

# NORTHWEST EMC

## Supra, A Division of UTCFS

Supra DirectKey™ Module

FCC 2.1091:2015

Report # SUPR0149



NVLAP Lab Code: 200630-0

*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. This Report may only be duplicated in its entirety*

# CERTIFICATE OF EVALUATION



Last Date of Test: April 7, 2015  
Supra, A Division of UTCFS  
Model: Supra DirectKey™ Module

## Radio Equipment Testing

### Standards

Specification	Method
FCC 2.1091:2015	OET Bulletin 65, Supplement C Ed 01-01

### Results

Method Clause	Test Description	Applied	Results	Comments
7.1	Maximum Permissible Exposure	Yes	Pass	

### Deviations From Test Standards

None

### Approved By:

Don Facteau, IT Manager

*Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test.*

# REVISION HISTORY

Revision Number		Description	Date	Page Number
00		None		

# ACCREDITATIONS AND AUTHORIZATIONS

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## United States

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**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

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## Canada

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**IC** - Recognized by Industry Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with IC.

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## European Union

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**European Commission** – Validated by the European Commission as a Conformity Assessment Body (CAB) under the EMC directive and as a Notified Body under the R&TTE Directive.

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## Australia/New Zealand

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

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## Korea

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

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## Japan

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

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## Taiwan

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**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.

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## Singapore

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

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## Israel

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

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## Hong Kong

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

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## Vietnam

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

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## SCOPE

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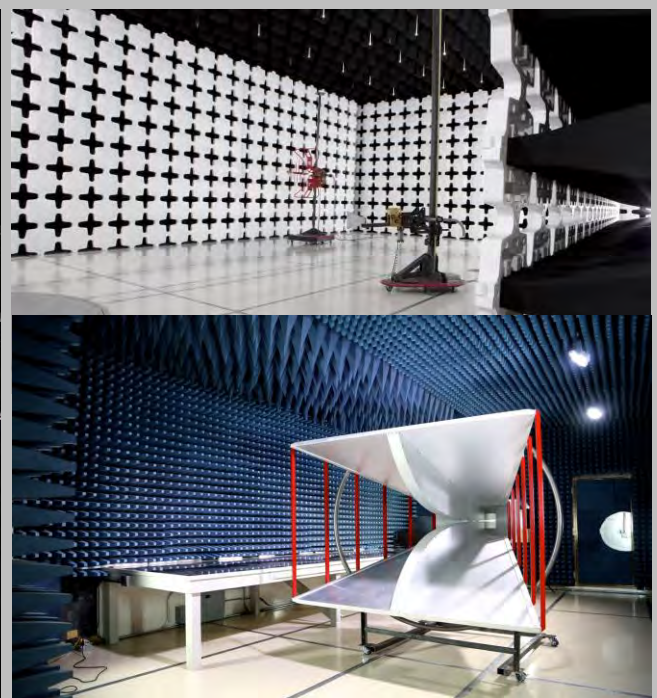
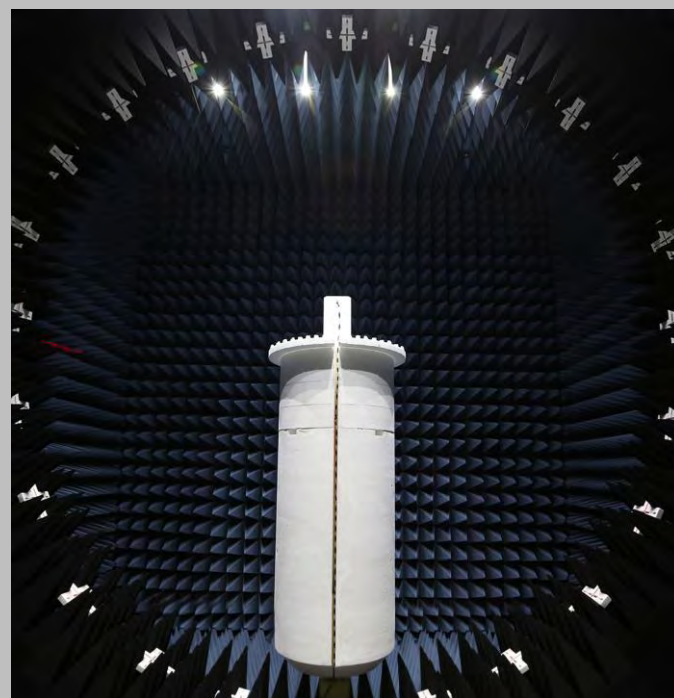
For details on the Scopes of our Accreditations, please visit:

<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 9801 (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>Industry 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 Test (EUT) Information

<b>Company Name:</b>	Supra, A Division of UTCFS
<b>Address:</b>	4001 Fairview Industrial Drive SE
<b>City, State, Zip:</b>	Salem, OR 97302-0167
<b>Test Requested By:</b>	Adam Purdue
<b>Model:</b>	Supra DirectKey™ Module
<b>First Date of Evaluation:</b>	April 6, 2015

## Information Provided by the Party Requesting the Test

<b>Functional Description of the EUT:</b>
Bluetooth LE radio module with one antenna.
<b>Testing Objective:</b>
To demonstrate compliance with FCC requirements for RF exposure for 2.1091 mobile 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 v05r02

KDB 447498 D01 General RF Exposure Guidance v05r02, Section 4.3.1

*"The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:*

*$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$$*

*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 2 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 5) in section 4.1 is applied to determine SAR test exclusion."*

## METHOD OF EVALUATION

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

The device has a maximum output power of 1.455 mW at 2402 MHz. The closest spacing of the antenna to the user's torso is 5 mm. The table below shows the results of the calculation. The value of 0.451 is well below the exclusion threshold of 3.0, therefore the unit is excluded from SAR evaluation and deemed compliant with FCC RF exposure requirements.

Output Power (mW)	Test Separation (mm)	Transmit Frequency (GHz)	Exclusion Threshold	Specification
1.455	5	2.402	.451	$\leq 3.0$



Signature