

Test Report of FCC
On Behalf of
L&K Precision Technology Co., Ltd

802.11/B/G/N Wireless Mini USB Dongle
Model No.: LP-8627S(100mW)

Prepared for : L&K Precision Technology Co., Ltd
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Taiwan

Prepared By : Anbotek Compliance Laboratory Limited
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Report Number : 201207859F-1
Date of Test : Jul. 26~Aug. 13, 2012
Date of Report : Aug. 13, 2012

TABLE OF CONTENTS

Description	
	Page
Test Report Verification	
1.GENERAL INFORMATION	4
1.1. Description of Device (EUT)	4
2.POWER LINE CONDUCTED MEASUREMENT	5
2.1. Test Equipment	5
2.2. Block Diagram of Test Setup	5
2.3. Power Line Conducted Emission Measurement Limits (FCC Part 15 Class B)	5
2.4. Configuration of EUT on Measurement.....	6
2.5. Operating Condition of EUT	6
2.6. Test Procedure.....	6
2.7. Power Line Conducted Emission Measurement Results.....	6
3.RADIATED EMISSION MEASUREMENT.....	9
3.1. Test Equipment	9
3.2. Block Diagram of Test Setup	9
3.3. Radiated Emission Limit (Subpart B Class B).....	10
3.4. EUT Configuration on Measurement	10
3.5. Operating Condition of EUT	10
3.6. Test Procedure.....	10
3.7. Radiated Emission Measurement Results	11
4.PHOTOGRAPH.....	14
4.1. Photo of Power Line Conducted Emission Test.....	14
4.2. Photo of Radiated Emission Test	15

TEST REPORT VERIFICATION

Applicant : L&K Precision Technology Co., Ltd
Manufacturer : Pei-Sing Electronic Factory
EUT : 802.11/B/G/N Wireless Mini USB Dongle
Model No. : LP-8627S(100mW)
Rating : DC 5V
Trade Mark : N.A.

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart B 2011 & FCC / ANSI C63.4-2009

The device described above is tested by Anbotek Compliance Laboratory Limited To determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B Class B limits both radiated and conducted emissions. The measurement results are contained in this test report and Anbotek Compliance Laboratory Limited Is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Anbotek Compliance Laboratory Limited

Date of Test : Jul. 26~Aug. 13, 2012

Prepared by : Barak Ban
(Engineer/ Barak Ban)

Reviewer : Jerry Du
(Project Manager/ Jerry Du)

Approved & Authorized Signer : Tom. Chen
(Manager/ Tom Chen)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	: 802.11/B/G/N Wireless Mini USB Dongle
Model Number	: LP-8627S(100mW)
Test Power Supply	: DC 5V
Applicant	: L&K Precision Technology Co., Ltd
Address	: 6F, No. 236, Bo-ai St., Shulin District, New Taipei City 238, Taiwan
Manufacturer	: Pei-Sing Electronic Factory
Address	: 9 WuGang Road XiKeng Industrial Zone,HengGang Town, ShenZhen City, GuangDong Province, China
Date of Sample received	: Jul. 26, 2012
Date of Test	: Jul. 26~Aug. 13, 2012

2. POWER LINE CONDUCTED MEASUREMENT

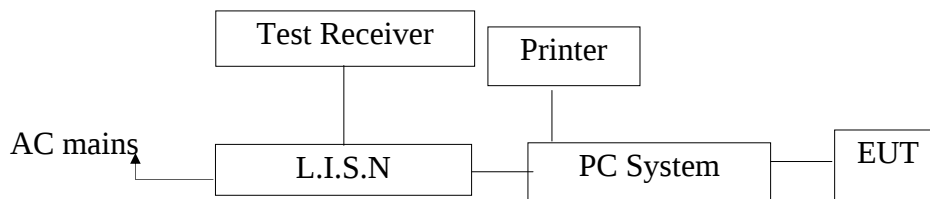
2.1. Test Equipment

The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Apr.25, 2012	1 Year
2.	Two-Line V-network	Rohde & Schwarz	ENV216	10055	Apr.25, 2012	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Apr.25, 2012	1 Year
4.	EMI Test Software	ES-K1	N/A	N/A	N/A	N/A

2.2. Block Diagram of Test Setup

2.2.1. Block diagram of connection between the EUT and simulators



(EUT: 802.11/B/G/N Wireless Mini USB Dongle)

2.3. Power Line Conducted Emission Measurement Limits (FCC Part 15

Class B)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

2.4. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

EUT : 802.11/B/G/N Wireless Mini USB Dongle
Model Number : LP-8627S(100mW)
Applicant : L&K Precision Technology Co., Ltd

2.5. Operating Condition of EUT

- 2.5.1. Setup the EUT and simulator as shown as Section 2.2.
- 2.5.2. Turn on the power of all equipment.
- 2.5.3. Let the EUT work measure it.

2.6. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.4-2009 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9KHz.

The frequency range from 150KHz to 30MHz is checked.

The test result are reported on Section 2.7.

2.7. Power Line Conducted Emission Measurement Results

PASS.

The frequency range from 150KHz to 30 MHz is investigated.

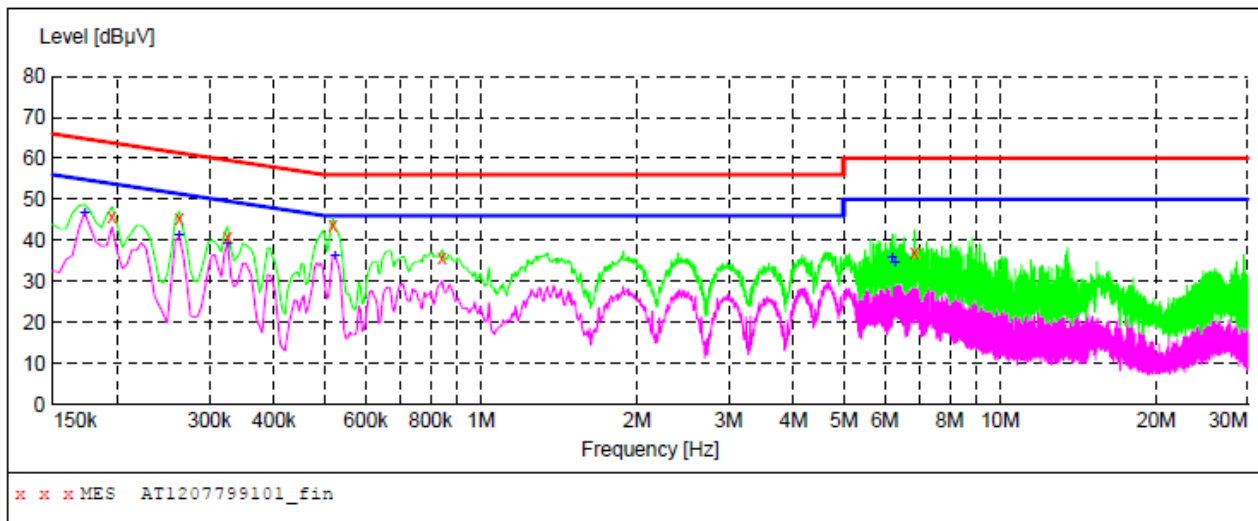
The test curves are shown in the following pages.

CONDUCTED EMISSION TEST DATA

EUT: 802.11/B/G/N Wireless Mini USB Dongle
M/N:LP-8627S(100mW)
Operating Condition: USB Charging and Playing
Test Site: 1# Shielded Room
Operator: Barak Ban
Test Specification: DC 5V
Comment: L
Tem:25°C Hum:50%

SCAN TABLE: "Voltage(150K~30M) FIN"

Short Description: 150K-30M Disturbance Voltages

**MEASUREMENT RESULT: "AT1207799101_fin"**

7/27/2012 9:42AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.195000	46.00	10.1	64	17.8	QP	L1	GND
0.262500	45.40	10.1	61	16.0	QP	L1	GND
0.325500	40.80	10.1	60	18.8	QP	L1	GND
0.519000	43.90	10.1	56	12.1	QP	L1	GND
0.843000	35.90	10.1	56	20.1	QP	L1	GND
6.845500	37.10	10.5	60	22.9	QP	L1	GND

MEASUREMENT RESULT: "AT1207799101_fin2"

7/27/2012 9:42AM

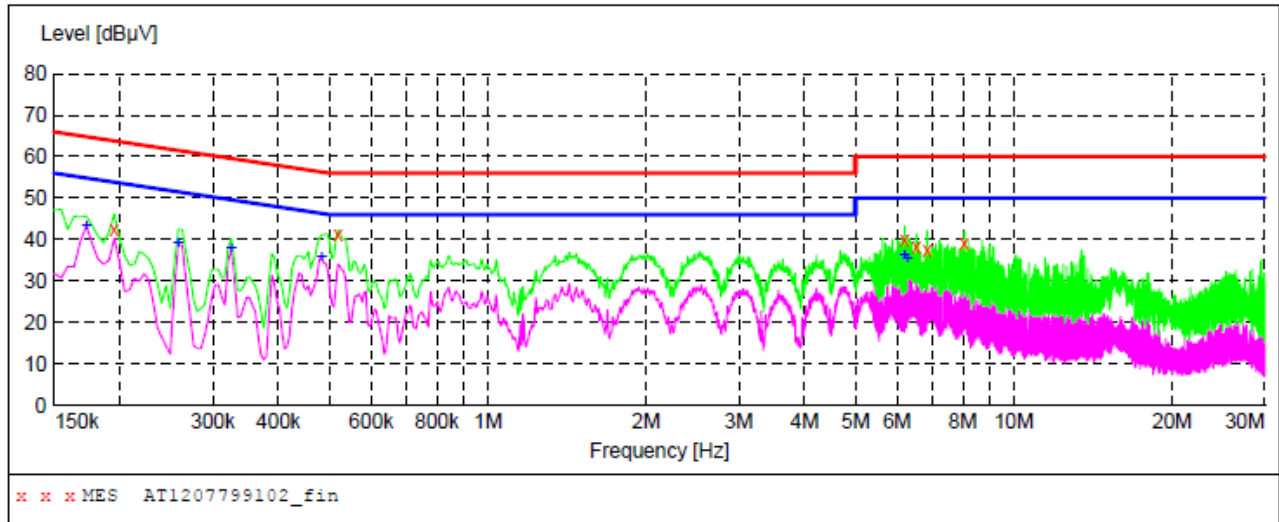
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.172500	46.70	10.1	55	8.1	AV	L1	GND
0.262500	41.30	10.1	51	10.1	AV	L1	GND
0.325500	39.10	10.1	50	10.5	AV	L1	GND
0.523500	36.00	10.1	46	10.0	AV	L1	GND
6.206500	35.60	10.5	50	14.4	AV	L1	GND
6.269500	34.60	10.5	50	15.4	AV	L1	GND

CONDUCTED EMISSION TEST DATA

EUT: 802.11/B/G/N Wireless Mini USB Dongle M/N:LP-8627S(100mW)
 Operating Condition: USB Charging and Playing
 Test Site: 1# Shielded Room
 Operator: Barak Ban
 Test Specification: DC 5V
 Comment: N
 Tem:25°C Hum:50%

SCAN TABLE: "Voltage (150K~30M) FIN"

Short Description: 150K-30M Disturbance Voltages

**MEASUREMENT RESULT: "AT1207799102_fin"**

7/27/2012 9:45AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.195000	42.60	10.1	64	21.2	QP	N	GND
0.519000	41.30	10.1	56	14.7	QP	N	GND
6.206500	40.00	10.5	60	20.0	QP	N	GND
6.526000	38.30	10.5	60	21.7	QP	N	GND
6.845500	37.60	10.5	60	22.4	QP	N	GND
8.060500	39.10	10.5	60	20.9	QP	N	GND

MEASUREMENT RESULT: "AT1207799102_fin2"

7/27/2012 9:45AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.172500	43.20	10.1	55	11.6	AV	N	GND
0.258000	39.20	10.1	52	12.3	AV	N	GND
0.325500	37.70	10.1	50	11.9	AV	N	GND
0.483000	35.60	10.1	46	10.7	AV	N	GND
6.206500	36.20	10.5	50	13.8	AV	N	GND
6.269500	35.30	10.5	50	14.7	AV	N	GND

3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

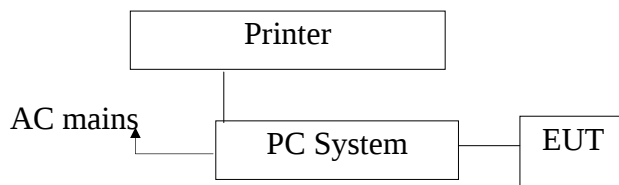
The following test equipments are used during the radiated emission measurement:

3.1.1. For Anechoic Chamber

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESCI	101604	Apr.25, 2012	1 Year
2.	Bilog Antenna	Schwarzbeck	VULB9163	100015	Apr.25, 2012	1 Year
3.	Pre-amplifier	Compliance Direction	PAP-0203	22008	Apr.25, 2012	1 Year
4.	EMI Test Software	SHURPLE	N/A	N/A	N/A	N/A
5.	Coaxial cable	ANBOTEK	N/A	N/A	N/A	N/A

3.2. Block Diagram of Test Setup

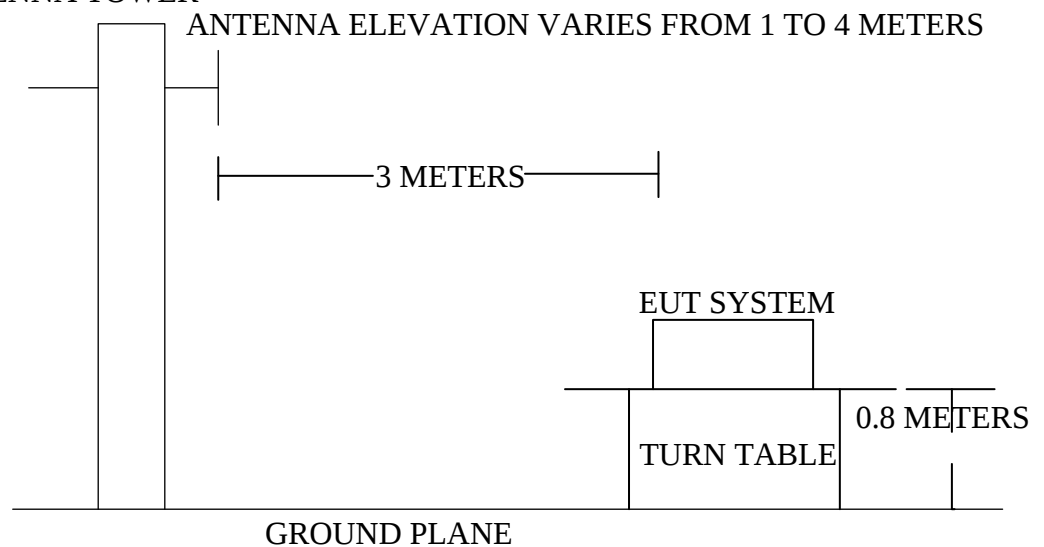
3.2.1. Block diagram of connection between the EUT and simulators



(EUT: 802.11/B/G/N Wireless Mini USB Dongle)

3.2.2. Anechoic Chamber Test Setup Diagram

ANTENNA TOWER



(EUT: 802.11/B/G/N Wireless Mini USB Dongle)

3.3. Radiated Emission Limit (Subpart B Class B)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
30~88	3	100	40.0
88~216	3	150	43.5
216~960	3	200	46.0
960~1000	3	500	54.0

- Remark :
- (1) Emission level $(\text{dB})\mu\text{V} = 20 \log \text{Emission level } \mu\text{V/m}$
 - (2) The smaller limit shall apply at the cross point between two frequency bands.
 - (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

3.4. EUT Configuration on Measurement

The following equipments are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

EUT : 802.11/B/G/N Wireless Mini USB Dongle
 Model Number : LP-8627S(100mW)
 Applicant : L&K Precision Technology Co., Ltd

3.5. Operating Condition of EUT

3.5.1. Setup the EUT as shown in Section 3.2.

3.5.2. Let the EUT work measure it.

3.6. Test Procedure

EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (Trilog Broadband Antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2009 on radiated emission measurement.

The bandwidth of the EMI test receiver (ESPI) is set at 120kHz.

The frequency range from 30MHz to 1000MHz is checked.

The test mode (USB Charging and Playing) is tested in chamber and all the test

results are listed in Section 3.7.

3.7. Radiated Emission Measurement Results

PASS.

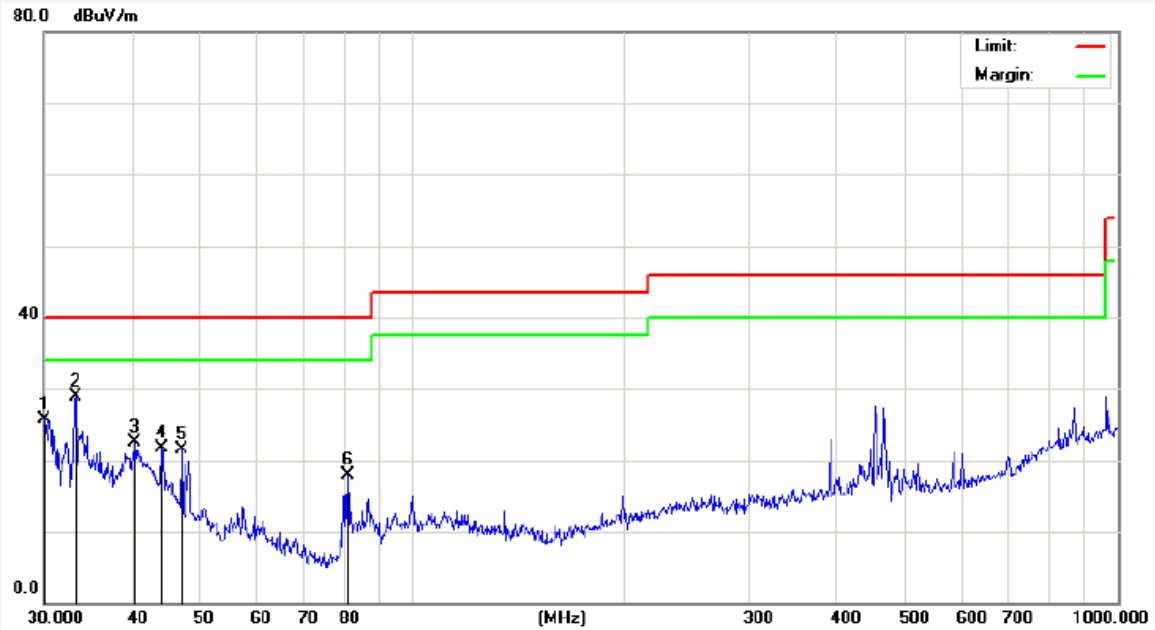
The test curves are shown in the following pages.

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Job No.:	AT1207799F	Polarization:	Horizontal
Standard:	(RE)FCC PART15 B _3m	Power Source:	DC 5V
Test item:	Radiation Test	Date:	2012/07/28
Temp.(C)/Hum.(%RH):	24.3(C)/55%RH	Time:	11:06:24
EUT:	802.11/B/G/N Wireless Mini USB Dongle	Test By:	Barak Ban
Model:	LP-8627S(100mW)	Distance:	3m
Note:	On		



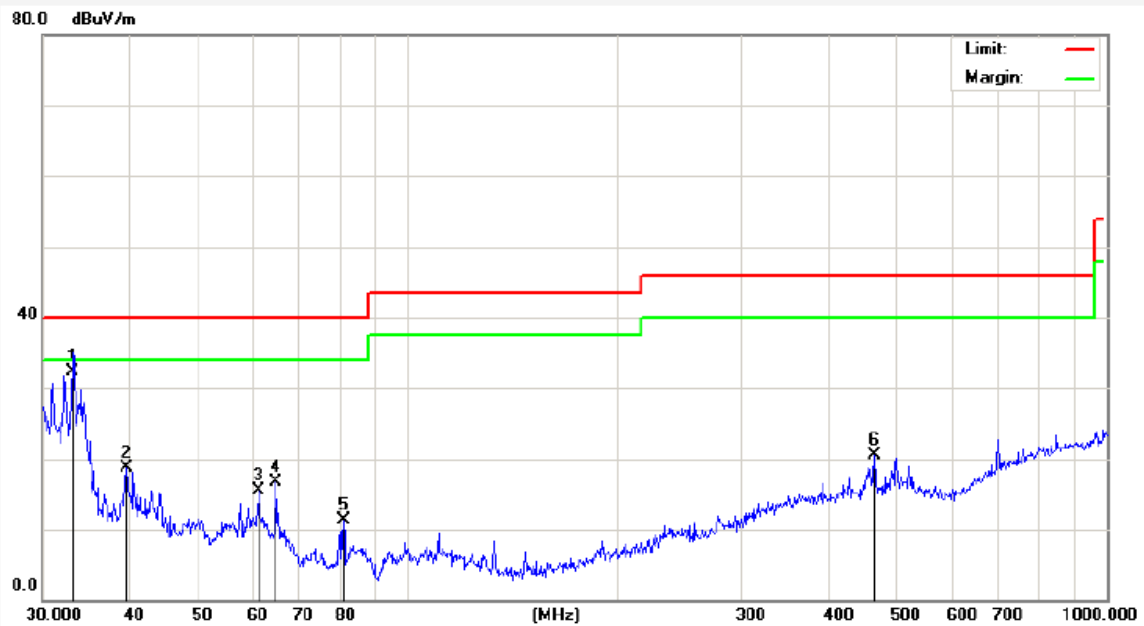
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	30.1054	53.20	-27.57	25.63	40.00	-14.37	peak			
2	33.3279	56.57	-27.75	28.82	40.00	-11.18	peak			
3	40.4172	49.37	-26.86	22.51	40.00	-17.49	peak			
4	44.1202	48.73	-27.07	21.66	40.00	-18.34	peak			
5	47.1599	48.80	-27.37	21.43	40.00	-18.57	peak			
6	80.9275	49.38	-31.43	17.95	40.00	-22.05	peak			


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 Http://www.anbotek.com

Job No.:	AT1207799F	Polarization:	Vertical
Standard:	(RE)FCC PART15 B _3m	Power Source:	DC 5V
Test item:	Radiation Test	Date:	2012/07/28
Temp.(C)/Hum.(%RH):	24.3(C)/55%RH	Time:	11:09:28
EUT:	802.11/B/G/N Wireless Mini USB Dongle	Test By:	Barak Ban
Model:	LP-8627S(100mW)	Distance:	3m
Note:	On		



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	33.2412	60.13	-27.74	32.39	40.00	-7.61	QP	300	360	
2	39.5757	45.54	-26.93	18.61	40.00	-21.39	peak			
3	61.1316	43.94	-28.51	15.43	40.00	-24.57	peak			
4	64.6594	46.42	-29.81	16.61	40.00	-23.39	peak			
5	80.9275	44.78	-33.43	11.35	40.00	-28.65	peak			
6	465.5994	42.74	-22.33	20.41	46.00	-25.59	peak			

4. PHOTOGRAPH

4.1. Photo of Power Line Conducted Emission Test



4.2. Photo of Radiated Emission Test

