



FCC PART 15.249

TEST REPORT

For

Wintop Electronics Co.,Limited

Unit 04 7/F,Bright Way Tower 33,Mong Kok RD KL,HONGKONG

FCC ID: 2AB75WM676REV

Report Type:	Product Type:
Original Report	2.4GHz Wireless Optical Mouse receiver
Test Engineer:	Dean Liu <i>Dean Liu</i>
Report Number:	RDG151119001-00
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Reviewed By:	Sula Huang <i>Sula Huang</i> RF Leader
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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FINAL

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Wintop Electronics Co.,Limited*'s product, model number: WM-676(FCC ID: 2AB75WM676REV) (the "EUT") in this report was a *2.4GHz Wireless Optical Mouse receiver*, was measured approximately: 1.85 cm (L) x 1.40 cm (W) x 0.60 cm(H), rated input voltage: DC5V from system.

Note: the series product, model WM-676, WM-117, MP1950BLK, WM-633, MP2125BLU, MP2225RED MP2325BLK, MP2425PUR, MP2650BLU, MP2750RED, MP2850BLK, MP2950PUR, WM-710, MP2175BLU, MP2275RED, MP2375BLK, MP2475PUR, WM-640, MP2120BLK, MP2120RED, MP2120WHT, MP2120BLU, MP2120LPD, MP2120SNL, MP2120RDF, MP2120CMO, MP2120NBL, MP2120NPK, MP2120NOR, MP2120NGR, MP2120NPR, are electrically identical, the differences between them are model name and color, we selected WM-676 for fully testing, the details was explained in the attached declaration letter.

** All measurement and test data in this report was gathered from production sample serial number: 151119001 (Assigned by BACL.Dongguan). The EUT was received on 2015-11-19.*

Objective

This type approval report is prepared on behalf of *Wintop Electronics Co.,Limited*. in accordance with Part 2-Subpart J, and Part 15-Subparts A, B and C of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.209 and 15.249 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan).

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 06, 2015.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing in engineering mode with maximum power output and switched the channels by key.

Channels list as follows:

Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
1	2405	5	2440
2	2413	6	2450
3	2422	7	2460
4	2430	8	2470

Channel 1, 4, 8 were selected to test.

EUT Exercise Software

No software was used in test.

Equipment Modifications

No modifications were made to the EUT.

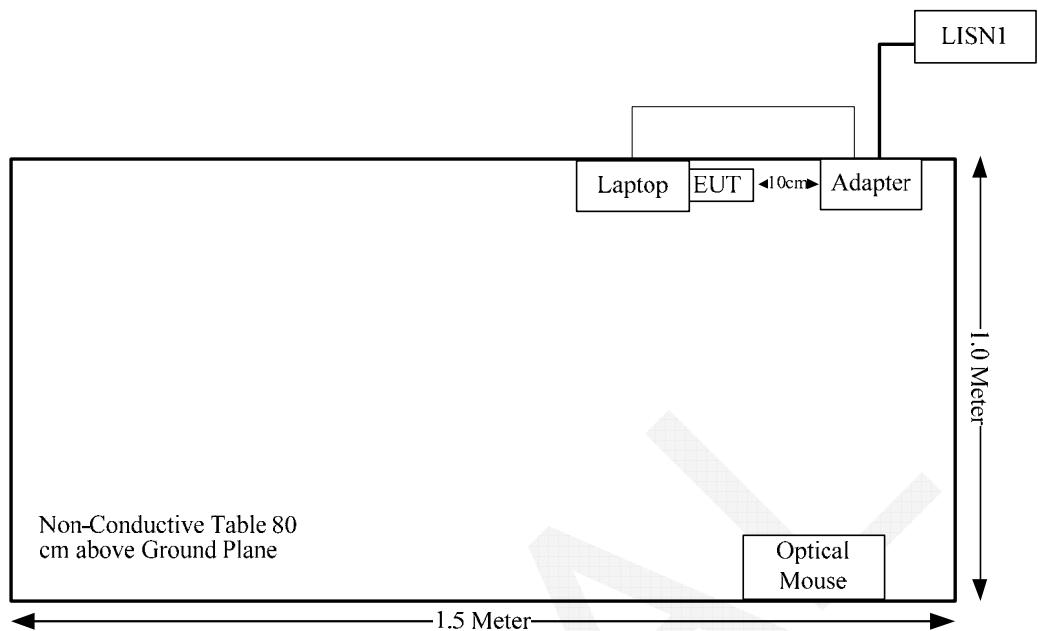
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	Laptop	PP11L	QDS-BRCM1017

External I/O Cable

Cable Description	Shielding Type	Ferrite Core	Length (m)	From	To
/	/	/	/	/	/

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliance
§15.207(a)	Conduction Emissions	Compliance
15.205, §15.209, §15.249	Radiated Emissions	Compliance
§15.215 (c)	20 dB Bandwidth	Compliance
§15.249(d)	Outside of Band Emission (50dB attenuation)	Compliance

FCC§15.203 - ANTENNA REQUIREMENT

Applicable Standard

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.

Antenna Connector Construction

The EUT has one integral antenna arrangement, which was permanently attached and the antenna gain is -1.0 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliant.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207

Measurement Uncertainty

Compliance or non- compliance with a disturbance limit shall be determined in the following manner :

If U_{lab} is less than or equal to U_{cisp} of Table 1, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than U_{cisp} of Table 1, then:

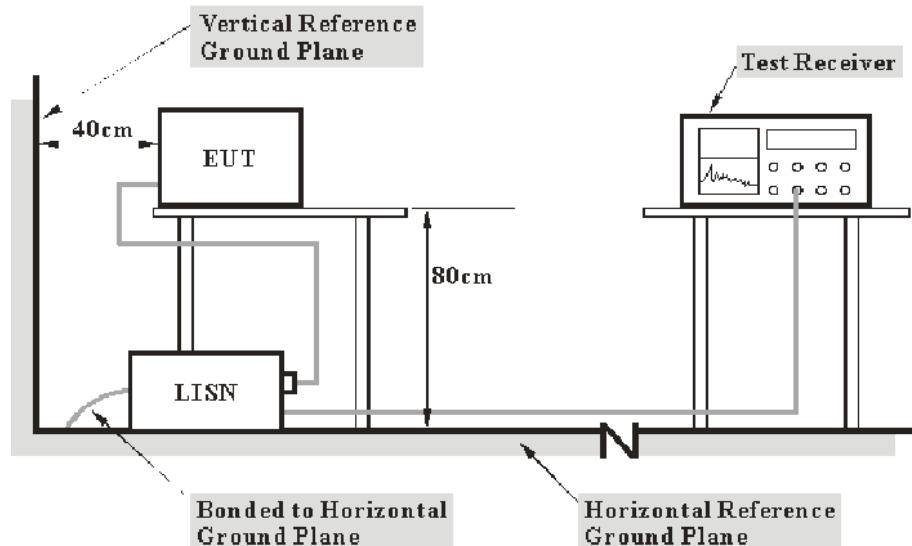
- compliance is deemed to occur if no measured disturbance level, increased by $(U_{\text{lab}} - U_{\text{cisp}})$, exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by $(U_{\text{lab}} - U_{\text{cisp}})$, exceeds the disturbance limit.

Based on CISPR 16-4-2-2011, measurement uncertainty of conducted disturbance at mains port using AMN at Bay Area Compliance Laboratories Corp. (Dongguan) is 3.46 dB (150 kHz to 30 MHz).

Table 1 – Values of U_{cisp}

Measurement	U_{cisp}
Conducted disturbance at mains port using AMN (150 kHz to 30 MHz)	3.4 dB

EUT Setup



Note:

1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

The adapter of laptop was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter of laptop was connected to the first LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$$V_C = V_R + A_C + VDF$$

$$C_f = A_C + VDF$$

Herein,

V_C (cord. Reading): corrected voltage amplitude

V_R : reading voltage amplitude

A_C : attenuation caused by cable loss

VDF: voltage division factor of AMN

C_f : Correction Factor

The “Margin” column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the maximum limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCS 30	830245/006	2015-10-20	2016-10-20
R&S	L.I.S.N	ESH3-Z5	892107/021	2015-07-16	2016-07-15
R&S	Two-line V-network	ENV 216	3560.6550.12	2014-12-11	2015-12-11
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207, with the worst margin reading of:

7.60 dB at 0.309742 MHz in the Neutral conducted mode

Test Data

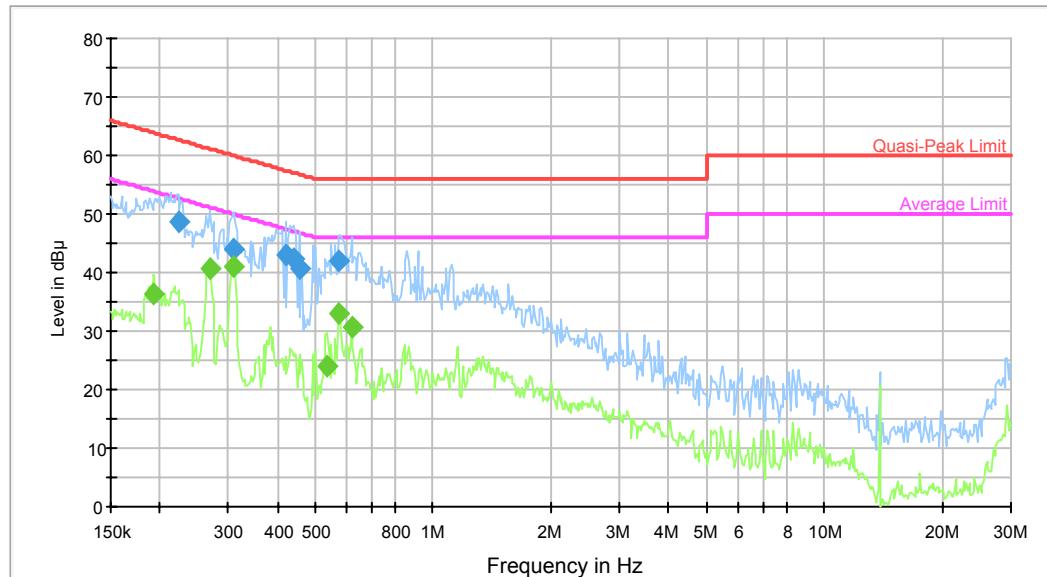
Environmental Conditions

Temperature:	25.5 °C
Relative Humidity:	58 %
ATM Pressure:	100.3 kPa

The testing was performed by Dean Liu on 2015-11-19.

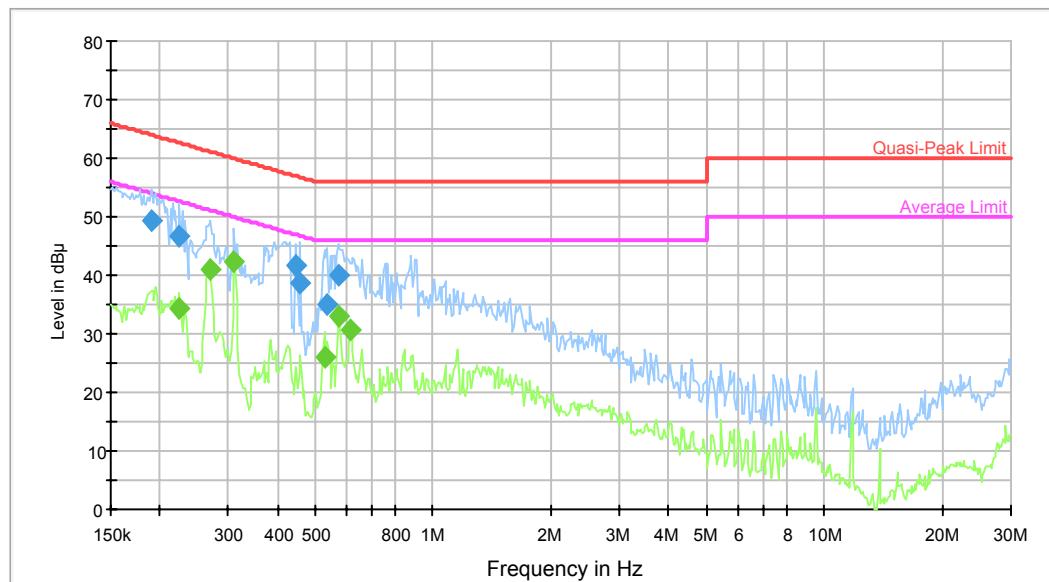
Test Mode: Transmitting

AC120 V, 60 Hz, Line:



Frequency (MHz)	Quasi Peak (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.223418	48.8	9.000	L1	0.2	13.9	62.7	Compliance
0.309742	44.2	9.000	L1	0.2	15.8	60.0	Compliance
0.419276	43.1	9.000	L1	0.2	14.4	57.5	Compliance
0.439808	42.5	9.000	L1	0.2	14.6	57.1	Compliance
0.454052	40.7	9.000	L1	0.2	16.1	56.8	Compliance
0.576662	42.1	9.000	L1	0.2	13.9	56.0	Compliance

Frequency (MHz)	Average (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.193566	36.4	9.000	L1	0.2	17.5	53.9	Compliance
0.268355	40.8	9.000	L1	0.2	10.4	51.2	Compliance
0.307284	41.0	9.000	L1	0.2	9	50.0	Compliance
0.536756	24.2	9.000	L1	0.2	21.8	46.0	Compliance
0.576662	33.0	9.000	L1	0.2	13	46.0	Compliance
0.619536	30.8	9.000	L1	0.2	15.2	46.0	Compliance

AC120 V, 60 Hz, Neutral:

Frequency (MHz)	Quasi Peak (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.190505	49.2	9.000	N	0.2	14.8	64.0	Compliance
0.225205	46.8	9.000	N	0.2	15.8	62.6	Compliance
0.446873	41.8	9.000	N	0.2	15.1	56.9	Compliance
0.457684	38.7	9.000	N	0.2	18	56.7	Compliance
0.536756	35.1	9.000	N	0.2	20.9	56.0	Compliance
0.572086	39.9	9.000	N	0.2	16.1	56.0	Compliance

Frequency (MHz)	Average (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.225205	34.4	9.000	N	0.2	18.2	52.6	Compliance
0.268355	41.1	9.000	N	0.2	10.1	51.2	Compliance
0.309742	42.4	9.000	N	0.2	7.6	50.0	Compliance
0.528270	26.0	9.000	N	0.2	20	46.0	Compliance
0.576662	33.0	9.000	N	0.2	13	46.0	Compliance
0.614619	30.8	9.000	N	0.2	15.2	46.0	Compliance

FCC§15.205, §15.209&§15.249- RADIATED EMISSIONS

Applicable Standard

As per FCC§15.249 (a), except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902–928 MHz	50	500
2400–2483.5 MHz	50	500
5725–5875 MHz	50	500
24.0–24.25 GHz	250	2500

As per FCC§15.249 (c), Field strength limits are specified at a distance of 3 meters.

(d) 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 §15.209, whichever is the lesser attenuation.

Measurement Uncertainty

Compliance or non- compliance with a disturbance limit shall be determined in the following manner :

If U_{lab} is less than or equal to U_{cispr} of Table 1, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than U_{cispr} of Table 1, then:

- compliance is deemed to occur if no measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is:

30M~200MHz: 5.0 dB

200M~1GHz: 6.2 dB

1G~6GHz: 4.45 dB

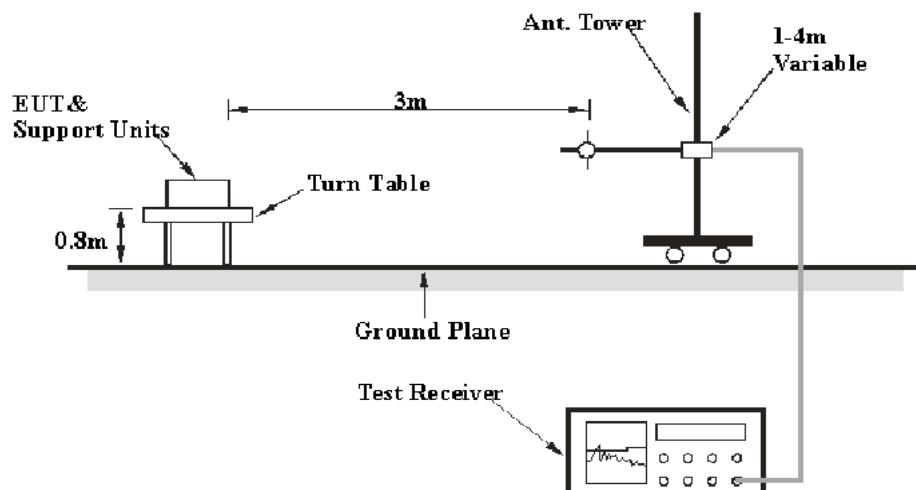
6G~18GHz: 5.23 dB

Table 1 – Values of U_{cisp}

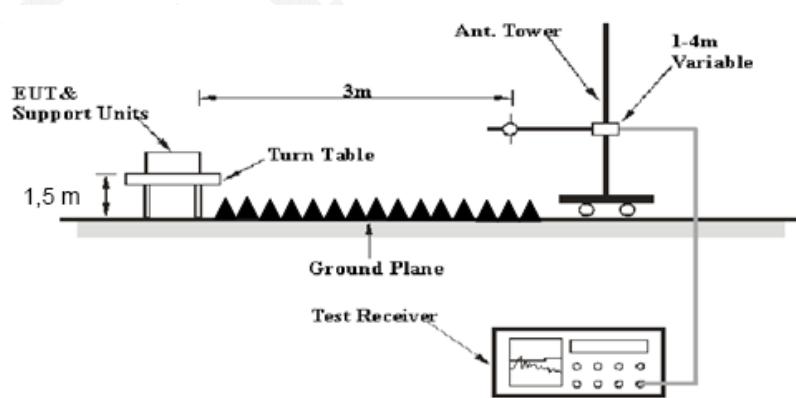
Measurement	U_{cisp}
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB

EUT Setup

Below 1 GHz:



Above 1 GHz:



The radiated emission and out of band emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209/15.205 and FCC 15.249 limits.

Test Equipment Setup

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	Ave.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the Quasi-peak detection mode from 30 MHz to 1GHz, peak and average detection mode above 1 GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2015-08-03	2016-08-02
Sunol Sciences	Antenna	JB3	A060611-3	2014-11-06	2017-11-05
HP	Amplifier	8447E	2434A02181	2015-09-01	2016-09-01
Agilent	Spectrum Analyzer	E4440A	SG43360054	2014-12-04	2015-12-04
ETS-Lindgren	Horn Antenna	3115	9808-5557	2015-09-06	2018-09-06
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2015-02-19	2016-02-19
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-01 1304	2014-06-16	2017-06-15
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2015-09-06	2016-09-06
N/A	Coaxial Cable	14m	N/A	2015-05-06	2016-05-06
N/A	Coaxial Cable	8m	N/A	2015-05-06	2016-05-06

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15.209 &15.205 & 15.249, with the worst margin reading of:

6.17 dB at 2486.2 MHz in the Vertical polarization

Test Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	52%
ATM Pressure:	100.3 kPa

The testing was performed by Dean Liu on 2015-11-25.

Test Mode: Transmitting

Note: The field strength (average) of fundamental and harmonic was based on calculated duty cycle correction factor instead of measurement.

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
	Reading (dB μ V)	Detector	Polar (H/V)	Factor (dB(1/m))					
frequency: 2405 MHz									
2405	61.55	PK	H	25.65	3.66	0.00	90.86	114.00	23.14
2405	66.14	PK	V	25.65	3.66	0.00	95.45	114.00	18.55
2400	26.68	PK	V	25.64	3.65	0.00	55.97	74.00	18.03
2400	13.64	AV	V	25.64	3.65	0.00	42.93	54.00	11.07
2389.6	29.34	PK	V	25.61	3.63	0.00	58.58	74.00	15.42
2389.6	16.58	AV	V	25.61	3.63	0.00	45.82	54.00	8.18
4810	55.65	PK	V	30.61	5.05	27.41	63.90	74.00	10.10
7215	51.22	PK	V	34.12	6.62	25.91	66.05	74.00	7.95
9620	37.85	PK	V	35.99	8.54	27.53	54.85	74.00	19.15
3238	33.39	PK	V	27.96	6.25	27.34	40.26	74.00	33.74
3238	21.05	AV	V	27.96	6.25	27.34	27.92	54.00	26.08
352.4	30.2	QP	V	15.30	2.26	21.65	26.11	46.00	19.89
frequency: 2430 MHz									
2430	61.13	PK	H	25.72	3.73	0.00	90.58	114.00	23.42
2430	65.7	PK	V	25.72	3.73	0.00	95.15	114.00	18.85
4860	56.13	PK	V	30.74	5.05	27.42	64.50	74.00	9.50
7290	51.72	PK	V	34.30	6.71	25.89	66.84	74.00	7.16
9720	38.22	PK	V	36.23	8.59	27.30	55.74	74.00	18.26
3238	33.82	PK	V	27.96	6.25	27.34	40.69	74.00	33.31
3238	21.38	AV	V	27.96	6.25	27.34	28.25	54.00	25.75
2734	33.39	PK	V	26.51	4.40	27.51	36.79	74.00	37.21
2734	21.54	AV	V	26.51	4.40	27.51	24.94	54.00	29.06
352.4	30.8	QP	V	15.30	2.26	21.65	26.71	46.00	19.29
frequency: 2470 MHz									
2470	61.33	PK	H	25.82	3.72	0.00	90.87	114.00	23.13
2470	65.88	PK	V	25.82	3.72	0.00	95.42	114.00	18.58
2483.5	26.69	PK	V	25.86	3.67	0.00	56.22	74.00	17.78
2483.5	14.36	AV	V	25.86	3.67	0.00	43.89	54.00	10.11
2486.2	30.25	PK	V	25.86	3.66	0.00	59.77	74.00	14.23
2486.2	18.31	AV	V	25.86	3.66	0.00	47.83	54.00	6.17
4940	56.31	PK	V	30.14	5.36	27.43	64.38	74.00	9.62
7410	51.44	PK	V	34.58	6.85	25.89	66.98	74.00	7.02
9880	38.1	PK	V	36.61	8.68	26.82	56.57	74.00	17.43
3238	33.5	PK	V	27.96	6.25	27.34	40.37	74.00	33.63
3238	21.34	AV	V	27.96	6.25	27.34	28.21	54.00	25.79
352.4	30.6	QP	V	15.30	2.26	21.65	26.51	46.00	19.49

Frequency (MHz)	Peak Measurement@3m (dB μ V/m)	Polar (H/V)	Duty Cycle Corrected Factor (dB μ V/m)	Average Amp (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
frequency: 2405 MHz						
2405	90.86	H	-37.70	53.16	94.00	40.84
2405	95.45	V	-37.70	57.75	94.00	36.25
4810	63.9	V	-37.70	26.20	54.00	27.80
7215	66.05	V	-37.70	28.35	54.00	25.65
9620	54.85	V	-37.70	17.15	54.00	36.85
frequency: 2430 MHz						
2430	90.58	H	-37.70	52.88	94.00	41.12
2430	95.15	V	-37.70	57.45	94.00	36.55
4860	64.5	V	-37.70	26.80	54.00	27.20
7290	66.84	V	-37.70	29.14	54.00	24.86
9720	55.74	V	-37.70	18.04	54.00	35.96
frequency: 2470 MHz						
2470	90.87	H	-37.70	53.17	94.00	40.83
2470	95.42	V	-37.70	57.72	94.00	36.28
4940	64.38	V	-37.70	26.68	54.00	27.32
7410	66.98	V	-37.70	29.28	54.00	24.72
9880	56.57	V	-37.70	18.87	54.00	35.13

Note:

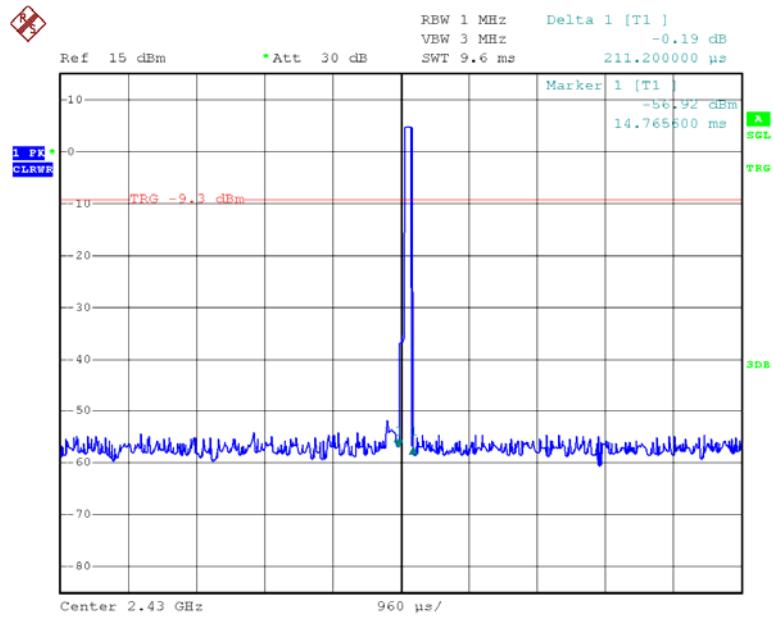
Calculate Average Value based on duty cycle correction factor:

$$\text{Duty cycle} = T_{\text{on}} / T_p = 211.2 / 1000 / 16.2 \\ = 1.304\%$$

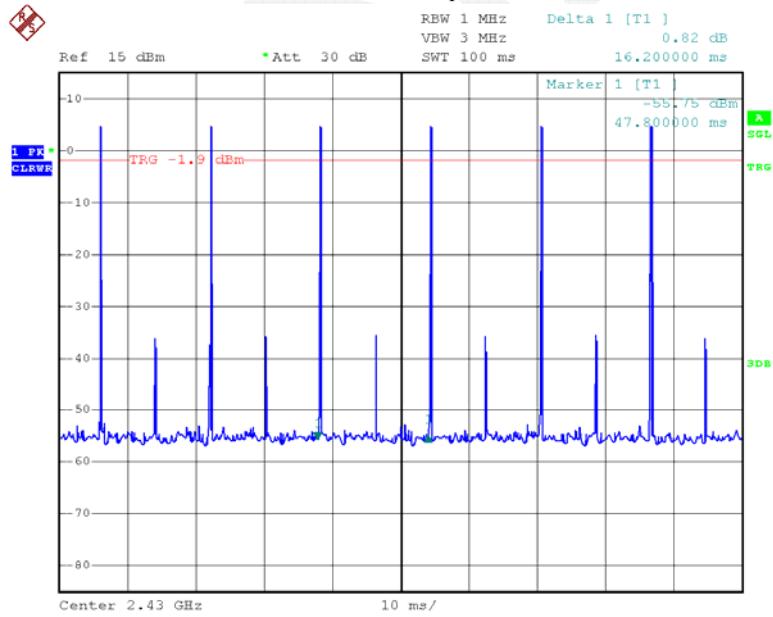
Duty cycle correction factor = $20 * \log(\text{duty cycle}) = 20 * \log(1.304\%) = -37.70 \text{ dB}$

Average = Peak + Duty cycle correction factor

Please refer to following plot.

T_{on}

Date: 25.NOV.2015 20:35:21

T_p

Date: 25.NOV.2015 19:54:55

FCC §15.215(c) – 20 dB BANDWIDTH TESTING

Applicable Standard

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT on the test table without connection to measurement instrument. Turn on the EUT. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSEM	831259/019	2015-07-28	2016-07-27
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2015-05-06	2016-05-06
N/A	Coaxial Cable	0.1m	N/A	2015-05-06	2016-05-06

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	26.6°C
Relative Humidity:	51 %
ATM Pressure:	100.2 kPa

* The testing was performed by Dean Liu on 2015-11-25.

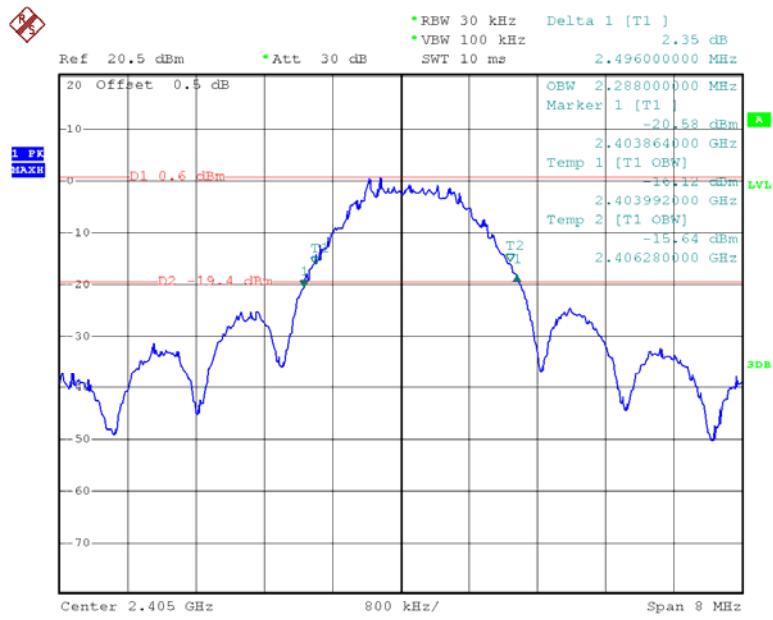
Test Result: Compliant.

Please refer to following tables and plots

Test Mode: Transmitting

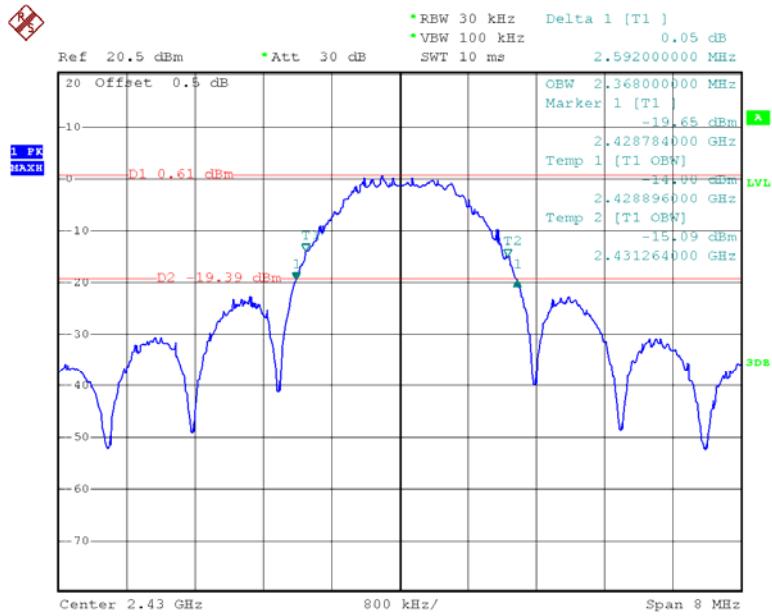
Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
Low	2405	2.496
Middle	2430	2.592
High	2470	2.592

Low Channel



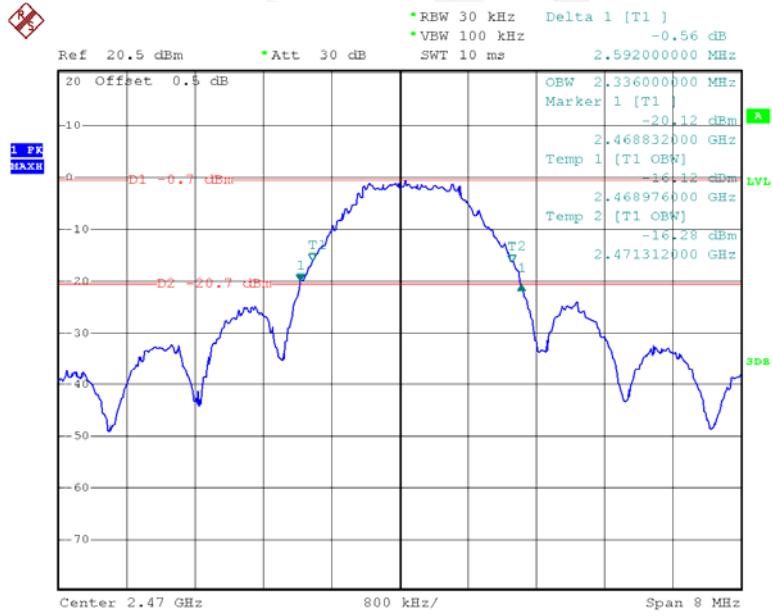
Date: 25.NOV.2015 02:00:45

Middle Channel



Date: 25.NOV.2015 01:46:13

High Channel



Date: 25.NOV.2015 01:59:08

FCC§15.249(d) - OUT OF BAND EMISSION (50 dB ATTENUATION)**Applicable Standard**

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 §15.209, whichever is the lesser attenuation

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSEM	831259/019	2015-07-28	2016-07-27
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2015-05-06	2016-05-06
N/A	Coaxial Cable	0.1m	N/A	2015-05-06	2016-05-06

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data**Environmental Conditions**

Temperature:	26.6°C
Relative Humidity:	51 %
ATM Pressure:	100.2 kPa

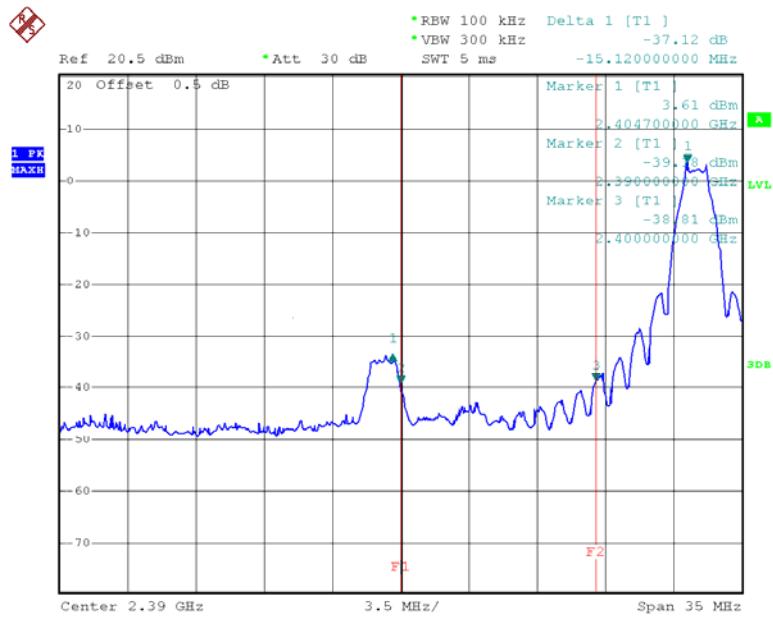
* The testing was performed by Dean Liu on 2015-11-25.

Test Result: Compliant.

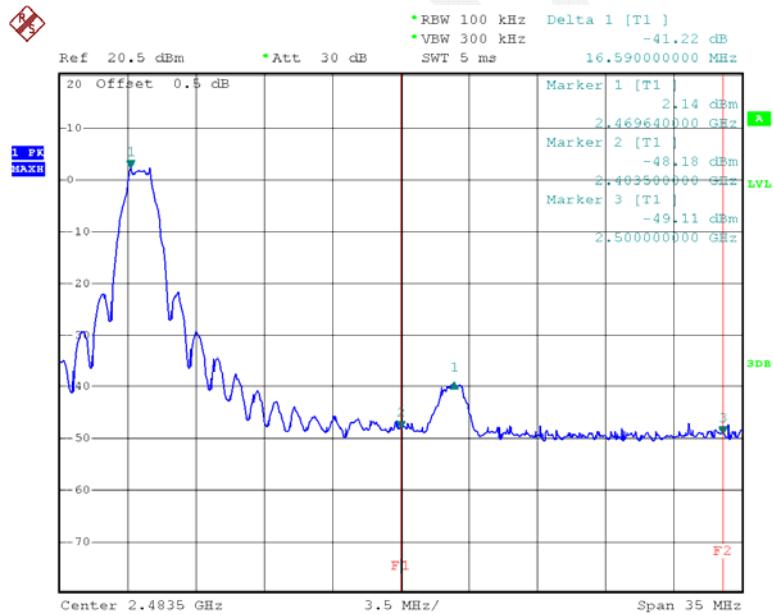
Please refer to the following table and plots:

Band Edge	Delta Peak to Band Emission (dBc)	Delta Limit (dBc)
Left	-37.12 (note)	50
Right	-41.22 (note)	50

*Note : The band emission compliant with the general radiated emission limits in §15.209.
Please refer to radiated emissions test section.*

Band Edge, Left Side

Date: 25.NOV.2015 02:06:32

Band Edge, Right Side

Date: 25.NOV.2015 02:14:27

DECLARATION LETTER

Wintop Electronics Co., Limited
Add: Unit 04 7/F, Bright Way Tower 33, Mong Kok RD KL Hong Kong
Tel: 86-755-84255795 Fax: 86-755-84255950

DECLARATION OF SIMILARITY

2015-11-20

To
Bay Area Compliance Laboratories Corp.(Dongguan)
No.69 Pulong Village, Puxinhu Industry Zone, Tangxia, Dongguan, China
Tel: +86 769 86858888 Fax: +86 769 86858892
<http://www.baclcorp.com>

Dear Sir or Madam:

We, Wintop Electronics Co., Limited, hereby declare that testing model product: 2.4GHz Wireless Optical Mouse receiver, Model number: WM-676. Multiple Models: WM-117, MP1950BLK, WM-633, MP2125BLU, MP2225RED MP2325BLK, MP2425PUR, MP2650BLU, MP2750RED, MP2850BLK, MP2950PUR, WM-710, MP2175BLU, MP2275RED, MP2375BLK, MP2475PUR, WM-640, MP2120BLK, MP2120RED, MP2120WHT, MP2120BLU, MP2120LPD, MP2120SNL, MP2120RDF, MP2120CMO, MP2120NBL, MP2120NPK, MP2120NOR, MP2120NGR, MP2120NPR. Multiple Model have the same structure, PCB, Material and function to the testing product's model, and only are different for model name and color.

Besides the differences in the above, we declare the products are identical. We guarantee all the information provided above is true, and notice that we'll bear all the consequences caused by any false information or concealing.

Please contact me should there be need for any additional clarification or information.

Best Regards,
Signature

Shirly Lee
Sales Manager



***** END OF REPORT *****