MPE REPORT

FCC ID: 2ARU6-NETV2

Date of issue: Jan. 04, 2019

Report Number:	MTi181211E050
Sample Description:	NeTV2
Model(s):	NETV2MVP
Applicant:	Alphamax LLC
Address:	PO Box 406, Chinatown Post Office, Singapore 910501
Date of Test:	Nov. 28, 2018 to Jan. 04, 2019

Shenzhen Microtest Co., Ltd.

http://www.mtitest.com

TEST RESULT CERTIFICATION	
Applicant's name:	Alphamax LLC
Address:	PO Box 406, Chinatown Post Office, Singapore 910501
Manufacture's name:	Alphamax LLC
Address:	PO Box 406, Chinatown Post Office, Singapore 910501
Product name:	NeTV2
Trademark:	NeTV2
Model name:	NETV2MVP
Series model:	N/A
Difference in series models:	N/A
RF Exposure Procedures:	KDB 447498 D01 v06

This device described above has been tested by Shenzhen Microtest Co., Ltd. and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

Tested by: Demi Mu Jan. 04, 2019

Reviewed by: Blue Zheng Jan. 04, 2019

Approved by: Smith Chen Jan. 04, 2019

1. RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	$*900/f^2$	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	$*180/f^2$	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

MPE Calculation Method

Friis transmission formula: $Pd= (Pout*G)\ (4*pi*R^2)$

Where

Pd= Power density in mW/cm2

Pout=output power to antenna in mW

G= Numeric gain of the antenna relative to isotropic antenna

Pi=3.14115926

R= distance between observation point and center of the radiator in cm(20cm)

Pd the limit of MPE, 1mW/cm2. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

Operation Frequency: WIFI 802.11b/g/n20:2412~2462MHz; n40: 2422~2452MHz

Power density limited: 1mW/ cm^2

Antenna Type: Integral Antenna;
Antenna gain: 3.5dBi

R=20cm

mW=10^(dBm/10)

Antenna gain Numeric=10^(dBi/10)= 10^(3.5/10)=2.24

2. SAR Test Exclucsion Thresholds

Bluetooth DTS:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna	Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain	Power density(mW/cm2)	(mW/cm2)
				(dBm)	(mW)	Numeric		
		Ant A	Ant A	Ant A	Ant A	Ant A	Ant A	
2412	802.11b	17.52	17±1	18	63.095734	2.24	0.02812	1
2437		17.36	17±1	18	63.095734	2.24	0.02812	1
2462		17.27	17±1	18	63.095734	2.24	0.02812	1
2412	802.11g	15.45	15±1	16	39.810717	2.24	0.01774	1
2437		15.14	15±1	16	39.810717	2.24	0.01774	1
2462		15.12	15±1	16	39.810717	2.24	0.01774	1
2412	802.11n H20	15.35	15±1	16	39.810717	2.24	0.01774	1
2437		15.09	15±1	16	39.810717	2.24	0.01774	1
2462		15.05	15±1	16	39.810717	2.24	0.01774	1
2422	802.11n H40	15.23	15±1	16	39.810717	2.24	0.01774	1
2437		15.69	15±1	16	39.810717	2.24	0.01774	1
2452		15.47	15±1	16	39.810717	2.24	0.01774	1

Antenna Type: Integral Antenna;
Antenna gain: 2.3dBi

R=20cm

mW=10^(dBm/10)

Antenna gain Numeric=10^(dBi/10)= 10^(2.3/10)=1.70

Bluetooth NII:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna	Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain	Power density(mW/cm2)	(mW/cm2)
				(dBm)	(mW)	Numeric		
		Ant A	Ant A	Ant A	Ant A	Ant A	Ant A	
5230	Band I	14.12	14±1	15	31.622777	1.70	0.01069	1
5310	Band II	12.61	12±1	13	19.952623	1.70	0.00675	1
5670	Band III	12.20	12±1	13	19.952623	1.70	0.00675	1
5670	Band IV	12.09	12±1	13	19.952623	1.70	0.00675	1

Conclusion:

For the max result: 0.02812≤ 1.0 for 1g SAR, No SAR is required.

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