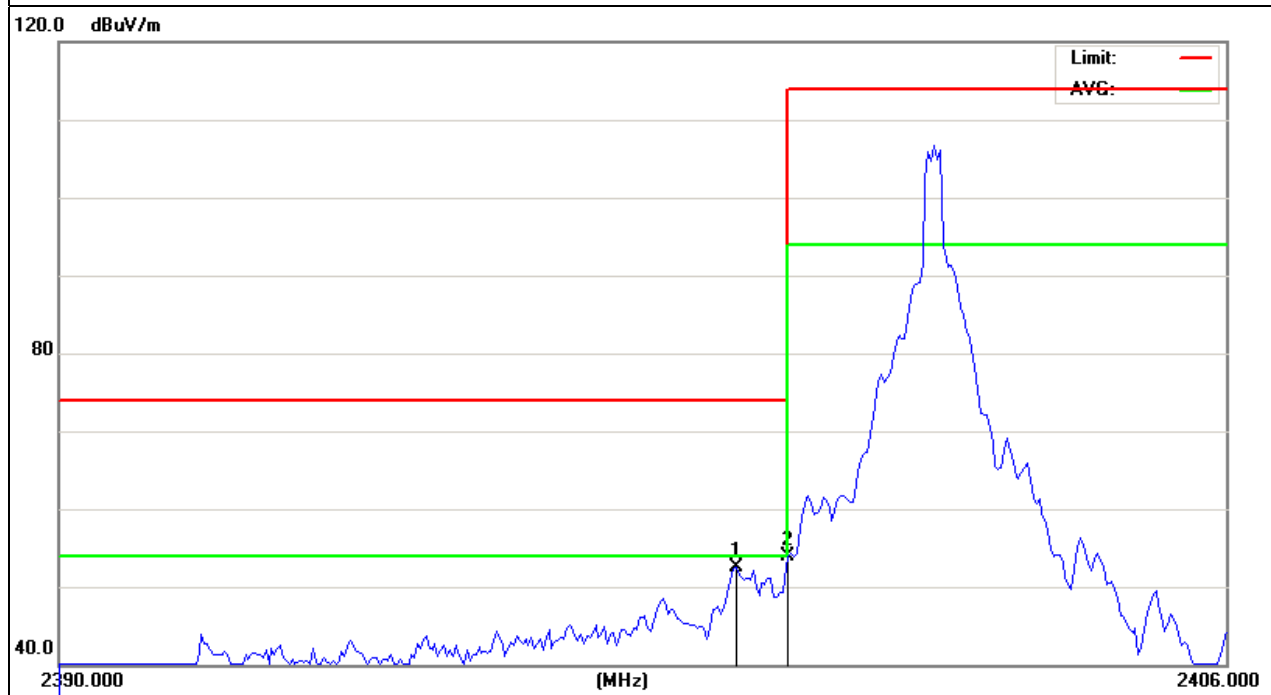
Band Edge Emission:

EUT :	wireless mouse	Model Name :	HV-MS976GT
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3V
Test Mode :	TX /2402MHz	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2399.28	65.51	-12.99	52.52	74	-21.48	peak
2400	66.9	-12.99	53.91	74	-20.09	peak

Remark:

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

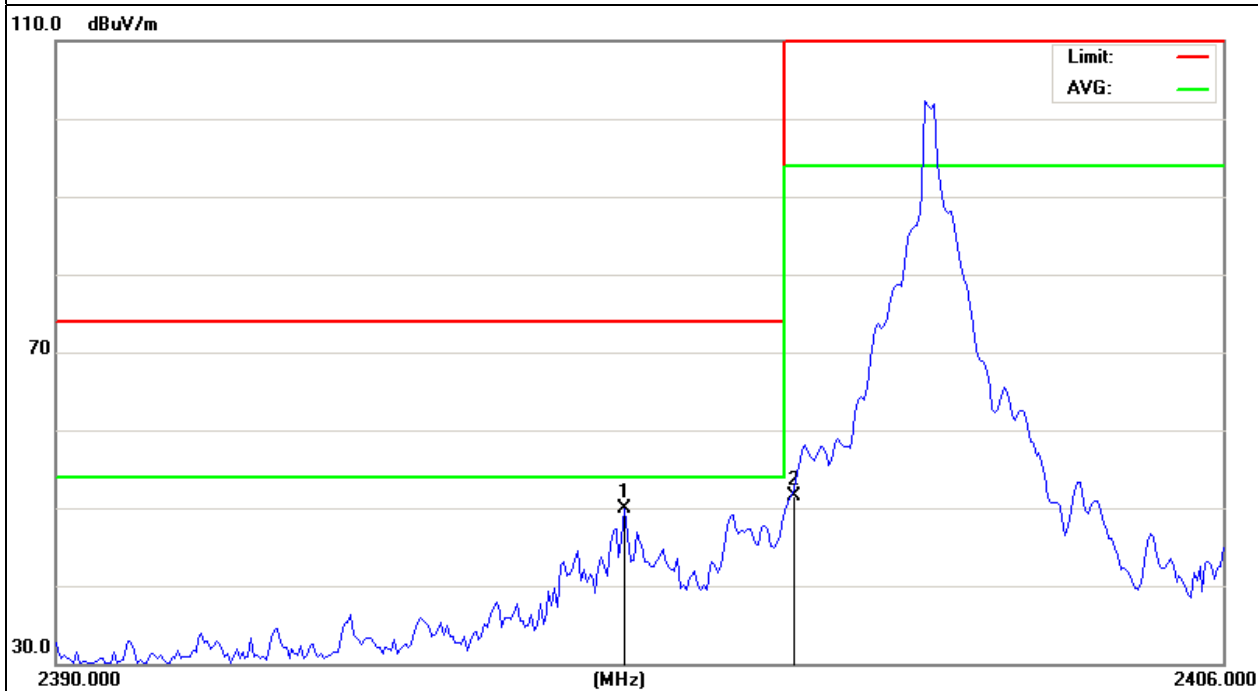


EUT :	wireless mouse	Model Name :	HV-MS976GT
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3V
Test Mode :	TX /2402MHz	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2397.8	62.81	-13	49.81	74	-24.19	peak
2400.00	64.46	-12.99	51.47	74	-22.53	peak

Remark:

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



EUT :	wireless mouse	Model Name :	HV-MS976GT
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3V
Test Mode :	TX /2480MHz	Polarization :	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	45.74	-12.78	32.96	74	-41.04	peak
2484.215	52.76	-12.78	39.98	74	-34.02	peak

Remark:

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



EUT :	wireless mouse	Model Name :	HV-MS976GT
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 3V
Test Mode :	TX /2480MHz	Polarization :	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	51.11	-12.78	38.33	74	-35.67	peak
2484.313	59.91	-12.78	47.13	74	-26.87	peak

Remark:

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



NOTE: If peak Level below the average limit, the average emission was not required.

4. BANDWIDTH TEST

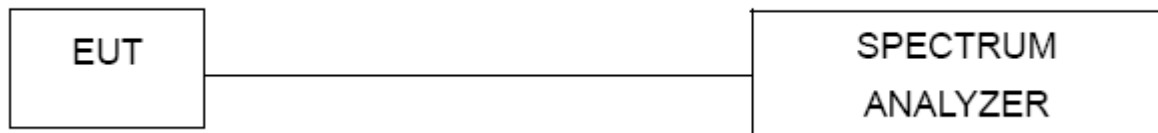
4.1 TEST PROCEDURE

- 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= 30KHz, VBW $\geq$ RBW, Sweep time = Auto.

4.2 DEVIATION FROM STANDARD

No deviation.

4.3 TEST SETUP

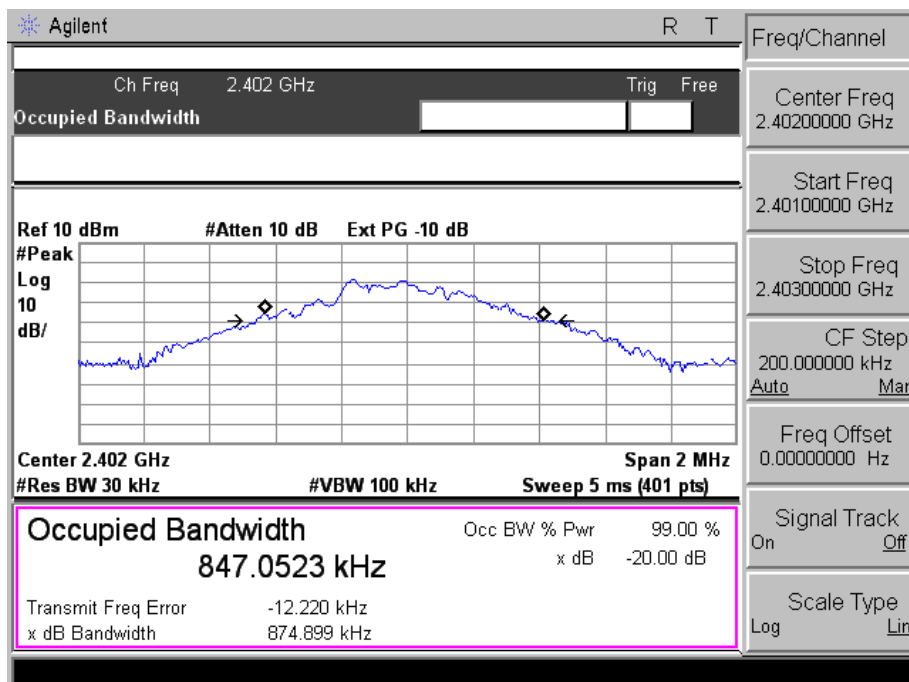


4.4 TEST RESULTS

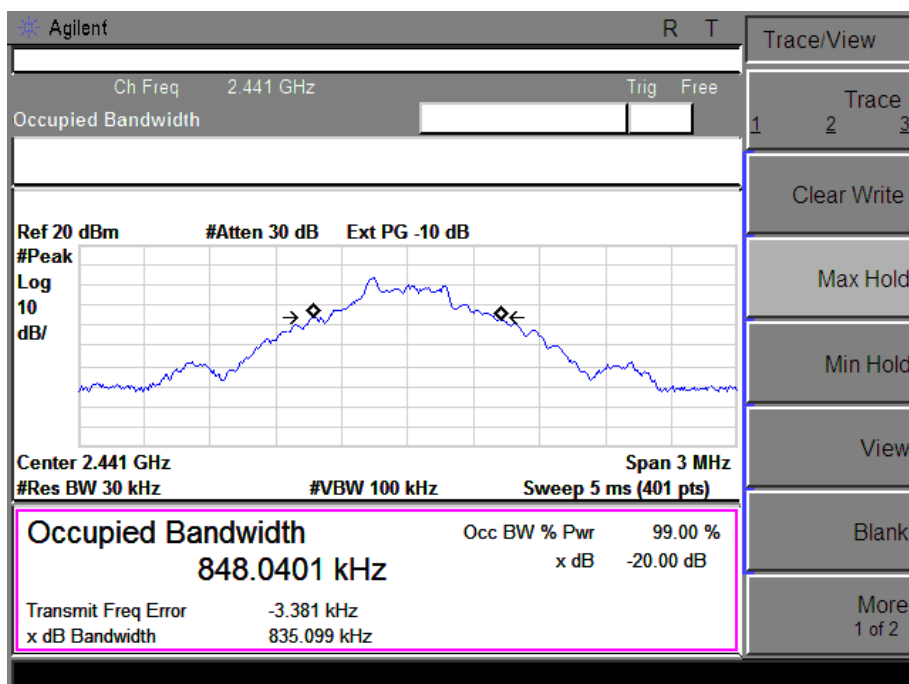
EUT :	wireless mouse	Model Name :	HV-MS976GT
Temperature :	26 °C	Relative Humidity :	53%
Pressure :	1020 hPa	Test Power :	DC 3V
Test Mode :	TX CH 1/3/16		

Test Channel	Frequency (MHz)	20 dBc Bandwidth (MHz)	99% Bandwidth (MHz)
CH1	2402	0.874	0.847
CH3	2441	0.835	0.848
CH16	2480	0.832	0.843

The Lowest Channel: 2402MHz



The Middle Channel: 2441MHz



The High Channel:2480MHz

