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| Author Data Andrew Becker | Dates of Test June 11 – August 16, 2013 March 24-26, 2014 December 8 – 12, 2014 | Test Report No RTS-6046-1308-39 Rev 6 | FCC ID: L6ARGB140LW | IC | |

SAR Compliance Test Report

| | | | |
|---------------------|---|-------------------|--|
| Testing Lab: | BlackBerry RTS 440 Phillip Street Waterloo, Ontario Canada N2L 5R9 Phone: 519-888-7465 Fax: 519-746-0189 | Applicant: | BlackBerry Limited 2200 University Ave. East Waterloo, Ontario Canada N2K 0A7 Phone: 519-888-7465 Fax: 519-888-6906 |
|---------------------|---|-------------------|--|

Web site: www.BlackBerry.com

Statement of Compliance: BlackBerry RTS declares under its sole responsibility that the product to which this declaration relates, is in conformity with the appropriate RF exposure standards, recommendations and guidelines. It also declares that the product was tested in accordance with the appropriate measurement standards, guidelines and recommended practices.

Device Category: This BlackBerry® Smartphone is a portable device, designed to be used in direct contact with the user's head, hand and to be carried in approved accessories when carried on the user's body.

RF Exposure Environment: This device has been shown to be in compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in, FCC 47 CFR Part 2.1093, FCC 96-326, IEEE Std. C95.1-1992, Health Canada's Safety Code 6, as reproduced in RSS-102 issue 4-2010 and has been tested in accordance with the measurement procedures specified in latest FCC OET KDB Procedures, ANSI/IEEE Std. C95.3-2002, IEEE 1528-2013, and RSS 102-issue4-2010

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RTS is accredited
according to
EN ISO/IEC 17025 by:




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| Revision History | | |
|------------------|--------------|---|
| Rev. Number | Date | Changes |
| Initial | Aug 21, 2013 | ----- |
| Rev 2 | Sep 16, 2013 | Separated data and report for model: RGB141LW and added more information to address FCC requirements. |
| Rev 3 | Sep 18, 2013 | Reused SAR data from model RFX101W was added to this report to address FCC OET requirement. <ul style="list-style-type: none"> Figure/Table 1.8.3-1 updated on page 20 |
| Rev 4 | Sep 30, 2013 | Added clarification that 802.11a/n (5-6 GHz) is not supported in Hotspot mode. |
| Rev 5 | Apr 30, 2014 | Added measured conducted power data for 802.11b Direct/GO mode: <ul style="list-style-type: none"> Table 1.8.1-3e added on page 15 |
| Rev 6 | Dec 15, 2014 | Added measured conducted power data for 802.11a Direct/GO and Hotspot mode which will be supported on software 10.3.1.x maintenance release: <ul style="list-style-type: none"> Table 1.8.1-4e added on page 19 Updated simultaneous transmission results for Hotspot mode <ul style="list-style-type: none"> Table 1.8.3-1 updated on page 20 Table 1.9.1-1 updated on page 42 Table 1.9.1-5 updated on page 46 Added equipment information used for 802.11a Direct/GO and Hotspot testing <ul style="list-style-type: none"> Table 2.1.1-2 added on page 52 Table 3.2-3 added on page 56 Table 6.1.1-2 added on page 62 Added dipole and dielectric parameters information used for 802.11a Direct/GO and Hotspot testing <ul style="list-style-type: none"> Table 4.1-2 added on page 59 Table 6.2-2 added on page 68 Added 802.11a Hotspot SAR test data <ul style="list-style-type: none"> Table 11.2-12d added on page 103 Updated References on page 104 |

Note: According to the hardware similarity document BlackBerry model: RGB141LW has the same Wi-Fi/BT design, PCB, and Cellular/WiFi/BT antennas as RFX101LW. The difference between the two models is RGB141LW does not support LTE band 4/13, instead it supports CDMA 800 BC10 and LTE band 25. In addition, antenna tuning is different on GSM/UMTS/LTE modes bands. Due to this, RFX101LW SAR data for the common bands are reused in this report.

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APPENDIX A: SAR DISTRIBUTION COMPARISON FOR ACCURACY VERIFICATION


APPENDIX B: SAR DISTRIBUTION PLOTS - HEAD CONFIGURATION

APPENDIX C1: SAR DISTRIBUTION PLOTS - BODY-WORN CONFIGURATION

APPENDIX C2: SAR DISTRIBUTION PLOTS - HOT SPOT

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1.0 OPERATING CONFIGURATIONS AND TEST CONDITIONS

1.1 Picture of Device

Please refer to Appendix E.

Figure 1.1-1 BlackBerry Smartphone


1.2 Antenna description

| | |
|----------------------|------------------------------|
| Type | Internal fixed antenna |
| Location | Please refer to Figure 1.9-1 |
| Configuration | Internal fixed antenna |

Table 1.2-1 Antenna description

1.3 Device description


| | | | | |
|--|---|--|----------------------------------|----------------------------------|
| Device Model | RGB141LW | | | |
| FCC ID | L6ARGB140LW | | | |
| PIN | Radiated: 303E76AA, 303E7691 Conducted: 303E76AA | | | |
| Hardware Rev | Rev1-x04-00/01/04 | | | |
| Software Version | 10.2.0.345/1095 | | | |
| Prototype or Production Unit | Production | | | |
| Mode(s) of Operation | 1-slot GSM 850 GSM 1900 | 2-slots EDGE/GPRS 850/1900 | 3-slots EDGE/GPRS 850/1900 | 4-slots EDGE/GPRS 850/1900 |
| Nominal Maximum conducted RF Output Power (dBm) | 32.0 28.5 | 29.5 28.0 | 28.5 25.5 | 26.5 25.0 |
| Tolerance in Power Setting on centre channel (dB) | ± 0.5 | ± 0.5 | ± 0.5 | ± 0.5 |
| Duty Cycle | 1:8 | 2:8 | 3:8 | 4:8 |
| Transmitting Frequency Range (MHz) | 824.2 – 848.8 1850.2 – 1909.8 | 824.2 – 848.8 1850.2 – 1909.8 | 824.2 – 848.8 1850.2 – 1909.8 | 824.2 – 848.8 1850.2 – 1909.8 |
| Mode(s) of Operation | HSPA ⁺ WCDMA/UMTS FDD V (850) | HSPA ⁺ WCDMA/UMTS FDD II (1900) | CDMA2000/ 1xEvDO 800 | CDMA2000/ 1xEvDO 850 |
| Nominal Maximum conducted RF Output Power (dBm) | 23.0 | 23.0 | 24.0 | 24.0 |
| Tolerance in Power Setting on centre channel (dB) | ± 0.5 | ± 0.5 | ± 0.50 | ± 0.50 |
| Duty Cycle | 1:1 | 1:1 | 1:1 | 1:1 |
| Transmitting Frequency Range (MHz) | 824.6 – 846.6 | 1852.4 – 1907.6 | 817.9 – 823.1 | 824.7 – 848.5 |

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| Mode(s) of Operation | CDMA2000/ 1xEvDO 1900 | 802.11b | 802.11g | 802.11n |
|---|-----------------------------|-----------|-----------|-----------|
| Nominal Maximum conducted RF Output Power (dBm) | 23.5 | 15.5 | 15.5 | 15.5 |
| Tolerance in Power Setting on centre channel (dB) | ± 0.50 | ± 1.0 | ± 1.0 | ± 1.0 |
| Duty Cycle | 1:1 | 1:1 | 1:1 | 1:1 |
| Transmitting Frequency Range (MHz) | 1851.2 – 1908.5 | 2412-2462 | 2412-2462 | 2412-2462 |
| Mode(s) of Operation | Bluetooth | 802.11a/n | 802.11a/n | 802.11a/n |
| Nominal Maximum conducted RF Output Power (dBm) | 9.5 | 15.0 | 15.0 | 15.0 |
| Tolerance in Power Setting on centre channel (dB) | N/A | ± 1.0 | ± 1.0 | ± 1.0 |
| Duty Cycle | N/A | 1:1 | 1:1 | 1:1 |
| Transmitting Frequency Range (MHz) | 2402-2483 | 5180-5240 | 5260-5320 | 5500-5700 |
| Mode(s) of Operation | 802.11a/n | NFC | | |
| Nominal Maximum conducted RF Output Power (dBm) | 15.0 | N/A | | |
| Tolerance in Power Setting on centre channel (dB) | ± 1.0 | N/A | | |
| Duty Cycle | 1:1 | N/A | | |
| Transmitting Frequency Range (MHz) | 5745-5825 | 13.56 | | |

Table 1.3-1 Test device characterization non-LTE U.S. wireless operating modes/bands

Note 1: SAR measurements on NFC haven't been conducted, since it is very low power and frequency magnetic field transceiver. SAR probes measure higher frequency/power electric field.


| | | | | | |
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| | | | | |
|---|-------------|--|--|--|
| Device Model | | RGB141LW | | |
| FCC ID | | L6ARGB140LW | | |
| PIN | | Radiated: 303E76AA, 303E7691 Conducted: 303E76AA | | |
| Hardware Rev | | Rev1-x04-00/01/04 | | |
| Software Version | | 10.2.0.345/1095 | | |
| Prototype or Production Unit | | Production | | |
| Transmission channel bandwidth | | Band 25: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15MHz, 20MHz | | |
| Transmission channel number and frequencies | | | | |
| | LTE band 25 | | | |
| | Chan. | f (MHz) | | |
| L ² | 26140 | 1860.0 | | |
| M | 26365 | 1882.5 | | |
| H ² | 26590 | 1905.0 | | |
| | | | | |
| UE Category | | Category 3 | | |
| Modulation supported in uplink | | QPSK, 16QAM | | |
| Description of LTE antenna | | 1 Tx/Rx Ant, Sharing with GSM/UMTS; 2 Rx Ant, one separate and one sharing with CDMA | | |
| LTE voice available/supported | | No | | |
| Hotspot with LTE+WiFi | | Yes | | |
| Hotspot with LTE+WiFi active with GSM/WCDMA voice | | No | | |
| LTE MPR permanently built-in by design | | Yes | | |
| LTE A-MPR | | Disabled during SAR testing , by setting NV value to NV_01 on the CMW500 | | |
| LTE maximum average power (dBm) | | Band 25: 23.2 dBm | | |
| Other non-LTE U.S. wireless operating modes/bands | | GSM//WCDMA/CDMA | 800 MHz CDMA BC10 835 MHz GSM/UMTS/CDMA BC0 1900 MHz GSM/UMTS/CDMA BC1 | |
| | | WiFi and BT | 2.4 GHz Wi-Fi 5 GHz Wi-Fi 2.4 GHz BT | |
| Simultaneous Tx conditions | | Please refer to section 1.9 | | |
| Power reduction applied | | Please refer to sections 1.10 & 1.11 | | |

Table 1.3-2 Test device characterization all U.S. wireless operating modes/bands

Note 2: As per 3GPP TS 36.521-1 V10.0.0 (2011-12):

“The channel numbers that designate carrier frequencies so close to the operating band edges that the carrier extends beyond the operating band edge shall not be used. This implies that the first 7, 15, 25, 50, 75 and 100 channel numbers at the lower operating band edge and the last 6, 14, 24, 49, 74 and 99 channel numbers at the upper operating band edge shall not be used for channel bandwidths of 1.4, 3, 5, 10, 15 and 20 MHz respectively.”...5.4.4

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1.4 Body worn accessories (holsters)

The device has been tested with the holsters listed below. The holster has been designed with the intended device orientation being with the LCD facing the belt clip only. Proper positioning is vital for protection of the LCD display, and to help maximize the battery life of the device. The device can also be placed in the holster with the backside facing the belt clip. Body SAR measurements were carried out with the worst-case configuration front LCD side and backside towards the belt clip.

| Number | Holster Type | Part Number | Separation distance (mm) |
|--------|---------------------------|---------------|--------------------------|
| 1 | Vertical Holster, Leather | HDW-55471-001 | 20 |

Table 1.4-1 Body worn holster

Note: Holsters have identical design, except for different leather material being used.

Please refer to Appendix E.

Figure 1.4-1 Body-worn holster

1.5 Headset

The device was tested with the following headset model if 1g avg. SAR value for Body-worn/Hotspot is >1.2 W/kg:

1)HDW-44306-xxx


1.6 Battery

The device was tested with the following Lithium Ion Battery packs:

1)BAT-50136-00x

1.7 Procedure used to establish test signal

- The device was put into test mode for SAR measurements by placing a call from a Rohde & Schwarz CMU 200 or CMW 500 Communications Test Instrument. The power control level was set to command the device to transmit at full power at the specified frequency. Other parameters include: Channel type = full rate, discontinuous transmission off, frequency hopping off. For LTE specific bandwidths, number of resource blocks, and resource block offsets were set. In addition, LTE A-MPR was disabled.
- Software Tool was used to set WiFi to transmit at maximum power and duty cycle for each band, channel, and modulation.

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1.8 Highlights of the FCC OET SAR Measurement Requirements


1.8.1 SAR Measurement Procedures for 802.11 a/b/g/n as per KDB 248227 D01 v01r02 and SAR Measurements 100 MHz to 6 GHz as per KDB 865664 D0 V01

- Repeat measurements when the measured SAR is ≥ 0.80 W/kg. If the measured SAR values are < 1.45 W/kg with $\leq 20\%$ variation, only one repeated measurement was performed to reaffirm that the results are not expected to have substantial variations. An additional repeated measurement is required only if the measured results are within 10% of the SAR limit and vary by more than 20%, which are often related to device and measurement setup difficulties.
- Maintained dielectric parameter uncertainty to $\pm 5.0\%$ of the target values, (although it is very challenging to control/maintain both permittivity and conductivity for 5-6 GHz for all test channels within $\pm 5.0\%$ of the target values, some conductivity values were measured slightly higher which resulted in more conservative SAR values.
- Liquid depth from SAM ERP or flat phantom was kept at 15 cm.
- Probe Requirement: Used SPEAG probe model ET3DV6/ES3DV3 for 2.45 GHz and EX3DV4 for 5-6 GHz SAR testing specs are outlined below:

| ET3DV6/ES3DV3 | |
|-------------------------------|--|
| Probe tip to sensor center | 2.7 mm / 2.0 mm |
| Probe tip diameter is | 6.8 mm / 4.0 mm |
| Probe calibration uncertainty | $< 15\%$ for $f = 2.45$ GHz |
| Probe calibration range | ± 100 MHz |
| EX3DV4 | |
| Probe tip to sensor center | 1.0 mm |
| Probe tip diameter is | 2.5 mm |
| Probe calibration uncertainty | $< 15\%$ for $f = 2.45$ to < 6.0 GHz |
| Probe calibration range | ± 100 MHz |

Table 1.8.1-1 Probe specification requirements

- Area scan resolution was maintained at 10mm (5-6 GHz)
- Area scan resolution was maintained at 12mm (2-3 GHz)
- Area scan resolution was maintained at 15mm (≤ 2 GHz)
- System accuracy validation was conducted within ± 100 MHz of device mid-band frequency and results were within $\pm 10\%$ of the manufacturers target value for each band.
- Zoom Scan: The following settings were used for the validation and measurement.


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| ET3DV6/ES3DV3 | |
|--------------------------------------|--------------------------------------|
| Closest Measurement Point to Phantom | 4.0 mm |
| Zoom Scan (x,y) Resolution | 7.5 mm (≤2 GHz) or 5 mm (2-3 GHz) |
| Zoom Scan (z) Resolution | 5.0 mm |
| Zoom Scan Volume | Minimum 30 x 30 x 30 mm ¹ |
| EX3DV4 | |
| Closest Measurement Point to Phantom | 2.0 mm |
| Zoom Scan (x,y) Resolution | 4.0 mm (5-6 GHz) |
| Zoom Scan (z) Resolution | 2.0 mm (5-6 GHz) |
| Zoom Scan Volume | Minimum 22 x 22 x 22 mm ¹ |

Table 1.8.1-2 Zoom Scan requirement


Note 1: “Auto-extend zoom scan when maxima on boundary” is enabled, which can result in the zoom scan dimensions varying between 30x30x30 to 60x60x30 mm and 22x22x22 to 48x40x22 mm.

- Frequency Channel Configuration: 802.11 b/g modes are tested on the highest output power channel.
- 802.11a is tested for UNII operations on the highest output power channel of each sub band (low, mid, upper band I, and upper band II). If the highest output power channel has a SAR level that is not 3dB lower than the limit, then the low, mid, and high channels of each sub band must also be tested.
- For each frequency band, testing at higher rates and higher modulations is not required when the maximum average output power for each of these configurations is less than ¼ dB higher than those measured at the lowest data rate.
- SAR is not required for 802.11g/n channels when the maximum average output power is less than ¼ dB higher than that measured on the corresponding 802.11b channels.
- SAR test was conducted on each “default test channel” and each band with the worst case modulation and highest duty cycle, if the SAR level was within 3dB of the limit.
- Conducted power measurements:

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| 802.11b @ 1Mbps | | | 802.11g @ 6Mbps | | | 802.11n @ 6.5 Mbps | | |
|------------------------|--------|---|------------------------|-------|---|--------------------|------|---|
| f (MHz) | Chan | Max. Avg. Cond. Power (dBm) | f (MHz) | Chan | Max. Avg. Cond. Power (dBm) | f (MHz) | Chan | Max. Avg. Cond. Power (dBm) |
| 2412 | 1 | 15.9 | 2412 | 1 | 16.3 | 2412 | 1 | 16.3 |
| 2437 | 6 | 15.9 | 2437 | 6 | 16.4 | 2437 | 6 | 16.3 |
| 2462 | 11 | 15.5 | 2462 | 11 | 13.8 | 2462 | 11 | 13.8 |
| 802.11g | | | 802.11b | | | | | |
| Data Rate (Mbps) | Mod. | Channel 6 | Data Rate (Mbps) | Mod. | Channel 6 | | | |
| | | Max. Avg. Cond. Power (dBm) | | | Max. Avg. Cond. Power (dBm) | | | |
| 6 | BPSK | 16.4 | 1 | BPSK | 15.9 | | | |
| 9 | BPSK | 16.3 | 2 | DQPSK | 15.9 | | | |
| 12 | QPSK | 16.3 | 5.5 | CCK | 15.9 | | | |
| 18 | QPSK | 16.1 | 11 | CCK | 15.8 | | | |
| 24 | 16-QAM | 16.0 | | | | | | |
| 36 | 16-QAM | 15.8 | | | | | | |
| 48 | 64-QAM | 15.6 | | | | | | |
| 54 | 64-QAM | 15.4 | | | | | | |
| 802.11 n | | | | | | | | |
| Data Rate (Mbps) | | Mod. | | | Channel 6 | | | |
| | | | | | Max. Avg. Cond. Power (dBm) | | | |
| 6.5 | | MCS0 | | | 16.3 | | | |
| 13 | | MCS1 | | | 16.3 | | | |
| 19.5 | | MCS2 | | | 16.2 | | | |
| 26 | | MCS3 | | | 16.1 | | | |
| 39 | | MCS4 | | | 15.9 | | | |
| 52 | | MCS5 | | | 15.8 | | | |
| 58.5 | | MCS6 | | | 14.6 | | | |
| 65 | | MCS7 | | | 14.5 | | | |


Table 1.8.1-3a 802.11 b/g/n modulation type/data rate vs. conducted power at full/maximum power

| | | | | | |
|---|---|---|---|-------------------------------|----|
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| 802.11b @ 1Mbps | | | 802.11g @ 6Mbps | | | 802.11n @ 6.5 Mbps | | |
|------------------------|--------|---|------------------------|-------|---|--------------------|------|---|
| f (MHz) | Chan | Max. Avg. Cond. Power (dBm) | f (MHz) | Chan | Max. Avg. Cond. Power (dBm) | f (MHz) | Chan | Max. Avg. Cond. Power (dBm) |
| 2412 | 1 | 10.1 | 2412 | 1 | 11.3 | 2412 | 1 | 11.2 |
| 2437 | 6 | 10.2 | 2437 | 6 | 11.4 | 2437 | 6 | 11.3 |
| 2462 | 11 | 9.8 | 2462 | 11 | 10.9 | 2462 | 11 | 10.9 |
| 802.11g | | | 802.11b | | | | | |
| Data Rate (Mbps) | Mod. | Channel 6 | Data Rate (Mbps) | Mod. | Channel 6 | | | |
| | | Max. Avg. Cond. Power (dBm) | | | Max. Avg. Cond. Power (dBm) | | | |
| 6 | BPSK | 11.4 | 1 | BPSK | 10.2 | | | |
| 9 | BPSK | 11.2 | 2 | DQPSK | 10.2 | | | |
| 12 | QPSK | 11.1 | 5.5 | CCK | 10.2 | | | |
| 18 | QPSK | 11.1 | 11 | CCK | 10.0 | | | |
| 24 | 16-QAM | 10.9 | | | | | | |
| 36 | 16-QAM | 10.7 | | | | | | |
| 48 | 64-QAM | 10.4 | | | | | | |
| 54 | 64-QAM | 10.4 | | | | | | |

Table 1.8.1-3b 802.11 b/g/n modulation type/data rate vs. conducted power at Hotspot power level

- There is fixed power reduction on Wi-Fi in hotspot mode. Power reduction is triggered when device is set to Hotspot mode.


| | | | | | |
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| 802.11b @ 1Mbps | | | 802.11g @ 6Mbps | | | 802.11n @ 6.5 Mbps | | |
|------------------------|--------|---|------------------------|-------|---|--------------------|------|---|
| f (MHz) | Chan | Max. Avg. Cond. Power (dBm) | f (MHz) | Chan | Max. Avg. Cond. Power (dBm) | f (MHz) | Chan | Max. Avg. Cond. Power (dBm) |
| 2412 | 1 | 12.3 | 2412 | 1 | 13.1 | 2412 | 1 | 13.1 |
| 2437 | 6 | 12.5 | 2437 | 6 | 13.2 | 2437 | 6 | 13.2 |
| 2462 | 11 | 12.1 | 2462 | 11 | 12.8 | 2462 | 11 | 12.8 |
| 802.11g | | | 802.11b | | | | | |
| Data Rate (Mbps) | Mod. | Channel 6 | Data Rate (Mbps) | Mod. | Channel 6 | | | |
| | | Max. Avg. Cond. Power (dBm) | | | Max. Avg. Cond. Power (dBm) | | | |
| 6 | BPSK | 13.2 | 1 | BPSK | 12.5 | | | |
| 9 | BPSK | 13.2 | 2 | DQPSK | 12.4 | | | |
| 12 | QPSK | 13.1 | 5.5 | CCK | 12.4 | | | |
| 18 | QPSK | 12.9 | 11 | CCK | 12.3 | | | |
| 24 | 16-QAM | 12.8 | | | | | | |
| 36 | 16-QAM | 12.5 | | | | | | |
| 48 | 64-QAM | 12.3 | | | | | | |
| 54 | 64-QAM | 12.2 | | | | | | |
| 802.11 n | | | | | | | | |
| Data Rate (Mbps) | | Mod. | | | Channel 6 | | | |
| | | | | | Max. Avg. Cond. Power (dBm) | | | |
| 6.5 | | MCS0 | | | 13.2 | | | |
| 13 | | MCS1 | | | 13.1 | | | |
| 19.5 | | MCS2 | | | 13.1 | | | |
| 26 | | MCS3 | | | 13.0 | | | |
| 39 | | MCS4 | | | 12.7 | | | |
| 52 | | MCS5 | | | 12.6 | | | |
| 58.5 | | MCS6 | | | 12.5 | | | |
| 65 | | MCS7 | | | 12.5 | | | |

Table 1.8.1-3c 802.11 b/g/n modulation type/data rate vs. conducted power at CDMA_BC1

There are two fixed Wi-Fi power reductions triggered when transmitting simultaneously with CDMA/SVLTE (data/voice) mode


- 1) WiFi at lower CDMA_BC1 power level.
- 2) WiFi at lower SVLTE_BC1_25 power level.

| | | | | | |
|---|--|---|--|---|--|
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| 802.11b @ 1Mbps | | | 802.11g @ 6Mbps | | | 802.11n @ 6.5 Mbps | | |
|------------------------|--------|---|------------------------|-------|---|--------------------|------|---|
| f (MHz) | Chan | Max. Avg. Cond. Power (dBm) | f (MHz) | Chan | Max. Avg. Cond. Power (dBm) | f (MHz) | Chan | Max. Avg. Cond. Power (dBm) |
| 2412 | 1 | 4.8 | 2412 | 1 | 7.1 | 2412 | 1 | 7.0 |
| 2437 | 6 | 4.9 | 2437 | 6 | 7.2 | 2437 | 6 | 7.1 |
| 2462 | 11 | 4.5 | 2462 | 11 | 6.7 | 2462 | 11 | 6.7 |
| 802.11g | | | 802.11b | | | | | |
| Data Rate (Mbps) | Mod. | Channel 6 | Data Rate (Mbps) | Mod. | Channel 6 | | | |
| | | Max. Avg. Cond. Power (dBm) | | | Max. Avg. Cond. Power (dBm) | | | |
| 6 | BPSK | 7.2 | 1 | BPSK | 4.9 | | | |
| 9 | BPSK | 7.1 | 2 | DQPSK | 4.8 | | | |
| 12 | QPSK | 7.0 | 5.5 | CCK | 4.8 | | | |
| 18 | QPSK | 6.8 | 11 | CCK | 4.7 | | | |
| 24 | 16-QAM | 6.7 | | | | | | |
| 36 | 16-QAM | 6.5 | | | | | | |
| 48 | 64-QAM | 6.3 | | | | | | |
| 54 | 64-QAM | 6.2 | | | | | | |
| 802.11 n | | | | | | | | |
| Data Rate (Mbps) | | Mod. | | | Channel 6 | | | |
| | | | | | Max. Avg. Cond. Power (dBm) | | | |
| 6.5 | | MCS0 | | | 7.1 | | | |
| 13 | | MCS1 | | | 7.1 | | | |
| 19.5 | | MCS2 | | | 6.9 | | | |
| 26 | | MCS3 | | | 6.8 | | | |
| 39 | | MCS4 | | | 6.7 | | | |
| 52 | | MCS5 | | | 6.5 | | | |
| 58.5 | | MCS6 | | | 6.5 | | | |
| 65 | | MCS7 | | | 6.4 | | | |

Table 1.8.1-3d 802.11 b/g/n modulation type/data rate vs. conducted power at SVLTE_BC1_25 power level


Note: SVLTE is not supported in Hotspot mode.

| | | | | | |
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| 802.11b @ 1Mbps | | | 802.11g @ 6Mbps | | | 802.11n @ 6.5 Mbps | | |
|------------------------|--------|---|-----------------------------|------|---|--------------------|------|---|
| f (MHz) | Chan | Max. Avg. Cond. Power (dBm) | f (MHz) | Chan | Max. Avg. Cond. Power (dBm) | f (MHz) | Chan | Max. Avg. Cond. Power (dBm) |
| 2412 | 1 | 10.9 | 2412 | 1 | 10.6 | 2412 | 1 | 10.6 |
| 2437 | 6 | 11.0 | 2437 | 6 | 11.0 | 2437 | 6 | 11.0 |
| 2462 | 11 | 10.6 | 2462 | 11 | 10.7 | 2462 | 11 | 10.6 |
| 802.11g | | | | | 802.11b | | | |
| Data Rate (Mbps) | Mod. | Channel 6 | Data Rate (Mbps) | Mod. | Channel 6 | | | |
| | | Max. Avg. Cond. Power (dBm) | | | Max. Avg. Cond. Power (dBm) | | | |
| 18 | QPSK | 11.0 | 5.5 | CCK | 11.0 | | | |
| 54 | 64-QAM | 11.0 | 11 | CCK | 11.0 | | | |
| 802.11 n | | | | | | | | |
| Data Rate (Mbps) | | Mod. | Channel 6 | | | | | |
| | | | Max. Avg. Cond. Power (dBm) | | | | | |
| 26 | | MCS3 | 11.0 | | | | | |
| 65 | | MCS7 | 11.0 | | | | | |

Table 1.8.1-3e 802.11 b/g/n modulation type/data rate vs. maximum average conducted power in Wi-Fi Direct/GO mode


| 802.11a (low band) 6Mbps | | | 802.11a (mid band) 6Mbps | | | 802.11a (upper band I) 6Mbps | | |
|--------------------------|-----------|-----------------------------|--------------------------|-----------|-----------------------------|-------------------------------|------------|-----------------------------|
| f (MHz) | Chan | Max. Avg. Cond. Power (dBm) | f (MHz) | Chan | Max. Avg. Cond. Power (dBm) | f (MHz) | Chan | Max. Avg. Cond. Power (dBm) |
| 5180 | 36 | 15.8 | 5260 | 52 | 15.5 | 5520 | 104 | 15.4 |
| 5200 | 40 | 15.7 | 5280 | 56 | 15.4 | 5580 | 116 | 15.3 |
| 5220 | 44 | 15.6 | 5300 | 60 | 15.4 | 5620 | 124 | 15.2 |
| 5240 | 48 | 15.6 | 5320 | 64 | 15.3 | 5700 | 140 | 15.1 |
| | | | | | | 802.11a (upper band II) 6Mbps | | |
| | | | | | | f (MHz) | Chan | Max. Avg. Cond. Power (dBm) |
| | | | | | | 5745 | 149 | 15.2 |
| | | | | | | 5765 | 153 | 15.1 |
| | | | | | | 5785 | 157 | 15.1 |
| | | | | | | 5805 | 161 | 15.0 |
| | | | | | | 5825 | 165 | 15.0 |

| | | | | | |
|---|---|---|---|-------------------------------|----|
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| | | 802.11a (lower band) | 802.11a (middle band) | 802.11a (upper band I) | 802.11a (upper band II) |
|---------------------|--------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Data Rate (Mbps) | Mod. | Channel 36 | Channel 52 | Channel 104 | Channel 149 |
| | | Max. Avg. Cond. Power (dBm) | Max. Avg. Cond. Power (dBm) | Max. Avg. Cond. Power (dBm) | Max. Avg. Cond. Power (dBm) |
| 6 | BPSK | 15.8 | 15.5 | 15.4 | 15.2 |
| 9 | BPSK | 15.7 | 15.4 | 15.3 | 15.1 |
| 12 | QPSK | 15.6 | 15.3 | 15.2 | 15.1 |
| 18 | QPSK | 15.5 | 15.1 | 15.1 | 14.9 |
| 24 | 16-QAM | 15.4 | 15.1 | 15.0 | 14.7 |
| 36 | 16-QAM | 15.2 | 14.8 | 14.7 | 14.5 |
| 48 | 64-QAM | 15.0 | 14.7 | 14.5 | 14.3 |
| 54 | 64-QAM | 14.8 | 14.6 | 14.4 | 14.2 |
| | | 802.11n (lower band) | 802.11n (middle band) | 802.11n (upper band I) | 802.11n (upper band II) |
| Mod. | | Channel 36 | Channel 52 | Channel 104 | Channel 149 |
| | | Max. Avg. Cond. Power (dBm) | Max. Avg. Cond. Power (dBm) | Max. Avg. Cond. Power (dBm) | Max. Avg. Cond. Power (dBm) |
| MCS0 | | 15.7 | 15.4 | 15.2 | 15.0 |
| MCS1 | | 15.6 | 15.3 | 15.1 | 14.9 |
| MCS2 | | 14.5 | 14.1 | 14.9 | 14.8 |
| MCS3 | | 14.3 | 14.0 | 14.8 | 14.7 |
| MCS4 | | 15.1 | 14.8 | 14.6 | 14.5 |
| MCS5 | | 14.9 | 14.6 | 14.4 | 14.2 |
| MCS6 | | 14.8 | 14.4 | 13.3 | 13.2 |
| MCS7 | | 14.7 | 14.4 | 13.2 | 13.1 |

Table 1.8.1-4a 802.11 a/n modulation type/data rate vs. conducted power at full power

| 802.11a (low band) 6Mbps | | | 802.11a (mid band) 6Mbps | | | 802.11a (upper band I) 6Mbps | | |
|--------------------------|------|-----------------------------|--------------------------|------|-----------------------------|-------------------------------|------|-----------------------------|
| f (MHz) | Chan | Max. Avg. Cond. Power (dBm) | f (MHz) | Chan | Max. Avg. Cond. Power (dBm) | f (MHz) | Chan | Max. Avg. Cond. Power (dBm) |
| 5180 | 36 | 13.0 | 5260 | 52 | 12.9 | 5520 | 104 | 12.6 |
| 5200 | 40 | 13.0 | 5280 | 56 | 12.8 | 5580 | 116 | 12.5 |
| 5220 | 44 | 13.0 | 5300 | 60 | 12.7 | 5620 | 124 | 12.4 |
| 5240 | 48 | 12.9 | 5320 | 64 | 12.6 | 5700 | 140 | 12.4 |
| | | | | | | 802.11a (upper band II) 6Mbps | | |
| | | | | | | f (MHz) | Chan | Cond. Power (dBm) |


| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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| | | | | 5745 | 149 | 12.5 |
|------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--------------------------------|--------------------------------|
| | | | | 5765 | 153 | 12.5 |
| | | | | 5785 | 157 | 12.5 |
| | | | | 5805 | 161 | 12.5 |
| | | | | 5825 | 165 | 12.4 |
| | | 802.11a (lower band) | 802.11a (middle band) | 802.11a (upper band I) | 802.11a (upper band II) | |
| Data Rate (Mbps) | Mod. | Channel 36 | Channel 52 | Channel 104 | Channel 149 | |
| | | Max. Avg. Cond. Power (dBm) | Max. Avg. Cond. Power (dBm) | Max. Avg. Cond. Power (dBm) | Max. Avg. Cond. Power (dBm) | |
| 6 | BPSK | 13.0 | 12.9 | 12.6 | 12.5 | |
| 9 | BPSK | 13.0 | 12.8 | 12.6 | 12.5 | |
| 12 | QPSK | 13.0 | 12.7 | 12.5 | 12.4 | |
| 18 | QPSK | 12.9 | 12.6 | 12.3 | 12.3 | |
| 24 | 16-QAM | 12.8 | 12.5 | 12.2 | 12.1 | |
| 36 | 16-QAM | 12.6 | 12.2 | 12.0 | 11.9 | |
| 48 | 64-QAM | 12.3 | 12.1 | 12.0 | 11.7 | |
| 54 | 64-QAM | 12.2 | 11.9 | 11.7 | 11.6 | |
| | 802.11n (lower band) | | 802.11n (middle band) | 802.11n (upper band I) | | 802.11n (upper band II) |
| Mod. | Channel 36 | | Channel 52 | Channel 104 | | Channel 149 |
| | Max. Avg. Cond. Power (dBm) | | Max. Avg. Cond. Power (dBm) | Max. Avg. Cond. Power (dBm) | | Max. Avg. Cond. Power (dBm) |
| MCS0 | 13.0 | | 13.0 | 13.0 | | 12.7 |
| MCS1 | 13.0 | | 13.0 | 13.0 | | 12.7 |
| MCS2 | 13.0 | | 13.0 | 13.0 | | 12.7 |
| MCS3 | 13.0 | | 13.0 | 13.0 | | 12.7 |
| MCS4 | 13.0 | | 13.0 | 13.0 | | 12.7 |
| MCS5 | 13.0 | | 13.0 | 13.0 | | 12.7 |
| MCS6 | 13.0 | | 13.0 | 13.0 | | 12.7 |
| MCS7 | 13.0 | | 13.0 | 13.0 | | 12.7 |

Table 1.8.1-4b 802.11 a/n modulation type/data rate vs. conducted power at CDMA_BC1 power level


There are two fixed Wi-Fi power reductions triggered when transmitting simultaneously with CDMA/SVLTE (data/voice) mode

- 3) WiFi at lower CDMA_BC1 power level.
- 4) WiFi at lower SVLTE_BC1_25 power level.

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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| 802.11a (low band) 6Mbps | | | 802.11a (mid band) 6Mbps | | | 802.11a (upper band I) 6Mbps | | |
|--------------------------|--------------------------------|---|-----------------------------------|-----------------------------------|---|--------------------------------|--------------------------------|---|
| f (MHz) | Chan | Max. Avg. Cond. Power (dBm) | f (MHz) | Chan | Max. Avg. Cond. Power (dBm) | f (MHz) | Chan | Max. Avg. Cond. Power (dBm) |
| 5180 | 36 | 7.6 | 5260 | 52 | 7.4 | 5520 | 104 | 8.0 |
| 5200 | 40 | 7.5 | 5280 | 56 | 7.3 | 5580 | 116 | 7.8 |
| 5220 | 44 | 7.5 | 5300 | 60 | 7.3 | 5620 | 124 | 7.7 |
| 5240 | 48 | 7.4 | 5320 | 64 | 7.2 | 5700 | 140 | 7.6 |
| | | | | | | 802.11a (upper band II) 6Mbps | | |
| | | | | | | f (MHz) | Chan | Cond. Power (dBm) |
| | | | | | | 5745 | 149 | 7.7 |
| | | | | | | 5765 | 153 | 7.7 |
| | | | | | | 5785 | 157 | 7.7 |
| | | | | | | 5805 | 161 | 7.6 |
| | | | | | | 5825 | 165 | 7.7 |
| | | 802.11a (lower band) | 802.11a (middle band) | 802.11a (upper band I) | | 802.11a (upper band II) | | |
| Data Rate (Mbits) | Mod. | Channel 36 | Channel 52 | Channel 104 | | Channel 149 | | |
| | | Max. Avg. Cond. Power (dBm) | Max. Avg. Cond. Power (dBm) | Max. Avg. Cond. Power (dBm) | | Max. Avg. Cond. Power (dBm) | | |
| 6 | BPSK | 7.6 | 7.4 | 7.9 | | 7.7 | | |
| 9 | BPSK | 7.6 | 7.4 | 7.9 | | 7.6 | | |
| 12 | QPSK | 7.5 | 7.2 | 7.8 | | 7.5 | | |
| 18 | QPSK | 7.3 | 7.1 | 7.7 | | 7.4 | | |
| 24 | 16-QAM | 7.2 | 7.0 | 7.5 | | 7.3 | | |
| 36 | 16-QAM | 7.0 | 6.8 | 7.3 | | 7.1 | | |
| 48 | 64-QAM | 6.8 | 6.5 | 7.0 | | 6.9 | | |
| 54 | 64-QAM | 6.7 | 6.4 | 6.9 | | 6.8 | | |
| | 802.11n (lower band) | | 802.11n (middle band) | | 802.11n (upper band I) | | 802.11n (upper band II) | |
| Mod. | Channel 36 | | Channel 52 | | Channel 104 | | Channel 149 | |
| | Max. Avg. Cond. Power (dBm) | | Max. Avg. Cond. Power (dBm) | | Max. Avg. Cond. Power (dBm) | | Max. Avg. Cond. Power (dBm) | |
| MCS0 | 7.6 | | 7.4 | | 8.0 | | 7.8 | |
| MCS1 | 7.6 | | 7.4 | | 8.0 | | 7.8 | |
| MCS2 | 7.6 | | 7.4 | | 8.0 | | 7.8 | |
| MCS3 | 7.6 | | 7.4 | | 8.0 | | 7.8 | |
| MCS4 | 7.6 | | 7.4 | | 8.0 | | 7.8 | |
| MCS5 | 7.6 | | 7.4 | | 8.0 | | 7.8 | |
| MCS6 | 7.6 | | 7.4 | | 8.0 | | 7.8 | |
| MCS7 | 7.6 | | 7.4 | | 8.0 | | 7.8 | |

**Table 1.8.1-4c 802.11 a/n modulation type/data rate vs. conducted power
at SVLTE_BC1_25 power level**

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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| 802.11a/n Conducted Power in Wi-Fi Direct/GO/Hotspot Mode | | | | | |
|--|-------------|---|---|-------------|---|
| 802.11a (low band) 6Mbps | | | 802.11a (upper band II) 6Mbps | | |
| f (MHz) | Chan | Max. average conducted power (dBm) | f (MHz) | Chan | Max. average conducted power (dBm) |
| 5180 | 36 | 11.10 | 5745 | 149 | 10.75 |
| 5200 | 40 | 11.05 | 5765 | 153 | 10.72 |
| 5220 | 44 | 10.97 | 5785 | 157 | 10.60 |
| 5240 | 48 | 10.98 | 5805 | 161 | 10.70 |
| | | | 5825 | 165 | 10.60 |
| | | 802.11a (lower band) | 802.11 a (upper band II) | | |
| | | Channel 36 | Channel 149 | | |
| Data Rate (Mbps) | | Max. average conducted power (dBm) | Max. average conducted power (dBm) | | |
| 6 | | 11.10 | 10.75 | | |
| 24 | | 11.10 | 10.70 | | |
| 54 | | 11.05 | 10.70 | | |
| | | 802.11n (lower band) | 802.11n (upper band II) | | |
| | | Channel 36 | Channel 149 | | |
| Mod. | | Max. average conducted power (dBm) | Max. average conducted power (dBm) | | |
| MCS0 | | 11.10 | 10.70 | | |
| MCS4 | | 11.10 | 10.65 | | |
| MCS7 | | 11.10 | 10.70 | | |


Table 1.8.1-4e 802.11 a/n modulation type/data rate vs. maximum average conducted power in 802.11a Direct/Go and Hotspot mode

Note: 802.11a/n Hotspot mode does not support channels 52-140

1.8.2 SAR Measurement Requirements for Bluetooth

| Channel | Freq (MHz) | Mode | Max. Peak Cond. Power (dBm) |
|----------------|-------------------|-------------|------------------------------------|
| 0 | 2402 | DH5 | 9.5 |
| 39 | 2441 | DH5 | 8.8 |
| 78 | 2480 | DH5 | 7.8 |

Table 1.8.2-1 Bluetooth peak conducted power measurements

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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1.8.3 SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities as per KDB 941225 D06 v01

Standalone personal wireless routers and handsets with hotspot mode capabilities must address hand-held and other near-body exposure conditions to show SAR compliance. The following procedures are applicable when the overall device length and width are ≥ 9 cm x 5 cm respectively. A test separation of 10 mm is required. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25 mm from that surface or edge, for the data modes, wireless technologies and frequency bands supporting hotspot mode. The standalone SAR results in each device test orientation must be analyzed for the applicable hotspot mode simultaneous transmission configurations to determine SAR test exclusion and volume scan requirements.

Static/fixed power reduction scheme on the following modes/bands have been implemented when Hotspot Mode is enabled or active to comply with body SAR with 10 mm test separation from flat phantom on standalone transmitter and multi-band simultaneous transmission conditions:

- 802.11b: back off 5 dB
- 802.11a: back off 5 dB

When Hotspot mode is enabled or active, all 5 GHz WiFi operations are disabled or not supported.

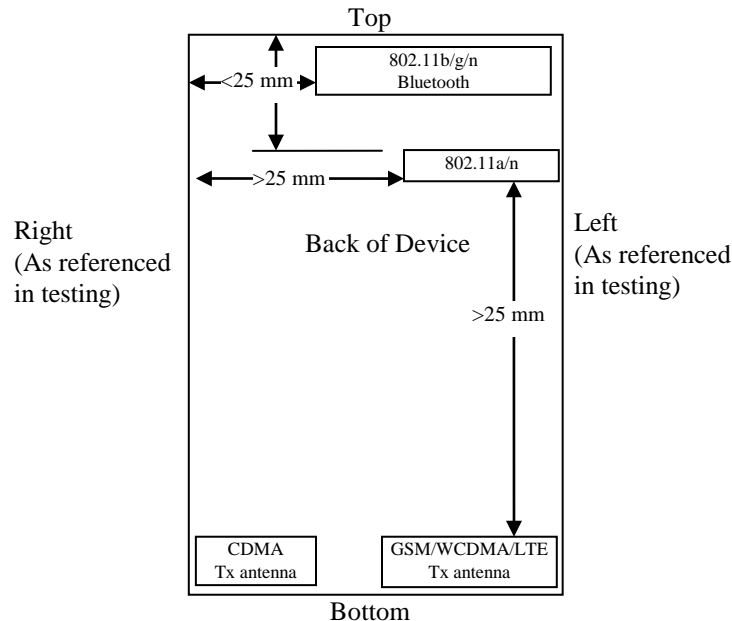



Figure 1.8.3-1 Identification of all sides for SAR Testing

Note: According to FCC guidance, Hotspot SAR testing is not required on any edge that is more than 2.5cm from the transmitting antenna.

| Hotspot Sides for SAR Testing | | | | | | |
|---|-------|------|-----|--------|------|-------|
| Mode | Front | Back | Top | Bottom | Left | Right |
| CDMA800, CDMA/GPRS/WCDMA/HSPA 850/1900, LTE band 25 | Yes | Yes | No | Yes | Yes | Yes |
| Bluetooth 2.4GHz/802.11bgn (2.4 GHz) | Yes | Yes | Yes | No | Yes | Yes |
| 802.11a/n (5 GHz) | Yes | Yes | Yes | No | Yes | No |


Table 1.8.3-1 Identification of all sides for SAR Testing

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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1.8.4 SAR Evaluation Procedures for GSM/(E)GPRS Dual Transfer Mode as per KDB 941225 D04 v01 and SAR Test Reduction Procedures GSM GPRS EDGE as per DDB 941225 D03 v01


- The device supports EGPRS/GPRS Multi-slot Class 12, DTM/GPRS Multi-slot Class11 and DTM/EGPRS Multi-slot Class10.
- CMU200 base station simulator with DTM software option CMU-K44 was used to set device in DTM (CS+PD) mode for testing. However, device could not be connected in DTM 4-slots uplink.
- For each slot addition in multi-slot modes (DTM, GPRS, EDGE), there is software power reduction of ~ 2 dB per slot.
- For head configurations, 1 slot CS, 2/3/4-slots (PD) and DTM (CS+PD) were evaluated.
- For body SAR configurations, 2/3/4-slots GPRS (PD) mode were tested.
- In EDGE/GPRS mode, GMSK Modulation was used using CS1-CS4 or MCS1-MCS4.
- 8-PSK modulation or MCS5-MCS9 code scheme were avoided since maximum burst avg . power was measured lower on those modulation schemes.
- Please refer to the conducted power measurements table below:

| Mode | Freq. (MHz) | Channel | Max burst averaged conducted power (dBm) CS1 | Max burst averaged conducted power (dBm) MCS1 | Max burst averaged conducted power (dBm) MCS5 | |
|----------------------------|----------------|---------|--|---|---|------|
| 2-slots GPRS 850 MHz | 824.2 | 128 | 29.9 | | | |
| | 836.8 | 190 | 29.9 | | | |
| | 848.8 | 251 | 29.9 | | | |
| 3-slots GPRS 850 MHz | 824.2 | 128 | 29.0 | | | |
| | 836.8 | 190 | 28.7 | | | |
| | 848.8 | 251 | 28.9 | | | |
| 4-slots GPRS 850 MHz | 824.2 | 128 | 27.0 | | | |
| | 836.8 | 190 | 26.8 | | | |
| | 848.8 | 251 | 26.8 | | | |
| 2-slots EDGE 850 MHz | 824.2 | 128 | 29.9 | 29.9 | 26.9 | |
| | 836.8 | 190 | 30.0 | 30.0 | 26.9 | |
| | 848.8 | 251 | 30.0 | 29.9 | 26.7 | |
| 2-slots DTM 850 MHz | 824.2 | 128 | 29.7 | 29.6 | 29.6 | 26.9 |
| | 836.8 | 190 | 29.7 | 29.5 | 29.6 | 26.9 |
| | 848.8 | 251 | 29.6 | 29.4 | 29.5 | 26.7 |
| 3-slots EDGE 850 MHz | 824.2 | 128 | 29.0 | 29.0 | 25.4 | |
| | 836.8 | 190 | 28.8 | 28.7 | 25.3 | |
| | 848.8 | 251 | 28.9 | 28.9 | 25.2 | |
| 3-slots DTM 850 MHz | 824.2 | 128 | 29.0 | 29.0 | 29.0 | 25.4 |
| | 836.8 | 190 | 29.0 | 28.6 | 28.7 | 25.3 |
| | 848.8 | 251 | 29.0 | 28.8 | 28.8 | 25.2 |
| 4-slots EDGE 850 MHz | 824.2 | 128 | 27.0 | 27.0 | 24.3 | |
| | 836.8 | 190 | 26.8 | 26.8 | 24.3 | |
| | 848.8 | 251 | 26.7 | 26.8 | 24.1 | |

| | | | | | |
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| | | | | | |
|--------------------------------|--------|------------------------|------|----------------|---|
| 2-slots GPRS 1900 MHz | 1850.2 | 512 | 28.4 | | |
| | 1880.0 | 661 | 28.2 | | |
| | 1909.8 | 810 | 28.3 | | |
| 3-slots GPRS 1900 MHz | 1850.2 | 512 | 26.0 | | |
| | 1880.0 | 661 | 25.8 | | |
| | 1909.8 | 810 | 25.8 | | |
| 4-slots GPRS 1900 MHz | 1850.2 | 512 | 25.4 | | |
| | 1880.0 | 661 | 25.3 | | |
| | 1909.8 | 810 | 25.3 | | |
| 2-slots EDGE 1900MHz | 1850.2 | 512 | 28.4 | 28.4 | 25.3 |
| | 1880.0 | 661 | 28.2 | 28.2 | 25.2 |
| | 1909.8 | 810 | 28.2 | 28.2 | 25.3 |
| 2-slots DTM 1900MHz | 1850.2 | 512 | 28.2 | 28.1 | 28.1 25.3 |
| | 1880.0 | 661 | 28.1 | 28.1 | 28.1 25.2 |
| | 1909.8 | 810 | 28.1 | 28.1 | 28.1 25.3 |
| 3-slots EDGE 1900MHz | 1850.2 | 512 | 26.0 | 26.0 | 24.3 |
| | 1880.0 | 661 | 25.8 | 25.9 | 24.3 |
| | 1909.8 | 810 | 25.8 | 25.8 | 24.3 |
| 3-slots DTM 1900MHz | 1850.2 | 512 | 25.7 | 25.6 | 25.6 24.3 |
| | 1880.0 | 661 | 25.6 | 25.5 | 25.5 24.3 |
| | 1909.8 | 810 | 25.6 | 25.6 | 25.6 24.3 |
| 4-slots EDGE 1900MHz | 1850.2 | 512 | 25.4 | 25.4 | 23.3 |
| | 1880.0 | 661 | 25.3 | 25.3 | 23.2 |
| | 1909.8 | 810 | 25.4 | 25.3 | 23.3 |
| Mode | | Freq. (MHz) | | Channel | Max burst averaged conducted power (dBm) |
| 1-slot GSM (CS) 850 MHz | | 824.2 | | 128 | 32.0 |
| | | 836.8 | | 190 | 32.1 |
| | | 848.8 | | 251 | 32.1 |
| 1-slot GSM (CS) 1900 MHz | | 1850.2 | | 512 | 28.8 |
| | | 1880.0 | | 661 | 28.9 |
| | | 1909.8 | | 810 | 28.9 |

1.8.4-1 GSM/EDGE/GPRS channel vs. conducted power

| | | | | |
|---|---|--|-------------------------------|------------------------|
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1.8.5 SAR Measurement Procedure for Fast SAR Scan as per KDB 447498

- Area scan based 1-g SAR estimation.
 - Very specific implementation of fast SAR methods.
 - Reported in the 29th BEMS meeting in 2009.
 - Using the specific polynomial fit algorithm.
 - Other implementations are not considered.
- When estimated 1-g SAR is ≤ 1.2 W/kg, zoom scan is not required according to the following:
 - Zoom scan is not required for any other purposes.
 - Peaks are distinctively identified in the area scan.
 - No sharp gradients: SAR at 1 cm from peak $\geq 40\%$ of peak value.
 - No measurement warnings or alerts for other measurement issues.
- 1-g SAR for estimated & zoom scan in the system verification (dipole) must be within 3% of each other to utilize Fast SAR.
- 1g Fast SAR values for dipole validation scans are generally more conservative than the standard SAR scans.
- Regardless of the SAR value, a zoom scan is required for the highest SAR configuration in each frequency band and wireless mode.
- Fast SAR Algorithm: The approach is based on the area scan using DASY5 system.

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1.8.6 SAR Measurement Procedures for 3G Devices

WCDMA Handsets

Output Power Verification

- Maximum output power is verified on the High, Middle and Low channels using 12.2 kbps RMC, 12.2 kbps AMR with a 3.4 kbps SRB (signal radio bearer) with TPC (transmit power control) set to all “1’s” for WCDMA/HSPA or applying the required inner loop.
- For Release 6 HSPA/Release 7 HSDPA⁺, output power is measured according to requirements for HS-DPCCH Sub-test 1-4/1-5 and 3GPP TS 34.121.

Head SAR Measurements

SAR for head exposure configurations is measured using the 12.2 kbps RMC with TPC bits configured to all “1s”. SAR in AMR configurations is not required when the maximum average output of each RF channel for 12.2 kbps AMR is less than ¼ dB higher than that measured in 12.2 kbps RMC. Otherwise, SAR is measured on the maximum output channel in 12.2 AMR with a 3.4 kbps SRB (signalling radio bearer) using the exposure configuration that results in the highest SAR for that RF channel in 12.2 RMC.

Body SAR Measurements

SAR for body exposure configurations is measured using the 12.2 kbps RMC with the TPC bits configured to all “1s”. SAR for other spreading codes and multiple DPDCH_n, when supported by the DUT, are not required when the maximum average outputs of each RF channel, for each spreading code and DPDCH_n configuration, are less than ¼ dB higher than those measured in 12.2 RMC. Otherwise, SAR is measured on the maximum output channel with an applicable RMC configuration for the corresponding spreading code or DPDCH_n using the exposure configuration that results in the highest SAR with 12.2 RMC.

Handsets with HSPA


Body SAR is not required for handsets with HSPA/HSPA+ capabilities, when the maximum average output of each RF channel with HSPA active is less than ¼ dB higher than that measured in 12.2 kbps RMC without HSPA/HSPA+. Otherwise, SAR for HSPA is measured using FRC (fixed reference channel) in the body exposure configuration that results in the highest SAR for that RF channel in 12.2 kbps RMC.

1.8.7 Test Setup information for WCDMA / HSPDA / HSUPA

a) WCDMA RMC

In RMC (reference measurement channel) mode the conducted power at 4 different bit rates were measured. They correspond with the used spreading factors as follows:

| Bit rate | 12.2 kbit/s | 64 kbit/s | 144 kbit/s | 384 kbit/s |
|-----------------------|--------------------|------------------|-------------------|-------------------|
| Spreading factor (SF) | 64 | 16 | 8 | 4 |

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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In RMC mode only DPCCCH and DPDCH are active. As bit rate changes do not influence the relative power of any code channel the measured RMS output power remains on the same level which is set to maximum by TPC (Transmit power control) pattern type 'All 1'.

b) HSDPA

HSDPA adds the HS-DPCCH in uplink as a control channel for high speed data transfer in downlink. In HSDPA mode 4 sub-tests are defined by 3GPP 34.121 according to the following table:

| Sub-test | β_c | β_d | β_d (SF) | β_c/β_d | $\beta_{hs}^{(1)}$ | CM(dB) ⁽²⁾ |
|----------|----------------------|----------------------|----------------|----------------------|--------------------|-----------------------|
| 1 | 2/15 | 15/15 | 64 | 2/15 | 4/15 | 0.0 |
| 2 | 12/15 ⁽³⁾ | 15/15 ⁽³⁾ | 64 | 12/15 ⁽³⁾ | 24/15 | 1.0 |
| 3 | 15/15 | 8/15 | 64 | 15/8 | 30/15 | 1.5 |
| 4 | 15/15 | 4/15 | 64 | 15/4 | 30/15 | 1.5 |

Note 1: $\Delta_{ACK}, \Delta_{NACK}, \Delta_{CQI} = 8 \iff A_{hs} = \beta_{hs}/\beta_c = 30/15 \iff \beta_{hs} = 30/15 * \beta_c$
Note 2 : CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$
Note 3 : For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1,TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$


Table 1.8.7-1 Sub-tests for UMTS Release 5 HSDPA

The β_c and β_d gain factors for DPCCCH and DPDCH were set according to the values in the above table, β_{hs} for HS-DPCCH is set automatically to the correct value when $\Delta_{ACK}, \Delta_{NACK}, \Delta_{CQI} = 8$. The variation of the β_c/β_d ratio causes a power reduction at sub-tests 2 - 4.

The measurements were performed with a Fixed Reference Channel (FRC) and H-Set 1 QPSK.

| Parameter | Value |
|----------------------------------|-------------|
| Nominal average inf. bit rate | 534 kbit/s |
| Inter-TTI Distance | 3 TTI's |
| Number of HARQ Processes | 2 Processes |
| Information Bit Payload | 3202 Bits |
| MAC-d PDU size | 336 Bits |
| Number Code Blocks | 1 Block |
| Binary Channel Bits Per TTI | 4800 Bits |
| Total Available SMLs in UE | 19200 SMLs |
| Number of SMLs per HARQ Process | 9600 SMLs |
| Coding Rate | 0.67 |
| Number of Physical Channel Codes | 5 |

Table 1.8.7-2 Settings of required H-Set 1 QPSK acc. to 3GPP 34.121

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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c) DC-HSDPA (3GPP Release 8)

Dual Cell – HSDPA has been signalized using the following settings for connection setup:

| Parameter During Connection Setup | Value |
|--------------------------------------|--------|
| P-CPICH_Ec/Ior | -10 dB |
| P-CCPCH | -12 |
| SCH_Ec/Ior | -12 |
| PICH_Ec/Ior | -15 |
| HS-PDSCH | off |
| HS-SCCH_1 | off |
| DPCH_Ec/Ior | -5 |
| OCNS_Ec/Ior | -3.1 |


Table 1.8.7-3 Downlink Physical Channels according to 3GPP 34.121 Table E.5.0

The fixed reference channel has been set to H-set 12 according to 3GPP TS 34.121 Table C.8.1.12:

| Parameter | Unit | Value |
|--|--------|-------|
| Nominal Average Inf. Bit Rate | kbit/s | 60 |
| Inter-TTI Distance | TTI's | 1 |
| Information Bit Payload (N_{INF}) | Bits | 120 |
| Number Code Blocks | Blocks | 1 |
| Binary Channel Bits Per TTI | Bits | 960 |
| Total Available SML's in UE | SML's | 19200 |
| Number of SML's per HARQ Process | SML's | 3200 |
| Coding Rate | | 0.15 |
| Number of Physical Channel Codecs | Codecs | 1 |
| Modulation | | QPSK |
| Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table. | | |
| Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used. | | |

Table 1.8.7-4 H-Set 12 QPSK configuration

The same Sub-test settings as for Release 5 HSDPA were used for the tests.

| | | | | | |
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d) HSUPA

In HSUPA mode additional code channels (E-DPCCH, E-DPDCHn) are added for data transfer in uplink at higher bit rates.

5 sub-tests are defined by 3GPP 34.121 according to the following table :


| Sub-test | β_c | β_d | β_d (SF) | β_c/β_d | $\beta_{hs}^{(1)}$ | β_{ec} | β_{ed} | β_{ec} (SF) | β_{ed} (code) | CM ⁽²⁾ (dB) | MPR (dB) | AG ⁽⁴⁾ Index | E-TFCI |
|----------|----------------------|----------------------|----------------|----------------------|--------------------|--------------|--|-------------------|---------------------|------------------------|----------|-------------------------|--------|
| 1 | 11/15 ⁽³⁾ | 15/15 ⁽³⁾ | 64 | 11/15 ⁽³⁾ | 22/15 | 209/225 | 1039/225 | 4 | 1 | 1.0 | 0.0 | 20 | 75 |
| 2 | 6/15 | 15/15 | 64 | 6/15 | 12/15 | 12/15 | 94/75 | 4 | 1 | 3.0 | 2.0 | 12 | 67 |
| 3 | 15/15 | 9/15 | 64 | 15/9 | 30/15 | 30/15 | $\beta_{ed1}:47/15$ $\beta_{ed2}:47/15$ | 4 | 2 | 2.0 | 1.0 | 15 | 92 |
| 4 | 2/15 | 15/15 | 64 | 2/15 | 4/15 | 2/15 | 56/75 | 4 | 1 | 3.0 | 2.0 | 17 | 71 |
| 5 | 15/15 ⁽⁴⁾ | 15/15 ⁽⁴⁾ | 64 | 15/15 ⁽⁴⁾ | 30/15 | 24/15 | 134/15 | 4 | 1 | 1.0 | 0.0 | 21 | 81 |

Note 1: $\Delta_{ACK}, \Delta_{NACK}, \Delta_{CQI} = 8 \iff A_{hs} = \beta_{hs}/\beta_c = 30/15 \iff \beta_{hs} = 30/15 * \beta_c$
Note 2 : CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference
Note 3 : For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1,TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$
Note 4 : For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1,TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$
Note 5 : Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g
Note 6 : β_{ed} can not be set directly; it is set by Absolute Grant Value

Table 1.8.7-5 Subtests for UMTS Release 6 HSUPA

To achieve the settings above some additional procedures were defined by 3GPP 34.121. Those have been included in an application note for the CMU200 and were exactly followed :

- Test mode connection (BS signal tab) :
- RMC 12.2 kbit/s + HSPA 34.108 with loop mode 1
- HS-DSCH settings (BS signal tab):
- FRC with H-set 1 QPSK
- ACK-NACK repetition factor = 3
- CQI feedback cycle = 4ms
- CQI repetition factor = 2
- HSUPA-specific signalling settings (UE signal tab) :
- E-TFCI table index = 0
- E-DCH minimum set E-TFCI = 9
- Puncturing limit non-max = 0.84
- max. number of channelisation codes = 2x SF4
- Initial Serving Grant Value = Off
- HSDPA and HSUPA Gain factors (UE signal tab)

| | | | | | |
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| Sub-test | β_c | β_d | $\Delta_{ACK}, \Delta_{NACK}, \Delta_{CQI}$ | $\Delta E-DPCCH^*$ |
|-----------------|-----------|-----------|---|--------------------|
| 1 | 10 | 15 | 8 | 6 |
| 2 | 6 | 15 | 8 | 8 |
| 3 | 15 | 9 | 8 | 8 |
| 4 | 2 | 15 | 8 | 5 |
| 5 | 14 | 15 | 8 | 7 |

* β_{ec} and β_{ed} ratios (relative to β_c and β_d) are set by $\Delta E-DPCCH$

- HSUPA Reference E-TFCIs (UE signal tab > HSUPA gain factors) :

| Sub-test | 1, 2, 4, 5 | | | | |
|-------------------------------|-------------------|----|----|----|----|
| Number of E-TFCIs | 5 | | | | |
| Reference E-TFCI | 11 | 67 | 71 | 75 | 81 |
| Reference E-TFCI power offset | 4 | 18 | 23 | 26 | 27 |

| Sub-test | 3 | |
|-------------------------------|----------|----|
| Number of E-TFCIs | 2 | |
| Reference E-TFCI | 11 | 92 |
| Reference E-TFCI power offset | 4 | 18 |

- HSUPA-specific generator parameters (BS Signal tab > HSUPA > E-AGCH > AG Pattern)

| Sub-test | Absolute Grant Value (AG Index) |
|-----------------|--|
| 1 | 20 |
| 2 | 12 |
| 3 | 15 |
| 4 | 17 |
| 5 | 21 |

- Power Level settings (BS Signal tab > Node B-settings):

- Level reference : Output Channel Power (Ior)

- Output Channel Power (Ior) : -86 dBm

- Downlink Physical Channel Settings (BS signal tab)

- P-CPICH : -10 dB

- S-CPICH : Off

- P-SCH : -15 dB

- S-SCH : -15 dB


- P-CCPCH : -12 dB

- S-CCPCH : -12 dB

- PICH : -15 dB

- AICH : -12 dB

- DPDCH : -10 dB

| | | | | | |
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- HS-SCCH : -8 dB
- HS-PDSCH : -3 dB
- E-AGCH : -20 dB
- E-RGCH/E-HICH - 20 dB
- E-RGCH Active : Off

The settings above were stored once for each sub-test and recalled before the measurement.

To reach maximum output power in HSUPA mode the following procedures were followed:

3 different TPC patterns were defined :

Set 1 : Closed loop with target power 10 dBm

Set 2 : Single Pattern+Alternating with binary pattern '11111' for 1 dB steps 'up'

Set 3 : Single Pattern+Alternating with binary pattern '00000' for 1 dB steps 'down'

After recalling a certain HSUPA sub-test the HSUPA E-AGCH graph with E-TFCI event counter is displayed. After starting with the closed loop command the power is increased in 1 dB steps by activating pattern set 2 until the UE decreases the transmitted E-TFCI.


At this point set 3 is activated once to reduce the output power to the value at which the original E-TFCI, which is required for the sub-test, appears again.

For conducted power measurements the same steps are repeated in the power menu to read out the corresponding maximum RMS output power with the target E-TFCI.

For SAR measurements it is useful to switch to Code Domain Power vs. Time display.


Here the CMU200 shows relative power values (max. and min.) of each code channel which should roughly correspond to the numerators of the gain factors e.g. :

| Sub-test | β_c | β_d | β_{hs} | β_{ec} | β_{ed} |
|----------|-----------|-----------|--------------|--------------|--------------|
| 5 | 15 | 15 | 30 | 24 | 134 |

| | | | | | |
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| | Band | | FDD V (850) | | |
|--------|-------------------------------------|--|--|--------|--------|
| | Freq (MHz) | | 826.4 | 836.4 | 846.6 |
| | Channel | | 4132 | 4182 | 4233 |
| Mode | Subtest | | Max burst averaged conducted power (dBm) | | |
| Rel99 | 12.2 kbps RMC | | 23.1 | 23.1 | 22.9 |
| Rel99 | 12.2kbps, Voice, AMR, SRB 3.4 kbps | | 23.1 | 23.1 | 22.9 |
| HSUPA | 1 | | 21.6 | 21.8 | 21.4 |
| HSUPA | 2 | | 21.3 | 21.6 | 21.1 |
| HSUPA | 3 | | 22.2 | 22.3 | 21.9 |
| HSUPA | 4 | | 22.0 | 22.2 | 21.8 |
| HSUPA | 5 | | 21.2 | 21.3 | 21.0 |
| HSDPA+ | 1 | | 22.2 | 22.3 | 21.9 |
| HSDPA+ | 2 | | 21.1 | 20.9 | 20.8 |
| HSDPA+ | 3 | | 20.3 | 20.2 | 19.9 |
| HSDPA+ | 4 | | 19.1 | 19.0 | 18.9 |
| | Band | | FDD II (1900) | | |
| | Freq (MHz) | | 1852.4 | 1880.0 | 1907.6 |
| | Channel | | 9262 | 9400 | 9538 |
| Mode | Subtest | | Max burst averaged conducted power (dBm) | | |
| Rel99 | 12.2 kbps RMC | | 23.0 | 23.0 | 23.0 |
| Rel99 | 12.2 kbps, Voice, AMR, SRB 3.4 kbps | | 23.0 | 22.9 | 22.9 |
| HSUPA | 1 | | 21.5 | 21.3 | 21.4 |
| HSUPA | 2 | | 21.2 | 21.2 | 21.1 |
| HSUPA | 3 | | 21.9 | 21.8 | 21.9 |
| HSUPA | 4 | | 21.9 | 21.8 | 21.9 |
| HSUPA | 5 | | 21.2 | 20.9 | 20.9 |
| HSDPA+ | 1 | | 22.0 | 22.0 | 22.0 |
| HSDPA+ | 2 | | 20.6 | 20.5 | 20.7 |
| HSDPA+ | 3 | | 20.1 | 20.2 | 20.3 |
| HSDPA+ | 4 | | 18.9 | 19.1 | 19.0 |

Table 1.8.7-6 WCDMA (Rel99) / HSPA/HSPA+ conducted power measurements

| | | | | | |
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1.8.8 FCC SAR Measurement Procedures for 3G Devices CDMA 2000

The followings are the **FCC SAR Measurement Procedures for 3G Devices issued in Oct. 2006**, applicable to handsets operating under CDMA 2000, Release 0, with MS Protocol Revision 6 (**P_REV 6**). The default test configuration is to measure SAR in RC3 with an established radio link between the DUT and a communication test set. SAR in RC1 is selectively confirmed according to output power and exposure conditions.

Output Power Verification

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. Results for at least steps 3, 4 and 10 of the power measurement procedures should be tabulated in the SAR report as shown on Table 1.8.3-3 Steps 3 and 4 should be measured using SO55 with power control bits in “**All Up**” condition. TDSO / SO32 may be used instead of SO55 for step 4. Step 10 should be measured using TDSO / SO32 with power control bits in the “**Bits Hold**” condition (i.e. alternative Up/Down Bits).

3GPP2 C.S0011/ TIA-98-E, section 4.4.5.2 Method of Measurement

1. If the mobile station supports Reverse Traffic Channel Radio Configuration 1 and 7 Forward Traffic Channel Radio Configuration 1, set up a call using Fundamental 8 Channel Test Mode 1 with 9600 bps data rate only and perform steps 6 through 8.
2. If the mobile station supports the Radio Configuration 3 Reverse Fundamental 11 Channel and demodulation of Radio Configuration 3, 4, or 5, set up a call using 12 Fundamental Channel Test Mode 3 with 9600 bps data rate only and 13 perform steps 6 through 8.
3. Set the test parameters as specified in **Table 1.8.8-1**
4. Send continuously ‘0’ power control bits to the mobile station.
5. Measure the mobile station output power at the mobile station antenna connector.
6. If the mobile station supports the Radio Configuration 3 Reverse Fundamental Channel, Radio Configuration 3 Reverse Supplemental Channel 0 and demodulation of Radio Configuration 3, 4, or 5, set up a call using Supplemental Channel Test Mode 3 with 9600 bps Fundamental Channel and 9600 bps Supplemental Channel 0 data rate, and perform the following:
 - a) Set the test parameters as specified in **Table 1.8.8-2**
 - b) Send alternating ‘0’ and ‘1’ power control bits to the mobile station using the smallest supported closed loop power control step size supported by the mobile station.
 - c) Determine the active channel configuration. If the desired channel configuration is not active, increase by 1 dB and repeat the verification. Repeat this step until the desired channel configuration becomes active.
 - d) Measure the mobile station output power at the mobile station antenna connector and record reading.


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

Table 1.8.8-1

Test Parameters for Maximum RF Output Power for Spreading Rate 1

| Parameter | Units | Value |
|------------------------------|--------------|-------|
| \bar{I}_{or} | dBm/1.23 MHz | -86 |
| $\frac{Pilot E_c}{I_{or}}$ | dB | -7 |
| $\frac{Traffic E_c}{I_{or}}$ | dB | -7.4 |

Table 1.8.8-2

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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Head SAR Measurements

SAR for head exposure configurations is measured in RC3 with the DUT configured to transmit at full rate using Loopback Service Option SO55. SAR for RC1 is not required when the maximum average output of each channel is less than ¼ dB higher than that measured in RC3. Otherwise, SAR is measured on the maximum output channel in RC1 using the exposure configuration that results in the highest SAR for that channel in RC3.


Body SAR Measurements

SAR for body exposure configurations is measured in RC3 with the DUT configured to transmit at full rate on FCH with all other code channels disabled using TDSO / SO32. SAR for multiple code channels (FCH + SCH_n) is not required when the maximum average output of each RF channel is less than ¼ dB higher than that measured with FCH only. Otherwise, SAR is measured on the maximum output channel (FCH + SCH_n) with FCH at full rate and SCH₀ enabled at 9600 bps using the exposure configuration that results in the highest SAR for that channel with FCH only. When multiple code channels are enabled, the DUT output may shift by more than 0.5 dB and lead to higher SAR drifts and SCH dropouts.

Body SAR in RC1 is not required when the maximum average output of each channel is less than ¼ dB higher than that measured in RC3. Otherwise, SAR is measured on the maximum output channel in RC1; with Loopback Service Option SO55, at full rate, using the body exposure configuration that results in the highest SAR for that channel in RC3.


1x Ev-DO

For handsets with Ev-Do capabilities, when the maximum average output of each channel in Rev. 0 is less than ¼ dB higher than that measured in RC3 (1x RTT), body SAR for Ev-Do is not required. Otherwise, SAR for Rev. 0 is measured on the maximum output channel at 153.6 kbps using the body exposure configuration that results in the highest SAR for that channel in RC3. SAR for Rev. A is not required when the maximum average output of each channel is less than that measured in Rev. 0 or less than ¼ dB higher than that measured in RC3. Otherwise, SAR is measured on the maximum output channel for Rev. A using a Reverse Data Channel payload size of 4096 bits and a Termination Target of 16 slots defined for Subtype 2 Physical Layer configurations. A Forward Traffic Channel data rate corresponding to the 2-slot version of 307.2 kbps with the ACK Channel transmitting in all slots should be configured in the downlink for both Rev. 0 and Rev. A.

| | | | | | |
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| Band | Freq. (MHz) | Ch. | 1xEvDO (153.6kbps) Rev 0 (dBm) | 1xEvDO (153.6kbps) Rev A (dBm) | CDMA2000 RC | S02 Loopback (dBm) | S055 Loopback (dBm) | TDSO S032 Test Data Service (dBm) |
|---------------------|----------------|------|---|---|----------------|--------------------------|---------------------------|---|
| CDMA 800 BC10 | 817.9 | 476 | 24.3 | 24.4 | RC1 | 24.5 | 24.5 | N/A |
| | | | | | RC3 | 24.5 | 24.5 | 24.5 |
| | 820.5 | 580 | 24.1 | 24.1 | RC1 | 24.3 | 24.3 | N/A |
| | | | | | RC3 | 24.3 | 24.3 | 24.3 |
| | 823.1 | 684 | 24.2 | 24.2 | RC1 | 24.3 | 24.3 | N/A |
| | | | | | RC3 | 24.3 | 24.3 | 24.3 |
| CDMA 850 BC0 | 824.70 | 1013 | 24.3 | 24.3 | RC1 | 24.4 | 24.4 | N/A |
| | | | | | RC3 | 24.4 | 24.4 | 24.4 |
| | 836.52 | 384 | 24.1 | 24.1 | RC1 | 24.1 | 24.1 | N/A |
| | | | | | RC3 | 24.1 | 24.1 | 24.2 |
| | 848.52 | 777 | 24.0 | 24.0 | RC1 | 24.1 | 24.0 | N/A |
| | | | | | RC3 | 24.0 | 24.1 | 24.1 |
| CDMA 1900 BC1 | 1851.25 | 25 | 23.8 | 23.9 | RC1 | 24.0 | 23.9 | N/A |
| | | | | | RC3 | 23.8 | 23.9 | 23.91 |
| | 1880.00 | 600 | 23.9 | 23.9 | RC1 | 24.0 | 24.0 | N/A |
| | | | | | RC3 | 24.0 | 24.0 | 23.94 |
| | 1908.50 | 1175 | 23.9 | 23.9 | RC1 | 23.9 | 23.9 | N/A |
| | | | | | RC3 | 24.0 | 23.9 | 23.93 |

Table 1.8.8-3: Max. Avg. Conducted RF output power (dBm) measured for various settings

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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1.8.9 SAR Evaluation Procedures for LTE as per KDB 941225 D05 v02

“1. QPSK with 1 RB allocation

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 for RB offsets at the upper edge, middle and lower edge of each *required test channel*. When the *reported SAR* is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and *required test channels* is not required for 1 RB allocation; otherwise, SAR is required for the remaining *required test channels* and only for the RB offset configuration with the highest output power for that channel. When the *reported SAR* of a *required test channel* is > 1.45 W/kg, SAR is required for all three RB offset configurations for that *required test channel*.

2. QPSK with 50% RB allocation

The procedures required for 1 RB allocation in 1. are applied to measure the SAR for QPSK with 50% RB allocation.

3. QPSK with 100% RB allocation

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 in 1. and 2. are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel and if the *reported SAR* is > 1.45 W/kg, the remaining *required test channels* must also be tested.

Higher order modulations

For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in sections 1. and 2. and 3. to determine the QAM configurations that may need SAR measurement.

For each configuration

identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is $> \frac{1}{2}$ dB higher than the same configuration in QPSK or when the *reported SAR* for the QPSK configuration is > 1.45 W/kg.


4. Other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section 5.2 to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is $> \frac{1}{2}$ 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.

The equivalent channel configuration for the RB allocation, RB offset and modulation etc. Is determined for the smaller channel bandwidth according to the same number of RB allocated in the largest channel bandwidth. For example, 50 RB in 10 MHz channel bandwidth does not apply to 5 MHz channel bandwidth; therefore, this cannot be tested in the smaller channel bandwidth.


However, 50% RB allocation in 10 MHz channel bandwidth

is equivalent to 100% RB allocation in 5 MHz channel bandwidth; therefore, these are the equivalent configurations to be compared to determine the specific channel and configuration in the smaller channel bandwidth that need SAR testing.”


| | | | | | |
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- MPR has been implemented permanently by the manufacturer as per 3GPP TS36.101
- A-MPR was disabled for all SAR measurements.
- LTE Head SAR was evaluated to cover third-party VoIP applications at full power.
- LTE Head SAR was evaluated in SVLTE mode at lowered LTE power.
- According to “3GPP TS 36.521-1 V10.0.0 (2011-12)”:
 • “The channel numbers that designate carrier frequencies so close to the operating band edges that the carrier extends beyond the operating band edge shall not be used. This implies that the first 7, 15, 25, 50, 75 and 100 channel numbers at the lower operating band edge and the last 6, 14, 24, 49, 74 and 99 channel numbers at the upper operating band edge shall not be used for channel bandwidths of 1.4, 3, 5, 10, 15 and 20 MHz respectively.”...

| LTE band | BW (MHz) | Mod. | Channel | RB# | Offset | Max. Avg. Tx Power (dBm) |
|----------|----------|------|---------|-----|--------|--------------------------|
| 25 | 20 | QPSK | 26140 | 1 | LOW | 23.05 |
| 25 | 20 | QPSK | 26140 | 1 | MID | 23.06 |
| 25 | 20 | QPSK | 26140 | 1 | HIGH | 23.20 |
| 25 | 20 | QPSK | 26140 | 50 | LOW | 21.95 |
| 25 | 20 | QPSK | 26140 | 50 | HIGH | 22.23 |
| 25 | 20 | QPSK | 26140 | 100 | LOW | 22.11 |
| 25 | 20 | Q16 | 26140 | 1 | LOW | 21.98 |
| 25 | 20 | Q16 | 26140 | 1 | MID | 22.08 |
| 25 | 20 | Q16 | 26140 | 1 | HIGH | 22.23 |
| 25 | 20 | Q16 | 26140 | 75 | LOW | 20.99 |
| 25 | 20 | Q16 | 26140 | 75 | HIGH | 21.11 |
| 25 | 20 | Q16 | 26140 | 100 | LOW | 21.09 |
| 25 | 20 | QPSK | 26365 | 1 | LOW | 23.16 |
| 25 | 20 | QPSK | 26365 | 1 | MID | 23.18 |
| 25 | 20 | QPSK | 26365 | 1 | HIGH | 22.72 |
| 25 | 20 | QPSK | 26365 | 50 | LOW | 22.12 |
| 25 | 20 | QPSK | 26365 | 50 | HIGH | 22.13 |
| 25 | 20 | QPSK | 26365 | 100 | LOW | 22.12 |
| 25 | 20 | Q16 | 26365 | 1 | LOW | 22.90 |
| 25 | 20 | Q16 | 26365 | 1 | MID | 22.91 |
| 25 | 20 | Q16 | 26365 | 1 | HIGH | 22.41 |
| 25 | 20 | Q16 | 26365 | 75 | LOW | 21.06 |
| 25 | 20 | Q16 | 26365 | 75 | HIGH | 21.05 |
| 25 | 20 | Q16 | 26365 | 100 | LOW | 21.05 |
| 25 | 20 | QPSK | 26590 | 1 | LOW | 22.52 |
| 25 | 20 | QPSK | 26590 | 1 | MID | 23.04 |


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|----|----|------|-------|-----|------|-------|
| 25 | 20 | QPSK | 26590 | 1 | HIGH | 22.49 |
| 25 | 20 | QPSK | 26590 | 50 | LOW | 21.91 |
| 25 | 20 | QPSK | 26590 | 50 | HIGH | 21.93 |
| 25 | 20 | QPSK | 26590 | 100 | LOW | 21.86 |
| 25 | 20 | Q16 | 26590 | 1 | LOW | 21.70 |
| 25 | 20 | Q16 | 26590 | 1 | MID | 22.07 |
| 25 | 20 | Q16 | 26590 | 1 | HIGH | 21.57 |
| 25 | 20 | Q16 | 26590 | 75 | LOW | 20.88 |
| 25 | 20 | Q16 | 26590 | 75 | HIGH | 20.95 |
| 25 | 20 | Q16 | 26590 | 100 | LOW | 20.87 |
| 25 | 15 | QPSK | 26365 | 1 | LOW | 23.17 |
| 25 | 15 | QPSK | 26365 | 1 | MID | 23.21 |
| 25 | 15 | QPSK | 26365 | 1 | HIGH | 22.95 |
| 25 | 15 | QPSK | 26365 | 36 | LOW | 22.17 |
| 25 | 15 | QPSK | 26365 | 36 | HIGH | 22.17 |
| 25 | 15 | QPSK | 26365 | 75 | LOW | 22.10 |
| 25 | 15 | Q16 | 26365 | 1 | LOW | 22.17 |
| 25 | 15 | Q16 | 26365 | 1 | MID | 22.14 |
| 25 | 15 | Q16 | 26365 | 1 | HIGH | 21.91 |
| 25 | 15 | Q16 | 26365 | 16 | LOW | 22.19 |
| 25 | 15 | Q16 | 26365 | 16 | HIGH | 22.16 |
| 25 | 15 | Q16 | 26365 | 75 | LOW | 21.14 |
| 25 | 10 | QPSK | 26365 | 1 | LOW | 22.99 |
| 25 | 10 | QPSK | 26365 | 1 | MID | 23.22 |
| 25 | 10 | QPSK | 26365 | 1 | HIGH | 23.06 |
| 25 | 10 | QPSK | 26365 | 25 | LOW | 22.21 |
| 25 | 10 | QPSK | 26365 | 25 | HIGH | 22.19 |
| 25 | 10 | QPSK | 26365 | 50 | LOW | 22.15 |
| 25 | 10 | Q16 | 26365 | 1 | LOW | 22.71 |
| 25 | 10 | Q16 | 26365 | 1 | MID | 22.86 |
| 25 | 10 | Q16 | 26365 | 1 | HIGH | 22.62 |
| 25 | 10 | Q16 | 26365 | 30 | LOW | 21.33 |
| 25 | 10 | Q16 | 26365 | 30 | HIGH | 21.23 |
| 25 | 10 | Q16 | 26365 | 50 | LOW | 21.25 |
| 25 | 5 | QPSK | 26365 | 1 | LOW | 22.98 |
| 25 | 5 | QPSK | 26365 | 1 | MID | 23.27 |
| 25 | 5 | QPSK | 26365 | 1 | HIGH | 23.21 |


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|----|----|------|-------|----|------|-------|
| 25 | 5 | QPSK | 26365 | 10 | LOW | 22.24 |
| 25 | 5 | QPSK | 26365 | 10 | HIGH | 22.34 |
| 25 | 5 | QPSK | 26365 | 25 | LOW | 22.28 |
| 25 | 5 | Q16 | 26365 | 1 | LOW | 21.88 |
| 25 | 5 | Q16 | 26365 | 1 | MID | 21.90 |
| 25 | 5 | Q16 | 26365 | 1 | HIGH | 21.90 |
| 25 | 5 | Q16 | 26365 | 8 | LOW | 22.29 |
| 25 | 5 | Q16 | 26365 | 8 | HIGH | 22.37 |
| 25 | 5 | Q16 | 26365 | 25 | LOW | 21.35 |
| 25 | 3 | QPSK | 26365 | 1 | LOW | 23.01 |
| 25 | 3 | QPSK | 26365 | 1 | MID | 23.22 |
| 25 | 3 | QPSK | 26365 | 1 | HIGH | 23.13 |
| 25 | 3 | QPSK | 26365 | 6 | LOW | 22.32 |
| 25 | 3 | QPSK | 26365 | 6 | HIGH | 22.31 |
| 25 | 3 | QPSK | 26365 | 15 | LOW | 22.29 |
| 25 | 3 | Q16 | 26365 | 1 | LOW | 22.78 |
| 25 | 3 | Q16 | 26365 | 1 | MID | 22.84 |
| 25 | 3 | Q16 | 26365 | 1 | HIGH | 22.71 |
| 25 | 3 | Q16 | 26365 | 4 | LOW | 22.41 |
| 25 | 3 | Q16 | 26365 | 4 | HIGH | 22.54 |
| 25 | 3 | Q16 | 26365 | 15 | LOW | 21.44 |
| 25 | 14 | QPSK | 26365 | 1 | LOW | 23.15 |
| 25 | 14 | QPSK | 26365 | 1 | MID | 23.21 |
| 25 | 14 | QPSK | 26365 | 1 | HIGH | 23.27 |
| 25 | 14 | QPSK | 26365 | 3 | LOW | 23.30 |
| 25 | 14 | QPSK | 26365 | 3 | HIGH | 23.25 |
| 25 | 14 | QPSK | 26365 | 6 | LOW | 22.44 |
| 25 | 14 | Q16 | 26365 | 1 | LOW | 22.07 |
| 25 | 14 | Q16 | 26365 | 1 | MID | 22.06 |
| 25 | 14 | Q16 | 26365 | 1 | HIGH | 22.09 |
| 25 | 14 | Q16 | 26365 | 5 | LOW | 22.34 |
| 25 | 14 | Q16 | 26365 | 5 | HIGH | 22.39 |
| 25 | 14 | Q16 | 26365 | 6 | LOW | 21.39 |


Table 1.8.9-1 LTE band 25 conducted power measurements at full power

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| LTE Band | BW (MHz) | Mod. | Channel | RB# | Offset | Max. Avg. Tx Power (dBm) |
|-----------------|-----------------|-------------|----------------|------------|---------------|---------------------------------|
| 25 | 20 | QPSK | 26140 | 1 | LOW | 18.27 |
| 25 | 20 | QPSK | 26140 | 1 | MID | 18.32 |
| 25 | 20 | QPSK | 26140 | 1 | HIGH | 18.59 |
| 25 | 20 | QPSK | 26140 | 50 | LOW | 17.83 |
| 25 | 20 | QPSK | 26140 | 50 | HIGH | 17.77 |
| 25 | 20 | QPSK | 26140 | 100 | LOW | 17.69 |
| 25 | 20 | Q16 | 26140 | 1 | LOW | 17.58 |
| 25 | 20 | Q16 | 26140 | 1 | MID | 18.00 |
| 25 | 20 | Q16 | 26140 | 1 | HIGH | 17.70 |
| 25 | 20 | Q16 | 26140 | 75 | LOW | 16.54 |
| 25 | 20 | Q16 | 26140 | 75 | HIGH | 16.41 |
| 25 | 20 | Q16 | 26140 | 100 | LOW | 16.37 |
| 25 | 20 | QPSK | 26365 | 1 | LOW | 18.60 |
| 25 | 20 | QPSK | 26365 | 1 | MID | 18.78 |
| 25 | 20 | QPSK | 26365 | 1 | HIGH | 18.04 |
| 25 | 20 | QPSK | 26365 | 50 | LOW | 17.57 |
| 25 | 20 | QPSK | 26365 | 50 | HIGH | 17.83 |
| 25 | 20 | QPSK | 26365 | 100 | LOW | 17.69 |
| 25 | 20 | Q16 | 26365 | 1 | LOW | 17.83 |
| 25 | 20 | Q16 | 26365 | 1 | MID | 18.44 |
| 25 | 20 | Q16 | 26365 | 1 | HIGH | 17.97 |
| 25 | 20 | Q16 | 26365 | 75 | LOW | 16.52 |
| 25 | 20 | Q16 | 26365 | 75 | HIGH | 16.68 |
| 25 | 20 | Q16 | 26365 | 100 | LOW | 16.65 |
| 25 | 20 | QPSK | 26590 | 1 | LOW | 17.84 |
| 25 | 20 | QPSK | 26590 | 1 | MID | 18.52 |
| 25 | 20 | QPSK | 26590 | 1 | HIGH | 17.94 |
| 25 | 20 | QPSK | 26590 | 50 | LOW | 17.43 |
| 25 | 20 | QPSK | 26590 | 50 | HIGH | 17.37 |
| 25 | 20 | QPSK | 26590 | 100 | LOW | 17.39 |
| 25 | 20 | Q16 | 26590 | 1 | LOW | 17.44 |
| 25 | 20 | Q16 | 26590 | 1 | MID | 17.86 |
| 25 | 20 | Q16 | 26590 | 1 | HIGH | 17.19 |


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| | | | | | | |
|----|----|------|-------|-----|------|-------|
| 25 | 20 | Q16 | 26590 | 75 | LOW | 16.52 |
| 25 | 20 | Q16 | 26590 | 75 | HIGH | 16.37 |
| 25 | 20 | Q16 | 26590 | 100 | LOW | 16.43 |
| 25 | 15 | QPSK | 26365 | 1 | LOW | 18.68 |
| 25 | 15 | QPSK | 26365 | 1 | MID | 18.69 |
| 25 | 15 | QPSK | 26365 | 1 | HIGH | 18.30 |
| 25 | 15 | QPSK | 26365 | 36 | LOW | 17.70 |
| 25 | 15 | QPSK | 26365 | 36 | HIGH | 17.92 |
| 25 | 15 | QPSK | 26365 | 75 | LOW | 17.77 |
| 25 | 15 | Q16 | 26365 | 1 | LOW | 17.81 |
| 25 | 15 | Q16 | 26365 | 1 | MID | 18.45 |
| 25 | 15 | Q16 | 26365 | 1 | HIGH | 17.96 |
| 25 | 15 | Q16 | 26365 | 16 | LOW | 17.96 |
| 25 | 15 | Q16 | 26365 | 16 | HIGH | 17.81 |
| 25 | 15 | Q16 | 26365 | 75 | LOW | 17.09 |
| 25 | 10 | QPSK | 26365 | 1 | LOW | 18.50 |
| 25 | 10 | QPSK | 26365 | 1 | MID | 18.56 |
| 25 | 10 | QPSK | 26365 | 1 | HIGH | 18.62 |
| 25 | 10 | QPSK | 26365 | 25 | LOW | 17.55 |
| 25 | 10 | QPSK | 26365 | 25 | HIGH | 17.76 |
| 25 | 10 | QPSK | 26365 | 50 | LOW | 17.59 |
| 25 | 10 | Q16 | 26365 | 1 | LOW | 17.89 |
| 25 | 10 | Q16 | 26365 | 1 | MID | 18.18 |
| 25 | 10 | Q16 | 26365 | 1 | HIGH | 17.80 |
| 25 | 10 | Q16 | 26365 | 30 | LOW | 16.50 |
| 25 | 10 | Q16 | 26365 | 30 | HIGH | 16.57 |
| 25 | 10 | Q16 | 26365 | 50 | LOW | 16.40 |
| 25 | 5 | QPSK | 26365 | 1 | LOW | 18.25 |
| 25 | 5 | QPSK | 26365 | 1 | MID | 18.68 |
| 25 | 5 | QPSK | 26365 | 1 | HIGH | 18.61 |
| 25 | 5 | QPSK | 26365 | 10 | LOW | 17.40 |
| 25 | 5 | QPSK | 26365 | 10 | HIGH | 17.55 |
| 25 | 5 | QPSK | 26365 | 25 | LOW | 17.47 |
| 25 | 5 | Q16 | 26365 | 1 | LOW | 17.31 |
| 25 | 5 | Q16 | 26365 | 1 | MID | 17.51 |
| 25 | 5 | Q16 | 26365 | 1 | HIGH | 17.22 |
| 25 | 5 | Q16 | 26365 | 8 | LOW | 17.50 |

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|----|----|------|-------|----|------|-------|
| 25 | 5 | Q16 | 26365 | 8 | HIGH | 17.29 |
| 25 | 5 | Q16 | 26365 | 25 | LOW | 16.22 |
| 25 | 3 | QPSK | 26365 | 1 | LOW | 18.45 |
| 25 | 3 | QPSK | 26365 | 1 | MID | 18.77 |
| 25 | 3 | QPSK | 26365 | 1 | HIGH | 18.63 |
| 25 | 3 | QPSK | 26365 | 6 | LOW | 17.64 |
| 25 | 3 | QPSK | 26365 | 6 | HIGH | 17.82 |
| 25 | 3 | QPSK | 26365 | 15 | LOW | 17.69 |
| 25 | 3 | Q16 | 26365 | 1 | LOW | 18.02 |
| 25 | 3 | Q16 | 26365 | 1 | MID | 18.13 |
| 25 | 3 | Q16 | 26365 | 1 | HIGH | 18.19 |
| 25 | 3 | Q16 | 26365 | 4 | LOW | 17.91 |
| 25 | 3 | Q16 | 26365 | 4 | HIGH | 17.87 |
| 25 | 3 | Q16 | 26365 | 15 | LOW | 16.52 |
| 25 | 14 | QPSK | 26365 | 1 | LOW | 18.47 |
| 25 | 14 | QPSK | 26365 | 1 | MID | 18.49 |
| 25 | 14 | QPSK | 26365 | 1 | HIGH | 18.60 |
| 25 | 14 | QPSK | 26365 | 3 | LOW | 18.57 |
| 25 | 14 | QPSK | 26365 | 3 | HIGH | 18.63 |
| 25 | 14 | QPSK | 26365 | 6 | LOW | 17.70 |
| 25 | 14 | Q16 | 26365 | 1 | LOW | 17.63 |
| 25 | 14 | Q16 | 26365 | 1 | MID | 17.62 |
| 25 | 14 | Q16 | 26365 | 1 | HIGH | 17.66 |
| 25 | 14 | Q16 | 26365 | 5 | LOW | 17.63 |
| 25 | 14 | Q16 | 26365 | 5 | HIGH | 17.63 |
| 25 | 14 | Q16 | 26365 | 6 | LOW | 16.34 |

**Table 1.8.9-2 LTE band 25 conducted power measurements
at SVLTE lower power**

| | | | | | |
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1.9 General SAR Test Reduction and Exclusion procedure as per KDB 447498 D01 V05 and SAR Handsets Multi Xmitter and Ant procedure as per 648474 D04 v01

Standalone SAR test exclusion guidance:

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances*

$$\left(\frac{\text{max. power of channel, including tune – up tolerance (mW)}}{\text{min. test separation distance (mm)}} \times \sqrt{f \text{ (GHz)}} \right) \leq 3.0, \text{ For 1g SAR}$$

Where:

- $f_{\text{(GHz)}}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation¹⁷
- If *distance* is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion
- The result is rounded to one decimal place for comparison

Simultaneous Transmission SAR Test exclusion considerations:

When the sum of 1-g of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit, SAR test exclusion applies to that simultaneous transmission configuration. When the sum is greater than the SAR limit, the SAR to peak location separation ratio procedures described below may be applied to determine if simultaneous transmission SAR test exclusion applies.

The ratio is determined by:


$$\left([SAR1 + SAR2]^{\frac{1.5}{R_i}} \right) \leq 0.04$$

Where:

- R_i = the separation distance between the peak SAR locations for the antenna pair (mm)

Simultaneous Transmission SAR required:

- antenna pairs with SAR to antenna separation ratio > 0.04; test is only required for the configuration that results in the highest SAR in standalone configuration for each wireless mode and exposure condition.

| | | | | | |
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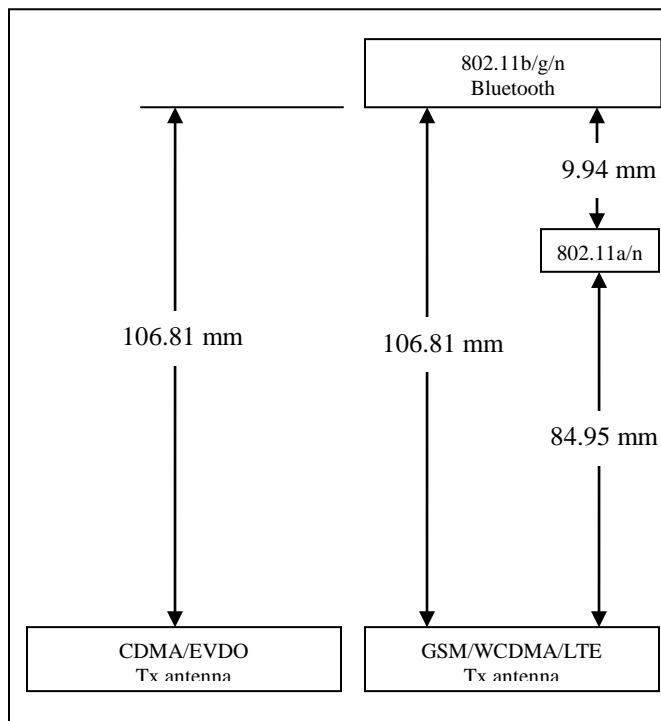


Figure 1.9-1 Back view of device showing closest distance between antenna pairs

1.9.1 Simultaneous Transmission Analysis


| Simultaneous Transmission Combination | Head | Body-Worn Accessory | Hotspot |
|---|------|---------------------|---------|
| CDMA2000 voice + LTE + Wi-Fi 2.4 GHz/Wi-Fi 5.0 GHz/BT | Yes | Yes | No |
| WCDMA/GSM/CDMA2000 voice + Wi-Fi 2.4 GHz/Wi-Fi 5.0 GHz/BT | Yes | Yes | No |
| CDMA2000 data+ LTE + Wi-Fi 2.4 GHz/Wi-Fi 5.0 GHz | Yes | Yes | No |
| CDMA2000 data+ LTE + BT | Yes | Yes | No |
| LTE/HSPA/EDGE/GPRS/CDMA2000 data + Wi-Fi 2.4/5.0 GHz | Yes | Yes | Yes |
| LTE/HSPA/EDGE/GPRS/CDMA2000 data + BT | Yes | Yes | No |

Table 1.9.1-1 Simultaneous Transmission Scenarios

Note 1: BT and Wi-Fi cannot transmit simultaneously since the design doesn't allow it and they use the same antenna.

Note 2: 802.11b and 802.11a cannot transmit simultaneously since the design doesn't allow it and they use the same antenna.

Note 3: LTE and GSM/WCDMA cannot transmit simultaneously since it shares the same antenna.


| | | | | | |
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| Test | Configuration | Licensed Transmitters | | WiFi 2.4/5.0GHz 1g avg. SAR (W/kg) | SVLTE band 25 | Max Sum 1g avg. SAR (W/kg) |
|----------|---------------|-----------------------|-----------------------|--|------------------|----------------------------------|
| | | Band | 1g avg. SAR (W/kg) | | | |
| Head SAR | Right Cheek | GSM/DTM/EDGE 850 | 0.41 | 0.77 | NA | 1.18 |
| | Right Cheek | UMTS Band V | 0.27 | 0.77 | NA | 1.04 |
| | Right Cheek | CDMA 800 BC10 | 0.32 | 0.77 | 0.12 | 1.21 |
| | Right Cheek | CDMA 850 BC0 | 0.33 | 0.77 | 0.12 | 1.22 |
| | Right Cheek | LTE Band 25 | 0.30 | 0.77 | NA | 1.07 |
| | Right Cheek | GSM/DTM/EDGE 1900 | 0.37 | 0.77 | NA | 1.14 |
| | Right Cheek | UMTS Band II | 0.38 | 0.77 | NA | 1.15 |
| | Right Cheek | CDMA 1900 BC1 | 1.33 | 0.11 | 0.12 | 1.56 |
| | Right Cheek | CDMA 1900 BC1 | 1.33 | 0.38 | NA | 1.71 |
| | Right Tilt | GSM/DTM/EDGE 850 | 0.21 | 0.90 | NA | 1.11 |
| | Right Tilt | UMTS Band V | 0.18 | 0.90 | NA | 1.08 |
| | Right Tilt | CDMA 800 BC10 | 0.19 | 0.90 | 0.06 | 1.09 |
| | Right Tilt | CDMA 850 BC0 | 0.21 | 0.90 | 0.06 | 1.17 |
| | Right Tilt | LTE Band 25 | 0.12 | 0.90 | NA | 1.02 |
| | Right Tilt | GSM/DTM/EDGE 1900 | 0.15 | 0.90 | NA | 1.05 |
| | Right Tilt | UMTS Band II | 0.36 | 0.90 | NA | 1.26 |
| | Right Tilt | CDMA 1900 BC1 | 0.39 | 0.13 | 0.06 | 0.58 |
| | Right Tilt | CDMA 1900 BC1 | 0.39 | 0.46 | NA | 0.85 |
| | Left Cheek | GSM/DTM/EDGE 850 | 0.47 | 0.46 | NA | 0.93 |
| | Left Cheek | UMTS Band V | 0.37 | 0.46 | NA | 0.83 |
| | Left Cheek | CDMA 800 BC10 | 0.29 | 0.46 | 0.24 | 0.99 |
| | Left Cheek | CDMA 850 BC0 | 0.29 | 0.46 | 0.24 | 0.99 |
| | Left Cheek | LTE Band 25 | 0.63 | 0.46 | NA | 1.09 |
| | Left Cheek | GSM/DTM/EDGE 1900 | 0.78 | 0.46 | NA | 1.24 |
| | Left Cheek | UMTS Band II | 1.22 | 0.46 | NA | 1.68 |
| | Left Cheek | CDMA 1900 BC1 | 0.73 | 0.06 | 0.24 | 1.03 |
| | Left Cheek | CDMA 1900 BC1 | 0.73 | 0.21 | NA | 0.94 |
| | Left Tilt | GSM/DTM/EDGE 850 | 0.27 | 0.51 | NA | 0.78 |
| | Left Tilt | UMTS Band V | 0.21 | 0.51 | NA | 0.72 |
| | Left Tilt | CDMA 800 BC10 | 0.16 | 0.51 | 0.06 | 0.73 |
| | Left Tilt | CDMA 850 BC0 | 0.15 | 0.51 | 0.06 | 0.72 |
| | Left Tilt | LTE Band 25 | 0.13 | 0.51 | NA | 0.64 |
| | Left Tilt | GSM/DTM/EDGE 1900 | 0.11 | 0.51 | NA | 0.62 |
| | Left Tilt | UMTS Band II | 0.28 | 0.51 | NA | 0.79 |
| | Left Tilt | CDMA 1900 BC1 | 0.42 | 0.07 | 0.06 | 0.55 |
| | Left Tilt | CDMA 1900 BC1 | 0.42 | 0.24 | NA | 0.66 |

Table 1.9.1-2 Highest Head SAR values and summation

Note 1: If sum of 1 g SAR < 1.6 W/kg, Simultaneous SAR measurement is not required.


Note 2: If sum of 1 g SAR > 1.6 W/kg, ratio of SAR to peak separation distance for pair of transmitters calculated.

| | | | | | |
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| Antenna | Position | SAR Zoom 1g | X [mm] | Y [mm] | Z [mm] | |
|---|--------------------------------|----------------|-----------|--------|--------|-------|
| Antenna 1 (802.11 b/g_CDMA_BC1 mode) 13.5 dBm Tx power | Right Head Touch | 0.38 | 34.2 | -334.1 | -173.1 | |
| Antenna 2 (CDMA 1900) | Right Head Touch | 1.33 | 62.1 | -259.7 | -171.4 | |
| | SAR Sum | 1.71 | | | | |
| | SAR Sum to the power of 1.5 | 2.24 | | | | |
| | Delta [mm] | | -27.9 | -74.4 | -1.7 | |
| | closest Distance [mm] | | | | | 79.48 |
| | Ratio | 0.03 | | | | |
| Antenna | Position | SAR Zoom 1g | X [mm] | Y [mm] | Z [mm] | |
| Antenna 1 (802.11 b) | Left Head Touch | 0.46 | 4.9 | 297.0 | -169.7 | |
| Antenna 2 UMTS band II | Left Head Touch | 1.22 | 64.4 | 257.2 | -170.8 | |
| | SAR Sum | 1.68 | | | | |
| | SAR Sum to the power of 1.5 | 2.18 | | | | |
| | Delta [mm] | | -59.5 | 39.8 | 1.1 | |
| | closest Distance [mm] | | | | | 71.62 |
| | Ratio | 0.03 | | | | |

Table 1.9.1-3 Head configuration ratio of SAR to peak separation distance for pair of transmitters

Note: If the ratio of SAR to peak separation distance is ≤ 0.04 , Simultaneous SAR measurement is not required.


| | | | | | |
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| Test | Configuration | Licensed Transmitters | | WiFi 2.4/5.0GHz 1g avg. SAR (W/kg) | SVLTE Band 25 | Max Sum 1g avg. SAR (W/kg) |
|---------------------|------------------------------|-----------------------|-----------------------|---|---------------------|----------------------------------|
| | | Band | 1g avg. SAR (W/kg) | | | |
| Body Worn SAR | 15mm separation device back | GSM/DTM/EDGE 850 | 0.70 | 0.43 | NA | 1.13 |
| | 15mm separation device back | UMTS Band V | 0.42 | 0.43 | NA | 0.85 |
| | 15mm separation device back | CDMA 800 BC10 | 0.62 | 0.43 | 0.12 | 1.17 |
| | 15mm separation device back | CDMA 850 BC0 | 0.61 | 0.43 | 0.12 | 1.16 |
| | 15mm separation device back | LTE Band 25 | 0.28 | 0.43 | NA | 0.71 |
| | 15mm separation device back | GSM/DTM/EDGE 1900 | 0.60 | 0.43 | NA | 1.03 |
| | 15mm separation device back | UMTS Band II | 0.86 | 0.43 | NA | 1.29 |
| | 15mm separation device back | CDMA 1900 BC1 | 0.47 | 0.04 | 0.12 | 0.63 |
| | 15mm separation device back | CDMA 1900 BC1 | 0.47 | 0.16 | NA | 0.63 |
| | 15mm separation device front | GSM/DTM/EDGE 850 | 0.63 | 0.07 | NA | 0.70 |
| | 15mm separation device front | UMTS Band V | 0.37 | 0.07 | NA | 0.44 |
| | 15mm separation device front | CDMA 800 BC10 | 0.45 | 0.07 | 0.10 | 0.62 |
| | 15mm separation device front | CDMA 850 BC0 | 0.47 | 0.07 | 0.10 | 0.64 |
| | 15mm separation device front | LTE Band 25 | 0.24 | 0.07 | NA | 0.31 |
| | 15mm separation device front | GSM/DTM/EDGE 1900 | 0.32 | 0.07 | NA | 0.39 |
| | 15mm separation device front | UMTS Band II | 0.48 | 0.07 | NA | 0.55 |
| | 15mm separation device front | CDMA 1900 BC1 | 0.70 | 0.07 | 0.10 | 0.87 |
| | 15mm separation device front | CDMA 1900 BC1 | 0.70 | 0.07 | NA | 0.77 |
| | Holster device back | GSM/DTM/EDGE 850 | 0.59 | 0.65 | NA | 1.24 |
| | Holster device back | UMTS Band V | 0.31 | 0.65 | NA | 0.96 |
| | Holster device back | CDMA 800 BC10 | 0.45 | 0.65 | 0.00 | 1.10 |
| | Holster device back | CDMA 850 BC0 | 0.44 | 0.65 | 0.00 | 1.09 |
| | Holster device back | LTE Band 25 | 0.30 | 0.65 | NA | 0.95 |
| | Holster device back | GSM/DTM/EDGE 1900 | 0.27 | 0.65 | NA | 0.92 |
| | Holster device back | UMTS Band II | 0.39 | 0.65 | NA | 1.04 |
| | Holster device back | CDMA 1900 BC1 | 0.42 | 0.04 | 0.00 | 0.46 |
| | Holster device back | CDMA 1900 BC1 | 0.42 | 0.10 | NA | 0.52 |

Table 1.9.1-4 Highest Body-worn SAR values for the same configuration

Note 1: If sum of 1 g SAR < 1.6 W/kg, Simultaneous SAR measurement is not required.

Note 2: If sum of 1 g SAR > 1.6 W/kg, ratio of SAR to peak separation distance for pair of transmitters is required.


| | | | | | |
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| Test | Configuration | Licensed Transmitters | | WiFi 2.4/5.0GHz 1g avg. SAR (W/kg) | Max Sum 1g avg. SAR (W/kg) |
|------------------------|-------------------------------|-----------------------|-----------------------|---|----------------------------------|
| | | Band | 1g avg. SAR (W/kg) | | |
| Hotspot Mode SAR | 10mm separation device back | GSM/DTM/EDGE 850 | 1.04 | 0.19 | 1.23 |
| | 10mm separation device back | UMTS Band V | 0.61 | 0.19 | 0.80 |
| | 10mm separation device back | CDMA 800 BC10 | 0.99 | 0.19 | 1.18 |
| | 10mm separation device back | CDMA 850 BC0 | 1.02 | 0.19 | 1.21 |
| | 10mm separation device back | LTE Band 25 | 0.85 | 0.19 | 1.04 |
| | 10mm separation device back | GSM/DTM/EDGE 1900 | 1.01 | 0.19 | 1.20 |
| | 10mm separation device back | UMTS Band II | 1.34 | 0.19 | 1.53 |
| | 10mm separation device back | CDMA 1900 BC1 | 0.85 | 0.19 | 1.04 |
| | 10mm separation device front | GSM/DTM/EDGE 850 | 0.80 | 0.05 | 0.85 |
| | 10mm separation device front | UMTS Band V | 0.48 | 0.05 | 0.53 |
| | 10mm separation device front | CDMA 800 BC10 | 0.64 | 0.05 | 0.69 |
| | 10mm separation device front | CDMA 850 BC0 | 0.71 | 0.05 | 0.76 |
| | 10mm separation device front | LTE Band 25 | 0.44 | 0.05 | 0.49 |
| | 10mm separation device front | GSM/DTM/EDGE 1900 | 0.62 | 0.05 | 0.67 |
| | 10mm separation device front | UMTS Band II | 0.92 | 0.05 | 0.97 |
| | 10mm separation device front | CDMA 1900 BC1 | 1.11 | 0.05 | 1.16 |
| | 10mm separation device left | GSM/DTM/EDGE 850 | 0.56 | 0.14 | 0.70 |
| | 10mm separation device left | UMTS Band V | 0.35 | 0.14 | 0.49 |
| | 10mm separation device left | CDMA 800 BC10 | 0.30 | 0.14 | 0.44 |
| | 10mm separation device left | CDMA 850 BC0 | 0.30 | 0.14 | 0.44 |
| | 10mm separation device left | LTE Band 25 | 0.27 | 0.14 | 0.41 |
| | 10mm separation device left | GSM/DTM/EDGE 1900 | 0.53 | 0.14 | 0.67 |
| | 10mm separation device left | UMTS Band II | 0.92 | 0.14 | 1.06 |
| | 10mm separation device left | CDMA 1900 BC1 | 0.18 | 0.14 | 0.32 |
| | 10mm separation device right | GSM/DTM/EDGE 850 | 0.42 | 0.00 | 0.42 |
| | 10mm separation device right | UMTS Band V | 0.29 | 0.00 | 0.29 |
| | 10mm separation device right | CDMA 800 BC10 | 0.41 | 0.00 | 0.41 |
| | 10mm separation device right | CDMA 850 BC0 | 0.36 | 0.00 | 0.36 |
| | 10mm separation device right | LTE Band 25 | 0.10 | 0.00 | 0.10 |
| | 10mm separation device right | GSM/DTM/EDGE 1900 | 0.08 | 0.00 | 0.08 |
| | 10mm separation device right | UMTS Band II | 0.12 | 0.00 | 0.12 |
| | 10mm separation device right | CDMA 1900 BC1 | 0.87 | 0.00 | 0.87 |
| | 10mm separation device bottom | GSM/DTM/EDGE 850 | 0.29 | 0.00 | 0.29 |
| | 10mm separation device bottom | UMTS Band V | 0.18 | 0.00 | 0.18 |
| | 10mm separation device bottom | CDMA 800 BC10 | 0.47 | 0.00 | 0.47 |
| | 10mm separation device bottom | CDMA 850 BC0 | 0.39 | 0.00 | 0.39 |
| | 10mm separation device bottom | LTE Band 25 | 0.10 | 0.00 | 0.10 |
| | 10mm separation device bottom | GSM/DTM/EDGE 1900 | 0.21 | 0.00 | 0.21 |
| | 10mm separation device bottom | UMTS Band II | 0.31 | 0.00 | 0.31 |
| | 10mm separation device bottom | CDMA 1900 BC1 | 0.41 | 0.00 | 0.41 |
| | 10mm separation device top | UMTS Band V | 0.00 | 0.09 | 0.09 |
| | 10mm separation device top | CDMA 800 BC10 | 0.00 | 0.09 | 0.09 |
| | 10mm separation device top | CDMA 850 BC0 | 0.00 | 0.09 | 0.09 |
| | 10mm separation device top | LTE Band 25 | 0.00 | 0.09 | 0.09 |
| | 10mm separation device top | GSM/DTM/EDGE 1900 | 0.00 | 0.09 | 0.09 |
| | 10mm separation device top | UMTS Band II | 0.00 | 0.09 | 0.09 |
| | 10mm separation device top | CDMA 1900 BC1 | 0.00 | 0.09 | 0.09 |

Table 1.9.1-5 Highest Hotspot SAR values for the same configuration

Note 1: If sum of 1 g SAR < 1.6 W/kg, Simultaneous SAR measurement is not required.

Note 2: If sum of 1 g SAR > 1.6 W/kg, ratio of SAR to peak separation distance for pair of transmitters calculated.

| | | | | | |
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1.10 SVLTE Power Reduction Considerations

This device supports Simultaneous Voice and LTE (SVLTE) calls, i.e. voice call is supported by a CDMA 1xRTT transmitter and the data connection supported by a LTE transmitter. Transmitters have separate antenna, match, PA and RF filtering. Dynamic Power Reduction scheme has been implemented on LTE during a SVLTE call with the 1xRTT voice. Power reduction is applicable to LTE mode only and not on CDMA modes during SVLTE calls. LTE power reduction is triggered when CDMA power is ≥ 18.5 dBm.

LTE and EvDO cannot transmit simultaneously in cell and PCS bands.

1.10.1 SVLTE Power Reduction, Test Setup Configuration and Conducted Power Measurements

The LTE power reduction was verified by simultaneously connecting the device to both LTE and CDMA base station simulators. LTE power levels were measured through conducted RF connections by first connecting the device to CWM500 LTE data and CDMA 1xRTT to CMU200 base station simulator.

First, CDMA 1xRTT was set to transmit at maximum transmitting power by setting the following parameters on the CMU200; CDMA and LTE power levels were measured and recorded:

- Power Control Bit was set to: All Bits UP
- BS Signal Level-> CDMA Power was set to: -99 dBm
- Analyzer level was set: 24.0 dBm
- RF Mode was set to: Auto

Then, CDMA 1xRTT power level was lowered by step of 1 dB; CDMA and LTE power levels were measured and recorded by setting the following parameters on the CMU200:

- Power Control Bit was set to: Auto
- BS Signal Level-> CDMA Power was set to: -99 dBm
- Analyzer level was lowered from 24.0 dBm to 17.0 dBm by step of 1 dB.
- RF Mode was set to: Manual

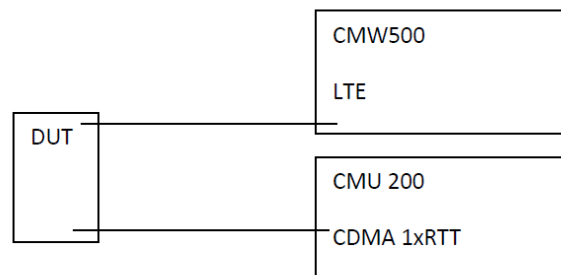



Figure 1.10.1-1 SVLTE Conducted Power Test Setup Diagram

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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| Band | SVLTE_LTE Band 25/CDMA 800 BC10 | | | | | | |
|-----------------|---------------------------------|--------|------------|---------|-----------|------|----------|
| Frequency (MHz) | Channel | BW | Modulation | RB Size | RB Offset | LTE | CDMA 800 |
| 1860 | 26410 | 20 MHz | QPSK | 1 | 99 | 18.4 | 24.5 |
| | | | QPSK | 1 | 99 | 18.7 | 23.2 |
| | | | QPSK | 1 | 99 | 21.4 | 22.5 |
| | | | QPSK | 1 | 99 | 21.3 | 21.0 |
| | | | QPSK | 1 | 99 | 23.3 | 20.0 |
| | | | QPSK | 1 | 99 | 23.3 | 19.0 |
| | | | QPSK | 1 | 99 | 23.3 | 18.0 |
| | | | QPSK | 1 | 99 | 23.2 | 18.0 |

Table 1.10.1-1 SVLTE Conducted Power Data for LTE/CDMA 800

Note 1: CMU200 Analyzer level→RF Max Level varied from 18.0dBm to 24.5dBm

Note 2: RF mode was set to Manual, Power control bit was set to Auto

Note 3: BS Signal Level →CDMA Power set to -99dBm

| Band | SVLTE_LTE Band 25/CDMA 850 BC0 | | | | | | |
|-----------------|--------------------------------|--------|------------|---------|-----------|------|----------|
| Frequency (MHz) | Channel | BW | Modulation | RB Size | RB Offset | LTE | CDMA 850 |
| 1860 | 26410 | 20 MHz | QPSK | 1 | 99 | 18.5 | 24.4 |
| | | | QPSK | 1 | 99 | 18.4 | 23.3 |
| | | | QPSK | 1 | 99 | 20.5 | 22.4 |
| | | | QPSK | 1 | 99 | 21.4 | 21.3 |
| | | | QPSK | 1 | 99 | 22.7 | 20.2 |
| | | | QPSK | 1 | 99 | 23.3 | 19.3 |
| | | | QPSK | 1 | 99 | 23.3 | 18.2 |
| | | | QPSK | 1 | 99 | 23.3 | 17.4 |

Table 1.10.1-2 SVLTE Conducted Power Data for LTE/CDMA 850

Note 1: CMU200 Analyzer level→RF Max Level varied from 17.4dBm to 24.4dBm

Note 2: RF mode was set to Manual, Power control bit was set to Auto

Note 3: BS Signal Level →CDMA Power set to -99dBm


| Band | SVLTE_LTE Band 25/CDMA 1900 BC1 | | | | | | |
|-----------------|---------------------------------|--------|------------|---------|-----------|------|-----------|
| Frequency (MHz) | Channel | BW | Modulation | RB Size | RB Offset | LTE | CDMA 1900 |
| 1860 | 26410 | 20 MHz | QPSK | 1 | 99 | 18.4 | 24.0 |
| | | | QPSK | 1 | 99 | 18.5 | 23.1 |
| | | | QPSK | 1 | 99 | 18.3 | 22.1 |
| | | | QPSK | 1 | 99 | 21.4 | 21.0 |
| | | | QPSK | 1 | 99 | 21.3 | 20.0 |
| | | | QPSK | 1 | 99 | 23.3 | 19.0 |
| | | | QPSK | 1 | 99 | 23.3 | 18.0 |
| | | | QPSK | 1 | 99 | 23.3 | 17.0 |

Table 1.10.1-3 SVLTE Conducted Power Data for LTE/CDMA 1900

Note 1: CMU200 Analyzer level→RF Max Level varied from 17.0dBm to 24.0dBm


Note 2: RF mode was set to Manual, Power control bit was set to Auto

Note 3: BS Signal Level →CDMA Power set to -99dBm

| | | | | | |
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1.11 Wi-Fi and Hotspot Mode Power Reductions

- There are two fixed Wi-Fi power reductions when transmitting simultaneously with CDMA/SVLTE (data/voice)
 - Wi-Fi at lower CDMA_BC1 power level.
 - Wi-Fi at lower SVLTE_BC1_25 power level.
- In addition there is fixed power reduction on Wi-Fi in hotspot mode. Power reduction is triggered when device is set to Hotspot mode.


| | | | | | |
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2.1.1 Equipment List

| Manufacturer | Test Equipment | Model Number | Serial Number | Cal. Due Date (MM/DD/YY) |
|---------------------------------|-------------------------------------|--------------|---------------|--------------------------|
| SCHMID & Partner Engineering AG | E-field probe | ES3DV3 | 3225 | 01/10/2014 |
| SCHMID & Partner Engineering AG | E-field probe | EX3DV4 | 3548 | 01/15/2014 |
| SCHMID & Partner Engineering AG | Data Acquisition Electronics (DAE3) | DAE4 V1 | 881 | 01/14/2014 |
| SCHMID & Partner Engineering AG | Dipole Validation Kit | D835V2 | 446 | 01/07/2015 |
| SCHMID & Partner Engineering AG | Dipole Validation Kit | D1900V2 | 545 | 01/09/2015 |
| SCHMID & Partner Engineering AG | Dipole Validation Kit | D2450V2 | 747 | 11/09/2013 |
| SCHMID & Partner Engineering AG | Dipole Validation Kit | D5000V2 | 1033 | 11/15/2013 |
| Agilent Technologies | Signal generator | 8648C | 4037U03155 | 09/23/2013 |
| Agilent Technologies | Power meter | E4419B | GB40202821 | 09/23/2013 |
| Agilent Technologies | Power sensor | 8481A | MY41095417 | 09/26/2013 |
| Amplifier Research | Amplifier | 5S1G4M3 | 300986 | CNR |
| Agilent Technologies | Power meter | N1911A | MY45100905 | 05/29/2015 |
| Agilent Technologies | Power sensor | N1921A | SG45240281 | 12/04/2014 |
| Weinschel Corp | 20dB Attenuator | 33-20-34 | BMO697 | CNR |
| Agilent Technologies | Power sensor | 8481A | MY41095233 | 09/26/2013 |
| Agilent Technologies | Network analyzer | 8753ES | US39174857 | 09/20/2013 |
| Rohde & Schwarz | Base Station Simulator | CMU 200 | 109747 | 11/19/2013 |
| CPI Wireless Solutions | Amplifier | VZC-6961K4 | SK4310E5 | CNR |
| Rohde & Schwarz | Signal generator | SMA 100A | 102106 | 12/02/2013 |
| Rohde & Schwarz | Bluetooth Tester | CBT | 100368 | 12/04/2013 |
| Rohde & Schwarz | Bluetooth Tester | CBT | 100678 | 12/04/2013 |
| Rohde & Schwarz | Wideband Base Station Simulator | CMW 500 | 109949 | 12/10/2014 |
| Rohde & Schwarz | Wideband Base Station Simulator | CMW 500 | 101169 | 12/10/2014 |


Table 2.1.1-1 Equipment list

Note: Only power meter model: N1911A, power sensor model: N19121A were used for conducted power measurements for Wi-Fi Direct GO mode, March 24-26, 2014.

| | | | | |
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| Manufacturer | Test Equipment | Model Number | Serial Number | Cal. Due Date (MM/DD/YY) |
|---------------------------------|-------------------------------------|--------------|---------------|--------------------------|
| SCHMID & Partner Engineering AG | E-field probe | EX3DV4 | 3592 | 11/10/2015 |
| SCHMID & Partner Engineering AG | Data Acquisition Electronics (DAE3) | DAE3 | 472 | 03/18/2015 |
| SCHMID & Partner Engineering AG | Dipole Validation Kit | D5000V2 | 1033 | 11/08/2015 |
| Agilent Technologies | Signal generator | 8648C | 4037U03155 | 09/25/2015 |
| Agilent Technologies | Power meter | E4419B | GB40202821 | 09/25/2015 |
| Agilent Technologies | Power sensor | 8481A | MY41095233 | 10/06/2015 |
| Agilent Technologies | Power sensor | 8481A | MY41095417 | 10/06/2015 |
| Amplifier Research | Amplifier | 5S1G4M3 | 300986 | CNR |
| Rohde & Schwarz | Signal generator | SMA 100A | 101540 | 11/28/2015 |
| Amplifier Research | Coupler | DC7144 | 300993 | CNR |
| CPI Wireless Solutions | Amplifier | VZC-6961K4 | SK4310E5 | CNR |
| Agilent Technologies | Network analyzer | 8753ES | US39174857 | 10/24/2015 |
| Agilent Technologies | Power meter | N1911A | MY45100905 | 05/29/2015 |
| Agilent Technologies | Power sensor | N1921A | MY45241383 | 09/05/2015 |
| Weinschel Corp | 20dB Attenuator | 33-20-34 | BMO697 | CNR |

Table 2.1.1-2 Equipment list for 802.11a Direct/Go and Hotspot mode

| | | | | |
|---|---|---|-------------------------------|------------------------|
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2.2 Description of the test setup

Before SAR measurements are conducted, the device and the DASY equipment are setup as follows:

2.2.1 Device and base station simulator setup

- Power up the device.
- Turn on the base station simulator and set the radio channel and power to the appropriate values.
- Connect an antenna to the RF IN/OUT of the communication test set and place it close to the device.

2.2.2 DASY setup

- Turn the computer on and log on to Windows.
- Start the DASY software by clicking on the icon located on the Windows desktop.
- Mount the DAE unit and the probe. Turn on the DAE unit.
- Turn the Robot Controller on by turning the main power switch to the horizontal position
- Align the probe by clicking the 'Align probe in light beam' button.
- Open a file and configure the proper parameters - probe, medium, communications system etc.
- Establish a connection between the Device and the communications test instrument. Place the Device on the stand and adjust it under the phantom.
- Start SAR measurements.


3.0 ELECTRIC FIELD PROBE CALIBRATION

3.1 Probe Specifications

SAR measurements were conducted using the dosimetric probes ES3DV3/ET3DV6 and EX3DV4, designed by Schmid & Partner Engineering AG for the measurement of SAR. The probe is constructed using the thin film technique, with printed resistive lines on ceramic substrates. It has a symmetrical design with triangular core, built-in optical fibre for the surface detection system and built-in shielding against static discharge. The probe is sensitive to E-fields and thus incorporates three small dipoles arranged so that the overall response is close to isotropic. The table below summarizes the technical data for the probe.

| Property | Data |
|---|----------------------------------|
| Frequency range | 30 MHz – 3 GHz |
| Linearity | ±0.1 dB |
| Directivity (rotation around probe axis) | ≤ ±0.2 dB |
| Directivity (rotation normal to probe axis) | ±0.4 dB |
| Dynamic Range | 5 mW/kg – 100 W/kg |
| Probe positioning repeatability | ±0.2 mm |
| Spatial resolution | < 0.125 mm ³ |
| Probe model EX3DV4 for 2.4 – 6 GHz | |
| Probe tip to sensor center | 1.0 mm |
| Probe tip diameter is | 2.5 mm |
| Probe calibration uncertainty | < 15 % for f = 2.45 to < 6.0 GHz |
| Probe calibration range | ± 100 MHz |

Table 3.1-1 Probe specifications

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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3.2 Probe calibration and measurement uncertainty

The probe had been calibrated with accuracy better than $\pm 12\%$. The sensitivity parameters (NormX, NormY, NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe were tested. The probe calibration parameters are shown on Appendix D and below:


Calibration Parameter Determined in Head Tissue Simulating Media

| f (MHz) ^C | Relative Permittivity ^F | Conductivity (S/m) ^F | ConvF X | ConvF Y | ConvF Z | Alpha | Depth (mm) | Unct. (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|-------|------------|--------------|
| 750 | 41.9 | 0.89 | 6.56 | 6.56 | 6.56 | 0.42 | 1.54 | $\pm 12.0\%$ |
| 900 | 41.5 | 0.97 | 6.19 | 6.19 | 6.19 | 0.43 | 1.52 | $\pm 12.0\%$ |
| 1810 | 40.0 | 1.40 | 5.35 | 5.35 | 5.35 | 0.63 | 1.39 | $\pm 12.0\%$ |
| 1950 | 40.0 | 1.40 | 5.09 | 5.09 | 5.09 | 0.80 | 1.23 | $\pm 12.0\%$ |
| 2450 | 39.2 | 1.80 | 4.65 | 4.65 | 4.65 | 0.61 | 1.63 | $\pm 12.0\%$ |
| 2600 | 39.0 | 1.96 | 4.43 | 4.43 | 4.43 | 0.80 | 1.32 | $\pm 12.0\%$ |

Calibration Parameter Determined in Body Tissue Simulating Media

| f (MHz) ^C | Relative Permittivity ^F | Conductivity (S/m) ^F | ConvF X | ConvF Y | ConvF Z | Alpha | Depth (mm) | Unct. (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|-------|------------|--------------|
| 750 | 55.5 | 0.96 | 6.27 | 6.27 | 6.27 | 0.48 | 1.51 | $\pm 12.0\%$ |
| 900 | 55.0 | 1.05 | 6.12 | 6.12 | 6.12 | 0.73 | 1.25 | $\pm 12.0\%$ |
| 1810 | 53.3 | 1.52 | 5.04 | 5.04 | 5.04 | 0.57 | 1.47 | $\pm 12.0\%$ |
| 1950 | 53.3 | 1.52 | 4.94 | 4.94 | 4.94 | 0.58 | 1.50 | $\pm 12.0\%$ |
| 2450 | 52.7 | 1.95 | 4.35 | 4.35 | 4.35 | 0.70 | 1.16 | $\pm 12.0\%$ |
| 2600 | 52.5 | 2.16 | 4.11 | 4.11 | 4.11 | 0.67 | 0.99 | $\pm 12.0\%$ |

Table 3.2-1 Probe ES3DV3 SN: 3225 (cal: 1/10/2013)

| | | | | | |
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Calibration Parameter Determined in Head Tissue Simulating Media


| f (MHz) ^C | Relative Permittivity ^F | Conductivity (S/m) ^F | ConvF X | ConvF Y | ConvF Z | Alpha | Depth (mm) | Unct. (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|-------|------------|-------------|
| 2600 | 39.0 | 1.96 | 7.15 | 7.15 | 7.15 | 0.47 | 0.86 | ± 12.0 % |
| 5200 | 36.0 | 4.66 | 5.13 | 5.13 | 5.13 | 0.40 | 1.80 | ± 13.1 % |
| 5500 | 35.6 | 4.96 | 4.79 | 4.79 | 4.79 | 0.40 | 1.80 | ± 13.1 % |
| 5800 | 35.3 | 5.27 | 4.61 | 4.61 | 4.61 | 0.45 | 1.80 | ± 13.1 % |

Calibration Parameter Determined in Body Tissue Simulating Media

| f (MHz) ^C | Relative Permittivity ^F | Conductivity (S/m) ^F | ConvF X | ConvF Y | ConvF Z | Alpha | Depth (mm) | Unct. (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|-------|------------|-------------|
| 2600 | 52.5 | 2.16 | 7.08 | 7.08 | 7.08 | 0.80 | 0.50 | ± 12.0 % |
| 5200 | 49.0 | 5.30 | 4.68 | 4.68 | 4.68 | 0.52 | 1.90 | ± 13.1 % |
| 5500 | 48.6 | 5.65 | 4.15 | 4.15 | 4.15 | 0.52 | 1.90 | ± 13.1 % |
| 5800 | 48.2 | 6.00 | 4.19 | 4.19 | 4.19 | 0.60 | 1.90 | ± 13.1 % |

Table 3.2-2 Probe EX3DV4 SN: 3548 (cal: 1/15/2013)

^C The validity of ± 100 MHz only applies for DASY v4.4 and higher.
DASY 52 has been used for measurements, therefore ± 100 MHz tolerance is valid.
Measured dielectric parameters are within +/- 5% of the probe calibration values and target values.
Expanded probe calibration uncertainty (k=2) is < 15 %

| | | | | | |
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Calibration Parameter Determined in Head Tissue Simulating Media

| f (MHz) ^C | Relative Permittivity ^F | Conductivity (S/m) ^F | ConvF X | ConvF Y | ConvF Z | Alpha ^G | Depth ^G (mm) | Unct. (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-------------|
| 2600 | 39.0 | 1.96 | 6.80 | 6.80 | 6.80 | 0.36 | 0.93 | ± 12.0 % |
| 5250 | 35.9 | 4.71 | 4.63 | 4.63 | 4.63 | 0.35 | 1.80 | ± 13.1 % |
| 5600 | 35.5 | 5.07 | 4.20 | 4.20 | 4.20 | 0.40 | 1.80 | ± 13.1 % |
| 5750 | 35.4 | 5.22 | 4.34 | 4.34 | 4.34 | 0.40 | 1.80 | ± 13.1 % |

Calibration Parameter Determined in Body Tissue Simulating Media


| f (MHz) ^C | Relative Permittivity ^F | Conductivity (S/m) ^F | ConvF X | ConvF Y | ConvF Z | Alpha ^G | Depth ^G (mm) | Unct. (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-------------|
| 2600 | 52.5 | 2.16 | 6.84 | 6.84 | 6.84 | 0.78 | 0.62 | ± 12.0 % |
| 5250 | 48.9 | 5.36 | 4.06 | 4.06 | 4.06 | 0.45 | 1.90 | ± 13.1 % |
| 5600 | 48.5 | 5.77 | 3.78 | 3.78 | 3.78 | 0.45 | 1.90 | ± 13.1 % |
| 5750 | 48.3 | 5.94 | 3.81 | 3.81 | 3.81 | 0.50 | 1.90 | ± 13.1 % |

Table 3.2-3 Probe EX3DV4 SN: 3592 (cal: 11/10/2014)

^C Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

^G Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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4.0 SAR MEASUREMENT SYSTEM VERIFICATION

Prior to conducting SAR measurements, the system was validated using the dipole validation kit and the flat section of the SAM phantom. A power level of 1.0W was applied to the dipole antenna. The verification results are in the table below with a comparison to reference values. Printouts are shown in Appendix A. All the measured parameters are within the allowed tolerances.

At above 1.5 – 2 GHz, dipoles maintain good return loss of -15 dB to -20 dB, therefore SAR measurements are limited to approximately +/- 100 MHz of the probe/dipole calibration frequency.


4.1 System accuracy verification for head adjacent use

| f (MHz) | Limits / Measured (MM/DD/YYYY) | Scan Type | SAR 1g/10g (W/kg) | Dielectric Parameters | | Liquid Temp. (°C) |
|------------|-----------------------------------|--------------------|-------------------------|--------------------------|----------------|-------------------------|
| | | | | ϵ_r | σ [S/m] | |
| 835 | Measured (06/24/2013) | Area Scan/Fast SAR | 8.68 / 5.76 | 41.4 | 0.89 | 22.8 |
| | Measured (06/24/2013) | Zoom Scan | 8.68 / 5.68 | 41.4 | 0.89 | 22.8 |
| | Measured (06/26/2013) | Area Scan/Fast SAR | 8.66 / 5.73 | 40.7 | 0.88 | 22.7 |
| | Measured (06/26/2013) | Zoom Scan | 8.59 / 5.62 | 40.7 | 0.88 | 22.7 |
| | Measured (07/13/2013) | Area Scan/Fast SAR | 9.09/6.03 | 41.6 | 0.90 | 23.0 |
| | Measured (07/13/2013) | Zoom Scan | 9.06/5.94 | 41.6 | 0.90 | 23.0 |
| | Measured (07/16/2013) | Area Scan/Fast SAR | 9.08/6.03 | 40.6 | 0.88 | 23.1 |
| | Measured (07/16/2013) | Zoom Scan | 8.80/5.76 | 40.6 | 0.88 | 23.1 |
| | Measured (08/16/2013) | Area Scan/Fast SAR | 8.70/5.76 | 40.4 | 0.88 | 21.5 |
| | Measured (08/16/2013) | Zoom Scan | 8.61/5.64 | 40.4 | 0.88 | 21.5 |
| | Recommended Limits (Dipole: 446) | | 9.39 / 6.13 | 41.5 | 0.90 | N/A |
| 1900 | Measured (06/20/2013) | Area Scan/Fast SAR | 38.6/20.2 | 38.7 | 1.41 | 22.5 |
| | Measured (06/20/2013) | Zoom Scan | 38.0/20.0 | 38.7 | 1.41 | 22.5 |
| | Measured (06/24/2013) | Area Scan/Fast SAR | 37.5/19.7 | 39.0 | 1.40 | 22.2 |
| | Measured (06/24/2013) | Zoom Scan | 36.6/19.3 | 39.0 | 1.40 | 22.2 |
| | Measured (06/28/2013) | Area Scan/Fast SAR | 36.9/19.5 | 39.3 | 1.38 | 23.0 |
| | Measured (06/28/2013) | Zoom Scan | 36.4/19.2 | 39.3 | 1.38 | 23.0 |
| | Measured (07/02/2013) | Area Scan/Fast SAR | 37.6/19.8 | 38.4 | 1.39 | 21.6 |
| | Measured (07/02/2013) | Zoom Scan | 37.0/19.5 | 38.4 | 1.39 | 21.6 |
| | Measured (07/05/2013) | Area Scan/Fast SAR | 36.7/19.4 | 38.7 | 1.41 | 21.7 |
| | Measured (07/05/2013) | Zoom Scan | 36.2/19.1 | 38.7 | 1.41 | 21.7 |
| | Measured (07/08/2013) | Area Scan/Fast SAR | 37.3/19.6 | 38.5 | 1.38 | 22.5 |
| | Measured (07/08/2013) | Zoom Scan | 36.6/19.2 | 38.5 | 1.38 | 22.5 |
| | Measured (08/07/2013) | Area Scan/Fast SAR | 38.7/20.5 | 38.2 | 1.38 | 22.2 |
| | Measured (08/07/2013) | Zoom Scan | 38.0/19.9 | 38.2 | 1.38 | 22.2 |
| | Measured (08/15/2013) | Area Scan/Fast SAR | 37.6/19.8 | 38.4 | 1.38 | 23.0 |
| | Measured (08/15/2013) | Zoom Scan | 36.7/19.3 | 38.4 | 1.38 | 23.0 |
| | Recommended Limits (Dipole: 545) | | 40.2/21.1 | 40.0 | 1.40 | N/A |

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| | | | | | | |
|------|-----------------------------------|--------------------|-------------|------|------|------|
| 2450 | Measured (06/17/2013) | Area Scan/Fast SAR | 50.3/22.1 | 39.4 | 1.76 | 22.5 |
| | Measured (06/17/2013) | Zoom Scan | 49.8/23.8 | 39.4 | 1.76 | 22.5 |
| | Measured (07/19/2013) | Area Scan/Fast SAR | 52.5/23.2 | 37.8 | 1.82 | 22.8 |
| | Measured (07/19/2013) | Zoom Scan | 52.1/24.6 | 37.8 | 1.82 | 22.8 |
| | Measured (07/23/2013) | Area Scan/Fast SAR | 51.7/22.8 | 37.9 | 1.85 | 22.4 |
| | Measured (07/23/2013) | Zoom Scan | 51.6/24.3 | 37.9 | 1.85 | 22.4 |
| | Measured (08/06/2013) | Area Scan/Fast SAR | 51.8/22.9 | 37.5 | 1.86 | 22.6 |
| | Measured (08/06/2013) | Zoom Scan | 50.8/24.0 | 37.5 | 1.86 | 22.6 |
| | Recommended Limits (Dipole: 747) | | 54.1/25.3 | 39.2 | 1.80 | N/A |
| 5200 | Measured (06/18/2013) | Area Scan/Fast SAR | 75.6 / 21.2 | 34.5 | 4.65 | 22.2 |
| | Measured (06/18/2013) | Zoom Scan | 80.2 / 23.3 | 34.5 | 4.65 | 22.2 |
| | Measured (07/22/2013) | Area Scan/Fast SAR | 77.3/21.6 | 35.2 | 4.63 | 21.4 |
| | Measured (07/22/2013) | Zoom Scan | 83.1/24.1 | 35.2 | 4.63 | 21.4 |
| | Measured (08/08/2013) | Area Scan/Fast SAR | 79.2/22.0 | 34.3 | 4.58 | 21.8 |
| | Measured (08/08/2013) | Zoom Scan | 83.4/24.3 | 34.3 | 4.58 | 21.8 |
| | Measured (08/12/2013) | Area Scan/Fast SAR | 74.4/20.6 | 34.4 | 4.67 | 22.8 |
| | Measured (08/12/2013) | Zoom Scan | 78.1/22.7 | 34.4 | 4.67 | 22.8 |
| | Recommended Limits (Dipole: 1033) | | 80.8 / 23.0 | 36.0 | 4.66 | N/A |
| 5500 | Measured (06/18/2013) | Area Scan/Fast SAR | 77.6 / 21.3 | 34.1 | 4.92 | 22.2 |
| | Measured (06/18/2013) | Zoom Scan | 81.8 / 23.4 | 34.1 | 4.92 | 22.2 |
| | Measured (07/22/2013) | Area Scan/Fast SAR | 83.2/22.9 | 34.5 | 5.01 | 21.4 |
| | Measured (07/22/2013) | Zoom Scan | 90.0/25.7 | 34.5 | 5.01 | 21.4 |
| | Measured (08/08/2013) | Area Scan/Fast SAR | 88.7/24.1 | 34.2 | 5.00 | 21.8 |
| | Measured (08/08/2013) | Zoom Scan | 93.2/26.7 | 34.2 | 5.00 | 21.8 |
| | Measured (08/12/2013) | Area Scan/Fast SAR | 80.9/21.9 | 34.8 | 5.00 | 22.8 |
| | Measured (08/12/2013) | Zoom Scan | 85.1/24.3 | 34.8 | 5.00 | 22.8 |
| | Recommended Limits (Dipole: 1033) | | 87.3 / 24.7 | 35.6 | 4.96 | N/A |
| 5800 | Measured (06/18/2013) | Area Scan/Fast SAR | 77.5 / 21.4 | 33.8 | 5.33 | 22.2 |
| | Measured (06/18/2013) | Zoom Scan | 82.1 / 23.5 | 33.8 | 5.33 | 22.2 |
| | Measured (07/22/2013) | Area Scan/Fast SAR | 78.1/21.6 | 33.9 | 5.32 | 21.4 |
| | Measured (07/22/2013) | Zoom Scan | 84.5/24.3 | 33.9 | 5.32 | 21.4 |
| | Measured (08/08/2013) | Area Scan/Fast SAR | 79.6/21.7 | 33.5 | 5.29 | 21.8 |
| | Measured (08/08/2013) | Zoom Scan | 83.7/24.0 | 33.5 | 5.29 | 21.8 |
| | Measured (08/12/2013) | Area Scan/Fast SAR | 81.9/22.2 | 33.9 | 5.28 | 22.8 |
| | Measured (08/12/2013) | Zoom Scan | 86.0/24.6 | 33.9 | 5.28 | 22.8 |
| | Recommended Limits (Dipole: 1033) | | 79.4 / 22.5 | 35.3 | 5.27 | N/A |

Table 4.1-1 System accuracy (validation for head adjacent use)

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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| f (MHz) | Limits / Measured (MM/DD/YYYY) | Scan Type | SAR 1g/10g (W/kg) | Dielectric Parameters | | Liquid Temp. (°C) |
|------------|-----------------------------------|-----------|-------------------------|--------------------------|----------------|-------------------------|
| | | | | ϵ_r | σ [S/m] | |
| 5200 | Measured (12/08/2014) | Zoom Scan | 83.7/24.2 | 34.3 | 4.67 | 22.6 |
| | Recommended Limits (Dipole: 1033) | | 79.4/22.6 | 36.0 | 4.66 | N/A |
| 5800 | Measured (12/08/2014) | Zoom Scan | 85.8/24.4 | 33.7 | 5.40 | 22.6 |
| | Recommended Limits (Dipole: 1033) | | 79.4/22.6 | 35.3 | 5.27 | N/A |

Table 4.1-2 System accuracy (validation for head adjacent use) for 802.11a Hotspot testing

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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5.0 PHANTOM DESCRIPTION

The SAM Twin Phantom, manufactured by SPEAG, was used during the SAR measurements. The phantom is made of a fibreglass shell integrated with a wooden table.

The SAM Twin Phantom is a fibreglass shell phantom with 2 mm shell thickness. It has three measurement areas:

- Left side head
- Right side head
- Flat phantom

The phantom table dimensions are: 100x50x85 cm (LxWxH). The table is intended for use with freestanding robots.


The bottom shelf contains three pair of bolts for locking the device holder in place. 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 solutions).

A white cover is provided to top the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. Free space scans of devices on the cover are possible; however the optical surface detector does not work properly at the cover surface. Place a sheet of white paper on the cover when using optical surface detection.

Liquid depth of ≥ 15 cm is maintained in the phantom for all the measurements.



Figure 5.0-1 SAM Twin Phantom

| | | | | | |
|---|---|--|-------------------------------|------------------------|--|
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6.0 TISSUE DIELECTRIC PROPERTIES

6.1 Composition of tissue simulant

The composition of the brain and muscle simulating liquids are shown in the table below.


| INGREDIENT | MIXTURE 800–900MHz | | MIXTURE 1800–1900MHz | | MIXTURE 2450 MHz | | MIXTURE 5 – 6 GHz | |
|--------------------|--------------------|----------|----------------------|----------|------------------|----------|-------------------|----------|
| | Brain % | Muscle % | Brain % | Muscle % | Brain % | Muscle % | Brain % | Muscle % |
| Water | 40.29 | 65.45 | 55.24 | 69.91 | 55.0 | 68.75 | 64 | 64-78 |
| Sugar | 57.90 | 34.31 | 0 | 0 | 0 | 0 | 0 | 0 |
| Salt | 1.38 | 0.62 | 0.31 | 0.13 | 0 | 0 | 0 | 0 |
| HEC | 0.24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bactericide | 0.18 | 0.10 | 0 | 0 | 0 | 0 | 0 | 0 |
| DGBE | 0 | 0 | 44.45 | 29.96 | 40.0 | 31.25 | 0 | 0 |
| Triton X-100 | 0 | 0 | 0 | 0 | 5.0 | 0 | 0 | 0 |
| Additives and Salt | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2-3 |
| Emulsifiers | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 9-15 |
| Mineral Oil | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 11-18 |

Table 6.1-1 Tissue simulant recipe

6.1.1 Equipment


| Manufacturer | Test Equipment | Model Number | Serial Number | Cal. Due Date (MM/DD/YY) |
|----------------------|----------------------|--------------|---------------|--------------------------|
| Pyrex, England | Graduated Cylinder | N/A | N/A | N/A |
| Pyrex, USA | Beaker | N/A | N/A | N/A |
| Acculab | Weight Scale | V1-1200 | 018WB2003 | N/A |
| IKA Works Inc. | Hot Plate | RC Basic | 3.107433 | N/A |
| Dell | PC using GPIB card | GX110 | 347 | N/A |
| Agilent Technologies | Dielectric probe kit | HP 85070C | US9936135 | CNR |
| Agilent Technologies | Network Analyzer | 8753ES | US39174857 | 09/20/2013 |
| Control Company | Digital Thermometer | 23609-234 | 21352860 | 09/26/2013 |

Table 6.1.1-1 Tissue simulant preparation equipment

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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| Manufacturer | Test Equipment | Model Number | Serial Number | Cal. Due Date (MM/DD/YY) |
|----------------------|----------------------|--------------|---------------|--------------------------|
| Pyrex, England | Graduated Cylinder | N/A | N/A | N/A |
| Pyrex, USA | Beaker | N/A | N/A | N/A |
| Acculab | Weight Scale | V1-1200 | 018WB2003 | N/A |
| IKA Works Inc. | Hot Plate | RC Basic | 3.107433 | N/A |
| Dell | PC using GPIB card | GX110 | 347 | N/A |
| Agilent Technologies | Dielectric probe kit | HP 85070C | US9936135 | CNR |
| Agilent Technologies | Network Analyzer | 8753ES | US39174857 | 10/24/2015 |
| Control Company | Digital Thermometer | 23609-234 | 21352860 | 09/22/2015 |
| Control Company | Digital Thermometer | 15-077-21 | 51129471 | 06/11/2015 |

Table 6.1.1-2 Tissue simulant preparation equipment used for 802.11a Direct/GO and Hotspot mode

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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6.1.2 Preparation procedure

800-900 MHz liquids

- Fill the container with **water**. Begin heating and stirring.
- Add the **Cellulose**, the **preservative substance** and the **salt**. After several hours, the liquid will become more transparent again. The container must be covered to prevent evaporation.
- Add **Sugar**. Stir it well until the sugar is sufficiently dissolved.
- Keep the liquid hot but below the boiling point for at least an hour. The container must be covered to prevent evaporation.
- Remove the container from, and turn the hotplate off and allow the liquid to cool off to room temperature prior to performing dielectric measurements.

1800-2450 MHz liquid

- Fill the container with water and place it on hotplate. Begin heating and stirring.
- Add the salt, Glycol/Triton X-100. The container must be covered to prevent evaporation.
- Keep the liquid hot enough to dissolve sugar for at least an hour. The container must be covered to prevent evaporation.
- Remove the container from, and turn the hotplate off and allow the liquid to cool off to room temperature prior to performing dielectric measurements.


6.2 Electrical parameters of the tissue simulating liquid

The tissue dielectric parameters shall be measured before a batch can be used for SAR measurements to ensure that the simulated tissue was properly made and will simulate the desired human characteristic. Limits and measured electrical parameters are shown in the table below.


Recommended limits are adopted from IEEE P1528-2003:

“Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques”, DASY manual and from FCC Tissue Dielectric Properties web page at <http://www.fcc.gov/fcc-bin/dielec.sh>


| Band (MHz) | Tissue Type | Limits / Measured (MM/DD/YYYY) | f (MHz) | Dielectric Parameters | | Liquid Temp (°C) |
|------------|-------------|--------------------------------|---------|-----------------------|----------------|------------------|
| | | | | ϵ_r | σ [S/m] | |
| 835 | Head | Measured (06/24/2013) | 815 | 41.7 | 0.87 | 22.8 |
| | | | 825 | 41.5 | 0.88 | |
| | | | 835 | 41.4 | 0.89 | |
| | | | 850 | 41.2 | 0.90 | |
| | | Measured (06/26/2013) | 815 | 40.9 | 0.86 | 22.7 |
| | | | 825 | 40.8 | 0.87 | |
| | | | 835 | 40.7 | 0.88 | |
| | | | 850 | 40.5 | 0.89 | |
| | | Measured (07/13/2013) | 815 | 41.8 | 0.88 | 23.0 |
| | | | 825 | 41.7 | 0.89 | |
| | | | 835 | 41.6 | 0.90 | |
| | | | 850 | 41.4 | 0.91 | |
| | | Measured (07/16/2013) | 815 | 40.8 | 0.86 | 23.1 |
| | | | 825 | 40.7 | 0.87 | |
| | | | 835 | 40.6 | 0.88 | |

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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| | | | | | | |
|------|--------|-----------------------|------|------|------|------|
| | Muscle | Measured (08/16/2013) | 850 | 40.4 | 0.89 | 21.5 |
| | | | 815 | 40.7 | 0.86 | |
| | | | 825 | 40.5 | 0.87 | |
| | | | 835 | 40.4 | 0.88 | |
| | | | 850 | 40.2 | 0.90 | |
| | | Recommended Limits | 835 | 41.5 | 0.90 | N/A |
| | | Measured (06/24/2013) | 815 | 53.0 | 0.93 | 22.8 |
| | | | 825 | 52.9 | 0.94 | |
| | | | 835 | 52.8 | 0.95 | |
| | | | 850 | 52.7 | 0.97 | |
| | | Measured (06/26/2013) | 815 | 53.3 | 0.94 | 22.7 |
| | | | 825 | 53.2 | 0.95 | |
| | | | 835 | 53.1 | 0.96 | |
| | | | 850 | 53.0 | 0.98 | |
| | | Measured (07/13/2013) | 815 | 53.4 | 0.95 | 23.0 |
| | | | 825 | 53.4 | 0.96 | |
| | | | 835 | 53.3 | 0.97 | |
| | | | 850 | 53.1 | 0.98 | |
| | | Measured (07/16/2013) | 815 | 53.9 | 0.93 | 23.1 |
| | | | 825 | 53.9 | 0.94 | |
| | | | 835 | 53.8 | 0.96 | |
| | | | 850 | 53.8 | 0.97 | |
| | | Measured (08/16/2013) | 815 | 54.3 | 0.94 | 21.5 |
| | | | 825 | 54.2 | 0.95 | |
| | | | 835 | 54.0 | 0.96 | |
| | | | 850 | 53.9 | 0.98 | |
| | | Recommended Limits | 835 | 55.2 | 0.97 | N/A |
| 1900 | Head | Measured (06/20/2013) | 1850 | 38.8 | 1.36 | 22.5 |
| | | | 1900 | 38.7 | 1.41 | |
| | | | 1910 | 38.6 | 1.42 | |
| | | | 1980 | 38.3 | 1.50 | |
| | | Measured (06/24/2013) | 1850 | 39.2 | 1.35 | 22.2 |
| | | | 1900 | 39.0 | 1.40 | |
| | | | 1910 | 39.0 | 1.41 | |
| | | | 1980 | 38.8 | 1.48 | |
| | | Measured (06/28/2013) | 1850 | 39.5 | 1.34 | 23.0 |
| | | | 1900 | 39.3 | 1.38 | |
| | | | 1910 | 39.3 | 1.39 | |
| | | | 1980 | 39.1 | 1.47 | |
| | | Measured (07/02/2013) | 1850 | 38.5 | 1.34 | 21.6 |
| | | | 1900 | 38.4 | 1.39 | |
| | | | 1910 | 38.4 | 1.40 | |
| | | | 1980 | 38.1 | 1.47 | |
| | | Measured (07/05/2013) | 1850 | 38.9 | 1.36 | 21.7 |
| | | | 1900 | 38.7 | 1.41 | |
| | | | 1910 | 38.6 | 1.42 | |
| | | | 1980 | 38.3 | 1.49 | |

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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| | | | | | | |
|------|--------|-----------------------|------|------|------|------|
| | | Measured (07/08/2013) | 1850 | 38.7 | 1.33 | 22.5 |
| | | | 1900 | 38.5 | 1.38 | |
| | | | 1910 | 38.5 | 1.39 | |
| | | | 1980 | 38.2 | 1.46 | |
| | | Measured (08/07/2013) | 1850 | 38.4 | 1.33 | 22.2 |
| | | | 1900 | 38.2 | 1.38 | |
| | | | 1910 | 38.2 | 1.42 | |
| | | Measured (08/15/2013) | 1850 | 38.6 | 1.33 | 23.0 |
| | | | 1900 | 38.4 | 1.38 | |
| | | | 1910 | 38.3 | 1.39 | |
| | | | 1980 | 38.0 | 1.47 | |
| | | Recommended Limits | 1900 | 40.0 | 1.40 | N/A |
| | Muscle | Measured (06/20/2013) | 1850 | 51.6 | 1.53 | 21.9 |
| | | | 1900 | 51.5 | 1.58 | |
| | | | 1910 | 51.4 | 1.59 | |
| | | Measured (06/24/2013) | 1850 | 51.6 | 1.50 | 22.2 |
| | | | 1900 | 51.4 | 1.55 | |
| | | | 1910 | 51.5 | 1.56 | |
| | | Measured (06/28/2013) | 1850 | 51.3 | 1.49 | 23.0 |
| | | | 1900 | 51.2 | 1.53 | |
| | | | 1910 | 51.2 | 1.54 | |
| | | Measured (07/02/2013) | 1850 | 50.7 | 1.50 | 21.6 |
| | | | 1900 | 50.7 | 1.55 | |
| | | | 1910 | 50.7 | 1.56 | |
| | | Measured (07/05/2013) | 1850 | 51.3 | 1.52 | 21.7 |
| | | | 1900 | 51.0 | 1.58 | |
| | | | 1910 | 51.0 | 1.59 | |
| | | Measured (07/08/2013) | 1850 | 51.1 | 1.49 | 22.5 |
| | | | 1900 | 50.9 | 1.55 | |
| | | | 1910 | 50.8 | 1.56 | |
| | | Measured (08/07/2013) | 1850 | 51.0 | 1.50 | 22.2 |
| | | | 1900 | 50.8 | 1.55 | |
| | | | 1910 | 50.8 | 1.56 | |
| | | Measured (08/15/2013) | 1850 | 51.0 | 1.50 | 23.0 |
| | | | 1900 | 50.9 | 1.55 | |
| | | | 1910 | 50.9 | 1.57 | |
| | | Recommended Limits | 1900 | 53.3 | 1.52 | N/A |
| 2450 | Head | Measured (06/17/2013) | 2410 | 39.5 | 1.72 | 22.5 |
| | | | 2450 | 39.4 | 1.76 | |
| | | | 2480 | 39.3 | 1.79 | |
| | | Measured (07/17/2013) | 2410 | 37.9 | 1.79 | 22.8 |
| | | | 2450 | 37.8 | 1.83 | |
| | | | 2480 | 37.7 | 1.86 | |
| | | Measured (07/23/2013) | 2410 | 38.0 | 1.80 | 22.4 |
| | | | 2450 | 37.9 | 1.85 | |
| | | | 2480 | 37.8 | 1.88 | |
| | | Measured (08/06/2013) | 2410 | 37.6 | 1.83 | 22.6 |


| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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| | | | | | | |
|------|--------|-----------------------|------|------|------|------|
| | Muscle | | 2450 | 37.5 | 1.86 | |
| | | | 2480 | 37.3 | 1.88 | |
| | | Recommended Limits | 2450 | 39.2 | 1.80 | N/A |
| | | Measured (06/17/2013) | 2410 | 50.3 | 1.86 | 22.5 |
| | | | 2450 | 50.2 | 1.90 | |
| | | | 2480 | 50.1 | 1.94 | |
| | | Measured (07/17/2013) | 2410 | 50.9 | 1.96 | 22.8 |
| | | | 2450 | 50.8 | 2.01 | |
| | | | 2480 | 50.6 | 2.05 | |
| | | Measured (07/23/2013) | 2410 | 51.3 | 2.00 | 22.1 |
| | | | 2450 | 51.0 | 2.04 | |
| | | | 2480 | 50.9 | 2.09 | |
| | | Measured (08/06/2013) | 2410 | 50.8 | 1.92 | 22.6 |
| | | | 2450 | 50.6 | 1.97 | |
| | | | 2480 | 50.6 | 2.00 | |
| | | Recommended Limits | 2450 | 52.7 | 1.95 | N/A |
| 5200 | Head | Measured (06/18/2013) | 5180 | 34.5 | 4.63 | 22.2 |
| | | | 5200 | 34.5 | 2.65 | |
| | | | 5280 | 34.3 | 4.74 | |
| | | Measured (06/18/2013) | 5180 | 35.2 | 4.62 | 21.4 |
| | | | 5200 | 35.2 | 4.63 | |
| | | | 5280 | 35.1 | 4.76 | |
| | | Measured (08/08/2013) | 5180 | 34.3 | 4.58 | 21.8 |
| | | | 5200 | 34.3 | 4.58 | |
| | | | 5280 | 34.2 | 4.72 | |
| | | Measured (08/12/2013) | 5180 | 34.4 | 4.65 | 22.8 |
| | | | 5200 | 34.4 | 4.67 | |
| | | | 5280 | 34.2 | 4.76 | |
| | | Recommended Limits | 5200 | 36.0 | 4.66 | N/A |
| | Muscle | Measured (06/18/2013) | 5180 | 51.1 | 5.48 | 22.2 |
| | | | 5200 | 51.0 | 5.49 | |
| | | | 5280 | 50.4 | 5.59 | |
| | | Measured (07/22/2013) | 5180 | 49.9 | 5.43 | 23.2 |
| | | | 5200 | 49.8 | 5.46 | |
| | | | 5280 | 49.6 | 5.64 | |
| | | Measured (08/08/2013) | 5180 | 49.9 | 5.41 | 21.8 |
| | | | 5200 | 49.9 | 5.42 | |
| | | | 5280 | 49.7 | 5.61 | |
| | | Measured (08/12/2013) | 5180 | 48.7 | 5.37 | 22.8 |
| | | | 5200 | 48.6 | 5.41 | |
| | | | 5280 | 48.5 | 5.57 | |
| | | Recommended Limits | 5200 | 49.0 | 5.30 | N/A |
| 5500 | Head | Measured (06/18/2013) | 5500 | 34.1 | 4.92 | 22.2 |
| | | | 5620 | 34.0 | 5.05 | |
| | | Measured (07/22/2013) | 5500 | 34.5 | 5.01 | 21.4 |
| | | | 5620 | 34.5 | 5.13 | |
| | | Measured (08/08/2013) | 5500 | 34.2 | 5.00 | 21.8 |
| | | | 5500 | 34.2 | 5.00 | |

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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| | | | | | | |
|------|--------|-----------------------|------|------|------|------|
| | | | 5620 | 34.1 | 5.12 | |
| | | Measured (08/12/2013) | 5500 | 34.8 | 5.00 | 22.8 |
| | | | 5620 | 34.6 | 5.15 | |
| | Muscle | Recommended Limits | 5500 | 35.6 | 4.96 | N/A |
| | | Measured (06/19/2013) | 5500 | 47.4 | 5.41 | 22.2 |
| | | | 5620 | 46.4 | 5.51 | |
| | | Measured (07/22/2013) | 5500 | 48.9 | 5.87 | 23.2 |
| | | | 5620 | 48.7 | 6.03 | |
| | | Measured (08/08/2013) | 5500 | 49.3 | 5.92 | 21.8 |
| | | | 5620 | 49.3 | 6.09 | |
| | | Measured (08/12/2013) | 5500 | 47.8 | 5.78 | 22.8 |
| | | | 5620 | 47.6 | 5.95 | |
| | | Recommended Limits | 5500 | 48.6 | 5.65 | N/A |
| 5800 | Head | Measured (06/18/2013) | 5745 | 34.0 | 5.27 | 22.2 |
| | | | 5800 | 33.8 | 5.33 | |
| | | Measured (07/22/2013) | 5745 | 34.3 | 5.30 | 21.4 |
| | | | 5800 | 33.9 | 5.32 | |
| | | Measured (08/08/2013) | 5745 | 34.1 | 5.30 | 21.8 |
| | | | 5800 | 33.5 | 5.29 | |
| | Muscle | Measured (08/12/2013) | 5745 | 34.2 | 5.22 | 22.8 |
| | | | 5800 | 33.9 | 5.28 | |
| | | Recommended Limits | 5800 | 35.3 | 5.27 | N/A |
| | | Measured (06/19/2013) | 5745 | 49.9 | 6.22 | 22.2 |
| | | | 5800 | 49.6 | 6.28 | |
| | | Measured (07/22/2013) | 5500 | 48.4 | 6.25 | 23.2 |
| | | | 5620 | 48.3 | 6.34 | |
| | | Measured (08/08/2013) | 5745 | 48.2 | 6.16 | 21.8 |
| | | | 5800 | 48.0 | 6.24 | |
| | | Measured (08/12/2013) | 5745 | 45.9 | 5.91 | 22.8 |
| | | | 5800 | 46.0 | 5.99 | |
| | | Recommended Limits | 5800 | 48.2 | 6.00 | N/A |

Table 6.2-1 Electrical parameters of tissue simulating liquid

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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| Band (MHz) | Tissue Type | Limits / Measured (MM/DD/YYYY) | f (MHz) | Dielectric Parameters | | Liquid Temp (°C) |
|---------------|----------------|-----------------------------------|------------|-----------------------|----------------|------------------------|
| | | | | ϵ_r | σ [S/m] | |
| 5200 | Head | Measured (12/08/2014) | 5180 | 34.3 | 4.65 | 22.6 |
| | | | 5200 | 34.3 | 4.67 | |
| | | | 5280 | 34.1 | 4.76 | |
| | | Recommended Limits | 5200 | 36.0 | 4.66 | N/A |
| | Muscle | Measured (12/08/2014) | 5180 | 46.7 | 5.61 | 22.6 |
| | | | 5200 | 46.7 | 5.64 | |
| | | | 5280 | 46.5 | 5.76 | |
| | | Recommended Limits | 5200 | 49.0 | 5.30 | N/A |
| 5800 | Head | Measured (12/08/2014) | 5745 | 33.8 | 5.34 | 22.6 |
| | | | 5800 | 33.7 | 5.40 | |
| | | Recommended Limits | 5800 | 35.3 | 5.27 | N/A |
| | Muscle | Measured (12/08/2014) | 5745 | 45.3 | 6.42 | 22.6 |
| | | | 5800 | 45.1 | 6.51 | |
| | | Recommended Limits | 5800 | 48.2 | 6.00 | N/A |

Table 6.2-2 Electrical parameters of tissue simulating liquid

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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6.2.2 Test Configuration

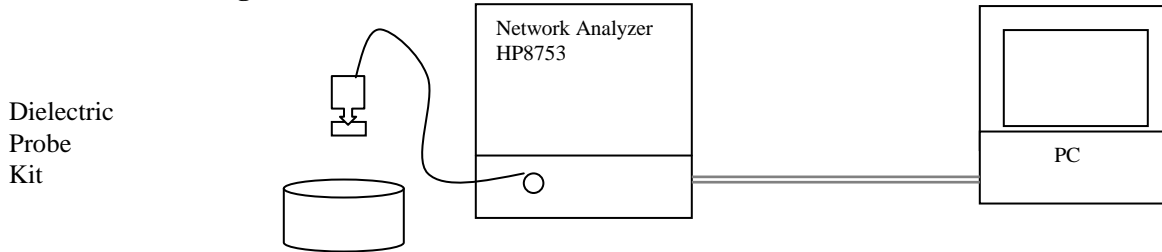



Figure 6.2.2-1 Test configuration

6.2.3 Procedure

1. Turn NWA on and allow at least 30 minutes for warm up.
2. Mount dielectric probe kit so that interconnecting cable to NWA will not be moved during measurements or calibration.
3. Pour de-ionized water and measure water temperature ($\pm 1^\circ$).
4. Set water temperature in HP-Software (Calibration Setup).
5. Perform calibration.
6. Relative permittivity $\epsilon_r = \epsilon'$ and conductivity can be calculated from ϵ'' ($\sigma = \omega \epsilon_0 \epsilon''$)
7. Measure liquid shortly after calibration.
8. Stir the liquid to be measured. Take a sample (~50ml) with a syringe from the center of the liquid container.
9. Pour the liquid into a small glass flask. Hold the syringe at the bottom of the flask to avoid air bubbles.
10. Put the dielectric probe in the glass flask. Check that there are no air bubbles in front of the opening in the dielectric probe kit.
11. Perform measurements.
12. Adjust medium parameters in DASY software for the frequencies necessary for the measurements ('Setup Config', select medium (e.g. Head 835 MHz) and press 'Option'-button.
13. Select the current medium for the frequency of the validation (e.g. Setup Medium Brain 835 MHz).

| | | | | | |
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7.0 SAR SAFETY LIMITS

| Standards/Guideline | Localized SAR Limit (W/kg) General public (uncontrolled) | Localized SAR Limits (W/kg) Workers (controlled) |
|---------------------|--|--|
| ICNIRP Standard | 2.0 (10g) | 10.0 (10g) |
| IEEE C95.1 Standard | 1.6 (1g) | 8.0 (1g) |


Table 7.0-1 SAR safety limits for Controlled / Uncontrolled environment

| Human Exposure | Localized SAR Limits (W/kg) 10g, ICNIRP Standard | Localized SAR Limits (W/kg) 1g, IEEE C95.1 Standard |
|--|--|---|
| Spatial Average (averaged over the whole body) | 0.08 | 0.08 |
| Spatial Peak (averaged over any X g of tissue) | 2.00 | 1.60 |
| Spatial Peak (hands/wrists/feet/ankles averaged over 10 g) | 4.00 | 4.00 (10g) |

Table 7.0-2 SAR safety limits

Uncontrolled Environments are defined as locations where there is exposure of individuals who have no knowledge or control of their exposure.

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

| | | | | | |
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8.0 DEVICE POSITIONING

8.1 Device holder for SAM Twin Phantom

The Device was positioned for all test configurations using the DASY5 holder. The device holder facilitates the rotation of the mounted transmitter in spherical coordinates whereby the rotation point is the ear opening. The devices can be easily, accurately and with repeatability positioned according to FCC and CENELEC specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).

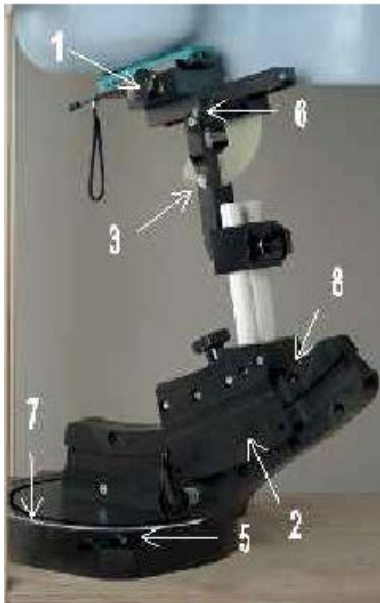



Figure 8.1-1 Device Holder

1. Put the phone in the clamp mechanism (1) and hold it straight while tightening. (Curved phones or phones with asymmetrical ear pieces should be positioned so that the earpiece is in the symmetry plane of the clamp).
2. Adjust the sliding carriage (2) to 90°. Then adjust the phone holder angle (3) until the reference line of the phone is horizontal (parallel to the flat phantom bottom). The phone reference line is defined as the front tangential line between the earpiece and the center of the device bottom (or the center of the flip hinge). For devices with parallel front and backsides, the phone holder angle (3) is 0°.
3. Place the device holder at the desired phantom section and move it securely against the positioning pins (4). The screw in front of the turning plate can be applied for correct positioning (5). (Do not tighten it too strongly).
4. Shift the phone clamp (6) so that the earpiece is exactly below the ear marking of the phantom. The phone is now correctly positioned in the holder for all standard phantom measurements, even after changing the phantom or phantom section.
5. Adjust the device position angles to the desired measurement position.
6. After fixing the device angles, move the phone fixture up until the phone touches the ear marking. (The point of contact depends on the design of the device and the positioning angle).

| | | | | | |
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8.2 Description of the test positioning

8.2.1 Test Positions of Device Relative to Head

The handset was tested in two test positions against the head phantom, the “cheek” position and the “tilted” position, on both left and right sides of the phantom.

The handset was tested in the above positions according to IEEE 1528- 2003 “Recommended Practice for Determining the Spatial-Peak Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques”.

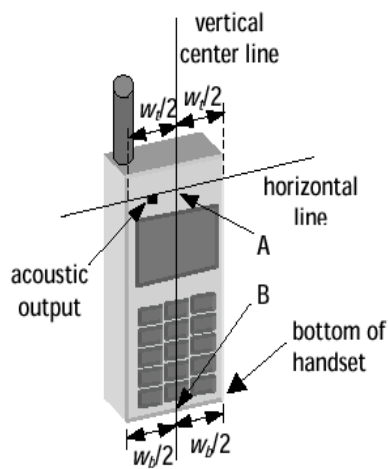


Figure 8.2.1-1 Handset vertical and horizontal reference lines – fixed case

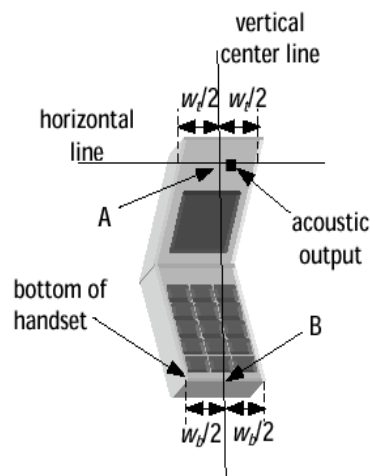



Figure 8.2.1-2 Handset vertical and horizontal reference lines – “clam-shell”

| | | | | | |
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Definition of the “cheek” position

- 1) Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece, open the cover.
- 2) Define two imaginary lines on the handset: the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset: the midpoint of the width w_t of the handset at the level of the acoustic output (point A on Figures 8.2.1-1 and 8.2.1-2), and the midpoint of the width w_b of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 8.2.1-1). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output. However, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 8.2.1-2), especially for clamshell handsets, handsets with flip pieces, and other irregularly shaped handsets.
- 3) Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 8.2.1-3), such that the plane defined by the vertical center line and the horizontal center line is in a plane approximately parallel to the sagittal plane of the phantom.
- 4) Translate the handset towards the phantom along the line passing through RE and LE until the handset touches the ear.
- 5) While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is the plane normal to MB (“mouth-back”) - NF (“neck-front”) including the line MB (reference plane).
- 6) Rotate the phone around the vertical centerline until the phone (horizontal line) is symmetrical with respect to the line NF.
- 7) While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE, and maintaining the phone contact with the ear, rotate the handset about the line NF until any point on the handset is in contact with a phantom point below the ear (cheek).

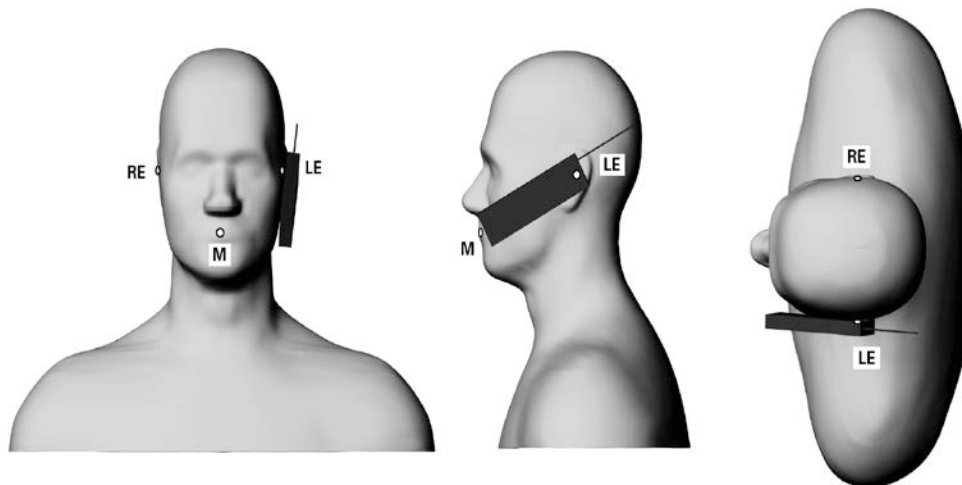



Figure 8.2.1-3 Phone position 1, “cheek” or “touch” position. The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning, are indicated. The shoulders are shown for illustration purposes only.

| | | | | | |
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Definition of the “Tilted” Position

- 1) Repeat steps 1 to 7 from above.
- 2) While maintaining the device in the reference plane (described above) and pivoting against the ear, move the device outward away from the mouth by an angle of 15 degrees, or until the antenna touches the phantom.

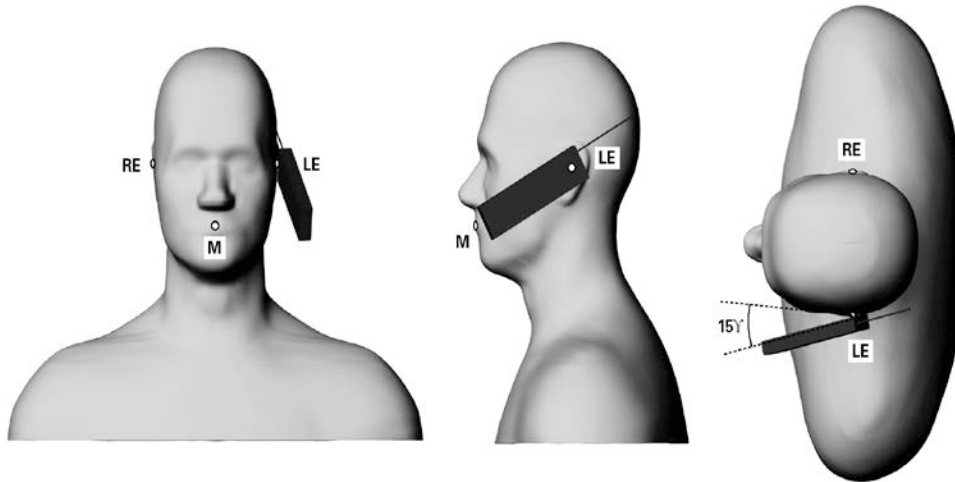


Figure 8.2.1-4 Phone position 2, “tilted position.” The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning, are indicated. The shoulders are shown for illustration purposes only.

8.2.2 Body-worn Configuration

Body-worn holsters, as shown on Figure 1.4-1, have been test with the device for RF exposure compliance. The device was positioned in each holster case and the belt clip was placed against the flat section of the phantom. A headset was then connected to the device to simulate hands-free operation in a body worn holster configuration.


In addition, device was tested with 15 mm BLACKBERRY recommended separation distance to allow typical after-market holster to be used. BLACKBERRY body-worn holsters with belt-clip have been designed to maintain ~ 19-20 mm separation distance from body.

8.2.3 Limb/Hand Configuration

BlackBerry device is not a limb-worn device and hasn’t been tested for such a configuration.

As per Clause 6.1.4.9 in the IEC/EN 62209-2 standard:

"Additional studies remain needed for devising a representative method for evaluating SAR in the hand of hand-held devices. Future versions of this standard are intended to contain a test method based on scientific data and rationale. Annex J presents the currently available test procedure."

| | | | | |
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Clause J.2 of the IEC/EN 62209-2 states that testing for compliance for the exposure of the hand is not applicable for devices that are intended to being hand-held to enable use at the ear (see EN 62209-1) or worn on the body when transmitting.

In addition, BlackBerry device is not intended to be held in hand at a distance of larger than 200 mm from the head and body during normal use.

9.0 HIGH LEVEL EVALUATION

9.1 Maximum search

The maximum search is automatically performed after each coarse scan measurement. It is based on splines in two or three dimensions. The procedure can find the maximum for most SAR distributions even with relatively large grid spacing. After the coarse scan measurement, the probe is automatically moved to a position at the interpolated maximum. The following scan can directly use this position for reference, e.g., for a finer resolution grid or the cube evaluations.

9.2 Extrapolation


The extrapolation can be used in z-axis scans with automatic surface detection. The SAR values can be extrapolated to the inner phantom surface. The extrapolation distance is the sum of the probe sensor offset, the surface detection distance and the grid offset. The extrapolation is based on fourth order polynomial functions. The extrapolation is only available for SAR values.

9.3 Boundary correction

The correction of the probe boundary effect in the vicinity of the phantom surface is done in the standard (worst case) evaluation; the boundary effect is reduced by different weights for the lowest measured points in the extrapolation routine. The result is a slight overestimation of the extrapolated SAR values (2% to 8%) depending on the SAR distribution and gradient. The advanced evaluation makes a full compensation of the boundary effect before doing the extrapolation. This is only possible for probes with specifications on the boundary effect.

9.4 Peak search for 1g and 10g cube averaged SAR

The 1g and 10g peak evaluations are only available for the predefined cube 5x5x7 / 7x7x9 scan. The routines are verified and optimized for the grid dimensions used in these cube measurements. The measured volume of 30x30x30mm / 22x22x22 with 7.5 / 5 / 4.0 mm resolution in (x,y) and 5mm / 2mm resolution in z axis amounts to 175 / 693 measurement points. The first procedure is an extrapolation (incl. Boundary correction) to get the points between the lowest measured plane and the surface. The next step uses 3D interpolation to get all points within the measured volume in a 1mm grid. In the last step, a 1g cube is placed numerically into the volume and its averaged SAR is calculated. This cube is then moved around until the highest averaged SAR is found. This last procedure is repeated for a 10 g cube. If the highest SAR is found at the edge of the measured volume, the system will issue a warning: higher SAR values might be found outside of the measured volume. In that case the cube measurement can be repeated, using the new interpolated maximum as the center.


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10.0 MEASUREMENT UNCERTAINTY

| DASY5 Uncertainty Budget According to IEEE 1528/2003 [1] | | | | | | | | |
|--|---------------|-------------|------------|--------------|---------------|----------------|-----------------|---------------------|
| Error Description | Uncert. value | Prob. Dist. | Div. | (c_i) 1g | (c_i) 10g | Std. Unc. (1g) | Std. Unc. (10g) | (v_i) v_{eff} |
| Measurement System | | | | | | | | |
| Probe Calibration | ±5.5 % | N | 1 | 1 | 1 | ±5.5 % | ±5.5 % | ∞ |
| Axial Isotropy | ±4.7 % | R | $\sqrt{3}$ | 0.7 | 0.7 | ±1.9 % | ±1.9 % | ∞ |
| Hemispherical Isotropy | ±9.6 % | R | $\sqrt{3}$ | 0.7 | 0.7 | ±3.9 % | ±3.9 % | ∞ |
| Boundary Effects | ±1.0 % | R | $\sqrt{3}$ | 1 | 1 | ±0.6 % | ±0.6 % | ∞ |
| Linearity | ±4.7 % | R | $\sqrt{3}$ | 1 | 1 | ±2.7 % | ±2.7 % | ∞ |
| System Detection Limits | ±1.0 % | R | $\sqrt{3}$ | 1 | 1 | ±0.6 % | ±0.6 % | ∞ |
| Readout Electronics | ±0.3 % | N | 1 | 1 | 1 | ±0.3 % | ±0.3 % | ∞ |
| Response Time | ±0.8 % | R | $\sqrt{3}$ | 1 | 1 | ±0.5 % | ±0.5 % | ∞ |
| Integration Time | ±2.6 % | R | $\sqrt{3}$ | 1 | 1 | ±1.5 % | ±1.5 % | ∞ |
| RF Ambient Noise | ±3.0 % | R | $\sqrt{3}$ | 1 | 1 | ±1.7 % | ±1.7 % | ∞ |
| RF Ambient Reflections | ±3.0 % | R | $\sqrt{3}$ | 1 | 1 | ±1.7 % | ±1.7 % | ∞ |
| Probe Positioner | ±0.4 % | R | $\sqrt{3}$ | 1 | 1 | ±0.2 % | ±0.2 % | ∞ |
| Probe Positioning | ±2.9 % | R | $\sqrt{3}$ | 1 | 1 | ±1.7 % | ±1.7 % | ∞ |
| Max. SAR Eval. | ±1.0 % | R | $\sqrt{3}$ | 1 | 1 | ±0.6 % | ±0.6 % | ∞ |
| Test Sample Related | | | | | | | | |
| Device Positioning | ±2.9 % | N | 1 | 1 | 1 | ±2.9 % | ±2.9 % | 145 |
| Device Holder | ±3.6 % | N | 1 | 1 | 1 | ±3.6 % | ±3.6 % | 5 |
| Power Drift | ±5.0 % | R | $\sqrt{3}$ | 1 | 1 | ±2.9 % | ±2.9 % | ∞ |
| Phantom and Setup | | | | | | | | |
| Phantom Uncertainty | ±4.0 % | R | $\sqrt{3}$ | 1 | 1 | ±2.3 % | ±2.3 % | ∞ |
| Liquid Conductivity (target) | ±5.0 % | R | $\sqrt{3}$ | 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 | $\sqrt{3}$ | 0.6 | 0.49 | ±1.7 % | ±1.4 % | ∞ |
| Liquid Permittivity (meas.) | ±2.5 % | N | 1 | 0.6 | 0.49 | ±1.5 % | ±1.2 % | ∞ |
| Combined Std. Uncertainty | | | | | | ±10.7 % | ±10.5 % | 387 |
| Expanded STD Uncertainty | | | | | | ±21.4 % | ±21.0 % | |


Table 10.0-1 Worst-Case uncertainty budget for DASY5 assessed according to IEEE P1528.
Source: Schmid & Partner Engineering AG.

[1] The budget is valid for the frequency range 300MHz - 3 GHz and represents a worst-case analysis. For specific tests and configurations, the uncertainty could be considerably smaller.

| | | | | | |
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| Relative DASY5 Uncertainty Budget for Fast SAR Tests According to IEEE 1528/2011 and IEC 62209-1/2011 (0.3 - 3 GHz range) | | | | | | | | |
|---|---------------|-------------|------------|--------------|---------------|----------------|-----------------|---------------------|
| Error Description | Uncert. value | Prob. Dist. | Div. | (c_i) 1g | (c_i) 10g | Std. Unc. (1g) | Std. Unc. (10g) | (v_i) v_{eff} |
| Measurement System | | | | | | | | |
| Probe Calibration | ±6.0 % | N | 1 | 0 | 0 | | | |
| Axial Isotropy | ±4.7 % | R | $\sqrt{3}$ | 0.7 | 0.7 | ±1.9 % | ±1.9 % | ∞ |
| Hemispherical Isotropy | ±9.6 % | R | $\sqrt{3}$ | 0.7 | 0.7 | ±3.9 % | ±3.9 % | ∞ |
| Boundary Effects | ±1.0 % | R | $\sqrt{3}$ | 1 | 1 | ±0.6 % | ±0.6 % | ∞ |
| Linearity | ±4.7 % | R | $\sqrt{3}$ | 1 | 1 | ±2.7 % | ±2.7 % | ∞ |
| System Detection Limits | ±1.0 % | R | $\sqrt{3}$ | 1 | 1 | ±0.6 % | ±0.6 % | ∞ |
| Modulation Response | ±2.4 % | R | $\sqrt{3}$ | 1 | 1 | ±1.4 % | ±1.4 % | ∞ |
| Readout Electronics | ±0.3 % | N | 1 | 0 | 0 | | | |
| Response Time | ±0.8 % | R | $\sqrt{3}$ | 0 | 0 | | | |
| Integration Time | ±2.6 % | R | $\sqrt{3}$ | 1 | 1 | ±1.5 % | ±1.5 % | ∞ |
| RF Ambient Noise | ±3.0 % | R | $\sqrt{3}$ | 1 | 1 | ±1.7 % | ±1.7 % | ∞ |
| RF Ambient Reflections | ±3.0 % | R | $\sqrt{3}$ | 0 | 0 | | | |
| Probe Positioner | ±0.4 % | R | $\sqrt{3}$ | 1 | 1 | ±0.2 % | ±0.2 % | ∞ |
| Probe Positioning | ±2.9 % | R | $\sqrt{3}$ | 1 | 1 | ±1.7 % | ±1.7 % | ∞ |
| Spatial x-y-Resolution | ±10.0 % | R | $\sqrt{3}$ | 1 | 1 | ±5.8 % | ±5.8 % | ∞ |
| Fast SAR z-Approximation | ±7.0 % | R | $\sqrt{3}$ | 1 | 1 | ±4.0 % | ±4.0 % | ∞ |
| Test Sample Related | | | | | | | | |
| Device Positioning | ±2.9 % | N | 1 | 1 | 1 | ±2.9 % | ±2.9 % | 145 |
| Device Holder | ±3.6 % | N | 1 | 1 | 1 | ±3.6 % | ±3.6 % | 5 |
| Power Drift | ±5.0 % | R | $\sqrt{3}$ | 1 | 1 | ±2.9 % | ±2.9 % | ∞ |
| Power Scaling | ±0 % | R | $\sqrt{3}$ | 0 | 0 | | | |
| Phantom and Setup | | | | | | | | |
| Phantom Uncertainty | ±6.1 % | R | $\sqrt{3}$ | 1 | 1 | ±3.5 % | ±3.5 % | ∞ |
| SAR correction | ±1.9 % | R | $\sqrt{3}$ | 0 | 0 | | | |
| Liquid Conductivity (mea.) | ±2.5 % | R | $\sqrt{3}$ | 0 | 0 | | | |
| Liquid Permittivity (mea.) | ±2.5 % | R | $\sqrt{3}$ | 0 | 0 | | | |
| Temp. unc. - Conductivity | ±3.4 % | R | $\sqrt{3}$ | 0 | 0 | | | |
| Temp. unc. - Permittivity | ±0.4 % | R | $\sqrt{3}$ | 0 | 0 | | | |
| Combined Std. Uncertainty | | | | | | ±11.4 % | ±11.4 % | 748 |
| Expanded STD Uncertainty | | | | | | ±22.7 % | ±22.7 % | |

Table 10.0-2 Worst-Case uncertainty budget for DASY5 assessed according to IEEE P1528/2011 and IEC 62209-1/2011
Source: Schmid & Partner Engineering AG.

| | | | | | |
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| DASY5 Uncertainty Budget for the 3 - 6 GHz range | | | | | | | | |
|---|---------------|-------------|------|----------------------|-----------------------|----------------|-----------------|------------------------------------|
| Error Description | Uncert. value | Prob. Dist. | Div. | (c ₁) 1g | (c ₁) 10g | Std. Unc. (1g) | Std. Unc. (10g) | (v ₁) v _{eff} |
| Measurement System | | | | | | | | |
| Probe Calibration | ±6.55 % | N | 1 | 1 | 1 | ±6.55 % | ±6.55 % | ∞ |
| Axial Isotropy | ±4.7 % | R | √3 | 0.7 | 0.7 | ±1.9 % | ±1.9 % | ∞ |
| Hemispherical Isotropy | ±9.6 % | R | √3 | 0.7 | 0.7 | ±3.9 % | ±3.9 % | ∞ |
| Boundary Effects | ±2.0 % | R | √3 | 1 | 1 | ±1.2 % | ±1.2 % | ∞ |
| Linearity | ±4.7 % | R | √3 | 1 | 1 | ±2.7 % | ±2.7 % | ∞ |
| System 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 | ±0.8 % | R | √3 | 1 | 1 | ±0.5 % | ±0.5 % | ∞ |
| Integration Time | ±2.6 % | R | √3 | 1 | 1 | ±1.5 % | ±1.5 % | ∞ |
| RF Ambient Noise | ±3.0 % | R | √3 | 1 | 1 | ±1.7 % | ±1.7 % | ∞ |
| RF Ambient Reflections | ±3.0 % | R | √3 | 1 | 1 | ±1.7 % | ±1.7 % | ∞ |
| Probe Positioner | ±0.8 % | R | √3 | 1 | 1 | ±0.5 % | ±0.5 % | ∞ |
| Probe Positioning | ±9.9 % | R | √3 | 1 | 1 | ±5.7 % | ±5.7 % | ∞ |
| Max. SAR Eval. | ±4.0 % | R | √3 | 1 | 1 | ±2.3 % | ±2.3 % | ∞ |
| Test Sample Related | | | | | | | | |
| Device Positioning | ±2.9 % | N | 1 | 1 | 1 | ±2.9 % | ±2.9 % | 145 |
| Device Holder | ±3.6 % | N | 1 | 1 | 1 | ±3.6 % | ±3.6 % | 5 |
| Power Drift | ±5.0 % | R | √3 | 1 | 1 | ±2.9 % | ±2.9 % | ∞ |
| Phantom and Setup | | | | | | | | |
| Phantom Uncertainty | ±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 Std. Uncertainty | | | | | | ±12.8 % | ±12.6 % | 330 |
| Expanded STD Uncertainty | | | | | | ±25.6 % | ±25.2 % | |

Table 10.0-3 Worst-Case uncertainty budget for DASY52 assessed according to IEEE P1528.
Source: Schmid & Partner Engineering AG.

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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11.0 TEST RESULTS

11.1 SAR Measurement results at highest power measured against the head

| Measured/Extrapolated SAR Values - Head - GSM/EDGE/DTM 850 MHz | | | | | | | | |
|--|-------------|------------|----------------|--------------------------|----------|------------------|---------------|--------------|
| Channel | Freq. (MHz) | Time Slots | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Measured | Extrapolated |
| 128 | 824.2 | 1 | Right Cheek | | | | | 0.00 |
| 190 | 836.6 | 1 | Right Cheek | 32.5 | 32.1 | 0.15 | 0.31 | 0.34 |
| 251 | 848.8 | 1 | Right Cheek | | | | | 0.00 |
| 190 | 836.6 | 2 | Right Cheek | 30.0 | 29.7 | 0.18 | 0.36 | 0.39 |
| 190 | 836.6 | 3 | Right Cheek | 29.0 | 29.0 | -0.05 | 0.41 | 0.41 |
| 190 | 836.6 | 2 | Right 15° Tilt | 30.0 | 29.7 | -0.04 | 0.20 | 0.21 |
| 128 | 824.2 | 1 | Left Cheek | | | | | 0.00 |
| 190 | 836.6 | 1 | Left Cheek | 32.5 | 32.1 | 0.06 | 0.36 | 0.39 |
| 251 | 848.8 | 1 | Left Cheek | | | | | 0.00 |
| 190 | 836.6 | 2 | Left Cheek | 30.0 | 29.7 | -0.05 | 0.41 | 0.44 |
| 190 | 836.6 | 3 | Left Cheek | 29.0 | 29.0 | -0.10 | 0.47 | 0.47 |
| 190 | 836.6 | 4 | Left Cheek | 27.0 | 26.8 | -0.18 | 0.42 | 0.44 |
| 190 | 836.6 | 3 | Left 15° Tilt | 29.0 | 29.0 | -0.05 | 0.27 | 0.27 |

Table 11.1-1a SAR results for GSM/EDGE/DTM 850 head configuration tested on RFX101LW

Note 1: SAR data was taken on model RFX101LW due to the same WiFi/BT design, PCB, and Cellular/WiFi/BT antennas as RGB141LW. Please refer to the hardware similarity document for more details.

Note 2: For all common bands between RFX101LW and RGB141LW, SAR was only spot checked on RGB141LW due to different antenna tuning on GSM/EDGE/GPRS/UMTS/LTE modes/bands. Please refer to the hardware similarity document for more details.


Note 3: If the power drift is ≤ -0.200 dB, the extrapolated SAR is calculated using the formula:

$$\text{Extrapolated SAR} = (\text{Measured SAR}) * 10^{(|\text{Power Drift (dB)}| / 10)}$$

Note 4: Only Middle channel was tested when 1g Average SAR <0.8 W/Kg or 3dB lower than the limit.

| Measured/Extrapolated SAR Values - Head - GSM/EDGE/DTM 850 MHz | | | | | | | | |
|--|-------------|------------|----------------|--------------------------|----------|------------------|---------------|--------------|
| Channel | Freq. (MHz) | Time Slots | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Measured | Extrapolated |
| 128 | 824.2 | 3 | Right Cheek | | | | | 0.00 |
| 190 | 836.6 | 3 | Right Cheek | 29.0 | 29.0 | -0.13 | 0.35 | 0.35 |
| 251 | 848.8 | 3 | Right Cheek | | | | | 0.00 |
| 190 | 836.6 | 3 | Right 15° Tilt | | | | | 0.00 |
| 128 | 824.2 | 3 | Left Cheek | | | | | 0.00 |
| 190 | 836.6 | 3 | Left Cheek | 29.0 | 29.0 | 0.02 | 0.35 | 0.35 |
| 251 | 848.8 | 3 | Left Cheek | | | | | 0.00 |
| 190 | 836.6 | 3 | Left 15° Tilt | | | | | 0.00 |

Table 11.1-1b SAR results for GSM/EDGE/DTM 850 head configuration tested on RGB141LW

| | | | | | | |
|---|---|---|---|--|-------------------------------|----|
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| Measured/Extrapolated SAR Values - Head - WCDMA FDD V 850 MHz | | | | | | | |
|---|-------------|----------------|--------------------------|----------|------------------|---------------|--------------|
| Channel | Freq. (MHz) | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | Declared | Measured | | Measured | Extrapolated |
| 4132 | 826.4 | Right Cheek | | | | | 0.00 |
| 4182 | 836.4 | Right Cheek | 23.5 | 23.1 | -0.13 | 0.25 | 0.27 |
| 4233 | 846.6 | Right Cheek | | | | | 0.00 |
| 4182 | 836.4 | Right 15° Tilt | 23.5 | 23.1 | -0.03 | 0.16 | 0.18 |
| 4132 | 826.4 | Left Cheek | | | | | 0.00 |
| 4182 | 836.4 | Left Cheek | 23.5 | 23.1 | 0.11 | 0.34 | 0.37 |
| 4233 | 846.6 | Left Cheek | | | | | 0.00 |
| 4182 | 836.4 | Left 15° Tilt | 23.5 | 23.1 | 0.04 | 0.19 | 0.21 |


Table 11.1-2a SAR results for WCDMA FDD V head configuration tested on RFX101LW

| Measured/Extrapolated SAR Values - Head - WCDMA FDD V 850 MHz | | | | | | | |
|---|-------------|----------------|--------------------------|----------|------------------|---------------|--------------|
| Channel | Freq. (MHz) | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | Declared | Measured | | Measured | Extrapolated |
| 4132 | 826.4 | Right Cheek | | | | | 0.00 |
| 4182 | 836.4 | Right Cheek | 23.5 | 23.1 | 0.07 | 0.09 | 0.10 |
| 4233 | 846.6 | Right Cheek | | | | | 0.00 |
| 4182 | 836.4 | Right 15° Tilt | | | | | 0.00 |
| 4132 | 826.4 | Left Cheek | | | | | 0.00 |
| 4182 | 836.4 | Left Cheek | 23.5 | 23.1 | -0.18 | 0.11 | 0.12 |
| 4233 | 846.6 | Left Cheek | | | | | 0.00 |
| 4182 | 836.4 | Left 15° Tilt | | | | | 0.00 |

Table 11.1-2b SAR results for WCDMA FDD V head configuration tested on RGB141LW

| Measured/Extrapolated SAR Values - Head - CDMA 800 MHz BC10 | | | | | | | |
|---|-------------|----------------|--------------------------|----------|------------------|---------------|--------------|
| Channel | Freq. (MHz) | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | Declared | Measured | | Measured | Extrapolated |
| 4132 | 826.4 | Right Cheek | | | | | 0.00 |
| 4182 | 836.4 | Right Cheek | 24.5 | 24.3 | 0.09 | 0.31 | 0.32 |
| 4233 | 846.6 | Right Cheek | | | | | 0.00 |
| 4182 | 836.4 | Right 15° Tilt | 24.5 | 24.3 | 0.25 | 0.18 | 0.19 |
| 4132 | 826.4 | Left Cheek | | | | | 0.00 |
| 4182 | 836.4 | Left Cheek | 24.5 | 24.3 | 0.13 | 0.28 | 0.29 |
| 4233 | 846.6 | Left Cheek | | | | | 0.00 |
| 4182 | 836.4 | Left 15° Tilt | 24.5 | 24.3 | -0.04 | 0.15 | 0.16 |

Table 11.1-3 SAR results for CDMA 800 BC10 head configuration tested on RGB141LW

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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| Measured/Extrapolated SAR Values - Head - CDMA 850 MHz BC0 | | | | | | | |
|--|-------------|----------------|--------------------------|----------|------------------|---------------|--------------|
| Channel | Freq. (MHz) | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | Declared | Measured | | Measured | Extrapolated |
| 4132 | 826.4 | Right Cheek | | | | | 0.00 |
| 4182 | 836.4 | Right Cheek | 24.5 | 24.1 | -0.11 | 0.30 | 0.33 |
| 4233 | 846.6 | Right Cheek | | | | | 0.00 |
| 4182 | 836.4 | Right 15° Tilt | 24.5 | 24.1 | -0.01 | 0.19 | 0.21 |
| 4132 | 826.4 | Left Cheek | | | | | 0.00 |
| 4182 | 836.4 | Left Cheek | 24.5 | 24.1 | 0.07 | 0.26 | 0.29 |
| 4233 | 846.6 | Left Cheek | | | | | 0.00 |
| 4182 | 836.4 | Left 15° Tilt | 24.5 | 24.1 | 0.05 | 0.14 | 0.15 |

Table 11.1-4 SAR results for CDMA 850 BC0 head configuration tested on RGB141LW

| Measured/Extrapolated SAR Values - Head - SVLTE Band 25 1900 MHz | | | | | | | | | | |
|--|-------------|------|------|-----------|----------------|--------------------------|----------|------------------|---------------|--------------|
| Channel | Freq. (MHz) | Mod. | RB # | RB Offset | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | | | Declared | Measured | | Measured | Extrapolated |
| 26140 | 1860.0 | QPSK | 1 | 99 | Right Cheek | | | | | 0.00 |
| 26365 | 1882.5 | QPSK | 1 | 50 | Right Cheek | 19.0 | 18.8 | -0.15 | 0.11 | 0.12 |
| 26590 | 1905.0 | QPSK | 1 | 50 | Right Cheek | | | | | 0.00 |
| 26365 | 1882.5 | QPSK | 50 | 50 | Right Cheek | 18.0 | 17.8 | 0.15 | 0.09 | 0.09 |
| 26365 | 1882.5 | QPSK | 100 | 0 | Right Cheek | 18.0 | 17.7 | 0.02 | 0.11 | 0.12 |
| 26365 | 1882.5 | QPSK | 1 | 50 | Right 15° Tilt | 19.0 | 18.8 | 0.03 | 0.06 | 0.06 |
| 26140 | 1860.0 | QPSK | 1 | 99 | Left Cheek | | | | | 0.00 |
| 26365 | 1882.5 | QPSK | 1 | 50 | Left Cheek | 19.0 | 18.8 | -0.13 | 0.23 | 0.24 |
| 26590 | 1905.0 | QPSK | 1 | 50 | Left Cheek | | | | | 0.00 |
| 26365 | 1882.5 | QPSK | 50 | 50 | Left Cheek | 18.0 | 17.8 | 0.14 | 0.23 | 0.24 |
| 26365 | 1882.5 | QPSK | 100 | 0 | Left Cheek | 18.0 | 17.7 | 0.15 | 0.20 | 0.21 |
| 26365 | 1882.5 | QPSK | 50 | 50 | Left 15° Tilt | 18.0 | 17.8 | -0.17 | 0.06 | 0.06 |

Table 11.1-5 SAR results for SVLTE band 25 (20MHz BW) head configuration tested on RGB141LW

Note 1: If the power drift is ≤ -0.200 dB, the extrapolated SAR is calculated using the formula:

$$\text{Extrapolated SAR} = (\text{Measured SAR}) * 10^{(|\text{Power Drift (dB)}| / 10)}$$

Note 2: Only Middle channel was tested when 1g Average SAR <0.8 W/Kg or 3dB lower than the limit.


Note 3: Only required to test the configuration (channel and offset) yielding the highest conducted power for RB 1 and RB 50% when combined 1g avg. SAR <0.8 W/Kg or 3dB lower than the limit for both cases. Also, when the highest conducted power for RB 1 and RB 50% are both greater than RB 100%, then SAR testing for RB 100% can be excluded.

Note 4: If 1g avg. SAR >0.8 W/Kg or not at least 3dB lower than the limit, then the remaining channels for that RB number must be tested and one additional scan must be done with RB 100%. For all additional scans the highest conducted power configuration (channel and offset) must be used.

Note 5: For LTE if SAR > 1.45, then SAR tests for the smaller bandwidths are required

Note 6: Tested only the highest bandwidth since conducted power on other bandwidths is about the same.

Note 7: Did not test 16 QAM as conducted power was lower than QPSK.


| | | | | | |
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| Measured/Extrapolated SAR Values - Head - LTE Band 25 1900 MHz | | | | | | | | | | |
|--|-------------|------|------|-----------|----------------|--------------------------|----------|------------------|---------------|--------------|
| Channel | Freq. (MHz) | Mod. | RB # | RB Offset | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | | | Declared | Measured | | Measured | Extrapolated |
| 26140 | 1860.0 | QPSK | 1 | 99 | Right Cheek | 23.5 | 23.2 | 0.04 | 0.28 | 0.30 |
| 26365 | 1882.5 | QPSK | 1 | 50 | Right Cheek | | | | | 0.00 |
| 26590 | 1905.0 | QPSK | 1 | 50 | Right Cheek | | | | | 0.00 |
| 26140 | 1860.0 | QPSK | 50 | 50 | Right Cheek | 22.5 | 22.2 | 0.35 | 0.20 | 0.21 |
| 26365 | 1882.5 | QPSK | 100 | 0 | Right Cheek | 22.5 | 22.1 | 0.22 | 0.25 | 0.27 |
| 26140 | 1860.0 | QPSK | 1 | 99 | Right 15° Tilt | 23.5 | 23.2 | -0.10 | 0.11 | 0.12 |
| 26140 | 1860.0 | QPSK | 1 | 99 | Left Cheek | 23.5 | 23.2 | 0.01 | 0.59 | 0.63 |
| 26365 | 1882.5 | QPSK | 1 | 50 | Left Cheek | | | | | 0.00 |
| 26590 | 1905.0 | QPSK | 1 | 50 | Left Cheek | | | | | 0.00 |
| 26140 | 1860.0 | QPSK | 50 | 50 | Left Cheek | 22.5 | 22.2 | -0.01 | 0.57 | 0.61 |
| 26365 | 1882.5 | QPSK | 100 | 0 | Left Cheek | 22.5 | 22.1 | 0.14 | 0.51 | 0.56 |
| 26140 | 1860.0 | QPSK | 1 | 99 | Left 15° Tilt | 22.5 | 23.2 | -0.04 | 0.15 | 0.13 |

Table 11.1-6 SAR results for LTE band 25 (20MHz BW) head configuration tested on RGB141LW

| Measured/Extrapolated SAR Values - Head - GSM/EDGE/DTM 1900 MHz | | | | | | | | |
|---|-------------|------------|----------------|--------------------------|----------|------------------|---------------|--------------|
| Channel | Freq. (MHz) | Time Slots | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Measured | Extrapolated |
| 512 | 1850.2 | 1 | Right Cheek | | | | | 0.00 |
| 661 | 1880.0 | 1 | Right Cheek | 29.0 | 28.9 | 0.03 | 0.14 | 0.14 |
| 810 | 1909.8 | 1 | Right Cheek | | | | | 0.00 |
| 661 | 1880.0 | 2 | Right Cheek | 28.5 | 28.1 | -0.01 | 0.24 | 0.26 |
| 661 | 1880.0 | 2 | Right 15° Tilt | 28.5 | 28.1 | 0.00 | 0.14 | 0.15 |
| 512 | 1850.2 | 1 | Left Cheek | | | | | 0.00 |
| 661 | 1880.0 | 1 | Left Cheek | 29.0 | 28.9 | 0.09 | 0.30 | 0.31 |
| 810 | 1909.8 | 1 | Left Cheek | | | | | 0.00 |
| 661 | 1880.0 | 2 | Left Cheek | 28.5 | 28.1 | -0.26 | 0.41 | 0.45 |
| 661 | 1880.0 | 3 | Left Cheek | 26.0 | 25.6 | -0.04 | 0.34 | 0.37 |
| 661 | 1880.0 | 4 | Left Cheek | 25.5 | 25.3 | 0.04 | 0.39 | 0.41 |
| 661 | 1880.0 | 2 | Left 15° Tilt | 28.5 | 28.1 | 0.10 | 0.10 | 0.11 |

Table 11.1-7a SAR results for GSM/EDGE/DTM 1900 head configuration tested on RFX101LW

| | | | | | |
|---|---|---|---|-------------------------------|------------------------|
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| Measured/Extrapolated SAR Values - Head - GSM/EDGE/DTM 1900 MHz | | | | | | | | |
|---|-------------|------------|----------------|--------------------------|----------|------------------|---------------|--------------|
| Channel | Freq. (MHz) | Time Slots | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Measured | Extrapolated |
| 512 | 1850.2 | 2 | Right Cheek | | | | | 0.00 |
| 661 | 1880.0 | 2 | Right Cheek | 28.5 | 28.1 | -0.04 | 0.34 | 0.37 |
| 810 | 1909.8 | 2 | Right Cheek | | | | | 0.00 |
| 661 | 1880.0 | 2 | Right 15° Tilt | | | | | 0.00 |
| 512 | 1850.2 | 2 | Left Cheek | | | | | 0.00 |
| 661 | 1880.0 | 2 | Left Cheek | 28.5 | 28.1 | 0.09 | 0.71 | 0.78 |
| 810 | 1909.8 | 2 | Left Cheek | | | | | 0.00 |
| 661 | 1880.0 | 2 | Left 15° Tilt | | | | | 0.00 |

Table 11.1-7b SAR results for GSM/EDGE/DTM 1900 head configuration tested on RGB141LW


| Measured/Extrapolated SAR Values - Head - WCDMA FDD II 1900 MHz | | | | | | | |
|---|-------------|----------------|--------------------------|----------|------------------|---------------|--------------|
| Channel | Freq. (MHz) | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | Declared | Measured | | Measured | Extrapolated |
| 9262 | 1852.4 | Right Cheek | | | | | 0.00 |
| 9400 | 1880.0 | Right Cheek | 23.5 | 23.0 | -0.06 | 0.34 | 0.38 |
| 9538 | 1907.6 | Right Cheek | | | | | 0.00 |
| 9400 | 1880.0 | Right 15° Tilt | 23.5 | 23.0 | -0.08 | 0.32 | 0.36 |
| 9262 | 1852.4 | Left Cheek | 23.5 | 23.0 | 0.06 | 0.97 | 1.09 |
| 9400 | 1880.0 | Left Cheek | 23.5 | 23.0 | 0.08 | 1.09 | 1.22 |
| 9400 | 1880.0 | Left Cheek* | 23.5 | 23.0 | 0.12 | 1.03 | 1.16 |
| 9538 | 1907.6 | Left Cheek | 23.5 | 23.0 | -0.01 | 0.95 | 1.07 |
| 9400 | 1880.0 | Left 15° Tilt | 23.5 | 23.0 | -0.08 | 0.25 | 0.28 |

*2nd Scan

Table 11.1-8a SAR results for WCDMA FDD II head configuration tested on RFX101LW

| Measured/Extrapolated SAR Values - Head - WCDMA FDD II 1900 MHz | | | | | | | |
|---|-------------|----------------|--------------------------|----------|------------------|---------------|--------------|
| Channel | Freq. (MHz) | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | Declared | Measured | | Measured | Extrapolated |
| 9262 | 1852.4 | Right Cheek | | | | | 0.00 |
| 9400 | 1880.0 | Right Cheek | 23.5 | 23.0 | -0.18 | 0.34 | 0.38 |
| 9538 | 1907.6 | Right Cheek | | | | | 0.00 |
| 9400 | 1880.0 | Right 15° Tilt | | | | | 0.00 |
| 9262 | 1852.4 | Left Cheek | | | | | 0.00 |
| 9400 | 1880.0 | Left Cheek | 23.5 | 23.0 | -0.06 | 0.70 | 0.79 |
| 9538 | 1907.6 | Left Cheek | | | | | 0.00 |
| 9400 | 1880.0 | Left 15° Tilt | | | | | 0.00 |

Table 11.1-8b SAR results for WCDMA FDD II head configuration tested on RGB141LW

| | | | | | |
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| Measured/Extrapolated SAR Values - Head - CDMA 1900 MHz BC1 | | | | | | | |
|---|-------------|----------------|--------------------------|----------|------------------|---------------|--------------|
| Channel | Freq. (MHz) | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | Declared | Measured | | Measured | Extrapolated |
| 25 | 1851.25 | Right Cheek | 24.0 | 24.0 | 0.02 | 1.11 | 1.11 |
| 600 | 1880.00 | Right Cheek | 24.0 | 24.0 | 0.07 | 1.27 | 1.27 |
| 600 | 1880.00 | Right Cheek* | 24.0 | 24.0 | 0.03 | 1.33 | 1.33 |
| 1175 | 1908.50 | Right Cheek | 24.0 | 23.9 | -0.10 | 1.17 | 1.20 |
| 600 | 1880.00 | Right 15° Tilt | 24.0 | 24.0 | 0.06 | 0.39 | 0.39 |
| 25 | 1851.25 | Left Cheek | 24.0 | 24.0 | 0.07 | 0.58 | 0.58 |
| 600 | 1880.00 | Left Cheek | 24.0 | 24.0 | 0.07 | 0.73 | 0.73 |
| 1175 | 1908.50 | Left Cheek | 24.0 | 23.9 | -0.09 | 0.63 | 0.64 |
| 600 | 1880.00 | Left 15° Tilt | 24.0 | 24.0 | 0.03 | 0.42 | 0.42 |

*2nd Scan

Table 11.1-9 SAR results for CDMA 1900 BC1 head configuration tested on RGB141LW

| Measured/Extrapolated SAR Values - Head - 802.11b/g 2450 MHz Full Power | | | | | | | |
|---|-------------|----------------|--------------------------|----------|------------------|---------------|--------------|
| Channel | Freq. (MHz) | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | Declared | Measured | | Measured | Extrapolated |
| 1 | 2412.0 | Right Cheek | 16.5 | 16.3 | 0.02 | 0.67 | 0.70 |
| 6 | 2437.0 | Right Cheek | 16.5 | 16.4 | 0.37 | 0.75 | 0.77 |
| 11 (b) | 2462.0 | Right Cheek | 16.5 | 15.5 | 0.09 | 0.48 | 0.60 |
| 1 | 2412.0 | Right 15° Tilt | 16.5 | 16.3 | 0.00 | 0.81 | 0.85 |
| 6 | 2437.0 | Right 15° Tilt | 16.5 | 16.4 | 0.03 | 0.88 | 0.90 |
| 11 (b) | 2462.0 | Right 15° Tilt | 16.5 | 15.5 | 0.00 | 0.58 | 0.73 |
| 1 | 2412.0 | Left Cheek | 16.5 | | | | 0.00 |
| 6 | 2437.0 | Left Cheek | 16.5 | 16.4 | -0.03 | 0.45 | 0.46 |
| 11 | 2462.0 | Left Cheek | 16.5 | | | | 0.00 |
| 6 | 2437.0 | Left 15° Tilt | 16.5 | 16.4 | 0.02 | 0.50 | 0.51 |

Table 11.1-10a SAR results for WiFi/WLAN/802.11b/g head configuration at full power tested on RGB141LW

| | | | | | |
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| Measured/Extrapolated SAR Values - Head - 802.11g 2450 MHz level_CDMA_BC1 Mode | | | | | | | |
|---|----------------|----------------|--------------------------|----------|---------------------|---------------|--------------|
| Channel | Freq. (MHz) | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | Declared | Measured | | Measured | Extrapolated |
| 1 | 2412.0 | Right Cheek | | | | | 0.00 |
| 6 | 2437.0 | Right Cheek | 13.5 | 13.2 | 0.20 | 0.35 | 0.38 |
| 11 | 2462.0 | Right Cheek | | | | | 0.00 |
| 6 | 2437.0 | Right 15° Tilt | 13.5 | 13.2 | 0.22 | 0.43 | 0.46 |
| 1 | 2412.0 | Left Cheek | | | | | 0.00 |
| 6 | 2437.0 | Left Cheek | 13.5 | 13.2 | 0.02 | 0.20 | 0.21 |
| 11 | 2462.0 | Left Cheek | | | | | 0.00 |
| 6 | 2437.0 | Left 15° Tilt | 13.5 | 13.2 | 0.15 | 0.22 | 0.24 |

Table 11.1-10b SAR results for WiFi/WLAN/802.11g head configuration at CDMA_BC1 power level tested on RGB141LW

- There are two fixed Wi-Fi power reductions when transmitting simultaneously with CDMA/SVLTE (data/voice)
 - WiFi at lower CDMA_BC1 power level.
 - WiFi at lower SVLTE_BC1_25 power level.


| Measured/Extrapolated SAR Values - Head - 802.11g 2450 MHz Power Level SVLTE_CDMA_BC1_25 mode | | | | | | Lower | |
|--|----------------|----------------|--------------------------|----------|---------------------|---------------|--------------|
| Channel | Freq. (MHz) | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | Declared | Measured | | Measured | Extrapolated |
| 1 | 2412.0 | Right Cheek | | | | | 0.00 |
| 6 | 2437.0 | Right Cheek | 8.0 | 7.2 | 0.08 | 0.09 | 0.11 |
| 11 | 2462.0 | Right Cheek | | | | | 0.00 |
| 6 | 2437.0 | Right 15° Tilt | 8.0 | 7.2 | 0.14 | 0.11 | 0.13 |
| 1 | 2412.0 | Left Cheek | | | | | 0.00 |
| 6 | 2437.0 | Left Cheek | 8.0 | 7.2 | 0.13 | 0.05 | 0.06 |
| 11 | 2462.0 | Left Cheek | | | | | 0.00 |
| 6 | 2437.0 | Left 15° Tilt | 8.0 | 7.2 | 0.15 | 0.06 | 0.07 |

Table 11.1-10c SAR results for WiFi/WLAN/802.11g head configuration at SVLTE_BC1_25 power level tested on RGB141LW

| | | | | | |
|---|---|---|---|-------------------------------|------------------------|
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| Measured/Extrapolated SAR Values - Head - Bluetooth 2450 MHz | | | | | | | |
|--|-------------|----------------|--------------------------|----------|------------------|---------------|--------------|
| Channel | Freq. (MHz) | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | Declared | Measured | | Measured | Extrapolated |
| 0 | 2402.0 | Right Cheek | 9.5 | 9.5 | 0.23 | 0.10 | 0.10 |
| 39 | 2441.0 | Right Cheek | | | | | 0.00 |
| 78 | 2480.0 | Right Cheek | | | | | 0.00 |
| 0 | 2402.0 | Right 15° Tilt | 9.5 | 9.5 | 0.03 | 0.12 | 0.12 |
| 0 | 2402.0 | Left Cheek | 9.5 | 9.5 | 0.15 | 0.05 | 0.05 |
| 39 | 2441.0 | Left Cheek | | | | | 0.00 |
| 78 | 2480.0 | Left Cheek | | | | | 0.00 |
| 0 | 2402.0 | Left 15° Tilt | 9.5 | 9.5 | 0.23 | 0.05 | 0.05 |


Table 11.1-11 SAR results for Bluetooth head configuration tested on RFX101LW

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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| Measured/Extrapolated SAR Values - Head - 802.11a 5000 MHz | | | | | | | |
|--|-------------|----------------|--------------------------|----------|------------|---------------|--------------|
| Full Power Mode | | | | | | | |
| Channel | Freq. (MHz) | Position | Cond. Output Power (dBm) | | Power | 1g SAR (W/Kg) | |
| | | | Declared | Measured | Drift (dB) | Measured | Extrapolated |
| 36 | 5180.0 | Right Cheek | 16.0 | 15.8 | 0.46 | 0.42 | 0.44 |
| 40 | 5200.0 | Right Cheek | | | | | 0.00 |
| 44 | 5220.0 | Right Cheek | | | | | 0.00 |
| 48 | 5240.0 | Right Cheek | | | | | 0.00 |
| 52 | 5260.0 | Right Cheek | 16.0 | 15.5 | 0.07 | 0.38 | 0.43 |
| 56 | 5280.0 | Right Cheek | | | | | 0.00 |
| 60 | 5300.0 | Right Cheek | | | | | 0.00 |
| 64 | 5320.0 | Right Cheek | | | | | 0.00 |
| 104 | 5520.0 | Right Cheek | 16.0 | 15.4 | 0.41 | 0.54 | 0.62 |
| 116 | 5580.0 | Right Cheek | | | | | 0.00 |
| 124 | 5620.0 | Right Cheek | | | | | 0.00 |
| 136 | 5680.0 | Right Cheek | | | | | 0.00 |
| 140 | 5700.0 | Right Cheek | | | | | 0.00 |
| 149 | 5745.0 | Right Cheek | 16.0 | 15.2 | 0.25 | 0.50 | 0.60 |
| 153 | 5765.0 | Right Cheek | | | | | 0.00 |
| 157 | 5785.0 | Right Cheek | | | | | 0.00 |
| 161 | 5805.0 | Right Cheek | | | | | 0.00 |
| 165 | 5825.0 | Right Cheek | | | | | 0.00 |
| 104 | 5520.0 | Right 15° Tilt | 16.0 | 15.4 | 0.25 | 0.21 | 0.24 |
| 36 | 5180.0 | Left Cheek | 16.0 | 15.8 | 0.08 | 0.13 | 0.14 |
| 40 | 5200.0 | Left Cheek | | | | | 0.00 |
| 44 | 5220.0 | Left Cheek | | | | | 0.00 |
| 48 | 5240.0 | Left Cheek | | | | | 0.00 |
| 52 | 5260.0 | Left Cheek | 16.0 | 15.5 | 0.03 | 0.16 | 0.18 |
| 56 | 5280.0 | Left Cheek | | | | | 0.00 |
| 60 | 5300.0 | Left Cheek | | | | | 0.00 |
| 64 | 5320.0 | Left Cheek | | | | | 0.00 |
| 104 | 5520.0 | Left Cheek | 16.0 | 15.4 | 0.10 | 0.26 | 0.30 |
| 116 | 5580.0 | Left Cheek | | | | | 0.00 |
| 124 | 5620.0 | Left Cheek | | | | | 0.00 |
| 136 | 5680.0 | Left Cheek | | | | | 0.00 |
| 140 | 5700.0 | Left Cheek | | | | | 0.00 |
| 149 | 5745.0 | Left Cheek | 16.0 | 15.2 | 0.15 | 0.29 | 0.35 |
| 153 | 5765.0 | Left Cheek | | | | | 0.00 |
| 157 | 5785.0 | Left Cheek | | | | | 0.00 |
| 161 | 5805.0 | Left Cheek | | | | | 0.00 |
| 165 | 5825.0 | Left Cheek | | | | | 0.00 |
| 149 | 5745.0 | Left 15° Tilt | 16.0 | 15.2 | 0.36 | 0.17 | 0.20 |

Table 11.1-12a SAR results for WiFi/WLAN/802.11a head configuration at full power tested on RFX101LW


Note: Scans done on highest conducted power channels per sub band

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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| Measured/Extrapolated SAR Values - Head - 802.11a/n 5000 MHz CDMA_BC1 power level | | | | | | | |
|--|----------------|----------------|--------------------------|----------|---------------------|---------------|--------------|
| Channel | Freq. (MHz) | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | Declared | Measured | | Measured | Extrapolated |
| 36 | 5180.0 | Right Cheek | 13.0 | 13.0 | 0.11 | 0.22 | 0.22 |
| 40 | 5200.0 | Right Cheek | | | | | 0.00 |
| 44 | 5220.0 | Right Cheek | | | | | 0.00 |
| 48 | 5240.0 | Right Cheek | | | | | 0.00 |
| 52 | 5260.0 | Right Cheek | 13.0 | 12.9 | 0.16 | 0.27 | 0.28 |
| 56 | 5280.0 | Right Cheek | | | | | 0.00 |
| 60 | 5300.0 | Right Cheek | | | | | 0.00 |
| 64 | 5320.0 | Right Cheek | | | | | 0.00 |
| 104 (a) | 5520.0 | Right Cheek | 13.0 | 12.6 | 0.11 | 0.33 | 0.36 |
| 104 (n) | 5520.0 | Right Cheek | 13.0 | 13.0 | -0.15 | 0.24 | 0.24 |
| 116 | 5580.0 | Right Cheek | | | | | 0.00 |
| 124 | 5620.0 | Right Cheek | | | | | 0.00 |
| 136 | 5680.0 | Right Cheek | | | | | 0.00 |
| 140 | 5700.0 | Right Cheek | | | | | 0.00 |
| 149 | 5745.0 | Right Cheek | 13.0 | 12.5 | 0.08 | 0.19 | 0.21 |
| 153 | 5765.0 | Right Cheek | | | | | 0.00 |
| 157 | 5785.0 | Right Cheek | | | | | 0.00 |
| 161 | 5805.0 | Right Cheek | | | | | 0.00 |
| 165 | 5825.0 | Right Cheek | | | | | 0.00 |
| 104 | 5520.0 | Right 15° Tilt | | | | | 0.00 |
| 36 | 5180.0 | Left Cheek | | | | | 0.00 |
| 40 | 5200.0 | Left Cheek | | | | | 0.00 |
| 44 | 5220.0 | Left Cheek | | | | | 0.00 |
| 48 | 5240.0 | Left Cheek | | | | | 0.00 |
| 52 | 5260.0 | Left Cheek | | | | | 0.00 |
| 56 | 5280.0 | Left Cheek | | | | | 0.00 |
| 60 | 5300.0 | Left Cheek | | | | | 0.00 |
| 64 | 5320.0 | Left Cheek | | | | | 0.00 |
| 104 | 5520.0 | Left Cheek | 13.0 | 12.6 | -0.05 | 0.08 | 0.09 |
| 116 | 5580.0 | Left Cheek | | | | | 0.00 |
| 124 | 5620.0 | Left Cheek | | | | | 0.00 |
| 136 | 5680.0 | Left Cheek | | | | | 0.00 |
| 140 | 5700.0 | Left Cheek | | | | | 0.00 |
| 149 | 5745.0 | Left Cheek | | | | | 0.00 |
| 153 | 5765.0 | Left Cheek | | | | | 0.00 |
| 157 | 5785.0 | Left Cheek | | | | | 0.00 |
| 161 | 5805.0 | Left Cheek | | | | | 0.00 |
| 165 | 5825.0 | Left Cheek | | | | | 0.00 |


Table 11.1-12b SAR results for WiFi/WLAN/802.11a head configuration at CDMA_BC1 power level tested on RGB141LW

- There are two fixed Wi-Fi power reductions when transmitting simultaneously with CDMA/SVLTE (data/voice)
 - WiFi at lower CDMA_BC1 power level.
 - WiFi at lower SVLTE_BC1_25 power level.

| | | | | | |
|---|---|---|-------------------------------|------------------------|--|
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| Measured/Extrapolated SAR Values - Head - 802.11a/n 5000 MHz SVLTE_CDMA_BC1_25 power level | | | | | | | |
|---|----------------|----------------|--------------------------|----------|---------------------|---------------|--------------|
| Channel | Freq. (MHz) | Position | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | Declared | Measured | | Measured | Extrapolated |
| 36 | 5180.0 | Right Cheek | 9.0 | 7.6 | 0.01 | 0.03 | 0.04 |
| 40 | 5200.0 | Right Cheek | | | | | 0.00 |
| 44 | 5220.0 | Right Cheek | | | | | 0.00 |
| 48 | 5240.0 | Right Cheek | | | | | 0.00 |
| 52 | 5260.0 | Right Cheek | 9.0 | 7.4 | 0.18 | 0.03 | 0.04 |
| 56 | 5280.0 | Right Cheek | | | | | 0.00 |
| 60 | 5300.0 | Right Cheek | | | | | 0.00 |
| 64 | 5320.0 | Right Cheek | | | | | 0.00 |
| 104 | 5520.0 | Right Cheek | 9.0 | 8.0 | -0.06 | 0.05 | 0.06 |
| 116 | 5580.0 | Right Cheek | | | | | 0.00 |
| 124 | 5620.0 | Right Cheek | | | | | 0.00 |
| 136 | 5680.0 | Right Cheek | | | | | 0.00 |
| 140 | 5700.0 | Right Cheek | | | | | 0.00 |
| 149 | 5745.0 | Right Cheek | 9.0 | 7.7 | -0.01 | 0.05 | 0.07 |
| 153 | 5765.0 | Right Cheek | | | | | 0.00 |
| 157 | 5785.0 | Right Cheek | | | | | 0.00 |
| 161 | 5805.0 | Right Cheek | | | | | 0.00 |
| 165 | 5825.0 | Right Cheek | | | | | 0.00 |
| 104 | 5520.0 | Right 15° Tilt | | | | | 0.00 |
| 36 | 5180.0 | Left Cheek | | | | | 0.00 |
| 40 | 5200.0 | Left Cheek | | | | | 0.00 |
| 44 | 5220.0 | Left Cheek | | | | | 0.00 |
| 48 | 5240.0 | Left Cheek | | | | | 0.00 |
| 52 | 5260.0 | Left Cheek | | | | | 0.00 |
| 56 | 5280.0 | Left Cheek | | | | | 0.00 |
| 60 | 5300.0 | Left Cheek | | | | | 0.00 |
| 64 | 5320.0 | Left Cheek | | | | | 0.00 |
| 104 | 5520.0 | Left Cheek | 9.0 | 8.0 | 0.02 | 0.02 | 0.03 |
| 116 | 5580.0 | Left Cheek | | | | | 0.00 |
| 124 | 5620.0 | Left Cheek | | | | | 0.00 |
| 136 | 5680.0 | Left Cheek | | | | | 0.00 |
| 140 | 5700.0 | Left Cheek | | | | | 0.00 |
| 149 | 5745.0 | Left Cheek | | | | | 0.00 |
| 153 | 5765.0 | Left Cheek | | | | | 0.00 |
| 157 | 5785.0 | Left Cheek | | | | | 0.00 |
| 161 | 5805.0 | Left Cheek | | | | | 0.00 |
| 165 | 5825.0 | Left Cheek | | | | | 0.00 |
| 149 | 5745.0 | Left 15° Tilt | | | | | 0.00 |

Table 11.1-12c SAR results for WiFi/WLAN/802.11a head configuration at SVLTE_BC1_25 power level tested on RGB141LW

| | | | | | |
|---|---|---|---|-------------------------------|------------------------|
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11.2 SAR measurement results at highest power measured against the body using accessories

| Measured/Extrapolated SAR Values - Hotspot/Body-Worn - GSM/EDGE/GPRS 850 MHz | | | | | | | | | |
|--|-------------|------------|-----------------------|---------------------|--------------------------|----------|------------------|---------------|--------------|
| Ch. | Freq. (MHz) | Time Slots | spacing (cm)/ holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | | Declared | Measured | | Measured | Extrapolated |
| Hotspot | | | | | | | | | |
| 128 | 824.2 | 1 | 1.0 | Back | | | | | 0.00 |
| 190 | 836.6 | 1 | 1.0 | Back | 32.5 | 32.1 | 0.08 | 0.64 | 0.70 |
| 251 | 848.8 | 1 | 1.0 | Back | | | | | 0.00 |
| 190 | 836.6 | 2 | 1.0 | Back | 30.0 | 29.9 | 0.04 | 0.78 | 0.80 |
| 128 | 824.2 | 3 | 1.0 | Back | 29.0 | 29.0 | -0.03 | 0.78 | 0.78 |
| 190 | 836.6 | 3 | 1.0 | Back | 29.0 | 28.7 | -0.06 | 0.97 | 1.04 |
| 190 | 836.6 | 3 | 1.0 | Back* | 29.0 | 28.7 | -0.04 | 0.96 | 1.03 |
| 251 | 848.8 | 3 | 1.0 | Back | 29.0 | 28.9 | 0.01 | 0.92 | 0.94 |
| 190 | 836.6 | 4 | 1.0 | Back | 27.0 | 26.8 | -0.04 | 0.81 | 0.85 |
| 190 | 836.6 | 3 | 1.0 | Front | 29.0 | 28.7 | -0.02 | 0.75 | 0.80 |
| 190 | 836.6 | 3 | 1.0 | Left | 29.0 | 28.7 | 0.08 | 0.52 | 0.56 |
| 190 | 836.6 | 3 | 1.0 | Right | 29.0 | 28.7 | 0.06 | 0.39 | 0.42 |
| 190 | 836.6 | 3 | 1.0 | Bottom | 29.0 | 28.7 | -0.01 | 0.27 | 0.29 |
| 190 | 836.6 | 3 | 1.0 | +HS | | | | | 0.00 |
| Body-worn | | | | | | | | | |
| 190 | 836.6 | 3 | 1.5 | Back | 29.0 | 28.7 | -0.03 | 0.65 | 0.70 |
| 190 | 836.6 | 3 | 1.5 | Front | 29.0 | 28.7 | 0.03 | 0.59 | 0.63 |
| 190 | 836.6 | 3 | Holster | Back | 29.0 | 28.7 | -0.08 | 0.55 | 0.59 |

*2nd Scan

Table 11.2-1a SAR results for GSM/EDGE/GPRS 850 body-worn and Hotspot configuration tested on RFX101LW

Note 1: SAR data was taken on model RFX101LW due to the same WiFi/BT design, PCB, and Cellular/WiFi/BT antennas as RGB141LW. Please refer to the hardware similarity document for more details.

Note 2: For all common bands between RFX101LW and RGB141LW, SAR was spot-checked on RGB141LW due to different antenna tuning on GSM/EDGE/GPRS/UMTS/LTE modes/bands. Please refer to the hardware similarity document for more details.


Note 3: If the power drift is ≤ -0.200 dB, the extrapolated SAR is calculated using the formula:

$$\text{Extrapolated SAR} = (\text{Measured SAR}) * 10^{(|\text{Power Drift (dB)}| / 10)}$$

Note 4: Only Middle channel was tested when 1g Average SAR < 0.8 W/Kg or 3dB lower than the limit.

Note 5: Device was tested with 15 mm BLACKBERRY recommended separation distance to allow typical after-market holster to be used. BLACKBERRY body-worn holsters with belt-clip have been designed to maintain ~ 20 mm separation distance from body.

Note 6: For Hot Spot mode any side of the phone that is further than 2.5 cm away from the transmitting antenna can be exempted from testing.


| | | | | | |
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| Measured/Extrapolated SAR Values - Hotspot/Body-Worn - GSM/EDGE/GPRS 850 MHz | | | | | | | | | |
|--|-------------|------------|----------------------|---------------------|--------------------------|----------|------------------|---------------|--------------|
| Ch. | Freq. (MHz) | Time Slots | spacing (cm)/holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | | Declared | Measured | | Measured | Extrapolated |
| Hotspot | | | | | | | | | |
| 128 | 824.2 | 1 | 1.0 | Back | | | | | 0.00 |
| 190 | 836.6 | 1 | 1.0 | Back | | | | | 0.00 |
| 251 | 848.8 | 1 | 1.0 | Back | | | | | 0.00 |
| 190 | 836.6 | 2 | 1.0 | Back | | | | | 0.00 |
| 190 | 836.6 | 3 | 1.0 | Back | 29.0 | 28.7 | -0.04 | 0.73 | 0.78 |
| 190 | 836.6 | 4 | 1.0 | Back | | | | | 0.00 |
| 190 | 836.6 | 2 | 1.0 | Front | | | | | 0.00 |
| 190 | 836.6 | 2 | 1.0 | Left | | | | | 0.00 |
| 190 | 836.6 | 2 | 1.0 | Right | | | | | 0.00 |
| 190 | 836.6 | 2 | 1.0 | Bottom | | | | | 0.00 |
| 190 | 836.6 | 2 | 1.0 | +HS | | | | | 0.00 |
| Body-Worn | | | | | | | | | |
| 190 | 836.6 | 2 | 1.5 | Back | 30.0 | 29.9 | 0.07 | 0.49 | 0.50 |
| 190 | 836.6 | 2 | 1.5 | Front | | | | | 0.00 |

Table 11.2-1b SAR results for GSM/EDGE/GPRS 850 body-worn and Hotspot configuration tested on RGB141LW

| Measured/Extrapolated SAR Values - Hotspot/Body-Worn - WCDMA FDD V 850 MHz | | | | | | | | |
|--|-------------|----------------------|---------------------|--------------------------|----------|------------------|---------------|--------------|
| Ch. | Freq. (MHz) | spacing (cm)/holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Measured | Extrapolated |
| Hotspot | | | | | | | | |
| 4132 | 826.4 | 1.0 | Back | | | | | 0.00 |
| 4182 | 836.4 | 1.0 | Back | 23.5 | 23.1 | -0.11 | 0.50 | 0.55 |
| 4233 | 846.6 | 1.0 | Back | | | | | 0.00 |
| 4182 | 836.4 | 1.0 | Front | 23.5 | 23.1 | -0.01 | 0.44 | 0.48 |
| 4182 | 836.4 | 1.0 | Left | 23.5 | 23.1 | -0.08 | 0.32 | 0.35 |
| 4182 | 836.4 | 1.0 | Right | 23.5 | 23.1 | -0.07 | 0.26 | 0.29 |
| 4182 | 836.4 | 1.0 | Bottom | 23.5 | 23.1 | 0.01 | 0.16 | 0.18 |
| 4182 | 836.4 | 1.0 | +HS | | | | | 0.00 |
| Body-Worn | | | | | | | | |
| 4182 | 836.4 | 1.5 | Back | 23.5 | 23.1 | -0.01 | 0.38 | 0.42 |
| 4182 | 836.4 | 1.5 | Front | 23.5 | 23.1 | -0.01 | 0.34 | 0.37 |
| 4182 | 836.4 | Holster | Back | 23.5 | 23.1 | 0.02 | 0.28 | 0.31 |
| | | | | | | | | |

Table 11.2-2a SAR results for WCDMA FDD V body-worn and Hotspot configuration tested on RFX101LW

| | | | | | |
|---|---|---|---|-------------------------------|------------------------|
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| Measured/Extrapolated SAR Values - Hotspot/Body-Worn - WCDMA FDD V 850 MHz | | | | | | | | |
|--|-------------|----------------------|---------------------|--------------------------|----------|------------------|---------------|--------------|
| Ch. | Freq. (MHz) | spacing (cm)/holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Measured | Extrapolated |
| Hotspot | | | | | | | | |
| 4132 | 826.4 | 1.0 | Back | | | | | 0.00 |
| 4182 | 836.4 | 1.0 | Back | 23.5 | 23.1 | 0.01 | 0.56 | 0.61 |
| 4233 | 846.6 | 1.0 | Back | | | | | 0.00 |
| 4182 | 836.4 | 1.0 | Front | | | | | 0.00 |
| 4182 | 836.4 | 1.0 | Left | | | | | 0.00 |
| 4182 | 836.4 | 1.0 | Right | | | | | 0.00 |
| 4182 | 836.4 | 1.0 | Bottom | | | | | 0.00 |
| 4182 | 836.4 | 1.0 | +HS | | | | | 0.00 |
| Body-Worn | | | | | | | | |
| 4182 | 836.4 | 1.5 | Back | 23.5 | 23.1 | 0.05 | 0.36 | 0.39 |

Table 11.2-2b SAR results for WCDMA FDD V body-worn and Hotspot configuration tested on RGB141LW

| Measured/Extrapolated SAR Values - Hotspot/Body-Worn - CDMA 800 MHz | | | | | | | | |
|---|-------------|-----------------------|---------------------|--------------------------|----------|------------------|---------------|--------------|
| Ch. | Freq. (MHz) | spacing (cm)/ holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Measured | Extrapolated |
| Hotspot | | | | | | | | |
| 476 | 817.9 | 1.0 | Back | 24.5 | 24.5 | -0.16 | 0.94 | 0.94 |
| 580 | 820.5 | 1.0 | Back | 24.5 | 24.3 | -0.19 | 0.91 | 0.95 |
| 684 | 823.1 | 1.0 | Back | 24.5 | 24.3 | 0.03 | 0.95 | 0.99 |
| 684 | 823.1 | 1.0 | Back* | 24.5 | 24.3 | 0.03 | 0.95 | 0.99 |
| 580 | 820.5 | 1.0 | Front | 24.5 | 24.3 | 0.04 | 0.61 | 0.64 |
| 580 | 820.5 | 1.0 | Left | 24.5 | 24.3 | 0.03 | 0.29 | 0.30 |
| 580 | 820.5 | 1.0 | Right | 24.5 | 24.3 | 0.09 | 0.39 | 0.41 |
| 580 | 820.5 | 1.0 | Bottom | 24.5 | 24.3 | 0.09 | 0.45 | 0.47 |
| 580 | 820.5 | 1.0 | +HS | | | | | 0.00 |
| Body-Worn | | | | | | | | |
| 580 | 820.5 | 1.5 | Back | 24.5 | 24.3 | 0.04 | 0.59 | 0.62 |
| 580 | 820.5 | 1.5 | Front | 24.5 | 24.3 | 0.01 | 0.43 | 0.45 |
| 580 | 820.5 | Holster | Back | 24.5 | 24.3 | 0.10 | 0.43 | 0.45 |

*2nd Scan

Table 11.2-3 SAR results for CDMA 800 BC10 body-worn and Hotspot configuration tested on RGB141LW

| | | | | | |
|---|---|---|---|-------------------------------|------------------------|
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| Measured/Extrapolated SAR Values - Hotspot/Body-Worn - CDMA 850 MHz | | | | | | | | |
|---|-------------|-----------------------|---------------------|--------------------------|----------|------------------|---------------|--------------|
| Ch. | Freq. (MHz) | spacing (cm)/ holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Measured | Extrapolated |
| Hotspot | | | | | | | | |
| 1013 | 824.7 | 1.0 | Back | 24.5 | 24.4 | 0.11 | 0.98 | 1.00 |
| 1013 | 824.7 | 1.0 | Back* | 24.5 | 24.4 | 0.07 | 1.00 | 1.02 |
| 384 | 836.5 | 1.0 | Back | 24.5 | 24.1 | 0.07 | 0.82 | 0.90 |
| 777 | 848.5 | 1.0 | Back | 24.5 | 24.1 | 0.06 | 0.86 | 0.94 |
| 384 | 836.5 | 1.0 | Front | 24.5 | 24.1 | -0.09 | 0.65 | 0.71 |
| 384 | 836.5 | 1.0 | Left | 24.5 | 24.1 | 0.00 | 0.27 | 0.30 |
| 384 | 836.5 | 1.0 | Right | 24.5 | 24.1 | 0.10 | 0.33 | 0.36 |
| 384 | 836.5 | 1.0 | Bottom | 24.5 | 24.1 | 0.05 | 0.36 | 0.39 |
| 384 | 836.5 | 1.0 | +HS | | | | | 0.00 |
| Body-Worn | | | | | | | | |
| 384 | 836.5 | 1.5 | Back | 24.5 | 24.1 | 0.03 | 0.56 | 0.61 |
| 384 | 836.5 | 1.5 | Front | 24.5 | 24.1 | 0.01 | 0.43 | 0.47 |
| 384 | 836.5 | Holster | Back | 24.5 | 24.1 | -0.01 | 0.40 | 0.44 |

*2nd Scan

Table 11.2-4 SAR results for CDMA 850 BC0 body-worn and Hotspot configuration tested on RGB141LW

| Measured/Extrapolated SAR Values - Body-Worn - SVLTE Band 25 1900 MHz | | | | | | | | | | | |
|---|-------------|-----------------------|------|------|-----------|---------------------|--------------------------|----------|------------------|---------------|--------------|
| Channel | Freq. (MHz) | Spacing (cm)/ Holster | Mod. | RB # | RB Offset | Side facing phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | | | | Declared | Measured | | Measured | Extrapolated |
| Body-Worn | | | | | | | | | | | |
| 26140 | 1860.0 | 1.5 | QPSK | 1 | 50 | Back | | | | | 0.00 |
| 26140 | 1860.0 | 1.5 | QPSK | 50 | 50 | Back | 18.0 | 17.8 | 0.11 | 0.11 | 0.12 |
| 26365 | 1882.5 | 1.5 | QPSK | 100 | 0 | Back | | | | | 0.00 |
| 26140 | 1860.0 | 1.5 | QPSK | 50 | 50 | Front | 18.0 | 17.8 | 0.09 | 0.10 | 0.10 |
| 26140 | 1860.0 | Holster | QPSK | 50 | 50 | Back | 18.0 | 17.8 | 0.03 | 0.00 | 0.00 |

Table 11.2-5 SAR results for SVLTE band 25 (20MHz BW) body-worn configuration tested on RGB141LW

Note 1: If the power drift is ≤ -0.200 dB, the extrapolated SAR is calculated using the formula:


$$\text{Extrapolated SAR} = (\text{Measured SAR}) * 10^{(|\text{Power Drift (dB)}| / 10)}$$

Note 2: Only Middle channel was tested when 1g Average SAR <0.8 W/Kg or 3dB lower than the limit.

Note 3: Device was tested with 15 mm BLACKBERRY recommended separation distance to allow typical after-market holster to be used. BLACKBERRY body-worn holsters with belt-clip have been designed to maintain ~ 20 mm separation distance from body.

Note 4: For Hot Spot mode any side of the phone that is further than 2.5 cm away from the transmitting antenna can be exempted from testing.

Note 5: Only required to test the configuration (channel and offset) yielding the highest conducted power for RB 1 and RB 50% when combined 1g avg. SAR <0.8 W/Kg or 3dB lower than the limit for both cases. Also, when the highest conducted power for RB 1 and RB 50% are both greater than RB 100%, then SAR testing for RB 100% can be excluded.

| | | | | | |
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Note 6: If 1g avg. SAR >0.8 W/Kg or not at least 3dB lower than the limit, than the remaining channels for that RB number must be tested and one additional scan must be done with RB 100%. For all additional scans the highest conducted power configuration (channel and offset) must be used.


Note 7: For LTE if SAR > 1.45, then SAR tests for the smaller bandwidths are required

Note 8: Tested only the highest bandwidth since conducted power on other bandwidths is about the same.

Note 9: Did not test 16 QAM as conducted power was lower than QPSK.

| Measured/Extrapolated SAR Values - Hotspot/Body-Worn - LTE Band 25 1900 Mhz | | | | | | | | | | | |
|---|-------------|-----------------------|------|------|-----------|---------------------|--------------------------|----------|------------------|---------------|--------------|
| Channel | Freq. (MHz) | Spacing (cm)/ Holster | Mod. | RB # | RB Offset | Side facing phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | | | | Declared | Measured | | Measured | Extrapolated |
| Hotspot | | | | | | | | | | | |
| 26140 | 1860.0 | 1.0 | QPSK | 1 | 99 | Back | 23.5 | 23.2 | -0.10 | 0.74 | 0.79 |
| 26365 | 1882.5 | 1.0 | QPSK | 1 | 50 | Back | | | | | 0.00 |
| 26590 | 1905.0 | 1.0 | QPSK | 1 | 50 | Back | | | | | 0.00 |
| 26140 | 1860.0 | 1.0 | QPSK | 50 | 50 | Back | 22.5 | 22.2 | 0.02 | 0.79 | 0.85 |
| 26365 | 1882.5 | 1.0 | QPSK | 100 | 0 | Back | 22.5 | 22.1 | -0.07 | 0.71 | 0.78 |
| 26140 | 1860.0 | 1.0 | QPSK | 50 | 50 | Front | 22.5 | 22.2 | 0.09 | 0.41 | 0.44 |
| 26140 | 1860.0 | 1.0 | QPSK | 50 | 50 | Left | 22.5 | 22.2 | -0.01 | 0.25 | 0.27 |
| 26140 | 1860.0 | 1.0 | QPSK | 50 | 50 | Right | 22.5 | 22.2 | 0.01 | 0.09 | 0.10 |
| 26140 | 1860.0 | 1.0 | QPSK | 50 | 50 | Top | | | | | 0.00 |
| 26140 | 1860.0 | 1.0 | QPSK | 50 | 50 | Bottom | 22.5 | 22.2 | 0.01 | 0.09 | 0.10 |
| 26140 | 1860.0 | 1.0 | QPSK | 50 | 50 | +HS | | | | | 0.00 |
| Body-Worn | | | | | | | | | | | |
| 26140 | 1860.0 | 1.5 | QPSK | 1 | 99 | Back | | | | | 0.00 |
| 26140 | 1860.0 | 1.5 | QPSK | 50 | 50 | Back | 22.5 | 22.2 | 0.04 | 0.26 | 0.28 |
| 26365 | 1882.5 | 1.5 | QPSK | 100 | 0 | Back | | | | | 0.00 |
| 26140 | 1860.0 | 1.5 | QPSK | 50 | 50 | Front | 22.5 | 22.2 | 0.03 | 0.22 | 0.24 |
| 26140 | 1860.0 | Holster | QPSK | 50 | 50 | Back | 22.5 | 22.2 | 0.19 | 0.28 | 0.30 |
| | | | | | | | | | | | |

Table 11.2-6 SAR results for LTE band 25 (20MHz BW) body-worn and Hotspot configuration tested on RGB141LW

| | | | | | |
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| Measured/Extrapolated SAR Values - Hotspot/Body-Worn - GSM/EDGE/GPRS 1900 MHz | | | | | | | | | |
|---|-------------|------------|----------------------|---------------------|--------------------------|----------|------------------|---------------|--------------|
| Ch. | Freq. (MHz) | Time Slots | spacing (cm)/holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | | Declared | Measured | | Measured | Extrapolated |
| Hotspot | | | | | | | | | |
| 512 | 1850.2 | 1 | 1.0 | Back | | | | | 0.00 |
| 661 | 1880.0 | 1 | 1.0 | Back | 29.0 | 28.9 | -0.03 | 0.65 | 0.67 |
| 810 | 1909.8 | 1 | 1.0 | Back | | | | | 0.00 |
| 661 | 1880.0 | 2 | 1.0 | Back | 28.5 | 28.2 | -0.09 | 0.89 | 0.95 |
| 661 | 1880.0 | 3 | 1.0 | Back | 26.0 | 25.8 | 0.09 | 0.81 | 0.85 |
| 512 | 1850.2 | 4 | 1.0 | Back | 25.5 | 25.4 | 0.04 | 0.88 | 0.90 |
| 661 | 1880.0 | 4 | 1.0 | Back | 25.5 | 25.3 | 0.05 | 0.91 | 0.95 |
| 661 | 1880.0 | 4 | 1.0 | Back* | 25.5 | 25.3 | 0.07 | 0.96 | 1.01 |
| 810 | 1909.8 | 4 | 1.0 | Back | 25.5 | 25.3 | 0.10 | 0.76 | 0.80 |
| 661 | 1880.0 | 4 | 1.0 | Front | 25.5 | 25.3 | 0.05 | 0.59 | 0.62 |
| 661 | 1880.0 | 4 | 1.0 | Left | 25.5 | 25.3 | -0.04 | 0.51 | 0.53 |
| 661 | 1880.0 | 4 | 1.0 | Right | 25.5 | 25.3 | 0.06 | 0.08 | 0.08 |
| 661 | 1880.0 | 4 | 1.0 | Bottom | 25.5 | 25.3 | -0.05 | 0.20 | 0.21 |
| 661 | 1880.0 | 4 | 1.0 | +HS | | | | | 0.00 |
| Body-Worn | | | | | | | | | |
| 661 | 1880.0 | 4 | 1.5 | Back | 25.5 | 25.3 | 0.02 | 0.57 | 0.60 |
| 661 | 1880.0 | 4 | 1.5 | Front | 25.5 | 25.3 | 0.00 | 0.31 | 0.32 |
| 661 | 1880.0 | 4 | Holster | Back | 25.5 | 25.3 | -0.06 | 0.26 | 0.27 |
| | | | | | | | | | |

*2nd Scan

Table 11.2-7a SAR results for GSM/EDGE/DTM 1900 body-worn and Hotspot configuration tested on RFX101LW

| Measured/Extrapolated SAR Values - Hotspot/Body-Worn - GSM/EDGE/GPRS 1900 MHz | | | | | | | | | |
|---|-------------|------------|----------------------|---------------------|--------------------------|----------|------------------|---------------|--------------|
| Ch. | Freq. (MHz) | Time Slots | spacing (cm)/holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | | Declared | Measured | | Measured | Extrapolated |
| Hotspot | | | | | | | | | |
| 512 | 1850.2 | 1 | 1.0 | Back | | | | | 0.00 |
| 661 | 1880.0 | 1 | 1.0 | Back | | | | | 0.00 |
| 810 | 1909.8 | 1 | 1.0 | Back | | | | | 0.00 |
| 661 | 1880.0 | 2 | 1.0 | Back | | | | | 0.00 |
| 661 | 1880.0 | 3 | 1.0 | Back | | | | | 0.00 |
| 661 | 1880.0 | 4 | 1.0 | Back | 25.5 | 25.3 | 0.01 | 0.56 | 0.59 |
| 661 | 1880.0 | 1 | 1.0 | Front | | | | | 0.00 |
| 661 | 1880.0 | 1 | 1.0 | Left | | | | | 0.00 |
| 661 | 1880.0 | 1 | 1.0 | Right | | | | | 0.00 |
| 661 | 1880.0 | 1 | 1.0 | Bottom | | | | | 0.00 |
| 661 | 1880.0 | 1 | 1.0 | +HS | | | | | 0.00 |
| Body-Worn | | | | | | | | | |
| 661 | 1880.0 | 4 | 1.5 | Back | 25.5 | 25.3 | 0.07 | 0.29 | 0.30 |
| 661 | 1880.0 | 1 | 1.5 | Front | | | | | 0.00 |


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Table 11.2-7b SAR results for GSM/EDGE/DTM 1900 body-worn and Hotspot configuration tested on RGB141LW


| Measured/Extrapolated SAR Values - Hotspot/Body-Worn - WCDMA FDD II 1900 MHz | | | | | | | | |
|--|-------------|----------------------|---------------------|--------------------------|----------|------------------|---------------|--------------|
| Ch. | Freq. (MHz) | spacing (cm)/holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Measured | Extrapolated |
| Hotspot | | | | | | | | |
| 9262 | 1852.4 | 1.0 | Back | 23.5 | 23.0 | -0.03 | 1.03 | 1.16 |
| 9400 | 1880.0 | 1.0 | Back | 23.5 | 23.0 | -0.14 | 1.19 | 1.34 |
| 9400 | 1880.0 | 1.0 | Back* | 23.5 | 23.0 | -0.10 | 1.12 | 1.26 |
| 9538 | 1907.6 | 1.0 | Back | 23.5 | 23.0 | 0.13 | 0.94 | 1.05 |
| 9400 | 1880.0 | 1.0 | Front | 23.5 | 23.0 | 0.06 | 0.82 | 0.92 |
| 9400 | 1880.0 | 1.0 | Left | 23.5 | 23.0 | -0.10 | 0.82 | 0.92 |
| 9400 | 1880.0 | 1.0 | Right | 23.5 | 23.0 | 0.03 | 0.11 | 0.12 |
| 9400 | 1880.0 | 1.0 | Bottom | 23.5 | 23.0 | -0.03 | 0.28 | 0.31 |
| 9400 | 1880.0 | 1.0 | +HS | | | | | 0.00 |
| Body-Worn | | | | | | | | |
| 9262 | 1852.4 | 1.5 | Back | 23.5 | 23.0 | -0.10 | 0.61 | 0.68 |
| 9400 | 1880.0 | 1.5 | Back | 23.5 | 23.0 | 0.07 | 0.77 | 0.86 |
| 9538 | 1907.6 | 1.5 | Back | 23.5 | 23.0 | 0.03 | 0.50 | 0.56 |
| 9400 | 1880.0 | 1.5 | Front | 23.5 | 23.0 | 0.00 | 0.43 | 0.48 |

*2nd Scan

Table 11.2-8a SAR results for WCDMA FDD II body-worn and Hotspot configuration tested on RFX101LW

| Measured/Extrapolated SAR Values - Hotspot/Body-Worn - WCDMA FDD II 1900 MHz | | | | | | | | |
|--|-------------|----------------------|---------------------|--------------------------|----------|------------------|---------------|--------------|
| Ch. | Freq. (MHz) | spacing (cm)/holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Measured | Extrapolated |
| Hotspot | | | | | | | | |
| 9262 | 1852.4 | 1.0 | Back | | | | | 0.00 |
| 9400 | 1880.0 | 1.0 | Back | 23.5 | 23.0 | -0.16 | 0.59 | 0.66 |
| 9538 | 1907.6 | 1.0 | Back | | | | | 0.00 |
| 9400 | 1880.0 | 1.0 | Front | | | | | 0.00 |
| 9400 | 1880.0 | 1.0 | Left | | | | | 0.00 |
| 9400 | 1880.0 | 1.0 | Right | | | | | 0.00 |
| 9400 | 1880.0 | 1.0 | Bottom | | | | | 0.00 |
| 9400 | 1880.0 | 1.0 | +HS | | | | | 0.00 |
| Body-Worn | | | | | | | | |
| 9400 | 1880.0 | 1.5 | Back | 23.5 | 23.0 | -0.05 | 0.30 | 0.34 |
| 9400 | 1880.0 | 1.5 | Front | | | | | 0.00 |


Table 11.2-8b SAR results for WCDMA FDD II body-worn and Hotspot configuration tested on RGB141LW

| | | | | | |
|---|---|---|---|-------------------------------|------------------------|
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| Measured/Extrapolated SAR Values - Hotspot/Body-Worn - CDMA 1900 MHz | | | | | | | | |
|--|-------------|-----------------------|---------------------|--------------------------|----------|------------------|---------------|--------------|
| Ch. | Freq. (MHz) | spacing (cm)/ holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Measured | Extrapolated |
| Hotspot | | | | | | | | |
| 25 | 1850.2 | 1.0 | Back | 24.0 | 24.0 | 0.10 | 0.80 | 0.80 |
| 600 | 1880.0 | 1.0 | Back | 24.0 | 24.0 | -0.07 | 0.85 | 0.85 |
| 600 | 1880.0 | 1.0 | Back* | 24.0 | 24.0 | -0.10 | 0.85 | 0.85 |
| 1175 | 1909.8 | 1.0 | Back | 24.0 | 23.9 | -0.05 | 0.72 | 0.74 |
| 25 | 1850.2 | 1.0 | Front | 24.0 | 24.0 | -0.07 | 1.09 | 1.09 |
| 600 | 1880.0 | 1.0 | Front | 24.0 | 24.0 | -0.10 | 1.07 | 1.07 |
| 600 | 1880.0 | 1.0 | Front* | 24.0 | 24.0 | 0.08 | 1.09 | 1.09 |
| 1175 | 1909.8 | 1.0 | Front | 24.0 | 23.9 | 0.10 | 1.08 | 1.11 |
| 600 | 1880.0 | 1.0 | Left | 24.0 | 24.0 | -0.03 | 0.18 | 0.18 |
| 25 | 1850.2 | 1.0 | Right | 24.0 | 24.0 | 0.08 | 0.82 | 0.82 |
| 600 | 1880.0 | 1.0 | Right | 24.0 | 24.0 | -0.03 | 0.87 | 0.87 |
| 1175 | 1909.8 | 1.0 | Right | 24.0 | 23.9 | -0.10 | 0.79 | 0.81 |
| 600 | 1880.0 | 1.0 | Bottom | 24.0 | 24.0 | -0.09 | 0.41 | 0.41 |
| 661 | 1880.0 | 1.0 | HS | | | | | 0.00 |
| Body-Worn | | | | | | | | |
| 600 | 1880.0 | 1.5 | Back | 24.0 | 24.0 | 0.05 | 0.47 | 0.47 |
| 600 | 1880.0 | 1.5 | Front | 24.0 | 24.0 | 0.02 | 0.70 | 0.70 |
| 600 | 1880.0 | Holster | Back | 24.0 | 24.0 | 0.14 | 0.42 | 0.42 |
| | | | | | | | | |

*2nd Scan

Table 11.2-9 SAR results for CDMA 1900 BC1 body-worn and Hotspot configuration tested on RGB141LW

| | | | | | |
|---|---|---|---|-------------------------------|------------------------|
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| Measured/Extrapolated SAR Values - Hotspot/Body-Worn - 802.11g 2450 MHz Full Power Mode | | | | | | | | |
|---|-------------|-----------------------|---------------------|--------------------------|----------|------------------|---------------|--------------|
| Ch. | Freq. (MHz) | spacing (cm)/ holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Measured | Extrapolated |
| Hotspot | | | | | | | | |
| 1 | 2412 | 1.0 | Back | | | | | 0.00 |
| 6 | 2437 | 1.0 | Back | 11.5 | 11.4 | 0.20 | 0.19 | 0.19 |
| 11 | 2462 | 1.0 | Back | | | | | 0.00 |
| 6 | 2437 | 1.0 | Front | 11.5 | 11.4 | 0.43 | 0.05 | 0.05 |
| 6 | 2437 | 1.0 | Left | 11.5 | 11.4 | 0.00 | 0.03 | 0.03 |
| 6 | 2437 | 1.0 | Right | 11.5 | 11.4 | 0.38 | 0.00 | 0.00 |
| 6 | 2437 | 1.0 | Top | 11.5 | 11.4 | 0.01 | 0.09 | 0.09 |
| 6 | 2437 | 1.0 | Bottom | | | | | 0.00 |
| 6 | 2437 | 1.0 | +HS | | | | | 0.00 |
| Body-Worn | | | | | | | | |
| 6 | 2437 | 1.5 | Back | 16.5 | 16.4 | 0.02 | 0.22 | 0.23 |
| 6 | 2437 | 1.5 | Front | 16.5 | 16.4 | -0.10 | 0.07 | 0.07 |
| 6 | 2437 | Holster | Back | 16.5 | 16.4 | -0.01 | 0.11 | 0.11 |

Table 11.2-10a SAR results for WiFi/WLAN/802.11g body-worn and Hotspot configuration tested on RGB141LW at full/maximum power level

| Measured/Extrapolated SAR Values - Body-Worn - 802.11g 2450 MHz CDMA_BC1 power level | | | | | | | | |
|--|-------------|----------------------|---------------------|--------------------------|----------|------------------|---------------|--------------|
| Ch. | Freq. (MHz) | spacing (cm)/holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Measured | Extrapolated |
| 6 | 2437 | 1.5 | Back | 13.5 | 13.2 | 0.07 | 0.12 | 0.13 |
| 6 | 2437 | 1.5 | Front | 13.5 | 13.2 | 0.15 | 0.03 | 0.03 |
| 6 | 2437 | Holster | Back | 13.5 | 13.2 | 0.27 | 0.00 | 0.00 |
| 6 | 2437 | Holster | Front | 13.5 | 13.2 | 0.33 | 0.00 | 0.00 |

Table 11.2-10b SAR results for WiFi/WLAN/802.11g body-worn configuration at CDMA_BC1 power level tested on RGB141LW

- There are two fixed Wi-Fi power reductions when transmitting simultaneously with CDMA/SVLTE (data/voice)
 - WiFi at lower CDMA_BC1 power level.
 - WiFi at lower SVLTE_BC1_25 power level.


| | | | | | |
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| Measured/Extrapolated SAR Values - Body-Worn - 802.11g 2450 MHz SVLTE_CDMA_BC1_25 power level | | | | | | | | |
|--|-------------|----------------------|---------------------|--------------------------|----------|------------------|---------------|--------------|
| Ch. | Freq. (MHz) | spacing (cm)/holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Measured | Extrapolated |
| 6 | 2437 | 1.5 | Back | 8.5 | 7.2 | -0.07 | 0.03 | 0.04 |
| 6 | 2437 | 1.5 | Front | 8.5 | 7.2 | 0.09 | 0.01 | 0.01 |
| 6 | 2437 | Holster | Back | 8.5 | 7.2 | -0.25 | 0.00 | 0.00 |

Table 11.2-10c SAR results for WiFi/WLAN/802.11g body-worn configuration at SVLTE_BC1_25 power level tested on RGB141LW


| Measured/Extrapolated SAR Values - Hotspot/Body-Worn - Bluetooth 2450 MHz | | | | | | | | |
|---|-------------|----------------------|---------------------|--------------------------|----------|------------------|---------------|--------------|
| Ch. | Freq. (MHz) | spacing (cm)/holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Measured | Extrapolated |
| Hotspot | | | | | | | | |
| 2402 | 0 | 1.0 | Back | | | | | 0.00 |
| 2441 | 39 | 1.0 | Back | 9.5 | 9.5 | -0.01 | 0.06 | 0.06 |
| 2480 | 78 | 1.0 | Back | | | | | 0.00 |
| 2441 | 39 | 1.0 | Front | 9.5 | 9.5 | 0.32 | 0.02 | 0.02 |
| 2441 | 39 | 1.0 | Left | | | | | 0.00 |
| 2441 | 39 | 1.0 | Right | | | | | 0.00 |
| 2441 | 39 | 1.0 | Top | 9.5 | 9.5 | 0.16 | 0.03 | 0.03 |
| 2441 | 39 | 1.0 | Bottom | | | | | 0.00 |
| 2441 | 39 | 1.0 | +HS | | | | | 0.00 |
| Body-Worn | | | | | | | | |
| 2441 | 39 | 1.5 | Back | 9.5 | 9.5 | -0.03 | 0.02 | 0.02 |
| 2441 | 39 | 1.5 | Front | | | | | 0.00 |

Table 11.2-11 SAR results for Bluetooth body-worn and Hotspot configuration tested on RFX101LW

| | | | | | |
|---|---|---|-------------------------------|-------------------------|--|
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| Measured/Extrapolated SAR Values - Body-Worn - 802.11a 5000 MHz Full Power Mode | | | | | | | | |
|---|-------------|----------------------|---------------------|--------------------------|----------|------------------|---------------|--------------|
| Ch. | Freq. (MHz) | spacing (cm)/holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Measured | Extrapolated |
| 36 | 5180 | 1.5 | Back | 16.0 | 15.8 | -0.09 | 0.22 | 0.23 |
| 40 | 5200 | 1.5 | Back | | | | | 0.00 |
| 44 | 5220 | 1.5 | Back | | | | | 0.00 |
| 48 | 5240 | 1.5 | Back | | | | | 0.00 |
| 52 | 5260 | 1.5 | Back | 16.0 | 15.5 | -0.09 | 0.23 | 0.26 |
| 56 | 5280 | 1.5 | Back | | | | | 0.00 |
| 60 | 5300 | 1.5 | Back | | | | | 0.00 |
| 64 | 5320 | 1.5 | Back | | | | | 0.00 |
| 104 | 5520 | 1.5 | Back | 16.0 | 15.4 | -0.04 | 0.31 | 0.36 |
| 116 | 5580 | 1.5 | Back | | | | | 0.00 |
| 124 | 5620 | 1.5 | Back | | | | | 0.00 |
| 136 | 5680 | 1.5 | Back | | | | | 0.00 |
| 140 | 5700 | 1.5 | Back | | | | | 0.00 |
| 149 | 5745 | 1.5 | Back | 16.0 | 15.2 | -0.13 | 0.36 | 0.43 |
| 153 | 5765 | 1.5 | Back | | | | | 0.00 |
| 157 | 5785 | 1.5 | Back | | | | | 0.00 |
| 161 | 5805 | 1.5 | Back | | | | | 0.00 |
| 165 | 5825 | 1.5 | Back | | | | | 0.00 |
| 149 | 5745 | 1.5 | Front | 16.0 | 15.2 | -0.13 | 0.06 | 0.07 |
| 149 | 5745 | Holster | Back | 16.0 | 15.2 | 0.08 | 0.54 | 0.65 |
| 149 | 5745 | Holster | Front | 16.0 | 15.2 | -0.03 | 0.08 | 0.10 |
| 149 | 5745 | 1.5 | +HS | | | | | |


Table 11.2-12a SAR results for WiFi/WLAN/802.11a body-worn configuration at full/maximum power tested on RFX101LW

| | | | | | |
|---|---|---|---|-------------------------------|----|
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| Measured/Extrapolated SAR Values - Body-Worn - 802.11a 5000 MHz CDMA_BC1 power level | | | | | | | | |
|---|----------------|-----------------------------|------------------------|--------------------------|----------|---------------------|---------------|--------------|
| Ch. | Freq. (MHz) | spacing (cm)/ holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Measured | Extrapolated |
| 36 | 5180 | 1.5 | Back | 13.0 | 13.0 | -0.19 | 0.06 | 0.06 |
| 40 | 5200 | 1.5 | Back | | | | | 0.00 |
| 44 | 5220 | 1.5 | Back | | | | | 0.00 |
| 48 | 5240 | 1.5 | Back | | | | | 0.00 |
| 52 | 5260 | 1.5 | Back | 13.0 | 12.9 | -0.14 | 0.16 | 0.16 |
| 56 | 5280 | 1.5 | Back | | | | | 0.00 |
| 60 | 5300 | 1.5 | Back | | | | | 0.00 |
| 64 | 5320 | 1.5 | Back | | | | | 0.00 |
| 104 | 5520 | 1.5 | Back | 13.0 | 12.6 | 0.04 | 0.14 | 0.15 |
| 116 | 5580 | 1.5 | Back | | | | | 0.00 |
| 124 | 5620 | 1.5 | Back | | | | | 0.00 |
| 136 | 5680 | 1.5 | Back | | | | | 0.00 |
| 140 | 5700 | 1.5 | Back | | | | | 0.00 |
| 149 | 5745 | 1.5 | Back | 13.0 | 12.5 | -0.01 | 0.07 | 0.08 |
| 153 | 5765 | 1.5 | Back | | | | | 0.00 |
| 157 | 5785 | 1.5 | Back | | | | | 0.00 |
| 161 | 5805 | 1.5 | Back | | | | | 0.00 |
| 165 | 5825 | 1.5 | Back | | | | | 0.00 |
| 149 | 5745 | 1.5 | Front | | | | | 0.00 |
| 149 | 5745 | Holster | Back | 13.0 | 12.5 | -0.09 | 0.09 | 0.10 |
| 149 | 5745 | Holster | Front | | | | | 0.00 |
| 149 | 5745 | 1.5 | +HS | | | | | 0.00 |


Table 11.2-12b SAR results for WiFi/WLAN/802.11a body-worn configuration at CDMA_BC1 power level tested on RGB141LW

- There are two fixed Wi-Fi power reductions when transmitting simultaneously with CDMA/SVLTE (data/voice)
 - 3) WiFi at lower CDMA_BC1 power level.
 - 4) WiFi at lower SVLTE_BC1_25 power level.

| | | | | | |
|---|---|---|---|-------------------------------|----|
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| Measured/Extrapolated SAR Values - Body-Worn - 802.11a 5000 MHz SVLTE_CDMA_BC1_25 power level | | | | | | | | |
|--|----------------|-----------------------------|------------------------|--------------------------|----------|---------------------|---------------|--------------|
| Ch. | Freq. (MHz) | spacing (cm)/ holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Measured | Extrapolated |
| 36 | 5180 | 1.5 | Back | 9.0 | 7.6 | 0.14 | 0.01 | 0.01 |
| 40 | 5200 | 1.5 | Back | | | | | 0.00 |
| 44 | 5220 | 1.5 | Back | | | | | 0.00 |
| 48 | 5240 | 1.5 | Back | | | | | 0.00 |
| 52 | 5260 | 1.5 | Back | 9.0 | 7.4 | -0.18 | 0.02 | 0.03 |
| 56 | 5280 | 1.5 | Back | | | | | 0.00 |
| 60 | 5300 | 1.5 | Back | | | | | 0.00 |
| 64 | 5320 | 1.5 | Back | | | | | 0.00 |
| 104 | 5520 | 1.5 | Back | 9.0 | 8.0 | 0.03 | 0.03 | 0.04 |
| 116 | 5580 | 1.5 | Back | | | | | 0.00 |
| 124 | 5620 | 1.5 | Back | | | | | 0.00 |
| 136 | 5680 | 1.5 | Back | | | | | 0.00 |
| 140 | 5700 | 1.5 | Back | | | | | 0.00 |
| 149 | 5745 | 1.5 | Back | 9.0 | 7.7 | -0.20 | 0.02 | 0.03 |
| 153 | 5765 | 1.5 | Back | | | | | 0.00 |
| 157 | 5785 | 1.5 | Back | | | | | 0.00 |
| 161 | 5805 | 1.5 | Back | | | | | 0.00 |
| 165 | 5825 | 1.5 | Back | | | | | 0.00 |
| 104 | 5520 | 1.5 | Front | | | | | 0.00 |
| 104 | 5520 | Holster | Back | 9.0 | 8.0 | 0.12 | 0.03 | 0.04 |
| 104 | 5520 | Holster | Front | | | | | 0.00 |
| 104 | 5520 | 1.5 | +HS | | | | | 0.00 |

**Table 11.2-12c SAR results for WiFi/WLAN/802.11a body-worn configuration
at SVLTE_BC1_25 power level tested on RGB141LW**

| | | | | | |
|---|---|---|---|-------------------------------|----|
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| Measured/Extrapolated SAR Values - Hotspot - 802.11a 5000-6000 MHz | | | | | | | | |
|--|----------------|-----------------------------|------------------------|--------------------------|----------|---------------------|---------------|----------|
| Ch. | Freq. (MHz) | spacing (cm)/ holster | Side Facing Phantom | Cond. Output Power (dBm) | | Power Drift (dB) | 1g SAR (W/Kg) | |
| | | | | Declared | Measured | | Extrapolated | Reported |
| 36* | 5180 | 1.0 | Back | 11.5 | 11.1 | -0.07 | 0.07 | 0.07 |
| 40 | 5200 | 1.0 | Back | | | | | 0.00 |
| 44 | 5220 | 1.0 | Back | | | | | 0.00 |
| 48* | 5240 | 1.0 | Back | | | | | 0.00 |
| | | | | | | | | |
| 149* | 5745 | 1.0 | Back | 11.5 | 10.8 | -0.20 | 0.12 | 0.14 |
| 153 | 5765 | 1.0 | Back | | | | | 0.00 |
| 157* | 5785 | 1.0 | Back | | | | | 0.00 |
| 161 | 5805 | 1.0 | Back | | | | | 0.00 |
| 165* | 5825 | 1.0 | Back | | | | | 0.00 |
| | | | | | | | | |
| 149* | 5745 | 1.0 | Front | 11.5 | 10.8 | 0.22 | 0.03 | 0.03 |
| 149* | 5745 | 1.0 | Left | 11.5 | 10.8 | 0.05 | 0.12 | 0.14 |
| 149* | 5745 | 1.0 | Right | | | | | 0.00 |
| 149* | 5745 | 1.0 | Top | 11.5 | 10.8 | 0.65 | 0.04 | 0.05 |

Table 11.2-12d SAR results for 802.11a Hotspot configurations

Note 1: Tested only highest output power channel per band

Note 2: * denotes the default channels of each sub band to be tested when reported 1g SAR ≥ 0.8 W/kg.

Note 3: 802.11a/n Hotspot mode does not support channels 52-136.

| | | | | | |
|---|---|---|-------------------------------|-------------------------|--|
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12.0 REFERENCES

- [1] DASY 5 DOSIMETRIC ASSESSMENT SYSTEM SOFTWARE MANUAL, Schmid & Partner Engineering AG.
- [2] FCC 47 CRF Part 2.1093, Radiofrequency radiation exposure evaluation: portable devices. June 18, 2014.
- [3] FCC 96-326, Guidelines for Evaluating the Environmental Effects of Radio-Frequency Radiation.
- [4] Health Canada, Safety Code 6, 2009: Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency range from 3 kHz to 300 GHz.
- [5] IEEE C95.1-1992, IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
- [6] IEEE C95.3-2002, IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields – RF and Microwave.
- [7] IEEE 1528-2013: Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.
- [8] KDB 248227 D01 v01r02, May 2007: FCC OET SAR Measurement Procedures for 802.11 a/b/g Transmitters.
- [9] KDB 447498 D01 v05r02, Feb 2014: FCC OET Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.
- [10] KDB 648474 D04 v01r02, Dec 2013: FCC OET SAR Evaluation Considerations for Wireless Handsets.
- [11] KDB 865664 D01 v01r03, Feb 2014: FCC OET SAR Measurement Requirements for 100 MHz to 6 GHz.
- [12] KDB 865664 D02 v01r01, May 2013: FCC OET RF Exposure Compliance Reporting and Documentation Considerations.
- [13] KDB 941225 D01 v03r00, Oct 2014: FCC OET 3G SAR Measurement Procedures.
- [14] KDB 941225 D05 v02r03, Dec 2013: FCC OET SAR Evaluation Considerations for LTE Devices.
- [15] KDB 941225 D05A v01r01, Aug 2014: FCC OET Rel.10 LTE SAR Test Guidance and KDB Inquires.
- [16] KDB 941225 D06 v02r00, Oct 2014: FCC OET SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities.
- [17] 3GPP TS 36.521-1 V10.0.0 (2011-12): Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: Conformance testing.
- [18] RSS-102, issue 4-2010: Evaluation Procedure for Mobile and Portable Radio Transmitters with respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields.
- [19] ICNIRP, International Commission on Non-Ionizing Radiation Protection (2009), Guidelines for limiting exposure in time-varying electric, magnetic, and electromagnetic fields (up to 300 GHz).
- [20] IEC 62209-1, First Edition-2005: Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures –Part 1: Procedure to determine the specific absorption rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz).
- [21] IEC 62209-2, Edition 1.0-2010: Human exposure to radio frequency fields from hand-held and body-mount 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).