A Test Lab Techno Corp.

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MPE Report

Test Report No.	：	1412FS17
Applicant	：	Marson Technology Co.,Ltd.
Manufacturer	：	Marson Technology Co.,Ltd.
Product Type	：	Wireless Barcode Scanner Cradle
Trade Name	：	MARSON
Model Number	：	MT7937 Cradle
Date of Received	：	Dec. 02, 2014
Test Period	：	Dec. 23, 2014
Date of Issued	：	Dec. 24, 2014
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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4. This document may be altered or revised by A Test Lab Techno. Corp. personnel only, and shall be noted in the revision section of the document.

Approved By ： Bill Hu (Bill Hu)　　Tested By ： Sky Chou (Sky Chou)

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1. Description of Equipment under Test (EUT)

Applicant	Marson Technology Co.,Ltd.
Applicant Address	9F., No.108-3, Mincyuan Rd., Sindian Dist., New Taipei City 23141, TAIWAN
Manufacturer	Marson Technology Co.,Ltd.
Manufacturer Address	9F., No.108-3, Mincyuan Rd., Sindian Dist., New Taipei City 23141, TAIWAN
Product Type	Wireless Barcode Scanner Cradle
Trade Name	MARSON
Model Number	MT7937 Cradle
Frequency Range	2402 - 2480 MHz Bluetooth v2.0
Transmit Power (conducted power)	Bluetooth v2.0: 0.00333 W / 5.22 dBm
Antenna Specification	Bluetooth v2.0: 3.22 dBi
Antenna Designation	Dipole Antenna
RF Evaluation	0.02 W/m^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

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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.

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3. RF Output Power

Band	CH	Frequency (MHz)	Packet Type	Average Conducted power (dBm)
Bluetooth GFSK	0	2402	DH1	4.62
			DH3	4.65
			DH5	4.79
	39	2441	DH1	4.79
			DH3	4.85
			DH5	4.93
	78	2480	DH1	4.82
			DH3	4.75
			DH5	4.90
Bluetooth π /4-DQPSK	0	2402	DH1	4.92
			DH3	4.94
			DH5	5.01
	39	2441	DH1	5.07
			DH3	5.12
			DH5	5.16
	78	2480	DH1	4.83
			DH3	4.78
			DH5	4.91
Bluetooth 8DPSK	0	2402	DH1	4.89
			DH3	4.92
			DH5	5.04
	39	2441	DH1	5.10
			DH3	5.14
			DH5	5.22
	78	2480	DH1	4.83
			DH3	4.74
			DH5	4.90

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4. Test Result

and	Data Rate	Frequency (MHz)	Limit (mw)	Distance [R] (cm)	Max tune-up Power (upper limit) [P] (dBm)	ANT Gain (dBi)	Numeric Gain [G] (dBi)	Duty Cycle	[P] x [G] with Duty cycle [TP] (mW)	Power Density [S] (mw)/cm^2
Bluetooth v2.0	---	2402.0	1.000	20	6	3.22	2.1	1	8.36	0.002
		2441.0	1.000	20	6	3.22	2.1	1	8.36	0.002
		2480.0	1.000	20	6	3.22	2.1	1	8.36	0.002

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