# Supra, A Division of UTCFS

## Bluetooth iBox

EMC Test Report

**Report No. SUPR0076**

Report Prepared By

NORTHWEST EMC

www.nwemc.com
1-888-EMI-CERT

NORTHWEST EMC

22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

# Certificate of Test

## Last Date of Test: September 8, 2010

## Supra, A Division of UTCFS

## Model: Bluetooth iBox

| Emissions | | | |
|---|---|---|---|
| **Test Description** | **Specification** | **Test Method** | **Pass/Fail** |
| Spurious Radiated Emissions | FCC 15.247:2010 | ANSI C63.10:2009 | **Pass** |

| Modifications made to the product |
|---|
| **See the Modifications section of this report** |

***Test Facility***

The measurement facility used to collect the data is located at:

Northwest EMC, Inc.;
22975 NW Evergreen Parkway, Suite 400;
Hillsboro, OR 97124

Phone: (503) 844-4066 Fax: 844-3826

This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada (Site filing #2834D-1).

**Approved By:**

*Don Facteau, IS Manager*

NVLAP

**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.***

***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. This Report may only be duplicated in its entirety. 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 Number | Description | Date | Page Number |
|---|---|---|---|
| 00 | None | | |

## Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

# Accreditations and Authorizations

## FCC

Accredited by NVLAP for performance of FCC radio, digital, and ISM device testing. Our Open Area Test Sites, certification chambers, and conducted measurement facilities have been fully described in reports filed with the FCC and accepted by the FCC in letters maintained in our files. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by the FCC as a Telecommunications Certification Body (TCB). This allows Northwest EMC to certify transmitters to FCC specifications in accordance with 47 CFR 2.960 and 2.962.

## NVLAP

Northwest EMC, Inc. is accredited under the United States Department of Commerce, National Institute of Standards and Technology, and National Voluntary Laboratory Accreditation Program for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 2004/108/EC, and ANSI C63.4. Additionally, Northwest EMC is accredited by NVLAP to perform radio testing in accordance with the European Union R&TTE Directive 1999/5/EEC, the requirements of FCC, and the RSS radio standards for Industry Canada.

NVLAP LAB CODE 200629-0
NVLAP LAB CODE 200630-0
NVLAP LAB CODE 200676-0
NVLAP LAB CODE 200761-0
NVLAP LAB CODE 200881-0

## Industry Canada

Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS-Gen, Issue 2 and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements. (*Site Filing Numbers - Hillsboro: 2834D-1, 2834D-2, Sultan: 2834C-1, Irvine: 2834B-1, 2834B-2, Brooklyn Park: 2834E-1)*

## CAB

Designated by NIST and validated by the European Commission as a Conformity Assessment Body (CAB) to conduct tests and approve products to the EMC directive and transmitters to the R&TTE directive, as described in the U.S. - EU Mutual Recognition Agreement.

## NEMKO

Assessed and accredited by NEMKO (Norwegian testing and certification body) for European emissions and immunity testing. As a result of NEMKO's laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification (Authorization No. ELA 119).

# Accreditations and Authorizations

## Australia/New Zealand

The National Association of Testing Authorities (NATA), Australia has been appointed by the ACA as an accreditation body to accredit test laboratories and competent bodies for EMC standards. Accredited test reports or assessments by competent bodies must carry the NATA logo. Test reports made by an overseas laboratory that has been accredited for the relevant standards by an overseas accreditation body that has a Mutual Recognition Agreement (MRA) with NATA are also accepted as technical grounds for product conformity. The report should be endorsed with the respective logo of the accreditation body (NVLAP).

## VCCI

Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. *(Registration Numbers. - Hillsboro: C-1071, R-1025, G-84, C-2687, T-1658, and R-2318, Irvine: R-1943, G-85, C-2766, and T-1659, Sultan: R-871, G-83, C-1784, and T-1511, Brooklyn Park: R-3125, G-86, G-141, C-3464, and T-1634).*

## BSMI

Northwest EMC has been designated by NIST and validated by C-Taipei (BSMI) as a CAB to conduct tests as described in the APEC Mutual Recognition Agreement (US0017). License No.SL2-IN-E-1017.

## GOST

Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification

## KCC

Northwest EMC, Inc is a CAB designated by MRA partners and recognized by Korea. (*Assigned Lab Numbers: Hillsboro: US0017, Irvine: US0158, Sultan: US0157)*

## VIETNAM

Vietnam MIC has approved Northwest EMC as an accredited test lab. Per Decision No. 194/QD-QLCL (dated December 15, 2009), Northwest EMC test reports can be used for Vietnam approval submissions.

## SCOPE

For details on the Scopes of our Accreditations, please visit:
http://www.nwemc.com/accreditations/

# Northwest EMC Locations

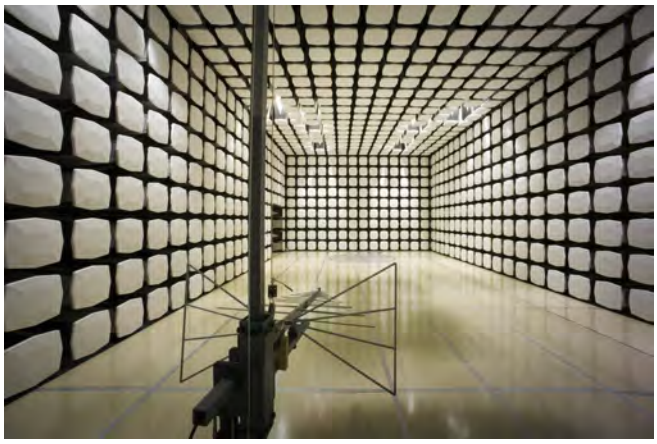
Oregon
Labs EV01-EV12
22975 NW Evergreen Pkwy
Suite 400
Hillsboro, OR 97124
(503) 844-4066

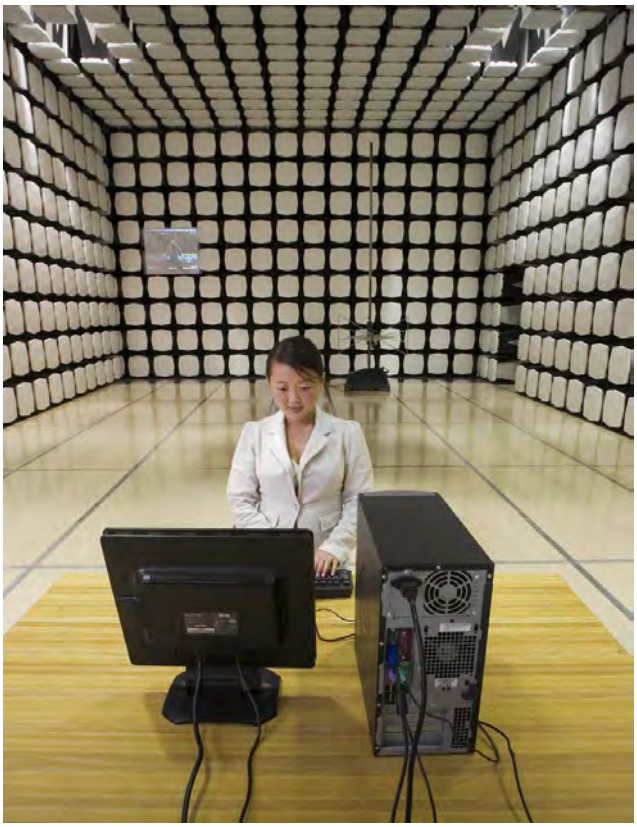
California
Labs OC01-OC13
41 Tesla
Irvine, CA 92618
(949) 861-8918

Minnesota
Labs MN01-MN08
9349 W Broadway Ave.
Brooklyn Park,
MN 55445
(763) 425-2281

Washington
Labs SU01-SU07
14128 339th Ave. SE
Sultan, WA 98294
(360) 793-8675

New York
Labs WA01-WA04
4939 Jordan Rd.
Elbridge, NY 13060
(315) 685-0796





## Party Requesting the Test

| | |
|---|---|
| **Company Name:** | Supra, A Division of UTCFS |
| **Address:** | 4001 Fairview Industrial Drive SE |
| **City, State, Zip:** | Salem, OR 97302-0167 |
| **Test Requested By:** | Dean Sinn |
| **Model:** | Bluetooth iBox |
| **First Date of Test:** | September 8, 2010 |
| **Last Date of Test:** | September 8, 2010 |
| **Receipt Date of Samples:** | September 8, 2010 |
| **Equipment Design Stage:** | Prototype |
| **Equipment Condition:** | No Damage |

## Information Provided by the Party Requesting the Test

| **Functional Description of the EUT (Equipment Under Test):** |
|---|
| Bluetooth radio inside of a battery operated key vault |

| **Testing Objective:** |
|---|
| Demonstrate compliance to the spurious radiated emissions requirements of FCC 15.247. The other requirements of FCC 15.247 are addressed in a separate report. |

## CONFIGURATION 1 SUPR0076

| EUT | | | |
|---|---|---|---|
| **Description** | **Manufacturer** | **Model/Part Number** | **Serial Number** |
| Bluetooth enabled key vault | Supra, A Division of UTCFS | Bluetooth iBox | L |
| Bluetooth enabled key vault | Supra, A Division of UTCFS | Bluetooth iBox | M |
| Bluetooth enabled key vault | Supra, A Division of UTCFS | Bluetooth iBox | H |

| Equipment modifications | | | | | |
|---|---|---|---|---|---|
| Item | Date | Test | Modification | Note | Disposition of EUT |
| 1 | 9/8/2010 | Spurious Radiated Emissions | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | Scheduled testing was completed. |

# SPURIOUS RADIATED EMISSIONS



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

## MODES OF OPERATION

Transmitting Ones and Zeros in GFSK modulation

## MODE USED FOR FINAL DATA

Low Channel, 2402 MHz
Mid Channel, 2450 MHz
High Channel, 2480 MHz

## POWER SETTINGS INVESTIGATED

Battery

## FREQUENCY RANGE INVESTIGATED

| Start Frequency | 30 MHz | Stop Frequency | 25 MHz |
|---|---|---|---|

## SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

## TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|---|---|---|---|---|---|
| Spectrum Analyzer | Agilent | E4446A | AAQ | 1/6/2010 | 12 |
| High Pass Filter | Micro-Tronics | HPM50111 | HFO | 7/9/2010 | 13 |
| Pre-Amplifier | Miteq | AM-1616-1000 | AOL | 7/9/2010 | 13 |
| Antenna, Biconilog | EMCO | 3141 | AXE | 1/14/2010 | 13 |
| EV01 Cables | N/A | Bilog Cables | EVA | 7/9/2010 | 13 |
| Pre-Amplifier | Miteq | AMF-4D-010100-24-10P | APW | 7/9/2010 | 13 |
| Antenna, Horn | EMCO | 3115 | AHC | 7/8/2010 | 24 |
| EV01 Cables | N/A | Double Ridge Horn Cables | EVB | 7/9/2010 | 13 |
| Pre-Amplifier | Miteq | AMF-6F-08001200-30-10P | AVC | 8/25/2010 | 13 |
| Antenna, Horn | ETS | 3160-07 | AHU | NCR | 0 |
| EV01 Cables | N/A | Standard Gain Horns Cables | EVF | 8/25/2010 | 13 |
| Pre-Amplifier | Miteq | AMF-6F-12001800-30-10P | AVD | 8/25/2010 | 13 |
| Antenna, Horn | ETS | 3160-08 | AHV | NCR | 0 |
| EV01 Cables | N/A | Standard Gain Horns Cables | EVF | 8/25/2010 | 13 |
| Antenna, Horn | ETS Lindgren | 3160-09 | AIV | NCR | 0 |
| Pre-Amplifier | Miteq | AM-1616-1000 | AVY | 7/19/2010 | 13 |

## MEASUREMENT BANDWIDTHS

| | Frequency Range (MHz) | Peak Data (kHz) | Quasi-Peak Data (kHz) | Average Data (kHz) |
|---|---|---|---|---|
| | 0.01 - 0.15 | 1.0 | 0.2 | 0.2 |
| | 0.15 - 30.0 | 10.0 | 9.0 | 9.0 |
| | 30.0 - 1000 | 100.0 | 120.0 | 120.0 |
| | Above 1000 | 1000.0 | N/A | 1000.0 |

Measurements were made using the bandwidths and detectors specified. No video filter was used.

## MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation is available upon request.

## TEST DESCRIPTION

The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.10:2009). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

NORTHWEST EMC

# SPURIOUS RADIATED EMISSIONS

PSA 2008.07.21
EMI 2008.1.9

| | | | |
|---|---|---|---|
| EUT: | Bluetooth iBox | Work Order: | SUPR0076 |
| Serial Number: | See Configuration Sheet | Date: | 09/08/10 |
| Customer: | Supra, A Division of UTCFS | Temperature: | 22 |
| Attendees: | Adam Purdue | Humidity: | 45% |
| Project: | None | Barometric Pres.: | 29.82 |
| Tested by: | Rod Peloquin | Power: Battery | Job Site: EV01 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.247:2010 | ANSI C63.10:2009 |

| TEST PARAMETERS | | | |
|---|---|---|---|
| Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3 |

**COMMENTS**

None

**EUT OPERATING MODES**

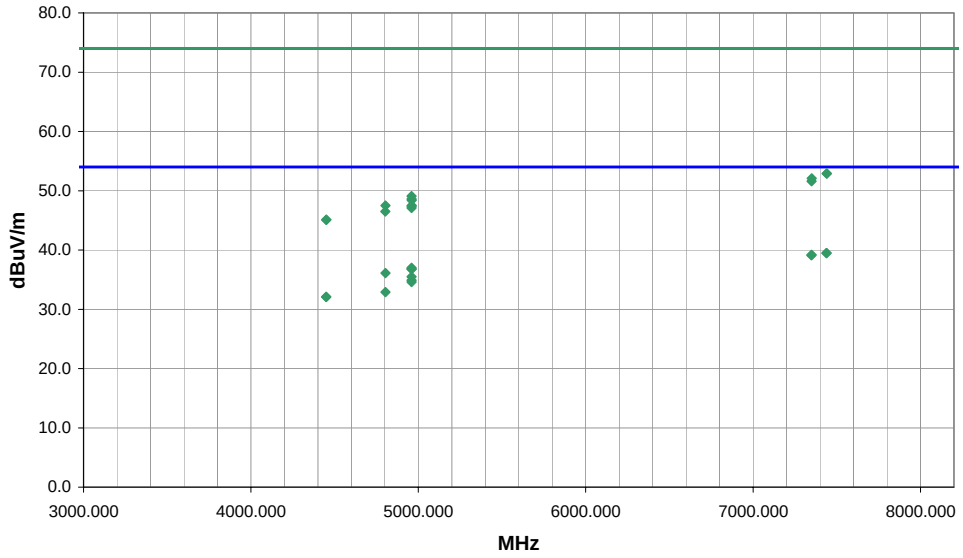
Transmitting Ones and Zeros

**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | |
|---|---|
| Run # | 2 |
| Configuration # | 1 |
| Results | Pass |

Signature




| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | External Attenuation (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7438.523 | 23.4 | 16.1 | 120.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 39.5 | 54.0 | -14.5 | High channel, EUT on side |
| 7438.657 | 23.4 | 16.1 | 3.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 39.5 | 54.0 | -14.5 | High channel, EUT on side |
| 7349.193 | 23.4 | 15.8 | 264.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 39.2 | 54.0 | -14.8 | Mid channel, EUT on side |
| 7348.583 | 23.4 | 15.7 | 237.0 | 1.6 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 39.1 | 54.0 | -14.9 | Mid channel, EUT on side |
| 4959.840 | 26.9 | 10.1 | 139.0 | 1.5 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 37.0 | 54.0 | -17.0 | High channel, EUT on side |
| 4959.757 | 26.7 | 10.1 | 235.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 36.8 | 54.0 | -17.2 | High channel, EUT on side |
| 4959.780 | 26.7 | 10.1 | 29.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 36.8 | 54.0 | -17.2 | High channel, EUT horizontal |
| 4803.820 | 26.7 | 9.4 | 11.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 36.1 | 54.0 | -17.9 | Low channel, EUT on side |
| 4959.793 | 25.4 | 10.1 | 69.0 | 1.6 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 35.5 | 54.0 | -18.5 | High channel, EUT horizontal |
| 4959.727 | 24.8 | 10.1 | 14.0 | 1.2 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 34.9 | 54.0 | -19.1 | High channel, EUT vertical |
| 4959.683 | 24.5 | 10.1 | 173.0 | 1.5 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 34.6 | 54.0 | -19.4 | High channel, EUT vertical |
| 4803.853 | 23.5 | 9.4 | 204.0 | 1.1 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 32.9 | 54.0 | -21.1 | Low channel, EUT on side |
| 7440.023 | 36.8 | 16.1 | 3.0 | 1.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 52.9 | 74.0 | -21.1 | High channel, EUT on side |
| 7440.207 | 36.8 | 16.1 | 120.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 52.9 | 74.0 | -21.1 | High channel, EUT on side |
| 4449.490 | 23.5 | 8.6 | 247.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 32.1 | 54.0 | -21.9 | Mid channel, EUT on side |
| 4450.123 | 23.5 | 8.6 | 130.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 32.1 | 54.0 | -21.9 | Mid channel, EUT on side |
| 7350.650 | 36.3 | 15.8 | 264.0 | 1.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 52.1 | 74.0 | -21.9 | Mid channel, EUT on side |
| 7349.353 | 35.8 | 15.8 | 237.0 | 1.6 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 51.6 | 74.0 | -22.4 | Mid channel, EUT on side |
| 4959.803 | 39.0 | 10.1 | 139.0 | 1.5 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 49.1 | 74.0 | -24.9 | High channel, EUT on side |
| 4959.947 | 38.5 | 10.1 | 235.0 | 1.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 48.6 | 74.0 | -25.4 | High channel, EUT on side |

NORTHWEST EMC

# SPURIOUS RADIATED EMISSIONS

PSA 2008.07.21
EMI 2008.1.9

| | | | | | |
|---|---|---|---|---|---|
| EUT: | Bluetooth iBox | | | Work Order: | SUPR0076 |
| Serial Number: | See Configuration Sheet | | | Date: | 09/08/10 |
| Customer: | Supra, A Division of UTCFS | | | Temperature: | 22 |
| Attendees: | Adam Purdue | | | Humidity: | 45% |
| Project: | None | | | Barometric Pres.: | 29.82 |
| Tested by: | Rod Peloquin | Power: | Battery | Job Site: | EV01 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.247:2010 | ANSI C63.10:2009 |

| TEST PARAMETERS | | | |
|---|---|---|---|
| Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3 |

**COMMENTS**

None

**EUT OPERATING MODES**

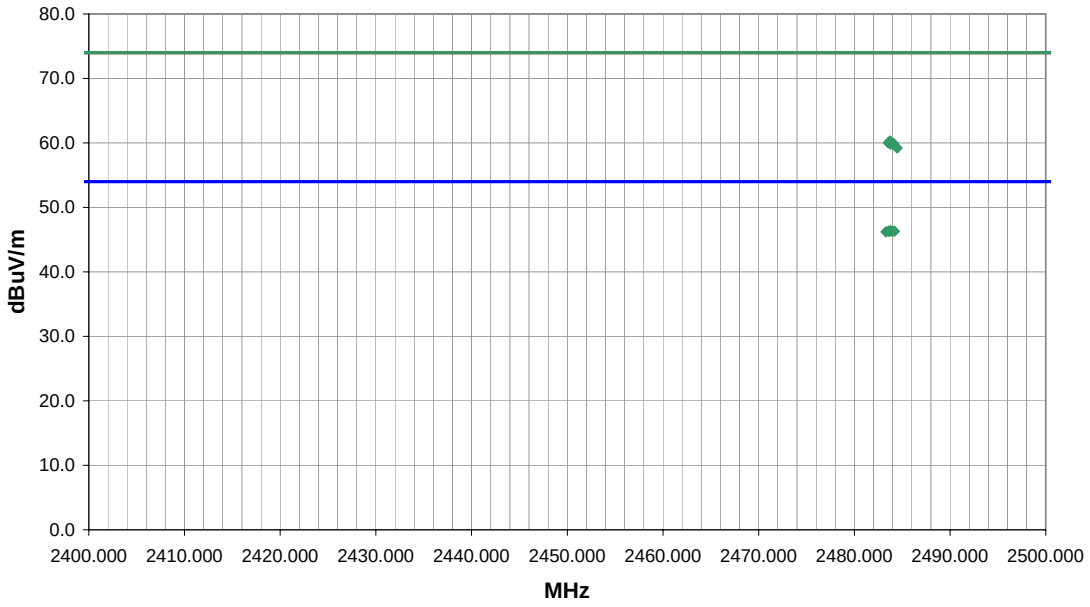
Transmitting Ones and Zeros, High channel

**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | |
|---|---|
| Run # | 1 |
| Configuration # | 1 |
| Results | Pass |

Signature




| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | External Attenuation (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2483.777 | 24.1 | 2.3 | 342.0 | 2.6 | 3.0 | 20.0 | V-Horn | AV | 0.0 | 46.4 | 54.0 | -7.6 | EUT on side |
| 2483.557 | 24.0 | 2.3 | 82.0 | 1.6 | 3.0 | 20.0 | V-Horn | AV | 0.0 | 46.3 | 54.0 | -7.7 | EUT vertical |
| 2483.672 | 24.0 | 2.3 | 302.0 | 1.0 | 3.0 | 20.0 | H-Horn | AV | 0.0 | 46.3 | 54.0 | -7.7 | EUT vertical |
| 2483.930 | 24.0 | 2.3 | 310.0 | 1.0 | 3.0 | 20.0 | H-Horn | AV | 0.0 | 46.3 | 54.0 | -7.7 | EUT on side |
| 2484.190 | 24.0 | 2.3 | 246.0 | 1.0 | 3.0 | 20.0 | H-Horn | AV | 0.0 | 46.3 | 54.0 | -7.7 | EUT on back |
| 2483.303 | 23.9 | 2.3 | 43.0 | 1.6 | 3.0 | 20.0 | V-Horn | AV | 0.0 | 46.2 | 54.0 | -7.8 | EUT on back |
| 2483.722 | 38.0 | 2.3 | 342.0 | 2.6 | 3.0 | 20.0 | V-Horn | PK | 0.0 | 60.3 | 74.0 | -13.7 | EUT on side |
| 2483.773 | 37.9 | 2.3 | 310.0 | 1.0 | 3.0 | 20.0 | H-Horn | PK | 0.0 | 60.2 | 74.0 | -13.8 | EUT on side |
| 2483.545 | 37.7 | 2.3 | 82.0 | 1.6 | 3.0 | 20.0 | V-Horn | PK | 0.0 | 60.0 | 74.0 | -14.0 | EUT vertical |
| 2484.105 | 37.6 | 2.3 | 302.0 | 1.0 | 3.0 | 20.0 | H-Horn | PK | 0.0 | 59.9 | 74.0 | -14.1 | EUT vertical |
| 2483.805 | 37.5 | 2.3 | 246.0 | 1.0 | 3.0 | 20.0 | H-Horn | PK | 0.0 | 59.8 | 74.0 | -14.2 | EUT on back |
| 2484.468 | 36.9 | 2.3 | 43.0 | 1.6 | 3.0 | 20.0 | V-Horn | PK | 0.0 | 59.2 | 74.0 | -14.8 | EUT on back |

NORTHWEST EMC

# SPURIOUS RADIATED EMISSIONS

PSA 2008.07.21
EMI 2008.1.9

| | | | |
|---|---|---|---|
| EUT: | Bluetooth iBox | Work Order: | SUPR0076 |
| Serial Number: | See Configuration Sheet | Date: | 09/08/10 |
| Customer: | Supra, A Division of UTCFS | Temperature: | 22 |
| Attendees: | Adam Purdue | Humidity: | 45% |
| Project: | None | Barometric Pres.: | 29.82 |
| Tested by: | Rod Peloquin | Power: Battery | Job Site: EV01 |

| TEST SPECIFICATIONS | Test Method |
|---|---|
| FCC 15.247:2010 | ANSI C63.10:2009 |

| TEST PARAMETERS | | | |
|---|---|---|---|
| Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3 |

**COMMENTS**

None

**EUT OPERATING MODES**

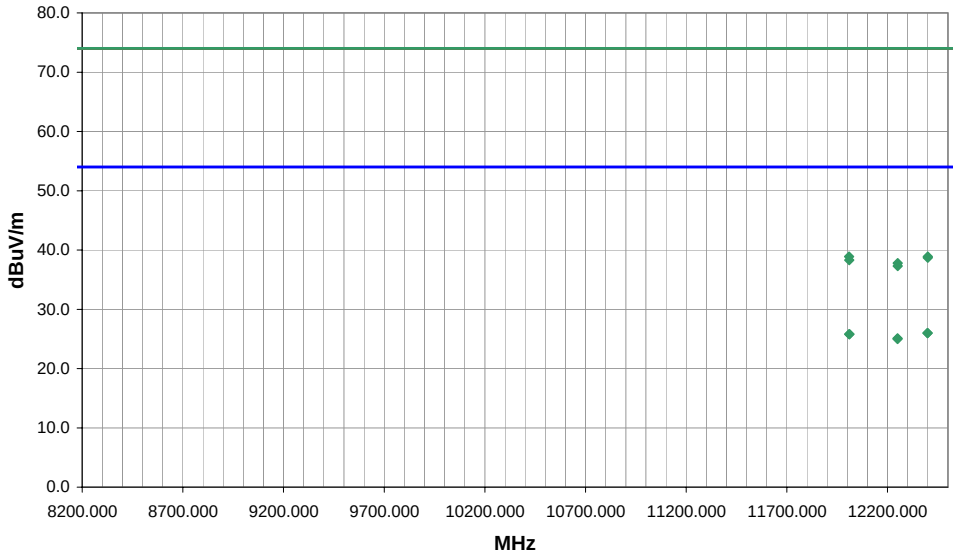
Transmitting Ones and Zeros

**DEVIATIONS FROM TEST STANDARD**

No deviations.

| | |
|---|---|
| Run # | 3 |
| Configuration # | 1 |
| Results | Pass |

Signature




| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | External Attenuation (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12398.520 | 27.8 | -1.8 | 76.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 26.0 | 54.0 | -28.0 | High channel, EUT on side |
| 12398.870 | 27.8 | -1.8 | 170.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 26.0 | 54.0 | -28.0 | High channel, EUT on side |
| 12009.960 | 30.0 | -4.2 | 39.0 | 1.1 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 25.8 | 54.0 | -28.2 | Low channel, EUT on side |
| 12010.820 | 30.0 | -4.2 | 271.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 25.8 | 54.0 | -28.2 | Low channel, EUT on side |
| 12249.600 | 27.9 | -2.8 | 338.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 25.1 | 54.0 | -28.9 | Mid channel, EUT on side |
| 12249.870 | 27.8 | -2.8 | 354.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 25.0 | 54.0 | -29.0 | Mid channel, EUT on side |
| 12399.610 | 40.7 | -1.8 | 170.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 38.9 | 74.0 | -35.1 | High channel, EUT on side |
| 12009.210 | 43.1 | -4.2 | 39.0 | 1.1 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 38.9 | 74.0 | -35.1 | Low channel, EUT on side |
| 12399.550 | 40.5 | -1.8 | 76.0 | 1.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 38.7 | 74.0 | -35.3 | High channel, EUT on side |
| 12009.300 | 42.5 | -4.2 | 271.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 38.3 | 74.0 | -35.7 | Low channel, EUT on side |
| 12250.600 | 40.6 | -2.8 | 338.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 37.8 | 74.0 | -36.2 | Mid channel, EUT on side |
| 12250.100 | 40.1 | -2.8 | 354.0 | 1.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 37.3 | 74.0 | -36.7 | Mid channel, EUT on side |