FCC RF Exposure Report

FCC ID	:	**P27NA502S**
Equipment	:	**Multiple RF Home Gateway**
Model No.	:	**NA502S**
Brand Name	:	**Sercomm**
Multiple Listing	:	**Refer to item 1.1.1 for more details**
Applicant	:	**Sercomm Corporation**
Address	:	**8F, No. 3-1, YuanQu St., NanKang, Taipei 115, Taiwan, R.O.C.**
Standard	:	**47 CFR FCC Part 2.1091**
Received Date	:	**Nov. 21, 2016**
Tested Date	:	**Nov. 25 ~ Dec. 19, 2016**

We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by: **Approved by:**

Along Chen / Assistant Manager **Gary Chang / Manager**

Testing Laboratory 2732

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Release Record

Report No.	Version	Description	Issued Date
FA6N2103	Rev. 01	Initial issue	Mar. 03, 2017

1 General Description

1.1 Information

1.1.1 Product Details

The following models are provided to this EUT.

Brand Name	Model Name	Product Name	Description
Sercomm	NA502Sxxxxxxxx	Multiple RF Home Gateway	the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, "blank" or “-“ , for marketing purpose.
MiOS	G550xxxxx	Multiple RF Home Gateway	
Nortek	GC1xxxxxxxx	Multiple RF Home Gateway	
Vera	VeraSecurexxxxx	Multiple RF Home Gateway	
Vera	VeraSecurexxxxx	Advanced Smart Home Security Controller	
✦ All models are electrically identical, different model names are for marketing purpose. ✦ The above models, model **NA502S** was selected as a representative one for the final test and only its data was recorded in this report.			

2 MPE EVALUATION OF MOBILE DEVICES

Human exposure to RF emissions from mobile devices (47 CFR §2.1091) may be evaluated based on the MPE limits adopted by the FCC for electric and magnetic field strength and/or power density, as appropriate, since exposures are assumed to occur at distances of 20 cm or more from persons.

2.1 LIMITS FOR GENERAL POPULATION/UNCONTROLLED EXPOSURE

Frequency Range (MHz)	Power Density (mW /cm^2)	Averaging Time (minutes)
300~1500	F/1500	30
1500~100000	1.0	30

2.2 MPE EVALUATION FORMULA

$$\mathbf{Pd} = \frac{Pt}{4 * Pi * R^2}$$

Where

Pd= Power density in mW/cm^2
Pt= EIRP in Mw
Pi= 3.1416
R= Measurement distance

2.3 MPE EVALUATION RESULTS

GPRS / EGPRS: Frequency band: 850 MHz

Mode	Maximum Peak Conducted Power (dBm)	Time slot	Maximum Average Conducted Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
GPRS 8 (GMSK, 1 slot)	31.32	1	22.29	4	20	0.085	0.549
GPRS 10 (GMSK, 2 slots)	31.26	2	25.24	4	20	**0.167**	0.549
EDGE 8 (8PSK , 1 slot)	26.02	1	16.99	4	20	0.025	0.549
EDGE 10 (8PSK, 2 slots)	25.76	2	19.74	4	20	0.047	0.549

GPRS / EGPRS: Frequency band: 1900 MHz

Mode	Maximum Peak Conducted Power (dBm)	Time slot	Maximum Average Conducted Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
GPRS 8 (GMSK, 1 slot)	29.12	1	20.09	2	20	0.032	1.000
GPRS 10 (GMSK, 2 slots)	29.07	2	23.05	2	20	0.064	1.000
EDGE 8 (8PSK , 1 slot)	25.31	1	16.28	2	20	0.013	1.000
EDGE 10 (8PSK, 2 slots)	25.22	2	19.20	2	20	0.026	1.000

WCDMA

Mode	Maximum Conducted Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WCDMA 850	23.06	4	20	0.101	0.549
WCDMA 1900	21.61	2	20	0.046	1

Frequency Range (MHz)	Maximum Conducted Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WLAN					
2412~2462	22.54	3.9	20	**0.088**	1
5180~5240	19.07	1.4	20	0.022	1
5745~5825	22.05	3.6	20	**0.073**	1
BT LE					
2402~2480	8.53	4	20	**0.004**	1
ZigBee					
2405~2480	16.63	3.4	20	**0.020**	1

Z-Wave

Frequency Range (MHz)	Field strength (AV value, dBuV/m)	E.I.R.P (dBm)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
908 ~ 916	92.69	-2.51	20	**0.0001**	0.605

Note: E(dBuV/m) = P(dBm EIRP) + 95.2.

MPE Evaluation of Simultaneous Transmission

The device supports simultaneous transmission as below configurations
Wi-Fi 2.4GHz + Wi-Fi 5GHz + WWAN + BT + ZigBee + Z-Wave

MPE evaluation is as below formula

PD1 / Limit1 + PD2 / Limit 2 + ….. < 1, PD = Power density

MPE Evaluation = 0.088 / 1 + 0.073 / 1 + 0.167 / 0.549 + 0.004 / 1 + 0.020 / 1 + 0.0001 / 0.605 = 0.489 < 1

Conclusion

MPE evaluations of single and simultaneous transmission meet the requirement of standard.

3 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website http://www.icertifi.com.tw.

Linkou	**Kwei Shan**	**Kwei Shan Site II**
Tel: 886-2-2601-1640	Tel: 886-3-271-8666	Tel: 886-3-271-8640
No. 30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan, R.O.C.	No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.	No. 14-1, Lane 19, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.

If you have any suggestion, please feel free to contact us as below information.

Tel: 886-3-271-8666
Fax: 886-3-318-0155
Email: ICC_Service@icertifi.com.tw

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