A Test Lab Techno Corp.

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ACCREDITED
Certificate #3464.02

MPE Report

Test Report No.	:	SZ2103FS11
Applicant	:	Maverick Industries, Inc.
Product Type	:	STAKE Bluetooth Extended Range
Trade Name	:	MAVERICK
Model Number	:	BT-150
Received Date	:	Mar. 08, 2021
Test Period	:	Mar. 15, 2021
Issue Date	:	Mar. 17, 2021
Test Specification	:	ANSI / IEEE Std.C95.1-1992 / IEEE Std. 1528-2013
		47 CFR § 2.1091
		47 CFR § 1.1310

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 : Louis Shen (Louis Shen)

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1. Description of Equipment under Test (EUT)

Applicant	Maverick Industries, Inc. 94 Mayfield Avenue Edison New Jersey United States		
Manufacturer	Manford Development Limited Unit 12, Factory A, 2/F, Gee Fat Factory Building, No.78-80 FukTsun Street, Tai Kok Tsui, Kowloon, Hong Kong		
Factory	ATR (DONG GUAN) ELECTRONICS MANUFACTORY CO., LTD. 38, XIAN FENG ROAD, PING SHAN, TANGXIA TOWN, DONGGUAN CITY, GUANG DONG PROVINCE		
Product Type	STAKE Bluetooth Extended Range		
Trade Name	MAVERICK		
Model Number	BT-150		
FCC ID	TKCBT-150		
Frequency Range	Operate Band		Frequency Range (MHz)
	Bluetooth LE		2402 - 2480
Antenna Information	Type	Max. Gain (dBi)	
	Chip Antenna	Bluetooth LE	0.5
Antenna Delivery	1TX		
RF Evaluation	0.0007 mW/cm^2		
Operate Temp. Range	0~45 ℃		

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

Operate Band	Frequency (MHz)	Packet Type	Conducted power (dBm)
Bluetooth LE GFSK	2402	---	4.43
	2440		4.59
	2480		4.66

4. Test Result

Antenna	Band	Test mode/ RB/Data rate	Frequency (MHz)	Limit (mw)/cm^2	Distance [R] (cm)	max tune-up Power [P] (dBm)	ANT Gain (dBi)	Numeric Gain [G]	Duty Cycle	Power with Duty cycle [TP] (mW)	Power Density [S] (mw)/cm^2
Bluetooth Antenna	Bluetooth LE	1M	2402	1	20	4.43	0.5	1.12	1	3.106	0.0006
			2440	1	20	4.59	0.5	1.12	1	3.223	0.0006
			2480	1	20	4.66	0.5	1.12	1	3.275	0.0007

Note:

1. Mobile or fixed location transmitters, minimum separation distance is 20 cm, even if calculations indicate MPE distance is less.
2. The Numeric Gain calculated by 10^(ant. Gain(dBi) /10).
3. Each band max power which perform MPE of any configurations.