



A Test Lab Techno Corp.

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SAR Test Exclusion Evaluation



Test Report No.	: 1412FS15
Applicant	: Marson Technology Co., Ltd.
Manufacturer	: Marson Technology Co.,Ltd.
Product Type	: Wireless Barcode Scanner
Trade Name	: MARSON
Model Number	: MT7937A
Dates of Received	: Dec. 01, 2014
Dates of Test	: Dec. 23, 2014
Dates of Issued	: Dec. 23, 2014
Test Specification	: 47 CFR § 2.1093 IEEE Std. 1528-2013 IEEE Std. 1528a-2005 KDB 447498 D01 General RF Exposure Guidance v05r02 KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r03 KDB 865664 D02 RF Exposure Reporting v01r01
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

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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		
Trade Name	MARSON		
Model Number	MT7937A		
FCC ID	IRJ-MT7937A		
Frequency Range	2402 - 2480 MHz (Bluetooth v2.0)		
Transmit Power (Avg. conducted power)	Band	Power	
		mW	dBm
	Bluetooth v2.0	0.005	7.00
Antenna Specification	2 dBi		
Antenna Designation	chip Antenna		

The above equipment was tested by A Test Lab Techno Corp. For compliance with the requirements set forth in 47 CFR § 2.1093. 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. SAR Test Exclusion

As RF exposure evaluation of portable device, SAR test is not required when the evaluation results . According to KDB 447498 4.3.1, unless excluded by specific FCC test procedures, portable devices shall include SAR data for equipment approval. SAR test necessity will be based on the exclusion result.

The test exclusion refers KDB 447498 as below:

≤50mm:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f}(\text{GHz})]$$

≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR

2.1 Antenna Distance

Distance of Antenna to edge		
Antenna	Side	Distance (mm)
Bluetooth	Side 1	5mm
Bluetooth	Side 2	5mm
Bluetooth	Side 3	5mm
Bluetooth	Side 4	5mm
Bluetooth	Side 5	5mm
Bluetooth	Side 6	5mm

2.2 Conducted Power

Band	CH	Frequency (MHz)	Packet Type	RF Conducted Output Power (dBm)
				Average
Bluetooth v2.0	0	2402.0	---	7.00
	19	2440.0	---	6.48
	39	2480.0	---	6.95

2.3 Evaluation Results

The evaluation of SAR test reduction according to KDB447498

SAR test is not required when the results showed "SAR is not required".

Transmitter and antenna implementation as below:

Band	Antenna
Bluetooth v2.0	V

≤ 50 mm								
Band	Side	Power (dBm)	Frequency (GHz)	distance (mm)	Power (mW)	Result	Limit	Exclusion considerations
Bluetooth v2.0	1	7.5	2.402	5	6	1.9	3	SAR is not required
	2	7.5	2.402	5	6	1.9	3	SAR is not required
	3	7.5	2.402	5	6	1.9	3	SAR is not required
	4	7.5	2.402	5	6	1.9	3	SAR is not required
	5	7.5	2.402	5	6	1.9	3	SAR is not required
	6	7.5	2.402	5	6	1.9	3	SAR is not required

The assessment result Stand-alone SAR is not required.