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ENGINEERING TEST REPORT # TR 314388 RFX
LSR Job #: C-2124

RF Exposure Compliance of:
Philadelphia

Test Date(s):
February 9, 12, 14 2015

Prepared For:
TASER
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This Test Report is issued under the Authority of: Adam Alger, EMC Engineer

Signature:  Date: 3-26-15

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Prepared For: TASER	Name: Philadelphia
Report: TR 314388 RFX	Model: P/N: T00504
LSR: C-2124	Serial: See Section 2.1

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LS Research, LLC in Review

As an EMC Testing Laboratory, our Accreditation and Assessments are recognized through the following:



TESTING CERT #1255.01

A2LA – American Association for Laboratory Accreditation

Accreditation based on ISO/IEC 17025: 2005 with Electrical (EMC) Scope of Accreditation

A2LA Certificate Number: 1255.01



Federal Communications Commission (FCC) – USA

Listing of 3 Meter Semi-Anechoic Chamber based on Title 47 CFR – Part 2.948

FCC Registration Number: 90756



Industry Canada

On file, 3 Meter Semi-Anechoic Chamber based on RSS-212 – Issue 1

File Number: IC 3088-A

On file, 3 and 10 Meter OATS based on RSS-212 – Issue 1

File Number: IC 3088



U. S. Conformity Assessment Body (CAB) Validation

Validated by the European Commission as a U. S. Competent Body operating under the U. S./EU, Mutual Recognition Agreement (MRA) operating under the European Union Electromagnetic Compatibility –Council Directive 2004/108/EC (formerly 89/336/EEC, Article 10.2).

Date of Validation: January 16, 2001

Validated by the European Commission as a U.S. Notified Body operating under the U.S. /EU, Mutual Recognition Agreement (MRA) operating under the European Union Telecommunication Equipment – Council Directive 99/5/EC, Annex V.

Date of Validation: November 20, 2002

Notified Body Identification Number: 1243

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1.0 Conformance Summary

The EUT was found to MEET the MPE threshold for FCC §2.1091(mobile) using methods of FCC KDB 447498 D01 General RF Exposure Guidance v05r02 as a standalone device.

2.0 Equipment Under Test (EUT) Information

The following information has been supplied by the applicant.

Product Name:	Philadelphia
Model Number:	P/N: T00504
Serial Number:	127 (Conducted Sample) 131 (Radiated Sample)
FCC ID	X4GS00831
IC Number	8803A-S00831

2.1 Product Description

Bluetooth Low Energy product.

2.2 Additional Information

EUT programmed for continuous transmit or receive via FTDI to USB cable connected to laptop computer running Broadcom Blue Tool v 1.8.4.6. Test channels; Low Channel (2402 MHz), Mid Channel (2440 MHz), and High Channel (2480 MHz).

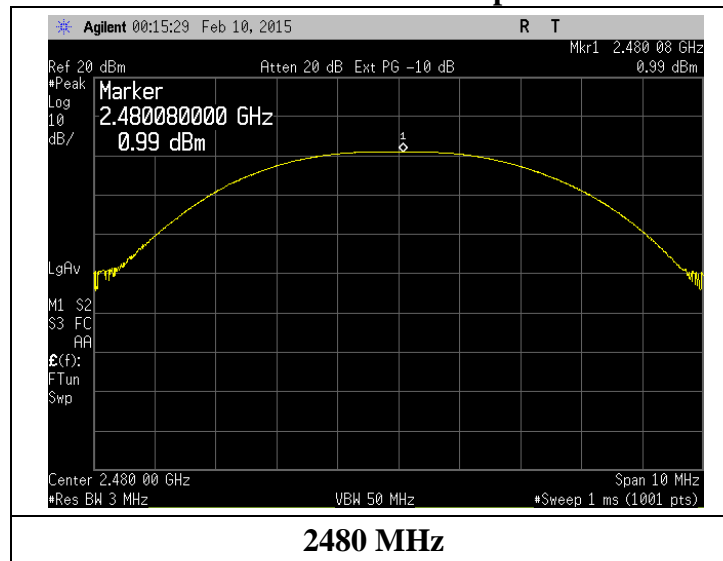
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3.0 RF Conducted Measurement Data

Table

Frequency (MHz)	6 dB DTS BW (kHz)	99% OBW (MHz)	20 dB OBW (MHz)	100 kHz PSD (dBm)	PSD Limit (dBm / 3 kHz)	PSD Margin (dB)	Max Output Power (dBm)	Max Output Power Limit (dBm)	Max Output Power Margin (dB)
2402	779.924	1.098	1.135	0.75	8	7.3	0.83	30	29.2
2440	772.582	1.090	1.134	0.87	8	7.1	0.94	30	29.1
2480	768.769	1.079	1.124	0.94	8	7.1	0.99	30	29.0

Plots – Maximum Peak Output Power



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4.0 MPE Calculation

2.4 GHz

Type: RF Evaluation

Evaluated Against: General Population/Uncontrolled Exposure

Duty Cycle: 100 %

Document Used for Evaluation: KDB 447498 / OET 65

Measurement Distance: 20 cm

Power Density Limit: 1 mW/cm²

Calculated Value:

Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{PG}{4\pi R^2}$$

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

Maximum peak output power at antenna input terminal:	0.99 (dBm)
Maximum peak output power at antenna input terminal:	1.256 (mW)
Antenna gain(typical):	0.5 (dBi)
Maximum antenna gain:	1.122 (numeric)
Prediction distance:	20 (cm)
Prediction frequency:	2480 (MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1 (mW/cm ²)
Power density at prediction frequency:	0.000280 (mW/cm ²)

5.0 Industry Canada Low Power Exemption

RSS 102 Issue 5 Section 2.5 states that all transmitters that meet the output power requirements as stated in section 2.5.1 and 2.5.2 of RSS 102 are exempt from routine SAR and RF exposure evaluation.

Output Power Evaluation.

Evaluation Frequency = 2480 MHz

Device Operation separation distance: **>20cm**

Maximum Effective Isotropic Radiated Power (dBm) = 0.99 dBm + 0.5 dBi = 1.49 dBm

Maximum Effective Isotropic Radiated Power (mW) = $\log^{-1}(\text{EIRP (dBm)}/10)$ = 1.409 mW

Section 2.5.2 general public use limit at for devices operating greater than 20cm:

Frequency	Limit	Limit $f = 2437 \text{ MHz}$
300 MHz to 6 GHz	$1.31 \times 10^{-2} f^{0.6834} \text{ W}$ ($f = \text{MHz}$)	2.7355 W

Conclusion:

Since the maximum effective radiated power (EIRP) is less than the applicable section limit, the Product is exempt from SAR/RF Evaluation

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END OF REPORT

Date	Version	Comments	Person
3-26-15	V1	Final	Adam A

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