SGS-CSTC Standards Technical Services
(Shanghai) Co., Ltd.

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1 Cover Page

FCC MPE REPORT

Application No.:	SHEM1505001330CR
Applicant:	Beijing Nanbao Technology Co., Ltd.
FCC ID:	2AEXCNB1210
Equipment Under Test (EUT): **NOTE:** The following sample(s) was/were submitted and identified by the client as	
Product Name:	kisslink access point
Model No.(EUT):	NB1210
Standards:	FCC Rules 47 CFR §2.1091 KDB447498 D01 General RF Exposure Guidance
Date of Receipt:	May 11, 2015
Date of Test:	May 25, 2015 to June 03, 2015
Date of Issue:	June 29, 2015
Test Result:	**Pass***

* In the configuration tested, the EUT complied with the standards specified above.

Parlam Zhan
E&E Section Manager
SGS-CSTC (Shanghai) Co., Ltd.

2 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
00	/	June 29, 2015	/	Original

Authorized for issue by:				
Engineer		Eddy Zong **Print Name**		
Clerk		Susie Liu **Print Name**		
Reviewer		Keny Xu **Print Name**		

3 Contents

4 General Information

4.1 Client Information

Applicant:	Beijing Nanbao Technology Co., Ltd.
Address of Applicant:	Beijing, Chaoyang District, Jianwai SOHO Building 10 Office #2602
Manufacturer:	Beijing Nanbao Technology Co., Ltd.
Address of Manufacturer:	Beijing, Chaoyang District, Jianwai SOHO Building 10 Office #2602
Factory:	Liling FullRiver Electronics & Technology Ltd
Address of Factory:	FullRiver Industrial Area Economic Development Zone LiLing City HuNan Province China

4.2 General Description of E.U.T.

Product Description:		Fixed product
Brand Name:		kisslink
Adapter:	Manufacturer:	HUONIU
	Model No.:	HNFL050100UE
	Rated Input:	AC 100V-240V 50-60Hz 0.2A
	Rated Output:	DC 5V 1A
	Cable length:	AC port: 2 wires
		DC port: 150 cm

4.3 Details of E.U.T.

Operation Frequency:	802.11 b/g/n(HT20): 2412MHz-2462MHz 802.11 n(HT40): 2422MHz-2452MHz
Modulation Type:	802.11 b: DSSS(CCK, DQPSK, DBPSK) 802.11 g/n(HT20/HT40): OFDM(64QAM, 16QAM, QPSK, BPSK)
Number of Channel:	802.11 b/g/n(HT20): 11 Channels 802.11 n(HT40): 7 Channels
Data Rate:	802.11 b: 1Mbps, 5.5Mbps, 11Mbps, 802.11 g: 6Mbps, 9Mbps, 12Mbps, 18Mbps, 36Mbps, 48Mbps, 54Mbps 802.11 n(HT20/HT40):MCS0-MCS15 (2T X 2R MIMO)
Antenna Gain:	Left long Antenna(A): 2.8 dBi Right short Antenna(B): 2.4 dBi

4.4 Test Location

All tests were performed at SGS E&E EMC lab

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

No.588 West Jindu Road, Songjiang District, Shanghai, China. 201612.

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4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L0599)**

  CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing. Date of expiry: 2017-07-14.

- **FCC – Registration No.: 402683**

  SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2017-09-16.

- **Industry Canada (IC) – IC Assigned Code: 8617A**

  The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A-1. Expiry Date: 2017-06-18.

- **VCCI (Member No.: 3061)**

  The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3868, C-4336, T-2221, G-830 respectively. Date of Expiry: 2017-11-16.

5 Test Standards and Limits

According to§1.1310 Radiofrequency radiation exposure limits:

The limit for general population/uncontrolled exposures

Frequency	Power density(mW/cm^2)	Averaging time(minutes)
300MHz~1.5GHz	f/1500	30
1.5GHz~100GHz	1.0	30

6 Measurement and Calculation

6.1 Maximum transmit power

a. Single Input Single Output mode:

Test mode	Test Channel	Reading Power (dBm)		Output Power (dBm)		Limit (dBm)	Result
		Antenna A	Antenna B	Antenna A	Antenna B		
802.11b	2412	18.81	18.68	19.31	19.18	30	Pass
	2437	19.11	18.84	19.61	19.34		Pass
	2462	18.53	18.91	19.03	19.41		Pass
802.11g	2412	19.14	18.96	19.64	19.46		Pass
	2437	**19.28**	**19.27**	**19.78**	**19.77**		Pass
	2462	19.06	19.17	19.56	19.67		Pass
802.11n20	2412	19.05	18.82	19.55	19.32		Pass
	2437	19.26	18.89	19.76	19.39		Pass
	2462	19.02	18.93	19.52	19.43		Pass
802.11n40	2422	18.24	16.01	18.74	16.51		Pass
	2437	18.29	16.92	18.79	17.42		Pass
	2452	18.18	17.11	18.68	17.61		Pass

b. Spatial Diversity Multiplexing-MIMO function mode:

Test mode	Test Channel	Reading Power (dBm)		Output Power (dBm)			Limit (dBm)	Result
		Antenna A	Antenna B	Antenna A	Antenna B	MIMO		
802.11n20	2412	18.55	12.71	19.05	13.21	19.96	30	Pass
	2437	18.81	14.05	19.31	14.55	20.44		Pass
	2462	18.44	15.93	18.94	16.43	20.70		Pass
802.11n40	2422	18.08	12.63	18.58	13.13	19.56		Pass
	2437	18.19	13.36	18.69	13.86	19.81		Pass
	2452	18.02	14.27	18.52	14.77	19.91		Pass

Remark:

1) Output Peak Power = Reading Power + Cable loss+ Duty Cycle Correction Factor

2) Cable loss= 0.5dB. Duty cycle of test signal is > 98%, duty factor is not required, reference Section 7.4

3) Per KDB 662911, the conducted powers at Antenna A and Antenna B were first measured separately during MIMO transmission as shown in section above. The measured values were then summed in linear power units then converted back to dBm.

6.2 MPE Calculation

According to the formula S= $\frac{PG}{4R^2\pi}$, we can calculate S which is MPE.

Note:

1) P (Watts) =Power Input to antenna = $10^{\frac{dBm}{10}}$ / 1000

2) G (Antenna gain in numeric) = 10^ (Antenna gain in dBi /10)

3) R = distance to the center of radiation of antenna (in meter) = 20cm

4) MPE limit = 1mW/cm²

For Antenna A:

The Max Conducted Peak Output Power is19.78dBm(98.06mW) in 802.11g of Middle Channel;

The best case gain of the antenna is 2.8dBi. 2.8dB logarithmic terms convert to numeric result is nearly 1.905

So, S= $\frac{PG}{4R^2\pi} = \frac{98.06 \times 1.905}{4 \times 400 \times 3.14}$ =0.03719 mW/cm^2

For Antenna B:

The Max Conducted Peak Output Power is19.77dBm(94.84mW) in 802.11g of Middle Channel;

The best case gain of the antenna is 2.4dBi. 2.4dB logarithmic terms convert to numeric result is nearly 1.749

So, S= $\frac{PG}{4R^2\pi} = \frac{98.06 \times 1.905}{4 \times 400 \times 3.14}$ =0.03281 mW/cm^2

The two antenna can simultaneous transmitting at frequency 2.4GHz band.But the maximum rate of MPE is $\frac{0.03719}{1.0} + \frac{0.03281}{1.0}$ =0.07<=1.0.

According to the KDB447498 D01 section 7.2 determine the device is exclusion from SAR test.

7 EUT Constructional Details

Refer to the < NB1210_External Photos > & < NB1210_Internal Photos>.

--End of the Report--