ACCREDITED
TESTING LABORATORY
CERTIFICATE #4820.01

BACL
Bay Area Compliance Labs Corp.

# SAR EVALUATION REPORT

For

## Hytera Communications Corporation Limited

Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road, Nanshan District, Shenzhen, China

**FCC ID:YAMPDC760UXB2**

**IC: 8913A-PDC760UXB2**

| **Report Type:** | **Product Type:** |
|---|---|
| Original Report | Multi-mode Advanced Radio |

| | |
|---|---|
| **Report Number:** | RDG171226008-20 |
| **Report Date:** | 2018-03-12 |
| **Reviewed By:** | Rocky Xiao<br>RF Engineer |
| **Prepared By:** | Bay Area Compliance Laboratories Corp. (Dongguan)<br>No.69 Pulongcun, Puxinhu Industry Area,<br>Tangxia, Dongguan, Guangdong, China<br>Tel: +86-769-86858888<br>Fax: +86-769-86858891<br>www.baclcorp.com.cn |

**Note:** This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Dongguan).This report must not be used by the customer to claim product certification, approval, or endorsement by A2LA* or any agency of the Federal Government. * This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "*".

| Attestation of Test Results | | | |
|---|---|---|---|
| EUT Information | EUT Description | Multi-mode Advanced Radio | |
| | Tested Model | PDC760 UxB2 | |
| | FCC ID | YAMPDC760UXB2 | |
| | IC | 8913A-PDC760UXB2 | |
| | Serial Number | 17122600820, 17122600821 | |
| | Test Date | 2018-02-09 ~ 2018-03-09 | |
| MODE | | Max. SAR Level(s) Reported(W/kg) | Limit |
| GSM 850 | 1g Head SAR | 0.37 | 1.6 W/kg |
| | 1g Body SAR | 0.45 | |
| PCS 1900 | 1g Head SAR | 0.33 | |
| | 1g Body SAR | 0.31 | |
| WCDMA Band 2 | 1g Head SAR | 0.71 | |
| | 1g Body SAR | **0.76** | |
| WCDMA Band 4 | 1g Head SAR | 0.28 | |
| | 1g Body SAR | 0.69 | |
| WCDMA Band 5 | 1g Head SAR | 0.34 | |
| | 1g Body SAR | 0.55 | |
| LTE Band 2 | 1g Head SAR | 0.78 | |
| | 1g Body SAR | 0.50 | |
| LTE Band 4 | 1g Head SAR | 0.31 | |
| | 1g Body SAR | 0.71 | |
| LTE Band 5 | 1g Head SAR | 0.31 | |
| | 1g Body SAR | 0.46 | |
| LTE Band 7 | 1g Head SAR | **0.78** | |
| | 1g Body SAR | 0.50 | |
| LTE Band 12 | 1g Head SAR | 0.25 | |
| | 1g Body SAR | 0.34 | |
| LTE Band 13 | 1g Head SAR | 0.26 | |
| | 1g Body SAR | 0.33 | |
| LTE Band 17 | 1g Head SAR | 0.25 | |
| | 1g Body SAR | 0.31 | |
| LTE Band 25 | 1g Head SAR | 0.76 | |
| | 1g Body SAR | 0.71 | |
| LTE Band 26 | 1g Head SAR | 0.23 | |
| | 1g Body SAR | 0.43 | |
| LTE Band 41 | 1g Head SAR | 0.30 | |
| | 1g Body SAR | 0.17 | |
| CDMA 850(BC0) | 1g Head SAR | 0.41 | |
| | 1g Body SAR | 0.41 | |
| CDMA 1900(BC1) | 1g Head SAR | 0.10 | |
| | 1g Body SAR | 0.12 | |
| CDMA 800(BC10) | 1g Head SAR | 0.37 | |
| | 1g Body SAR | 0.40 | |

| | | | |
|---|---|---|---|
| **WLAN** | 1g Head SAR | 0.11 | |
| | 1g Body SAR | 0.09 | |
| **Bluetooth** | 1g Head SAR | 0.05 | |
| | 1g Body SAR | 0.04 | |
| **PTT** | 1g Head SAR | **5.13** | **8.0 W/kg** |
| | 1g Body SAR | **5.13** | |
| **Simultaneous** | 1g Head SAR | **5.47** | **8.0 W/kg** |
| | 1g Body SAR | **5.69** | |
| | 1g Body SAR | **0.66 (Hotspot)** | **1.6 W/kg** |
| **Applicable Standards** | **FCC 47 CFR part 2.1093**<br>Radiofrequency radiation exposure evaluation: portable devices | | |
| | **RSS-102 Issue 5 March 2015**<br>Radio Frequency (RF) Exposure Compliance of Radio communication Apparatus (All Frequency Bands). | | |
| | **IEEE1528:2013**<br>IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques | | |
| | **IEC 62209-2:2010**<br>Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices-Human models, instrumentation, and procedures-Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz) | | |
| | **KDB procedures**<br>KDB 447498 D01 General RF Exposure Guidance v06<br>KDB 648474 D04 Handset SAR v01r03<br>KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04<br>KDB 865664 D02 RF Exposure Reporting v01r02<br>KDB 941225 D01 3G SAR Procedures v03r01<br>KDB 941225 D05 SAR for LTE Devices v02r05<br>KDB 248227 D01 802 11 Wi-Fi SAR v02r02<br>KDB 941225 D06 Hotspot Mode v02r01<br>KDB 643646 D01 SAR test Reduction Considerations for Occupational PTT Radios v01r03. | | |
| **Note:** This wireless device has been shown to be capable of compliance for localized specific absorption rate (SAR) for Occupational/Controlled Exposure limits specified in **FCC 47 CFR part 2.1093/RSS-102 Issue 5 March 2015** and has been tested in accordance with the measurement procedures specified in IEEE 1528-2013 and RF exposure KDB procedures.<br>**The results and statements contained in this report pertain only to the device(s) evaluated.** | | | |

# TABLE OF CONTENTS

**DOCUMENT REVISION HISTORY** ..... **5**
**EUT DESCRIPTION** ..... **6**
TECHNICAL SPECIFICATION ..... 6
**REFERENCE, STANDARDS, AND GUIDELINES** ..... **7**
SAR LIMITS ..... 7
**FACILITIES** ..... **8**
**DESCRIPTION OF TEST SYSTEM** ..... **9**
**EQUIPMENT LIST AND CALIBRATION** ..... **16**
EQUIPMENTS LIST & CALIBRATION INFORMATION ..... 16
**SAR MEASUREMENT SYSTEM VERIFICATION** ..... **18**
LIQUID VERIFICATION ..... 18
SYSTEM ACCURACY VERIFICATION ..... 26
SAR SYSTEM VALIDATION DATA ..... 28
**EUT TEST STRATEGY AND METHODOLOGY** ..... **47**
TEST POSITIONS FOR DEVICE OPERATING NEXT TO A PERSON'S EAR ..... 47
CHEEK/TOUCH POSITION ..... 48
EAR/TILT POSITION ..... 48
TEST POSITIONS FOR BODY-WORN AND OTHER CONFIGURATIONS ..... 49
TEST DISTANCE FOR SAR EVALUATION ..... 49
SAR EVALUATION PROCEDURE ..... 50
**CONDUCTED OUTPUT POWER MEASUREMENT** ..... **51**
PROVISION APPLICABLE ..... 51
TEST PROCEDURE ..... 51
RADIO CONFIGURATION ..... 51
MAXIMUM TARGET OUTPUT POWER ..... 57
TEST RESULTS: ..... 59
**SAR MEASUREMENT RESULTS** ..... **84**
SAR TEST DATA ..... 84
**SAR MEASUREMENT VARIABILITY** ..... **109**
**SAR SIMULTANEOUS TRANSMISSION DESCRIPTION** ..... **117**
ANTENNA DISTANCE TO EDGES ..... 118
STANDALONE SAR TEST EXCLUSION CONSIDERATIONS(RSS-102): ..... 118
SAR TEST EXCLUSION FOR THE EUT EDGE CONSIDERATIONS RESULT(HOTSPOT MODE) ..... 119
**SAR PLOTS** ..... **129**
**APPENDIX A MEASUREMENT UNCERTAINTY** ..... **130**
**APPENDIX B EUT TEST POSITION PHOTOS** ..... **132**
**APPENDIX C CALIBRATION CERTIFICATES** ..... **133**

# DOCUMENT REVISION HISTORY

| Revision Number | Report Number | Description of Revision | Date of Revision |
|---|---|---|---|
| 1.0 | RDG171226008-20 | Original Report | 2018-03-09 |

**NOTE:**

PTT mode - Only frequency range 350-406MHz&406.1-512MHz for FCC review; Frequency range 406.1-430MHz&450-470MHz for ISEDC review.
LTE Band 41 – Only frequency range 2570 – 2620MHz for ISEDC review.
LTE Band 26/CDMA 800(BC10): 814-824 MHz(TX) ; 859-869 MHz(RX), which not for ISEDC review

# EUT DESCRIPTION

This report has been prepared on behalf of ***Hytera Communications Corporation Limited*** and their product ***Multi-mode Advanced Radio***, Model: ***PDC760 UxB2,*** FCC ID:***YAMPDC760UXB2***, IC: ***8913A-PDC760UXB2*** or the EUT (Equipment under Test) as referred to in the rest of this report.

** All measurement and test data in this report was gathered from production sample serial number: 17122600820 and 17122600821(Assigned by BACL, Dongguan). The EUT supplied by the applicant was received on 2018-01-02.*

## Technical Specification

| | |
|---|---|
| **Device Type:** | Portable |
| **Exposure Category:** | Occupational/Controlled Exposure |
| **Antenna Type(s):** | Internal Antenna for WWAN and WLAN; External Antenna for PTT |
| **DTM Type:** | Class B |
| **Multi-slot Class:** | GPRS(Class 33); EGPRS(Class 33) |
| **Body-Worn Accessories:** | Belt Clip |
| **Face-Head Accessories:** | None |
| **Operation Mode :** | GSM Voice, GPRS/EDGE Data, WCDMA, FDD-LTE, TDD-LTE,<br>CDMA 1xRTT, 1xEVDO, WLAN, Bluetooth, PTT_FM, PTT_4FSK |
| **Frequency Band:** | GSM 850: 824-849 MHz(TX); 869-894 MHz(RX)<br>PCS 1900: 1850-1910 MHz(TX); 1930-1990 MHz(RX)<br>WCDMA Band 2: 1850-1910 MHz(TX); 1930-1990 MHz(RX)<br>WCDMA Band 4: 1710-1755 MHz(TX) ; 2110-2155 MHz(RX)<br>WCDMA Band 5: 824-849 MHz(TX); 869-894 MHz(RX)<br>LTE Band 2: 1850-1910 MHz(TX); 1930-1990 MHz(RX)<br>LTE Band 4: 1710-1755 MHz(TX) ; 2110-2155 MHz(RX)<br>LTE Band 5: 824-849 MHz(TX); 869-894 MHz(RX)<br>LTE Band 7: 2500-2570 MHz(TX) ; 2620-2690 MHz(RX)<br>LTE Band 12: 699-716 MHz(TX); 729-746 MHz(RX)<br>LTE Band 13: 777-787 MHz(TX) ; 746-756 MHz(RX)<br>LTE Band 17: 704-716 MHz(TX); 734-746 MHz(RX)<br>LTE Band 25: 1850-1915 MHz(TX) ; 1930-1995 MHz(RX)<br>LTE Band 26: 814-824 MHz(TX) ; 859-869 MHz(RX)<br>LTE Band 41: 2496-2690 MHz(TX) ; 2496-2690 MHz(RX)<br>CDMA 850(BC0): 824-849 MHz(TX); 869-894 MHz(RX)<br>CDMA 1900(BC1): 1850-1910 MHz(TX); 1930-1990 MHz(RX)<br>CDMA 800(BC10): 816-824 MHz(TX); 861-869 MHz(RX)<br>WLAN: 2412 -2472 MHz<br>Bluetooth : 2402 MHz-2480 MHz<br>PTT_FM/PTT_4FSK: 350-400 MHz; 400-470 MHz; 450-512 MHz |
| **Conducted RF Power:** | GSM 850 : 32.50 dBm; PCS 1900: 29.07 dBm<br>WCDMA Band 2: 22.80 dBm; WCDMA Band 4: 22.29 dBm<br>WCDMA Band 5: 22.70 dBm;<br>LTE Band 2: 23.10 dBm; LTE Band 4: 23.09 dBm; LTE Band 5: 22.85 dBm;<br>LTE Band 7: 22.93 dBm; LTE Band 12: 23.01 dBm; LTE Band 13: 23.00 dBm<br>LTE Band 17: 23.09 dBm; LTE Band 25: 22.92 dBm;<br>LTE Band 26: 23.18 dBm; LTE Band 41: 23.10 dBm<br>CDMA 850(BC0): 23.28 dBm; CDMA 1900(BC1): 23.37 dBm;<br>CDMA 800(BC10): 23.27 dBm<br>WLAN: 14.96 dBm ; Bluetooth(BDR/EDR): 12.85 dBm;BLE: 1.92 dBm<br>PTT (350-400 MHz): 4.56 W; PTT (400-470 MHz): 4.78 W;<br>PTT (450-512 MHz): 4.59 W |
| **Dimensions (L*W*H):** | 24.0 cm (L) * 7.0 cm (W) *2.5 cm (H) |
| **Power Source:** | 7.6 VDC Rechargeable Battery |
| **Normal Operation:** | Head, Face Up and Body-worn |

# REFERENCE, STANDARDS, AND GUIDELINES

**FCC:**

The Report and Order requires routine SAR evaluation prior to equipment authorization of portable transmitter devices, including portable telephones. For consumer products, ANSI/IEEE standard C95.1-1992 [6], limit the whole-body-averaged SAR to 0.4 and 0.08 W/kg for the controlled and uncontrolled environments. According to the Supplement C of OET Bulletin 65 “Evaluating Compliance with FCC Guide-lines for Human Exposure to Radio frequency Electromagnetic Fields", released on Jun 29, 2001 by the FCC, the device should be evaluated at maximum output power (radiated from the antenna) under “worst-case” conditions for normal or intended use, incorporating normal antenna operating positions, device peak performance frequencies and positions for maximum RF energy coupling.

This report describes the methodology and results of experiments performed on wireless data terminal. The objective was to determine if there is RF radiation and if radiation is found, what is the extent of radiation with respect to safety limits. SAR (Specific Absorption Rate) is the measure of RF exposure determined by the amount of RF energy absorbed by human body (or its parts) – to determine how the RF energy couples to the body or head which is a primary health concern for body worn devices. The limit below which the exposure to RF is considered safe by regulatory bodies in North America.

## SAR Limits

**FCC/IC Limit**

| EXPOSURE LIMITS | SAR (W/kg) | |
|---|---|---|
| | (General Population / Uncontrolled Exposure Environment) | (Occupational / Controlled Exposure Environment) |
| Spatial Average (averaged over the whole body) | 0.08 | 0.4 |
| Spatial Peak (averaged over any 1 g of tissue) | **1.60** | **8.0** |
| Spatial Peak (hands/wrists/feet/ankles averaged over 10 g) | 4.0 | 20.0 |

Population/Uncontrolled Environments are defined as locations where there is the exposure of individual who have no knowledge or control of their exposure.

Occupational/Controlled Environments are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure (i.e. as a result of employment or occupation).

# FACILITIES

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218,the FCC Designation No. : CN1220.

The test site has been registered with ISED Canada under ISED Canada Registration Number 3062D.

The test sites and measurement facilities used to collect data are located at:

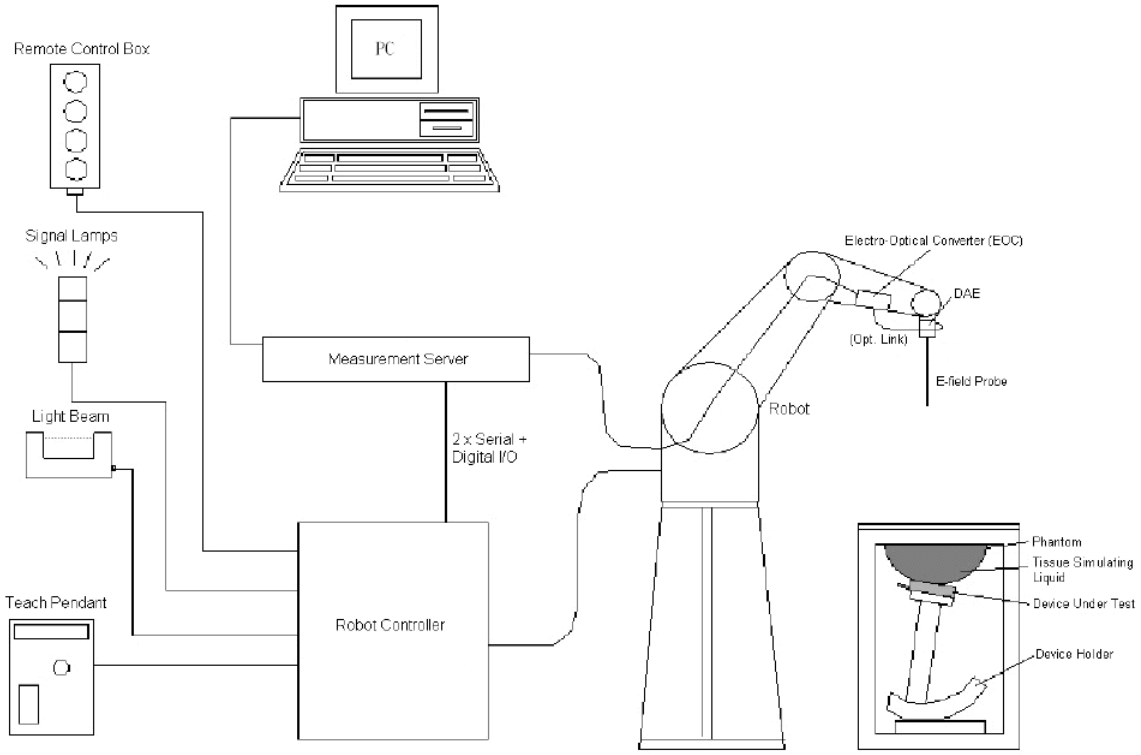
| | |
|---|---|
| ☒ SAR Lab 1 | ☒ SAR Lab 2 |

# DESCRIPTION OF TEST SYSTEM

These measurements were performed with the automated near-field scanning system DASY5 from Schmid & Partner Engineering AG (SPEAG) which is the Fifth generation of the system shown in the figure hereinafter:

## DASY5 System Description

The DASY5 system for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal application, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win7 professional operating system and the DASY52 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

**DASY5 Measurement Server**

The DASY5 measurement server is based on a PC/104 CPU board with a 400MHz Intel ULV Celeron, 128MB chip-disk and 128MB RAM. The necessary circuits for communication with the DAE4 (or DAE3) electronics box, as well as the 16 bit AD-converter system for optical detection and digital I/O interface are contained on the DASY5 I/O board, which is directly connected to the PC/104 bus of the CPU board.

The measurement server performs all real-time data evaluation of field measurements and surface detection, controls robot movements and handles safety operation. The PC operating system cannot interfere with these time critical processes. All connections are supervised by a watchdog, and disconnection of any of the cables to the measurement server will automatically disarm the robot and disable all program-controlled robot movements. Furthermore, the measurement server is equipped with an expansion port which is reserved for future applications. Please note that this expansion port does not have a standardized point out, and therefore only devices provided by SPEAG can be connected. Devices from any other supplier could seriously damage the measurement server.

**Data Acquisition Electronics**

The data acquisition electronics (DAE4) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information, as well as an optical uplink for commands and the clock.

The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection.

The input impedance of both the DAE4 as well as of the DAE3 box is 200MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

**ES3DV2 E-Field Probes**

| | |
|---|---|
| **Frequency** | 10 MHz to > 4 GHz<br>Linearity: ± 0.2 dB (30 MHz to 4 GHz) |
| **Directivity** | ± 0.2 dB in TSL (rotation around probe axis)<br>± 0.3 dB in TSL (rotation normal to probe axis) |
| **Dynamic Range** | 5 µW/g to > 100 mW/g<br>Linearity: ± 0.2 dB (noise: typically < 1 µW/g) |
| **Dimensions** | Overall length: 337 mm (Tip: 10 mm)<br>Tip diameter: 4 mm (Body: 10 mm)<br>Typical distance from probe tip to dipole centers: 4.0 mm |
| **Application** | General dosimetry up to 4 GHz<br>Dosimetry in strong gradient fields<br>Compliance tests of mobile phones |
| **Compatibility** | DASY3, DASY4, DASY52 SAR and higher, EASY4/MRI |

**Calibration Frequency Points for ES3DV2 E-Field Probes SN: 3019 Calibrated: 2017/10/30**

| Calibration Frequency Point(MHz) | Frequency Range(MHz) | | Conversion Factor | | |
|---|---|---|---|---|---|
| | From | To | X | Y | Z |
| 750 Head | 650 | 850 | 6.57 | 6.57 | 6.57 |
| 750 Body | 650 | 850 | 6.42 | 6.42 | 6.42 |
| 900 Head | 850 | 1000 | 6.29 | 6.29 | 6.29 |
| 900 Body | 850 | 1000 | 6.25 | 6.25 | 6.25 |
| 1750 Head | 1650 | 1850 | 5.13 | 5.13 | 5.13 |
| 1750 Body | 1650 | 1850 | 4.84 | 4.84 | 4.84 |
| 1900 Head | 1850 | 2000 | 4.93 | 4.93 | 4.93 |
| 1900 Body | 1850 | 2000 | 4.65 | 4.65 | 4.65 |
| 2450 Head | 2350 | 2550 | 4.41 | 4.41 | 4.41 |
| 2450 Body | 2350 | 2550 | 4.05 | 4.05 | 4.05 |
| 2600 Head | 2550 | 2700 | 4.09 | 4.09 | 4.09 |
| 2600 Body | 2550 | 2700 | 3.82 | 3.82 | 3.82 |

**EX3DV4 E-Field Probes**

| | |
|---|---|
| **Frequency** | 10 MHz to > 6 GHz<br>Linearity: ± 0.2 dB (30 MHz to 6 GHz) |
| **Directivity** | ± 0.3 dB in TSL (rotation around probe axis)<br>± 0.5 dB in TSL (rotation normal to probe axis) |
| **Dynamic Range** | 10 µW/g to > 100 mW/g<br>Linearity: ± 0.2 dB (noise: typically < 1 µW/g) |
| **Dimensions** | Overall length: 337 mm (Tip: 20 mm)<br>Tip diameter: 2.5 mm (Body: 12 mm)<br>Typical distance from probe tip to dipole centers: 1 mm |
| **Application** | High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields); the only probe that enables compliance testing for frequencies up to 6 GHz with precision of better 30%. |
| **Compatibility** | DASY3, DASY4, DASY52 SAR and higher, EASY4/MRI |

**Calibration Frequency Points for EX3DV4 E-Field Probes SN: 7441 Calibrated: 2017/11/23**

| Calibration Frequency Point(MHz) | Frequency Range(MHz) | | Conversion Factor | | |
|---|---|---|---|---|---|
| | From | To | X | Y | Z |
| 450 Head | 350 | 550 | 10.97 | 10.97 | 10.97 |
| 450 Body | 350 | 550 | 12.08 | 12.08 | 12.08 |

**SAM Twin Phantom**

The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region, where shell thickness
increases to 6 mm). The phantom has three measurement areas:
_ Left Head
_ Right Head
_ Flat phantom

The phantom table for the DASY systems based on the robots have the size of 100 x 50 x 85 cm (L x W x H).
For easy dislocation these tables have fork lift cut outs at the bottom.
The bottom plate contains three pairs of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. Only one device holder is necessary if two phantoms are used (e.g., for different liquids)

A white cover is provided to cover the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. Free space scans of devices on top of this phantom cover are possible. Three reference marks are provided on the phantom counter. These reference marks are used to teach the absolute phantom position relative to the robot.

**Triple Flat Phantom**

The SAM twin phantom is a fiberglass shell phantom with 2mm(± 0.2 mm) shell thickness . The phantom shell is compatible with SPEAG tissue simulating liquids (sugar and oil based). Use of other liquids may render the phantom warranty void (see note or consult SPEAG support).

The phantom table have the size of 100 x 75 x 91 cm (L x W x H).
For easy dislocation these tables have fork lift cut outs at the bottom.
The bottom plate contains three pairs of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. Only one device holder is necessary if two phantoms are used (e.g., for different liquids)

A white cover is provided to cover the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. Free space scans of devices on top of this phantom cover are possible. Three reference marks are provided on the phantom counter. These reference marks are used to teach the absolute phantom position relative to the robot.

**Robots**

The DASY5 system uses the high precision industrial robot. The robot offers the same features important for our application:

- High precision (repeatability 0.02mm)
- High reliability (industrial design)
- Low maintenance costs (virtually maintenance free due to direct drive gears; no belt drives)
- Jerk-free straight movements (brushless synchrony motors; no stepper motors)
- Low ELF interference (motor control fields shielded via the closed metallic construction shields)

The above mentioned robots are controlled by the Staubli CS8c robot controllers. All information regarding the use and maintenance of the robot arm and the robot controller is contained on the CDs delivered along with the robot. Paper manuals are available upon request direct from Staubli.

**Area Scans**

Area scans are defined prior to the measurement process being executed with a user defined variable spacing between each measurement point (integral) allowing low uncertainty measurements to be conducted. Scans defined for FCC applications utilize a 15mm 2 step integral, with 1.5mm interpolation used to locate the peak SAR area used for zoom scan assessments.

Where the system identifies multiple SAR peaks (which are within 25% of peak value) the system will provide the user with the option of assessing each peak location individually for zoom scan averaging.

**Zoom Scan (Cube Scan Averaging)**

The averaging zoom scan volume utilized in the DASY5 software is in the shape of a cube and the side dimension of a 1 g or 10 g mass is dependent on the density of the liquid representing the simulated tissue. A density of 1000 kg/$m^3$ is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1g cube is 10mm,with the side length of the 10g cube is 21.5mm.

When the cube intersects with the surface of the phantom, it is oriented so that 3 vertices touch the surface of the shell or the center of a face is tangent to the surface. The face of the cube closest to the surface is modified in order to conform to the tangent surface.

The zoom scan integer steps can be user defined so as to reduce uncertainty, but normal practice for typical test applications (including FCC) utilize a physical step of 7 x7 x 7 (5mmx5mmx5mm) providing a volume of 30 mm in the X & Y & Z axis.

## Tissue Dielectric Parameters for Head and Body Phantoms

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 described in Reference [12] and extrapolated according to the head parameters specified in P1528.

**Recommended Tissue Dielectric Parameters for Head and Body**

| Frequency (MHz) | Head Tissue | | Body Tissue | |
|---|---|---|---|---|
| | εr | Ơ (S/m) | εr | Ơ (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 |

# EQUIPMENT LIST AND CALIBRATION

## Equipments List & Calibration Information

**SAR Lab 1:**

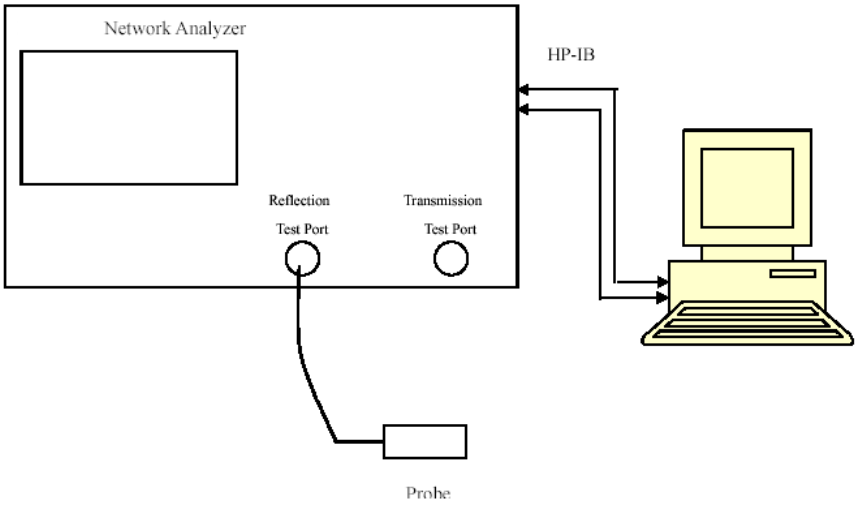
| Equipment | Model | S/N | Calibration Date | Calibration Due Date |
|---|---|---|---|---|
| DASY5 Test Software | DASY52.8 | N/A | NCR | NCR |
| DASY5 Measurement Server | DASY5 4.5.12 | 1470 | NCR | NCR |
| Data Acquisition Electronics | DAE4 | 1459 | 2017/9/15 | 2018/9/15 |
| E-Field Probe | EX3DV4 | 7441 | 2017/11/23 | 2018/11/22 |
| Dipole, 450MHz | D450V3 | 1096 | 2016/11/07 | 2019/11/06 |
| Mounting Device | MD4HHTV5 | SD 000 H01 KA | NCR | NCR |
| Oval Flat Phantom | ELI V8.0 | 2051 | NCR | NCR |
| Simulated Tissue 450 MHz Head | TS-450-H | 1709045001 | Each Time | / |
| Simulated Tissue 450 MHz Body | TS-450-B | 1709045002 | Each Time | / |
| Network Analyzer | 8753C | 3033A02857 | 2017/8/31 | 2018/8/31 |
| Dielectric assessment kit | 1253 | SM DAK 040 CA | NCR | NCR |
| Signal Generator | N5182B | MY51350142 | 2017/5/4 | 2018/5/4 |
| Power Meter | EPM-441A | GB37481494 | 2017/12/11 | 2018/12/11 |
| Power Amplifier | ZVA-213-S+ | SN054 201245 | NCR | NCR |
| Directional Coupler | 488Z | N/A | NCR | NCR |
| Attenuator | 20dB, 100W | N/A | NCR | NCR |
| Attenuator | 3dB, 150W | N/A | NCR | NCR |

**SAR Lab 2:**

| Equipment | Model | S/N | Calibration Date | Calibration Due Date |
|---|---|---|---|---|
| DASY5 Test Software | DASY52.8 | N/A | NCR | NCR |
| DASY5 Measurement Server | DASY5 4.5.12 | 1567 | NCR | NCR |
| Data Acquisition Electronics | DAE4 | 772 | 2017/10/9 | 2018/10/8 |
| E-Field Probe | ES3DV2 | 3019 | 2017/10/30 | 2018/10/29 |
| Mounting Device | MD4HHTV5 | BJPCTC0152 | NCR | NCR |
| Twin SAM | Twin SAM V5.0 | 1412 | NCR | NCR |
| Triple Flat Phantom 5.1C | QD 000 P51 CA | 1130 | NCR | NCR |
| Dipole, 750 MHz | D750V3 | 1167 | 2016/11/8 | 2019/11/7 |
| Dipole, 1750 MHz | D1750V2 | 1141 | 2015/7/9 | 2018/7/9 |
| Dipole, 1900 MHz | D1900V2 | 543 | 2016/10/25 | 2019/10/24 |
| Dipole,2450 MHz | D2450V2 | 971 | 2015/7/8 | 2018/7/8 |
| Dipole, 2600 MHz | D2600V2 | 1132 | 2016/11/10 | 2019/11/9 |
| Simulated Tissue 750 MHz Head | TS-750-H | 1709075001 | Each Time | / |
| Simulated Tissue 750 MHz Body | TS-750-B | 1709075002 | Each Time | / |
| Simulated Tissue 1750 MHz Head | TS-1750-H | 1703175001 | Each Time | / |
| Simulated Tissue 1750 MHz Body | TS-1750-B | 1703175002 | Each Time | / |
| Simulated Tissue 1900 MHz Head | TS-1900-H | 1703190001 | Each Time | / |
| Simulated Tissue 1900 MHz Body | TS-1900-B | 1703190002 | Each Time | / |
| Simulated Tissue 2450 MHz Head | TS-2450-H | 1703245001 | Each Time | / |
| Simulated Tissue 2450 MHz Body | TS-2450-B | 1703245002 | Each Time | / |
| Simulated Tissue 2600 MHz Head | TS-2600-H | 1709260001 | Each Time | / |
| Simulated Tissue 2600 MHz Body | TS-2600-B | 1709260002 | Each Time | / |
| Network Analyzer | 8753C | 3033A02857 | 2017/8/31 | 2018/8/31 |
| Dielectric assessment kit | 1253 | SM DAK 040 CA | N/A | N/A |
| Signal Generator | N5182B | MY51350142 | 2017/5/4 | 2018/5/4 |
| Power Meter | EPM-441A | GB37481494 | 2017/12/11 | 2018/12/11 |
| Power Amplifier | ZVA-183-S+ | 5969001149 | NCR | NCR |
| Directional Coupler | 488Z | N/A | NCR | NCR |
| Attenuator | 20dB, 100W | N/A | NCR | NCR |
| Attenuator | 3dB, 150W | N/A | NCR | NCR |
| R&S, universal Radio Communication Tester | CMU200 | 109 038 | 2017/7/21 | 2018/7/21 |
| Wideband Radio Communication Tester | CMW500 | 1201.0002K50 | 2017/8/31 | 2018/8/31 |
| Wireless communication tester | E5515C | MY48367501 | 2017/12/11 | 2018/12/11 |

# SAR MEASUREMENT SYSTEM VERIFICATION

## Liquid Verification




Liquid Verification Setup Block Diagram

### Liquid Verification Results

.

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | σ (S/m) | $\varepsilon_r$ | σ (S/m) | $\Delta\varepsilon_r$ | Δσ (S/m) | |
| 750 | Simulated Tissue 750 MHz Head | 41.438 | 0.896 | 41.94 | 0.89 | -1.2 | 0.67 | ±5 |
| 819 | Simulated Tissue 750 MHz Head | 42.386 | 0.874 | 41.58 | 0.9 | 1.94 | -2.89 | ±5 |

**Liquid Verification above was performed on 2018/2/26.*

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | σ (S/m) | $\varepsilon_r$ | σ (S/m) | $\Delta\varepsilon_r$ | Δσ (S/m) | |
| 750 | Simulated Tissue 750 MHz Body | 57.059 | 0.944 | 55.53 | 0.96 | 2.75 | -1.67 | ±5 |
| 819 | Simulated Tissue 750 MHz Body | 57.323 | 0.955 | 55.26 | 0.97 | 3.73 | -1.55 | ±5 |

**Liquid Verification above was performed on 2018/2/26.*

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | $\sigma$ (S/m) | $\varepsilon_r$ | $\sigma$ (S/m) | $\Delta\varepsilon_r$ | $\Delta\sigma$ (S/m) | |
| 704 | Simulated Tissue 750 MHz Head | 43.011 | 0.884 | 42.18 | 0.89 | 1.97 | -0.67 | ±5 |
| 707.5 | Simulated Tissue 750 MHz Head | 43.008 | 0.885 | 42.16 | 0.89 | 2.01 | -0.56 | ±5 |
| 711 | Simulated Tissue 750 MHz Head | 42.975 | 0.882 | 42.14 | 0.89 | 1.98 | -0.9 | ±5 |
| 750 | Simulated Tissue 750 MHz Head | 41.372 | 0.894 | 41.94 | 0.89 | -1.35 | 0.45 | ±5 |
| 824.2 | Simulated Tissue 750 MHz Head | 42.458 | 0.863 | 41.56 | 0.9 | 2.16 | -4.11 | ±5 |
| 826.4 | Simulated Tissue 750 MHz Head | 42.408 | 0.868 | 41.54 | 0.9 | 2.09 | -3.56 | ±5 |
| 829 | Simulated Tissue 750 MHz Head | 42.387 | 0.871 | 41.53 | 0.9 | 2.06 | -3.22 | ±5 |
| 836.5 | Simulated Tissue 750 MHz Head | 42.337 | 0.877 | 41.5 | 0.9 | 2.02 | -2.56 | ±5 |
| 836.6 | Simulated Tissue 750 MHz Head | 42.316 | 0.88 | 41.5 | 0.9 | 1.97 | -2.22 | ±5 |
| 844 | Simulated Tissue 750 MHz Head | 42.276 | 0.882 | 41.5 | 0.91 | 1.87 | -3.08 | ±5 |
| 846.6 | Simulated Tissue 750 MHz Head | 42.26 | 0.884 | 41.5 | 0.91 | 1.83 | -2.86 | ±5 |
| 848.8 | Simulated Tissue 750 MHz Head | 42.072 | 0.889 | 41.5 | 0.91 | 1.38 | -2.31 | ±5 |

**Liquid Verification above was performed on 2018/3/3.*

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | $\sigma$ (S/m) | $\varepsilon_r$ | $\sigma$ (S/m) | $\Delta\varepsilon_r$ | $\Delta\sigma$ (S/m) | |
| 709 | Simulated Tissue 750 MHz Head | 42.99 | 0.878 | 42.15 | 0.89 | 1.99 | -1.35 | ±5 |
| 710 | Simulated Tissue 750 MHz Head | 42.978 | 0.88 | 42.15 | 0.89 | 1.96 | -1.12 | ±5 |
| 711 | Simulated Tissue 750 MHz Head | 41.446 | 0.897 | 42.14 | 0.89 | -1.65 | 0.79 | ±5 |
| 750 | Simulated Tissue 750 MHz Head | 41.224 | 0.912 | 41.94 | 0.89 | -1.71 | 2.47 | ±5 |
| 782 | Simulated Tissue 750 MHz Head | 40.327 | 0.936 | 41.78 | 0.9 | -3.48 | 4 | ±5 |
| 817.25 | Simulated Tissue 750 MHz Head | 42.478 | 0.862 | 41.59 | 0.9 | 2.14 | -4.22 | ±5 |
| 820.5 | Simulated Tissue 750 MHz Head | 42.386 | 0.874 | 41.58 | 0.9 | 1.94 | -2.89 | ±5 |
| 822.75 | Simulated Tissue 750 MHz Head | 42.316 | 0.881 | 41.56 | 0.9 | 1.82 | -2.11 | ±5 |
| 824.7 | Simulated Tissue 750 MHz Head | 42.42 | 0.864 | 41.55 | 0.9 | 2.09 | -4 | ±5 |
| 836.52 | Simulated Tissue 750 MHz Head | 42.319 | 0.879 | 41.5 | 0.9 | 1.97 | -2.33 | ±5 |
| 848.31 | Simulated Tissue 750 MHz Head | 42.073 | 0.886 | 41.5 | 0.91 | 1.38 | -2.64 | ±5 |

**Liquid Verification above was performed on 2018/3/5.*

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | $\sigma$ (S/m) | $\varepsilon_r$ | $\sigma$ (S/m) | $\Delta\varepsilon_r$ | $\Delta\sigma$ (S/m) | |
| 704 | Simulated Tissue 750 MHz Body | 55.173 | 0.955 | 55.71 | 0.96 | -0.96 | -0.52 | ±5 |
| 707.5 | Simulated Tissue 750 MHz Body | 55.172 | 0.957 | 55.7 | 0.96 | -0.95 | -0.31 | ±5 |
| 711 | Simulated Tissue 750 MHz Body | 54.997 | 0.964 | 55.68 | 0.96 | -1.23 | 0.42 | ±5 |
| 750 | Simulated Tissue 750 MHz Body | 53.062 | 0.974 | 55.53 | 0.96 | -4.44 | 1.46 | ±5 |
| 824.2 | Simulated Tissue 750 MHz Body | 57.433 | 0.939 | 55.24 | 0.97 | 3.97 | -3.2 | ±5 |
| 826.4 | Simulated Tissue 750 MHz Body | 57.372 | 0.945 | 55.23 | 0.97 | 3.88 | -2.58 | ±5 |
| 829 | Simulated Tissue 750 MHz Body | 57.369 | 0.951 | 55.22 | 0.97 | 3.89 | -1.96 | ±5 |
| 836.5 | Simulated Tissue 750 MHz Body | 57.279 | 0.955 | 55.2 | 0.97 | 3.77 | -1.55 | ±5 |
| 836.6 | Simulated Tissue 750 MHz Body | 57.276 | 0.955 | 55.2 | 0.97 | 3.76 | -1.55 | ±5 |
| 844 | Simulated Tissue 750 MHz Body | 57.174 | 0.961 | 55.17 | 0.98 | 3.63 | -1.94 | ±5 |
| 846.6 | Simulated Tissue 750 MHz Body | 57.209 | 0.963 | 55.16 | 0.98 | 3.71 | -1.73 | ±5 |
| 848.8 | Simulated Tissue 750 MHz Body | 56.852 | 0.966 | 55.16 | 0.99 | 3.07 | -2.42 | ±5 |

**Liquid Verification above was performed on 2018/3/4.*

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | $\sigma$ (S/m) | $\varepsilon_r$ | $\sigma$ (S/m) | $\Delta\varepsilon_r$ | $\Delta\sigma$ (S/m) | |
| 709 | Simulated Tissue 750 MHz Body | 55.15 | 0.959 | 55.69 | 0.96 | -0.97 | -0.1 | ±5 |
| 710 | Simulated Tissue 750 MHz Body | 55.094 | 0.962 | 55.69 | 0.96 | -1.07 | 0.21 | ±5 |
| 711 | Simulated Tissue 750 MHz Body | 54.985 | 0.973 | 55.68 | 0.96 | -1.25 | 1.35 | ±5 |
| 750 | Simulated Tissue 750 MHz Body | 53.531 | 0.983 | 55.53 | 0.96 | -3.6 | 2.4 | ±5 |
| 782 | Simulated Tissue 750 MHz Body | 52.79 | 1.009 | 55.41 | 0.97 | -4.73 | 4.02 | ±5 |
| 817.25 | Simulated Tissue 750 MHz Body | 57.437 | 0.937 | 55.27 | 0.97 | 3.92 | -3.4 | ±5 |
| 820.5 | Simulated Tissue 750 MHz Body | 57.323 | 0.955 | 55.26 | 0.97 | 3.73 | -1.55 | ±5 |
| 822.75 | Simulated Tissue 750 MHz Body | 57.26 | 0.957 | 55.25 | 0.97 | 3.64 | -1.34 | ±5 |
| 824.7 | Simulated Tissue 750 MHz Body | 56.846 | 0.973 | 55.24 | 0.97 | 2.91 | 0.31 | ±5 |
| 836.52 | Simulated Tissue 750 MHz Body | 57.276 | 0.955 | 55.2 | 0.97 | 3.76 | -1.55 | ±5 |
| 848.31 | Simulated Tissue 750 MHz Body | 56.928 | 0.965 | 55.16 | 0.99 | 3.21 | -2.53 | ±5 |

**Liquid Verification above was performed on 2018/3/6.*

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | $\sigma$ (S/m) | $\varepsilon_r$ | $\sigma$ (S/m) | $\Delta\varepsilon_r$ | $\Delta\sigma$ (S/m) | |
| 1712.4 | Simulated Tissue 1750 MHz Head | 41.364 | 1.319 | 40.14 | 1.35 | 3.05 | -2.3 | ±5 |
| 1720 | Simulated Tissue 1750 MHz Head | 41.262 | 1.333 | 40.13 | 1.35 | 2.82 | -1.26 | ±5 |
| 1732.5 | Simulated Tissue 1750 MHz Head | 41.251 | 1.34 | 40.11 | 1.36 | 2.84 | -1.47 | ±5 |
| 1732.6 | Simulated Tissue 1750 MHz Head | 41.215 | 1.341 | 40.11 | 1.36 | 2.75 | -1.4 | ±5 |
| 1745 | Simulated Tissue 1750 MHz Head | 41.091 | 1.347 | 40.09 | 1.37 | 2.5 | -1.68 | ±5 |
| 1750 | Simulated Tissue 1750 MHz Head | 41.071 | 1.359 | 40.08 | 1.37 | 2.47 | -0.8 | ±5 |
| 1752.6 | Simulated Tissue 1750 MHz Head | 41.021 | 1.366 | 40.07 | 1.37 | 2.37 | -0.29 | ±5 |

**Liquid Verification above was performed on 2018/2/22.*

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | $\sigma$ (S/m) | $\varepsilon_r$ | $\sigma$ (S/m) | $\Delta\varepsilon_r$ | $\Delta\sigma$ (S/m) | |
| 1712.4 | Simulated Tissue 1750 MHz Body | 53.042 | 1.496 | 53.53 | 1.46 | -0.91 | 2.47 | ±5 |
| 1720 | Simulated Tissue 1750 MHz Body | 52.843 | 1.509 | 53.51 | 1.47 | -1.25 | 2.65 | ±5 |
| 1732.5 | Simulated Tissue 1750 MHz Body | 52.822 | 1.528 | 53.48 | 1.48 | -1.23 | 3.24 | ±5 |
| 1732.6 | Simulated Tissue 1750 MHz Body | 52.811 | 1.528 | 53.48 | 1.48 | -1.25 | 3.24 | ±5 |
| 1745 | Simulated Tissue 1750 MHz Body | 52.682 | 1.539 | 53.44 | 1.49 | -1.42 | 3.29 | ±5 |
| 1750 | Simulated Tissue 1750 MHz Body | 52.638 | 1.545 | 53.43 | 1.49 | -1.48 | 3.69 | ±5 |
| 1752.6 | Simulated Tissue 1750 MHz Body | 52.608 | 1.547 | 53.42 | 1.49 | -1.52 | 3.83 | ±5 |

**Liquid Verification above was performed on 2018/2/24.*

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | $\sigma$ (S/m) | $\varepsilon_r$ | $\sigma$ (S/m) | $\Delta\varepsilon_r$ | $\Delta\sigma$ (S/m) | |
| 1850.2 | Simulated Tissue 1900 MHz Head | 40.732 | 1.339 | 40 | 1.4 | 1.83 | -4.36 | ±5 |
| 1851.25 | Simulated Tissue 1900 MHz Head | 40.728 | 1.344 | 40 | 1.4 | 1.82 | -4 | ±5 |
| 1852.4 | Simulated Tissue 1900 MHz Head | 40.698 | 1.348 | 40 | 1.4 | 1.75 | -3.71 | ±5 |
| 1860 | Simulated Tissue 1900 MHz Head | 40.582 | 1.351 | 40 | 1.4 | 1.46 | -3.5 | ±5 |
| 1880 | Simulated Tissue 1900 MHz Head | 40.47 | 1.36 | 40 | 1.4 | 1.18 | -2.86 | ±5 |
| 1900 | Simulated Tissue 1900 MHz Head | 40.425 | 1.391 | 40 | 1.4 | 1.06 | -0.64 | ±5 |
| 1907.6 | Simulated Tissue 1900 MHz Head | 40.355 | 1.398 | 40 | 1.4 | 0.89 | -0.14 | ±5 |
| 1908.75 | Simulated Tissue 1900 MHz Head | 40.313 | 1.403 | 40 | 1.4 | 0.78 | 0.21 | ±5 |
| 1909.8 | Simulated Tissue 1900 MHz Head | 40.302 | 1.409 | 40 | 1.4 | 0.75 | 0.64 | ±5 |

**Liquid Verification above was performed on 2018/3/7.*

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | $\sigma$ (S/m) | $\varepsilon_r$ | $\sigma$ (S/m) | $\Delta\varepsilon_r$ | $\Delta\sigma$ (S/m) | |
| 1860 | Simulated Tissue 1900 MHz Head | 40.211 | 1.375 | 40 | 1.4 | 0.53 | -1.79 | ±5 |
| 1882.5 | Simulated Tissue 1900 MHz Head | 40.284 | 1.367 | 40 | 1.4 | 0.71 | -2.36 | ±5 |
| 1900 | Simulated Tissue 1900 MHz Head | 40.404 | 1.396 | 40 | 1.4 | 1.01 | -0.29 | ±5 |
| 1905 | Simulated Tissue 1900 MHz Head | 40.407 | 1.396 | 40 | 1.4 | 1.02 | -0.29 | ±5 |

**Liquid Verification above was performed on 2018/3/9.*

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | $\sigma$ (S/m) | $\varepsilon_r$ | $\sigma$ (S/m) | $\Delta\varepsilon_r$ | $\Delta\sigma$ (S/m) | |
| 1850.2 | Simulated Tissue 1900 MHz Body | 54.636 | 1.454 | 53.3 | 1.52 | 2.51 | -4.34 | ±5 |
| 1851.25 | Simulated Tissue 1900 MHz Body | 54.612 | 1.462 | 53.3 | 1.52 | 2.46 | -3.82 | ±5 |
| 1852.4 | Simulated Tissue 1900 MHz Body | 54.598 | 1.464 | 53.3 | 1.52 | 2.44 | -3.68 | ±5 |
| 1860 | Simulated Tissue 1900 MHz Body | 54.414 | 1.468 | 53.3 | 1.52 | 2.09 | -3.42 | ±5 |
| 1880 | Simulated Tissue 1900 MHz Body | 54.231 | 1.479 | 53.3 | 1.52 | 1.75 | -2.7 | ±5 |
| 1900 | Simulated Tissue 1900 MHz Body | 54.191 | 1.514 | 53.3 | 1.52 | 1.67 | -0.39 | ±5 |
| 1907.6 | Simulated Tissue 1900 MHz Body | 54.148 | 1.516 | 53.3 | 1.52 | 1.59 | -0.26 | ±5 |
| 1908.75 | Simulated Tissue 1900 MHz Body | 54.105 | 1.517 | 53.3 | 1.52 | 1.51 | -0.2 | ±5 |
| 1909.8 | Simulated Tissue 1900 MHz Body | 54.103 | 1.529 | 53.3 | 1.52 | 1.51 | 0.59 | ±5 |

**Liquid Verification above was performed on 2018/3/8.*

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | $\sigma$ (S/m) | $\varepsilon_r$ | $\sigma$ (S/m) | $\Delta\varepsilon_r$ | $\Delta\sigma$ (S/m) | |
| 1860 | Simulated Tissue 1900 MHz Body | 53.726 | 1.484 | 53.3 | 1.52 | 0.8 | -2.37 | ±5 |
| 1882.5 | Simulated Tissue 1900 MHz Body | 54.066 | 1.491 | 53.3 | 1.52 | 1.44 | -1.91 | ±5 |
| 1900 | Simulated Tissue 1900 MHz Body | 53.875 | 1.519 | 53.3 | 1.52 | 1.08 | -0.07 | ±5 |
| 1905 | Simulated Tissue 1900 MHz Body | 54.173 | 1.515 | 53.3 | 1.52 | 1.64 | -0.33 | ±5 |

**Liquid Verification above was performed on 2018/3/9.*

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | $\sigma$ (S/m) | $\varepsilon_r$ | $\sigma$ (S/m) | $\Delta\varepsilon_r$ | $\Delta\sigma$ (S/m) | |
| 2450 | Simulated Tissue 2450 MHz Head | 38.776 | 1.797 | 39.2 | 1.8 | -1.08 | -0.17 | ±5 |
| 2506 | Simulated Tissue 2450 MHz Head | 40.224 | 1.801 | 39.13 | 1.86 | 2.8 | -3.17 | ±5 |
| 2510 | Simulated Tissue 2450 MHz Head | 40.069 | 1.816 | 39.12 | 1.87 | 2.43 | -2.89 | ±5 |
| 2535 | Simulated Tissue 2450 MHz Head | 39.016 | 1.896 | 39.09 | 1.89 | -0.19 | 0.32 | ±5 |
| 2545 | Simulated Tissue 2450 MHz Head | 39.002 | 1.916 | 39.08 | 1.9 | -0.2 | 0.84 | ±5 |

**Liquid Verification above was performed on 2018/2/23.*

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | σ (S/m) | $\varepsilon_r$ | σ (S/m) | $\Delta\varepsilon_r$ | Δσ (S/m) | |
| 2402 | Simulated Tissue 2450 MHz Head | 40.266 | 1.703 | 39.29 | 1.76 | 2.48 | -3.24 | ±5 |
| 2412 | Simulated Tissue 2450 MHz Head | 40.245 | 1.738 | 39.27 | 1.77 | 2.48 | -1.81 | ±5 |
| 2416 | Simulated Tissue 2450 MHz Head | 40.203 | 1.744 | 39.27 | 1.77 | 2.38 | -1.47 | ±5 |
| 2441 | Simulated Tissue 2450 MHz Head | 40.139 | 1.768 | 39.22 | 1.79 | 2.34 | -1.23 | ±5 |
| 2442 | Simulated Tissue 2450 MHz Head | 38.955 | 1.775 | 39.21 | 1.79 | -0.65 | -0.84 | ±5 |
| 2450 | Simulated Tissue 2450 MHz Head | 38.442 | 1.823 | 39.2 | 1.8 | -1.93 | 1.28 | ±5 |
| 2472 | Simulated Tissue 2450 MHz Head | 38.36 | 1.817 | 39.17 | 1.82 | -2.07 | -0.16 | ±5 |
| 2480 | Simulated Tissue 2450 MHz Head | 38.205 | 1.825 | 39.16 | 1.83 | -2.44 | -0.27 | ±5 |

**Liquid Verification above was performed on 2018/2/24.*

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | σ (S/m) | $\varepsilon_r$ | σ (S/m) | $\Delta\varepsilon_r$ | Δσ (S/m) | |
| 2402 | Simulated Tissue 2450 MHz Body | 54.434 | 1.891 | 52.76 | 1.9 | 3.17 | -0.47 | ±5 |
| 2412 | Simulated Tissue 2450 MHz Body | 54.382 | 1.905 | 52.75 | 1.91 | 3.09 | -0.26 | ±5 |
| 2416 | Simulated Tissue 2450 MHz Body | 54.302 | 1.911 | 52.75 | 1.91 | 2.94 | 0.05 | ±5 |
| 2441 | Simulated Tissue 2450 MHz Body | 54.189 | 1.933 | 52.71 | 1.94 | 2.81 | -0.36 | ±5 |
| 2442 | Simulated Tissue 2450 MHz Body | 52.705 | 1.942 | 52.71 | 1.94 | -0.01 | 0.1 | ±5 |
| 2450 | Simulated Tissue 2450 MHz Body | 52.464 | 1.948 | 52.7 | 1.95 | -0.45 | -0.1 | ±5 |
| 2472 | Simulated Tissue 2450 MHz Body | 51.91 | 1.978 | 52.67 | 1.98 | -1.44 | -0.1 | ±5 |
| 2480 | Simulated Tissue 2450 MHz Body | 51.578 | 1.983 | 52.66 | 1.99 | -2.05 | -0.35 | ±5 |
| 2506 | Simulated Tissue 2450 MHz Body | 52.824 | 1.943 | 52.63 | 2.03 | 0.37 | -4.29 | ±5 |
| 2510 | Simulated Tissue 2450 MHz Body | 52.632 | 1.969 | 52.62 | 2.04 | 0.02 | -3.48 | ±5 |
| 2535 | Simulated Tissue 2450 MHz Body | 52.483 | 2.111 | 52.59 | 2.07 | -0.2 | 1.98 | ±5 |
| 2545 | Simulated Tissue 2450 MHz Body | 52.635 | 2.145 | 52.58 | 2.08 | 0.1 | 3.13 | ±5 |

**Liquid Verification above was performed on 2018/2/23.*

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | σ (S/m) | $\varepsilon_r$ | σ (S/m) | $\Delta\varepsilon_r$ | Δσ (S/m) | |
| 2560 | Simulated Tissue 2600 MHz Head | 38.898 | 1.925 | 39.06 | 1.92 | -0.41 | 0.26 | ±5 |
| 2593 | Simulated Tissue 2600 MHz Head | 37.934 | 1.974 | 39.02 | 1.96 | -2.78 | 0.71 | ±5 |
| 2600 | Simulated Tissue 2600 MHz Head | 37.967 | 1.984 | 39.01 | 1.96 | -2.67 | 1.22 | ±5 |
| 2635 | Simulated Tissue 2600 MHz Head | 37.952 | 2.044 | 38.96 | 2 | -2.59 | 2.2 | ±5 |
| 2680 | Simulated Tissue 2600 MHz Head | 37.731 | 2.116 | 38.91 | 2.05 | -3.03 | 3.22 | ±5 |

**Liquid Verification above was performed on 2018/2/25.*

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | $\sigma$ (S/m) | $\varepsilon_r$ | $\sigma$ (S/m) | $\Delta\varepsilon_r$ | $\Delta\sigma$ (S/m) | |
| 2560 | Simulated Tissue 2600 MHz Body | 54.244 | 2.119 | 52.56 | 2.11 | 3.2 | 0.43 | ±5 |
| 2593 | Simulated Tissue 2600 MHz Body | 51.786 | 2.212 | 52.52 | 2.15 | -1.4 | 2.88 | ±5 |
| 2600 | Simulated Tissue 2600 MHz Body | 51.325 | 2.145 | 52.51 | 2.16 | -2.26 | -0.69 | ±5 |
| 2635 | Simulated Tissue 2600 MHz Body | 51.114 | 2.282 | 52.46 | 2.21 | -2.57 | 3.26 | ±5 |
| 2680 | Simulated Tissue 2600 MHz Body | 50.624 | 2.343 | 52.41 | 2.28 | -3.41 | 2.76 | ±5 |

**Liquid Verification above was performed on 2018/2/25.*

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | $\sigma$ (S/m) | $\varepsilon_r$ | $\sigma$ (S/m) | $\Delta\varepsilon_r$ | $\Delta\sigma$ (S/m) | |
| 350.0125 | Simulated Tissue 450 MHz Head | 44.764 | 0.868 | 44.70 | 0.87 | 0.14 | -0.23 | ±5 |
| 362 | Simulated Tissue 450 MHz Head | 44.298 | 0.878 | 44.56 | 0.87 | -0.59 | 0.92 | ±5 |
| 375 | Simulated Tissue 450 MHz Head | 44.341 | 0.883 | 44.40 | 0.87 | -0.13 | 1.49 | ±5 |
| 388 | Simulated Tissue 450 MHz Head | 43.8 | 0.873 | 44.24 | 0.87 | -0.99 | 0.34 | ±5 |
| 399.9875 | Simulated Tissue 450 MHz Head | 43.061 | 0.872 | 44.10 | 0.87 | -2.36 | 0.23 | ±5 |
| 400.0125 | Simulated Tissue 450 MHz Head | 43.061 | 0.872 | 44.10 | 0.87 | -2.36 | 0.23 | ±5 |
| 406.1125 | Simulated Tissue 450 MHz Head | 43.301 | 0.878 | 44.03 | 0.87 | -1.66 | 0.92 | ±5 |
| 418 | Simulated Tissue 450 MHz Head | 43.472 | 0.891 | 43.88 | 0.87 | -0.93 | 2.41 | ±5 |
| 435 | Simulated Tissue 450 MHz Head | 42.833 | 0.875 | 43.68 | 0.87 | -1.94 | 0.57 | ±5 |
| 450 | Simulated Tissue 450 MHz Head | 42.994 | 0.86 | 43.50 | 0.87 | -1.16 | -1.15 | ±5 |
| 452 | Simulated Tissue 450 MHz Head | 43.398 | 0.874 | 43.49 | 0.87 | -0.21 | 0.46 | ±5 |
| 469.9875 | Simulated Tissue 450 MHz Head | 42.975 | 0.873 | 43.40 | 0.87 | -0.98 | 0.34 | ±5 |
| 450.0125 | Simulated Tissue 450 MHz Head | 42.974 | 0.86 | 43.50 | 0.87 | -1.21 | -1.15 | ±5 |
| 469 | Simulated Tissue 450 MHz Head | 43.302 | 0.872 | 43.40 | 0.87 | -0.23 | 0.23 | ±5 |
| 488 | Simulated Tissue 450 MHz Head | 42.692 | 0.881 | 43.30 | 0.87 | -1.4 | 1.26 | ±5 |
| 507 | Simulated Tissue 450 MHz Head | 42.804 | 0.902 | 43.20 | 0.87 | -0.92 | 3.68 | ±5 |
| 511.9875 | Simulated Tissue 450 MHz Head | 42.626 | 0.914 | 43.10 | 0.88 | -1.1 | 3.86 | ±5 |

**Liquid Verification above was performed on 2018/2/9.*

| Frequency (MHz) | Liquid Type | Liquid Parameter | | Target Value | | Delta (%) | | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|
| | | $\varepsilon_r$ | $\sigma$ (S/m) | $\varepsilon_r$ | $\sigma$ (S/m) | $\Delta\varepsilon_r$ | $\Delta\sigma$ (S/m) | |
| 350.0125 | Simulated Tissue 450 MHz Body | 56.682 | 0.936 | 57.70 | 0.93 | -1.76 | 0.65 | ±5 |
| 362 | Simulated Tissue 450 MHz Body | 56.094 | 0.959 | 57.58 | 0.93 | -2.58 | 3.12 | ±5 |
| 375 | Simulated Tissue 450 MHz Body | 56.083 | 0.967 | 57.45 | 0.93 | -2.38 | 3.98 | ±5 |
| 388 | Simulated Tissue 450 MHz Body | 55.766 | 0.939 | 57.32 | 0.93 | -2.71 | 0.97 | ±5 |
| 399.9875 | Simulated Tissue 450 MHz Body | 55.204 | 0.948 | 57.20 | 0.93 | -3.49 | 1.94 | ±5 |
| 400.0125 | Simulated Tissue 450 MHz Body | 55.113 | 0.95 | 57.20 | 0.93 | -3.65 | 2.15 | ±5 |
| 406.1125 | Simulated Tissue 450 MHz Body | 55.466 | 0.955 | 57.14 | 0.93 | -2.93 | 2.69 | ±5 |
| 418 | Simulated Tissue 450 MHz Body | 55.237 | 0.957 | 57.02 | 0.94 | -3.13 | 1.81 | ±5 |
| 435 | Simulated Tissue 450 MHz Body | 55.447 | 0.973 | 56.85 | 0.94 | -2.47 | 3.51 | ±5 |
| 450 | Simulated Tissue 450 MHz Body | 55.156 | 0.964 | 56.70 | 0.94 | -2.72 | 2.55 | ±5 |
| 452 | Simulated Tissue 450 MHz Body | 54.938 | 0.955 | 56.69 | 0.94 | -3.09 | 1.6 | ±5 |
| 469.9875 | Simulated Tissue 450 MHz Body | 55.298 | 0.977 | 56.62 | 0.94 | -2.33 | 3.94 | ±5 |
| 450.0125 | Simulated Tissue 450 MHz Body | 54.928 | 0.944 | 56.70 | 0.94 | -3.13 | 0.43 | ±5 |
| 469 | Simulated Tissue 450 MHz Body | 55.049 | 0.969 | 56.63 | 0.94 | -2.79 | 3.09 | ±5 |
| 488 | Simulated Tissue 450 MHz Body | 55.38 | 0.954 | 56.55 | 0.94 | -2.07 | 1.49 | ±5 |
| 507 | Simulated Tissue 450 MHz Body | 55.204 | 0.975 | 56.48 | 0.94 | -2.26 | 3.72 | ±5 |
| 511.9875 | Simulated Tissue 450 MHz Body | 55.426 | 0.973 | 56.40 | 0.95 | -1.73 | 2.42 | ±5 |

**Liquid Verification above was performed on 2018/2/10.*

## System Accuracy Verification

Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of ±10%. The validation results are tabulated below. And also the corresponding SAR plot is attached as well in the SAR plots files.

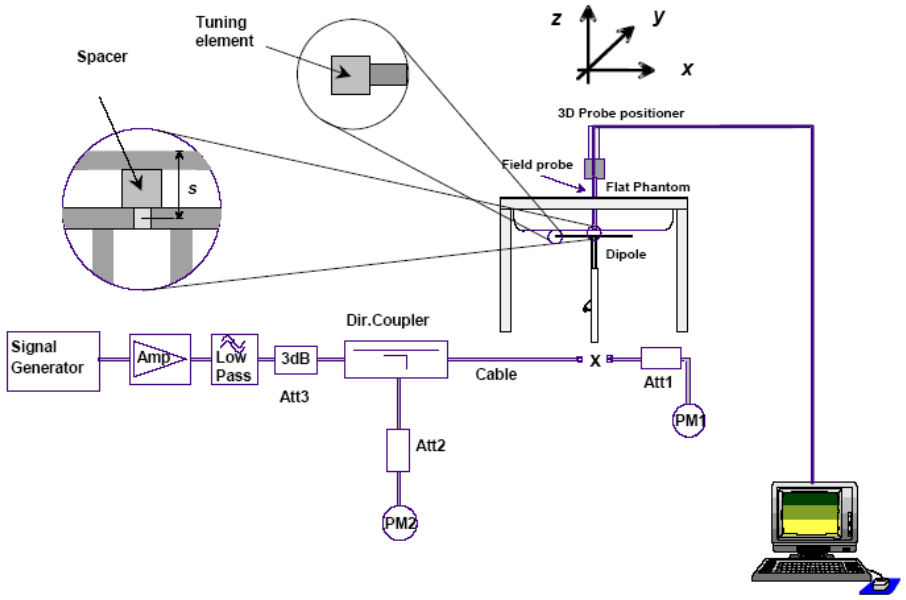
The spacing distance ***s*** in the **System Verification Setup Block Diagram** is given by the following:

a) s = 15 mm ± 0,2 mm for 300 MHz ≤ f ≤ 1 000 MHz;

b) s = 10 mm ± 0,2 mm for 1 000 MHz < f ≤ 3 000 MHz;

c) s = 10 mm ± 0,2 mm for 3 000 MHz < f ≤ 6 000 MHz.

### System Verification Setup Block Diagram




### System Accuracy Check Results

| Date | Frequency Band | Liquid Type | Input Power (mW) | Measured SAR (W/kg) | | Normalized to 1W (W/kg) | Target Value (W/kg) | Delta (%) | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|---|
| 2018/2/26 | 750 MHz | Head | 100 | 1g | 0.832 | 8.32 | 8.23 | 2.55 | ±10 |
| 2018/2/26 | 750 MHz | Body | 100 | 1g | 0.847 | 8.47 | 8.58 | -1.98 | ±10 |
| 2018/3/3 | 750 MHz | Head | 100 | 1g | 0.837 | 8.37 | 8.23 | 1.70 | ±10 |
| 2018/3/5 | 750 MHz | Head | 100 | 1g | 0.844 | 8.44 | 8.23 | 2.55 | ±10 |
| 2018/3/4 | 750 MHz | Body | 100 | 1g | 0.841 | 8.41 | 8.58 | -1.98 | ±10 |
| 2018/3/6 | 750 MHz | Body | 100 | 1g | 0.834 | 8.34 | 8.58 | -2.80 | ±10 |
| 2018/2/22 | 1750 MHz | Head | 100 | 1g | 3.72 | 37.2 | 36.8 | 1.09 | ±10 |
| 2018/2/24 | 1750 MHz | Body | 100 | 1g | 3.88 | 38.8 | 37.4 | 3.74 | ±10 |
| 2018/3/7 | 1900 MHz | Head | 100 | 1g | 3.98 | 39.8 | 40.3 | -1.24 | ±10 |
| 2018/3/9 | 1900 MHz | Head | 100 | 1g | 4.06 | 40.6 | 40.3 | 0.74 | ±10 |
| 2018/3/8 | 1900 MHz | Body | 100 | 1g | 4.14 | 41.4 | 41.1 | 0.73 | ±10 |
| 2018/3/9 | 1900 MHz | Body | 100 | 1g | 4.23 | 42.3 | 41.1 | 2.92 | ±10 |
| 2018/2/23 | 2450 MHz | Head | 100 | 1g | 5.31 | 53.1 | 53.3 | -0.38 | ±10 |
| 2018/2/24 | 2450 MHz | Head | 100 | 1g | 5.27 | 52.7 | 53.3 | -1.13 | ±10 |
| 2018/2/23 | 2450 MHz | Body | 100 | 1g | 5.14 | 51.4 | 50.6 | 1.58 | ±10 |
| 2018/2/25 | 2600 MHz | Head | 100 | 1g | 5.54 | 55.4 | 56.1 | -1.25 | ±10 |
| 2018/2/25 | 2600 MHz | Body | 100 | 1g | 5.27 | 52.7 | 53.9 | -2.23 | ±10 |

| Date | Frequency Band | Liquid Type | Input Power (mW) | Measured SAR (W/kg) | | Normalized to 1W (W/kg) | Target Value (W/kg) | Delta (%) | Tolerance (%) |
|---|---|---|---|---|---|---|---|---|---|
| 2018/2/9 | 450 MHz | Head | 100 | 1g | 0.461 | 4.61 | 4.53 | 1.77 | ±10 |
| 2018/2/10 | 450 MHz | Body | 100 | 1g | 0.461 | 4.61 | 4.55 | 1.32 | ±10 |

*The SAR values above are normalized to 1 Watt forward power.

## SAR SYSTEM VALIDATION DATA

**System Performance 750 MHz Body on 2018/2/26 at SAR Lab 2**

**DUT: D750V3; Type: 750 MHz; Serial: 1167**

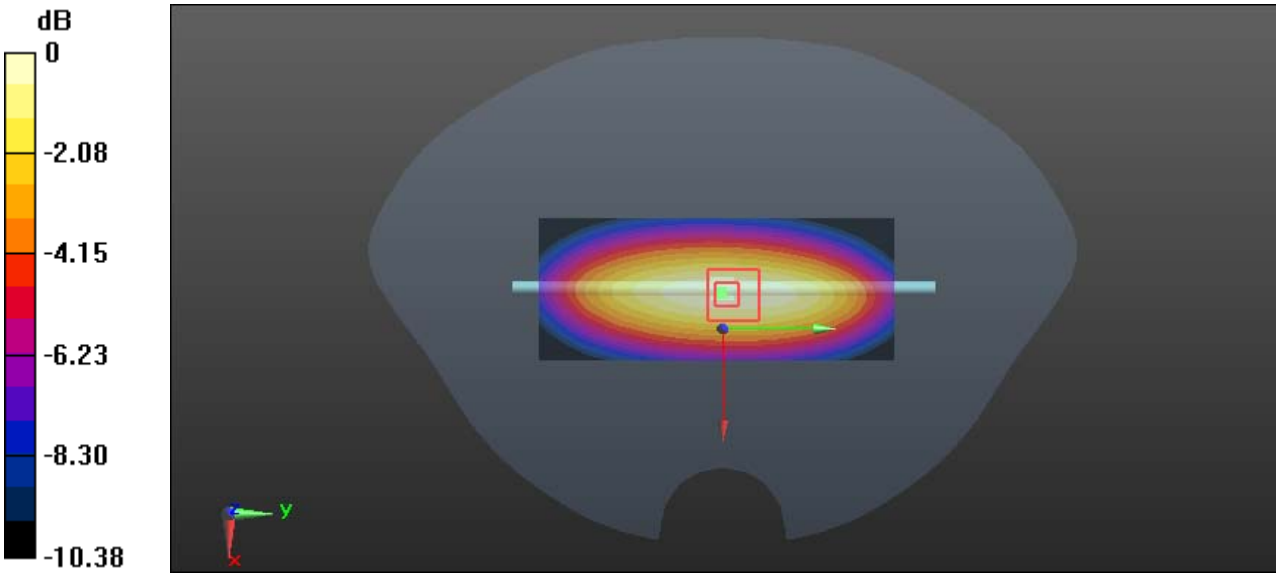
Communication System:CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; $\sigma$ = 0.896 S/m; $\varepsilon_r$ = 41.438; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV2 - SN3019; ConvF(6.57, 6.57, 6.57); Calibrated: 2017/10/30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn772;Calibrated: 2017/10/9
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: 1412
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (41x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.12 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.58 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 1.28 W/kg
**SAR(1 g) = 0.832 W/kg; SAR(10 g) = 0.550 W/kg**
Maximum value of SAR (measured) = 1.11 W/kg




0 dB = 1.11 W/kg = 0.45 dBW/kg

**System Performance 750 MHz Body on 2018/2/26 at SAR Lab 2**

**DUT: D750V3; Type: 750 MHz; Serial: 1167**

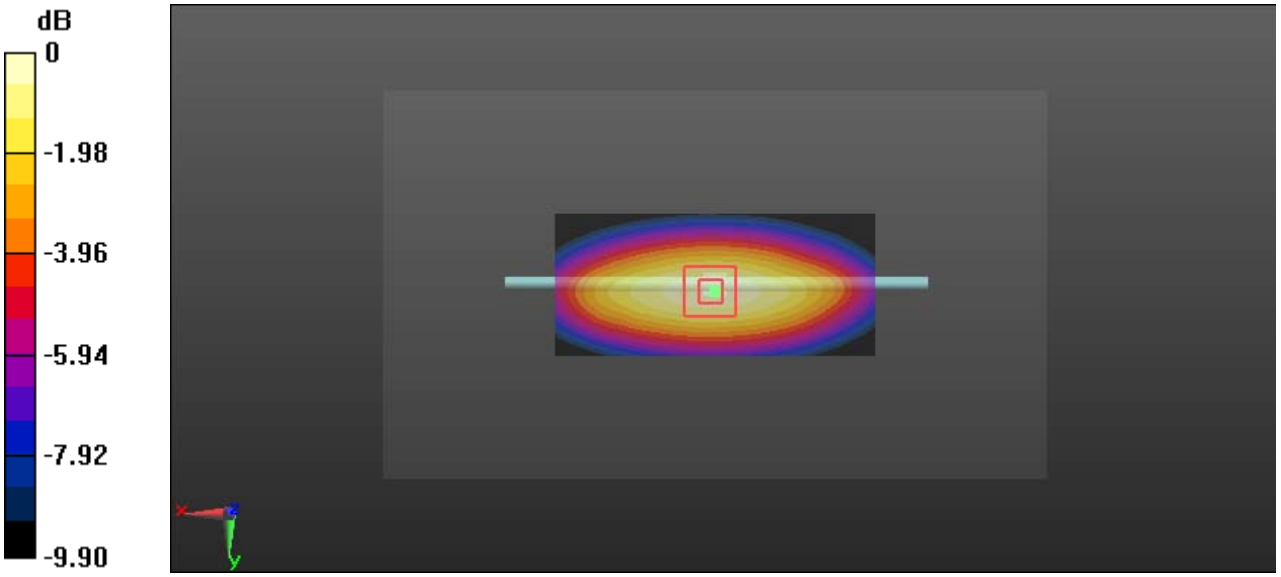
Communication System: CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; $\sigma$ = 0.944 S/m; $\varepsilon_r$ = 57.059; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section

DASY5 Configuration:

- Probe: ES3DV2 - SN3019; ConvF(6.42, 6.42, 6.42); Calibrated: 2017/10/30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn772;Calibrated: 2017/10/9
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: 1130
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (91x41x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.15 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.15 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 1.29 W/kg
**SAR(1 g) = 0.847 W/kg; SAR(10 g) = 0.568 W/kg**
Maximum value of SAR (measured) = 1.18 W/kg




0 dB = 1.18 W/kg = 0.72 dBW/kg

**System Performance 750 MHz Head on 2018/3/3 at SAR Lab 2**

**DUT: D750V3; Type: 750 MHz; Serial: 1167**

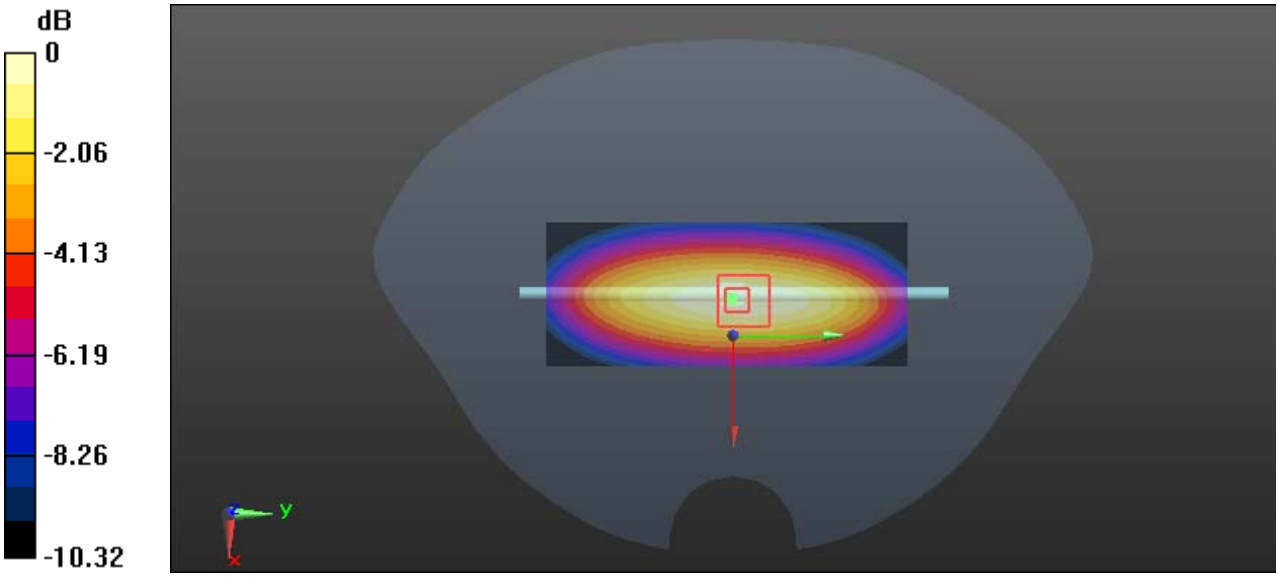
Communication System:CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; $\sigma$ = 0.894 S/m; $\varepsilon_r$ = 41.372; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV2 - SN3019; ConvF(6.57, 6.57, 6.57); Calibrated: 2017/10/30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn772;Calibrated: 2017/10/9
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: 1412
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (41x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.12 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.75 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.29 W/kg
**SAR(1 g) = 0.837 W/kg; SAR(10 g) = 0.557 W/kg**
Maximum value of SAR (measured) = 1.13 W/kg




0 dB = 1.13 W/kg = 0.53 dBW/kg

**System Performance 750 MHz Head on 2018/3/5 at SAR Lab 2**

**DUT: D750V3; Type: 750 MHz; Serial: 1167**

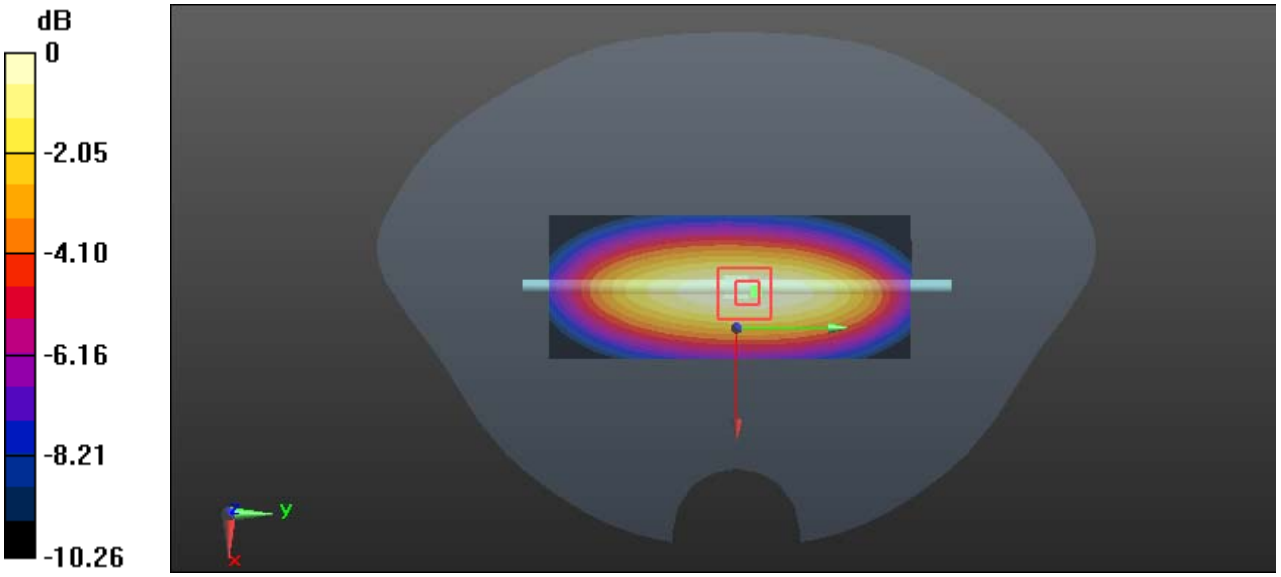
Communication System:CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; $\sigma$ = 0.912 S/m; $\varepsilon_r$ = 41.224; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV2 - SN3019; ConvF(6.57, 6.57, 6.57); Calibrated: 2017/10/30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn772;Calibrated: 2017/10/9
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: 1412
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (41x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.15 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.15 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 1.31 W/kg
**SAR(1 g) = 0.844 W/kg; SAR(10 g) = 0.563 W/kg**
Maximum value of SAR (measured) = 1.12 W/kg




0 dB = 1.12 W/kg = 0.49 dBW/kg

**System Performance 750 MHz Body on 2018/3/4 at SAR Lab 2**

**DUT: D750V3; Type: 750 MHz; Serial: 1167**

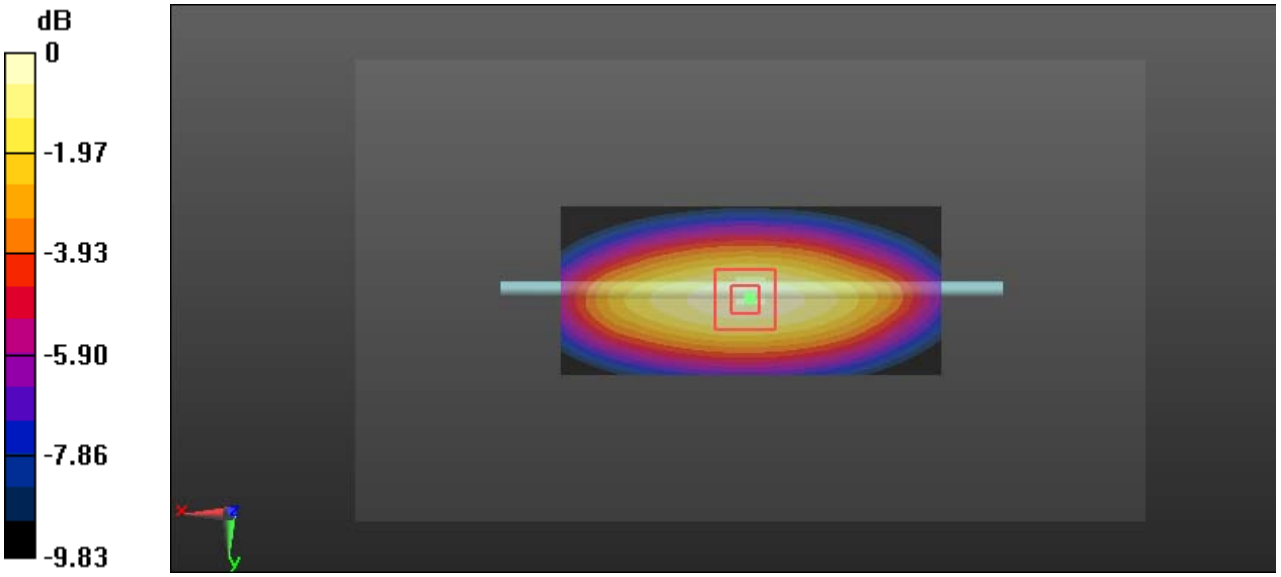
Communication System: CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; $\sigma$ = 0.974 S/m; $\varepsilon_r$ = 53.062; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section

DASY5 Configuration:

- Probe: ES3DV2 - SN3019; ConvF(6.42, 6.42, 6.42); Calibrated: 2017/10/30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn772;Calibrated: 2017/10/9
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: 1130
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (91x41x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.04 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.05 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.17 W/kg
**SAR(1 g) = 0.841 W/kg; SAR(10 g) = 0.553 W/kg**
Maximum value of SAR (measured) = 1.02 W/kg




0 dB = 1.02 W/kg = 0.09 dBW/kg

**System Performance 750 MHz Body on 2018/3/6 at SAR Lab 2**

**DUT: D750V3; Type: 750 MHz; Serial: 1167**

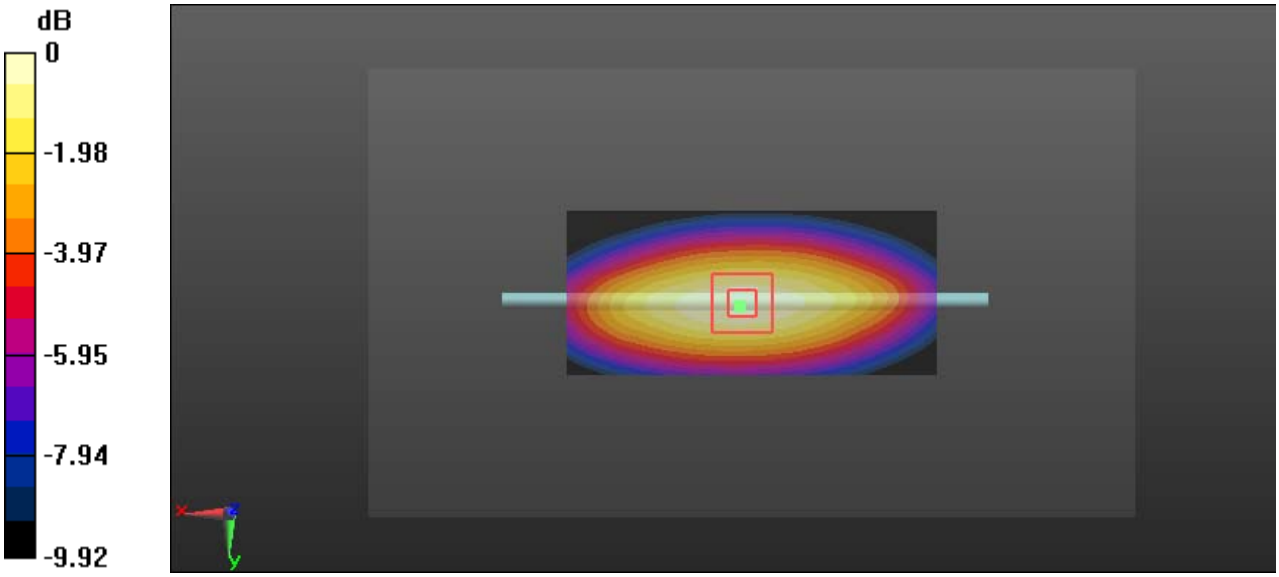
Communication System: CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; $\sigma$ = 0.983 S/m; $\varepsilon_r$ = 53.531; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section

DASY5 Configuration:

- Probe: ES3DV2 - SN3019; ConvF(6.42, 6.42, 6.42); Calibrated: 2017/10/30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn772;Calibrated: 2017/10/9
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: 1130
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (91x41x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.05 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.78 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.15 W/kg
**SAR(1 g) = 0.834 W/kg; SAR(10 g) = 0.549 W/kg**
Maximum value of SAR (measured) = 1.07 W/kg




0 dB = 1.07 W/kg = 0.29 dBW/kg

**System Performance 1750 MHz Head on 2018/2/22 at SAR Lab 2**

**DUT: D1750V2; Type: 1750 MHz; Serial: 1141**

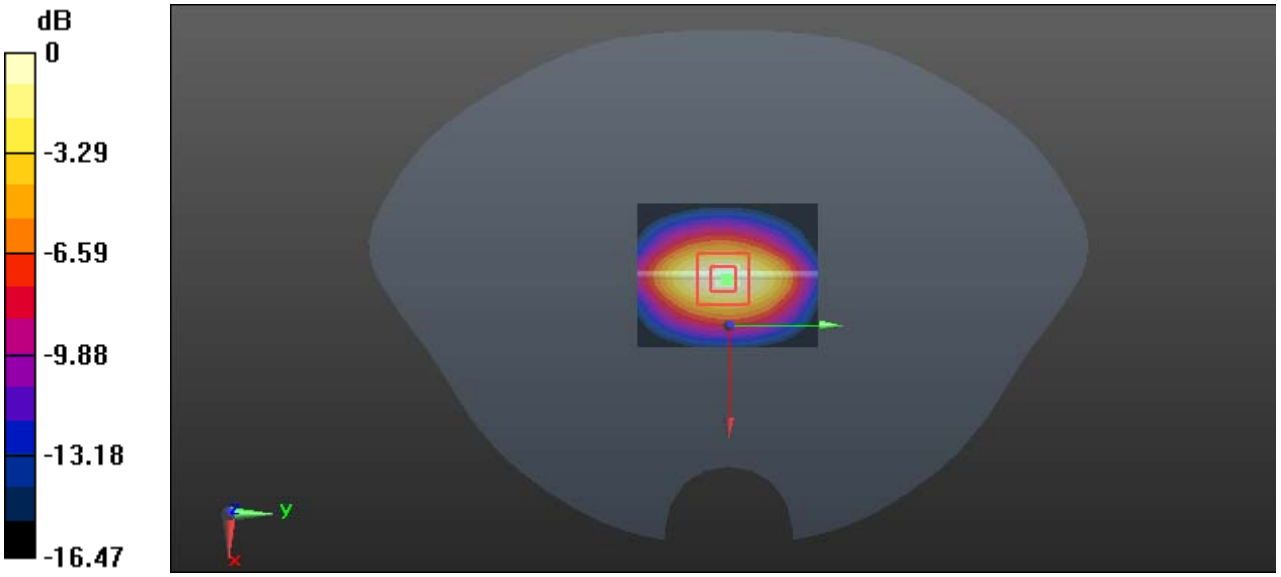
Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; $\sigma$ = 1.359 S/m; $\varepsilon_r$ = 41.071; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV2 - SN3019; ConvF(5.13, 5.13, 5.13); Calibrated: 2017/10/30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn772;Calibrated: 2017/10/9
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: 1412
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (41x51x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 5.92 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 54.29 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 6.74 W/kg
**SAR(1 g) = 3.72 W/kg; SAR(10 g) = 1.99 W/kg**
Maximum value of SAR (measured) = 5.62 W/kg




0 dB = 5.62 W/kg = 7.50 dBW/kg

**System Performance 1750 MHz Body on 2018/2/24 at SAR Lab 2**

**DUT: D1750V2; Type: 1750 MHz; Serial: 1141**

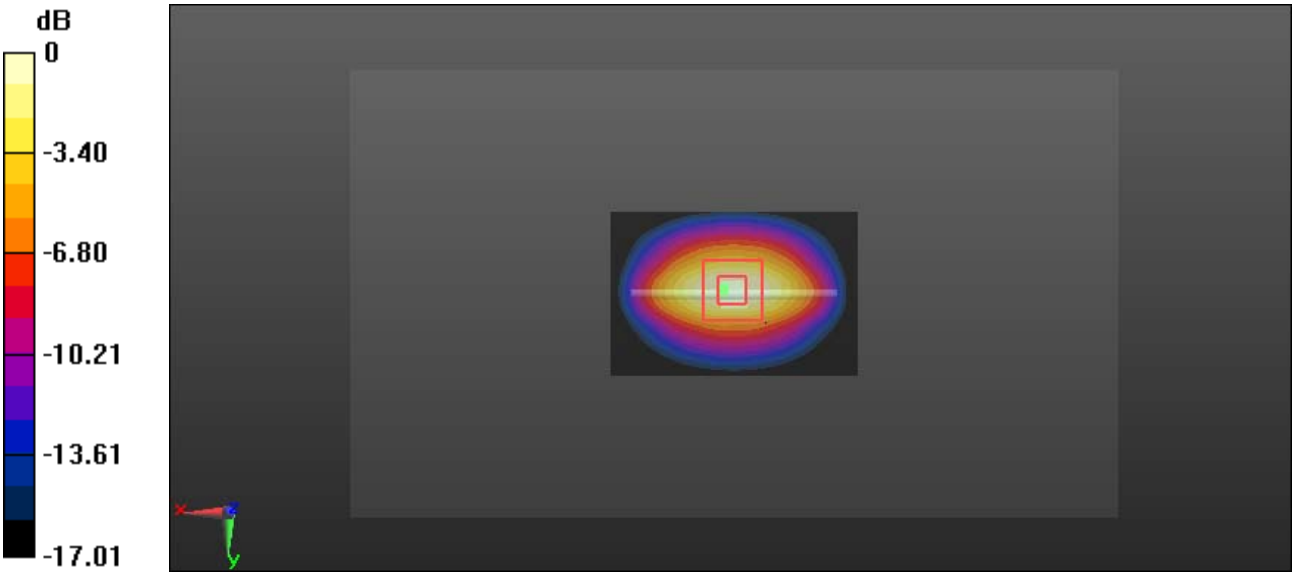
Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; $\sigma$ = 1.545 S/m; $\varepsilon_r$ = 52.638; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV2 - SN3019; ConvF(4.84, 4.84, 4.84); Calibrated: 2017/10/30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn772;Calibrated: 2017/10/9
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: 1130
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (61x41x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 6.41 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 55.87 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 7.28 W/kg
**SAR(1 g) = 3.88 W/kg; SAR(10 g) = 2.09 W/kg**
Maximum value of SAR (measured) = 6.02 W/kg




0 dB = 6.02 W/kg = 7.80 dBW/kg

**System Performance 1900 MHz Head on 2018/3/7 at SAR Lab 2**

**DUT: D1900V2; Type: 1900 MHz; Serial: 543**

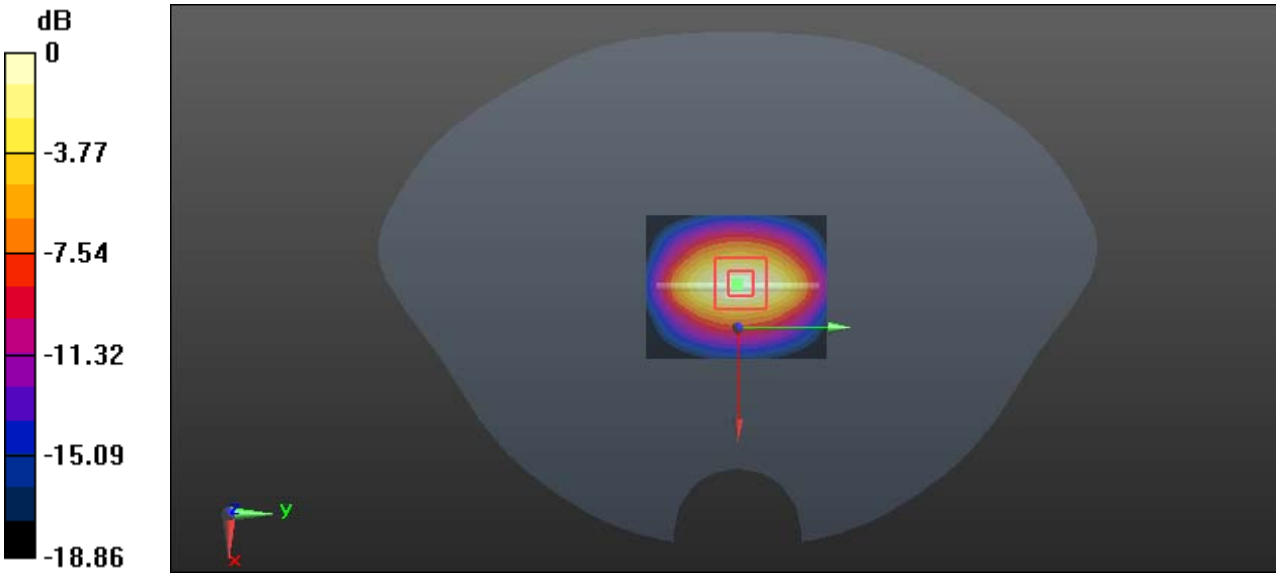
Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; $\sigma$ = 1.391 S/m; $\varepsilon_r$ = 40.425; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV2 - SN3019; ConvF(4.93, 4.93, 4.93); Calibrated: 2017/10/30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn772;Calibrated: 2017/10/9
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: 1412
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (41x51x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 6.82 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 56.57 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 7.63 W/kg
**SAR(1 g) = 3.98 W/kg; SAR(10 g) = 2.08 W/kg**
Maximum value of SAR (measured) = 6.30 W/kg




0 dB = 6.30 W/kg = 7.99 dBW/kg

**System Performance 1900 MHz Head on 2018/3/9 at SAR Lab 2**

**DUT: D1900V2; Type: 1900 MHz; Serial: 543**

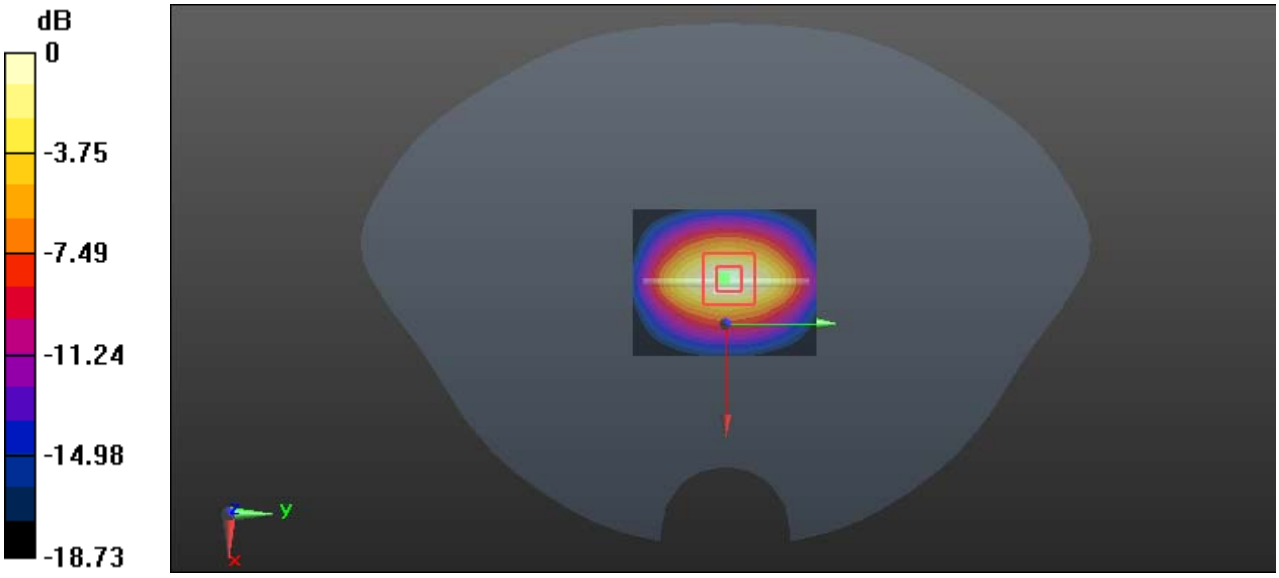
Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; $\sigma$ = 1.396 S/m; $\varepsilon_r$ = 40.404; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV2 - SN3019; ConvF(4.93, 4.93, 4.93); Calibrated: 2017/10/30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn772;Calibrated: 2017/10/9
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: 1412
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (41x51x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 6.97 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 56.16 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 7.78 W/kg
**SAR(1 g) = 4.06 W/kg; SAR(10 g) = 2.15 W/kg**
Maximum value of SAR (measured) = 6.44 W/kg




0 dB = 6.44 W/kg = 8.09 dBW/kg

**System Performance 1900 MHz Body on 2018/3/8 at SAR Lab 2**

**DUT: D1900V2; Type: 1900 MHz; Serial: 543**

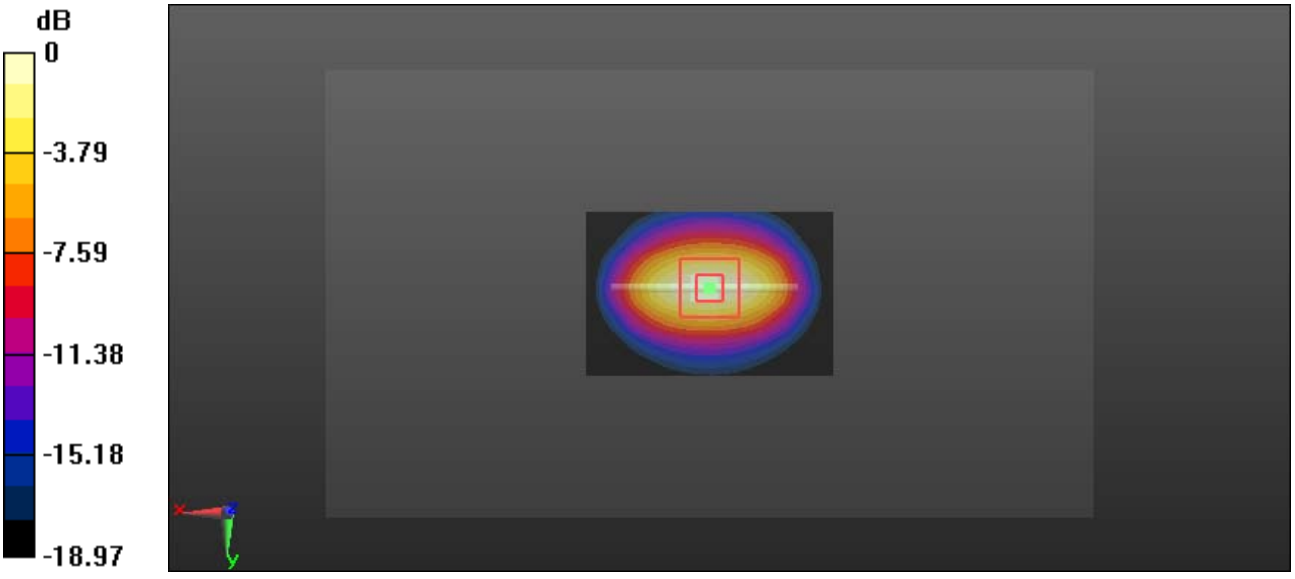
Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; $\sigma$ = 1.514 S/m; $\varepsilon_r$ = 54.191; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV2 - SN3019; ConvF(4.65, 4.65, 4.65); Calibrated: 2017/10/30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn772;Calibrated: 2017/10/9
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: 1130
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (91x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 7.17 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 56.36 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 8.03 W/kg
**SAR(1 g) = 4.14 W/kg; SAR(10 g) = 2.26 W/kg**
Maximum value of SAR (measured) = 6.84 W/kg




0 dB = 6.84 W/kg = 8.35 dBW/kg

**System Performance 1900 MHz Body on 2018/3/9 at SAR Lab 2**

**DUT: D1900V2; Type: 1900 MHz; Serial: 543**

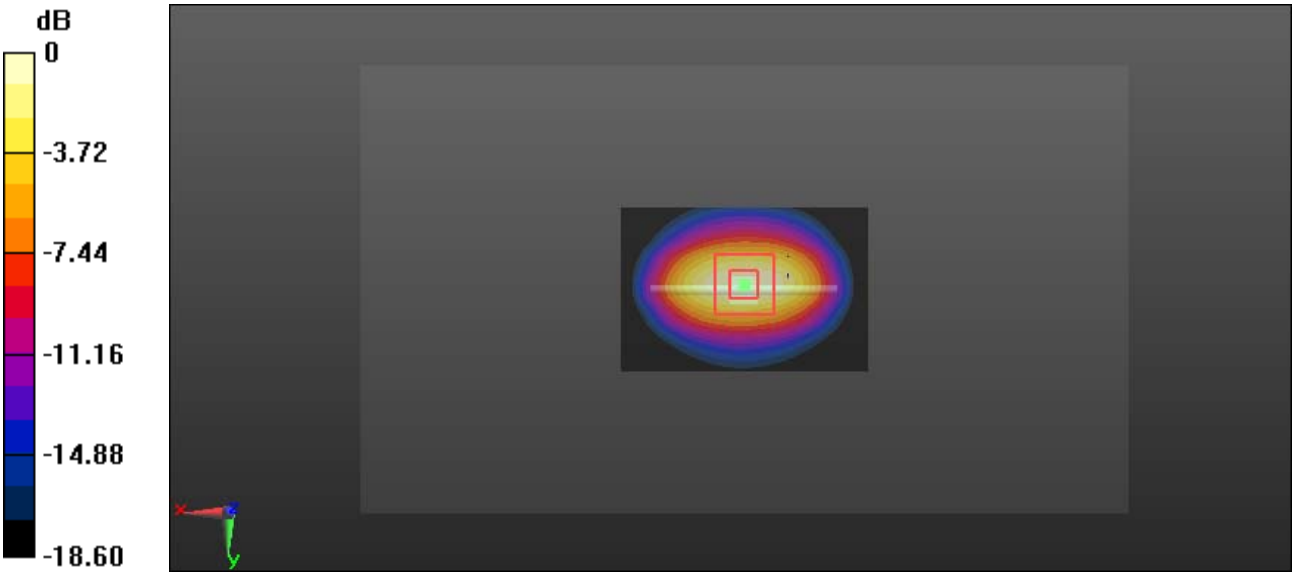
Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; $\sigma$ = 1.519 S/m; $\varepsilon_r$ = 53.875; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV2 - SN3019; ConvF(4.65, 4.65, 4.65); Calibrated: 2017/10/30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn772;Calibrated: 2017/10/9
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: 1130
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (91x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 7.18 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 57.06 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 8.11 W/kg
**SAR(1 g) = 4.23 W/kg; SAR(10 g) = 2.27 W/kg**
Maximum value of SAR (measured) = 6.82 W/kg




0 dB = 6.82 W/kg = 8.34 dBW/kg

**System Performance 2450MHz Head on 2018/2/23 at SAR Lab 2**

**DUT: D2450V2; Type: 2450 MHz; Serial: 971**

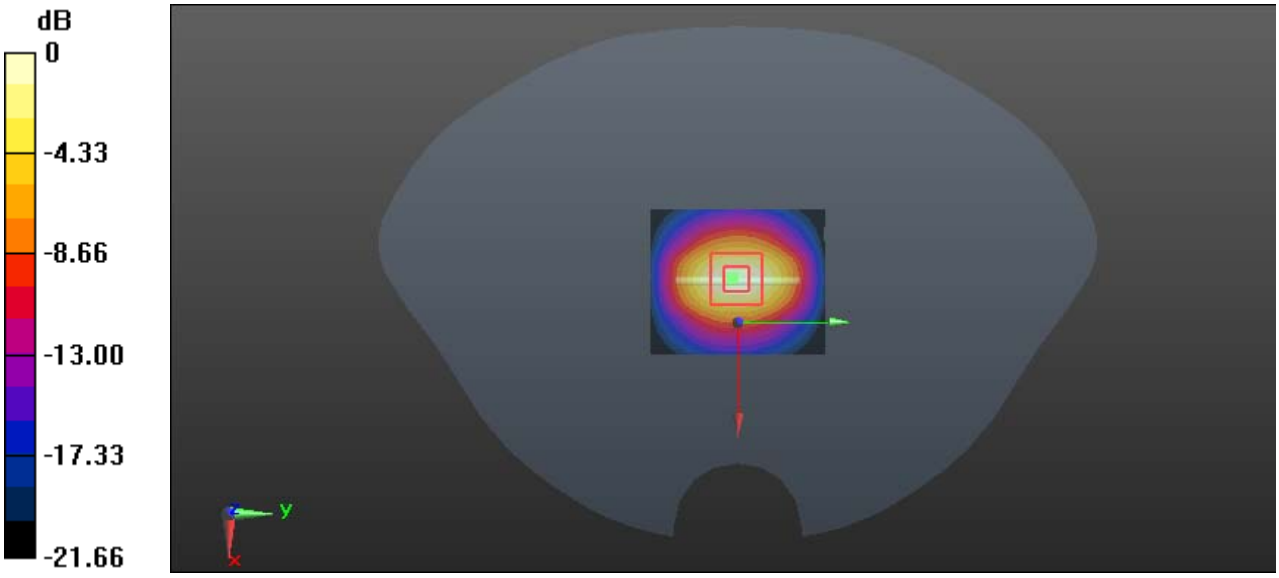
Communication System:CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; $\sigma$ = 1.797 S/m; $\varepsilon_r$ = 38.776; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section

D ASY5 Configuration:

- Probe: ES3DV2 - SN3019; ConvF(4.41, 4.41, 4.41); Calibrated: 2017/10/30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn772;Calibrated: 2017/10/9
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: 1412
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (51x61x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 9.25 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 58.57 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 10.9 W/kg
**SAR(1 g) = 5.31 W/kg; SAR(10 g) = 2.53 W/kg**
Maximum value of SAR (measured) = 8.76 W/kg




0 dB = 8.76 W/kg = 9.43 dBW/kg

**System Performance 2450MHz Head on 2018/2/24 at SAR Lab 2**

**DUT: D2450V2; Type: 2450 MHz; Serial: 971**

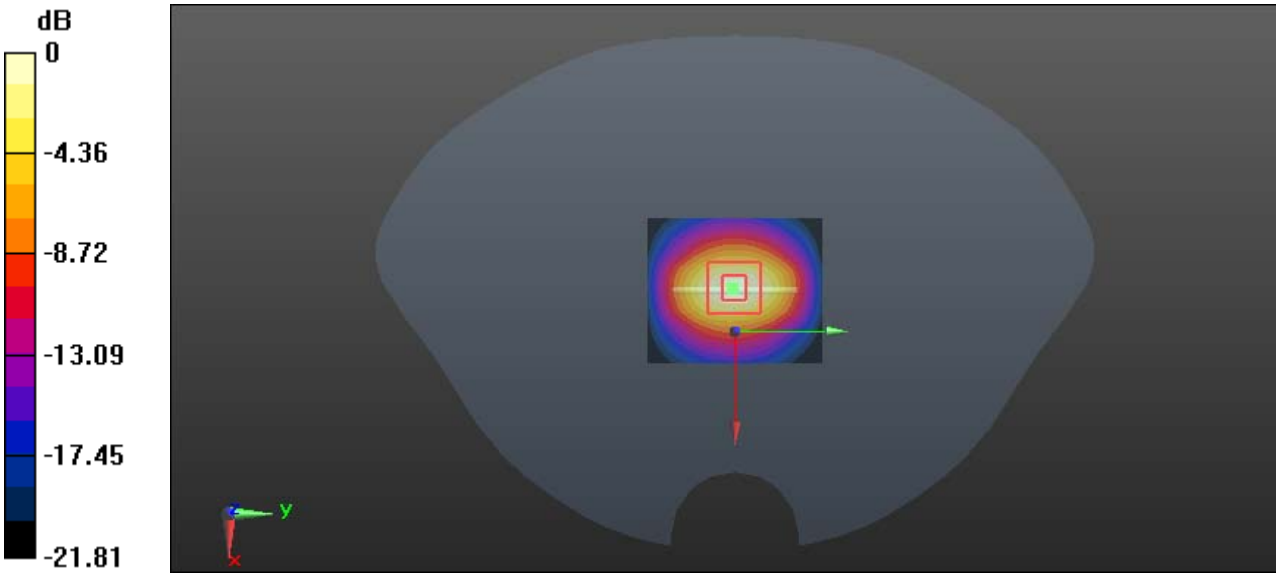
Communication System:CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; $\sigma$ = 1.823 S/m; $\varepsilon_r$ = 38.442; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

D ASY5 Configuration:

- Probe: ES3DV2 - SN3019; ConvF(4.41, 4.41, 4.41); Calibrated: 2017/10/30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn772;Calibrated: 2017/10/9
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: 1412
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (51x61x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 9.27 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 56.74 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 10.9 W/kg
**SAR(1 g) = 5.27 W/kg; SAR(10 g) = 2.53 W/kg**
Maximum value of SAR (measured) = 8.63 W/kg




0 dB = 8.63 W/kg = 9.36 dBW/kg

**System Performance 2450MHz Body on 2018/2/23 at SAR Lab 2**

**DUT: D2450V2; Type: 2450 MHz; Serial: 971**

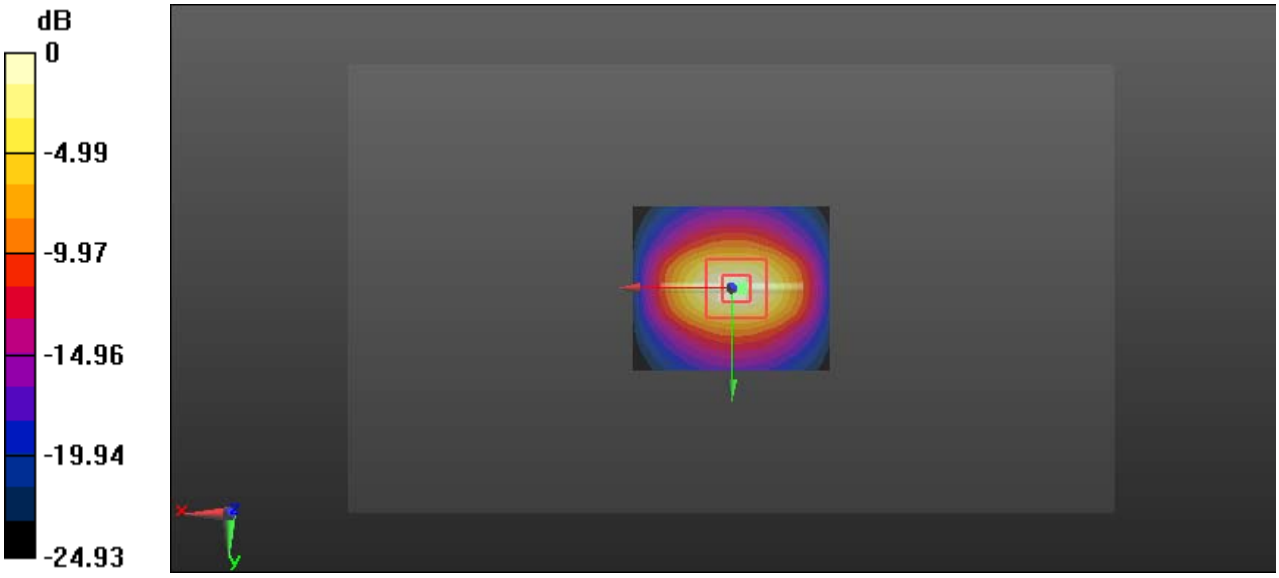
Communication System:CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; $\sigma$ = 1.948 S/m; $\varepsilon_r$ = 52.464; $\rho$ = 1000 kg/$m^3$
Phantom section: Center Section

D ASY5 Configuration:

- Probe: ES3DV2 - SN3019; ConvF(4.05, 4.05, 4.05); Calibrated: 2017/10/30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn772;Calibrated: 2017/10/9
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: 1130
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (61x51x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 10.1 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 57.45 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 11.7 W/kg
**SAR(1 g) = 5.14 W/kg; SAR(10 g) = 2.34 W/kg**
Maximum value of SAR (measured) = 9.04 W/kg




0 dB = 9.04 W/kg = 9.56 dBW/kg

**System Performance 2600 MHz Head on 2018/2/25 at SAR Lab 2**

**DUT: D2600V2; Type: 2600 MHz; Serial: 1132**

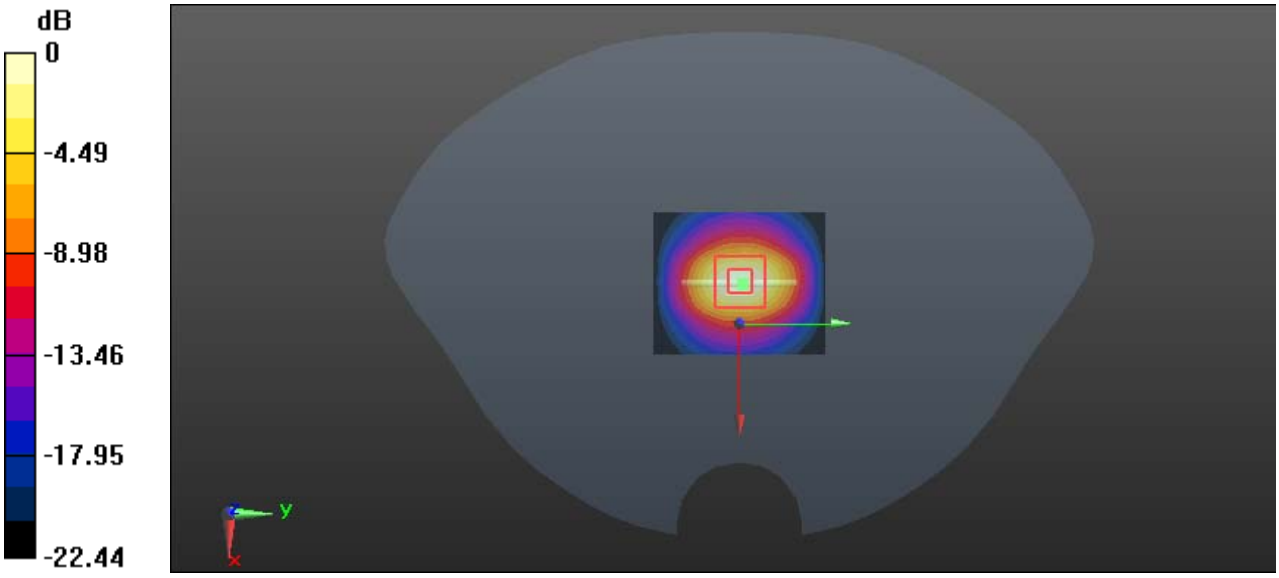
Communication System: CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; $\sigma$ = 1.984 S/m; $\varepsilon_r$ = 37.967; $\rho$ = 1000 kg/$m^3$
Phantom section: Flat Section

D ASY5 Configuration:

- Probe: ES3DV2 - SN3019; ConvF(4.09, 4.09, 4.09); Calibrated: 2017/10/30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn772;Calibrated: 2017/10/9
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: 1412
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (51x61x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 10.4 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 57.63 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 11.7 W/kg
**SAR(1 g) = 5.54 W/kg; SAR(10 g) = 2.53 W/kg**
Maximum value of SAR (measured) = 9.39 W/kg




0 dB = 9.39 W/kg = 9.73 dBW/kg

**System Performance 2600 MHz Body on 2018/2/25 at SAR Lab 2**

**DUT: D2600V2; Type: 2600 MHz; Serial: 1132**

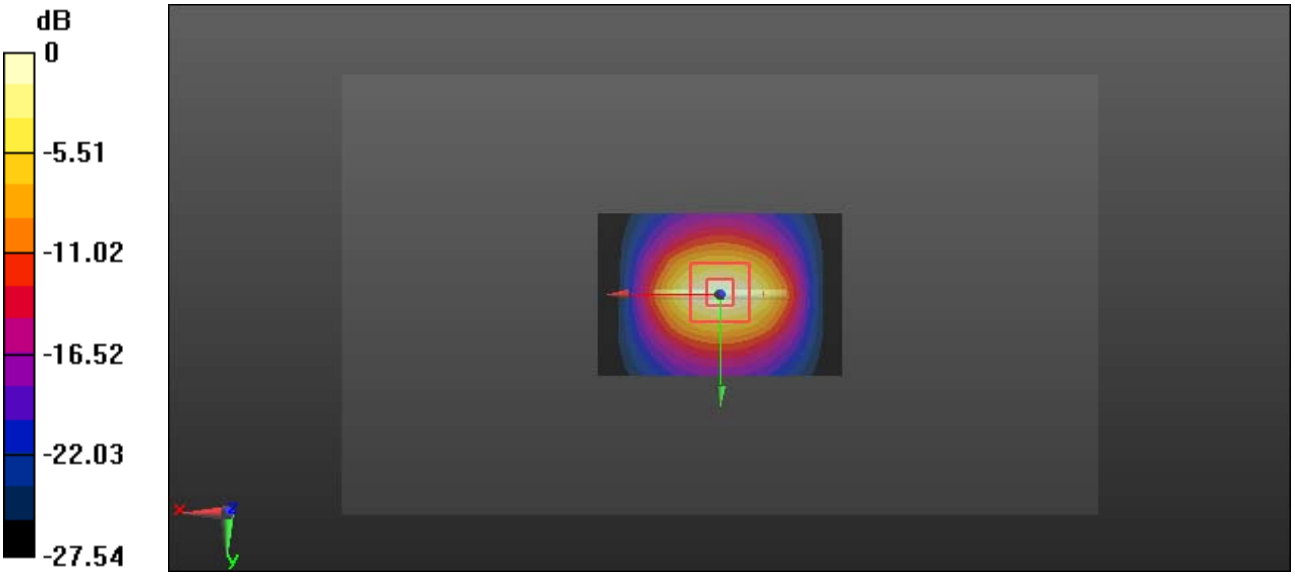
Communication System: CW; Frequency: 2600 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; $\sigma$ = 2.145 S/m; $\varepsilon_r$ = 51.325; $\rho$ = 1000 kg/m$^3$
Phantom section: Center Section

DASY5 Configuration:

- Probe: ES3DV2 - SN3019; ConvF(3.82, 3.82, 3.82); Calibrated: 2017/10/30;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn772;Calibrated: 2017/10/9
- Phantom: Triple Flat Phantom 5.1C; Type: QD 000 P51 CA; Serial: 1130
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (91x61x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 10.4 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 56.03 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 11.8 W/kg
**SAR(1 g) = 5.27 W/kg; SAR(10 g) = 2.38 W/kg**
Maximum value of SAR (measured) = 9.03 W/kg




0 dB = 9.03 W/kg = 9.56 dBW/kg

**System Performance 450 MHz Head on 2018/2/9 at SAR Lab 1**

**DUT: Dipole 450 MHz; Type: D450V3; Serial: 1096**

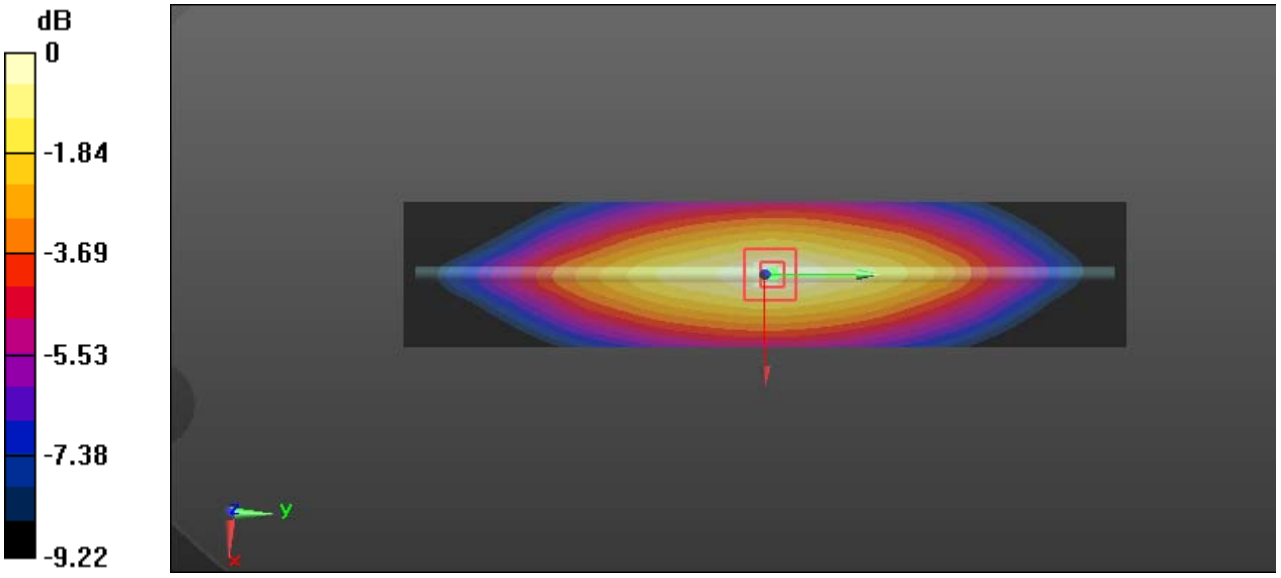
Communication System: CW; Frequency: 450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 450 MHz; $\sigma$ = 0.86 S/m; $\varepsilon_r$ = 42.994; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.97, 10.97, 10.97); Calibrated: 2017/11/23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1459; Calibrated: 2017/9/15
- Phantom: ELI v8.0; Type: QDOVA004AA; Serial: 2051
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (41x201x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.625 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.64 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.718 W/kg
**SAR(1 g) = 0.461 W/kg; SAR(10 g) = 0.311 W/kg**
Maximum value of SAR (measured) = 0.622 W/kg




0 dB = 0.622 W/kg = -2.06 dBW/kg

**System Performance 450 MHz Body on 2018/2/10 at SAR Lab 1**

**DUT: Dipole 450 MHz; Type: D450V3; Serial: 1096**

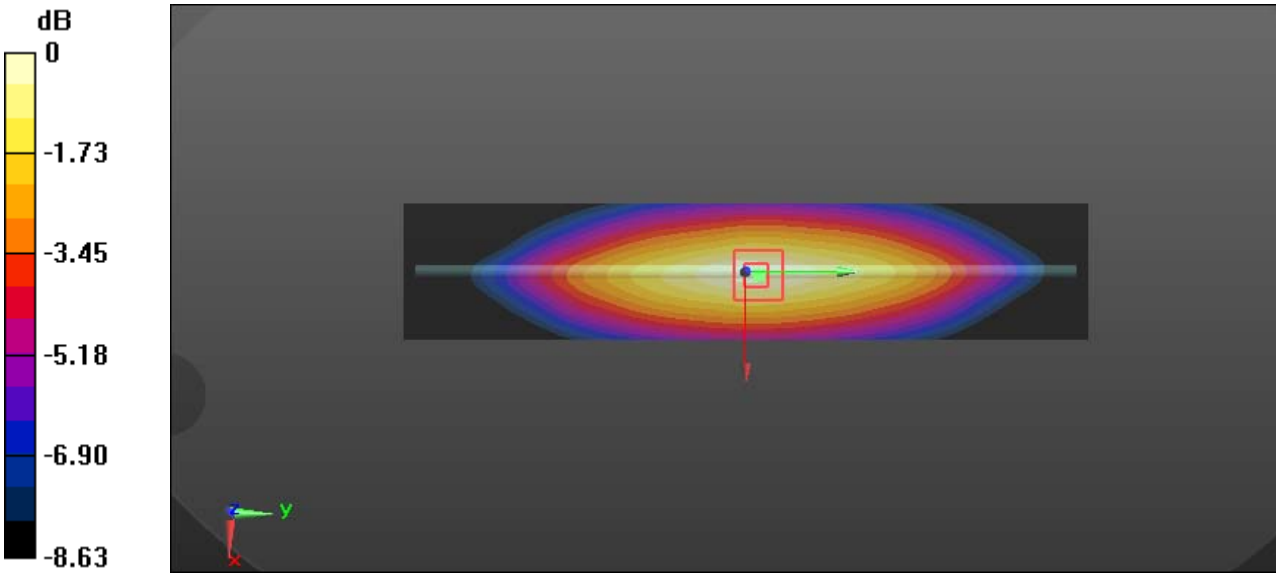
Communication System: CW; Frequency: 450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 450 MHz; $\sigma$ = 0.964 S/m; $\varepsilon_r$ = 55.156; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(12.08, 12.08, 12.08); Calibrated: 2017/11/23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1459; Calibrated: 2017/9/15
- Phantom: ELI v8.0; Type: QDOVA004AA; Serial: 2051
- Measurement SW: DASY52, Version 52.8 (8);

**Area Scan (41x201x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.615 W/kg

**Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.98 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.722 W/kg
**SAR(1 g) = 0.461 W/kg; SAR(10 g) = 0.302 W/kg**
Maximum value of SAR (measured) = 0.617 W/kg



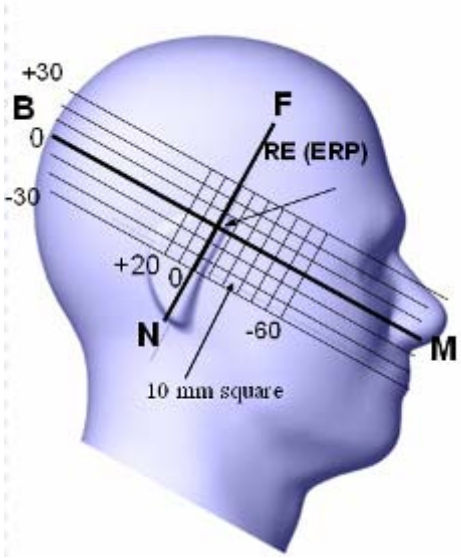

0 dB = 0.617 W/kg = -2.10 dBW/kg

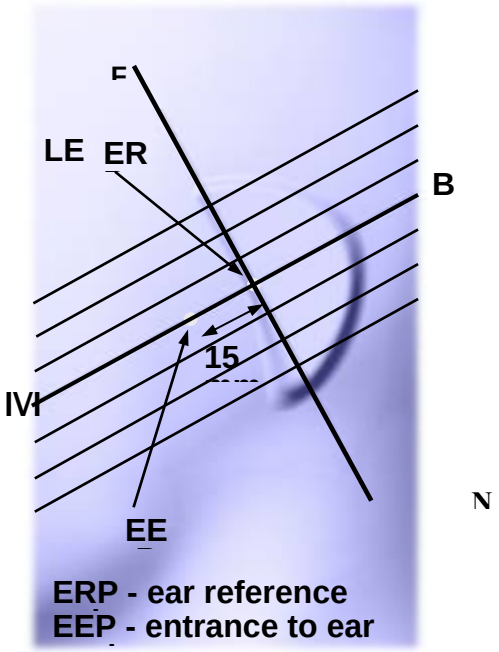
# EUT TEST STRATEGY AND METHODOLOGY

## Test Positions for Device Operating Next to a Person's Ear

This category includes most wireless handsets with fixed, retractable or internal antennas located toward the top half of the device, with or without a foldout, sliding or similar keypad cover. The handset should have its earpiece located within the upper ¼ of the device, either along the centerline or off-centered, as perceived by its users. This type of handset should be positioned in a normal operating position with the "test device reference point" located along the "vertical centerline" on the front of the device aligned to the "ear reference point". The "test device reference point" should be located at the same level as the center of the earpiece region. The "vertical centerline" should bisect the front surface of the handset at its top and bottom edges. A "ear reference point" is located on the outer surface of the head phantom on each ear spacer. It is located 1.5 cm above the center of the ear canal entrance in the "phantom reference plane" defined by the three lines joining the center of each "ear reference point" (left and right) and the tip of the mouth.

A handset should be initially positioned with the earpiece region pressed against the ear spacer of a head phantom. For the SCC-34/SC-2 head phantom, the device should be positioned parallel to the "N-F" line defined along the base of the ear spacer that contains the "ear reference point". For interim head phantoms, the device should be positioned parallel to the cheek for maximum RF energy coupling. The "test device reference point" is aligned to the "ear reference point" on the head phantom and the "vertical centerline" is aligned to the "phantom reference plane". This is called the "initial ear position". While maintaining these three alignments, the body of the handset is gradually adjusted to each of the following positions for evaluating SAR:



## Cheek/Touch Position

The device is brought toward the mouth of the head phantom by pivoting against the "ear reference point" or along the "N-F" line for the SCC-34/SC-2 head phantom.

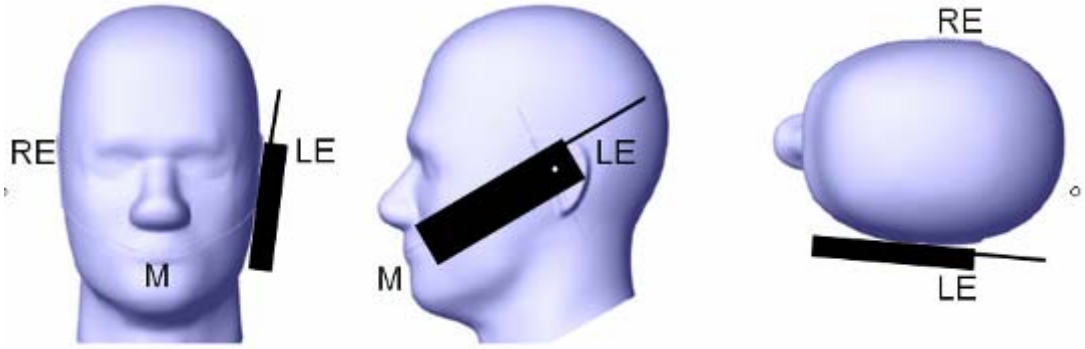
This test position is established:

When any point on the display, keypad or mouthpiece portions of the handset is in contact with the phantom.

(or) When any portion of a foldout, sliding or similar keypad cover opened to its intended self-adjusting normal use position is in contact with the cheek or mouth of the phantom.

For existing head phantoms – when the handset loses contact with the phantom at the pivoting point, rotation should continue until the device touches the cheek of the phantom or breaks its last contact from the ear spacer.

**Cheek /Touch Position**




## Ear/Tilt Position

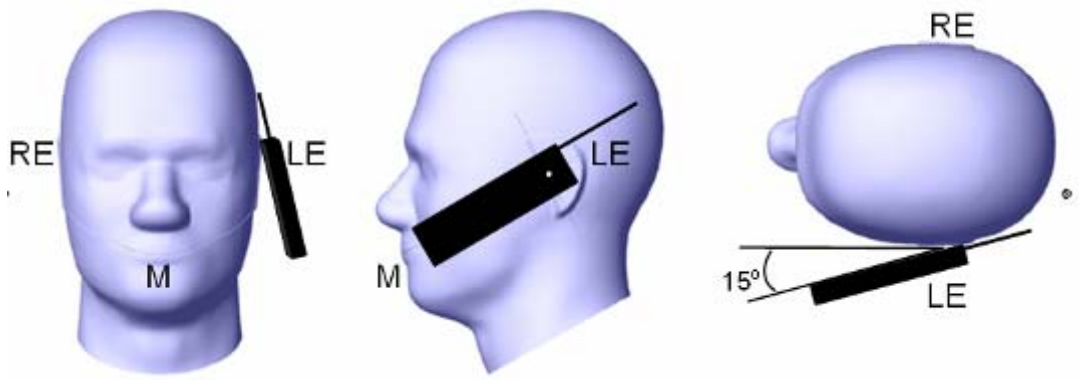
With the handset aligned in the "Cheek/Touch Position":

1) If the earpiece of the handset is not in full contact with the phantom's ear spacer (in the "Cheek/Touch position") and the peak SAR location for the "Cheek/Touch" position is located at the ear spacer region or corresponds to the earpiece region of the handset, the device should be returned to the "initial ear position" by rotating it away from the mouth until the earpiece is in full contact with the ear spacer.

2) (otherwise) The handset should be moved (translated) away from the cheek perpendicular to the line passes through both "ear reference points" (note: one of these ear reference points may not physically exist on a split head model) for approximate 2-3 cm. While it is in this position, the device handset is tilted away from the mouth with respect to the "test device reference point" until the inside angle between the vertical centerline on the front surface of the phone and the horizontal line passing through the ear reference point is by 15 80°. After the tilt, it is then moved (translated) back toward the head perpendicular to the line passes through both "ear reference points" until the device touches the phantom or the ear spacer. If the antenna touches the head first, the positioning process should be repeated with a tilt angle less than 15° so that the device and its antenna would touch the phantom simultaneously. This test position may require a device holder or positioner to achieve the translation and tilting with acceptable positioning repeatability.

If a device is also designed to transmit with its keypad cover closed for operating in the head position, such positions should also be considered in the SAR evaluation. The device should be tested on the left and right side of the head phantom in the "Cheek/Touch" and "Ear/Tilt" positions. When applicable, each configuration should be tested with the antenna in its fully extended and fully retracted positions. These test configurations should be tested at the high, middle and low frequency channels of each operating mode; for example, AMPS, CDMA, and TDMA. If the SAR measured at the middle channel for each test configuration (left, right, Cheek/Touch, Tilt/Ear, extended and retracted) is at least 2.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s). If the transmission band of the test device is less than 10 MHz, testing at the high and low frequency channels is optional.

**Ear /Tilt 15° Position**




## Test positions for body-worn and other configurations

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations. Devices with a headset output should be tested with a headset connected to the device. When multiple accessories that do not contain metallic components are supplied with the device, the device may be tested with only the accessory that dictates the closest spacing to the body. When multiple accessories that contain metallic components are supplied with the device, the device must be tested with each accessory that contains a unique metallic component. If multiple accessories share an identical metallic component (e.g., the same metallic belt-clip used with different holsters with no other metallic components), only the accessory that dictates the closest spacing to the body must be tested.

Body-worn accessories may not always be supplied or available as options for some devices that are intended to be authorized for body-worn use. A separation distance of 1.5 cm between the back of the device and a flat phantom is recommended for testing body-worn SAR compliance under such circumstances. Other separation distances may be used, but they should not exceed 2.5 cm. In these cases, the device may use body-worn accessories that provide a separation distance greater than that tested for the device provided however that the accessory contains no metallic components.

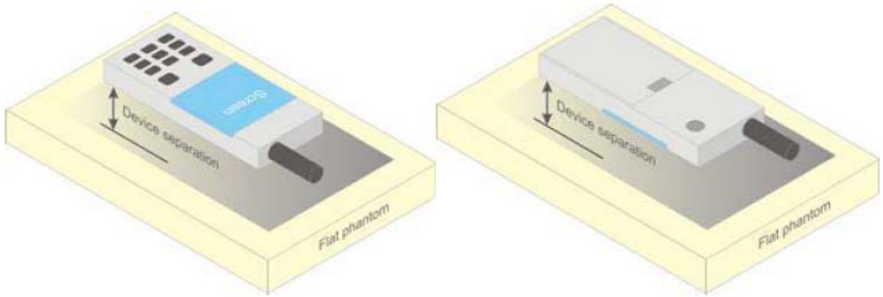



Figure 5 – Test positions for body-worn devices

## Test Distance for SAR Evaluation

In this case the DUT(Device Under Test) is set directly against the phantom, the test distance is 0mm(with Belt Clip attached) for body worn back mode; for face up mode the distance is 25mm; for hotspot mode the distance is 10mm.

## SAR Evaluation Procedure

The evaluation was performed with the following procedure:

Step 1: Measurement of the SAR value at a fixed location above the ear point or central position was used as a reference value for assessing the power drop. The SAR at this point is measured at the start of the test and then again at the end of the testing.

Step 2: The SAR distribution at the exposed side of the head was measured at a distance of 4 mm from the inner surface of the shell. The area covered the entire dimension of the head or radiating structures of the EUT, the horizontal grid spacing was 15 mm x 15 mm, and the SAR distribution was determined by integrated grid of 1.5mm x 1.5mm. Based on these data, the area of the maximum absorption was determined by spline interpolation. The first Area Scan covers the entire dimension of the EUT to ensure that the hotspot was correctly identified.

Step 3: Around this point, a volume of 30 mm x 30 mm x 30 mm was assessed by measuring 7x 7 x 7 points. On the basis of this data set, the spatial peak SAR value was evaluated under the following procedure:

1) The data at the surface were extrapolated, since the center of the dipoles is 1.2 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.3 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.

2) The maximum interpolated value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed by the 3D-Spline interpolation algorithm. The 3D-Spline is composed of three one dimensional splines with the “Not a knot"-condition (in x, y and z-directions). The volume was integrated with the trapezoidal-algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the averages.

All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

Step 4: Re-measurement of the SAR value at the same location as in Step 1. If the value changed by more than 5%, the evaluation was repeated.

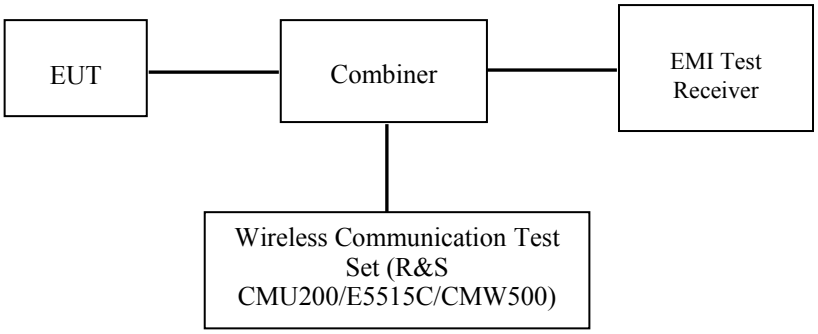
# CONDUCTED OUTPUT POWER MEASUREMENT

## Provision Applicable

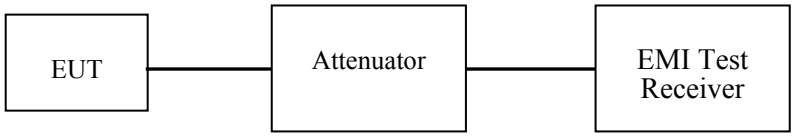
The measured peak output power should be greater and within 5% than EMI measurement.

## Test Procedure

The RF output of the transmitter was connected to the input of the EMI Test Receiver through sufficient attenuation.




**GSM /LTE/CDMA**




**PTT**

## Radio Configuration

The power measurement was configured by the Wireless Communication Test Set.

**GSM/GPRS/EGPRS**

Function: Menu select > GSM Mobile Station > GSM 850/1900
Press Connection control to choose the different menus
Press RESET > choose all the reset all settings
Connection Press Signal Off to turn off the signal and change settings
Network Support > GSM + GPRS or GSM + EGSM
Main Service > Packet Data
Service selection > Test Mode A – Auto Slot Config. off
MS Signal Press Slot Config Bottom on the right twice to select and change the number of time slots and power setting
> Slot configuration > Uplink/Gamma
> 33 dBm for GPRS 850
> 30 dBm for GPRS 1900
> 27 dBm for EGPRS 850
> 26 dBm for EGPRS 1900
BS Signal Enter the same channel number for TCH channel (test channel) and BCCH channel
Frequency Offset > + 0 Hz
Mode > BCCH and TCH
BCCH Level > -85 dBm (May need to adjust if link is not stabe)
BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]

Channel Type > Off
P0 > 4 dB
Slot Config >Unchanged (if already set under MS signal)
TCH > choose desired test channel
Hopping > Off

Main Timeslot > 3
Network Coding Scheme > CS4 (GPRS) and MCS5 (EGPRS)
Bit Stream >2E9-1 PSR Bit Stream
AF/RF Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input
Connection Press Signal on to turn on the signal and change settings

**WCDMA Release 99**

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification. The EUT has a nominal maximum output power of 24dBm (+1.7/-3.7).

| | | |
|---|---|---|
| **WCDMA General Settings** | Loopback Mode | Test Mode 1 |
| | Rel99 RMC | 12.2kbps RMC |
| | Power Control Algorithm | Algorithm2 |
| | $\beta_c/\beta_d$ | 8/15 |

**HSDPA**

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

| | Mode | HSDPA | HSDPA | HSDPA | HSDPA |
|---|---|---|---|---|---|
| | Subset | 1 | 2 | 3 | 4 |
| WCDMA General Settings | Loopback Mode | Test Mode 1 | | | |
| | Rel99 RMC | 12.2kbps RMC | | | |
| | HSDPA FRC | H-Set1 | | | |
| | Power Control Algorithm | Algorithm2 | | | |
| | $\beta_c$ | 2/15 | 12/15 | 15/15 | 15/15 |
| | $\beta_d$ | 15/15 | 15/15 | 8/15 | 4/15 |
| | $\beta_d$(SF) | 64 | | | |
| | $\beta_c/\beta_d$ | 2/15 | 12/15 | 15/8 | 15/4 |
| | $\beta_{hs}$ | 4/15 | 24/15 | 30/15 | 30/15 |
| | MPR(dB) | 0 | 0 | 0.5 | 0.5 |
| HSDPA Specific Settings | DACK | 8 | | | |
| | DNAK | 8 | | | |
| | DCQI | 8 | | | |
| | Ack-Nack repetition factor | 3 | | | |
| | CQI Feedback | 4ms | | | |
| | CQI Repetition Factor | 2 | | | |
| | Ahs=βhs/ βc | 30/15 | | | |

**HSUPA**

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

| | Mode | HSUPA | HSUPA | HSUPA | HSUPA | HSUPA |
|---|---|---|---|---|---|---|
| | Subset | 1 | 2 | 3 | 4 | 5 |
| WCDMA General Settings | Loopback Mode | Test Mode 1 | | | | |
| | Rel99 RMC | 12.2kbps RMC | | | | |
| | HSDPA FRC | H-Set1 | | | | |
| | HSUPA Test | HSUPA Loopback | | | | |
| | Power Control Algorithm | Algorithm2 | | | | |
| | $\beta_c$ | 11/15 | 6/15 | 15/15 | 2/15 | 15/15 |
| | $\beta_d$ | 15/15 | 15/15 | 9/15 | 15/15 | 0 |
| | $\beta_{ec}$ | 209/225 | 12/15 | 30/15 | 2/15 | 5/15 |
| | $\beta_c/\beta_d$ | 11/15 | 6/15 | 15/9 | 2/15 | - |
| | $\beta_{hs}$ | 22/15 | 12/15 | 30/15 | 4/15 | 5/15 |
| | CM(dB) | 1.0 | 3.0 | 2.0 | 3.0 | 1.0 |
| | MPR(dB) | 0 | 2 | 1 | 2 | 0 |
| HSDPA Specific Settings | DACK | 8 | | | | |
| | DNAK | 8 | | | | |
| | DCQI | 8 | | | | |
| | Ack-Nack repetition factor | 3 | | | | |
| | CQI Feedback | 4ms | | | | |
| | CQI Repetition Factor | 2 | | | | |
| | $Ahs=\beta_{hs}/\beta_c$ | 30/15 | | | | |
| HSUPA Specific Settings | DE-DPCCH | 6 | 8 | 8 | 5 | 7 |
| | DHARQ | 0 | 0 | 0 | 0 | 0 |
| | AG Index | 20 | 12 | 15 | 17 | 21 |
| | ETFCI | 75 | 67 | 92 | 71 | 81 |
| | Associated Max UL Data Rate kbps | 242.1 | 174.9 | 482.8 | 205.8 | 308.9 |
| | Reference E_FCIs | E-TFCI 11 E<br>E-TFCI PO 4<br>E-TFCI 67<br>E-TFCI PO 18<br>E-TFCI 71<br>E-TFCI PO23<br>E-TFCI 75<br>E-TFCI PO26<br>E-TFCI 81<br>E-TFCI PO 27 | | E-TFCI 11<br>E-TFCI PO4<br>E-TFCI 92<br>E-TFCI PO 18 | E-TFCI 11 E<br>E-TFCI PO 4<br>E-TFCI 67<br>E-TFCI PO 18<br>E-TFCI 71<br>E-TFCI PO23<br>E-TFCI 75<br>E-TFCI PO26<br>E-TFCI 81<br>E-TFCI PO 27 | |

**FDD-LTE**

For UE Power Class 1 and 3, the allowed Maximum Power Reduction (MPR) for the maximum output power in Table 6.2.2-1due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1.

**Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1 and 3**

| Modulation | Channel bandwidth / Transmission bandwidth ($N_{RB}$) | | | | | | MPR (dB) |
|---|---|---|---|---|---|---|---|
| | 1.4 MHz | 3.0 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz | |
| QPSK | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 1 |
| 16 QAM | ≤ 5 | ≤ 4 | ≤ 8 | ≤ 12 | ≤ 16 | ≤ 18 | ≤ 1 |
| 16 QAM | > 5 | > 4 | > 8 | > 12 | > 16 | > 18 | ≤ 2 |

For UE Power Class 1 and 3 the specific requirements and identified sub clauses are specified in Table 6.2.4-1 along with the allowed A-MPR values that may be used to meet these requirements. The allowed A-MPR values specified below in Table 6.2.4.-1 to 6.2.4-15 are in addition to the allowed MPR requirements specified in sub clause 6.2.3.

**Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)**

| Network Signalling value | Requirements (subclause) | E-UTRA Band | Channel bandwidth (MHz) | Resources Blocks ($N_{RB}$) | A-MPR (dB) |
|---|---|---|---|---|---|
| NS_01 | 6.6.2.1.1 | Table 5.5-1 | 1.4, 3, 5, 10, 15, 20 | Table 5.6-1 | N/A |
| NS_03 | 6.6.2.2.1 | 2, 4,10, 23, 25, 35, 36 | 3 | >5 | ≤ 1 |
| | | | 5 | >6 | ≤ 1 |
| | | | 10 | >6 | ≤ 1 |
| | | | 15 | >8 | ≤ 1 |
| | | | 20 | >10 | ≤ 1 |
| NS_04 | 6.6.2.2.2 | 41 | 5 | >6 | ≤ 1 |
| | | | 10, 15, 20 | Table 6.2.4-4 | |
| NS_05 | 6.6.3.3.1 | 1 | 10,15,20 | ≥ 50 | ≤ 1 |
| NS_06 | 6.6.2.2.3 | 12, 13, 14, 17 | 1.4, 3, 5, 10 | Table 5.6-1 | N/A |
| NS_07 | 6.6.2.2.3 6.6.3.3.2 | 13 | 10 | Table 6.2.4-2 | |
| NS_08 | 6.6.3.3.3 | 19 | 10, 15 | > 44 | ≤ 3 |
| NS_09 | 6.6.3.3.4 | 21 | 10, 15 | > 40 | ≤ 1 |
| | | | | > 55 | ≤ 2 |
| NS_10 | | 20 | 15, 20 | Table 6.2.4-3 | |
| NS_11 | 6.6.2.2.1 | 23 | 1.4, 3, 5, 10, 15, 20 | Table 6.2.4-5 | |
| NS_12 | 6.6.3.3.5 | 26 | 1.4, 3, 5 | Table 6.2.4-6 | |
| NS_13 | 6.6.3.3.6 | 26 | 5 | Table 6.2.4-7 | |
| NS_14 | 6.6.3.3.7 | 26 | 10, 15 | Table 6.2.4-8 | |
| NS_15 | 6.6.3.3.8 | 26 | 1.4, 3, 5, 10, 15 | Table 6.2.4-9 Table 6.2.4-10 | |
| NS_16 | 6.6.3.3.9 | 27 | 3, 5, 10 | Table 6.2.4-11, Table 6.2.4-12, Table 6.2.4-13 | |
| NS_17 | 6.6.3.3.10 | 28 | 5, 10 | Table 5.6-1 | N/A |
| NS_18 | 6.6.3.3.11 | 28 | 5 | ≥ 2 | ≤ 1 |
| | | | 10, 15, 20 | ≥ 1 | ≤ 4 |
| NS_19 | 6.6.3.3.12 | 44 | 10, 15, 20 | Table 6.2.4-14 | |
| NS_20 | 6.2.2 6.6.2.2.1 6.6.3.2 | 23 | 5, 10, 15, 20 | Table 6.2.4-15 | |
| ... | | | | | |
| NS_32 | - | - | - | - | - |

## TDD-LTE

3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

| Special subframe configuration | Normal cyclic prefix in downlink | | | Extended cyclic prefix in downlink | | |
|---|---|---|---|---|---|---|
| | DwPTS | UpPTS | | DwPTS | UpPTS | |
| | | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink | | Normal cyclic prefix in uplink | Extended cyclic prefix in uplink |
| 0 | $6592 \cdot T_s$ | $2192 \cdot T_s$ | $2560 \cdot T_s$ | $7680 \cdot T_s$ | $2192 \cdot T_s$ | $2560 \cdot T_s$ |
| 1 | $19760 \cdot T_s$ | | | $20480 \cdot T_s$ | | |
| 2 | $21952 \cdot T_s$ | | | $23040 \cdot T_s$ | | |
| 3 | $24144 \cdot T_s$ | | | $25600 \cdot T_s$ | | |
| 4 | $26336 \cdot T_s$ | | | $7680 \cdot T_s$ | $4384 \cdot T_s$ | $5120 \cdot T_s$ |
| 5 | $6592 \cdot T_s$ | $4384 \cdot T_s$ | $5120 \cdot T_s$ | $20480 \cdot T_s$ | | |
| 6 | $19760 \cdot T_s$ | | | $23040 \cdot T_s$ | | |
| 7 | $21952 \cdot T_s$ | | | $12800 \cdot T_s$ | | |
| 8 | $24144 \cdot T_s$ | | | - | - | - |
| 9 | $13168 \cdot T_s$ | | | - | - | - |

Table 4.2-2: Uplink-downlink configurations.

| Uplink-downlink configuration | Downlink-to-Uplink Switch-point periodicity | Subframe number | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 5 ms | D | S | U | U | U | D | S | U | U | U |
| 1 | 5 ms | D | S | U | U | D | D | S | U | U | D |
| 2 | 5 ms | D | S | U | D | D | D | S | U | D | D |
| 3 | 10 ms | D | S | U | U | U | D | D | D | D | D |
| 4 | 10 ms | D | S | U | U | D | D | D | D | D | D |
| 5 | 10 ms | D | S | U | D | D | D | D | D | D | D |
| 6 | 5 ms | D | S | U | U | U | D | S | U | U | D |

**Calculated Duty Cycle**

| Uplink-Downlink Configuration | Downlink-to-Uplink Switch-point Periodicity | Subframe Number | | | | | | | | | | Calculated Duty Cycle (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| 0 | 5 ms | D | S | U | U | U | D | S | U | U | U | 63.33 |
| 1 | 5 ms | D | S | U | U | D | D | S | U | U | D | 43.33 |
| 2 | 5 ms | D | S | U | D | D | D | S | U | D | D | 23.33 |
| 3 | 10 ms | D | S | U | U | U | D | D | D | D | D | 31.67 |
| 4 | 10 ms | D | S | U | U | D | D | D | D | D | D | 21.67 |
| 5 | 10 ms | D | S | U | D | D | D | D | D | D | D | 11.67 |
| 6 | 5 ms | D | S | U | U | U | D | S | U | U | D | 53.33 |

Calculated Duty Cycle = Extended cyclic prefix in uplink x ($T_s$) x # of S + # of U

Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:
Calculated Duty Cycle = 5120 x [1/(15000 x 2048)] x 2 + 6 ms = 63.33%
where
$T_s$ = 1/(15000 x 2048) seconds

**CDMA 1x RTT**

Maximum output power is verified on the high, middle and low channels according to procedures in section 4.4.5.2 of 3GPP2 C.S0011/TIA-98-E. Steps 3 and 4 are measured using Loopback Service Option SO55 with power control bits in "All Up" condition. Step 10 is measured using TDSO/SO32 with power control bits in the "Bits Hold" condition (i.e. alternative Up/Down Bits).

**Table 4.4.5.2-1. Test Parameters for Maximum RF Output Power with a Single Traffic Code Channel, Spreading Rate 1**

| Parameter | Units | Value |
|---|---|---|
| $\hat{I}_{or}$ | dBm/1.23 MHz | -104 |
| $\frac{\text{Pilot } E_c}{I_{or}}$ | dB | -7 |
| $\frac{\text{Traffic } E_c}{I_{or}}$ | dB | -7.4 |

**Table 4.4.5.2-2. Test Parameters for Maximum RF Output Power with Multiple Traffic Code Channels, Spreading Rate 1**

| Parameter | Units | Value |
|---|---|---|
| $\frac{\text{Pilot } E_c}{I_{or}}$ | dB | -7 |
| $\frac{\text{Traffic } E_c}{I_{or}}$ | dB | -7.4 |

**EVDO**

Maximum output power is verified on the high, middle and low channels according to procedures in section 3.1.2.3.4 of 3GPP2 C.S0033-0/TIA-866 for Rev. 0, section 4.3.4 of 3GPP2 C.S0033-A for Rev. A.

Maximum output power is measured for Rev. 0 and Rev. A in Subtype 0/1 and Subtype 2 Physical Layer configurations, respectively.

## Maximum Target Output Power

| Max Target Power(dBm) | | | |
|---|---|---|---|
| Mode/Band | Channel | | |
| | Low | Middle | High |
| GSM 850 | 32.6 | 32.6 | 32.6 |
| GPRS 1 TX Slot | 32.6 | 32.6 | 32.6 |
| GPRS 2 TX Slot | 30.7 | 30.7 | 30.7 |
| GPRS 3 TX Slot | 29.1 | 29.1 | 29.1 |
| GPRS 4 TX Slot | 27.5 | 27.5 | 27.5 |
| EDGE 1 TX Slot | 26.4 | 26.4 | 26.4 |
| EDGE 2 TX Slot | 25.3 | 25.3 | 25.3 |
| EDGE 3 TX Slot | 23.8 | 23.8 | 23.8 |
| EDGE 4 TX Slot | 22.7 | 22.7 | 22.7 |
| PCS 1900 | 29.2 | 29.2 | 29.2 |
| GPRS 1 TX Slot | 29.2 | 29.2 | 29.2 |
| GPRS 2 TX Slot | 28.4 | 28.4 | 28.4 |
| GPRS 3 TX Slot | 26.9 | 26.9 | 26.9 |
| GPRS 4 TX Slot | 25.4 | 25.4 | 25.4 |
| EDGE 1 TX Slot | 25.5 | 25.5 | 25.5 |
| EDGE 2 TX Slot | 24.5 | 24.5 | 24.5 |
| EDGE 3 TX Slot | 23.3 | 23.3 | 23.3 |
| EDGE 4 TX Slot | 22.2 | 22.2 | 22.2 |
| WCDMA Band 2 | 22.9 | 22.9 | 22.9 |
| HSDPA | 22.1 | 22.1 | 22.1 |
| HSUPA | 21 | 21 | 21 |
| WCDMA Band 4 | 22.4 | 22.4 | 22.4 |
| HSDPA | 21 | 21 | 21 |
| HSUPA | 20 | 20 | 20 |
| WCDMA Band 5 | 22.8 | 22.8 | 22.8 |
| HSDPA | 21.9 | 21.9 | 21.9 |
| HSUPA | 21 | 21 | 21 |
| LTE Band 2 | 23.1 | 23.1 | 23.1 |
| LTE Band 4 | 23.1 | 23.1 | 23.1 |
| LTE Band 5 | 22.9 | 22.9 | 22.9 |
| LTE Band 7 | 23 | 23 | 23 |
| LTE Band 12 | 23.1 | 23.1 | 23.1 |
| LTE Band 13 | 22.9 | 22.9 | 22.9 |
| LTE Band 17 | 23.1 | 23.1 | 23.1 |
| LTE Band 25 | 23 | 23 | 23 |
| LTE Band 26 | 23.2 | 23.2 | 23.2 |
| LTE Band 41 | 23.1 | 23.1 | 23.1 |

| Max Target Power(dBm) | | | | |
|---|---|---|---|---|
| Mode/Band | | Channel | | |
| | | Low | Middle | High |
| CDMA (BC0) 850 1xRTT | | 23.3 | 23.3 | 23.3 |
| CDMA(BC0) 850 EV-DO | | 23.3 | 23.3 | 23.3 |
| CDMA(BC1) 1900 1xRTT | | 23.4 | 23.4 | 23.4 |
| CDMA(BC1) 1900 EV-DO | | 23.4 | 23.4 | 23.4 |
| CDMA 800(BC10) 1xRTT | | 23.4 | 23.4 | 23.4 |
| CDMA 800 (BC10) EV-DO | | 23.4 | 23.4 | 23.4 |
| WLAN(802.11b) | | 15 | 15 | 15 |
| WLAN(802.11g) | | 15 | 15 | 15 |
| WLAN(802.11n HT20) | | 15 | 15 | 15 |
| Bluetooth(WB) | Bluetooth BDR/EDR | 13 | 13 | 13 |
| | Bluetooth LE | 2 | 2 | 2 |
| Bluetooth(NB) | Bluetooth BDR/EDR | 5 | 5 | 5 |
| | Bluetooth LE | 2 | 2 | 2 |

| Max. tune-up tolerance power limit for Production Unit (W) | | | |
|---|---|---|---|
| PTT/Mode | Frequency (350-400 MHz) | Frequency (400-470 MHz) | Frequency (450-512 MHz) |
| **FM(12.5 kHz)** | 4.8 | 4.8 | 4.8 |
| **FM(25 kHz)** | | | |
| **4FSK** | | | |

## Test Results:

### GSM:

| Band | Channel No. | Frequency (MHz) | RF Output Power (dBm) |
|---|---|---|---|
| GSM 850 | 128 | 824.2 | 32.35 |
| | 190 | 836.6 | 32.24 |
| | 251 | 848.8 | 32.16 |
| PCS 1900 | 512 | 1850.2 | **29.07** |
| | 661 | 1880 | 28.75 |
| | 810 | 1909.8 | 28.83 |

### GPRS:

| Band | Channel No. | Frequency (MHz) | RF Output Power (dBm) | | | |
|---|---|---|---|---|---|---|
| | | | 1 slot | 2 slots | 3 slots | 4 slots |
| GSM 850 | 128 | 824.2 | 32.47 | 30.61 | 28.98 | 27.41 |
| | 190 | 836.6 | **32.50** | 30.61 | 28.90 | 27.13 |
| | 251 | 848.8 | 32.49 | 30.42 | 28.78 | 27.19 |
| PCS 1900 | 512 | 1850.2 | 29.07 | 28.28 | 26.81 | 25.32 |
| | 661 | 1880 | 28.93 | 28.13 | 26.81 | 25.03 |
| | 810 | 1909.8 | 28.94 | 27.83 | 26.67 | 25.08 |

### EGPRS:

| Band | Channel No. | Frequency (MHz) | RF Output Power (dBm) | | | |
|---|---|---|---|---|---|---|
| | | | 1 slot | 2 slots | 3 slots | 4 slots |
| GSM 850 | 128 | 824.2 | 26.32 | 25.17 | 23.72 | 22.60 |
| | 190 | 836.6 | 26.22 | 25.12 | 23.47 | 22.35 |
| | 251 | 848.8 | 26.08 | 24.91 | 23.49 | 22.24 |
| PCS 1900 | 512 | 1850.2 | 25.41 | 24.41 | 23.19 | 22.10 |
| | 661 | 1880 | 25.44 | 24.32 | 23.06 | 21.94 |
| | 810 | 1909.8 | 25.34 | 24.34 | 23.14 | 22.13 |

For SAR, the time based average power is relevant, the difference in between depends on the duty cycle of the TDMA signal.

| Number of Time slot | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Duty Cycle | 1:8 | 1:4 | 1:2.66 | 1:2 |
| Time based Ave. power compared to slotted Ave. power | -9 dB | -6 dB | -4.25 dB | -3 dB |
| Crest Factor | 8 | 4 | 2.66 | 2 |

**The time based average power for GPRS**

| Band | Channel No. | Frequency (MHz) | Time based average Power (dBm) | | | |
|---|---|---|---|---|---|---|
| | | | 1 slot | 2 slot | 3 slots | 4 slots |
| GSM 850 | 128 | 824.2 | 23.47 | 24.61 | **24.73** | 24.41 |
| | 190 | 836.6 | 23.5 | 24.61 | 24.65 | 24.13 |
| | 251 | 848.8 | 23.49 | 24.42 | 24.53 | 24.19 |
| PCS 1900 | 512 | 1850.2 | 20.07 | 22.28 | 22.56 | 22.32 |
| | 661 | 1880 | 19.93 | 22.13 | **22.56** | 22.03 |
| | 810 | 1909.8 | 19.94 | 21.83 | 22.42 | 22.08 |

**The time based average power for EGPRS**

| Band | Channel No. | Frequency (MHz) | Time based average Power (dBm) | | | |
|---|---|---|---|---|---|---|
| | | | 1 slot | 2 slot | 3 slots | 4 slots |
| GSM 850 | 128 | 824.2 | 17.32 | 19.17 | 19.47 | 19.6 |
| | 190 | 836.6 | 17.22 | 19.12 | 19.22 | 19.35 |
| | 251 | 848.8 | 17.08 | 18.91 | 19.24 | 19.24 |
| PCS 1900 | 512 | 1850.2 | 16.41 | 18.41 | 18.94 | 19.1 |
| | 661 | 1880 | 16.44 | 18.32 | 18.81 | 18.94 |
| | 810 | 1909.8 | 16.34 | 18.34 | 18.89 | 19.13 |

**Note:**

1. Rohde & Schwarz Radio Communication Tester (CMU200) was used for the measurement of GSM peak and average output power for active timeslots.
2 .For GSM voice, 1 timeslot has been activated with power level 5 (850 MHz band) and 0 (1900 MHz band).
3 .For GPRS, 1, 2, 3 and 4 timeslots has been activated separately with power level 3(850 MHz band) and 3(1900 MHz band).
4. According to KDB941225D01-SAR for EGPRS mode are not required when the source-based time-averaged output power for data mode is lower than that in the normal GPRS mode.

**WCDMA:**

**Results (12.2kbps RMC)**

| Band | Frequency (MHz) | RF Output Power (dBm) |
|---|---|---|
| WCDMA Band 2 | 1852.4 | 22.77 |
| | 1880 | 22.68 |
| | 1907.6 | **22.80** |
| WCDMA Band 4 | 1712.4 | 22.21 |
| | 1732.6 | 22.16 |
| | 1752.6 | **22.29** |
| WCDMA Band 5 | 826.4 | **22.70** |
| | 836.6 | 22.33 |
| | 846.6 | 22.32 |

**Results (HSDPA)**

| Band | Frequency (MHz) | RF Output Power (dBm) | | | |
|---|---|---|---|---|---|
| | | Subset 1 | Subset 2 | Subset 3 | Subset 4 |
| WCDMA Band 2 | 1852.4 | 21.07 | 21.79 | 22.01 | 21.77 |
| | 1880 | 20.86 | 21.48 | 21.76 | 21.45 |
| | 1907.6 | 20.97 | 21.51 | 21.58 | 21.35 |
| WCDMA Band 4 | 1712.4 | 20.25 | 20.78 | 20.86 | 20.73 |
| | 1732.6 | 20.51 | 20.40 | 20.64 | 20.60 |
| | 1752.6 | 20.39 | 20.50 | 20.50 | 20.50 |
| WCDMA Band 5 | 826.4 | 21.50 | 21.71 | 21.73 | 21.63 |
| | 836.6 | 21.26 | 21.50 | 21.80 | 21.62 |
| | 846.6 | 21.06 | 21.48 | 21.60 | 21.38 |

**Results (HSUPA)**

| Band | Frequency (MHz) | RF Output Power (dBm) | | | | |
|---|---|---|---|---|---|---|
| | | Subset 1 | Subset 2 | Subset 3 | Subset 4 | Subset 5 |
| WCDMA Band 2 | 1852.4 | 20.53 | 20.63 | 20.83 | 20.67 | 20.88 |
| | 1880 | 20.39 | 20.50 | 20.64 | 20.42 | 20.72 |
| | 1907.6 | 20.32 | 20.63 | 20.52 | 20.61 | 20.65 |
| WCDMA Band 4 | 1712.4 | 19.67 | 19.73 | 19.69 | 19.64 | 19.90 |
| | 1732.6 | 19.93 | 19.43 | 19.62 | 19.46 | 19.58 |
| | 1752.6 | 19.77 | 19.58 | 19.63 | 19.58 | 19.70 |
| WCDMA Band 5 | 826.4 | 20.74 | 20.70 | 20.72 | 20.59 | 20.90 |
| | 836.6 | 20.68 | 20.48 | 20.71 | 20.53 | 20.81 |
| | 846.6 | 20.61 | 20.52 | 20.68 | 20.39 | 20.67 |

**Note:**

1. The default test configuration is to measure SAR with an established radio link between the EUT and a communication test set using a 12.2 kbps RMC (reference measurement Channel) Configured in Test Loop Model 1.
2. KDB 941225 D01-Body SAR is not required for HSDPA/HSUPA when the maximum average output of each RF channel is less than ¼ dB higher than measured 12.2kbps RMC or the maximum SAR for 12.2kbps RMC is < 75% of SAR limit.

**LTE Band 2:**

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Target MPR | Meas MPR | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|---|---|
| 1.4M | QPSK | 1#0 | 0 | 0 | 22.89 | 22.92 | 22.65 |
| | | 1#3 | 0 | 0 | 22.63 | 21.98 | 22.41 |
| | | 1#5 | 0 | 0 | 22.77 | 22.54 | 22.16 |
| | | 3#0 | 1 | 1 | 22.7 | 22.58 | 22.28 |
| | | 3#1 | 1 | 1 | 22.18 | 22.86 | **23.1** |
| | | 3#3 | 1 | 1 | 22.28 | 22.68 | 22.77 |
| | | 6#0 | 1 | 1 | 22.2 | 22.21 | 22.69 |
| | 16-QAM | 1#0 | 1 | 1 | 22.23 | 22.67 | 22.99 |
| | | 1#3 | 1 | 1 | 22.69 | 22.89 | 22.97 |
| | | 1#5 | 1 | 1 | 21.07 | 21.63 | 21.33 |
| | | 3#0 | 2 | 2 | 21.58 | 21.41 | 21.8 |
| | | 3#1 | 2 | 2 | 21.21 | 21.64 | 21.85 |
| | | 3#3 | 2 | 2 | 21.45 | 21.69 | 21.6 |
| | | 6#0 | 2 | 2 | 21.79 | 21.1 | 21.16 |
| 3M | QPSK | 1#0 | 0 | 0 | 22.95 | 22.82 | 22.8 |
| | | 1#7 | 0 | 0 | 22.75 | 22.64 | 22.77 |
| | | 1#14 | 0 | 0 | 22.61 | 22.73 | 22.85 |
| | | 8#0 | 1 | 1 | 21.94 | 21.97 | 22.07 |
| | | 8#4 | 1 | 1 | 21.83 | 21.72 | 21.69 |
| | | 8#7 | 1 | 1 | 21.52 | 21.64 | 21.7 |
| | | 15#0 | 1 | 1 | 21.76 | 21.78 | 21.82 |
| | 16-QAM | 1#0 | 1 | 1 | 22.09 | 22.15 | 22.21 |
| | | 1#7 | 1 | 1 | 22.17 | 21.96 | 22.58 |
| | | 1#14 | 1 | 1 | 22.22 | 21.8 | 21.93 |
| | | 8#0 | 2 | 2 | 20.86 | 20.73 | 20.95 |
| | | 8#4 | 2 | 2 | 20.55 | 20.68 | 20.92 |
| | | 8#7 | 2 | 2 | 20.5 | 20.51 | 20.34 |
| | | 15#0 | 2 | 2 | 20.69 | 20.78 | 20.48 |
| 5M | QPSK | 1#0 | 0 | 0 | 22.43 | 22.61 | 22.76 |
| | | 1#12 | 0 | 0 | 22.58 | 22.55 | 22.76 |
| | | 1#24 | 0 | 0 | 22.69 | 22.89 | 22.53 |
| | | 12#0 | 1 | 1 | 22 | 21.71 | 21.85 |
| | | 12#6 | 1 | 1 | 21.96 | 21.79 | 21.61 |
| | | 12#11 | 1 | 1 | 21.99 | 21.66 | 21.88 |
| | | 25#0 | 1 | 1 | 21.77 | 21.69 | 21.81 |
| | 16-QAM | 1#0 | 1 | 1 | 22.02 | 21.54 | 21.7 |
| | | 1#12 | 1 | 1 | 21.68 | 21.31 | 21.38 |
| | | 1#24 | 1 | 1 | 21.77 | 21.36 | 21.81 |
| | | 12#0 | 2 | 2 | 20.83 | 20.65 | 20.32 |
| | | 12#6 | 2 | 2 | 20.39 | 20.64 | 20.83 |
| | | 12#11 | 2 | 2 | 20.66 | 20.39 | 20.4 |
| | | 25#0 | 2 | 2 | 20.84 | 20.27 | 20.87 |

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Target MPR | Meas MPR | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|---|---|
| 10M | QPSK | 1#0 | 0 | 0 | 22.31 | 22.83 | 22.61 |
| | | 1#24 | 0 | 0 | 22.79 | 22.37 | 22.73 |
| | | 1#49 | 0 | 0 | 22.3 | 22.91 | 22.64 |
| | | 25#0 | 1 | 1 | 21.68 | 21.43 | 21.28 |
| | | 25#12 | 1 | 1 | 21.78 | 21.66 | 21.29 |
| | | 25#24 | 1 | 1 | 21.76 | 21.57 | 21.6 |
| | | 50#0 | 1 | 1 | 21.87 | 21.54 | 21.63 |
| | 16-QAM | 1#0 | 1 | 1 | 21.79 | 21.11 | 21.32 |
| | | 1#24 | 1 | 1 | 21.77 | 21.27 | 21.53 |
| | | 1#49 | 1 | 1 | 21.53 | 21.32 | 21.71 |
| | | 25#0 | 2 | 2 | 22.13 | 20.49 | 20.73 |
| | | 25#12 | 2 | 2 | 22.43 | 20.56 | 20.49 |
| | | 25#24 | 2 | 2 | 22.6 | 20.32 | 20.5 |
| | | 50#0 | 2 | 2 | 20.57 | 20.59 | 20.39 |
| 15M | QPSK | 1#0 | 0 | 0 | 22.13 | 22.05 | 22.33 |
| | | 1#37 | 0 | 0 | 21.98 | 22.05 | 22.15 |
| | | 1#74 | 0 | 0 | 22.04 | 22.08 | 22.16 |
| | | 36#0 | 1 | 1 | 22.11 | 22 | 22.06 |
| | | 36#17 | 1 | 1 | 21.99 | 21.89 | 21.88 |
| | | 36#35 | 1 | 1 | 22.05 | 21.67 | 21.56 |
| | | 75#0 | 1 | 1 | 21.91 | 21.84 | 22.07 |
| | 16-QAM | 1#0 | 1 | 1 | 21.81 | 21.95 | 21.72 |
| | | 1#37 | 1 | 1 | 21.92 | 21.94 | 21.63 |
| | | 1#74 | 1 | 1 | 21.81 | 21.89 | 21.35 |
| | | 36#0 | 2 | 2 | 21.79 | 21.79 | 22.06 |
| | | 36#17 | 2 | 2 | 21.81 | 21.73 | 22.02 |
| | | 36#35 | 2 | 2 | 21.51 | 21.63 | 21.92 |
| | | 75#0 | 2 | 2 | 21.28 | 21.05 | 20.93 |
| 20M | QPSK | 1#0 | 0 | 0 | 22.64 | 22.95 | 23.03 |
| | | 1#49 | 0 | 0 | 22.68 | 22.35 | 22.79 |
| | | 1#99 | 0 | 0 | 22.87 | 22.88 | 22.61 |
| | | 50#0 | 1 | 1 | 22 | 22.23 | 21.83 |
| | | 50#24 | 1 | 1 | 21.84 | 21.1 | 21.86 |
| | | 50#49 | 1 | 1 | 21.16 | 21.66 | 21.41 |
| | | 100#0 | 1 | 1 | 21.38 | 21.67 | 21.43 |
| | 16-QAM | 1#0 | 1 | 1 | 22.06 | 22.05 | 22.33 |
| | | 1#49 | 1 | 1 | 21.68 | 21.89 | 21.08 |
| | | 1#99 | 1 | 1 | 21.99 | 21.44 | 21.89 |
| | | 50#0 | 2 | 2 | 20.52 | 20.54 | 20.96 |
| | | 50#24 | 2 | 2 | 20.29 | 20.79 | 20.5 |
| | | 50#49 | 2 | 2 | 20.57 | 20.76 | 20.45 |
| | | 100#0 | 2 | 2 | 20.9 | 20.52 | 20.7 |

**LTE Band 4:**

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Target MPR | Meas MPR | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|---|---|
| 1.4M | QPSK | 1#0 | 0 | 0 | 22.76 | 22.39 | 22.49 |
| | | 1#3 | 0 | 0 | 22.42 | 22.59 | 22.54 |
| | | 1#5 | 0 | 0 | 22.35 | 22.21 | 22.25 |
| | | 3#0 | 1 | 1 | 22.19 | 22.57 | 23.03 |
| | | 3#1 | 1 | 1 | 22.53 | 22.77 | 22.47 |
| | | 3#3 | 1 | 1 | 22.23 | 22.61 | 22.95 |
| | | 6#0 | 1 | 1 | 21.1 | 21.5 | 21.67 |
| | 16-QAM | 1#0 | 1 | 1 | 21.4 | 21.45 | 21.43 |
| | | 1#3 | 1 | 1 | 21.63 | 22 | 21.74 |
| | | 1#5 | 1 | 1 | 21.4 | 21.54 | 21.44 |
| | | 3#0 | 2 | 2 | 22.44 | 21.88 | 21.24 |
| | | 3#1 | 2 | 2 | 22.59 | 21.2 | 21.45 |
| | | 3#3 | 2 | 2 | 22.15 | 21.88 | 21.42 |
| | | 6#0 | 2 | 2 | 20.29 | 20.82 | 20.83 |
| 3M | QPSK | 1#0 | 0 | 0 | **23.09** | 22.65 | 22.55 |
| | | 1#7 | 0 | 0 | 22.41 | 22.31 | 22.21 |
| | | 1#14 | 0 | 0 | 22.96 | 22.6 | 22.14 |
| | | 8#0 | 1 | 1 | 21.1 | 21.41 | 21.67 |
| | | 8#4 | 1 | 1 | 21.56 | 21.75 | 21.52 |
| | | 8#7 | 1 | 1 | 21.36 | 21.54 | 21.11 |
| | | 15#0 | 1 | 1 | 21.4 | 21.46 | 21.41 |
| | 16-QAM | 1#0 | 1 | 1 | 22.02 | 21.55 | 21.77 |
| | | 1#7 | 1 | 1 | 21.69 | 21.29 | 21.64 |
| | | 1#14 | 1 | 1 | 21.7 | 21.11 | 21.62 |
| | | 8#0 | 2 | 2 | 20.13 | 20.53 | 20.28 |
| | | 8#4 | 2 | 2 | 20.56 | 20.66 | 20.84 |
| | | 8#7 | 2 | 2 | 20.48 | 20.31 | 20.77 |
| | | 15#0 | 2 | 2 | 20.8 | 20.25 | 20.45 |
| 5M | QPSK | 1#0 | 0 | 0 | 22.54 | 22.01 | 22.89 |
| | | 1#12 | 0 | 0 | 22.59 | 22.19 | 22.81 |
| | | 1#24 | 0 | 0 | 22.44 | 22.38 | 22.2 |
| | | 12#0 | 1 | 1 | 21.14 | 21.7 | 21.59 |
| | | 12#6 | 1 | 1 | 21.41 | 21.33 | 21.48 |
| | | 12#11 | 1 | 1 | 21.54 | 21.4 | 21.1 |
| | | 25#0 | 1 | 1 | 21.56 | 21.27 | 21.89 |
| | 16-QAM | 1#0 | 1 | 1 | 21.65 | 21.99 | 21.91 |
| | | 1#12 | 1 | 1 | 21.01 | 21.86 | 21.56 |
| | | 1#24 | 1 | 1 | 21.12 | 21.69 | 21.77 |
| | | 12#0 | 2 | 2 | 20.27 | 20.72 | 20.19 |
| | | 12#6 | 2 | 2 | 20.25 | 20.61 | 20.63 |
| | | 12#11 | 2 | 2 | 20.72 | 20.54 | 20.36 |
| | | 25#0 | 2 | 2 | 20.44 | 20.44 | 20.79 |

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Target MPR | Meas MPR | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|---|---|
| 10M | QPSK | 1#0 | 0 | 0 | 22.8 | 22.54 | 22.32 |
| | | 1#24 | 0 | 0 | 22.61 | 22.64 | 22.29 |
| | | 1#49 | 0 | 0 | 22.59 | 22.56 | 22.06 |
| | | 25#0 | 1 | 1 | 21.42 | 21.41 | 21.43 |
| | | 25#12 | 1 | 1 | 21.36 | 21.67 | 21.31 |
| | | 25#24 | 1 | 1 | 21.22 | 21.56 | 21.28 |
| | | 50#0 | 1 | 1 | 21.3 | 21.05 | 21.5 |
| | 16-QAM | 1#0 | 1 | 1 | 22.7 | 22.51 | 22.92 |
| | | 1#24 | 1 | 1 | 22.65 | 22.19 | 22.47 |
| | | 1#49 | 1 | 1 | 22.23 | 22.22 | 22.49 |
| | | 25#0 | 2 | 2 | 20.48 | 21.1 | 20.22 |
| | | 25#12 | 2 | 2 | 20.14 | 20.49 | 20.46 |
| | | 25#24 | 2 | 2 | 20.47 | 20.43 | 20.6 |
| | | 50#0 | 2 | 2 | 20.82 | 20.78 | 20.55 |
| 15M | QPSK | 1#0 | 0 | 0 | 22.8 | 22.36 | 22.37 |
| | | 1#37 | 0 | 0 | 22.32 | 22.37 | 22.71 |
| | | 1#74 | 0 | 0 | 22.61 | 22.78 | 22.62 |
| | | 36#0 | 1 | 1 | 21.45 | 21.57 | 21.17 |
| | | 36#17 | 1 | 1 | 21.63 | 21.54 | 21.72 |
| | | 36#35 | 1 | 1 | 22.01 | 21.7 | 21.43 |
| | | 75#0 | 1 | 1 | 21.58 | 21.75 | 21.18 |
| | 16-QAM | 1#0 | 1 | 1 | 21.66 | 21.55 | 21.21 |
| | | 1#37 | 1 | 1 | 21.65 | 21.54 | 21.54 |
| | | 1#74 | 1 | 1 | 21.88 | 21.53 | 21.73 |
| | | 36#0 | 2 | 2 | 20.16 | 20.53 | 20.92 |
| | | 36#17 | 2 | 2 | 20.53 | 20.53 | 20.71 |
| | | 36#35 | 2 | 2 | 20.18 | 20.38 | 20.57 |
| | | 75#0 | 2 | 2 | 20.29 | 20.52 | 22.65 |
| 20M | QPSK | 1#0 | 0 | 0 | 22.71 | 22.79 | 22.73 |
| | | 1#49 | 0 | 0 | 22.44 | 22.25 | 22.71 |
| | | 1#99 | 0 | 0 | 22.53 | 22.49 | 22.5 |
| | | 50#0 | 1 | 1 | 21.75 | 21.44 | 21.35 |
| | | 50#24 | 1 | 1 | 21.13 | 21.47 | 21.8 |
| | | 50#49 | 1 | 1 | 21.61 | 21.89 | 21.21 |
| | | 100#0 | 1 | 1 | 21.15 | 21.88 | 21.49 |
| | 16-QAM | 1#0 | 1 | 1 | 22.24 | 22.52 | 22.33 |
| | | 1#49 | 1 | 1 | 22.53 | 22.19 | 22.83 |
| | | 1#99 | 1 | 1 | 21.53 | 22.35 | 22.46 |
| | | 50#0 | 2 | 2 | 21.07 | 20.93 | 21.6 |
| | | 50#24 | 2 | 2 | 20.9 | 20.32 | 20.24 |
| | | 50#49 | 2 | 2 | 20.77 | 20.97 | 20.74 |
| | | 100#0 | 2 | 2 | 20.64 | 20.5 | 20.34 |

**LTE Band 5:**

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Target MPR | Meas MPR | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|---|---|
| 1.4M | QPSK | 1#0 | 0 | 0 | 22.69 | 22.52 | 22.49 |
| | | 1#3 | 0 | 0 | 22.71 | 22.73 | 22.7 |
| | | 1#5 | 0 | 0 | 22.67 | 22.7 | 22.71 |
| | | 3#0 | 1 | 1 | 22.7 | 22.67 | 22.59 |
| | | 3#1 | 1 | 1 | 22.68 | 22.6 | 22.52 |
| | | 3#3 | 1 | 1 | 22.64 | **22.85** | 22.67 |
| | | 6#0 | 1 | 1 | 22.73 | 22.65 | 22.66 |
| | 16-QAM | 1#0 | 1 | 1 | 22.44 | 22.4 | 22.5 |
| | | 1#3 | 1 | 1 | 22.52 | 22.6 | 22.37 |
| | | 1#5 | 1 | 1 | 21.66 | 21.74 | 21.75 |
| | | 3#0 | 2 | 2 | 21.77 | 21.79 | 21.83 |
| | | 3#1 | 2 | 2 | 21.81 | 21.8 | 21.69 |
| | | 3#3 | 2 | 2 | 21.62 | 21.75 | 21.48 |
| | | 6#0 | 2 | 2 | 21.61 | 21.59 | 21.72 |
| 3M | QPSK | 1#0 | 0 | 0 | 22.67 | 22.68 | 22.84 |
| | | 1#7 | 0 | 0 | 22.59 | 22.38 | 22.73 |
| | | 1#14 | 0 | 0 | 22.53 | 22.66 | 22.51 |
| | | 8#0 | 1 | 1 | 21.71 | 21.78 | 21.57 |
| | | 8#4 | 1 | 1 | 21.67 | 21.89 | 21.27 |
| | | 8#7 | 1 | 1 | 21.75 | 21.66 | 21.82 |
| | | 15#0 | 1 | 1 | 21.67 | 21.78 | 21.73 |
| | 16-QAM | 1#0 | 1 | 1 | 22.46 | 22.3 | 22.42 |
| | | 1#7 | 1 | 1 | 22.47 | 22.46 | 22.15 |
| | | 1#14 | 1 | 1 | 21.43 | 21.45 | 21.69 |
| | | 8#0 | 2 | 2 | 20.57 | 20.66 | 20.49 |
| | | 8#4 | 2 | 2 | 20.72 | 20.52 | 20.84 |
| | | 8#7 | 2 | 2 | 20.57 | 20.38 | 20.56 |
| | | 15#0 | 2 | 2 | 20.62 | 20.19 | 20.48 |
| 5M | QPSK | 1#0 | 0 | 0 | 22.48 | 22.51 | 22.17 |
| | | 1#12 | 0 | 0 | 22.41 | 22.51 | 22.71 |
| | | 1#24 | 0 | 0 | 22.56 | 22.5 | 22.32 |
| | | 12#0 | 1 | 1 | 21.65 | 21.72 | 21.55 |
| | | 12#6 | 1 | 1 | 21.24 | 21.54 | 21.35 |
| | | 12#11 | 1 | 1 | 21.54 | 21.67 | 21.58 |
| | | 25#0 | 1 | 1 | 21.44 | 21.13 | 21.29 |
| | 16-QAM | 1#0 | 1 | 1 | 21.29 | 21.15 | 21.43 |
| | | 1#12 | 1 | 1 | 21.27 | 21.42 | 21.75 |
| | | 1#24 | 1 | 1 | 21.46 | 21.43 | 21.31 |
| | | 12#0 | 2 | 2 | 20.24 | 20.24 | 20.32 |
| | | 12#6 | 2 | 2 | 20.36 | 20.45 | 20.51 |
| | | 12#11 | 2 | 2 | 20.3 | 20.48 | 20.36 |
| | | 25#0 | 2 | 2 | 20.29 | 20.37 | 20.19 |

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Target MPR | Meas MPR | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|---|---|
| 10M | QPSK | 1#0 | 0 | 0 | 22.37 | 22.57 | 22.41 |
| | | 1#24 | 0 | 0 | 22.21 | 22.43 | 22.55 |
| | | 1#49 | 0 | 0 | 22.47 | 22.35 | 22.33 |
| | | 25#0 | 1 | 1 | 21.64 | 21.84 | 21.27 |
| | | 25#12 | 1 | 1 | 21.44 | 21.14 | 21.22 |
| | | 25#24 | 1 | 1 | 21.64 | 21.28 | 21.43 |
| | | 50#0 | 1 | 1 | 21.58 | 21.42 | 21.53 |
| | 16-QAM | 1#0 | 1 | 1 | 21.76 | 21.21 | 21.7 |
| | | 1#24 | 1 | 1 | 21.78 | 21.9 | 21.78 |
| | | 1#49 | 1 | 1 | 21.86 | 21.83 | 21.8 |
| | | 25#0 | 2 | 2 | 22.48 | 20.46 | 20.54 |
| | | 25#12 | 2 | 2 | 22.28 | 20.35 | 20.43 |
| | | 25#24 | 2 | 2 | 22.44 | 20.37 | 20.54 |
| | | 50#0 | 2 | 2 | 20.31 | 20.31 | 20.37 |

**LTE Band 7:**

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Target MPR | Meas MPR | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|---|---|
| 5M | QPSK | 1#0 | 0 | 0 | 22.76 | 22.28 | 22.73 |
| | | 1#12 | 0 | 0 | 22.58 | 22.71 | 22.65 |
| | | 1#24 | 0 | 0 | 22.63 | 22.79 | **22.93** |
| | | 12#0 | 1 | 1 | 21.8 | 21.67 | 21.77 |
| | | 12#6 | 1 | 1 | 21.81 | 21.97 | 21.37 |
| | | 12#11 | 1 | 1 | 21.69 | 21.8 | 21.14 |
| | | 25#0 | 1 | 1 | 21.67 | 21.64 | 21.56 |
| | 16-QAM | 1#0 | 1 | 1 | 22.38 | 21.6 | 22.7 |
| | | 1#12 | 1 | 1 | 22.71 | 21.8 | 22.74 |
| | | 1#24 | 1 | 1 | 22.7 | 21.59 | 22.54 |
| | | 12#0 | 2 | 2 | 21.68 | 20.63 | 21.56 |
| | | 12#6 | 2 | 2 | 21.68 | 21.91 | 21.61 |
| | | 12#11 | 2 | 2 | 21.61 | 20.11 | 21.59 |
| | | 25#0 | 2 | 2 | 21.15 | 20.69 | 20.38 |
| 10M | QPSK | 1#0 | 0 | 0 | 22.59 | 22.35 | 22.85 |
| | | 1#24 | 0 | 0 | 22.77 | 22.43 | 22.69 |
| | | 1#49 | 0 | 0 | 22.6 | 22.25 | 22.78 |
| | | 25#0 | 1 | 1 | 21.86 | 21.68 | 22.06 |
| | | 25#12 | 1 | 1 | 21.94 | 21.84 | 21.96 |
| | | 25#24 | 1 | 1 | 21.77 | 21.83 | 22.1 |
| | | 50#0 | 1 | 1 | 22.07 | 21.4 | 21.5 |
| | 16-QAM | 1#0 | 1 | 1 | 21.93 | 21.98 | 21.93 |
| | | 1#24 | 1 | 1 | 21.8 | 22.13 | 21.94 |
| | | 1#49 | 1 | 1 | 21.76 | 22.29 | 22.02 |
| | | 25#0 | 2 | 2 | 20.96 | 21.28 | 21.27 |
| | | 25#12 | 2 | 2 | 21.27 | 21.22 | 21.1 |
| | | 25#24 | 2 | 2 | 21 | 21.38 | 21.27 |
| | | 50#0 | 2 | 2 | 21.21 | 20.63 | 20.58 |
| 15M | QPSK | 1#0 | 0 | 0 | 22.4 | 22.33 | 22.36 |
| | | 1#37 | 0 | 0 | 22.26 | 22.38 | 22.25 |
| | | 1#74 | 0 | 0 | 22.26 | 22.6 | 22.08 |
| | | 36#0 | 1 | 1 | 21.69 | 21.77 | 21.61 |
| | | 36#17 | 1 | 1 | 21.92 | 22.03 | 21.86 |
| | | 36#35 | 1 | 1 | 22.41 | 22.27 | 22.39 |
| | | 75#0 | 1 | 1 | 22.45 | 22.27 | 22.42 |
| | 16-QAM | 1#0 | 1 | 1 | 21.83 | 21.93 | 22.03 |
| | | 1#37 | 1 | 1 | 21.9 | 21.83 | 21.83 |
| | | 1#74 | 1 | 1 | 21.3 | 21.23 | 21.21 |
| | | 36#0 | 2 | 2 | 21.48 | 21.48 | 22.02 |
| | | 36#17 | 2 | 2 | 21.34 | 21.44 | 21.59 |
| | | 36#35 | 2 | 2 | 21.38 | 21.18 | 21.67 |
| | | 75#0 | 2 | 2 | 20.36 | 20.87 | 21.6 |

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Target MPR | Meas MPR | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|---|---|
| 20M | QPSK | 1#0 | 0 | 0 | 22.69 | 22.58 | 22.58 |
| | | 1#49 | 0 | 0 | 22.48 | 22.71 | 22.77 |
| | | 1#99 | 0 | 0 | 22.55 | 22.49 | 22.49 |
| | | 50#0 | 1 | 1 | 21.13 | 22.48 | 22.78 |
| | | 50#24 | 1 | 1 | 22.08 | 22.62 | 22.6 |
| | | 50#49 | 1 | 1 | 21.3 | 22.38 | 22.35 |
| | | 100#0 | 1 | 1 | 22.12 | 22.03 | 22.58 |
| | 16-QAM | 1#0 | 1 | 1 | 22.31 | 22.38 | 22.26 |
| | | 1#49 | 1 | 1 | 22 | 22.41 | 22.56 |
| | | 1#99 | 1 | 1 | 22.41 | 22.71 | 22.8 |
| | | 50#0 | 2 | 2 | 21.07 | 21.5 | 22.66 |
| | | 50#24 | 2 | 2 | 21.42 | 21.48 | 22.37 |
| | | 50#49 | 2 | 2 | 21.13 | 21.26 | 21.91 |
| | | 100#0 | 2 | 2 | 21.86 | 20.17 | 21.71 |

**LTE Band 12:**

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Target MPR | Meas MPR | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|---|---|
| 1.4M | QPSK | 1#0 | 0 | 0 | 22.73 | 22.55 | 22.69 |
| | | 1#3 | 0 | 0 | 22.67 | 22.65 | 22.53 |
| | | 1#5 | 0 | 0 | 22.56 | 22.81 | 22.92 |
| | | 3#0 | 1 | 1 | 22.59 | **23.01** | 22.39 |
| | | 3#1 | 1 | 1 | 22.41 | 22.2 | 22.35 |
| | | 3#3 | 1 | 1 | 22.43 | 22.36 | 22.55 |
| | | 6#0 | 1 | 1 | 22.49 | 22.23 | 22.48 |
| | 16-QAM | 1#0 | 1 | 1 | 22.4 | 22.46 | 22.52 |
| | | 1#3 | 1 | 1 | 22.42 | 22.03 | 21.36 |
| | | 1#5 | 1 | 1 | 21.2 | 21.05 | 21.09 |
| | | 3#0 | 2 | 2 | 21.12 | 21.4 | 21.02 |
| | | 3#1 | 2 | 2 | 21.12 | 21.68 | 21.94 |
| | | 3#3 | 2 | 2 | 20.9 | 20.92 | 20.82 |
| | | 6#0 | 2 | 2 | 20.82 | 20.75 | 20.62 |
| 3M | QPSK | 1#0 | 0 | 0 | 22.46 | 22.5 | 22.79 |
| | | 1#7 | 0 | 0 | 22.39 | 22.94 | 22.39 |
| | | 1#14 | 0 | 0 | 22.46 | 22.34 | 22.48 |
| | | 8#0 | 1 | 1 | 21.63 | 21.69 | 21.65 |
| | | 8#4 | 1 | 1 | 21.84 | 21.28 | 21.79 |
| | | 8#7 | 1 | 1 | 21.79 | 21.69 | 21.9 |
| | | 15#0 | 1 | 1 | 21.46 | 21.8 | 21.37 |
| | 16-QAM | 1#0 | 1 | 1 | 22.75 | 22.73 | 22.76 |
| | | 1#7 | 1 | 1 | 22.76 | 22.67 | 22.52 |
| | | 1#14 | 1 | 1 | 22.61 | 22.39 | 22.29 |
| | | 8#0 | 2 | 2 | 20.84 | 20.89 | 20.9 |
| | | 8#4 | 2 | 2 | 20.31 | 20.99 | 20.82 |
| | | 8#7 | 2 | 2 | 20.87 | 20.84 | 20.98 |
| | | 15#0 | 2 | 2 | 20.6 | 20.69 | 20.62 |
| 5M | QPSK | 1#0 | 0 | 0 | 22.35 | 22.66 | 22.78 |
| | | 1#12 | 0 | 0 | 22.76 | 22.87 | 22.62 |
| | | 1#24 | 0 | 0 | 22.67 | 22.84 | 22.53 |
| | | 12#0 | 1 | 1 | 21.66 | 21.74 | 21.71 |
| | | 12#6 | 1 | 1 | 21.72 | 21.87 | 21.73 |
| | | 12#11 | 1 | 1 | 21.77 | 21.73 | 21.98 |
| | | 25#0 | 1 | 1 | 21.71 | 21.74 | 21.89 |
| | 16-QAM | 1#0 | 1 | 1 | 21.85 | 21.86 | 21.85 |
| | | 1#12 | 1 | 1 | 21.69 | 21.51 | 21.75 |
| | | 1#24 | 1 | 1 | 21.69 | 22 | 21.63 |
| | | 12#0 | 2 | 2 | 20.57 | 20.59 | 20.59 |
| | | 12#6 | 2 | 2 | 20.5 | 20.56 | 20.47 |
| | | 12#11 | 2 | 2 | 20.36 | 20.85 | 20.64 |
| | | 25#0 | 2 | 2 | 20.61 | 20.66 | 20.52 |

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Target MPR | Meas MPR | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|---|---|
| 10M | QPSK | 1#0 | 0 | 0 | 22.69 | 22.85 | 22.8 |
| | | 1#24 | 0 | 0 | 22.56 | 22.49 | 22.44 |
| | | 1#49 | 0 | 0 | 22.58 | 22.74 | 22.55 |
| | | 25#0 | 1 | 1 | 21.48 | 21.47 | 21.47 |
| | | 25#12 | 1 | 1 | 21.58 | 21.6 | 21.53 |
| | | 25#24 | 1 | 1 | 21.81 | 22.03 | 21.74 |
| | | 50#0 | 1 | 1 | 21.49 | 21.57 | 21.33 |
| | 16-QAM | 1#0 | 1 | 1 | 21.52 | 21.5 | 21.6 |
| | | 1#24 | 1 | 1 | 21.51 | 21.33 | 21.61 |
| | | 1#49 | 1 | 1 | 21.53 | 21.41 | 21.39 |
| | | 25#0 | 2 | 2 | 22.67 | 20.93 | 20.82 |
| | | 25#12 | 2 | 2 | 22.32 | 20.84 | 20.96 |
| | | 25#24 | 2 | 2 | 22.62 | 20.75 | 20.81 |
| | | 50#0 | 2 | 2 | 20.45 | 20.8 | 20.38 |

**LTE Band 13:**

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Target MPR | Meas MPR | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|---|---|
| 5M | QPSK | 1#0 | 0 | 0 | 22.44 | 22.46 | 22.36 |
| | | 1#12 | 0 | 0 | 22.37 | 22.59 | 22.22 |
| | | 1#24 | 0 | 0 | 22.25 | 22.4 | 22.23 |
| | | 12#0 | 1 | 1 | 21.44 | 21.54 | 21.47 |
| | | 12#6 | 1 | 1 | 21.47 | 21.65 | 21.93 |
| | | 12#11 | 1 | 1 | 21.43 | 21.34 | 21.61 |
| | | 25#0 | 1 | 1 | 21.69 | 21.71 | 21.39 |
| | 16-QAM | 1#0 | 1 | 1 | 21.5 | 21.33 | 21.54 |
| | | 1#12 | 1 | 1 | 21.48 | 21.28 | 21.41 |
| | | 1#24 | 1 | 1 | 21.42 | 21.41 | 21.48 |
| | | 12#0 | 2 | 2 | 20.57 | 20.83 | 20.62 |
| | | 12#6 | 2 | 2 | 20.58 | 20.58 | 20.57 |
| | | 12#11 | 2 | 2 | 20.7 | 20.59 | 20.72 |
| | | 25#0 | 2 | 2 | 20.48 | 20.49 | 20.53 |
| 10M | QPSK | 1#0 | 0 | 0 | / | 22.85 | / |
| | | 1#24 | 0 | 0 | / | **23** | / |
| | | 1#49 | 0 | 0 | / | 22.76 | / |
| | | 25#0 | 1 | 1 | / | 21.45 | / |
| | | 25#12 | 1 | 1 | / | 22.04 | / |
| | | 25#24 | 1 | 1 | / | 21.48 | / |
| | | 50#0 | 1 | 1 | / | 21.37 | / |
| | 16-QAM | 1#0 | 1 | 1 | / | 21.33 | / |
| | | 1#24 | 1 | 1 | / | 21.45 | / |
| | | 1#49 | 1 | 1 | / | 20.8 | / |
| | | 25#0 | 2 | 2 | / | 20.66 | / |
| | | 25#12 | 2 | 2 | / | 20.65 | / |
| | | 25#24 | 2 | 2 | / | 20.36 | / |
| | | 50#0 | 2 | 2 | / | 20.12 | / |

**LTE Band 17:**

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Target MPR | Meas MPR | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|---|---|
| 5M | QPSK | 1#0 | 0 | 0 | 22.82 | 22.67 | 22.99 |
| | | 1#12 | 0 | 0 | 22.47 | 22.61 | 22.49 |
| | | 1#24 | 0 | 0 | 22.48 | 22.56 | 22.75 |
| | | 12#0 | 1 | 1 | 21.52 | 21.54 | 21.83 |
| | | 12#6 | 1 | 1 | 21.4 | 21.44 | 21.19 |
| | | 12#11 | 1 | 1 | 21.6 | 21.49 | 22 |
| | | 25#0 | 1 | 1 | 21.5 | 21.65 | 21.66 |
| | 16-QAM | 1#0 | 1 | 1 | 21.57 | 21.52 | 21.85 |
| | | 1#12 | 1 | 1 | 21.76 | 21.5 | 21.51 |
| | | 1#24 | 1 | 1 | 21.43 | 21.69 | 21.43 |
| | | 12#0 | 2 | 2 | 20.32 | 20.41 | 20.57 |
| | | 12#6 | 2 | 2 | 20.55 | 20.61 | 20.53 |
| | | 12#11 | 2 | 2 | 20.42 | 20.75 | 20.36 |
| | | 25#0 | 2 | 2 | 20.65 | 20.45 | 20.75 |
| 10M | QPSK | 1#0 | 0 | 0 | 22.71 | 23.03 | **23.09** |
| | | 1#24 | 0 | 0 | 22.82 | 22.55 | 22.35 |
| | | 1#49 | 0 | 0 | 22.77 | 22.71 | 22.66 |
| | | 25#0 | 1 | 1 | 21.79 | 21.57 | 21.61 |
| | | 25#12 | 1 | 1 | 21.77 | 22.13 | 21.85 |
| | | 25#24 | 1 | 1 | 21.73 | 21.72 | 21.98 |
| | | 50#0 | 1 | 1 | 21.69 | 21.63 | 21.95 |
| | 16-QAM | 1#0 | 1 | 1 | 21.68 | 21.48 | 21.53 |
| | | 1#24 | 1 | 1 | 21.74 | 21.75 | 22.01 |
| | | 1#49 | 1 | 1 | 21.51 | 21.77 | 21.77 |
| | | 25#0 | 2 | 2 | 22.44 | 20.74 | 20.68 |
| | | 25#12 | 2 | 2 | 22.27 | 20.76 | 20.64 |
| | | 25#24 | 2 | 2 | 22.66 | 20.96 | 20.93 |
| | | 50#0 | 2 | 2 | 20.39 | 21.05 | 21 |

**LTE Band 25:**

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Target MPR | Meas MPR | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|---|---|
| 1.4M | QPSK | 1#0 | 0 | 0 | 22.48 | 22.42 | 22.65 |
| | | 1#3 | 0 | 0 | 22.44 | 22.44 | 22.38 |
| | | 1#5 | 0 | 0 | 22.51 | 22.6 | 22.42 |
| | | 3#0 | 1 | 1 | 22.46 | 22.39 | 22.32 |
| | | 3#1 | 1 | 1 | 22.58 | 22.53 | 22.56 |
| | | 3#3 | 1 | 1 | 22.83 | 22.68 | 22.38 |
| | | 6#0 | 1 | 1 | 22.51 | 22.24 | 22.46 |
| | 16-QAM | 1#0 | 1 | 1 | 22.08 | 22.77 | 22.31 |
| | | 1#3 | 1 | 1 | 22.73 | 22.49 | 22.48 |
| | | 1#5 | 1 | 1 | 21.69 | 21.83 | 21.6 |
| | | 3#0 | 2 | 2 | 21.59 | 21.48 | 21.7 |
| | | 3#1 | 2 | 2 | 21.67 | 21.74 | 21.55 |
| | | 3#3 | 2 | 2 | 21.61 | 21.44 | 21.76 |
| | | 6#0 | 2 | 2 | 21.4 | 21.72 | 21.38 |
| 3M | QPSK | 1#0 | 0 | 0 | 22.62 | 22.75 | 22.57 |
| | | 1#7 | 0 | 0 | 22.59 | 22.69 | 22.54 |
| | | 1#14 | 0 | 0 | 22.47 | 22.4 | 22.56 |
| | | 8#0 | 1 | 1 | 21.57 | 21.75 | 21.61 |
| | | 8#4 | 1 | 1 | 21.56 | 21.43 | 21.54 |
| | | 8#7 | 1 | 1 | 21.68 | 21.58 | 21.72 |
| | | 15#0 | 1 | 1 | 21.58 | 21.76 | 21.67 |
| | 16-QAM | 1#0 | 1 | 1 | 22.47 | 22.56 | 22.56 |
| | | 1#7 | 1 | 1 | 22.67 | 22.64 | 22.57 |
| | | 1#14 | 1 | 1 | 22.61 | 21.52 | 21.8 |
| | | 8#0 | 2 | 2 | 20.81 | 20.83 | 20.95 |
| | | 8#4 | 2 | 2 | 20.85 | 20.78 | 20.89 |
| | | 8#7 | 2 | 2 | 20.81 | 20.77 | 20.87 |
| | | 15#0 | 2 | 2 | 20.84 | 20.79 | 20.63 |
| 5M | QPSK | 1#0 | 0 | 0 | 22.83 | 22.83 | 22.83 |
| | | 1#12 | 0 | 0 | **22.92** | 22.8 | 22.76 |
| | | 1#24 | 0 | 0 | 22.78 | 22.56 | 22.71 |
| | | 12#0 | 1 | 1 | 21.41 | 21.47 | 21.38 |
| | | 12#6 | 1 | 1 | 21.43 | 21.58 | 21.43 |
| | | 12#11 | 1 | 1 | 21.38 | 21.54 | 21.4 |
| | | 25#0 | 1 | 1 | 21.48 | 21.35 | 21.5 |
| | 16-QAM | 1#0 | 1 | 1 | 21.46 | 21.4 | 21.69 |
| | | 1#12 | 1 | 1 | 21.64 | 21.6 | 21.61 |
| | | 1#24 | 1 | 1 | 21.92 | 21.36 | 21.52 |
| | | 12#0 | 2 | 2 | 20.7 | 20.74 | 20.74 |
| | | 12#6 | 2 | 2 | 20.75 | 20.63 | 20.85 |
| | | 12#11 | 2 | 2 | 20.71 | 20.69 | 20.76 |
| | | 25#0 | 2 | 2 | 20.67 | 20.74 | 20.86 |

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Target MPR | Meas MPR | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|---|---|
| 10M | QPSK | 1#0 | 0 | 0 | 22.37 | 22.34 | 22.43 |
| | | 1#24 | 0 | 0 | 22.42 | 22.54 | 22.46 |
| | | 1#49 | 0 | 0 | 22.45 | 22.3 | 22.37 |
| | | 25#0 | 1 | 1 | 21.65 | 21.51 | 21.52 |
| | | 25#12 | 1 | 1 | 21.53 | 21.66 | 21.48 |
| | | 25#24 | 1 | 1 | 21.66 | 21.37 | 21.63 |
| | | 50#0 | 1 | 1 | 21.48 | 21.77 | 21.67 |
| | 16-QAM | 1#0 | 1 | 1 | 21.54 | 21.64 | 21.48 |
| | | 1#24 | 1 | 1 | 21.55 | 21.49 | 21.56 |
| | | 1#49 | 1 | 1 | 21.28 | 21.62 | 21.11 |
| | | 25#0 | 2 | 2 | 20.63 | 20.79 | 20.76 |
| | | 25#12 | 2 | 2 | 20.64 | 20.65 | 20.68 |
| | | 25#24 | 2 | 2 | 20.6 | 20.65 | 20.54 |
| | | 50#0 | 2 | 2 | 20.78 | 20.36 | 20.65 |
| 15M | QPSK | 1#0 | 0 | 0 | 22.46 | 22.33 | 22.28 |
| | | 1#37 | 0 | 0 | 22.41 | 22.34 | 22.51 |
| | | 1#74 | 0 | 0 | 22.29 | 22.32 | 22.3 |
| | | 36#0 | 1 | 1 | 22.32 | 22.49 | 22.14 |
| | | 36#17 | 1 | 1 | 22.39 | 22.32 | 22.31 |
| | | 36#35 | 1 | 1 | 22.3 | 22.26 | 22.37 |
| | | 75#0 | 1 | 1 | 21.5 | 21.33 | 21.39 |
| | 16-QAM | 1#0 | 1 | 1 | 21.34 | 21.16 | 21.44 |
| | | 1#37 | 1 | 1 | 21.39 | 21.39 | 21.43 |
| | | 1#74 | 1 | 1 | 21.51 | 21.45 | 21.45 |
| | | 36#0 | 2 | 2 | 21.38 | 21.42 | 21.49 |
| | | 36#17 | 2 | 2 | 21.32 | 21.23 | 21.23 |
| | | 36#35 | 2 | 2 | 21.45 | 20.78 | 21.57 |
| | | 75#0 | 2 | 2 | 21.35 | 21.31 | 21.36 |
| 20M | QPSK | 1#0 | 0 | 0 | 22.49 | 22.39 | 22.35 |
| | | 1#49 | 0 | 0 | 22.38 | 22.46 | 22.58 |
| | | 1#99 | 0 | 0 | 22.39 | 22.25 | 22.86 |
| | | 50#0 | 1 | 1 | 21.28 | 21.33 | 21.19 |
| | | 50#24 | 1 | 1 | 21.32 | 21.15 | 21.26 |
| | | 50#49 | 1 | 1 | 21.2 | 21.17 | 21.12 |
| | | 100#0 | 1 | 1 | 21.23 | 21.27 | 21.23 |
| | 16-QAM | 1#0 | 1 | 1 | 22.12 | 21.98 | 22.15 |
| | | 1#49 | 1 | 1 | 21.33 | 21.31 | 21.11 |
| | | 1#99 | 1 | 1 | 21.26 | 21.31 | 21.39 |
| | | 50#0 | 2 | 2 | 20.88 | 20.82 | 21.01 |
| | | 50#24 | 2 | 2 | 20.72 | 20.73 | 20.68 |
| | | 50#49 | 2 | 2 | 20.65 | 20.68 | 20.55 |
| | | 100#0 | 2 | 2 | 20.79 | 20.6 | 20.73 |

**LTE Band 26:**

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Target MPR | Meas MPR | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|---|---|
| 1.4M | QPSK | 1#0 | 0 | 0 | 23.09 | 22.88 | 23.01 |
| | | 1#3 | 0 | 0 | 23.18 | 23.1 | 23.11 |
| | | 1#5 | 0 | 0 | 23.1 | 23.1 | 23.13 |
| | | 3#0 | 1 | 1 | 22.78 | 23 | 23.1 |
| | | 3#1 | 1 | 1 | 23.11 | 23.04 | 22.99 |
| | | 3#3 | 1 | 1 | 23.03 | 22.82 | 22.89 |
| | | 6#0 | 1 | 1 | 21.88 | 21.98 | 21.94 |
| | 16-QAM | 1#0 | 1 | 1 | 22.31 | 22.28 | 22.19 |
| | | 1#3 | 1 | 1 | 22.38 | 22.26 | 22.27 |
| | | 1#5 | 1 | 1 | 22.21 | 22.2 | 21.91 |
| | | 3#0 | 2 | 2 | 22.09 | 22.1 | 22.31 |
| | | 3#1 | 2 | 2 | 22.18 | 22.36 | 22.26 |
| | | 3#3 | 2 | 2 | 22.13 | 22.21 | 22.31 |
| | | 6#0 | 2 | 2 | 20.5 | 20.5 | 20.28 |
| 3M | QPSK | 1#0 | 0 | 0 | 22.93 | 22.92 | 22.89 |
| | | 1#7 | 0 | 0 | 23.14 | 22.76 | 22.7 |
| | | 1#14 | 0 | 0 | 23.13 | 22.76 | 22.97 |
| | | 8#0 | 1 | 1 | 22.1 | 21.99 | 21.93 |
| | | 8#4 | 1 | 1 | 22.02 | 22.03 | 21.92 |
| | | 8#7 | 1 | 1 | 22.08 | 21.85 | 21.87 |
| | | 15#0 | 1 | 1 | 22.05 | 22.04 | 21.87 |
| | 16-QAM | 1#0 | 1 | 1 | 21.63 | 21.6 | 21.76 |
| | | 1#7 | 1 | 1 | 21.59 | 21.85 | 21.52 |
| | | 1#14 | 1 | 1 | 21.92 | 21.58 | 21.51 |
| | | 8#0 | 2 | 2 | 21.26 | 21.3 | 21.42 |
| | | 8#4 | 2 | 2 | 21.46 | 21.36 | 21.29 |
| | | 8#7 | 2 | 2 | 21.12 | 20.96 | 21.04 |
| | | 15#0 | 2 | 2 | 20.75 | 20.74 | 20.98 |
| 5M | QPSK | 1#0 | 0 | 0 | 22.91 | 23.12 | 23.09 |
| | | 1#12 | 0 | 0 | 22.17 | 22.13 | 22.1 |
| | | 1#24 | 0 | 0 | **23.18** | 23.03 | 23.13 |
| | | 12#0 | 1 | 1 | 21.74 | 21.85 | 21.75 |
| | | 12#6 | 1 | 1 | 21.88 | 21.85 | 21.95 |
| | | 12#11 | 1 | 1 | 22.06 | 22.08 | 21.81 |
| | | 25#0 | 1 | 1 | 22.05 | 21.96 | 22.06 |
| | 16-QAM | 1#0 | 1 | 1 | 21.47 | 21.45 | 21.49 |
| | | 1#12 | 1 | 1 | 21.69 | 21.45 | 21.49 |
| | | 1#24 | 1 | 1 | 21.51 | 21.72 | 21.81 |
| | | 12#0 | 2 | 2 | 20.96 | 20.82 | 20.79 |
| | | 12#6 | 2 | 2 | 21.13 | 21.01 | 21.24 |
| | | 12#11 | 2 | 2 | 21.03 | 21.07 | 21.09 |
| | | 25#0 | 2 | 2 | 21.24 | 21 | 21.01 |

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Target MPR | Meas MPR | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|---|---|---|---|---|---|---|---|
| 10M | QPSK | 1#0 | 0 | 0 | / | 22.96 | / |
| | | 1#24 | 0 | 0 | / | 22.88 | / |
| | | 1#49 | 0 | 0 | / | 22.9 | / |
| | | 25#0 | 1 | 1 | / | 21.83 | / |
| | | 25#12 | 1 | 1 | / | 21.88 | / |
| | | 25#24 | 1 | 1 | / | 22.05 | / |
| | | 50#0 | 1 | 1 | / | 21.84 | / |
| | 16-QAM | 1#0 | 1 | 1 | / | 21.66 | / |
| | | 1#24 | 1 | 1 | / | 22.39 | / |
| | | 1#49 | 1 | 1 | / | 21.65 | / |
| | | 25#0 | 2 | 2 | / | 20.92 | / |
| | | 25#12 | 2 | 2 | / | 21.17 | / |
| | | 25#24 | 2 | 2 | / | 20.91 | / |
| | | 50#0 | 2 | 2 | / | 20.9 | / |

**LTE Band 41:**

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Target MPR | Meas MPR | Low Channel (dBm) | | Middle Channel (dBm) | High Channel (dBm) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2498.5 MHz | 2545 MHz | 2593 MHz | 2635 MHz | 2687.5 MHz |
| 5M | QPSK | 1#0 | 0 | 0 | 22.96 | 22.9 | 22.27 | 22.19 | 22.62 |
| | | 1#12 | 0 | 0 | 22.78 | 22.58 | 22.93 | 22.72 | 22.78 |
| | | 1#24 | 0 | 0 | 22.92 | 22.75 | 23.05 | 22.81 | 22.79 |
| | | 12#0 | 1 | 1 | 22.86 | 22.64 | 23.04 | 23 | 22.85 |
| | | 12#6 | 1 | 1 | 22.95 | 22.73 | 22.72 | 22.51 | 22.93 |
| | | 12#11 | 1 | 1 | 22.78 | 22.58 | 22.9 | 22.77 | 22.61 |
| | | 25#0 | 1 | 1 | 22.74 | 22.68 | 22.96 | 22.81 | 22.8 |
| | 16-QAM | 1#0 | 1 | 1 | 22.87 | 22.77 | 23.04 | 22.8 | 22.82 |
| | | 1#12 | 1 | 1 | 22.45 | 22.34 | 22.52 | 22.28 | 22.45 |
| | | 1#24 | 1 | 1 | 21.19 | 21.03 | 21.68 | 21.43 | 21.9 |
| | | 12#0 | 2 | 2 | 21.16 | 21.06 | 21.36 | 21.12 | 21.24 |
| | | 12#6 | 2 | 2 | 21.2 | 21.14 | 21.27 | 21.21 | 21.15 |
| | | 12#11 | 2 | 2 | 21.24 | 21.05 | 21.24 | 21.04 | 21.35 |
| | | 25#0 | 2 | 2 | 21.36 | 21.13 | 21.24 | 21.07 | 21.13 |
| **Test Bandwidth** | **Test Modulation** | **Resource Block & RB offset** | **Target MPR** | **Meas MPR** | **Low Channel (dBm)** | | **Middle Channel (dBm)** | **High Channel (dBm)** | |
| | | | | | **2501 MHz** | **2545 MHz** | **2593 MHz** | **2635 MHz** | **2685 MHz** |
| 10M | QPSK | 1#0 | 0 | 0 | 22.65 | 22.41 | 22.16 | 22.1 | 22.24 |
| | | 1#24 | 0 | 0 | 22.69 | 22.51 | 22.86 | 22.79 | 22.91 |
| | | 1#49 | 0 | 0 | 22.94 | 22.79 | 22.65 | 22.54 | 22.77 |
| | | 25#0 | 1 | 1 | 21.08 | 20.87 | 20.78 | 20.63 | 21.39 |
| | | 25#12 | 1 | 1 | 21.2 | 21.11 | 21.37 | 21.14 | 21.08 |
| | | 25#24 | 1 | 1 | 21.16 | 21.11 | 21.11 | 21.01 | 21.1 |
| | | 50#0 | 1 | 1 | 21.19 | 20.97 | 21.14 | 21 | 21.11 |
| | 16-QAM | 1#0 | 1 | 1 | 22.99 | 22.91 | 22.82 | 22.7 | 22.97 |
| | | 1#24 | 1 | 1 | 22.73 | 22.49 | **23.1** | 22.89 | 22.9 |
| | | 1#49 | 1 | 1 | 22.93 | 22.81 | 22.98 | 22.8 | 23 |
| | | 25#0 | 2 | 2 | 20.61 | 20.52 | 20.91 | 20.74 | 20.96 |
| | | 25#12 | 2 | 2 | 20.75 | 20.64 | 20.65 | 20.43 | 20.6 |
| | | 25#24 | 2 | 2 | 20.58 | 20.51 | 20.62 | 20.5 | 20.52 |
| | | 50#0 | 2 | 2 | 20.58 | 20.52 | 20.8 | 20.7 | 20.52 |

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Target MPR | Meas MPR | Low Channel (dBm) | | Middle Channel (dBm) | High Channel (dBm) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2503.5 MHz | 2545 MHz | 2593 MHz | 2635 MHz | 2682.5 MHz |
| 15M | QPSK | 1#0 | 0 | 0 | 22.62 | 22.41 | 22.48 | 22.24 | 22.41 |
| | | 1#37 | 0 | 0 | 22.55 | 22.43 | 22.66 | 22.6 | 22.68 |
| | | 1#74 | 0 | 0 | 22.3 | 22.18 | 22.52 | 22.3 | 22.37 |
| | | 36#0 | 1 | 1 | 21.61 | 21.51 | 21.79 | 21.69 | 21.45 |
| | | 36#17 | 1 | 1 | 21.67 | 21.58 | 21.45 | 21.23 | 21.62 |
| | | 36#35 | 1 | 1 | 21.68 | 21.52 | 21.73 | 21.66 | 21.78 |
| | | 75#0 | 1 | 1 | 21.68 | 21.62 | 21.82 | 21.72 | 21.84 |
| | 16-QAM | 1#0 | 1 | 1 | 21.76 | 21.59 | 21.55 | 21.38 | 21.81 |
| | | 1#37 | 1 | 1 | 21.77 | 21.68 | 21.53 | 21.37 | 21.69 |
| | | 1#74 | 1 | 1 | 21.89 | 21.69 | 21.43 | 21.36 | 21.51 |
| | | 36#0 | 2 | 2 | 20.66 | 20.61 | 20.61 | 20.4 | 20.72 |
| | | 36#17 | 2 | 2 | 20.46 | 20.29 | 20.46 | 20.26 | 20.48 |
| | | 36#35 | 2 | 2 | 20.5 | 20.38 | 20.54 | 20.42 | 20.73 |
| | | 75#0 | 2 | 2 | 20.41 | 20.3 | 20.36 | 20.19 | 20.44 |
| **Test Bandwidth** | **Test Modulation** | **Resource Block & RB offset** | **Target MPR** | **Meas MPR** | **Low Channel (dBm)** | | **Middle Channel (dBm)** | **High Channel (dBm)** | |
| | | | | | **2506 MHz** | **2545 MHz** | **2593 MHz** | **2635 MHz** | **2680 MHz** |
| 20M | QPSK | 1#0 | 0 | 0 | 22.53 | 22.32 | 22.72 | 22.36 | 22.56 |
| | | 1#49 | 0 | 0 | 22.31 | 22.18 | 22.46 | 22.01 | 22.29 |
| | | 1#99 | 0 | 0 | 22.47 | 22.24 | 22.32 | 22.08 | 22.42 |
| | | 50#0 | 1 | 1 | 21.91 | 21.71 | 21.83 | 21.71 | 21.77 |
| | | 50#24 | 1 | 1 | 21.96 | 21.75 | 21.93 | 21.75 | 22.11 |
| | | 50#49 | 1 | 1 | 21.9 | 21.84 | 22.01 | 21.83 | 22 |
| | | 100#0 | 1 | 1 | 21.9 | 21.7 | 22.1 | 22 | 21.91 |
| | 16-QAM | 1#0 | 1 | 1 | 22.03 | 21.78 | 21.96 | 21.86 | 21.99 |
| | | 1#49 | 1 | 1 | 21.97 | 21.8 | 21.8 | 21.67 | 21.74 |
| | | 1#99 | 1 | 1 | 21.88 | 21.8 | 21.32 | 21.2 | 22.08 |
| | | 50#0 | 2 | 2 | 22.26 | 22.11 | 21 | 20.89 | 20.94 |
| | | 50#24 | 2 | 2 | 22.68 | 22.52 | 20.71 | 20.59 | 20.78 |
| | | 50#49 | 2 | 2 | 20.74 | 20.67 | 20.65 | 20.58 | 20.74 |
| | | 100#0 | 2 | 2 | 20.61 | 20.5 | 20.96 | 20.75 | 20.65 |

**Note:**

1. SAR for LTE band exposure configurations is measured according to the procedures of KDB 941225 D05 SAR for LTE Devices v02.
2. The CMW500 Wideband Radio Communication tester is used for LTE output power measurements and SAR testing. Closed loop power control is used to keep the radio transmitters the max output power during the test.

**CDMA 850(BC0):**

| Mode | Channel No. | Frequency (MHz) | RF Output Power (dBm) |
|---|---|---|---|
| 1xRTT RC3+SO55(Loopback) | 1013 | 824.7 | 22.89 |
| | 384 | 836.52 | 22.96 |
| | 777 | 848.31 | 23.01 |
| EV-DO, RTAP 153.6 kbps | 1013 | 824.7 | 23.24 |
| | 384 | 836.52 | 23.20 |
| | 777 | 848.31 | **23.28** |

**CDMA 1900(BC1):**

| Mode | Channel No. | Frequency (MHz) | RF Output Power (dBm) |
|---|---|---|---|
| 1xRTT RC3+SO55(Loopback) | 25 | 1851.25 | 22.86 |
| | 600 | 1880.00 | 23.02 |
| | 1175 | 1908.75 | 23.04 |
| EV-DO, RTAP 153.6 kbps | 25 | 1851.25 | 23.30 |
| | 600 | 1880.00 | 23.24 |
| | 1175 | 1908.75 | **23.37** |

**CDMA 800(BC10):**

| Mode | Channel No. | Frequency (MHz) | RF Output Power (dBm) |
|---|---|---|---|
| 1xRTT RC3+SO55(Loopback) | 450 | 817.25 | 22.87 |
| | 580 | 820.50 | 22.93 |
| | 670 | 822.75 | 22.92 |
| EV-DO, RTAP 153.6 kbps | 450 | 817.25 | **23.27** |
| | 580 | 820.50 | 23.19 |
| | 670 | 822.75 | 23.18 |

**WLAN:**

| Mode | Channel frequency (MHz) | Date Rate | RF Output Power (dBm) |
|---|---|---|---|
| **802.11b** | 2412 | 1Mbps | 13.33 |
| | 2442 | | 14.73 |
| | 2472 | | 13.55 |
| 802.11g | 2412 | 6Mbps | 14.93 |
| | 2442 | | 14.33 |
| | 2472 | | **14.96** |
| 802.11n HT20 | 2412 | MCS0 | 14.81 |
| | 2442 | | 14.59 |
| | 2472 | | 14.92 |

**Bluetooth(WB):**

| Mode | Channel frequency(MHz) | RF Output Power (dBm) |
|---|---|---|
| BDR(GFSK) | 2402 | 10.58 |
| | 2441 | 9.81 |
| | 2480 | 11.24 |
| | 2416 | 11.82 |
| EDR (π/4-DQPSK) | 2402 | 11.42 |
| | 2441 | 10.60 |
| | 2480 | 11.98 |
| | 2416 | 12.62 |
| EDR(8-DPSK) | 2402 | 11.92 |
| | 2441 | 10.74 |
| | 2480 | 12.34 |
| | 2416 | **12.85** |
| Bluetooth LE | 2402 | 0.65 |
| | 2440 | **1.92** |
| | 2480 | 1.40 |

**Bluetooth(NB):**

| Mode | Channel frequency(MHz) | RF Output Power (dBm) |
|---|---|---|
| BDR(GFSK) | 2402 | 4.88 |
| | 2441 | **4.97** |
| | 2480 | 4.97 |
| EDR (π/4-DQPSK) | 2402 | 3.89 |
| | 2441 | 4.85 |
| | 2480 | 3.17 |
| EDR(8-DPSK) | 2402 | 4.03 |
| | 2441 | 4.9 |
| | 2480 | 3.57 |
| Bluetooth LE | 2402 | 0.61 |
| | 2440 | **1.69** |
| | 2480 | 1.23 |

**PTT:**

**Frequency(350-400 MHz)**

| Mode | Frequency Spacing (kHz) | Frequency (MHz) | Output Power(W) | Power level |
|---|---|---|---|---|
| FM | 12.5 | 350.0125 | 4.45 | High |
| | | 362 | 4.55 | High |
| | | 375 | 4.44 | High |
| | | 388 | **4.56** | **High** |
| | | 399.9875 | 4.50 | High |
| | 25 | 350.0125 | 4.30 | High |
| | | 362 | 4.46 | High |
| | | 375 | 4.41 | High |
| | | 388 | 4.47 | High |
| | | 399.9875 | 4.42 | High |
| 4FSK | 12.5 | 350.0125 | 4.45 | High |
| | | 362 | 4.55 | High |
| | | 375 | 4.44 | High |
| | | 388 | 4.56 | High |
| | | 399.9875 | 4.50 | High |

**Frequency(400-470 MHz)**

| Mode | Frequency Spacing (kHz) | Frequency (MHz) | Output Power(W) | Power level |
|---|---|---|---|---|
| FM | 12.5 | 400.0125 | 4.64 | High |
| | | 418 | 4.51 | High |
| | | 435 | 4.52 | High |
| | | 452 | 4.52 | High |
| | | 469.9875 | 4.62 | High |
| | 25 | 400.0125 | 4.56 | High |
| | | 418 | 4.58 | High |
| | | 435 | 4.54 | High |
| | | 452 | 4.73 | High |
| | | 469.9875 | 4.76 | High |
| 4FSK | 12.5 | 400.0125 | **4.78** | **High** |
| | | 418 | 4.70 | High |
| | | 435 | 4.56 | High |
| | | 452 | 4.72 | High |
| | | 469.9875 | 4.67 | High |

**Frequency(450-512 MHz)**

| Mode | Frequency Spacing (kHz) | Frequency (MHz) | Output Power(W) | Power level |
|---|---|---|---|---|
| FM | 12.5 | 450.0125 | 4.35 | High |
| | | 469 | 4.33 | High |
| | | 488 | **4.59** | **High** |
| | | 507 | 4.39 | High |
| | | 511.9875 | 4.45 | High |
| | 25 | 450.0125 | 4.41 | High |
| | | 469 | 4.49 | High |
| | | 488 | 4.55 | High |
| | | 507 | 4.34 | High |
| | | 511.9875 | 4.41 | High |
| 4FSK | 12.5 | 450.0125 | 4.57 | High |
| | | 469 | 4.58 | High |
| | | 488 | 4.35 | High |
| | | 507 | 4.53 | High |
| | | 511.9875 | 4.57 | High |

# SAR MEASUREMENT RESULTS

This page summarizes the results of the performed dosimetric evaluation.

## SAR Test Data

### Environmental Conditions

**SAR Lab 1:**

| | | |
|---|---|---|
| **Temperature:** | 21.0-22.8 ℃ | 21.2-22.6 ℃ |
| **Relative Humidity:** | 35 % | 38 % |
| **ATM Pressure:** | 101.4 kPa | 101.0 kPa |
| **Test Date:** | 2018/2/9 | 2018/2/10 |

*Testing was performed by Yun Yu, Brave Lu, Jayce Chen.*

**SAR Lab 2:**

| | | | | |
|---|---|---|---|---|
| **Temperature:** | 22.5-23.8 ℃ | 22.0-23.4 ℃ | 21.6-23.2 ℃ | 21.4-22.7 ℃ |
| **Relative Humidity:** | 50 % | 46 % | 45 % | 41 % |
| **ATM Pressure:** | 101.2 kPa | 101.4 kPa | 101.4 kPa | 101.7 kPa |
| **Test Date:** | 2018/2/22 | 2018/2/23 | 2018/2/24 | 2018/2/25 |

| | | | | |
|---|---|---|---|---|
| **Temperature:** | 21.8-23.1 ℃ | 22.3-23.7 ℃ | 22.3-23.9 ℃ | 22.7-24.3 ℃ |
| **Relative Humidity:** | 36 % | 52 % | 53 % | 54 % |
| **ATM Pressure:** | 101.4 kPa | 100.8 kPa | 100.8 kPa | 100.6 kPa |
| **Test Date:** | 2018/2/26 | 2018/3/3 | 2018/3/4 | 2018/3/5 |

| | | | | |
|---|---|---|---|---|
| **Temperature:** | 22.4-24.2 ℃ | 22.2-23.2 ℃ | 22.3-22.8 ℃ | 21.6-23.1 ℃ |
| **Relative Humidity:** | 47 % | 41 % | 40 % | 41 % |
| **ATM Pressure:** | 100.9 kPa | 101.1 kPa | 101.4 kPa | 101.9 kPa |
| **Test Date:** | 2018/3/6 | 2018/3/7 | 2018/3/8 | 2018/3/9 |

*Testing was performed by Gaochao Gong, Sam Liang, William Ye.*

**GSM 850:**

| EUT Position | Frequency (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 824.2 | GSM | 32.35 | 32.6 | 1.059 | 0.25 | 0.265 | 0.27 | 1# |
| | 836.6 | GSM | 32.24 | 32.6 | 1.086 | 0.281 | 0.305 | 0.31 | 2# |
| | 848.8 | GSM | 32.16 | 32.6 | 1.107 | 0.327 | 0.362 | **0.37** | 3# |
| Head Left Tilt | 824.2 | GSM | / | / | / | / | / | / | / |
| | 836.6 | GSM | 32.24 | 32.6 | 1.086 | 0.191 | 0.207 | 0.21 | 4# |
| | 848.8 | GSM | / | / | / | / | / | / | / |
| Head Right Cheek | 824.2 | GSM | / | / | / | / | / | / | / |
| | 836.6 | GSM | 32.24 | 32.6 | 1.086 | 0.246 | 0.267 | 0.27 | 5# |
| | 848.8 | GSM | / | / | / | / | / | / | / |
| Head Right Tilt | 824.2 | GSM | / | / | / | / | / | / | / |
| | 836.6 | GSM | 32.24 | 32.6 | 1.086 | 0.155 | 0.168 | 0.17 | 6# |
| | 848.8 | GSM | / | / | / | / | / | / | / |
| Head Face Up (25mm) | 824.2 | GPRS | / | / | / | / | / | / | / |
| | 836.6 | GPRS | 28.9 | 29.1 | 1.047 | 0.146 | 0.153 | 0.16 | 7# |
| | 848.8 | GPRS | / | / | / | / | / | / | / |
| Body Worn Back | 824.2 | GSM | / | / | / | / | / | / | / |
| | 836.6 | GSM | 32.24 | 32.6 | 1.086 | 0.215 | 0.233 | 0.24 | 8# |
| | 848.8 | GSM | / | / | / | / | / | / | / |
| Body Front (10mm) | 824.2 | GPRS | 28.98 | 29.1 | 1.028 | 0.334 | 0.343 | 0.35 | 9# |
| | 836.6 | GPRS | 28.9 | 29.1 | 1.047 | 0.323 | 0.338 | 0.34 | 10# |
| | 848.8 | GPRS | 28.78 | 29.1 | 1.076 | 0.417 | 0.449 | **0.45** | 11# |
| Body Back (10mm) | 824.2 | GPRS | / | / | / | / | / | / | / |
| | 836.6 | GPRS | 28.9 | 29.1 | 1.047 | 0.168 | 0.176 | 0.18 | 12# |
| | 848.8 | GPRS | / | / | / | / | / | / | / |
| Body Left (10mm) | 824.2 | GPRS | / | / | / | / | / | / | / |
| | 836.6 | GPRS | 28.9 | 29.1 | 1.047 | 0.177 | 0.185 | 0.19 | 13# |
| | 848.8 | GPRS | / | / | / | / | / | / | / |
| Body Right (10mm) | 824.2 | GPRS | / | / | / | / | / | / | / |
| | 836.6 | GPRS | 28.9 | 29.1 | 1.047 | 0.222 | 0.232 | 0.24 | 14# |
| | 848.8 | GPRS | / | / | / | / | / | / | / |
| Body Bottom (10mm) | 824.2 | GPRS | / | / | / | / | / | / | / |
| | 836.6 | GPRS | 28.9 | 29.1 | 1.047 | 0.134 | 0.14 | 0.14 | 15# |
| | 848.8 | GPRS | / | / | / | / | / | | / |

*Testing was performed on Date 2018/3/3(Head Mode) and 2018/3/4(Body Mode) at SAR Lab 2.*

**Note**:

1. When the 1-g SAR is ≤ 0.8W/kg, testing for other channels are optional.
2. The EUT transmit and receive through the same GSM antenna while testing SAR.
3. When SAR or MPE is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance.
4. When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel must be used.
5. The Multi-slot Classes of EUT is Class 12 which has maximum 4 Downlink slots and 4 Uplink slots, the maximum active slots is 5, when perform the multiple slots scan, 2DL+3UL is the worst case.

6. According to IEC 62209-2:2010 ,If the correction ΔSAR has a positive sign, the measured SAR results shall not be corrected.

**GSM 1900:**

| EUT Position | Frequency (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 1850.2 | GSM | 29.07 | 29.2 | 1.03 | 0.256 | 0.264 | 0.27 | 16# |
| | 1880 | GSM | 28.75 | 29.2 | 1.109 | 0.298 | 0.33 | **0.33** | 17# |
| | 1909.8 | GSM | 28.83 | 29.2 | 1.089 | 0.296 | 0.322 | 0.33 | 18# |
| Head Left Tilt | 1850.2 | GSM | / | / | / | / | / | / | / |
| | 1880 | GSM | 28.75 | 29.2 | 1.109 | 0.166 | 0.184 | 0.19 | 19# |
| | 1909.8 | GSM | / | / | / | / | / | / | / |
| Head Right Cheek | 1850.2 | GSM | / | / | / | / | / | / | / |
| | 1880 | GSM | 28.75 | 29.2 | 1.109 | 0.169 | 0.187 | 0.19 | 20# |
| | 1909.8 | GSM | / | / | / | / | / | / | / |
| Head Right Tilt | 1850.2 | GSM | / | / | / | / | / | / | / |
| | 1880 | GSM | 28.75 | 29.2 | 1.109 | 0.094 | 0.104 | 0.11 | 21# |
| | 1909.8 | GSM | / | / | / | / | / | / | / |
| Head Face Up (25mm) | 1850.2 | GPRS | / | / | / | / | / | / | / |
| | 1880 | GPRS | 26.81 | 26.9 | 1.021 | 0.068 | 0.07 | 0.07 | 22# |
| | 1909.8 | GPRS | / | / | / | / | / | / | / |
| Body Worn Back | 1850.2 | GSM | / | / | / | / | / | / | / |
| | 1880 | GSM | 28.75 | 29.2 | 1.109 | 0.093 | 0.103 | 0.11 | 23# |
| | 1909.8 | GSM | / | / | / | / | / | / | / |
| Body Front (10mm) | 1850.2 | GPRS | / | / | / | / | / | / | / |
| | 1880 | GPRS | 26.81 | 26.9 | 1.021 | 0.138 | 0.141 | 0.15 | 24# |
| | 1909.8 | GPRS | / | / | / | / | / | / | / |
| Body Back (10mm) | 1850.2 | GPRS | / | / | / | / | / | / | / |
| | 1880 | GPRS | 26.81 | 26.9 | 1.021 | 0.087 | 0.089 | 0.09 | 25# |
| | 1909.8 | GPRS | / | / | / | / | / | / | / |
| Body Left (10mm) | 1850.2 | GPRS | / | / | / | / | / | / | / |
| | 1880 | GPRS | 26.81 | 26.9 | 1.021 | 0.17 | 0.174 | 0.18 | 26# |
| | 1909.8 | GPRS | / | / | / | / | / | / | / |
| Body Right (10mm) | 1850.2 | GPRS | / | / | / | / | / | / | / |
| | 1880 | GPRS | 26.81 | 26.9 | 1.021 | 0.069 | 0.07 | 0.07 | 27# |
| | 1909.8 | GPRS | / | / | / | / | / | / | / |
| Body Bottom (10mm) | 1850.2 | GPRS | 26.81 | 26.9 | 1.021 | 0.281 | 0.287 | 0.29 | 28# |
| | 1880 | GPRS | 26.81 | 26.9 | 1.021 | 0.283 | 0.289 | 0.29 | 29# |
| | 1909.8 | GPRS | 26.67 | 26.9 | 1.054 | 0.293 | 0.309 | **0.31** | 30# |

*Testing was performed on Date 2018/3/7(Head Mode) and 2018/3/8(Body Mode) at SAR Lab 2.*

**Note**:

1. When the 1-g SAR is ≤ 0.8W/kg, testing for other channels are optional.
2. The EUT transmit and receive through the same GSM antenna while testing SAR.
3. When SAR or MPE is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance.
4. When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel must be used.

5. The Multi-slot Classes of EUT is Class 12 which has maximum 4 Downlink slots and 4 Uplink slots, the maximum active slots is 5, when perform the multiple slots scan, 2DL+3UL is the worst case.
6. According to IEC 62209-2:2010 ,If the correction ΔSAR has a positive sign, the measured SAR results shall not be corrected.

**WCDMA Band 2:**

| EUT Position | Frequency (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 1852.4 | RMC | 22.77 | 22.9 | 1.03 | 0.677 | 0.697 | 0.70 | 31# |
| | 1880 | RMC | 22.68 | 22.9 | 1.052 | 0.672 | 0.707 | **0.71** | 32# |
| | 1907.6 | RMC | 22.8 | 22.9 | 1.023 | 0.613 | 0.627 | 0.63 | 33# |
| Head Left Tilt | 1852.4 | RMC | / | / | / | / | / | / | / |
| | 1880 | RMC | 22.68 | 22.9 | 1.052 | 0.346 | 0.364 | 0.37 | 34# |
| | 1907.6 | RMC | / | / | / | / | / | / | / |
| Head Right Cheek | 1852.4 | RMC | / | / | / | / | / | / | / |
| | 1880 | RMC | 22.68 | 22.9 | 1.052 | 0.352 | 0.37 | 0.37 | 35# |
| | 1907.6 | RMC | / | / | / | / | / | / | / |
| Head Right Tilt | 1852.4 | RMC | / | / | / | / | / | / | / |
| | 1880 | RMC | 22.68 | 22.9 | 1.052 | 0.196 | 0.206 | 0.21 | 36# |
| | 1907.6 | RMC | / | / | / | / | / | / | / |
| Head Face Up (25mm) | 1852.4 | RMC | / | / | / | / | / | / | / |
| | 1880 | RMC | 22.68 | 22.9 | 1.052 | 0.274 | 0.288 | 0.29 | 37# |
| | 1907.6 | RMC | / | / | / | / | / | / | / |
| Body Front (10mm) | 1852.4 | RMC | / | / | / | / | / | / | / |
| | 1880 | RMC | 22.68 | 22.9 | 1.052 | 0.416 | 0.438 | 0.44 | 38# |
| | 1907.6 | RMC | / | / | / | / | / | / | / |
| Body Back (10mm) | 1852.4 | RMC | / | / | / | / | / | / | / |
| | 1880 | RMC | 22.68 | 22.9 | 1.052 | 0.406 | 0.427 | 0.43 | 39# |
| | 1907.6 | RMC | / | / | / | / | / | / | / |
| Body Left (10mm) | 1852.4 | RMC | / | / | / | / | / | / | / |
| | 1880 | RMC | 22.68 | 22.9 | 1.052 | 0.593 | 0.624 | 0.63 | 40# |
| | 1907.6 | RMC | / | / | / | / | / | / | / |
| Body Right (10mm) | 1852.4 | RMC | / | / | / | / | / | / | / |
| | 1880 | RMC | 22.68 | 22.9 | 1.052 | 0.234 | 0.246 | 0.25 | 41# |
| | 1907.6 | RMC | / | / | / | / | / | / | / |
| Body Bottom (10mm) | 1852.4 | RMC | 22.77 | 22.9 | 1.03 | 0.731 | 0.753 | **0.76** | 42# |
| | 1880 | RMC | 22.68 | 22.9 | 1.052 | 0.669 | 0.704 | 0.71 | 43# |
| | 1907.6 | RMC | 22.8 | 22.9 | 1.023 | 0.734 | 0.751 | 0.76 | 44# |

*Testing was performed on Date 2018/3/7(Head Mode) and 2018/3/8(Body Mode) at SAR Lab 2.*

**WCDMA Band 4:**

| EUT Position | Frequency (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 1712.4 | RMC | / | / | / | / | / | / | / |
| | 1732.6 | RMC | 22.16 | 22.4 | 1.057 | 0.19 | 0.201 | 0.21 | 45# |
| | 1752.6 | RMC | / | / | / | / | / | / | / |
| Head Left Tilt | 1712.4 | RMC | / | / | / | / | / | / | / |
| | 1732.6 | RMC | 22.16 | 22.4 | 1.057 | 0.117 | 0.124 | 0.13 | 46# |
| | 1752.6 | RMC | / | / | / | / | / | / | / |
| Head Right Cheek | 1712.4 | RMC | / | / | / | / | / | / | / |
| | 1732.6 | RMC | 22.16 | 22.4 | 1.057 | 0.148 | 0.156 | 0.16 | 47# |
| | 1752.6 | RMC | / | / | / | / | / | / | / |
| Head Right Tilt | 1712.4 | RMC | / | / | / | / | / | / | / |
| | 1732.6 | RMC | 22.16 | 22.4 | 1.057 | 0.077 | 0.081 | 0.09 | 48# |
| | 1752.6 | RMC | / | / | / | / | / | / | / |
| Head Face Up (25mm) | 1712.4 | RMC | 22.21 | 22.4 | 1.045 | 0.254 | 0.265 | 0.27 | 49# |
| | 1732.6 | RMC | 22.16 | 22.4 | 1.057 | 0.217 | 0.229 | 0.23 | 50# |
| | 1752.6 | RMC | 22.29 | 22.4 | 1.026 | 0.265 | 0.272 | **0.28** | 51# |
| Body Front (10mm) | 1712.4 | RMC | / | / | / | / | / | / | / |
| | 1732.6 | RMC | 22.16 | 22.4 | 1.057 | 0.56 | 0.592 | 0.60 | 52# |
| | 1752.6 | RMC | / | / | / | / | / | / | / |
| Body Back (10mm) | 1712.4 | RMC | / | / | / | / | / | / | / |
| | 1732.6 | RMC | 22.16 | 22.4 | 1.057 | 0.35 | 0.37 | 0.37 | 53# |
| | 1752.6 | RMC | / | / | / | / | / | / | / |
| Body Left (10mm) | 1712.4 | RMC | / | / | / | / | / | / | / |
| | 1732.6 | RMC | 22.16 | 22.4 | 1.057 | 0.358 | 0.378 | 0.38 | 54# |
| | 1752.6 | RMC | / | / | / | / | / | / | / |
| Body Right (10mm) | 1712.4 | RMC | / | / | / | / | / | / | / |
| | 1732.6 | RMC | 22.16 | 22.4 | 1.057 | 0.108 | 0.114 | 0.12 | 55# |
| | 1752.6 | RMC | / | / | / | / | / | / | / |
| Body Bottom (10mm) | 1712.4 | RMC | 22.21 | 22.4 | 1.045 | 0.593 | 0.62 | 0.62 | 56# |
| | 1732.6 | RMC | 22.16 | 22.4 | 1.057 | 0.65 | 0.687 | **0.69** | 57# |
| | 1752.6 | RMC | 22.29 | 22.4 | 1.026 | 0.516 | 0.529 | 0.53 | 58# |

*Testing was performed on Date 2018/2/22(Head Mode) and 2018/2/24(Body Mode) at SAR Lab 2.*

**WCDMA Band 5:**

| EUT Position | Frequency (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 826.4 | RMC | 22.7 | 22.8 | 1.023 | 0.268 | 0.274 | 0.28 | 59# |
| | 836.6 | RMC | 22.33 | 22.8 | 1.114 | 0.285 | 0.317 | 0.32 | 60# |
| | 846.6 | RMC | 22.32 | 22.8 | 1.117 | 0.297 | 0.332 | **0.34** | 61# |
| Head Left Tilt | 826.4 | RMC | / | / | / | / | / | / | / |
| | 836.6 | RMC | 22.33 | 22.8 | 1.114 | 0.163 | 0.182 | 0.19 | 62# |
| | 846.6 | RMC | / | / | / | / | / | / | / |
| Head Right Cheek | 826.4 | RMC | / | / | / | / | / | / | / |
| | 836.6 | RMC | 22.33 | 22.8 | 1.114 | 0.253 | 0.282 | 0.29 | 63# |
| | 846.6 | RMC | / | / | / | / | / | / | / |
| Head Right Tilt | 826.4 | RMC | / | / | / | / | / | / | / |
| | 836.6 | RMC | 22.33 | 22.8 | 1.114 | 0.131 | 0.146 | 0.15 | 64# |
| | 846.6 | RMC | / | / | / | / | / | / | / |
| Head Face Up (25mm) | 826.4 | RMC | / | / | / | / | / | / | / |
| | 836.6 | RMC | 22.33 | 22.8 | 1.114 | 0.098 | 0.109 | 0.11 | 65# |
| | 846.6 | RMC | / | / | / | / | / | / | / |
| Body Front (10mm) | 826.4 | RMC | 22.7 | 22.8 | 1.023 | 0.465 | 0.476 | 0.48 | 66# |
| | 836.6 | RMC | 22.33 | 22.8 | 1.114 | 0.48 | 0.535 | 0.54 | 67# |
| | 846.6 | RMC | 22.32 | 22.8 | 1.117 | 0.492 | 0.55 | **0.55** | 68# |
| Body Back (10mm) | 826.4 | RMC | / | / | / | / | / | / | / |
| | 836.6 | RMC | 22.33 | 22.8 | 1.114 | 0.238 | 0.265 | 0.27 | 69# |
| | 846.6 | RMC | / | / | / | / | / | / | / |
| Body Left (10mm) | 826.4 | RMC | / | / | / | / | / | / | / |
| | 836.6 | RMC | 22.33 | 22.8 | 1.114 | 0.247 | 0.275 | 0.28 | 70# |
| | 846.6 | RMC | / | / | / | / | / | / | / |
| Body Right (10mm) | 826.4 | RMC | / | / | / | / | / | / | / |
| | 836.6 | RMC | 22.33 | 22.8 | 1.114 | 0.362 | 0.403 | 0.41 | 71# |
| | 846.6 | RMC | / | / | / | / | / | / | / |
| Body Bottom (10mm) | 826.4 | RMC | / | / | / | / | / | / | / |
| | 836.6 | RMC | 22.33 | 22.8 | 1.114 | 0.225 | 0.251 | 0.26 | 72# |
| | 846.6 | RMC | / | / | / | / | / | / | / |

*Testing was performed on Date 2018/3/3(Head Mode) and 2018/3/4(Body Mode) at SAR Lab 2.*

**Note**:

1. When the 1-g SAR is≤ 0.8W/kg, testing for other channels are optional.
2. The EUT transmit and receive through the same antenna while testing SAR.
3. The default test configuration is to measure SAR with an established radio link between the EUT and a communication test set using a 12.2 kbps RMC (reference measurement Channel) Configured in Test Loop Model.
4. KDB 941225 D01-Body SAR is not required for HSDPA/HSUPA/HSPA+ when the maximum average output of each RF channel is less than ¼ dB higher than measured 12.2kbps RMC or the maximum SAR for 12.2kbps RMC is < 75% of SAR limit.
5. When SAR or MPE is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance.
6. According to IEC 62209-2:2010 ,If the correction ΔSAR has a positive sign, the measured SAR results shall not be corrected.

**LTE Band 2:**

| EUT Position | Frequency (MHz) | Bandwidth (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 1860 | 20 | 1RB | 22.64 | 23.1 | 1.112 | 0.7 | 0.778 | **0.78** | 73# |
| | 1880 | 20 | 1RB | 22.95 | 23.1 | 1.035 | 0.643 | 0.666 | 0.67 | 74# |
| | 1900 | 20 | 1RB | 23.03 | 23.1 | 1.016 | 0.661 | 0.672 | 0.68 | 75# |
| | 1880 | 20 | 50%RB | 22.23 | 23.1 | 1.222 | 0.532 | 0.65 | 0.65 | 76# |
| Head Left Tilt | 1860 | 20 | 1RB | 22.64 | / | / | / | / | / | / |
| | 1880 | 20 | 1RB | 22.95 | 23.1 | 1.035 | 0.155 | 0.16 | 0.16 | 77# |
| | 1900 | 20 | 1RB | 23.03 | / | / | / | / | / | / |
| | 1880 | 20 | 50%RB | 22.23 | 23.1 | 1.222 | 0.115 | 0.141 | 0.15 | 78# |
| Head Right Cheek | 1860 | 20 | 1RB | 22.64 | / | / | / | / | / | / |
| | 1880 | 20 | 1RB | 22.95 | 23.1 | 1.035 | 0.352 | 0.364 | 0.37 | 79# |
| | 1900 | 20 | 1RB | 23.03 | / | / | / | / | / | / |
| | 1880 | 20 | 50%RB | 22.23 | 23.1 | 1.222 | 0.209 | 0.255 | 0.26 | 80# |
| Head Right Tilt | 1860 | 20 | 1RB | 22.64 | / | / | / | / | / | / |
| | 1880 | 20 | 1RB | 22.95 | 23.1 | 1.035 | 0.098 | 0.101 | 0.11 | 81# |
| | 1900 | 20 | 1RB | 23.03 | / | / | / | / | / | / |
| | 1880 | 20 | 50%RB | 22.23 | 23.1 | 1.222 | 0.077 | 0.094 | 0.10 | 82# |
| Head Face Up (25mm) | 1860 | 20 | 1RB | 22.64 | / | / | / | / | / | / |
| | 1880 | 20 | 1RB | 22.95 | 23.1 | 1.035 | 0.071 | 0.073 | 0.08 | 83# |
| | 1900 | 20 | 1RB | 23.03 | / | / | / | / | / | / |
| | 1880 | 20 | 50%RB | 22.23 | 23.1 | 1.222 | 0.081 | 0.099 | 0.10 | 84# |
| Body Front (10mm) | 1860 | 20 | 1RB | 22.64 | 23.1 | 1.112 | 0.443 | 0.493 | **0.50** | 85# |
| | 1880 | 20 | 1RB | 22.95 | 23.1 | 1.035 | 0.418 | 0.433 | 0.44 | 86# |
| | 1900 | 20 | 1RB | 23.03 | 23.1 | 1.016 | 0.369 | 0.375 | 0.38 | 87# |
| | 1880 | 20 | 50%RB | 22.23 | 23.1 | 1.222 | 0.303 | 0.37 | 0.37 | 88# |
| Body Back (10mm) | 1860 | 20 | 1RB | 22.64 | / | / | / | / | / | / |
| | 1880 | 20 | 1RB | 22.95 | 23.1 | 1.035 | 0.18 | 0.186 | 0.19 | 89# |
| | 1900 | 20 | 1RB | 23.03 | / | / | / | / | / | / |
| | 1880 | 20 | 50%RB | 22.23 | 23.1 | 1.222 | 0.142 | 0.174 | 0.18 | 90# |
| Body Left (10mm) | 1860 | 20 | 1RB | 22.64 | / | / | / | / | / | / |
| | 1880 | 20 | 1RB | 22.95 | 23.1 | 1.035 | 0.507 | 0.525 | 0.53 | 91# |
| | 1900 | 20 | 1RB | 23.03 | / | / | / | / | / | / |
| | 1880 | 20 | 50%RB | 22.23 | 23.1 | 1.222 | 0.416 | 0.508 | 0.51 | 92# |
| Body Right (10mm) | 1860 | 20 | 1RB | 22.64 | / | / | / | / | / | / |
| | 1880 | 20 | 1RB | 22.95 | 23.1 | 1.035 | 0.183 | 0.189 | 0.19 | 93# |
| | 1900 | 20 | 1RB | 23.03 | / | / | / | / | / | / |
| | 1880 | 20 | 50%RB | 22.23 | 23.1 | 1.222 | 0.135 | 0.165 | 0.17 | 94# |
| Body Bottom (10mm) | 1860 | 20 | 1RB | 22.64 | / | / | / | / | / | / |
| | 1880 | 20 | 1RB | 22.95 | 23.1 | 1.035 | 0.396 | 0.41 | 0.41 | 95# |
| | 1900 | 20 | 1RB | 23.03 | / | / | / | / | / | / |
| | 1880 | 20 | 50%RB | 22.23 | 23.1 | 1.222 | 0.332 | 0.406 | 0.41 | 96# |

*Testing was performed on Date 2018/3/7(Head Mode) and 2018/3/8(Body Mode) at SAR Lab 2.*

**LTE Band 4:**

| EUT Position | Frequency (MHz) | Bandwidth (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 1720 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1732.5 | 20 | 1RB | 22.79 | 23.1 | 1.074 | 0.269 | 0.289 | 0.29 | 97# |
| | 1745 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1732.5 | 20 | 50%RB | 21.89 | 23.1 | 1.321 | 0.22 | 0.291 | 0.30 | 98# |
| Head Left Tilt | 1720 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1732.5 | 20 | 1RB | 22.79 | 23.1 | 1.074 | 0.116 | 0.125 | 0.13 | 99# |
| | 1745 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1732.5 | 20 | 50%RB | 21.89 | 23.1 | 1.321 | 0.086 | 0.114 | 0.12 | 100# |
| Head Right Cheek | 1720 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1732.5 | 20 | 1RB | 22.79 | 23.1 | 1.074 | 0.142 | 0.153 | 0.16 | 101# |
| | 1745 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1732.5 | 20 | 50%RB | 21.89 | 23.1 | 1.321 | 0.109 | 0.144 | 0.15 | 102# |
| Head Right Tilt | 1720 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1732.5 | 20 | 1RB | 22.79 | 23.1 | 1.074 | 0.082 | 0.088 | 0.09 | 103# |
| | 1745 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1732.5 | 20 | 50%RB | 21.89 | 23.1 | 1.321 | 0.062 | 0.082 | 0.09 | 104# |
| Head Face Up (25mm) | 1720 | 20 | 1RB | 22.71 | 23.1 | 1.094 | 0.258 | 0.282 | 0.29 | 105# |
| | 1732.5 | 20 | 1RB | 22.79 | 23.1 | 1.074 | 0.283 | 0.304 | **0.31** | **106#** |
| | 1745 | 20 | 1RB | 22.73 | 23.1 | 1.089 | 0.272 | 0.296 | 0.30 | 107# |
| | 1732.5 | 20 | 50%RB | 21.89 | 23.1 | 1.321 | 0.221 | 0.292 | 0.30 | 108# |
| Body Front (10mm) | 1720 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1732.5 | 20 | 1RB | 22.79 | 23.1 | 1.074 | 0.46 | 0.494 | 0.50 | 109# |
| | 1745 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1732.5 | 20 | 50%RB | 21.89 | 23.1 | 1.321 | 0.395 | 0.522 | 0.53 | 110# |
| Body Back (10mm) | 1720 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1732.5 | 20 | 1RB | 22.79 | 23.1 | 1.074 | 0.302 | 0.324 | 0.33 | 111# |
| | 1745 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1732.5 | 20 | 50%RB | 21.89 | 23.1 | 1.321 | 0.248 | 0.328 | 0.33 | 112# |
| Body Left (10mm) | 1720 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1732.5 | 20 | 1RB | 22.79 | 23.1 | 1.074 | 0.38 | 0.408 | 0.41 | 113# |
| | 1745 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1732.5 | 20 | 50%RB | 21.89 | 23.1 | 1.321 | 0.284 | 0.375 | 0.38 | 114# |
| Body Right (10mm) | 1720 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1732.5 | 20 | 1RB | 22.79 | 23.1 | 1.074 | 0.108 | 0.116 | 0.12 | 115# |
| | 1745 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1732.5 | 20 | 50%RB | 21.89 | 23.1 | 1.321 | 0.088 | 0.116 | 0.12 | 116# |
| Body Bottom (10mm) | 1720 | 20 | 1RB | 22.71 | 23.1 | 1.094 | 0.634 | 0.694 | 0.70 | 117# |
| | 1732.5 | 20 | 1RB | 22.79 | 23.1 | 1.074 | 0.654 | 0.702 | **0.71** | **118#** |
| | 1745 | 20 | 1RB | 22.73 | 23.1 | 1.089 | 0.623 | 0.678 | 0.68 | 119# |
| | 1732.5 | 20 | 50%RB | 21.89 | 23.1 | 1.321 | 0.501 | 0.662 | 0.67 | 120# |

*Testing was performed on Date 2018/2/22(Head Mode) and 2018/2/24(Body Mode) at SAR Lab 2.*

**LTE Band 5:**

| EUT Position | Frequency (MHz) | Bandwidth (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 829 | 10 | 1RB | 22.37 | 22.9 | 1.13 | 0.218 | 0.246 | 0.25 | 121# |
| | 836.5 | 10 | 1RB | 22.57 | 22.9 | 1.079 | 0.281 | 0.303 | **0.31** | 122# |
| | 844 | 10 | 1RB | 22.41 | 22.9 | 1.119 | 0.226 | 0.253 | 0.26 | 123# |
| | 836.5 | 10 | 50%RB | 21.84 | 22.9 | 1.276 | 0.221 | 0.282 | 0.29 | 124# |
| Head Left Tilt | 829 | 10 | 1RB | 22.37 | / | / | / | / | / | / |
| | 836.5 | 10 | 1RB | 22.57 | 22.9 | 1.079 | 0.181 | 0.195 | 0.20 | 125# |
| | 844 | 10 | 1RB | 22.41 | / | / | / | / | / | / |
| | 836.5 | 10 | 50%RB | 21.84 | 22.9 | 1.276 | 0.144 | 0.184 | 0.19 | 126# |
| Head Right Cheek | 829 | 10 | 1RB | 22.37 | / | / | / | / | / | / |
| | 836.5 | 10 | 1RB | 22.57 | 22.9 | 1.079 | 0.277 | 0.299 | 0.30 | 127# |
| | 844 | 10 | 1RB | 22.41 | / | / | / | / | / | / |
| | 836.5 | 10 | 50%RB | 21.84 | 22.9 | 1.276 | 0.214 | 0.273 | 0.28 | 128# |
| Head Right Tilt | 829 | 10 | 1RB | 22.37 | / | / | / | / | / | / |
| | 836.5 | 10 | 1RB | 22.57 | 22.9 | 1.079 | 0.141 | 0.152 | 0.16 | 129# |
| | 844 | 10 | 1RB | 22.41 | / | / | / | / | / | / |
| | 836.5 | 10 | 50%RB | 21.84 | 22.9 | 1.276 | 0.107 | 0.137 | 0.14 | 130# |
| Head Face Up (25mm) | 829 | 10 | 1RB | 22.37 | / | / | / | / | / | / |
| | 836.5 | 10 | 1RB | 22.57 | 22.9 | 1.079 | 0.055 | 0.059 | 0.06 | 131# |
| | 844 | 10 | 1RB | 22.41 | / | / | / | / | / | / |
| | 836.5 | 10 | 50%RB | 21.84 | 22.9 | 1.276 | 0.046 | 0.059 | 0.06 | 132# |
| Body Front (10mm) | 829 | 10 | 1RB | 22.37 | 22.9 | 1.13 | 0.377 | 0.426 | 0.43 | 133# |
| | 836.5 | 10 | 1RB | 22.57 | 22.9 | 1.079 | 0.422 | 0.455 | **0.46** | 134# |
| | 844 | 10 | 1RB | 22.41 | 22.9 | 1.119 | 0.387 | 0.433 | 0.44 | 135# |
| | 836.5 | 10 | 50%RB | 21.84 | 22.9 | 1.276 | 0.312 | 0.398 | 0.40 | 136# |
| Body Back (10mm) | 829 | 10 | 1RB | 22.37 | / | / | / | / | / | / |
| | 836.5 | 10 | 1RB | 22.57 | 22.9 | 1.079 | 0.196 | 0.211 | 0.22 | 137# |
| | 844 | 10 | 1RB | 22.41 | / | / | / | / | / | / |
| | 836.5 | 10 | 50%RB | 21.84 | 22.9 | 1.276 | 0.156 | 0.199 | 0.20 | 138# |
| Body Left (10mm) | 829 | 10 | 1RB | 22.37 | / | / | / | / | / | / |
| | 836.5 | 10 | 1RB | 22.57 | 22.9 | 1.079 | 0.237 | 0.256 | 0.26 | 139# |
| | 844 | 10 | 1RB | 22.41 | / | / | / | / | / | / |
| | 836.5 | 10 | 50%RB | 21.84 | 22.9 | 1.276 | 0.178 | 0.227 | 0.23 | 140# |
| Body Right (10mm) | 829 | 10 | 1RB | 22.37 | / | / | / | / | / | / |
| | 836.5 | 10 | 1RB | 22.57 | 22.9 | 1.079 | 0.28 | 0.302 | 0.31 | 141# |
| | 844 | 10 | 1RB | 22.41 | / | / | / | / | / | / |
| | 836.5 | 10 | 50%RB | 21.84 | 22.9 | 1.276 | 0.227 | 0.29 | 0.29 | 142# |
| Body Bottom (10mm) | 829 | 10 | 1RB | 22.37 | / | / | / | / | / | / |
| | 836.5 | 10 | 1RB | 22.57 | 22.9 | 1.079 | 0.152 | 0.164 | 0.17 | 143# |
| | 844 | 10 | 1RB | 22.41 | / | / | / | / | / | / |
| | 836.5 | 10 | 50%RB | 21.84 | 22.9 | 1.276 | 0.114 | 0.145 | 0.15 | 144# |

*Testing was performed on Date 2018/3/3(Head Mode) and 2018/3/4(Body Mode) at SAR Lab 2.*

**LTE Band 7:**

| EUT Position | Frequency (MHz) | Bandwidth (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 2510 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2535 | 20 | 1RB | 22.71 | 23 | 1.069 | 0.421 | 0.45 | 0.45 | 145# |
| | 2560 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2535 | 20 | 50%RB | 22.62 | 23 | 1.091 | 0.346 | 0.377 | 0.38 | 146# |
| Head Left Tilt | 2510 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2535 | 20 | 1RB | 22.71 | 23 | 1.069 | 0.326 | 0.348 | 0.35 | 147# |
| | 2560 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2535 | 20 | 50%RB | 22.62 | 23 | 1.091 | 0.267 | 0.291 | 0.30 | 148# |
| Head Right Cheek | 2510 | 20 | 1RB | 22.48 | 23 | 1.127 | 0.615 | 0.693 | 0.70 | 149# |
| | 2535 | 20 | 1RB | 22.71 | 23 | 1.069 | 0.683 | 0.73 | 0.73 | 150# |
| | 2560 | 20 | 1RB | 22.77 | 23 | 1.054 | 0.739 | 0.779 | **0.78** | **151#** Note* |
| | 2535 | 20 | 50%RB | 22.62 | 23 | 1.091 | 0.531 | 0.579 | 0.58 | 152# |
| Head Right Tilt | 2510 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2535 | 20 | 1RB | 22.71 | 23 | 1.069 | 0.214 | 0.229 | 0.23 | 153# |
| | 2560 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2535 | 20 | 50%RB | 22.62 | 23 | 1.091 | 0.143 | 0.156 | 0.16 | 154# |
| Head Face Up (25mm) | 2510 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2535 | 20 | 1RB | 22.71 | 23 | 1.069 | 0.102 | 0.109 | 0.11 | 155# |
| | 2560 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2535 | 20 | 50%RB | 22.62 | 23 | 1.091 | 0.08 | 0.087 | 0.09 | 156# |
| Body Front (10mm) | 2510 | 20 | 1RB | 22.48 | 23 | 1.127 | 0.413 | 0.465 | 0.47 | 157# |
| | 2535 | 20 | 1RB | 22.71 | 23 | 1.069 | 0.407 | 0.435 | 0.44 | 158# |
| | 2560 | 20 | 1RB | 22.77 | 23 | 1.054 | 0.461 | 0.486 | 0.49 | 159# Note* |
| | 2535 | 20 | 50%RB | 22.62 | 23 | 1.091 | 0.45 | 0.491 | **0.50** | **160#** |
| Body Back (10mm) | 2510 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2535 | 20 | 1RB | 22.71 | 23 | 1.069 | 0.246 | 0.263 | 0.27 | 161# |
| | 2560 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2535 | 20 | 50%RB | 22.62 | 23 | 1.091 | 0.215 | 0.235 | 0.24 | 162# |
| Body Left (10mm) | 2510 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2535 | 20 | 1RB | 22.71 | 23 | 1.069 | 0.227 | 0.243 | 0.25 | 163# |
| | 2560 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2535 | 20 | 50%RB | 22.62 | 23 | 1.091 | 0.169 | 0.184 | 0.19 | 164# |
| Body Right (10mm) | 2510 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2535 | 20 | 1RB | 22.71 | 23 | 1.069 | 0.297 | 0.317 | 0.32 | 165# |
| | 2560 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2535 | 20 | 50%RB | 22.62 | 23 | 1.091 | 0.225 | 0.245 | 0.25 | 166# |
| Body Bottom (10mm) | 2510 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2535 | 20 | 1RB | 22.71 | 23 | 1.069 | 0.199 | 0.213 | 0.22 | 167# |
| | 2560 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2535 | 20 | 50%RB | 22.62 | 23 | 1.091 | 0.147 | 0.16 | 0.16 | 168# |

*Testing was performed on Date 2018/2/23(Head Mode) and 2018/2/23(Body Mode) except Channel 2560MHz performed on 2018/2/25(Head Mode) and 2018/2/25(Body Mode) at SAR Lab 2.*

**LTE Band 12:**

| EUT Position | Frequency (MHz) | Bandwidth (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 704 | 10 | 1RB | 22.69 | 23.1 | 1.099 | 0.198 | 0.218 | 0.22 | 169# |
| | 707.5 | 10 | 1RB | 22.85 | 23.1 | 1.059 | 0.236 | 0.25 | **0.25** | 170# |
| | 711 | 10 | 1RB | 22.8 | 23.1 | 1.072 | 0.218 | 0.234 | 0.24 | 171# |
| | 707.5 | 10 | 50%RB | 22.03 | 23.1 | 1.279 | 0.164 | 0.21 | 0.21 | 172# |
| Head Left Tilt | 704 | 10 | 1RB | 22.69 | / | / | / | / | / | / |
| | 707.5 | 10 | 1RB | 22.85 | 23.1 | 1.059 | 0.078 | 0.083 | 0.09 | 173# |
| | 711 | 10 | 1RB | 22.8 | / | / | / | / | / | / |
| | 707.5 | 10 | 50%RB | 22.63 | 23.1 | 1.114 | 0.07 | 0.078 | 0.08 | 174# |
| Head Right Cheek | 704 | 10 | 1RB | 22.69 | / | / | / | / | / | / |
| | 707.5 | 10 | 1RB | 22.85 | 23.1 | 1.059 | 0.193 | 0.204 | 0.21 | 175# |
| | 711 | 10 | 1RB | 22.8 | / | / | / | / | / | / |
| | 707.5 | 10 | 50%RB | 22.63 | 23.1 | 1.114 | 0.159 | 0.177 | 0.18 | 176# |
| Head Right Tilt | 704 | 10 | 1RB | 22.69 | / | / | / | / | / | / |
| | 707.5 | 10 | 1RB | 22.85 | 23.1 | 1.059 | 0.077 | 0.082 | 0.09 | 177# |
| | 711 | 10 | 1RB | 22.8 | / | / | / | / | / | / |
| | 707.5 | 10 | 50%RB | 22.63 | 23.1 | 1.114 | 0.068 | 0.076 | 0.08 | 178# |
| Head Face Up (25mm) | 704 | 10 | 1RB | 22.69 | / | / | / | / | / | / |
| | 707.5 | 10 | 1RB | 22.85 | 23.1 | 1.059 | 0.075 | 0.079 | 0.08 | 179# |
| | 711 | 10 | 1RB | 22.8 | / | / | / | / | / | / |
| | 707.5 | 10 | 50%RB | 22.63 | 23.1 | 1.114 | 0.061 | 0.068 | 0.07 | 180# |
| Body Front (10mm) | 704 | 10 | 1RB | 22.69 | 23.1 | 1.099 | 0.252 | 0.277 | 0.28 | 181# |
| | 707.5 | 10 | 1RB | 22.85 | 23.1 | 1.059 | 0.314 | 0.333 | **0.34** | 182# |
| | 711 | 10 | 1RB | 22.8 | 23.1 | 1.072 | 0.284 | 0.304 | 0.31 | 183# |
| | 707.5 | 10 | 50%RB | 22.63 | 23.1 | 1.114 | 0.25 | 0.279 | 0.28 | 184# |
| Body Back (10mm) | 704 | 10 | 1RB | 22.69 | / | / | / | / | / | / |
| | 707.5 | 10 | 1RB | 22.85 | 23.1 | 1.059 | 0.078 | 0.083 | 0.09 | 185# |
| | 711 | 10 | 1RB | 22.8 | / | / | / | / | / | / |
| | 707.5 | 10 | 50%RB | 22.63 | 23.1 | 1.114 | 0.07 | 0.078 | 0.08 | 186# |
| Body Left (10mm) | 704 | 10 | 1RB | 22.69 | / | / | / | / | / | / |
| | 707.5 | 10 | 1RB | 22.85 | 23.1 | 1.059 | 0.161 | 0.17 | 0.17 | 187# |
| | 711 | 10 | 1RB | 22.8 | / | / | / | / | / | / |
| | 707.5 | 10 | 50%RB | 22.63 | 23.1 | 1.114 | 0.133 | 0.148 | 0.15 | 188# |
| Body Right (10mm) | 704 | 10 | 1RB | 22.69 | / | / | / | / | / | / |
| | 707.5 | 10 | 1RB | 22.85 | 23.1 | 1.059 | 0.085 | 0.09 | 0.09 | 189# |
| | 711 | 10 | 1RB | 22.8 | / | / | / | / | / | / |
| | 707.5 | 10 | 50%RB | 22.63 | 23.1 | 1.114 | 0.083 | 0.092 | 0.10 | 190# |
| Body Bottom (10mm) | 704 | 10 | 1RB | 22.69 | / | / | / | / | / | / |
| | 707.5 | 10 | 1RB | 22.85 | 23.1 | 1.059 | 0.087 | 0.092 | 0.10 | 191# |
| | 711 | 10 | 1RB | 22.8 | / | / | / | / | / | / |
| | 707.5 | 10 | 50%RB | 22.63 | 23.1 | 1.114 | 0.066 | 0.074 | 0.08 | 192# |

*Testing was performed on Date 2018/3/3(Head Mode) and 2018/3/4(Body Mode) at SAR Lab 2.*

**LTE Band 13:**

| EUT Position | Frequency (MHz) | Bandwidth (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 782 | 10 | 1RB | 22.85 | 22.9 | 1.012 | 0.256 | 0.259 | **0.26** | 193# |
| | 782 | 10 | 50%RB | 22.04 | 22.9 | 1.219 | 0.209 | 0.255 | 0.26 | 194# |
| Head Left Tilt | 782 | 10 | 1RB | 22.85 | 22.9 | 1.012 | 0.155 | 0.157 | 0.16 | 195# |
| | 782 | 10 | 50%RB | 22.04 | 22.9 | 1.219 | 0.119 | 0.145 | 0.15 | 196# |
| Head Right Cheek | 782 | 10 | 1RB | 22.85 | 22.9 | 1.012 | 0.234 | 0.237 | 0.24 | 197# |
| | 782 | 10 | 50%RB | 22.04 | 22.9 | 1.219 | 0.177 | 0.216 | 0.22 | 198# |
| Head Right Tilt | 782 | 10 | 1RB | 22.85 | 22.9 | 1.012 | 0.134 | 0.136 | 0.14 | 199# |
| | 782 | 10 | 50%RB | 22.04 | 22.9 | 1.219 | 0.104 | 0.127 | 0.13 | 200# |
| Head Face Up (25mm) | 782 | 10 | 1RB | 22.85 | 22.9 | 1.012 | 0.101 | 0.102 | 0.11 | 201# |
| | 782 | 10 | 50%RB | 22.04 | 22.9 | 1.219 | 0.078 | 0.095 | 0.10 | 202# |
| Body Front (10mm) | 782 | 10 | 1RB | 22.85 | 22.9 | 1.012 | 0.325 | 0.329 | **0.33** | 203# |
| | 782 | 10 | 50%RB | 22.04 | 22.9 | 1.219 | 0.243 | 0.296 | 0.30 | 204# |
| Body Back (10mm) | 782 | 10 | 1RB | 22.85 | 22.9 | 1.012 | 0.165 | 0.167 | 0.17 | 205# |
| | 782 | 10 | 50%RB | 22.04 | 22.9 | 1.219 | 0.125 | 0.152 | 0.16 | 206# |
| Body Left (10mm) | 782 | 10 | 1RB | 22.85 | 22.9 | 1.012 | 0.26 | 0.263 | 0.27 | 207# |
| | 782 | 10 | 50%RB | 22.04 | 22.9 | 1.219 | 0.194 | 0.236 | 0.24 | 208# |
| Body Right (10mm) | 782 | 10 | 1RB | 22.85 | 22.9 | 1.012 | 0.297 | 0.301 | 0.31 | 209# |
| | 782 | 10 | 50%RB | 22.04 | 22.9 | 1.219 | 0.224 | 0.273 | 0.28 | 210# |
| Body Bottom (10mm) | 782 | 10 | 1RB | 22.85 | 22.9 | 1.012 | 0.067 | 0.068 | 0.07 | 211# |
| | 782 | 10 | 50%RB | 22.04 | 22.9 | 1.219 | 0.054 | 0.066 | 0.07 | 212# |

*Testing was performed on Date 2018/3/5(Head Mode) and 2018/3/6(Body Mode) at SAR Lab 2.*

**LTE Band 17:**

| EUT Position | Frequency (MHz) | Bandwidth (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 709 | 10 | 1RB | 22.71 | 23.1 | 1.094 | 0.228 | 0.249 | **0.25** | 213# |
| | 710 | 10 | 1RB | 23.03 | 23.1 | 1.016 | 0.237 | 0.241 | 0.25 | 214# |
| | 711 | 10 | 1RB | 23.09 | 23.1 | 1.002 | 0.227 | 0.227 | 0.23 | 215# |
| | 710 | 10 | 50%RB | 22.13 | 23.1 | 1.25 | 0.17 | 0.213 | 0.22 | 216# |
| Head Left Tilt | 709 | 10 | 1RB | / | / | / | / | / | / | / |
| | 710 | 10 | 1RB | 23.03 | 23.1 | 1.016 | 0.089 | 0.09 | 0.09 | 217# |
| | 711 | 10 | 1RB | / | / | / | / | / | / | / |
| | 710 | 10 | 50%RB | 22.13 | 23.1 | 1.25 | 0.066 | 0.083 | 0.09 | 218# |
| Head Right Cheek | 709 | 10 | 1RB | / | / | / | / | / | / | / |
| | 710 | 10 | 1RB | 23.03 | 23.1 | 1.016 | 0.224 | 0.228 | 0.23 | 219# |
| | 711 | 10 | 1RB | / | / | / | / | / | / | / |
| | 710 | 10 | 50%RB | 22.13 | 23.1 | 1.25 | 0.168 | 0.21 | 0.21 | 220# |
| Head Right Tilt | 709 | 10 | 1RB | / | / | / | / | / | / | / |
| | 710 | 10 | 1RB | 23.03 | 23.1 | 1.016 | 0.1 | 0.102 | 0.11 | 221# |
| | 711 | 10 | 1RB | / | / | / | / | / | / | / |
| | 710 | 10 | 50%RB | 22.13 | 23.1 | 1.25 | 0.069 | 0.086 | 0.09 | 222# |
| Head Face Up (25mm) | 709 | 10 | 1RB | / | / | / | / | / | / | / |
| | 710 | 10 | 1RB | 23.03 | 23.1 | 1.016 | 0.107 | 0.109 | 0.11 | 223# |
| | 711 | 10 | 1RB | / | / | / | / | / | / | / |
| | 710 | 10 | 50%RB | 22.13 | 23.1 | 1.25 | 0.083 | 0.104 | 0.11 | 224# |
| Body Front (10mm) | 709 | 10 | 1RB | 22.71 | 23.1 | 1.094 | 0.275 | 0.301 | 0.31 | 225# |
| | 710 | 10 | 1RB | 23.03 | 23.1 | 1.016 | 0.298 | 0.303 | **0.31** | 226# |
| | 711 | 10 | 1RB | 23.09 | 23.1 | 1.002 | 0.27 | 0.271 | 0.28 | 227# |
| | 710 | 10 | 50%RB | 22.13 | 23.1 | 1.25 | 0.237 | 0.296 | 0.30 | 228# |
| Body Back (10mm) | 709 | 10 | 1RB | / | / | / | / | / | / | / |
| | 710 | 10 | 1RB | 23.03 | 23.1 | 1.016 | 0.091 | 0.092 | 0.10 | 229# |
| | 711 | 10 | 1RB | / | / | / | / | / | / | / |
| | 710 | 10 | 50%RB | 22.13 | 23.1 | 1.25 | 0.075 | 0.094 | 0.10 | 230# |
| Body Left (10mm) | 709 | 10 | 1RB | / | / | / | / | / | / | / |
| | 710 | 10 | 1RB | 23.03 | 23.1 | 1.016 | 0.184 | 0.187 | 0.19 | 231# |
| | 711 | 10 | 1RB | / | / | / | / | / | / | / |
| | 710 | 10 | 50%RB | 22.13 | 23.1 | 1.25 | 0.149 | 0.186 | 0.19 | 232# |
| Body Right (10mm) | 709 | 10 | 1RB | / | / | / | / | / | / | / |
| | 710 | 10 | 1RB | 23.03 | 23.1 | 1.016 | 0.108 | 0.11 | 0.11 | 233# |
| | 711 | 10 | 1RB | / | / | / | / | / | / | / |
| | 710 | 10 | 50%RB | 22.13 | 23.1 | 1.25 | 0.095 | 0.119 | 0.12 | 234# |
| Body Bottom (10mm) | 709 | 10 | 1RB | / | / | / | / | / | / | / |
| | 710 | 10 | 1RB | 23.03 | 23.1 | 1.016 | 0.084 | 0.085 | 0.09 | 235# |
| | 711 | 10 | 1RB | / | / | / | / | / | / | / |
| | 710 | 10 | 50%RB | 22.13 | 23.1 | 1.25 | 0.064 | 0.08 | 0.08 | 236# |

*Testing was performed on Date 2018/3/5(Head Mode) and 2018/3/6(Body Mode) at SAR Lab 2.*

**LTE Band 25:**

| EUT Position | Frequency (MHz) | Bandwidth (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 1860 | 20 | 1RB | 22.38 | 23 | 1.153 | 0.494 | 0.57 | 0.57 | 237# |
| | 1882.5 | 20 | 1RB | 22.46 | 23 | 1.132 | 0.664 | 0.752 | **0.76** | 238# |
| | 1905 | 20 | 1RB | 22.58 | 23 | 1.102 | 0.542 | 0.597 | 0.60 | 239# |
| | 1882.5 | 20 | 50%RB | 21.73 | 23 | 1.34 | 0.513 | 0.687 | 0.69 | 240# |
| Head Left Tilt | 1860 | 20 | 1RB | 22.38 | / | / | / | / | / | / |
| | 1882.5 | 20 | 1RB | 22.46 | 23 | 1.132 | 0.264 | 0.299 | 0.30 | 241# |
| | 1905 | 20 | 1RB | 22.58 | / | / | / | / | / | / |
| | 1882.5 | 20 | 50%RB | 21.73 | 23 | 1.34 | 0.21 | 0.281 | 0.29 | 242# |
| Head Right Cheek | 1860 | 20 | 1RB | 22.38 | / | / | / | / | / | / |
| | 1882.5 | 20 | 1RB | 22.46 | 23 | 1.132 | 0.297 | 0.336 | 0.34 | 243# |
| | 1905 | 20 | 1RB | 22.58 | / | / | / | / | / | / |
| | 1882.5 | 20 | 50%RB | 21.73 | 23 | 1.34 | 0.222 | 0.297 | 0.30 | 244# |
| Head Right Tilt | 1860 | 20 | 1RB | 22.38 | / | / | / | / | / | / |
| | 1882.5 | 20 | 1RB | 22.46 | 23 | 1.132 | 0.151 | 0.171 | 0.18 | 245# |
| | 1905 | 20 | 1RB | 22.58 | / | / | / | / | / | / |
| | 1882.5 | 20 | 50%RB | 21.73 | 23 | 1.34 | 0.118 | 0.158 | 0.16 | 246# |
| Head Face Up (25mm) | 1860 | 20 | 1RB | 22.38 | / | / | / | / | / | / |
| | 1882.5 | 20 | 1RB | 22.46 | 23 | 1.132 | 0.165 | 0.187 | 0.19 | 247# |
| | 1905 | 20 | 1RB | 22.58 | / | / | / | / | / | / |
| | 1882.5 | 20 | 50%RB | 21.73 | 23 | 1.34 | 0.128 | 0.172 | 0.18 | 248# |
| Body Front (10mm) | 1860 | 20 | 1RB | 22.38 | / | / | / | / | / | / |
| | 1882.5 | 20 | 1RB | 22.46 | 23 | 1.132 | 0.382 | 0.432 | 0.44 | 249# |
| | 1905 | 20 | 1RB | 22.58 | / | / | / | / | / | / |
| | 1882.5 | 20 | 50%RB | 21.73 | 23 | 1.34 | 0.305 | 0.409 | 0.41 | 250# |
| Body Back (10mm) | 1860 | 20 | 1RB | 22.38 | / | / | / | / | / | / |
| | 1882.5 | 20 | 1RB | 22.46 | 23 | 1.132 | 0.174 | 0.197 | 0.20 | 251# |
| | 1905 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1882.5 | 20 | 50%RB | 21.73 | 23 | 1.34 | 0.141 | 0.189 | 0.19 | 252# |
| Body Left (10mm) | 1860 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1882.5 | 20 | 1RB | 22.46 | 23 | 1.132 | 0.466 | 0.528 | 0.53 | 253# |
| | 1905 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1882.5 | 20 | 50%RB | 21.73 | 23 | 1.34 | 0.368 | 0.493 | 0.50 | 254# |
| Body Right (10mm) | 1860 | 20 | 1RB | / | / | / | / | / | / | / |
| | 1882.5 | 20 | 1RB | 22.46 | 23 | 1.132 | 0.169 | 0.191 | 0.20 | 255# |
| | 1905 | 20 | 1RB | 22.58 | / | / | / | / | / | / |
| | 1882.5 | 20 | 50%RB | 21.73 | 23 | 1.34 | 0.139 | 0.186 | 0.19 | 256# |
| Body Bottom (10mm) | 1860 | 20 | 1RB | 22.38 | 23 | 1.153 | 0.612 | 0.706 | 0.71 | 257# |
| | 1882.5 | 20 | 1RB | 22.46 | 23 | 1.132 | 0.624 | 0.706 | **0.71** | 258# |
| | 1905 | 20 | 1RB | 22.58 | 23 | 1.102 | 0.548 | 0.604 | 0.61 | 259# |
| | 1882.5 | 20 | 50%RB | 21.73 | 23 | 1.34 | 0.517 | 0.693 | 0.70 | 260# |

*Testing was performed on Date 2018/3/9(Head Mode) and 2018/3/9(Body Mode) at SAR Lab 2.*

**LTE Band 26:**

| EUT Position | Frequency (MHz) | Bandwidth (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 819 | 10 | 1RB | 22.96 | 23.2 | 1.057 | 0.213 | 0.225 | **0.23** | **359#** |
| | 819 | 10 | 50%RB | 22.05 | 23.2 | 1.303 | 0.168 | 0.219 | 0.22 | 360# |
| Head Left Tilt | 819 | 10 | 1RB | 22.96 | 23.2 | 1.057 | 0.13 | 0.137 | 0.14 | 361# |
| | 819 | 10 | 50%RB | 22.05 | 23.2 | 1.303 | 0.103 | 0.134 | 0.14 | 362# |
| Head Right Cheek | 819 | 10 | 1RB | 22.96 | 23.2 | 1.057 | 0.204 | 0.216 | 0.22 | 363# |
| | 819 | 10 | 50%RB | 22.05 | 23.2 | 1.303 | 0.169 | 0.22 | 0.23 | 364# |
| Head Right Tilt | 819 | 10 | 1RB | 22.96 | 23.2 | 1.057 | 0.128 | 0.135 | 0.14 | 365# |
| | 819 | 10 | 50%RB | 22.05 | 23.2 | 1.303 | 0.102 | 0.133 | 0.14 | 366# |
| Head Face Up (25mm) | 819 | 10 | 1RB | 22.96 | 23.2 | 1.057 | 0.056 | 0.059 | 0.06 | 367# |
| | 819 | 10 | 50%RB | 22.05 | 23.2 | 1.303 | 0.045 | 0.059 | 0.06 | 368# |
| Body Front (10mm) | 819 | 10 | 1RB | 22.96 | 23.2 | 1.057 | 0.403 | 0.426 | **0.43** | **369#** |
| | 819 | 10 | 50%RB | 22.05 | 23.2 | 1.303 | 0.293 | 0.382 | 0.39 | 370# |
| Body Back (10mm) | 819 | 10 | 1RB | 22.96 | 23.2 | 1.057 | 0.2 | 0.211 | 0.22 | 371# |
| | 819 | 10 | 50%RB | 22.05 | 23.2 | 1.303 | 0.161 | 0.21 | 0.21 | 372# |
| Body Left (10mm) | 819 | 10 | 1RB | 22.96 | 23.2 | 1.057 | 0.252 | 0.266 | 0.27 | 373# |
| | 819 | 10 | 50%RB | 22.05 | 23.2 | 1.303 | 0.199 | 0.259 | 0.26 | 374# |
| Body Right (10mm) | 819 | 10 | 1RB | 22.96 | 23.2 | 1.057 | 0.297 | 0.314 | 0.32 | 375# |
| | 819 | 10 | 50%RB | 22.05 | 23.2 | 1.303 | 0.241 | 0.314 | 0.32 | 376# |
| Body Bottom (10mm) | 819 | 10 | 1RB | 22.96 | 23.2 | 1.057 | 0.148 | 0.156 | 0.16 | 377# |
| | 819 | 10 | 50%RB | 22.05 | 23.2 | 1.303 | 0.117 | 0.152 | 0.16 | 378# |

*Testing was performed on Date 2018/2/26(Head Mode) and 2018/2/26(Body Mode) at SAR Lab 2.*

**LTE Band 41:**

| EUT Position | Frequency (MHz) | Bandwidth (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 2506 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2593 | 20 | 1RB | 22.72 | 23.1 | 1.091 | 0.189 | 0.206 | 0.21 | 261# |
| | 2680 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2593 | 20 | 50%RB | 22.01 | 23.1 | 1.285 | 0.15 | 0.193 | 0.20 | 262# |
| Head Left Tilt | 2506 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2593 | 20 | 1RB | 22.72 | 23.1 | 1.091 | 0.115 | 0.125 | 0.13 | 263# |
| | 2680 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2593 | 20 | 50%RB | 22.01 | 23.1 | 1.285 | 0.089 | 0.114 | 0.12 | 264# |
| Head Right Cheek | 2506 | 20 | 1RB | 22.53 | 23.1 | 1.14 | 0.22 | 0.251 | 0.26 | 265# |
| | 2545 | 20 | 1RB | 22.32 | 23.1 | 1.197 | 0.212 | 0.254 | 0.26 | 266# |
| | 2593 | 20 | 1RB | 22.72 | 23.1 | 1.091 | 0.259 | 0.283 | 0.29 | 267# |
| | 2635 | 20 | 1RB | 22.36 | 23.1 | 1.186 | 0.247 | 0.293 | **0.30** | 268# |
| | 2680 | 20 | 1RB | 22.56 | 23.1 | 1.132 | 0.253 | 0.286 | 0.29 | 269# |
| | 2593 | 20 | 50%RB | 22.01 | 23.1 | 1.285 | 0.207 | 0.266 | 0.27 | 270# |
| Head Right Tilt | 2506 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2593 | 20 | 1RB | 22.72 | 23.1 | 1.091 | 0.077 | 0.084 | 0.09 | 271# |
| | 2680 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2593 | 20 | 50%RB | 22.01 | 23.1 | 1.285 | 0.064 | 0.082 | 0.09 | 272# |
| Head Face Up (25mm) | 2506 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2593 | 20 | 1RB | 22.72 | 23.1 | 1.091 | 0.058 | 0.063 | 0.07 | 273# |
| | 2680 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2593 | 20 | 50%RB | 22.01 | 23.1 | 1.285 | 0.044 | 0.057 | 0.06 | 274# |
| Body Front (10mm) | 2506 | 20 | 1RB | 22.53 | 23.1 | 1.14 | 0.129 | 0.147 | 0.15 | 275# |
| | 2545 | 20 | 1RB | 22.32 | 23.1 | 1.197 | 0.12 | 0.144 | 0.15 | 276# |
| | 2593 | 20 | 1RB | 22.72 | 23.1 | 1.091 | 0.146 | 0.159 | 0.16 | 277# |
| | 2635 | 20 | 1RB | 22.36 | 23.1 | 1.186 | 0.136 | 0.161 | 0.17 | 278# |
| | 2680 | 20 | 1RB | 22.56 | 23.1 | 1.132 | 0.15 | 0.17 | **0.17** | 279# |
| | 2593 | 20 | 50%RB | 22.01 | 23.1 | 1.285 | 0.121 | 0.155 | 0.16 | 280# |
| Body Back (10mm) | 2506 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2593 | 20 | 1RB | 22.72 | 23.1 | 1.091 | 0.071 | 0.077 | 0.08 | 281# |
| | 2680 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2593 | 20 | 50%RB | 22.01 | 23.1 | 1.285 | 0.054 | 0.069 | 0.07 | 282# |
| Body Left (10mm) | 2506 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2593 | 20 | 1RB | 22.72 | 23.1 | 1.091 | 0.083 | 0.091 | 0.10 | 283# |
| | 2680 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2593 | 20 | 50%RB | 22.01 | 23.1 | 1.285 | 0.067 | 0.086 | 0.09 | 284# |
| Body Right (10mm) | 2506 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2593 | 20 | 1RB | 22.72 | 23.1 | 1.091 | 0.084 | 0.092 | 0.10 | 285# |
| | 2680 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2593 | 20 | 50%RB | 22.01 | 23.1 | 1.285 | 0.061 | 0.078 | 0.08 | 286# |

| EUT Position | Frequency (MHz) | Bandwidth (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Body Bottom (10mm) | 2506 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2593 | 20 | 1RB | 22.72 | 23.1 | 1.091 | 0.095 | 0.104 | 0.11 | 287# |
| | 2680 | 20 | 1RB | / | / | / | / | / | / | / |
| | 2593 | 20 | 50%RB | 22.01 | 23.1 | 1.285 | 0.077 | 0.099 | 0.10 | 288# |

*Testing was performed on Date 2018/2/25(Head Mode) and 2018/2/25(Body Mode) except Channel 2506MHz performed on 2018/2/23(Head Mode) and 2018/2/23(Body Mode) at SAR Lab 2.*

**Note:**

1. SAR for LTE band exposure configurations is measured according to the procedures of KDB 941225 D05 SAR for LTE Devices v02.
2. KDB941225D05- Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offset the upper edge, middle and lower edge of each required test channel.
3. When the 1-g SAR is ≤ 0.8W/kg, testing for other channels are optional.
4. Worst case SAR for 50% RB allocation is selected to be tested.
5. KDB941225D05- For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg.
6. KDB941225D05-For QPSK with 100% RB allocation, when the reported SAR measured for the Highest output power channel is <1.45 W/kg, tests for the remaining required test channels are optional.
7. KDB941225D05- other channel bandwidths SAR test is required when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.
8. KDB941225D05-SAR for higher order modulation is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg
9. KDB 648474 D04-When the peak SAR located in regions that probe is unable to access, a flat phantom is used for SAR measurement.
10. According to IEC 62209-2:2010 ,If the correction ΔSAR has a positive sign, the measured SAR results shall not be corrected.

**CDMA BC0:**

| EUT Position | Frequency (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 824.7 | RC3+SO55 | 22.89 | 23.3 | 1.099 | 0.323 | 0.355 | 0.36 | 289# |
| | 836.52 | RC3+SO55 | 22.96 | 23.3 | 1.081 | 0.347 | 0.375 | 0.38 | 290# |
| | 848.31 | RC3+SO55 | 23.01 | 23.3 | 1.069 | 0.381 | 0.407 | **0.41** | 291# |
| Head Left Tilt | 824.7 | RC3+SO55 | / | / | / | / | / | / | / |
| | 836.52 | RC3+SO55 | 22.96 | 23.3 | 1.081 | 0.235 | 0.254 | 0.26 | 292# |
| | 848.31 | RC3+SO55 | / | / | / | / | / | / | / |
| Head Right Cheek | 824.7 | RC3+SO55 | / | / | / | / | / | / | / |
| | 836.52 | RC3+SO55 | 22.96 | 23.3 | 1.081 | 0.296 | 0.32 | 0.32 | 293# |
| | 848.31 | RC3+SO55 | / | / | / | / | / | / | / |
| Head Right Tilt | 824.7 | RC3+SO55 | / | / | / | / | / | / | / |
| | 836.52 | RC3+SO55 | 22.96 | 23.3 | 1.081 | 0.177 | 0.191 | 0.20 | 294# |
| | 848.31 | RC3+SO55 | / | / | / | / | / | / | / |
| Head Face Up (25mm) | 824.7 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| | 836.52 | RTAP 153.6 kbps | 23.2 | 23.3 | 1.023 | 0.165 | 0.169 | 0.17 | 295# |
| | 848.31 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| Body Worn Back | 824.7 | RC3+SO55 | / | / | / | / | / | / | / |
| | 836.52 | RC3+SO55 | 22.96 | 23.3 | 1.081 | 0.124 | 0.134 | 0.14 | 296# |
| | 848.31 | RC3+SO55 | / | / | / | / | / | / | / |
| Body Front (10mm) | 824.7 | RTAP 153.6 kbps | 23.24 | 23.3 | 1.014 | 0.368 | 0.373 | 0.38 | 297# |
| | 836.52 | RTAP 153.6 kbps | 23.2 | 23.3 | 1.023 | 0.401 | 0.41 | **0.41** | 298# |
| | 848.31 | RTAP 153.6 kbps | 23.28 | 23.3 | 1.005 | 0.381 | 0.383 | 0.39 | 299# |
| Body Back (10mm) | 824.7 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| | 836.52 | RTAP 153.6 kbps | 23.2 | 23.3 | 1.023 | 0.148 | 0.151 | 0.16 | 300# |
| | 848.31 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| Body Left (10mm) | 824.7 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| | 836.52 | RTAP 153.6 kbps | 23.2 | 23.3 | 1.023 | 0.177 | 0.181 | 0.19 | 301# |
| | 848.31 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| Body Right (10mm) | 824.7 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| | 836.52 | RTAP 153.6 kbps | 23.2 | 23.3 | 1.023 | 0.257 | 0.263 | 0.27 | 302# |
| | 848.31 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| Body Bottom (10mm) | 824.7 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| | 836.52 | RTAP 153.6 kbps | 23.2 | 23.3 | 1.023 | 0.142 | 0.145 | 0.15 | 303# |
| | 848.31 | RTAP 153.6 kbps | / | / | / | / | / | / | / |

*Testing was performed on Date 2018/3/5(Head Mode) and 2018/3/6(Body Mode) at SAR Lab 2.*

**CDMA BC1:**

| EUT Position | Frequency (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 1851.25 | RC3+SO55 | 22.86 | 23.4 | 1.132 | 0.072 | 0.082 | 0.09 | 304# |
| | 1880.00 | RC3+SO55 | 23.02 | 23.4 | 1.091 | 0.083 | 0.091 | **0.10** | **305#** |
| | 1908.75 | RC3+SO55 | 23.04 | 23.4 | 1.086 | 0.081 | 0.088 | 0.09 | 306# |
| Head Left Tilt | 1851.25 | RC3+SO55 | / | / | / | / | / | / | / |
| | 1880.00 | RC3+SO55 | 23.02 | 23.4 | 1.091 | 0.061 | 0.067 | 0.07 | 307# |
| | 1908.75 | RC3+SO55 | / | / | / | / | / | / | / |
| Head Right Cheek | 1851.25 | RC3+SO55 | / | / | / | / | / | / | / |
| | 1880.00 | RC3+SO55 | 23.02 | 23.4 | 1.091 | 0.056 | 0.061 | 0.07 | 308# |
| | 1908.75 | RC3+SO55 | / | / | / | / | / | / | / |
| Head Right Tilt | 1851.25 | RC3+SO55 | / | / | / | / | / | / | / |
| | 1880.00 | RC3+SO55 | 23.02 | 23.4 | 1.091 | 0.038 | 0.042 | 0.05 | 309# |
| | 1908.75 | RC3+SO55 | / | / | / | / | / | / | / |
| Head Face Up (25mm) | 1851.25 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| | 1880.00 | RTAP 153.6 kbps | 23.02 | 23.4 | 1.091 | 0.037 | 0.04 | 0.04 | 310# |
| | 1908.75 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| Body Worn Back | 1851.25 | RC3+SO55 | / | / | / | / | / | / | / |
| | 1880.00 | RC3+SO55 | 23.02 | 23.4 | 1.091 | 0.028 | 0.031 | 0.04 | 311# |
| | 1908.75 | RC3+SO55 | / | / | / | / | / | / | / |
| Body Front (10mm) | 1851.25 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| | 1880.00 | RTAP 153.6 kbps | 23.02 | 23.4 | 1.091 | 0.073 | 0.08 | 0.08 | 312# |
| | 1908.75 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| Body Back (10mm) | 1851.25 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| | 1880.00 | RTAP 153.6 kbps | 23.02 | 23.4 | 1.091 | 0.039 | 0.043 | 0.05 | 313# |
| | 1908.75 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| Body Left (10mm) | 1851.25 | RTAP 153.6 kbps | 22.86 | 23.4 | 1.132 | 0.080 | 0.09 | 0.09 | 314# |
| | 1880.00 | RTAP 153.6 kbps | 23.02 | 23.4 | 1.091 | 0.094 | 0.103 | 0.11 | 315# |
| | 1908.75 | RTAP 153.6 kbps | 23.04 | 23.4 | 1.086 | 0.102 | 0.111 | **0.12** | **316#** |
| Body Right (10mm) | 1851.25 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| | 1880.00 | RTAP 153.6 kbps | 23.02 | 23.4 | 1.091 | 0.030 | 0.032 | 0.04 | 317# |
| | 1908.75 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| Body Bottom (10mm) | 1851.25 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| | 1880.00 | RTAP 153.6 kbps | 23.02 | 23.4 | 1.091 | 0.081 | 0.089 | 0.09 | 318# |
| | 1908.75 | RTAP 153.6 kbps | / | / | / | / | / | / | / |

*Testing was performed on Date 2018/3/7(Head Mode) and 2018/3/8(Body Mode) at SAR Lab 2.*

**CDMA BC10:**

| EUT Position | Frequency (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 817.25 | RC3+SO55 | 22.87 | 23.4 | 1.13 | 0.286 | 0.323 | 0.33 | 319# |
| | 820.50 | RC3+SO55 | 22.93 | 23.4 | 1.114 | 0.303 | 0.338 | 0.34 | 320# |
| | 822.75 | RC3+SO55 | 22.92 | 23.4 | 1.117 | 0.328 | 0.366 | **0.37** | **321#** |
| Head Left Tilt | 817.25 | RC3+SO55 | / | / | / | / | / | / | / |
| | 820.50 | RC3+SO55 | 22.93 | 23.4 | 1.114 | 0.194 | 0.216 | 0.22 | 322# |
| | 822.75 | RC3+SO55 | / | / | / | / | / | / | / |
| Head Right Cheek | 817.25 | RC3+SO55 | / | / | / | / | / | / | / |
| | 820.50 | RC3+SO55 | 22.93 | 23.4 | 1.114 | 0.257 | 0.286 | 0.29 | 323# |
| | 822.75 | RC3+SO55 | / | / | / | / | / | / | / |
| Head Right Tilt | 817.25 | RC3+SO55 | / | / | / | / | / | / | / |
| | 820.50 | RC3+SO55 | 22.93 | 23.4 | 1.114 | 0.153 | 0.17 | 0.17 | 324# |
| | 822.75 | RC3+SO55 | / | / | / | / | / | / | / |
| Head Face Up (25mm) | 817.25 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| | 820.50 | RTAP 153.6 kbps | 22.93 | 23.4 | 1.114 | 0.142 | 0.158 | 0.16 | 325# |
| | 822.75 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| Body Worn Back | 817.25 | RC3+SO55 | / | / | / | / | / | / | / |
| | 820.50 | RC3+SO55 | 22.93 | 23.4 | 1.114 | 0.113 | 0.126 | 0.13 | 326# |
| | 822.75 | RC3+SO55 | / | / | / | / | / | / | / |
| Body Front (10mm) | 817.25 | RTAP 153.6 kbps | 22.87 | 23.4 | 1.13 | 0.312 | 0.353 | 0.36 | 327# |
| | 820.50 | RTAP 153.6 kbps | 22.93 | 23.4 | 1.114 | 0.353 | 0.393 | **0.40** | **328#** |
| | 822.75 | RTAP 153.6 kbps | 22.92 | 23.4 | 1.117 | 0.309 | 0.345 | 0.35 | 329# |
| Body Back (10mm) | 817.25 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| | 820.50 | RTAP 153.6 kbps | 22.93 | 23.4 | 1.114 | 0.129 | 0.144 | 0.15 | 330# |
| | 822.75 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| Body Left (10mm) | 817.25 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| | 820.50 | RTAP 153.6 kbps | 22.93 | 23.4 | 1.114 | 0.184 | 0.205 | 0.21 | 331# |
| | 822.75 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| Body Right (10mm) | 817.25 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| | 820.50 | RTAP 153.6 kbps | 22.93 | 23.4 | 1.114 | 0.205 | 0.228 | 0.23 | 332# |
| | 822.75 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| Body Bottom (10mm) | 817.25 | RTAP 153.6 kbps | / | / | / | / | / | / | / |
| | 820.50 | RTAP 153.6 kbps | 22.93 | 23.4 | 1.114 | 0.125 | 0.139 | 0.14 | 333# |
| | 822.75 | RTAP 153.6 kbps | / | / | / | / | / | / | / |

*Testing was performed on Date 2018/3/5(Head Mode) and 2018/3/6(Body Mode) at SAR Lab 2.*

**Note**:

1. When the 1-g SAR is≤ 0.8W/kg, testing for other channels are optional.
2. The EUT transmit and receive through the same antenna while testing SAR.
3. The default test configuration is to measure SAR with an established radio link between the EUT and a communication test set using a 12.2 kbps RMC (reference measurement Channel) Configured in Test Loop Model.
4. KDB 941225 D01-Body SAR is not required for HSDPA/HSUPA/HSPA+ when the maximum average output of each RF channel is less than ¼ dB higher than measured 12.2kbps RMC or the maximum SAR for 12.2kbps RMC is < 75% of SAR limit.

5. When SAR or MPE is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance.
6. According to IEC 62209-2:2010 ,If the correction ΔSAR has a positive sign, the measured SAR results shall not be corrected.

**WLAN:**

| EUT Position | Frequency (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 2412 | 802.11 b | / | / | / | / | / | / | / |
| | 2442 | 802.11 b | 14.73 | 15 | 1.064 | 0.037 | 0.04 | 0.04 | 334# |
| | 2472 | 802.11 b | / | / | / | / | / | / | |
| Head Left Tilt | 2412 | 802.11 b | / | / | / | / | / | / | |
| | 2442 | 802.11 b | 14.73 | 15 | 1.064 | 0.045 | 0.048 | 0.05 | 335# |
| | 2472 | 802.11 b | / | / | / | / | / | / | / |
| Head Right Cheek | 2412 | 802.11 b | 13.33 | 15 | 1.469 | 0.070 | 0.102 | **0.11** | **336#** |
| | 2442 | 802.11 b | 14.73 | 15 | 1.064 | 0.061 | 0.065 | 0.07 | 337# |
| | 2472 | 802.11 b | 13.55 | 15 | 1.396 | 0.066 | 0.092 | 0.10 | 338# |
| Head Right Tilt | 2412 | 802.11 b | / | / | / | / | / | / | / |
| | 2442 | 802.11 b | 14.73 | 15 | 1.064 | 0.060 | 0.064 | 0.07 | 339# |
| | 2472 | 802.11 b | / | / | / | / | / | / | / |
| Face UP (25mm) | 2412 | 802.11 b | / | / | / | / | / | / | / |
| | 2442 | 802.11 b | 14.73 | 15 | 1.064 | 0.00844 | 0.009 | 0.01 | 340# |
| | 2472 | 802.11 b | / | / | / | / | / | / | / |
| Body(Worn) Back (10mm) | 2412 | 802.11 b | 13.33 | 15 | 1.469 | 0.055 | 0.081 | **0.09** | **341#** |
| | 2442 | 802.11 b | 14.73 | 15 | 1.064 | 0.052 | 0.056 | 0.06 | 342# |
| | 2472 | 802.11 b | 13.55 | 15 | 1.396 | 0.048 | 0.067 | 0.07 | 343# |
| Body Front (10mm) | 2412 | 802.11 b | / | / | / | / | / | / | / |
| | 2442 | 802.11 b | 14.73 | 15 | 1.064 | 0.00717 | 0.008 | 0.01 | 344# |
| | 2472 | 802.11 b | / | / | / | / | / | / | / |
| Body Left (10mm) | 2412 | 802.11 b | / | / | / | / | / | / | / |
| | 2442 | 802.11 b | 14.73 | 15 | 1.064 | 0.019 | 0.021 | 0.03 | 345# |
| | 2472 | 802.11 b | / | / | / | / | / | / | / |
| Body Right (10mm) | 2412 | 802.11 b | / | / | / | / | / | / | / |
| | 2442 | 802.11 b | 14.73 | 15 | 1.064 | 0.013 | 0.013 | 0.02 | 346# |
| | 2472 | 802.11 b | / | / | / | / | / | / | / |

*Testing was performed on Date 2018/2/24(Head Mode) and 2018/2/23(Body Mode) at SAR Lab 2.*

**Note**:

1. When the 1-g SAR is less than half of the limit value, testing for other channels are optional.
2. When SAR or MPE is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance.
3. According to IEC 62209-2:2010 ,If the correction ΔSAR has a positive sign, the measured SAR results shall not be corrected.

**Bluetooth:**

| EUT Position | Frequency (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Scaled Factor | Meas. SAR | Scaled SAR | Corrected SAR | Plot |
| Head Left Cheek | 2402 | 8-DPSK | / | / | / | / | / | / | / |
| | 2441 | 8-DPSK | 10.74 | 13 | 1.683 | 0.017 | 0.029 | 0.03 | 347# |
| | 2480 | 8-DPSK | / | / | / | / | / | / | |
| Head Left Tilt | 2402 | 8-DPSK | / | / | / | / | / | / | |
| | 2441 | 8-DPSK | 10.74 | 13 | 1.683 | 0.011 | 0.019 | 0.02 | 348# |
| | 2480 | 8-DPSK | / | / | / | / | / | / | / |
| Head Right Cheek | 2402 | 8-DPSK | / | / | / | / | / | / | / |
| | 2441 | 8-DPSK | 10.74 | 13 | 1.683 | 0.025 | 0.042 | 0.05 | 349# |
| | 2480 | 8-DPSK | / | / | / | / | / | / | / |
| Head Right Tilt | 2402 | 8-DPSK | 11.92 | 13 | 1.282 | 0.015 | 0.019 | 0.02 | 350# |
| | 2416 | 8-DPSK | 12.85 | 13 | 1.035 | 0.025 | 0.025 | 0.03 | 351# |
| | 2441 | 8-DPSK | 10.74 | 13 | 1.683 | 0.025 | 0.042 | **0.05** | **352#** |
| | 2480 | 8-DPSK | 12.34 | 13 | 1.164 | 0.018 | 0.021 | 0.03 | 353# |
| Face Up (25mm) | 2402 | 8-DPSK | / | / | / | / | / | / | |
| | 2441 | 8-DPSK | 10.74 | 13 | 1.683 | 0.00525 | 0.009 | 0.01 | 354# |
| | 2480 | 8-DPSK | / | / | / | / | / | / | / |
| Body(Worn) Back | 2402 | 8-DPSK | 11.92 | 13 | 1.282 | 0.019 | 0.024 | 0.03 | 355# |
| | 2416 | 8-DPSK | 12.85 | 13 | 1.035 | 0.028 | 0.028 | 0.03 | 356# |
| | 2441 | 8-DPSK | 10.74 | 13 | 1.683 | 0.014 | 0.023 | 0.03 | 357# |
| | 2480 | 8-DPSK | 12.34 | 13 | 1.164 | 0.028 | 0.033 | **0.04** | **358#** |

*Testing was performed on Date 2018/2/24(Head Mode) and 2018/2/23(Body Mode) at SAR Lab 2.*

**Note**:

1. When the 1-g SAR is less than half of the limit value, testing for other channels are optional.
2. When SAR or MPE is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance.
3. According to IEC 62209-2:2010 ,If the correction ΔSAR has a positive sign, the measured SAR results shall not be corrected.

**PTT:**

**Frequency(350-400 MHz)**

*Pre-Scan all 5 Channels, the peak SAR located on 375 MHz for Face Up mode, 399.9875 MHz for Body Back mode.*

| Test Mode | | Frequency (MHz) | Max. Meas. Power (W) | Max.Rated Power(W) | 1 g SAR Value(W/kg) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Scaled Factor | Meas. SAR | Scaled SAR | 50% | Corrected SAR | Plot |
| Head Face Up (25 mm) | FM 12.5 kHz | 350.0125 | 4.45 | 4.8 | 1.079 | 5.51 | 5.945 | 2.973 | 2.98 | 1* |
| | | 362 | 4.55 | 4.8 | 1.055 | 6.63 | 6.995 | 3.498 | 3.50 | 2* |
| | | 375 | 4.44 | 4.8 | 1.081 | 7.32 | 7.913 | 3.957 | **3.96** | **3*** |
| | | 388 | 4.56 | 4.8 | 1.053 | 3.14 | 3.306 | 1.653 | 1.66 | 4* |
| | | 399.9875 | 4.50 | 4.8 | 1.067 | 7.36 | 7.853 | 3.927 | 3.93 | 5* |
| | FM 25 kHz | 350.0125 | / | / | / | / | / | / | / | / |
| | | 362 | / | / | / | / | / | / | / | / |
| | | 375 | 4.62 | 4.8 | 1.039 | 6.64 | 6.899 | 3.45 | 3.45 | 6* |
| | | 388 | / | / | / | / | / | / | / | / |
| | | 399.9875 | / | / | / | / | / | / | / | / |
| | 4FSK 12.5 kHz | 350.0125 | / | / | / | / | / | / | / | / |
| | | 362 | / | / | / | / | / | / | / | / |
| | | 375 | 4.44 | 4.8 | 1.081 | 2.85 | 3.081 | 1.541 | 1.55 | 7* |
| | | 388 | / | / | / | / | / | / | / | / |
| | | 399.9875 | / | / | / | / | / | / | / | / |
| Body Back (0 mm) | FM 12.5 kHz | 350.0125 | 4.45 | 4.8 | 1.079 | 7.43 | 8.017 | 4.009 | 4.01 | 8* |
| | | 362 | 4.55 | 4.8 | 1.055 | 8.05 | 8.493 | 4.247 | 4.25 | 9* |
| | | 375 | 4.44 | 4.8 | 1.081 | 6.92 | 7.481 | 3.741 | 3.75 | 10* |
| | | 388 | 4.56 | 4.8 | 1.053 | 2.91 | 3.064 | 1.532 | 1.54 | 11* |
| | | 399.9875 | 4.50 | 4.8 | 1.067 | 8.8 | 9.39 | 4.695 | 4.70 | 12* |
| | FM 25 kHz | 350.0125 | 4.30 | 4.8 | 1.116 | 6.85 | 7.645 | 3.823 | 3.83 | 13* |
| | | 362 | 4.46 | 4.8 | 1.076 | 7.83 | 8.425 | 4.213 | 4.22 | 14* |
| | | 375 | 4.41 | 4.8 | 1.088 | 6.82 | 7.42 | 3.71 | 3.71 | 15* |
| | | 388 | 4.47 | 4.8 | 1.074 | 2.87 | 3.082 | 1.541 | 1.55 | 16* |
| | | 399.9875 | 4.42 | 4.8 | 1.086 | 8.71 | 9.459 | 4.73 | **4.73** | **17*** |
| | 4FSK 12.5 kHz | 350.0125 | / | / | / | / | / | / | / | / |
| | | 362 | / | / | / | / | / | / | / | / |
| | | 375 | / | / | / | / | / | / | / | / |
| | | 388 | / | / | / | / | / | / | / | / |
| | | 399.9875 | 4.46 | 4.8 | 1.076 | 4.17 | 4.487 | 2.244 | 2.25 | 18* |

*Testing was performed on Date 2018/2/9(Head Mode) and 2018/2/10(Body Mode) at SAR Lab 1.*

**Frequency(400-470 MHz)**

*Pre-Scan all 5 Channels, the peak SAR located on 418 MHz for Face Up mode and Body Back mode.*

| Test Mode | | Frequency (MHz) | Max. Meas. Power (W) | Max.Rated Power(W) | 1 g SAR Value(W/kg) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Scaled Factor | Meas. SAR | Scaled SAR | 50% | Corrected SAR | Plot |
| Head Face Up (25 mm) | FM 12.5 kHz | 400.0125 | 4.64 | 4.8 | 1.034 | 7.21 | 7.455 | 3.728 | 3.73 | 19* |
| | | 418 | 4.51 | 4.8 | 1.064 | 8.93 | 9.502 | 4.751 | 4.76 | 20* |
| | | 435 | 4.52 | 4.8 | 1.062 | 7.62 | 8.092 | 4.046 | 4.05 | 21* |
| | | 452 | 4.52 | 4.8 | 1.062 | 7.08 | 7.519 | 3.76 | 3.76 | 22* |
| | | 469.9875 | 4.62 | 4.8 | 1.039 | 3.99 | 4.146 | 2.073 | 2.08 | 23* |
| | FM 25 kHz | 400.0125 | 4.56 | 4.8 | 1.053 | 9.23 | 9.719 | 4.86 | 4.86 | 24* |
| | | 418 | 4.58 | 4.8 | 1.048 | 9.78 | 10.249 | 5.125 | **5.13** | **25*** |
| | | 435 | 4.54 | 4.8 | 1.057 | 7.91 | 8.361 | 4.181 | 4.19 | 26* |
| | | 452 | 4.73 | 4.8 | 1.015 | 6.1 | 6.192 | 3.096 | 3.10 | 27* |
| | | 469.9875 | 4.76 | 4.8 | 1.008 | 3.93 | 3.961 | 1.981 | 1.99 | 28* |
| | 4FSK 12.5 kHz | 400.0125 | / | / | / | / | / | / | / | / |
| | | 418 | 4.7 | 4.8 | 1.021 | 3.98 | 4.064 | 2.032 | 2.04 | 29* |
| | | 435 | / | / | / | / | / | / | / | / |
| | | 452 | / | / | / | / | / | / | / | / |
| | | 469.9875 | / | / | / | / | / | / | / | / |
| Body Back (0 mm) | FM 12.5 kHz | 400.0125 | 4.64 | 4.8 | 1.034 | 9.56 | 9.885 | 4.943 | 4.95 | 30* |
| | | 418 | 4.51 | 4.8 | 1.064 | 9.61 | 10.225 | 5.113 | 5.12 | 31* |
| | | 435 | 4.52 | 4.8 | 1.062 | 8.54 | 9.069 | 4.535 | 4.54 | 32* |
| | | 452 | 4.52 | 4.8 | 1.062 | 6.2 | 6.584 | 3.292 | 3.30 | 33* |
| | | 469.9875 | 4.62 | 4.8 | 1.039 | 4.29 | 4.457 | 2.229 | 2.23 | 34* |
| | FM 25 kHz | 400.0125 | 4.56 | 4.8 | 1.053 | 9.74 | 10.256 | 5.128 | 5.13 | 35* |
| | | 418 | 4.58 | 4.8 | 1.048 | 9.78 | 10.249 | 5.125 | **5.13** | **36*** |
| | | 435 | 4.54 | 4.8 | 1.057 | 8.98 | 9.492 | 4.746 | 4.75 | 37* |
| | | 452 | 4.73 | 4.8 | 1.015 | 7.18 | 7.288 | 3.644 | 3.65 | 38* |
| | | 469.9875 | 4.76 | 4.8 | 1.008 | 4.46 | 4.496 | 2.248 | 2.25 | 39* |
| | 4FSK 12.5 kHz | 400.0125 | / | / | / | / | / | / | / | / |
| | | 418 | 4.7 | 4.8 | 1.021 | 4.69 | 4.788 | 2.394 | 2.40 | 40* |
| | | 435 | / | / | / | / | / | / | / | / |
| | | 452 | / | / | / | / | / | / | / | / |
| | | 469.9875 | / | / | / | / | / | / | / | / |

*Testing was performed on Date 2018/2/9(Head Mode) and 2018/2/10(Body Mode) at SAR Lab 1.*

**Frequency(450-512 MHz)**

*Pre-Scan all 5 Channels, the peak SAR located on 469 MHz for Face Up mode, 450.0125 MHz for Body Back mode.*

| Test Mode | | Frequency (MHz) | Max. Meas. Power (W) | Max.Rated Power(W) | 1 g SAR Value(W/kg) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Scaled Factor | Meas. SAR | Scaled SAR | 50% | Corrected SAR | Plot |
| Head Face Up (25 mm) | FM 12.5 kHz | 450.0125 | / | / | / | / | / | / | / | / |
| | | 469 | 4.33 | 4.8 | 1.109 | 5.59 | 6.199 | 3.1 | **3.10** | **41*** |
| | | 488 | / | / | / | / | / | / | / | / |
| | | 507 | / | / | / | / | / | / | / | / |
| | | 511.9875 | / | / | / | / | / | / | / | / |
| | FM 25 kHz | 450.0125 | / | / | / | / | / | / | / | / |
| | | 469 | 4.49 | 4.8 | 1.069 | 5.73 | 6.125 | 3.063 | 3.07 | 42* |
| | | 488 | / | / | / | / | / | / | / | / |
| | | 507 | / | / | / | / | / | / | / | / |
| | | 511.9875 | / | / | / | / | / | / | / | / |
| | 4FSK 12.5 kHz | 450.0125 | / | / | / | / | / | / | / | / |
| | | 469 | 4.58 | 4.8 | 1.048 | 3.71 | 3.888 | 1.944 | 1.95 | 43* |
| | | 488 | / | / | / | / | / | / | / | / |
| | | 507 | / | / | / | / | / | / | / | / |
| | | 511.9875 | / | / | / | / | / | / | / | / |
| Body Back (0 mm) | FM 12.5 kHz | 450.0125 | 4.35 | 4.8 | 1.103 | 7.03 | 7.754 | 3.877 | 3.88 | 44* |
| | | 469 | 4.33 | 4.8 | 1.109 | 6.65 | 7.375 | 3.688 | 3.69 | 45* |
| | | 488 | 4.59 | 4.8 | 1.046 | 5.64 | 5.899 | 2.95 | 2.95 | 46* |
| | | 507 | 4.39 | 4.8 | 1.093 | 5.63 | 6.154 | 3.077 | 3.08 | 47* |
| | | 511.9875 | 4.45 | 4.8 | 1.079 | 4.75 | 5.125 | 2.563 | 2.57 | 48* |
| | FM 25 kHz | 450.0125 | 4.41 | 4.8 | 1.088 | 7.3 | 7.942 | 3.971 | **3.98** | **49*** |
| | | 469 | 4.49 | 4.8 | 1.069 | 6.87 | 7.344 | 3.672 | 3.68 | 50* |
| | | 488 | 4.55 | 4.8 | 1.055 | 5.75 | 6.066 | 3.033 | 3.04 | 51* |
| | | 507 | 4.34 | 4.8 | 1.106 | 5.71 | 6.315 | 3.158 | 3.16 | 52* |
| | | 511.9875 | 4.41 | 4.8 | 1.088 | 5.01 | 5.451 | 2.726 | 2.73 | 53* |
| | 4FSK 12.5 kHz | 450.0125 | 4.57 | 4.8 | 1.05 | 3.59 | 3.77 | 1.885 | 1.89 | 54* |
| | | 469 | / | / | / | / | / | / | / | / |
| | | 488 | / | / | / | / | / | / | / | / |
| | | 507 | / | / | / | / | / | / | / | / |
| | | 511.9875 | | | | | | | | |

*Testing was performed on Date 2018/2/9(Head Mode) and 2018/2/10(Body Mode) at SAR Lab 1.*

**Note**:

1. When the 1-g SAR tested using the default battery and default accessories is ≤ 3.5W/kg (corrected by Multiplying 50% for PTT mode), testing for other channels are optional.
2. KDB 447498 D01 - A duty factor of 50% should be applied to determine compliance for radios with maximum operating duty factors ≤ 50%. The 50% duty factor only applies to exposure conditions where the radio operates with a mechanical PTT button.
3. Passive body-worn and audio accessories generally do not apply to the head SAR of PTT radios.
4. The whole antenna and radiating structures that may contribute to the measured SAR or influence the SAR distribution has been included in the area scan.
5. According to IEC 62209-2:2010 ,If the correction ΔSAR has a positive sign, the measured SAR results shall not be corrected.

# SAR Measurement Variability

In accordance with published RF Exposure KDB procedure 865664 D01 SAR measurement 100 MHz to 6 GHz v01. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg.
2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

*Note: The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.*

**The Highest Measured SAR Configuration in Each Frequency Band**

**Head**

| Frequency Band | Freq.(MHz) | EUT Position | Meas. SAR (W/kg) | | Largest to Smallest SAR Ratio |
|---|---|---|---|---|---|
| | | | Original | Repeated | |
| (350-550 MHz) PTT_FM 25kHz | 418 | Face Up | 9.78 | 9.34 | **1.05** |

**Body**

| Frequency Band | Freq.(MHz) | EUT Position | Meas. SAR (W/kg) | | Largest to Smallest SAR Ratio |
|---|---|---|---|---|---|
| | | | Original | Repeated | |
| (350-550 MHz) PTT_FM 25kHz | 418 | Body Back | 9.78 | 9.72 | 1.01 |

**Note:**

1. Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the original and first repeated measurement is not > 1.20.
2. The measured SAR results **do not** have to be scaled to the maximum tune-up tolerance to determine if repeated measurements are required.
3. SAR measurement variability must be assessed for each frequency band, which is determined by the **SAR probe calibration point and tissue-equivalent medium** used for the device measurements..

**Corrected SAR Evaluation**



# Annex F
(normative)

## SAR correction for deviations of complex permittivity from targets

### F.2 SAR correction formula

From [13] and [14], a linear relationship was found between the percent change in SAR (denoted $\Delta SAR$) and the percent change in the permittivity and conductivity from the target values in Table 1 (denoted $\Delta\varepsilon_r$ and $\Delta\sigma$, respectively). This linear relationship agrees with the results of Kuster and Balzano [48] and Bit-Babik et al. [2]. The relationship is given by:

$$\Delta\text{SAR} = c_\varepsilon\, \Delta\varepsilon_r + c_\sigma\, \Delta\sigma \qquad \text{(F.1)}$$

where

$c_\varepsilon = \partial(\Delta\text{SAR})/\partial(\Delta\varepsilon)$ is the coefficients representing the sensitivity of SAR to permittivity where SAR is normalized to output power;

$c_\sigma = \partial(\Delta\text{SAR})/\partial(\Delta\sigma)$ is the coefficients representing the sensitivity of SAR to conductivity, where SAR is normalized to output power.

The values of $c_\varepsilon$ and $c_\sigma$ have a simple relationship with frequency that can be described using polynomial equations. For the 1 g averaged SAR $c_\varepsilon$ and $c_\sigma$ are given by

$$c_\varepsilon = -7{,}854\times10^{-4} f^3 + 9{,}402\times10^{-3} f^2 - 2{,}742\times10^{-2} f - 0{,}202\,6 \qquad \text{(F.2)}$$

$$c_\sigma = 9{,}804\times10^{-3} f^3 - 8{,}661\times10^{-2} f^2 + 2{,}981\times10^{-2} f + 0{,}782\,9 \qquad \text{(F.3)}$$

where

$f$ is the frequency in GHz.

For the 10 g averaged SAR, the variables $c_\varepsilon$ and $c_\sigma$ are given by:

$$c_\varepsilon = 3{,}456\times10^{-3} f^3 - 3{,}531\times10^{-2} f^2 + 7{,}675\times10^{-2} f - 0{,}186\,0 \qquad \text{(F.4)}$$

$$c_\sigma = 4{,}479\times10^{-3} f^3 - 1{,}586\times10^{-2} f^2 - 0{,}197\,2 f + 0{,}771\,7 \qquad \text{(F.5)}$$

## Corrected SAR Evaluation Table

***Date 2018/2/26:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 750 | Head | -0.218 | -1.2 | 0.761 | 0.67 | 0.77 |
| 819 | Head | -0.219 | 1.94 | 0.755 | -2.89 | -2.61 |

***Date 201823265:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 750 | Body | -0.218 | 2.75 | 0.761 | -1.67 | -1.87 |
| 819 | Body | -0.219 | 3.73 | 0.755 | -1.55 | -1.99 |

***Date 2018/3/3:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 704 | Head | -0.218 | 1.97 | 0.764 | -0.67 | -0.94 |
| 707.5 | Head | -0.218 | 2.01 | 0.764 | -0.56 | -0.87 |
| 711 | Head | -0.218 | 1.98 | 0.764 | -0.9 | -1.12 |
| 750 | Head | -0.218 | -1.35 | 0.761 | 0.45 | 0.64 |
| 824.2 | Head | -0.219 | 2.16 | 0.754 | -4.11 | -3.57 |
| 826.4 | Head | -0.219 | 2.09 | 0.754 | -3.56 | -3.14 |
| 829 | Head | -0.219 | 2.06 | 0.754 | -3.22 | -2.88 |
| 836.5 | Head | -0.219 | 2.02 | 0.753 | -2.56 | -2.37 |
| 836.6 | Head | -0.219 | 1.97 | 0.753 | -2.22 | -2.10 |
| 844 | Head | -0.220 | 1.87 | 0.752 | -3.08 | -2.73 |
| 846.6 | Head | -0.220 | 1.83 | 0.752 | -2.86 | -2.55 |
| 848.8 | Head | -0.220 | 1.38 | 0.752 | -2.31 | -2.04 |

***Date 2018/3/5:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 709 | Head | -0.218 | 1.99 | 0.764 | -1.35 | -1.46 |
| 710 | Head | -0.218 | 1.96 | 0.764 | -1.12 | -1.28 |
| 711 | Head | -0.218 | -1.65 | 0.764 | 0.79 | 0.96 |
| 750 | Head | -0.218 | -1.71 | 0.761 | 2.47 | 2.25 |
| 782 | Head | -0.219 | -3.48 | 0.758 | 4 | 3.79 |
| 817.25 | Head | -0.219 | 2.14 | 0.755 | -4.22 | -3.65 |
| 820.5 | Head | -0.219 | 1.94 | 0.754 | -2.89 | -2.61 |
| 822.75 | Head | -0.219 | 1.82 | 0.754 | -2.11 | -1.99 |
| 824.7 | Head | -0.219 | 2.09 | 0.754 | -4 | -3.47 |
| 836.52 | Head | -0.219 | 1.97 | 0.753 | -2.33 | -2.19 |
| 848.31 | Head | -0.220 | 1.38 | 0.752 | -2.64 | -2.29 |

***Date 2018/3/4:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 704 | Body | -0.218 | -0.96 | 0.764 | -0.52 | -0.19 |
| 707.5 | Body | -0.218 | -0.95 | 0.764 | -0.31 | -0.03 |
| 711 | Body | -0.218 | -1.23 | 0.764 | 0.42 | 0.59 |
| 750 | Body | -0.218 | -4.44 | 0.761 | 1.46 | 2.08 |
| 824.2 | Body | -0.219 | 3.97 | 0.754 | -3.2 | -3.28 |
| 826.4 | Body | -0.219 | 3.88 | 0.754 | -2.58 | -2.80 |
| 829 | Body | -0.219 | 3.89 | 0.754 | -1.96 | -2.33 |
| 836.5 | Body | -0.219 | 3.77 | 0.753 | -1.55 | -1.99 |
| 836.6 | Body | -0.219 | 3.76 | 0.753 | -1.55 | -1.99 |
| 844 | Body | -0.220 | 3.63 | 0.752 | -1.94 | -2.26 |
| 846.6 | Body | -0.220 | 3.71 | 0.752 | -1.73 | -2.12 |
| 848.8 | Body | -0.220 | 3.07 | 0.752 | -2.42 | -2.49 |

***Date 2018/3/6:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 709 | Body | -0.218 | -0.97 | 0.764 | -0.1 | 0.13 |
| 710 | Body | -0.218 | -1.07 | 0.764 | 0.21 | 0.39 |
| 711 | Body | -0.218 | -1.25 | 0.764 | 1.35 | 1.30 |
| 750 | Body | -0.218 | -3.6 | 0.761 | 2.4 | 2.61 |
| 782 | Body | -0.219 | -4.73 | 0.758 | 4.02 | 4.08 |
| 817.25 | Body | -0.219 | 3.92 | 0.755 | -3.4 | -3.43 |
| 820.5 | Body | -0.219 | 3.73 | 0.754 | -1.55 | -1.99 |
| 822.75 | Body | -0.219 | 3.64 | 0.754 | -1.34 | -1.81 |
| 824.7 | Body | -0.219 | 2.91 | 0.754 | 0.31 | -0.40 |
| 836.52 | Body | -0.219 | 3.76 | 0.753 | -1.55 | -1.99 |
| 848.31 | Body | -0.220 | 3.21 | 0.752 | -2.53 | -2.61 |

***Date 2018/2/22:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 1712.4 | Head | -0.226 | 3.05 | 0.629 | -2.3 | -2.14 |
| 1720 | Head | -0.226 | 2.82 | 0.628 | -1.26 | -1.43 |
| 1732.5 | Head | -0.226 | 2.84 | 0.626 | -1.47 | -1.56 |
| 1732.6 | Head | -0.226 | 2.75 | 0.626 | -1.4 | -1.50 |
| 1745 | Head | -0.226 | 2.5 | 0.623 | -1.68 | -1.61 |
| 1750 | Head | -0.226 | 2.47 | 0.622 | -0.8 | -1.06 |
| 1752.6 | Head | -0.226 | 2.37 | 0.622 | -0.29 | -0.72 |

***Date 2018/2/24:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 1712.4 | Body | -0.226 | -0.91 | 0.629 | 2.47 | 1.76 |
| 1720 | Body | -0.226 | -1.25 | 0.628 | 2.65 | 1.95 |
| 1732.5 | Body | -0.226 | -1.23 | 0.626 | 3.24 | 2.30 |
| 1732.6 | Body | -0.226 | -1.25 | 0.626 | 3.24 | 2.31 |
| 1745 | Body | -0.226 | -1.42 | 0.623 | 3.29 | 2.37 |
| 1750 | Body | -0.226 | -1.48 | 0.622 | 3.69 | 2.63 |
| 1752.6 | Body | -0.226 | -1.52 | 0.622 | 3.83 | 2.73 |

***Date 2018/3/7:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 1850.2 | Head | -0.226 | 1.83 | 0.604 | -4.36 | -3.05 |
| 1851.25 | Head | -0.226 | 1.82 | 0.603 | -4 | -2.83 |
| 1852.4 | Head | -0.226 | 1.75 | 0.603 | -3.71 | -2.63 |
| 1860 | Head | -0.226 | 1.46 | 0.602 | -3.5 | -2.44 |
| 1880 | Head | -0.226 | 1.18 | 0.598 | -2.86 | -1.98 |
| 1900 | Head | -0.226 | 1.06 | 0.594 | -0.64 | -0.62 |
| 1907.6 | Head | -0.226 | 0.89 | 0.593 | -0.14 | -0.28 |
| 1908.75 | Head | -0.226 | 0.78 | 0.592 | 0.21 | -0.05 |
| 1909.8 | Head | -0.226 | 0.75 | 0.592 | 0.64 | 0.21 |

***Date 2018/3/9:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 1860 | Head | -0.226 | 0.53 | 0.602 | -1.79 | -1.20 |
| 1882.5 | Head | -0.226 | 0.71 | 0.597 | -2.36 | -1.57 |
| 1900 | Head | -0.226 | 1.01 | 0.594 | -0.29 | -0.40 |
| 1905 | Head | -0.226 | 1.02 | 0.593 | -0.29 | -0.40 |

***Date 2018/3/8:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 1850.2 | Body | -0.226 | 2.51 | 0.604 | -4.34 | -3.19 |
| 1851.25 | Body | -0.226 | 2.46 | 0.603 | -3.82 | -2.86 |
| 1852.4 | Body | -0.226 | 2.44 | 0.603 | -3.68 | -2.77 |
| 1860 | Body | -0.226 | 2.09 | 0.602 | -3.42 | -2.53 |
| 1880 | Body | -0.226 | 1.75 | 0.598 | -2.7 | -2.01 |
| 1900 | Body | -0.226 | 1.67 | 0.594 | -0.39 | -0.61 |
| 1907.6 | Body | -0.226 | 1.59 | 0.593 | -0.26 | -0.51 |
| 1908.75 | Body | -0.226 | 1.51 | 0.592 | -0.2 | -0.46 |
| 1909.8 | Body | -0.226 | 1.51 | 0.592 | 0.59 | 0.01 |

***Date 2018/3/9:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 1860 | Body | -0.226 | 0.8 | 0.602 | -2.37 | -1.61 |
| 1882.5 | Body | -0.226 | 1.44 | 0.597 | -1.91 | -1.47 |
| 1900 | Body | -0.226 | 1.08 | 0.594 | -0.07 | -0.29 |
| 1905 | Body | -0.226 | 1.64 | 0.593 | -0.33 | -0.57 |

***Date 2018/2/23:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 2450 | Head | -0.225 | -1.08 | 0.480 | -0.17 | 0.16 |
| 2506 | Head | -0.225 | 2.8 | 0.468 | -3.17 | -2.11 |
| 2510 | Head | -0.225 | 2.43 | 0.467 | -2.89 | -1.90 |
| 2535 | Head | -0.224 | -0.19 | 0.462 | 0.32 | 0.19 |
| 2545 | Head | -0.224 | -0.2 | 0.459 | 0.84 | 0.43 |

***Date 2018/2/24:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 2402 | Head | -0.225 | 2.48 | 0.491 | -3.24 | -2.15 |
| 2412 | Head | -0.225 | 2.48 | 0.489 | -1.81 | -1.44 |
| 2416 | Head | -0.225 | 2.38 | 0.488 | -1.47 | -1.25 |
| 2441 | Head | -0.225 | 2.34 | 0.482 | -1.23 | -1.12 |
| 2442 | Head | -0.225 | -0.65 | 0.482 | -0.84 | -0.26 |
| 2450 | Head | -0.225 | -1.93 | 0.480 | 1.28 | 1.05 |
| 2472 | Head | -0.225 | -2.07 | 0.475 | -0.16 | 0.39 |
| 2480 | Head | -0.225 | -2.44 | 0.474 | -0.27 | 0.42 |

***Date 2018/2/23:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 2402 | Body | -0.225 | 3.17 | 0.491 | -0.47 | -0.94 |
| 2412 | Body | -0.225 | 3.09 | 0.489 | -0.26 | -0.82 |
| 2416 | Body | -0.225 | 2.94 | 0.488 | 0.05 | -0.64 |
| 2441 | Body | -0.225 | 2.81 | 0.482 | -0.36 | -0.81 |
| 2442 | Body | -0.225 | -0.01 | 0.482 | 0.1 | 0.05 |
| 2450 | Body | -0.225 | -0.45 | 0.480 | -0.1 | 0.05 |
| 2472 | Body | -0.225 | -1.44 | 0.475 | -0.1 | 0.28 |
| 2480 | Body | -0.225 | -2.05 | 0.474 | -0.35 | 0.29 |
| 2506 | Body | -0.225 | 0.37 | 0.468 | -4.29 | -2.09 |
| 2510 | Body | -0.225 | 0.02 | 0.467 | -3.48 | -1.63 |
| 2535 | Body | -0.224 | -0.2 | 0.462 | 1.98 | 0.96 |
| 2545 | Body | -0.225 | 3.17 | 0.491 | -0.47 | -0.94 |

***Date 2018/2/25:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 2560 | Head | -0.224 | -0.41 | 0.456 | 0.26 | 0.21 |
| 2593 | Head | -0.224 | -2.78 | 0.449 | 0.71 | 0.94 |
| 2600 | Head | -0.224 | -2.67 | 0.447 | 1.22 | 1.14 |
| 2635 | Head | -0.224 | -2.59 | 0.439 | 2.2 | 1.55 |
| 2680 | Head | -0.224 | -3.03 | 0.429 | 3.22 | 2.06 |

***Date 2018/2/25:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 2560 | Body | -0.224 | 3.2 | 0.456 | 0.43 | -0.52 |
| 2593 | Body | -0.224 | -1.4 | 0.449 | 2.88 | 1.61 |
| 2600 | Body | -0.224 | -2.26 | 0.447 | -0.69 | 0.20 |
| 2635 | Body | -0.224 | -2.57 | 0.439 | 3.26 | 2.01 |
| 2680 | Body | -0.224 | -3.41 | 0.429 | 2.76 | 1.95 |

***Date 2018/2/9:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 350.0125 | Head | -0.211 | 0.14 | 0.783 | -0.23 | -0.21 |
| 362 | Head | -0.211 | -0.59 | 0.783 | 0.92 | 0.84 |
| 375 | Head | -0.212 | -0.13 | 0.782 | 1.49 | 1.19 |
| 388 | Head | -0.212 | -0.99 | 0.782 | 0.34 | 0.48 |
| 399.9875 | Head | -0.212 | -2.36 | 0.782 | 0.23 | 0.68 |
| 400.0125 | Head | -0.212 | -2.36 | 0.782 | 0.23 | 0.68 |
| 406.1125 | Head | -0.212 | -1.66 | 0.781 | 0.92 | 1.07 |
| 418 | Head | -0.212 | -0.93 | 0.781 | 2.41 | 2.08 |
| 435 | Head | -0.213 | -1.94 | 0.780 | 0.57 | 0.86 |
| 450 | Head | -0.213 | -1.16 | 0.780 | -1.15 | -0.65 |
| 452 | Head | -0.213 | -0.21 | 0.780 | 0.46 | 0.40 |
| 469.9875 | Head | -0.213 | -0.98 | 0.779 | 0.34 | 0.47 |
| 450.0125 | Head | -0.213 | -1.21 | 0.780 | -1.15 | -0.64 |
| 469 | Head | -0.213 | -0.23 | 0.779 | 0.23 | 0.23 |
| 488 | Head | -0.214 | -1.4 | 0.778 | 1.26 | 1.28 |
| 507 | Head | -0.214 | -0.92 | 0.777 | 3.68 | 3.06 |
| 511.9875 | Head | -0.214 | -1.1 | 0.777 | 3.86 | 3.23 |

***Date 2018/2/10:***

| Frequency (MHz) | Liquid Type | C ε | △ ε r | C δ | △ δ | △SAR (%) |
|---|---|---|---|---|---|---|
| 350.0125 | Body | -0.211 | -1.76 | 0.783 | 0.65 | 0.88 |
| 362 | Body | -0.211 | -2.58 | 0.783 | 3.12 | 2.99 |
| 375 | Body | -0.212 | -2.38 | 0.782 | 3.98 | 3.62 |
| 388 | Body | -0.212 | -2.71 | 0.782 | 0.97 | 1.33 |
| 399.9875 | Body | -0.212 | -3.49 | 0.782 | 1.94 | 2.26 |
| 400.0125 | Body | -0.212 | -3.65 | 0.782 | 2.15 | 2.45 |
| 406.1125 | Body | -0.212 | -2.93 | 0.781 | 2.69 | 2.72 |
| 418 | Body | -0.212 | -3.13 | 0.781 | 1.81 | 2.08 |
| 435 | Body | -0.213 | -2.47 | 0.780 | 3.51 | 3.26 |
| 450 | Body | -0.213 | -2.72 | 0.780 | 2.55 | 2.57 |
| 452 | Body | -0.213 | -3.09 | 0.780 | 1.6 | 1.91 |
| 469.9875 | Body | -0.213 | -2.33 | 0.779 | 3.94 | 3.57 |
| 450.0125 | Body | -0.213 | -3.13 | 0.780 | 0.43 | 1.00 |
| 469 | Body | -0.213 | -2.79 | 0.779 | 3.09 | 3.00 |
| 488 | Body | -0.214 | -2.07 | 0.778 | 1.49 | 1.60 |
| 507 | Body | -0.214 | -2.26 | 0.777 | 3.72 | 3.37 |
| 511.9875 | Body | -0.214 | -1.73 | 0.777 | 2.42 | 2.25 |

$$\Delta SAR = c_\varepsilon \Delta\varepsilon_r + c_\sigma \Delta\sigma$$

$$c_\varepsilon = 3{,}456\times10^{-3} f^3 - 3{,}531\times10^{-2} f^2 + 7{,}675\times10^{-2} f - 0{,}186\ 0$$

$$c_\sigma = 4{,}479\times10^{-3} f^3 - 1{,}586\times10^{-2} f^2 - 0{,}197\ 2 f + 0{,}771\ 7$$

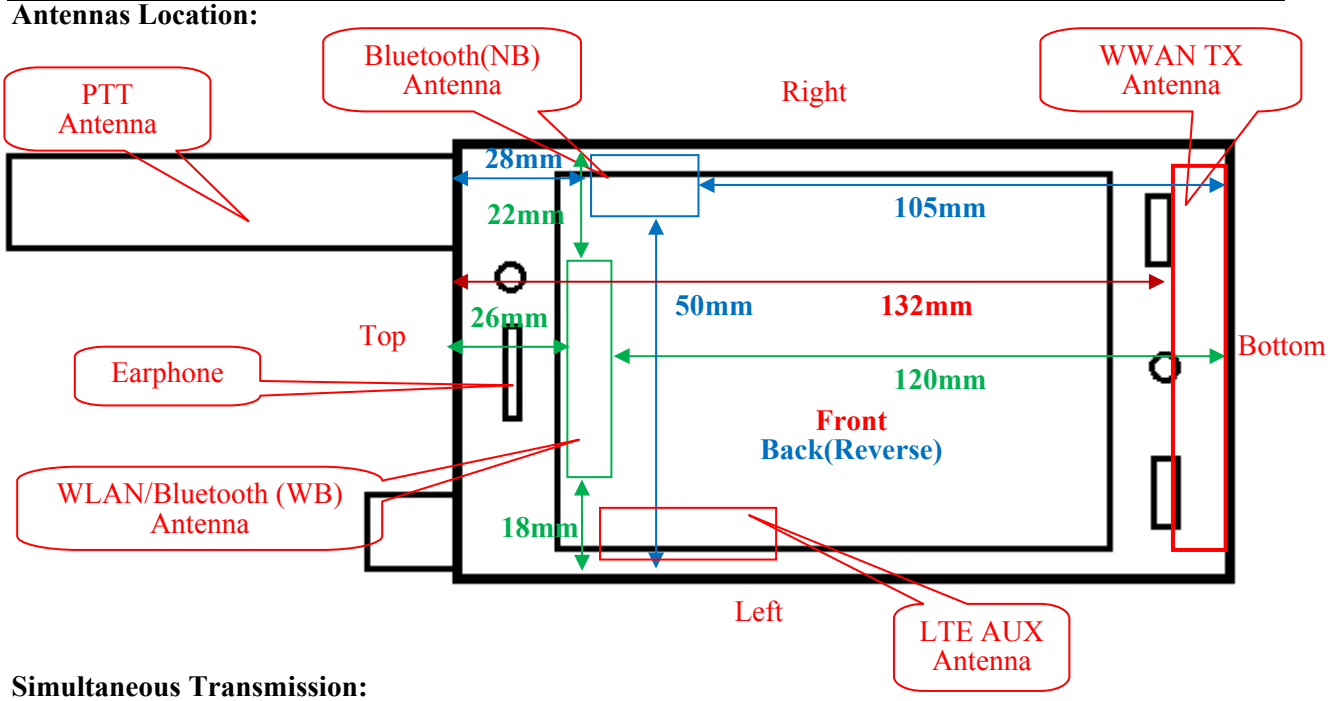
where

$f$ is the frequency in GHz.

Corrected SAR = Measured SAR * ((100 + (ΔSAR x -1)) /100)

# SAR SIMULTANEOUS TRANSMISSION DESCRIPTION

**Antennas Location:**




**Simultaneous Transmission:**

| Description of Simultaneous Transmit Capabilities | | |
|---|---|---|
| **Transmitter Combination** | **Simultaneous?** | **Hotspot?** |
| WWAN(Voice) + Bluetooth(NB) + WLAN | √ | × |
| **WWAN(Data) + Bluetooth(NB) + WLAN+PTT** | √ | × |
| WWAN(Voice) + Bluetooth(WB) | √ | × |
| **WWAN(Data) + Bluetooth(WB) +PTT** | √ | × |
| **WWAN(Data) + WLAN** | √ | √ |

***Note:***

1. *The EUT contains 4 RF transmitting antennas.*
2. *The EUT support WWAN(GSM/CDMA/WCDMA/LTE),WAN(Wi-Fi 2.4GHz), Bluetooth(Bluetooth(NB)/Bluetooth(WB)) and PTT technology.*
3. *The PTT mode can't work in Earphone speaking mode.*
4. *The PTT mode can't transmit Simultaneously with WWAN Voice mode.*
5. *The PTT mode can transmit Simultaneously with WWAN Data mode or WLAN/Bluetooth, the data communication keep linked when PTT mode works.*
6. *The WLAN and Bluetooth（WB）share the same Antenna，they can't transmit simultaneously.*
7. *The Bluetooth(WB) can't transmit simultaneously with Bluetooth(NB).*
8. *Per KDB 941225 D06 - A hotspot mode enabled device can provide wireless internet access to nearby Wi-Fi devices by routing the traffic through an available WWAN connection. Hotspot mode is a subset of the simultaneous transmission configurations applicable to certain categories of hosts and devices.*

**Antenna Distance To Edges**

| Antenna Distance To Edge(mm) | | | | | | |
|---|---|---|---|---|---|---|
| **Mode** | **Back** | **Front** | **Left** | **Right** | **Bottom** | **Top** |
| Bluetooth(NB) Antenna | 15 | 14 | 50 | 8 | 105 | 28 |
| WLAN/Bluetooth(WB) Antenna | 15 | 14 | 18 | 22 | 120 | 26 |
| WWAN Antenna | 18 | < 5 | < 5 | < 5 | < 5 | 132 |

**Standalone SAR test exclusion considerations(KDB)**

| Mode | Frequency (MHz) | Pavg (dBm) | Pavg (mW) | Minimum test Distance (mm) | Calculated value | Threshold (1-g) | SAR Test Exclusion |
|---|---|---|---|---|---|---|---|
| Bluetooth(NB) | 2480 | 5.0 | 3.16 | 8 | 0.6 | 3 | YES |

**NOTE:**
The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[( max. power of channel, including tune-up tolerance, mW )/( min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤7.5 for 10-g extremity SAR, where
1. f(GHz) is the RF channel transmit frequency in GHz.
2. Power and distance are rounded to the nearest mW and mm before calculation.
3. The result is rounded to one decimal place for comparison.
4. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test Exclusion.

**Standalone SAR test exclusion considerations(RSS-102):**

| Mode | Frequency (MHz) | Pavg (dBm) | Antenna Gain(dBi) | e.i.r.p. (mW) | Test Exclusion Distance (mm) |
|---|---|---|---|---|---|
| Bluetooth(NB) | 2480 | 5.0 | 0 | 3.16 | 6.8 |

**Conclusion:** The distance from the antenna to edge is large than **Test Exclusion Distance specified** under **KDB** and **RSS-102 Issue 5 March 2015**, SAR test is not required

**NOTE:**

1, When the operating frequency of the device is between two frequencies located in Table 1of **RSS-102 Issue 5 March 2015**, linear interpolation shall be applied for the applicable separation distance.
2, When the **Test Exclusion Distance** is farther than **50mm** and less than 200mm, testing for each edge is required.

**Standalone SAR estimation:**

| Mode | EDGE | Frequency (MHz) | Pavg (dBm) | Pavg (mW) | Distance (mm) | Estimated 1-g (W/kg) |
|---|---|---|---|---|---|---|
| Bluetooth(NB) | **Back** | 2480 | 5.0 | 3.16 | 15 | 0.04 |
| | **Front** | 2480 | 5.0 | 3.16 | 14 | 0.05 |
| | **Left** | 2480 | 5.0 | 3.16 | 50 | 0.01 |
| | **Right** | 2480 | 5.0 | 3.16 | 8 | 0.08 |
| | **Bottom** | 2480 | 5.0 | 3.16 | 105 | 0.01 |
| | **Top** | 2480 | 5.0 | 3.16 | 28 | 0.02 |
| | **Face Up** | 2480 | 5.0 | 3.16 | 25 | 0.02 |

When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:
[( max. power of channel, including tune-up tolerance , mW)/( min. test separation distance,mm)] · [√f(GHz)/x ]
W/kg for test separation distances ≤50 mm;
where x = 7.5 for 1-g SAR.
When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test Exclusion

**SAR test exclusion for the EUT edge considerations Result(Hotspot Mode)**

| Mode | Back | Front | Left | Right | Bottom | Top |
|---|---|---|---|---|---|---|
| WLAN | Required | Required | Required | Required | **Exclusion** | **Exclusion** |
| WWAN (GSM/CDMA/WCDMA/LTE) | Required | Required | Required | Required | Required | **Exclusion** |

**Note:**
KDB 941225 D06-Hotspot mode SAR is measured for all edges and surfaces of the device with a transmitting antenna located within 25 mm from that surface or edge.

**Required**：The distance to Edge is less than 25mm, testing is required.
**Exclusion**：The distance to Edge is more than 25 mm, testing is not required.
**Exclusion***：SAR test exclusion evaluation has been done above**.**

**Simultaneous and Hotspot SAR test exclusion considerations:**

**WWAN + Bluetooth(NB) + WLAN+PTT:**

| Mode (WWAN+BT+ WLAN+PTT) | Position | Reported SAR(W/kg) | | | | Mixed SAR (Sum of SAR-to-limit ratios) | ΣSAR < 8.0W/kg |
|---|---|---|---|---|---|---|---|
| | | WWAN | BT | WLAN | PTT | | |
| GSM 850+Bluetooth(NB) +WLAN+PTT | Head Left Cheek | 0.37 | 0.05 | 0.04 | N/A | 0.288 | 0.46 |
| | Head Left Tilt | 0.21 | 0.05 | 0.05 | N/A | 0.194 | 0.31 |
| | Head Right Cheek | 0.27 | 0.05 | 0.11 | N/A | 0.269 | 0.43 |
| | Head Right Tilt | 0.17 | 0.05 | 0.07 | N/A | 0.181 | 0.29 |
| | Face Up | 0.16 | 0.02 | 0.01 | 5.13 | 0.760 | 5.32 |
| | Body Worn Back (GSM voice) | 0.24 | 0.04 | 0.09 | N/A | 0.231 | 0.37 |
| | | N/A | 0.04 | 0.09 | 5.13 | 0.723 | 5.26 |
| | Body Back (GPRS Data) | 0.18 | 0.04 | 0.09 | 5.13 | 0.835 | 5.44 |
| PCS1900 + Bluetooth(NB) +WLAN +PTT | Head Left Cheek | 0.33 | 0.05 | 0.04 | N/A | 0.263 | 0.42 |
| | Head Left Tilt | 0.19 | 0.05 | 0.05 | N/A | 0.181 | 0.29 |
| | Head Right Cheek | 0.19 | 0.05 | 0.11 | N/A | 0.219 | 0.35 |
| | Head Right Tilt | 0.11 | 0.05 | 0.07 | N/A | 0.144 | 0.23 |
| | Face Up | 0.07 | 0.02 | 0.01 | 5.13 | 0.704 | 5.23 |
| | Body Worn Back (GSM voice) | 0.11 | 0.04 | 0.09 | N/A | 0.150 | 0.24 |
| | | N/A | 0.04 | 0.09 | 5.13 | 0.723 | 5.26 |
| | Body Back (GPRS Data) | 0.09 | 0.04 | 0.09 | 5.13 | 0.779 | 5.35 |
| WCDMA Band 2+ Bluetooth(NB) +WLAN +PTT | Head Left Cheek | 0.71 | 0.05 | 0.04 | N/A | 0.500 | 0.8 |
| | Head Left Tilt | 0.37 | 0.05 | 0.05 | N/A | 0.294 | 0.47 |
| | Head Right Cheek | 0.37 | 0.05 | 0.11 | N/A | 0.331 | 0.53 |
| | Head Right Tilt | 0.21 | 0.05 | 0.07 | N/A | 0.206 | 0.33 |
| | Face Up | 0.29 | 0.02 | 0.01 | 5.13 | 0.841 | 5.45 |
| | Body Back | 0.43 | 0.04 | 0.09 | 5.13 | **0.991** | **5.69** |
| WCDMA Band 4+ Bluetooth(NB) +WLAN +PTT | Head Left Cheek | 0.21 | 0.05 | 0.04 | N/A | 0.188 | 0.3 |
| | Head Left Tilt | 0.13 | 0.05 | 0.05 | N/A | 0.144 | 0.23 |
| | Head Right Cheek | 0.16 | 0.05 | 0.11 | N/A | 0.200 | 0.32 |
| | Head Right Tilt | 0.09 | 0.05 | 0.07 | N/A | 0.131 | 0.21 |
| | Face Up | 0.28 | 0.02 | 0.01 | 5.13 | 0.835 | 5.44 |
| | Body Back | 0.37 | 0.04 | 0.09 | 5.13 | 0.954 | 5.63 |
| WCDMA Band 5+Bluetooth +WLAN +PTT | Head Left Cheek | 0.34 | 0.05 | 0.04 | N/A | 0.269 | 0.43 |
| | Head Left Tilt | 0.19 | 0.05 | 0.05 | N/A | 0.181 | 0.29 |
| | Head Right Cheek | 0.29 | 0.05 | 0.11 | N/A | 0.281 | 0.45 |
| | Head Right Tilt | 0.15 | 0.05 | 0.07 | N/A | 0.169 | 0.27 |
| | Face Up | 0.11 | 0.02 | 0.01 | 5.13 | 0.729 | 5.27 |
| | Body Back | 0.27 | 0.04 | 0.09 | 5.13 | 0.891 | 5.53 |
| LTE Band 2+ Bluetooth(NB) +WLAN +PTT | Head Left Cheek | 0.78 | 0.05 | 0.04 | N/A | 0.544 | 0.87 |
| | Head Left Tilt | 0.16 | 0.05 | 0.05 | N/A | 0.163 | 0.26 |
| | Head Right Cheek | 0.37 | 0.05 | 0.11 | N/A | 0.331 | 0.53 |
| | Head Right Tilt | 0.11 | 0.05 | 0.07 | N/A | 0.144 | 0.23 |
| | Face Up | 0.08 | 0.02 | 0.01 | 5.13 | 0.710 | 5.24 |
| | Body Back | 0.19 | 0.04 | 0.09 | 5.13 | 0.841 | 5.45 |

| Mode (WWAN+BT+ WLAN+PTT) | Position | Reported SAR(W/kg) | | | | Mixed SAR (Sum of SAR-to-limit ratios) | ΣSAR < 8.0W/kg |
|---|---|---|---|---|---|---|---|
| | | WWAN | BT | WLAN | PTT | | |
| LTE Band 4+ Bluetooth(NB) +WLAN +PTT | Head Left Cheek | 0.30 | 0.05 | 0.04 | N/A | 0.244 | 0.39 |
| | Head Left Tilt | 0.13 | 0.05 | 0.05 | N/A | 0.144 | 0.23 |
| | Head Right Cheek | 0.16 | 0.05 | 0.11 | N/A | 0.200 | 0.32 |
| | Head Right Tilt | 0.09 | 0.05 | 0.07 | N/A | 0.131 | 0.21 |
| | Face Up | 0.31 | 0.02 | 0.01 | 5.13 | 0.854 | 5.47 |
| | Body Back | 0.33 | 0.04 | 0.09 | 5.13 | 0.929 | 5.59 |
| LTE Band 5+ Bluetooth(NB) +WLAN +PTT | Head Left Cheek | 0.31 | 0.05 | 0.04 | N/A | 0.250 | 0.40 |
| | Head Left Tilt | 0.20 | 0.05 | 0.05 | N/A | 0.188 | 0.30 |
| | Head Right Cheek | 0.30 | 0.05 | 0.11 | N/A | 0.288 | 0.46 |
| | Head Right Tilt | 0.16 | 0.05 | 0.07 | N/A | 0.175 | 0.28 |
| | Face Up | 0.06 | 0.02 | 0.01 | 5.13 | 0.698 | 5.22 |
| | Body Back | 0.22 | 0.04 | 0.09 | 5.13 | 0.860 | 5.48 |
| LTE Band 7+ Bluetooth(NB) +WLAN +PTT | Head Left Cheek | 0.45 | 0.05 | 0.04 | N/A | 0.338 | 0.54 |
| | Head Left Tilt | 0.35 | 0.05 | 0.05 | N/A | 0.281 | 0.45 |
| | Head Right Cheek | 0.78 | 0.05 | 0.11 | N/A | 0.588 | 0.94 |
| | Head Right Tilt | 0.23 | 0.05 | 0.07 | N/A | 0.219 | 0.35 |
| | Face Up | 0.11 | 0.02 | 0.01 | 5.13 | 0.729 | 5.27 |
| | Body Back | 0.27 | 0.04 | 0.09 | 5.13 | 0.891 | 5.53 |
| LTE Band 12+ Bluetooth(NB) +WLAN +PTT | Head Left Cheek | 0.25 | 0.05 | 0.04 | N/A | 0.213 | 0.34 |
| | Head Left Tilt | 0.09 | 0.05 | 0.05 | N/A | 0.119 | 0.19 |
| | Head Right Cheek | 0.21 | 0.05 | 0.11 | N/A | 0.231 | 0.37 |
| | Head Right Tilt | 0.09 | 0.05 | 0.07 | N/A | 0.131 | 0.21 |
| | Face Up | 0.08 | 0.02 | 0.01 | 5.13 | 0.710 | 5.24 |
| | Body Back | 0.09 | 0.04 | 0.09 | 5.13 | 0.779 | 5.35 |
| LTE Band 13+ Bluetooth(NB) +WLAN +PTT | Head Left Cheek | 0.26 | 0.05 | 0.04 | N/A | 0.219 | 0.35 |
| | Head Left Tilt | 0.16 | 0.05 | 0.05 | N/A | 0.163 | 0.26 |
| | Head Right Cheek | 0.24 | 0.05 | 0.11 | N/A | 0.250 | 0.40 |
| | Head Right Tilt | 0.14 | 0.05 | 0.07 | N/A | 0.163 | 0.26 |
| | Face Up | 0.11 | 0.02 | 0.01 | 5.13 | 0.729 | 5.27 |
| | Body Back | 0.17 | 0.04 | 0.09 | 5.13 | 0.829 | 5.43 |
| LTE Band 17+ Bluetooth(NB) +WLAN +PTT | Head Left Cheek | 0.25 | 0.05 | 0.04 | N/A | 0.213 | 0.34 |
| | Head Left Tilt | 0.09 | 0.05 | 0.05 | N/A | 0.119 | 0.19 |
| | Head Right Cheek | 0.23 | 0.05 | 0.11 | N/A | 0.244 | 0.39 |
| | Head Right Tilt | 0.11 | 0.05 | 0.07 | N/A | 0.144 | 0.23 |
| | Face Up | 0.11 | 0.02 | 0.01 | 5.13 | 0.729 | 5.27 |
| | Body Back | 0.10 | 0.04 | 0.09 | 5.13 | 0.785 | 5.36 |
| LTE Band 25+ Bluetooth(NB) +WLAN +PTT | Head Left Cheek | 0.76 | 0.05 | 0.04 | N/A | 0.531 | 0.85 |
| | Head Left Tilt | 0.30 | 0.05 | 0.05 | N/A | 0.250 | 0.40 |
| | Head Right Cheek | 0.34 | 0.05 | 0.11 | N/A | 0.313 | 0.50 |
| | Head Right Tilt | 0.18 | 0.05 | 0.07 | N/A | 0.188 | 0.30 |
| | Face Up | 0.19 | 0.02 | 0.01 | 5.13 | 0.779 | 5.35 |
| | Body Back | 0.20 | 0.04 | 0.09 | 5.13 | 0.848 | 5.46 |

| Mode (WWAN+BT+ WLAN+PTT) | Position | Reported SAR(W/kg) | | | | Mixed SAR (Sum of SAR-to-limit ratios) | ΣSAR < 8.0W/kg |
|---|---|---|---|---|---|---|---|
| | | WWAN | BT | WLAN | PTT | | |
| LTE Band 26+ Bluetooth(NB) +WLAN +PTT | Head Left Cheek | 0.23 | 0.05 | 0.04 | N/A | 0.200 | 0.32 |
| | Head Left Tilt | 0.14 | 0.05 | 0.05 | N/A | 0.150 | 0.24 |
| | Head Right Cheek | 0.23 | 0.05 | 0.11 | N/A | 0.244 | 0.39 |
| | Head Right Tilt | 0.14 | 0.05 | 0.07 | N/A | 0.163 | 0.26 |
| | Face Up | 0.06 | 0.02 | 0.01 | 5.13 | 0.698 | 5.22 |
| | Body Back | 0.22 | 0.04 | 0.09 | 5.13 | 0.860 | 5.48 |
| LTE Band 41+ Bluetooth(NB) +WLAN +PTT | Head Left Cheek | 0.21 | 0.05 | 0.04 | N/A | 0.188 | 0.30 |
| | Head Left Tilt | 0.13 | 0.05 | 0.05 | N/A | 0.144 | 0.23 |
| | Head Right Cheek | 0.30 | 0.05 | 0.11 | N/A | 0.288 | 0.46 |
| | Head Right Tilt | 0.09 | 0.05 | 0.07 | N/A | 0.131 | 0.21 |
| | Face Up | 0.07 | 0.02 | 0.01 | 5.13 | 0.704 | 5.23 |
| | Body Back | 0.08 | 0.04 | 0.09 | 5.13 | 0.773 | 5.34 |
| CDMA 850(BC0) + Bluetooth(NB) +WLAN +PTT | Head Left Cheek | 0.41 | 0.05 | 0.04 | N/A | 0.313 | 0.50 |
| | Head Left Tilt | 0.26 | 0.05 | 0.05 | N/A | 0.225 | 0.36 |
| | Head Right Cheek | 0.32 | 0.05 | 0.11 | N/A | 0.300 | 0.48 |
| | Head Right Tilt | 0.20 | 0.05 | 0.07 | N/A | 0.200 | 0.32 |
| | Face Up | 0.17 | 0.02 | 0.01 | 5.13 | 0.766 | 5.33 |
| | Body Worn Back | 0.14 | 0.04 | 0.09 | N/A | 0.169 | 0.27 |
| | | N/A | 0.05 | 0.09 | 5.13 | 0.729 | 5.27 |
| | Body Back | 0.16 | 0.05 | 0.09 | 5.13 | 0.829 | 5.43 |
| CDMA 1900(BC1) + Bluetooth(NB) +WLAN +PTT | Head Left Cheek | 0.10 | 0.05 | 0.04 | N/A | 0.119 | 0.19 |
| | Head Left Tilt | 0.07 | 0.05 | 0.05 | N/A | 0.106 | 0.17 |
| | Head Right Cheek | 0.07 | 0.02 | 0.11 | N/A | 0.125 | 0.20 |
| | Head Right Tilt | 0.05 | 0.04 | 0.07 | N/A | 0.100 | 0.16 |
| | Face Up | 0.04 | 0.05 | 0.01 | 5.13 | 0.704 | 5.23 |
| | Body Worn Back | 0.04 | 0.05 | 0.09 | N/A | 0.113 | 0.18 |
| | | N/A | 0.05 | 0.09 | 5.13 | 0.729 | 5.27 |
| | Body Back | 0.05 | 0.05 | 0.09 | 5.13 | 0.760 | 5.32 |
| CDMA 800(BC10) + Bluetooth(NB) +WLAN +PTT | Head Left Cheek | 0.37 | 0.02 | 0.04 | N/A | 0.269 | 0.43 |
| | Head Left Tilt | 0.22 | 0.04 | 0.05 | N/A | 0.194 | 0.31 |
| | Head Right Cheek | 0.29 | 0.05 | 0.11 | N/A | 0.281 | 0.45 |
| | Head Right Tilt | 0.17 | 0.05 | 0.07 | N/A | 0.181 | 0.29 |
| | Face Up | 0.16 | 0.05 | 0.01 | 5.14 | 0.780 | 5.36 |
| | Body Worn Back | 0.13 | 0.05 | 0.09 | N/A | 0.169 | 0.27 |
| | | N/A | 0.02 | 0.09 | 5.14 | 0.711 | 5.25 |
| | Body Back | 0.15 | 0.04 | 0.09 | 5.14 | 0.818 | 5.42 |

**WWAN + Bluetooth(WB) +PTT:**

| Mode (WWAN+BT+ WLAN+PTT) | Position | Reported SAR(W/kg) | | | Mixed SAR (Sum of SAR-to-limit ratios) | ΣSAR < 8.0W/kg |
|---|---|---|---|---|---|---|
| | | WWAN | BT | PTT | | |
| GSM 850+Bluetooth(WB) +PTT | Head Left Cheek | 0.37 | 0.03 | N/A | 0.250 | 0.40 |
| | Head Left Tilt | 0.21 | 0.03 | N/A | 0.150 | 0.24 |
| | Head Right Cheek | 0.27 | 0.05 | N/A | 0.200 | 0.32 |
| | Head Right Tilt | 0.17 | 0.05 | N/A | 0.138 | 0.22 |
| | Face Up | 0.16 | 0.01 | 5.13 | 0.663 | 5.30 |
| | Body Worn Back | 0.24 | 0.04 | N/A | 0.175 | 0.28 |
| | | N/A | 0.04 | 5.13 | 0.666 | 5.17 |
| | Body Back | 0.18 | 0.04 | 5.13 | 0.669 | 5.35 |
| PCS1900 + Bluetooth(WB) +PTT | Head Left Cheek | 0.33 | 0.03 | N/A | 0.225 | 0.36 |
| | Head Left Tilt | 0.19 | 0.03 | N/A | 0.138 | 0.22 |
| | Head Right Cheek | 0.19 | 0.05 | N/A | 0.150 | 0.24 |
| | Head Right Tilt | 0.11 | 0.05 | N/A | 0.100 | 0.16 |
| | Face Up | 0.07 | 0.01 | 5.13 | 0.651 | 5.21 |
| | Body Worn Back | 0.11 | 0.04 | N/A | 0.094 | 0.15 |
| | | N/A | 0.04 | 5.13 | 0.666 | 5.17 |
| | Body Back | 0.09 | 0.04 | 5.13 | 0.658 | 5.26 |
| WCDMA Band 2+ Bluetooth(WB) +PTT | Head Left Cheek | 0.71 | 0.03 | N/A | 0.463 | 0.74 |
| | Head Left Tilt | 0.37 | 0.03 | N/A | 0.250 | 0.40 |
| | Head Right Cheek | 0.37 | 0.05 | N/A | 0.263 | 0.42 |
| | Head Right Tilt | 0.21 | 0.05 | N/A | 0.163 | 0.26 |
| | Face Up | 0.29 | 0.01 | 5.13 | 0.679 | 5.43 |
| | Body Back | 0.43 | 0.04 | 5.13 | 0.700 | 5.60 |
| WCDMA Band 4+ Bluetooth(WB) +PTT | Head Left Cheek | 0.21 | 0.03 | N/A | 0.150 | 0.24 |
| | Head Left Tilt | 0.13 | 0.03 | N/A | 0.100 | 0.16 |
| | Head Right Cheek | 0.16 | 0.05 | N/A | 0.131 | 0.21 |
| | Head Right Tilt | 0.09 | 0.05 | N/A | 0.088 | 0.14 |
| | Face Up | 0.28 | 0.01 | 5.13 | 0.678 | 5.42 |
| | Body Back | 0.37 | 0.04 | 5.13 | 0.693 | 5.54 |
| WCDMA Band 5+Bluetooth +PTT | Head Left Cheek | 0.34 | 0.03 | N/A | 0.231 | 0.37 |
| | Head Left Tilt | 0.19 | 0.03 | N/A | 0.138 | 0.22 |
| | Head Right Cheek | 0.29 | 0.05 | N/A | 0.213 | 0.34 |
| | Head Right Tilt | 0.15 | 0.05 | N/A | 0.125 | 0.20 |
| | Face Up | 0.11 | 0.01 | 5.13 | 0.656 | 5.25 |
| | Body Back | 0.27 | 0.04 | 5.13 | 0.680 | 5.44 |
| LTE Band 2+ Bluetooth(WB) +PTT | Head Left Cheek | 0.78 | 0.03 | N/A | 0.506 | 0.81 |
| | Head Left Tilt | 0.16 | 0.03 | N/A | 0.119 | 0.19 |
| | Head Right Cheek | 0.37 | 0.05 | N/A | 0.263 | 0.42 |
| | Head Right Tilt | 0.11 | 0.05 | N/A | 0.100 | 0.16 |
| | Face Up | 0.08 | 0.01 | 5.13 | 0.653 | 5.22 |
| | Body Back | 0.19 | 0.04 | 5.13 | 0.670 | 5.36 |

| Mode (WWAN+BT+ WLAN+PTT) | Position | Reported SAR(W/kg) | | | Mixed SAR (Sum of SAR-to-limit ratios) | ΣSAR < 8.0W/kg |
|---|---|---|---|---|---|---|
| | | WWAN | BT | PTT | | |
| LTE Band 4+ Bluetooth(WB) +PTT | Head Left Cheek | 0.30 | 0.03 | N/A | 0.206 | 0.33 |
| | Head Left Tilt | 0.13 | 0.02 | N/A | 0.094 | 0.15 |
| | Head Right Cheek | 0.16 | 0.05 | N/A | 0.131 | 0.21 |
| | Head Right Tilt | 0.09 | 0.05 | N/A | 0.088 | 0.14 |
| | Face Up | 0.31 | 0.01 | 5.13 | 0.681 | 5.45 |
| | Body Back | 0.33 | 0.04 | 5.13 | 0.688 | 5.50 |
| LTE Band 5+ Bluetooth(WB) +PTT | Head Left Cheek | 0.31 | 0.03 | N/A | 0.213 | 0.34 |
| | Head Left Tilt | 0.20 | 0.03 | N/A | 0.144 | 0.23 |
| | Head Right Cheek | 0.30 | 0.05 | N/A | 0.219 | 0.35 |
| | Head Right Tilt | 0.16 | 0.05 | N/A | 0.131 | 0.21 |
| | Face Up | 0.06 | 0.01 | 5.13 | 0.650 | 5.20 |
| | Body Back | 0.22 | 0.04 | 5.13 | 0.674 | 5.39 |
| LTE Band 7+ Bluetooth(WB) +PTT | Head Left Cheek | 0.45 | 0.03 | N/A | 0.300 | 0.48 |
| | Head Left Tilt | 0.35 | 0.03 | N/A | 0.238 | 0.38 |
| | Head Right Cheek | 0.78 | 0.05 | N/A | 0.519 | 0.83 |
| | Head Right Tilt | 0.23 | 0.05 | N/A | 0.175 | 0.28 |
| | Face Up | 0.11 | 0.01 | 5.13 | 0.656 | 5.25 |
| | Body Back | 0.27 | 0.04 | 5.13 | 0.680 | 5.44 |
| LTE Band 12+ Bluetooth(WB) +PTT | Head Left Cheek | 0.25 | 0.03 | N/A | 0.175 | 0.28 |
| | Head Left Tilt | 0.09 | 0.03 | N/A | 0.075 | 0.12 |
| | Head Right Cheek | 0.21 | 0.05 | N/A | 0.163 | 0.26 |
| | Head Right Tilt | 0.09 | 0.05 | N/A | 0.088 | 0.14 |
| | Face Up | 0.08 | 0.01 | 5.13 | 0.653 | 5.22 |
| | Body Back | 0.09 | 0.04 | 5.13 | 0.658 | 5.26 |
| LTE Band 13+ Bluetooth(WB) +PTT | Head Left Cheek | 0.26 | 0.03 | N/A | 0.181 | 0.29 |
| | Head Left Tilt | 0.16 | 0.03 | N/A | 0.119 | 0.19 |
| | Head Right Cheek | 0.24 | 0.05 | N/A | 0.181 | 0.29 |
| | Head Right Tilt | 0.14 | 0.05 | N/A | 0.119 | 0.19 |
| | Face Up | 0.11 | 0.01 | 5.13 | 0.656 | 5.25 |
| | Body Back | 0.17 | 0.04 | 5.13 | 0.668 | 5.34 |
| LTE Band 17+ Bluetooth(WB) +PTT | Head Left Cheek | 0.25 | 0.03 | N/A | 0.175 | 0.28 |
| | Head Left Tilt | 0.09 | 0.03 | N/A | 0.075 | 0.12 |
| | Head Right Cheek | 0.23 | 0.05 | N/A | 0.175 | 0.28 |
| | Head Right Tilt | 0.11 | 0.05 | N/A | 0.100 | 0.16 |
| | Face Up | 0.11 | 0.01 | 5.13 | 0.656 | 5.25 |
| | Body Back | 0.10 | 0.04 | 5.13 | 0.659 | 5.27 |
| LTE Band 25+ Bluetooth(WB) +PTT | Head Left Cheek | 0.76 | 0.03 | N/A | 0.494 | 0.79 |
| | Head Left Tilt | 0.30 | 0.03 | N/A | 0.206 | 0.33 |
| | Head Right Cheek | 0.34 | 0.05 | N/A | 0.244 | 0.39 |
| | Head Right Tilt | 0.18 | 0.05 | N/A | 0.144 | 0.23 |
| | Face Up | 0.19 | 0.01 | 5.13 | 0.666 | 5.33 |
| | Body Back | 0.20 | 0.04 | 5.13 | 0.671 | 5.37 |

| Mode (WWAN+BT+ WLAN+PTT) | Position | Reported SAR(W/kg) | | | Mixed SAR (Sum of SAR-to-limit ratios) | ΣSAR < 8.0W/kg |
|---|---|---|---|---|---|---|
| | | WWAN | BT | PTT | | |
| LTE Band 26+ Bluetooth(WB) +PTT | Head Left Cheek | 0.23 | 0.03 | N/A | 0.163 | 0.26 |
| | Head Left Tilt | 0.14 | 0.03 | N/A | 0.106 | 0.17 |
| | Head Right Cheek | 0.23 | 0.05 | N/A | 0.175 | 0.28 |
| | Head Right Tilt | 0.14 | 0.05 | N/A | 0.119 | 0.19 |
| | Face Up | 0.06 | 0.01 | 5.13 | 0.685 | 5.20 |
| | Body Back | 0.22 | 0.04 | 5.13 | 0.804 | 5.39 |
| LTE Band 41+ Bluetooth(WB) +PTT | Head Left Cheek | 0.21 | 0.03 | N/A | 0.150 | 0.24 |
| | Head Left Tilt | 0.13 | 0.03 | N/A | 0.100 | 0.16 |
| | Head Right Cheek | 0.30 | 0.05 | N/A | 0.219 | 0.35 |
| | Head Right Tilt | 0.09 | 0.05 | N/A | 0.088 | 0.14 |
| | Face Up | 0.07 | 0.01 | 5.13 | 0.651 | 5.21 |
| | Body Back | 0.08 | 0.04 | 5.13 | 0.656 | 5.25 |
| CDMA 850(BC0) + Bluetooth(WB) +PTT | Head Left Cheek | 0.41 | 0.03 | N/A | 0.275 | 0.44 |
| | Head Left Tilt | 0.26 | 0.03 | N/A | 0.181 | 0.29 |
| | Head Right Cheek | 0.32 | 0.05 | N/A | 0.231 | 0.37 |
| | Head Right Tilt | 0.20 | 0.05 | N/A | 0.156 | 0.25 |
| | Face Up | 0.17 | 0.01 | 5.13 | 0.664 | 5.31 |
| | Body Worn Back | 0.14 | 0.04 | N/A | 0.113 | 0.18 |
| | | N/A | 0.04 | 5.13 | 0.666 | 5.17 |
| | Body Back | 0.16 | 0.04 | 5.13 | 0.666 | 5.33 |
| CDMA 1900(BC1) + Bluetooth(WB) +PTT | Head Left Cheek | 0.10 | 0.03 | N/A | 0.081 | 0.13 |
| | Head Left Tilt | 0.07 | 0.03 | N/A | 0.063 | 0.10 |
| | Head Right Cheek | 0.07 | 0.05 | N/A | 0.075 | 0.12 |
| | Head Right Tilt | 0.05 | 0.05 | N/A | 0.063 | 0.10 |
| | Face Up | 0.04 | 0.01 | 5.13 | 0.648 | 5.18 |
| | Body Worn Back | 0.04 | 0.04 | N/A | 0.050 | 0.08 |
| | | N/A | 0.04 | 5.13 | 0.666 | 5.17 |
| | Body Back | 0.05 | 0.04 | 5.13 | 0.653 | 5.22 |
| CDMA 800(BC10) + Bluetooth(WB) +PTT | Head Left Cheek | 0.37 | 0.03 | N/A | 0.250 | 0.40 |
| | Head Left Tilt | 0.22 | 0.03 | N/A | 0.156 | 0.25 |
| | Head Right Cheek | 0.29 | 0.05 | N/A | 0.213 | 0.34 |
| | Head Right Tilt | 0.17 | 0.05 | N/A | 0.138 | 0.22 |
| | Face Up | 0.16 | 0.01 | 5.14 | 0.664 | 5.31 |
| | Body Worn Back | 0.13 | 0.04 | N/A | 0.106 | 0.17 |
| | | N/A | 0.04 | 5.14 | 0.668 | 5.18 |
| | Body Back | 0.15 | 0.04 | 5.14 | 0.666 | 5.33 |

**Note:**

1, KDB 447498 D01, Occupational exposure limits do not apply to consumer devices and radio services intended for supporting public networks or Part 15 unlicensed operations, thus the limits is 1.6W/kg for Bluetooth and 8.0W/kg for PTT(PLMRS).
2, The initial simultaneous transmission SAR test exclusion is to be based on ratios of SAR to the applicable limit for each transmit mode (similar to basic concept of ratios for "mixed limits" in 7.2 of KDB Pub. 447498 D01 v06 and FCC-13-39).

**Sum of SAR-to-limit ratios= WWAN/1.6+ BT/1.6+ WLAN/1.6+ PTT/8.0**

**Conclusion:**

The **sum of SAR-to-limit ratios** is less than 1.0, thus additional analysis or simultaneous-transmit extended-volume-scan SAR is not needed.

**Hotspot:**

| Mode(WWAN+ WLAN) | Position | Reported SAR(W/kg) | | ΣSAR < 1.6W/kg |
|---|---|---|---|---|
| | | WWAN | WLAN | |
| GSM 850+WLAN 2.4G | Body Front | 0.45 | 0.01 | 0.46 |
| | Body Back | 0.18 | 0.09 | 0.27 |
| | Body Left | 0.19 | 0.03 | 0.22 |
| | Body Right | 0.24 | 0.02 | 0.26 |
| | Body Bottom | 0.14 | N/A | N/A |
| PCS1900 + WLAN 2.4G | Body Front | 0.15 | 0.01 | 0.16 |
| | Body Back | 0.09 | 0.09 | 0.18 |
| | Body Left | 0.18 | 0.03 | 0.21 |
| | Body Right | 0.07 | 0.02 | 0.09 |
| | Body Bottom | 0.31 | N/A | N/A |
| WCDMA Band 2+ WLAN 2.4G | Body Front | 0.44 | 0.01 | 0.45 |
| | Body Back | 0.43 | 0.09 | 0.52 |
| | Body Left | 0.63 | 0.03 | **0.66** |
| | Body Right | 0.25 | 0.02 | 0.27 |
| | Body Bottom | 0.76 | N/A | N/A |
| WCDMA Band 4+ WLAN 2.4G | Body Front | 0.60 | 0.01 | 0.61 |
| | Body Back | 0.37 | 0.09 | 0.46 |
| | Body Left | 0.38 | 0.03 | 0.41 |
| | Body Right | 0.12 | 0.02 | 0.14 |
| | Body Bottom | 0.69 | 0.00 | 0.69 |
| WCDMA Band 5+ WLAN 2.4G | Body Front | 0.55 | 0.01 | 0.56 |
| | Body Back | 0.27 | 0.09 | 0.36 |
| | Body Left | 0.28 | 0.03 | 0.31 |
| | Body Right | 0.41 | 0.02 | 0.43 |
| | Body Bottom | 0.26 | N/A | N/A |
| LTE Band 2+ WLAN 2.4G | Body Front | 0.50 | 0.01 | 0.51 |
| | Body Back | 0.19 | 0.09 | 0.28 |
| | Body Left | 0.53 | 0.03 | 0.56 |
| | Body Right | 0.19 | 0.02 | 0.21 |
| | Body Bottom | 0.41 | N/A | N/A |
| LTE Band 4+ WLAN 2.4G | Body Front | 0.53 | 0.01 | 0.54 |
| | Body Back | 0.33 | 0.09 | 0.42 |
| | Body Left | 0.41 | 0.03 | 0.44 |
| | Body Right | 0.12 | 0.02 | 0.14 |
| | Body Bottom | 0.71 | N/A | N/A |
| LTE Band 5+ WLAN 2.4G | Body Front | 0.46 | 0.01 | 0.47 |
| | Body Back | 0.22 | 0.09 | 0.31 |
| | Body Left | 0.26 | 0.03 | 0.29 |
| | Body Right | 0.31 | 0.02 | 0.33 |
| | Body Bottom | 0.17 | N/A | N/A |

| Mode(WWAN+Wi-Fi) | Position | Reported SAR(W/kg) | | ΣSAR < 1.6W/kg |
|---|---|---|---|---|
| | | WWAN | Wi-Fi | |
| LTE Band 7+ WLAN 2.4G | Body Front | 0.50 | 0.01 | 0.51 |
| | Body Back | 0.27 | 0.09 | 0.36 |
| | Body Left | 0.25 | 0.03 | 0.28 |
| | Body Right | 0.32 | 0.02 | 0.34 |
| | Body Bottom | 0.22 | 0.00 | 0.22 |
| LTE Band 12+ WLAN 2.4G | Body Front | 0.34 | 0.01 | 0.35 |
| | Body Back | 0.09 | 0.09 | 0.18 |
| | Body Left | 0.17 | 0.03 | 0.20 |
| | Body Right | 0.10 | 0.02 | 0.12 |
| | Body Bottom | 0.10 | N/A | N/A |
| LTE Band 13+ WLAN 2.4G | Body Front | 0.33 | 0.01 | 0.34 |
| | Body Back | 0.17 | 0.09 | 0.26 |
| | Body Left | 0.27 | 0.03 | 0.30 |
| | Body Right | 0.31 | 0.02 | 0.33 |
| | Body Bottom | 0.07 | N/A | N/A |
| LTE Band 17+ WLAN 2.4G | Body Front | 0.31 | 0.01 | 0.32 |
| | Body Back | 0.10 | 0.09 | 0.19 |
| | Body Left | 0.19 | 0.03 | 0.22 |
| | Body Right | 0.12 | 0.02 | 0.14 |
| | Body Bottom | 0.09 | N/A | N/A |
| LTE Band 25+ WLAN 2.4G | Body Front | 0.44 | 0.01 | 0.45 |
| | Body Back | 0.20 | 0.09 | 0.29 |
| | Body Left | 0.53 | 0.03 | 0.56 |
| | Body Right | 0.20 | 0.02 | 0.22 |
| | Body Bottom | 0.71 | N/A | N/A |
| LTE Band 26+ WLAN 2.4G | Body Front | 0.43 | 0.01 | 0.44 |
| | Body Back | 0.22 | 0.09 | 0.31 |
| | Body Left | 0.27 | 0.03 | 0.30 |
| | Body Right | 0.32 | 0.02 | 0.34 |
| | Body Bottom | 0.16 | N/A | N/A |
| LTE Band 41+ WLAN 2.4G | Body Front | 0.17 | 0.01 | 0.18 |
| | Body Back | 0.08 | 0.09 | 0.17 |
| | Body Left | 0.10 | 0.03 | 0.13 |
| | Body Right | 0.10 | 0.02 | 0.12 |
| | Body Bottom | 0.11 | N/A | N/A |
| CDMA 850(BC0) + WLAN 2.4G | Body Front | 0.41 | 0.01 | 0.42 |
| | Body Back | 0.16 | 0.09 | 0.25 |
| | Body Left | 0.19 | 0.03 | 0.22 |
| | Body Right | 0.27 | 0.02 | 0.29 |
| | Body Bottom | 0.15 | N/A | N/A |
| CDMA 1900(BC1) + WLAN 2.4G | Body Front | 0.08 | 0.01 | 0.09 |
| | Body Back | 0.05 | 0.09 | 0.14 |
| | Body Left | 0.12 | 0.03 | 0.15 |
| | Body Right | 0.04 | 0.02 | 0.06 |
| | Body Bottom | 0.09 | N/A | N/A |

| Mode(WWAN+Wi-Fi) | Position | Reported SAR(W/kg) | | ΣSAR < 1.6W/kg |
|---|---|---|---|---|
| | | WWAN | Wi-Fi | |
| CDMA 800(BC10) + WLAN 2.4G | Body Front | 0.40 | 0.01 | 0.41 |
| | Body Back | 0.15 | 0.09 | 0.24 |
| | Body Left | 0.21 | 0.03 | 0.24 |
| | Body Right | 0.23 | 0.02 | 0.25 |
| | Body Bottom | 0.14 | N/A | N/A |

**Note:**

1. Hotspot mode SAR is only required for the edges within 25mm from the transmitting antenna located.
2. Hotspot Mode is not feasible during voice calls.
3. The PTT mode can't transmit Simultaneously with GSM /LTE/CDMA/WLAN or Bluetooth for head use condition.

**Conclusion:**

Sum of SAR: **ΣSAR ≤1.6 W/kg(Limit)** therefore simultaneous transmission SAR with Volume Scans is **not required**.

# SAR Plots

**Please Refer to the Attachment.**

# APPENDIX A MEASUREMENT UNCERTAINTY

The uncertainty budget has been determined for the measurement system and is given in the following Table.

**Measurement uncertainty evaluation for IEEE1528-2013 SAR test**

| Source of uncertainty | Tolerance/ uncertainty ± % | Probability distribution | Divisor | ci (1 g) | ci (10 g) | Standard uncertainty ± %, (1 g) | Standard uncertainty ± %, (10 g) |
|---|---|---|---|---|---|---|---|
| **Measurement system** | | | | | | | |
| Probe calibration | 6.55 | N | 1 | 1 | 1 | 6.6 | 6.6 |
| Axial Isotropy | 4.7 | R | √3 | 1 | 1 | 2.7 | 2.7 |
| Hemispherical Isotropy | 9.6 | R | √3 | 0 | 0 | 0.0 | 0.0 |
| Boundary effect | 1.0 | R | √3 | 1 | 1 | 0.6 | 0.6 |
| Linearity | 4.7 | R | √3 | 1 | 1 | 2.7 | 2.7 |
| Detection limits | 1.0 | R | √3 | 1 | 1 | 0.6 | 0.6 |
| Readout electronics | 0.3 | N | 1 | 1 | 1 | 0.3 | 0.3 |
| Response time | 0.0 | R | √3 | 1 | 1 | 0.0 | 0.0 |
| Integration time | 0.0 | R | √3 | 1 | 1 | 0.0 | 0.0 |
| RF ambient conditions – noise | 1.0 | R | √3 | 1 | 1 | 0.6 | 0.6 |
| RF ambient conditions–reflections | 1.0 | R | √3 | 1 | 1 | 0.6 | 0.6 |
| Probe positioner mech. Restrictions | 0.8 | R | √3 | 1 | 1 | 0.5 | 0.5 |
| Probe positioning with respect to phantom shell | 6.7 | R | √3 | 1 | 1 | 3.9 | 3.9 |
| Post-processing | 2.0 | R | √3 | 1 | 1 | 1.2 | 1.2 |
| **Test sample related** | | | | | | | |
| Test sample positioning | 2.8 | N | 1 | 1 | 1 | 2.8 | 2.8 |
| Device holder uncertainty | 6.3 | N | 1 | 1 | 1 | 6.3 | 6.3 |
| Drift of output power | 5.0 | R | √3 | 1 | 1 | 2.9 | 2.9 |
| **Phantom and set-up** | | | | | | | |
| Phantom uncertainty (shape and thickness tolerances) | 4.0 | R | √3 | 1 | 1 | 2.3 | 2.3 |
| Liquid conductivity target) | 5.0 | R | √3 | 0.64 | 0.43 | 1.8 | 1.2 |
| Liquid conductivity meas.) | 2.5 | N | 1 | 0.64 | 0.43 | 1.6 | 1.1 |
| Liquid permittivity target) | 5.0 | R | √3 | 0.6 | 0.49 | 1.7 | 1.4 |
| Liquid permittivity meas.) | 2.5 | N | 1 | 0.6 | 0.49 | 1.5 | 1.2 |
| Combined standard uncertainty | | RSS | | | | 12.2 | 12.0 |
| Expanded uncertainty 95 % confidence interval) | | | | | | 24.3 | 23.9 |

**Measurement uncertainty evaluation for IEC62209-2 SAR test**

| Source of uncertainty | Tolerance/ uncertainty ± % | Probability distribution | Divisor | ci (1 g) | ci (10 g) | Standard uncertainty ± %, (1 g) | Standard uncertainty ± %, (10 g) |
|---|---|---|---|---|---|---|---|
| **Measurement system** | | | | | | | |
| Probe calibration | 6.55 | N | 1 | 1 | 1 | 6.6 | 6.6 |
| Axial Isotropy | 4.7 | R | √3 | 1 | 1 | 2.7 | 2.7 |
| Hemispherical Isotropy | 9.6 | R | √3 | 0 | 0 | 0.0 | 0.0 |
| Linearity | 4.7 | R | √3 | 1 | 1 | 2.7 | 2.7 |
| Modulation Response | 0.0 | R | √3 | 1 | 1 | 0.0 | 0.0 |
| Detection limits | 1.0 | R | √3 | 1 | 1 | 0.6 | 0.6 |
| Boundary effect | 1.0 | R | √3 | 1 | 1 | 0.6 | 0.6 |
| Readout electronics | 0.3 | N | 1 | 1 | 1 | 0.3 | 0.3 |
| Response time | 0.0 | R | √3 | 1 | 1 | 0.0 | 0.0 |
| Integration time | 0.0 | R | √3 | 1 | 1 | 0.0 | 0.0 |
| RF ambient conditions – noise | 1.0 | R | √3 | 1 | 1 | 0.6 | 0.6 |
| RF ambient conditions–reflections | 1.0 | R | √3 | 1 | 1 | 0.6 | 0.6 |
| Probe positioner mech. Restrictions | 0.8 | R | √3 | 1 | 1 | 0.5 | 0.5 |
| Probe positioning with respect to phantom shell | 6.7 | R | √3 | 1 | 1 | 3.9 | 3.9 |
| Post-processing | 2.0 | R | √3 | 1 | 1 | 1.2 | 1.2 |
| **Test sample related** | | | | | | | |
| Device holder Uncertainty | 6.3 | N | 1 | 1 | 1 | 6.3 | 6.3 |
| Test sample positioning | 2.8 | N | 1 | 1 | 1 | 2.8 | 2.8 |
| Power scaling | 4.5 | R | √3 | 1 | 1 | 2.6 | 2.6 |
| Drift of output power | 5.0 | R | √3 | 1 | 1 | 2.9 | 2.9 |
| **Phantom and set-up** | | | | | | | |
| Phantom uncertainty (shape and thickness tolerances) | 4.0 | R | √3 | 1 | 1 | 2.3 | 2.3 |
| Algorithm for correcting SAR for deviations in permittivity and conductivity | 1.9 | N | 1 | 1 | 0.84 | 1.1 | 0.9 |
| Liquid conductivity (meas.) | 2.5 | N | 1 | 0.64 | 0.43 | 1.6 | 1.1 |
| Liquid permittivity (meas.) | 2.5 | N | 1 | 0.6 | 0.49 | 1.5 | 1.2 |
| Temp. unc. - Conductivity | 1.7 | R | √3 | 0.78 | 0.71 | 0.8 | 0.7 |
| Temp. unc. - Permittivity | 0.3 | R | √3 | 0.23 | 0.26 | 0.0 | 0.0 |
| Combined standard uncertainty | | RSS | | | | 12.2 | 12.1 |
| Expanded uncertainty 95 % confidence interval) | | | | | | 24.5 | 24.2 |

# APPENDIX B EUT TEST POSITION PHOTOS

**Please Refer to the Attachment.**

# APPENDIX C CALIBRATION CERTIFICATES

**Please Refer to the Attachment.**

******* END OF REPORT *******