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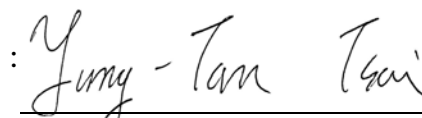


MPE Report

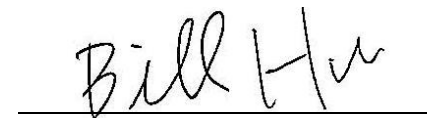
Test Report No.	: 1306FS11-02
Applicant	: Ubiquiti Networks, Inc.
Manufacturer	: Ubiquiti Networks, Inc.
Product Type	: NBE-M5
Trade Name	: UBIQUITI
Model Number	: NBE-M5
Dates of Receive	: Apr. 12, 2013
Dates of Test	: May 20 ~ Aug. 07, 2013
Issued Date	: Aug. 21, 2013
Test Specification	: 47 CFR § 2.1091 47 CFR §1.1310 ANSI / IEEE Std.C95.1-1992
Location of Test Lab.	: Chang-an Lab.

1. The test operations have to be performed with cautious behavior, the test results are as attached.
2. The test results are under chamber environment of A Test Lab Techno Corp. A Test Lab Techno Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples.
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Approved By


(Yung Tan Tsai)

Tested By


(Bill Hu)



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1. Description of Equipment under Test (EUT)

Applicant	Ubiquiti Networks, Inc.
Applicant Address	12F, No105, Song Ren Rd., SinYi District, Taipei, Taiwan
Manufacturer	Ubiquiti Networks, Inc.
Manufacturer Address	12F, No105, Song Ren Rd., SinYi District, Taipei, Taiwan
Product Type	NBE-M5
Trade Name	UBIQUiTi
Model Number	NBE-M5
FCC ID	SWX-NBM5HP
Hardware Version	v1.0
Frequency Range	5180 - 5240 MHz IEEE 802.11a / 802.11n (5GHz) 20MHz U-NII Band I 5745 - 5850 MHz IEEE 802.11a / 802.11n (5GHz) 20MHz U-NII Band IV 5190 - 5230 MHz IEEE 802.11n (5GHz) 40MHz U-NII Band I 5755 - 5795 MHz IEEE 802.11n (5GHz) 40MHz U-NII Band IV
Transmit Power (conducted power)	IEEE 802.11a U-NII Band I: 0.001 W / -2.63 dBm IEEE 802.11a U-NII Band IV: 0.009 W / 9.33 dBm IEEE 802.11n (5GHz) 20MHz U-NII Band I: 0.001 W / -2.57 dBm IEEE 802.11n (5GHz) 20MHz U-NII Band IV: 0.007 W / 8.48 dBm IEEE 802.11n (5GHz) 40MHz U-NII Band I: 0.001 W / -2.80 dBm IEEE 802.11n (5GHz) 40MHz U-NII Band IV: 0.006 W / 7.49 dBm
Antenna Gain	25 dBi
Antenna Designation	Dish Antenna
Temperature Range	-30 ~ +70°C

The above equipment was tested by A Test Lab Techno Corp. For compliance with the requirements set forth in 47 CFR § 2.1091 & 47 CFR § 1.1310. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties



2. Human Exposure Assessment

Due to the design and installation of this product, it is not possible to conduct SAR evaluation. This is because client either manufactures or supplies the antenna(s) that will be used in the installation of this product. Therefore, this product will be evaluated as a mobile device per 47 CFR §1.1310 titled "Radiofrequency radiation exposure limits", generally referred to as MPE limits.

In 47 CFR § 2.1091, paragraph (b) defines a mobile device as "a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 cm is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons." This product is intended to be installed into a vehicle such that the unit is physically secured at one location. In the installation guide supplied with the product,

Client has made the following statement: "IMPORTANT: To meet the FCC's RF Exposure Guidelines, the antenna should be installed so there is at least 20 cm of separation between the body of the user and nearby persons and the antenna". Based on the installation of the transceiver and the antenna, the transmitters radiating structure is more than 20 cm from the user. Thus, this product is a "mobile device" as defined in section § 2.1091 paragraph (b).

Exposure evaluation

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{PG}{4\pi R^2}$$

Where

S: power density

P: power input to the antenna

G: power gain of the antenna in the direction of interest relative to an isotropic radiator.

R: distance to the center of radiation of the antenna.



3. RF Output Power

Band	Data Rate	CH	Frequency (MHz)	Time-Avg. Conducted power (dBm)	
				Antenna 0	Antenna 1
IEEE 802.11a	6M	36	5180.0	-2.63	-2.97
		40	5200.0	-2.77	-2.66
		44	5220.0	-2.75	-2.62
		48	5240.0	-8.78	-7.24
		149	5745.0	8.62	7.48
		153	5765.0	8.95	8.46
		157	5785.0	9.33	8.54
		161	5805.0	9.19	8.58
		165	5825.0	8.39	8.56
	54M	36	5180.0	-2.92	-2.85
		40	5200.0	-2.88	-2.68
		44	5220.0	-2.87	-2.64
		48	5240.0	-8.54	-7.30
		149	5745.0	7.95	6.81
		153	5765.0	8.02	7.72
		157	5785.0	8.69	8.03
		161	5805.0	8.28	7.90
		165	5825.0	7.75	7.89
IEEE 802.11n (5GHz) 20MHz	6.5M	36	5180.0	-2.57	-2.74
		40	5200.0	-2.65	-2.56
		44	5220.0	-2.72	-2.75
		48	5240.0	-8.86	-7.36
		149	5745.0	8.41	6.57
		153	5765.0	8.09	7.05
		157	5785.0	8.48	7.69
		161	5805.0	8.11	7.56
		165	5825.0	7.52	7.53
	130M	36	5180.0	-3.04	-2.63
		40	5200.0	-2.85	-2.88
		44	5220.0	-2.69	-3.02
		48	5240.0	-8.71	-7.57
		149	5745.0	6.96	5.19
		153	5765.0	6.77	5.96
		157	5785.0	6.94	6.45
		161	5805.0	6.69	6.82
		165	5825.0	6.38	6.54
IEEE 802.11n (5GHz) 40MHz	13.5M	38	5190.0	-2.80	-2.75
		46	5230.0	-8.48	-7.57
		151	5755.0	7.45	4.42
		159	5795.0	7.49	5.38
	270M	38	5190.0	-2.82	-2.79
		46	5230.0	-8.62	-7.80
		151	5755.0	5.96	3.53
		159	5795.0	6.02	4.19



4. Test Result

Band	Data Rate	Frequency (MHz)	Limit (mw)	Distance [R] (cm)	Max. tune-up Power (upper limit) [P] (dBm)	Numeric Gain [G]	Duty Cycle	Power with Duty cycle [TP] (mW)	Power Density [S] (mw/cm ²)
IEEE 802.11a	6M	5180	1.000	113	-2.62	316.23	1	172.98	0.001
		5200	1.000	113	-2.62	316.23	1	172.98	0.001
		5220	1.000	113	-2.62	316.23	1	172.98	0.001
		5240	1.000	113	-7.24	316.23	1	59.70	0.000
		5745	1.000	113	9.33	316.23	1	2710.21	0.017
		5765	1.000	113	9.33	316.23	1	2710.21	0.017
		5785	1.000	113	9.33	316.23	1	2710.21	0.017
IEEE 802.11n (5GHz) 20MHz	6.5M	5180	1.000	113	-2.56	316.23	1	175.39	0.001
		5200	1.000	113	-2.56	316.23	1	175.39	0.001
		5220	1.000	113	-2.56	316.23	1	175.39	0.001
		5240	1.000	113	-7.36	316.23	1	58.08	0.000
		5745	1.000	113	8.48	316.23	1	2228.45	0.014
		5765	1.000	113	8.48	316.23	1	2228.45	0.014
		5785	1.000	113	8.48	316.23	1	2228.45	0.014
IEEE 802.11n (5GHz) 40MHz	13.5M	5190	1.000	113	-2.75	316.23	1	167.88	0.001
		5230	1.000	113	-7.57	316.23	1	55.34	0.000
		5755	1.000	113	7.49	316.23	1	1774.20	0.011
		5795	1.000	113	7.49	316.23	1	1774.20	0.011

Note: 1. The numeric ant gain = $10^{(25 \text{ dBi}/10)} = 316.23$
 2. The distance of evaluated is worst case for MPE.