

# NORTHWEST EMC

## BD Technologies

Conduit SMARTCAP

FCC 2.1093:2016

Bluetooth Radio Module

Report # BDTE0001



NVLAP Lab Code: 200676-0

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.

# CERTIFICATE OF EVALUATION



Last Date of Evaluation: August 4, 2016  
BD Technologies  
Model: Conduit SMARTCAP

## RF Exposure Evaluation

### Standards

Specification	Method
FCC 2.1093:2016	FCC KDB 447498 D01 General RF Exposure Guidance v06

### Results

Method Clause	Evaluation Description	Applied	Results	Comments
4.3.1	SAR Evaluation Exclusion	Yes	Pass	

### Deviations From Standards

None

### Approved By:

Donald Facteau, IT Manager

*Product compliance is the responsibility of the client; therefore, the Evaluations and equipment modes of operation represented in this report were agreed upon by the client, prior to Evaluation. The results of this Evaluation pertain only to the sample(s) Evaluation. The specific description is noted in each of the individual sections of the Evaluation report supporting this certificate of Evaluation. This report reflects only those Evaluations from the referenced standards shown in the certificate of Evaluation. It does not include inspection or verification of labels, identification, marking or user information.*

# REVISION HISTORY

Revision Number	Description	Date	Page Number
00	None		

# ACCREDITATIONS AND AUTHORIZATIONS

---

## United States

---

**FCC** - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

**A2LA** - Accredited by A2LA to ISO / IEC 17065 as a product certifier. This allows Northwest EMC to certify transmitters to FCC and IC specifications.

**NVLAP** - Each laboratory is accredited by NVLAP to ISO 17025

---

## Canada

---

**ISED** - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with ISED.

---

## European Union

---

**European Commission** – Validated by the European Commission as a Notified Body under the R&TTE Directive.

---

## Australia/New Zealand

---

**ACMA** - Recognized by ACMA as a CAB for the acceptance of test data.

---

## Korea

---

**MSIP / RRA** - Recognized by KCC's RRA as a CAB for the acceptance of test data.

---

## Japan

---

**VCCI** - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

---

## Taiwan

---

**BSMI** – Recognized by BSMI as a CAB for the acceptance of test data.

**NCC** - Recognized by NCC as a CAB for the acceptance of test data.

---

## Singapore

---

**IDA** – Recognized by IDA as a CAB for the acceptance of test data.

---

## Israel

---

**MOC** – Recognized by MOC as a CAB for the acceptance of test data.

---

## Hong Kong

---

**OFCA** – Recognized by OFCA as a CAB for the acceptance of test data.

---

## Vietnam

---

**MIC** – Recognized by MIC as a CAB for the acceptance of test data.

---

## SCOPE

For details on the Scopes of our Accreditations, please visit:

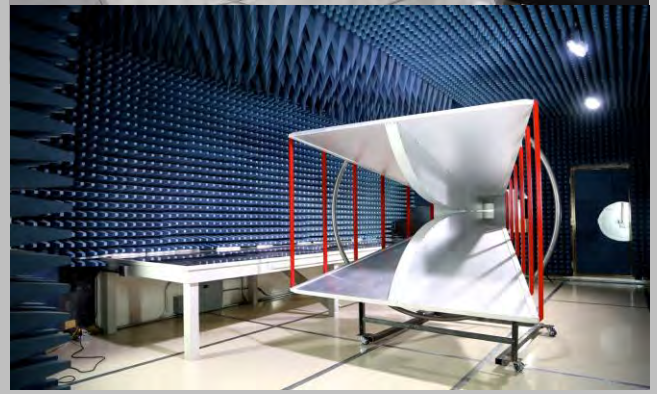
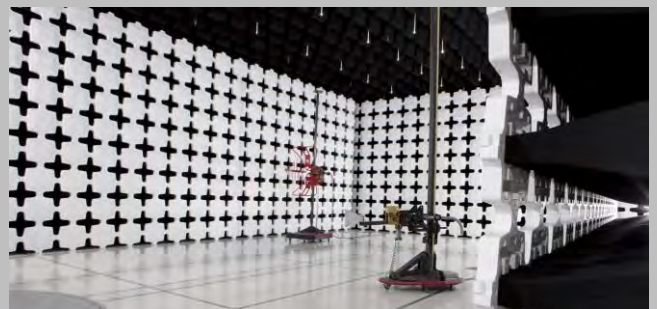
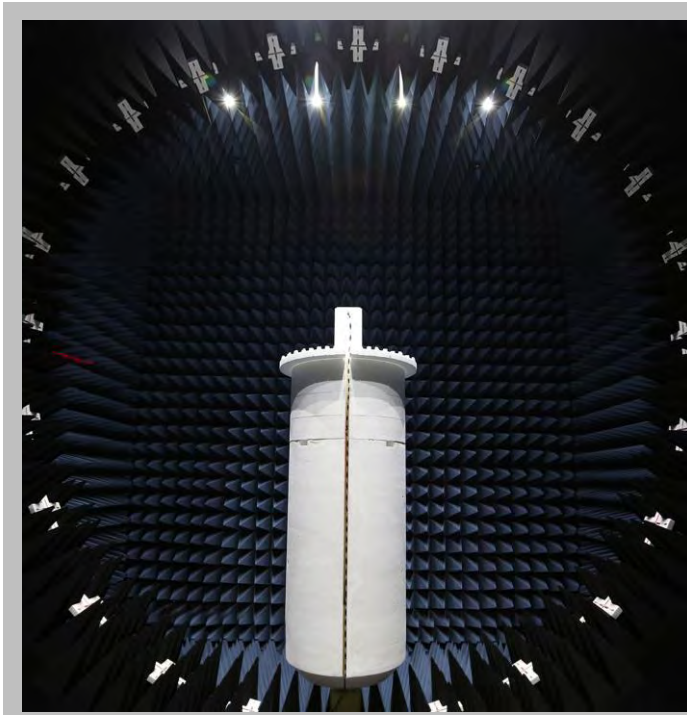
<http://www.nwemc.com/accreditations/>

<http://gsi.nist.gov/global/docs/cabs/designations.html>

# FACILITIES



<b>California</b> Labs OC01-13 41 Tesla Irvine, CA 92618 (949) 861-8918	<b>Minnesota</b> Labs MN01-08, MN10 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	<b>New York</b> Labs NY01-04 4939 Jordan Rd. Elbridge, NY 13060 (315) 554-8214	<b>Oregon</b> Labs EV01-12 22975 NW Evergreen Pkwy Hillsboro, OR 97124 (503) 844-4066	<b>Texas</b> Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	<b>Washington</b> Labs NC01-05 19201 120 <sup>th</sup> Ave NE Bothell, WA 98011 (425)984-6600
<b>NVLAP</b>					
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0
<b>Innovation, Science and Economic Development Canada</b>					
2834B-1, 2834B-3	2834E-1	N/A	2834D-1, 2834D-2	2834G-1	2834F-1
<b>BSMI</b>					
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
<b>VCCI</b>					
A-0029	A-0109	N/A	A-0108	A-0201	A-0110
<b>Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRR, MIC, MOC, NCC, OFCA</b>					
US0158	US0175	N/A	US0017	US0191	US0157



# PRODUCT DESCRIPTION

## Client and Equipment Under Evaluation Information

<b>Company Name:</b>	BD Technologies
<b>Address:</b>	21 Davis Drive
<b>City, State, Zip:</b>	Research Triangle Park, NC 27709
<b>Evaluation Requested By:</b>	Michael Yarger
<b>Model:</b>	Conduit SMARTCAP
<b>First Date of Evaluation:</b>	August 4, 2016

## Information Provided by the Party Requesting the Evaluation

### Functional Description of the Equipment:

EQUIPMENT is a Bluetooth Low Energy radio cap that goes on a insulin injector pen. It is meant to connect and log when the cap was removed and the pen used.

### Objective:

To demonstrate compliance of the Bluetooth Low Energy radio with FCC RF exposure requirements for 2.1093 portable devices.

# SAR TEST EXCLUSION

## OVERVIEW

The device is excluded from SAR evaluation and therefore deemed compliant with FCC RF exposure requirements as described below:

## COMPLIANCE WITH FCC KDB 447498 D01 General RF Exposure Guidance v06

KDB 447498 D01 General RF Exposure Guidance v06, Section 4.3.1(a)

*“For 100 MHz to 6 GHz and test separation distances  $\leq 50$  mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:*

*$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$  for 1-g SAR and  $\leq 7.5$  for 10-g extremity SAR, where*

- $f(\text{GHz})$  is the RF channel transmit frequency in GHz*
- Power and distance are rounded to the nearest mW and mm before calculation*
- The result is rounded to one decimal place for comparison*
- 3.0 and 7.5 are referred to as the numeric thresholds in the step b below*

*The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm according to 4.1f) is applied to determine SAR test exclusion.”*

## METHOD OF EVALUATION

The SAR Test Exclusion Threshold is summarized in the following table:

The result of the calculation is below the exclusion threshold; therefore the unit is excluded from SAR evaluation and deemed compliant with FCC RF exposure requirements.

Radio	Transmit Frequency (MHz)	Measured Conducted Output Power (mW)	Duty Cycle	Highest Antenna Gain (dBi)	Minimum Antenna Cable Loss (dB)	Minimum Separation Distance (mm)	Exclusion Threshold	Limit	Compliant
BT	2480	1.51	1	0.5	0	5	0.476	3.0	Yes