



A Test Lab Techno Corp.

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MPE Report



Test Report No.	: 1204FS15
Applicant	: BaudTec Corporation
Manufacturer	: BaudTec Corporation
Product Type	: Wireless 802.11 b/g/n ADSL2+ Router
Trade Name	: Baudtec
Model Number	: RN243R4
Dates of Received	: Apr. 09, 2012
Dates of Test	: Apr. 16 ~ 17, 2012
Dates of Issued	: Apr. 26, 2012
Test Specification	: 47 CFR § 2.1091 47 CFR §1.1310 ANSI / IEEE Std.C95.1-1999
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
(Yung Tan Tsai) (Bill Hu)



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1. Description of Equipment under Test (EUT)

Applicant	BaudTec Corporation
Applicant Address	12F,NO,181,Sec.1.TatungRd.,His-chih City, Taipei county,221,Taiwan,R.O.C
Manufacturer	BaudTec Corporation
Manufacturer Address	12F,NO,181,Sec.1.TatungRd.,His-chih City, Taipei county,221,Taiwan,R.O.C
Product Type	Wireless 802.11 b/g/n ADSL2+ Router
Trade Name	Baudtec
Model Number	RN243R4
FCC ID	XKR-RN243R4
Frequency Range	2412 - 2462 MHz IEEE 802.11b / IEEE 802.11g 2412 - 2462 MHz draft 802.11n Standard-20MHz 2422 - 2452 MHz draft 802.11n Wide-40MHz
Transmit Power (conducted power)	IEEE 802.11b: 0.021 W / 13.29 dBm IEEE 802.11g: 0.081 W / 19.07 dBm draft 802.11n Standard-20MHz: 0.065 W / 18.16 dBm draft 802.11n Standard-40MHz: 0.061 W / 17.83 dBm
Antenna Specification	IEEE 802.11b / IEEE 802.11g: 3 dBi draft 802.11n Standard-20MHz / Wide-40MHz: 3 dBi
Antenna Designation	Dipole Type
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



1.1 RF Output Power

Band	Antenna Port	Data Rate	CH	Frequency (MHz)	Peak Conducted power (dBm)	Worst Case
IEEE 802.11b	---	1M	1	2412.0	13.14	<input type="checkbox"/>
			6	2437.0	13.17	<input type="checkbox"/>
			11	2462.0	13.29	<input checked="" type="checkbox"/>
		11M	1	2412.0	12.86	<input type="checkbox"/>
			6	2437.0	13.05	<input type="checkbox"/>
			11	2462.0	13.13	<input type="checkbox"/>
IEEE 802.11g	---	6M	1	2412.0	18.05	<input type="checkbox"/>
			6	2437.0	18.62	<input type="checkbox"/>
			11	2462.0	19.07	<input checked="" type="checkbox"/>
		54M	1	2412.0	18.25	<input type="checkbox"/>
			6	2437.0	18.77	<input type="checkbox"/>
			11	2462.0	19.03	<input type="checkbox"/>
draft 802.11n 20MHz	1	13M	1	2412.0	14.40	<input type="checkbox"/>
			6	2437.0	14.90	<input type="checkbox"/>
			11	2462.0	15.10	<input type="checkbox"/>
		130M	1	2412.0	15.04	<input type="checkbox"/>
			6	2437.0	14.85	<input type="checkbox"/>
			11	2462.0	14.93	<input type="checkbox"/>
	2	13M	1	2412.0	15.08	<input type="checkbox"/>
			6	2437.0	15.12	<input type="checkbox"/>
			11	2462.0	15.19	<input type="checkbox"/>
		130M	1	2412.0	14.50	<input type="checkbox"/>
			6	2437.0	14.47	<input type="checkbox"/>
			11	2462.0	13.86	<input type="checkbox"/>
	1+2	13M	1	2412.0	17.76	<input type="checkbox"/>
			6	2437.0	18.02	<input type="checkbox"/>
			11	2462.0	18.16	<input checked="" type="checkbox"/>
draft 802.11n 40MHz	1	27M	3	2422.0	13.78	<input type="checkbox"/>
			6	2437.0	14.36	<input type="checkbox"/>
			9	2452.0	15.15	<input type="checkbox"/>
		270M	3	2422.0	14.90	<input type="checkbox"/>
			6	2437.0	14.85	<input type="checkbox"/>
			9	2452.0	14.88	<input type="checkbox"/>
	2	27M	3	2422.0	14.22	<input type="checkbox"/>
			6	2437.0	14.36	<input type="checkbox"/>
			9	2452.0	14.47	<input type="checkbox"/>
		270M	3	2422.0	14.34	<input type="checkbox"/>
			6	2437.0	14.25	<input type="checkbox"/>
			9	2452.0	14.29	<input type="checkbox"/>
	1+2	27M	3	2422.0	17.02	<input type="checkbox"/>
			6	2437.0	17.37	<input type="checkbox"/>
			9	2452.0	17.83	<input checked="" type="checkbox"/>



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.



2.1 Test Result

Band	Data Rate	Frequency (MHz)	Limit (mw)	Distance (cm) [R]	Power (dBm) [P]	ANT Gain (dBi) [G]	[P]+ [G] (W) [TP]	Power Density [S]	Min. distance (cm)
IEEE 802.11b	1M	2412.0	1.000	20	13.14	3	13.14	0.005	20cm
		2437.0	1.000	20	13.17	3	13.17	0.005	20cm
		2462.0	1.000	20	13.29	3	13.29	0.005	20cm
IEEE 802.11g	6M	2412.0	1.000	20	18.05	3	18.05	0.015	20cm
		2437.0	1.000	20	18.62	3	18.62	0.018	20cm
		2462.0	1.000	20	19.07	3	19.07	0.020	20cm
draft 802.11n Standard-20MHz TX1+TX2	13M	2412.0	1.000	20	17.76	3	17.76	0.014	20cm
		2437.0	1.000	20	18.02	3	18.02	0.015	20cm
		2462.0	1.000	20	18.16	3	18.16	0.016	20cm
draft 802.11n Wide-40MHz TX1+TX2	27M	2422.0	1.000	20	17.02	3	17.02	0.012	20cm
		2437.0	1.000	20	17.37	3	17.37	0.013	20cm
		2452.0	1.000	20	17.83	3	17.83	0.015	20cm