



Most Technology Service Co., Ltd.
Tel: (86) 755-26825180 Fax: (86) 755-86170310
Http:// www. szmost.com Email: szmost@szmost.com

Test Report

Product Name: WIRELESS OPTICAL MOUSE

FCC ID: UWGSYNAPSISRM6

MODEL NO. : 3015, 3009, 3008, 3009A, 3002, 3006, 3016, 3017, 3029, 3034, 3041, 3047, 3048, 3049, 3050, 3028A, 3051, 3052, 3053, 3055

Applicant:

SYNAPSIS INDUSTRIAL CO., LTD.
Unit 811, 8/F., New Commerce Centre 19 On Sum Street Shatin, New Territories Hong Kong

Date Received: 07/12/2008

Date Tested: 06/12/2008

APPLICANT: SYNAPSIS INDUSTRIAL CO., LTD.
FCC ID: UWGSYNAPSISRM6

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EMC Equipment List

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	100492	Apr 05,2008	1 Year
LISN	ROHDE&SCHWARZ	ENV216	100093	Apr 05,2008	1 Year
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	101202	Apr 05,2008	1 Year
Spectrum Analyzer	ANRITSU	MS2651B	6200238316	Apr 05,2008	1 Year
50 Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Apr 05,2008	1 Year
Bilog Antenna	Sunol	JB3	A121206	Apr 05,2008	1 Year
Horn Antenna	EMCO	3115	640201028-06	Apr 05,2008	1 Year
50 Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Apr 05,2008	1 Year
Cable	Resenberger	N/A	NO.1	Apr 05,2008	1 Year
Cable	SCHWARZBECK	N/A	NO.2	Apr 05,2008	1 Year
Cable	SCHWARZBECK	N/A	NO.3	Apr 05,2008	1 Year
Single Phase Power Line Filter	Kikusui	LIN40MA-PC R-L	LM002352	Apr 05,2008	1 Year
AC Power Source	Kikusui	AC40MA	LM003232	Apr 05,2008	1 Year
Test analyzer	Kikusui	KHA1000	LM003720	Apr 05,2008	1 Year
ESD Tester	Kikusui	KES4021	LM003537	Apr 05,2008	1 Year
Signal Generator	IFR	2032	203002/100	Apr 05,2008	1 Year
Amplifier	A&R	150W1000	UWGGSYNAP SISRM684	NCR	NCR
Dual Directional Coupler	A&R	DC6080	UWGGSYNAP SISRM608	Apr 05,2008	1 Year
Power Head	A&R	PH2000	301193	Apr 05,2008	1 Year
Power Meter	A&R	PM2002	302799	Apr 05,2008	1 Year
Field Monitor	A&R	FM5004	300329	Apr 05,2008	1 Year
Field Probe	A&R	FP5000	300221	Apr 05,2008	1 Year
EMCPRO System	EM Test	UCS-500-M4	V0648102026	Apr 05,2008	1 Year
EMCPRO System	EM Test	UCS-500-M4	V0648102026	Apr 05,2008	1 Year

Remark:

Test Firm Name: Most Technology Service Co., Ltd.

Test Firm Address:

No. 5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China

FCC Registered Test Site Number: 490827

APPLICANT: SYNAPSIS INDUSTRIAL CO., LTD.

FCC ID: UWGGSYNAP SISRM6



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TEST PROCEDURE

GENERAL: This report shall NOT be reproduced except in full without the written approval of MOST TECHNOLOGY SERVICE CO., LTD. The EUT was transmitting a test signal during the testing.

POWER LINE CONDUCTED INTERFERENCE: The test procedure used was ANSI Standard C63.4-2003 using a 50 μ H LISN. Both Lines were observed. The bandwidth of the receiver was 10 kHz with an appropriate sweep speed. The ambient temperature of the EUT was 25 with a humidity of 58%.

RADIATION INTERFERENCE: The test procedure used was ANSI Standard C63.4-2003 using a ANRITSU spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a micro volt at the output of the antenna. The resolution bandwidth was 100 kHz and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3 MHz above 1 GHz. The ambient temperature of the EUT was 25 with a humidity of 58%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer and cable loss. The antenna correction factors and cable loss are stated in terms of dB. The gain of the Pre-selector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

Freq (MHz) METER READING + ACF + CABLE = FS
33 20 dBuV + 10.36 dB + 0.9 dB = 31.26 dBuV/m @ 3m

ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to 10th harmonic of the fundamental.

Peak readings were taken in three (3) orthogonal planes and the highest readings were converted to average readings based on the duration of "ON" time.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI Standard C63.4-2003 10.1.7 with the EUT 40 cm from the vertical ground wall.



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FCC ID: UWGSYNAPSISRM6

NAME OF TEST: POWER LINE CONDUCTED INTERFERENCE

RULES PART NUMBER: 15.107

REQUIREMENTS:

Frequency of Emission (MHz)	Conducted Limit (dB _{UV})	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST PROCEDURE: ANSI STANDARD C63.4-2003

THE HIGHEST EMISSION READ FOR LINE 1 WAS 37.85dB_{UV} @ 1.038MHz.

THE HIGHEST EMISSION READ FOR LINE 2 WAS 38.51dB_{UV} @ 0.550MHz.

THE PLOTS ON THE NEXT PAGE REPRESENT THE EMISSIONS READ FOR POWER LINE CONDUCTED FOR THIS DEVICE.

APPLICANT: SYNAPSIS INDUSTRIAL CO., LTD.
FCC ID: UWGSYNAPSISRM6

Conducted Emission Measurement

File :3015

Data :#3

Date: 2008/12/06

Time: 15/46/36



Site site #1

Phase: **N**

Temperature: 26

Limit: FCC Part 15C Conduction(QP)

Power: DC 5V From PC Input AC 120V/60Hz

Humidity: 60 %

EUT: Wireless Optical Mouse

M/N: 3015

Mode: Running

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.4380	24.87	10.41	35.28	57.10	-21.82	QP	
2		0.5420	27.71	10.00	37.71	56.00	-18.29	QP	
3	*	1.0380	27.89	9.96	37.85	56.00	-18.15	QP	
4		1.7980	28.49	9.20	37.69	56.00	-18.31	QP	
5		3.9180	26.06	10.92	36.98	56.00	-19.02	QP	
6		5.8980	24.40	11.46	35.86	60.00	-24.14	QP	

*:Maximum data x:Over limit !:over margin

Conducted Emission Measurement

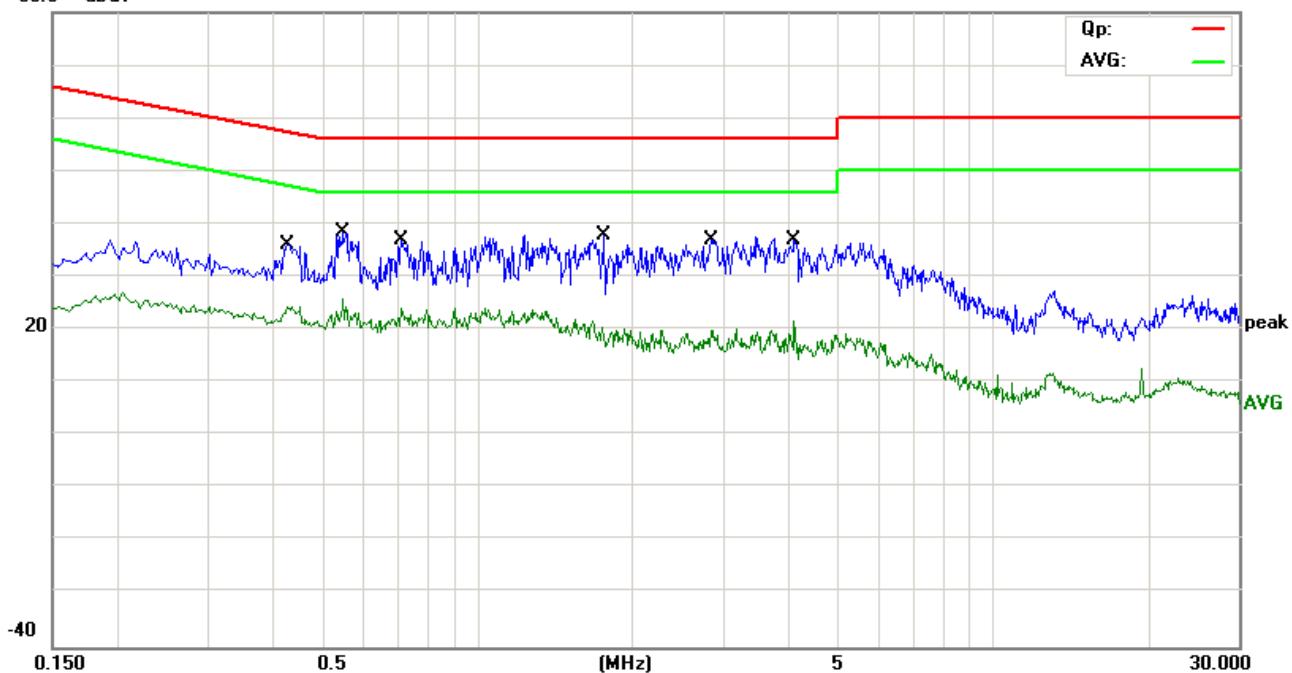
File :3015

Data :#4

Date: 2008/12/06

Time: 15/51/35

80.0 dBuV



Site site #1

Phase: *L1*

Temperature: 26

Limit: FCC Part 15C Conduction(QP)

Power: DC 5V From PC Input AC 120V/60Hz

Humidity: 60 %

EUT: Wireless Optical Mouse

M/N: 3015

Mode: Running

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.4300	25.52	10.47	35.99	57.25	-21.26	QP	
2	*	0.5500	28.51	10.00	38.51	56.00	-17.49	QP	
3		0.7140	26.93	10.00	36.93	56.00	-19.07	QP	
4		1.7660	28.58	9.23	37.81	56.00	-18.19	QP	
5		2.8540	27.20	9.85	37.05	56.00	-18.95	QP	
6		4.1300	25.84	11.13	36.97	56.00	-19.03	QP	

*:Maximum data x:Over limit !:over margin



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NAME OF TEST: RADIATION INTERFERENCE

RULES PART NUMBER: 15.109

REQUIREMENTS:

S15.109
30 - 88 MHz 40 dBuV/m @3M
88 - 216 MHz 43.5
216 - 960 MHz 46
ABOVE 960 MHz 54dBuV/m

Test Data:

REMARK: Emissions attenuated more than 20 dB below the permissible value are not reported.

Test Mode: Running

Frequency (MHz)	Antenna Polarization	Emission Level (dBuV/m)			FCC 15 Subpart B Limit (dBuV/m)
		Avg	QP	Peak	
102.09	Horizontal	--	--	27.15	43.5
221.29	Horizontal	--	32.91	34.87	46.0
380.11	Horizontal	--	--	33.63	46.0
593.32	Horizontal	--	--	30.00	46.0
101.64	Vertical	--	--	29.03	43.5
311.16	Vertical	--	--	28.44	46.0
489.60	Vertical	--	--	31.43	46.0
504.94	Vertical	--	--	32.09	46.0