SAR Exclusion Evaluation Report

Applicant	:	Targus International LLC
Product Type	:	Bluetooth Mouse
Trade Name	:	Targus
Model Number	:	AMB580
Date of Received	:	May 04, 2017
Test Period	:	May 08, 2017
Date of Issued	:	May 26, 2017

Issue by

Approved By : (Bill Hu)

Tested By : (Mark Duan)

A Test Lab Techno Corp.
No. 140-1, Changan Street, Bade District,
Taoyuan City 33465, Taiwan (R.O.C)
Tel：+886-3-2710188 / Fax：+886-3-2710190
Taiwan Accreditation Foundation accreditation number: 1330

Revision History

Rev.	Issue Date	Revisions	Revised By
00	May 25, 2017	Initial Issue	Snow Wang
01	May 26, 2017	Revised report information.	Snow Wang

Contents

1. Description of Equipment under Test (EUT)

Applicant	Targus International LLC 1211 North Miller Street Anaheim California 92806 United States			
Manufacturer	Dongguan Boyye Industrial Co., Ltd. Bld B,#36 Shengye Road,North District of Tianmei Industrial Park,Huangjiang Town,Dongguan,P.R.China			
Product Type	Bluetooth Mouse			
Trade Name	Targus			
Model Number	AMB580			
FCC ID	OXM000077			
Operate Freq. Band	Frequency Range (MHz)	Modulation Type	Data Rate (Mbps)	Number of Channels
Bluetooth BR	2402 ~ 2480	GFSK	1	79
Antenna information	Type		Max. Gain (dBi)	
	PCB Antenna		-1.9	

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. Reference Testing Standards

Standard	Description	Version
ANSI/IEEE C95.1	American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 300 KHz to 100 GHz, New York.	1992
IEEE 1528	IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head From Wireless Communications Devices: Measurement Techniques.	2013
FCC 47 CFR Part 2.1093	Radiofrequency radiation exposure evaluation: portable devices.	---
FCC KDB 865664 D01	SAR measurement 100 MHz to 6 GHz - describes SAR measurement procedures for devices operating between 100 MHz to 6 GHz	v01r04
FCC KDB 865664 D02	RF Exposure Reporting - provides general reporting requirements as well as certain specific information required to support MPE and SAR compliance.	v01r02
FCC KDB 447498 D01	General RF Exposure Guidance - provides guidance pertaining to RF exposure requirements for mobile and portable device equipment authorizations.	v06

3. 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:

[(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR

>50mm and <200mm:

a) [Power allowed at numeric threshold for 50 mm in step 1) + (test separation distance - 50 mm)·(f(MHz)/150)] mW, at 100 MHz to 1500 MHz

b) [Power allowed at numeric threshold for 50 mm in step 1) + (test separation distance - 50 mm)·10] mW at > 1500 MHz and ≤ 6 GHz

3.1 Conducted Power

The conducted power turn-up tolerance, please reference manufacturer specification.

Operate Band	Modulation Type	Data Rate (Mbps)	Frequency (MHz)	Packet Type	Average Power (dBm)
Bluetooth BR	GFSK	1	2402	DH1	-3.16
				DH3	-3.13
				DH5	-3.09
			2441	DH1	-4.06
				DH3	-4.00
				DH5	-3.96
			2480	DH1	-3.94
				DH3	-3.90
				DH5	-3.81

3.2 Antenna Location

Transmitter and antenna implementation	
Operate Band	Bluetooth Antenna
Bluetooth BR	V

Ant. Used	Antenna to user distance (mm)					
	Side 1	Side 2	Side 3	Side 4	Side 5	Side 6
Bluetooth Antenna	5	5	5	5	5	5

Note：We use a minimum distance of 5mm for bluetooth function.

3.3 Evaluation Results

The evaluation of SAR test reduction according to KDB447498

SAR test is not required when the results showed “EXEMPT”.

Body SAR test reduction										
Ant. Used	Operate Band	Frequency (GHz)	Tune-Power		Calculated threshold value					
			(dBm)	(mW)	Side 1	Side 2	Side 3	Side 4	Side 5	Side 6
Bluetooth Antenna	Bluetooth BR (GFSK)	2480	-3	1	0.3	0.3	0.3	0.3	0.3	0.3
					EXEMPT	EXEMPT	EXEMPT	EXEMPT	EXEMPT	EXEMPT

Note: 1.Calculated Value include string "mW",that is meam through compare output power with threshold, if the output power more than threshold value the SAR test should be perform. Otherwise,the SAR test could be exempt. (> 50mm)

2.Calculated Value only inculde number format, that is mean through compare output power with threshold, if the Calculated value more than 3, the SAR test should be perform. Otherwise, the SAR test could be exempt. (<50mm)

3.When an antenna qualifies for the standalone SAR test exclusion of KDB 447498 section 4.3.1 and also transmits simultaneously with other antennas, the standalone SAR value must be estimated according to KDB 447498 section "4.3.2. Simultaneous transmission SAR test exclusion considerations b) "

4.We used highest frequency and power,that result should be evaluated the worst case.

5.Power and distance are rounded to the nearest mW and mm before calculation.

6.The result is rounded to one decimal place for comparison.

7.We use a minimum distance of 5mm for bluetooth function.