



## **Intermec Technologies Corporation**

**Name: CN70 RFID**

**Model 1000CP01F9**

**SAR Evaluation Report #: ITRM0333.1**

**Evaluated to the following SAR Specifications:**

**FCC 2.1093:2012**



Report Prepared By Northwest EMC Inc.

NORTHWEST EMC – (888) 364-2378 – [www.nwemc.com](http://www.nwemc.com)

California – Minnesota – Oregon – New York – Washington

# CERTIFICATE OF EVALUATION

**Last Date of Test: January 07, 2013**  
**Intermec Technologies Corporation**  
**Name: CN70 RFID**  
**Model:1000CP01F9**

## Applicable Standard

| Test Description | Specification                                         | Test Method                | Pass/Fail |
|------------------|-------------------------------------------------------|----------------------------|-----------|
| SAR Evaluation   | FCC 2.1093:2013<br>FCC 15.247:2013<br>FCC 15.407:2013 | FCC OET 65C:2001           | Pass      |
|                  |                                                       | IEEE Std 1528:2003         |           |
|                  |                                                       | FCC KDB 447498 D01 v05     |           |
|                  |                                                       | FCC KDB 248227 D01 v01r02  |           |
|                  |                                                       | FCC KDB 648474 D04 V01     |           |
|                  |                                                       | FCC KDB 865664 D01 and D02 |           |

## Highest SAR Values

| Frequency Bands (GHz) | Head 1g (W/kg) | Body 1g (W/kg) | Limit 1g (W/kg) | Exposure Environment            |
|-----------------------|----------------|----------------|-----------------|---------------------------------|
| 900 MHz               | 0.374          | 0.615          | 1.6             | General Population Uncontrolled |
| 2.4                   | 0.162          | 0.553          |                 |                                 |
| 5.2, 5.3, 5.6, 5.8    | 0.061          | 0.335          |                 |                                 |

## Deviations From Test Standards

None

## Approved By:



Don Facteau, IS Manager



NVLAP Lab Code: 200630-0

## 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 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*



WTD 12.5.23

# CERTIFICATE OF EVALUATION

*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        |      |             |

## Barometric Pressure

The recorded barometric pressure has been normalized to sea level.

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## 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 Guide 65 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

**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

**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

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

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## Korea

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

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## Japan

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

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## 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.

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## Singapore

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

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## Hong Kong

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

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## Vietnam

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

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## Russia

**GOST** – Accredited by Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC to perform EMC and Hygienic testing for Information Technology products to GOST standards.

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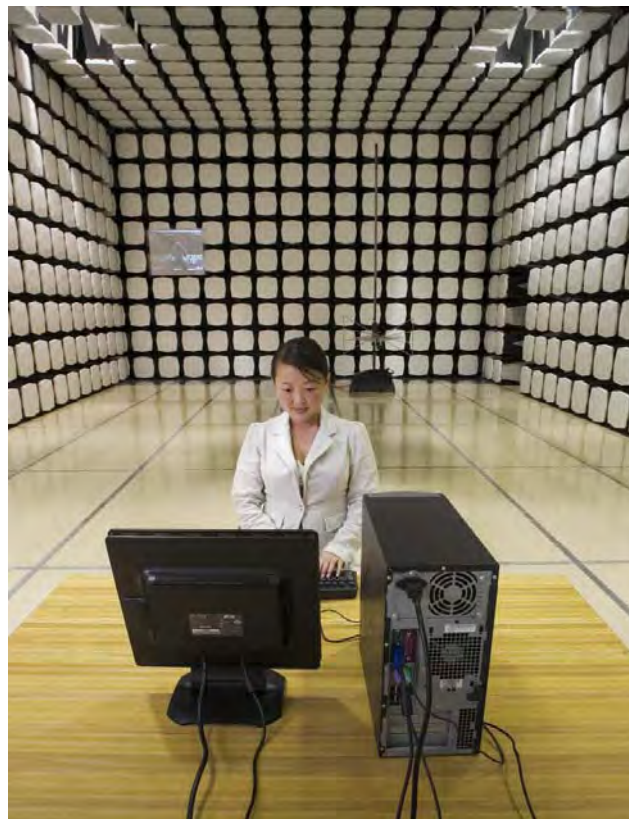
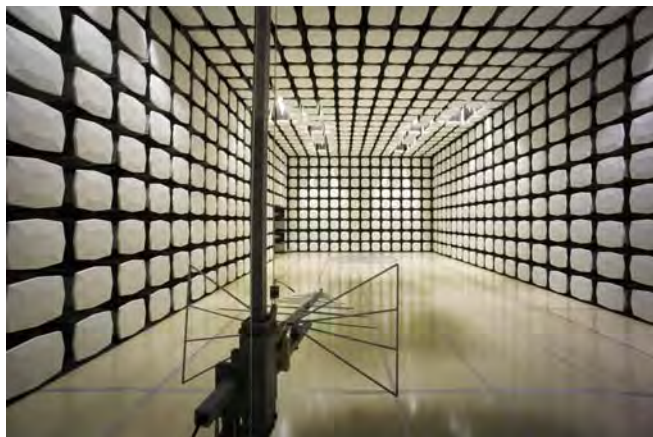
## SCOPE

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

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



|                                                                                                   |                                                                                     |                                                                                            |                                                                                                       |                                                                                                                       |
|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| <b>Oregon</b><br>Labs EV01-12<br>22975 NW Evergreen Pkwy<br>Hillsboro, OR 97124<br>(503) 844-4066 | <b>California</b><br>Labs OC01-13<br>41 Tesla<br>Irvine, CA 92618<br>(949) 861-8918 | <b>New York</b><br>Labs WA01-04<br>4939 Jordan Rd.<br>Elbridge, NY 13060<br>(315) 685-0796 | <b>Minnesota</b><br>Labs MN01-08<br>9349 W Broadway Ave.<br>Brooklyn Park, MN 55445<br>(763) 425-2281 | <b>Washington</b><br>Labs NC01-05,SU02,SU07<br>19201 120 <sup>th</sup> Ave. NE<br>Bothell, WA 98011<br>(425) 984-6600 |
| <b>VCCI</b>                                                                                       |                                                                                     |                                                                                            |                                                                                                       |                                                                                                                       |
| A-0108                                                                                            | A-0029                                                                              |                                                                                            | A-0109                                                                                                | A-0110                                                                                                                |
| <b>Industry Canada</b>                                                                            |                                                                                     |                                                                                            |                                                                                                       |                                                                                                                       |
| 2834D-1, 2834D-2                                                                                  | 2834B-1, 2834B-2, 2834B-3                                                           |                                                                                            | 2834E-1                                                                                               | 2834C-1                                                                                                               |



## Client and Equipment Under Test (EUT) Information

|                                 |                                   |
|---------------------------------|-----------------------------------|
| <b>Company Name:</b>            | Intermec Technologies Corporation |
| <b>Address:</b>                 | 550 Second St. SE                 |
| <b>City, State, Zip:</b>        | Cedar Rapids, IA 52401-2023       |
| <b>Test Requested By:</b>       | Dave Fry                          |
| <b>Model:</b>                   | 1000CP01F9                        |
| <b>First Date of Test:</b>      | December 07, 2012                 |
| <b>Last Date of Test:</b>       | January 07, 2013                  |
| <b>Receipt Date of Samples:</b> | December 07, 2012                 |
| <b>Equipment Design Stage:</b>  | Production                        |
| <b>Equipment Condition:</b>     | No Damage                         |

## Information Provided by the Party Requesting the Test

### Functional Description of the EUT (Equipment Under Test):

The EUT is the Model 1000CP01F9 handheld computer containing two radio modules, the Intermec Models RC12 and IM11, each with their own integral antenna.

The Intermec Model RC12 radio module is an 802.11a/b/g/n – Bluetooth radio. It is not capable of 40 MHz channel operation. The 802.11a/b/g/n and Bluetooth radios share the same antenna, but cannot transmit simultaneously. The frequency range of the 802.11a/b/g/n radio:

- 2412 – 2462 MHz
- 5180 – 5320 MHz
- 5500 – 5700 MHz
- 5745 – 5825 MHz

The frequency range of the Bluetooth radio:

- 2402 – 2480 MHz

The Intermec IM11 radio module is a RFID reader supporting only EPC Gen 2 (PR-ASK) operation. Dave Fry, Sr. EMC Engineer at Intermec, attests that the maximum duty cycle is 50%:

**“The IM11 module firmware always establishes a maximum 50% on/off transmitter duty cycle.”**

The IM11 has two antenna ports, but only one is connected for use in the Model 1000CP01F9. Its frequency range:

- 902.75 – 927.25 MHz

The closest spacing between the RFID antenna and the 802.11a/b/g/n antenna is 3.7cm. The 802.11a/b/g/n antenna is on the right side of the handheld computer and the RFID antenna is on the left side.

In normal operation, the EUT can be held in the hand, or next to the head like a cellular handset, or worn on the body. The only Intermec approved accessory for body worn operation is a holster that contains metal. The EUT can only fit in the holster with the top end of the unit pointing down. The holster cup can be attached to the holster belt with either the keypad facing the user, or the side facing the user. In no case can the back of the EUT face the user.

An optional snap-on audio accessory is available. It connects to the bottom end of the unit and provides a standard audio jack for connection of a VR10 headset.

The EUT is powered by a lithium-ion battery, Model 1000AB01.

## Testing Objective:

To demonstrate compliance with the SAR requirements of FCC 2.1093.

## Scope

Regarding the 802.11a/b/g/n-Bluetooth radio, KDB 447498 D01 v05, Appendix A contains the SAR test exclusion thresholds for 100 MHz – 6 GHz. For the most conservative test separation of 5mm, the power threshold at 2450 MHz is 10mW. Since the output power of Bluetooth is 7mW, the Bluetooth radio does not require SAR evaluation.

However the output power of the 802.11a/b/g/n radio is greater than the SAR test exclusion thresholds for all bands, so it does require stand-alone SAR evaluation. This is true for the RFID radio as well.

The stand-alone SAR evaluation documented in this report is for the 802.11a/b/g/n and RFID portions of the EUT.

SAR Evaluation for simultaneous transmission was not required because the sum of the 1-g SAR was less than the SAR limit of 1.6 W/kg:

| Model      | Phantom | Highest of         |                     | Sum<br>1 g (W/kg) |
|------------|---------|--------------------|---------------------|-------------------|
|            |         | RFID<br>1 g (W/kg) | Wi-Fi<br>1 g (W/kg) |                   |
| 1000CP01F9 | Head    | 0.374              | 0.162               | 0.536             |
|            | Body    | 0.615              | 0.553               | 1.168             |

Per KDB 447498, Section 4.3.2:

“When the sum of 1-g or 10-g SAR of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit, SAR test exclusion applies to that simultaneous transmission configuration”

## Configuration ITRM0333- 1

| EUT                |                                   |                   |               |
|--------------------|-----------------------------------|-------------------|---------------|
| Description        | Manufacturer                      | Model/Part Number | Serial Number |
| CN70 RFID Computer | Intermec Technologies Corporation | 1000CP01F9        | 8721242648    |
| Battery            | Intermec Technologies Corporation | 1000AB01          | 16961001575   |

| Peripherals in test setup boundary |                                   |                   |               |
|------------------------------------|-----------------------------------|-------------------|---------------|
| Description                        | Manufacturer                      | Model/Part Number | Serial Number |
| Holster                            | Intermec Technologies Corporation | None              | None          |
| Headset                            | Intermec Technologies Corporation | VR10              | None          |
| Standard Audio Snap-On             | Intermec Technologies Corporation | 1000AA02          | 22011146662   |

| Cables                                                                                                 |        |            |         |                   |              |
|--------------------------------------------------------------------------------------------------------|--------|------------|---------|-------------------|--------------|
| Cable Type                                                                                             | Shield | Length (m) | Ferrite | Connection 1      | Connection 2 |
| Headset                                                                                                | No     | 1.2m       | No      | Handheld Computer | Headset      |
| PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown. |        |            |         |                   |              |

## Configuration ITRM0333- 2

| EUT                |                                   |                   |               |
|--------------------|-----------------------------------|-------------------|---------------|
| Description        | Manufacturer                      | Model/Part Number | Serial Number |
| CN70 RFID Computer | Intermec Technologies Corporation | 1000CP01F9        | 8721242648    |
| Battery            | Intermec Technologies Corporation | 1000AB01          | 16961001575   |

## Configuration ITRM0333- 7

| EUT                |                                   |                   |               |
|--------------------|-----------------------------------|-------------------|---------------|
| Description        | Manufacturer                      | Model/Part Number | Serial Number |
| CN70 RFID Computer | Intermec Technologies Corporation | 1000CP01F9        | 8721242641    |
| Battery            | Intermec Technologies Corporation | 1000AB01          | 16961001575   |

| Peripherals in test setup boundary |                                   |                   |               |
|------------------------------------|-----------------------------------|-------------------|---------------|
| Description                        | Manufacturer                      | Model/Part Number | Serial Number |
| Holster                            | Intermec Technologies Corporation | None              | None          |
| Headset                            | Intermec Technologies Corporation | VR10              | None          |
| Standard Audio Snap-On             | Intermec Technologies Corporation | 1000AA02          | 22011146662   |
|                                    |                                   |                   |               |

| Cables                                                                                                 |        |            |         |                   |              |
|--------------------------------------------------------------------------------------------------------|--------|------------|---------|-------------------|--------------|
| Cable Type                                                                                             | Shield | Length (m) | Ferrite | Connection 1      | Connection 2 |
| Headset                                                                                                | No     | 1.2m       | No      | Handheld Computer | Headset      |
| PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown. |        |            |         |                   |              |

## Configuration ITRM0333- 8

| EUT                |                                   |                   |               |
|--------------------|-----------------------------------|-------------------|---------------|
| Description        | Manufacturer                      | Model/Part Number | Serial Number |
| CN70 RFID Computer | Intermec Technologies Corporation | 1000CP01F9        | 8721242641    |
| Battery            | Intermec Technologies Corporation | 1000AB01          | 16961001575   |

## Equipment Modifications

| Item | Date       | Test           | Modification                         | Note                                                                | Disposition of EUT                                |
|------|------------|----------------|--------------------------------------|---------------------------------------------------------------------|---------------------------------------------------|
| 1    | 12/7/2012  | Output Power   | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 2    | 12/18/2012 | SAR Evaluation | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 3    | 1/7/2013   | SAR Evaluation | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |

## 2.4 AND 5 GHz Bands

Per FCC KDB 248227, the conducted output power was measured at the “default test channels” and at the “required test channels” in each band. Measurements were made while the EUT transmitted at the lowest, middle and the highest data rates for each channel. Test software insured that the EUT transmitted at 100% duty cycle.

Per FCC KDB 248227, among the channels required for normal testing, SAR must be measured on the highest output channel (highlighted). When the SAR measured on the highest output channel is  $>0.8$  W/kg, SAR evaluation for the other required test channels is necessary.

Output power measurements are on the following pages. The model 1001CP01F9 was used for conducted output power measurements because it's conducted RF characteristics are identical to the model 1000CP01F9. Both models contain identical system boards, radio modules, displays, and antennas. The difference in keyboard size is the primary differentiator.

|                                             |    |                                                                                             |                |
|---------------------------------------------|----|---------------------------------------------------------------------------------------------|----------------|
| NORTHWEST                                   |    | XMIT 2011.01.18                                                                             |                |
| <b>EMC</b>                                  |    | <b>Output Power</b>                                                                         |                |
| EUT: 1001CP01F9                             |    | Work Order: ITRM0333                                                                        |                |
| Serial Number: 8721242648                   |    | Date: 12/07/12                                                                              |                |
| Customer: Intermec Technologies Corporation |    | Temperature: 21°C                                                                           |                |
| Attendees: None                             |    | Humidity: 40%                                                                               |                |
| Project:                                    |    | Barometric Pres.: 1021 mbar                                                                 |                |
| Tested by: Brandon Hobbs, Rod Peloquin      |    | EUT Power: Battery                                                                          | Job Site: EV08 |
| TEST SPECIFICATIONS                         |    |                                                                                             |                |
| FCC 2.1093:2012                             |    | Test Method: FCC OET 65C:2001                                                               |                |
| COMMENTS                                    |    |                                                                                             |                |
| Conducted output power                      |    |                                                                                             |                |
| DEVIATIONS FROM TEST STANDARD               |    |                                                                                             |                |
| None                                        |    |                                                                                             |                |
| Configuration #                             | 12 | Signature  |                |

| Channel | Frequency<br>(MHz) | Data Rate<br>(Mbps) | Modulation | Conducted Power (Average) |       |
|---------|--------------------|---------------------|------------|---------------------------|-------|
|         |                    |                     |            | dBm                       | W     |
| 1       | 2412               | 1                   | BPSK       | 16.4                      | 0.044 |
|         |                    | 11                  | CCK        | 16.2                      | 0.042 |
|         |                    | 6                   | OFDM       | 13.0                      | 0.020 |
|         |                    | 36                  | OFDM       | 12.8                      | 0.019 |
|         |                    | 54                  | OFDM       | 12.7                      | 0.019 |
|         |                    | 7.2 (MCS0)          | OFDM       | 13.0                      | 0.020 |
|         |                    | 72.2 (MCS7)         | OFDM       | 12.3                      | 0.017 |
| 6       | 2437               | 1                   | BPSK       | 16.7                      | 0.046 |
|         |                    | 11                  | CCK        | 16.6                      | 0.045 |
|         |                    | 6                   | OFDM       | 13.1                      | 0.021 |
|         |                    | 36                  | OFDM       | 13.0                      | 0.020 |
|         |                    | 54                  | OFDM       | 12.9                      | 0.020 |
|         |                    | 7.2 (MCS0)          | OFDM       | 13.2                      | 0.021 |
|         |                    | 72.2 (MCS7)         | OFDM       | 12.5                      | 0.018 |
| 11      | 2462               | 1                   | BPSK       | 16.9                      | 0.049 |
|         |                    | 11                  | CCK        | 16.7                      | 0.047 |
|         |                    | 6                   | OFDM       | 13.4                      | 0.022 |
|         |                    | 36                  | OFDM       | 13.2                      | 0.021 |
|         |                    | 54                  | OFDM       | 13.2                      | 0.021 |
|         |                    | 7.2 (MCS0)          | OFDM       | 13.4                      | 0.022 |
|         |                    | 72.2 (MCS7)         | OFDM       | 12.8                      | 0.019 |

| NORTHWEST                                   |    | Output Power                                                                                |  | XMIT 2011.01.18 |  |
|---------------------------------------------|----|---------------------------------------------------------------------------------------------|--|-----------------|--|
| <b>EMC</b>                                  |    |                                                                                             |  |                 |  |
| EUT: 1001CP01F9                             |    | Work Order: ITRM0333                                                                        |  |                 |  |
| Serial Number: 08721244013                  |    | Date: 12/07/12                                                                              |  |                 |  |
| Customer: Intermec Technologies Corporation |    | Temperature: 21°C                                                                           |  |                 |  |
| Attendees: None                             |    | Humidity: 40%                                                                               |  |                 |  |
| Project:                                    |    | Barometric Pres.: 1021 mbar                                                                 |  |                 |  |
| Tested by: Brandon Hobbs, Rod Peloquin      |    | EUT Power: Battery                                                                          |  | Job Site: EV08  |  |
| TEST SPECIFICATIONS                         |    | Test Method                                                                                 |  |                 |  |
| FCC 2.1093:2012                             |    | FCC OET 65C:2001                                                                            |  |                 |  |
| COMMENTS                                    |    |                                                                                             |  |                 |  |
| Conducted output power                      |    |                                                                                             |  |                 |  |
| DEVIATIONS FROM TEST STANDARD               |    |                                                                                             |  |                 |  |
| None                                        |    |                                                                                             |  |                 |  |
| Configuration #                             | 12 | Signature  |  |                 |  |

| Channel | Frequency<br>(MHz) | Data Rate<br>(Mbps) | Modulation | Conducted Power (Average) |       |
|---------|--------------------|---------------------|------------|---------------------------|-------|
|         |                    |                     |            | dBm                       | W     |
| 36      | 5180               | 6                   | OFDM       | 12.3                      | 0.017 |
|         |                    | 54                  | OFDM       | 11.6                      | 0.014 |
|         |                    | 7.2 (MCS0)          | OFDM       | 12.3                      | 0.017 |
|         |                    | 72.2 (MCS7)         | OFDM       | 10.1                      | 0.010 |
| 40      | 5200               | 6                   | OFDM       | 12.3                      | 0.017 |
|         |                    | 54                  | OFDM       | 11.5                      | 0.014 |
|         |                    | 7.2 (MCS0)          | OFDM       | 12.3                      | 0.017 |
|         |                    | 72.2 (MCS7)         | OFDM       | 10.0                      | 0.010 |
| 44      | 5220               | 6                   | OFDM       | 12.2                      | 0.017 |
|         |                    | 54                  | OFDM       | 11.5                      | 0.014 |
|         |                    | 7.2 (MCS0)          | OFDM       | 12.2                      | 0.017 |
|         |                    | 72.2 (MCS7)         | OFDM       | 10.0                      | 0.010 |
| 48      | 5240               | 6                   | OFDM       | 12.2                      | 0.017 |
|         |                    | 54                  | OFDM       | 11.3                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 12.2                      | 0.017 |
|         |                    | 72.2 (MCS7)         | OFDM       | 10.0                      | 0.010 |
| 52      | 5260               | 6                   | OFDM       | 12.2                      | 0.017 |
|         |                    | 54                  | OFDM       | 11.3                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 12.1                      | 0.016 |
|         |                    | 72.2 (MCS7)         | OFDM       | 9.9                       | 0.010 |
| 56      | 5280               | 6                   | OFDM       | 12.1                      | 0.016 |
|         |                    | 54                  | OFDM       | 11.2                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 12.1                      | 0.016 |
|         |                    | 72.2 (MCS7)         | OFDM       | 9.9                       | 0.010 |
| 60      | 5300               | 6                   | OFDM       | 11.9                      | 0.015 |
|         |                    | 54                  | OFDM       | 11.2                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 11.9                      | 0.015 |
|         |                    | 72.2 (MCS7)         | OFDM       | 9.8                       | 0.010 |
| 64      | 5320               | 6                   | OFDM       | 11.9                      | 0.015 |
|         |                    | 54                  | OFDM       | 11.1                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 11.9                      | 0.015 |
|         |                    | 72.2 (MCS7)         | OFDM       | 9.7                       | 0.009 |
| 100     | 5500               | 6                   | OFDM       | 11.1                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 11.1                      | 0.013 |
| 104     | 5520               | 6                   | OFDM       | 11.1                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 11.1                      | 0.013 |
| 108     | 5540               | 6                   | OFDM       | 11.0                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 11.1                      | 0.013 |
| 112     | 5560               | 6                   | OFDM       | 11.2                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 11.0                      | 0.013 |
| 116     | 5580               | 6                   | OFDM       | 11.1                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 10.9                      | 0.012 |
| 120     | 5600               | 6                   | OFDM       | 11.3                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 11.2                      | 0.013 |
| 124     | 5620               | 6                   | OFDM       | 11.3                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 11.3                      | 0.013 |
| 128     | 5640               | 6                   | OFDM       | 11.3                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 11.2                      | 0.013 |
| 132     | 5660               | 6                   | OFDM       | 11.3                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 11.3                      | 0.013 |
| 136     | 5680               | 6                   | OFDM       | 11.3                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 11.3                      | 0.013 |
| 140     | 5700               | 6                   | OFDM       | 11.3                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 11.3                      | 0.013 |
| 149     | 5745               | 6                   | OFDM       | 11.2                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 11.2                      | 0.013 |
| 153     | 5765               | 6                   | OFDM       | 11.2                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 11.2                      | 0.013 |
| 157     | 5785               | 6                   | OFDM       | 11.1                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 11.1                      | 0.013 |
| 161     | 5805               | 6                   | OFDM       | 11.1                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 11.1                      | 0.013 |
| 165     | 5825               | 6                   | OFDM       | 11.1                      | 0.013 |
|         |                    | 7.2 (MCS0)          | OFDM       | 11.1                      | 0.013 |

|                                             |   |                                                                                                    |  |
|---------------------------------------------|---|----------------------------------------------------------------------------------------------------|--|
| NORTHWEST                                   |   | XMIT 2011.01.18                                                                                    |  |
| <b>EMC</b>                                  |   | <b>Output Power</b>                                                                                |  |
| EUT: 1001CP01F9                             |   | Work Order: ITRM0333                                                                               |  |
| Serial Number: 08721244017                  |   | Date: 12/07/12                                                                                     |  |
| Customer: Intermec Technologies Corporation |   | Temperature: 21°C                                                                                  |  |
| Attendees: None                             |   | Humidity: 40%                                                                                      |  |
| Project:                                    |   | Barometric Pres.: 1021 mbar                                                                        |  |
| Tested by: Brandon Hobbs, Rod Peloquin      |   | Job Site: EV08                                                                                     |  |
| EUT Power: Battery                          |   |                                                                                                    |  |
| TEST SPECIFICATIONS                         |   |                                                                                                    |  |
| FCC 2.1093:2012                             |   | FCC OET 65C:2001                                                                                   |  |
| COMMENTS                                    |   |                                                                                                    |  |
| Conducted output power                      |   |                                                                                                    |  |
| DEVIATIONS FROM TEST STANDARD               |   |                                                                                                    |  |
| None                                        |   |                                                                                                    |  |
| Configuration #                             | 6 | <i>Signature</i>  |  |

| Channel | Frequency<br>(MHz) | Data Rate<br>(Kbps) | Modulation | Conducted Power (Average) |       |               |     |
|---------|--------------------|---------------------|------------|---------------------------|-------|---------------|-----|
|         |                    |                     |            | Port 1<br>dBm             | W     | Port 2<br>dBm | W   |
| 5       | 902.75             | 340                 | PRASK      | 27.3                      | 0.532 | N/A           | N/A |
| 30      | 915.25             | 340                 | PRASK      | 27.2                      | 0.524 | N/A           | N/A |
| 54      | 927.25             | 340                 | PRASK      | 27.3                      | 0.540 | N/A           | N/A |

## Characterization of tissue-equivalent liquid dielectric properties

Per IEEE 1528: 2003, Section 5.2.2, the permittivity and conductivity of the tissue material should be measured at least within 24 hours of any full-compliance test. The measured values must be within +/- 5% of the target values. The temperature variation in the liquid during SAR measurements must be within +/- 2 degrees C of that recorded when the dielectric properties were measured.

The dielectric parameters of the tissue-equivalent liquids were measured within 24 hours of the start of testing using the HP85070E dielectric probe kit. The dielectric measurements were made across the frequency range of the liquid. The attached data sheets show that the dielectric parameters of the liquid were within the required 5% tolerances.

## Target values of dielectric parameters

Per FCC OET 65C, Appendix C:

“The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations and extrapolated according to the head parameters specified in P1528.”

| Target Frequency | Head         |                | Body         |                |
|------------------|--------------|----------------|--------------|----------------|
| (MHz)            | $\epsilon_r$ | $\sigma$ (S/m) | $\epsilon_r$ | $\sigma$ (S/m) |
| 150              | 52.3         | 0.76           | 61.9         | 0.80           |
| 300              | 45.3         | 0.87           | 58.2         | 0.92           |
| 450              | 43.5         | 0.87           | 56.7         | 0.94           |
| 835              | 41.5         | 0.90           | 55.2         | 0.97           |
| 900              | 41.5         | 0.97           | 55.0         | 1.05           |
| 915              | 41.5         | 0.98           | 55.0         | 1.06           |
| 1450             | 40.5         | 1.20           | 54.0         | 1.30           |
| 1610             | 40.3         | 1.29           | 53.8         | 1.40           |
| 1800 – 2000      | 40.0         | 1.40           | 53.3         | 1.52           |
| 2450             | 39.2         | 1.80           | 52.7         | 1.95           |
| 3000             | 38.5         | 2.40           | 52.0         | 2.73           |
| 5800             | 35.3         | 5.27           | 48.2         | 6.00           |

( $\epsilon_r$  = relative permittivity,  $\sigma$  = conductivity and  $\rho = 1000 \text{ kg/m}^3$ )

## Composition of Ingredients for Liquid Tissue Phantoms

Northwest EMC uses tissue-equivalent liquids prepared by SPEAG and confirmed by them to be within +/- 5% from the target values. Their recipes are based upon the following formulations as found in FCC OET 65C, Appendix C:

“The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.”

| Ingredients<br>(% by weight) | Frequency (MHz) |       |       |      |       |       |       |      |      |      |
|------------------------------|-----------------|-------|-------|------|-------|-------|-------|------|------|------|
|                              | 450             |       | 835   |      | 915   |       | 1900  |      | 2450 |      |
| Tissue Type                  | Head            | Body  | Head  | Body | Head  | Body  | Head  | Body | Head | Body |
| Water                        | 38.56           | 51.16 | 41.45 | 52.4 | 41.05 | 56.0  | 54.9  | 40.4 | 62.7 | 73.2 |
| Salt (NaCl)                  | 3.95            | 1.49  | 1.45  | 1.4  | 1.35  | 0.76  | 0.18  | 0.5  | 0.5  | 0.04 |
| Sugar                        | 56.32           | 46.78 | 56.0  | 45.0 | 56.5  | 41.76 | 0.0   | 58.0 | 0.0  | 0.0  |
| HEC                          | 0.98            | 0.52  | 1.0   | 1.0  | 1.0   | 1.21  | 0.0   | 1.0  | 0.0  | 0.0  |
| Bactericide                  | 0.19            | 0.05  | 0.1   | 0.1  | 0.1   | 0.27  | 0.0   | 0.1  | 0.0  | 0.0  |
| Triton X-100                 | 0.0             | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0  | 36.8 | 0.0  |
| DGBE                         | 0.0             | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 44.92 | 0.0  | 0.0  | 26.7 |
| Dielectric Constant          | 43.42           | 58.0  | 42.54 | 56.1 | 42.0  | 56.8  | 39.9  | 54.0 | 39.8 | 52.5 |
| Conductivity (S/m)           | 0.85            | 0.83  | 0.91  | 0.95 | 1.0   | 1.07  | 1.42  | 1.45 | 1.88 | 1.78 |

Salt: 99<sup>+</sup>% Pure Sodium Chloride

Sugar: 98<sup>+</sup>% Pure Sucrose

Water: De-ionized, 16 MΩ<sup>+</sup> resistivity

HEC: Hydroxyethyl Cellulose

DGBE: 99<sup>+</sup>% Di(ethylene glycol) butyl ether, [2-(2-butoxyethoxy)ethanol]

Triton X-100 (ultra pure): Polyethylene glycol mono [4-(1,1, 3, 3-tetramethylbutyl)phenyl]ether

|                   |                                   |                     |            |
|-------------------|-----------------------------------|---------------------|------------|
| Tissue:           | Body                              | Work Order:         | ITRM0333   |
| Serial Number:    | SAT                               | Date:               | 12-20-2012 |
| Customer:         | Intermec Technologies Corporation | Temperature:        | 22.9°C     |
| Customer Project: | None                              | Liquid Temperature: | 22.5°C     |
| Tested By:        | Ethan Schoonover                  | Relative Humidity:  | 34.4       |
| Job Site:         | EV08                              | Bar. Pressure:      | 1007       |

## TEST SPECIFICATIONS

## RESULTS

|                 | Actual Values         |              | Target Values         |              | Deviation (%)         |              |
|-----------------|-----------------------|--------------|-----------------------|--------------|-----------------------|--------------|
| Frequency (MHz) | Relative Permittivity | Conductivity | Relative Permittivity | Conductivity | Relative Permittivity | Conductivity |
| 900             | 52.8                  | 1.065        | 55                    | 1.05         | 4                     | -1.43        |

| Frequency (MHz) | Relative Permittivity | Conductivity |
|-----------------|-----------------------|--------------|
| 700             | 54.9                  | 0.866        |
| 715             | 54.7                  | 0.881        |
| 735             | 54.5                  | 0.9          |
| 750             | 54.3                  | 0.914        |
| 770             | 54.1                  | 0.933        |
| 790             | 53.8                  | 0.953        |
| 810             | 53.6                  | 0.974        |
| 825             | 53.5                  | 0.99         |
| 845             | 53.3                  | 1.01         |
| 865             | 53.1                  | 1.03         |
| 880             | 52.9                  | 1.046        |
| 900             | 52.8                  | 1.065        |
| 915             | 52.6                  | 1.08         |
| 935             | 52.4                  | 1.1          |
| 955             | 52.2                  | 1.12         |
| 970             | 52                    | 1.136        |
| 990             | 51.8                  | 1.157        |
| 1010            | 51.7                  | 1.177        |
| 1025            | 51.5                  | 1.193        |
| 1045            | 51.3                  | 1.214        |
| 1065            | 51.2                  | 1.234        |
| 1085            | 51                    | 1.256        |
| 1100            | 50.9                  | 1.272        |
| 1120            | 50.7                  | 1.293        |
| 1140            | 50.5                  | 1.314        |
| 1155            | 50.3                  | 1.33         |
| 1175            | 50.2                  | 1.352        |
| 1195            | 50                    | 1.372        |
| 1200            | 50                    | 1.377        |

|                   |                                   |                     |            |
|-------------------|-----------------------------------|---------------------|------------|
| Tissue:           | Head                              | Work Order:         | ITRM0333   |
| Serial Number:    | SAS                               | Date:               | 12-17-2012 |
| Customer:         | Intermec Technologies Corporation | Temperature:        | 21.9°C     |
| Customer Project: | None                              | Liquid Temperature: | 22.5°C     |
| Tested By:        | Ethan Schoonover                  | Relative Humidity:  | 37.0       |
| Job Site:         | EV08                              | Bar. Pressure:      | 1010       |

## TEST SPECIFICATIONS

## RESULTS

|                 | Actual Values         |              | Target Values         |              | Deviation (%)         |              |
|-----------------|-----------------------|--------------|-----------------------|--------------|-----------------------|--------------|
| Frequency (MHz) | Relative Permittivity | Conductivity | Relative Permittivity | Conductivity | Relative Permittivity | Conductivity |
| 900             | 39.6                  | 0.929        | 41.5                  | 0.97         | 4.58                  | 4.23         |

| Frequency (MHz) | Relative Permittivity | Conductivity |
|-----------------|-----------------------|--------------|
| 700             | 42.1                  | 0.747        |
| 715             | 41.9                  | 0.76         |
| 735             | 41.7                  | 0.778        |
| 750             | 41.5                  | 0.792        |
| 770             | 41.2                  | 0.81         |
| 790             | 40.9                  | 0.828        |
| 810             | 40.6                  | 0.847        |
| 825             | 40.5                  | 0.861        |
| 845             | 40.2                  | 0.879        |
| 865             | 40                    | 0.898        |
| 880             | 39.8                  | 0.911        |
| 900             | 39.6                  | 0.929        |
| 915             | 39.4                  | 0.943        |
| 935             | 39.2                  | 0.96         |
| 955             | 39                    | 0.978        |
| 970             | 38.8                  | 0.992        |
| 990             | 38.6                  | 1.01         |
| 1010            | 38.4                  | 1.028        |
| 1025            | 38.2                  | 1.042        |
| 1045            | 38                    | 1.059        |
| 1065            | 37.8                  | 1.077        |
| 1085            | 37.6                  | 1.096        |
| 1100            | 37.5                  | 1.109        |
| 1120            | 37.3                  | 1.127        |
| 1140            | 37.1                  | 1.144        |
| 1155            | 36.9                  | 1.157        |
| 1175            | 36.7                  | 1.175        |
| 1195            | 36.6                  | 1.192        |
| 1200            | 36.5                  | 1.197        |

|                   |                                   |                     |            |
|-------------------|-----------------------------------|---------------------|------------|
| Tissue:           | Body                              | Work Order:         | ITRM0333   |
| Serial Number:    | SAM                               | Date:               | 12-21-2012 |
| Customer:         | Intermec Technologies Corporation | Temperature:        | 23.4°C     |
| Customer Project: | None                              | Liquid Temperature: | 22.2°C     |
| Tested By:        | Ethan Schoonover                  | Relative Humidity:  | 34.4       |
| Job Site:         | EV08                              | Bar. Pressure:      | 1011       |

## TEST SPECIFICATIONS

## RESULTS

|                 | Actual Values         |              | Target Values         |              | Deviation (%)         |              |
|-----------------|-----------------------|--------------|-----------------------|--------------|-----------------------|--------------|
| Frequency (MHz) | Relative Permittivity | Conductivity | Relative Permittivity | Conductivity | Relative Permittivity | Conductivity |
| 2450            | 51.3                  | 2.005        | 52.7                  | 1.95         | 2.66                  | -2.82        |

| Frequency (MHz) | Relative Permittivity | Conductivity |
|-----------------|-----------------------|--------------|
| 1900            | 53.1                  | 5.129        |
| 1925            | 56.8                  | 1.075        |
| 1950            | 56.9                  | 0.971        |
| 1975            | 56.8                  | 0.972        |
| 2000            | 56.6                  | 1.011        |
| 2025            | 56.3                  | 1.072        |
| 2050            | 56.2                  | 1.125        |
| 2100            | 55.7                  | 1.234        |
| 2125            | 55.3                  | 1.3          |
| 2150            | 55                    | 1.362        |
| 2175            | 54.8                  | 1.422        |
| 2200            | 54.5                  | 1.476        |
| 2225            | 54.1                  | 1.537        |
| 2250            | 53.8                  | 1.589        |
| 2300            | 53.2                  | 1.701        |
| 2325            | 52.9                  | 1.75         |
| 2350            | 52.5                  | 1.797        |
| 2375            | 52.1                  | 1.846        |
| 2400            | 51.9                  | 1.898        |
| 2425            | 51.6                  | 1.954        |
| 2450            | 51.3                  | 2.005        |
| 2500            | 50.6                  | 2.1          |
| 2525            | 50.2                  | 2.143        |
| 2550            | 49.9                  | 2.186        |
| 2575            | 49.6                  | 2.23         |
| 2600            | 49.3                  | 2.272        |
| 2625            | 49                    | 2.314        |
| 2675            | 48.3                  | 2.387        |
| 2700            | 48                    | 2.421        |

|                   |                                   |                     |            |
|-------------------|-----------------------------------|---------------------|------------|
| Tissue:           | Head                              | Work Order:         | ITRM0333   |
| Serial Number:    | SAL                               | Date:               | 12-26-2012 |
| Customer:         | Intermec Technologies Corporation | Temperature:        | 22.5°C     |
| Customer Project: | None                              | Liquid Temperature: | 21.1°C     |
| Tested By:        | Ethan Schoonover                  | Relative Humidity:  | 37.0       |
| Job Site:         | EV08                              | Bar. Pressure:      | 1011       |

## TEST SPECIFICATIONS

## RESULTS

|                 | Actual Values         |              | Target Values         |              | Deviation (%)         |              |
|-----------------|-----------------------|--------------|-----------------------|--------------|-----------------------|--------------|
| Frequency (MHz) | Relative Permittivity | Conductivity | Relative Permittivity | Conductivity | Relative Permittivity | Conductivity |
| 2450            | 38.9                  | 1.881        | 39.2                  | 1.8          | 0.77                  | -4.5         |

| Frequency (MHz) | Relative Permittivity | Conductivity |
|-----------------|-----------------------|--------------|
| 1900            | 43.6                  | 3.055        |
| 1925            | 46.4                  | 0.819        |
| 1950            | 46.3                  | 0.806        |
| 1975            | 46.1                  | 0.851        |
| 2000            | 45.9                  | 0.912        |
| 2025            | 45.6                  | 0.979        |
| 2050            | 45.2                  | 1.048        |
| 2100            | 44.5                  | 1.185        |
| 2125            | 44.1                  | 1.253        |
| 2150            | 43.7                  | 1.313        |
| 2175            | 43.3                  | 1.373        |
| 2200            | 42.9                  | 1.429        |
| 2225            | 42.4                  | 1.488        |
| 2250            | 42                    | 1.537        |
| 2300            | 41.2                  | 1.637        |
| 2325            | 40.7                  | 1.682        |
| 2350            | 40.3                  | 1.72         |
| 2375            | 39.9                  | 1.758        |
| 2400            | 39.6                  | 1.795        |
| 2425            | 39.3                  | 1.838        |
| 2450            | 38.9                  | 1.881        |
| 2500            | 38.2                  | 1.954        |
| 2525            | 37.8                  | 1.986        |
| 2550            | 37.5                  | 2.019        |
| 2575            | 37.1                  | 2.054        |
| 2600            | 36.8                  | 2.089        |
| 2625            | 36.4                  | 2.119        |
| 2675            | 35.8                  | 2.172        |
| 2700            | 35.4                  | 2.196        |

|                   |                                   |                     |            |
|-------------------|-----------------------------------|---------------------|------------|
| Tissue:           | Body                              | Work Order:         | ITRM0333   |
| Serial Number:    | SAV                               | Date:               | 12-27-2012 |
| Customer:         | Intermec Technologies Corporation | Temperature:        | 23.1°C     |
| Customer Project: | None                              | Liquid Temperature: | 22.6°C     |
| Tested By:        | Ethan Schoonover                  | Relative Humidity:  | 34.3       |
| Job Site:         | EV08                              | Bar. Pressure:      | 1019       |

## TEST SPECIFICATIONS

## RESULTS

|                 | Actual Values         |              | Target Values         |              | Deviation (%)         |              |
|-----------------|-----------------------|--------------|-----------------------|--------------|-----------------------|--------------|
| Frequency (MHz) | Relative Permittivity | Conductivity | Relative Permittivity | Conductivity | Relative Permittivity | Conductivity |
| 5800            | 46.2                  | 6.166        | 48.2                  | 6            | 4.15                  | -2.77        |

| Frequency (MHz) | Relative Permittivity | Conductivity |
|-----------------|-----------------------|--------------|
| 3400            | 50.1                  | 3.246        |
| 3500            | 50                    | 3.35         |
| 3600            | 49.9                  | 3.456        |
| 3700            | 49.8                  | 3.569        |
| 3900            | 49.5                  | 3.779        |
| 4000            | 49.4                  | 3.889        |
| 4100            | 49.1                  | 3.997        |
| 4300            | 48.8                  | 4.241        |
| 4400            | 48.8                  | 4.365        |
| 4500            | 48.6                  | 4.49         |
| 4600            | 48.4                  | 4.622        |
| 4800            | 48.1                  | 4.883        |
| 4850            | 48                    | 4.938        |
| 4900            | 47.9                  | 5            |
| 5000            | 47.7                  | 5.128        |
| 5050            | 47.6                  | 5.194        |
| 5100            | 47.4                  | 5.257        |
| 5200            | 47.3                  | 5.383        |
| 5250            | 47.2                  | 5.439        |
| 5300            | 47.1                  | 5.502        |
| 5350            | 47                    | 5.572        |
| 5450            | 46.8                  | 5.705        |
| 5500            | 46.8                  | 5.771        |
| 5550            | 46.7                  | 5.836        |
| 5650            | 46.5                  | 5.963        |
| 5700            | 46.4                  | 6.026        |
| 5750            | 46.3                  | 6.083        |
| 5800            | 46.2                  | 6.166        |
| 5850            | 46.1                  | 6.243        |
| 5900            | 46.1                  | 6.321        |

|                   |                                   |                     |          |
|-------------------|-----------------------------------|---------------------|----------|
| Tissue:           | Head                              | Work Order:         | ITRM0333 |
| Serial Number:    | SAU                               | Date:               | 1-2-2012 |
| Customer:         | Intermec Technologies Corporation | Temperature:        | 23.8°C   |
| Customer Project: | None                              | Liquid Temperature: | 21.0°C   |
| Tested By:        | Ethan Schoonover                  | Relative Humidity:  | 23.0     |
| Job Site:         | EV08                              | Bar. Pressure:      | 1027     |

## TEST SPECIFICATIONS

## RESULTS

|                 | Actual Values         |              | Target Values         |              | Deviation (%)         |              |
|-----------------|-----------------------|--------------|-----------------------|--------------|-----------------------|--------------|
| Frequency (MHz) | Relative Permittivity | Conductivity | Relative Permittivity | Conductivity | Relative Permittivity | Conductivity |
| 5800            | 35.3                  | 5.261        | 35.3                  | 5.27         | 0                     | 0.17         |

| Frequency (MHz) | Relative Permittivity | Conductivity |
|-----------------|-----------------------|--------------|
| 3400            | 38.6                  | 2.831        |
| 3450            | 38.6                  | 2.874        |
| 3550            | 38.5                  | 2.956        |
| 3650            | 38.3                  | 3.038        |
| 3750            | 38.2                  | 3.122        |
| 3850            | 38.2                  | 3.207        |
| 3900            | 38.1                  | 3.25         |
| 4000            | 38                    | 3.342        |
| 4100            | 37.9                  | 3.438        |
| 4200            | 37.8                  | 3.539        |
| 4300            | 37.7                  | 3.639        |
| 4350            | 37.6                  | 3.691        |
| 4450            | 37.5                  | 3.796        |
| 4550            | 37.3                  | 3.9          |
| 4650            | 37.2                  | 4.004        |
| 4750            | 37                    | 4.111        |
| 4850            | 36.9                  | 4.224        |
| 4900            | 36.8                  | 4.277        |
| 5000            | 36.6                  | 4.389        |
| 5100            | 36.5                  | 4.499        |
| 5200            | 36.3                  | 4.604        |
| 5300            | 36.1                  | 4.711        |
| 5350            | 36.1                  | 4.763        |
| 5450            | 35.9                  | 4.872        |
| 5550            | 35.7                  | 4.984        |
| 5650            | 35.6                  | 5.097        |
| 5750            | 35.4                  | 5.207        |
| 5800            | 35.3                  | 5.261        |
| 5850            | 35.2                  | 5.32         |
| 5900            | 35.2                  | 5.376        |

## REQUIREMENT

Per IEEE 1528, Section 8.2.1, "System checks are performed prior to compliance tests and the results must always be within  $\pm 10\%$  of the target value corresponding to the test frequency, liquid, and the source used. The target values are 1 g or 10 g averaged SAR values measured on systems having current system validation and calibration status, and using the system check setup as shown in Figure 14. These target values should be determined using a standard source."

## TEST DESCRIPTION

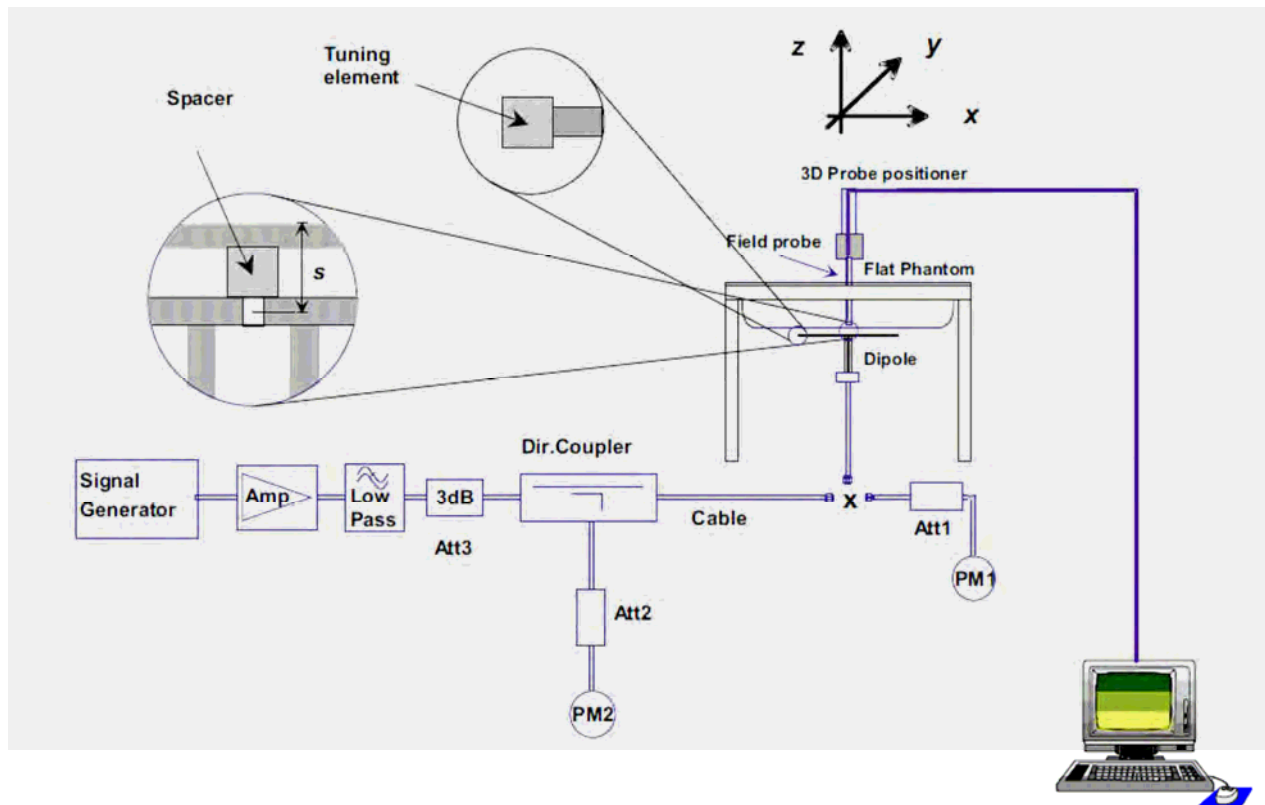
Within 24 hours of a measurement, then every 72 hours thereafter, Northwest EMC used the system validation kit (calibrated reference dipole) to test whether the system was operating within its specifications. The validation was performed in the indicated bands by making SAR measurements of the reference dipole with the phantom filled with the tissue-equivalent liquid. First, a signal generator and power amplifier were used to produce a 100mW level as measured with a power meter at the antenna terminals of the dipole. Then, the reference dipole was positioned below the bottom of the phantom and centered with its axis parallel to the longest side of the phantom. A low loss and low relative permittivity spacer was used to establish the correct distance between the center axis of the reference dipole and the liquid.

For the reference dipoles, the spacing distance  $s$  is given by:

$s = 15\text{mm}$ ,  $\pm 0.2\text{mm}$  for  $300\text{MHz} \leq f \leq 1000 \text{ MHz}$ :

$s = 10\text{mm}$ ,  $\pm 0.2\text{mm}$  for  $1000\text{MHz} \leq f \leq 6000\text{MHz}$

The measured 1 g and 10 g spatial average SAR values were normalized to a 1W dipole input power for comparison to the calibration data. The results are summarized in the attached table. The deviation is less than 10% in all cases, indicating that the system performance check was within tolerance.



|            |                                   |                   |          |
|------------|-----------------------------------|-------------------|----------|
| EUT:       | 1001CP01F9                        | Work Order:       | ITRM0333 |
| Customer:  | Intermec Technologies Corporation | Job Site:         | EV08     |
| Attendees: | None                              | Customer Project: | None     |

## TEST SPECIFICATIONS

### COMMENTS

None

### DEVIATIONS FROM TEST STANDARD

None

## RESULTS

| Date       | Liquid part number and frequency | Conducted Power into the Dipole (dBm) | Correction Factor | Measured |       | Normalized to 1W |       | Target<br>(Normalized to 1W)<br>Get from Dipole Calibration Certificate |      | % Difference |       |
|------------|----------------------------------|---------------------------------------|-------------------|----------|-------|------------------|-------|-------------------------------------------------------------------------|------|--------------|-------|
|            |                                  |                                       |                   | 1g       | 10g   | 1g               | 10g   | 1g                                                                      | 10g  | 1g           | 10g   |
| 12/18/2012 | HSL 900                          | 19.98                                 | 10.05             | 1.08     | 0.698 | 10.85            | 7.01  | 10.7                                                                    | 6.97 | 1.4          | 0.57  |
| 12/21/2012 | MSL 900                          | 20.00                                 | 10.00             | 1.12     | 0.718 | 11.2             | 7.18  | 10.9                                                                    | 7.04 | 2.75         | 1.99  |
| 12/21/2012 | MSL 2450                         | 19.95                                 | 10.12             | 4.71     | 2.17  | 47.67            | 21.96 | 50.4                                                                    | 23.7 | -5.42        | -7.34 |
| 12/26/2012 | MSL 2450                         | 13.75                                 | 42.17             | 1.18     | 0.542 | 49.76            | 22.86 | 50.4                                                                    | 23.7 | -1.27        | -3.54 |
| 12/26/2012 | HSL 2450                         | 20.00                                 | 10.00             | 5.31     | 2.44  | 53.1             | 24.4  | 53.9                                                                    | 25.3 | -1.48        | -3.56 |
| 12/28/2012 | MSL 501                          | 19.98                                 | 10.05             | 7.84     | 2.23  | 78.79            | 22.41 | 76.5                                                                    | 21.6 | 2.99         | 3.75  |
| 12/28/2012 | MSL 501                          | 20.00                                 | 10.00             | 8.37     | 2.35  | 83.7             | 23.5  | 83.3                                                                    | 23.4 | 0.48         | 0.43  |
| 12/28/2012 | MSL 501                          | 19.98                                 | 10.05             | 7.11     | 2     | 71.46            | 20.1  | 78                                                                      | 21.9 | -8.38        | -8.22 |
| 1/2/2013   | HSL 501                          | 19.9                                  | 10.23             | 7.75     | 2.24  | 79.28            | 22.92 | 85.3                                                                    | 24.1 | -7.06        | -4.9  |
| 1/8/2013   | HSL 501                          | 19.96                                 | 10.09             | 7.81     | 2.27  | 78.8             | 22.9  | 76.5                                                                    | 21.6 | 3.01         | 6.02  |
| 1/8/2013   | HSL 501                          | 20.01                                 | 9.98              | 8.7      | 2.5   | 86.83            | 24.95 | 83.3                                                                    | 23.4 | 4.24         | 6.62  |
| 1/8/2013   | HSL 501                          | 19.97                                 | 10.07             | 8.61     | 2.47  | 86.7             | 24.87 | 81.3                                                                    | 23.2 | 6.64         | 7.2   |
| 1/8/2013   | HSL 900                          | 20.00                                 | 10.00             | 1.05     | 0.681 | 10.5             | 6.81  | 10.7                                                                    | 6.97 | -1.87        | -2.3  |
|            |                                  |                                       |                   |          |       |                  |       |                                                                         |      |              |       |

|                |                  |                          |         |
|----------------|------------------|--------------------------|---------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 20.8°C  |
| Date:          | 12/18/2012       | Liquid Temperature (°C): | 20.6°C  |
| Serial Number: | ADP              | Humidity (%RH):          | 38%     |
| Configuration: | N/A              | Bar. Pressure (mb):      | 1017 mb |
| Comments:      | None             |                          |         |

## HSL900 System Check\_900MHz 12-18-12

**DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:ADP**

Communication System: CW; Communication System Band: D900 (900.0 MHz); Frequency: 900 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $f = 900 \text{ MHz}$ ;  $\sigma = 0.929 \text{ mho/m}$ ;  $\epsilon_r = 39.591$ ;  $\rho = 1000 \text{ kg/m}^3$ , Medium parameters used:  $\sigma = 0 \text{ mho/m}$ ,  $\epsilon_r = 1$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**System Check/System Check/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 34.453 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 1.64 W/kg

**SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.698 W/kg**

Maximum value of SAR (measured) = 1.08 W/kg

**System Check/System Check/Area Scan (71x101x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 1.08 W/kg

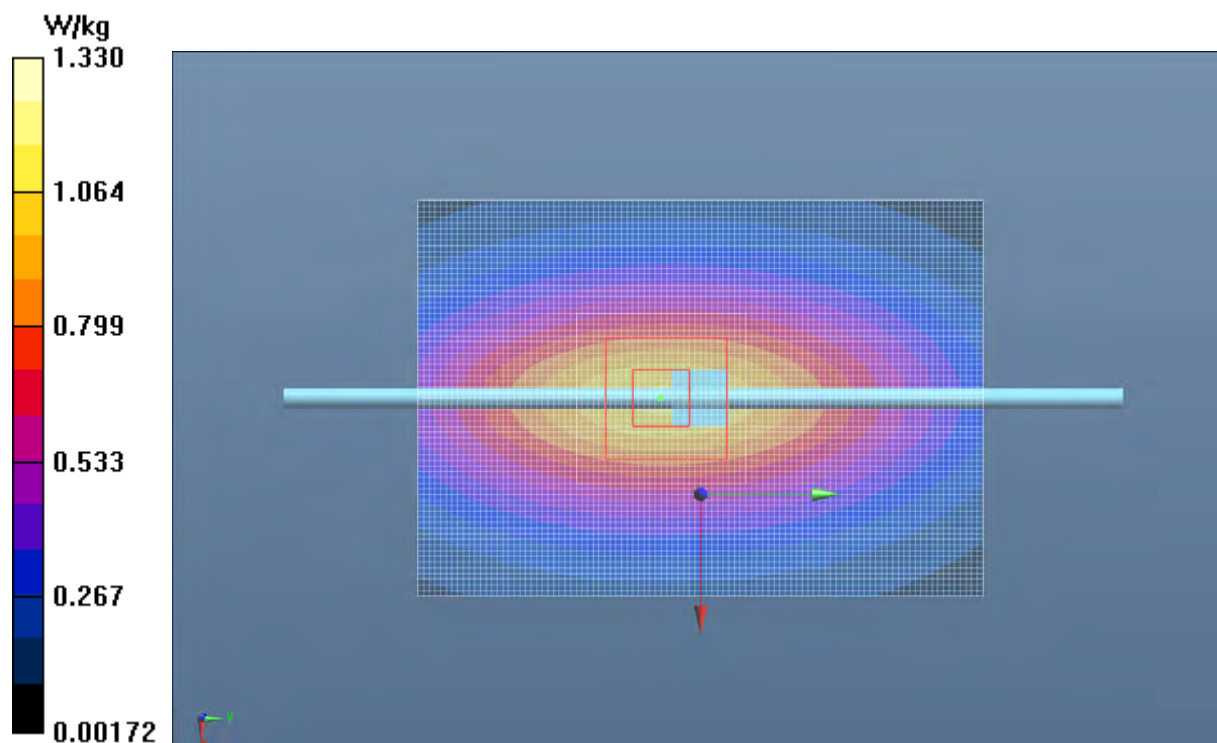
**System Check/System Check/Z Scan (1x1x21):** Measurement grid:  $dx=20\text{mm}$ ,  $dy=20\text{mm}$ ,  $dz=5\text{mm}$

Maximum value of Total (measured) = 37.88 V/m

Maximum value of SAR (measured) = 1.33 W/kg

   
Approved By

HSL900 System Check\_900MHz 12-18-12



|                |                  |                          |         |
|----------------|------------------|--------------------------|---------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 22.8°C  |
| Date:          | 12/21/2012       | Liquid Temperature (°C): | 21.3°C  |
| Serial Number: | ADP              | Humidity (%RH):          | 38%     |
| Configuration: | N/A              | Bar. Pressure (mb):      | 1007 mb |
| Comments:      | None             |                          |         |

## MSL900 System Check\_900MHz 12-21-12

**DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:ADP**

Communication System: CW; Communication System Band: D900 (900.0 MHz); Frequency: 900 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $f = 900$  MHz;  $\sigma = 1.065$  mho/m;  $\epsilon_r = 52.757$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**System Check/System Check/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 33.41 V/m

**System Check/System Check/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 31.674 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.69 W/kg

**SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.718 W/kg**

Maximum value of SAR (measured) = 1.12 W/kg

**System Check/System Check/Area Scan (71x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

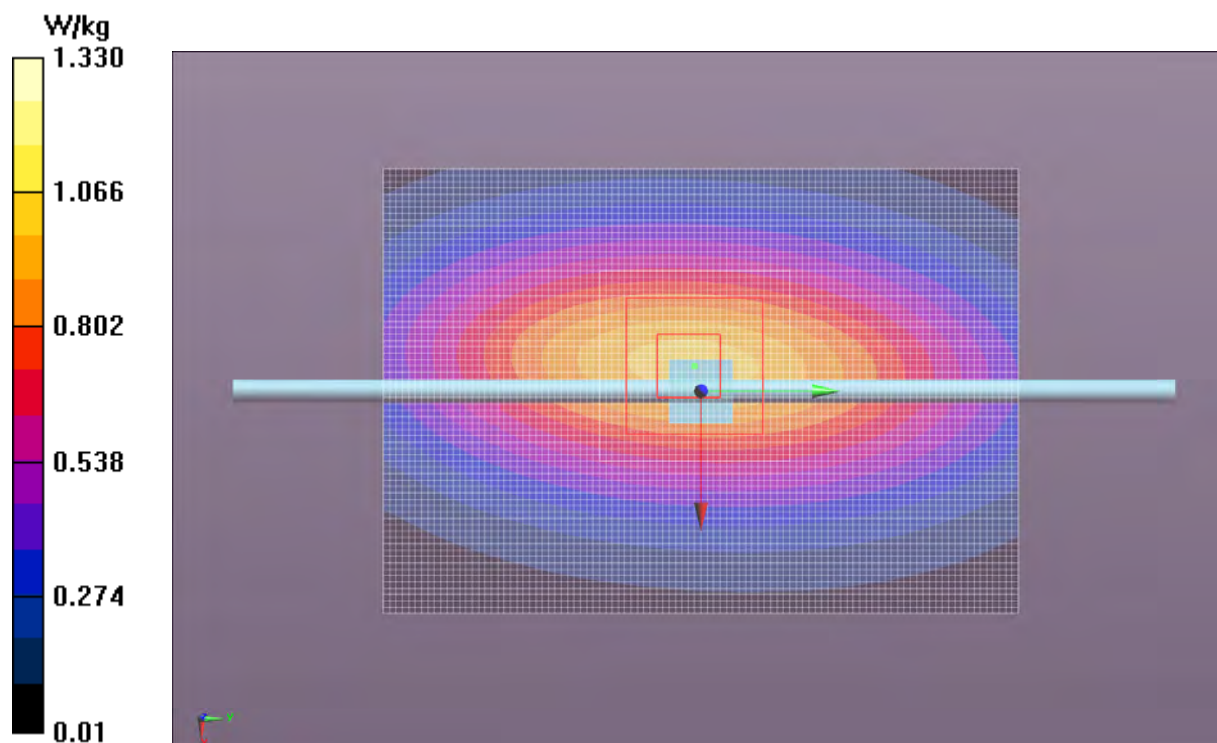
Maximum value of SAR (interpolated) = 1.12 W/kg

Maximum value of SAR (measured) = 1.19 W/kg



Approved By

MSL900 System Check\_900MHz 12-21-12



|                |                  |                          |         |
|----------------|------------------|--------------------------|---------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 23°C    |
| Date:          | 12/21/2012       | Liquid Temperature (°C): | 21.8°C  |
| Serial Number: | ADL              | Humidity (%RH):          | 35%     |
| Configuration: | N/A              | Bar. Pressure (mb):      | 1007 mb |
| Comments:      | None             |                          |         |

## MSL2450 2450 12-21-12

**DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN:ADL**

Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Frequency: 2450 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.957$  mho/m;  $\epsilon_r = 50.358$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**System Check/System Check/Area Scan (51x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 5.08 W/kg

**System Check/System Check/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 58.39 V/m

**System Check/System Check/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 47.898 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 9.63 W/kg

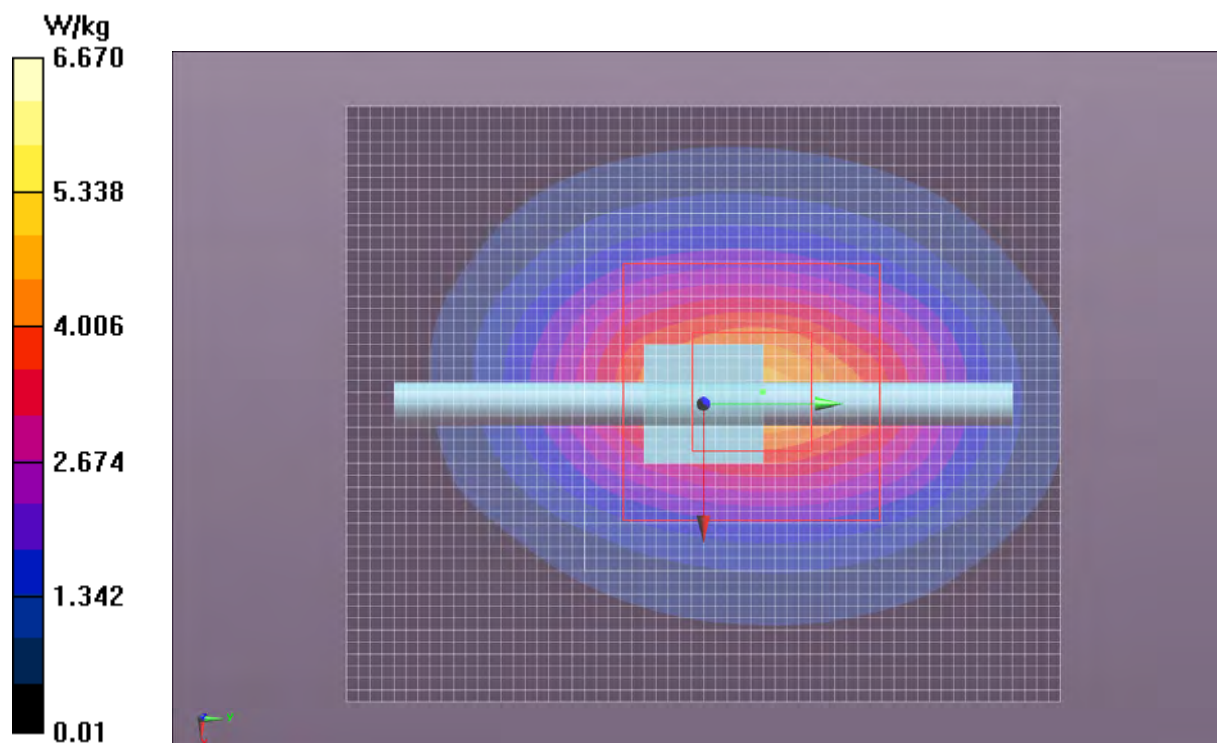
**SAR(1 g) = 4.71 W/kg; SAR(10 g) = 2.17 W/kg**

Maximum value of SAR (measured) = 4.72 W/kg

Maximum value of SAR (measured) = 6.67 W/kg

   
Approved By

MSL2450 2450 12-21-12



|                |                  |                          |         |
|----------------|------------------|--------------------------|---------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 23.2°C  |
| Date:          | 12/26/2012       | Liquid Temperature (°C): | 22.5°C  |
| Serial Number: | ADL              | Humidity (%RH):          | 41.4%   |
| Configuration: | N/A              | Bar. Pressure (mb):      | 1011 mb |
| Comments:      | None             |                          |         |

## HSL2450 2450 12-26-12

**DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: SN:ADL**

Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Frequency: 2450 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.884$  mho/m;  $\epsilon_r = 38.543$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**System Check/System Check/Area Scan (51x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 5.29 W/kg

**System Check/System Check/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 73.78 V/m

**System Check/System Check/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 50.845 V/m; Power Drift = -0.03 dB

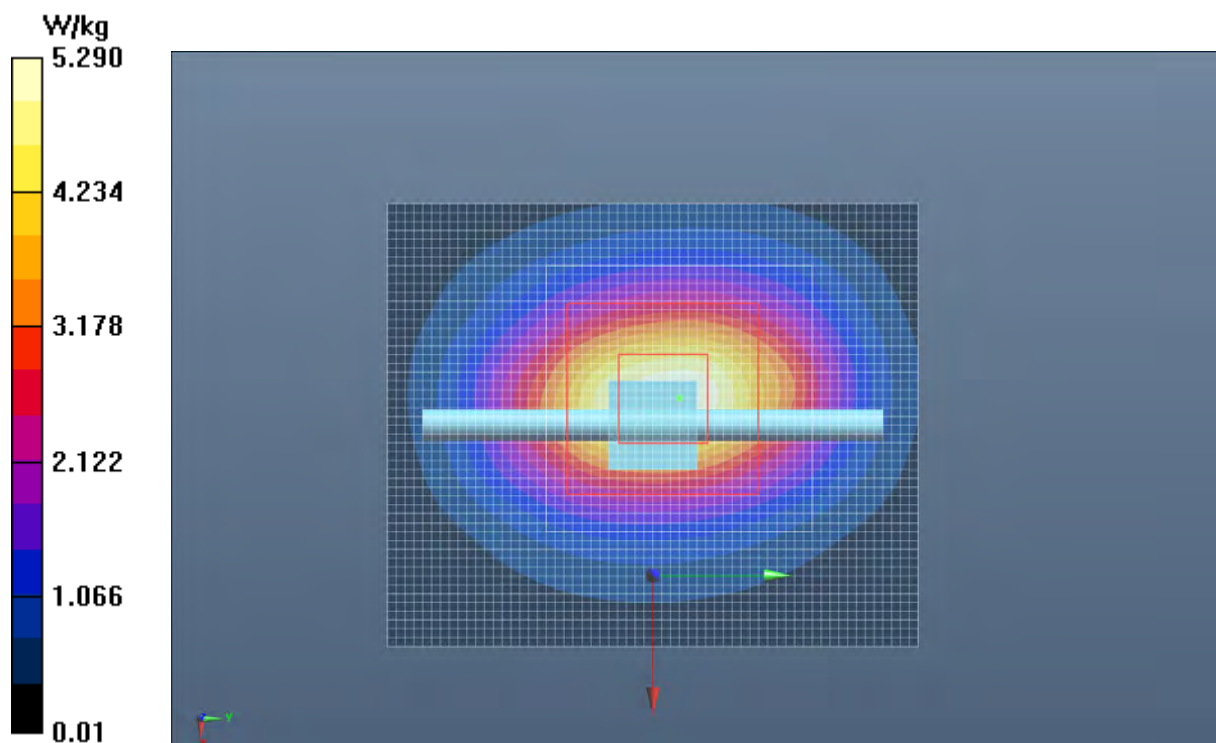
Peak SAR (extrapolated) = 11.4 W/kg

**SAR(1 g) = 5.31 W/kg; SAR(10 g) = 2.44 W/kg**

Maximum value of SAR (measured) = 5.16 W/kg

   
Approved By

HSL2450 2450 12-26-12



|                |                  |                          |         |
|----------------|------------------|--------------------------|---------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 23°C    |
| Date:          | 12/26/2012       | Liquid Temperature (°C): | 22.1°C  |
| Serial Number: | ADL              | Humidity (%RH):          | 39.6%   |
| Configuration: | N/A              | Bar. Pressure (mb):      | 1011 mb |
| Comments:      | None             |                          |         |

## MSL2450 2450 12-26-12

**DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN:ADL**

Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Frequency: 2450 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.957$  mho/m;  $\epsilon_r = 50.358$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**System Check/System Check/Area Scan (51x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.19 W/kg

**System Check/System Check/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 34.00 V/m

**System Check/System Check/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 23.775 V/m; Power Drift = -0.01 dB

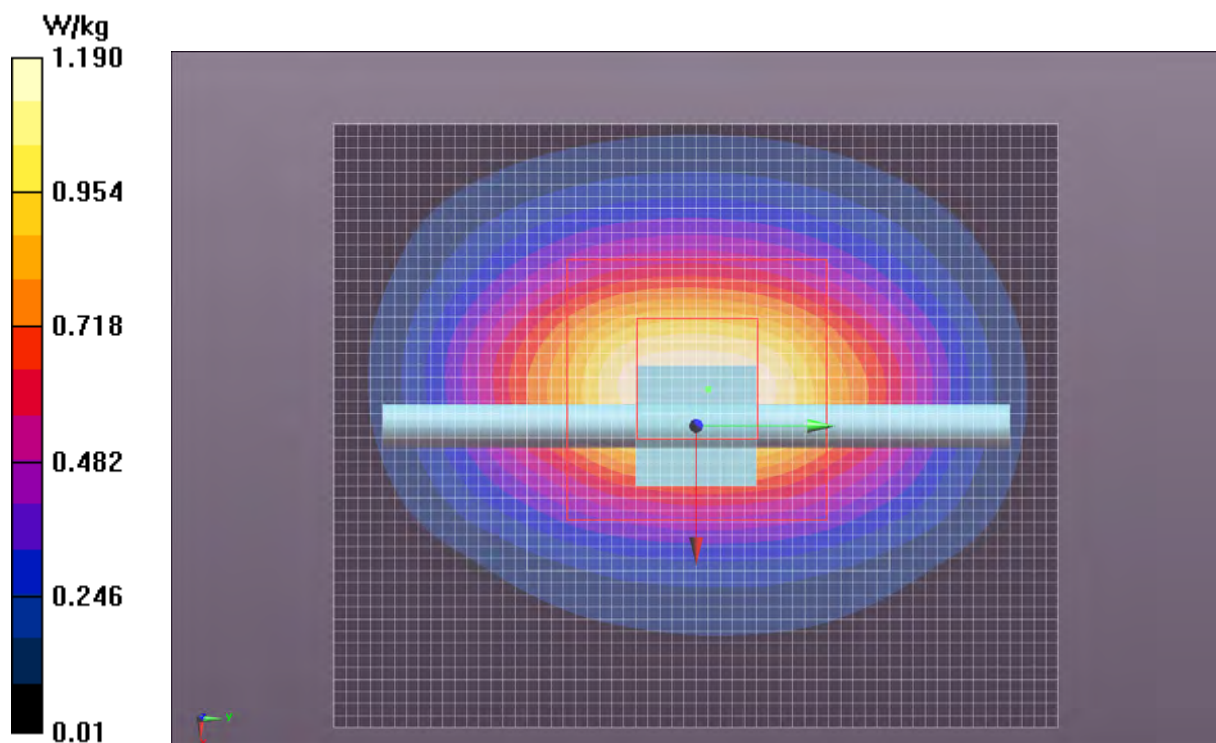
Peak SAR (extrapolated) = 2.43 W/kg

**SAR(1 g) = 1.18 W/kg; SAR(10 g) = 0.542 W/kg**

Maximum value of SAR (measured) = 1.18 W/kg

   
Approved By

MSL2450 2450 12-26-12



|                |                  |                          |         |
|----------------|------------------|--------------------------|---------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 23.2°C  |
| Date:          | 12/28/2012       | Liquid Temperature (°C): | 22.7°C  |
| Serial Number: | ADM              | Humidity (%RH):          | 32%     |
| Configuration: | N/A              | Bar. Pressure (mb):      | 1021 mb |
| Comments:      | None             |                          |         |

## MSL501 5200 12-28-12

**DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:ADM**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5200 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $f = 5200$  MHz;  $\sigma = 5.383$  mho/m;  $\epsilon_r = 47.336$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**System Check/System Check - Low Channel/Zoom Scan (7x9x7) (7x7x9)/Cube 0:** Measurement grid:

$dx=4$ mm,  $dy=4$ mm,  $dz=2.5$ mm

Reference Value = 55.546 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 30.7 W/kg

**SAR(1 g) = 7.84 W/kg; SAR(10 g) = 2.23 W/kg**

Maximum value of SAR (measured) = 16.4 W/kg

**System Check/System Check - Low Channel/Area Scan (51x61x1):** Interpolated grid:  $dx=1.000$  mm,  $dy=1.000$  mm

Maximum value of SAR (interpolated) = 16.5 W/kg

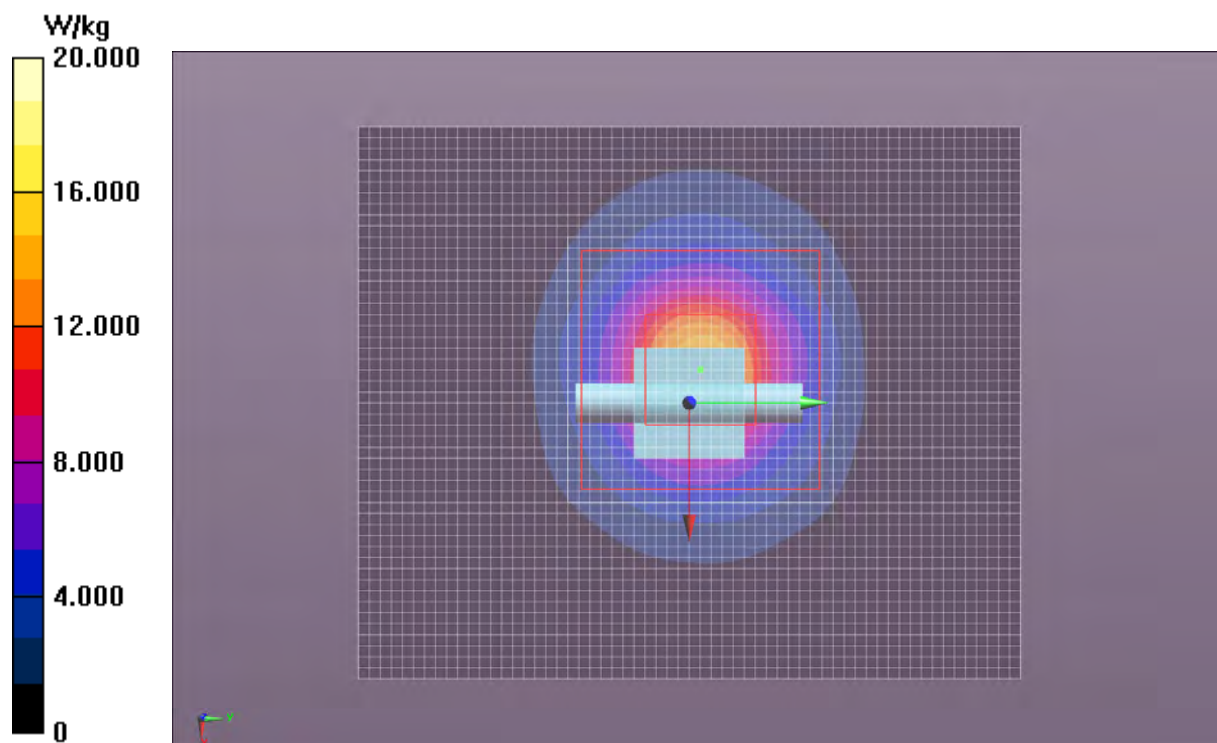
**System Check/System Check - Low Channel/Z Scan (1x1x21):** Measurement grid:  $dx=20$ mm,  $dy=20$ mm,  $dz=5$ mm

Maximum value of Total (measured) = 24.97 V/m

Maximum value of SAR (measured) = 3.36 W/kg

   
Approved By

MSL501 5200 12-28-12



|                |                  |                          |         |
|----------------|------------------|--------------------------|---------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 23.2°C  |
| Date:          | 12/28/2012       | Liquid Temperature (°C): | 22.7°C  |
| Serial Number: | ADM              | Humidity (%RH):          | 32%     |
| Configuration: | N/A              | Bar. Pressure (mb):      | 1021 mb |
| Comments:      | None             |                          |         |

## MSL501 5500 12-28-12

**DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:ADM**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5500 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $f = 5500$  MHz;  $\sigma = 5.771$  mho/m;  $\epsilon_r = 46.799$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**System Check/System Check - Mid Channel/Area Scan (51x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 18.2 W/kg

**System Check/System Check - Mid Channel/Zoom Scan (7x9x7) (7x7x9)/Cube 0:** Measurement grid:

dx=4mm, dy=4mm, dz=2.5mm

Reference Value = 56.912 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 34.1 W/kg

**SAR(1 g) = 8.37 W/kg; SAR(10 g) = 2.35 W/kg**

Maximum value of SAR (measured) = 17.9 W/kg

**System Check/System Check - Mid Channel/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

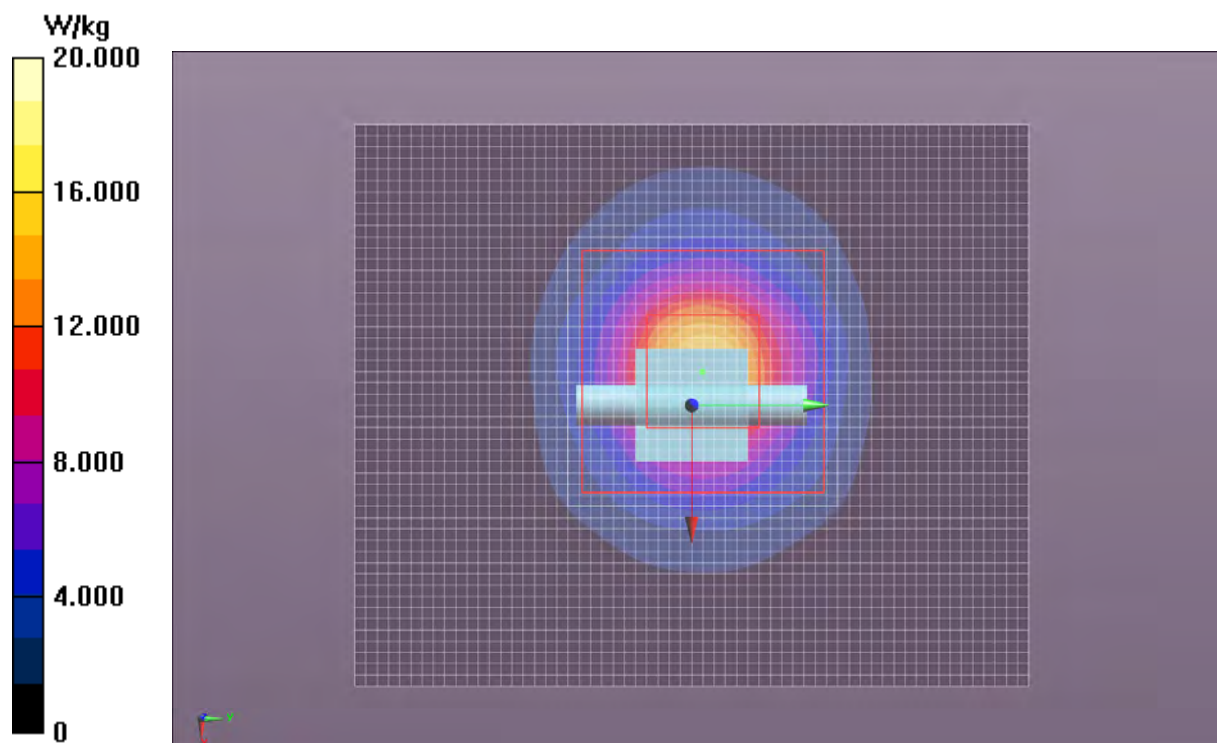
Maximum value of Total (measured) = 24.26 V/m

Maximum value of SAR (measured) = 3.40 W/kg

Approved By

MSL501 5500 12-28-12



|                |                  |                          |         |
|----------------|------------------|--------------------------|---------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 23.2°C  |
| Date:          | 12/28/2012       | Liquid Temperature (°C): | 22.7°C  |
| Serial Number: | ADM              | Humidity (%RH):          | 32%     |
| Configuration: | N/A              | Bar. Pressure (mb):      | 1021 mb |
| Comments:      | None             |                          |         |

## MSL501 5800 12-28-12

**DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:ADM**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5800 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $f = 5800$  MHz;  $\sigma = 6.166$  mho/m;  $\epsilon_r = 46.183$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**System Check/System Check - High Channel/Area Scan (51x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 15.4 W/kg

**System Check/System Check - High Channel/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 41.81 V/m

**System Check/System Check - High Channel/Zoom Scan (7x9x7) (7x7x9)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2.5mm

Reference Value = 41.369 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 31.0 W/kg

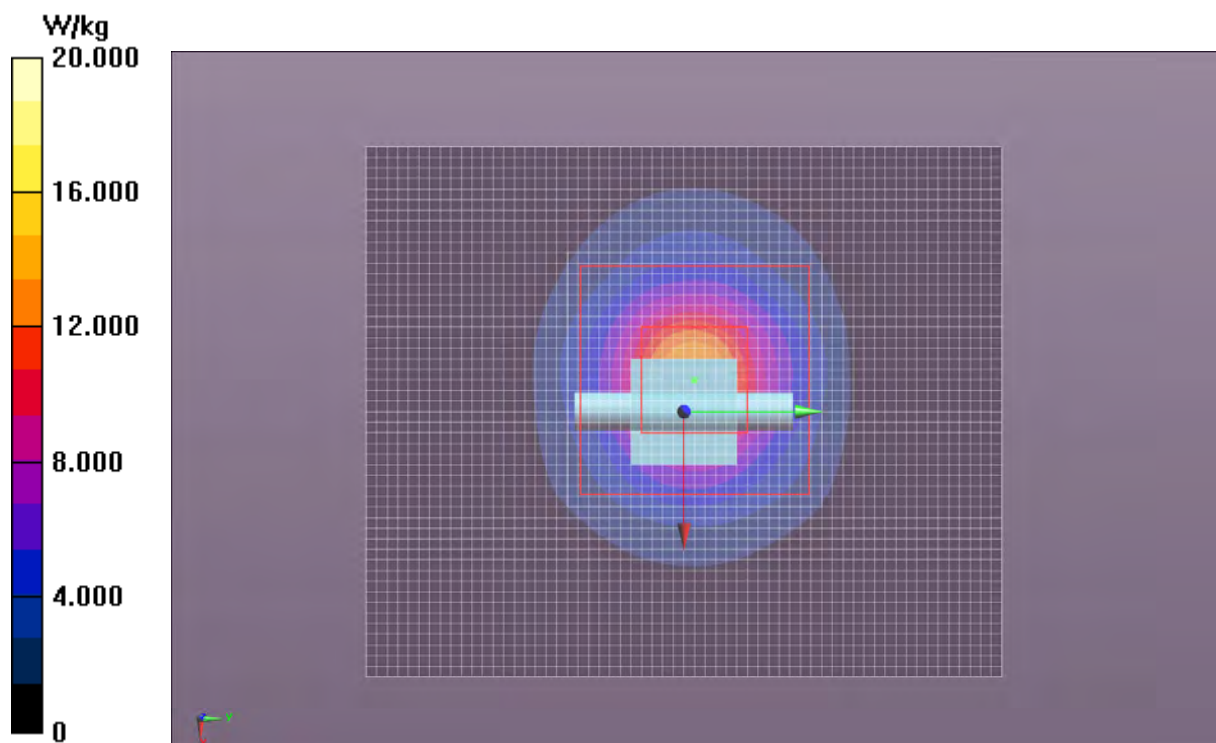
**SAR(1 g) = 7.11 W/kg; SAR(10 g) = 2 W/kg**

Maximum value of SAR (measured) = 15.6 W/kg

Maximum value of SAR (measured) = 10.8 W/kg

   
Approved By

MSL501 5800 12-28-12



|                |                  |                          |         |
|----------------|------------------|--------------------------|---------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 23.8°C  |
| Date:          | 1/2/2013         | Liquid Temperature (°C): | 21°C    |
| Serial Number: | ADM              | Humidity (%RH):          | 23%     |
| Configuration: | N/A              | Bar. Pressure (mb):      | 1027 mb |
| Comments:      | None             |                          |         |

## HSL501 5200 1-2-13

**DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:ADM**

Communication System: CW; Communication System Band: ITD5500 (5000.0 - 5900.0 MHz); Frequency: 5200 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $f = 5200$  MHz;  $\sigma = 4.603$  mho/m;  $\epsilon_r = 36.308$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**System Check/System Check - Low Channel/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 63.98 V/m

**System Check/System Check - Low Channel/Zoom Scan (8x8x9)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2.5mm

Reference Value = 60.083 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 30.8 W/kg

**SAR(1 g) = 7.75 W/kg; SAR(10 g) = 2.24 W/kg**

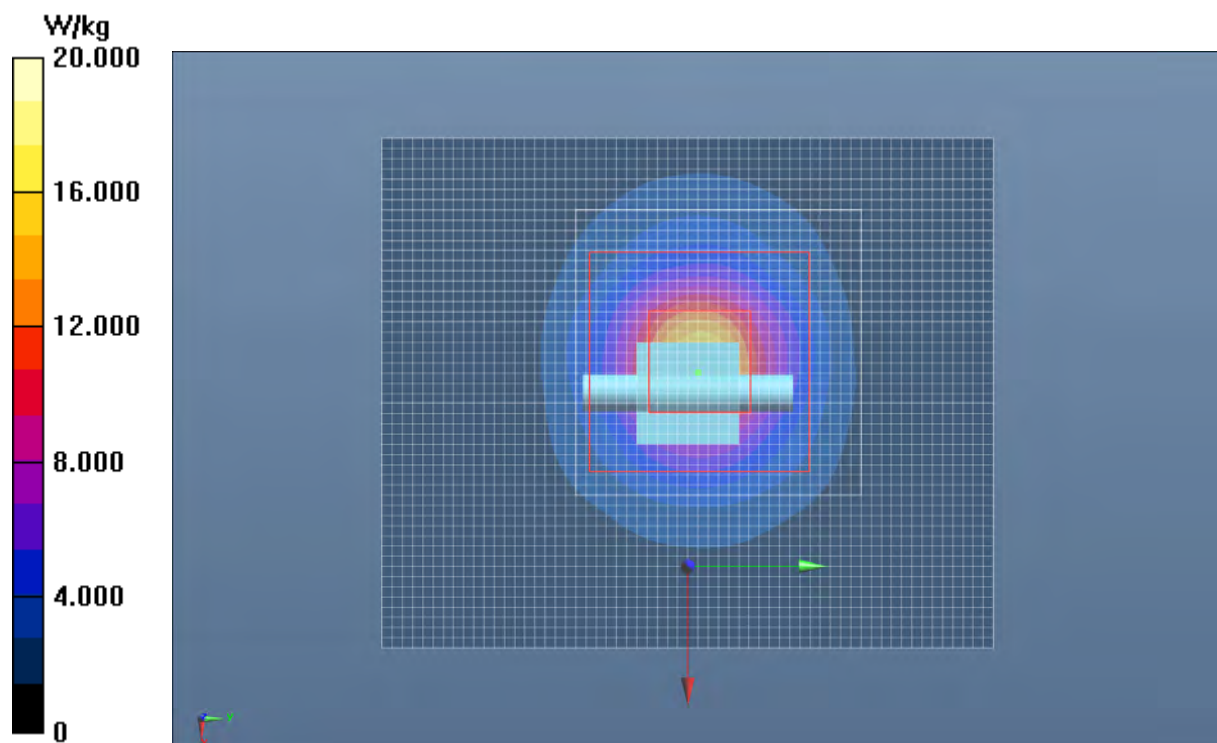
Maximum value of SAR (measured) = 16.0 W/kg

**System Check/System Check - Low Channel/Area Scan (51x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 16.6 W/kg

   
Approved By

HSL501 5200 1-2-13



|                |                  |                          |         |
|----------------|------------------|--------------------------|---------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 22.8°C  |
| Date:          | 1/8/2013         | Liquid Temperature (°C): | 21.2°C  |
| Serial Number: | ADM              | Humidity (%RH):          | 41%     |
| Configuration: | N/A              | Bar. Pressure (mb):      | 1017 mb |
| Comments:      | None             |                          |         |

## HSL501 5200 1-8-13

**DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:xxx**

Communication System: CW; Communication System Band: ITD5500 (5000.0 - 5900.0 MHz); Frequency: 5200 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $f = 5200$  MHz;  $\sigma = 4.603$  mho/m;  $\epsilon_r = 36.308$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**System Check/System Check - Low Channel/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 64.38 V/m

**System Check/System Check - Low Channel/Zoom Scan (9x9x9)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2.5mm

Reference Value = 63.316 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 31.0 W/kg

**SAR(1 g) = 7.81 W/kg; SAR(10 g) = 2.27 W/kg**

Maximum value of SAR (measured) = 16.3 W/kg

**System Check/System Check - Low Channel/Area Scan (51x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

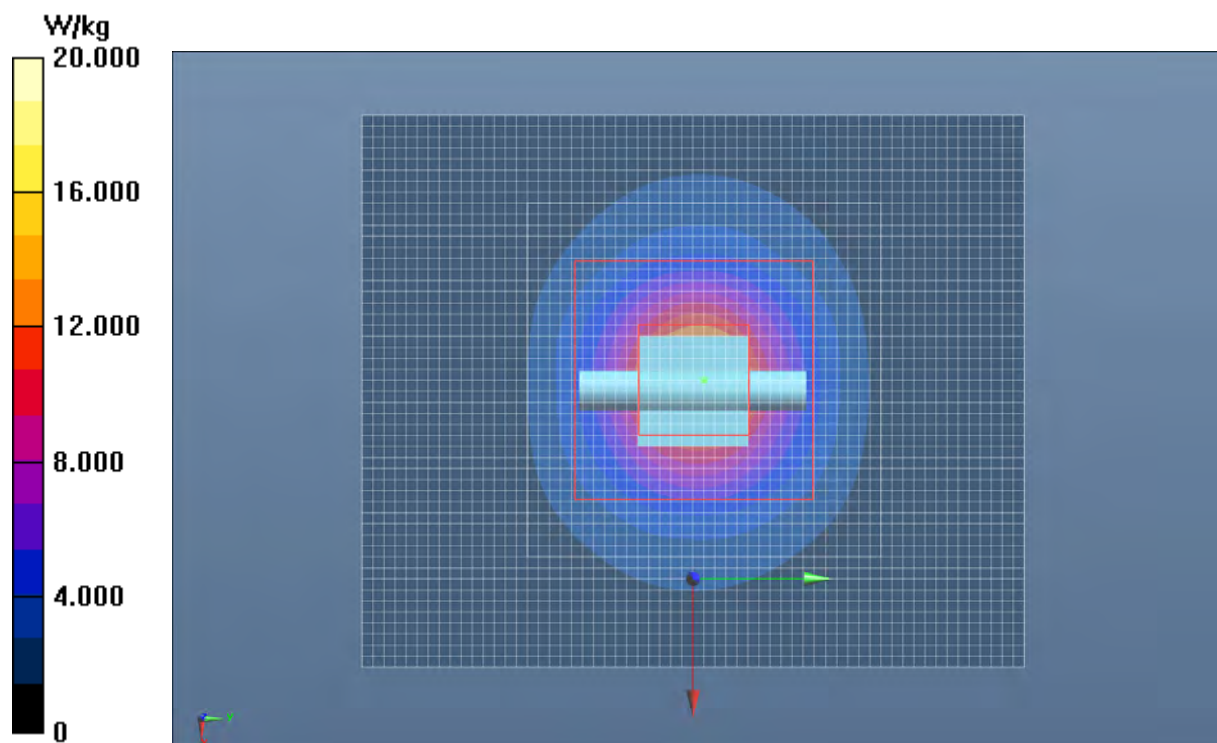
Maximum value of SAR (interpolated) = 16.8 W/kg

Maximum value of SAR (measured) = 19.1 W/kg

Approved By

HSL501 5200 1-8-13



|                |                  |                          |         |
|----------------|------------------|--------------------------|---------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 22.8°C  |
| Date:          | 1/8/2013         | Liquid Temperature (°C): | 21.2°C  |
| Serial Number: | ADM              | Humidity (%RH):          | 41%     |
| Configuration: | N/A              | Bar. Pressure (mb):      | 1017 mb |
| Comments:      | None             |                          |         |

## HSL501 5500 1-8-13

**DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:xxx**

Communication System: CW; Communication System Band: ITD5500 (5000.0 - 5900.0 MHz); Frequency: 5500 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $f = 5500$  MHz;  $\sigma = 4.929$  mho/m;  $\epsilon_r = 35.817$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**System Check/System Check - Mid Channel/Area Scan (51x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 19.5 W/kg

**System Check/System Check - Mid Channel/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 62.30 V/m

**System Check/System Check - Mid Channel/Zoom Scan (9x9x9)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2.5mm

Reference Value = 65.562 V/m; Power Drift = -0.18 dB

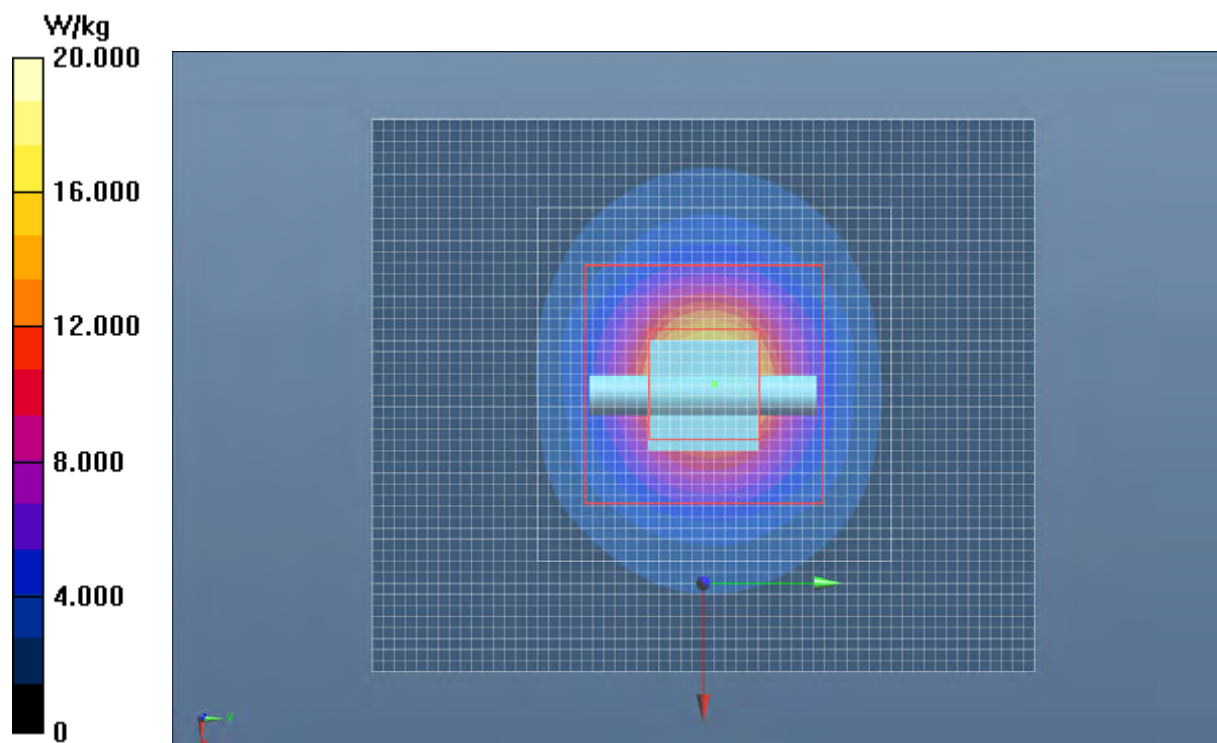
Peak SAR (extrapolated) = 37.4 W/kg

**SAR(1 g) = 8.7 W/kg; SAR(10 g) = 2.5 W/kg**

Maximum value of SAR (measured) = 18.4 W/kg

   
Approved By

HSL501 5500 1-8-13



|                |                  |                          |         |
|----------------|------------------|--------------------------|---------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 22.8°C  |
| Date:          | 1/8/2013         | Liquid Temperature (°C): | 20.7°C  |
| Serial Number: | ADM              | Humidity (%RH):          | 44%     |
| Configuration: | N/A              | Bar. Pressure (mb):      | 1017 mb |
| Comments:      | None             |                          |         |

## HSL501 5800 1-8-13, 2

**DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:xxx**

Communication System: CW; Communication System Band: ITD5500 (5000.0 - 5900.0 MHz); Frequency: 5800 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $f = 5800$  MHz;  $\sigma = 5.261$  mho/m;  $\epsilon_r = 35.318$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**System Check/System Check - High Channel/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 67.47 V/m

**System Check/System Check - High Channel/Area Scan (51x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 18.7 W/kg

**System Check/System Check - High Channel/Zoom Scan (7x7x9)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2.5mm

Reference Value = 61.621 V/m; Power Drift = -0.06 dB

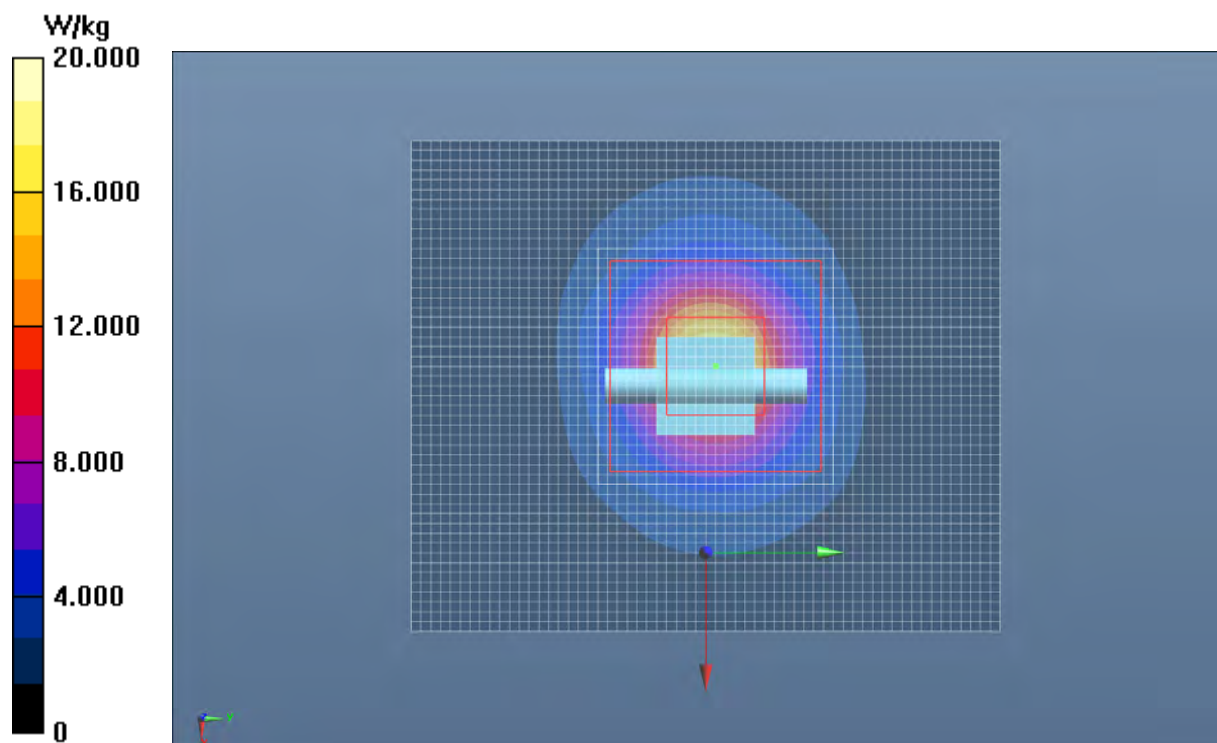
Peak SAR (extrapolated) = 38.5 W/kg

**SAR(1 g) = 8.61 W/kg; SAR(10 g) = 2.47 W/kg**

Maximum value of SAR (measured) = 18.6 W/kg

   
Approved By

HSL501 5800 1-8-13, 2



|                |                  |                          |         |
|----------------|------------------|--------------------------|---------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 23.1°C  |
| Date:          | 1/8/2013         | Liquid Temperature (°C): | 21.5°C  |
| Serial Number: | ADM              | Humidity (%RH):          | 44%     |
| Configuration: | N/A              | Bar. Pressure (mb):      | 1017 mb |
| Comments:      | None             |                          |         |

## HSL900 System Check\_900MHz 1-8-13

**DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:xxx**

Communication System: CW; Communication System Band: D900 (900.0 MHz); Frequency: 900

MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $f = 900 \text{ MHz}$ ;  $\sigma = 0.929 \text{ mho/m}$ ;  $\epsilon_r = 39.591$ ;  $\rho = 1000 \text{ kg/m}^3$ , Medium parameters used:  $\sigma = 0 \text{ mho/m}$ ,  $\epsilon_r = 1$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**System Check/System Check/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 33.813 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.58 W/kg

**SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.681 W/kg**

Maximum value of SAR (measured) = 1.05 W/kg

**System Check/System Check/Area Scan (71x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

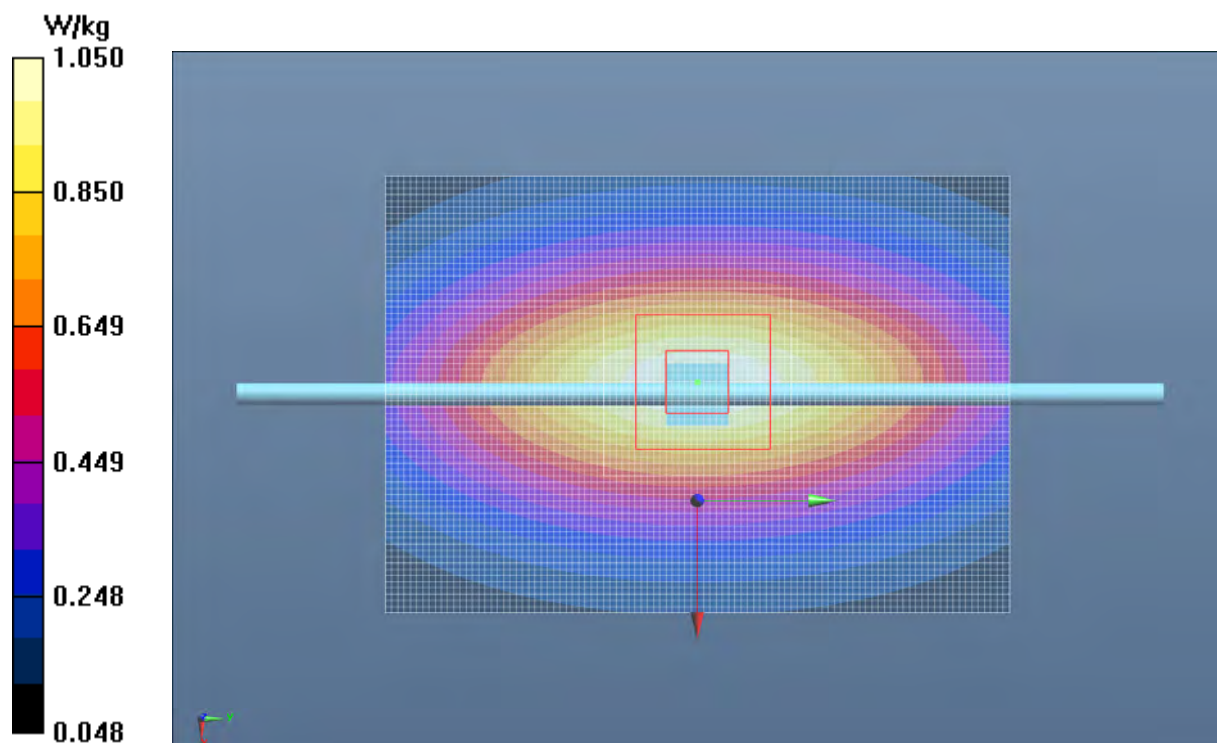
Maximum value of SAR (interpolated) = 1.05 W/kg

**System Check/System Check/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 37.40 V/m

   
Approved By

HSL900 System Check\_900MHz 1-8-13



## Test Configurations

In normal operation, the EUT can be held in the hand, or next to the head like a cellular handset, or worn on the body. The only Intermec approved accessory for body worn operation is a holster that contains metal. The EUT can only fit in the holster with the top end of the unit pointing down. The holster cup can be attached to the holster belt with either the keypad facing the user, or the side facing the user. In no case can the back of the EUT face the user.

The 802.11a/b/g/n antenna is on the right side of the handheld computer and the RFID antenna is on the left side. The holster provides a minimum spacing of 1.2 cm from any side of the EUT to the flat phantom

An optional snap-on audio accessory is available. It connects to the bottom end of the unit and provides a standard audio jack for connection of a VR10 headset. Measurements were made with the headset.

The EUT is powered by a lithium-ion battery, Model 1000AB01. It was fully charged before each SAR evaluation.

Per KDB 248227, among the channels required for normal testing, SAR must be measured on the highest conducted output channel in each band (see highlighted values in the Output Power section of this report). Where the measured SAR on the highest output channel is  $> 0.8 \text{ W/kg}$ , SAR evaluation for the other channels was performed (reference also KDB 447498 Section 4.3.3).

## Duty Factor

All testing was performed with the EUT configured in a worst – case configuration and operating mode to produce the highest SAR levels. The EUT used Intermec test software that permitted the selection of transmit channel, modulation type, and data rate. Both radio modules operated continuously at nearly 100% duty cycle at the maximum rated power.

In normal operation, the Intermec IM11 radio module is a RFID reader supporting only EPC Gen 2 (PR-ASK) operation. Dave Fry, Sr. EMC Engineer at Intermec, attests that the maximum duty cycle is 50%:

*“The IM11 module firmware always establishes a maximum 50% on/off transmitter duty cycle.”*

Per KDB 447498, Section 6.3, duty factor scaling was applied to the RFID data only. SAR was measured at 100% duty factor, then a scaling factor of 0.5 was applied to the measured SAR values.

## Summary

The following tables summarize the measured SAR values.

|            |                                   |                   |          |
|------------|-----------------------------------|-------------------|----------|
| EUT:       | 1000CP01F9                        | Work Order:       | ITRM0333 |
| Customer:  | Intermec Technologies Corporation | Job Site:         | EV08     |
| Attendees: | None                              | Customer Project: | None     |

## TEST SPECIFICATIONS

| Specification:                                        | Method:                                                                                                                                           |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| FCC 2.1093:2013<br>FCC 15.247:2013<br>FCC 15.407:2013 | FCC OET 65C:2001<br>IEEE Std 1528:2003<br>FCC KDB 447498 D01 v05<br>FCC KDB 248227 D01 V01r02<br>FCC KDB 648474 D04 V01<br>FCC 865664 D01 and D02 |

## COMMENTS

None

## DEVIATIONS FROM TEST STANDARD

None

## RESULTS

| Test Configuration | Side of Head | EUT Position | Headset | Frequency Band | Transmit Frequency (MHz) | Transmit Channel | Data Rate (Mbps) | Modulation | Power Drift During Test (dB) | Measured 1g SAR Level (mW/g) | Test # |
|--------------------|--------------|--------------|---------|----------------|--------------------------|------------------|------------------|------------|------------------------------|------------------------------|--------|
| Head               | Left         | Touch        | No      | 2.4            | 2462                     | 11               | 1                | BPSK       | 0                            | 0.162                        | 7      |
| Head               | Left         | Tilt         | No      | 2.4            | 2462                     | 11               | 1                | BPSK       | 0.13                         | 0.136                        | 8      |
| Head               | Right        | Touch        | No      | 2.4            | 2462                     | 11               | 1                | BPSK       | 0.11                         | 0.118                        | 9      |
| Head               | Right        | Tilt         | No      | 2.4            | 2462                     | 11               | 1                | BPSK       | 0.03                         | 0.137                        | 10     |

|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 22.5 |
| Date:          | 12/26/2012   | Liquid Temperature (°C): | 21.1 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 37   |
| Configuration: | 2            | Bar. Pressure (mb):      | 1011 |
| Comments:      | None         |                          |      |

## Test 7

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Frequency: 2462 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used (interpolated):  $f = 2462$  MHz;  $\sigma = 1.908$  mho/m;  $\epsilon_r = 37.862$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Cheek - Mid/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of Total (measured) = 7.164 V/m

**Head/Cheek - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.179 W/kg

**Head/Cheek - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.197 W/kg

**Head/Cheek - Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.757 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 0.315 W/kg

**SAR(1 g) = 0.162 W/kg; SAR(10 g) = 0.082 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

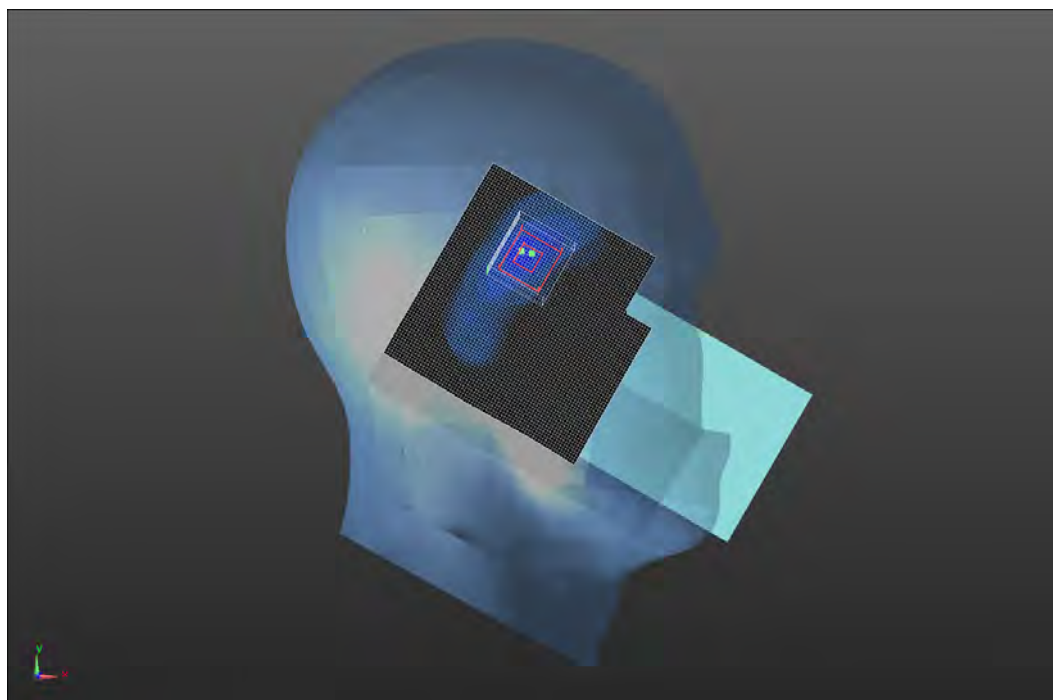
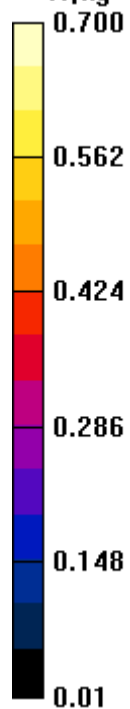
Maximum value of SAR (measured) = 0.203 W/kg

Maximum value of SAR (measured) = 0.0979 W/kg

   
Approved By

Test 7

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 22.4 |
| Date:          | 12/26/2012   | Liquid Temperature (°C): | 21   |
| Serial Number: | 8721242648   | Humidity (%RH):          | 37   |
| Configuration: | 2            | Bar. Pressure (mb):      | 1011 |
| Comments:      | None         |                          |      |

## Test 8

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Frequency: 2462 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 2462$  MHz;  $\sigma = 1.908$  mho/m;  $\epsilon_r = 37.862$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Tilt - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.150 W/kg

**Head/Tilt - Mid/Zoom Scan 2 (13x8x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.026 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.258 W/kg

**SAR(1 g) = 0.135 W/kg; SAR(10 g) = 0.070 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.168 W/kg

**Head/Tilt - Mid/Zoom Scan (9x8x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.026 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.259 W/kg

**SAR(1 g) = 0.136 W/kg; SAR(10 g) = 0.069 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.173 W/kg

**Head/Tilt - Mid/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of Total (measured) = 6.441 V/m

**Head/Tilt - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

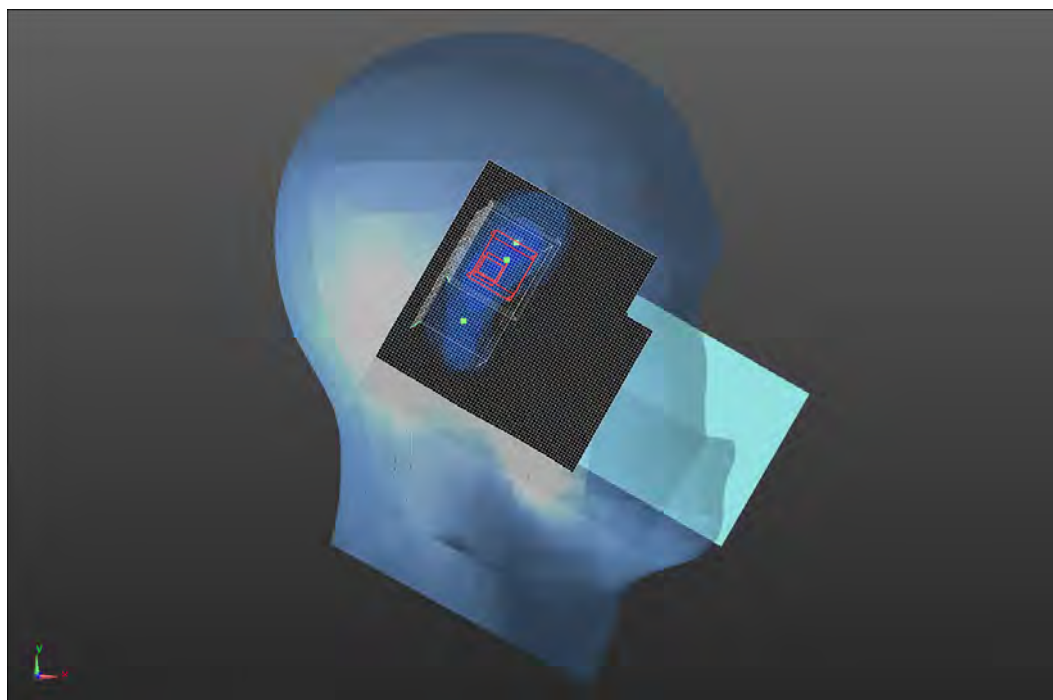
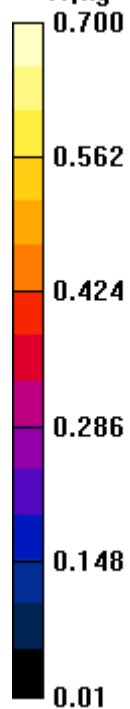
Maximum value of SAR (interpolated) = 0.160 W/kg

Maximum value of SAR (measured) = 0.0792 W/kg

   
Approved By

Test 8

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 22.5 |
| Date:          | 12/26/2012   | Liquid Temperature (°C): | 20.6 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 37   |
| Configuration: | 2            | Bar. Pressure (mb):      | 1011 |
| Comments:      | None         |                          |      |

## Test 9

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Frequency: 2462 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used (interpolated):  $f = 2462$  MHz;  $\sigma = 1.908$  mho/m;  $\epsilon_r = 37.862$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Cheek - Mid/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of Total (measured) = 6.298 V/m

**Head/Cheek - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.151 W/kg

**Head/Cheek - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.147 W/kg

**Head/Cheek - Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.851 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.208 W/kg

**SAR(1 g) = 0.118 W/kg; SAR(10 g) = 0.064 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

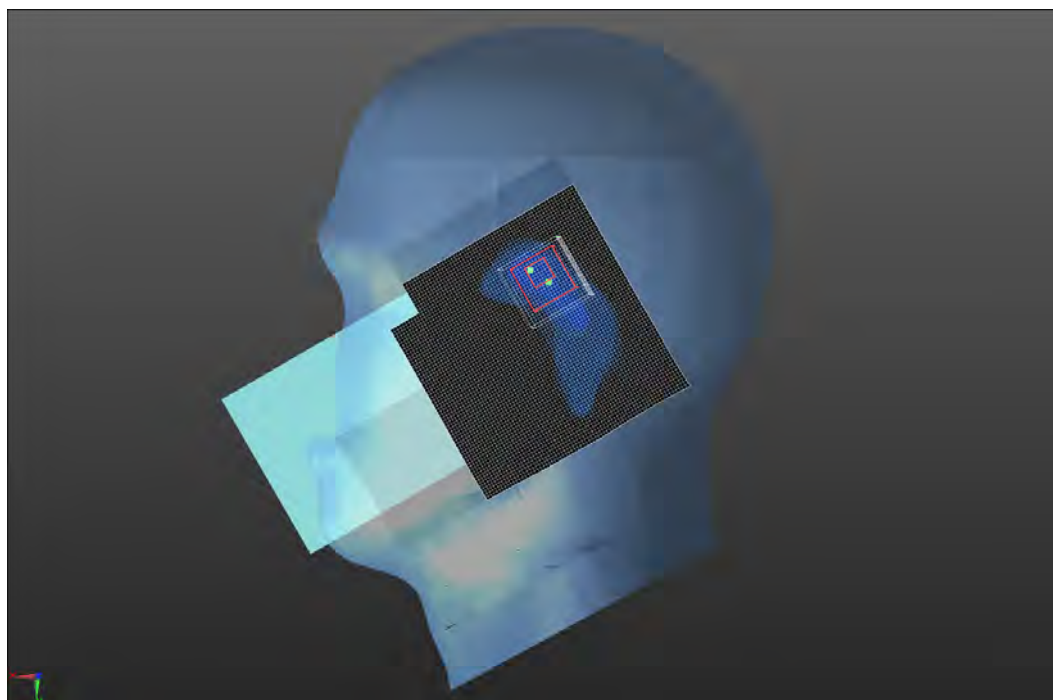
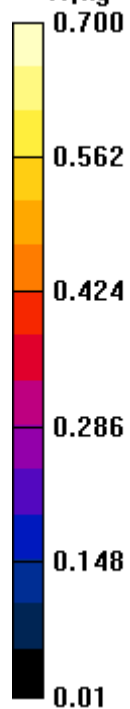
Maximum value of SAR (measured) = 0.146 W/kg

Maximum value of SAR (measured) = 0.0757 W/kg

   
Approved By

Test 9

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 22.4 |
| Date:          | 12/26/2012   | Liquid Temperature (°C): | 20.7 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 37   |
| Configuration: | 2            | Bar. Pressure (mb):      | 1011 |
| Comments:      | None         |                          |      |

## Test 10

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Frequency: 2462 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 2462$  MHz;  $\sigma = 1.908$  mho/m;  $\epsilon_r = 37.862$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Tilt - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.144 W/kg

**Head/Tilt - Mid/Zoom Scan (8x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.556 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.255 W/kg

**SAR(1 g) = 0.137 W/kg; SAR(10 g) = 0.071 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.171 W/kg

**Head/Tilt - Mid/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of Total (measured) = 6.924 V/m

**Head/Tilt - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

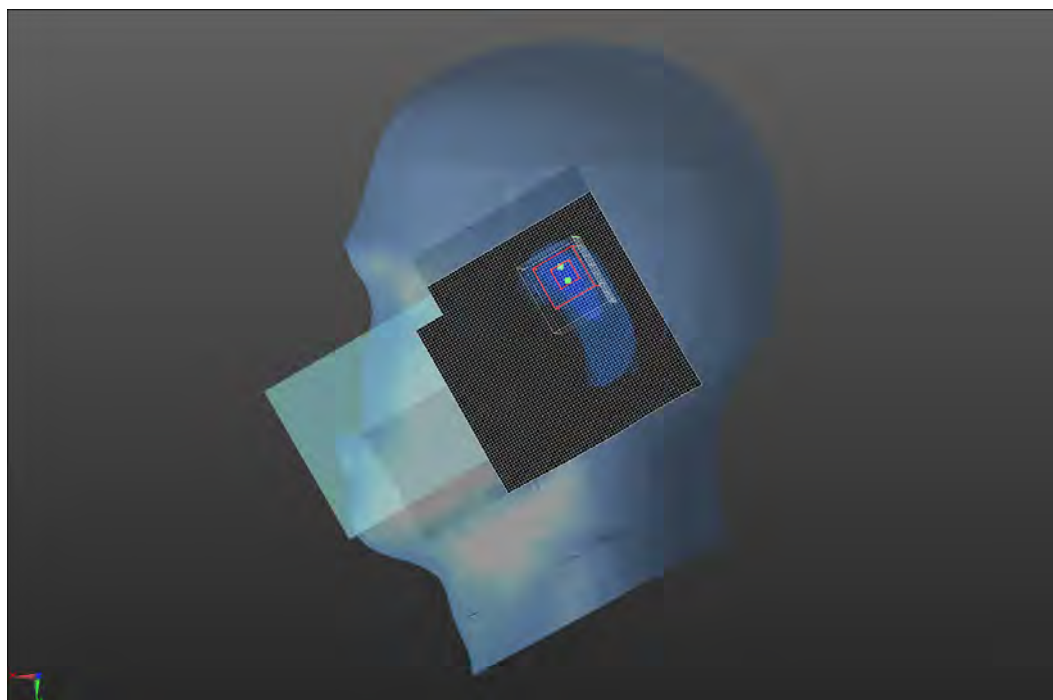
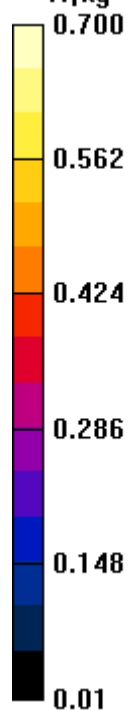
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.175 W/kg

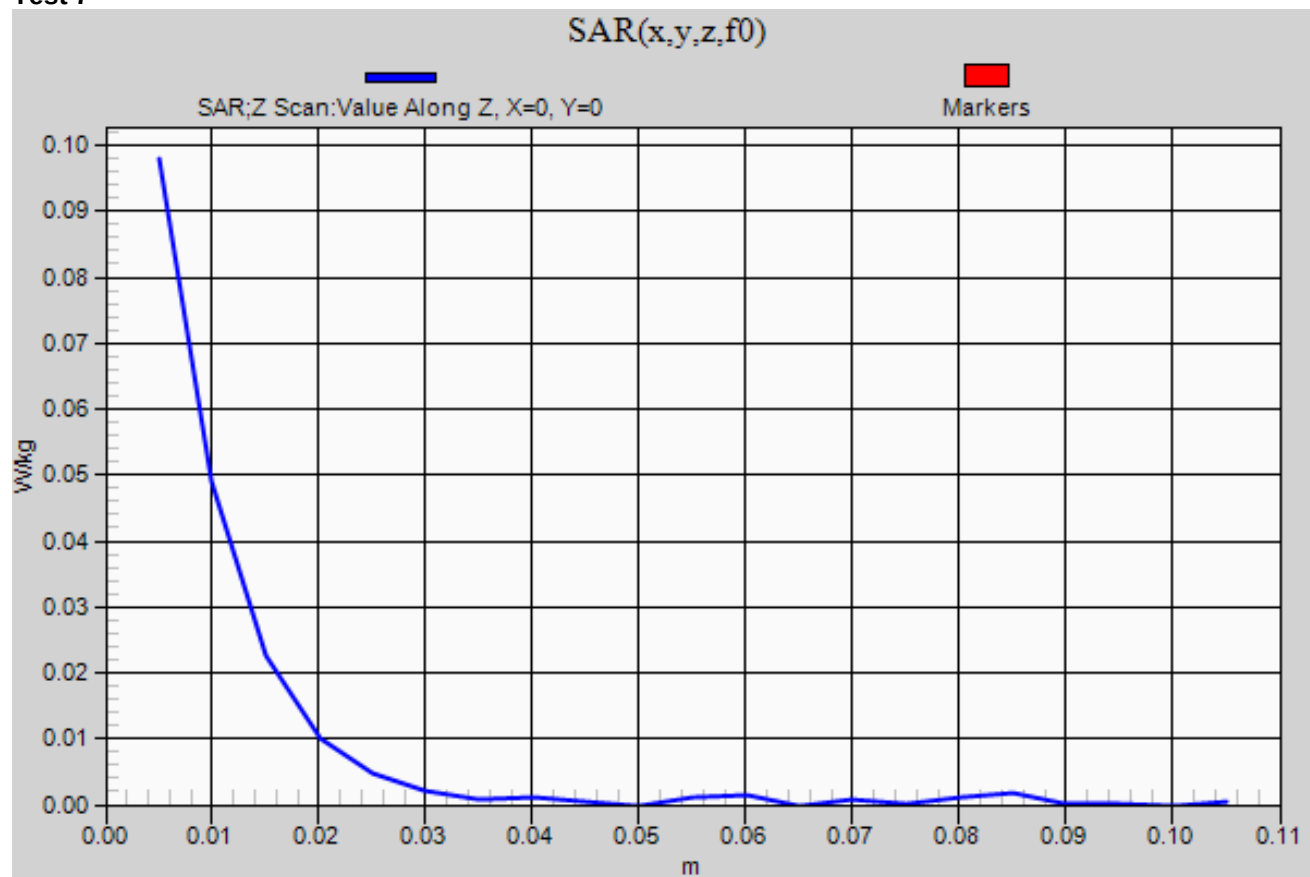
   
Approved By

Test 10

W/kg



## Test 7



|            |                                   |                   |          |
|------------|-----------------------------------|-------------------|----------|
| EUT:       | 1000CP01F9                        | Work Order:       | ITRM0333 |
| Customer:  | Intermec Technologies Corporation | Job Site:         | EV08     |
| Attendees: | None                              | Customer Project: | None     |

## TEST SPECIFICATIONS

| Specification:                                        | Method:                                                                                                                                           |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| FCC 2.1093:2013<br>FCC 15.247:2013<br>FCC 15.407:2013 | FCC OET 65C:2001<br>IEEE Std 1528:2003<br>FCC KDB 447498 D01 v05<br>FCC KDB 248227 D01 V01r02<br>FCC KDB 648474 D04 V01<br>FCC 865664 D01 and D02 |

## COMMENTS

None

## DEVIATIONS FROM TEST STANDARD

None

## RESULTS

| Test Configuration | EUT Position | Body Worn Accessory | Headset | Frequency Band | Transmit Frequency (MHz) | Transmit Channel | Data Rate (Mbps) | Modulation | Power Drift During Test (dB) | Measured 1g SAR Level (mW/g) | Test # |
|--------------------|--------------|---------------------|---------|----------------|--------------------------|------------------|------------------|------------|------------------------------|------------------------------|--------|
| Body               | Right        | Holster             | Yes     | 2.4            | 2462                     | 11               | 1                | BPSK       | -0.02                        | 0.553                        | 1      |
| Body               | Front        | Holster             | Yes     | 2.4            | 2462                     | 11               | 1                | BPSK       | 0.56                         | 0.00687                      | 2      |

|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 23.1 |
| Date:          | 12/21/2012   | Liquid Temperature (°C): | 21.4 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 36   |
| Configuration: | 1            | Bar. Pressure (mb):      | 1007 |
| Comments:      | None         |                          |      |

## Test 1

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Frequency: 2462

MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 2462$  MHz;  $\sigma = 2.002$  mho/m;  $\epsilon_r = 51.642$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Body/Body/Reference scan (41x101x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.401 W/kg

**Body/Body/Area scan (71x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.675 W/kg

**Body/Body/Zoom Scan (7x8x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.003 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.06 W/kg

**SAR(1 g) = 0.553 W/kg; SAR(10 g) = 0.273 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.709 W/kg

**Body/Body/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

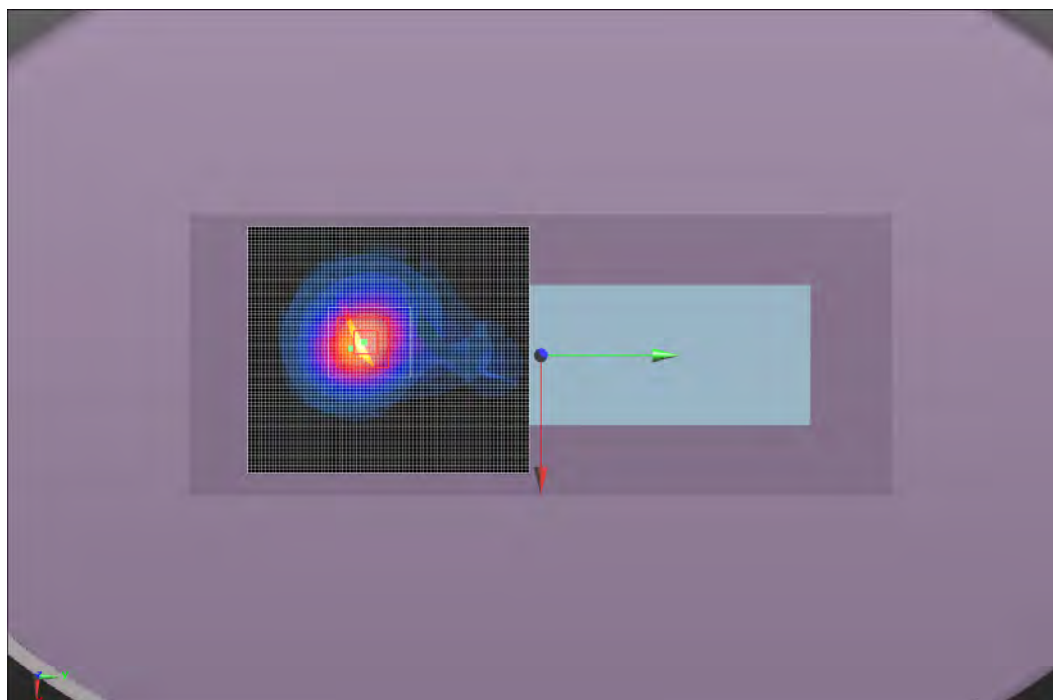
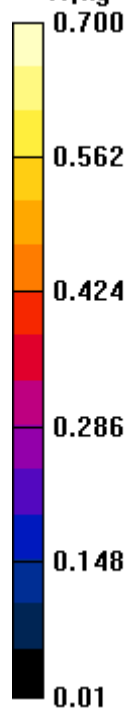
Maximum value of Total (measured) = 13.63 V/m

Maximum value of SAR (measured) = 0.372 W/kg

   
Approved By

Test 1

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 22.8 |
| Date:          | 12/21/2012   | Liquid Temperature (°C): | 21.2 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 37   |
| Configuration: | 1            | Bar. Pressure (mb):      | 1007 |
| Comments:      | None         |                          |      |

## Test 2

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Frequency: 2462 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 2462$  MHz;  $\sigma = 2.002$  mho/m;  $\epsilon_r = 51.642$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Body/Body/Reference scan (51x101x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0501 W/kg

**Body/Body/Area scan (71x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0505 W/kg

**Body/Body/Zoom Scan (9x10x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.667 V/m; Power Drift = 0.56 dB

Peak SAR (extrapolated) = 0.0460 W/kg

**SAR(1 g) = 0.00687 W/kg; SAR(10 g) = 0.00162 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0370 W/kg

**Body/Body/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of Total (measured) = 2.862 V/m

**Body/Body/Zoom Scan (9x10x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

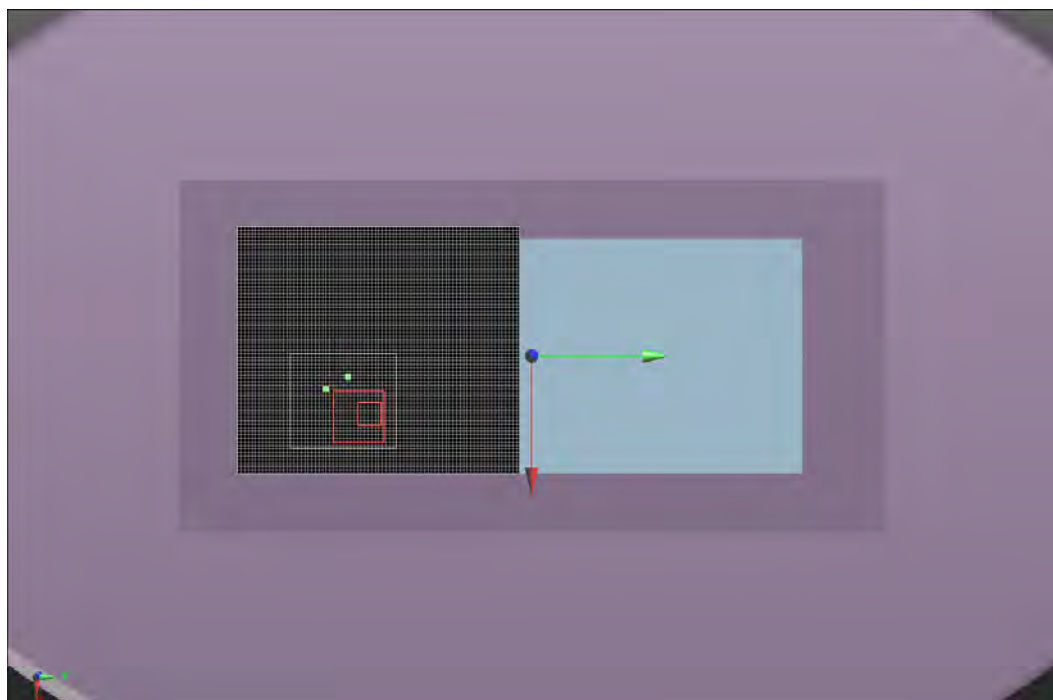
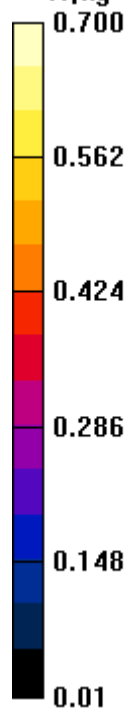
Reference Value = 3.667 V/m; Power Drift = 0.56 dB

[Info: Interpolated medium parameters used for SAR evaluation.](#)

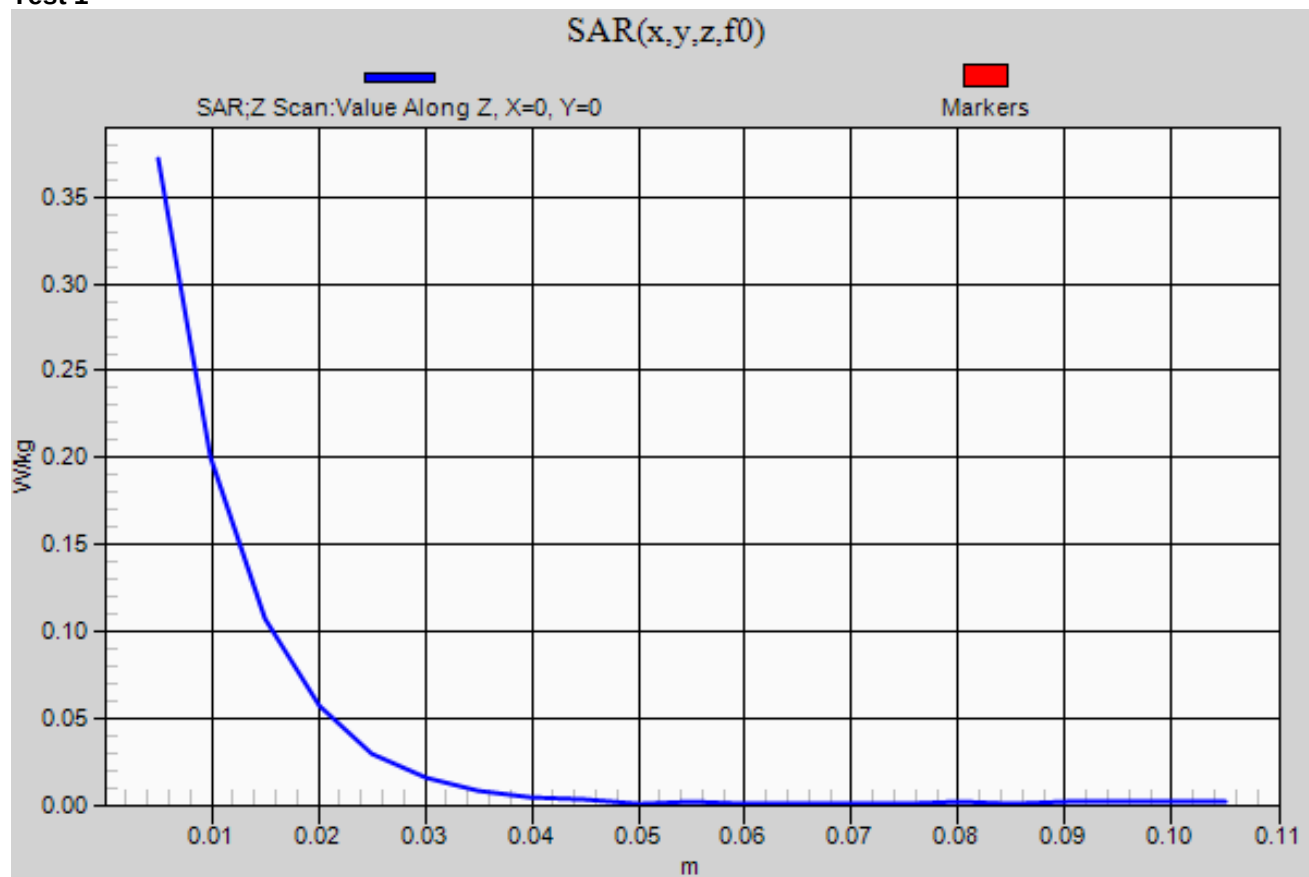
   
Approved By

Test 2

W/kg



## Test 1



|            |                                   |                   |          |
|------------|-----------------------------------|-------------------|----------|
| EUT:       | 1000CP01F9                        | Work Order:       | ITRM0333 |
| Customer:  | Intermec Technologies Corporation | Job Site:         | EV08     |
| Attendees: | None                              | Customer Project: | None     |

## TEST SPECIFICATIONS

| Specification:                                        | Method:                                                                                                                                           |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| FCC 2.1093:2013<br>FCC 15.247:2013<br>FCC 15.407:2013 | FCC OET 65C:2001<br>IEEE Std 1528:2003<br>FCC KDB 447498 D01 v05<br>FCC KDB 248227 D01 V01r02<br>FCC KDB 648474 D04 V01<br>FCC 865664 D01 and D02 |

## COMMENTS

None

## DEVIATIONS FROM TEST STANDARD

None

## RESULTS

| Test Configuration | Side of Head | EUT Position | Headset | Frequency Band | Transmit Frequency (MHz) | Transmit Channel | Data Rate (Mbps) | Modulation | Power Drift During Test (dB) | Measured 1g SAR Level (mW/g) | Test # |
|--------------------|--------------|--------------|---------|----------------|--------------------------|------------------|------------------|------------|------------------------------|------------------------------|--------|
| Head               | Left         | Touch        | No      | 5.2            | 5200                     | 40               | 6                | OFDM       | 0.01                         | 0.061                        | 43     |
| Head               | Left         | Tilt         | No      | 5.2            | 5200                     | 40               | 6                | OFDM       | 0.13                         | 0.00152                      | 44     |
| Head               | Right        | Touch        | No      | 5.2            | 5200                     | 40               | 6                | OFDM       | Note 2                       | Note 1                       | 45     |
| Head               | Right        | Tilt         | No      | 5.2            | 5200                     | 40               | 6                | OFDM       | Note 2                       | Note 1                       | 46     |
| Head               | Left         | Touch        | No      | 5.3            | 5260                     | 52               | 6                | OFDM       | Note 2                       | Note 1                       | 47     |
| Head               | Left         | Tilt         | No      | 5.3            | 5260                     | 52               | 6                | OFDM       | Note 2                       | Note 1                       | 48     |
| Head               | Right        | Touch        | No      | 5.3            | 5260                     | 52               | 6                | OFDM       | Note 2                       | Note 1                       | 49     |
| Head               | Right        | Tilt         | No      | 5.3            | 5260                     | 52               | 6                | OFDM       | 0.49                         | 0.000403                     | 50     |
| Head               | Left         | Touch        | No      | 5.6            | 5680                     | 136              | 6                | OFDM       | -0.79                        | 0.042                        | 51     |
| Head               | Left         | Tilt         | No      | 5.6            | 5680                     | 136              | 6                | OFDM       | Note 2                       | Note 1                       | 52     |
| Head               | Right        | Touch        | No      | 5.6            | 5680                     | 136              | 6                | OFDM       | Note 2                       | Note 1                       | 53     |
| Head               | Right        | Tilt         | No      | 5.6            | 5680                     | 136              | 6                | OFDM       | Note 2                       | Note 1                       | 54     |
| Head               | Left         | Touch        | No      | 5.8            | 5745                     | 149              | 6                | OFDM       | -0.03                        | 0.039                        | 55     |
| Head               | Left         | Tilt         | No      | 5.8            | 5745                     | 149              | 6                | OFDM       | Note 2                       | Note 1                       | 56     |
| Head               | Right        | Touch        | No      | 5.8            | 5745                     | 149              | 6                | OFDM       | Note 2                       | Note 1                       | 57     |
| Head               | Right        | Tilt         | No      | 5.8            | 5745                     | 149              | 6                | OFDM       | Note 2                       | Note 1                       | 58     |

Note 1: Zoom scan measurement was not performed because the area scan results were less than 0.1 mW/g

Note 2: Power drift measurement was not performed because the area scan results were less than 0.1 mW/g

|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 23.2 |
| Date:          | 1/2/2013     | Liquid Temperature (°C): | 21   |
| Serial Number: | 8721242648   | Humidity (%RH):          | 23   |
| Configuration: | 2            | Bar. Pressure (mb):      | 1027 |
| Comments:      | None         |                          |      |

## Test 43

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5200 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $f = 5200$  MHz;  $\sigma = 4.603$  mho/m;  $\epsilon_r = 36.308$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Cheek - Mid/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 1.747 V/m

**Head/Cheek - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

Maximum value of SAR (interpolated) = 0.0411 W/kg

**Head/Cheek - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.228 W/kg

**Head/Cheek - Mid/Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.525 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.229 W/kg

**SAR(1 g) = 0.061 W/kg; SAR(10 g) = 0.028 W/kg**

Maximum value of SAR (measured) = 0.0818 W/kg

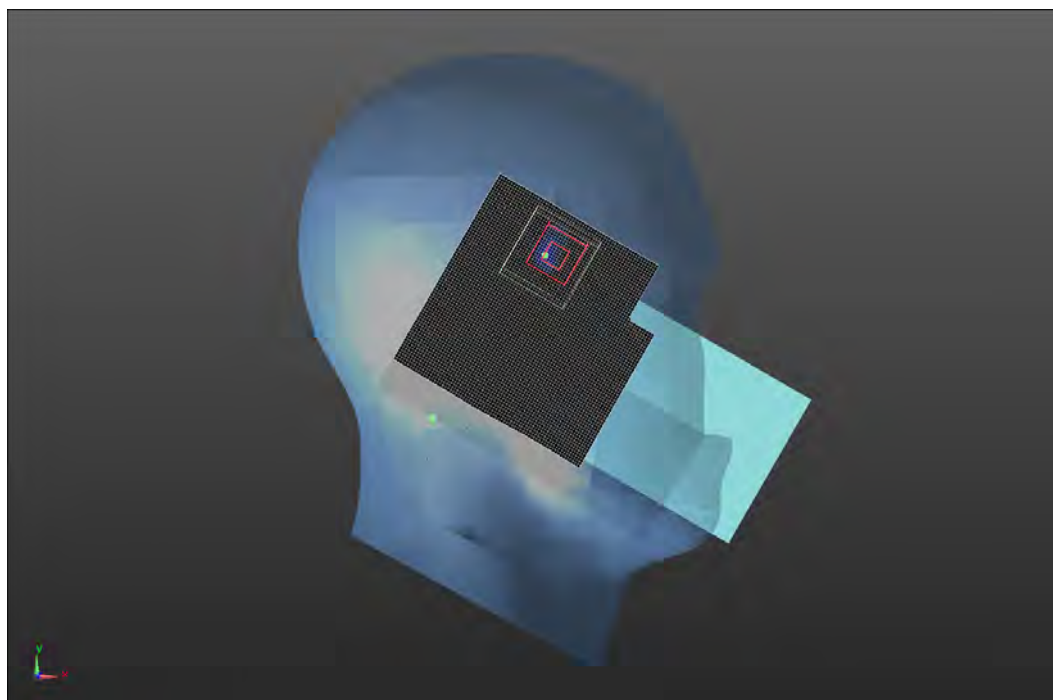
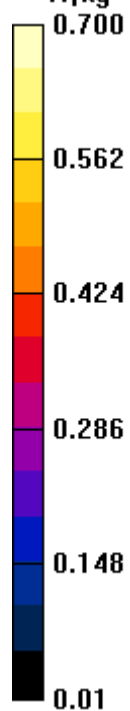
Maximum value of SAR (measured) = 0.0140 W/kg

Approved By

Test 43

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 22.8 |
| Date:          | 1/2/2013     | Liquid Temperature (°C): | 20.4 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 26   |
| Configuration: | 2            | Bar. Pressure (mb):      | 1027 |
| Comments:      | None         |                          |      |

## Test 44

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5200 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $f = 5200$  MHz;  $\sigma = 4.603$  mho/m;  $\epsilon_r = 36.308$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Tilt - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

Maximum value of SAR (interpolated) = 0.0360 W/kg

**Head/Tilt - Mid/Zoom Scan (9x8x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.044 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.0950 W/kg

**SAR(1 g) = 0.00152 W/kg; SAR(10 g) = 0.000168 W/kg**

Maximum value of SAR (measured) = 0.0368 W/kg

**Head/Tilt - Mid/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 1.183 V/m

**Head/Tilt - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

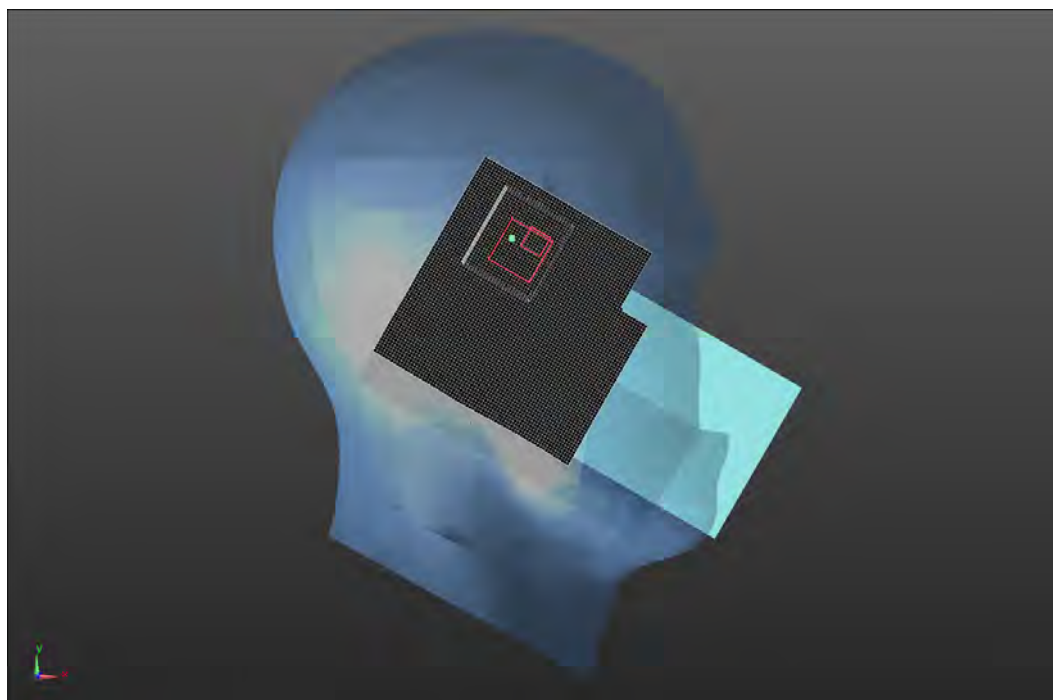
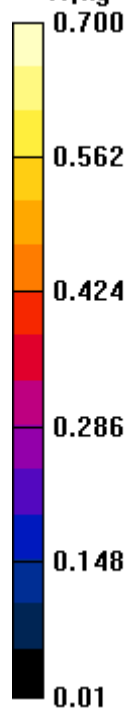
Maximum value of SAR (interpolated) = 0.0261 W/kg

Maximum value of SAR (measured) = 0.00644 W/kg

   
Approved By

Test 44

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 23.5 |
| Date:          | 1/2/2013     | Liquid Temperature (°C): | 20   |
| Serial Number: | 8721242648   | Humidity (%RH):          | 27   |
| Configuration: | 2            | Bar. Pressure (mb):      | 1027 |
| Comments:      | None         |                          |      |

## Test 45

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5200 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $f = 5200$  MHz;  $\sigma = 4.603$  mho/m;  $\epsilon_r = 36.308$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Cheek - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

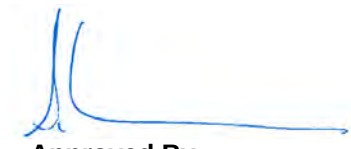
Maximum value of SAR (interpolated) = 0.0334 W/kg

**Head/Cheek - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.115 W/kg

**Head/Cheek - Mid/Area scan (8x8x1):** Measurement grid: dx=15mm, dy=15mm

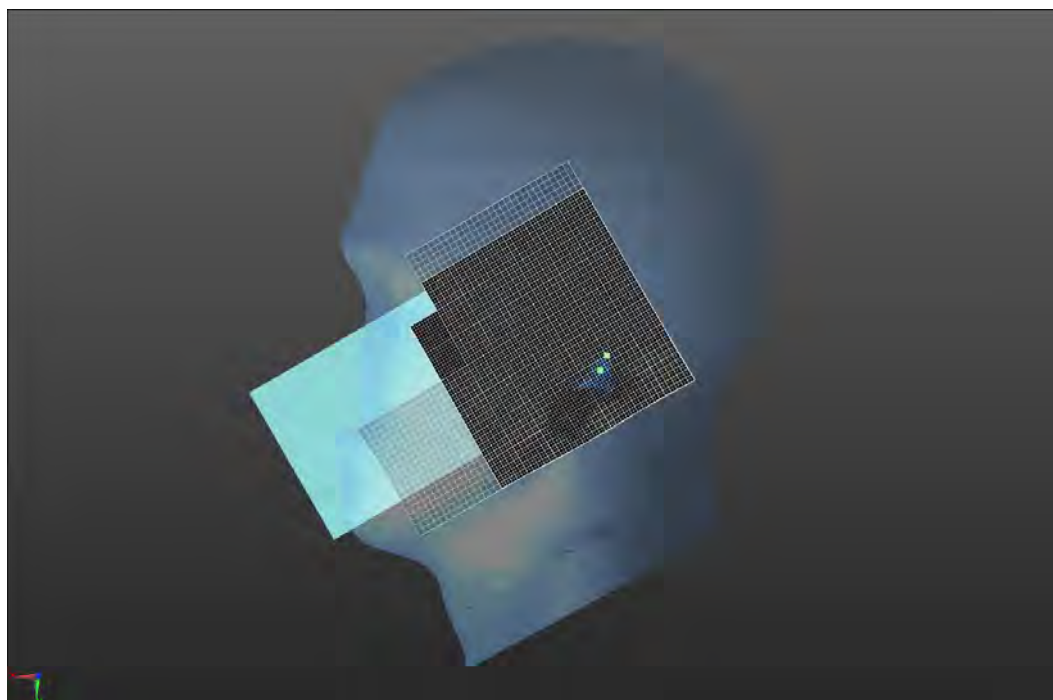
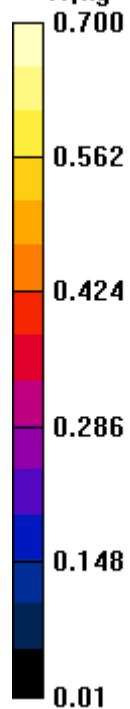
Maximum value of SAR (measured) = 0.0385 W/kg

Approved By

Test 45

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 23.8 |
| Date:          | 1/2/2013     | Liquid Temperature (°C): | 20.1 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 26   |
| Configuration: | 2            | Bar. Pressure (mb):      | 1027 |
| Comments:      | None         |                          |      |

## Test 46

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5200 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $f = 5200$  MHz;  $\sigma = 4.603$  mho/m;  $\epsilon_r = 36.308$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Tilt - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

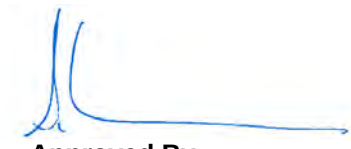
Maximum value of SAR (interpolated) = 0.00894 W/kg

**Head/Tilt - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0734 W/kg

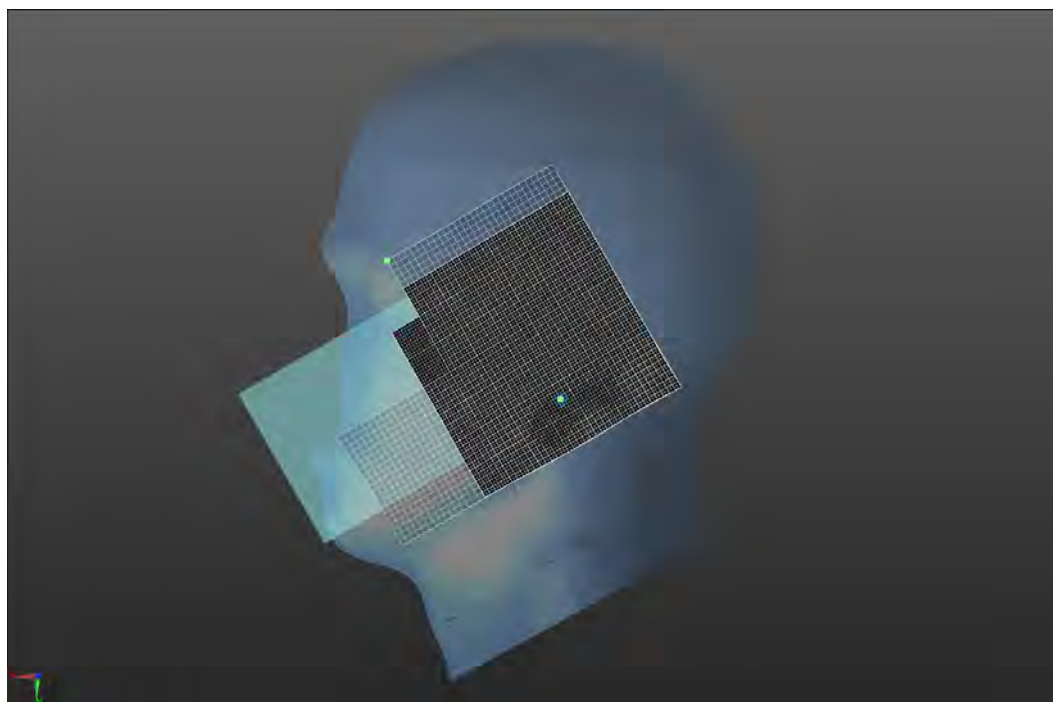
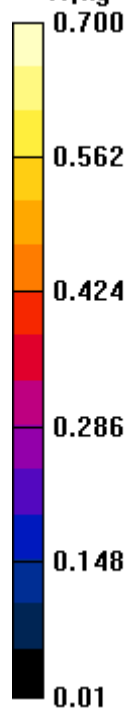
**Head/Tilt - Mid/Area scan (8x8x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.0306 W/kg

   
Approved By

Test 46

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 23.6 |
| Date:          | 1/2/2013     | Liquid Temperature (°C): | 20.1 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 25   |
| Configuration: | 2            | Bar. Pressure (mb):      | 1027 |
| Comments:      | None         |                          |      |

## Test 47

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5260 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 5260$  MHz;  $\sigma = 4.668$  mho/m;  $\epsilon_r = 36.215$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Cheek - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0323 W/kg

**Head/Cheek - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0784 W/kg

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0348 W/kg

**Head/Cheek - Mid/Area scan (8x8x1):** Measurement grid: dx=15mm, dy=15mm

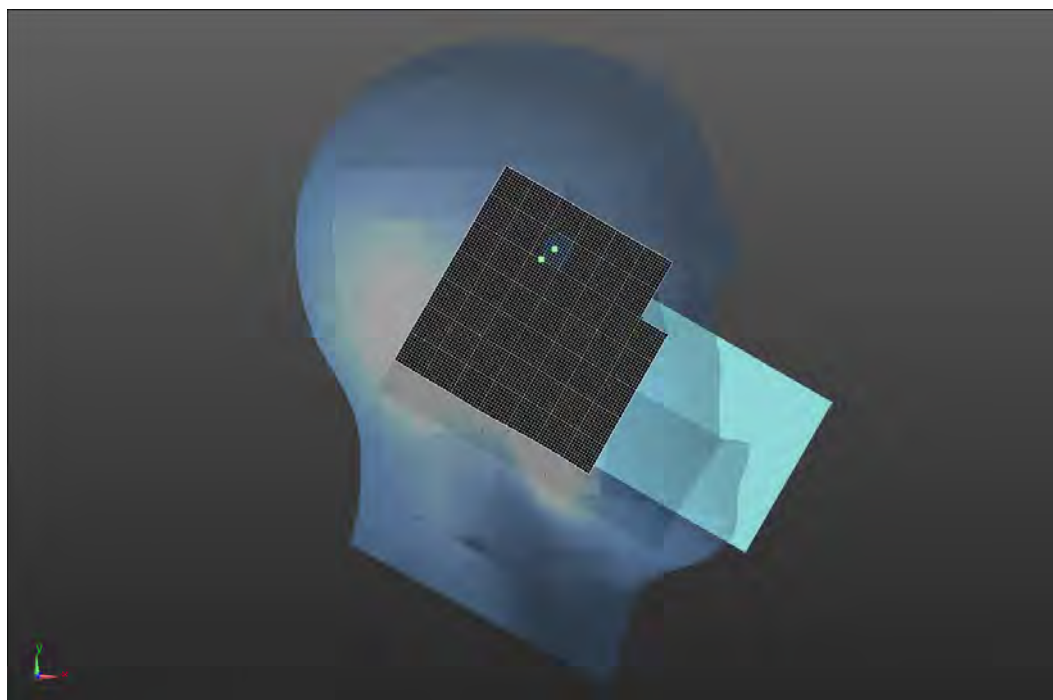
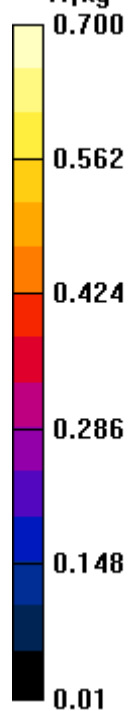
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0570 W/kg

   
Approved By

Test 47

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 22.8 |
| Date:          | 1/2/2013     | Liquid Temperature (°C): | 20.4 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 27   |
| Configuration: | 2            | Bar. Pressure (mb):      | 1027 |
| Comments:      | None         |                          |      |

## Test 48

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5260 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 5260$  MHz;  $\sigma = 4.668$  mho/m;  $\epsilon_r = 36.215$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Tilt - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0331 W/kg

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0172 W/kg

**Head/Tilt - Mid/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of Total (measured) = 4.813 V/m

**Head/Tilt - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

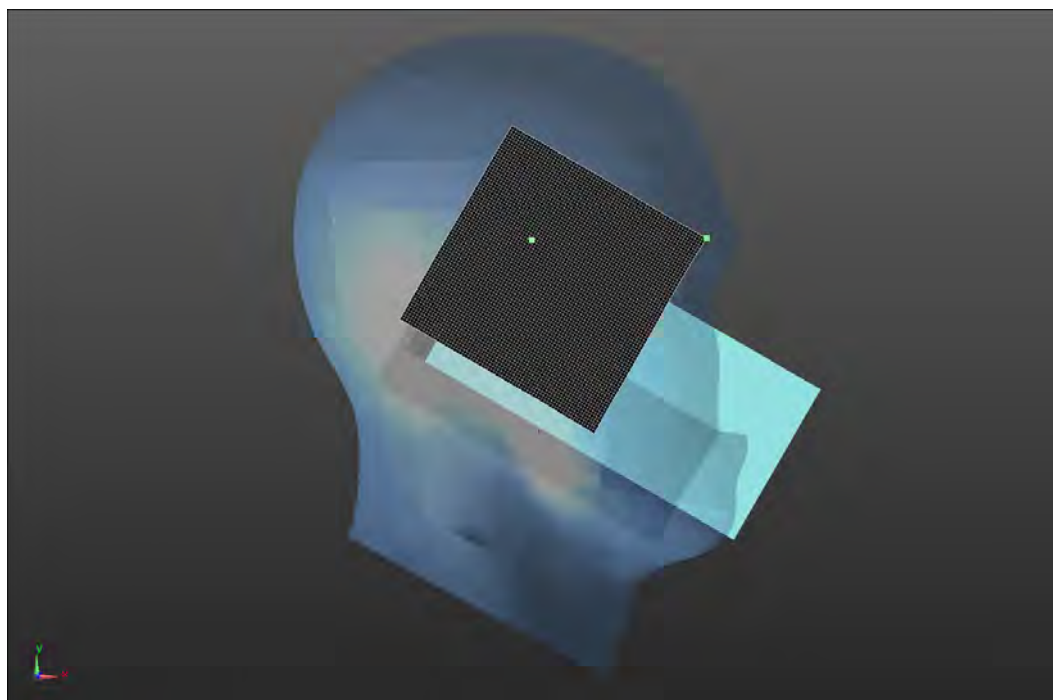
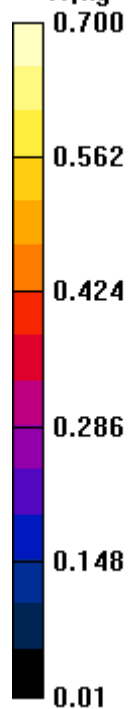
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0278 W/kg

   
Approved By

Test 48

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 23.7 |
| Date:          | 1/2/2013     | Liquid Temperature (°C): | 20.1 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 26   |
| Configuration: | 2            | Bar. Pressure (mb):      | 1027 |
| Comments:      | None         |                          |      |

## Test 49

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5260 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 5260$  MHz;  $\sigma = 4.668$  mho/m;  $\epsilon_r = 36.215$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Cheek - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0459 W/kg

**Head/Cheek - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0429 W/kg

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0206 W/kg

**Head/Cheek - Mid/Area scan (8x8x1):** Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

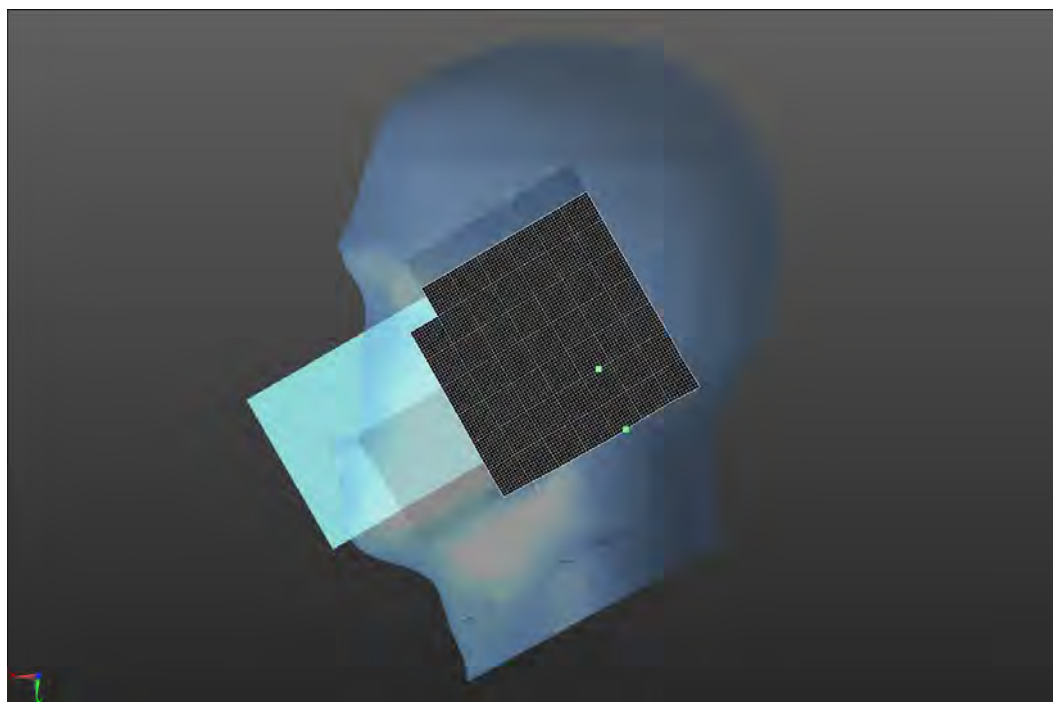
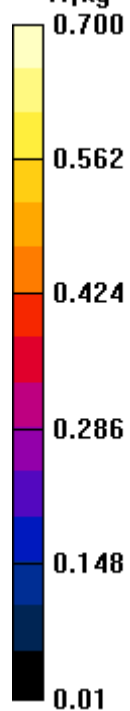
Maximum value of SAR (measured) = 0.0269 W/kg



Approved By

Test 49

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 23.8 |
| Date:          | 1/2/2013     | Liquid Temperature (°C): | 20.1 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 25   |
| Configuration: | 2            | Bar. Pressure (mb):      | 1027 |
| Comments:      | None         |                          |      |

## Test 50

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5260 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 5260$  MHz;  $\sigma = 4.668$  mho/m;  $\epsilon_r = 36.215$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Tilt - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0176 W/kg

**Head/Tilt - Mid/Zoom Scan (11x12x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.748 V/m; Power Drift = 0.49 dB

Peak SAR (extrapolated) = 0.0200 W/kg

**SAR(1 g) = 0.000403 W/kg; SAR(10 g) = 4.04e-005 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0151 W/kg

**Head/Tilt - Mid/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of Total (measured) = 1.060 V/m

**Head/Tilt - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

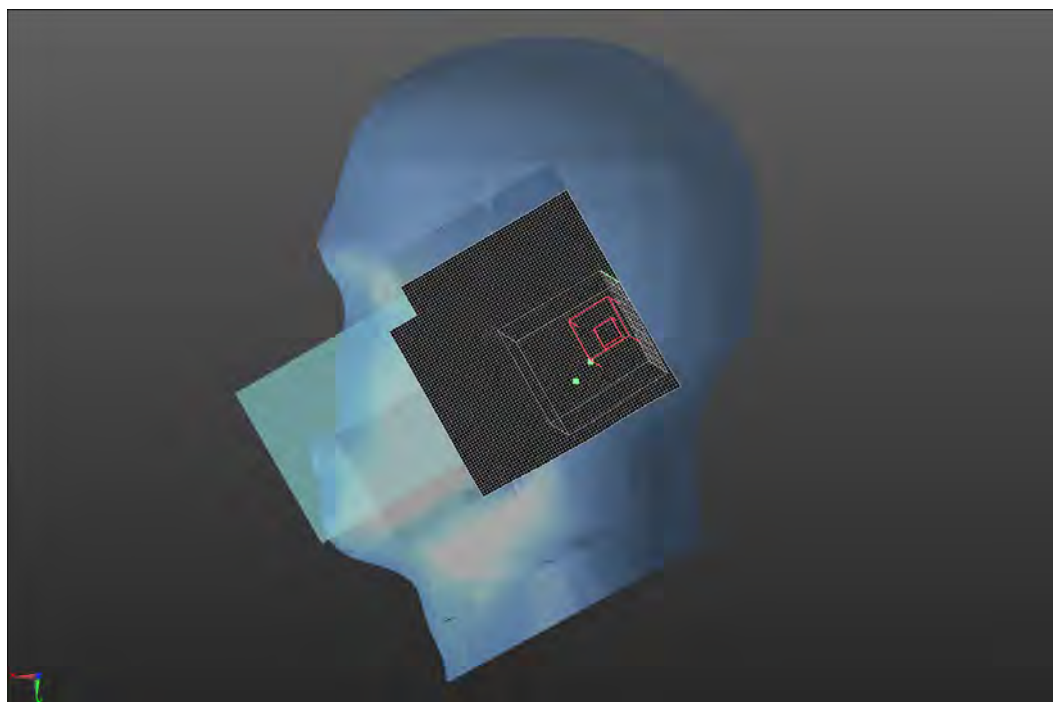
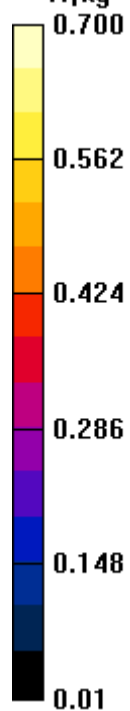
Maximum value of SAR (interpolated) = 0.0627 W/kg

Maximum value of SAR (measured) = 0.00524 W/kg

   
Approved By

Test 50

W/kg



|                |                  |                          |      |
|----------------|------------------|--------------------------|------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 23.3 |
| Date:          | 1/7/2013         | Liquid Temperature (°C): | 21.1 |
| Serial Number: | 8721242648       | Humidity (%RH):          | 37.3 |
| Configuration: | 2                | Bar. Pressure (mb):      | 1016 |
| Comments:      | None             |                          |      |

## Test 51

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5680 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used (interpolated):  $f = 5680$  MHz;  $\sigma = 5.13$  mho/m;  $\epsilon_r = 35.522$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Cheek - Mid/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of Total (measured) = 1.254 V/m

**Head/Cheek - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0196 W/kg

**Head/Cheek - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0889 W/kg

**Head/Cheek - Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.062 V/m; Power Drift = -0.79 dB

Peak SAR (extrapolated) = 0.183 W/kg

**SAR(1 g) = 0.042 W/kg; SAR(10 g) = 0.018 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

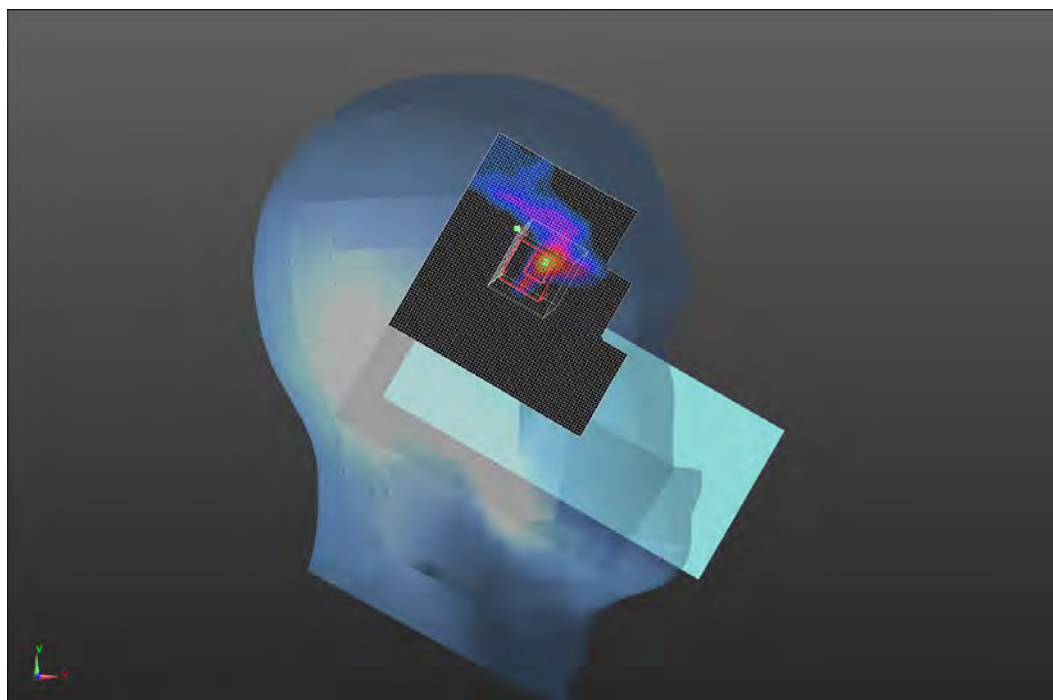
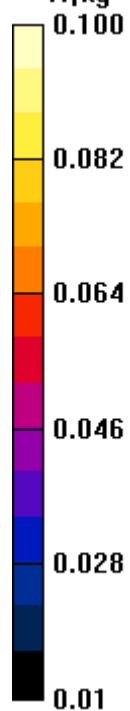
Maximum value of SAR (measured) = 0.0625 W/kg

Maximum value of SAR (measured) = 0.00807 W/kg

   
Approved By

Test 51

W/kg



|                |                  |                          |      |
|----------------|------------------|--------------------------|------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 23.7 |
| Date:          | 1/7/2013         | Liquid Temperature (°C): | 21.2 |
| Serial Number: | 8721242648       | Humidity (%RH):          | 37.5 |
| Configuration: | 2                | Bar. Pressure (mb):      | 1016 |
| Comments:      | None             |                          |      |

## Test 52

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5680 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 5680$  MHz;  $\sigma = 5.13$  mho/m;  $\epsilon_r = 35.522$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Tilt - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0302 W/kg

**Head/Tilt - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

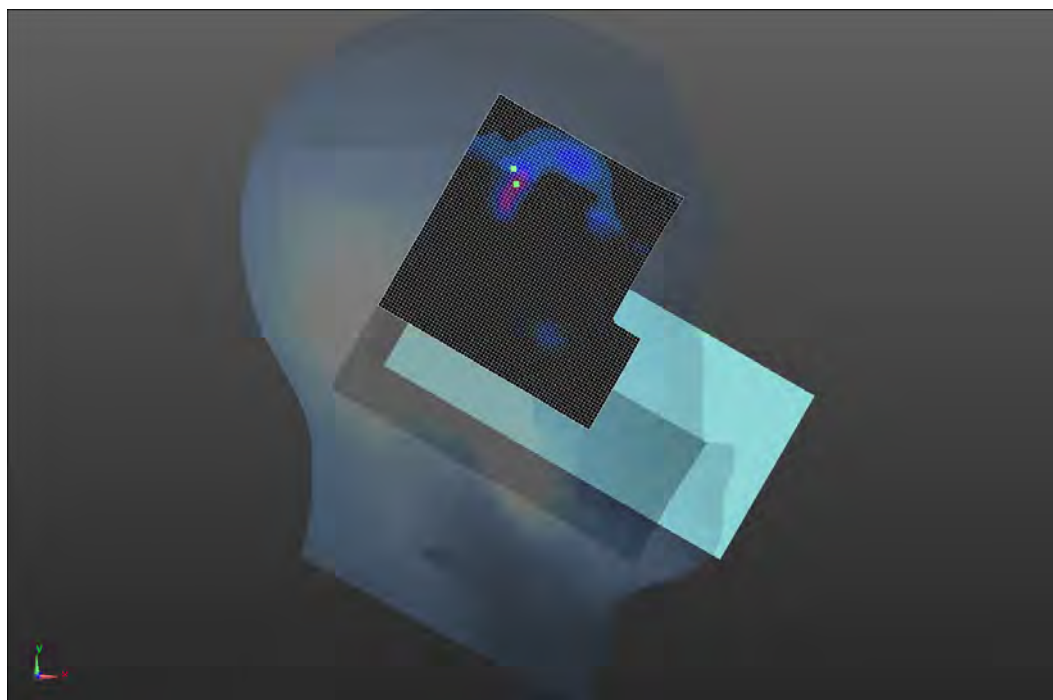
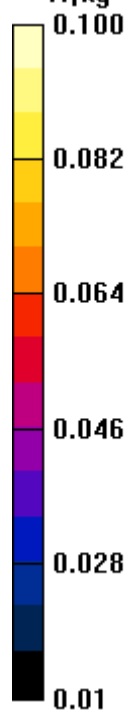
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0480 W/kg

   
Approved By

Test 52

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 23.6 |
| Date:          | 1/7/2013     | Liquid Temperature (°C): | 21.3 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 40   |
| Configuration: | 2            | Bar. Pressure (mb):      | 1019 |
| Comments:      | None         |                          |      |

## Test 53

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5680 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 5680$  MHz;  $\sigma = 5.13$  mho/m;  $\epsilon_r = 35.522$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Cheek - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0526 W/kg

**Head/Cheek - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0566 W/kg

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0177 W/kg

**Head/Cheek - Mid/Area scan (8x8x1):** Measurement grid: dx=15mm, dy=15mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

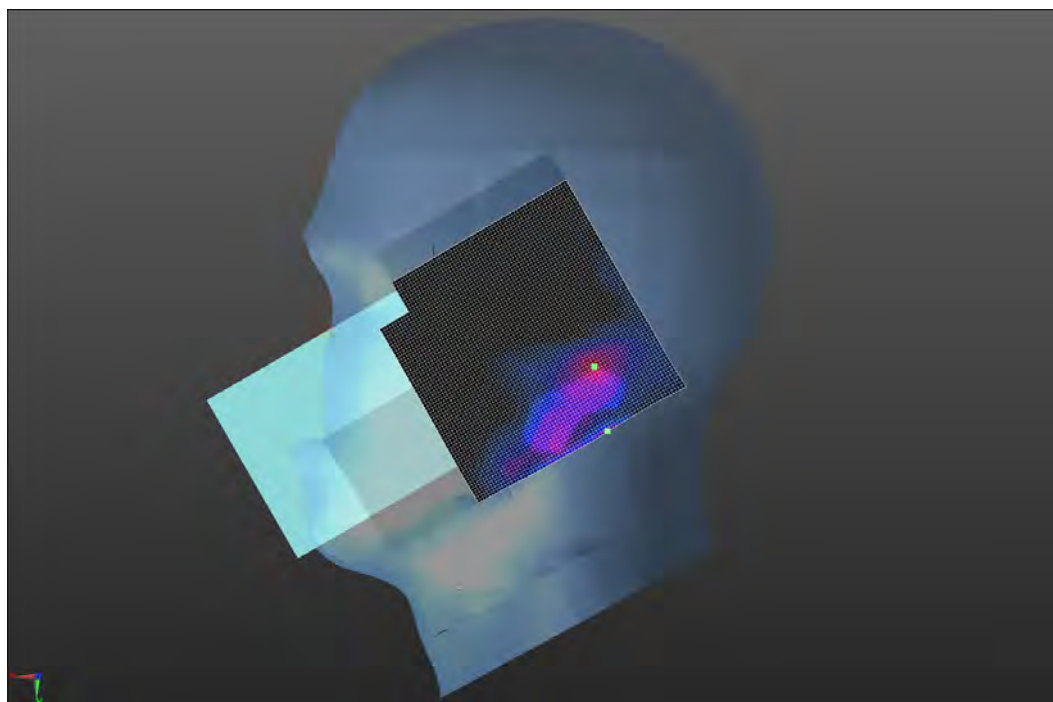
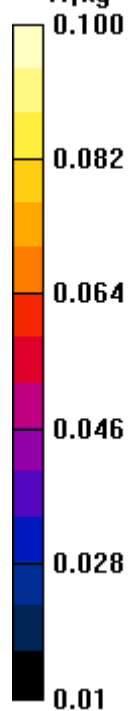
Maximum value of SAR (measured) = 0.0525 W/kg




Approved By

Test 53

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 23.7 |
| Date:          | 1/7/2013     | Liquid Temperature (°C): | 21.3 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 40   |
| Configuration: | 2            | Bar. Pressure (mb):      | 1019 |
| Comments:      | None         |                          |      |

## Test 54

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5680 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 5680$  MHz;  $\sigma = 5.13$  mho/m;  $\epsilon_r = 35.522$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Tilt - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0299 W/kg

**Head/Tilt - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0419 W/kg

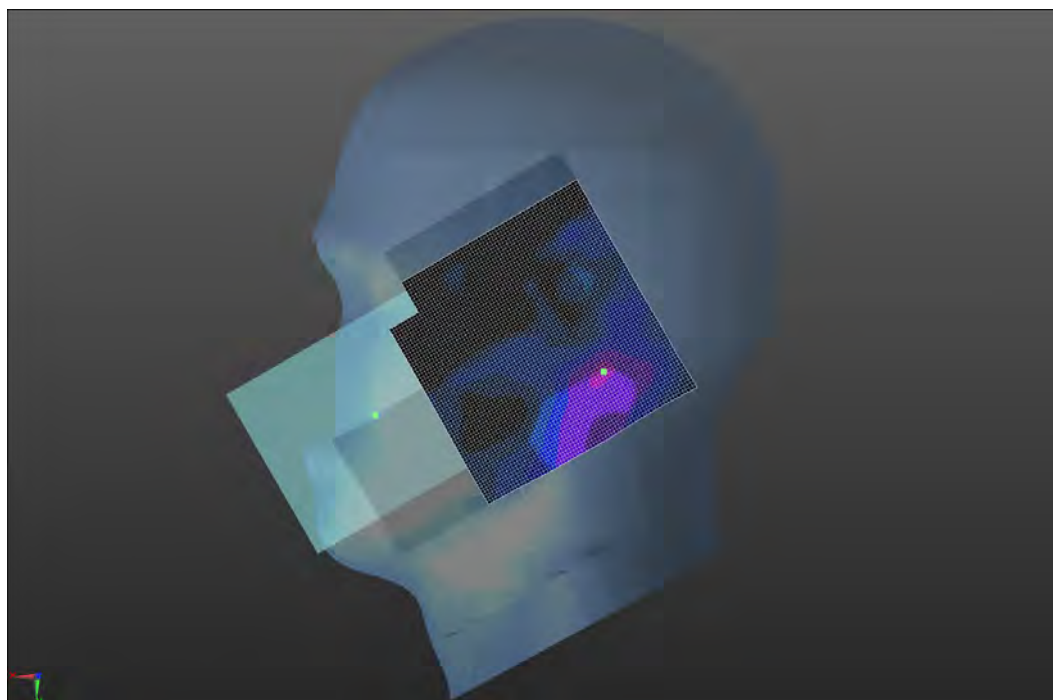
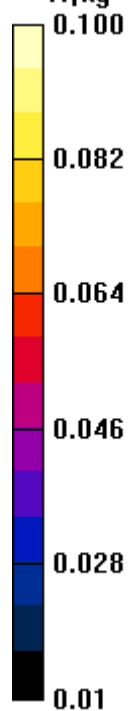
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0167 W/kg

   
Approved By

Test 54

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 23.6 |
| Date:          | 1/7/2013     | Liquid Temperature (°C): | 21.3 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 40   |
| Configuration: | 2            | Bar. Pressure (mb):      | 1019 |
| Comments:      | None         |                          |      |

## Test 55

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5745 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used (interpolated):  $f = 5745$  MHz;  $\sigma = 5.201$  mho/m;  $\epsilon_r = 35.422$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Cheek - Mid/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of Total (measured) = 1.527 V/m

**Head/Cheek - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0356 W/kg

**Head/Cheek - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.113 W/kg

**Head/Cheek - Mid/Zoom Scan (8x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.305 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.0930 W/kg

**SAR(1 g) = 0.039 W/kg; SAR(10 g) = 0.023 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

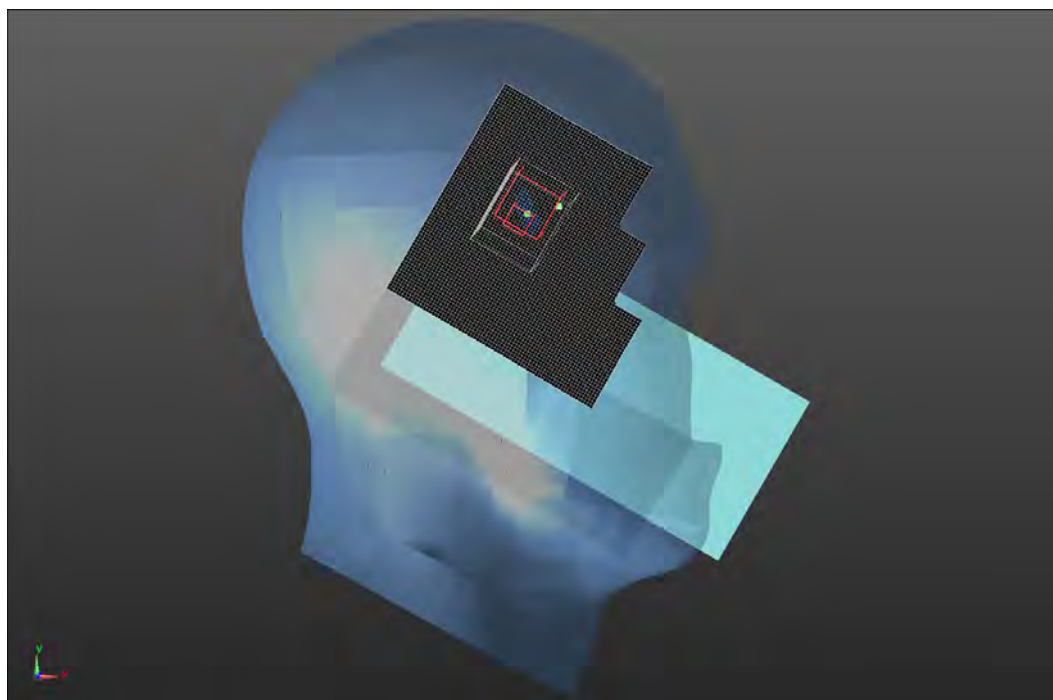
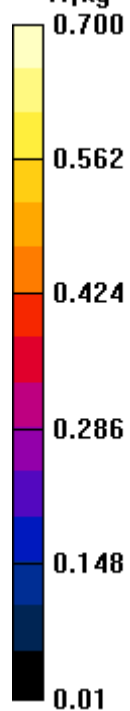
Maximum value of SAR (measured) = 0.0569 W/kg

Maximum value of SAR (measured) = 0.0121 W/kg

   
Approved By

Test 55

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 23.6 |
| Date:          | 1/7/2013     | Liquid Temperature (°C): | 21.2 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 39   |
| Configuration: | 2            | Bar. Pressure (mb):      | 1019 |
| Comments:      | None         |                          |      |

## Test 56

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5745 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 5745$  MHz;  $\sigma = 5.201$  mho/m;  $\epsilon_r = 35.422$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Tilt - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0 W/kg

**Head/Tilt - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0265 W/kg

**Head/Tilt - Mid/Area scan (8x8x1):** Measurement grid: dx=15mm, dy=15mm

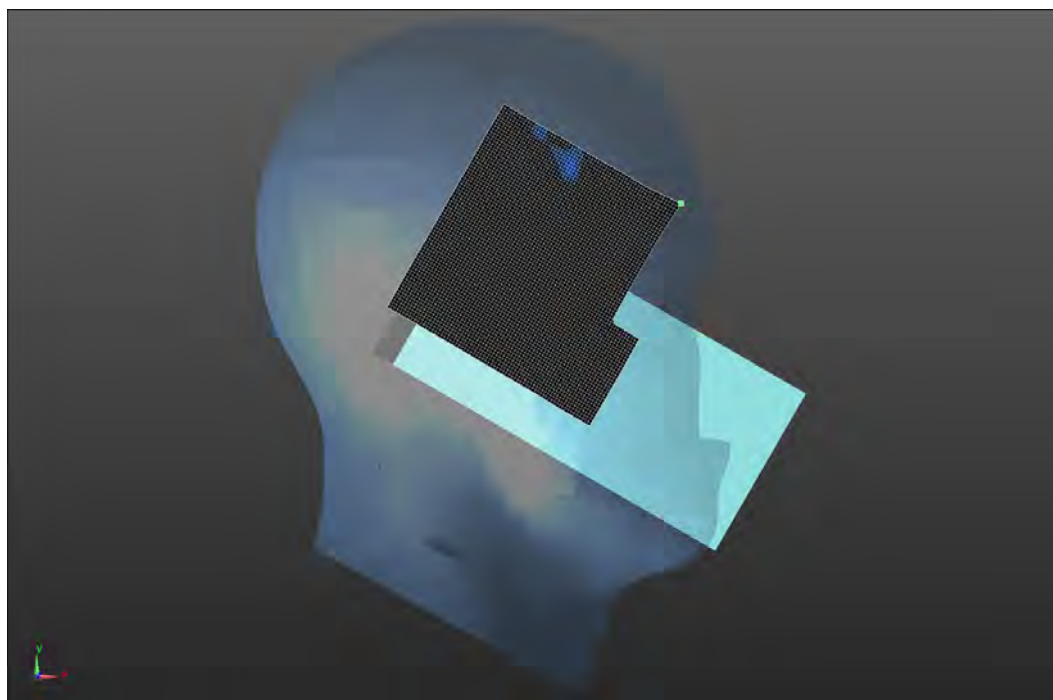
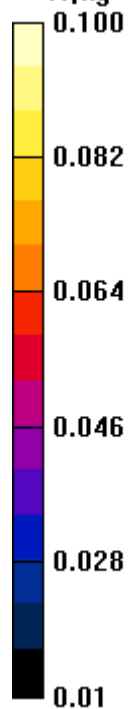
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0265 W/kg

   
Approved By

Test 56

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 23.8 |
| Date:          | 1/7/2013     | Liquid Temperature (°C): | 21.3 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 39   |
| Configuration: | 2            | Bar. Pressure (mb):      | 1019 |
| Comments:      | None         |                          |      |

## Test 57

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5745 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 5745$  MHz;  $\sigma = 5.201$  mho/m;  $\epsilon_r = 35.422$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Cheek - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0480 W/kg

**Head/Cheek - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0376 W/kg

**Head/Cheek - Mid/Area scan (8x8x1):** Measurement grid: dx=15mm, dy=15mm

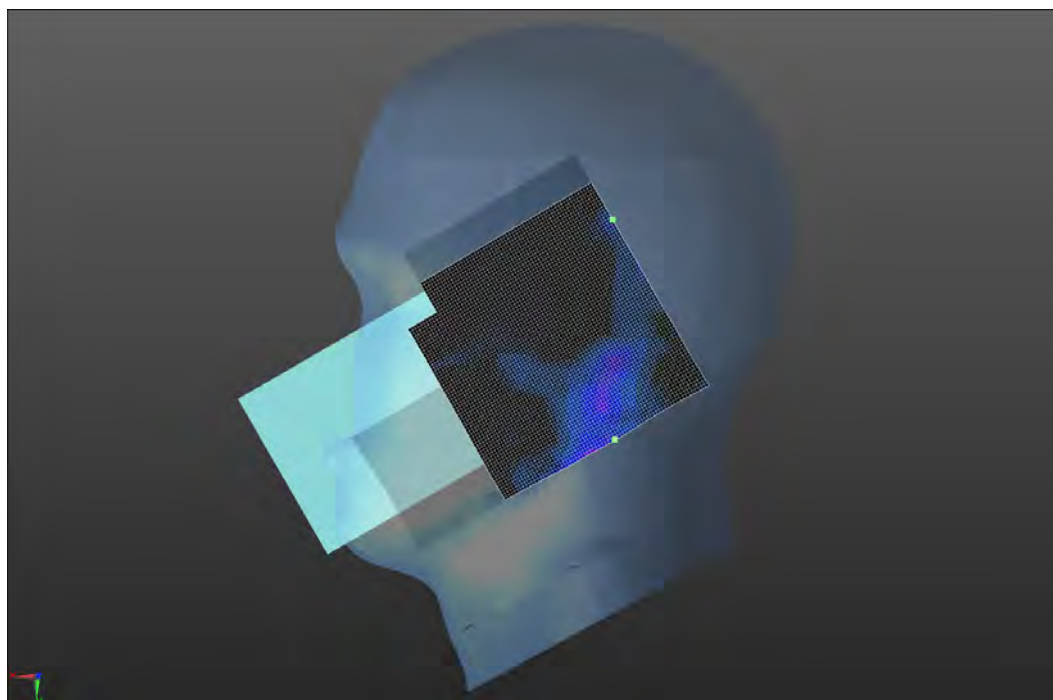
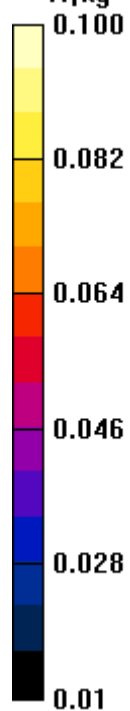
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0361 W/kg

   
Approved By

Test 57

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 23.7 |
| Date:          | 1/7/2013     | Liquid Temperature (°C): | 21.3 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 39   |
| Configuration: | 2            | Bar. Pressure (mb):      | 1019 |
| Comments:      | None         |                          |      |

## Test 58

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5745 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 5745$  MHz;  $\sigma = 5.201$  mho/m;  $\epsilon_r = 35.422$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Tilt - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0400 W/kg

**Head/Tilt - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0422 W/kg

**Head/Tilt - Mid/Area scan (8x8x1):** Measurement grid: dx=15mm, dy=15mm

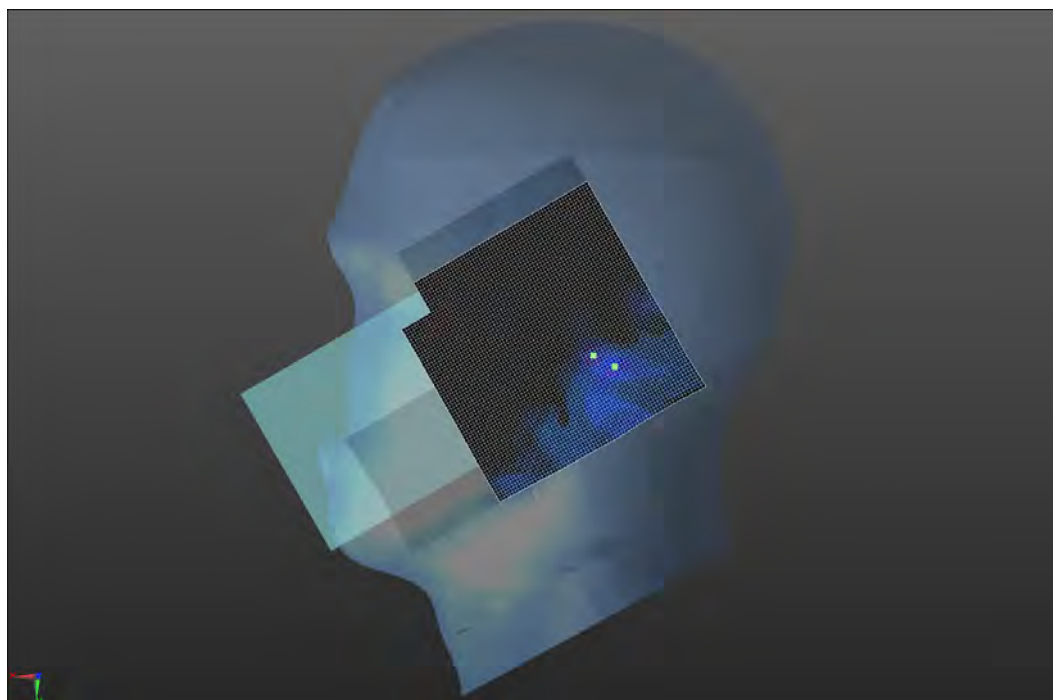
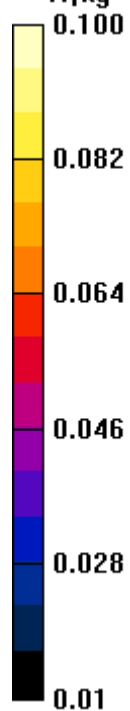
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0311 W/kg

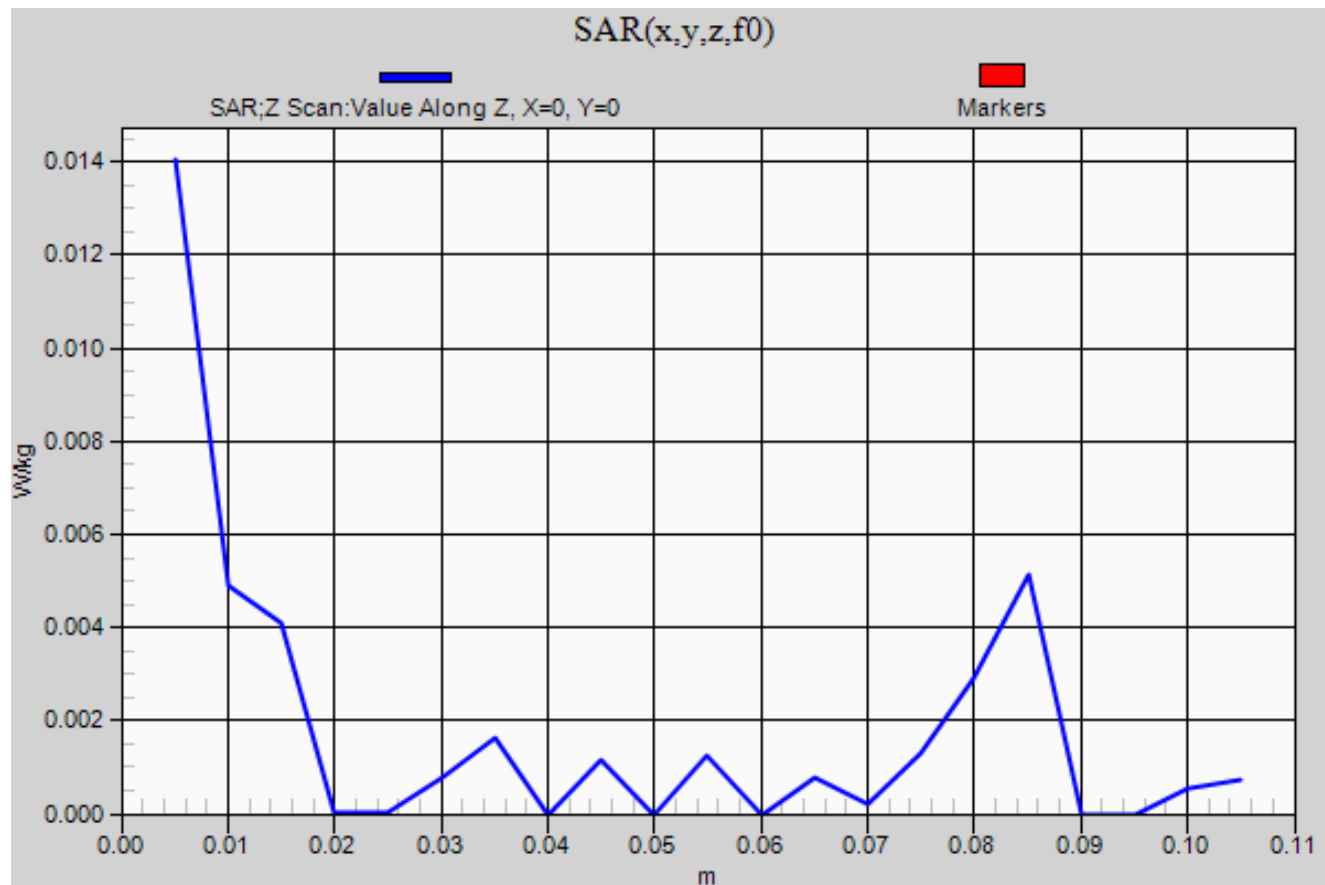
   
Approved By

Test 58

W/kg



## Test 43



|            |                                   |                   |          |
|------------|-----------------------------------|-------------------|----------|
| EUT:       | 1000CP01F9                        | Work Order:       | ITRM0333 |
| Customer:  | Intermec Technologies Corporation | Job Site:         | EV08     |
| Attendees: | None                              | Customer Project: | None     |

## TEST SPECIFICATIONS

| Specification:                                        | Method:                                                                                                                                           |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| FCC 2.1093:2013<br>FCC 15.247:2013<br>FCC 15.407:2013 | FCC OET 65C:2001<br>IEEE Std 1528:2003<br>FCC KDB 447498 D01 v05<br>FCC KDB 248227 D01 V01r02<br>FCC KDB 648474 D04 V01<br>FCC 865664 D01 and D02 |

## COMMENTS

None

## DEVIATIONS FROM TEST STANDARD

None

## RESULTS

| Test Configuration | EUT Position | Body Worn Accessory | Headset | Frequency Band | Transmit Frequency (MHz) | Transmit Channel | Data Rate (Mbps) | Modulation | Power Drift During Test (dB) | Measured 1g SAR Level (mW/g) | Test # |
|--------------------|--------------|---------------------|---------|----------------|--------------------------|------------------|------------------|------------|------------------------------|------------------------------|--------|
| Body               | Right        | Holster             | Yes     | 5.2            | 5200                     | 40               | 6                | OFDM       | 0.02                         | 0.302                        | 19     |
| Body               | Front        | Holster             | Yes     | 5.2            | 5200                     | 40               | 6                | OFDM       | Note 2                       | Note 1                       | 20     |
| Body               | Right        | Holster             | Yes     | 5.3            | 5260                     | 52               | 6                | OFDM       | 0.1                          | 0.287                        | 21     |
| Body               | Front        | Holster             | Yes     | 5.3            | 5260                     | 52               | 6                | OFDM       | Note 2                       | Note 1                       | 22     |
| Body               | Right        | Holster             | Yes     | 5.6            | 5680                     | 136              | 6                | OFDM       | 0.01                         | 0.335                        | 23     |
| Body               | Front        | Holster             | Yes     | 5.6            | 5680                     | 136              | 6                | OFDM       | Note 2                       | Note 1                       | 24     |
| Body               | Right        | Holster             | Yes     | 5.8            | 5745                     | 149              | 6                | OFDM       | -0.12                        | 0.225                        | 25     |
| Body               | Front        | Holster             | Yes     | 5.8            | 5745                     | 149              | 6                | OFDM       | Note 2                       | Note 1                       | 26     |

Note 1: Zoom scan measurement was not performed because the area scan results were less than 0.1 mW/g

Note 2: Power drift measurement was not performed because the area scan results were less than 0.1 mW/g

|                |                  |                          |      |
|----------------|------------------|--------------------------|------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 23.1 |
| Date:          | 12/27/2012       | Liquid Temperature (°C): | 22.6 |
| Serial Number: | 8721242648       | Humidity (%RH):          | 34.3 |
| Configuration: | 1                | Bar. Pressure (mb):      | 1019 |
| Comments:      | None             |                          |      |

## Test 19

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5200 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $f = 5200$  MHz;  $\sigma = 5.383$  mho/m;  $\epsilon_r = 47.336$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Body/Body/Zoom Scan (8x8x9)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2.5mm

Reference Value = 11.181 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.924 W/kg

**SAR(1 g) = 0.302 W/kg; SAR(10 g) = 0.121 W/kg**

Maximum value of SAR (measured) = 0.542 W/kg

**Body/Body/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

Maximum value of Total (measured) = 4.947 V/m

**Body/Body/Reference scan (51x91x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

Maximum value of SAR (interpolated) = 1.07 W/kg

**Body/Body/Area scan (81x81x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.562 W/kg

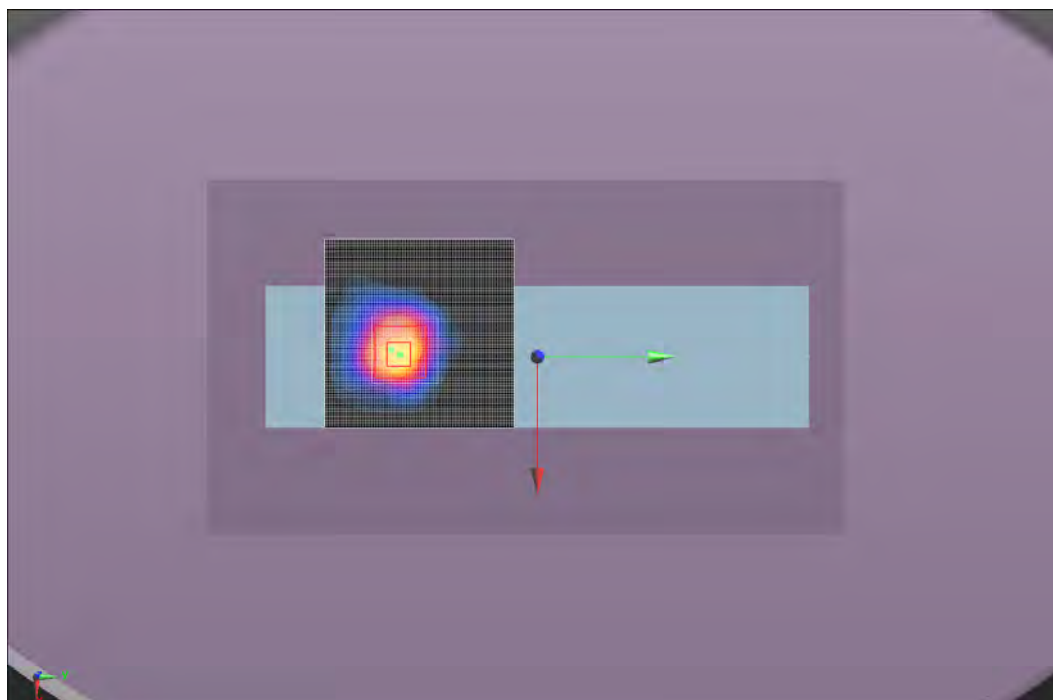
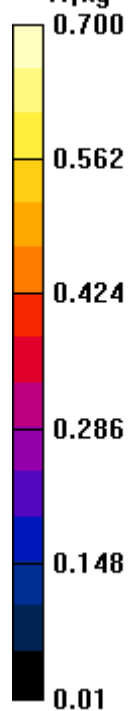
Maximum value of SAR (measured) = 0.132 W/kg

Approved By

Test 19

W/kg



|                |                  |                          |      |
|----------------|------------------|--------------------------|------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 23.1 |
| Date:          | 12/27/2012       | Liquid Temperature (°C): | 22.6 |
| Serial Number: | 8721242648       | Humidity (%RH):          | 34.3 |
| Configuration: | 1                | Bar. Pressure (mb):      | 1019 |
| Comments:      | None             |                          |      |

## Test 20

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5200 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $f = 5200$  MHz;  $\sigma = 5.383$  mho/m;  $\epsilon_r = 47.336$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Body/Body/Reference scan (51x91x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

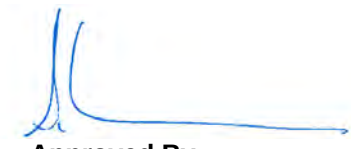
Maximum value of SAR (interpolated) = 0.0107 W/kg

**Body/Body/Area scan (81x81x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0343 W/kg

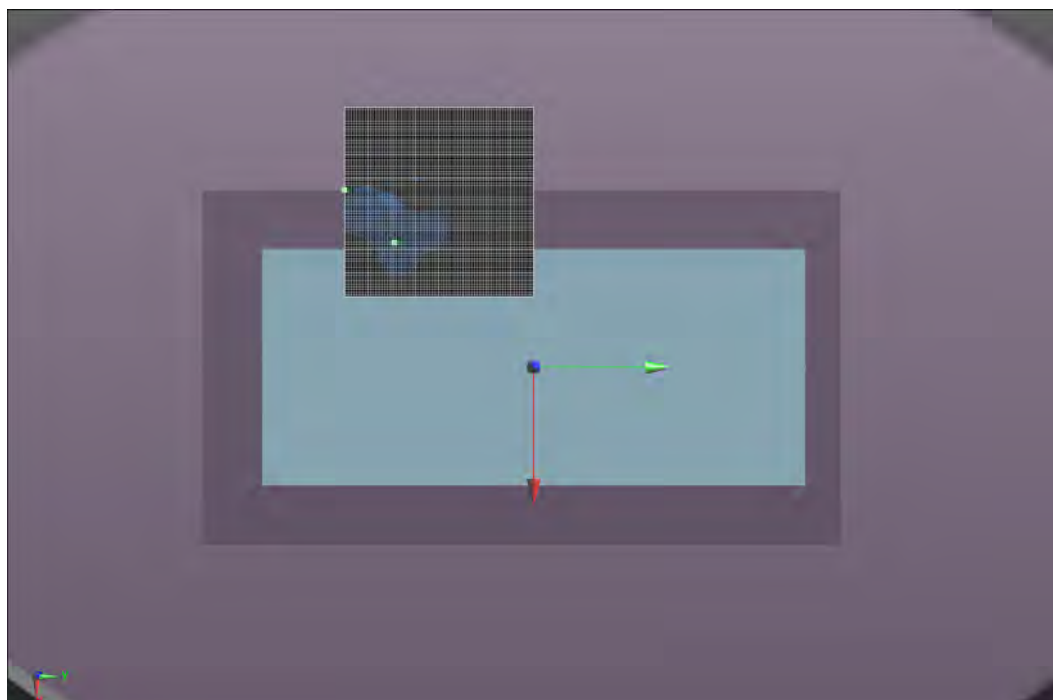
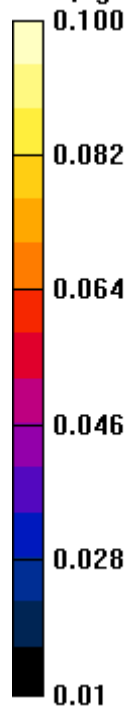
**Body/Body/Area scan (9x9x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.0239 W/kg

   
Approved By

Test 20

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 23.1 |
| Date:          | 12/27/2012   | Liquid Temperature (°C): | 22.8 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 34   |
| Configuration: | 1            | Bar. Pressure (mb):      | 1022 |
| Comments:      | None         |                          |      |

## Test 21

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5260 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 5260$  MHz;  $\sigma = 5.451$  mho/m;  $\epsilon_r = 47.209$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Body/Body/Zoom Scan (9x9x9)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2.5mm

Reference Value = 10.595 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.845 W/kg

**SAR(1 g) = 0.287 W/kg; SAR(10 g) = 0.119 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.503 W/kg

**Body/Body/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of Total (measured) = 4.748 V/m

**Body/Body/Reference scan (51x91x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.470 W/kg

**Body/Body/Area scan (81x81x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

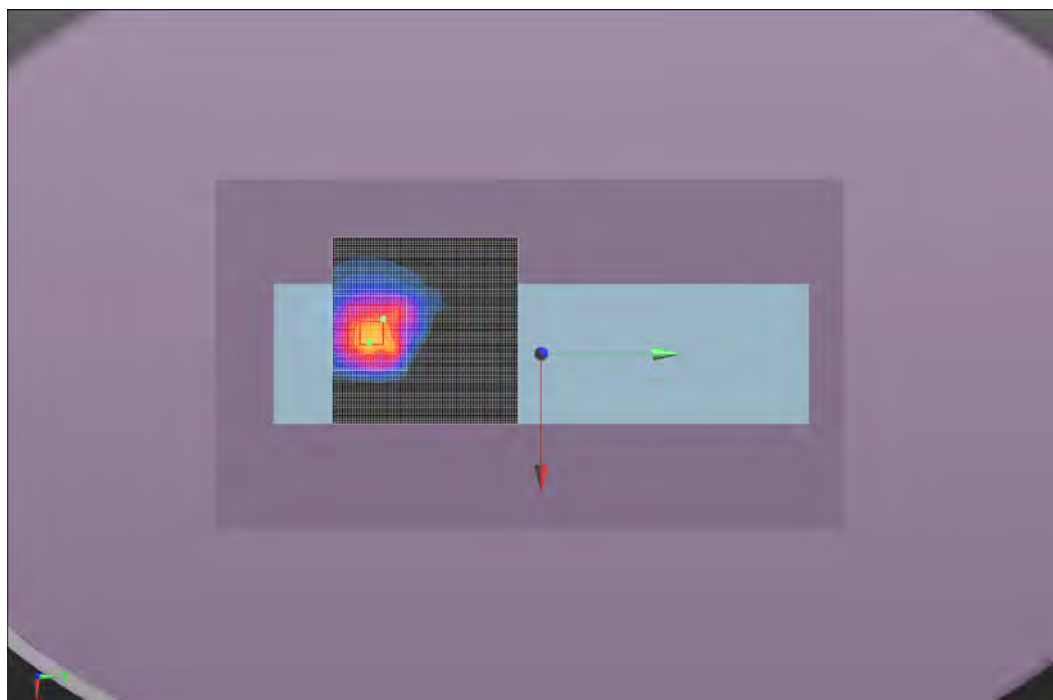
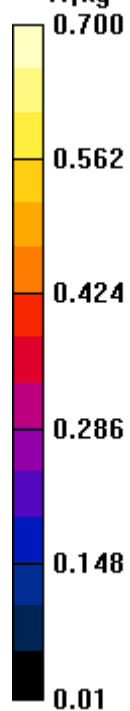
Maximum value of SAR (interpolated) = 0.516 W/kg

Maximum value of SAR (measured) = 0.123 W/kg

   
Approved By

Test 21

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 21.8 |
| Date:          | 12/27/2012   | Liquid Temperature (°C): | 22.7 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 36   |
| Configuration: | 1            | Bar. Pressure (mb):      | 1022 |
| Comments:      | None         |                          |      |

## Test 22

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5260 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 5260$  MHz;  $\sigma = 5.451$  mho/m;  $\epsilon_r = 47.209$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Body/Body/Reference scan (51x91x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.000373 W/kg

**Body/Body/Area scan (111x111x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0354 W/kg

**Body/Body/Area scan (12x12x1):** Measurement grid: dx=10mm, dy=10mm

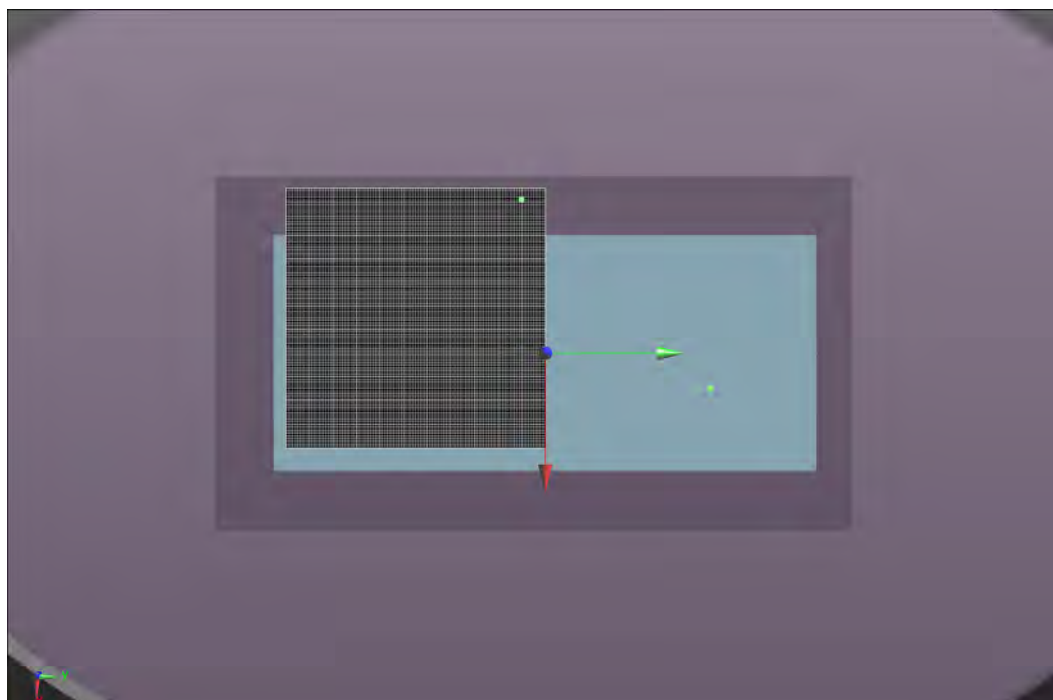
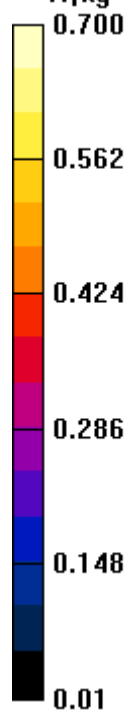
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0278 W/kg

   
Approved By

Test 22

W/kg



|                |                  |                          |      |
|----------------|------------------|--------------------------|------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 23.8 |
| Date:          | 12/28/2012       | Liquid Temperature (°C): | 22.7 |
| Serial Number: | 8721242648       | Humidity (%RH):          | 31.1 |
| Configuration: | 1                | Bar. Pressure (mb):      | 1020 |
| Comments:      | None             |                          |      |

## Test 23

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5680 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 5680$  MHz;  $\sigma = 6.001$  mho/m;  $\epsilon_r = 46.454$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Body/Body/Zoom Scan (9x9x9)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2.5mm

Reference Value = 10.778 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.09 W/kg

**SAR(1 g) = 0.335 W/kg; SAR(10 g) = 0.135 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.597 W/kg

**Body/Body/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of Total (measured) = 4.552 V/m

**Body/Body/Reference scan (51x91x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.374 W/kg

**Body/Body/Area scan (111x111x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

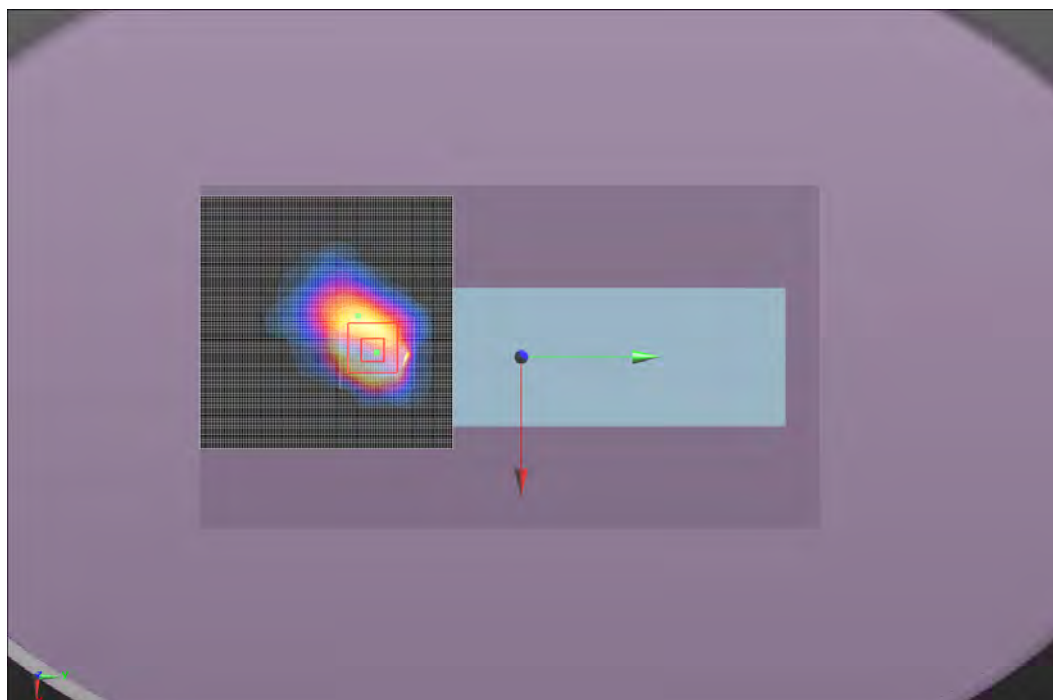
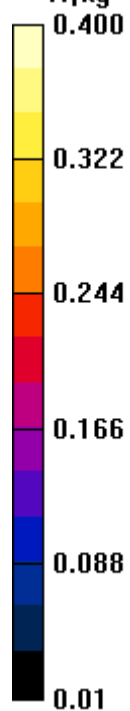
Maximum value of SAR (interpolated) = 0.645 W/kg

Maximum value of SAR (measured) = 0.124 W/kg

   
Approved By

Test 23

W/kg



|                |                  |                          |      |
|----------------|------------------|--------------------------|------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 23.8 |
| Date:          | 12/28/2012       | Liquid Temperature (°C): | 22.7 |
| Serial Number: | 8721242648       | Humidity (%RH):          | 31.1 |
| Configuration: | 1                | Bar. Pressure (mb):      | 1020 |
| Comments:      | None             |                          |      |

## Test 24

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5680 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 5680$  MHz;  $\sigma = 6.001$  mho/m;  $\epsilon_r = 46.454$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Body/Body/Reference scan (51x91x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0107 W/kg

**Body/Body/Area scan (111x111x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0 W/kg

**Body/Body/Area scan (12x12x1):** Measurement grid: dx=10mm, dy=10mm

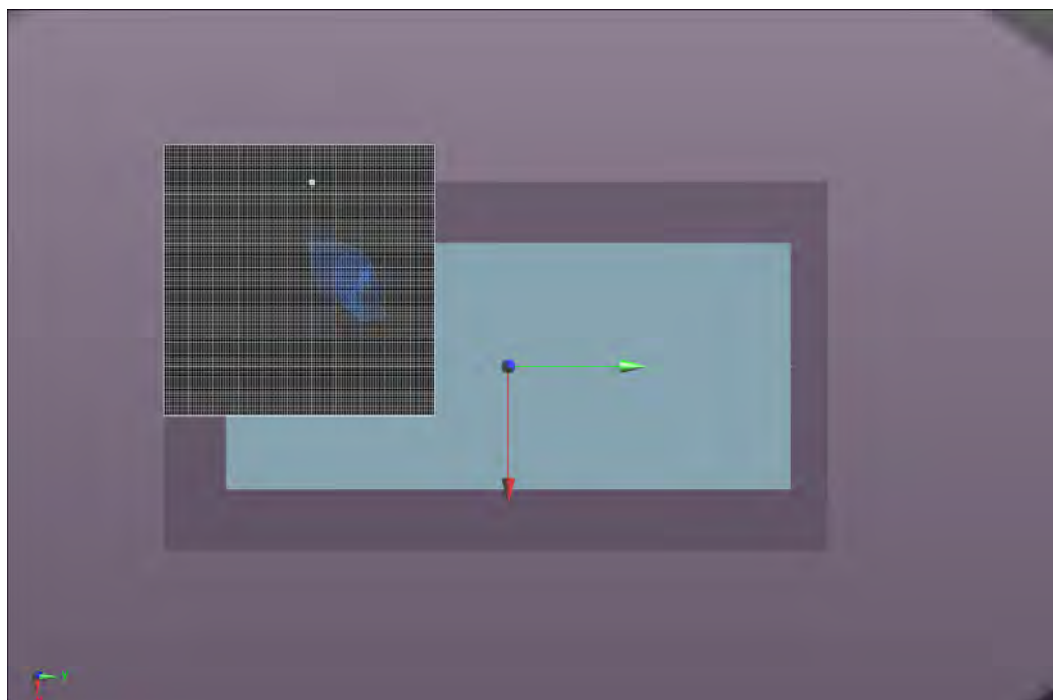
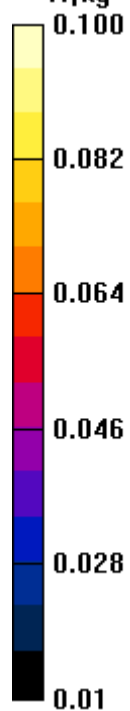
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0278 W/kg

   
Approved By

Test 24

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 23.2 |
| Date:          | 12/28/2012   | Liquid Temperature (°C): | 22.6 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 33   |
| Configuration: | 1            | Bar. Pressure (mb):      | 1020 |
| Comments:      | None         |                          |      |

## Test 25

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5745 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 5745$  MHz;  $\sigma = 6.077$  mho/m;  $\epsilon_r = 46.324$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Body/Body/Zoom Scan (9x9x9)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2.5mm

Reference Value = 9.932 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 1.89 W/kg

**SAR(1 g) = 0.225 W/kg; SAR(10 g) = 0.088 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.466 W/kg

**Body/Body/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of Total (measured) = 3.882 V/m

**Body/Body/Reference scan (41x91x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.725 W/kg

**Body/Body/Area scan (111x111x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

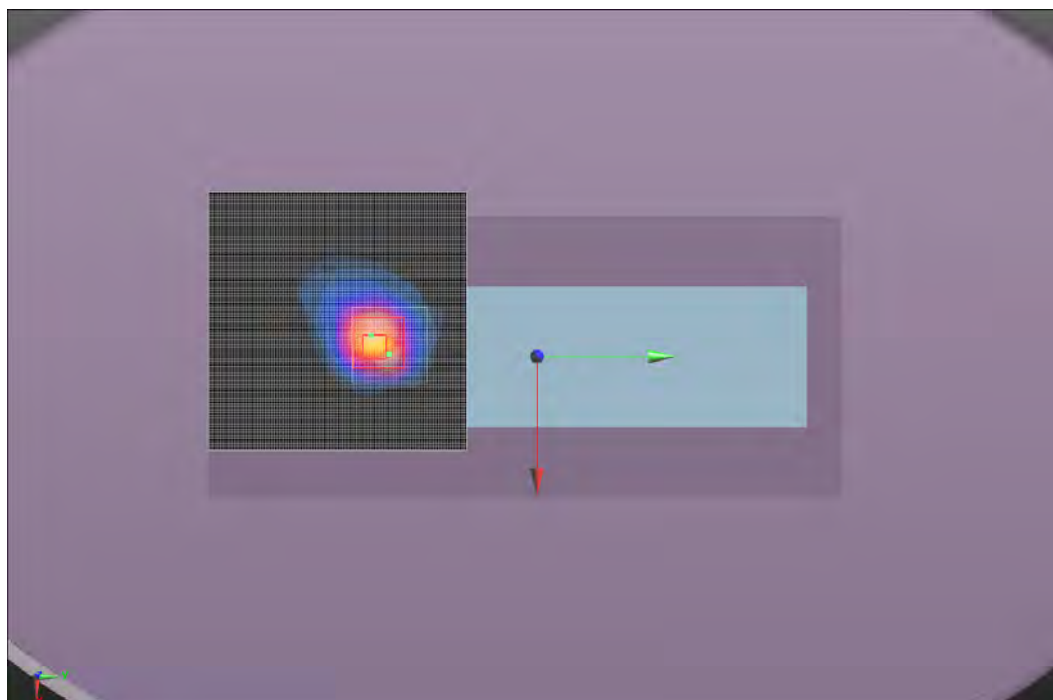
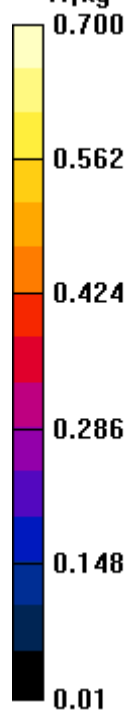
Maximum value of SAR (interpolated) = 0.574 W/kg

Maximum value of SAR (measured) = 0.0916 W/kg

   
Approved By

Test 25

W/kg



|                |              |                          |      |
|----------------|--------------|--------------------------|------|
| Tested By:     | Carl Engholm | Room Temperature (°C):   | 23.1 |
| Date:          | 12/28/2012   | Liquid Temperature (°C): | 22.6 |
| Serial Number: | 8721242648   | Humidity (%RH):          | 33   |
| Configuration: | 1            | Bar. Pressure (mb):      | 1020 |
| Comments:      | None         |                          |      |

## Test 26

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D5GHz (5000.0 - 6000.0 MHz); Frequency: 5745 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 5745$  MHz;  $\sigma = 6.077$  mho/m;  $\epsilon_r = 46.324$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

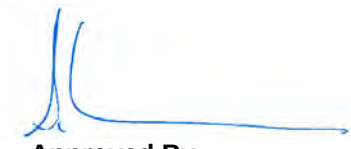
**Body/Body/Reference scan (51x91x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0 W/kg

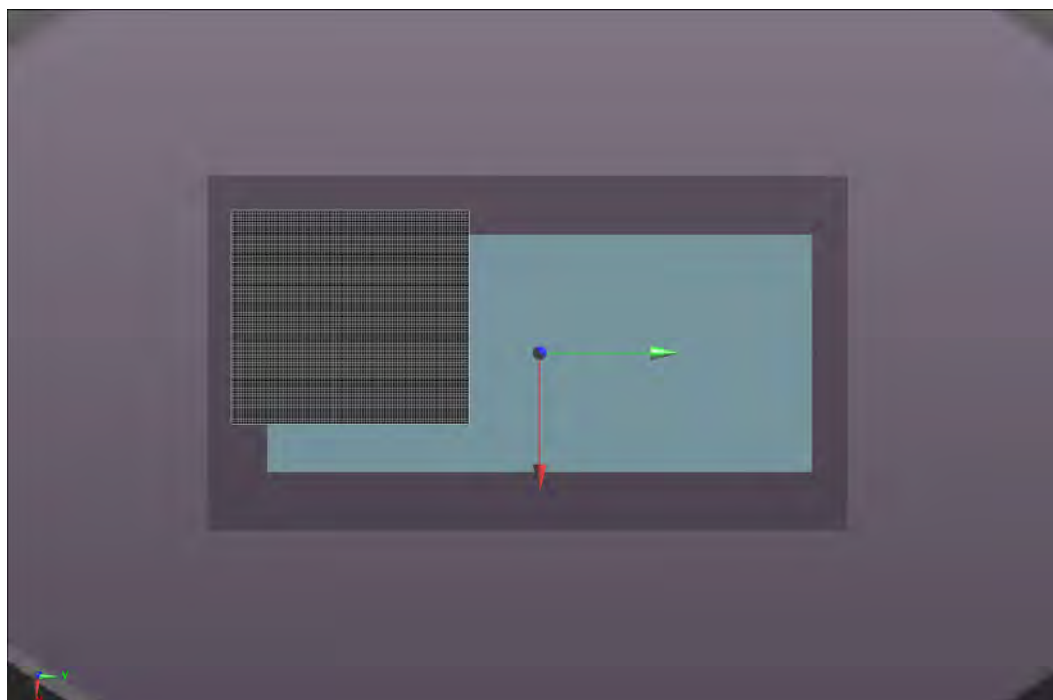
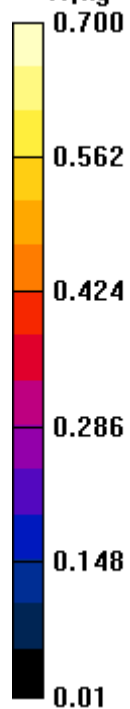
**Body/Body/Area scan (91x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

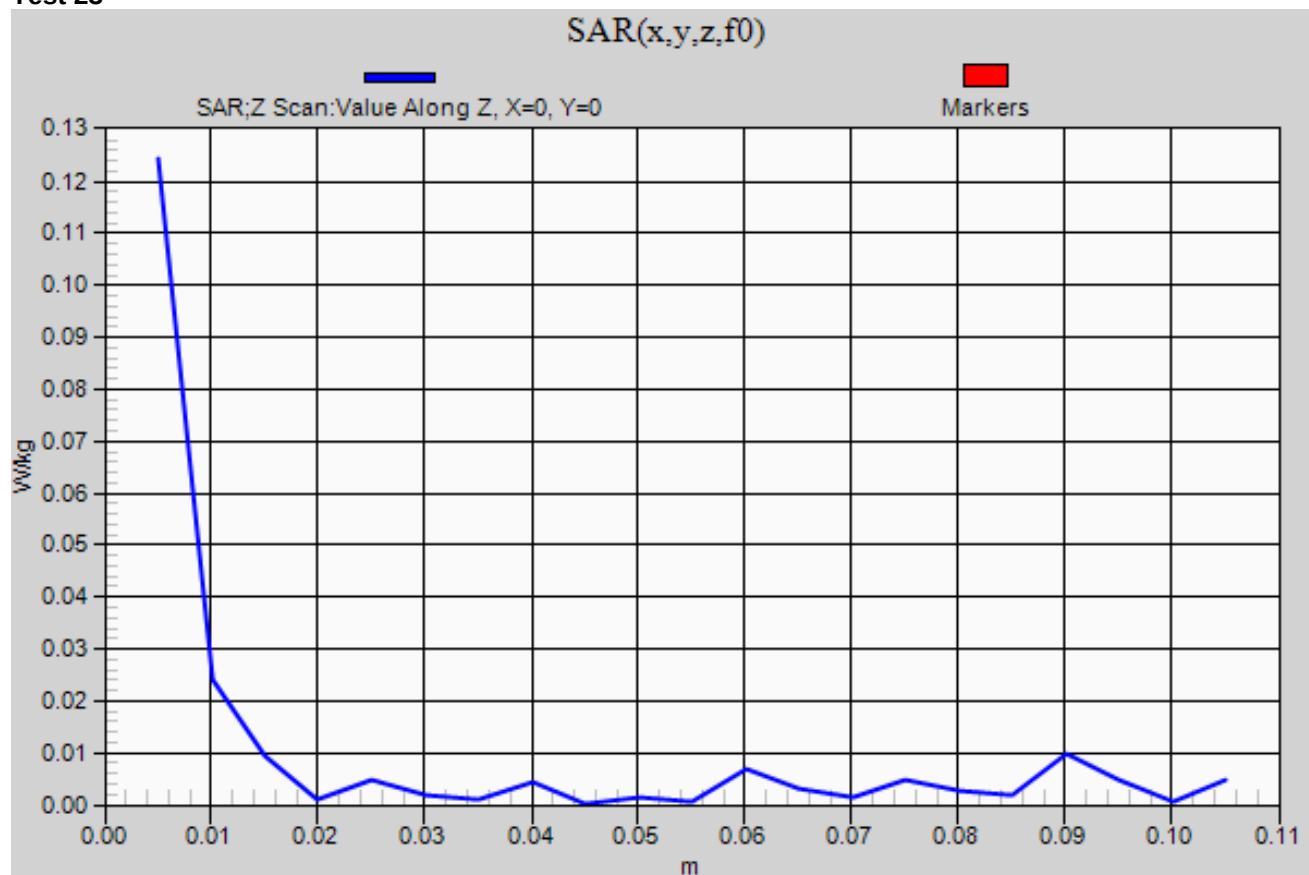
   
Approved By

Test 26

W/kg



## Test 23



|            |                                   |                   |          |
|------------|-----------------------------------|-------------------|----------|
| EUT:       | 1000CP01F9                        | Work Order:       | ITRM0333 |
| Customer:  | Intermec Technologies Corporation | Job Site:         | EV08     |
| Attendees: | None                              | Customer Project: | None     |

## TEST SPECIFICATIONS

| Specification:                                        | Method:                                                                                                                                           |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| FCC 2.1093:2013<br>FCC 15.247:2013<br>FCC 15.407:2013 | FCC OET 65C:2001<br>IEEE Std 1528:2003<br>FCC KDB 447498 D01 v05<br>FCC KDB 248227 D01 V01r02<br>FCC KDB 648474 D04 V01<br>FCC 865664 D01 and D02 |

## COMMENTS

None

## DEVIATIONS FROM TEST STANDARD

None

## RESULTS

| Test Configuration | Side of Head | EUT Position | Headset | Frequency Band | Transmit Frequency (MHz) | Transmit Channel | Data Rate (Mbps) | Modulation | Power Drift During Test (dB) | Measured 1g SAR Level (mW/g) | Scaled to 50% Duty Cycle <sup>1</sup> (mW/g) | Test # |
|--------------------|--------------|--------------|---------|----------------|--------------------------|------------------|------------------|------------|------------------------------|------------------------------|----------------------------------------------|--------|
| Head               | Left         | Touch        | No      | 915            | 927.25                   | 54               | 340              | PRASK      | 0.08                         | 0.748                        | 0.374                                        | 97     |
| Head               | Left         | Tilt         | No      | 915            | 927.25                   | 54               | 340              | PRASK      | -0.06                        | 0.627                        | 0.314                                        | 98     |
| Head               | Right        | Touch        | No      | 915            | 927.25                   | 54               | 340              | PRASK      | -0.04                        | 0.729                        | 0.365                                        | 99     |
| Head               | Right        | Tilt         | No      | 915            | 927.25                   | 54               | 340              | PRASK      | 0.14                         | 0.679                        | 0.340                                        | 100    |

Note 1: Measured SAR after it has been scaled for a 50% duty cycle

|                |                  |                          |      |
|----------------|------------------|--------------------------|------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 21.9 |
| Date:          | 12/17/2012       | Liquid Temperature (°C): | 23.5 |
| Serial Number: | 8721242648       | Humidity (%RH):          | 37   |
| Configuration: | 2                | Bar. Pressure (mb):      | 1010 |
| Comments:      | None             |                          |      |

## Test 97

**DUT: CK70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D915 (915.0 MHz); Frequency: 927.25 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used (interpolated):  $f = 927.25$  MHz;  $\sigma = 0.953$  mho/m;  $\epsilon_r = 39.273$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head - Right/Cheek - Mid/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of Total (measured) = 26.11 V/m

**Head - Right/Cheek - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.890 W/kg

**Head - Right/Cheek - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.855 W/kg

**Head - Right/Cheek - Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 29.628 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.979 W/kg

**SAR(1 g) = 0.748 W/kg; SAR(10 g) = 0.534 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

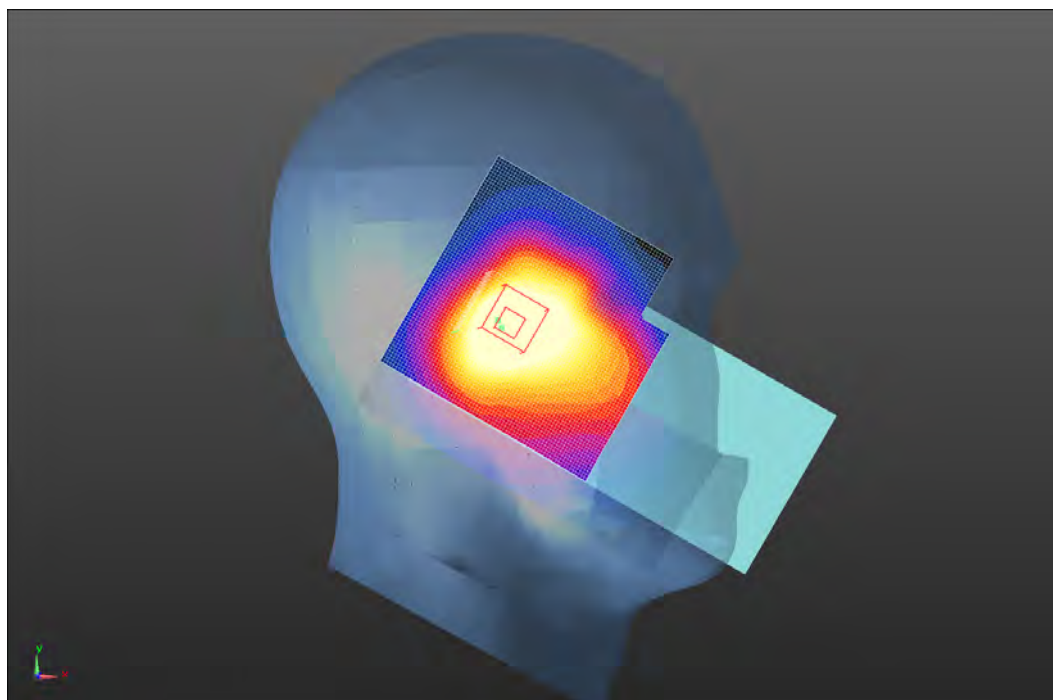
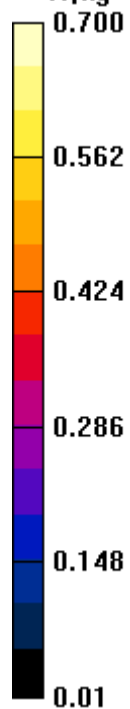
Maximum value of SAR (measured) = 0.829 W/kg

Maximum value of SAR (measured) = 0.650 W/kg

   
Approved By

Test 97

W/kg



|                |                  |                          |      |
|----------------|------------------|--------------------------|------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 21.1 |
| Date:          | 12/17/2012       | Liquid Temperature (°C): | 22   |
| Serial Number: | 8721242648       | Humidity (%RH):          | 38.5 |
| Configuration: | 2                | Bar. Pressure (mb):      | 1010 |
| Comments:      | None             |                          |      |

## Test 98

**DUT: CK70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D915 (915.0 MHz); Frequency: 927.25 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 927.25$  MHz;  $\sigma = 0.953$  mho/m;  $\epsilon_r = 39.273$ ;  $\rho = 1000$  kg/m<sup>3</sup>,  
Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASYS2 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head - Right/Tilt - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.751 W/kg

**Head - Right/Tilt - Mid/Zoom Scan 2 (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 27.766 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.726 W/kg

**SAR(1 g) = 0.499 W/kg; SAR(10 g) = 0.311 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.626 W/kg

**Head - Right/Tilt - Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 27.766 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.855 W/kg

**SAR(1 g) = 0.627 W/kg; SAR(10 g) = 0.423 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.711 W/kg

**Head - Right/Tilt - Mid/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of Total (measured) = 23.23 V/m

**Head - Right/Tilt - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

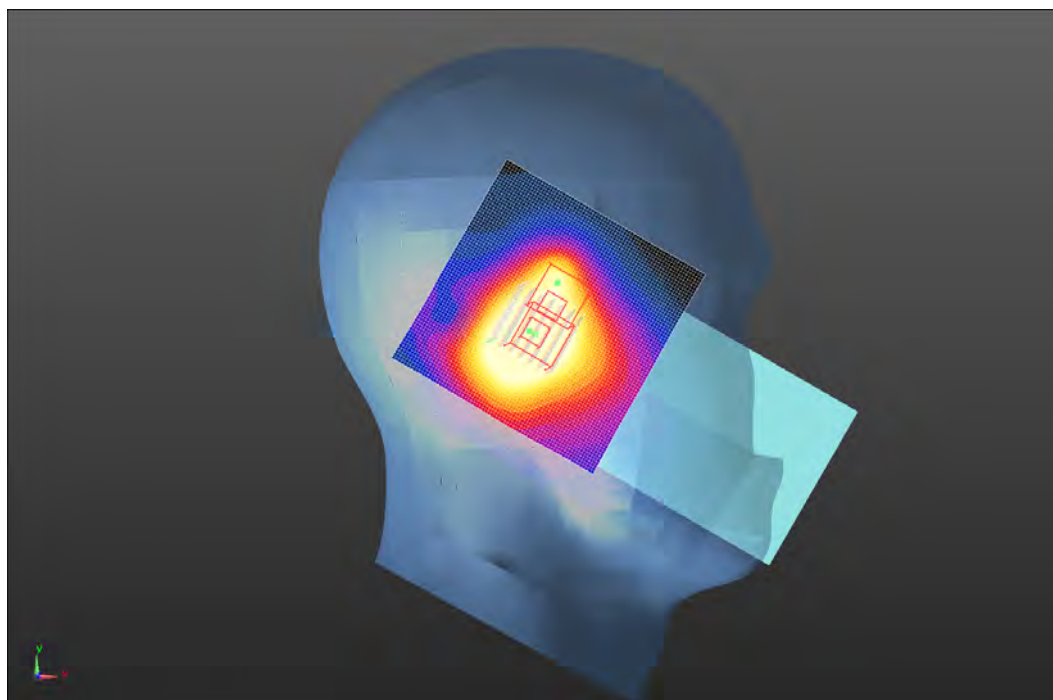
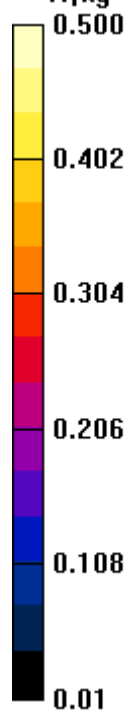
Maximum value of SAR (interpolated) = 0.721 W/kg

Maximum value of SAR (measured) = 0.514 W/kg

   
Approved By

Test 98

W/kg



|                |                  |                          |      |
|----------------|------------------|--------------------------|------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 20.6 |
| Date:          | 12/17/2012       | Liquid Temperature (°C): | 21.1 |
| Serial Number: | 8721242648       | Humidity (%RH):          | 38.6 |
| Configuration: | 2                | Bar. Pressure (mb):      | 1010 |
| Comments:      | None             |                          |      |

## Test 99

**DUT: CK70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D915 (915.0 MHz); Frequency: 927.25 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used (interpolated):  $f = 927.25$  MHz;  $\sigma = 0.953$  mho/m;  $\epsilon_r = 39.273$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Cheek - Mid/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of Total (measured) = 24.09 V/m

**Head/Cheek - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.950 W/kg

**Head/Cheek - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.894 W/kg

**Head/Cheek - Mid/Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 31.052 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.23 W/kg

**SAR(1 g) = 0.729 W/kg; SAR(10 g) = 0.482 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.871 W/kg

**Head/Cheek - Mid/Zoom Scan 2 (7x8x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 31.052 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.831 W/kg

**SAR(1 g) = 0.551 W/kg; SAR(10 g) = 0.418 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

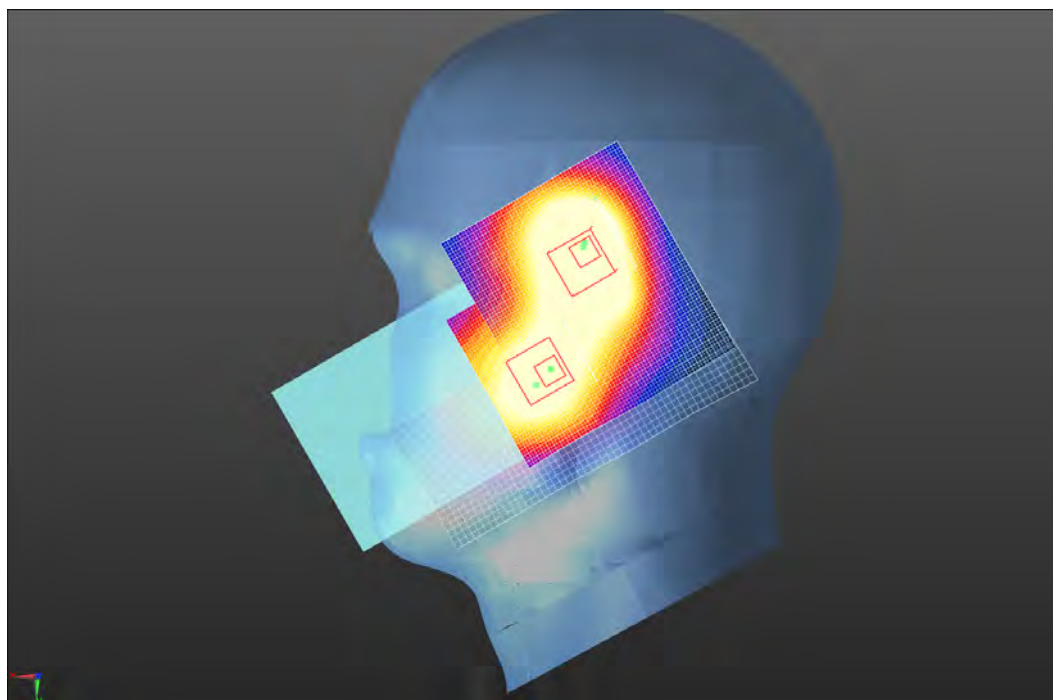
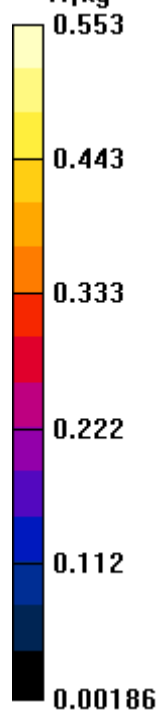
Maximum value of SAR (measured) = 0.607 W/kg

Maximum value of SAR (measured) = 0.553 W/kg

   
Approved By

Test 99

W/kg



|                |                  |                          |      |
|----------------|------------------|--------------------------|------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 22.3 |
| Date:          | 12/17/2012       | Liquid Temperature (°C): | 21.1 |
| Serial Number: | 8721242648       | Humidity (%RH):          | 40.7 |
| Configuration: | 2                | Bar. Pressure (mb):      | 1010 |
| Comments:      | None             |                          |      |

## Test 100

**DUT: CK70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D915 (915.0 MHz); Frequency: 927.25 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 927.25$  MHz;  $\sigma = 0.953$  mho/m;  $\epsilon_r = 39.273$ ;  $\rho = 1000$  kg/m<sup>3</sup>,  
Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Head/Tilt - Mid/Reference scan (41x71x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.854 W/kg

**Head/Tilt - Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 29.037 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.997 W/kg

**SAR(1 g) = 0.679 W/kg; SAR(10 g) = 0.455 W/kg** (SAR corrected for target medium)

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.778 W/kg

**Head/Tilt - Mid/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of Total (measured) = 23.84 V/m

**Head/Tilt - Mid/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

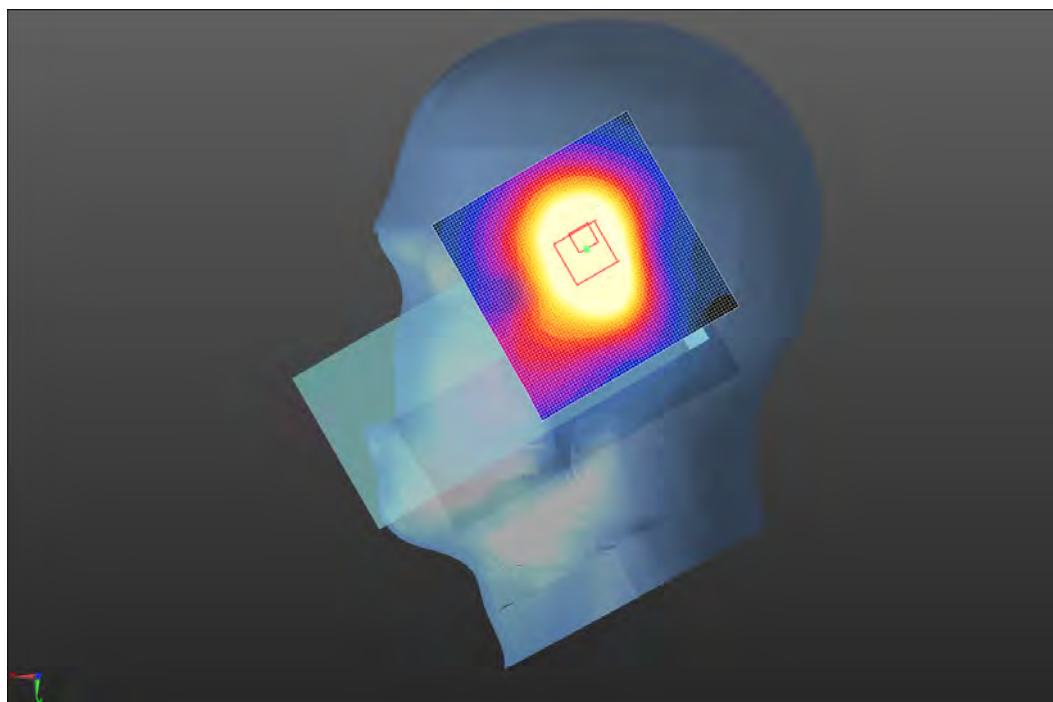
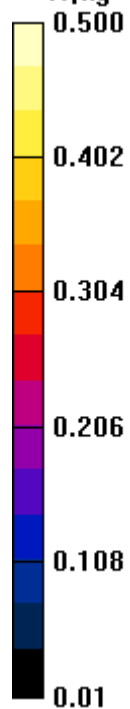
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.800 W/kg

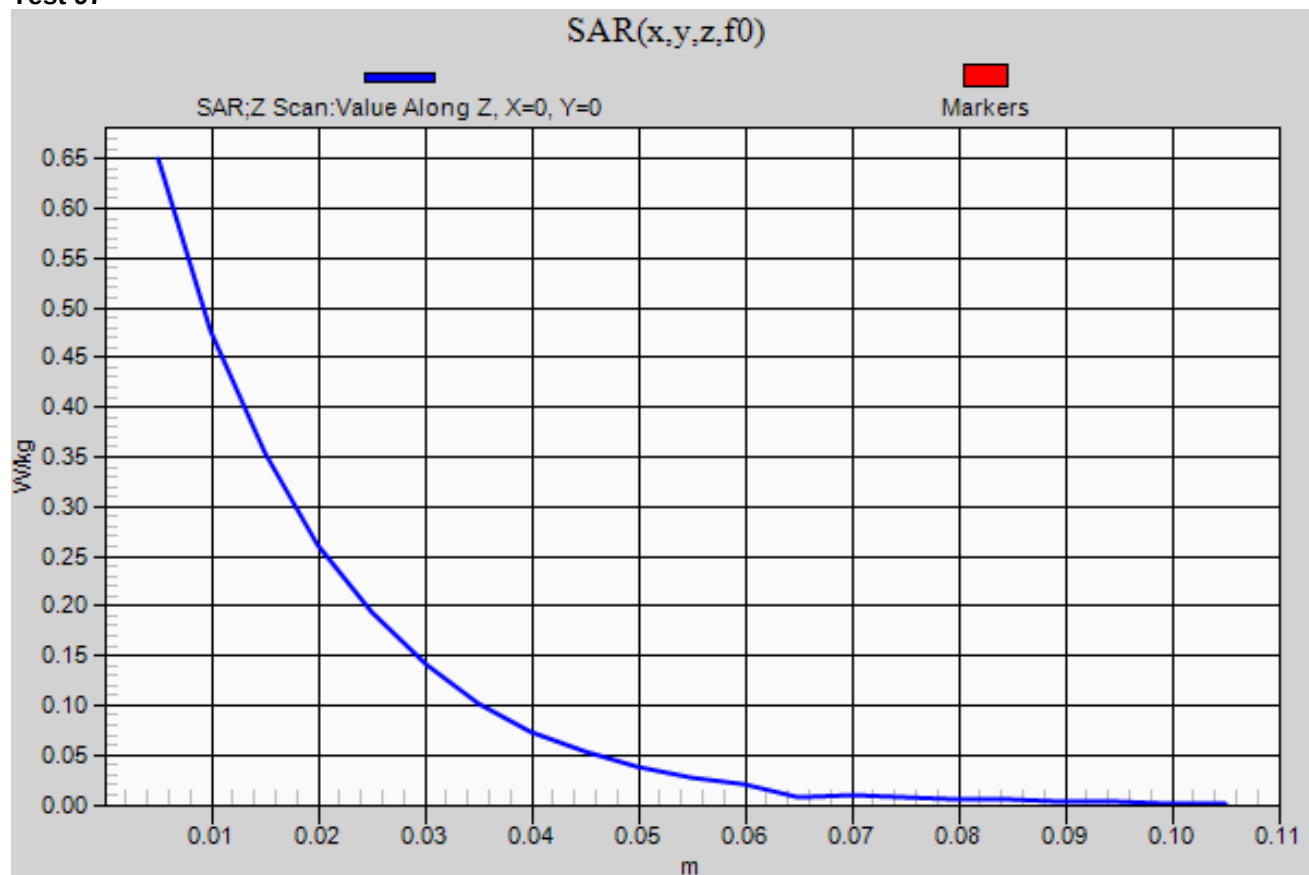
Maximum value of SAR (measured) = 0.542 W/kg

   
Approved By

Test 100  
W/kg



## Test 97



|            |                                   |                   |          |
|------------|-----------------------------------|-------------------|----------|
| EUT:       | 1000CP01F9                        | Work Order:       | ITRM0333 |
| Customer:  | Intermec Technologies Corporation | Job Site:         | EV08     |
| Attendees: | None                              | Customer Project: | None     |

## TEST SPECIFICATIONS

| Specification:                                        | Method:                                                                                                                                           |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| FCC 2.1093:2013<br>FCC 15.247:2013<br>FCC 15.407:2013 | FCC OET 65C:2001<br>IEEE Std 1528:2003<br>FCC KDB 447498 D01 v05<br>FCC KDB 248227 D01 V01r02<br>FCC KDB 648474 D04 V01<br>FCC 865664 D01 and D02 |

## COMMENTS

None

## DEVIATIONS FROM TEST STANDARD

None

## RESULTS

| Test Configuration | EUT Position | Body Worn Accessory | Headset | Frequency Band | Transmit Frequency (MHz) | Transmit Channel | Data Rate (kbps) | Modulation | Power Drift During Test (dB) | Measured 1g SAR Level (mW/g) | Scaled to 50% Duty Cycle <sup>1</sup> (mW/g) | Test # |
|--------------------|--------------|---------------------|---------|----------------|--------------------------|------------------|------------------|------------|------------------------------|------------------------------|----------------------------------------------|--------|
| Body               | Left         | Holster             | Yes     | 915            | 927.25                   | 54               | 340              | PRASK      | 0.02                         | 1.2                          | 0.6                                          | 92     |
| Body               | Left         | Holster             | Yes     | 915            | 902.75                   | 5                | 340              | PRASK      | -0.09                        | 1.23                         | 0.615                                        | 92a    |
| Body               | Left         | Holster             | Yes     | 915            | 915.25                   | 30               | 340              | PRASK      | 0                            | 1.17                         | 0.585                                        | 92b    |
| Body               | Front        | Holster             | Yes     | 915            | 927.25                   | 54               | 340              | PRASK      | -0.09                        | 0.283                        | 0.142                                        | 91     |

Note 1: Measured SAR after it has been scaled for a 50% duty cycle

|                |                  |                          |      |
|----------------|------------------|--------------------------|------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 22.9 |
| Date:          | 12/20/2012       | Liquid Temperature (°C): | 22.5 |
| Serial Number: | 8721242648       | Humidity (%RH):          | 34.2 |
| Configuration: | 1                | Bar. Pressure (mb):      | 1007 |
| Comments:      | None             |                          |      |

## Test 92

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D915 (915.0 MHz); Frequency: 927.25

MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 927.25$  MHz;  $\sigma = 1.092$  mho/m;  $\epsilon_r = 52.478$ ;  $\rho = 1000$  kg/m<sup>3</sup>,

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Body/Body/Zoom Scan 2 (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 35.213 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.51 W/kg

**SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.717 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.21 W/kg

**Body/Body/Reference scan (51x91x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.63 W/kg

**Body/Body/Area scan 2 (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.48 W/kg

**Body/Body/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.43 W/kg

**Body/Body/Zoom Scan (7x8x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 35.213 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.82 W/kg

**SAR(1 g) = 1.2 W/kg; SAR(10 g) = 0.777 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.41 W/kg

**Body/Body/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of Total (measured) = 29.22 V/m

**Body/Body/Area scan 2 (8x8x1):** Measurement grid: dx=15mm, dy=15mm

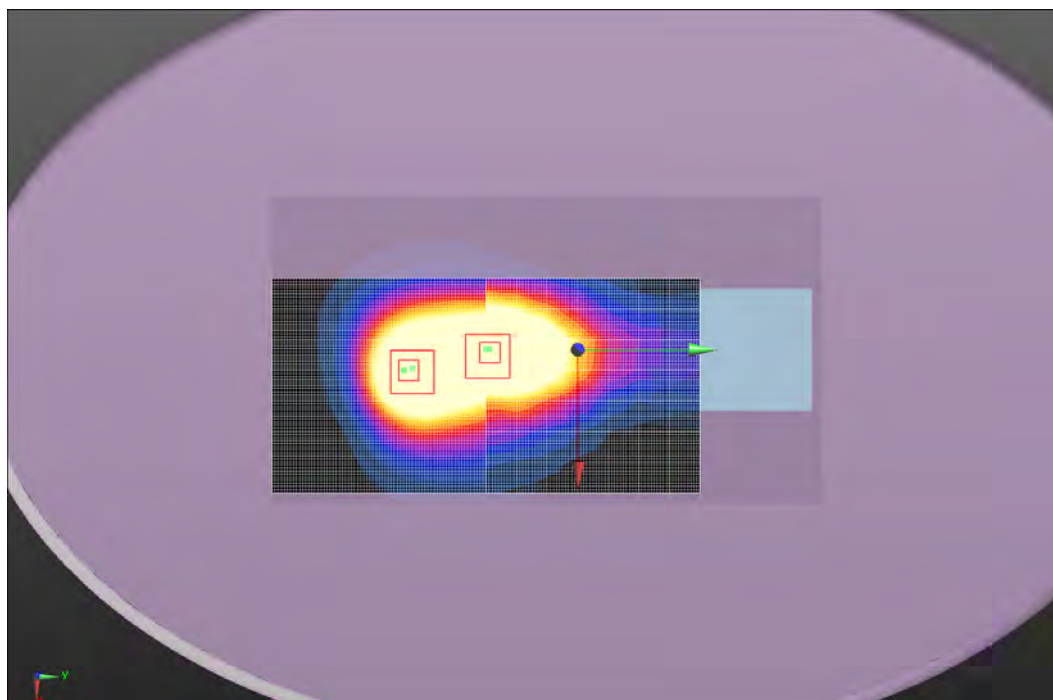
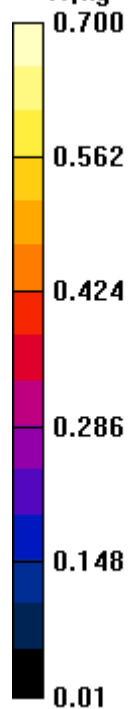
Info: Interpolated medium parameters used for SAR evaluation.



Approved By

Test 92

W/kg



|                |                  |                          |      |
|----------------|------------------|--------------------------|------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 22.9 |
| Date:          | 12/20/2012       | Liquid Temperature (°C): | 22.5 |
| Serial Number: | 8721242648       | Humidity (%RH):          | 35.2 |
| Configuration: | 1                | Bar. Pressure (mb):      | 1007 |
| Comments:      | None             |                          |      |

**Test 92a**

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D915 (915.0 MHz); Frequency: 902.75 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 902.75$  MHz;  $\sigma = 1.068$  mho/m;  $\epsilon_r = 52.725$ ;  $\rho = 1000$  kg/m<sup>3</sup>,

Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Body/Body/Zoom Scan 2 (8x8x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 37.092 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 2.66 W/kg

**SAR(1 g) = 1.23 W/kg; SAR(10 g) = 0.708 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 2.12 W/kg

**Body/Body/Reference scan (51x91x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.75 W/kg

**Body/Body/Area scan (71x111x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.42 W/kg

**Body/Body/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 37.092 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 2.05 W/kg

**SAR(1 g) = 1.23 W/kg; SAR(10 g) = 0.819 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.40 W/kg

**Body/Body/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

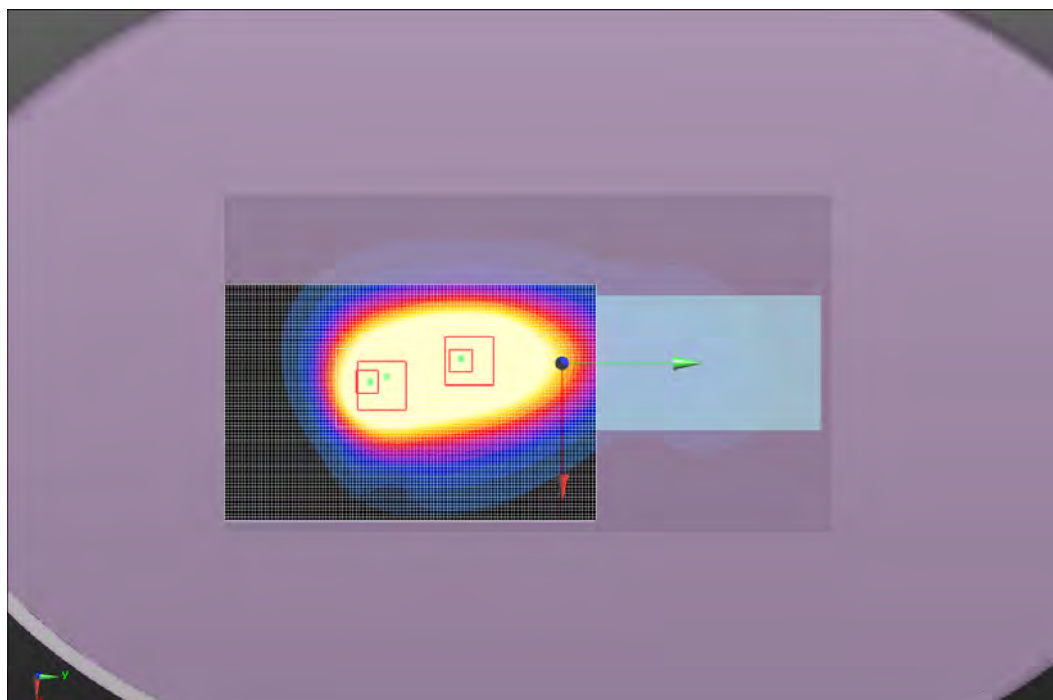
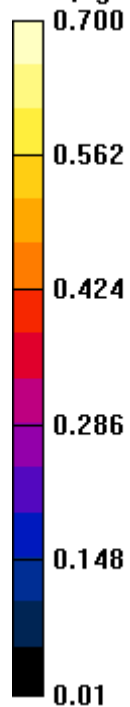
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of Total (measured) = 29.97 V/m

Maximum value of SAR (measured) = 0.959 W/kg

   
Approved By

Test 92a  
W/kg



|                |                  |                          |      |
|----------------|------------------|--------------------------|------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 22.7 |
| Date:          | 12/20/2012       | Liquid Temperature (°C): | 22.1 |
| Serial Number: | 8721242648       | Humidity (%RH):          | 36.9 |
| Configuration: | 1                | Bar. Pressure (mb):      | 1007 |
| Comments:      | None             |                          |      |

## Test 92b

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D915 (915.0 MHz); Frequency: 915.25 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 915.25$  MHz;  $\sigma = 1.08$  mho/m;  $\epsilon_r = 52.602$ ;  $\rho = 1000$  kg/m<sup>3</sup>, Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Body/Body/Zoom Scan 2 (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 36.014 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 2.17 W/kg

**SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.770 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.31 W/kg

**Body/Body/Reference scan (51x91x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.77 W/kg

**Body/Body/Area scan (71x111x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 1.42 W/kg

**Body/Body/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 36.014 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 1.77 W/kg

**SAR(1 g) = 1.17 W/kg; SAR(10 g) = 0.747 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.38 W/kg

**Body/Body/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

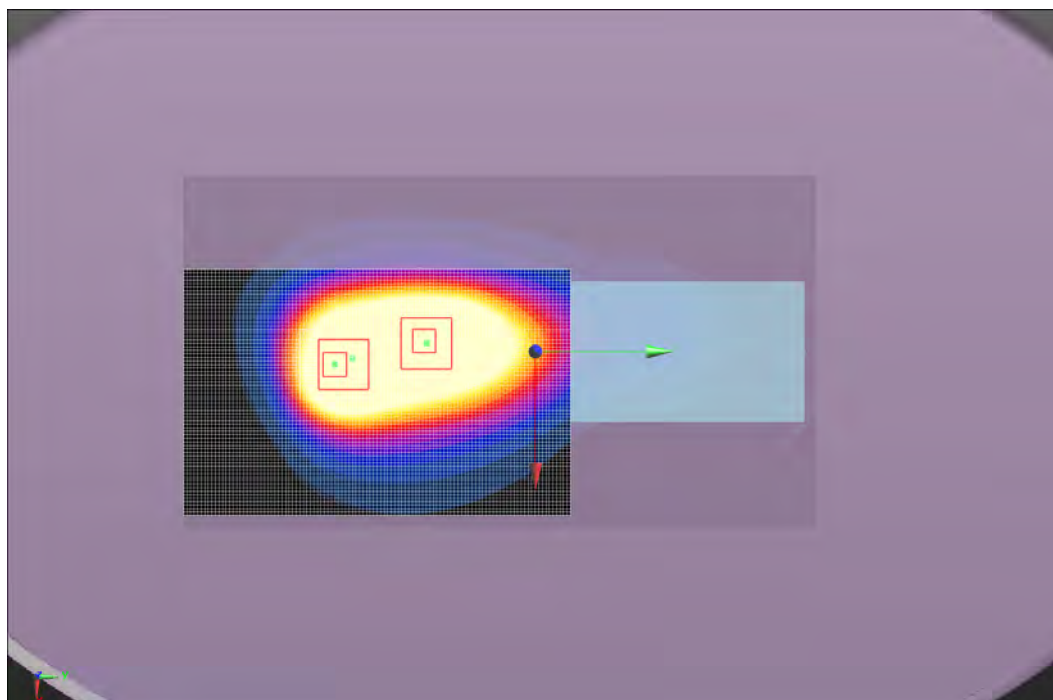
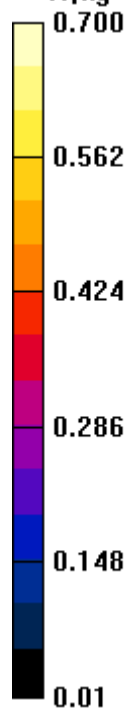
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of Total (measured) = 28.96 V/m

Maximum value of SAR (measured) = 0.906 W/kg

   
Approved By

Test 92b  
W/kg



|                |                  |                          |      |
|----------------|------------------|--------------------------|------|
| Tested By:     | Ethan Schoonover | Room Temperature (°C):   | 22.8 |
| Date:          | 12/20/2012       | Liquid Temperature (°C): | 22   |
| Serial Number: | 8721242648       | Humidity (%RH):          | 37   |
| Configuration: | 1                | Bar. Pressure (mb):      | 1007 |
| Comments:      | None             |                          |      |

## Test 91

**DUT: CN70; Type: 1000CP01F9; Serial: 8721242648**

Communication System: CW; Communication System Band: D915 (915.0 MHz); Frequency: 927.25 MHz; Communication System PAR: 0 dB; PMF: 1

Medium parameters used (interpolated):  $f = 927.25$  MHz;  $\sigma = 1.092$  mho/m;  $\epsilon_r = 52.478$ ;  $\rho = 1000$  kg/m<sup>3</sup>,  
Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

**Body/Body/Zoom Scan 2 (8x8x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.852 V/m; Power Drift = -0.27 dB

Peak SAR (extrapolated) = 0.511 W/kg

**SAR(1 g) = 0.261 W/kg; SAR(10 g) = 0.177 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.312 W/kg

**Body/Body/Reference scan (51x91x1):** Interpolated grid: dx=3.000 mm, dy=3.000 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.306 W/kg

**Body/Body/Area scan (71x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.354 W/kg

**Body/Body/Zoom Scan (7x9x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.852 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.409 W/kg

**SAR(1 g) = 0.283 W/kg; SAR(10 g) = 0.188 W/kg**

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.327 W/kg

**Body/Body/Z Scan (1x1x21):** Measurement grid: dx=20mm, dy=20mm, dz=5mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

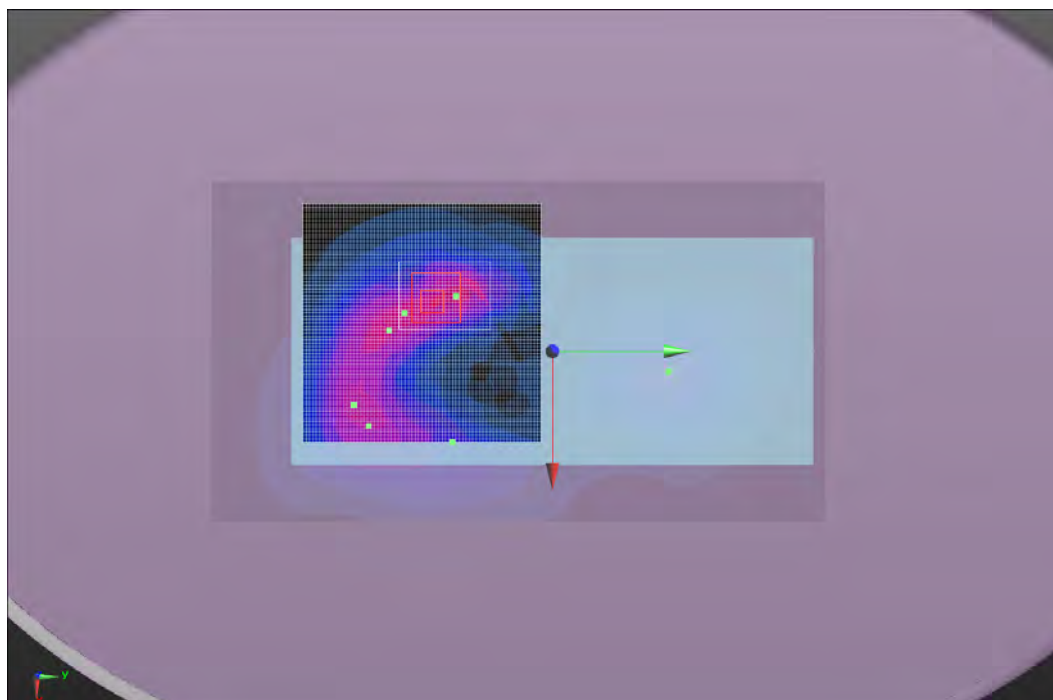
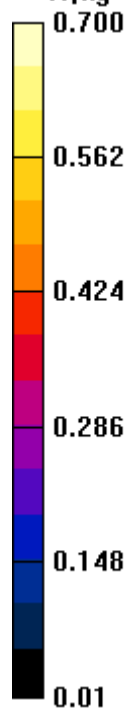
Maximum value of Total (measured) = 13.96 V/m

Maximum value of SAR (measured) = 0.213 W/kg

   
Approved By

Test 91

W/kg



## Test 92a

