A Test Lab Techno Corp.

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MPE Report

Test Report No.	：	1602FS11-01
Applicant	：	BenQ Corporation
Product Type	：	treVolo S Bluetooth® Speaker
Trade Name	：	BenQ
Model Number	：	AU3000
Date of Received	：	Jan. 29, 2016
Test Period	：	Jan. 29 ~ Feb. 01, 2016
Date of Issued	：	Mar. 18, 2016
Test Specification	：	ANSI / IEEE Std.C95.1-1992 / IEEE Std. 1528-2013
		47 CFR § 2.1091
		47 CFR § 1.1310
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 ： Bill Hu (Bill Hu)　　Tested By ： Sky Chou (Sky Chou)

Contents

1. Description of Equipment under Test (EUT)

Applicant	BenQ Corporation 16 Jihu Road, Neihu, Taipei 114, Taiwan
Manufacturer (1)	Qisda (Suzhou) Co., Ltd. No. 169, Zhujiang Road, New District, Suzhou, Jiangsu 215129, P.R. China
Manufacturer (2)	Qisda Mexicana S.A. De C.V. Calzada Venustiano Carranza, No. 88 Col. Plutarco Elias Calles 21376 Mexocali, B.C. Mexico C.P Mexico
Manufacturer (3)	Qisda Optronics (Suzhou) Co., Ltd. No.169, Zhujiang Road, New District, Suzhou, Jiangsu 215129, P.R. China
Manufacturer (4)	Qisda Corporation 157, Shan-Ying Road, Gueishan, Taoyuan 333, Taiwan
Product Type	treVolo S Bluetooth® Speaker
Trade Name	BenQ
Model Number	AU3000
FCC ID	JVPAU3000
Frequency Range	Bluetooth BR/EDR 2402 - 2480 MHz Bluetooth LE 2402 - 2480 MHz
Transmit Power (conducted power)	Bluetooth BR/EDR: 0.00841 W / 9.25 dBm Bluetooth LE: 0.00690 W / 8.39 dBm
Antenna Information	Model: WA-P-LA-02-168 / Type: PCB antenna type / Max. Gain: 4 dBi
Temperature Range	0 ~ +40°C
RF Evaluation	0.004349 mW/cm^2

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
$$S = \frac{PG}{4\pi R^2}$$ 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	CH	Frequency (MHz)	Packet Type	Average Conducted power (dBm)
Bluetooth BR GFSK	0	2402	DH1	7.22
			DH3	7.23
			DH5	7.25
	39	2441	DH1	8.45
			DH3	8.46
			DH5	8.49
	78	2480	DH1	9.21
			DH3	9.23
			DH5	9.25
Bluetooth EDR π/4-DQPSK	0	2402	2DH1	5.69
			2DH3	5.74
			2DH5	5.79
	39	2441	2DH1	7.15
			2DH3	7.20
			2DH5	7.25
	78	2480	2DH1	7.76
			2DH3	7.81
			2DH5	7.86
Bluetooth EDR 8DPSK	0	2402	3DH1	5.71
			3DH3	5.76
			3DH5	5.81
	39	2441	3DH1	7.19
			3DH3	7.24
			3DH5	7.29
	78	2480	3DH1	7.79
			3DH3	7.84
			3DH5	7.89
Bluetooth LE	0	2402	---	6.37
	19	2440		7.74
	39	2480		8.39

4. Test Result

Band	Packet Type	Frequency (MHz)	Limit (mw)	Distance [R] (cm)	Max tune-up Power (upper limit) [P] (dBm)	ANT Gain (dBi)	Numeric Gain [G]	Duty Cycle	[P] x [G] with Duty cycle [TP] (mW)	Power Density [S] (mw)/cm^2
Bluetooth BR	DH1	2402.0	1.000	20	7.4	4.00	2.51	1	13.79	0.002743
		2441.0	1.000	20	8.6	4.00	2.51	1	18.18	0.003617
		2480.0	1.000	20	9.4	4.00	2.51	1	21.86	0.004349
Bluetooth LE	---	2402.0	1.000	20	6.5	4.00	2.51	1	11.21	0.002230
		2440.0	1.000	20	7.9	4.00	2.51	1	15.48	0.003080
		2480.0	1.000	20	8.5	4.00	2.51	1	17.77	0.003535

Note:

1. The Numeric Gain calculated by 10^(ant. Gain(dBi) /10).
2. Each band max power which perform MPE of any configurations.