



**FCC OET BULLETIN 65 SUPPLEMENT C 01-01
IEEE Std 1528-2003 and IEEE Std 1528a-2005**

SAR EVALUATION REPORT

For
**Multi-band Radio Module
(Tested inside of Panasonic Laptop PC CF-C2)**

**Model: WW12E
FCC ID: ACJ9TGWW12E**

**Report Number: 12J14610-1B
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NVLAP LAB CODE 200065-0

Revision History

| <u>Rev.</u> | <u>Issue Date</u> | <u>Revisions</u> | <u>Revised By</u> |
|-------------|-------------------|---|-------------------|
| -- | 11/11/2012 | Initial Issue | -- |
| A | 11/13/2012 | <ol style="list-style-type: none"> 1. Sec. 7.3: Updated Simultaneous Transmission table to make the distinction between the two transmit antennas for WLAN. 2. Sec. 12: Corrected the reference for SAR test reduction considerations. 3. Sec. 14: Included estimated SAR results for Bluetooth in Simultaneous Transmission SAR analysis. 4. Sec. 14: Added the "MIMO" descriptor to Wi-Fi 2 Tx Simultaneous Transmission conditions to distinguish this transmit condition from others involving the transmission of just one Wi-Fi antenna. 5. Sec. 17: Identified the WLAN Aux Antenna as also being the transmit antenna for Bluetooth. | Ray Su |
| B | 11/13/2012 | <ol style="list-style-type: none"> 1. Sec. 1: Replaced highest simultaneous transmission results from 1.598 W/kg to 1.56 for grant listing.1 2. Sec .14: Computed and added SPLSR graph for the simultaneous transmission condition with the result of 1.598 3. Sec. 14: Corrected errors in the tabulation of simultaneous transmission data. 4. Sec. 14: Separated Wi-Fi Main and Wi-Fi Aux antennas In SPLSR computation table. 5. Sec. 14: Removed simultaneous transmission data for non-supported scenarios. | Ray Su |

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1. Attestation of Test Results

| | | | |
|--|--|--|--------------|
| Applicant | Panasonic Corporation of North America | | |
| DUT description | Multi-band Radio Module (Tested inside of Panasonic Laptop PC CF-C2) | | |
| Model | WW12E | | |
| Test device is | An identical prototype | | |
| Device category | Portable | | |
| Exposure category | General Population/Uncontrolled Exposure | | |
| Dates tested | 8/29/2012 – 8/30/2012, 9/24/2012 – 9/25/2012, 10/3/2012 – 10/16/2012, 11/2/2012 – 11/7/2012 | | |
| FCC Rule Parts | Freq. Range | Highest 1-g SAR | Limit |
| 22 | 824-849 MHz | 1.222 W/kg (Body Edge 1 w/ 0 mm distance) | 1.6 W/kg |
| 24 | 1850-1910 MHz | 1.351 W/kg (Body Edge 1 w/ 0 mm distance) | |
| 27 | 1710–1755 MHz | 1.38 W/kg (Body Edge 1 w/ 0 mm distance) | |
| Simultaneous Transmission Condition: | | 1.56 W/kg (The highest SAR across exposure conditions) | |
| Applicable Standards | | | Test Results |
| <ul style="list-style-type: none"> - FCC OET Bulletin 65 Supplement C 01-01, - IEEE Std 1528-2003 and IEEE Std 1528a-2005 | | | Pass |
| <p>UL CCS tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.</p> <p>Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government (NIST Handbook 150, Annex A). This report is written to support regulatory compliance of the applicable standards stated above.</p> | | | |
| Approved & Released For UL CCS By: | | Tested By: | |
|  | |  | |
| Dave Weaver Program Manager UL CCS | | Ray Su SAR Engineer UL CCS | |

2. Test Methodology

The tests documented in this report were performed in accordance with FCC OET Bulletin 65 Supplement C Edition 01-01, IEEE STD 1528-2003, IEEE Std 1528a-2005 and the following KDB Procedures:

- 447498 D01 General RF Exposure Guidance v05
- 865664 D01 SAR measurement 100 MHz to 6 GHz v01
- 616217 D04 SAR for laptop and tablets v01
- 941225 D03 SAR Test Reduction GSM GPRS EDGE v01
- 941225 D01 SAR test for 3G devices v02

3. Facilities and Accreditation

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

4. Calibration and Uncertainty

4.1. Measuring Instrument Calibration

The measuring equipment used to perform the tests documented in this report has been calibrated in accordance with the manufacturers' recommendations, and is traceable to recognized national standards.

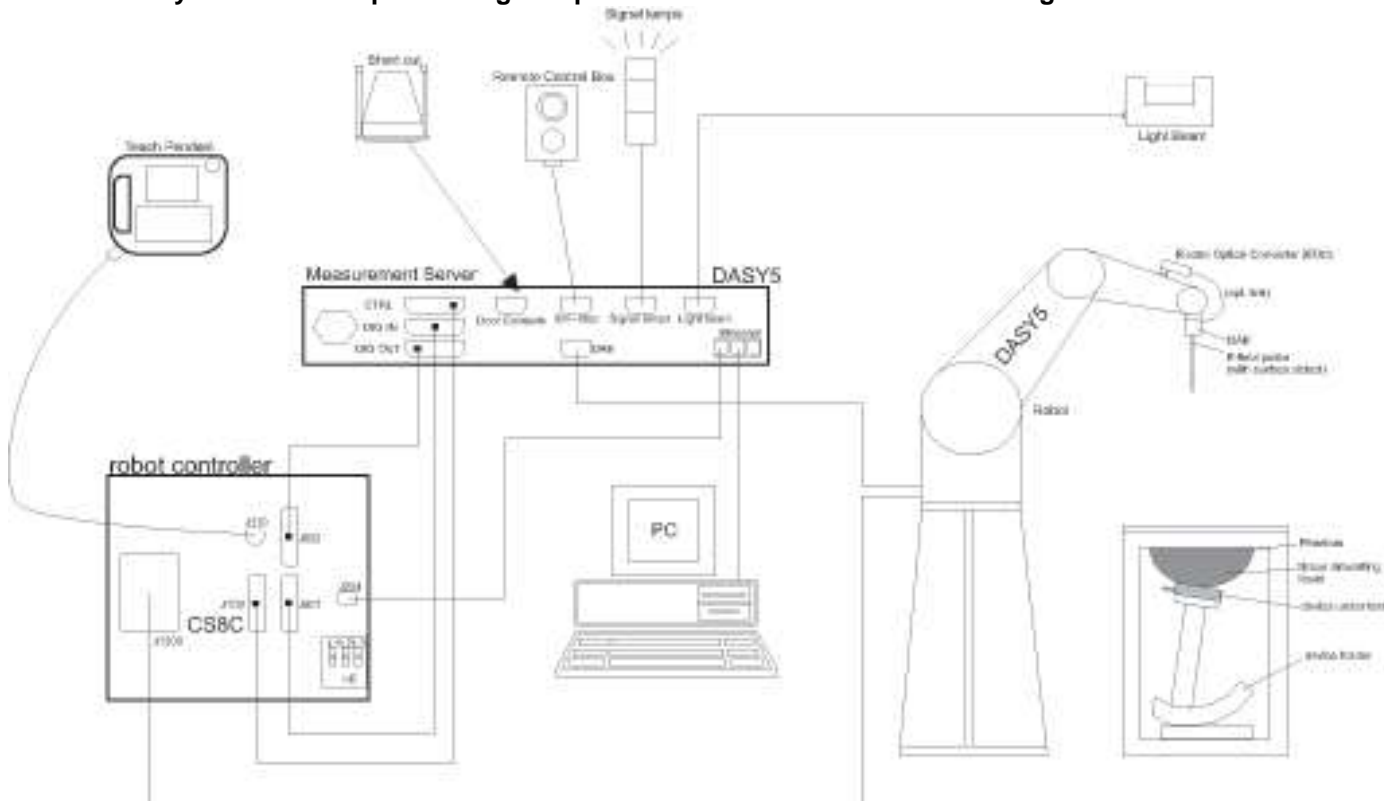
| Name of Equipment | Manufacturer | Type/Model | Serial No. | Cal. Due date | | |
|------------------------------|--------------|-------------------|--------------|---------------|----|------|
| | | | | MM | DD | Year |
| Dielectronic Probe kit | HP | 85070C | N/A | N/A | | |
| Thermometer | ERTCO | 639-1S | 8350 | 7 | 30 | 2013 |
| Base Station Simulator | Agilent | 8960 | GB46160222 | 6 | 20 | 2013 |
| Base Station Simulator | R & S | CMU200 | 106301 | 6 | 6 | 2013 |
| Base Station Simulator | R & S | CMW500 | 10-300233773 | 12 | 14 | 2012 |
| ESA Series Network Analyzer | Agilent | E5071B | MY42100131 | 2 | 11 | 2013 |
| Synthesized Signal Generator | HP | 8665B | 3438A00633 | 2 | 22 | 2013 |
| Power Meter | HP | 438A | 3513U04320 | 9 | 17 | 2013 |
| Power Sensor A | HP | 8481A | 2237A31744 | 8 | 17 | 2013 |
| Power Sensor B | HP | 8481A | 3318A95392 | 8 | 17 | 2013 |
| Amplifier | MITEQ | 4D00400600-50-30P | 1622052 | N/A | | |
| Directional coupler | Werlatone | C8060-102 | 2149 | N/A | | |
| E-Field Probe | SPEAG | EX3DV4 | 3749 | 1 | 27 | 2013 |
| E-Field Probe | SPEAG | EX3DV4 | 3772 | 2 | 16 | 2013 |
| E-Field Probe | SPEAG | EX3DV4 | 3773 | 3 | 14 | 2013 |
| Data Acquisition Electronics | SPEAG | DAE3 | 500 | 6 | 13 | 2013 |
| Data Acquisition Electronics | SPEAG | DAE4 | 1258 | 3 | 8 | 2013 |
| Data Acquisition Electronics | SPEAG | DAE4 | 1239 | 6 | 6 | 2013 |
| System Validation Dipole | SPEAG | D835V2 | 4d117 | 4 | 10 | 2013 |
| System Validation Dipole | SPEAG | D1750V2 | 1050 | 4 | 19 | 2013 |
| System Validation Dipole | SPEAG | D1900V2 | 5d140 | 4 | 18 | 2013 |

4.2. Measurement Uncertainty

| Measurement uncertainty for 300 MHz to 3 GHz averaged over 1 gram | | | | | |
|---|----------|--------------|---------|-------------|-----------|
| Component | Error, % | Distribution | Divisor | Sensitivity | U (Xi), % |
| Measurement System | | | | | |
| Probe Calibration (k=1) | 6.00 | Normal | 1 | 1 | 6.00 |
| Axial Isotropy | 1.15 | Rectangular | 1.732 | 0.7071 | 0.47 |
| Hemispherical Isotropy | 2.30 | Rectangular | 1.732 | 0.7071 | 0.94 |
| Boundary Effect | 0.90 | Rectangular | 1.732 | 1 | 0.52 |
| Probe Linearity | 3.45 | Rectangular | 1.732 | 1 | 1.99 |
| System Detection Limits | 1.00 | Rectangular | 1.732 | 1 | 0.58 |
| Readout Electronics | 0.30 | Normal | 1 | 1 | 0.30 |
| Response Time | 0.80 | Rectangular | 1.732 | 1 | 0.46 |
| Integration Time | 2.60 | Rectangular | 1.732 | 1 | 1.50 |
| RF Ambient Conditions - Noise | 3.00 | Rectangular | 1.732 | 1 | 1.73 |
| RF Ambient Conditions - Reflections | 3.00 | Rectangular | 1.732 | 1 | 1.73 |
| Probe Positioner Mechanical Tolerance | 0.40 | Rectangular | 1.732 | 1 | 0.23 |
| Probe Positioning with respect to Phantom | 2.90 | Rectangular | 1.732 | 1 | 1.67 |
| Extrapolation, Interpolation and Integration | 1.00 | Rectangular | 1.732 | 1 | 0.58 |
| Test Sample Related | | | | | |
| Test Sample Positioning | 2.90 | Normal | 1 | 1 | 2.90 |
| Device Holder Uncertainty | 3.60 | Normal | 1 | 1 | 3.60 |
| Output Power Variation - SAR Drift | 5.00 | Rectangular | 1.732 | 1 | 2.89 |
| Phantom and Tissue Parameters | | | | | |
| Phantom Uncertainty (shape and thickness) | 4.00 | Rectangular | 1.732 | 1 | 2.31 |
| Liquid Conductivity - deviation from target | 5.00 | Rectangular | 1.732 | 0.64 | 1.85 |
| Liquid Conductivity - measurement | 4.88 | Normal | 1 | 0.64 | 3.12 |
| Liquid Permittivity - deviation from target | 5.00 | Rectangular | 1.732 | 0.6 | 1.73 |
| Liquid Permittivity - measurement uncertainty | -4.46 | Normal | 1 | 0.6 | -2.68 |
| Combined Standard Uncertainty Uc(y) = | | | | | 10.57 |
| Expanded Uncertainty U, Coverage Factor = 2, > 95 % Confidence = | | | | 21.15 % | |
| Expanded Uncertainty U, Coverage Factor = 2, > 95 % Confidence = | | | | 1.67 dB | |

5. Measurement System Description and Setup

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



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

6. SAR Measurement Procedure

6.1. Normal SAR Measurement Procedure

Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 2.1 mm. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

Step 2: Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE Standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan). If only one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of Zoom Scans has to be increased accordingly.

Step 3: Zoom Scan

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The Zoom Scan measures $\geq 7 \times 7 \times 9$ (above 4.5 GHz) or $5 \times 5 \times 7$ (below 3 GHz) points within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the Zoom Scan evaluates the averaged SAR for 1 g and 10 g and displays these values next to the job's label.

Step 4: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

Step 5: Z-Scan (FCC only)

The Z Scan measures points along a vertical straight line. The line runs along the Z-axis of a one-dimensional grid. In order to get a reasonable extrapolation the extrapolated distance should not be larger than the step size in Z-direction.

6.2. Volume Scan Procedures

Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 2.1 mm. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

Step 2: Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE Standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan). If only one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of Zoom Scans has to be increased accordingly.

Step 3: Zoom Scan

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The Zoom Scan measures $\geq 7 \times 7 \times 9$ (above 4.5 GHz) or $5 \times 5 \times 7$ (below 3 GHz) points within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the Zoom Scan evaluates the averaged SAR for 1 g and 10 g and displays these values next to the job's label.

Step 4: Volume Scan

Volume Scans are used to assess peak SAR and averaged SAR measurements in largely extended 3-dimensional volumes within any phantom. This measurement does not need any previous area scan. The grid can be anchored to a user specific point or to the current probe location.

Step 5: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

7. Device Under Test

| | |
|---|---|
| Multi-band Radio Module (Tested inside of Panasonic Laptop PC CF-C2) Model: WW12E | |
| Operating Configuration(s) | - Laptop Mode - Tablet Mode |
| Exposure Condition(s) | - The device is used in close proximity to the body. Specific details of the required test positions are provided in Section 8 "Summary of Test Configurations" |
| Accessory | None |

7.1. Wireless Technologies

| | |
|-----------------------------------|---|
| Wireless Mode and Frequency Bands | - GSM850: 824 - 849 MHz - GSM1900: 1850 - 1910 MHz - W-CDMA Band V: 824 - 849 MHz - W-CDMA Band IV: 1710 - 1755 MHz - W-CDMA Band II: 1850 - 1910 MHz - CDMA BC 0: 824 - 849 MHz - CDMA BC 1: 1850 - 1910 MHz - 802.11ab/g/n: 2412 - 2462 MHz, b / g / HT20 / HT40 5150 - 5250 MHz, a / HT20 / HT40 5250 - 5350 MHz, a / HT20 / HT40 5500 - 5700 MHz, a / HT20 / HT40 5725 - 5850 MHz, a / HT20 / HT40 - Bluetooth: 2402 - 2480 MHz |
| GPRS Multi-Slot Class: | 10 |
| GPRS Class: | B |
| Duty Cycle | - GPRS 2 Slots: 25% - W-CDMA: 100% - CDMA: 100% |

7.2. Hotspot (Wireless Router) Exposure Condition

N/A

7.3. Simultaneous Transmission

| Usage Scenario | Modes | Mode of Operation | BAND | CDMA 1xRTT | CDMA 1xEV-DO | GPRS/EDGE | WCDMA | HSDPA | HSUPA | HSPA+ | DC-HSPA | WiFi 2.4GHz Main | WiFi 2.4GHz Aux | WiFi 5 GHz Bands Main | WiFi 5 GHz Bands Aux | BT 2.4 GHz | | | |
|----------------|--------------------|-------------------------|-------------------------|-------------|--------------|-----------|-------|-------|-------|-------|---------|------------------|-----------------|-----------------------|----------------------|------------|-----|----|----|
| Body SAR | WWAN + 2.4GHz WLAN | CDMA 1xRTT | BC0 | YES | No | No | No | No | No | No | No | YES | No | No | No | No | | | |
| | | CDMA 1xRTT | BC1 | YES | No | No | No | No | No | No | No | No | YES | No | No | No | No | | |
| | | CDMA 1xEVDO | BC0 | No | YES | No | No | No | No | No | No | No | YES | No | No | No | No | | |
| | | CDMA 1xEVDO | BC1 | No | YES | No | No | No | No | No | No | No | YES | No | No | No | No | | |
| | | EDGE | 850 | No | No | YES | No | No | No | No | No | No | YES | No | No | No | No | | |
| | | EDGE | 1900 | No | No | YES | No | No | No | No | No | No | YES | No | No | No | No | | |
| | | W-CDMA | 850 | No | No | No | YES | No | No | No | No | No | YES | No | No | No | No | | |
| | | W-CDMA | 1700 | No | No | No | YES | No | No | No | No | No | YES | No | No | No | No | | |
| | | W-CDMA | 1900 | No | No | No | YES | YES | No | No | No | No | YES | No | No | No | No | | |
| | | HSDPA | 850 | No | No | No | No | YES | No | No | No | No | YES | No | No | No | No | | |
| | | HSDPA | 1700 | No | No | No | No | YES | No | No | No | No | YES | No | No | No | No | | |
| | | HSDPA | 1900 | No | No | No | No | No | YES | No | No | No | YES | No | No | No | No | | |
| | | HSUPA | 850 | No | No | No | No | No | No | YES | No | No | YES | No | No | No | No | | |
| | | HSUPA | 1700 | No | No | No | No | No | No | YES | No | No | YES | No | No | No | No | | |
| | | HSUPA | 1900 | No | No | No | No | No | No | No | YES | No | YES | No | No | No | No | | |
| | | HSPA+ | 850 | No | No | No | No | No | No | No | YES | No | YES | No | No | No | No | | |
| | | HSPA+ | 1700 | No | No | No | No | No | No | No | YES | No | YES | No | No | No | No | | |
| | | HSPA+ | 1900 | No | No | No | No | No | No | No | No | YES | No | YES | No | No | No | | |
| | | DC-HSDPA | 850 | No | No | No | No | No | No | No | No | YES | YES | No | No | No | No | | |
| | | DC-HSDPA | 1700 | No | No | No | No | No | No | No | No | YES | YES | No | No | No | No | | |
| | | DC-HSDPA | 1900 | No | No | No | No | No | No | No | No | YES | YES | No | No | No | No | | |
| | | CDMA 1xRTT | BC0 | YES | No | No | No | No | No | No | No | No | No | No | YES | No | No | No | |
| | | CDMA 1xRTT | BC1 | YES | No | No | No | No | No | No | No | No | No | No | YES | No | No | No | |
| | | CDMA 1xEVDO | BC0 | No | YES | No | No | No | No | No | No | No | No | No | YES | No | No | No | |
| | | CDMA 1xEVDO | BC1 | No | YES | No | No | No | No | No | No | No | No | No | YES | No | No | No | |
| | | EDGE | 850 | No | No | YES | No | No | No | No | No | No | No | No | YES | No | No | No | |
| | | EDGE | 1900 | No | No | YES | No | No | No | No | No | No | No | No | YES | No | No | No | |
| | | W-CDMA | 850 | No | No | No | YES | No | No | No | No | No | No | No | YES | No | No | No | |
| | | W-CDMA | 1700 | No | No | No | YES | No | No | No | No | No | No | No | YES | No | No | No | |
| | | W-CDMA | 1900 | No | No | No | YES | YES | No | No | No | No | No | No | YES | No | No | No | |
| | | HSDPA | 850 | No | No | No | No | YES | No | No | No | No | No | No | YES | No | No | No | |
| | | HSDPA | 1700 | No | No | No | No | YES | No | No | No | No | No | No | YES | No | No | No | |
| | | HSDPA | 1900 | No | No | No | No | No | YES | No | No | No | No | No | YES | No | No | No | |
| | | HSUPA | 850 | No | No | No | No | No | No | YES | No | No | No | No | YES | No | No | No | |
| | | HSUPA | 1700 | No | No | No | No | No | No | YES | No | No | No | No | YES | No | No | No | |
| | | HSUPA | 1900 | No | No | No | No | No | No | No | YES | No | No | No | YES | No | No | No | |
| | | HSPA+ | 850 | No | No | No | No | No | No | No | YES | No | No | No | YES | No | No | No | |
| | | HSPA+ | 1700 | No | No | No | No | No | No | No | YES | No | No | No | YES | No | No | No | |
| | | HSPA+ | 1900 | No | No | No | No | No | No | No | No | YES | No | No | YES | No | No | No | |
| | | DC-HSDPA | 850 | No | No | No | No | No | No | No | No | YES | No | YES | No | No | No | No | |
| | | DC-HSDPA | 1700 | No | No | No | No | No | No | No | No | YES | No | YES | No | No | No | No | |
| | | DC-HSDPA | 1900 | No | No | No | No | No | No | No | No | No | YES | No | YES | No | No | No | |
| | | WWAN + 5 GHz Bands WLAN | WWAN + 5 GHz Bands WLAN | CDMA 1xRTT | BC0 | YES | No | No | No | No | No | No | No | No | No | YES | No | No | |
| | | | | CDMA 1xRTT | BC1 | YES | No | No | No | No | No | No | No | No | No | No | YES | No | No |
| | | | | CDMA 1xEVDO | BC0 | No | YES | No | No | No | No | No | No | No | No | No | YES | No | No |
| | | | | CDMA 1xEVDO | BC1 | No | YES | No | No | No | No | No | No | No | No | No | YES | No | No |
| | | | | EDGE | 850 | No | No | YES | No | No | No | No | No | No | No | No | YES | No | No |
| | | | | EDGE | 1900 | No | No | YES | No | No | No | No | No | No | No | No | YES | No | No |
| W-CDMA | 850 | | | No | No | No | YES | No | No | No | No | No | No | No | YES | No | No | | |
| W-CDMA | 1700 | | | No | No | No | YES | No | No | No | No | No | No | No | YES | No | No | | |
| W-CDMA | 1900 | | | No | No | No | YES | YES | No | No | No | No | No | No | YES | No | No | | |
| HSDPA | 850 | | | No | No | No | No | YES | No | No | No | No | No | No | YES | No | No | | |
| HSDPA | 1700 | | | No | No | No | No | YES | No | No | No | No | No | No | YES | No | No | | |
| HSDPA | 1900 | | | No | No | No | No | No | YES | No | No | No | No | No | YES | No | No | | |
| HSUPA | 850 | | | No | No | No | No | No | No | YES | No | No | No | No | YES | No | No | | |
| HSUPA | 1700 | | | No | No | No | No | No | No | YES | No | No | No | No | YES | No | No | | |
| HSUPA | 1900 | | | No | No | No | No | No | No | No | YES | No | No | No | YES | No | No | | |
| HSPA+ | 850 | | | No | No | No | No | No | No | No | YES | No | No | No | YES | No | No | | |
| HSPA+ | 1700 | No | No | No | No | No | No | No | YES | No | No | No | YES | No | No | | | | |
| HSPA+ | 1900 | No | No | No | No | No | No | No | No | YES | No | No | YES | No | No | | | | |
| DC-HSDPA | 850 | No | No | No | No | No | No | No | No | No | YES | No | YES | No | No | | | | |
| DC-HSDPA | 1700 | No | No | No | No | No | No | No | No | YES | No | No | YES | No | No | | | | |
| DC-HSDPA | 1900 | No | No | No | No | No | No | No | No | YES | No | No | YES | No | No | | | | |

Simultaneous Transmission continued

| Usage Scenario | Modes | Mode of Operation | BAND | CDMA 1xRTT | CDMA 1xEVDO | GPRS/EDGE | WCDMA | HSDPA | HSUPA | HSPA+ | DC-HSPA | WiFi 2.4GHz Main | WiFi 2.4GHz Aux | WiFi 5 Ghz Bands Main | WiFi 5 Ghz Bands Aux | BT 2.4 GHz | |
|--------------------------|-------------------------|-------------------|------|------------|-------------|-----------|-------|-------|-------|-------|---------|------------------|-----------------|-----------------------|----------------------|------------|-----|
| Body SAR | WWAN + 5 GHz Bands WLAN | CDMA 1xRTT | BC0 | YES | No | No | No | No | No | No | No | No | No | No | YES | No | |
| | | CDMA 1xRTT | BC1 | YES | No | No | No | No | No | No | No | No | No | No | YES | No | |
| | | CDMA 1xEVDO | BC0 | No | YES | No | No | No | No | No | No | No | No | No | No | YES | No |
| | | CDMA 1xEVDO | BC1 | No | YES | No | No | No | No | No | No | No | No | No | No | YES | No |
| | | EDGE | 850 | No | No | YES | No | No | No | No | No | No | No | No | No | YES | No |
| | | EDGE | 1900 | No | No | YES | No | No | No | No | No | No | No | No | No | YES | No |
| | | W-CDMA | 850 | No | No | No | YES | No | No | No | No | No | No | No | No | YES | No |
| | | W-CDMA | 1700 | No | No | No | YES | No | No | No | No | No | No | No | No | YES | No |
| | | W-CDMA | 1900 | No | No | No | YES | YES | No | No | No | No | No | No | No | YES | No |
| | | HSDPA | 850 | No | No | No | No | YES | No | No | No | No | No | No | No | YES | No |
| | | HSDPA | 1700 | No | No | No | No | YES | No | No | No | No | No | No | No | YES | No |
| | | HSDPA | 1900 | No | No | No | No | No | YES | No | No | No | No | No | No | YES | No |
| | | HSUPA | 850 | No | No | No | No | No | No | YES | No | No | No | No | No | YES | No |
| | | HSUPA | 1700 | No | No | No | No | No | No | YES | No | No | No | No | No | YES | No |
| | | HSUPA | 1900 | No | No | No | No | No | No | No | No | No | No | No | No | YES | No |
| | | HSPA+ | 850 | No | No | No | No | No | No | No | YES | No | No | No | No | YES | No |
| | | HSPA+ | 1700 | No | No | No | No | No | No | No | YES | No | No | No | No | YES | No |
| | | HSPA+ | 1900 | No | No | No | No | No | No | No | YES | No | No | No | No | YES | No |
| | | DC-HSDPA | 850 | No | No | No | No | No | No | No | No | YES | No | No | No | YES | No |
| | | DC-HSDPA | 1700 | No | No | No | No | No | No | No | No | YES | No | No | No | YES | No |
| | | DC-HSDPA | 1900 | No | No | No | No | No | No | No | No | YES | No | No | No | YES | No |
| | WWAN + BT | CDMA 1xRTT | BC0 | YES | No | No | No | No | No | No | No | No | No | No | No | No | YES |
| | | CDMA 1xRTT | BC1 | YES | No | No | No | No | No | No | No | No | No | No | No | No | YES |
| | | CDMA 1xEVDO | BC0 | No | YES | No | No | No | No | No | No | No | No | No | No | No | YES |
| | | CDMA 1xEVDO | BC1 | No | YES | No | No | No | No | No | No | No | No | No | No | No | YES |
| | | EDGE | 850 | No | No | YES | No | No | No | No | No | No | No | No | No | No | YES |
| | | EDGE | 1900 | No | No | YES | No | No | No | No | No | No | No | No | No | No | YES |
| | | W-CDMA | 850 | No | No | No | YES | No | No | No | No | No | No | No | No | No | YES |
| | | W-CDMA | 1700 | No | No | No | YES | No | No | No | No | No | No | No | No | No | YES |
| | | W-CDMA | 1900 | No | No | No | YES | YES | No | No | No | No | No | No | No | No | YES |
| | | HSDPA | 850 | No | No | No | No | YES | No | No | No | No | No | No | No | No | YES |
| | | HSDPA | 1700 | No | No | No | No | YES | No | No | No | No | No | No | No | No | YES |
| | | HSDPA | 1900 | No | No | No | No | No | YES | No | No | No | No | No | No | No | YES |
| | | HSUPA | 850 | No | No | No | No | No | No | YES | No | No | No | No | No | No | YES |
| | | HSUPA | 1700 | No | No | No | No | No | No | YES | No | No | No | No | No | No | YES |
| | | HSUPA | 1900 | No | No | No | No | No | No | No | No | No | No | No | No | No | YES |
| | | HSPA+ | 850 | No | No | No | No | No | No | No | YES | No | No | No | No | No | YES |
| | | HSPA+ | 1700 | No | No | No | No | No | No | No | YES | No | No | No | No | No | YES |
| | | HSPA+ | 1900 | No | No | No | No | No | No | No | YES | No | No | No | No | No | YES |
| | | DC-HSDPA | 850 | No | No | No | No | No | No | No | No | YES | No | No | No | No | YES |
| | | DC-HSDPA | 1700 | No | No | No | No | No | No | No | No | YES | No | No | No | No | YES |
| | | DC-HSDPA | 1900 | No | No | No | No | No | No | No | No | YES | No | No | No | No | YES |
| WWAN + 2.4 GHz WLAN + BT | CDMA 1xRTT | BC0 | YES | No | No | No | No | No | No | No | No | YES | No | No | No | YES | |
| | CDMA 1xRTT | BC1 | YES | No | No | No | No | No | No | No | No | YES | No | No | No | YES | |
| | CDMA 1xEVDO | BC0 | No | YES | No | No | No | No | No | No | No | YES | No | No | No | YES | |
| | CDMA 1xEVDO | BC1 | No | YES | No | No | No | No | No | No | No | YES | No | No | No | YES | |
| | EDGE | 850 | No | No | YES | No | No | No | No | No | No | YES | No | No | No | YES | |
| | EDGE | 1900 | No | No | YES | No | No | No | No | No | No | YES | No | No | No | YES | |
| | W-CDMA | 850 | No | No | No | YES | No | No | No | No | No | YES | No | No | No | YES | |
| | W-CDMA | 1700 | No | No | No | YES | No | No | No | No | No | YES | No | No | No | YES | |
| | W-CDMA | 1900 | No | No | No | YES | YES | No | No | No | No | YES | No | No | No | YES | |
| | HSDPA | 850 | No | No | No | No | YES | No | No | No | No | YES | No | No | No | YES | |
| | HSDPA | 1700 | No | No | No | No | YES | No | No | No | No | YES | No | No | No | YES | |
| | HSDPA | 1900 | No | No | No | No | No | YES | No | No | No | YES | No | No | No | YES | |
| | HSUPA | 850 | No | No | No | No | No | No | YES | No | No | YES | No | No | No | YES | |
| | HSUPA | 1700 | No | No | No | No | No | No | YES | No | No | YES | No | No | No | YES | |
| | HSUPA | 1900 | No | No | No | No | No | No | No | No | No | YES | No | No | No | YES | |
| | HSPA+ | 850 | No | No | No | No | No | No | No | YES | No | YES | No | No | No | YES | |
| | HSPA+ | 1700 | No | No | No | No | No | No | No | YES | No | YES | No | No | No | YES | |
| | HSPA+ | 1900 | No | No | No | No | No | No | No | YES | No | YES | No | No | No | YES | |
| | DC-HSDPA | 850 | No | No | No | No | No | No | No | No | YES | YES | No | No | No | YES | |
| DC-HSDPA | 1700 | No | No | No | No | No | No | No | No | YES | YES | No | No | No | YES | | |
| DC-HSDPA | 1900 | No | No | No | No | No | No | No | No | YES | YES | No | No | No | YES | | |

Simultaneous Transmission continued

| Usage Scenario | Modes | Mode of Operation | BAND | CDMA 1xRTT | CDMA 1xEVDO | GPRS/EDGE | WCDMA | HSDPA | HSUPA | HSPA+ | DC-HSPA | WiFi 2.4GHz Main | WiFi 2.4GHz Aux | WiFi 5 GHz Bands Main | WiFi 5 GHz Bands Aux | BT 2.4 GHz | |
|----------------|---|-------------------|------|------------|-------------|-----------|-------|-------|-------|-------|---------|------------------|-----------------|-----------------------|----------------------|------------|-----|
| Body SAR | WWAN + 5GHz Bands WLAN + BT | CDMA 1xRTT | BC0 | YES | No | No | No | No | No | No | No | No | No | YES | No | YES | |
| | | CDMA 1xRTT | BC1 | YES | No | No | No | No | No | No | No | No | No | YES | No | YES | |
| | | CDMA 1xEVDO | BC0 | No | YES | No | No | No | No | No | No | No | No | No | YES | No | YES |
| | | CDMA 1xEVDO | BC1 | No | YES | No | No | No | No | No | No | No | No | No | YES | No | YES |
| | | EDGE | 850 | No | No | YES | No | No | No | No | No | No | No | No | YES | No | YES |
| | | EDGE | 1900 | No | No | YES | No | No | No | No | No | No | No | No | YES | No | YES |
| | | W-CDMA | 850 | No | No | No | YES | No | No | No | No | No | No | No | YES | No | YES |
| | | W-CDMA | 1700 | No | No | No | YES | No | No | No | No | No | No | No | YES | No | YES |
| | | W-CDMA | 1900 | No | No | No | YES | YES | No | No | No | No | No | No | YES | No | YES |
| | | HSDPA | 850 | No | No | No | No | YES | No | No | No | No | No | No | YES | No | YES |
| | | HSDPA | 1700 | No | No | No | No | YES | No | No | No | No | No | No | YES | No | YES |
| | | HSDPA | 1900 | No | No | No | No | No | YES | No | No | No | No | No | YES | No | YES |
| | | HSUPA | 850 | No | No | No | No | No | No | YES | No | No | No | No | YES | No | YES |
| | | HSUPA | 1700 | No | No | No | No | No | No | YES | No | No | No | No | YES | No | YES |
| | | HSUPA | 1900 | No | No | No | No | No | No | No | No | No | No | No | YES | No | YES |
| | | HSPA+ | 850 | No | No | No | No | No | No | No | YES | No | No | No | YES | No | YES |
| | | HSPA+ | 1700 | No | No | No | No | No | No | No | YES | No | No | No | YES | No | YES |
| | | HSPA+ | 1900 | No | No | No | No | No | No | No | No | YES | No | No | YES | No | YES |
| | | DC-HSDPA | 850 | No | No | No | No | No | No | No | No | YES | No | No | YES | No | YES |
| | | DC-HSDPA | 1700 | No | No | No | No | No | No | No | No | YES | No | No | YES | No | YES |
| | DC-HSDPA | 1900 | No | No | No | No | No | No | No | No | YES | No | No | YES | No | YES | |
| | WWAN + 2.4GHz WLAN MIMO (2 Tx on WLAN) | CDMA 1xRTT | BC0 | YES | No | No | No | No | No | No | No | No | YES | YES | No | No | No |
| | | CDMA 1xRTT | BC1 | YES | No | No | No | No | No | No | No | No | YES | YES | No | No | No |
| | | CDMA 1xEVDO | BC0 | No | YES | No | No | No | No | No | No | No | YES | YES | No | No | No |
| | | CDMA 1xEVDO | BC1 | No | YES | No | No | No | No | No | No | No | YES | YES | No | No | No |
| | | EDGE | 850 | No | No | YES | No | No | No | No | No | No | YES | YES | No | No | No |
| | | EDGE | 1900 | No | No | YES | No | No | No | No | No | No | YES | YES | No | No | No |
| | | W-CDMA | 850 | No | No | No | YES | No | No | No | No | No | YES | YES | No | No | No |
| | | W-CDMA | 1700 | No | No | No | YES | No | No | No | No | No | YES | YES | No | No | No |
| | | W-CDMA | 1900 | No | No | No | YES | YES | No | No | No | No | YES | YES | No | No | No |
| | | HSDPA | 850 | No | No | No | No | YES | No | No | No | No | YES | YES | No | No | No |
| | | HSDPA | 1700 | No | No | No | No | YES | No | No | No | No | YES | YES | No | No | No |
| | | HSDPA | 1900 | No | No | No | No | No | YES | No | No | No | YES | YES | No | No | No |
| | | HSUPA | 850 | No | No | No | No | No | No | YES | No | No | YES | YES | No | No | No |
| | | HSUPA | 1700 | No | No | No | No | No | No | YES | No | No | YES | YES | No | No | No |
| | | HSUPA | 1900 | No | No | No | No | No | No | No | No | No | YES | YES | No | No | No |
| | | HSPA+ | 850 | No | No | No | No | No | No | No | YES | No | YES | YES | No | No | No |
| | | HSPA+ | 1700 | No | No | No | No | No | No | No | YES | No | YES | YES | No | No | No |
| | | HSPA+ | 1900 | No | No | No | No | No | No | No | YES | No | YES | YES | No | No | No |
| | | DC-HSDPA | 850 | No | No | No | No | No | No | No | No | YES | YES | YES | No | No | No |
| | | DC-HSDPA | 1700 | No | No | No | No | No | No | No | No | YES | YES | YES | No | No | No |
| | DC-HSDPA | 1900 | No | No | No | No | No | No | No | No | YES | YES | YES | No | No | No | |
| | WWAN + 5 GHz Bands WLAN MIMO (2 Tx on WLAN) | CDMA 1xRTT | BC0 | YES | No | No | No | No | No | No | No | No | No | No | YES | YES | No |
| | | CDMA 1xRTT | BC1 | YES | No | No | No | No | No | No | No | No | No | No | YES | YES | No |
| | | CDMA 1xEVDO | BC0 | No | YES | No | No | No | No | No | No | No | No | No | YES | YES | No |
| CDMA 1xEVDO | | BC1 | No | YES | No | No | No | No | No | No | No | No | No | YES | YES | No | |
| EDGE | | 850 | No | No | YES | No | No | No | No | No | No | No | No | YES | YES | No | |
| EDGE | | 1900 | No | No | YES | No | No | No | No | No | No | No | No | YES | YES | No | |
| W-CDMA | | 850 | No | No | No | YES | No | No | No | No | No | No | No | YES | YES | No | |
| W-CDMA | | 1700 | No | No | No | YES | No | No | No | No | No | No | No | YES | YES | No | |
| W-CDMA | | 1900 | No | No | No | YES | YES | No | No | No | No | No | No | YES | YES | No | |
| HSDPA | | 850 | No | No | No | No | YES | No | No | No | No | No | No | YES | YES | No | |
| HSDPA | | 1700 | No | No | No | No | YES | No | No | No | No | No | No | YES | YES | No | |
| HSDPA | | 1900 | No | No | No | No | No | YES | No | No | No | No | No | YES | YES | No | |
| HSUPA | | 850 | No | No | No | No | No | No | YES | No | No | No | No | YES | YES | No | |
| HSUPA | | 1700 | No | No | No | No | No | No | YES | No | No | No | No | YES | YES | No | |
| HSUPA | | 1900 | No | No | No | No | No | No | No | No | No | No | No | YES | YES | No | |
| HSPA+ | 850 | No | No | No | No | No | No | No | YES | No | No | No | YES | YES | No | | |
| HSPA+ | 1700 | No | No | No | No | No | No | No | YES | No | No | No | YES | YES | No | | |
| HSPA+ | 1900 | No | No | No | No | No | No | No | YES | No | No | No | YES | YES | No | | |
| DC-HSDPA | 850 | No | No | No | No | No | No | No | No | YES | No | No | YES | YES | No | | |
| DC-HSDPA | 1700 | No | No | No | No | No | No | No | No | YES | No | No | YES | YES | No | | |
| DC-HSDPA | 1900 | No | No | No | No | No | No | No | No | YES | No | No | YES | YES | No | | |

Notes:

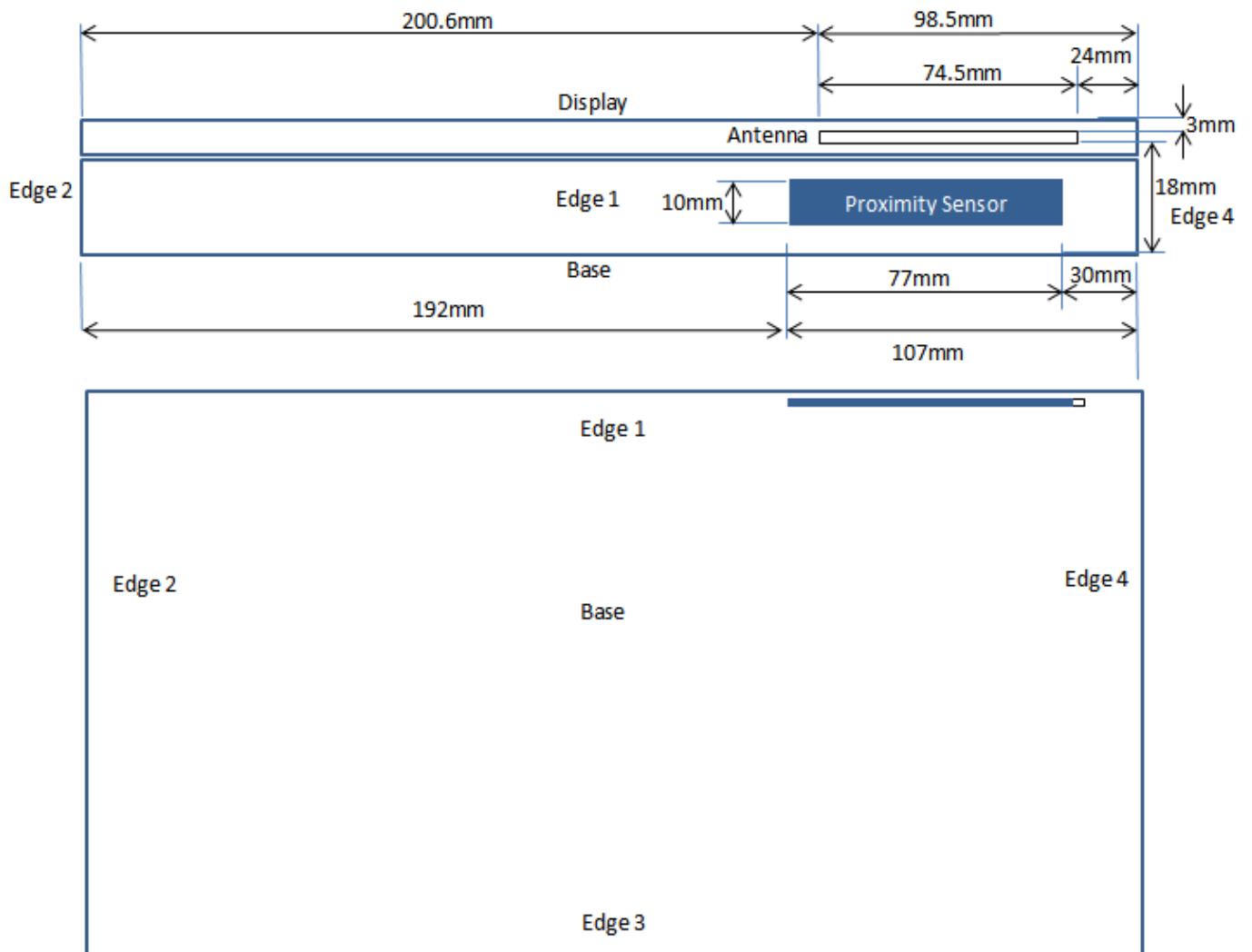
- Bluetooth transmits using the WLAN Aux Antenna
- Bluetooth can transmit simultaneously with the WLAN Main Antenna, in either of the WLAN bands.
- Bluetooth cannot transmit simultaneously with the WLAN Aux Antenna, in either of the WLAN bands; this also precludes the transmission of Bluetooth when WLAN is in MIMO mode.
- With a maximum output power of 4.47 mW, Bluetooth qualifies for Standalone SAR test exclusion based on the formula for Standalone SAR test exclusion considerations outlined in KDB 447498 D01 . For the exact value that this formula yields, please refer to **Section 14 "Simultaneous Transmission SAR Analysis"** of this report.

7.4. Proximity Sensor

The proximity sensor is intended to reduce the WWAN output power when edge 1 is brought close to the user. The proximity sensor only operates when the DUT is in tablet mode.

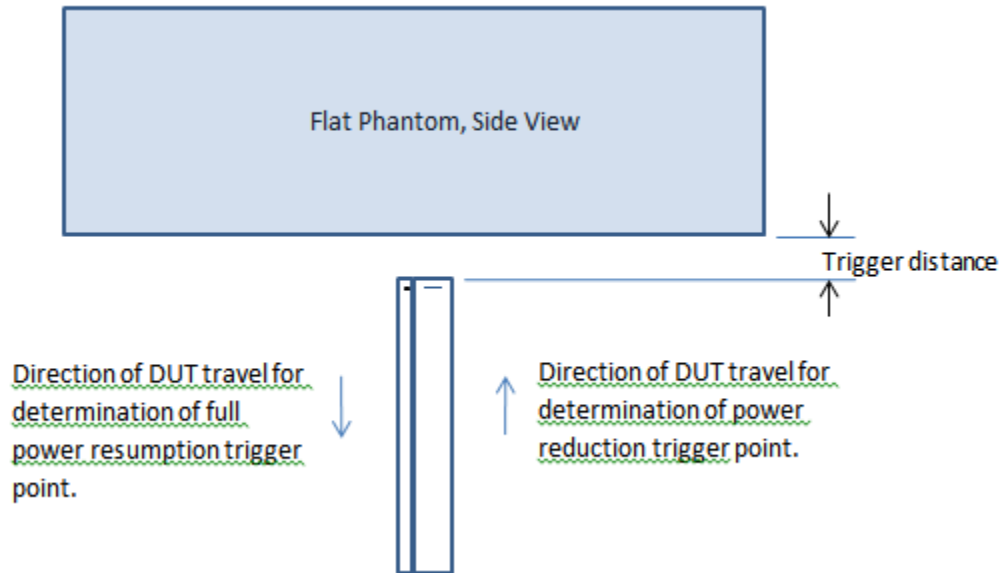
Proximity sensor triggering distances were only verified for edge 1. SAR testing of edge 4 and the base was performed at full power.

Proximity Sensor and WWAN Main antenna locations and dimensions



7.5. Proximity Sensor Triggering distance (KDB 616217 §6.2)

Edge 1 of the DUT was placed directly below the flat phantom. The DUT was moved toward the phantom in accordance with the steps outlined in KDB 616217 §6.2 to determine the trigger distance for enabling power reduction. The DUT was moved away from the phantom to determine the trigger distance for resuming full power.



Proximity sensor trigger distance assessment (Edge 4) KDB 616217 §6.2

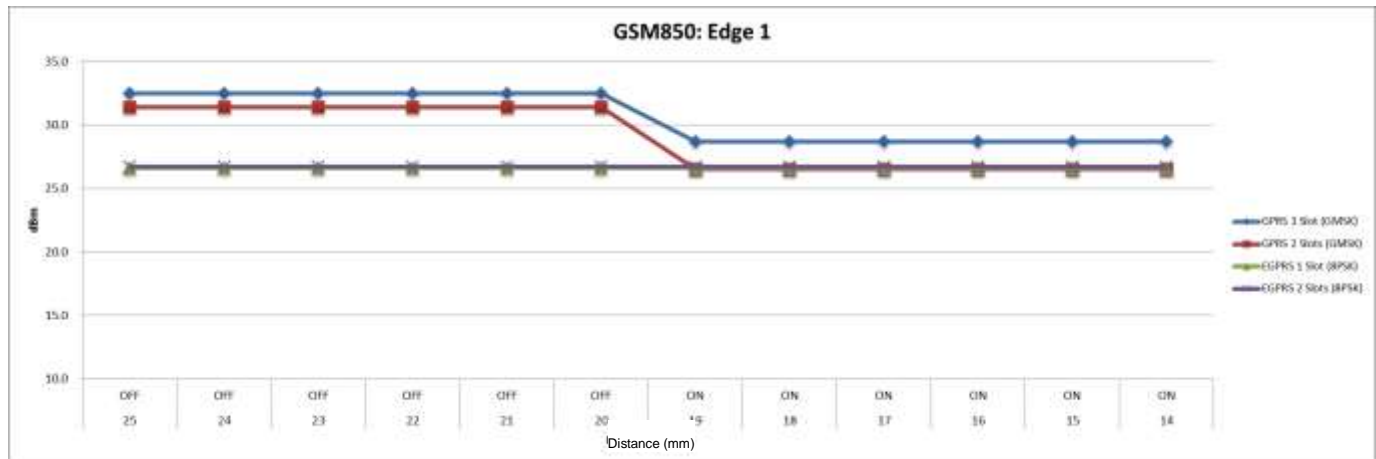
Summary of triggering distances.

| Tissue simulating liquid | Trigger distance - edge 1 | |
|--------------------------|---------------------------|---------------------|
| | Moving toward phantom | Moving from phantom |
| 850 muscle | 19mm | 25mm |
| 1750 muscle | 19mm | 24mm |
| 1900 muscle | 17mm | 24mm |

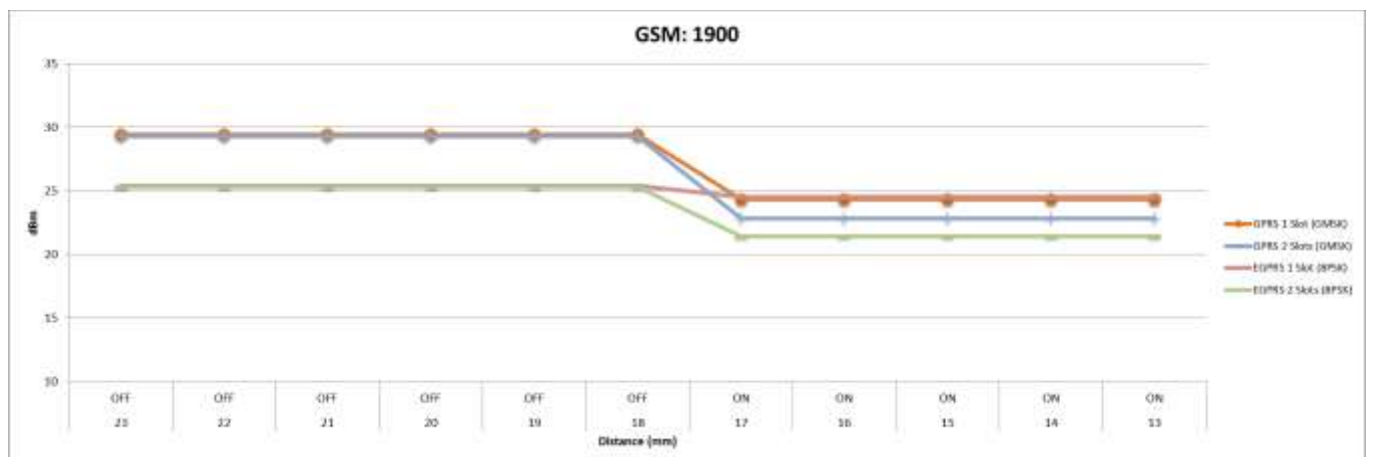
7.6. Triggering distances and power levels

7.6.1. DUT moving toward the phantom

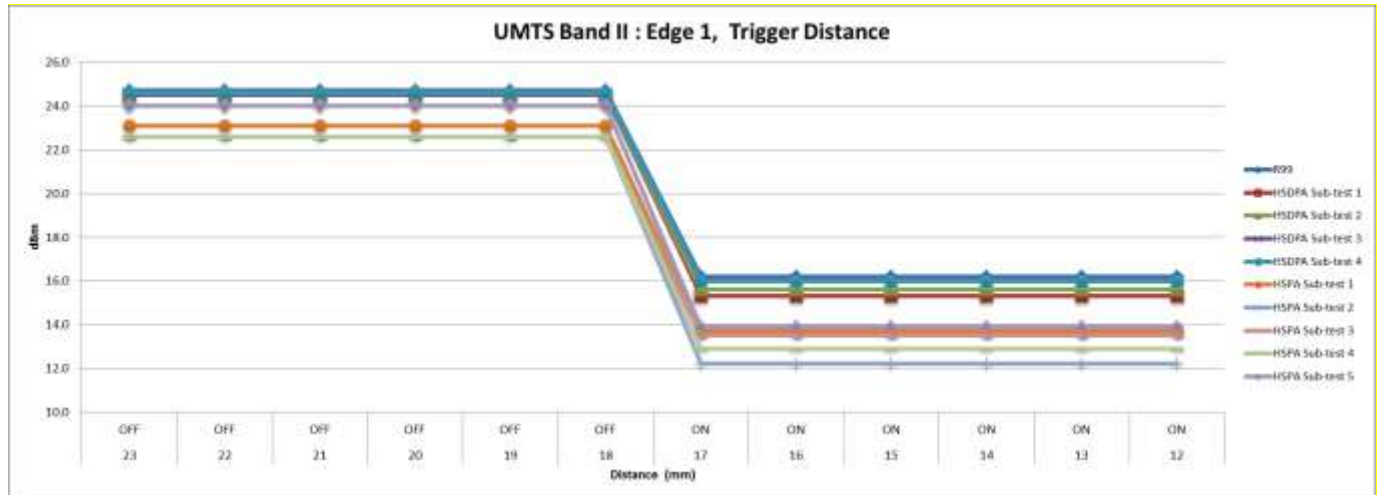
| Edge 1, (GSM850) | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON |
| GPRS 1 Slot (GMSK) | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 |
| GPRS 2 Slots (GMSK) | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 |
| EGPRS 1 Slot (8PSK) | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 |
| EGPRS 2 Slots (8PSK) | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 |



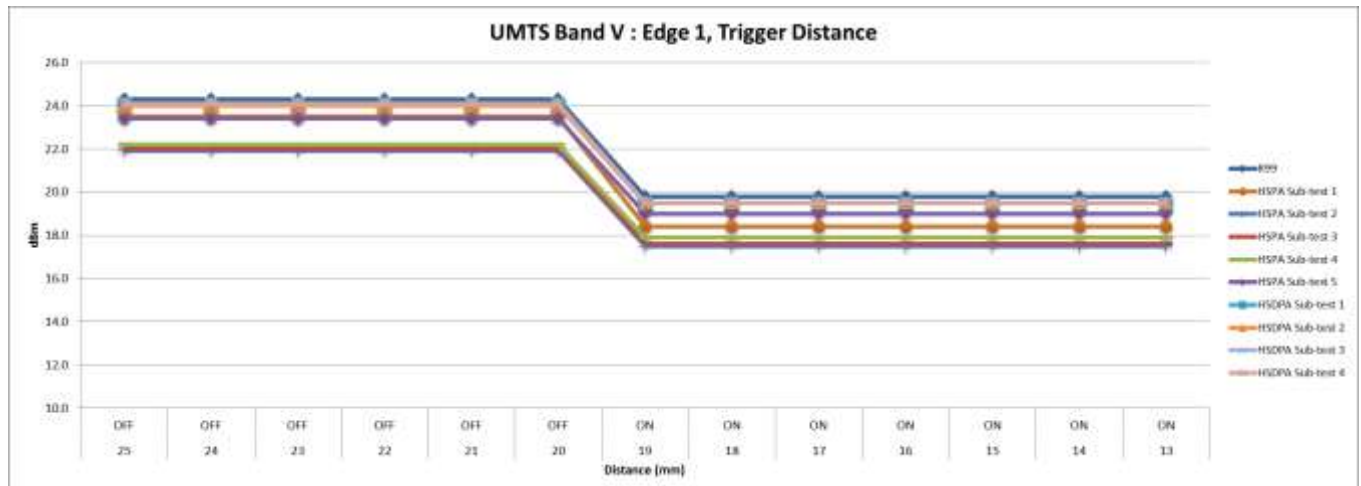
| Edge 1, (GSM1900) | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Distance (mm): | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON |
| GPRS 1 Slot (GMSK) | 29.40 | 29.40 | 29.40 | 29.40 | 29.40 | 29.40 | 24.30 | 24.30 | 24.30 | 24.30 | 24.30 | 24.30 |
| GPRS 2 Slots (GMSK) | 29.30 | 29.30 | 29.30 | 29.30 | 29.30 | 29.30 | 22.80 | 22.80 | 22.80 | 22.80 | 22.80 | 22.80 |
| EGPRS 1 Slot (8PSK) | 25.40 | 25.40 | 25.40 | 25.40 | 25.40 | 25.40 | 24.50 | 24.50 | 24.50 | 24.50 | 24.50 | 24.50 |
| EGPRS 2 Slots (8PSK) | 25.30 | 25.30 | 25.30 | 25.30 | 25.30 | 25.30 | 21.40 | 21.40 | 21.40 | 21.40 | 21.40 | 21.40 |



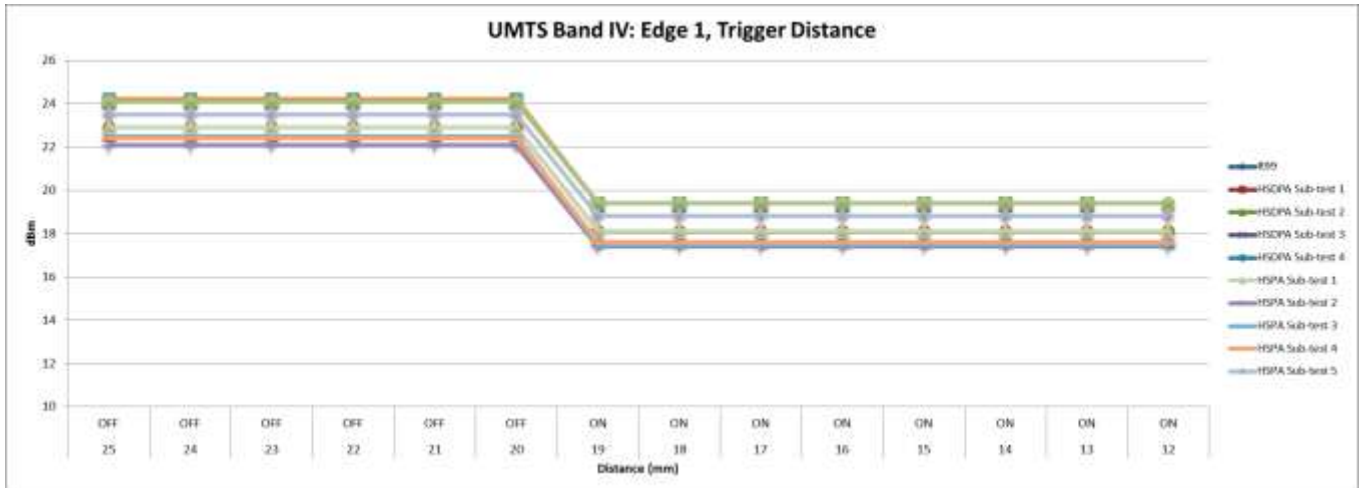
| Edge 1, (UMTS Band II) | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON |
| R99 | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 |
| HSDPA Sub-test 1 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 |
| HSDPA Sub-test 2 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 |
| HSDPA Sub-test 3 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| HSDPA Sub-test 4 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| HSPA Sub-test 1 | 23.1 | 23.1 | 23.1 | 23.1 | 23.1 | 23.1 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 |
| HSPA Sub-test 2 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 |
| HSPA Sub-test 3 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 |
| HSPA Sub-test 4 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 |
| HSPA Sub-test 5 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 |



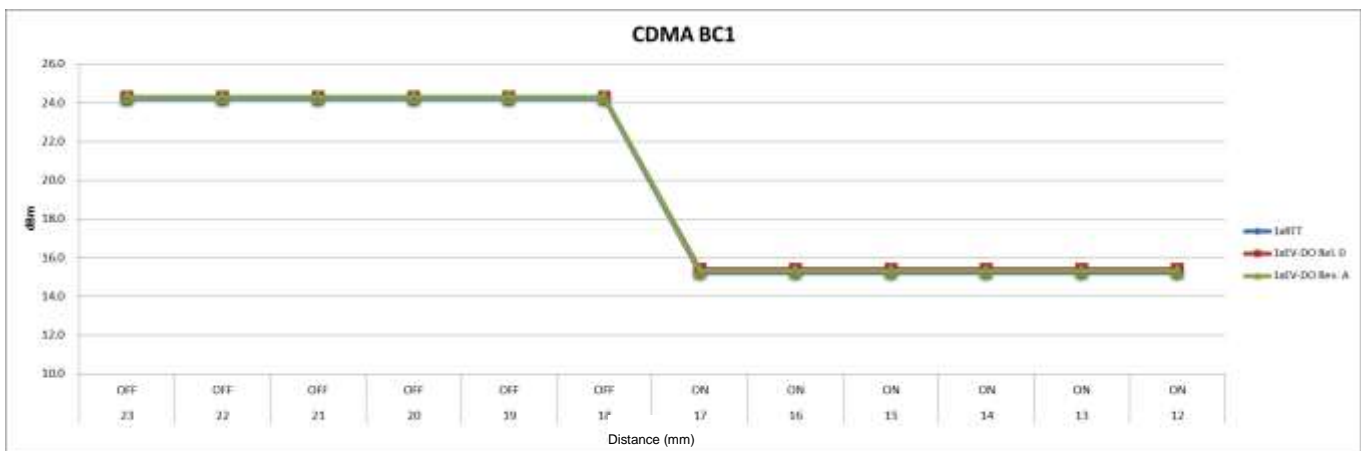
| Edge 1, (UMTS Band V) | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON | ON |
| R99 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 |
| HSDPA Sub-test 1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSDPA Sub-test 2 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSDPA Sub-test 3 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSDPA Sub-test 4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSPA Sub-test 1 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 |
| HSPA Sub-test 2 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 |
| HSPA Sub-test 3 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 |
| HSPA Sub-test 4 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 |
| HSPA Sub-test 5 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 |



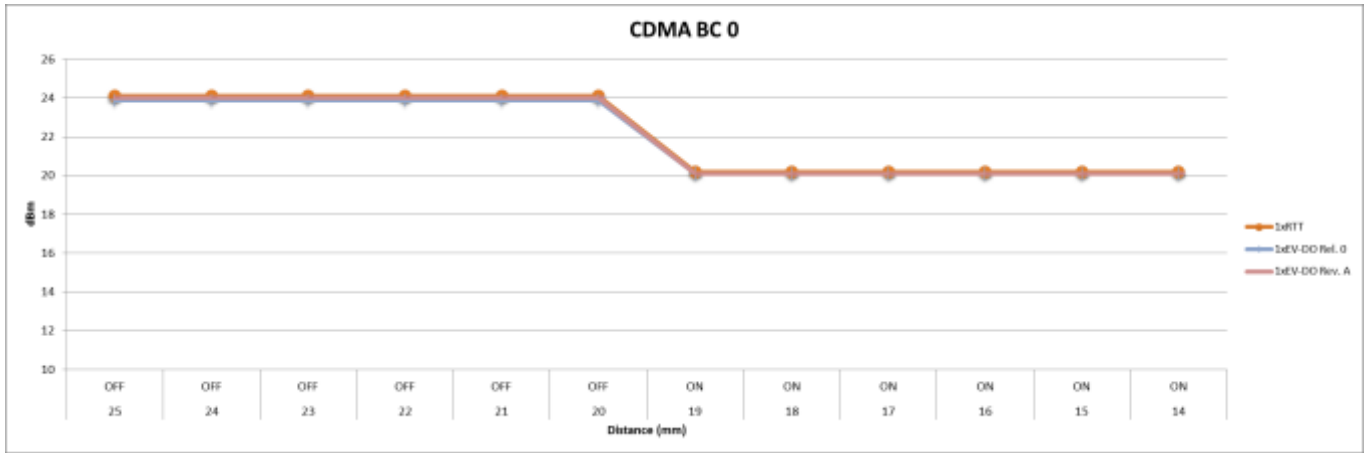
| Edge 1, (UMTS Band IV) | | | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Distance (mm): | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON | ON | ON |
| R99 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSDPA Sub-test 1 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSDPA Sub-test 2 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSDPA Sub-test 3 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSDPA Sub-test 4 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSPA Sub-test 1 | 22.90 | 22.90 | 22.90 | 22.90 | 22.90 | 22.90 | 18.10 | 18.10 | 18.10 | 18.10 | 18.10 | 18.10 | 18.10 | 18.10 |
| HSPA Sub-test 2 | 22.10 | 22.10 | 22.10 | 22.10 | 22.10 | 22.10 | 17.40 | 17.40 | 17.40 | 17.40 | 17.40 | 17.40 | 17.40 | 17.40 |
| HSPA Sub-test 3 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 | 17.50 | 17.50 | 17.50 | 17.50 | 17.50 | 17.50 | 17.50 | 17.50 |
| HSPA Sub-test 4 | 22.40 | 22.40 | 22.40 | 22.40 | 22.40 | 22.40 | 17.60 | 17.60 | 17.60 | 17.60 | 17.60 | 17.60 | 17.60 | 17.60 |
| HSPA Sub-test 5 | 23.50 | 23.50 | 23.50 | 23.50 | 23.50 | 23.50 | 18.80 | 18.80 | 18.80 | 18.80 | 18.80 | 18.80 | 18.80 | 18.80 |



| Edge 1,CDMA BC 1 | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|--|
| Distance (mm): | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON | |
| 1xRTT | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | |
| 1xEV-DO Rel. 0 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | |
| 1xEV-DO Rev. A | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | |

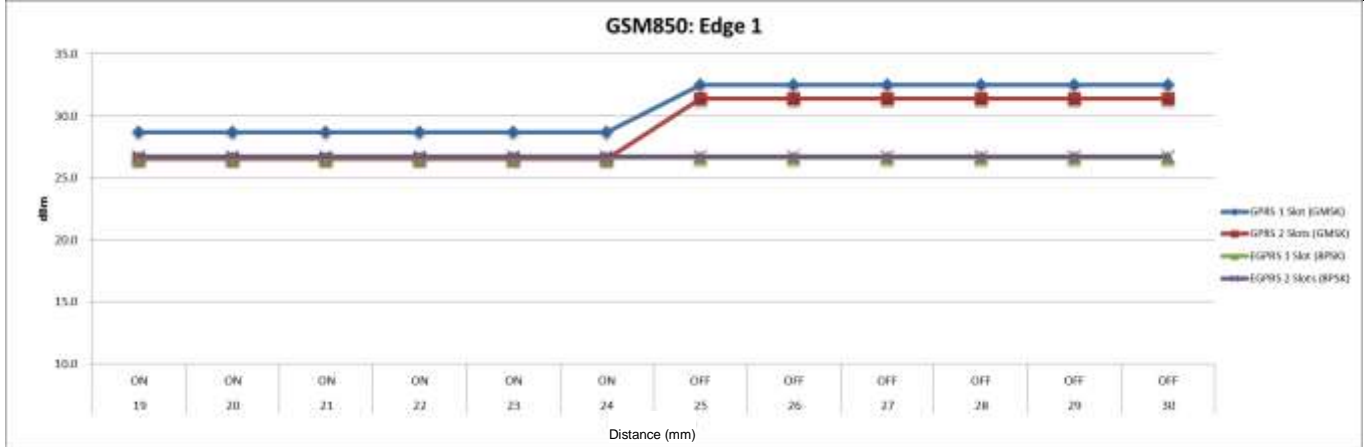


| Edge 1, CDMA BC 0 | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON |
| 1xRTT | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 |
| 1xEV-DO Rel. 0 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 |
| 1xEV-DO Rev. A | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 |

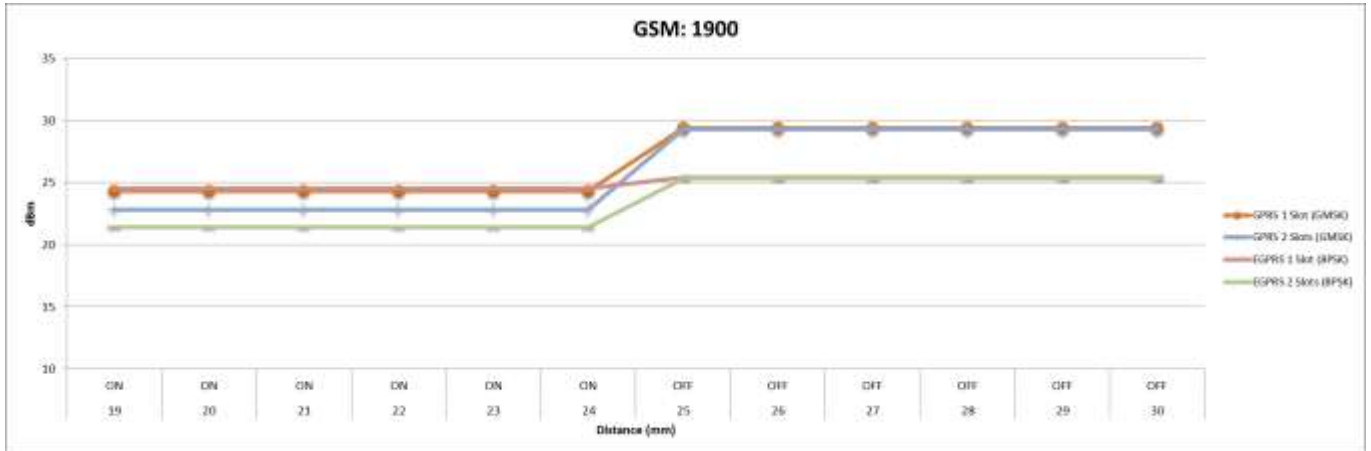


7.6.2. DUT moving away from the phantom

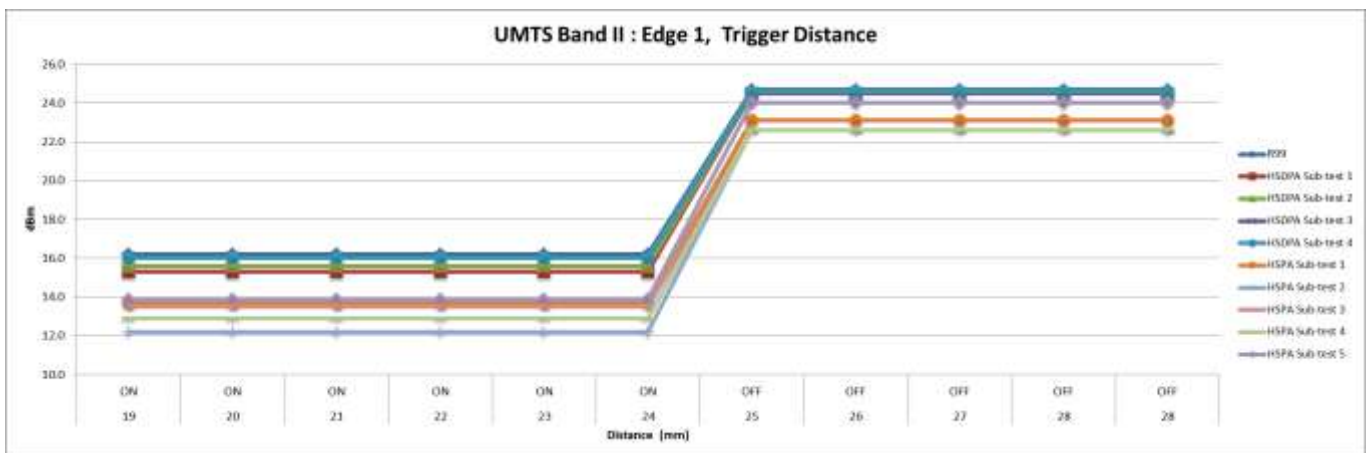
| Edge 1,GSM850) | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|--|
| Distance (mm): | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF | |
| GPRS 1 Slot (GMSK) | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | |
| GPRS 2 Slots (GMSK) | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 | |
| EGPRS 1 Slot (8PSK) | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | |
| EGPRS 2 Slots (8PSK) | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | |



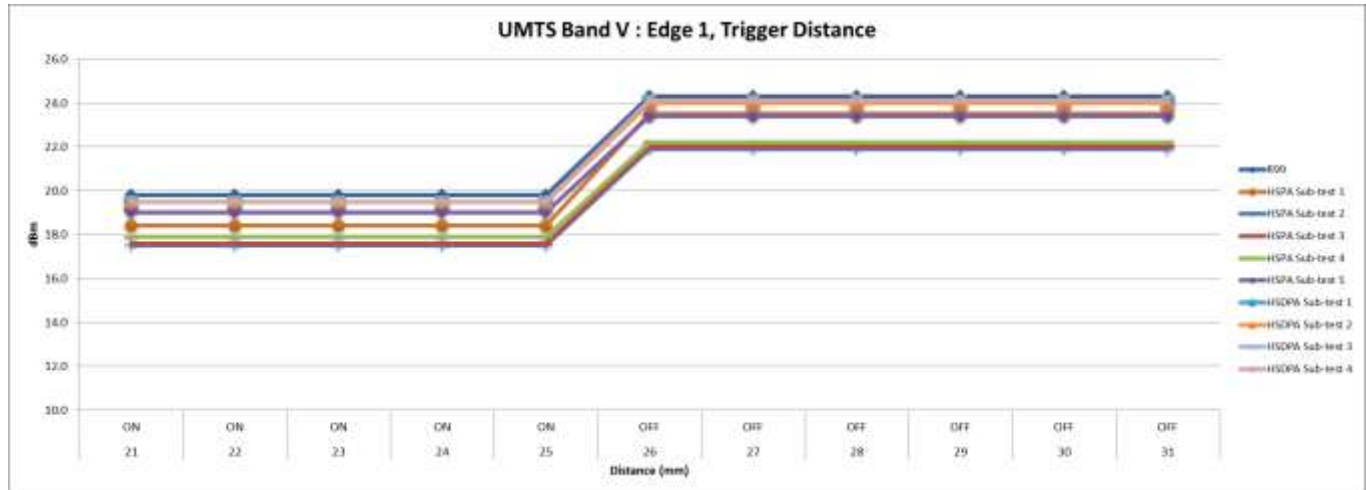
| Edge 1 (GSM1900) | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| GPRS 1 Slot (GMSK) | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 29.4 | 29.4 | 29.4 | 29.4 | 29.4 | 29.4 |
| GPRS 2 Slots (GMSK) | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 29.3 | 29.3 | 29.3 | 29.3 | 29.3 | 29.3 |
| EGPRS 1 Slot (8PSK) | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 25.4 | 25.4 | 25.4 | 25.4 | 25.4 | 25.4 |
| EGPRS 2 Slots (8PSK) | 21.4 | 21.4 | 21.4 | 21.4 | 21.4 | 21.4 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 |



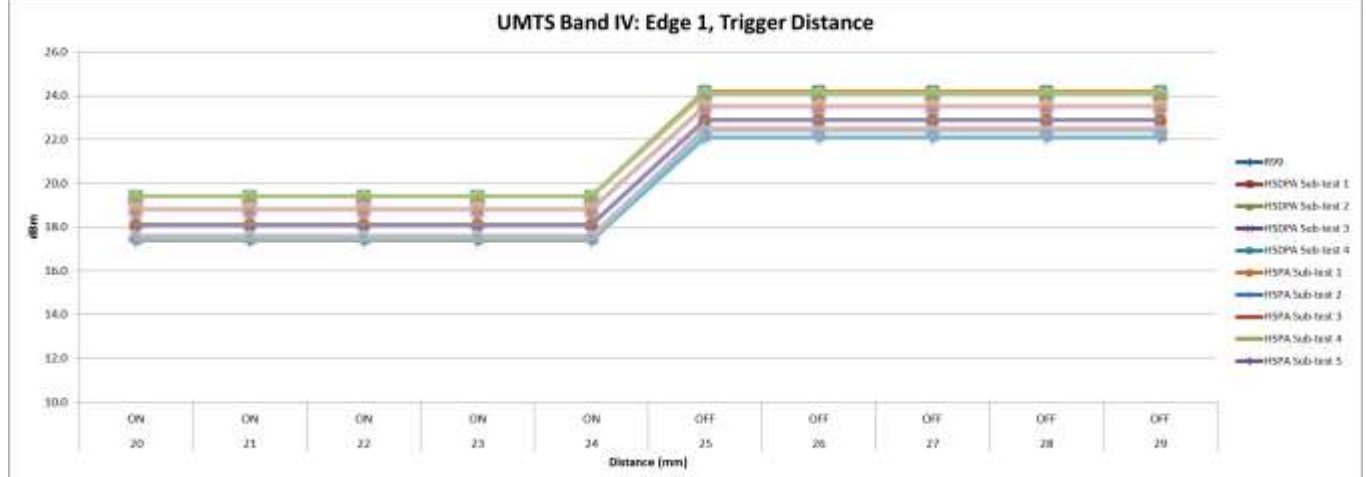
| Edge 1, (UMTS Band II) | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 28 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF |
| R99 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 |
| HSDPA Sub-test 1 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 |
| HSDPA Sub-test 2 | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 |
| HSDPA Sub-test 3 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 |
| HSDPA Sub-test 4 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 |
| HSPA Sub-test 1 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 | 23.1 | 23.1 | 23.1 | 23.1 | 23.1 |
| HSPA Sub-test 2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 |
| HSPA Sub-test 3 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 |
| HSPA Sub-test 4 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 |
| HSPA Sub-test 5 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |



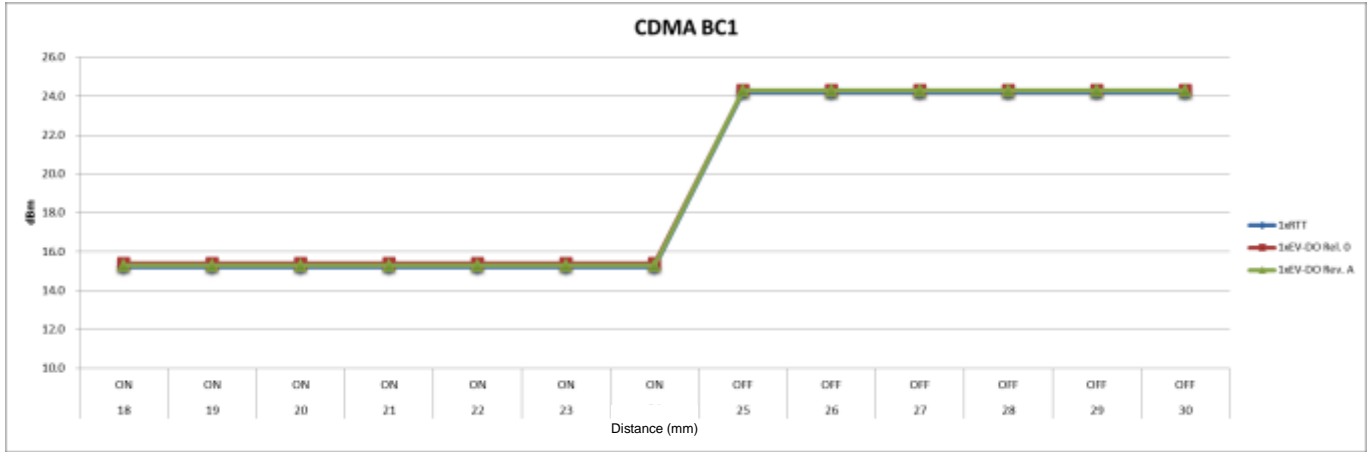
| Edge 1, (UMTS Band V) | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| R99 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 |
| HSDPA Sub-test 1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSDPA Sub-test 2 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |
| HSDPA Sub-test 3 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSDPA Sub-test 4 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSPA Sub-test 1 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 |
| HSPA Sub-test 2 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 |
| HSPA Sub-test 3 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| HSPA Sub-test 4 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 |
| HSPA Sub-test 5 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 |



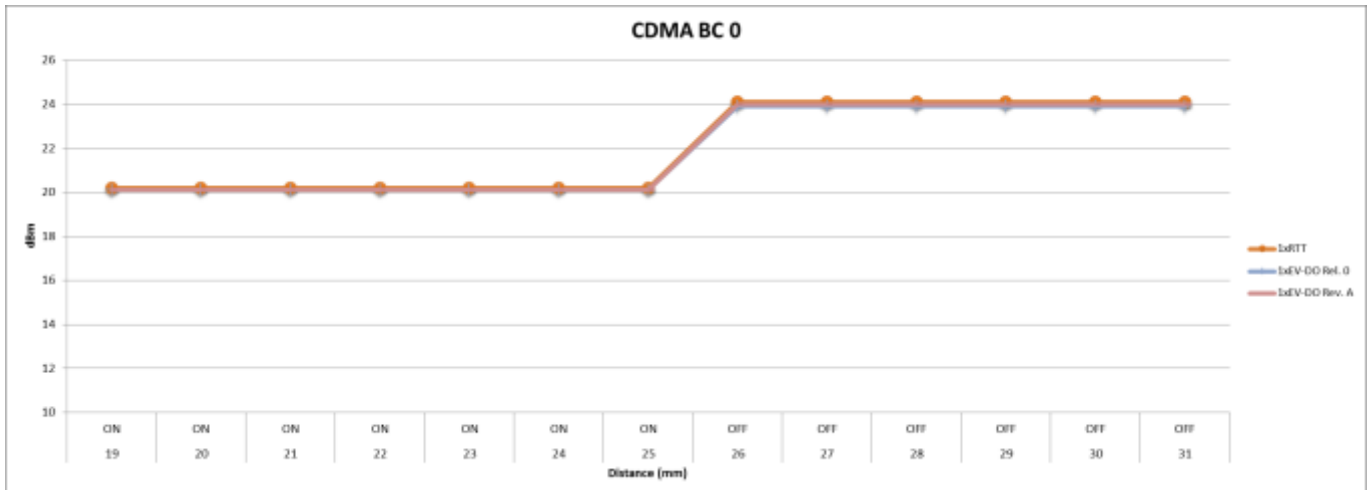
| Edge 1, (UMTS Band IV) | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|--|
| Distance (mm): | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | |
| R99 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | |
| HSDPA Sub-test 1 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | |
| HSDPA Sub-test 2 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | |
| HSDPA Sub-test 3 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | |
| HSDPA Sub-test 4 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | |
| HSPA Sub-test 1 | 18.1 | 18.1 | 18.1 | 18.1 | 18.1 | 22.9 | 22.9 | 22.9 | 22.9 | 22.9 | |
| HSPA Sub-test 2 | 17.4 | 17.4 | 17.4 | 17.4 | 17.4 | 22.1 | 22.1 | 22.1 | 22.1 | 22.1 | |
| HSPA Sub-test 3 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | |
| HSPA Sub-test 4 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 22.4 | 22.4 | 22.4 | 22.4 | 22.4 | |
| HSPA Sub-test 5 | 18.8 | 18.8 | 18.8 | 18.8 | 18.8 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | |



| Edge 1,CDMA BC 1 | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| 1xRTT | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 |
| 1xEV-DO Rel. 0 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 |
| 1xEV-DO Rev. A | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 |



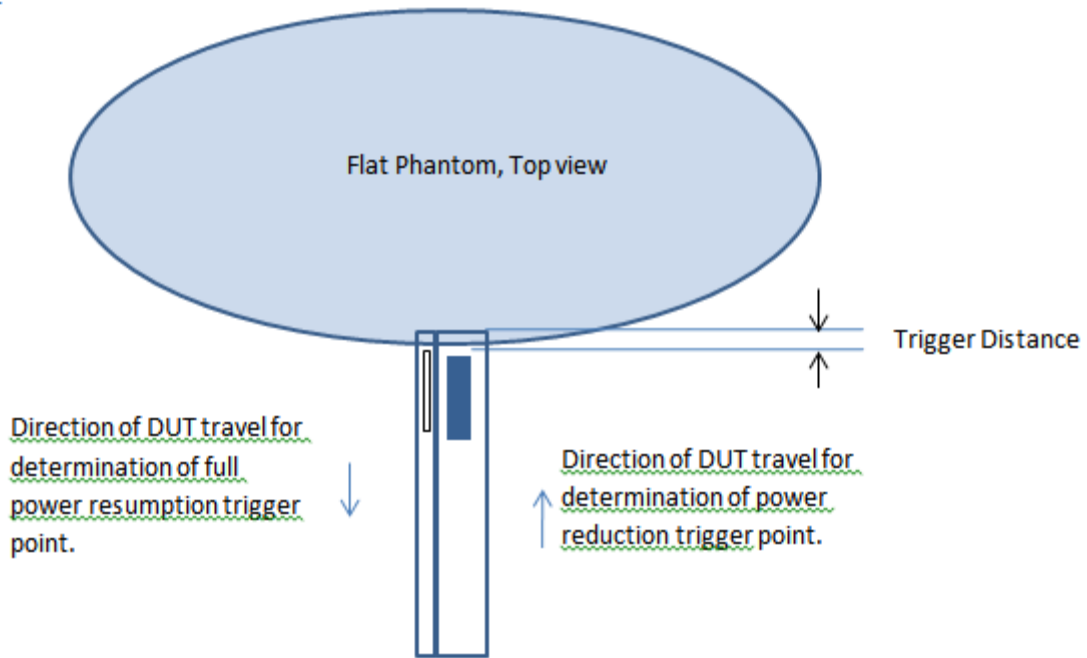
| Edge 1 (CDMA BC 0) | | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| Distance (mm): | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF | |
| 1xRTT | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | |
| 1xEV-DO Rel. 0 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | |
| 1xEV-DO Rev. A | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | |



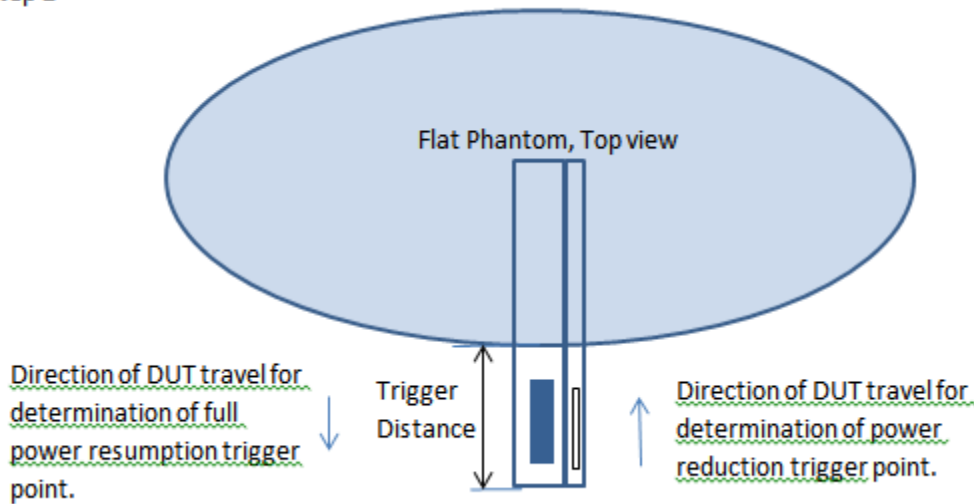
7.7. Proximity Sensor Coverage (KDB 616217 §6.3)

The DUT was positioned at a distance less than 17mm (smallest measured trigger distance) below the phantom. The DUT was held perpendicular to the phantom with edge 4 parallel to the phantom's bottom surface. From a starting position with the DUT >20mm laterally outside the phantom the DUT was moved horizontally toward the phantom as described in KDB 616217 §6.3 to determine the coverage trigger distance. The process was repeated with the DUT positioned directly below the phantom and then moved horizontally away from the phantom. Each edge and face adjacent to edge 1 of the DUT was assessed.

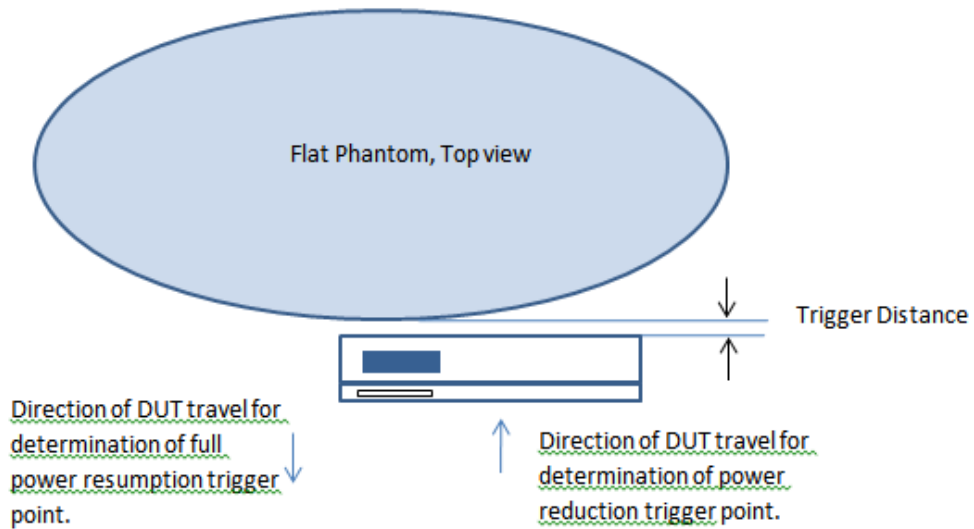
Step 1



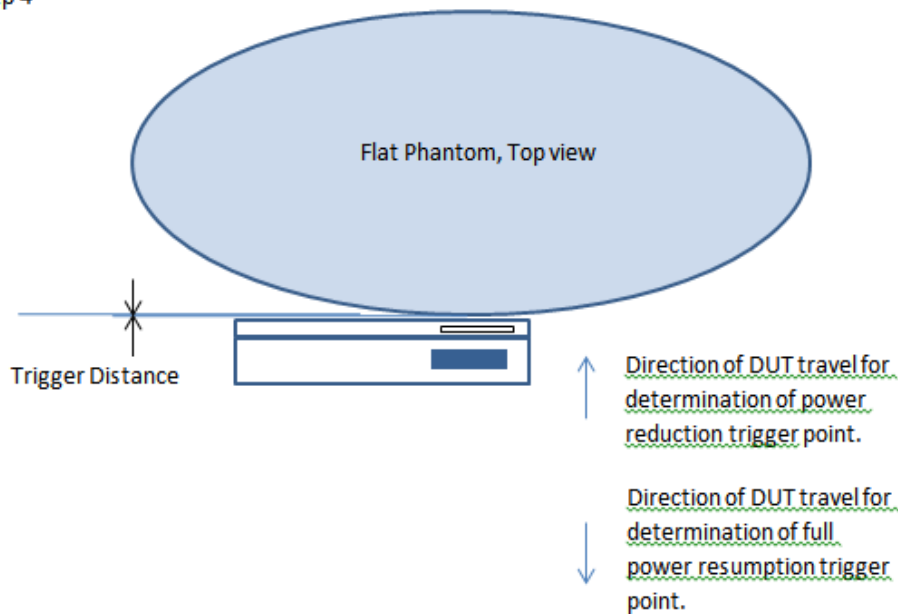
Step 2



Step 3



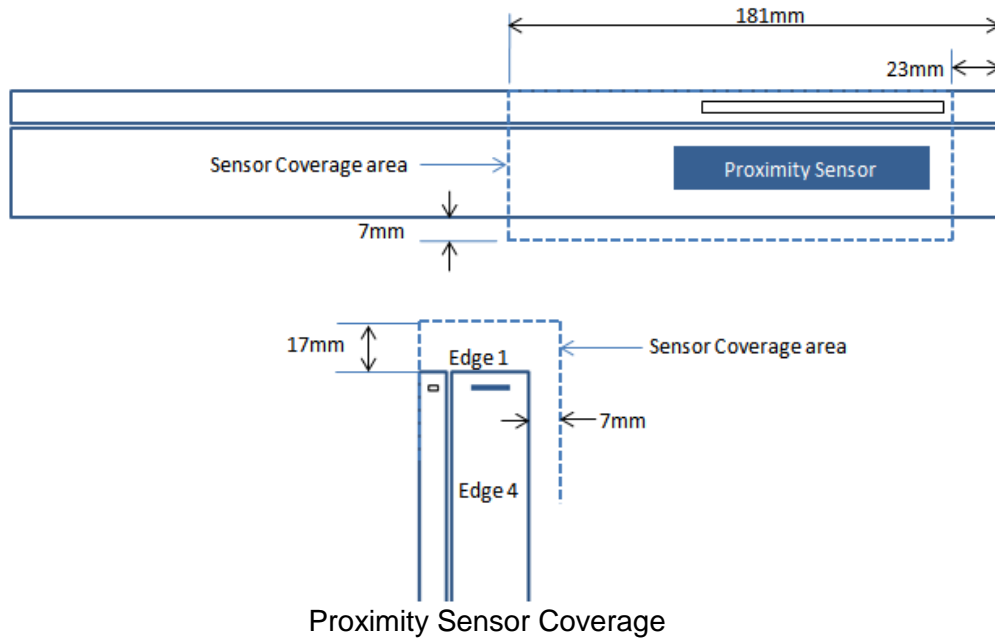
Step 4



Summary of proximity sensor coverage distances.

| Tissue simulating liquid | Trigger distance Step 1 | | Trigger distance Step 2 | | Trigger distance Step 3 | | Trigger distance Step 4 | |
|--------------------------|-------------------------|---------------------|-------------------------|---------------------|-------------------------|---------------------|-------------------------|---------------------|
| | Moving toward phantom | Moving from phantom | Moving toward phantom | Moving from phantom | Moving toward phantom | Moving from phantom | Moving toward phantom | Moving from phantom |
| 850 muscle | -19mm | -15mm | 181mm | 189mm | 7mm | 8mm | 0mm | 4mm |
| 1750 muscle | -22mm | -17mm | 189mm | 191mm | 9mm | 10mm | 1mm | 4mm |
| 1900 muscle | -23mm | -17mm | 190mm | 195mm | 10mm | 12mm | 0mm | 3mm |

Note - A negative distance indicates that the DUT's edge had passed under the edge of the phantom

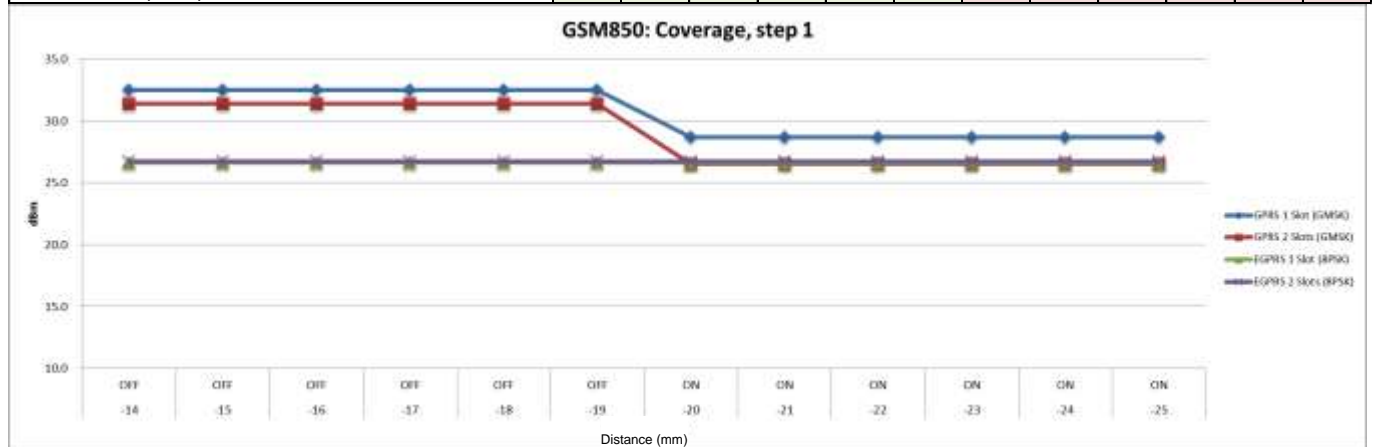


All of the edge 1 WWAN SAR peaks were situated within the boundaries of the proximity sensor coverage area.

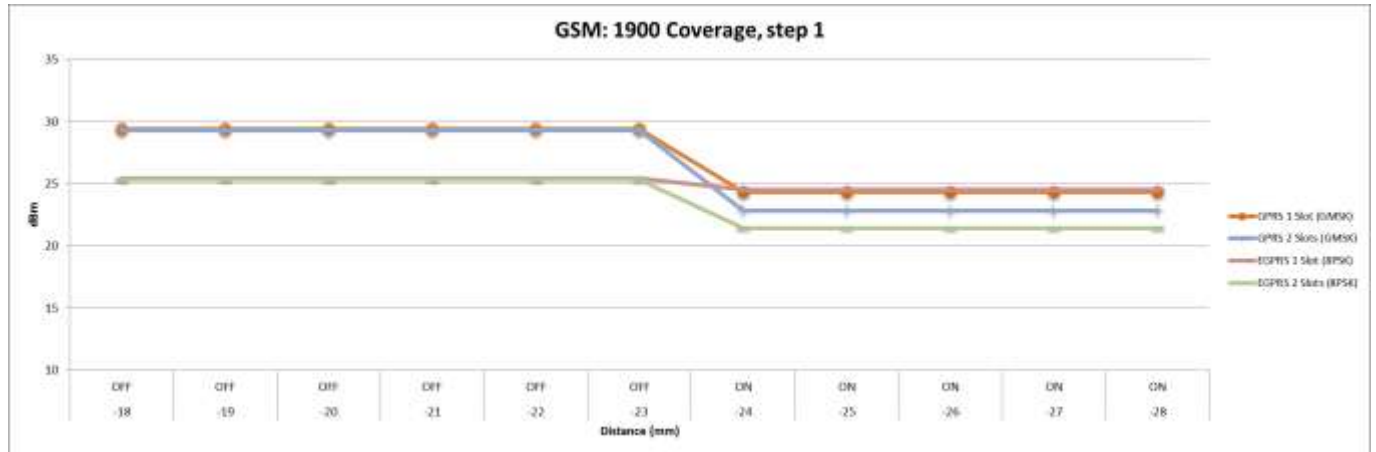
7.8. Proximity Sensor Coverage Measurement Results

7.8.1. DUT Moving Toward the Phantom

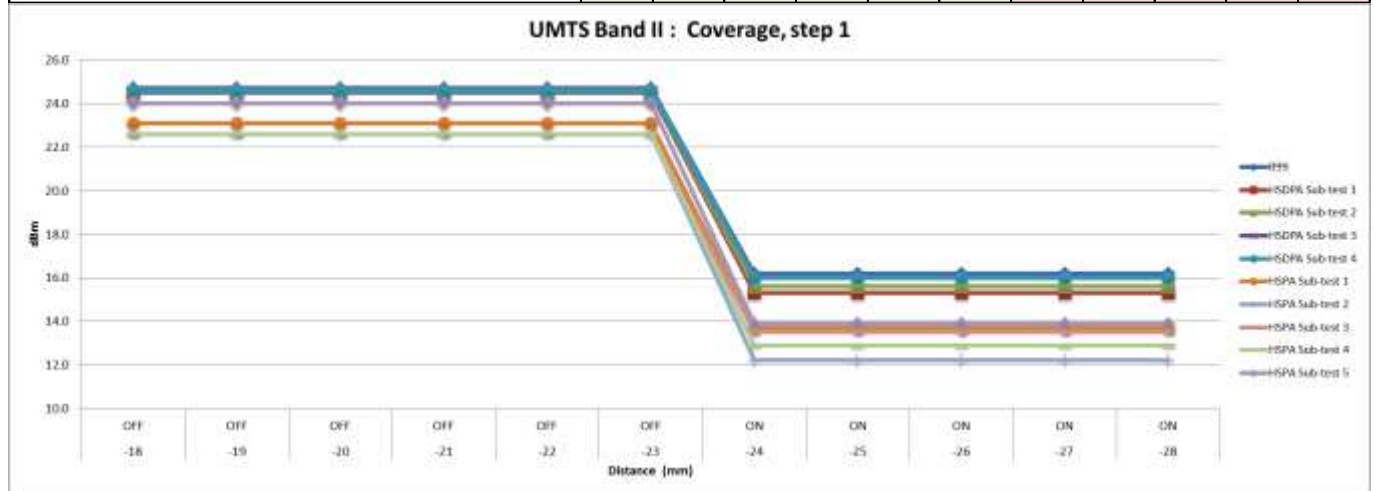
| Coverage step 1, GSM850 | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | -14 | -15 | -16 | -17 | -18 | -19 | -20 | -21 | -22 | -23 | -24 | -25 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON |
| GPRS 1 Slot (GMSK) | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 |
| GPRS 2 Slots (GMSK) | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 |
| EGPRS 1 Slot (8PSK) | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 |
| EGPRS 2 Slots (8PSK) | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 |



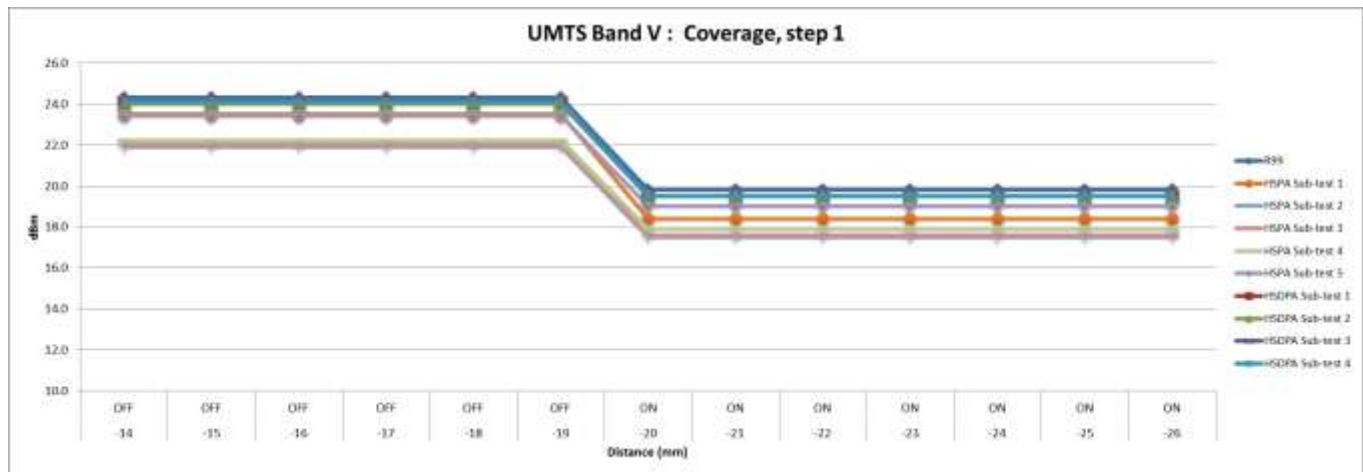
| Coverage step 1 (GSM 1900) | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Distance (mm): | -18 | -19 | -20 | -21 | -22 | -23 | -24 | -25 | -26 | -27 | -28 | -29 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON |
| GPRS 1 Slot (GMSK) | 29.40 | 29.40 | 29.40 | 29.40 | 29.40 | 29.40 | 24.30 | 24.30 | 24.30 | 24.30 | 24.30 | 24.30 |
| GPRS 2 Slots (GMSK) | 29.30 | 29.30 | 29.30 | 29.30 | 29.30 | 29.30 | 22.80 | 22.80 | 22.80 | 22.80 | 22.80 | 22.80 |
| EGPRS 1 Slot (8PSK) | 25.40 | 25.40 | 25.40 | 25.40 | 25.40 | 25.40 | 24.50 | 24.50 | 24.50 | 24.50 | 24.50 | 24.50 |
| EGPRS 2 Slots (8PSK) | 25.30 | 25.30 | 25.30 | 25.30 | 25.30 | 25.30 | 21.40 | 21.40 | 21.40 | 21.40 | 21.40 | 21.40 |



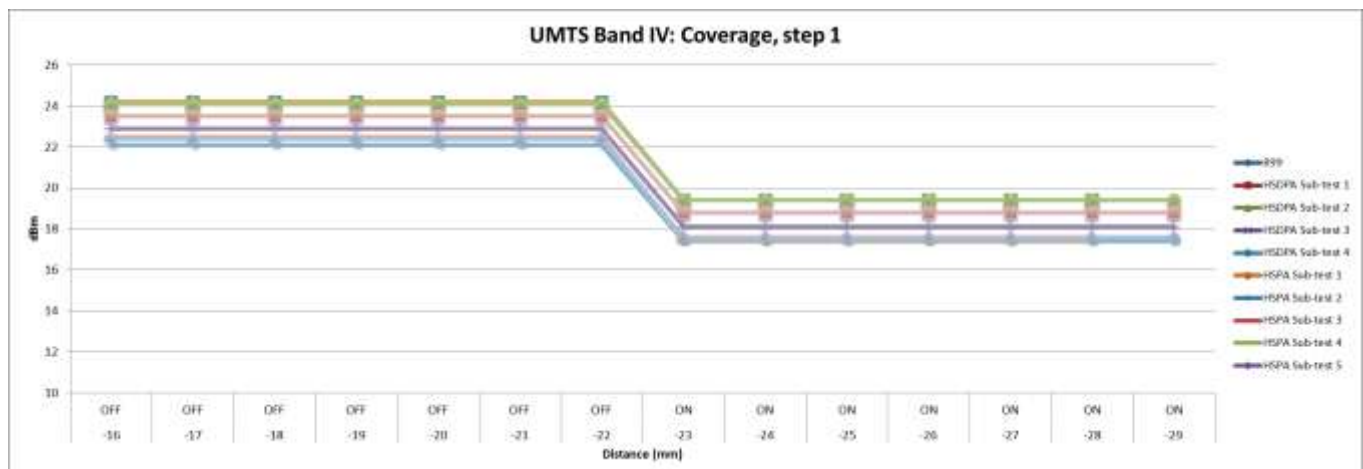
| Coverage step 1 (UMTS Band II) | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|--|
| Distance (mm): | -18 | -19 | -20 | -21 | -22 | -23 | -24 | -25 | -26 | -27 | -28 | |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | |
| R99 | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 | |
| HSDPA Sub-test 1 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | |
| HSDPA Sub-test 2 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 | |
| HSDPA Sub-test 3 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | |
| HSDPA Sub-test 4 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | |
| HSPA Sub-test 1 | 23.1 | 23.1 | 23.1 | 23.1 | 23.1 | 23.1 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 | |
| HSPA Sub-test 2 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | |
| HSPA Sub-test 3 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | |
| HSPA Sub-test 4 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 | |
| HSPA Sub-test 5 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | |



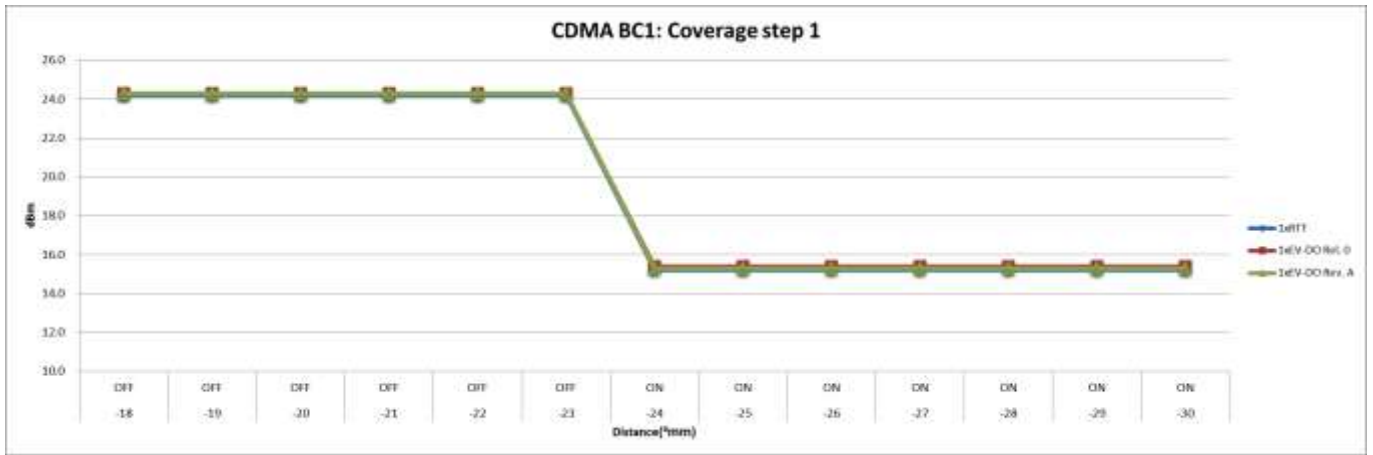
| Coverage step 1 (UMTS Band V) | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | -14 | -15 | -16 | -17 | -18 | -19 | -20 | -21 | -22 | -23 | -24 | -25 | -26 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON | ON |
| R99 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 |
| HSDPA Sub-test 1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSDPA Sub-test 2 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSDPA Sub-test 3 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSDPA Sub-test 4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSPA Sub-test 1 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 |
| HSPA Sub-test 2 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 |
| HSPA Sub-test 3 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 |
| HSPA Sub-test 4 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 |
| HSPA Sub-test 5 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 |



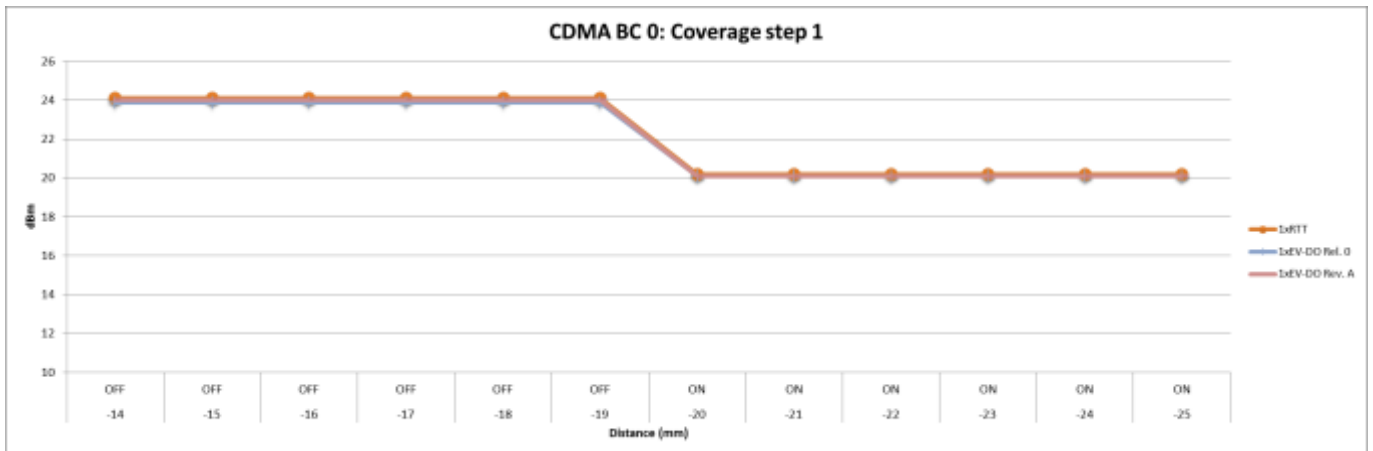
| Edge 1, (UMTS Band IV) | | | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Distance (mm): | -16 | -17 | -18 | -19 | -20 | -21 | -22 | -23 | -24 | -25 | -26 | -27 | -28 | -29 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON | ON |
| R99 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSDPA Sub-test 1 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSDPA Sub-test 2 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSDPA Sub-test 3 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSDPA Sub-test 4 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSPA Sub-test 1 | 22.90 | 22.90 | 22.90 | 22.90 | 22.90 | 22.90 | 22.90 | 18.10 | 18.10 | 18.10 | 18.10 | 18.10 | 18.10 | 18.10 |
| HSPA Sub-test 2 | 22.10 | 22.10 | 22.10 | 22.10 | 22.10 | 22.10 | 22.10 | 17.40 | 17.40 | 17.40 | 17.40 | 17.40 | 17.40 | 17.40 |
| HSPA Sub-test 3 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 | 17.50 | 17.50 | 17.50 | 17.50 | 17.50 | 17.50 | 17.50 |
| HSPA Sub-test 4 | 22.40 | 22.40 | 22.40 | 22.40 | 22.40 | 22.40 | 22.40 | 17.60 | 17.60 | 17.60 | 17.60 | 17.60 | 17.60 | 17.60 |
| HSPA Sub-test 5 | 23.50 | 23.50 | 23.50 | 23.50 | 23.50 | 23.50 | 23.50 | 18.80 | 18.80 | 18.80 | 18.80 | 18.80 | 18.80 | 18.80 |



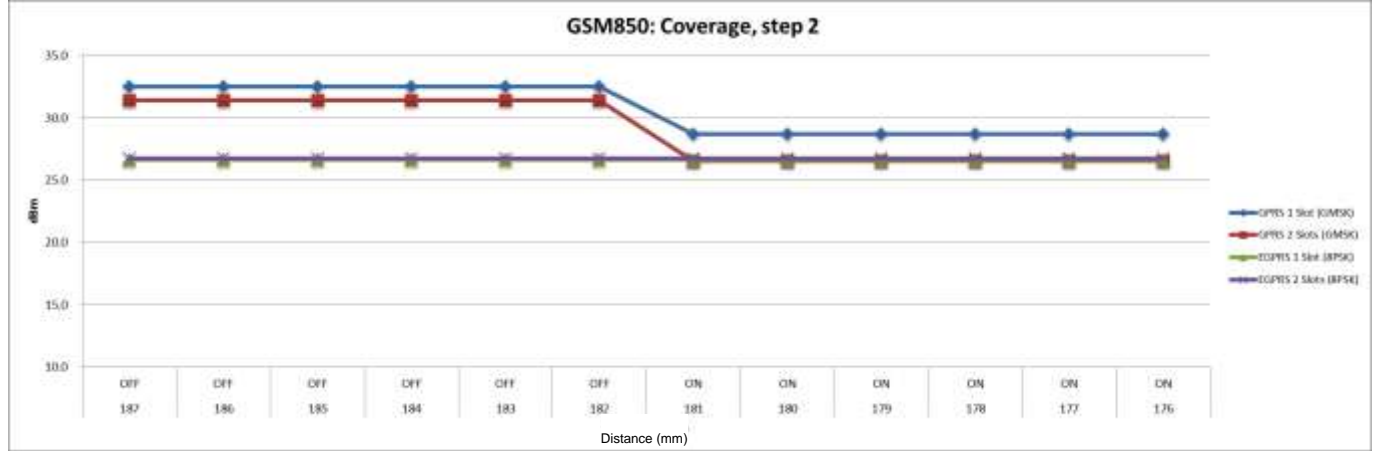
| Coverage step 1 CDMA BC 1 | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | -18 | -19 | -20 | -21 | -22 | -23 | -24 | -25 | -26 | -27 | -28 | -29 | -30 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON | ON |
| 1xRTT | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 |
| 1xEV-DO Rel. 0 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 |
| 1xEV-DO Rev. A | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 |



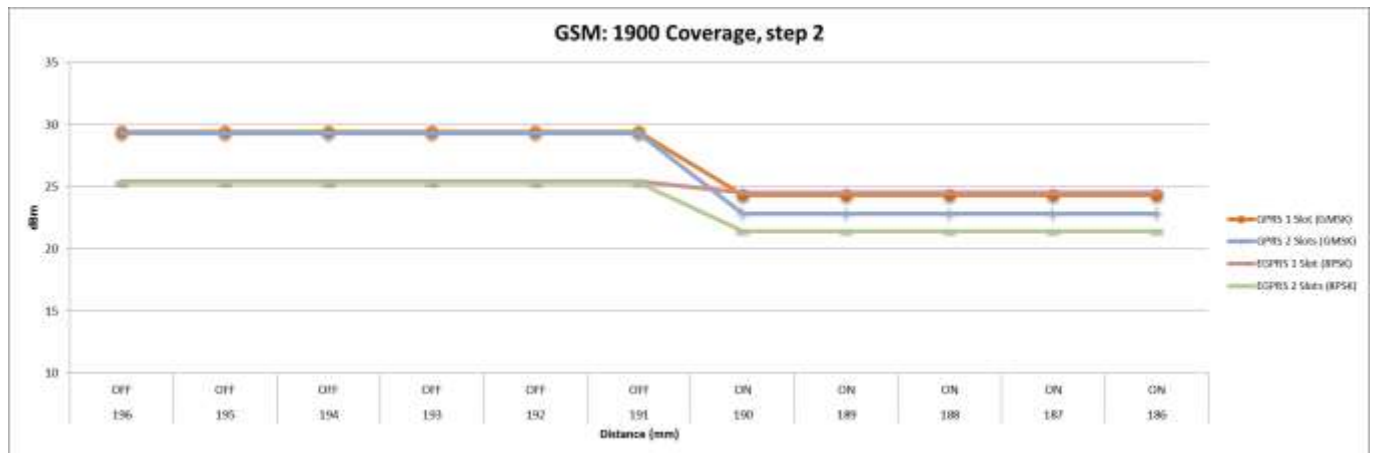
| Coverage step 1 CDMA BC 0 | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|--|
| Distance (mm): | -14 | -15 | -16 | -17 | -18 | -19 | -20 | -21 | -22 | -23 | -24 | -25 | |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON | |
| 1xRTT | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | |
| 1xEV-DO Rel. 0 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | |
| 1xEV-DO Rev. A | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | |



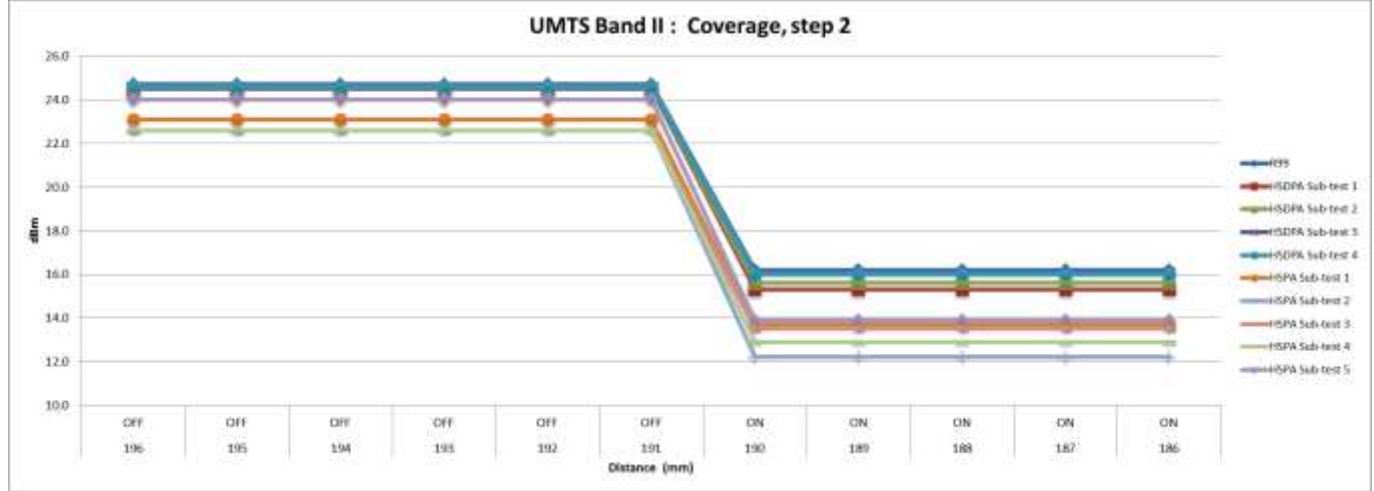
| Coverage step 2 (GSM850) | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 187 | 186 | 185 | 184 | 183 | 182 | 181 | 180 | 179 | 178 | 177 | 176 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON |
| GPRS 1 Slot (GMSK) | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 |
| GPRS 2 Slots (GMSK) | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 |
| EGPRS 1 Slot (8PSK) | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 |
| EGPRS 2 Slots (8PSK) | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 |



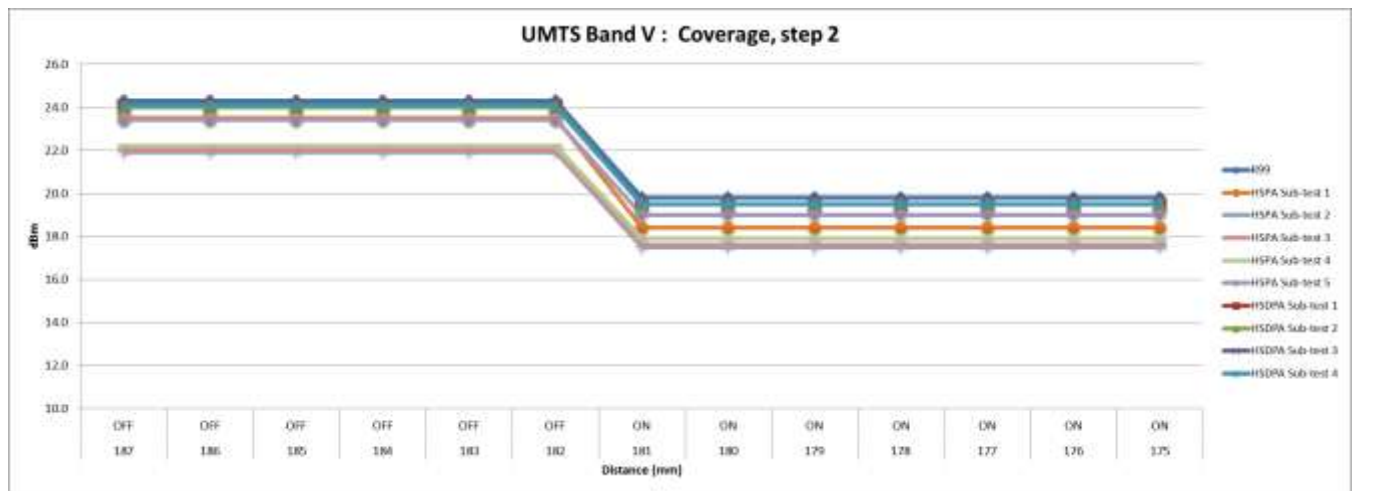
| Coverage step 2 (GSM 1900) | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Distance (mm): | 196 | 195 | 194 | 193 | 192 | 191 | 190 | 189 | 188 | 187 | 186 | 185 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON |
| GPRS 1 Slot (GMSK) | 29.40 | 29.40 | 29.40 | 29.40 | 29.40 | 29.40 | 24.30 | 24.30 | 24.30 | 24.30 | 24.30 | 24.30 |
| GPRS 2 Slots (GMSK) | 29.30 | 29.30 | 29.30 | 29.30 | 29.30 | 29.30 | 22.80 | 22.80 | 22.80 | 22.80 | 22.80 | 22.80 |
| EGPRS 1 Slot (8PSK) | 25.40 | 25.40 | 25.40 | 25.40 | 25.40 | 25.40 | 24.50 | 24.50 | 24.50 | 24.50 | 24.50 | 24.50 |
| EGPRS 2 Slots (8PSK) | 25.30 | 25.30 | 25.30 | 25.30 | 25.30 | 25.30 | 21.40 | 21.40 | 21.40 | 21.40 | 21.40 | 21.40 |



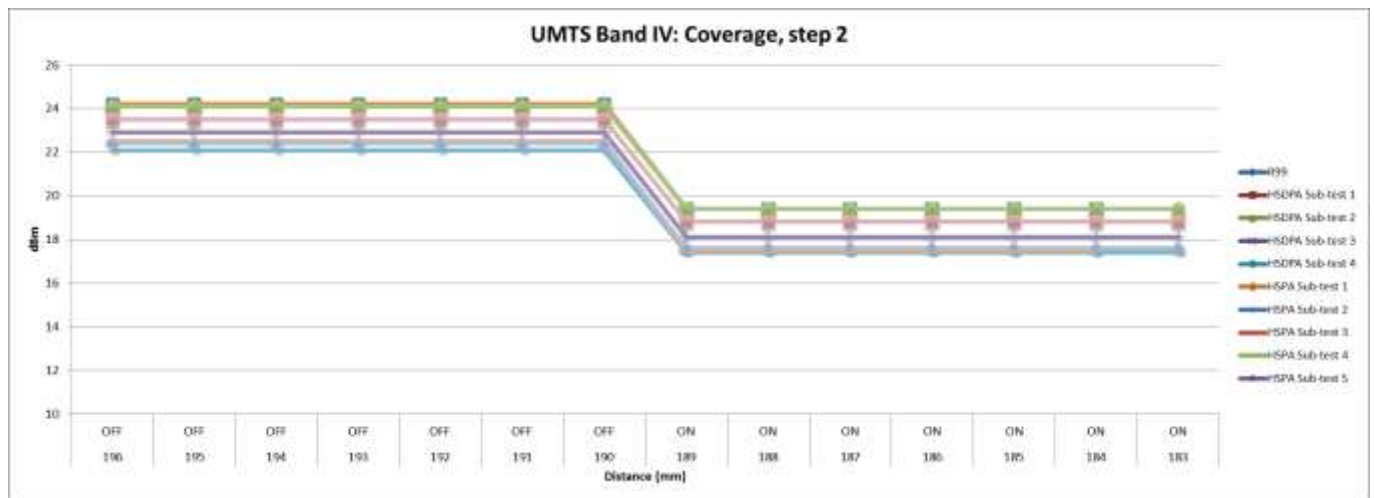
| Coverage step 2 (UMTS Band II) | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 196 | 195 | 194 | 193 | 192 | 191 | 190 | 189 | 188 | 187 | 186 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON |
| R99 | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 |
| HSDPA Sub-test 1 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 |
| HSDPA Sub-test 2 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 |
| HSDPA Sub-test 3 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| HSDPA Sub-test 4 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| HSPA Sub-test 1 | 23.1 | 23.1 | 23.1 | 23.1 | 23.1 | 23.1 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 |
| HSPA Sub-test 2 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 |
| HSPA Sub-test 3 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 |
| HSPA Sub-test 4 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 |
| HSPA Sub-test 5 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 |



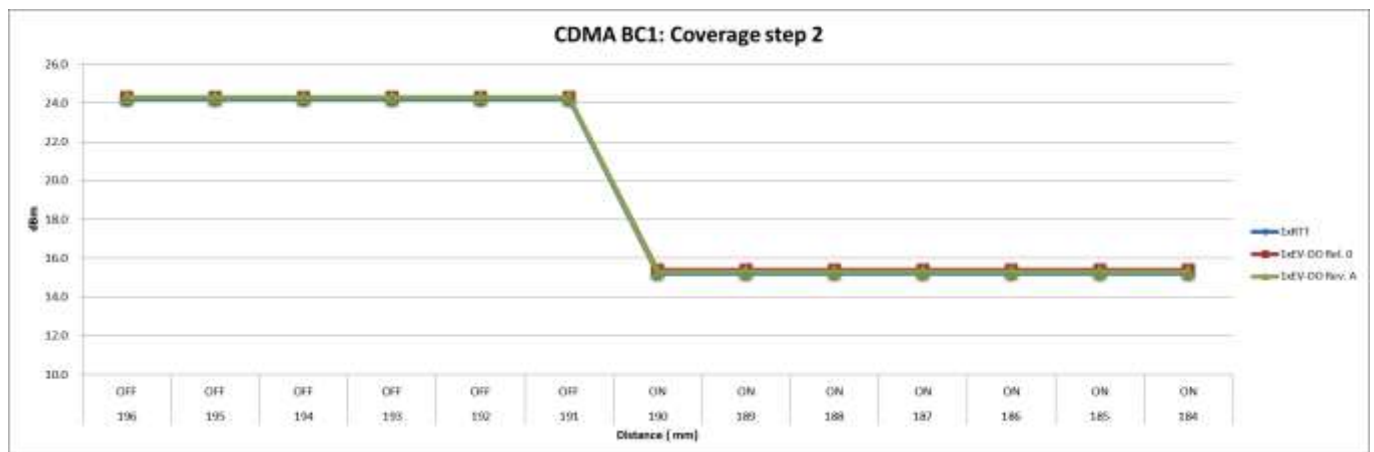
| Coverage step 2 (UMTS Band V) | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 187 | 186 | 185 | 184 | 183 | 182 | 181 | 180 | 179 | 178 | 177 | 176 | 175 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON | ON |
| R99 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 |
| HSDPA Sub-test 1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSDPA Sub-test 2 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSDPA Sub-test 3 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSDPA Sub-test 4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSPA Sub-test 1 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 |
| HSPA Sub-test 2 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 |
| HSPA Sub-test 3 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 |
| HSPA Sub-test 4 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 |
| HSPA Sub-test 5 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 |



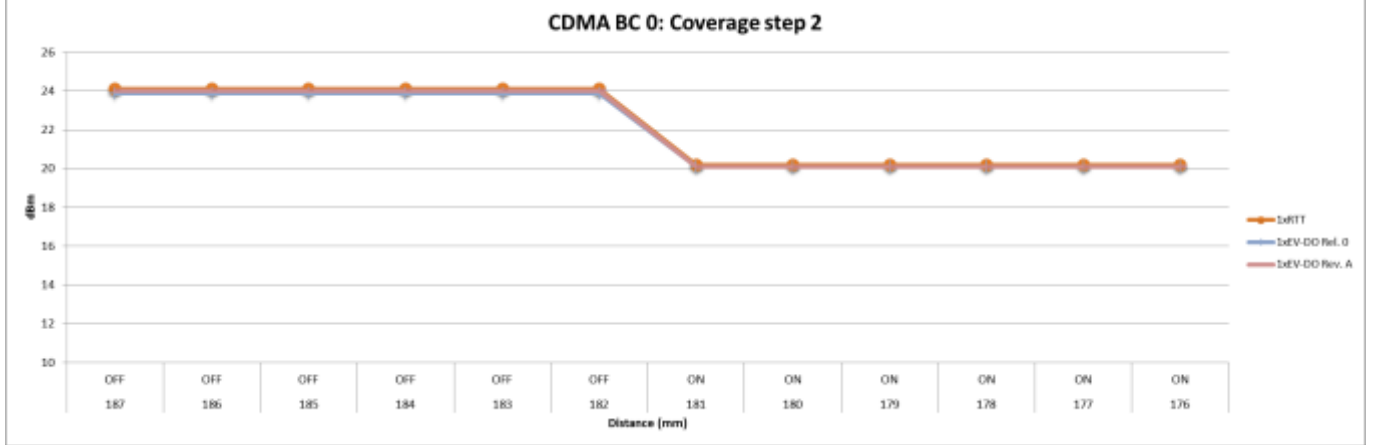
| Coverage step 2 (UMTS Band IV) | | | | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| Distance (mm): | 196 | 195 | 194 | 193 | 192 | 191 | 190 | 189 | 188 | 187 | 186 | 185 | 184 | 183 | |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON | ON | |
| R99 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | |
| HSDPA Sub-test 1 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | |
| HSDPA Sub-test 2 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | |
| HSDPA Sub-test 3 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | |
| HSDPA Sub-test 4 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | |
| HSPA Sub-test 1 | 22.90 | 22.90 | 22.90 | 22.90 | 22.90 | 22.90 | 22.90 | 18.10 | 18.10 | 18.10 | 18.10 | 18.10 | 18.10 | 18.10 | |
| HSPA Sub-test 2 | 22.10 | 22.10 | 22.10 | 22.10 | 22.10 | 22.10 | 22.10 | 17.40 | 17.40 | 17.40 | 17.40 | 17.40 | 17.40 | 17.40 | |
| HSPA Sub-test 3 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 | 17.50 | 17.50 | 17.50 | 17.50 | 17.50 | 17.50 | 17.50 | |
| HSPA Sub-test 4 | 22.40 | 22.40 | 22.40 | 22.40 | 22.40 | 22.40 | 22.40 | 17.60 | 17.60 | 17.60 | 17.60 | 17.60 | 17.60 | 17.60 | |
| HSPA Sub-test 5 | 23.50 | 23.50 | 23.50 | 23.50 | 23.50 | 23.50 | 23.50 | 18.80 | 18.80 | 18.80 | 18.80 | 18.80 | 18.80 | 18.80 | |



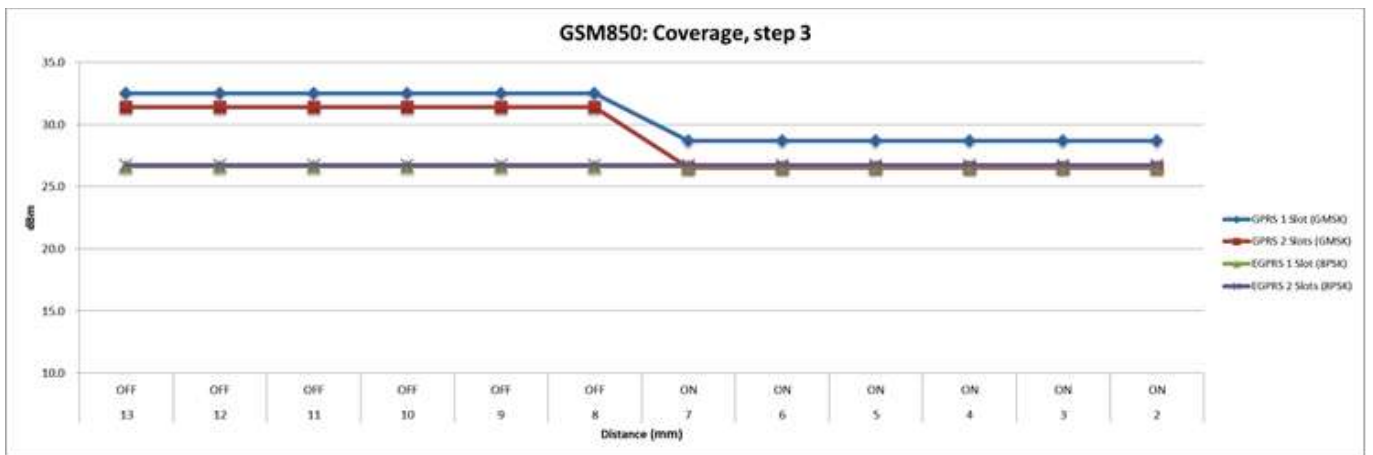
| Coverage step 2 CDMA BC 1 | | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| Distance (mm): | 196 | 195 | 194 | 193 | 192 | 191 | 190 | 189 | 188 | 187 | 186 | 185 | 184 | |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON | ON | |
| 1xRTT | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | |
| 1xEV-DO Rel. 0 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | |
| 1xEV-DO Rev. A | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | |



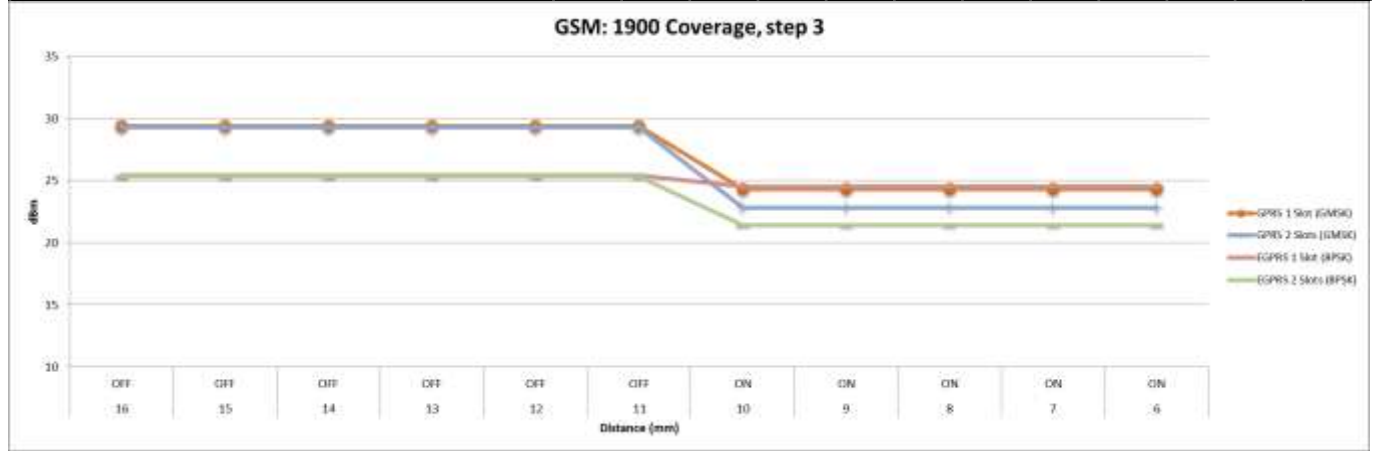
| Coverage step 2 CDMA BC 0 | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 187 | 186 | 185 | 184 | 183 | 182 | 181 | 180 | 179 | 178 | 177 | 176 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON |
| 1xRTT | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 |
| 1xEV-DO Rel. 0 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 |
| 1xEV-DO Rev. A | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 |



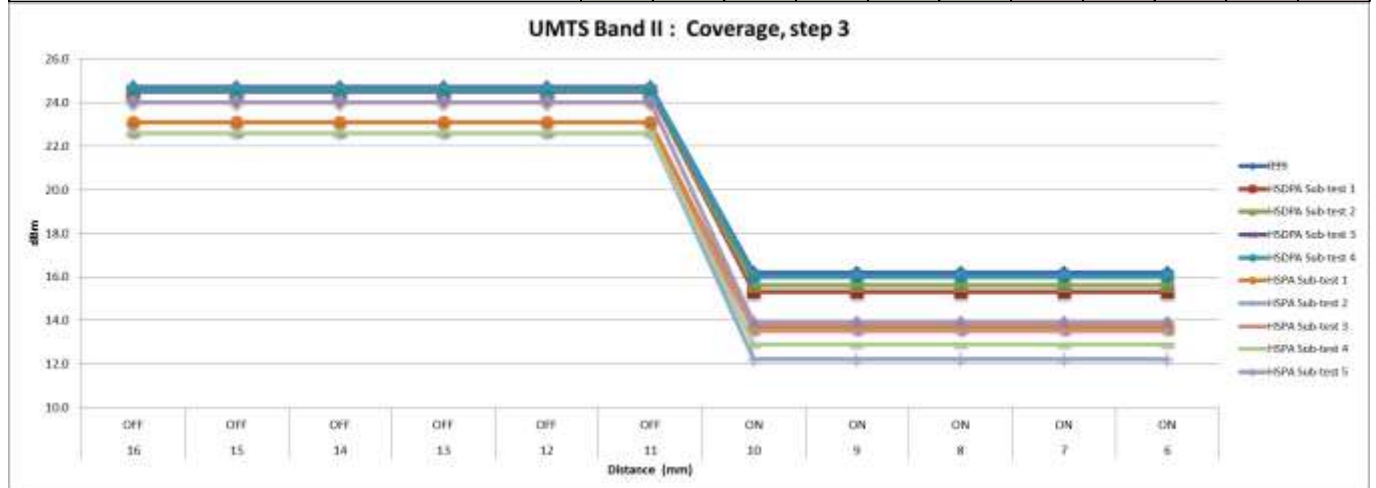
| Coverage step 3 (GSM850) | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON |
| GPRS 1 Slot (GMSK) | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 |
| GPRS 2 Slots (GMSK) | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 |
| EGPRS 1 Slot (8PSK) | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 |
| EGPRS 2 Slots (8PSK) | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 |



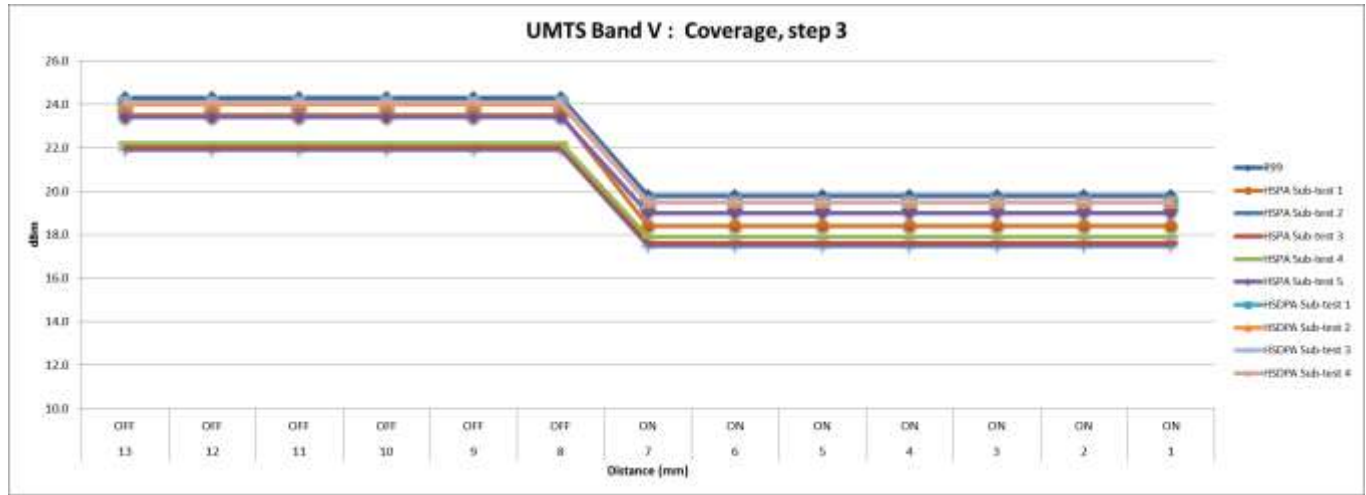
| Coverage step 3 (GSM1900) | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Distance (mm): | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON |
| GPRS 1 Slot (GMSK) | 29.40 | 29.40 | 29.40 | 29.40 | 29.40 | 29.40 | 24.30 | 24.30 | 24.30 | 24.30 | 24.30 | 24.30 |
| GPRS 2 Slots (GMSK) | 29.30 | 29.30 | 29.30 | 29.30 | 29.30 | 29.30 | 22.80 | 22.80 | 22.80 | 22.80 | 22.80 | 22.80 |
| EGPRS 1 Slot (8PSK) | 25.40 | 25.40 | 25.40 | 25.40 | 25.40 | 25.40 | 24.50 | 24.50 | 24.50 | 24.50 | 24.50 | 24.50 |
| EGPRS 2 Slots (8PSK) | 25.30 | 25.30 | 25.30 | 25.30 | 25.30 | 25.30 | 21.40 | 21.40 | 21.40 | 21.40 | 21.40 | 21.40 |



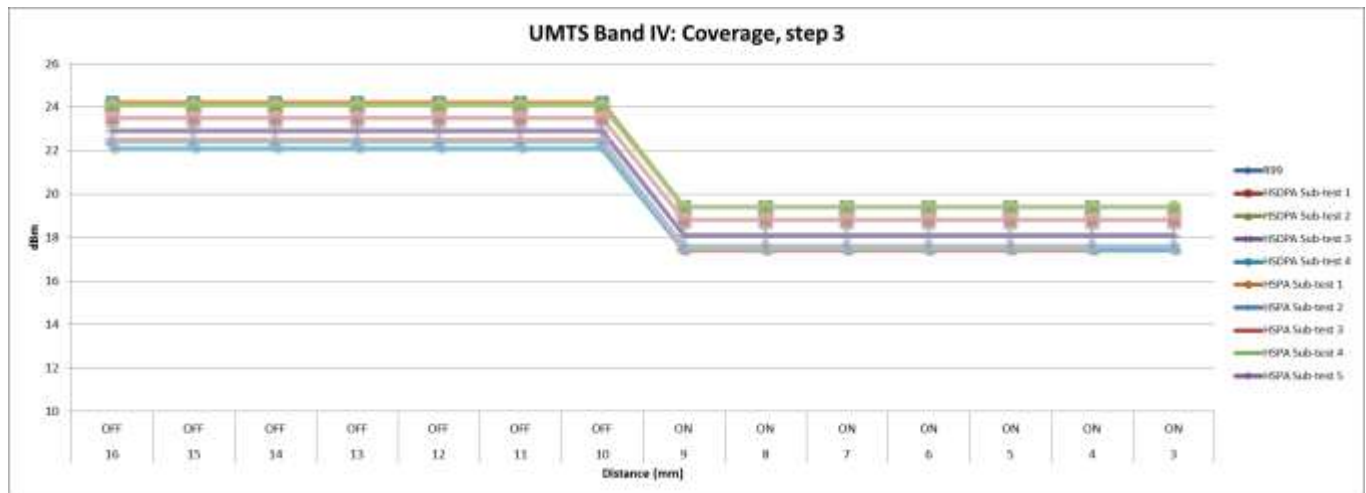
| Coverage step 3 (UMTS Band II) | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON |
| R99 | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 |
| HSDPA Sub-test 1 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 |
| HSDPA Sub-test 2 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 |
| HSDPA Sub-test 3 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| HSDPA Sub-test 4 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| HSPA Sub-test 1 | 23.1 | 23.1 | 23.1 | 23.1 | 23.1 | 23.1 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 |
| HSPA Sub-test 2 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 |
| HSPA Sub-test 3 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 |
| HSPA Sub-test 4 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 |
| HSPA Sub-test 5 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 |



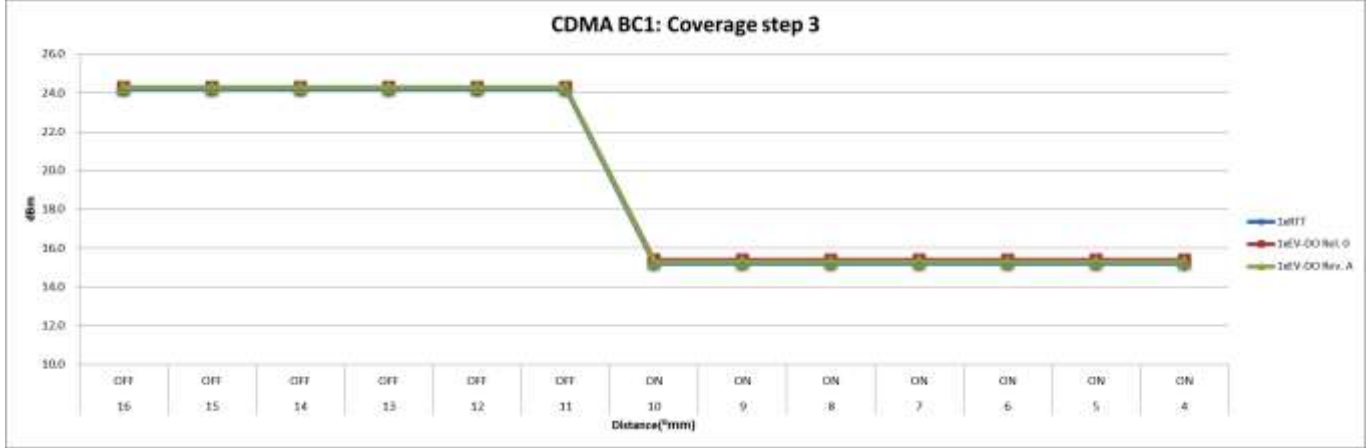
| Coverage step 3 (UMTS Band V) | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON | ON |
| R99 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 |
| HSDPA Sub-test 1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSDPA Sub-test 2 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSDPA Sub-test 3 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSDPA Sub-test 4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSPA Sub-test 1 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 |
| HSPA Sub-test 2 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 |
| HSPA Sub-test 3 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 |
| HSPA Sub-test 4 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 |
| HSPA Sub-test 5 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 |



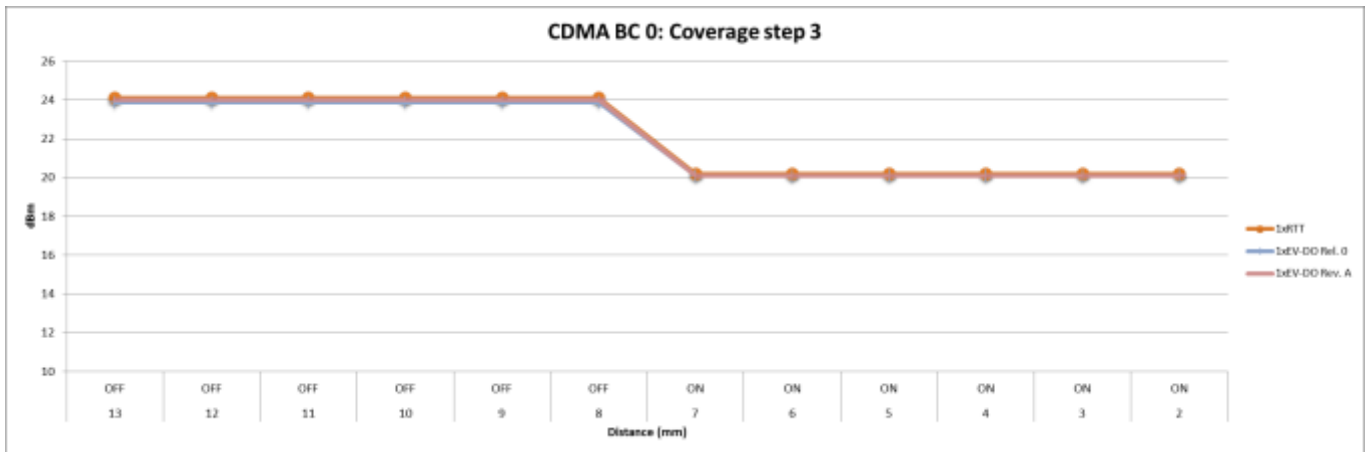
| Coverage step 3 (UMTS Band IV) | | | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Distance (mm): | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON | ON |
| R99 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSDPA Sub-test 1 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSDPA Sub-test 2 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSDPA Sub-test 3 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSDPA Sub-test 4 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSPA Sub-test 1 | 22.90 | 22.90 | 22.90 | 22.90 | 22.90 | 22.90 | 22.90 | 18.10 | 18.10 | 18.10 | 18.10 | 18.10 | 18.10 | 18.10 |
| HSPA Sub-test 2 | 22.10 | 22.10 | 22.10 | 22.10 | 22.10 | 22.10 | 22.10 | 17.40 | 17.40 | 17.40 | 17.40 | 17.40 | 17.40 | 17.40 |
| HSPA Sub-test 3 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 | 17.50 | 17.50 | 17.50 | 17.50 | 17.50 | 17.50 | 17.50 |
| HSPA Sub-test 4 | 22.40 | 22.40 | 22.40 | 22.40 | 22.40 | 22.40 | 22.40 | 17.60 | 17.60 | 17.60 | 17.60 | 17.60 | 17.60 | 17.60 |
| HSPA Sub-test 5 | 23.50 | 23.50 | 23.50 | 23.50 | 23.50 | 23.50 | 23.50 | 18.80 | 18.80 | 18.80 | 18.80 | 18.80 | 18.80 | 18.80 |



| Coverage step 3, CDMA BC 1 | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON | ON |
| 1xRTT | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 |
| 1xEV-DO Rel. 0 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 |
| 1xEV-DO Rev. A | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 |



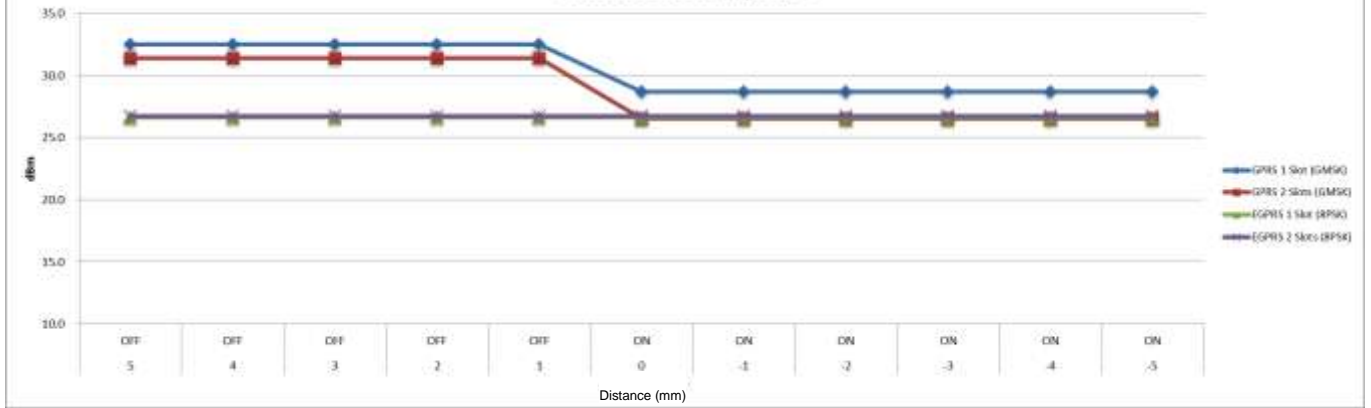
| Coverage step 3 CDMA BC 0 | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON |
| 1xRTT | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 |
| 1xEV-DO Rel. 0 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 |
| 1xEV-DO Rev. A | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 |



Coverage step 4 GSM850)

| Distance (mm): | 5 | 4 | 3 | 2 | 1 | 0 | -1 | -2 | -3 | -4 | -5 |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON |
| GPRS 1 Slot (GMSK) | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 |
| GPRS 2 Slots (GMSK) | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 |
| EGPRS 1 Slot (8PSK) | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 |
| EGPRS 2 Slots (8PSK) | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 |

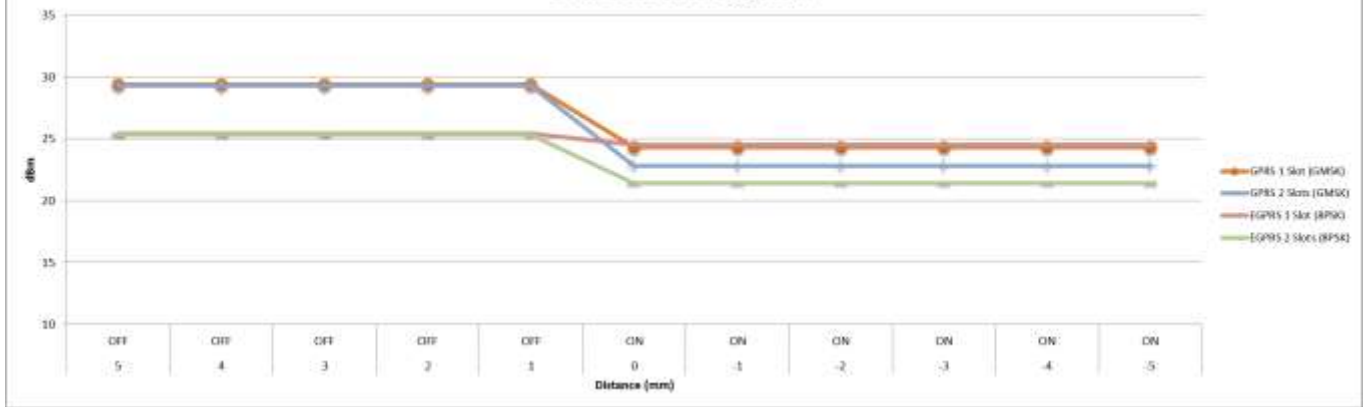
GSM850: Coverage, step 4



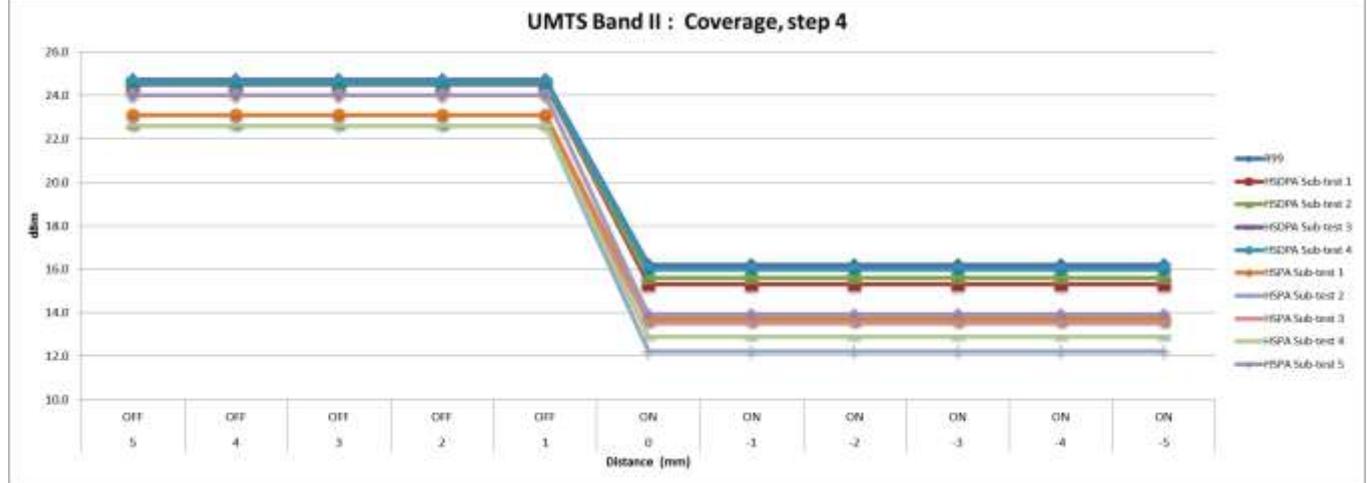
Coverage step 4 (GSM1900)

| Distance (mm): | 5 | 4 | 3 | 2 | 1 | 0 | -1 | -2 | -3 | -4 | -5 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON |
| GPRS 1 Slot (GMSK) | 29.40 | 29.40 | 29.40 | 29.40 | 29.40 | 24.30 | 24.30 | 24.30 | 24.30 | 24.30 | 24.30 |
| GPRS 2 Slots (GMSK) | 29.30 | 29.30 | 29.30 | 29.30 | 29.30 | 22.80 | 22.80 | 22.80 | 22.80 | 22.80 | 22.80 |
| EGPRS 1 Slot (8PSK) | 25.40 | 25.40 | 25.40 | 25.40 | 25.40 | 24.50 | 24.50 | 24.50 | 24.50 | 24.50 | 24.50 |
| EGPRS 2 Slots (8PSK) | 25.30 | 25.30 | 25.30 | 25.30 | 25.30 | 21.40 | 21.40 | 21.40 | 21.40 | 21.40 | 21.40 |

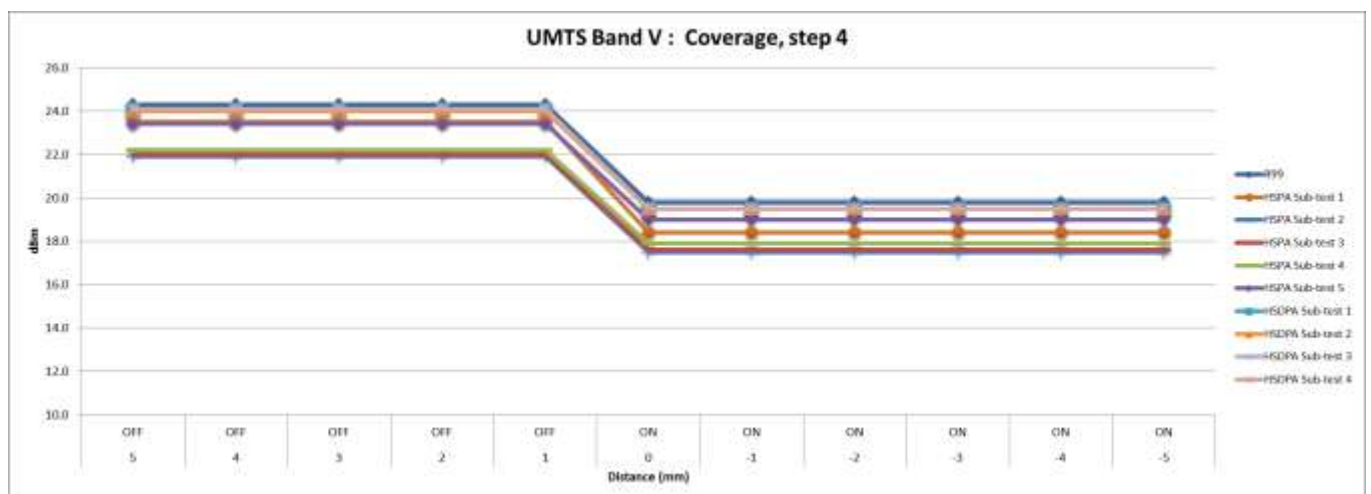
GSM: 1900 Coverage, step 4



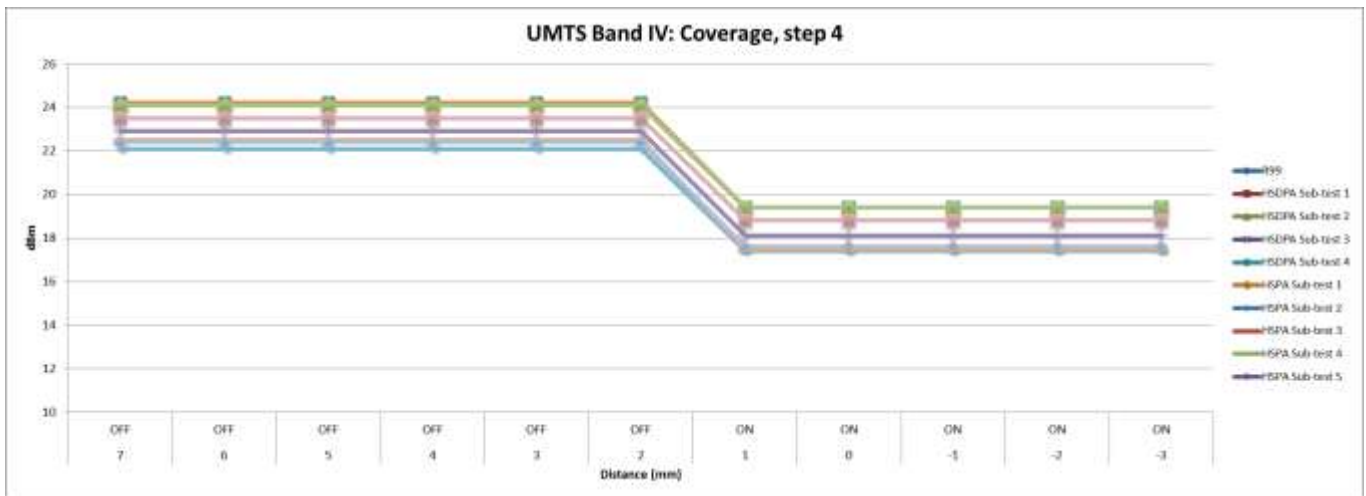
| Coverage step 4 , (UMTS Band II) | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 5 | 4 | 3 | 2 | 1 | 0 | -1 | -2 | -3 | -4 | -5 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON |
| R99 | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 |
| HSDPA Sub-test 1 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 |
| HSDPA Sub-test 2 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 |
| HSDPA Sub-test 3 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| HSDPA Sub-test 4 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| HSPA Sub-test 1 | 23.1 | 23.1 | 23.1 | 23.1 | 23.1 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 |
| HSPA Sub-test 2 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 |
| HSPA Sub-test 3 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 |
| HSPA Sub-test 4 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 |
| HSPA Sub-test 5 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 |



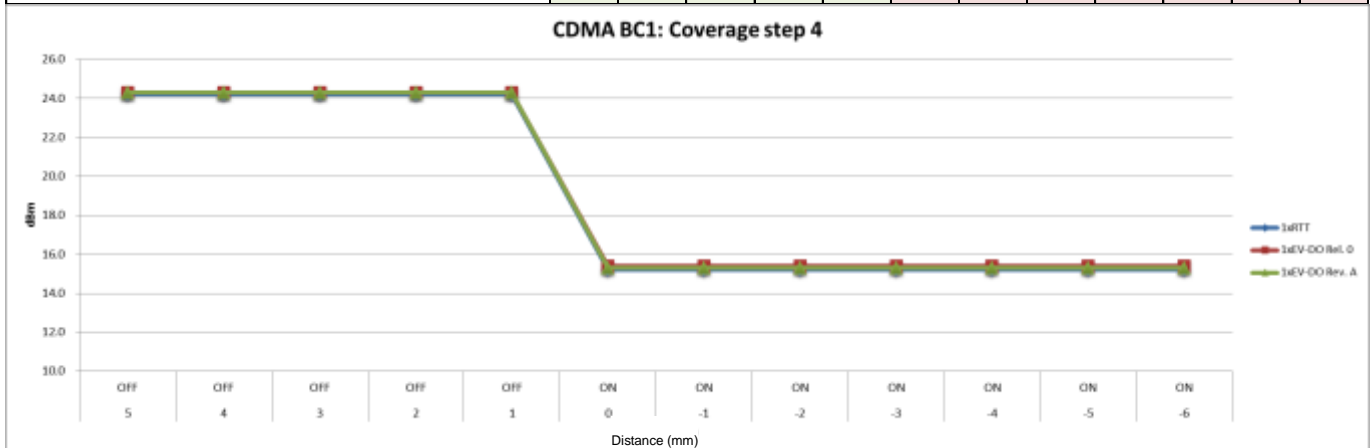
| Coverage step 4 (UMTS Band V) | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 5 | 4 | 3 | 2 | 1 | 0 | -1 | -2 | -3 | -4 | -5 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON |
| R99 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 |
| HSDPA Sub-test 1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSDPA Sub-test 2 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSDPA Sub-test 3 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSDPA Sub-test 4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 |
| HSPA Sub-test 1 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 |
| HSPA Sub-test 2 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 |
| HSPA Sub-test 3 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 |
| HSPA Sub-test 4 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 |
| HSPA Sub-test 5 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 |



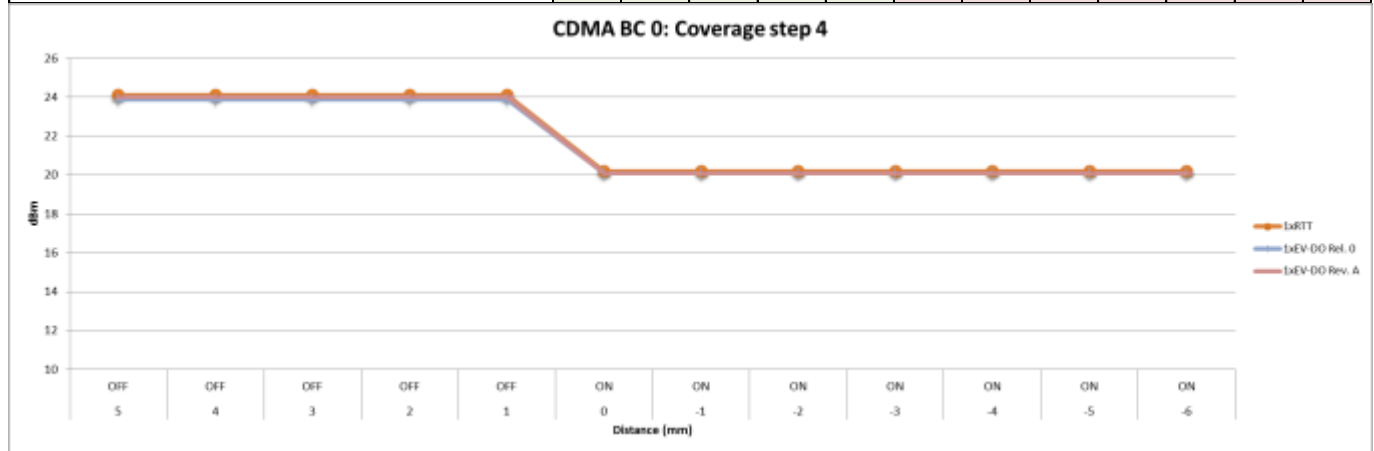
| Coverage step 4 (UMTS Band IV) | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Distance (mm): | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 | -1 | -2 | -3 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON |
| R99 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSDPA Sub-test 1 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 24.20 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSDPA Sub-test 2 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSDPA Sub-test 3 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSDPA Sub-test 4 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 24.10 | 19.40 | 19.40 | 19.40 | 19.40 | 19.40 |
| HSPA Sub-test 1 | 22.90 | 22.90 | 22.90 | 22.90 | 22.90 | 22.90 | 18.10 | 18.10 | 18.10 | 18.10 | 18.10 |
| HSPA Sub-test 2 | 22.10 | 22.10 | 22.10 | 22.10 | 22.10 | 22.10 | 17.40 | 17.40 | 17.40 | 17.40 | 17.40 |
| HSPA Sub-test 3 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 | 22.50 | 17.50 | 17.50 | 17.50 | 17.50 | 17.50 |
| HSPA Sub-test 4 | 22.40 | 22.40 | 22.40 | 22.40 | 22.40 | 22.40 | 17.60 | 17.60 | 17.60 | 17.60 | 17.60 |
| HSPA Sub-test 5 | 23.50 | 23.50 | 23.50 | 23.50 | 23.50 | 23.50 | 18.80 | 18.80 | 18.80 | 18.80 | 18.80 |



| Coverage step 4 CDMA BC 1 | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 5 | 4 | 3 | 2 | 1 | 0 | -1 | -2 | -3 | -4 | -5 | -6 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON | ON |
| 1xRTT | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 |
| 1xEV-DO Rel. 0 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 |
| 1xEV-DO Rev. A | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 |

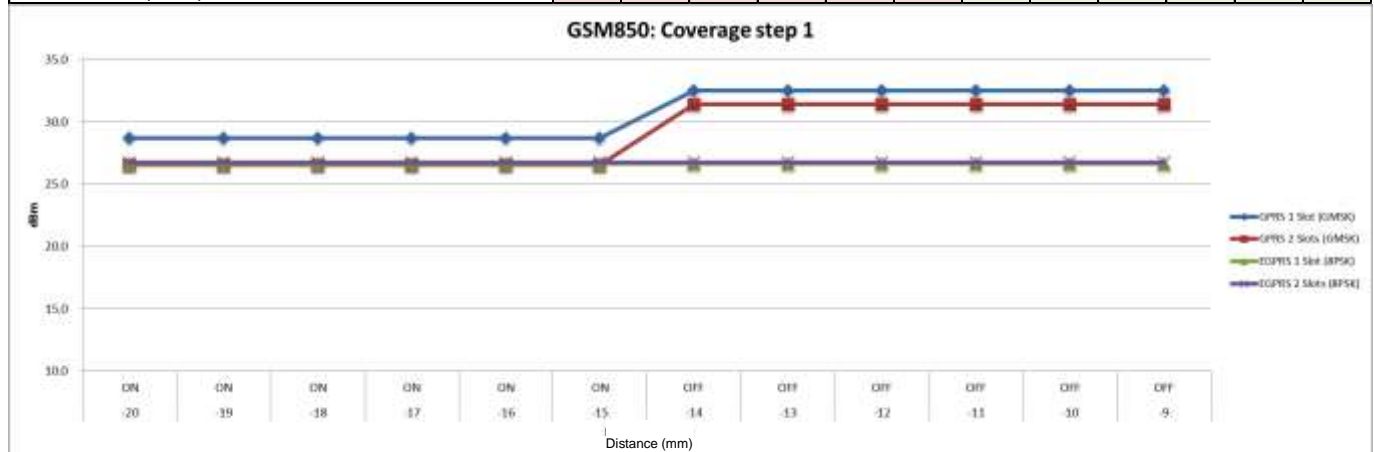


| Coverage step 4 CDMA BC 0 | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 5 | 4 | 3 | 2 | 1 | 0 | -1 | -2 | -3 | -4 | -5 | -6 |
| Proximity sensor with reduced power activation: | OFF | OFF | OFF | OFF | OFF | ON | ON | ON | ON | ON | ON | ON |
| 1xRTT | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 |
| 1xEV-DO Rel. 0 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 |
| 1xEV-DO Rev. A | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 |

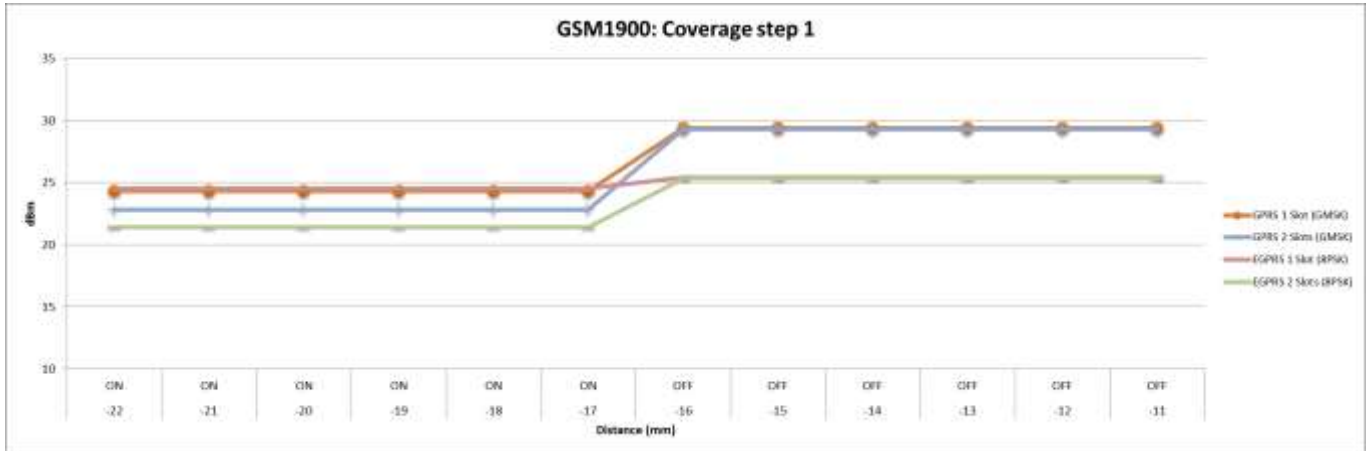


7.8.2. DUT moving away from the Phantom

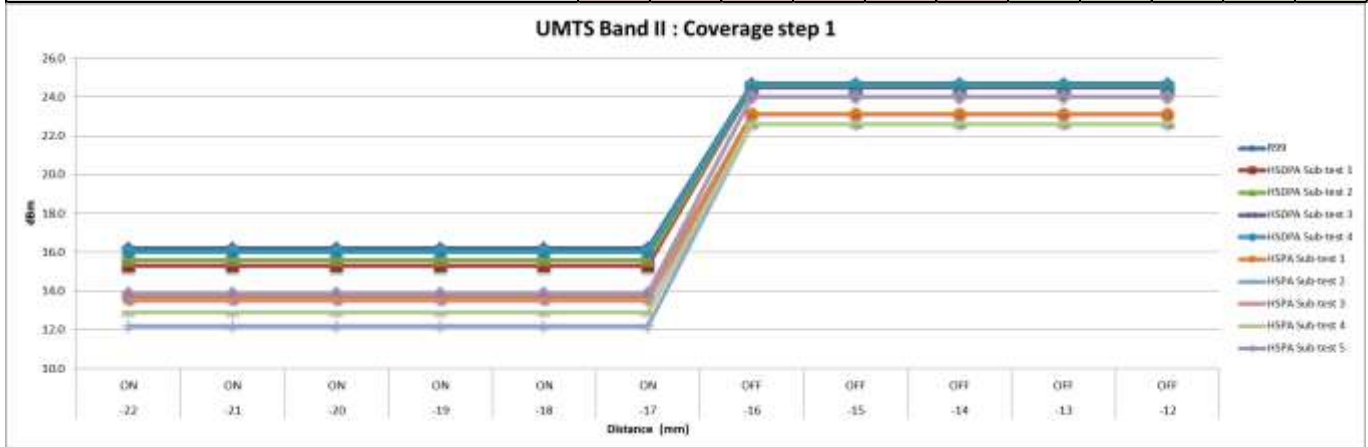
| Coverage step 1 (GSM850) | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | -20 | -19 | -18 | -17 | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| GPRS 1 Slot (GMSK) | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 |
| GPRS 2 Slots (GMSK) | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 |
| EGPRS 1 Slot (8PSK) | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 |
| EGPRS 2 Slots (8PSK) | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 |



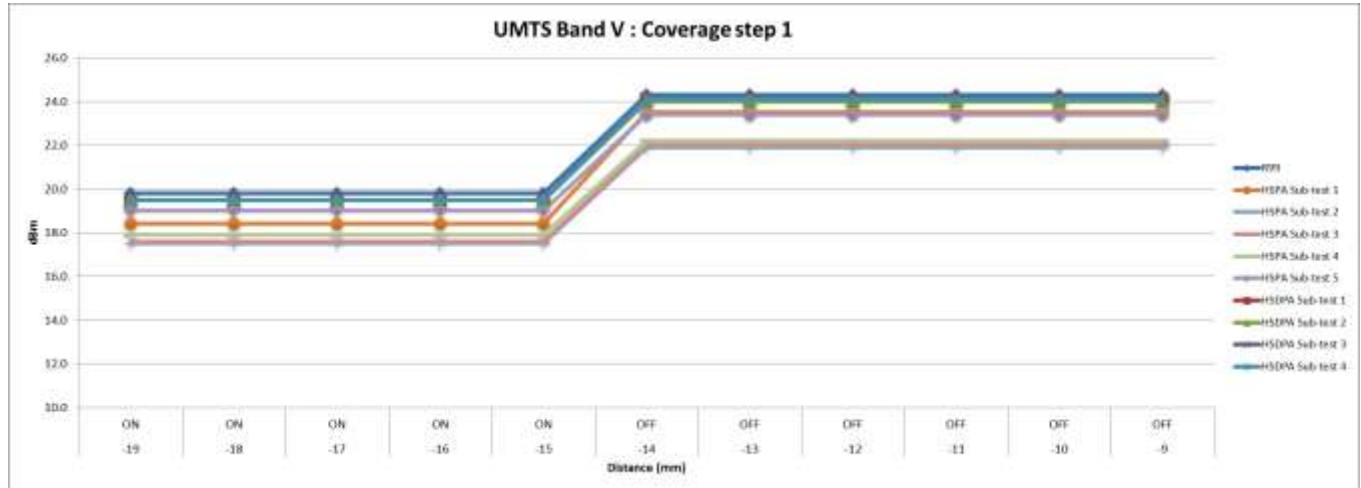
| Coverage step 1, GSM 1900 | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | -22 | -21 | -20 | -19 | -18 | -17 | -16 | -15 | -14 | -13 | -12 | -11 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| GPRS 1 Slot (GMSK) | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 29.4 | 29.4 | 29.4 | 29.4 | 29.4 | 29.4 |
| GPRS 2 Slots (GMSK) | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 29.3 | 29.3 | 29.3 | 29.3 | 29.3 | 29.3 |
| EGPRS 1 Slot (8PSK) | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 25.4 | 25.4 | 25.4 | 25.4 | 25.4 | 25.4 |
| EGPRS 2 Slots (8PSK) | 21.4 | 21.4 | 21.4 | 21.4 | 21.4 | 21.4 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 |



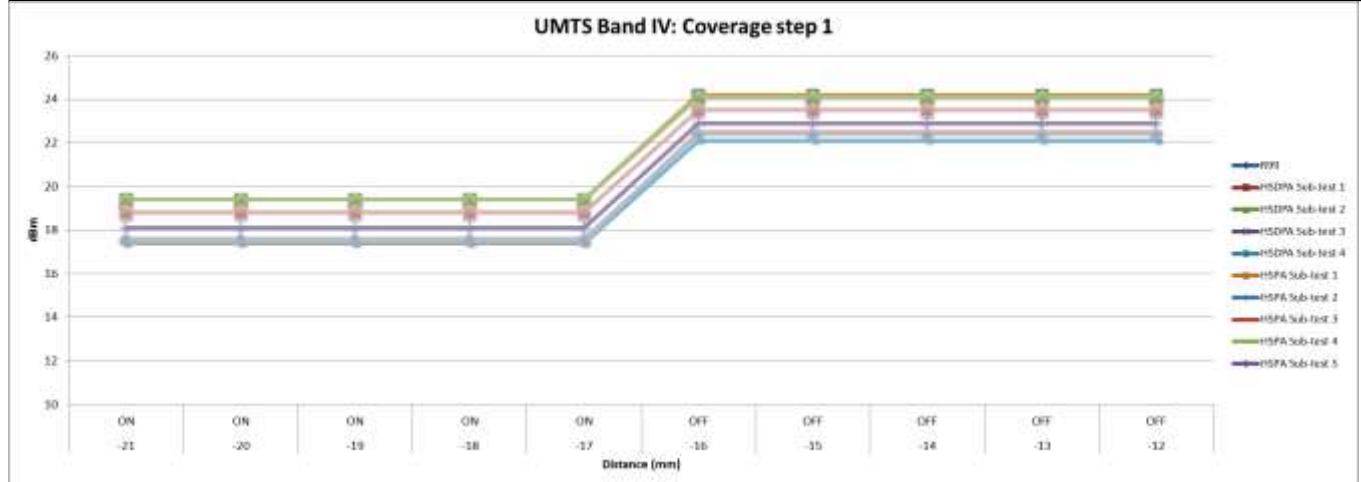
| Coverage step 1 (UMTS Band II) | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | -22 | -21 | -20 | -19 | -18 | -17 | -16 | -15 | -14 | -13 | -12 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF |
| R99 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 |
| HSDPA Sub-test 1 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 |
| HSDPA Sub-test 2 | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 |
| HSDPA Sub-test 3 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 |
| HSDPA Sub-test 4 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 |
| HSPA Sub-test 1 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 | 23.1 | 23.1 | 23.1 | 23.1 | 23.1 |
| HSPA Sub-test 2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 |
| HSPA Sub-test 3 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 |
| HSPA Sub-test 4 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 |
| HSPA Sub-test 5 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |



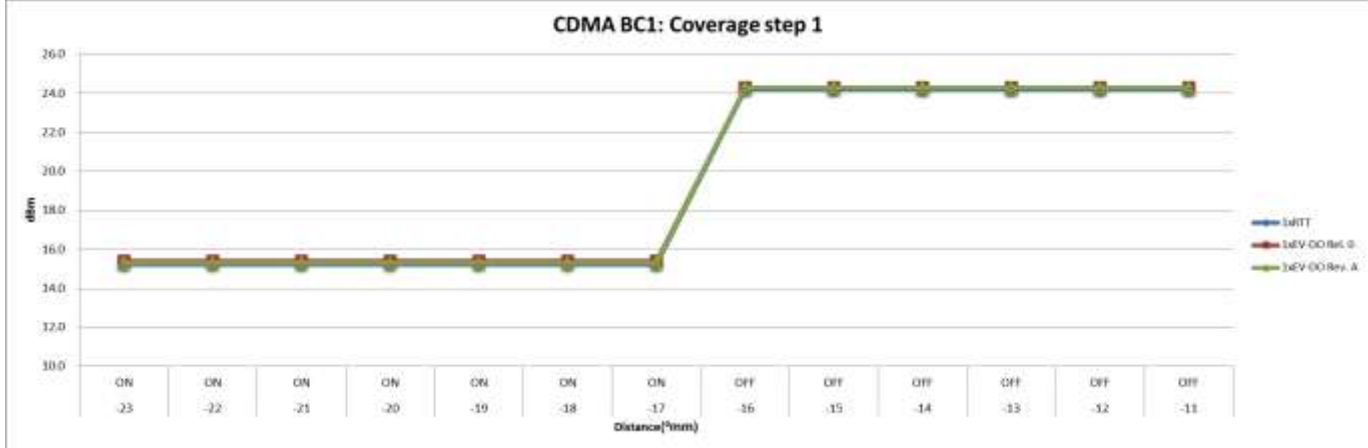
| Coverage step 1 (UMTS Band V) | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | -19 | -18 | -17 | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| R99 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 |
| HSDPA Sub-test 1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSDPA Sub-test 2 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |
| HSDPA Sub-test 3 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSDPA Sub-test 4 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSPA Sub-test 1 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 |
| HSPA Sub-test 2 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 |
| HSPA Sub-test 3 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| HSPA Sub-test 4 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 |
| HSPA Sub-test 5 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 |



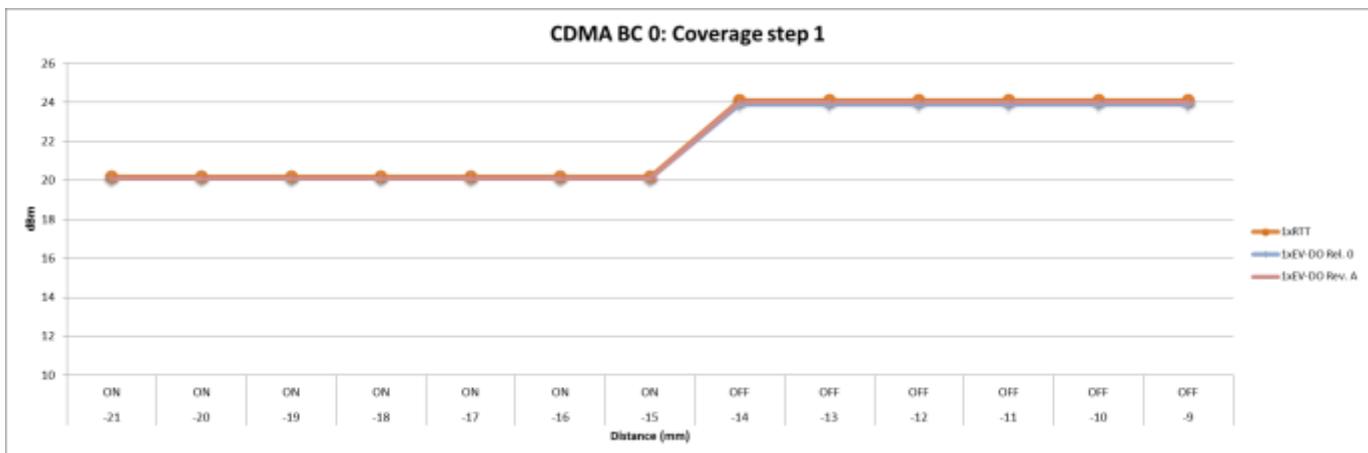
| Coverage step 1 (UMTS Band IV) | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | -21 | -20 | -19 | -18 | -17 | -16 | -15 | -14 | -13 | -12 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF |
| R99 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 |
| HSDPA Sub-test 1 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 |
| HSDPA Sub-test 2 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSDPA Sub-test 3 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSDPA Sub-test 4 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSPA Sub-test 1 | 18.1 | 18.1 | 18.1 | 18.1 | 18.1 | 22.9 | 22.9 | 22.9 | 22.9 | 22.9 |
| HSPA Sub-test 2 | 17.4 | 17.4 | 17.4 | 17.4 | 17.4 | 22.1 | 22.1 | 22.1 | 22.1 | 22.1 |
| HSPA Sub-test 3 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 |
| HSPA Sub-test 4 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 22.4 | 22.4 | 22.4 | 22.4 | 22.4 |
| HSPA Sub-test 5 | 18.8 | 18.8 | 18.8 | 18.8 | 18.8 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 |



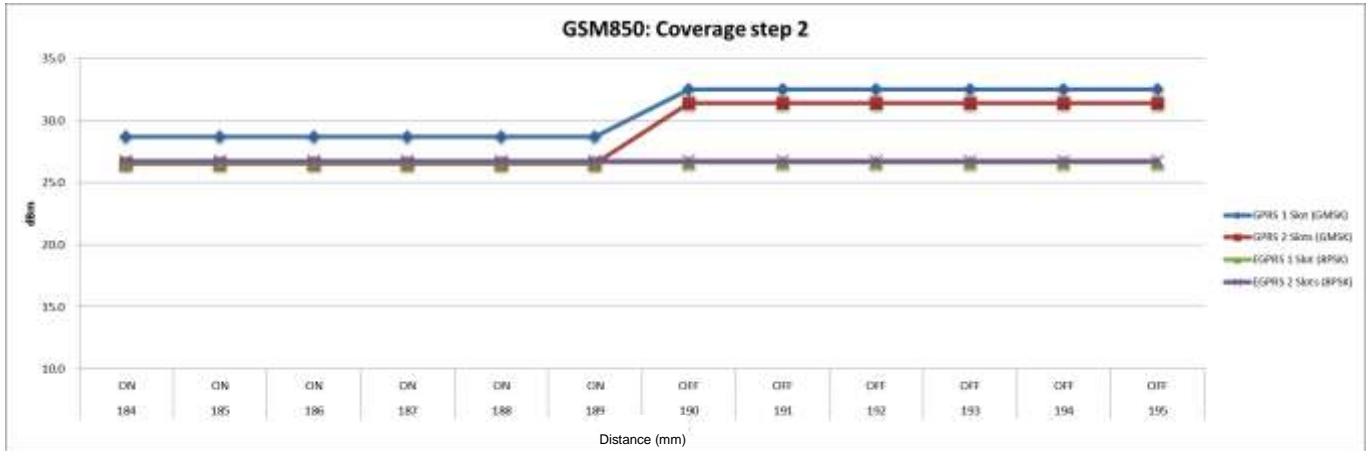
| Coverage step 1CDMA BC 1 | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | -23 | -22 | -21 | -20 | -19 | -18 | -17 | -16 | -15 | -14 | -13 | -12 | -11 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| 1xRTT | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 |
| 1xEV-DO Rel. 0 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 |
| 1xEV-DO Rev. A | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 |



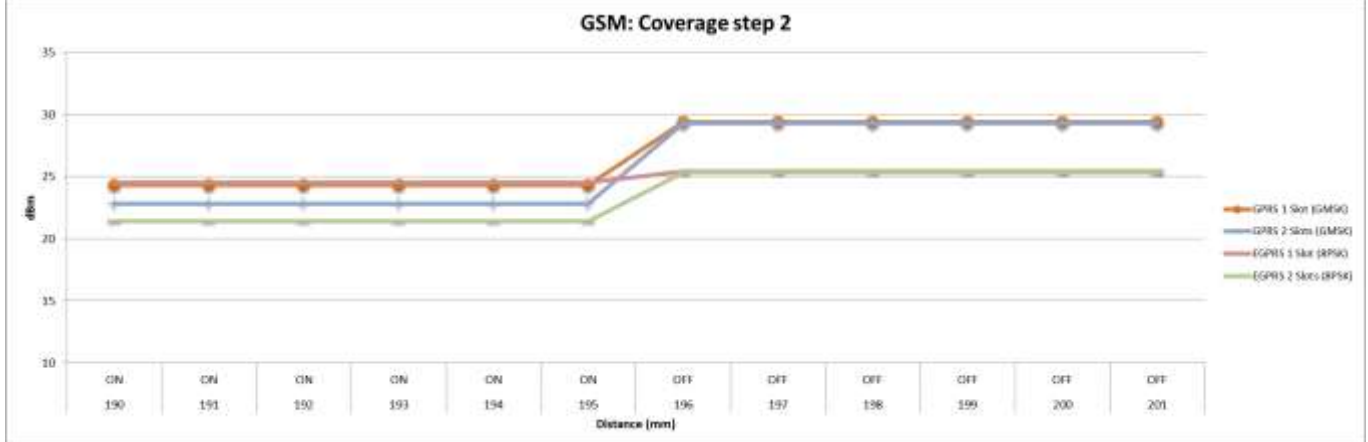
| Coverage step 1 (CDMA BC 0) | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | -21 | -20 | -19 | -18 | -17 | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| 1xRTT | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| 1xEV-DO Rel. 0 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 |
| 1xEV-DO Rev. A | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |



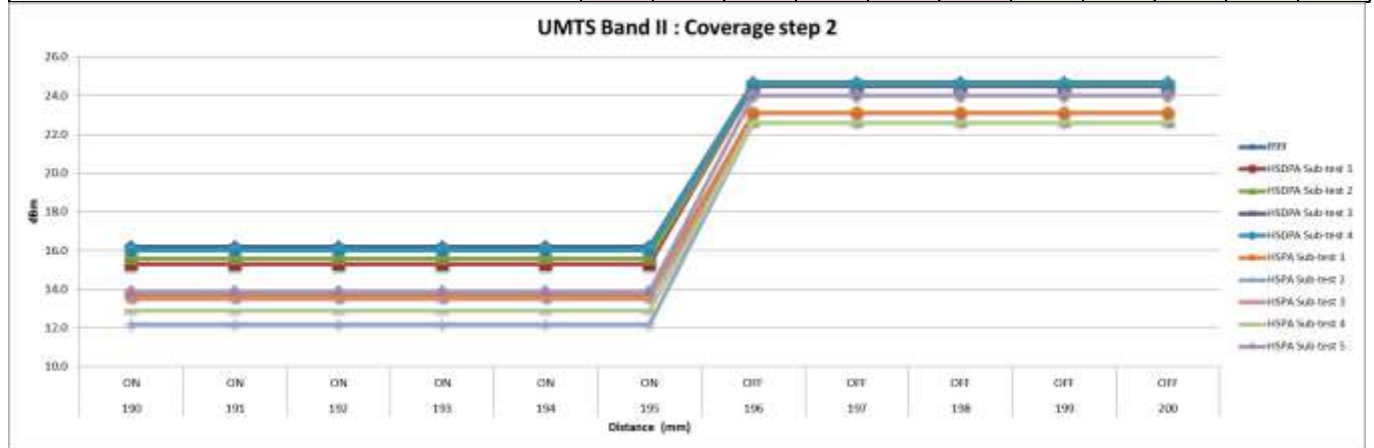
| Coverage step 2(GSM850) | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| GPRS 1 Slot (GMSK) | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 |
| GPRS 2 Slots (GMSK) | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 |
| EGPRS 1 Slot (8PSK) | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 |
| EGPRS 2 Slots (8PSK) | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 |



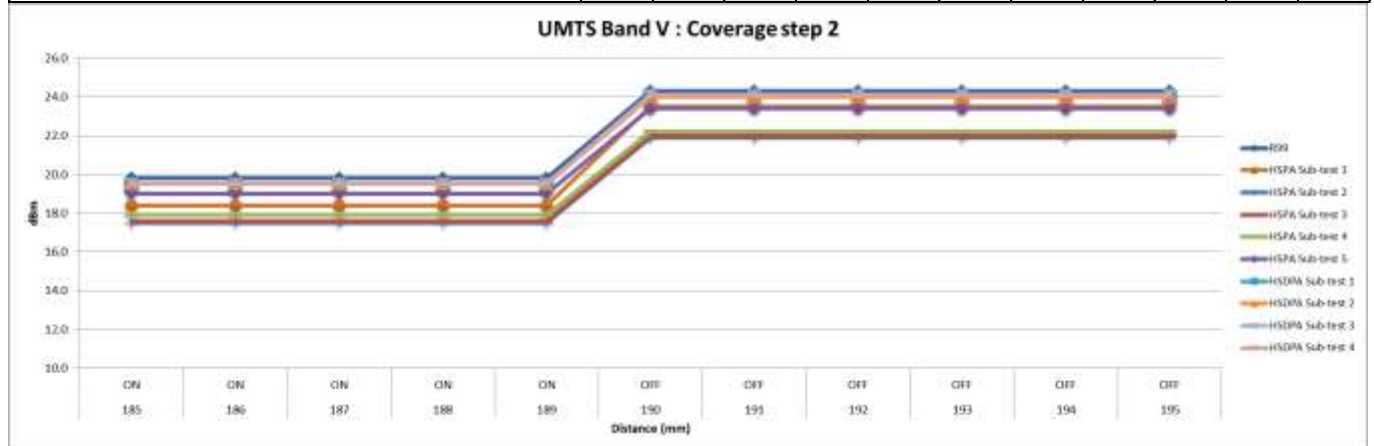
| Coverage step 2 GSM 1900 | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 201 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| GPRS 1 Slot (GMSK) | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 29.4 | 29.4 | 29.4 | 29.4 | 29.4 | 29.4 |
| GPRS 2 Slots (GMSK) | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 29.3 | 29.3 | 29.3 | 29.3 | 29.3 | 29.3 |
| EGPRS 1 Slot (8PSK) | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 25.4 | 25.4 | 25.4 | 25.4 | 25.4 | 25.4 |
| EGPRS 2 Slots (8PSK) | 21.4 | 21.4 | 21.4 | 21.4 | 21.4 | 21.4 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 |



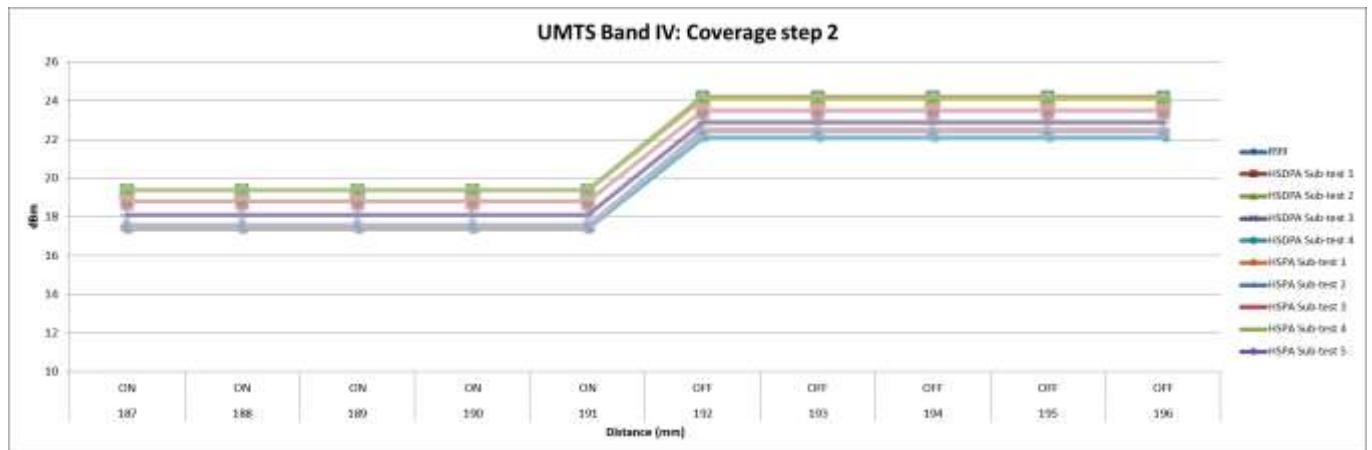
| Distance (mm): | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF |
| R99 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 |
| HSDPA Sub-test 1 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 |
| HSDPA Sub-test 2 | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 |
| HSDPA Sub-test 3 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 |
| HSDPA Sub-test 4 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 |
| HSPA Sub-test 1 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 | 23.1 | 23.1 | 23.1 | 23.1 | 23.1 |
| HSPA Sub-test 2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 |
| HSPA Sub-test 3 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 |
| HSPA Sub-test 4 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 |
| HSPA Sub-test 5 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |



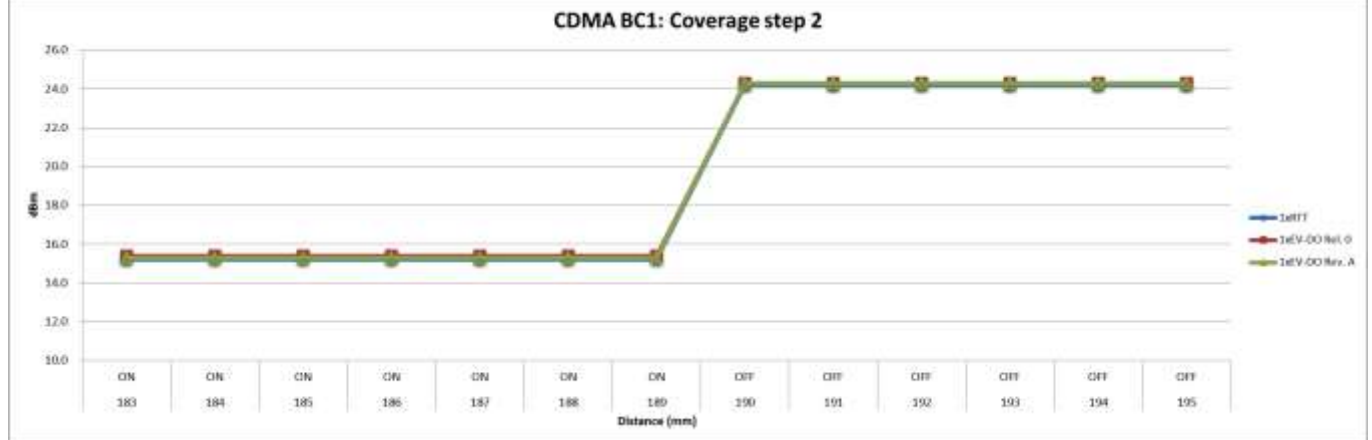
| Coverage step 2, (UMTS Band V) | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| R99 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 |
| HSDPA Sub-test 1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSDPA Sub-test 2 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |
| HSDPA Sub-test 3 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSDPA Sub-test 4 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSPA Sub-test 1 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 |
| HSPA Sub-test 2 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 |
| HSPA Sub-test 3 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| HSPA Sub-test 4 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 |
| HSPA Sub-test 5 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 |



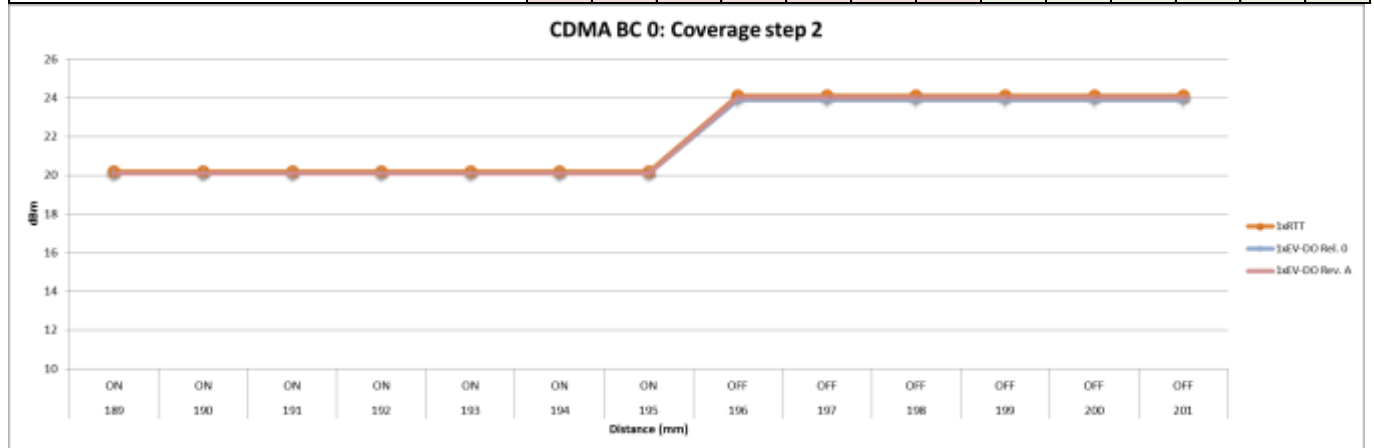
| Coverage step 2 (UMTS Band IV) | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|--|
| Distance (mm): | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | |
| R99 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | |
| HSDPA Sub-test 1 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | |
| HSDPA Sub-test 2 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | |
| HSDPA Sub-test 3 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | |
| HSDPA Sub-test 4 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | |
| HSPA Sub-test 1 | 18.1 | 18.1 | 18.1 | 18.1 | 18.1 | 22.9 | 22.9 | 22.9 | 22.9 | 22.9 | |
| HSPA Sub-test 2 | 17.4 | 17.4 | 17.4 | 17.4 | 17.4 | 22.1 | 22.1 | 22.1 | 22.1 | 22.1 | |
| HSPA Sub-test 3 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | |
| HSPA Sub-test 4 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 22.4 | 22.4 | 22.4 | 22.4 | 22.4 | |
| HSPA Sub-test 5 | 18.8 | 18.8 | 18.8 | 18.8 | 18.8 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | |



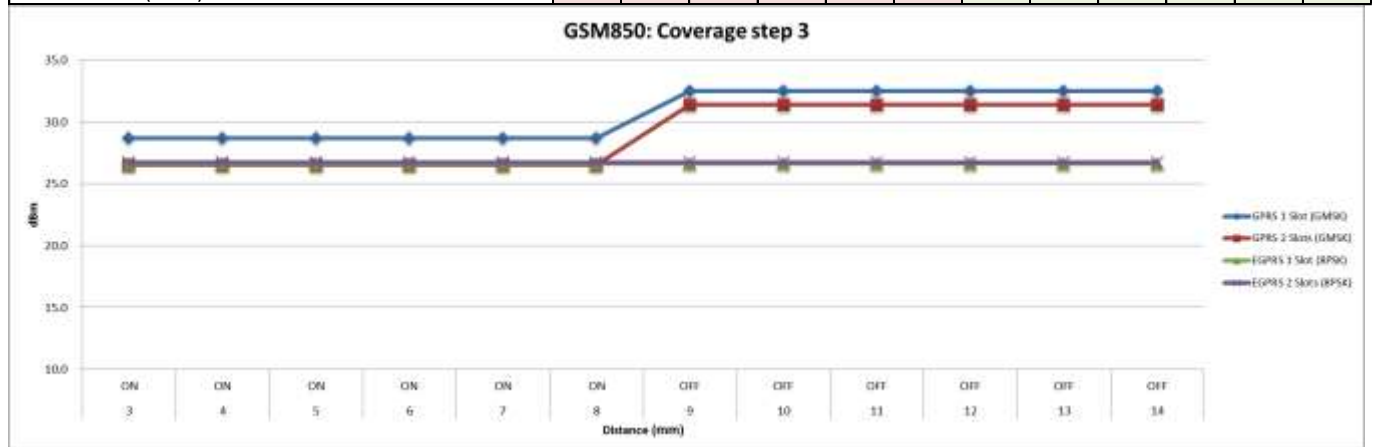
| Coverage step 2 (CDMA BC 1) | | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| Distance (mm): | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF | |
| 1xRTT | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | |
| 1xEV-DO Rel. 0 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | |
| 1xEV-DO Rev. A | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | |



| Coverage step 2 (CDMA BC 0) | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 201 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| 1xRTT | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| 1xEV-DO Rel. 0 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 |
| 1xEV-DO Rev. A | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |

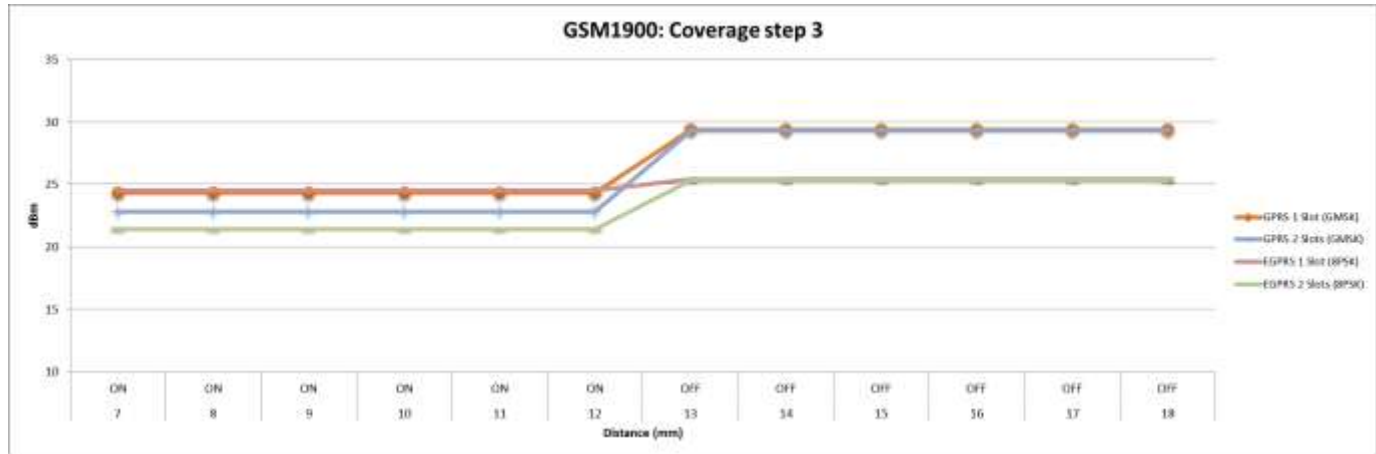


| Coverage step 3 (GSM850) | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|--|
| Distance (mm): | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF | |
| GPRS 1 Slot (GMSK) | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | |
| GPRS 2 Slots (GMSK) | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 | |
| EGPRS 1 Slot (8PSK) | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | |
| EGPRS 2 Slots (8PSK) | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | |



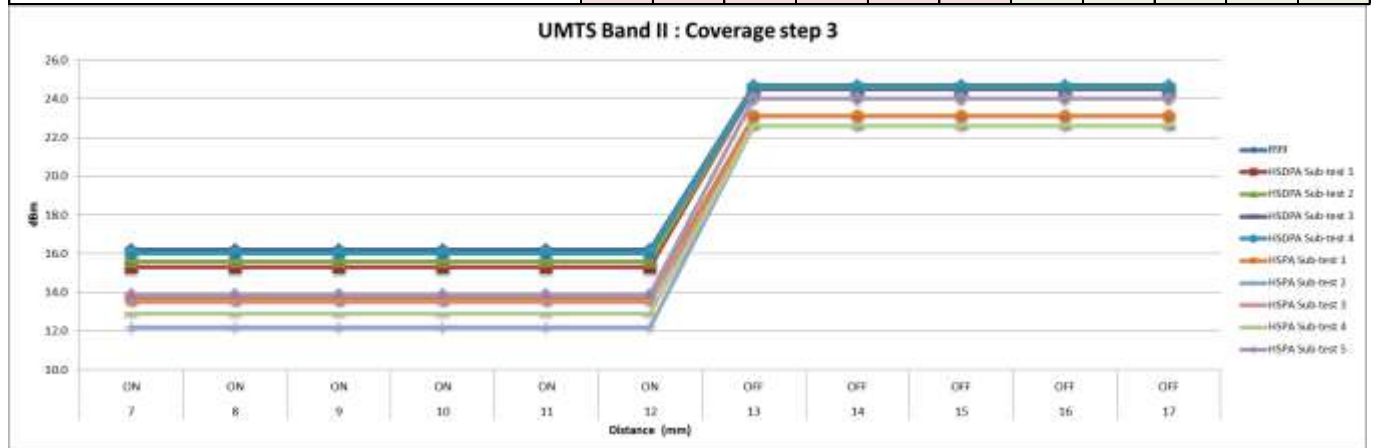
Coverage step 3 (GSM 1900)

| Distance (mm): | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| GPRS 1 Slot (GMSK) | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 29.4 | 29.4 | 29.4 | 29.4 | 29.4 | 29.4 |
| GPRS 2 Slots (GMSK) | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 29.3 | 29.3 | 29.3 | 29.3 | 29.3 | 29.3 |
| EGPRS 1 Slot (8PSK) | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 25.4 | 25.4 | 25.4 | 25.4 | 25.4 | 25.4 |
| EGPRS 2 Slots (8PSK) | 21.4 | 21.4 | 21.4 | 21.4 | 21.4 | 21.4 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 |

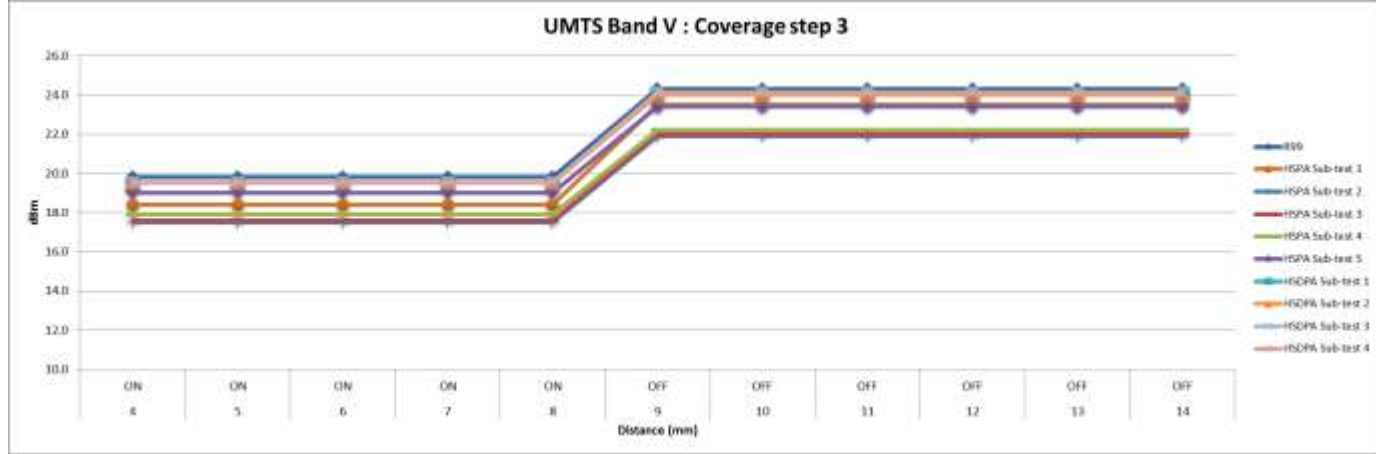


Coverage step 3 (UMTS Band II)

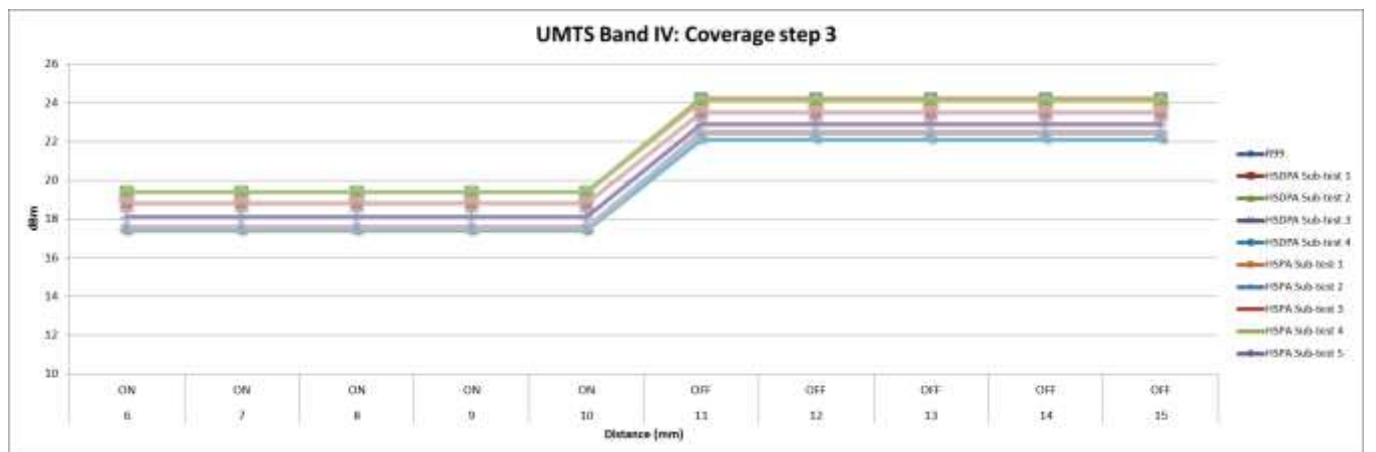
| Distance (mm): | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF |
| R99 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 |
| HSDPA Sub-test 1 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 |
| HSDPA Sub-test 2 | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 |
| HSDPA Sub-test 3 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 |
| HSDPA Sub-test 4 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 |
| HSPA Sub-test 1 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 | 23.1 | 23.1 | 23.1 | 23.1 | 23.1 |
| HSPA Sub-test 2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 |
| HSPA Sub-test 3 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 |
| HSPA Sub-test 4 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 |
| HSPA Sub-test 5 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |



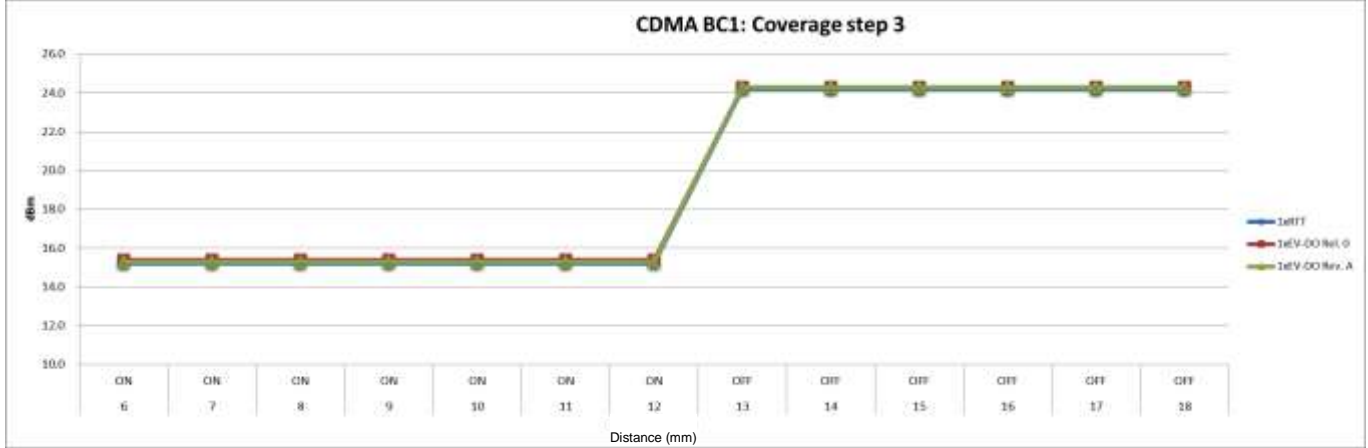
| Coverage step 3 (UMTS Band V) | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| R99 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 |
| HSDPA Sub-test 1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSDPA Sub-test 2 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |
| HSDPA Sub-test 3 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSDPA Sub-test 4 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSPA Sub-test 1 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 |
| HSPA Sub-test 2 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 |
| HSPA Sub-test 3 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| HSPA Sub-test 4 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 |
| HSPA Sub-test 5 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 |



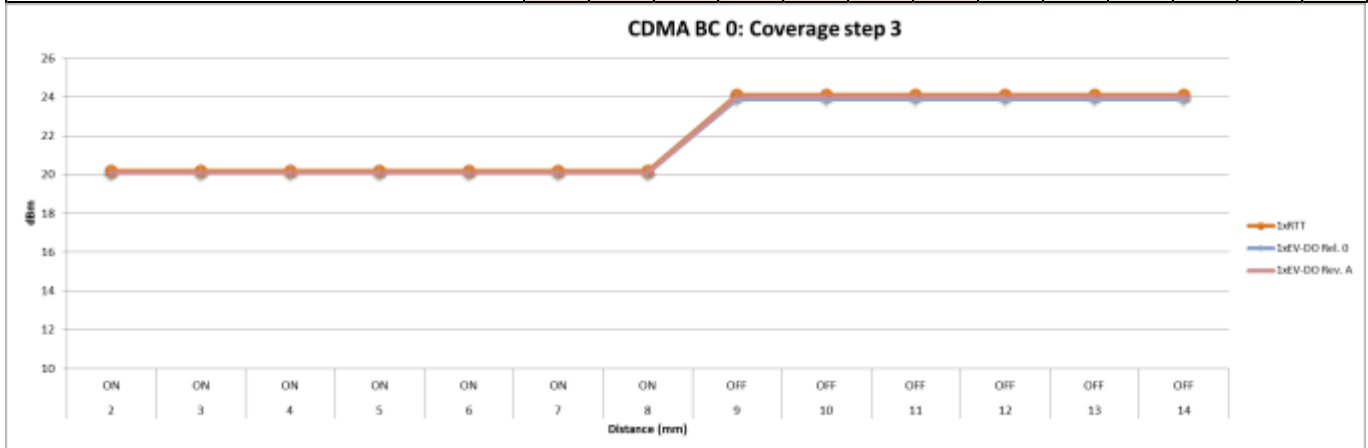
| Edge 1, (UMTS Band IV) | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF |
| R99 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 |
| HSDPA Sub-test 1 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 |
| HSDPA Sub-test 2 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSDPA Sub-test 3 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSDPA Sub-test 4 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSPA Sub-test 1 | 18.1 | 18.1 | 18.1 | 18.1 | 18.1 | 22.9 | 22.9 | 22.9 | 22.9 | 22.9 |
| HSPA Sub-test 2 | 17.4 | 17.4 | 17.4 | 17.4 | 17.4 | 22.1 | 22.1 | 22.1 | 22.1 | 22.1 |
| HSPA Sub-test 3 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 |
| HSPA Sub-test 4 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 22.4 | 22.4 | 22.4 | 22.4 | 22.4 |
| HSPA Sub-test 5 | 18.8 | 18.8 | 18.8 | 18.8 | 18.8 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 |



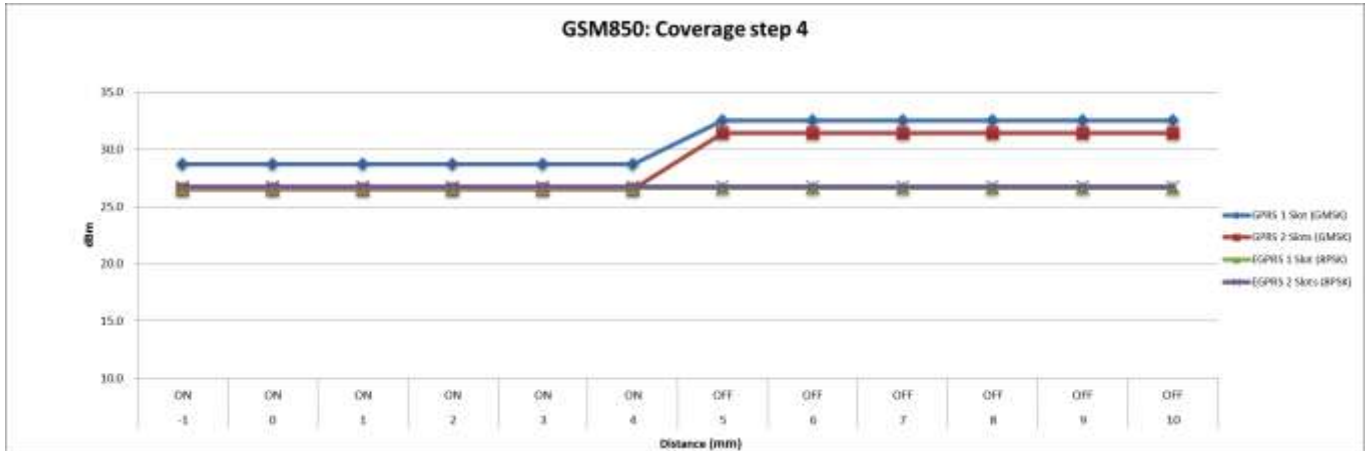
| Coverage step 3 CDMA BC 1 | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| 1xRTT | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 |
| 1xEV-DO Rel. 0 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 |
| 1xEV-DO Rev. A | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 |



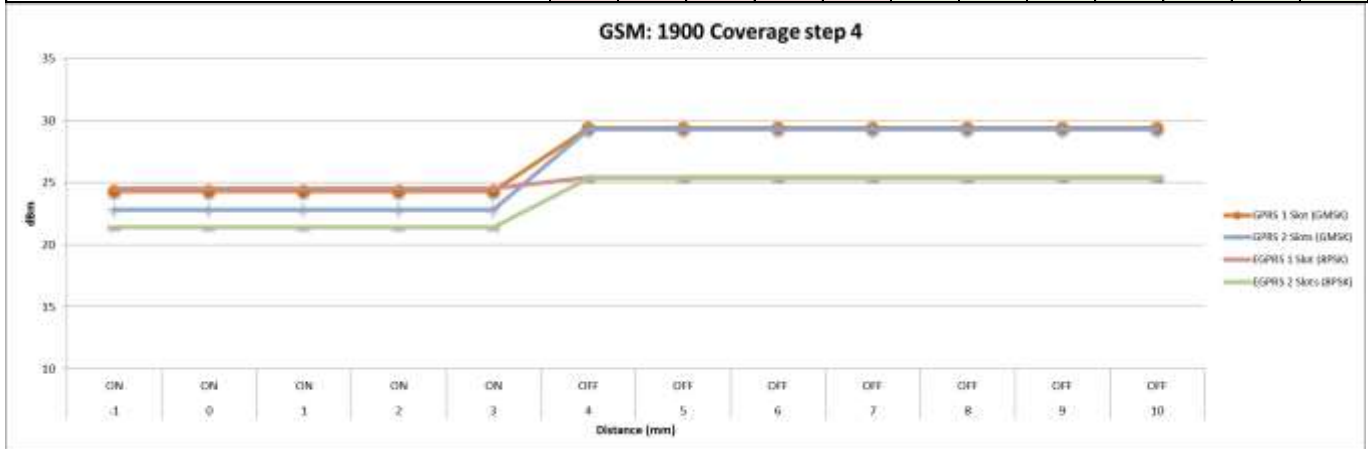
| Coverage step 3 (CDMA BC 0) | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| 1xRTT | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| 1xEV-DO Rel. 0 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 |
| 1xEV-DO Rev. A | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |



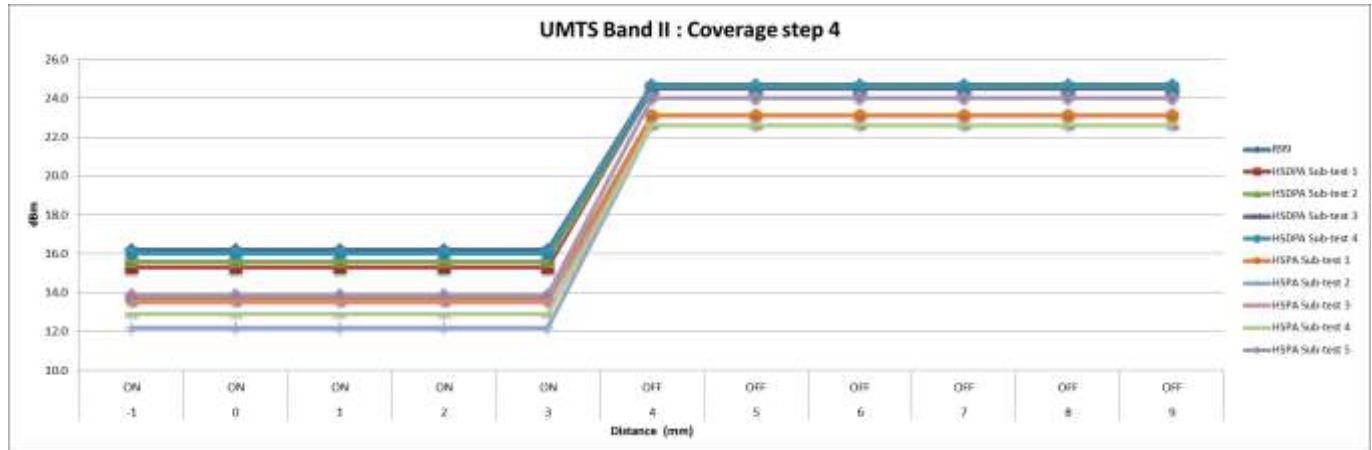
| Coverage (GSM850) | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| GPRS 1 Slot (GMSK) | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 | 28.7 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 |
| GPRS 2 Slots (GMSK) | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 | 26.5 | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 | 31.4 |
| EGPRS 1 Slot (8PSK) | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 | 26.6 |
| EGPRS 2 Slots (8PSK) | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 | 26.7 |



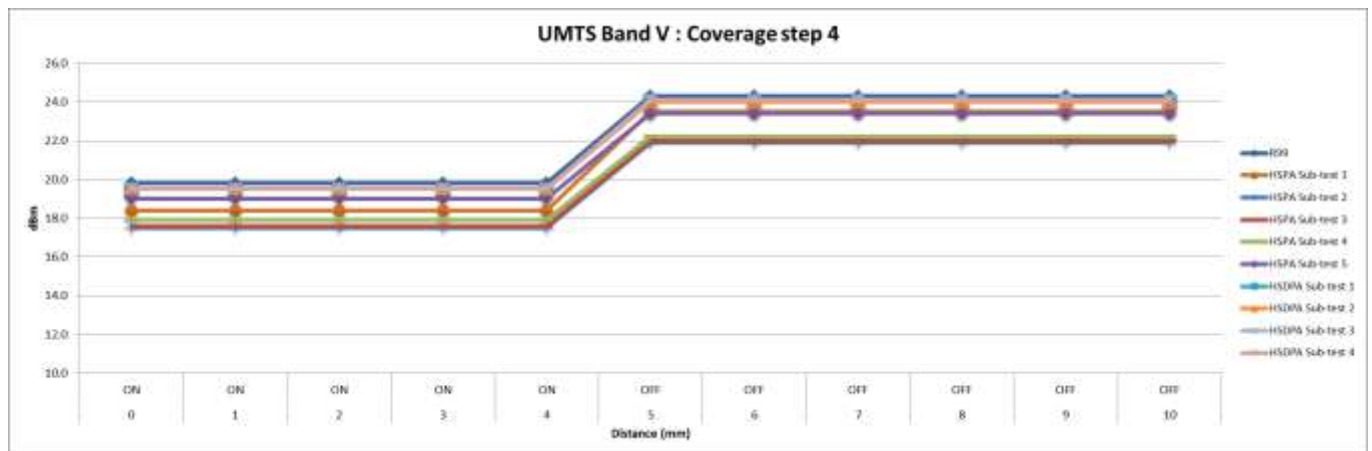
| Edge 1, GSM 1900 | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF | OFF |
| GPRS 1 Slot (GMSK) | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 29.4 | 29.4 | 29.4 | 29.4 | 29.4 | 29.4 | 29.4 |
| GPRS 2 Slots (GMSK) | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 29.3 | 29.3 | 29.3 | 29.3 | 29.3 | 29.3 | 29.3 |
| EGPRS 1 Slot (8PSK) | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 25.4 | 25.4 | 25.4 | 25.4 | 25.4 | 25.4 | 25.4 |
| EGPRS 2 Slots (8PSK) | 21.4 | 21.4 | 21.4 | 21.4 | 21.4 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 | 25.3 |



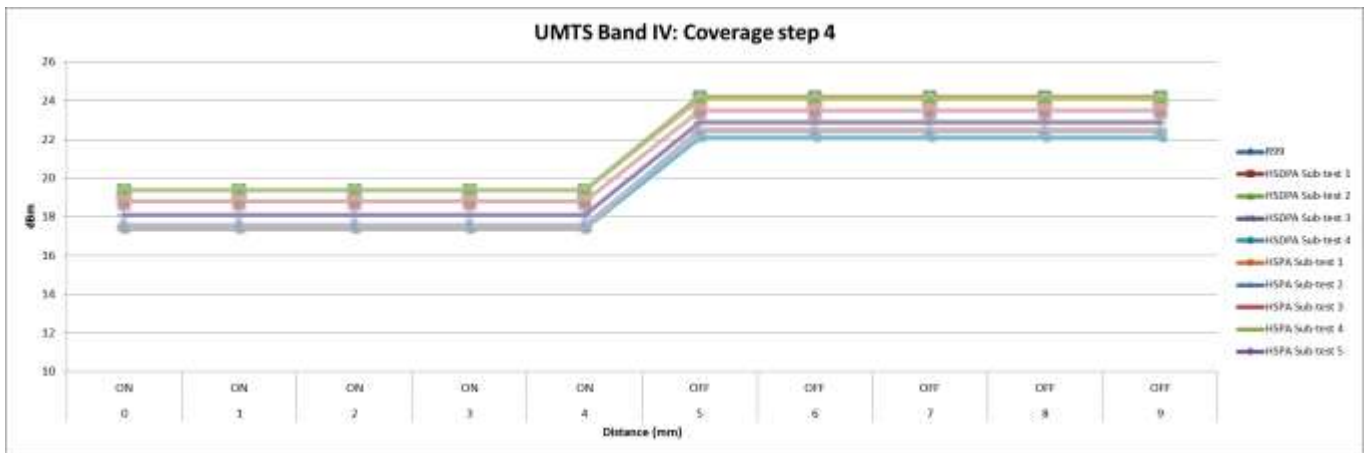
| Coverage step 4 (UMTS Band II) | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| R99 | 16.2 | 16.2 | 16.2 | 16.2 | 16.2 | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 |
| HSDPA Sub-test 1 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 |
| HSDPA Sub-test 2 | 15.6 | 15.6 | 15.6 | 15.6 | 15.6 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 |
| HSDPA Sub-test 3 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 | 24.5 |
| HSDPA Sub-test 4 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 | 24.6 |
| HSPA Sub-test 1 | 13.7 | 13.7 | 13.7 | 13.7 | 13.7 | 23.1 | 23.1 | 23.1 | 23.1 | 23.1 | 23.1 |
| HSPA Sub-test 2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 |
| HSPA Sub-test 3 | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 |
| HSPA Sub-test 4 | 12.9 | 12.9 | 12.9 | 12.9 | 12.9 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 | 22.6 |
| HSPA Sub-test 5 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |



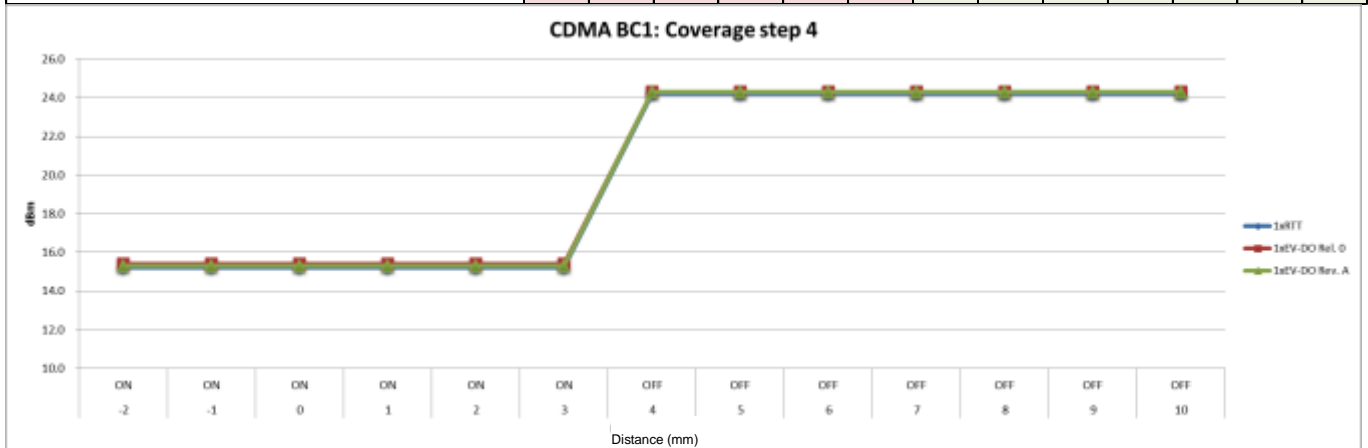
| Coverage step 4 , (UMTS Band V) | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF |
| R99 | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 |
| HSDPA Sub-test 1 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSDPA Sub-test 2 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |
| HSDPA Sub-test 3 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSDPA Sub-test 4 | 19.5 | 19.5 | 19.5 | 19.5 | 19.5 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSPA Sub-test 1 | 18.4 | 18.4 | 18.4 | 18.4 | 18.4 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 |
| HSPA Sub-test 2 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 | 21.9 |
| HSPA Sub-test 3 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| HSPA Sub-test 4 | 17.9 | 17.9 | 17.9 | 17.9 | 17.9 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 | 22.2 |
| HSPA Sub-test 5 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 | 23.4 |



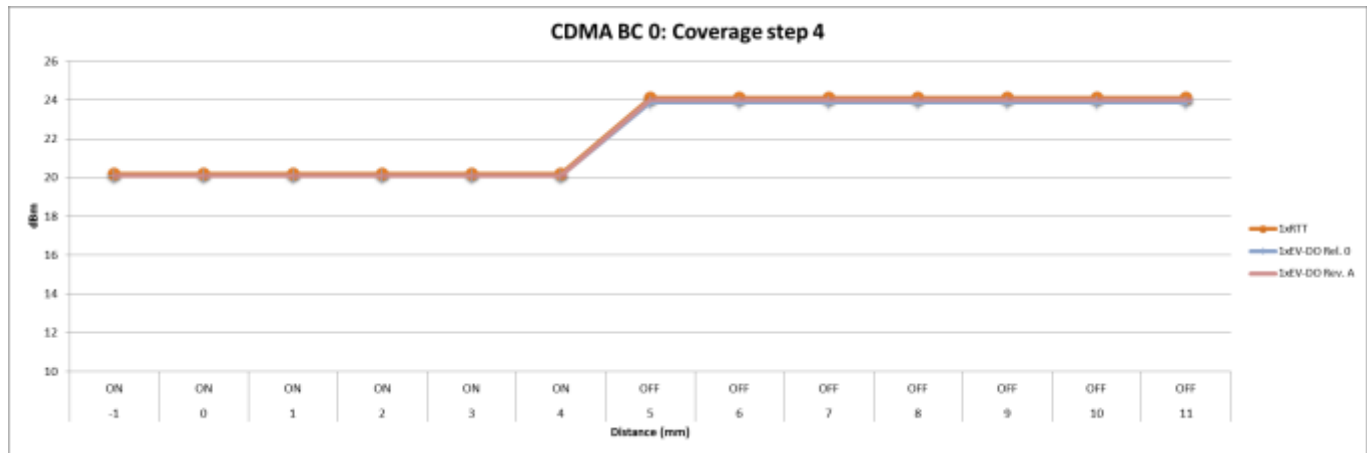
| Coverage step 4 (UMTS Band IV) | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF |
| R99 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 |
| HSDPA Sub-test 1 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 |
| HSDPA Sub-test 2 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSDPA Sub-test 3 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSDPA Sub-test 4 | 19.4 | 19.4 | 19.4 | 19.4 | 19.4 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| HSPA Sub-test 1 | 18.1 | 18.1 | 18.1 | 18.1 | 18.1 | 22.9 | 22.9 | 22.9 | 22.9 | 22.9 |
| HSPA Sub-test 2 | 17.4 | 17.4 | 17.4 | 17.4 | 17.4 | 22.1 | 22.1 | 22.1 | 22.1 | 22.1 |
| HSPA Sub-test 3 | 17.5 | 17.5 | 17.5 | 17.5 | 17.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 |
| HSPA Sub-test 4 | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 | 22.4 | 22.4 | 22.4 | 22.4 | 22.4 |
| HSPA Sub-test 5 | 18.8 | 18.8 | 18.8 | 18.8 | 18.8 | 23.5 | 23.5 | 23.5 | 23.5 | 23.5 |



| Coverage step 4 CDMA BC 1 | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF | OFF |
| 1xRTT | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 15.2 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 | 24.2 |
| 1xEV-DO Rel. 0 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 |
| 1xEV-DO Rev. A | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 15.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 | 24.3 |



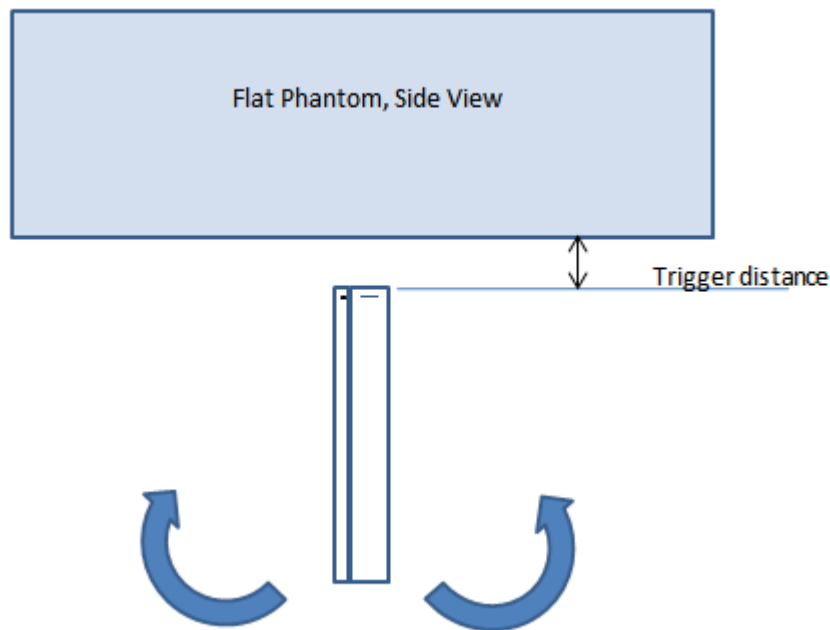
| Coverage step 4 (CDMA BC 0) | | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Distance (mm): | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Proximity sensor with reduced power activation: | ON | ON | ON | ON | ON | ON | OFF | OFF | OFF | OFF | OFF | OFF | OFF |
| 1xRTT | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 20.2 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 | 24.1 |
| 1xEV-DO Rel. 0 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 | 23.9 |
| 1xEV-DO Rev. A | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 20.1 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |



7.9. Proximity Sensor Tilt Angle (KDB 616217 §6.3)

The DUT was positioned directly below the flat phantom at the minimum measured trigger distance with edge 1 parallel to the base of the flat phantom. The DUT was rotated in both directions about edge 1.

The proximity sensor remained triggered with the DUT positioned 17mm from the phantom for all angles up to 45°.



Proximity sensor tilt angle assessment (Edge 4) KDB 616217 §6.4

8. Summary of Test Configurations

Refer to Section 17 “Antenna Location and Separation Distances” for the specific details of the antenna-to-antenna and antenna-to-edge(s) distances.

8.1. Body Exposure Test Configurations for WWAN

Laptop Mode

| Test Configurations | Antenna-to-edge/surface | SAR Required | Note |
|--|-------------------------|--------------|--|
| Rear | 18 mm | No | The Main Antenna does not require testing in this position when operating in Laptop Mode as the same test position for Tablet Mode is far more conservative. |
| Top Edge of Display Screen against Phantom | 2.3 mm | No | The Main Antenna does not require testing in this position as it is accounted for by the Edge 1 test position for Tablet Mode. |

Tablet Mode

| Test Configurations | Antenna-to-edge/surface | SAR Required | Note |
|---------------------|-------------------------|--------------|---|
| Rear | 18 mm | Yes | |
| Edge 1 | 2.3 mm | Yes | A proximity sensor is incorporated at this edge that, when triggered, will reduce the transmit power of the WWAN transmitter. As such, two separate sets of evaluations are required for this test position: one with the device operating at a reduced power level and in contact with the phantom, and one with the device operating at full power level and at 16 mm away from the phantom. 16mm is 1 mm less than the closest distance away from an object the device will operate at full power. |
| Edge 2 | 200.6 mm | No | This is not the most conservative antenna-to-user distance at edge mode. According to KDB 447498 4) b) ii) (2) |
| Edge 3 | 210.9 mm | No | This is not the most conservative antenna-to-user distance at edge mode. According to KDB 447498 4) b) ii) (2) |
| Edge 4 | 24 mm | Yes | |

Notes:

- Edge 1= Top Edge
- Edge 2= Right Edge
- Edge 3= Bottom Edge
- Edge 4= Left Edge

9. RF Output Power Measurement

As this device implements proximity sensor-triggered power reduction for SAR compliance, conducted output power was measured for the two different operating power levels. The following serves to clarify and establish the relation between power level and proximity sensor status:

- Full Power = Proximity Sensor Off
- Reduced Power= Proximity Sensor On

Each operating power level has its own set of target power and tune-up limits, and the scaling of SAR values is applied according to the corresponding target for the given operating power level

9.1. GSM850

Target Power for GSM850

| GSM850 | Full Power | Reduced Power |
|----------------------|------------|---------------|
| GPRS 1 Slot (GMSK) | 32.6 dBm | 28.5 dBm |
| GPRS 2 Slots (GMSK) | 31.6 dBm | 25.7 dBm |
| EGPRS 1 Slot (8PSK) | 25.7 dBm | 25.7 dBm |
| EGPRS 2 Slots (8PSK) | 25.7 dBm | 25.7 dBm |

Tune-Up Tolerance: +1.0 dB/- 1.0 dB

Full Power

| GPRS (GMSK) - Coding Scheme: CS1 | | | | | | |
|------------------------------------|--------|---------|---------------------|---------------|-------------|---------------|
| Band | Ch No. | f (MHz) | Avg burst Pwr (dBm) | | | |
| | | | 1 slot | Frame Avg Pwr | 2 slots | Frame Avg Pwr |
| 850 | 128 | 824.2 | 32.5 | 23.4 | 31.3 | 25.2 |
| | 190 | 836.6 | 32.5 | 23.5 | 31.4 | 25.4 |
| | 251 | 848.8 | 32.6 | 23.5 | 31.3 | 25.3 |
| EGPRS (8PSK) - Coding Scheme: MCS5 | | | | | | |
| Band | Ch No. | f (MHz) | Avg burst Pwr (dBm) | | | |
| | | | 1 slot | Frame Avg Pwr | 2 slots | Frame Avg Pwr |
| 850 | 128 | 824.2 | 26.6 | 17.5 | 26.7 | 20.7 |
| | 190 | 836.6 | 26.6 | 17.5 | 26.7 | 20.7 |
| | 251 | 848.8 | 26.5 | 17.4 | 26.4 | 20.4 |

Reduced Power

| GPRS (GMSK) - Coding Scheme: CS1 | | | | | | |
|------------------------------------|--------|---------|---------------------|---------------|-------------|---------------|
| Band | Ch No. | f (MHz) | Avg burst Pwr (dBm) | | | |
| | | | 1 slot | Frame Avg Pwr | 2 slots | Frame Avg Pwr |
| 850 | 128 | 824.2 | 28.7 | 19.6 | 26.5 | 20.5 |
| | 190 | 836.6 | 28.5 | 19.5 | 26.6 | 20.5 |
| | 251 | 848.8 | 28.6 | 19.5 | 26.5 | 20.4 |
| EGPRS (8PSK) - Coding Scheme: MCS5 | | | | | | |
| Band | Ch No. | f (MHz) | Avg burst Pwr (dBm) | | | |
| | | | 1 slot | Frame Avg Pwr | 2 slots | Frame Avg Pwr |
| 850 | 128 | 824.2 | 26.6 | 17.5 | 26.7 | 20.7 |
| | 190 | 836.6 | 26.6 | 17.5 | 26.7 | 20.7 |
| | 251 | 848.8 | 26.5 | 17.4 | 26.4 | 20.4 |

Notes:

The worst-case configuration and mode for SAR testing is determined to be as follows:

- Body: GMSK (GPRS) mode with 2 time slots, based on the output power measurements above
- SAR is not required for EGPRS (8PSK) Mode at full power because its output power is less than that of GPRS Mode at full power.
- SAR is required for EGPRS (8PSK) Mode at reduced power because its output power is greater than that of GPRS Mode at reduced power

9.2. GSM1900

Target Power for GSM1900

| GSM1900 | Full Power | Reduced Power |
|----------------------|------------|--|
| GPRS 1 Slot (GMSK) | 29.8 dBm | 24.5 dBm |
| GPRS 2 Slots (GMSK) | 29.8 dBm | Low and Mid Channels: 21.9 dBm High Channel: 21.6 dBm |
| EGPRS 1 Slot (8PSK) | 24.8 dBm | 24.5 dBm |
| EGPRS 2 Slots (8PSK) | 24.8 dBm | 22.0 dBm |

Tune-Up Tolerance: +1.0 dB/- 1.0 dB

Full Power

| GPRS (GMSK) - Coding Scheme: CS1 | | | | | | |
|------------------------------------|--------|---------|---------------------|---------------|-------------|---------------|
| Band | Ch No. | f (MHz) | Avg burst Pwr (dBm) | | | |
| | | | 1 slot | Frame Avg Pwr | 2 slots | Frame Avg Pwr |
| 1900 | 512 | 1850.2 | 29.6 | 20.6 | 29.5 | 23.5 |
| | 661 | 1880.0 | 29.4 | 20.3 | 29.3 | 23.3 |
| | 810 | 1909.8 | 29.5 | 20.4 | 29.4 | 23.4 |
| EGPRS (8PSK) - Coding Scheme: MCS5 | | | | | | |
| Band | Ch No. | f (MHz) | Avg burst Pwr (dBm) | | | |
| | | | 1 slot | Frame Avg Pwr | 2 slots | Frame Avg Pwr |
| 1900 | 512 | 1850.2 | 25.2 | 16.2 | 25.5 | 19.5 |
| | 661 | 1880.0 | 25.4 | 16.3 | 25.3 | 19.3 |
| | 810 | 1909.8 | 25.3 | 16.2 | 25.2 | 19.1 |

Reduced Power

| GPRS (GMSK) - Coding Scheme: CS1 | | | | | | |
|------------------------------------|--------|---------|---------------------|---------------|-------------|---------------|
| Band | Ch No. | f (MHz) | Avg burst Pwr (dBm) | | | |
| | | | 1 slot | Frame Avg Pwr | 2 slots | Frame Avg Pwr |
| 1900 | 512 | 1850.2 | 24.7 | 15.6 | 22.9 | 16.9 |
| | 661 | 1880.0 | 24.3 | 15.3 | 22.8 | 16.8 |
| | 810 | 1909.8 | 24.2 | 15.1 | 22.6 | 16.6 |
| EGPRS (8PSK) - Coding Scheme: MCS5 | | | | | | |
| Band | Ch No. | f (MHz) | Avg burst Pwr (dBm) | | | |
| | | | 1 slot | Frame Avg Pwr | 2 slots | Frame Avg Pwr |
| 1900 | 512 | 1850.2 | 24.7 | 15.7 | 21.6 | 15.6 |
| | 661 | 1880.0 | 24.5 | 15.4 | 21.4 | 15.4 |
| | 810 | 1909.8 | 24.2 | 15.2 | 21.3 | 15.2 |

Notes:

The worst-case configuration and mode for SAR testing is determined to be as follows:

- Body: GMSK (GPRS) mode with 2 time slots, based on the output power measurements above
- SAR is not required for EGPRS (8PSK) Mode at full power or reduced power because its output power is less than that of GPRS Mode at either full power or reduced power

9.3. W-CDMA Band V

Target Power for W-CDMA Band V

| W-CDMA Band V | Full Power | Reduced Power |
|----------------|------------|---------------|
| Release 99 RMC | 24.2 dBm | 18.8 dBm |
| HSDPA | 24.2 dBm | 18.8 dBm |
| HSUPA | 24.2 dBm | 18.8 dBm |

Tune-Up Tolerance: +1.0 dB/- 1.0 dB

Release 99

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

| Mode | Subtest | Rel99 |
|------------------------|-------------------------|--------------|
| WCDMA General Settings | Loopback Mode | Test Mode 1 |
| | Rel99 RMC | 12.2kbps RMC |
| | Power Control Algorithm | Algorithm2 |
| | β_c/β_d | 8/15 |

Release 99 RMC Output Power Measurement Results

| Band | Mode | UL Ch No. | Freq. (MHz) | Avg Pwr (dBm) | |
|----------------------|-------------------------|-----------|-------------|---------------|---------------|
| | | | | Full Power | Reduced Power |
| W-CDMA (UMTS) Band V | Rel 99 (RMC, 12.2 kbps) | 4132 | 826.4 | 24.3 | 19.8 |
| | | 4183 | 836.6 | 24.3 | 19.8 |
| | | 4233 | 846.6 | 24.2 | 19.7 |

HSDPA

The following 4 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

| Mode | HSDPA | HSDPA | HSDPA | HSDPA |
|--|-------------------------|-------|-------|-------|
| Subtest | 1 | 2 | 3 | 4 |
| W-CDMA General Settings | Loopback Mode | | | |
| | Test Mode 1 | | | |
| | Rel99 RMC | | | |
| | 12.2kbps RMC | | | |
| | HSDPA FRC | | | |
| | H-Set1 | | | |
| | Power Control Algorithm | | | |
| | Algorithm 2 | | | |
| β_c | 2/15 | 12/15 | 15/15 | 15/15 |
| β_d | 15/15 | 15/15 | 8/15 | 4/15 |
| Bd (SF) | 64 | | | |
| β_c/β_d | 2/15 | 12/15 | 15/8 | 15/4 |
| β_{hs} | 4/15 | 24/15 | 30/15 | 30/15 |
| CM (dB) | 0 | 1 | 1.5 | 1.5 |
| HSDPA Specific Settings | D _{ACK} | | | |
| | 8 | | | |
| | D _{NAK} | | | |
| | 8 | | | |
| | DCQI | | | |
| | 8 | | | |
| Ack-Nack repetition factor | | | | |
| 3 | | | | |
| CQI Feedback (Table 5.2B.4) | | | | |
| 4ms | | | | |
| CQI Repetition Factor (Table 5.2B.4) | | | | |
| 2 | | | | |
| A _{hs} = β_{hs}/β_c | | | | |
| 30/15 | | | | |

HSDPA Output Power Measurement Results

| Band | Mode | UL Ch No. | Freq. (MHz) | Avg Pwr (dBm) | |
|----------------------------|-----------|-----------|-------------|---------------|---------------|
| | | | | Full Power | Reduced Power |
| W-CDMA (UMTS) Band V | Subtest 1 | 4132 | 826.4 | 24.1 | 19.6 |
| | | 4183 | 836.6 | 24.1 | 19.5 |
| | | 4233 | 846.6 | 24.1 | 19.5 |
| | Subtest 2 | 4132 | 826.4 | 24.0 | 19.6 |
| | | 4183 | 836.6 | 24.0 | 19.5 |
| | | 4233 | 846.6 | 24.0 | 19.4 |
| | Subtest 3 | 4132 | 826.4 | 24.0 | 19.5 |
| | | 4183 | 836.6 | 24.1 | 19.5 |
| | | 4233 | 846.6 | 24.0 | 19.4 |
| | Subtest 4 | 4132 | 826.4 | 24.1 | 19.6 |
| | | 4183 | 836.6 | 24.1 | 19.5 |
| | | 4233 | 846.6 | 24.0 | 19.4 |

Note(s):

KDB 941225 D01 – Body SAR is not required for HSDPA when the maximum average output of each RF channel with HSDPA active is less than ¼ dB higher than that measured without HSDPA using 12.2 kbps RMC or the maximum SAR for 12.2 kbps RMC is < 75% of the SAR limit.

HSPA (HSDPA & HSUPA)

The following 5 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

| Mode | HSPA | HSPA | HSPA | HSPA | HSPA | |
|--------------------------------------|------------------------------------|--|-------|---|--------|--|
| Subtest | 1 | 2 | 3 | 4 | 5 | |
| WCDMA General Settings | Loopback Mode | | | | | |
| | Test Mode 1 | | | | | |
| | Rel99 RMC | | | | | |
| | 12.2kbps RMC | | | | | |
| | HSDPA FRC | | | | | |
| | H-Set1 | | | | | |
| | HSUPA Test | | | | | |
| | HSUPA Loopback | | | | | |
| | Power Control Algorithm | | | | | |
| | Algorithm2 | | | | | |
| | β_c | 11/15 | 6/15 | 15/15 | 2/15 | 15/15 |
| | β_d | 15/15 | 15/15 | 9/15 | 15/15 | 15/15 |
| β_{ec} | 209/225 | 12/15 | 30/15 | 2/15 | 24/15 | |
| β_c/β_d | 11/15 | 6/15 | 15/9 | 2/15 | 15/15 | |
| β_{hs} | 22/15 | 12/15 | 30/15 | 4/15 | 30/15 | |
| β_{ed} | 1309/225 | 94/75 | 47/15 | 56/75 | 134/15 | |
| CM (dB) | 1.0 | 3.0 | 2.0 | 3.0 | 1.0 | |
| MPR (dB) | 0 | 2 | 1 | 2 | 0 | |
| HSDPA Specific Settings | DACK | | | | | |
| | 8 | | | | | |
| | DNAK | | | | | |
| | 8 | | | | | |
| | DCQI | | | | | |
| | 8 | | | | | |
| Ack-Nack repetition factor | | | | | | |
| 3 | | | | | | |
| CQI Feedback (Table 5.2B.4) | | | | | | |
| 4ms | | | | | | |
| CQI Repetition Factor (Table 5.2B.4) | | | | | | |
| 2 | | | | | | |
| $A_{hs} = \beta_{hs}/\beta_c$ | | | | | | |
| 30/15 | | | | | | |
| HSUPA Specific Settings | D E-DPCCH | 6 | 8 | 8 | 5 | 7 |
| | DHARQ | 0 | 0 | 0 | 0 | 0 |
| | AG Index | 20 | 12 | 15 | 17 | 21 |
| | ETFCI (from 34.121 Table C.11.1.3) | 75 | 67 | 92 | 71 | 81 |
| | Associated Max UL Data Rate kbps | 242.1 | 174.9 | 482.8 | 205.8 | 308.9 |
| | Reference E_TFCIs | E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27 | | E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18 | | E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27 |

HSUPA Output Power Measurement Results

| Band | Mode | UL Ch No. | Freq. (MHz) | Avg Pwr (dBm) | |
|---------------------|-----------|-----------|-------------|---------------|---------------|
| | | | | Full Power | Reduced Power |
| WCDMA (UMTS) Band V | Subtest 1 | 4132 | 826.4 | 23.6 | 18.7 |
| | | 4183 | 836.6 | 23.2 | 18.4 |
| | | 4233 | 846.6 | 23.5 | 18.8 |
| | Subtest 2 | 4132 | 826.4 | 22.0 | 17.5 |
| | | 4183 | 836.6 | 21.9 | 17.5 |
| | | 4233 | 846.6 | 21.8 | 17.4 |
| | Subtest 3 | 4132 | 826.4 | 22.1 | 17.6 |
| | | 4183 | 836.6 | 22.0 | 17.6 |
| | | 4233 | 846.6 | 22.2 | 17.7 |
| | Subtest 4 | 4132 | 826.4 | 22.3 | 17.9 |
| | | 4183 | 836.6 | 22.2 | 17.9 |
| | | 4233 | 846.6 | 22.2 | 17.8 |
| | Subtest 5 | 4132 | 826.4 | 23.4 | 19.0 |
| | | 4183 | 836.6 | 23.4 | 19.0 |
| | | 4233 | 846.6 | 23.4 | 18.9 |

Note(s):

- KDB 941225 D01 – Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit.

9.4. W-CDMA Band IV

Target Power for W-CDMA Band IV

| W-CDMA Band IV | Full Power | Reduced Power |
|----------------|------------|--|
| Release 99 RMC | 24.2 dBm | Low Channel: 18.5 dBm Mid and High Channels: 18.4 dBm |
| HSDPA | 24.2 dBm | 18.5 dBm |
| HSUPA | 23.9 dBm | Low Channel: 17.9 dBm Mid and High Channels: 17.8 dBm |

Tune-Up Tolerance: +1.0 dB/- 1.0 dB

Release 99

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

| Mode | Subtest | Rel99 |
|------------------------|-------------------------|--------------|
| WCDMA General Settings | Loopback Mode | Test Mode 1 |
| | Rel99 RMC | 12.2kbps RMC |
| | Power Control Algorithm | Algorithm2 |
| | β_c/β_d | 8/15 |

Release 99 RMC Output Power Measurement Results

| Band | Mode | UL Ch No. | Freq. (MHz) | Avg Pwr (dBm) | |
|-----------------------|-------------------------|-----------|-------------|---------------|--------------------|
| | | | | Full Power | w/ Power Reduction |
| W-CDMA (UMTS) Band IV | Rel 99 (RMC, 12.2 kbps) | 1312 | 1712.4 | 24.2 | 19.5 |
| | | 1413 | 1732.6 | 24.2 | 19.4 |
| | | 1513 | 1752.6 | 24.2 | 19.4 |

HSDPA

The following 4 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

| Mode | HSDPA | HSDPA | HSDPA | HSDPA |
|--|-------------------------|-------|-------|-------|
| Subtest | 1 | 2 | 3 | 4 |
| W-CDMA General Settings | Loopback Mode | | | |
| | Test Mode 1 | | | |
| | Rel99 RMC | | | |
| | 12.2kbps RMC | | | |
| | HSDPA FRC | | | |
| | H-Set1 | | | |
| | Power Control Algorithm | | | |
| | Algorithm 2 | | | |
| β_c | 2/15 | 12/15 | 15/15 | 15/15 |
| β_d | 15/15 | 15/15 | 8/15 | 4/15 |
| Bd (SF) | 64 | | | |
| β_c/β_d | 2/15 | 12/15 | 15/8 | 15/4 |
| β_{hs} | 4/15 | 24/15 | 30/15 | 30/15 |
| CM (dB) | 0 | 1 | 1.5 | 1.5 |
| HSDPA Specific Settings | D _{ACK} | | | |
| | 8 | | | |
| | D _{NAK} | | | |
| | 8 | | | |
| | DCQI | | | |
| | 8 | | | |
| Ack-Nack repetition factor | | | | |
| 3 | | | | |
| CQI Feedback (Table 5.2B.4) | | | | |
| 4ms | | | | |
| CQI Repetition Factor (Table 5.2B.4) | | | | |
| 2 | | | | |
| A _{hs} = β_{hs}/β_c | | | | |
| 30/15 | | | | |

HSDPA Output Power Measurement Results

| Band | Mode | UL Ch No. | Freq. (MHz) | Avg Pwr (dBm) | |
|-----------------------------|-----------|-----------|-------------|---------------|--------------------|
| | | | | Full Power | w/ Power Reductoin |
| W-CDMA (UMTS) Band IV | Subtest 1 | 1312 | 1712.4 | 24.2 | 19.5 |
| | | 1413 | 1732.6 | 24.2 | 19.4 |
| | | 1513 | 1752.6 | 24.1 | 19.3 |
| | Subtest 2 | 1312 | 1712.4 | 24.2 | 19.5 |
| | | 1413 | 1732.6 | 24.1 | 19.4 |
| | | 1513 | 1752.6 | 24.1 | 19.4 |
| | Subtest 3 | 1312 | 1712.4 | 24.1 | 19.5 |
| | | 1413 | 1732.6 | 24.1 | 19.4 |
| | | 1513 | 1752.6 | 24.0 | 19.4 |
| | Subtest 4 | 1312 | 1712.4 | 24.1 | 19.5 |
| | | 1413 | 1732.6 | 24.1 | 19.4 |
| | | 1513 | 1752.6 | 24.0 | 19.3 |

Note(s):

KDB 941225 D01 – Body SAR is not required for HSDPA when the maximum average output of each RF channel with HSDPA active is less than ¼ dB higher than that measured without HSDPA using 12.2 kbps RMC or the maximum SAR for 12.2 kbps RMC is < 75% of the SAR limit.

HSPA (HSDPA & HSUPA)

The following 5 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

| Mode | HSPA | HSPA | HSPA | HSPA | HSPA | |
|--------------------------------------|------------------------------------|--|-------|---|--------|--|
| Subtest | 1 | 2 | 3 | 4 | 5 | |
| WCDMA General Settings | Loopback Mode | | | | | |
| | Test Mode 1 | | | | | |
| | Rel99 RMC | | | | | |
| | 12.2kbps RMC | | | | | |
| | HSDPA FRC | | | | | |
| | H-Set1 | | | | | |
| | HSUPA Test | | | | | |
| | HSUPA Loopback | | | | | |
| | Power Control Algorithm | | | | | |
| | Algorithm2 | | | | | |
| | β_c | 11/15 | 6/15 | 15/15 | 2/15 | 15/15 |
| | β_d | 15/15 | 15/15 | 9/15 | 15/15 | 15/15 |
| β_{ec} | 209/225 | 12/15 | 30/15 | 2/15 | 24/15 | |
| β_c/β_d | 11/15 | 6/15 | 15/9 | 2/15 | 15/15 | |
| β_{hs} | 22/15 | 12/15 | 30/15 | 4/15 | 30/15 | |
| β_{ed} | 1309/225 | 94/75 | 47/15 | 56/75 | 134/15 | |
| CM (dB) | 1.0 | 3.0 | 2.0 | 3.0 | 1.0 | |
| MPR (dB) | 0 | 2 | 1 | 2 | 0 | |
| HSDPA Specific Settings | DACK | | | | | |
| | 8 | | | | | |
| | DNAK | | | | | |
| | 8 | | | | | |
| | DCQI | | | | | |
| | 8 | | | | | |
| Ack-Nack repetition factor | | | | | | |
| 3 | | | | | | |
| CQI Feedback (Table 5.2B.4) | | | | | | |
| 4ms | | | | | | |
| CQI Repetition Factor (Table 5.2B.4) | | | | | | |
| 2 | | | | | | |
| $A_{hs} = \beta_{hs}/\beta_c$ | | | | | | |
| 30/15 | | | | | | |
| HSUPA Specific Settings | D E-DPCCH | 6 | 8 | 8 | 5 | 7 |
| | DHARQ | 0 | 0 | 0 | 0 | 0 |
| | AG Index | 20 | 12 | 15 | 17 | 21 |
| | ETFCl (from 34.121 Table C.11.1.3) | 75 | 67 | 92 | 71 | 81 |
| | Associated Max UL Data Rate kbps | 242.1 | 174.9 | 482.8 | 205.8 | 308.9 |
| | Reference E_TFCIs | E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27 | | E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18 | | E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27 |

HSUPA Output Power Measurement Results

| Band | Mode | UL Ch No. | Freq. (MHz) | Avg Pwr (dBm) | |
|----------------------|-----------|-----------|-------------|---------------|--------------------|
| | | | | Full Power | w/ Power Reductoin |
| WCDMA (UMTS) Band IV | Subtest 1 | 1312 | 1712.4 | 23.2 | 18.3 |
| | | 1413 | 1732.6 | 22.9 | 18.1 |
| | | 1513 | 1752.6 | 23.1 | 18.1 |
| | Subtest 2 | 1312 | 1712.4 | 22.1 | 17.5 |
| | | 1413 | 1732.6 | 22.1 | 17.4 |
| | | 1513 | 1752.6 | 22.0 | 17.4 |
| | Subtest 3 | 1312 | 1712.4 | 22.3 | 17.6 |
| | | 1413 | 1732.6 | 22.5 | 17.5 |
| | | 1513 | 1752.6 | 22.3 | 17.4 |
| | Subtest 4 | 1312 | 1712.4 | 22.6 | 17.8 |
| | | 1413 | 1732.6 | 22.4 | 17.6 |
| | | 1513 | 1752.6 | 22.5 | 17.4 |
| | Subtest 5 | 1312 | 1712.4 | 23.7 | 18.9 |
| | | 1413 | 1732.6 | 23.5 | 18.8 |
| | | 1513 | 1752.6 | 23.5 | 18.8 |

Note(s):

- KDB 941225 D01 – Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit.

9.5. W-CDMA Band II

Target Power for W-CDMA Band II

| W-CDMA Band II | Full Power | Reduced Power |
|----------------|------------|--|
| Release 99 RMC | 24.2 dBm | Low and Mid Channels: 15.2 dBm High Channel: 15.0 dBm |
| HSDPA | 24.2 dBm | Low and Mid Channels: 15.2 dBm High Channel: 15.0 dBm |
| HSUPA | 24.2 dBm | Low and Mid Channels: 14.2 dBm High Channel: 14.0 dBm |

Tune-Up Tolerance: +1.0 dB/- 1.0 dB

Release 99

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

| Mode | Subtest | Rel99 |
|------------------------|-------------------------|--------------|
| WCDMA General Settings | Loopback Mode | Test Mode 1 |
| | Rel99 RMC | 12.2kbps RMC |
| | Power Control Algorithm | Algorithm2 |
| | β_c/β_d | 8/15 |

Release 99 RMC Output Power Measurement Results

| Band | Mode | UL Ch No. | Freq. (MHz) | Avg Pwr (dBm) | |
|-----------------------|-------------------------|-----------|-------------|---------------|--------------------|
| | | | | Full Power | w/ Power Reduction |
| W-CDMA (UMTS) Band II | Rel 99 (RMC, 12.2 kbps) | 9262 | 1852.4 | 24.5 | 15.9 |
| | | 9400 | 1880.0 | 24.7 | 16.2 |
| | | 9538 | 1907.6 | 24.4 | 14.9 |

HSDPA

The following 4 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

| | Mode | HSDPA | HSDPA | HSDPA | HSDPA |
|-------------------------------|--------------------------------------|--------------|-------|-------|-------|
| | Subtest | 1 | 2 | 3 | 4 |
| W-CDMA General Settings | Loopback Mode | Test Mode 1 | | | |
| | Rel99 RMC | 12.2kbps RMC | | | |
| | HSDPA FRC | H-Set1 | | | |
| | Power Control Algorithm | Algorithm 2 | | | |
| | β_c | 2/15 | 12/15 | 15/15 | 15/15 |
| | β_d | 15/15 | 15/15 | 8/15 | 4/15 |
| | Bd (SF) | 64 | | | |
| | β_c/β_d | 2/15 | 12/15 | 15/8 | 15/4 |
| | β_{hs} | 4/15 | 24/15 | 30/15 | 30/15 |
| CM (dB) | 0 | 1 | 1.5 | 1.5 | |
| HSDPA Specific Settings | D_{ACK} | 8 | | | |
| | D_{NAK} | 8 | | | |
| | DCQI | 8 | | | |
| | Ack-Nack repetition factor | 3 | | | |
| | CQI Feedback (Table 5.2B.4) | 4ms | | | |
| | CQI Repetition Factor (Table 5.2B.4) | 2 | | | |
| | $A_{hs} = \beta_{hs}/\beta_c$ | 30/15 | | | |

HSDPA Output Power Measurement Results

| Band | Mode | UL Ch No. | Freq. (MHz) | Avg Pwr (dBm) | |
|-----------------------------|-----------|-----------|-------------|---------------|--------------------|
| | | | | Full Power | w/ Power Reductoin |
| W-CDMA (UMTS) Band II | Subtest 1 | 9262 | 1852.4 | 24.3 | 15.7 |
| | | 9400 | 1880.0 | 24.5 | 15.3 |
| | | 9538 | 1907.6 | 24.2 | 15.5 |
| | Subtest 2 | 9262 | 1852.4 | 24.2 | 15.6 |
| | | 9400 | 1880.0 | 24.5 | 15.6 |
| | | 9538 | 1907.6 | 24.2 | 15.8 |
| | Subtest 3 | 9262 | 1852.4 | 24.3 | 15.7 |
| | | 9400 | 1880.0 | 24.5 | 16.0 |
| | | 9538 | 1907.6 | 24.2 | 15.4 |
| | Subtest 4 | 9262 | 1852.4 | 24.3 | 15.8 |
| | | 9400 | 1880.0 | 24.6 | 16.0 |
| | | 9538 | 1907.6 | 24.3 | 15.4 |

Note(s):

KDB 941225 D01 – Body SAR is not required for HSDPA when the maximum average output of each RF channel with HSDPA active is less than ¼ dB higher than that measured without HSDPA using 12.2 kbps RMC or the maximum SAR for 12.2 kbps RMC is < 75% of the SAR limit.

HSPA (HSDPA & HSUPA)

The following 5 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

| Mode | HSPA | HSPA | HSPA | HSPA | HSPA | |
|--------------------------------------|------------------------------------|--|-------|---|--------|--|
| Subtest | 1 | 2 | 3 | 4 | 5 | |
| WCDMA General Settings | Loopback Mode | | | | | |
| | Test Mode 1 | | | | | |
| | Rel99 RMC | | | | | |
| | 12.2kbps RMC | | | | | |
| | HSDPA FRC | | | | | |
| | H-Set1 | | | | | |
| | HSUPA Test | | | | | |
| | HSUPA Loopback | | | | | |
| | Power Control Algorithm | | | | | |
| | Algorithm2 | | | | | |
| | β_c | 11/15 | 6/15 | 15/15 | 2/15 | 15/15 |
| | β_d | 15/15 | 15/15 | 9/15 | 15/15 | 15/15 |
| β_{ec} | 209/225 | 12/15 | 30/15 | 2/15 | 24/15 | |
| β_c/β_d | 11/15 | 6/15 | 15/9 | 2/15 | 15/15 | |
| β_{hs} | 22/15 | 12/15 | 30/15 | 4/15 | 30/15 | |
| β_{ed} | 1309/225 | 94/75 | 47/15 | 56/75 | 134/15 | |
| CM (dB) | 1.0 | 3.0 | 2.0 | 3.0 | 1.0 | |
| MPR (dB) | 0 | 2 | 1 | 2 | 0 | |
| HSDPA Specific Settings | DACK | | | | | |
| | 8 | | | | | |
| | DNAK | | | | | |
| | 8 | | | | | |
| | DCQI | | | | | |
| | 8 | | | | | |
| Ack-Nack repetition factor | | | | | | |
| 3 | | | | | | |
| CQI Feedback (Table 5.2B.4) | | | | | | |
| 4ms | | | | | | |
| CQI Repetition Factor (Table 5.2B.4) | | | | | | |
| 2 | | | | | | |
| $A_{hs} = \beta_{hs}/\beta_c$ | | | | | | |
| 30/15 | | | | | | |
| HSUPA Specific Settings | D E-DPCCH | 6 | 8 | 8 | 5 | 7 |
| | DHARQ | 0 | 0 | 0 | 0 | 0 |
| | AG Index | 20 | 12 | 15 | 17 | 21 |
| | ETFCI (from 34.121 Table C.11.1.3) | 75 | 67 | 92 | 71 | 81 |
| | Associated Max UL Data Rate kbps | 242.1 | 174.9 | 482.8 | 205.8 | 308.9 |
| | Reference E_TFCIs | E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27 | | E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18 | | E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27 |

HSUPA Output Power Measurement Results

| Band | Mode | UL Ch No. | Freq. (MHz) | Avg Pwr (dBm) | |
|----------------------|-----------|-----------|-------------|---------------|--------------------|
| | | | | Full Power | w/ Power Reductoin |
| WCDMA (UMTS) Band II | Subtest 1 | 9262 | 1852.4 | 23.1 | 13.6 |
| | | 9400 | 1880.0 | 23.3 | 13.7 |
| | | 9538 | 1907.6 | 23.0 | 13.5 |
| | Subtest 2 | 9262 | 1852.4 | 22.5 | 12.2 |
| | | 9400 | 1880.0 | 22.6 | 12.2 |
| | | 9538 | 1907.6 | 22.1 | 12.6 |
| | Subtest 3 | 9262 | 1852.4 | 22.4 | 13.4 |
| | | 9400 | 1880.0 | 22.6 | 13.5 |
| | | 9538 | 1907.6 | 22.2 | 13.5 |
| | Subtest 4 | 9262 | 1852.4 | 22.5 | 12.6 |
| | | 9400 | 1880.0 | 22.6 | 12.9 |
| | | 9538 | 1907.6 | 22.6 | 12.8 |
| | Subtest 5 | 9262 | 1852.4 | 23.8 | 13.7 |
| | | 9400 | 1880.0 | 24.0 | 13.9 |
| | | 9538 | 1907.6 | 23.7 | 13.9 |

Note(s):

- KDB 941225 D01 – Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit.

9.6. CDMA BC0

Target Power for CDMA BC0

| CDMA BC0 | Full Power | Reduced Power |
|----------|------------|---------------|
| 1xRTT | 24.0 dBm | 19.2 dBm |
| 1xEV-DO | 24.0 dBm | 19.2 dBm |

Tune-Up Tolerance: +1.0 dB/- 1.0 dB

1xRTT Output Power Measurement Results

| CDMA | | | Avg Pwr (dBm) | | | | | |
|------|------|-------------|---------------|---------------|------------|---------------|------------|---------------|
| Band | Ch | Freq. (MHz) | RC1 - SO55 | | RC3 - SO55 | | RC3 - SO32 | |
| | | | (Loopback) | | (Loopback) | | (+F-SCH) | |
| | | | Full Power | Reduced Power | Full Power | Reduced Power | Full Power | Reduced Power |
| BC 0 | 1013 | 824.7 | 24.1 | 20.0 | 24.1 | 20.1 | 24.1 | 20.1 |
| | 384 | 836.52 | 24.1 | 20.2 | 24.1 | 20.1 | 24.1 | 20.1 |
| | 777 | 848.31 | 23.8 | 20.0 | 23.8 | 20.0 | 23.8 | 20.0 |

1xEV-DO Rel. 0 Output Power Measurement Results

| Band | FTAP Rate | RTAP Rate | Channel | f (MHz) | Avg Pwr (dBm) | |
|------|------------------------------|------------|---------|---------|---------------|---------------|
| | | | | | Full Power | Reduced Power |
| BC 0 | 307.2 kbps (2 slot, QPSK) | 153.6 kbps | 1013 | 824.7 | 24.1 | 20.1 |
| | | | 384 | 836.52 | 23.9 | 20.1 |
| | | | 777 | 848.31 | 24.0 | 19.9 |

1xEV-DO Rev. A Output Power Measurement Results

| Band | FETAP Traffic Format | RETAP Data Payload Size | Channel | f (MHz) | Avg Pwr (dBm) | |
|------|---|-------------------------|---------|---------|---------------|---------------|
| | | | | | Full Power | Reduced Power |
| BC 0 | 307.2k, QPSK/ ACK channel is transmitted at all the slots | 4096 | 1013 | 824.7 | 23.9 | 20.0 |
| | | | 384 | 836.52 | 24.0 | 20.1 |
| | | | 777 | 848.31 | 23.8 | 19.9 |

9.7. CDMA BC1

Target Power for CDMA BC1

| CDMA BC1 | Full Power | Reduced Power |
|----------|------------|---------------|
| 1xRTT | 24.0 dBm | 14.6 dBm |
| 1xEV-DO | 24.0 dBm | 14.6 dBm |

Tune-Up Tolerance: +1.0 dB/- 1.0 dB

1xRTT Output Power Measurement Results

| CDMA | | | Avg Pwr (dBm) | | | | | |
|------|------|-------------|---------------|---------------|------------|---------------|------------|---------------|
| Band | Ch | Freq. (MHz) | RC1 - SO55 | | RC3 - SO55 | | RC3 - SO32 | |
| | | | (Loopback) | | (Loopback) | | (+F-SCH) | |
| | | | Full Power | Reduced Power | Full Power | Reduced Power | Full Power | Reduced Power |
| BC 1 | 25 | 1851.25 | 24.0 | 15.1 | 24.2 | 15.1 | 24.2 | 15.1 |
| | 600 | 1880 | 24.2 | 15.2 | 24.3 | 15.2 | 24.2 | 15.2 |
| | 1175 | 1908.75 | 24.0 | 15.3 | 24.0 | 15.3 | 23.8 | 15.3 |

1xEV-DO Rel. 0 Output Power Measurement Results

| Band | FTAP Rate | RTAP Rate | Channel | f (MHz) | Avg Pwr (dBm) | |
|------|------------------------------|------------|---------|---------|---------------|---------------|
| | | | | | Full Power | Reduced Power |
| BC 1 | 307.2 kbps (2 slot, QPSK) | 153.6 kbps | 25 | 1851.25 | 24.4 | 15.2 |
| | | | 600 | 1880 | 24.3 | 15.4 |
| | | | 1175 | 1908.75 | 24.4 | 15.4 |

1xEV-DO Rev. A Output Power Measurement Results

| Band | FETAP Traffic Format | RETAP Data Payload Size | Channel | f (MHz) | Avg Pwr (dBm) | |
|------|---|-------------------------|---------|---------|---------------|---------------|
| | | | | | Full Power | Reduced Power |
| BC 1 | 307.2k, QPSK/ ACK channel is transmitted at all the slots | 4096 | 25 | 1851.25 | 24.3 | 15.3 |
| | | | 600 | 1880 | 24.3 | 15.3 |
| | | | 1175 | 1908.75 | 24.3 | 15.5 |

10. Tissue Dielectric Properties

IEEE Std 1528-2003 Table 2

| Target Frequency (MHz) | Head | |
|------------------------|--------------|----------------|
| | ϵ_r | σ (S/m) |
| 300 | 45.3 | 0.87 |
| 450 | 43.5 | 0.87 |
| 835 | 41.5 | 0.90 |
| 900 | 41.5 | 0.97 |
| 1450 | 40.5 | 1.20 |
| 1800 – 2000 | 40.0 | 1.40 |
| 2450 | 39.2 | 1.80 |
| 2600 | 39.0 | 1.96 |
| 3000 | 38.5 | 2.40 |

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| Target Frequency (MHz) | Head | | Body | |
|------------------------|--------------|----------------|--------------|----------------|
| | ϵ_r | σ (S/m) | ϵ_r | σ (S/m) |
| 150 | 52.3 | 0.76 | 61.9 | 0.80 |
| 300 | 45.3 | 0.87 | 58.2 | 0.92 |
| 450 | 43.5 | 0.87 | 56.7 | 0.94 |
| 835 | 41.5 | 0.90 | 55.2 | 0.97 |
| 900 | 41.5 | 0.97 | 55.0 | 1.05 |
| 915 | 41.5 | 0.98 | 55.0 | 1.06 |
| 1450 | 40.5 | 1.20 | 54.0 | 1.30 |
| 1610 | 40.3 | 1.29 | 53.8 | 1.40 |
| 1800 – 2000 | 40.0 | 1.40 | 53.3 | 1.52 |
| 2450 | 39.2 | 1.80 | 52.7 | 1.95 |
| 3000 | 38.5 | 2.40 | 52.0 | 2.73 |
| 5000 | 36.2 | 4.45 | 49.3 | 5.07 |
| 5100 | 36.1 | 4.55 | 49.1 | 5.18 |
| 5200 | 36.0 | 4.66 | 49.0 | 5.30 |
| 5300 | 35.9 | 4.76 | 48.9 | 5.42 |
| 5400 | 35.8 | 4.86 | 48.7 | 5.53 |
| 5500 | 35.6 | 4.96 | 48.6 | 5.65 |
| 5600 | 35.5 | 5.07 | 48.5 | 5.77 |
| 5700 | 35.4 | 5.17 | 48.3 | 5.88 |
| 5800 | 35.3 | 5.27 | 48.2 | 6.00 |

10.1. Composition of Ingredients for the Tissue Material Used in the SAR Tests

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

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

Salt: 99+% Pure Sodium Chloride Sugar: 98+% Pure Sucrose
 Water: De-ionized, 16 MΩ+ resistivity HEC: Hydroxyethyl Cellulose
 DGBE: 99+% Di(ethylene glycol) butyl ether, [2-(2-butoxyethoxy)ethanol]
 Triton X-100 (ultra pure): Polyethylene glycol mono [4-(1,1, 3, 3-tetramethylbutyl)phenyl]ether

MSL/HSL750 (Body and Head liquids for 700 – 800 MHz)

| | |
|--|---|
| Item | Head Tissue Simulation Liquids HSL750 Muscle (body) Tissue Simulation Liquids MSL750 |
| Type No | SL AAH 075 |
| Manufacturer | SPEAG |
| The item is composed of the following ingredients: | |
| H ² O | Water, 35 – 58% |
| Sucrose | Sugar, white, refined, 40-60% |
| NaCl | Sodium Chloride, 0-6% |
| Hydroxyethyl-cellulose | Medium Viscosity (CAS# 9004-62-0), <0.3% |
| Preventol-D7 | Preservative: aqueous preparation, (CAS# 55965-84-9), containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyl-3(2H)-isothiazolone, 0.1-0.7% |

Simulating Liquids for 5 GHz, Manufactured by SPEAG

| Ingredients | (% by weight) |
|--------------------|---------------|
| Water | 78 |
| Mineral oil | 11 |
| Emulsifiers | 9 |
| Additives and Salt | 2 |

10.2. Tissue Dielectric Parameter Check Results

Tissue dielectric parameters were measured at the low, middle and high frequency of each operating frequency range of the test device.

| Date | Freq. (MHz) | Liquid Parameters | | Measured | Target | Delta (%) | Limit \pm (%) | |
|-----------|-------------|-------------------|---|---|--------|-----------|-----------------|---|
| 8/29/2012 | Body 1900 | e' | 50.9538 | Relative Permittivity (ϵ_r): | 50.95 | 53.30 | -4.40 | 5 |
| | | e" | 14.5182 | Conductivity (σ): | 1.53 | 1.52 | 0.91 | 5 |
| | Body 1850 | e' | 51.1274 | Relative Permittivity (ϵ_r): | 51.13 | 53.30 | -4.08 | 5 |
| | | e" | 14.3717 | Conductivity (σ): | 1.48 | 1.52 | -2.74 | 5 |
| | Body 1880 | e' | 51.0226 | Relative Permittivity (ϵ_r): | 51.02 | 53.30 | -4.27 | 5 |
| | | e" | 14.4591 | Conductivity (σ): | 1.51 | 1.52 | -0.56 | 5 |
| Body 1910 | e' | 50.9214 | Relative Permittivity (ϵ_r): | 50.92 | 53.30 | -4.46 | 5 | |
| | e" | 14.5491 | Conductivity (σ): | 1.55 | 1.52 | 1.65 | 5 | |
| 8/30/2012 | Body 1900 | e' | 52.4174 | Relative Permittivity (ϵ_r): | 52.42 | 53.30 | -1.66 | 5 |
| | | e" | 14.2503 | Conductivity (σ): | 1.51 | 1.52 | -0.95 | 5 |
| | Body 1850 | e' | 52.5806 | Relative Permittivity (ϵ_r): | 52.58 | 53.30 | -1.35 | 5 |
| | | e" | 14.1076 | Conductivity (σ): | 1.45 | 1.52 | -4.53 | 5 |
| | Body 1880 | e' | 52.4879 | Relative Permittivity (ϵ_r): | 52.49 | 53.30 | -1.52 | 5 |
| | | e" | 14.1911 | Conductivity (σ): | 1.48 | 1.52 | -2.40 | 5 |
| Body 1910 | e' | 52.3839 | Relative Permittivity (ϵ_r): | 52.38 | 53.30 | -1.72 | 5 | |
| | e" | 14.2814 | Conductivity (σ): | 1.52 | 1.52 | -0.22 | 5 | |
| 9/24/2012 | Body 835 | e' | 54.0638 | Relative Permittivity (ϵ_r): | 54.06 | 55.20 | -2.06 | 5 |
| | | e" | 21.1581 | Conductivity (σ): | 0.98 | 0.97 | 1.27 | 5 |
| | Body 820 | e' | 54.2976 | Relative Permittivity (ϵ_r): | 54.30 | 55.28 | -1.77 | 5 |
| | | e" | 21.2208 | Conductivity (σ): | 0.97 | 0.97 | -0.09 | 5 |
| | Body 850 | e' | 54.0493 | Relative Permittivity (ϵ_r): | 54.05 | 55.16 | -2.01 | 5 |
| | | e" | 21.0508 | Conductivity (σ): | 0.99 | 0.99 | 0.79 | 5 |
| 9/25/2012 | Body 835 | e' | 54.0545 | Relative Permittivity (ϵ_r): | 54.05 | 55.20 | -2.08 | 5 |
| | | e" | 21.3814 | Conductivity (σ): | 0.99 | 0.97 | 2.34 | 5 |
| | Body 820 | e' | 54.2110 | Relative Permittivity (ϵ_r): | 54.21 | 55.28 | -1.93 | 5 |
| | | e" | 21.2539 | Conductivity (σ): | 0.97 | 0.97 | 0.06 | 5 |
| | Body 850 | e' | 53.9774 | Relative Permittivity (ϵ_r): | 53.98 | 55.16 | -2.14 | 5 |
| | | e" | 21.1443 | Conductivity (σ): | 1.00 | 0.99 | 1.24 | 5 |
| 10/3/2012 | Body 1900 | e' | 52.2229 | Relative Permittivity (ϵ_r): | 52.22 | 53.30 | -2.02 | 5 |
| | | e" | 14.7514 | Conductivity (σ): | 1.56 | 1.52 | 2.53 | 5 |
| | Body 1850 | e' | 52.2327 | Relative Permittivity (ϵ_r): | 52.23 | 53.30 | -2.00 | 5 |
| | | e" | 14.5340 | Conductivity (σ): | 1.50 | 1.52 | -1.64 | 5 |
| | Body 1880 | e' | 52.1241 | Relative Permittivity (ϵ_r): | 52.12 | 53.30 | -2.21 | 5 |
| | | e" | 14.7301 | Conductivity (σ): | 1.54 | 1.52 | 1.30 | 5 |
| Body 1910 | e' | 52.1897 | Relative Permittivity (ϵ_r): | 52.19 | 53.30 | -2.08 | 5 | |
| | e" | 14.8252 | Conductivity (σ): | 1.57 | 1.52 | 3.58 | 5 | |
| 10/5/2012 | Body 835 | e' | 54.6020 | Relative Permittivity (ϵ_r): | 54.60 | 55.20 | -1.08 | 5 |
| | | e" | 21.4566 | Conductivity (σ): | 1.00 | 0.97 | 2.70 | 5 |
| | Body 815 | e' | 54.8192 | Relative Permittivity (ϵ_r): | 54.82 | 55.30 | -0.86 | 5 |
| | | e" | 21.6467 | Conductivity (σ): | 0.98 | 0.97 | 1.33 | 5 |
| | Body 820 | e' | 54.7895 | Relative Permittivity (ϵ_r): | 54.79 | 55.28 | -0.88 | 5 |
| | | e" | 21.5206 | Conductivity (σ): | 0.98 | 0.97 | 1.32 | 5 |
| Body 850 | e' | 54.3457 | Relative Permittivity (ϵ_r): | 54.35 | 55.16 | -1.47 | 5 | |
| | e" | 21.3124 | Conductivity (σ): | 1.01 | 0.99 | 2.04 | 5 | |

Tissue Dielectric Parameter Check Results continued

| Date | Freq. (MHz) | Liquid Parameters | | Measured | Target | Delta (%) | Limit ±(%) | |
|------------|-------------|-------------------|---------|---|--------|-----------|------------|---|
| 10/9/2012 | Body 1750 | e' | 51.9715 | Relative Permittivity (ϵ_r): | 51.97 | 53.44 | -2.75 | 5 |
| | | e" | 15.0729 | Conductivity (σ): | 1.47 | 1.49 | -1.31 | 5 |
| | Body 1710 | e' | 52.3032 | Relative Permittivity (ϵ_r): | 52.30 | 53.54 | -2.32 | 5 |
| | | e" | 14.9279 | Conductivity (σ): | 1.42 | 1.46 | -2.89 | 5 |
| | Body 1735 | e' | 52.1205 | Relative Permittivity (ϵ_r): | 52.12 | 53.48 | -2.54 | 5 |
| | | e" | 15.1020 | Conductivity (σ): | 1.46 | 1.48 | -1.35 | 5 |
| | Body 1755 | e' | 51.9118 | Relative Permittivity (ϵ_r): | 51.91 | 53.43 | -2.84 | 5 |
| | | e" | 15.1410 | Conductivity (σ): | 1.48 | 1.49 | -0.79 | 5 |
| 10/11/2012 | Body 835 | e' | 53.6507 | Relative Permittivity (ϵ_r): | 53.65 | 55.20 | -2.81 | 5 |
| | | e" | 21.2359 | Conductivity (σ): | 0.99 | 0.97 | 1.64 | 5 |
| | Body 815 | e' | 54.2833 | Relative Permittivity (ϵ_r): | 54.28 | 55.30 | -1.83 | 5 |
| | | e" | 21.0797 | Conductivity (σ): | 0.96 | 0.97 | -1.32 | 5 |
| | Body 820 | e' | 53.9819 | Relative Permittivity (ϵ_r): | 53.98 | 55.28 | -2.34 | 5 |
| | | e" | 21.2890 | Conductivity (σ): | 0.97 | 0.97 | 0.23 | 5 |
| | Body 850 | e' | 53.5182 | Relative Permittivity (ϵ_r): | 53.52 | 55.16 | -2.97 | 5 |
| | | e" | 21.3459 | Conductivity (σ): | 1.01 | 0.99 | 2.20 | 5 |
| 10/11/2012 | Body 1900 | e' | 53.1885 | Relative Permittivity (ϵ_r): | 53.19 | 53.30 | -0.21 | 5 |
| | | e" | 14.3616 | Conductivity (σ): | 1.52 | 1.52 | -0.18 | 5 |
| | Body 1850 | e' | 53.3324 | Relative Permittivity (ϵ_r): | 53.33 | 53.30 | 0.06 | 5 |
| | | e" | 14.1381 | Conductivity (σ): | 1.45 | 1.52 | -4.32 | 5 |
| | Body 1880 | e' | 53.2898 | Relative Permittivity (ϵ_r): | 53.29 | 53.30 | -0.02 | 5 |
| | | e" | 14.2502 | Conductivity (σ): | 1.49 | 1.52 | -2.00 | 5 |
| | Body 1910 | e' | 53.2090 | Relative Permittivity (ϵ_r): | 53.21 | 53.30 | -0.17 | 5 |
| | | e" | 14.3544 | Conductivity (σ): | 1.52 | 1.52 | 0.29 | 5 |
| 10/16/2012 | Body 1750 | e' | 52.3099 | Relative Permittivity (ϵ_r): | 52.31 | 53.44 | -2.12 | 5 |
| | | e" | 15.4251 | Conductivity (σ): | 1.50 | 1.49 | 1.00 | 5 |
| | Body 1710 | e' | 52.3659 | Relative Permittivity (ϵ_r): | 52.37 | 53.54 | -2.20 | 5 |
| | | e" | 15.2769 | Conductivity (σ): | 1.45 | 1.46 | -0.62 | 5 |
| | Body 1735 | e' | 52.3312 | Relative Permittivity (ϵ_r): | 52.33 | 53.48 | -2.15 | 5 |
| | | e" | 15.4651 | Conductivity (σ): | 1.49 | 1.48 | 1.02 | 5 |
| | Body 1755 | e' | 52.4500 | Relative Permittivity (ϵ_r): | 52.45 | 53.43 | -1.83 | 5 |
| | | e" | 15.5753 | Conductivity (σ): | 1.52 | 1.49 | 2.06 | 5 |
| 10/31/2012 | Body 1750 | e' | 51.5327 | Relative Permittivity (ϵ_r): | 51.53 | 53.44 | -3.57 | 5 |
| | | e" | 14.9316 | Conductivity (σ): | 1.45 | 1.49 | -2.24 | 5 |
| | Body 1710 | e' | 51.6123 | Relative Permittivity (ϵ_r): | 51.61 | 53.54 | -3.61 | 5 |
| | | e" | 14.8504 | Conductivity (σ): | 1.41 | 1.46 | -3.39 | 5 |
| | Body 1735 | e' | 51.4714 | Relative Permittivity (ϵ_r): | 51.47 | 53.48 | -3.75 | 5 |
| | | e" | 15.0230 | Conductivity (σ): | 1.45 | 1.48 | -1.87 | 5 |
| | Body 1755 | e' | 51.5142 | Relative Permittivity (ϵ_r): | 51.51 | 53.43 | -3.58 | 5 |
| | | e" | 14.9801 | Conductivity (σ): | 1.46 | 1.49 | -1.84 | 5 |
| 11/1/2012 | Body 835 | e' | 53.4551 | Relative Permittivity (ϵ_r): | 53.46 | 55.20 | -3.16 | 5 |
| | | e" | 21.8956 | Conductivity (σ): | 1.02 | 0.97 | 4.80 | 5 |
| | Body 815 | e' | 53.5759 | Relative Permittivity (ϵ_r): | 53.58 | 55.30 | -3.11 | 5 |
| | | e" | 22.0919 | Conductivity (σ): | 1.00 | 0.97 | 3.41 | 5 |
| | Body 820 | e' | 53.5292 | Relative Permittivity (ϵ_r): | 53.53 | 55.28 | -3.16 | 5 |
| | | e" | 22.0438 | Conductivity (σ): | 1.01 | 0.97 | 3.78 | 5 |
| | Body 850 | e' | 53.3649 | Relative Permittivity (ϵ_r): | 53.36 | 55.16 | -3.25 | 5 |
| | | e" | 21.9057 | Conductivity (σ): | 1.04 | 0.99 | 4.88 | 5 |

Tissue Dielectric Parameter Check Results continued

| Date | Freq. (MHz) | Liquid Parameters | | Measured | Target | Delta (%) | Limit ±(%) | |
|-----------|-------------|-------------------|---------|---|--------|-----------|------------|---|
| 11/2/2012 | Body 1900 | e' | 53.9915 | Relative Permittivity (ϵ_r): | 53.99 | 53.30 | 1.30 | 5 |
| | | e" | 14.3020 | Conductivity (σ): | 1.51 | 1.52 | -0.60 | 5 |
| | Body 1850 | e' | 54.2087 | Relative Permittivity (ϵ_r): | 54.21 | 53.30 | 1.70 | 5 |
| | | e" | 14.1400 | Conductivity (σ): | 1.45 | 1.52 | -4.31 | 5 |
| | Body 1880 | e' | 54.0604 | Relative Permittivity (ϵ_r): | 54.06 | 53.30 | 1.43 | 5 |
| | | e" | 14.2345 | Conductivity (σ): | 1.49 | 1.52 | -2.11 | 5 |
| | Body 1910 | e' | 53.9655 | Relative Permittivity (ϵ_r): | 53.97 | 53.30 | 1.25 | 5 |
| | | e" | 14.3251 | Conductivity (σ): | 1.52 | 1.52 | 0.09 | 5 |
| 11/5/2012 | Body 1750 | e' | 53.0429 | Relative Permittivity (ϵ_r): | 53.04 | 53.44 | -0.74 | 5 |
| | | e" | 15.2437 | Conductivity (σ): | 1.48 | 1.49 | -0.19 | 5 |
| | Body 1710 | e' | 53.0573 | Relative Permittivity (ϵ_r): | 53.06 | 53.54 | -0.91 | 5 |
| | | e" | 15.1994 | Conductivity (σ): | 1.45 | 1.46 | -1.12 | 5 |
| | Body 1755 | e' | 53.0429 | Relative Permittivity (ϵ_r): | 53.04 | 53.43 | -0.72 | 5 |
| | | e" | 15.2437 | Conductivity (σ): | 1.49 | 1.49 | -0.11 | 5 |
| 11/5/2012 | Body 835 | e' | 53.1041 | Relative Permittivity (ϵ_r): | 53.10 | 55.20 | -3.80 | 5 |
| | | e" | 21.7466 | Conductivity (σ): | 1.01 | 0.97 | 4.09 | 5 |
| | Body 820 | e' | 53.2697 | Relative Permittivity (ϵ_r): | 53.27 | 55.28 | -3.63 | 5 |
| | | e" | 21.8018 | Conductivity (σ): | 0.99 | 0.97 | 2.64 | 5 |
| | Body 850 | e' | 52.9695 | Relative Permittivity (ϵ_r): | 52.97 | 55.16 | -3.97 | 5 |
| | | e" | 21.7064 | Conductivity (σ): | 1.03 | 0.99 | 3.93 | 5 |
| 11/6/2012 | Body 1900 | e' | 52.4600 | Relative Permittivity (ϵ_r): | 52.46 | 53.30 | -1.58 | 5 |
| | | e" | 14.6400 | Conductivity (σ): | 1.55 | 1.52 | 1.75 | 5 |
| | Body 1850 | e' | 52.7400 | Relative Permittivity (ϵ_r): | 52.74 | 53.30 | -1.05 | 5 |
| | | e" | 14.3700 | Conductivity (σ): | 1.48 | 1.52 | -2.75 | 5 |
| | Body 1910 | e' | 52.3900 | Relative Permittivity (ϵ_r): | 52.39 | 53.30 | -1.71 | 5 |
| | | e" | 14.6600 | Conductivity (σ): | 1.56 | 1.52 | 2.43 | 5 |
| 11/7/2012 | Body 835 | e' | 54.3000 | Relative Permittivity (ϵ_r): | 54.30 | 55.20 | -1.63 | 5 |
| | | e" | 21.6700 | Conductivity (σ): | 1.01 | 0.97 | 3.72 | 5 |
| | Body 820 | e' | 54.4500 | Relative Permittivity (ϵ_r): | 54.45 | 55.28 | -1.50 | 5 |
| | | e" | 21.6700 | Conductivity (σ): | 0.99 | 0.97 | 2.02 | 5 |
| | Body 850 | e' | 54.3000 | Relative Permittivity (ϵ_r): | 54.30 | 55.16 | -1.55 | 5 |
| | | e" | 21.6700 | Conductivity (σ): | 1.02 | 0.99 | 3.75 | 5 |
| 11/7/2012 | Body 1900 | e' | 52.7500 | Relative Permittivity (ϵ_r): | 52.75 | 53.30 | -1.03 | 5 |
| | | e" | 14.3500 | Conductivity (σ): | 1.52 | 1.52 | -0.26 | 5 |
| | Body 1850 | e' | 52.9700 | Relative Permittivity (ϵ_r): | 52.97 | 53.30 | -0.62 | 5 |
| | | e" | 14.1500 | Conductivity (σ): | 1.46 | 1.52 | -4.24 | 5 |
| | Body 1910 | e' | 52.7500 | Relative Permittivity (ϵ_r): | 52.75 | 53.30 | -1.03 | 5 |
| | | e" | 14.3600 | Conductivity (σ): | 1.53 | 1.52 | 0.33 | 5 |

11. System Performance Check

The system performance check is performed prior to any usage of the system in order to verify SAR system measurement accuracy. The system performance check verifies that the system operates within its specifications of $\pm 10\%$.

11.1. System Performance Check Measurement Conditions

- The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 ± 0.2 mm (bottom plate) filled with Body or Head simulating liquid of the following parameters.
- The DASY system with an E-Field Probe was used for the measurements.
- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10 mm (above 1 GHz) and 15 mm (below 1 GHz) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 15 mm was aligned with the dipole.
 For 5 GHz band - The coarse grid with a grid spacing of 10 mm was aligned with the dipole.
- Special 7x7x7 (below 3 GHz) and/or 8x8x7 (above 3 GHz) fine cube was chosen for the cube.
- Distance between probe sensors and phantom surface was set to 3 mm.
 For 5 GHz band - Distance between probe sensors and phantom surface was set to 2.5 mm
- The dipole input power (forward power) was 100 mW.
- The results are normalized to 1 W input power.

11.2. Reference SAR Values for System Performance Check

The reference SAR values can be obtained from the calibration certificate of system validation dipoles

| System Dipole | Serial No. | Cal. Date | Freq. (MHz) | Target SAR Values (mW/g) | | |
|---------------|------------|-----------|-------------|--------------------------|------|------|
| | | | | 1g/10g | Head | Body |
| D835V2 | 4d117 | 4/10/12 | 835 | 1g | 9.38 | 9.52 |
| | | | | 10g | 6.15 | 6.31 |
| D1750V2 | 1050 | 4/19/12 | 1750 | 1g | 35.9 | 36.9 |
| | | | | 10g | 19.1 | 19.9 |
| D1900V2 | 5d140 | 4/12/12 | 1900 | 1g | 39.8 | 40.2 |
| | | | | 10g | 20.8 | 21.3 |

11.3. System Performance Check Results

Tissue Dielectric Parameter Check Results

| Date Tested | System Dipole | | T.S. Liquid | SAR Measured (Normalized to 1 W) | | Target (Ref. Value) | Delta (%) | Tolerance (%) |
|-------------|---------------|------------|-------------|----------------------------------|-------|---------------------|-----------|---------------|
| | Type | Serial No. | | 1g | 10g | | | |
| 8/29/2012 | D1900V2 | 5d140 | Body | 1g | 42.5 | 40.2 | 5.72 | ±10 |
| | | | | 10g | 22.4 | 21.3 | 5.16 | |
| 8/30/2012 | D1900V2 | 5d140 | Body | 1g | 41.7 | 40.2 | 3.73 | ±10 |
| | | | | 10g | 21.9 | 21.3 | 2.82 | |
| 9/24/2012 | D835V2 | 4d117 | Body | 1g | 10.0 | 9.52 | 5.04 | ±10 |
| | | | | 10g | 6.59 | 6.31 | 4.44 | |
| 9/25/2012 | D835V2 | 4d117 | Body | 1g | 10.1 | 9.52 | 6.09 | ±10 |
| | | | | 10g | 6.68 | 6.31 | 5.86 | |
| 10/3/2012 | D1900V2 | 5d140 | Body | 1g | 41.7 | 40.2 | 3.73 | ±10 |
| | | | | 10g | 22.0 | 21.3 | 3.29 | |
| 10/5/2012 | D835V2 | 4d117 | Body | 1g | 9.37 | 9.52 | -1.58 | ±10 |
| | | | | 10g | 6.17 | 6.31 | -2.22 | |
| 10/9/2012 | D1750V2 | 1050 | Body | 1g | 38.4 | 36.9 | 4.07 | ±10 |
| | | | | 10g | 20.6 | 19.9 | 3.52 | |
| 10/11/2012 | D835V2 | 4d117 | Body | 1g | 9.38 | 9.52 | -1.47 | ±10 |
| | | | | 10g | 6.15 | 6.31 | -2.54 | |
| 10/11/2012 | D1900V2 | 5d140 | Body | 1g | 40.7 | 40.2 | 1.24 | ±10 |
| | | | | 10g | 21.3 | 21.3 | 0.00 | |
| 10/16/2012 | D1750v2 | 1050 | Body | 1g | 36.1 | 36.9 | -2.17 | ±10 |
| | | | | 10g | 19.2 | 19.9 | -3.52 | |
| 10/31/2012 | D1750v2 | 1050 | Body | 1g | 37.2 | 36.9 | 0.81 | ±10 |
| | | | | 10g | 19.9 | 19.9 | 0.00 | |
| 11/1/2012 | D835V2 | 4d117 | Body | 1g | 10.00 | 9.52 | 5.04 | ±10 |
| | | | | 10g | 6.60 | 6.31 | 4.60 | |
| 11/2/2012 | D1900V2 | 5d140 | Body | 1g | 41.4 | 40.2 | 2.99 | ±10 |
| | | | | 10g | 21.7 | 21.3 | 1.88 | |
| 11/5/2012 | D1750v2 | 1050 | Body | 1g | 36.8 | 36.9 | -0.27 | ±10 |
| | | | | 10g | 19.6 | 19.9 | -1.51 | |
| 11/5/2012 | D835V2 | 4d117 | Body | 1g | 9.70 | 9.52 | 1.89 | ±10 |
| | | | | 10g | 6.38 | 6.31 | 1.11 | |
| 11/6/2012 | D1900V2 | 5d140 | Body | 1g | 40.9 | 40.2 | 1.74 | ±10 |
| | | | | 10g | 21.6 | 21.3 | 1.41 | |
| 11/7/2012 | D835V2 | 4d117 | Body | 1g | 10.10 | 9.52 | 6.09 | ±10 |
| | | | | 10g | 6.64 | 6.31 | 5.23 | |
| 11/7/2012 | D1900V2 | 5d140 | Body | 1g | 42.4 | 40.2 | 5.47 | ±10 |
| | | | | 10g | 22.5 | 21.3 | 5.63 | |

12. SAR Test Results

12.1. GSM850

| Test Position | Dist. (mm) | Prox. Sensor Status | Mode | Ch #. | Freq. (MHz) | Power (dBm) | | 1-g SAR (W/kg) | | Plot No. | Note |
|---------------|------------|---------------------|---------------|-------|-------------|---------------|-------|----------------|--------------|----------|------|
| | | | | | | Tune-Up Limit | Meas. | Meas. | Scaled | | |
| Rear | 0 | Off | GPRS 2 slots | 128 | 824.2 | 32.6 | 31.3 | | | | 1 |
| | | | | 190 | 836.6 | 32.6 | 31.4 | 0.252 | 0.334 | 1 | |
| | | | | 251 | 848.8 | 32.6 | 31.3 | | | | 1 |
| Edge 1 | 16 | Off | GPRS 2 slots | 128 | 824.2 | 32.6 | 31.3 | | | | 1 |
| | | | | 190 | 836.6 | 32.6 | 31.4 | 0.588 | 0.779 | 2 | |
| | | | | 251 | 848.8 | 32.6 | 31.3 | | | | 1 |
| Edge 1 | 0 | ON | GPRS 2 slots | 128 | 824.2 | 26.7 | 26.5 | 0.915 | 0.963 | 3 | |
| | | | | 190 | 836.6 | 26.7 | 26.6 | 0.955 | 0.977 | 4 | |
| | | | | 251 | 848.8 | 26.7 | 26.5 | 1.060 | 1.118 | 5 | |
| | 0 | ON | EGPRS 2 slots | 128 | 824.2 | 26.7 | 26.7 | 0.792 | 0.792 | 6 | |
| | | | | 190 | 836.6 | 26.7 | 26.7 | 0.859 | 0.859 | 7 | |
| | | | | 251 | 848.8 | 26.7 | 26.4 | 1.140 | 1.222 | 8 | |
| Edge 4 | 0 | Off | GPRS 2 slots | 128 | 824.2 | 32.6 | 31.3 | | | | 1 |
| | | | | 190 | 836.6 | 32.6 | 31.4 | 0.291 | 0.385 | 9 | |
| | | | | 251 | 848.8 | 32.6 | 31.3 | | | | 1 |

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

12.2. GSM1900

| Test Position | Dist. (mm) | Prox. Sensor Status | Mode | Ch #. | Freq. (MHz) | Power (dBm) | | 1-g SAR (W/kg) | | Plot No. | Note |
|---------------|------------|---------------------|--------------|-------|-------------|---------------|-------|----------------|--------------|----------|------|
| | | | | | | Tune-Up Limit | Meas. | Meas. | Scaled | | |
| Rear | 0 | Off | GPRS 2 slots | 512 | 1850.2 | 30.8 | 29.5 | | | | 1 |
| | | | | 661 | 1880 | 30.8 | 29.3 | 0.057 | 0.081 | 1 | |
| | | | | 810 | 1909.8 | 30.8 | 29.4 | | | | 1 |
| Edge 1 | 16 | Off | GPRS 2 slots | 512 | 1850.2 | 30.8 | 29.5 | | | | 1 |
| | | | | 661 | 1880 | 30.8 | 29.3 | 0.496 | 0.704 | 2 | |
| | | | | 810 | 1909.8 | 30.8 | 29.4 | | | | 1 |
| Edge 1 | 0 | ON | GPRS 2 slots | 512 | 1850.2 | 22.9 | 22.9 | 1.130 | 1.130 | 3 | |
| | | | | 661 | 1880 | 22.9 | 22.8 | 1.000 | 1.023 | 4 | |
| | | | | 810 | 1909.8 | 22.6 | 22.6 | 1.350 | 1.350 | 5 | |
| Edge 4 | 0 | Off | GPRS 2 slots | 512 | 1850.2 | 30.8 | 29.5 | | | | 1 |
| | | | | 661 | 1880 | 30.8 | 29.3 | 0.217 | 0.308 | 6 | |
| | | | | 810 | 1909.8 | 30.8 | 29.4 | | | | 1 |

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

12.3. W-CDMA Band V

Test mode reduction considerations

Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit as per KDB 941225 D01

| Test Position | Dist. (mm) | Prox. Sensor Status | Mode | Ch #. | Freq. (MHz) | Power (dBm) | | 1-g SAR (W/kg) | | Plot No. | Note |
|---------------|------------|---------------------|---------------------|-------|-------------|---------------|-------|----------------|--------------|----------|------|
| | | | | | | Tune-Up Limit | Meas. | Meas. | Scaled | | |
| Rear | 0 | Off | Rel 99 RMC 12.2kbps | 4132 | 826.4 | 25.2 | 24.3 | | | | 1 |
| | | | | 4183 | 836.6 | 25.2 | 24.3 | 0.181 | 0.225 | 1 | |
| | | | | 4233 | 846.6 | 25.2 | 24.2 | | | | 1 |
| Edge 1 | 16 | Off | Rel 99 RMC 12.2kbps | 4132 | 826.4 | 25.2 | 24.3 | | | | 1 |
| | | | | 4183 | 836.6 | 25.2 | 24.3 | 0.354 | 0.441 | 2 | |
| | | | | 4233 | 846.6 | 25.2 | 24.2 | | | | 1 |
| Edge 1 | 0 | ON | Rel 99 RMC 12.2kbps | 4132 | 826.4 | 19.8 | 19.8 | 0.800 | 0.800 | 3 | |
| | | | | 4183 | 836.6 | 19.8 | 19.8 | 0.768 | 0.768 | 4 | |
| | | | | 4233 | 846.6 | 19.8 | 19.7 | 0.855 | 0.875 | 5 | |
| Edge 4 | 0 | Off | Rel 99 RMC 12.2kbps | 4132 | 826.4 | 25.2 | 24.3 | | | | 1 |
| | | | | 4183 | 836.6 | 25.2 | 24.3 | 0.218 | 0.271 | 6 | |
| | | | | 4233 | 846.6 | 25.2 | 24.2 | | | | 1 |

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

12.4. W-CDMA Band IV

Test mode reduction considerations

Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit as per KDB 941225 D01

| Test Position | Dist. (mm) | Prox. Sensor Status | Mode | Ch #. | Freq. (MHz) | Power (dBm) | | 1-g SAR (W/kg) | | Plot No. | Note |
|---------------|------------|---------------------|---------------------|-------|-------------|---------------|-------|----------------|--------|----------|------|
| | | | | | | Tune-Up Limit | Meas. | Meas. | Scaled | | |
| Rear | 0 | Off | Rel 99 RMC 12.2kbps | 1312 | 1712.4 | 25.2 | 24.2 | | | | 1 |
| | | | | 1413 | 1732.6 | 25.2 | 24.2 | 0.204 | 0.255 | 1 | |
| | | | | 1513 | 1752.6 | 25.2 | 24.2 | | | | 1 |
| Edge 1 | 16 | Off | Rel 99 RMC 12.2kbps | 1312 | 1712.4 | 25.2 | 24.2 | | | | 1 |
| | | | | 1413 | 1732.6 | 25.2 | 24.2 | 0.374 | 0.468 | 2 | |
| | | | | 1513 | 1752.6 | 25.2 | 24.2 | | | | 1 |
| Edge 1 | 0 | ON | Rel 99 RMC 12.2kbps | 1312 | 1712.4 | 19.5 | 19.5 | 1.380 | 1.380 | 3 | |
| | | | | 1413 | 1732.6 | 19.4 | 19.4 | 1.370 | 1.370 | 4 | |
| | | | | 1513 | 1752.6 | 19.4 | 19.4 | 1.310 | 1.310 | 5 | |
| | 0 | ON | HSUPA Subtest 5 | 1312 | 1712.4 | 18.9 | 18.9 | 1.260 | 1.260 | 6 | |
| | | | | 1413 | 1732.6 | 18.8 | 18.8 | 1.090 | 1.090 | 7 | |
| | | | | 1513 | 1752.6 | 18.8 | 18.8 | 1.060 | 1.060 | 8 | |
| Edge 4 | 0 | Off | Rel 99 RMC 12.2kbps | 1312 | 1712.4 | 25.2 | 24.2 | | | | 1 |
| | | | | 1413 | 1732.6 | 25.2 | 24.2 | 0.324 | 0.405 | 9 | |
| | | | | 1513 | 1752.6 | 25.2 | 24.2 | | | | 1 |

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

12.5. W-CDMA Band II

Test mode reduction considerations

Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than ¼ dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and the maximum SAR for 12.2kbps RMC is ≤ 75% of the SAR limit as per KDB 941225 D01

| Test Position | Dist. (mm) | Prox. Sensor Status | Mode | Ch #. | Freq. (MHz) | Power (dBm) | | 1-g SAR (W/kg) | | Plot No. | Note |
|---------------|------------|---------------------|---------------------|-------|-------------|---------------|-------|----------------|--------------|----------|------|
| | | | | | | Tune-Up Limit | Meas. | Meas. | Scaled | | |
| Rear | 0 | Off | Rel 99 RMC 12.2kbps | 9262 | 1852.4 | 25.2 | 24.5 | | | | 1 |
| | | | | 9400 | 1880 | 25.2 | 24.7 | 0.074 | 0.083 | 1 | |
| | | | | 9538 | 1907.6 | 25.2 | 24.4 | | | | 1 |
| Edge 1 | 16 | Off | Rel 99 RMC 12.2kbps | 9262 | 1852.4 | 25.2 | 24.5 | | | | 1 |
| | | | | 9400 | 1880 | 25.2 | 24.7 | 0.486 | 0.544 | 2 | |
| | | | | 9538 | 1907.6 | 25.2 | 24.4 | | | | 1 |
| Edge 1 | 0 | ON | Rel 99 RMC 12.2kbps | 9262 | 1852.4 | 16.2 | 15.9 | 1.030 | 1.114 | 3 | |
| | | | | 9400 | 1880 | 16.2 | 16.2 | 1.180 | 1.180 | 4 | |
| | | | | 9538 | 1907.6 | 16.0 | 14.9 | 1.040 | 1.340 | 5 | |
| Edge 4 | 0 | Off | Rel 99 RMC 12.2kbps | 9262 | 1852.4 | 25.2 | 24.5 | | | | 1 |
| | | | | 9400 | 1880 | 25.2 | 24.7 | 0.302 | 0.338 | 6 | |
| | | | | 9538 | 1907.6 | 25.2 | 24.4 | | | | 1 |

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

12.6. CDMA BC0

| Test Position | Dist. (mm) | Prox. Sensor Status | Mode | Ch #. | Freq. (MHz) | Power (dBm) | | 1-g SAR (W/kg) | | Plot No. | Note |
|---------------|------------|---------------------|------------------|-------|-------------|---------------|-------|----------------|--------------|----------|------|
| | | | | | | Tune-Up Limit | Meas. | Meas. | Scaled | | |
| Rear | 0 | Off | 1xRTT (RC3 SO32) | 1013 | 824.7 | 25.0 | 24.1 | | | | 1 |
| | | | | 384 | 836.52 | 25.0 | 24.1 | 0.142 | 0.176 | 1 | |
| | | | | 777 | 848.31 | 25.0 | 23.8 | | | | 1 |
| Edge 1 | 16 | Off | 1xRTT (RC3 SO32) | 1013 | 824.7 | 25.0 | 24.1 | | | | 1 |
| | | | | 384 | 836.52 | 25.0 | 24.1 | 0.307 | 0.202 | 2 | |
| | | | | 777 | 848.31 | 25.0 | 23.8 | | | | 1 |
| Edge 1 | 0 | ON | 1xRTT (RC3 SO32) | 1013 | 824.7 | 20.2 | 20.1 | 0.835 | 0.851 | 3 | |
| | | | | 384 | 836.52 | 20.2 | 20.1 | 0.803 | 0.816 | 4 | |
| | | | | 777 | 848.31 | 20.2 | 20.0 | 0.835 | 0.876 | 5 | |
| Edge 4 | 0 | Off | 1xRTT (RC3 SO32) | 1013 | 824.7 | 25.0 | 24.1 | | | | 1 |
| | | | | 384 | 836.52 | 25.0 | 24.1 | 0.200 | 0.248 | 6 | |
| | | | | 777 | 848.31 | 25.0 | 23.8 | | | | 1 |
| Test Position | Dist. (mm) | Prox. Sensor Status | Mode | Ch #. | Freq. (MHz) | Power (dBm) | | 1-g SAR (W/kg) | | Plot No. | Note |
| | | | | | | Tune-Up Limit | Meas. | Meas. | Scaled | | |
| Rear | 0 | Off | 1xEV-DO (Rel. 0) | 1013 | 824.7 | 25.0 | 24.1 | | | | 1 |
| | | | | 384 | 836.52 | 25.0 | 23.9 | 0.195 | 0.251 | 7 | |
| | | | | 777 | 848.31 | 25.0 | 24.0 | | | | 1 |
| Edge 1 | 16 | Off | 1xEV-DO (Rel. 0) | 1013 | 824.7 | 25.0 | 24.1 | | | | 1 |
| | | | | 384 | 836.52 | 25.0 | 23.9 | 0.379 | 0.488 | 8 | |
| | | | | 777 | 848.31 | 25.0 | 24.0 | | | | 1 |
| Edge 1 | 0 | ON | 1xEV-DO (Rel. 0) | 1013 | 824.7 | 20.2 | 20.1 | 0.897 | 0.918 | 9 | |
| | | | | 384 | 836.52 | 20.2 | 20.1 | 1.050 | 1.074 | 10 | |
| | | | | 777 | 848.31 | 20.2 | 19.9 | 1.060 | 1.136 | 11 | |
| Edge 4 | 0 | Off | 1xEV-DO (Rel. 0) | 1013 | 824.7 | 25.0 | 24.1 | | | | 1 |
| | | | | 384 | 836.52 | 25.0 | 23.9 | 0.199 | 0.256 | 12 | |
| | | | | 777 | 848.31 | 25.0 | 24.0 | | | | 1 |

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

12.7. CDMA BC1

| Test Position | Dist. (mm) | Prox. Sensor Status | Mode | Ch #. | Freq. (MHz) | Power (dBm) | | 1-g SAR (W/kg) | | Plot No. | Note |
|---------------|------------|---------------------|------------------|-------|-------------|---------------|-------|----------------|--------|----------|------|
| | | | | | | Tune-Up Limit | Meas. | Meas. | Scaled | | |
| Rear | 0 | Off | 1xRTT (RC3 SO32) | 25 | 1851.25 | 25.0 | 24.2 | | | | 1 |
| | | | | 600 | 1880 | 25.0 | 24.2 | 0.068 | 0.081 | 1 | |
| | | | | 1175 | 1908.75 | 25.0 | 23.8 | | | | 1 |
| Edge 1 | 16 | Off | 1xRTT (RC3 SO32) | 25 | 1851.25 | 25.0 | 24.2 | | | | 1 |
| | | | | 600 | 1880 | 25.0 | 24.2 | 0.514 | 0.612 | 2 | |
| | | | | 1175 | 1908.75 | 25.0 | 23.8 | | | | 1 |
| Edge 1 | 0 | ON | 1xRTT (RC3 SO32) | 25 | 1851.25 | 15.6 | 15.1 | 1.020 | 1.144 | 3 | |
| | | | | 600 | 1880 | 15.6 | 15.2 | 1.070 | 1.173 | 4 | |
| | | | | 1175 | 1908.75 | 15.6 | 15.3 | 1.000 | 1.072 | 5 | |
| Edge 4 | 0 | Off | 1xRTT (RC3 SO32) | 25 | 1851.25 | 25.0 | 24.2 | | | | 1 |
| | | | | 600 | 1880 | 25.0 | 24.2 | 0.214 | 0.255 | 6 | |
| | | | | 1175 | 1908.75 | 25.0 | 23.8 | | | | 1 |
| Test Position | Dist. (mm) | Prox. Sensor Status | Mode | Ch #. | Freq. (MHz) | Power (dBm) | | 1-g SAR (W/kg) | | Plot No. | Note |
| | | | | | | Tune-Up Limit | Meas. | Meas. | Scaled | | |
| Rear | 0 | Off | 1xEV-DO (Rel. 0) | 25 | 1851.25 | 25.0 | 24.4 | | | | 1 |
| | | | | 600 | 1880 | 25.0 | 24.3 | 0.066 | 0.078 | 7 | |
| | | | | 1175 | 1908.75 | 25.0 | 24.4 | | | | 1 |
| Edge 1 | 16 | Off | 1xEV-DO (Rel. 0) | 25 | 1851.25 | 25.0 | 24.4 | | | | 1 |
| | | | | 600 | 1880 | 25.0 | 24.3 | 0.674 | 0.792 | 8 | |
| | | | | 1175 | 1908.75 | 25.0 | 24.4 | | | | 1 |
| Edge 1 | 0 | ON | 1xEV-DO (Rel. 0) | 25 | 1851.25 | 15.6 | 15.2 | 1.110 | 1.217 | 9 | |
| | | | | 600 | 1880 | 15.6 | 15.4 | 1.290 | 1.351 | 10 | |
| | | | | 1175 | 1908.75 | 15.6 | 15.4 | 1.060 | 1.110 | 11 | |
| Edge 4 | 0 | Off | 1xEV-DO (Rel. 0) | 25 | 1851.25 | 25.0 | 24.4 | | | | 1 |
| | | | | 600 | 1880 | 25.0 | 24.3 | 0.232 | 0.273 | 12 | |
| | | | | 1175 | 1908.75 | 25.0 | 24.4 | | | | 1 |

Note(s):

According to KDB 447498 D01 General RF Exposure Guidance v05, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is.

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

13. Summary of Highest Measured SAR Values

Results of highest measured SAR values for each frequency band and mode

| Technology/Band | Test configuration | | Mode | Highest 1g SAR (W/kg) |
|-----------------|---------------------|---------------------------------------|---------------------|-----------------------|
| GSM850 | Body Tablet Mode | Edge 1, 0 mm w/ Power Reduction | EGPRS 2 Slot | 1.14 |
| GSM1900 | Body Tablet Mode | Edge 1, 0 mm w/ Power Reduction | GPRS 2 Slot | 1.35 |
| W-CDMA Band V | Body Tablet Mode | Edge 1, 0 mm w/ Power Reduction | Rel 99 RMC 12.2kbps | 0.855 |
| W-CDMA Band IV | Body Tablet Mode | Edge 1, 0 mm w/ Power Reduction | Rel 99 RMC 12.2kbps | 1.38 |
| W-CDMA Band II | Body Tablet Mode | Edge 1, 0 mm w/ Power Reduction | Rel 99 RMC 12.2kbps | 1.18 |
| CDMA BC0 | Body Tablet Mode | Edge 1, 0 mm w/ Power Reduction | 1xRTT (RC3, SO32) | 0.835 |
| CDMA BC0 | Body Tablet Mode | Edge 1, 0 mm w/ Power Reduction | 1xEVDO (Rel.0) | 1.06 |
| CDMA BC1 | Body Tablet Mode | Edge 1, 0 mm w/ Power Reduction | 1xRTT (RC3, SO32) | 1.07 |
| CDMA BC1 | Body Tablet Mode | Edge 1, 0 mm w/ Power Reduction | 1xEVDO (Rel.0) | 1.29 |

13.1. SAR Measurement Variability and Uncertainty

In accordance with published KDB procedure “865664 SAR measurement 100 MHz to 6 GHz DR01”. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

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

| Technology/ Band | Test Configuration | | Mode | Dist. (mm) | Ch #. | Freq. (MHz) | Power (dBm) | SAR (W/kg) |
|---------------------|--------------------|----------------------------------|-----------------------------|---------------|-------|----------------|----------------|---------------|
| | Exposure | Position | | | | | | |
| GSM 850 | Body | Edge 1, w/ Power Reduction | EGPRS 2 Slots | 0 | 251 | 848.8 | 26.4 | 1.090 |
| W-CDMA Band IV | Body | Edge 1, w/ Power Reduction | Rel. 99 RMC 12.2 kbps | 0 | 1312 | 1712.4 | 19.5 | 1.400 |
| GSM 1900 | Body | Edge 1, w/ Power Reduction | GPRS 2 Slots | 0 | 810 | 1909.80 | 22.0 | 1.320 |

13.2. SAR Plots (from Summary of Highest Measured SAR Values)

Test Laboratory: UL CCS SAR Lab C

Date: 10/5/2012

GPRS 850

Frequency: 848.8 MHz; Duty Cycle: 1:4; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): $f = 848.8$ MHz; $\sigma = 1.007$ mho/m; $\epsilon_r = 54.42$; $\rho = 1000$ kg/m³

DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3773; ConvF(8.74, 8.74, 8.74); Calibrated: 3/14/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1117

Edge 1 Prox On/EGPRS 2 slots_Ch 251/Area Scan (6x21x1): Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (measured) = 1.634 mW/g

Edge 1 Prox On/EGPRS 2 slots_Ch 251/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

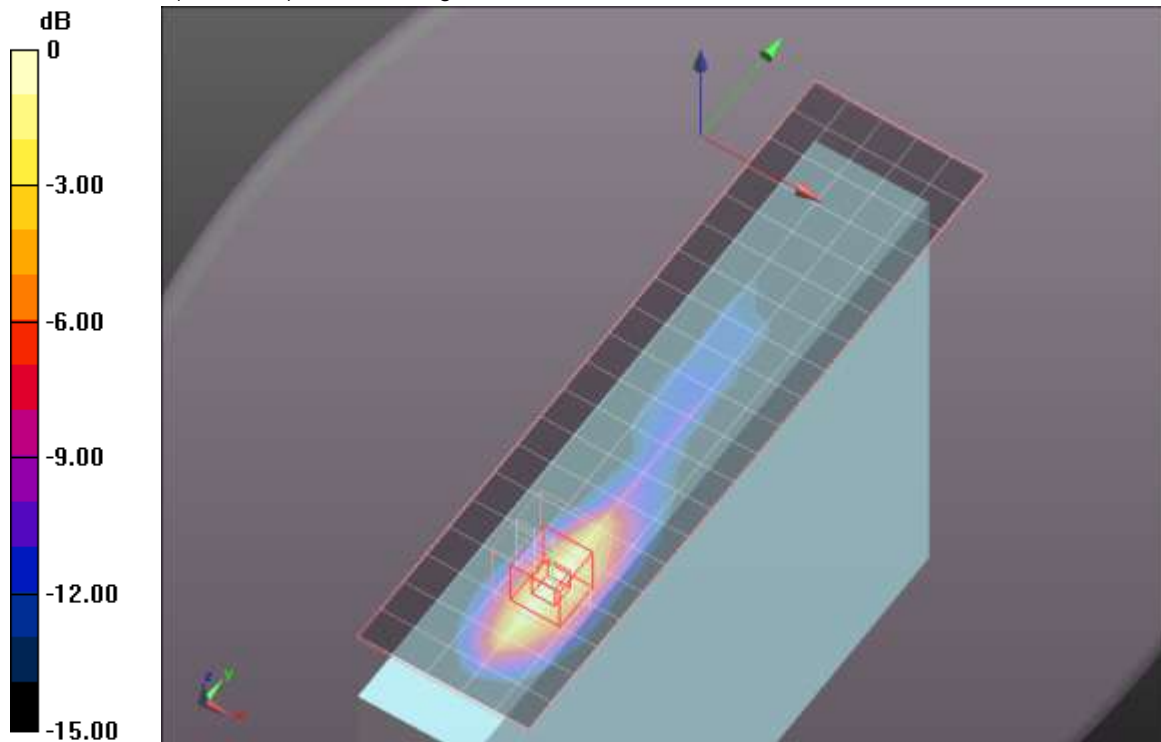
Reference Value = 40.989 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 2.163 W/kg

SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.596 mW/g

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

Maximum value of SAR (measured) = 1.575 mW/g



0 dB = 1.570mW/g

GPRS 1900

Frequency: 1909.8 MHz; Duty Cycle: 1:4; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used: $f = 1910$ MHz; $\sigma = 1.52$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³ ;

DASY4 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE3 Sn500; Calibrated: 6/13/2012
- Probe: EX3DV4 - SN3749; ConvF(6.97, 6.97, 6.97); Calibrated: 1/27/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BB; Serial: SN:1017

Edge 1 Prox On_2 Slots_Ch 810/Area Scan (6x21x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 1.26 mW/g

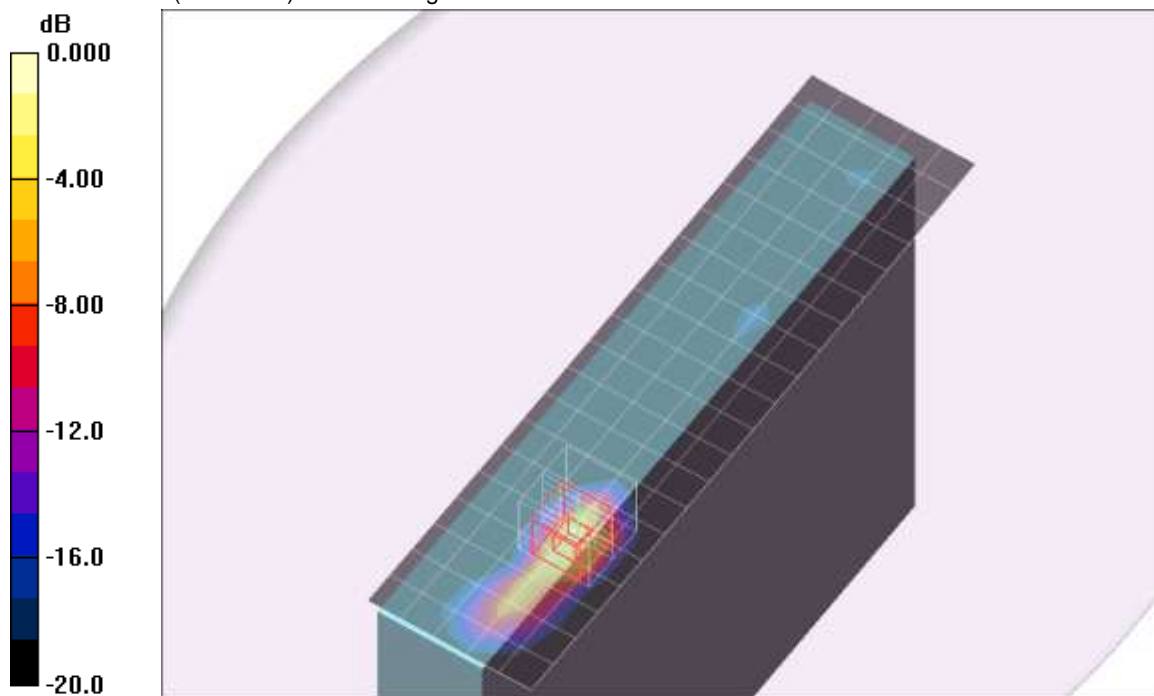
Edge 1 Prox On_2 Slots_Ch 810/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 31.7 V/m; Power Drift = -0.083 dB

Peak SAR (extrapolated) = 3.06 W/kg

SAR(1 g) = 1.35 mW/g; SAR(10 g) = 0.577 mW/g

Maximum value of SAR (measured) = 1.99 mW/g



0 dB = 1.99mW/g

Test Laboratory: UL CCS SAR Lab D

Date/Time: 9/24/2012

W-CDMA Band V

Frequency: 846.6 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): $f = 846.6$ MHz; $\sigma = 0.997$ mho/m; $\epsilon_r = 54.2$; $\rho = 1000$ kg/m³;

DASY4 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE3 Sn500; Calibrated: 6/13/2012
- Probe: EX3DV4 - SN3749; ConvF(8.84, 8.84, 8.84); Calibrated: 1/27/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BB; Serial: SN:1017

Edge 1 Prox On_RMC R99_Ch 4233/Area Scan (6x21x1):

Measurement grid: dx=15mm, dy=15mm
[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 1.23 mW/g

Edge 1 Prox On_RMC R99_Ch 4233/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

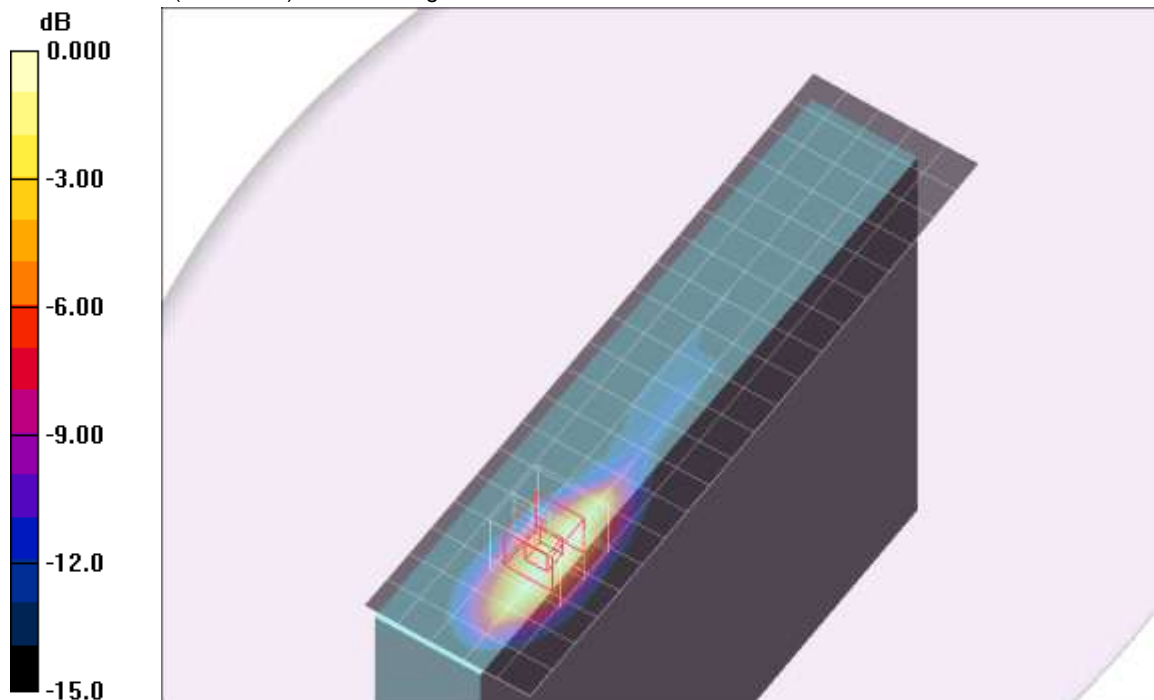
Reference Value = 33.1 V/m; Power Drift = 0.089 dB

Peak SAR (extrapolated) = 1.68 W/kg

SAR(1 g) = 0.855 mW/g; SAR(10 g) = 0.442 mW/g

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

Maximum value of SAR (measured) = 1.04 mW/g



0 dB = 1.04mW/g

Test Laboratory: UL CCS SAR Lab A

Date: 10/9/2012

W-CDMA Band IV

Frequency: 1712.4 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): $f = 1712.4$ MHz; $\sigma = 1.425$ mho/m; $\epsilon_r = 52.313$; $\rho = 1000$ kg/m³

DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1258; Calibrated: 3/8/2012
- Probe: EX3DV4 - SN3772; ConvF(7.55, 7.55, 7.55); Calibrated: 2/16/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1119

Edge 1/(2nd Level Back Off) R99_Ch 1312 w/ Pwr back-off/Area Scan (6x21x1):

Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (measured) = 1.910 mW/g

Edge 1/(2nd Level Back Off) R99_Ch 1312 w/ Pwr back-off/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

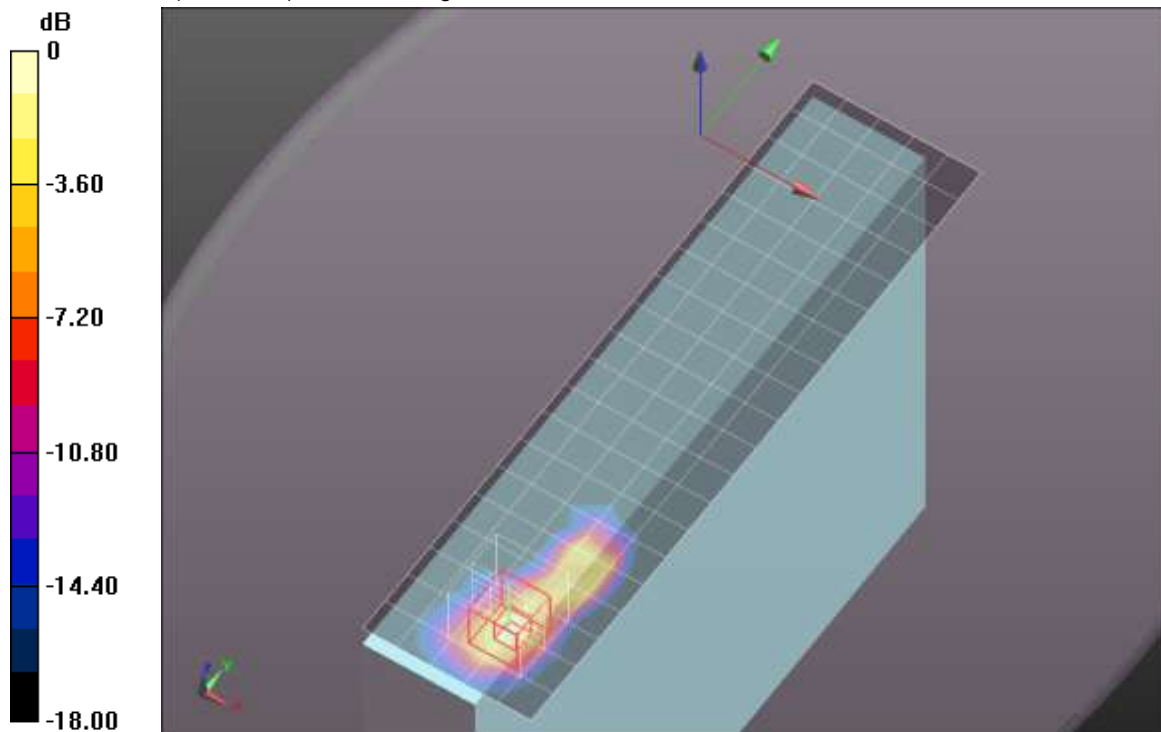
Reference Value = 37.286 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 2.7650

SAR(1 g) = 1.38 mW/g; SAR(10 g) = 0.627 mW/g

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

Maximum value of SAR (measured) = 1.924 mW/g



0 dB = 1.920mW/g = 5.67 dB mW/g

Test Laboratory: UL CCS SAR Lab D

Date/Time: 8/29/2012

W-CDMA Band II

Frequency: 1880 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51$; $\rho = 1000$ kg/m³;

DASY4 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE3 Sn500; Calibrated: 6/13/2012
- Probe: EX3DV4 - SN3749; ConvF(6.97, 6.97, 6.97); Calibrated: 1/27/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BB; Serial: SN:1017

Edge 1 Prox On_RMC R99_Ch 9400/Area Scan (6x21x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.826 mW/g

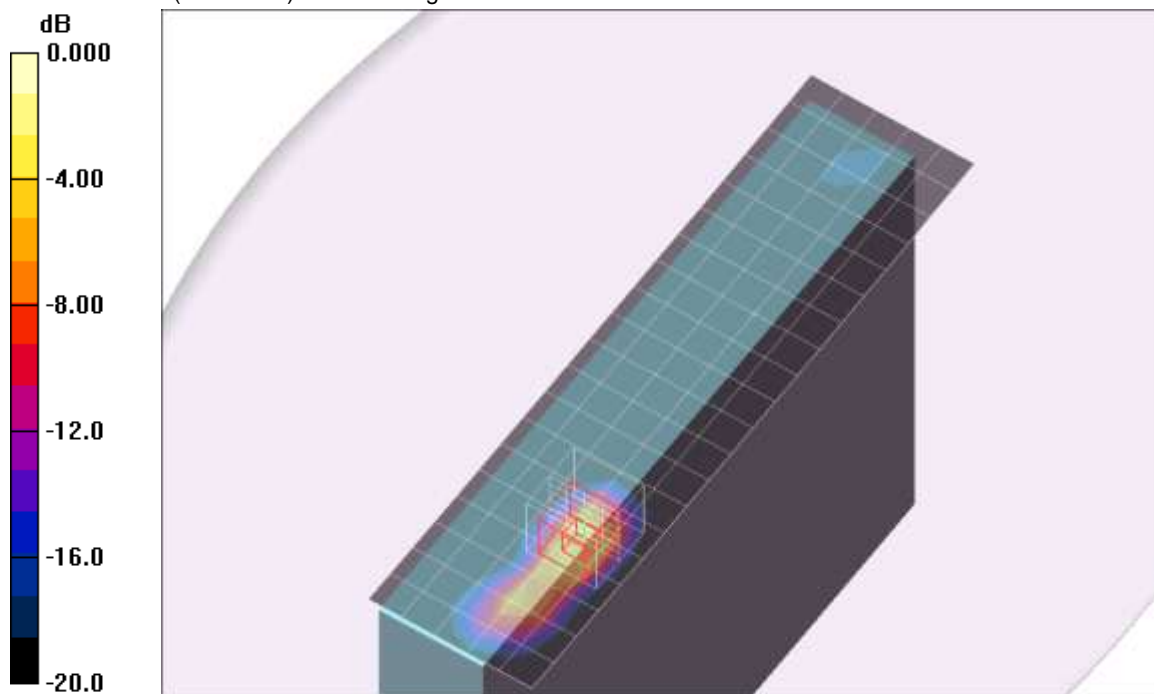
Edge 1 Prox On_RMC R99_Ch 9400/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.4 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 2.69 W/kg

SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.511 mW/g

Maximum value of SAR (measured) = 1.78 mW/g



0 dB = 1.78mW/g

Test Laboratory: UL CCS SAR Lab D

Date/Time: 9/25/2012

CDMA BC0

Frequency: 848.31 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): $f = 848.31$ MHz; $\sigma = 0.998$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ kg/m³;

DASY4 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE3 Sn500; Calibrated: 6/13/2012
- Probe: EX3DV4 - SN3749; ConvF(8.84, 8.84, 8.84); Calibrated: 1/27/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used))Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BB; Serial: SN:1017

Edge 1 Prox On_RC3 SO32_Ch 777/Area Scan (6x21x1): Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (measured) = 1.16 mW/g

Edge 1 Prox On_RC3 SO32_Ch 777/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

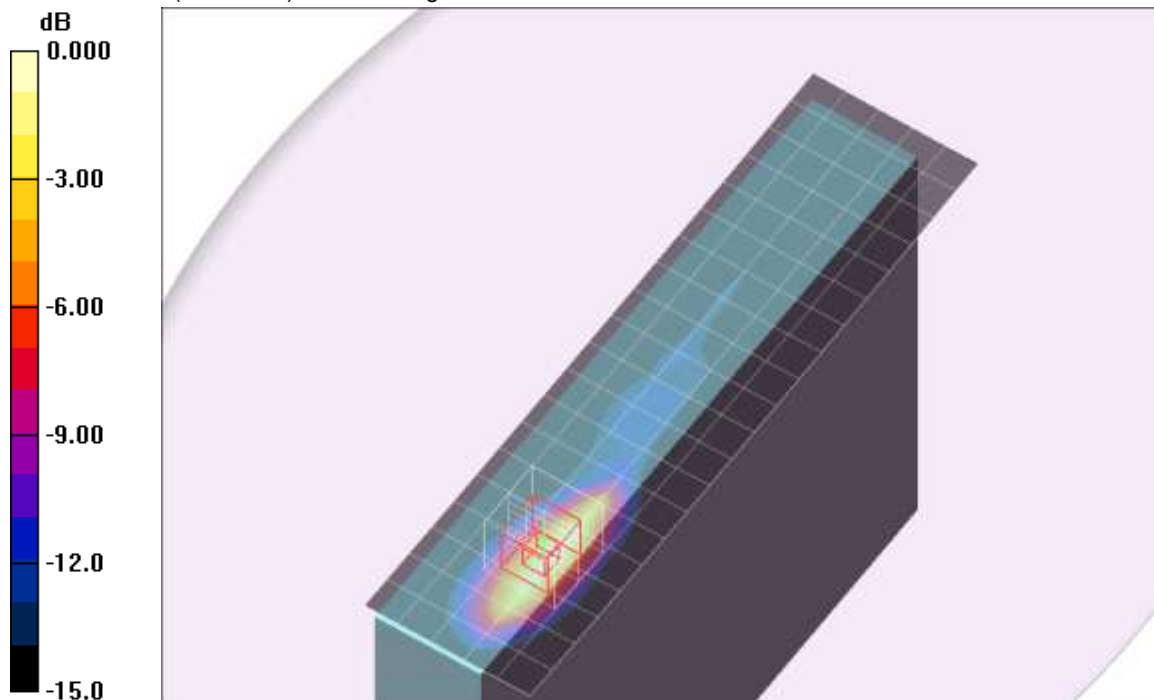
Reference Value = 32.3 V/m; Power Drift = 0.107 dB

Peak SAR (extrapolated) = 1.67 W/kg

SAR(1 g) = 0.835 mW/g; SAR(10 g) = 0.432 mW/g

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

Maximum value of SAR (measured) = 1.15 mW/g



0 dB = 1.15mW/g

Test Laboratory: UL CCS SAR Lab C

Date: 10/11/2012

CDMA BC 0

Frequency: 848.31 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used (interpolated): $f = 848.31$ MHz; $\sigma = 1.008$ mho/m; $\epsilon_r = 53.543$; $\rho = 1000$ kg/m³

DASY5 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3773; ConvF(8.74, 8.74, 8.74); Calibrated: 3/14/2012
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1117

Edge 1/1xEVDO_Rel. 0_Ch 777 Prox On/Area Scan (6x21x1): Measurement grid: dx=15mm, dy=15mm

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

Maximum value of SAR (measured) = 1.156 mW/g

Edge 1/1xEVDO_Rel. 0_Ch 777 Prox On/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

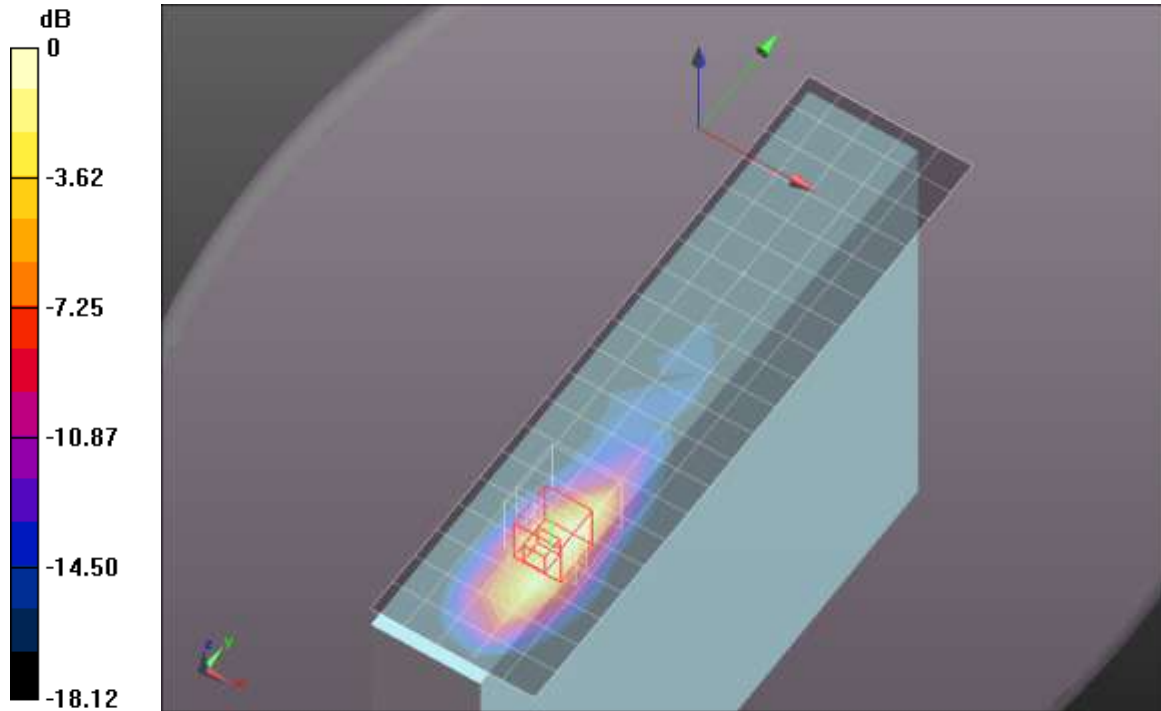
Reference Value = 32.269 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 2.2300

SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.493 mW/g

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

Maximum value of SAR (measured) = 1.397 mW/g



0 dB = 1.400mW/g = 2.92 dB mW/g

Test Laboratory: UL CCS SAR Lab C

Date: 11/2/2012

CDMA BC1

Frequency: 1880 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.489$ mho/m; $\epsilon_r = 54.06$; $\rho = 1000$ kg/m³

DASY5 Configuration:

- Area Scan Setting: Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3773; ConvF(7.11, 7.11, 7.11); Calibrated: 3/14/2012;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (B); Type: QDOVA001BB; Serial: 1118

Edge 1/1xRTT_RC3_SO32_Ch 600 w/ Pwr back-off (0 mm)/Area Scan (6x21x1):

Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.12 W/kg

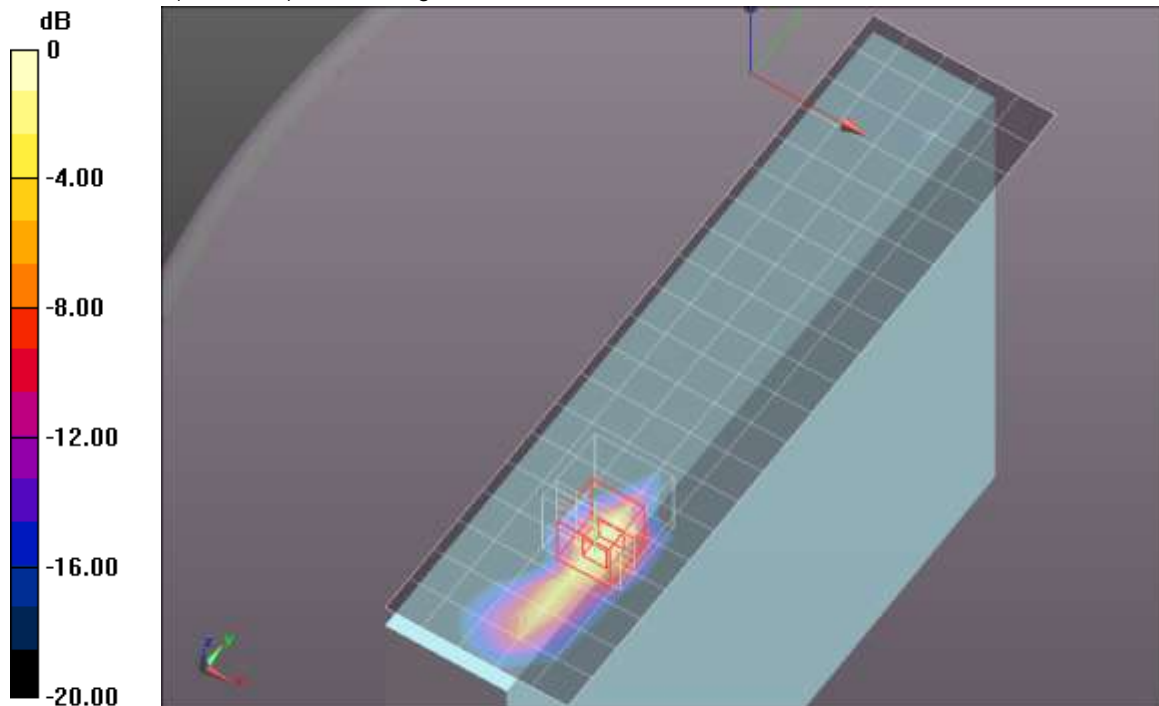
Edge 1/1xRTT_RC3_SO32_Ch 600 w/ Pwr back-off (0 mm)/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.456 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 2.45 W/kg

SAR(1 g) = 1.07 W/kg; SAR(10 g) = 0.460 W/kg

Maximum value of SAR (measured) = 1.58 W/kg



0 dB = 1.58 W/kg = 1.99 dBW/kg

CDMA BC1

Frequency: 1880 MHz; Duty Cycle: 1:1; Room Ambient Temperature: 24.0°C; Liquid Temperature: 23.0°C
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.489$ mho/m; $\epsilon_r = 54.06$; $\rho = 1000$ kg/m³

DASY5 Configuration:

- Area Scan Setting: Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Electronics: DAE4 Sn1239; Calibrated: 6/6/2012
- Probe: EX3DV4 - SN3773; ConvF(7.11, 7.11, 7.11); Calibrated: 3/14/2012;
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Phantom: ELI v5.0 (B); Type: QDOVA001BB; Serial: 1118

Edge 1/1xEVDO_Rel. 0_Ch 600 w/ Pwr back-off (0 mm)/Area Scan (6x21x1): Measurement

grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.04 W/kg

Edge 1/1xEVDO_Rel. 0_Ch 600 w/ Pwr back-off (0 mm)/Zoom Scan (5x5x7)/Cube 0:

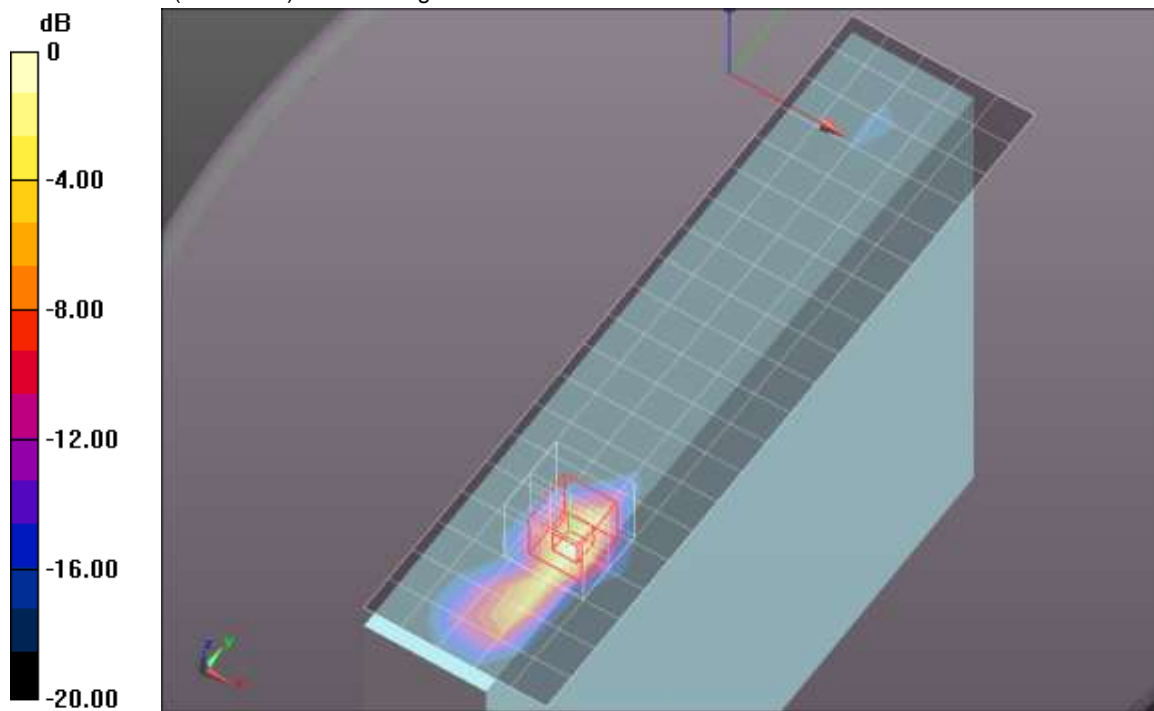
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 36.908 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 3.21 W/kg

SAR(1 g) = 1.29 W/kg; SAR(10 g) = 0.552 W/kg

Maximum value of SAR (measured) = 2.02 W/kg



0 dB = 2.02 W/kg = 3.05 dBW/kg

14. Simultaneous Transmission SAR Analysis

- The only test positions included for simultaneous transmission analysis are those that are shared between WWAN and Wi-Fi.
- All Wi-Fi 1-g SAR values were taken from measurement results recorded in SAR report 12J14611-1A, submitted under FCC ID ACJ9TGWL12A
- All Simultaneous Transmission SAR analysis applies scaling in accordance with the scaled values documented in this report (for the WWAN radios) and the aforementioned SAR report (12J14611-1A) with scaling applied (for the WLAN radios).

14.1. Bluetooth SAR in Simultaneous Transmission SAR Analysis

Standalone SAR Test Exclusion

Based on the criteria for Standalone SAR test exclusion listed in Section 4.3.1. of KDB 447498 D01 General RF Exposure Guidance v05:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0, \text{ for 1-g SAR}$$

An assessment was made using the above-stated formula to determine Bluetooth’s eligibility for SAR test exclusion, using the following values:

- Power of Channel: 4.47 mW (rounded to 4 for the calculation)
- Min. Test Separation Distance: 2.3 mm (5mm is used for the calculation)
- Frequency: 2.441 GHz

Hence the equation:

$$[(4\text{mW})/(5 \text{ mm})] [\sqrt{2.441(\text{GHz})}] = 1.2$$

The computed value of 1.2 is < 3.0, and so Bluetooth qualifies for Standalone SAR test exclusion.

Estimated SAR for Simultaneous Transmission SAR Analysis

As SAR was not measured for Bluetooth, estimated Standalone SAR values were computed for Bluetooth for the purpose of Simultaneous Transmission SAR Analysis using the following formula:

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

With x = 7.5 for 1-g SAR

This standalone SAR estimation was performed in accordance with the separation distances listed in Section 17.1 “Antenna Locations” and only at the applicable simultaneous transmission test positions. The estimated SAR results are as follow:

| Test Position | Power of Channel, with Tune-Up Tolerance, mW | Minimum. Test Separation Distance, mm | Estimated 1-g SAR Values, W/kg |
|---------------|--|---------------------------------------|--------------------------------|
| Rear | 4.47 | 8.2 | 0.114 |
| Edge 4 | 4.47 | 2.3 | 0.405 |

14.2. Sum of the SAR for GSM, Wi-Fi 2.4 GHz Band and Bluetooth

| Test Position | Data | | | | | Σ 1-g SAR (mW/g) |
|---------------------------------------|----------|-----------|-------------------|------------------|-----------|------------------|
| | GPRS 850 | GPRS 1900 | WiFi 2.4 GHz Main | WiFi 2.4 GHz Aux | Bluetooth | |
| Rear, Wi-Fi 1 Tx | 0.334 | | 0.01094 | | 0.114 | 0.459 |
| | 0.334 | | | 0.093 | | 0.427 |
| | | 0.081 | 0.01094 | | 0.114 | 0.206 |
| | | 0.081 | | 0.093 | | 0.174 |
| Rear, Wi-Fi 2 Tx (MIMO) | 0.334 | | 0.00319 | 0.017 | | 0.354 |
| | | 0.081 | 0.00319 | 0.017 | | 0.101 |
| Edge 1, 0 mm, w/ WWAN Power Reduction | 1.222 | | 1.425 | | | 2.647 |
| | | 1.35 | 1.425 | | | 2.775 |
| Edge 4 | 0.385 | | | 1.29 | | 1.675 |
| | 0.385 | | | | 0.405 | 0.790 |
| | | 0.308 | | 1.29 | | 1.598 |
| | | 0.308 | | | 0.405 | 0.713 |

Notes:

1. Simultaneous transmission SAR measurement (Volume Scan) is not required when the sum of the 1-g SAR is < 1.6 W/kg
2. If the sum of the SAR is > 1.6 W/kg an SPLSR calculation is performed. If SPLSR is <0.04 then Simultaneous transmission SAR measurement (Volume Scan) is not required.

SAR to Peak Location Separation Ratio (SPLSR)

| Case # | Test Position | Worst-case combination | | | | Σ 1-g SAR (mW/g) | Calculated distance (mm) | SPLSR | Figure |
|--------|-------------------------------------|------------------------|-----------|-------------------|------------------|------------------|--------------------------|-------|--------|
| | | GPRS 850 | GPRS 1900 | WiFi 2.4 GHz Main | WiFi 2.4 GHz Aux | | | | |
| 1 | Edge 1, 0 mm, w/ WWAN Pwr Reduction | 1.222 | | 1.425 | | 2.647 | 131.52 | 0.033 | 1 |
| 2 | | | 1.350 | 1.425 | | 2.775 | 124.35 | 0.037 | 2 |
| 3 | Edge 4 | 0.385 | | | 1.290 | 1.675 | 194.59 | 0.011 | 3 |
| 4 | | | 0.308 | | 1.290 | 1.598 | 188.45 | 0.011 | 4 |

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.3. Sum of the SAR for W-CDMA& Wi-Fi 2.4 GHz Band

| Test Position | Data | | | | | | Σ 1-g SAR (mW/g) |
|---------------------------------------|---------------|----------------|----------------|-------------------|------------------|-----------|------------------|
| | W-CDMA Band V | W-CDMA Band IV | W-CDMA Band II | WiFi 2.4 GHz Main | WiFi 2.4 GHz Aux | Bluetooth | |
| Rear, Wi-Fi 1 Tx | 0.225 | | | 0.01094 | | 0.114 | 0.350 |
| | 0.225 | | | | 0.093 | | 0.318 |
| | | 0.255 | | 0.01094 | | 0.114 | 0.380 |
| | | 0.255 | | | 0.093 | | 0.348 |
| | | | 0.083 | 0.01094 | | 0.114 | 0.208 |
| | | | 0.083 | | 0.093 | | 0.176 |
| Rear, Wi-Fi 2 Tx (MIMO) | 0.225 | | | 0.00319 | 0.017 | | 0.245 |
| | | 0.255 | | 0.00319 | 0.017 | | 0.275 |
| | | | 0.083 | 0.00319 | 0.017 | | 0.103 |
| Edge 1, 0 mm, w/ WWAN Power Reduction | 0.875 | | | 1.425 | | | 2.300 |
| | | 1.380 | | 1.425 | | | 2.805 |
| | | | 1.340 | 1.425 | | | 2.765 |
| Edge 4 | 0.271 | | | | 1.29 | | 1.561 |
| | 0.271 | | | | | 0.405 | 0.676 |
| | | 0.405 | | | 1.29 | | 1.695 |
| | | 0.405 | | | | 0.405 | 0.810 |
| | | | 0.338 | | 1.29 | | 1.628 |
| | | | 0.338 | | | 0.405 | 0.743 |

Notes:

1. Simultaneous transmission SAR measurement (Volume Scan) is not required when the sum of the 1-g SAR is < 1.6 W/kg
2. If the sum of the SAR is > 1.6 W/kg an SPLSR calculation is performed. If SPLSR is <0.04 then Simultaneous transmission SAR measurement (Volume Scan) is not required

SAR to Peak Location Separation Ratio (SPLSR)

| Case # | Test Position | Worst-case combination | | | | | Σ 1-g SAR (mW/g) | Calculated distance (mm) | SPLSR | Figure |
|--------|---------------------------------------|------------------------|----------------|----------------|-------------------|------------------|------------------|--------------------------|-------|--------|
| | | W-CDMA Band V | W-CDMA Band IV | W-CDMA Band II | WiFi 2.4 GHz Main | WiFi 2.4 GHz Aux | | | | |
| 5 | Edge 1, 0 mm, w/ WWAN Power Reduction | 0.875 | | | 1.425 | | 2.300 | 129.81 | 0.027 | 5 |
| 6 | | | 1.380 | | 1.425 | | 2.805 | 158.08 | 0.030 | 6 |
| 7 | | | | 1.340 | 1.425 | | 2.765 | 122.92 | 0.037 | 7 |
| 8 | Edge 4 | | 0.405 | | | 1.29 | 1.695 | 190.26 | 0.012 | 8 |
| 9 | | | | 0.338 | | 1.29 | 1.628 | 173.34 | 0.012 | 9 |

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.4. Sum of the SAR for CDMA & Wi-Fi 2.4 GHz Band

| Test Position | Data | | | | | | | Σ 1-g SAR (mW/g) |
|---------------------------------------|----------------|----------------|-----------------|-----------------|-------------------|------------------|-----------|------------------|
| | CDMA BC0 1xRTT | CDMA BC1 1xRTT | CDMA BC0 1xEVDO | CDMA BC1 1xEVDO | WiFi 2.4 GHz Main | WiFi 2.4 GHz Aux | Bluetooth | |
| Rear, Wi-Fi 1 Tx | 0.176 | | | | 0.01094 | | 0.114 | 0.301 |
| | 0.176 | | | | | 0.093 | | 0.269 |
| | | 0.081 | | | 0.01094 | | 0.114 | 0.206 |
| | | 0.081 | | | | 0.093 | | 0.174 |
| | | | 0.251 | | 0.01094 | | 0.114 | 0.376 |
| | | | 0.251 | | | 0.093 | | 0.344 |
| | | | | 0.078 | 0.01094 | | 0.114 | 0.203 |
| Rear, Wi-Fi 2 Tx (MIMO) | | | | 0.078 | | 0.093 | | 0.171 |
| | 0.176 | | | | 0.00319 | 0.017 | | 0.196 |
| | | 0.081 | | | 0.00319 | 0.017 | | 0.101 |
| | | | 0.251 | | 0.00319 | 0.017 | | 0.271 |
| Edge 1, 0 mm, w/ WWAN Power Reduction | | | | 0.078 | 0.00319 | 0.017 | | 0.098 |
| | 0.876 | | | | 1.425 | | | 2.301 |
| | | 1.173 | | | 1.425 | | | 2.598 |
| | | | 1.136 | | 1.425 | | | 2.561 |
| Edge 4 | | | | 1.351 | 1.425 | | | 2.776 |
| | 0.248 | | | | | 1.29 | | 1.538 |
| | 0.248 | | | | | | 0.405 | 0.653 |
| | | 0.255 | | | | 1.29 | | 1.545 |
| | | 0.255 | | | | | 0.405 | 0.660 |
| | | | 0.256 | | | 1.29 | | 1.546 |
| | | | 0.256 | | | | 0.405 | 0.661 |
| | | | 0.273 | | 1.29 | | 1.563 | |
| | | | 0.273 | | | 0.405 | 0.678 | |

Notes:

1. Simultaneous transmission SAR measurement (Volume Scan) is not required when the sum of the 1-g SAR is < 1.6 W/kg
2. If the sum of the SAR is > 1.6 W/kg an SPLSR calculation is performed. If SPLSR is <0.04 then Simultaneous transmission SAR measurement (Volume Scan) is not required

SAR to Peak Location Separation Ratio (SPLSR)

| Case # | Test Position | Worst-case combination | | | | | Σ 1-g SAR (mW/g) | Calculated distance (mm) | SPLSR | Figure |
|--------|---------------------------------------|------------------------|----------------|-----------------|-----------------|-------------------|------------------|--------------------------|-------|--------|
| | | CDMA BC0 1xRTT | CDMA BC1 1xRTT | CDMA BC0 1xEVDO | CDMA BC1 1xEVDO | WiFi 2.4 GHz Main | | | | |
| 10 | Edge 1, 0 mm, w/ WWAN Power Reduction | 0.860 | | | | 1.425 | 2.285 | 132.91 | 0.026 | 10 |
| 11 | | | 1.173 | | | 1.425 | 2.598 | 130.7 | 0.032 | 11 |
| 12 | | | | 1.138 | | 1.425 | 2.563 | 122.68 | 0.033 | 12 |
| 13 | | | | | 1.351 | 1.425 | 2.776 | 130.72 | 0.035 | 13 |

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.5. Sum of the SAR for GSM & Wi-Fi 5.2 GHz Band

| Test Position | Data | | | | | Σ 1-g SAR (mW/g) |
|---------------------------------------|----------|-----------|-------------------|------------------|-----------|------------------|
| | GPRS 850 | GPRS 1900 | WiFi 5.2 GHz Main | WiFi 5.2 GHz Aux | Bluetooth | |
| Rear, Wi-Fi 1 Tx | 0.420 | | 0.027 | | 0.114 | 0.561 |
| | 0.420 | | | 0.134 | | 0.554 |
| | | 0.081 | 0.027 | | 0.114 | 0.222 |
| | | 0.081 | | 0.134 | | 0.215 |
| Rear, Wi-Fi 2 Tx (MIMO) | 0.420 | | 0.004 | 0.100 | | 0.524 |
| | | 0.081 | 0.004 | 0.100 | | 0.185 |
| Edge 1, 0 mm, w/ WWAN Power Reduction | 1.222 | | 1.11 | | | 2.332 |
| | | 1.35 | 1.11 | | | 2.460 |
| Edge 4 | 0.385 | | | 0.721 | | 1.106 |
| | 0.385 | | | | 0.405 | 0.790 |
| | | 0.308 | | 0.721 | | 1.029 |
| | | 0.308 | | | 0.405 | 0.713 |

Notes:

1. Simultaneous transmission SAR measurement (Volume Scan) is not required when the sum of the 1-g SAR is < 1.6 W/kg
2. If the sum of the SAR is > 1.6 W/kg an SPLSR calculation is performed. If SPLSR is <0.04 then Simultaneous transmission SAR measurement (Volume Scan) is not required

SAR to Peak Location Separation Ratio (SPLSR)

| Case # | Test Position | Worst-case combination | | | Σ 1-g SAR (mW/g) | Calculated distance (mm) | SPLSR | Figure |
|--------|-------------------------------------|------------------------|-----------|-------------------|------------------|--------------------------|-------|--------|
| | | GPRS 850 | GPRS 1900 | WiFi 5.2 GHz Main | | | | |
| 14 | Edge 1, 0 mm, w/ WWAN Pwr Reduction | 1.222 | | 1.11 | 2.332 | 126.61 | 0.028 | 14 |
| 15 | | | 1.350 | 1.11 | 2.460 | 119.20 | 0.032 | 15 |

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.6. Sum of the SAR for W-CDMA & Wi-Fi 5.2 GHz Band

| Test Position | Data | | | | | | Σ 1-g SAR (mW/g) |
|---------------------------------------|---------------|----------------|----------------|-------------------|------------------|-----------|------------------|
| | W-CDMA Band V | W-CDMA Band IV | W-CDMA Band II | WiFi 5.2 GHz Main | WiFi 5.2 GHz Aux | Bluetooth | |
| Rear, Wi-Fi 1 Tx | 0.225 | | | 0.027 | | 0.114 | 0.366 |
| | 0.225 | | | | 0.134 | | 0.359 |
| | | 0.255 | | 0.027 | | 0.114 | 0.396 |
| | | 0.255 | | | 0.134 | | 0.389 |
| | | | 0.083 | 0.027 | | 0.114 | 0.224 |
| | | | 0.083 | | 0.134 | | 0.217 |
| Rear, Wi-Fi 2 Tx (MIMO) | 0.225 | | | 0.004 | 0.100 | | 0.329 |
| | | 0.255 | | 0.004 | 0.100 | | 0.359 |
| | | | 0.083 | 0.004 | 0.100 | | 0.187 |
| Edge 1, 0 mm, w/ WWAN Power Reduction | 0.875 | | | 1.11 | | | 1.985 |
| | | 1.38 | | 1.11 | | | 2.490 |
| | | | 1.34 | 1.11 | | | 2.450 |
| Edge 4 | 0.271 | | | | 0.721 | | 0.992 |
| | 0.271 | | | | | 0.405 | 0.676 |
| | | 0.405 | | | 0.721 | | 1.126 |
| | | 0.405 | | | | 0.405 | 0.810 |
| | | | 0.338 | | 0.721 | | 1.059 |
| | | | 0.338 | | | 0.405 | 0.743 |

Notes:

1. Simultaneous transmission SAR measurement (Volume Scan) is not required when the sum of the 1-g SAR is < 1.6 W/kg
2. If the sum of the SAR is > 1.6 W/kg an SPLSR calculation is performed. If SPLSR is < 0.04 then Simultaneous transmission SAR measurement (Volume Scan) is not required

SAR to Peak Location Separation Ratio (SPLSR)

| Case # | Test Position | Worst-case combination | | | | Σ 1-g SAR (mW/g) | Calculated distance (mm) | SPLSR | Figure |
|--------|---------------------------------------|------------------------|----------------|----------------|-------------------|------------------|--------------------------|-------|--------|
| | | W-CDMA Band V | W-CDMA Band IV | W-CDMA Band II | WiFi 5.2 GHz Main | | | | |
| | Edge 1, 0 mm, w/ WWAN Power Reduction | 0.875 | | | 1.11 | 1.985 | 125.06 | 0.022 | 16 |
| | | | 1.380 | | 1.11 | 2.490 | 153.09 | 0.026 | 17 |
| | | | | 1.34 | 1.11 | 2.450 | 117.63 | 0.033 | 18 |

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.7. Sum of the SAR for CDMA & Wi-Fi 5.2 GHz Band

| Test Position | Data | | | | | | | Σ 1-g SAR (mW/g) |
|---------------------------------------|----------------|----------------|-----------------|-----------------|-------------------|------------------|-----------|------------------|
| | CDMA BC0 1xRTT | CDMA BC1 1xRTT | CDMA BC0 1xEVDO | CDMA BC1 1xEVDO | WiFi 5.2 GHz Main | WiFi 5.2 GHz Aux | Bluetooth | |
| Rear, Wi-Fi 1 Tx | 0.176 | | | | 0.027 | | 0.114 | 0.317 |
| | 0.176 | | | | | 0.134 | | 0.310 |
| | | 0.081 | | | 0.027 | | 0.114 | 0.222 |
| | | 0.081 | | | | 0.134 | | 0.215 |
| | | | 0.251 | | 0.027 | | 0.114 | 0.392 |
| | | | 0.251 | | | 0.134 | | 0.385 |
| | | | | 0.078 | 0.027 | | 0.114 | 0.219 |
| Rear, Wi-Fi 2 Tx (MIMO) | | | | 0.078 | | 0.134 | | 0.212 |
| | 0.176 | | | | 0.004 | 0.1 | | 0.280 |
| | | 0.081 | | | 0.004 | 0.1 | | 0.185 |
| | | | 0.251 | | 0.004 | 0.1 | | 0.355 |
| Edge 1, 0 mm, w/ WWAN Power Reduction | | | | 0.078 | 0.004 | 0.1 | | 0.182 |
| | 0.876 | | | | 1.11 | | | 1.986 |
| | | 1.173 | | | 1.11 | | | 2.283 |
| | | | 1.136 | | 1.11 | | | 2.246 |
| Edge 4 | | | | 1.351 | 1.11 | | | 2.461 |
| | 0.248 | | | | | 0.721 | | 0.969 |
| | 0.248 | | | | | | 0.405 | 0.653 |
| | | 0.255 | | | | 0.721 | | 0.976 |
| | | 0.255 | | | | | 0.405 | 0.660 |
| | | | 0.256 | | | 0.721 | | 0.977 |
| | | | 0.256 | | | | 0.405 | 0.661 |
| | | | | 0.273 | | 0.721 | | 0.994 |
| | | | 0.273 | | | 0.405 | 0.678 | |

Notes:

1. Simultaneous transmission SAR measurement (Volume Scan) is not required when the sum of the 1-g SAR is < 1.6 W/kg
2. If the sum of the SAR is > 1.6 W/kg an SPLSR calculation is performed. If SPLSR is <0.04 then Simultaneous transmission SAR measurement (Volume Scan) is not required

SAR to Peak Location Separation Ratio (SPLSR)

| Case # | Test Position | Worst-case combination | | | | | Σ 1-g SAR (mW/g) | Calculated distance (mm) | SPLSR | Figure |
|--------|---------------------------------------|------------------------|----------------|-----------------|-----------------|-------------------|------------------|--------------------------|-------|--------|
| | | CDMA BC0 1xRTT | CDMA BC1 1xRTT | CDMA BC0 1xEVDO | CDMA BC1 1xEVDO | WiFi 5.2 GHz Main | | | | |
| 19 | Edge 1, 0 mm, w/ WWAN Power Reduction | 0.860 | | | | 1.11 | 1.970 | 128.15 | 0.022 | 19 |
| 20 | | | 1.173 | | | 1.11 | 2.283 | 126.10 | 0.027 | 20 |
| 21 | | | | 1.138 | | 1.11 | 2.248 | 117.61 | 0.029 | 21 |
| 22 | | | | | 1.351 | 1.11 | 2.461 | 125.44 | 0.031 | 22 |

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.1. Sum of the SAR for GSM & Wi-Fi 5.3 GHz Band

| Test Position | Data | | | | | Σ 1-g SAR (mW/g) |
|---------------------------------------|----------|-----------|-------------------|------------------|-----------|------------------|
| | GPRS 850 | GPRS 1900 | WiFi 5.3 GHz Main | WiFi 5.3 GHz Aux | Bluetooth | |
| Rear, Wi-Fi 1 Tx | 0.420 | | 0.024 | | 0.114 | 0.558 |
| | 0.420 | | | 0.132 | | 0.552 |
| | | 0.081 | 0.024 | | 0.114 | 0.219 |
| | | 0.081 | | 0.132 | | 0.213 |
| Rear, Wi-Fi 2 Tx (MIMO) | 0.420 | | 0.012 | 0.108 | | 0.540 |
| | | 0.081 | 0.012 | 0.108 | | 0.201 |
| Edge 1, 0 mm, w/ WWAN Power Reduction | 1.222 | | 1.307 | | | 2.529 |
| | | 1.35 | 1.307 | | | 2.657 |
| Edge 4 | 0.385 | | | 0.724 | | 1.109 |
| | 0.385 | | | | 0.405 | 0.790 |
| | | 0.308 | | 0.724 | | 1.032 |
| | | 0.308 | | | 0.405 | 0.713 |

Notes:

1. Simultaneous transmission SAR measurement (Volume Scan) is not required when the sum of the 1-g SAR is < 1.6 W/kg
2. If the sum of the SAR is > 1.6 W/kg an SPLSR calculation is performed. If SPLSR is <0.04 then Simultaneous transmission SAR measurement (Volume Scan) is not required

SAR to Peak Location Separation Ratio (SPLSR)

| Case # | Test Position | Worst-case combination | | | Σ 1-g SAR (mW/g) | Calculated distance (mm) | SPLSR | Figure |
|--------|-------------------------------------|------------------------|-----------|-------------------|------------------|--------------------------|-------|--------|
| | | GPRS 850 | GPRS 1900 | WiFi 5.3 GHz Main | | | | |
| 23 | Edge 1, 0 mm, w/ WWAN Pwr Reduction | 1.222 | | 1.307 | 2.529 | 127.75 | 0.031 | 23 |
| 24 | | | 1.350 | 1.307 | 2.657 | 120.24 | 0.036 | 24 |

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.2. Sum of the SAR for W-CDMA & Wi-Fi 5.3 GHz Band

| Test Position | Data | | | | | | Σ 1-g SAR (mW/g) |
|---------------------------------------|---------------|----------------|----------------|-------------------|------------------|-----------|------------------|
| | W-CDMA Band V | W-CDMA Band IV | W-CDMA Band II | WiFi 5.3 GHz Main | WiFi 5.3 GHz Aux | Bluetooth | |
| Rear, Wi-Fi 1 Tx | 0.225 | | | 0.023 | | 0.114 | 0.362 |
| | 0.225 | | | | 0.132 | | 0.357 |
| | | 0.255 | | 0.023 | | 0.114 | 0.392 |
| | | 0.255 | | | 0.132 | | 0.387 |
| | | | 0.083 | 0.023 | | 0.114 | 0.220 |
| | | | 0.083 | | 0.132 | | 0.215 |
| Rear, Wi-Fi 2 Tx (MIMO) | 0.225 | | | 0.012 | 0.108 | | 0.345 |
| | | 0.255 | | 0.012 | 0.108 | | 0.375 |
| | | | 0.083 | 0.012 | 0.108 | | 0.203 |
| Edge 1, 0 mm, w/ WWAN Power Reduction | 0.875 | | | 1.307 | | | 2.182 |
| | | 1.38 | | 1.307 | | | 2.687 |
| | | | 1.34 | 1.307 | | | 2.647 |
| Edge 4 | 0.271 | | | | 0.724 | | 0.995 |
| | 0.271 | | | | | 0.405 | 0.676 |
| | | 0.405 | | | 0.724 | | 1.129 |
| | | 0.405 | | | | 0.405 | 0.810 |
| | | | 0.338 | | 0.724 | | 1.062 |
| | | | 0.338 | | | 0.405 | 0.743 |

Notes:

1. Simultaneous transmission SAR measurement (Volume Scan) is not required when the sum of the 1-g SAR is < 1.6 W/kg
2. If the sum of the SAR is > 1.6 W/kg an SPLSR calculation is performed. If SPLSR is <0.04 then Simultaneous transmission SAR measurement (Volume Scan) is not required

SAR to Peak Location Separation Ratio (SPLSR)

| Case # | Test Position | Worst-case combination | | | | Σ 1-g SAR (mW/g) | Calculated distance (mm) | SPLSR | Figure |
|--------|---------------------------------------|------------------------|----------------|----------------|-------------------|------------------|--------------------------|--------|--------|
| | | W-CDMA Band V | W-CDMA Band IV | W-CDMA Band II | WiFi 5.3 GHz Main | | | | |
| 25 | Edge 1, 0 mm, w/ WWAN Power Reduction | 0.875 | | | 1.307 | 2.182 | 126.26 | 0.026 | 25 |
| 26 | | | 1.380 | | 1.307 | 2.687 | 154.17 | 0.029 | 26 |
| 27 | | | | | 1.340 | 1.307 | 2.647 | 118.60 | 0.036 |

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.3. Sum of the SAR for CDMA & Wi-Fi 5.3 GHz Band

| Test Position | Data | | | | | | | Σ 1-g SAR (mW/g) |
|---------------------------------------|----------------|----------------|-----------------|-----------------|-------------------|------------------|-----------|------------------|
| | CDMA BC0 1xRTT | CDMA BC1 1xRTT | CDMA BC0 1xEVDO | CDMA BC1 1xEVDO | WiFi 5.3 GHz Main | WiFi 5.3 GHz Aux | Bluetooth | |
| Rear, Wi-Fi 1 Tx | 0.176 | | | | 0.023 | | 0.114 | 0.313 |
| | 0.176 | | | | | 0.132 | | 0.308 |
| | | 0.081 | | | 0.023 | | 0.114 | 0.218 |
| | | 0.081 | | | | 0.132 | | 0.213 |
| | | | 0.251 | | 0.023 | | 0.114 | 0.388 |
| | | | 0.251 | | | 0.132 | | 0.383 |
| | | | | 0.078 | 0.023 | | 0.114 | 0.215 |
| Rear, Wi-Fi 2 Tx (MIMO) | | | | 0.078 | | 0.132 | | 0.210 |
| | 0.176 | | | | 0.012 | 0.108 | | 0.296 |
| | | 0.081 | | | 0.012 | 0.108 | | 0.201 |
| | | | 0.251 | | 0.012 | 0.108 | | 0.371 |
| Edge 1, 0 mm, w/ WWAN Power Reduction | | | | 0.078 | 0.012 | 0.108 | | 0.198 |
| | 0.876 | | | | 1.307 | | | 2.183 |
| | | 1.173 | | | 1.307 | | | 2.480 |
| | | | 1.136 | | 1.307 | | | 2.443 |
| Edge 4 | | | | 1.351 | 1.307 | | | 2.658 |
| | 0.248 | | | | | 0.724 | | 0.972 |
| | 0.248 | | | | | | 0.405 | 0.653 |
| | | 0.255 | | | | 0.724 | | 0.979 |
| | | 0.255 | | | | | 0.405 | 0.660 |
| | | | 0.256 | | | 0.724 | | 0.980 |
| | | | 0.256 | | | | 0.405 | 0.661 |
| | | | 0.273 | | 0.724 | | 0.997 | |
| | | | 0.273 | | | 0.405 | 0.678 | |

Notes:

1. Simultaneous transmission SAR measurement (Volume Scan) is not required when the sum of the 1-g SAR is < 1.6 W/kg
2. If the sum of the SAR is > 1.6 W/kg an SPLSR calculation is performed. If SPLSR is <0.04 then Simultaneous transmission SAR measurement (Volume Scan) is not required

SAR to Peak Location Separation Ratio (SPLSR)

| Case # | Test Position | Worst-case combination | | | | | Σ 1-g SAR (mW/g) | Calculated distance (mm) | SPLSR | Figure |
|--------|---------------------------------------|------------------------|----------------|-----------------|-----------------|-------------------|------------------|--------------------------|-------|--------|
| | | CDMA BC0 1xRTT | CDMA BC1 1xRTT | CDMA BC0 1xEVDO | CDMA BC1 1xEVDO | WiFi 5.3 GHz Main | | | | |
| 28 | Edge 1, 0 mm, w/ WWAN Power Reduction | 0.860 | | | | 1.307 | 2.167 | 129.35 | 0.025 | 28 |
| 29 | | | 1.173 | | | 1.307 | 2.480 | 127.37 | 0.031 | 29 |
| 30 | | | | 1.138 | | 1.307 | 2.445 | 118.69 | 0.032 | 30 |
| 31 | | | | | 1.351 | 1.307 | 2.658 | 126.42 | 0.034 | 31 |

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.4. Sum of the SAR for GSM & Wi-Fi 5.5 GHz Band

| Test Position | Data | | | | | Σ 1-g SAR (mW/g) |
|---------------------------------------|----------|-----------|-------------------|------------------|-----------|------------------|
| | GPRS 850 | GPRS 1900 | WiFi 5.5 GHz Main | WiFi 5.5 GHz Aux | Bluetooth | |
| Rear, Wi-Fi 1 Tx | 0.420 | | 0.031 | | 0.114 | 0.565 |
| | 0.420 | | | 0.206 | | 0.626 |
| | | 0.081 | 0.031 | | 0.114 | 0.226 |
| | | 0.081 | | 0.206 | | 0.287 |
| Rear, Wi-Fi 2 Tx (MIMO) | 0.420 | | 0.013 | 0.126 | | 0.559 |
| | | 0.081 | 0.013 | 0.126 | | 0.220 |
| Edge 1, 0 mm, w/ WWAN Power Reduction | 1.222 | | 1.3 | | | 2.522 |
| | | 1.35 | 1.3 | | | 2.650 |
| Edge 4 | 0.385 | | | 1.01 | | 1.395 |
| | 0.385 | | | | 0.405 | 0.790 |
| | | 0.308 | | 1.01 | | 1.318 |
| | | 0.308 | | | 0.405 | 0.713 |

Notes:

1. Simultaneous transmission SAR measurement (Volume Scan) is not required when the sum of the 1-g SAR is < 1.6 W/kg
2. If the sum of the SAR is > 1.6 W/kg an SPLSR calculation is performed. If SPLSR is <0.04 then Simultaneous transmission SAR measurement (Volume Scan) is not required

SAR to Peak Location Separation Ratio (SPLSR)

| Case # | Test Position | Worst-case combination | | | Σ 1-g SAR (mW/g) | Calculated distance (mm) | SPLSR | Figure |
|--------|-------------------------------------|------------------------|-----------|-------------------|------------------|--------------------------|-------|--------|
| | | GPRS 850 | GPRS 1900 | WiFi 5.5 GHz Main | | | | |
| 32 | Edge 1, 0 mm, w/ WWAN Pwr Reduction | 1.222 | | 1.30 | 2.522 | 128.98 | 0.031 | 32 |
| 33 | | | 1.350 | 1.30 | 2.650 | 121.61 | 0.035 | 33 |

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.5. Sum of the SAR for W-CDMA & Wi-Fi 5.5 GHz Band

| Test Position | Data | | | | | | Σ 1-g SAR (mW/g) |
|---------------------------------------|---------------|----------------|----------------|-------------------|------------------|-----------|------------------|
| | W-CDMA Band V | W-CDMA Band IV | W-CDMA Band II | WiFi 5.5 GHz Main | WiFi 5.5 GHz Aux | Bluetooth | |
| Rear, Wi-Fi 1 Tx | 0.225 | | | 0.031 | | 0.114 | 0.370 |
| | 0.225 | | | | 0.206 | | 0.431 |
| | | 0.255 | | 0.031 | | 0.114 | 0.400 |
| | | 0.255 | | | 0.206 | | 0.461 |
| | | | 0.083 | 0.031 | | 0.114 | 0.228 |
| | | | 0.083 | | 0.206 | | 0.289 |
| Rear, Wi-Fi 2 Tx (MIMO) | 0.225 | | | 0.013 | 0.126 | | 0.364 |
| | | 0.255 | | 0.013 | 0.126 | | 0.394 |
| | | | 0.083 | 0.013 | 0.126 | | 0.222 |
| Edge 1, 0 mm, w/ WWAN Power Reduction | 0.875 | | | 1.30 | | | 2.175 |
| | | 1.38 | | 1.30 | | | 2.680 |
| | | | 1.34 | 1.30 | | | 2.640 |
| Edge 4 | 0.271 | | | | 1.01 | | 1.281 |
| | 0.271 | | | | | 0.405 | 0.676 |
| | | 0.405 | | | | 1.01 | 1.415 |
| | | 0.405 | | | | 0.405 | 0.810 |
| | | | 0.338 | | | 1.01 | 1.348 |
| | | | 0.338 | | | 0.405 | 0.743 |

Notes:

1. Simultaneous transmission SAR measurement (Volume Scan) is not required when the sum of the 1-g SAR is < 1.6 W/kg
2. If the sum of the SAR is > 1.6 W/kg an SPLSR calculation is performed. If SPLSR is <0.04 then Simultaneous transmission SAR measurement (Volume Scan) is not required

SAR to Peak Location Separation Ratio (SPLSR)

| Case # | Test Position | Worst-case combination | | | | Σ 1-g SAR (mW/g) | Calculated distance (mm) | SPLSR | Figure |
|--------|---------------------------------------|------------------------|----------------|----------------|-------------------|------------------|--------------------------|--------|--------|
| | | W-CDMA Band V | W-CDMA Band IV | W-CDMA Band II | WiFi 5.5 GHz Main | | | | |
| 34 | Edge 1, 0 mm, w/ WWAN Power Reduction | 0.875 | | | 1.30 | 2.175 | 127.39 | 0.025 | 34 |
| 35 | | | 1.380 | | 1.30 | 2.680 | 155.47 | 0.028 | 35 |
| 36 | | | | | 1.340 | 1.30 | 2.640 | 120.06 | 0.036 |

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.6. Sum of the SAR for CDMA & Wi-Fi 5.5 GHz Band

| Test Position | Data | | | | | | | Σ 1-g SAR (mW/g) |
|---------------------------------------|----------------|----------------|-----------------|-----------------|-------------------|------------------|-----------|------------------|
| | CDMA BC0 1xRTT | CDMA BC1 1xRTT | CDMA BC0 1xEVDO | CDMA BC1 1xEVDO | WiFi 5.5 GHz Main | WiFi 5.5 GHz Aux | Bluetooth | |
| Rear, Wi-Fi 1 Tx | 0.176 | | | | 0.031 | | 0.114 | 0.321 |
| | 0.176 | | | | | 0.206 | | 0.382 |
| | | 0.081 | | | 0.031 | | 0.114 | 0.226 |
| | | 0.081 | | | | 0.206 | | 0.287 |
| | | | 0.251 | | 0.031 | | 0.114 | 0.396 |
| | | | 0.251 | | | 0.206 | | 0.457 |
| | | | | 0.078 | 0.031 | | 0.114 | 0.223 |
| Rear, Wi-Fi 2 Tx (MIMO) | | | | 0.078 | | 0.206 | | 0.284 |
| | 0.176 | | | | 0.013 | 0.126 | | 0.315 |
| | | 0.081 | | | 0.013 | 0.126 | | 0.220 |
| | | | 0.251 | | 0.013 | 0.126 | | 0.390 |
| Edge 1, 0 mm, w/ WWAN Power Reduction | | | | 0.078 | 0.013 | 0.126 | | 0.217 |
| | 0.876 | | | | 1.3 | | | 2.176 |
| | | 1.173 | | | 1.3 | | | 2.473 |
| | | | 1.136 | | 1.3 | | | 2.436 |
| Edge 4 | | | | 1.351 | 1.3 | | | 2.651 |
| | 0.248 | | | | | 1.01 | | 1.258 |
| | 0.248 | | | | | | 0.405 | 0.653 |
| | | 0.255 | | | | 1.01 | | 1.265 |
| | | 0.255 | | | | | 0.405 | 0.660 |
| | | | 0.256 | | | 1.01 | | 1.266 |
| | | | 0.256 | | | | 0.405 | 0.661 |
| | | | 0.273 | | 1.01 | | 1.283 | |
| | | | 0.273 | | | 0.405 | 0.678 | |

Notes:

1. Simultaneous transmission SAR measurement (Volume Scan) is not required when the sum of the 1-g SAR is < 1.6 W/kg
2. If the sum of the SAR is > 1.6 W/kg an SPLSR calculation is performed. If SPLSR is <0.04 then Simultaneous transmission SAR measurement (Volume Scan) is not required

SAR to Peak Location Separation Ratio (SPLSR)

| Case # | Test Position | Worst-case combination | | | | | Σ 1-g SAR (mW/g) | Calculated distance (mm) | SPLSR | Figure |
|--------|---------------------------------------|------------------------|----------------|-----------------|-----------------|-------------------|------------------|--------------------------|-------|--------|
| | | CDMA BC0 1xRTT | CDMA BC1 1xRTT | CDMA BC0 1xEVDO | CDMA BC1 1xEVDO | WiFi 5.5 GHz Main | | | | |
| 37 | Edge 1, 0 mm, w/ WWAN Power Reduction | 0.860 | | | | 1.30 | 2.160 | 130.49 | 0.024 | 37 |
| 38 | | | 1.173 | | | 1.30 | 2.473 | 128.41 | 0.030 | 38 |
| 39 | | | | 1.138 | | 1.30 | 2.438 | 120.00 | 0.032 | 39 |
| 40 | | | | | 1.351 | 1.30 | 2.651 | 127.87 | 0.034 | 40 |

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.7. Sum of the SAR for GSM & Wi-Fi 5.8 GHz Band

| Test Position | Data | | | | | Σ 1-g SAR (mW/g) |
|---------------------------------------|----------|-----------|-------------------|------------------|-----------|------------------|
| | GPRS 850 | GPRS 1900 | WiFi 5.8 GHz Main | WiFi 5.8 GHz Aux | Bluetooth | |
| Rear, Wi-Fi 1 Tx | 0.420 | | 0.031 | | 0.114 | 0.565 |
| | 0.420 | | | 0.189 | | 0.609 |
| | | 0.081 | 0.031 | | 0.114 | 0.226 |
| | | 0.081 | | 0.189 | | 0.270 |
| Rear, Wi-Fi 2 Tx (MIMO) | 0.420 | | 0.013 | 0.129 | | 0.562 |
| | | 0.081 | 0.013 | 0.129 | | 0.223 |
| Edge 1, 0 mm, w/ WWAN Power Reduction | 1.222 | | 1.231 | | | 2.453 |
| | | 1.35 | 1.231 | | | 2.581 |
| Edge 4 | 0.385 | | | 1.152 | | 1.537 |
| | 0.385 | | | | 0.405 | 0.790 |
| | | 0.308 | | 1.152 | | 1.460 |
| | | 0.308 | | | 0.405 | 0.713 |

Notes:

1. Simultaneous transmission SAR measurement (Volume Scan) is not required when the sum of the 1-g SAR is < 1.6 W/kg
2. If the sum of the SAR is > 1.6 W/kg an SPLSR calculation is performed. If SPLSR is <0.04 then Simultaneous transmission SAR measurement (Volume Scan) is not required

SAR to Peak Location Separation Ratio (SPLSR)

| Case # | Test Position | Worst-case combination | | | Σ 1-g SAR (mW/g) | Calculated distance (mm) | SPLSR | Figure |
|--------|-------------------------------------|------------------------|-----------|-------------------|------------------|--------------------------|-------|--------|
| | | GPRS 850 | GPRS 1900 | WiFi 5.8 GHz Main | | | | |
| 41 | Edge 1, 0 mm, w/ WWAN Pwr Reduction | 1.222 | | 1.23 | 2.453 | 127.61 | 0.030 | 41 |
| 42 | | | 1.350 | 1.23 | 2.581 | 120.20 | 0.034 | 42 |

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.8. Sum of the SAR for W-CDMA & Wi-Fi 5.8 GHz Band

| Test Position | Data | | | | | | Σ 1-g SAR (mW/g) |
|---------------------------------------|---------------|----------------|----------------|-------------------|------------------|-----------|------------------|
| | W-CDMA Band V | W-CDMA Band IV | W-CDMA Band II | WiFi 5.8 GHz Main | WiFi 5.8 GHz Aux | Bluetooth | |
| Rear, Wi-Fi 1 Tx | 0.225 | | | 0.031 | | 0.114 | 0.370 |
| | 0.225 | | | | 0.189 | | 0.414 |
| | | 0.255 | | 0.031 | | 0.114 | 0.400 |
| | | 0.255 | | | 0.189 | | 0.444 |
| | | | 0.083 | 0.031 | | 0.114 | 0.228 |
| | | | 0.083 | | 0.189 | | 0.272 |
| Rear, Wi-Fi 2 Tx (MIMO) | 0.225 | | | 0.013 | 0.129 | | 0.367 |
| | | 0.255 | | 0.013 | 0.129 | | 0.397 |
| | | | 0.083 | 0.013 | 0.129 | | 0.225 |
| Edge 1, 0 mm, w/ WWAN Power Reduction | 0.875 | | | 1.23 | | | 2.106 |
| | | 1.38 | | 1.23 | | | 2.611 |
| | | | 1.34 | 1.23 | | | 2.571 |
| Edge 4 | 0.271 | | | | 1.152 | | 1.423 |
| | 0.271 | | | | | 0.405 | 0.676 |
| | | 0.405 | | | | 1.152 | 1.557 |
| | | 0.405 | | | | 0.405 | 0.810 |
| | | | 0.338 | | | 1.152 | 1.490 |
| | | | 0.338 | | | 0.405 | 0.743 |

Notes:

1. Simultaneous transmission SAR measurement (Volume Scan) is not required when the sum of the 1-g SAR is < 1.6 W/kg
2. If the sum of the SAR is > 1.6 W/kg an SPLSR calculation is performed. If SPLSR is <0.04 then Simultaneous transmission SAR measurement (Volume Scan) is not required

SAR to Peak Location Separation Ratio (SPLSR)

| Case # | Test Position | Worst-case combination | | | | Σ 1-g SAR (mW/g) | Calculated distance (mm) | SPLSR | Figure |
|--------|---------------------------------------|------------------------|----------------|----------------|-------------------|------------------|--------------------------|-------|--------|
| | | W-CDMA Band V | W-CDMA Band IV | W-CDMA Band II | WiFi 5.8 GHz Main | | | | |
| 43 | Edge 1, 0 mm, w/ WWAN Power Reduction | 0.875 | | | 1.231 | 2.106 | 126.05 | 0.024 | 43 |
| 44 | | | 1.380 | | 1.231 | 2.611 | 154.09 | 0.027 | 44 |
| 45 | | | | 1.340 | 1.231 | 2.571 | 118.63 | 0.035 | 45 |

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.9. Sum of the SAR for CDMA & Wi-Fi 5.8 GHz Band

| Test Position | Data | | | | | | | Σ 1-g SAR (mW/g) |
|---------------------------------------|----------------|----------------|-----------------|-----------------|-------------------|------------------|-----------|------------------|
| | CDMA BC0 1xRTT | CDMA BC1 1xRTT | CDMA BC0 1xEVDO | CDMA BC1 1xEVDO | WiFi 5.8 GHz Main | WiFi 5.8 GHz Aux | Bluetooth | |
| Rear, Wi-Fi 1 Tx | 0.176 | | | | 0.031 | | 0.114 | 0.321 |
| | 0.176 | | | | | 0.189 | | 0.365 |
| | | 0.081 | | | 0.031 | | 0.114 | 0.226 |
| | | 0.081 | | | | 0.189 | | 0.270 |
| | | | 0.251 | | 0.031 | | 0.114 | 0.396 |
| | | | 0.251 | | | 0.189 | | 0.440 |
| | | | | 0.078 | 0.031 | | 0.114 | 0.223 |
| Rear, Wi-Fi 2 Tx (MIMO) | | | | 0.078 | | 0.189 | | 0.267 |
| | 0.176 | | | | 0.013 | 0.129 | | 0.318 |
| | | 0.081 | | | 0.013 | 0.129 | | 0.223 |
| | | | 0.251 | | 0.013 | 0.129 | | 0.393 |
| Edge 1, 0 mm, w/ WWAN Power Reduction | | | | 0.078 | 0.013 | 0.129 | | 0.220 |
| | 0.876 | | | | 1.231 | | | 2.107 |
| | | 1.173 | | | 1.231 | | | 2.404 |
| | | | 1.136 | | 1.231 | | | 2.367 |
| Edge 4 | | | | 1.351 | 1.231 | | | 2.582 |
| | 0.248 | | | | | 1.152 | | 1.400 |
| | 0.248 | | | | | | 0.405 | 0.653 |
| | | 0.255 | | | | 1.152 | | 1.407 |
| | | 0.255 | | | | | 0.405 | 0.660 |
| | | | 0.256 | | | 1.152 | | 1.408 |
| | | | 0.256 | | | | 0.405 | 0.661 |
| | | | | 0.273 | | 1.152 | | 1.425 |
| | | | 0.273 | | | 0.405 | 0.678 | |

Notes:

1. Simultaneous transmission SAR measurement (Volume Scan) is not required when the sum of the 1-g SAR is < 1.6 W/kg
2. If the sum of the SAR is > 1.6 W/kg an SPLSR calculation is performed. If SPLSR is <0.04 then Simultaneous transmission SAR measurement (Volume Scan) is not required

SAR to Peak Location Separation Ratio (SPLSR)

| Case # | Test Position | Worst-case combination | | | | | Σ 1-g SAR (mW/g) | Calculated distance (mm) | SPLSR | Figure |
|--------|---------------------------------------|------------------------|----------------|-----------------|-----------------|-------------------|------------------|--------------------------|-------|--------|
| | | CDMA BC0 1xRTT | CDMA BC1 1xRTT | CDMA BC0 1xEVDO | CDMA BC1 1xEVDO | WiFi 5.8 GHz Main | | | | |
| 46 | Edge 1, 0 mm, w/ WWAN Power Reduction | 0.860 | | | | 1.23 | 2.091 | 129.15 | 0.023 | 46 |
| 47 | | | 1.173 | | | 1.23 | 2.404 | 127.10 | 0.029 | 47 |
| 48 | | | | 1.138 | | 1.23 | 2.369 | 118.61 | 0.031 | 48 |
| 49 | | | | | 1.351 | 1.23 | 2.582 | 126.44 | 0.033 | 49 |

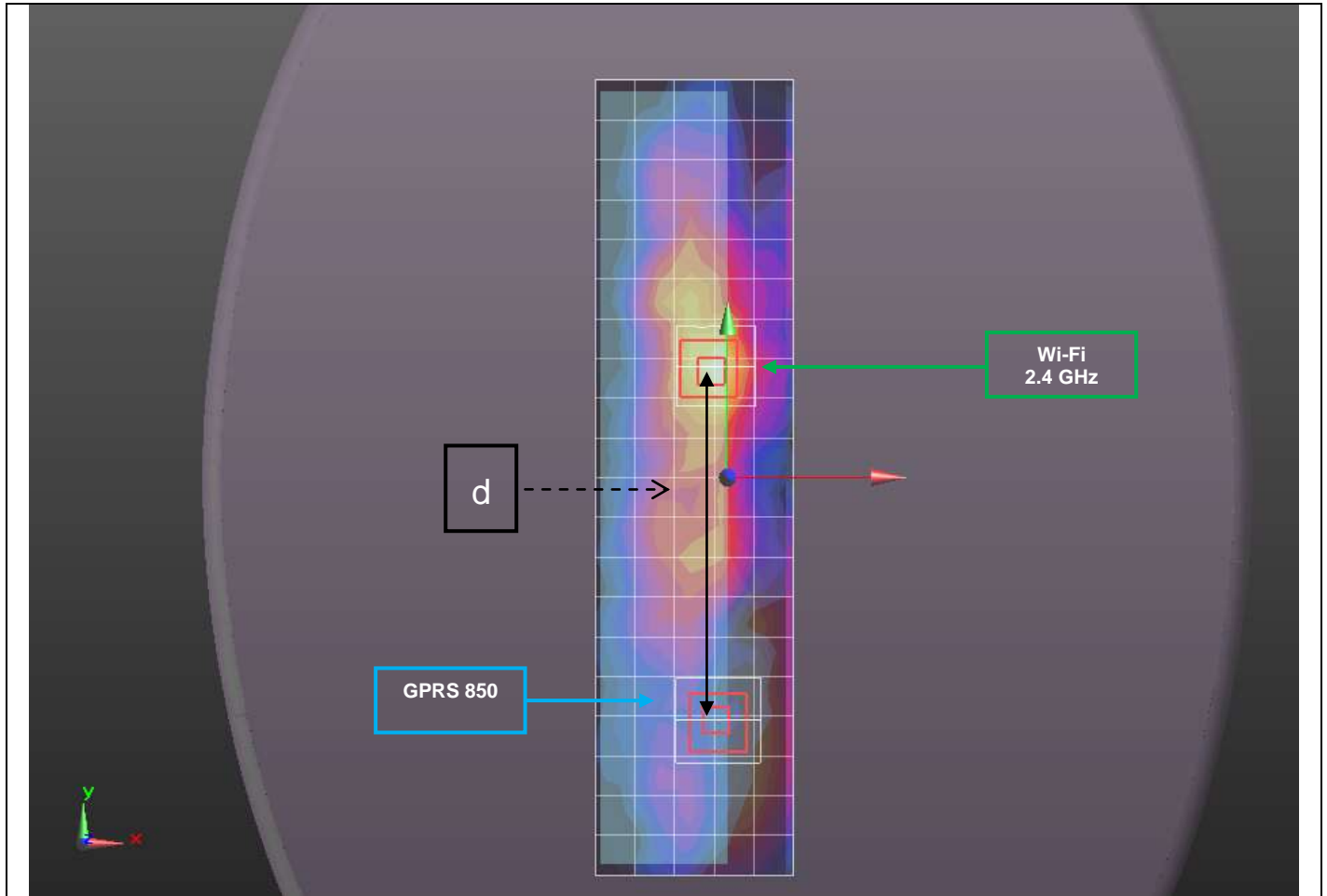
Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

14.10. SAR Peak Location Separation Distance Calculations and Figures

14.10.1. Wi-Fi 2.4 GHz and WWAN

Figure (1)

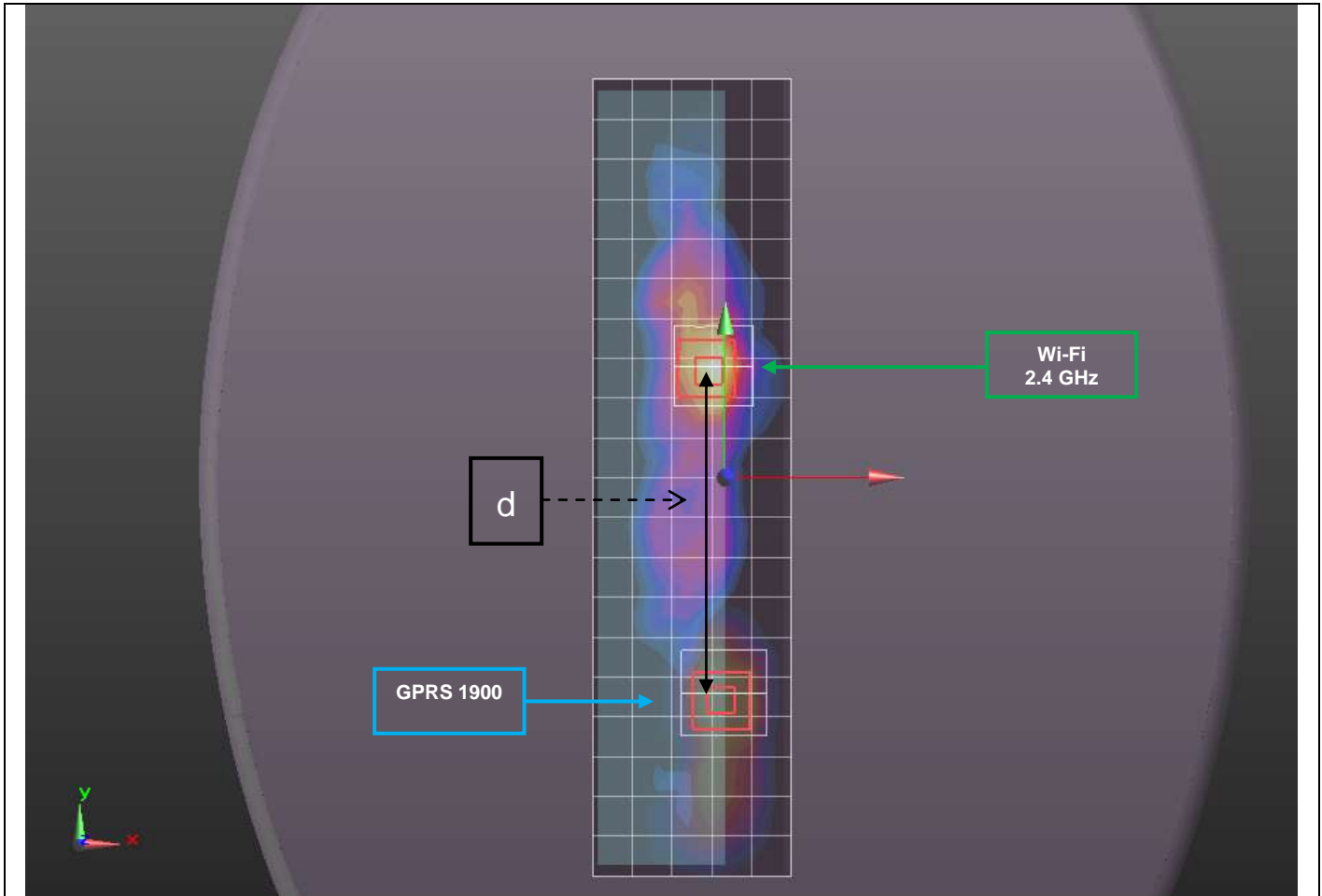


| Mode | Peak SAR mW/g | X m | Y m | Z m |
|--------------|------------------|----------|---------|--------|
| GPRS 850 | 2.16 | -0.0051 | -0.0915 | -0.184 |
| WiFi 2.4 GHz | 3.66 | -0.00638 | 0.04 | -0.182 |

| |
|-----------------------------|
| d: Calculated distance (mm) |
| 131.52 |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (2)

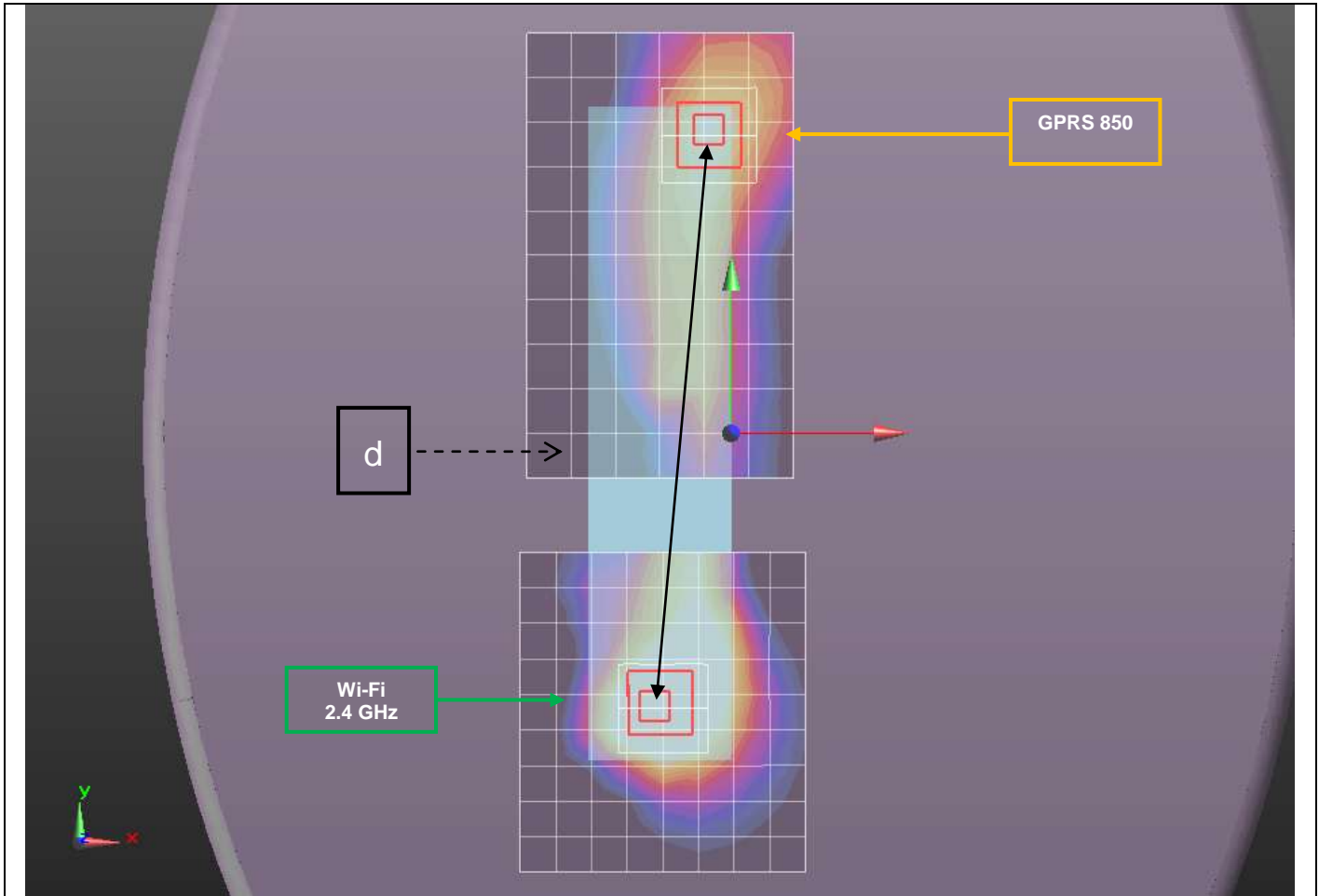


| Mode | Peak SAR mW/g | X m | Y m | Z m |
|--------------|------------------|----------|---------|--------|
| GPRS 1900 | 3.06 | -0.00046 | -0.0842 | -0.181 |
| WiFi 2.4 GHz | 3.66 | -0.00638 | 0.04 | -0.182 |

| | |
|-----------------------------|--|
| d: Calculated distance (mm) | |
| 124.35 | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

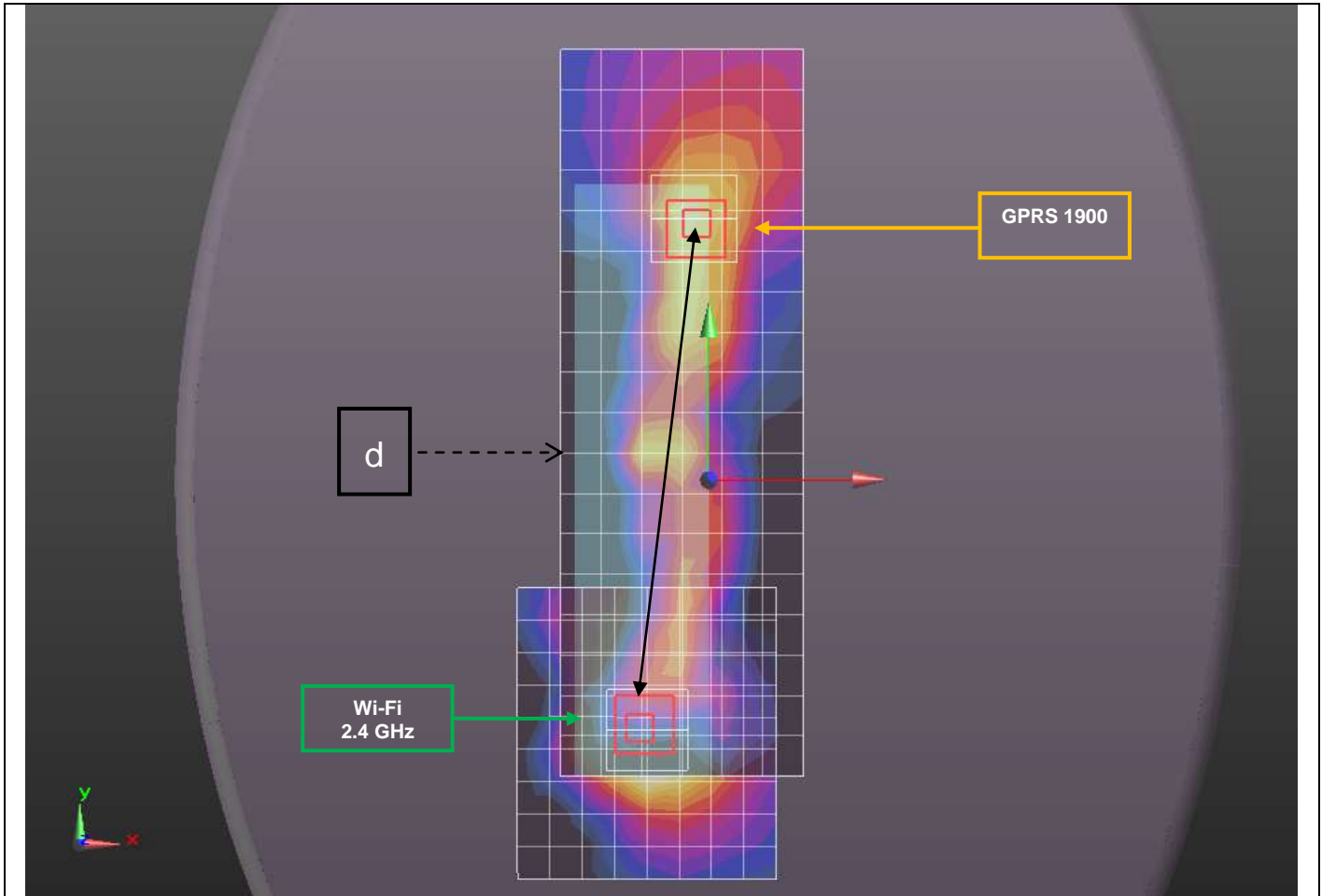
Figure (3)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|----------|---------|--------|
| GPRS 850 | 0.507 | -0.00749 | 0.102 | -0.181 |
| WiFi 2.4 GHz | 2.7 | -0.025 | -0.0918 | -0.181 |
| d: Calculated distance (mm) | | | | |
| 194.59 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (4)

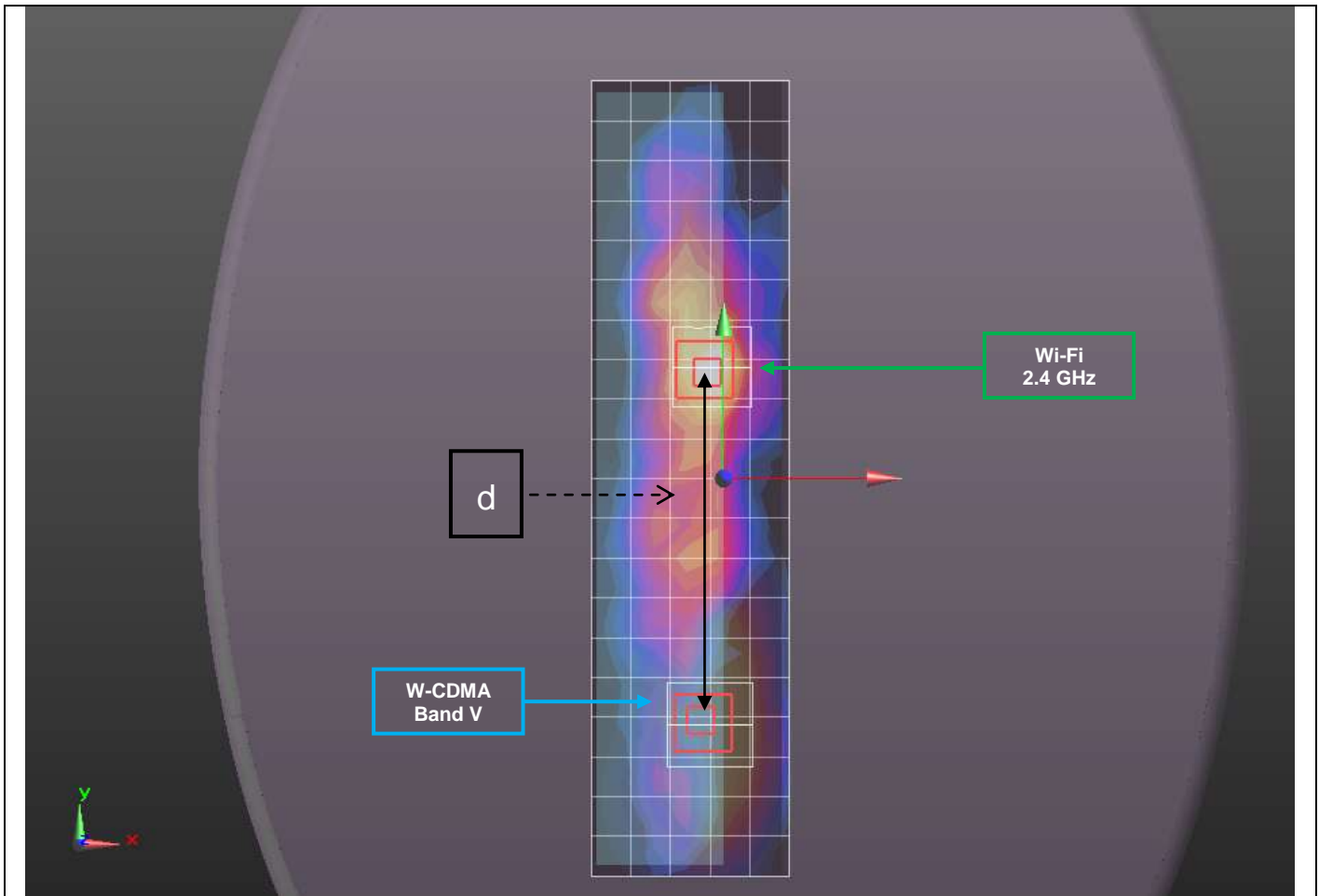


| Mode | Peak SAR mW/g | X m | Y m | Z m |
|--------------|------------------|---------|---------|--------|
| GPRS 1900 | 0.428 | -0.0039 | 0.0954 | -0.186 |
| WiFi 2.4 GHz | 2.7 | -0.025 | -0.0918 | -0.181 |

| | |
|-----------------------------|--|
| d: Calculated distance (mm) | |
| 188.45 | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (5)

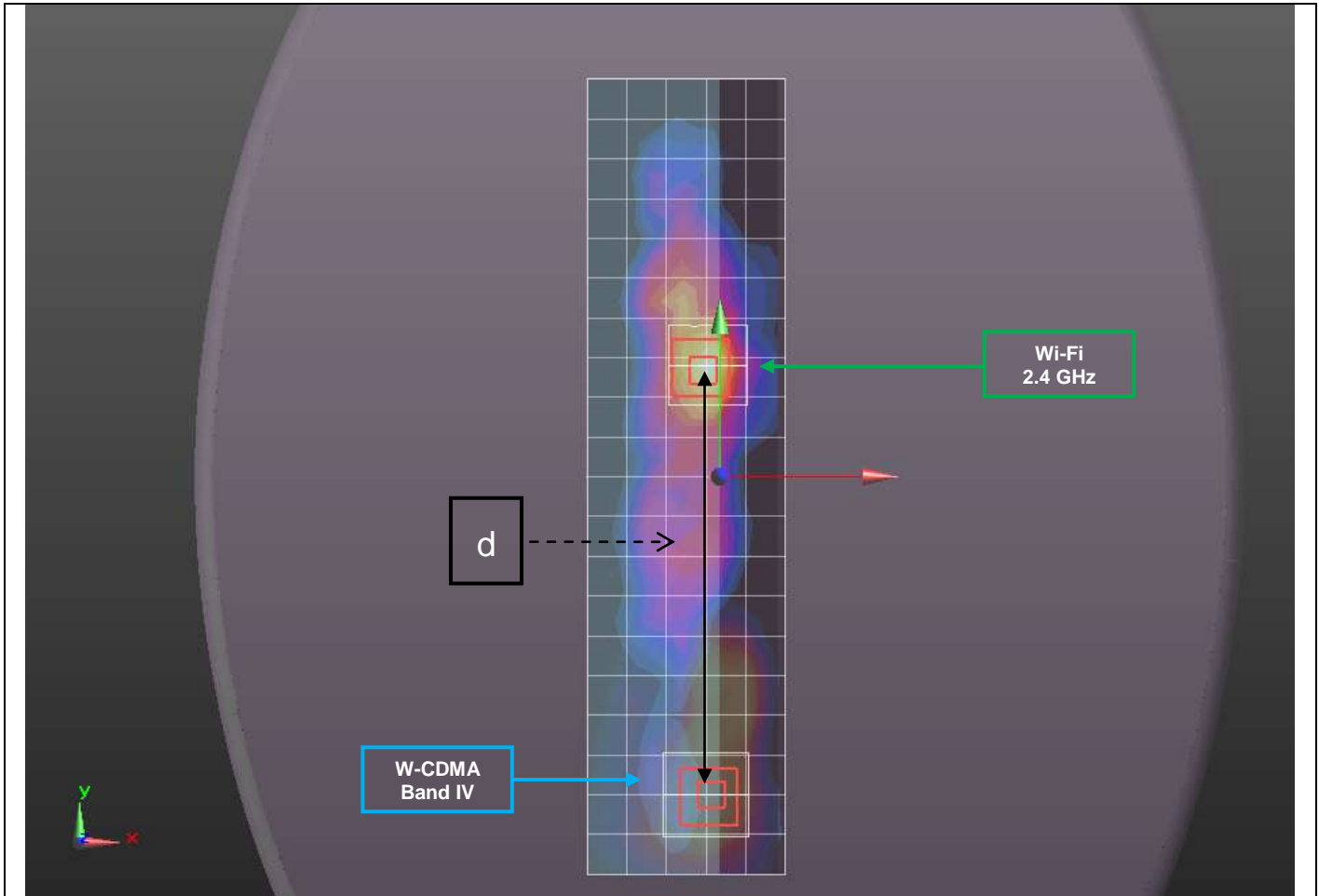


| Mode | Peak SAR mW/g | X m | Y m | Z m |
|---------------|------------------|----------|---------|--------|
| W-CDMA Band V | 1.68 | -0.00815 | -0.0898 | -0.182 |
| WiFi 2.4 GHz | 3.66 | -0.00638 | 0.04 | -0.182 |

| |
|-----------------------------|
| d: Calculated distance (mm) |
| 129.81 |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (6)

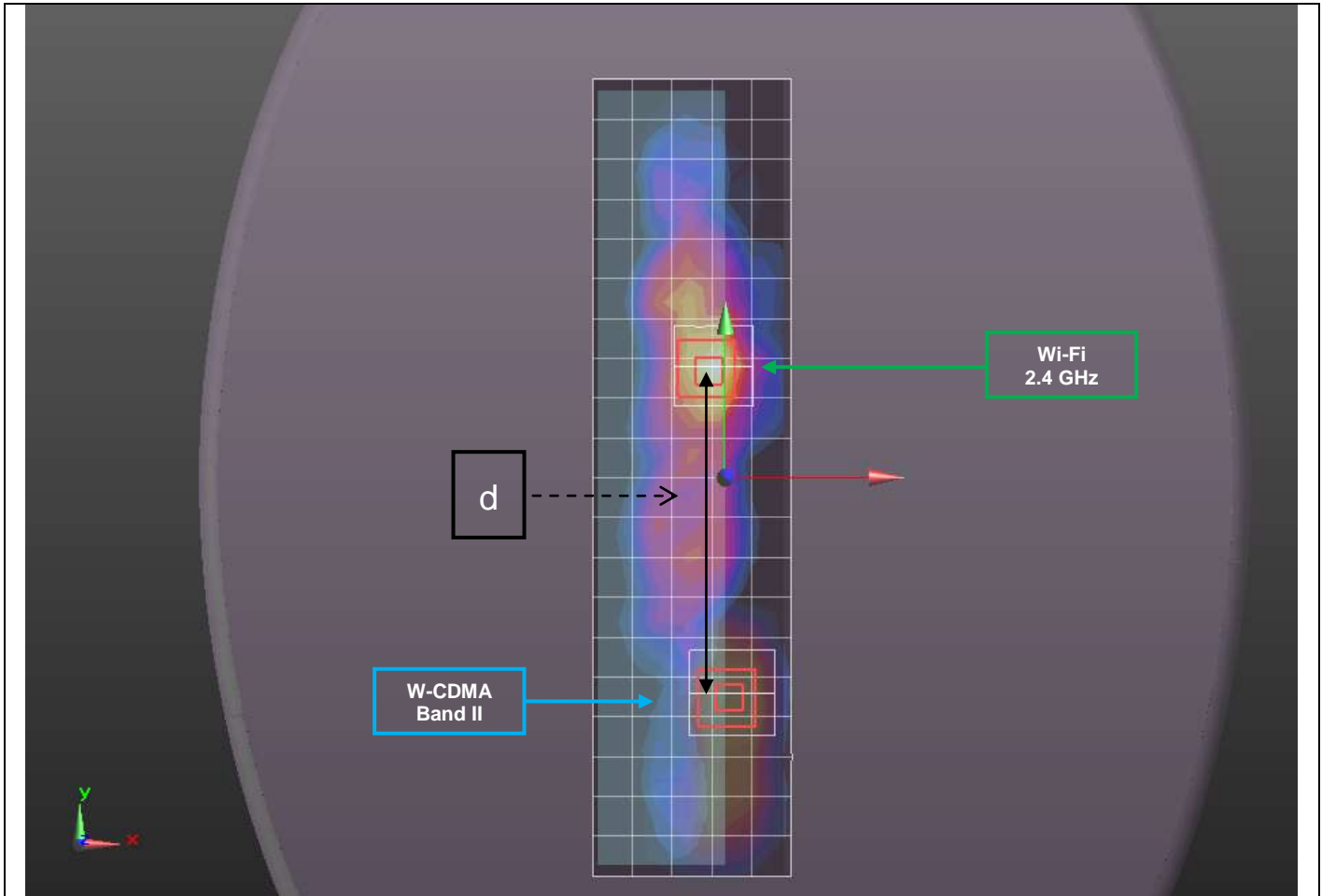


| Mode | Peak SAR mW/g | X m | Y m | Z m |
|----------------|------------------|----------|--------|--------|
| W-CDMA Band IV | 2.77 | -0.0034 | -0.118 | -0.186 |
| WiFi 2.4 GHz | 3.66 | -0.00638 | 0.04 | -0.182 |

| | |
|-----------------------------|--|
| d: Calculated distance (mm) | |
| 158.08 | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

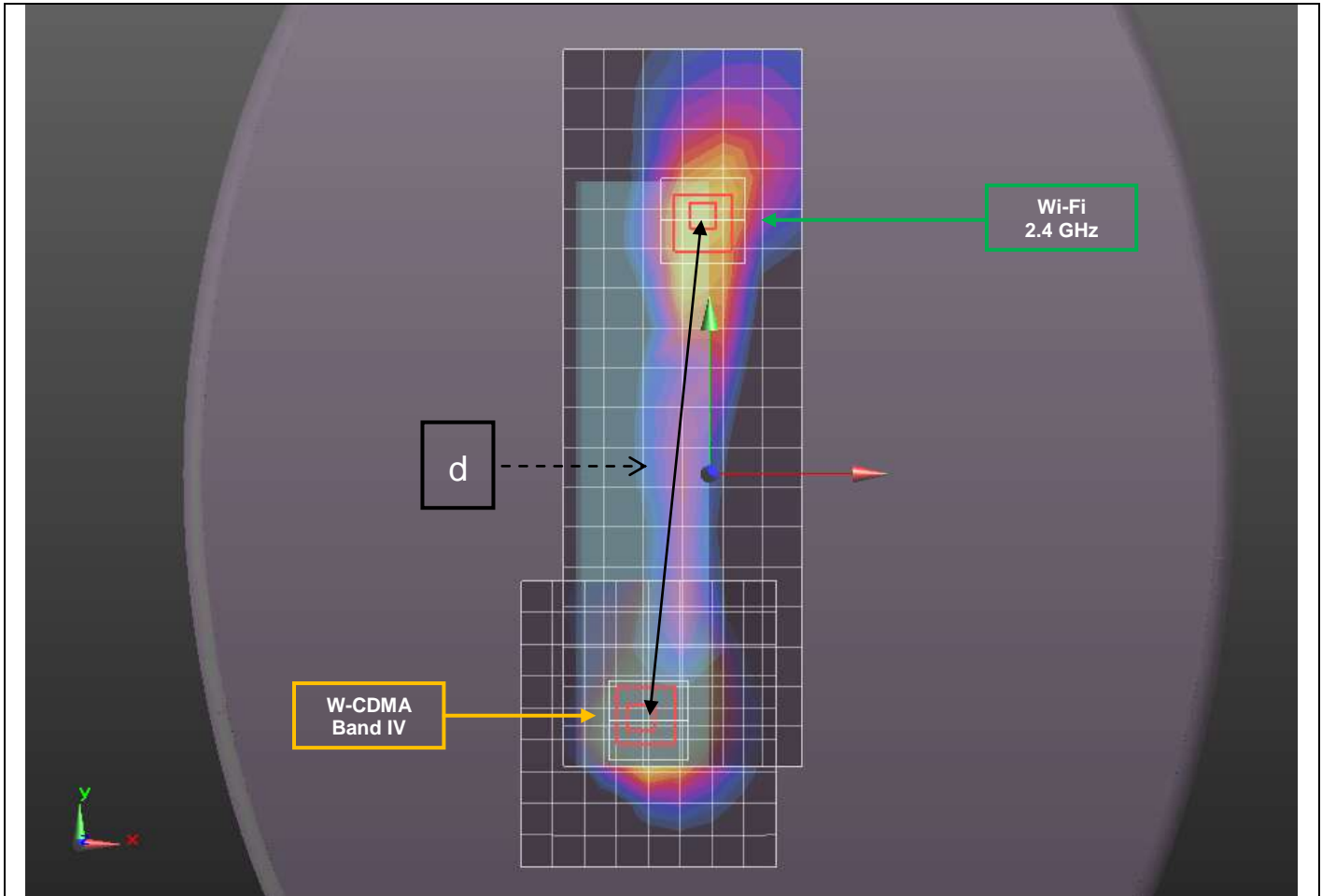
Figure (7)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|----------|---------|--------|
| W-CDMA Band II | 2.34 | 0.00244 | -0.0826 | -0.181 |
| WiFi 2.4 GHz | 3.66 | -0.00638 | 0.04 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 122.92 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (8)

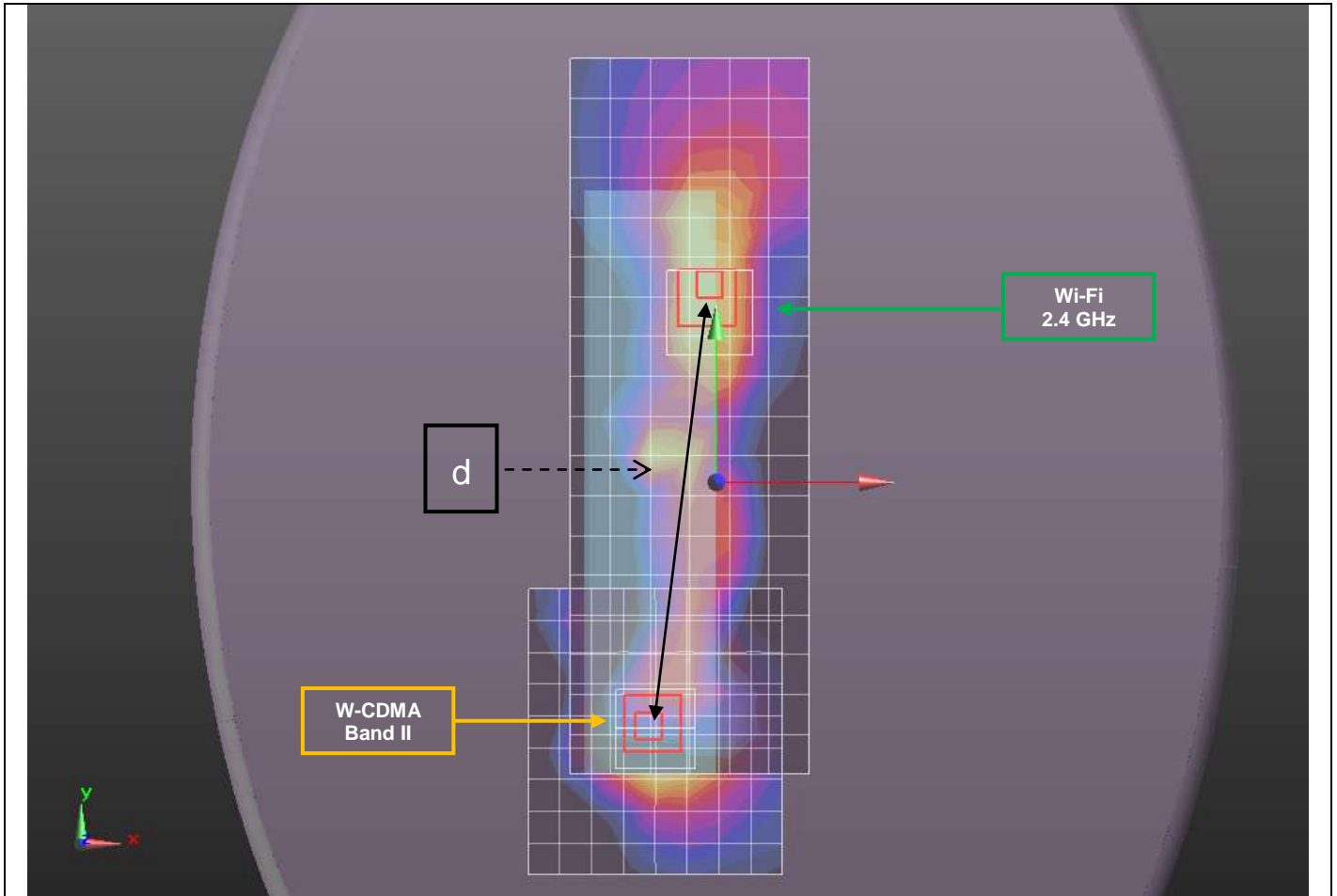


| Mode | Peak SAR mW/g | X m | Y m | Z m |
|----------------|------------------|---------|---------|--------|
| W-CDMA Band IV | 0.631 | -0.0025 | 0.0971 | -0.184 |
| WiFi 2.4 GHz | 2.7 | -0.025 | -0.0918 | -0.181 |

| | |
|-----------------------------|--|
| d: Calculated distance (mm) | |
| 190.26 | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (9)

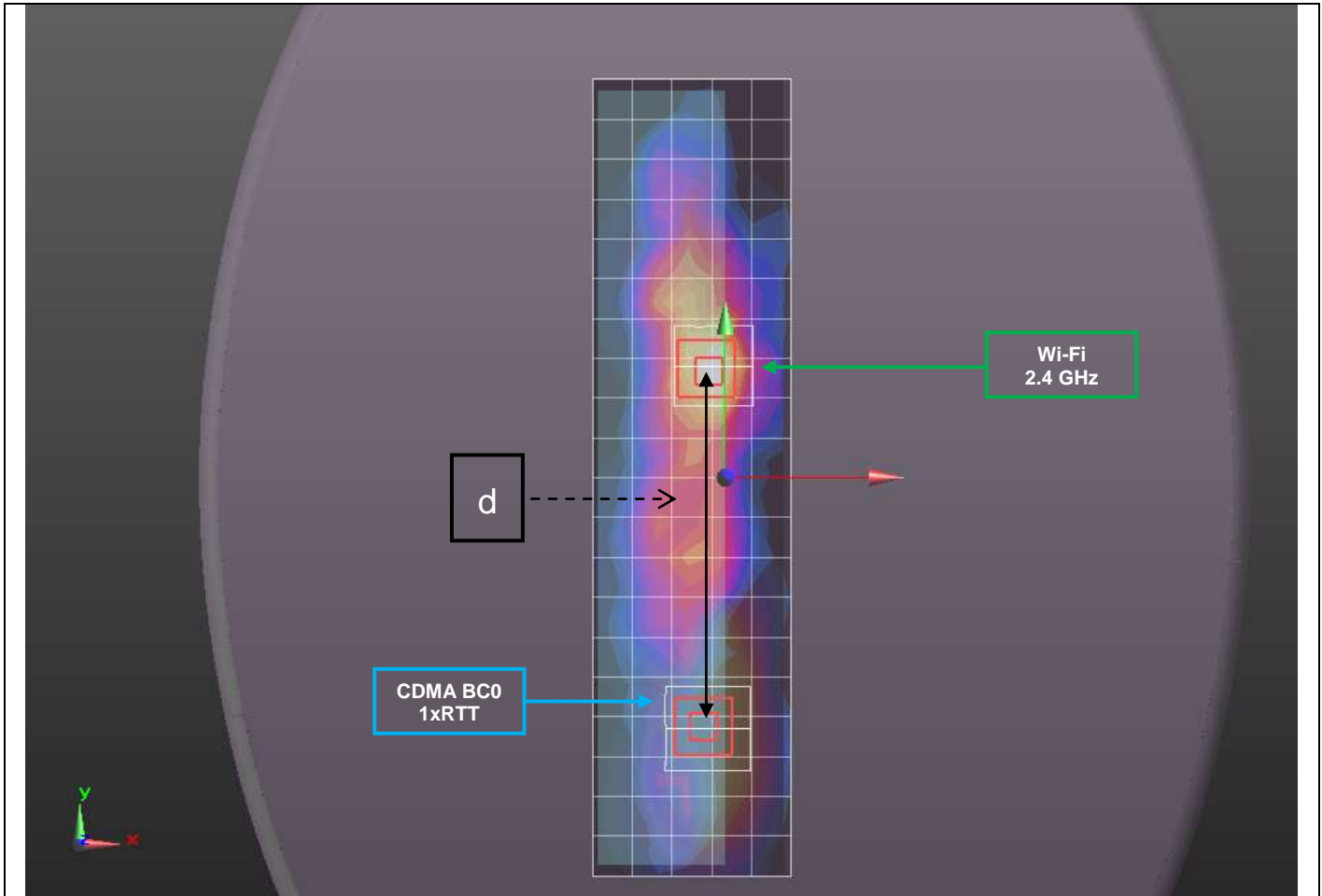


| Mode | Peak SAR mW/g | X m | Y m | Z m |
|----------------|------------------|---------|---------|--------|
| W-CDMA Band II | 0.603 | -0.0025 | 0.08 | -0.186 |
| WiFi 2.4 GHz | 2.7 | -0.025 | -0.0918 | -0.181 |

| |
|-----------------------------|
| d: Calculated distance (mm) |
| 173.34 |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (10)

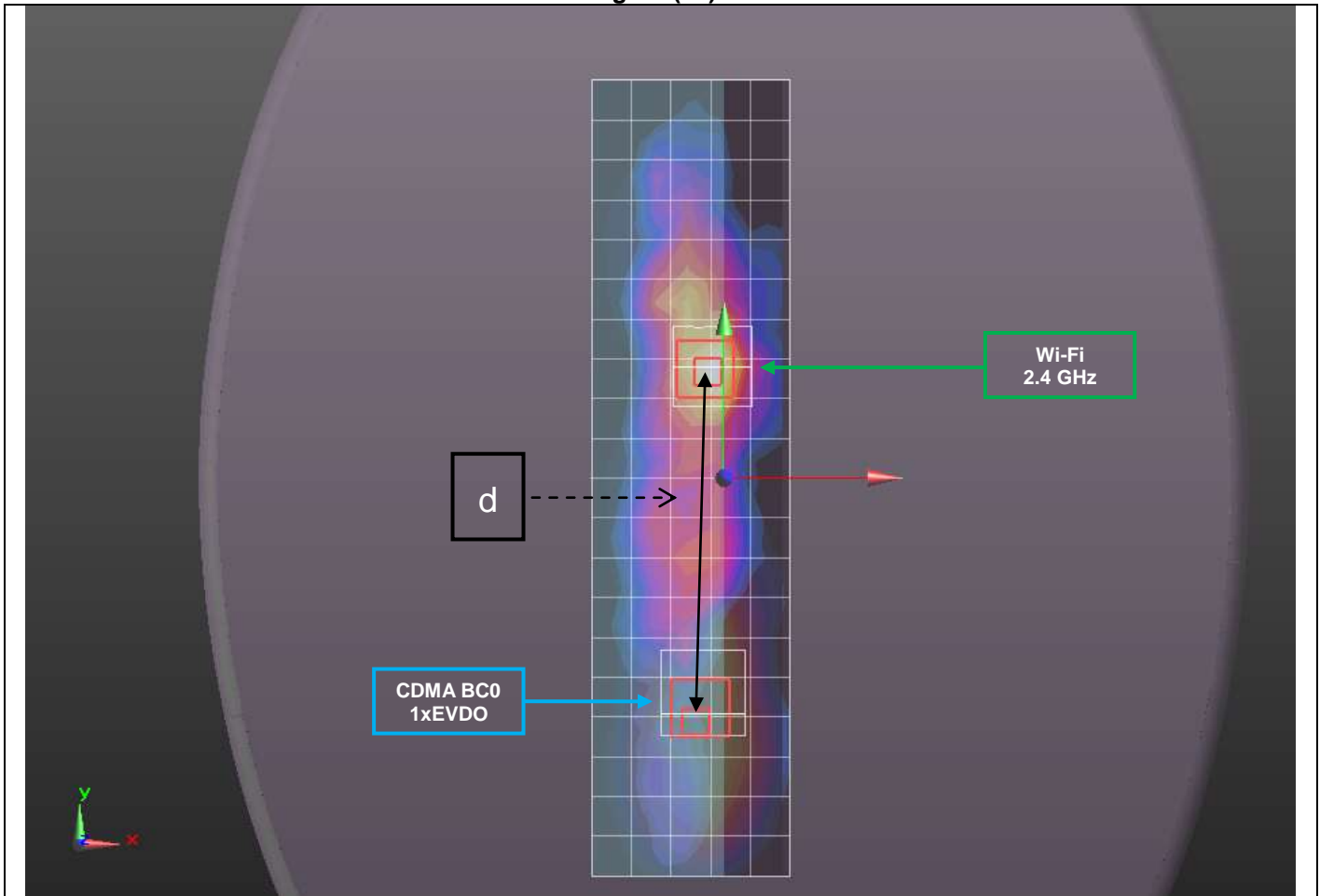


| Mode | Peak SAR mW/g | X m | Y m | Z m |
|----------------|------------------|----------|---------|--------|
| CDMA BC0 1xRTT | 1.66 | -0.00816 | -0.0929 | -0.182 |
| WiFi 2.4 GHz | 3.66 | -0.00638 | 0.04 | -0.182 |

| | |
|-----------------------------|--|
| d: Calculated distance (mm) | |
| 132.91 | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

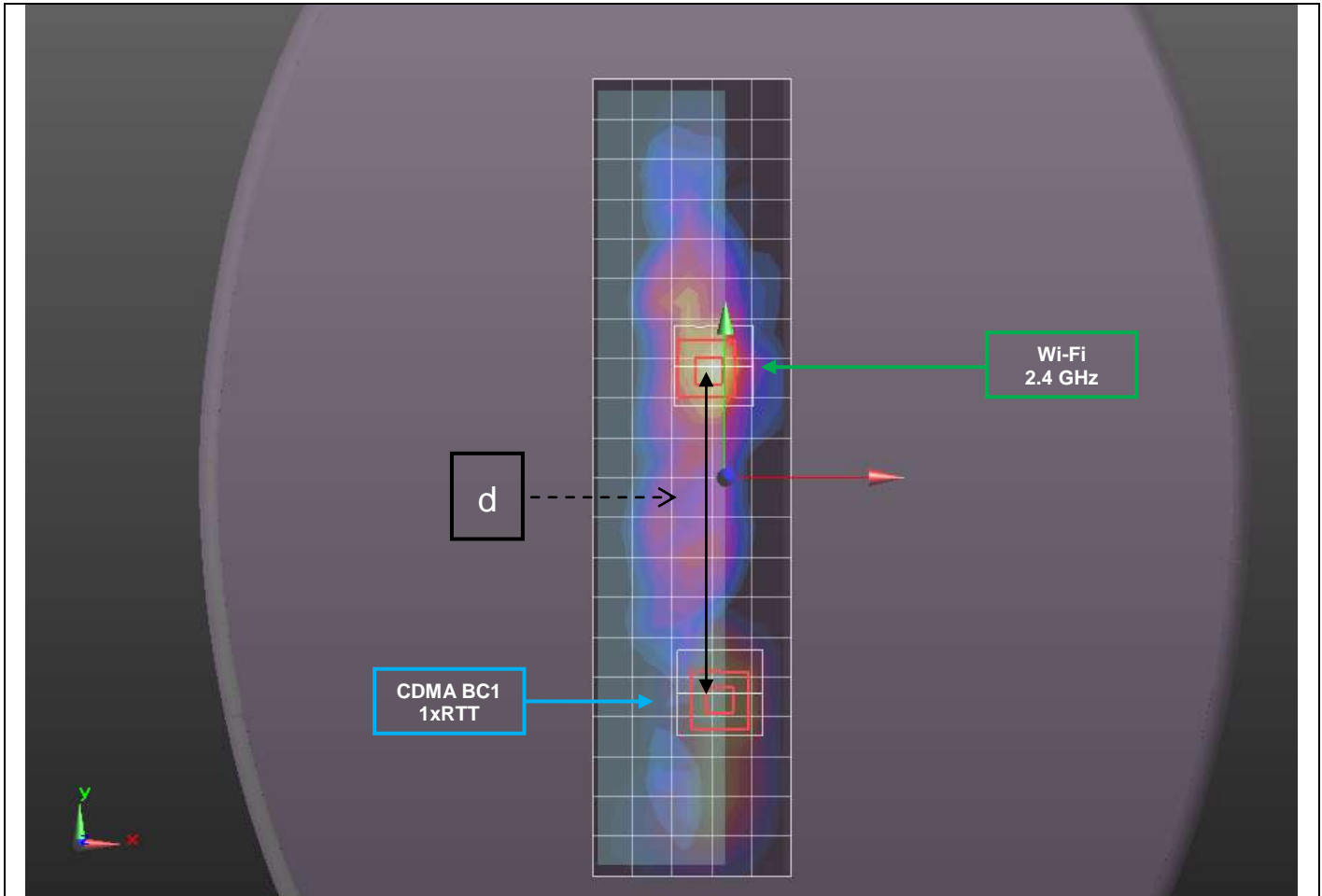
Figure (11)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|----------|---------|--------|
| CDMA BC0 1xEVDO | 2.23 | -0.0112 | -0.0906 | -0.184 |
| WiFi 2.4 GHz | 3.66 | -0.00638 | 0.04 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 130.70 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (12)

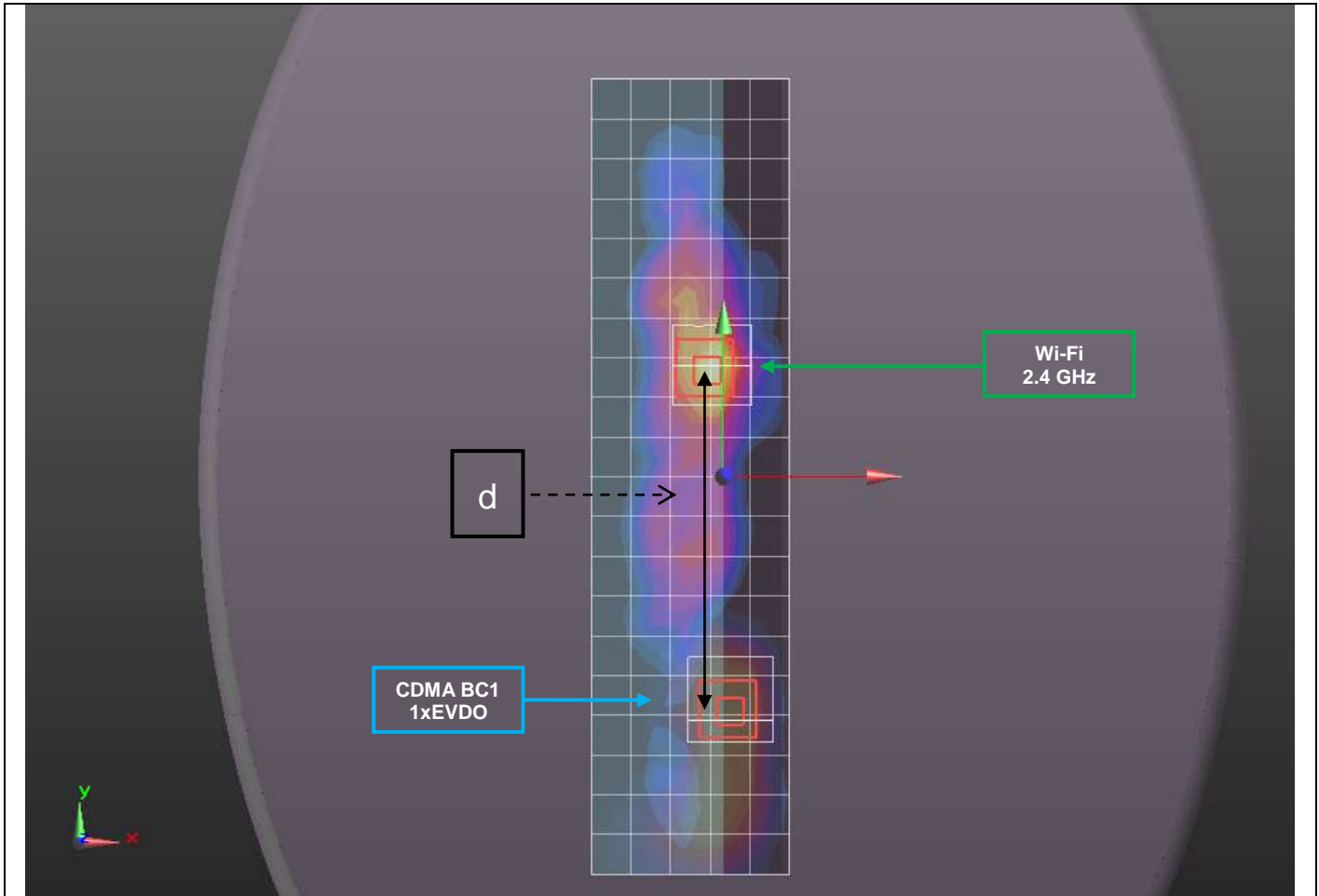


| Mode | Peak SAR mW/g | X m | Y m | Z m |
|----------------|------------------|----------|---------|--------|
| CDMA BC1 1xRTT | 3.42 | -0.00198 | -0.0826 | -0.182 |
| WiFi 2.4 GHz | 3.66 | -0.00638 | 0.04 | -0.182 |

| | |
|-----------------------------|--|
| d: Calculated distance (mm) | |
| 122.68 | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (13)



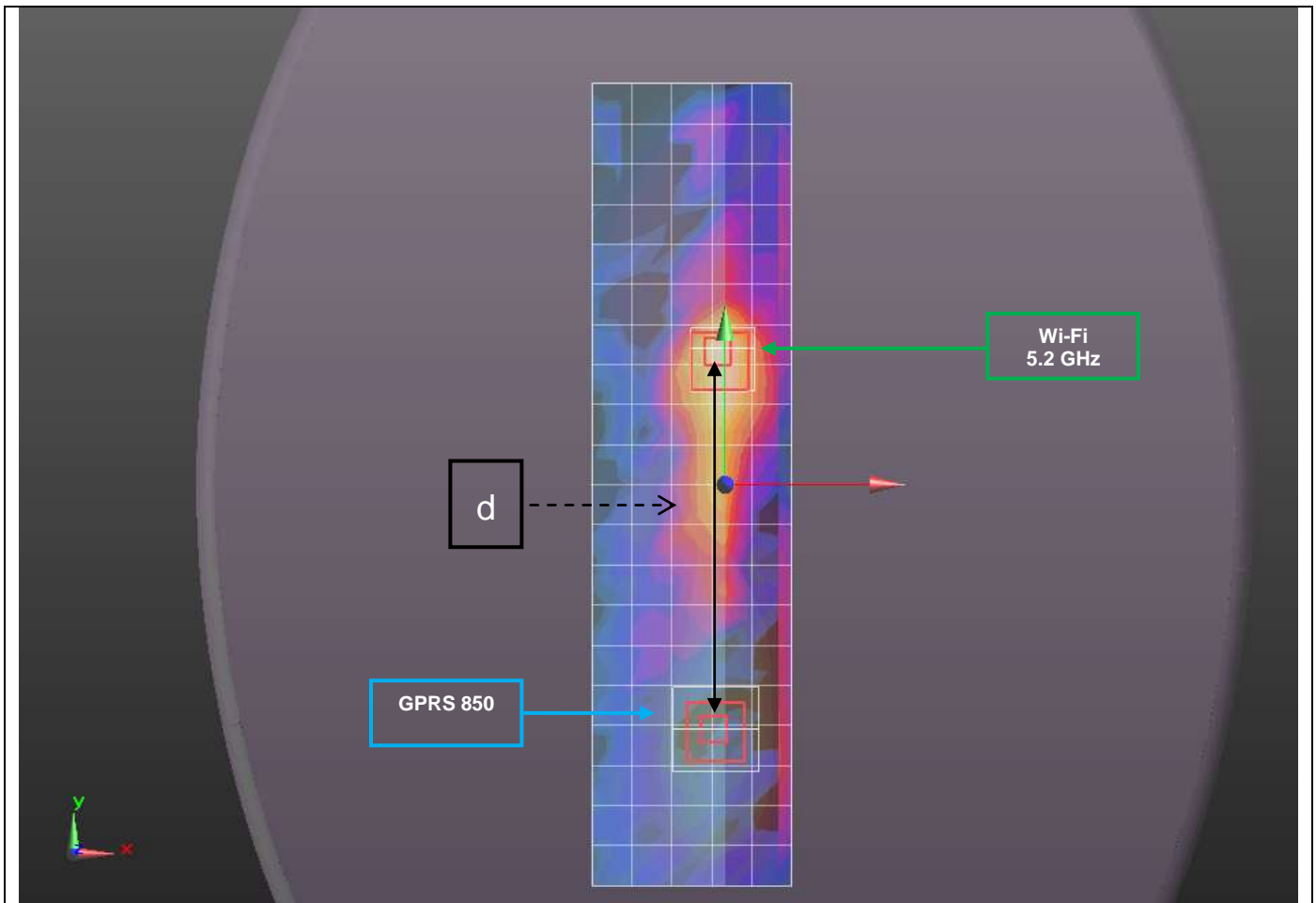
| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------|------------------|----------|---------|--------|
| CDMA BC1 1xEVDO | 3.04 | 0.0025 | -0.0904 | -0.184 |
| WiFi 2.4 GHz | 3.66 | -0.00638 | 0.04 | -0.182 |

| | |
|-----------------------------|--|
| d: Calculated distance (mm) | |
| 130.72 | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

14.10.2. Wi-Fi 5.2 GHz and WWAN

Figure (14)

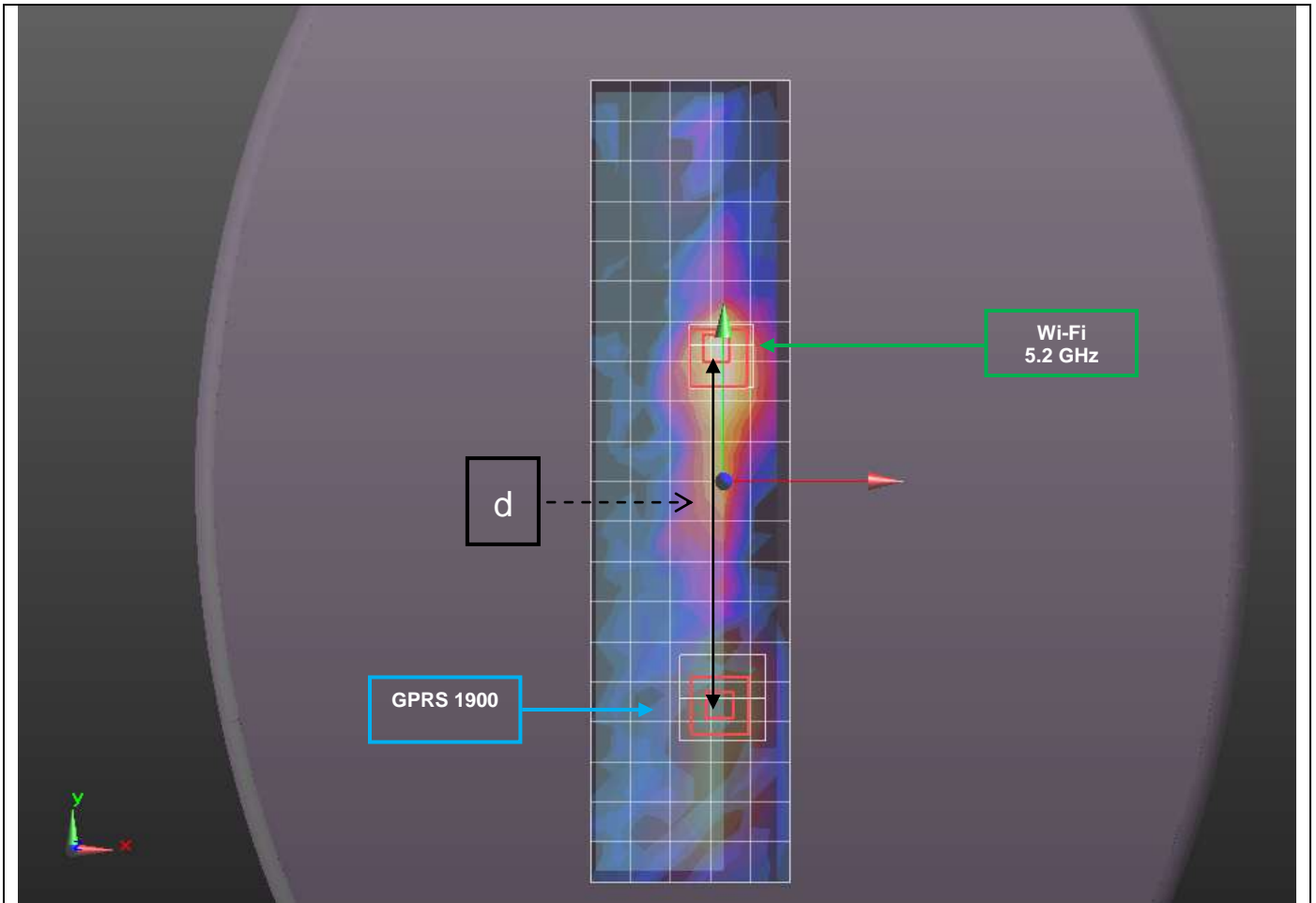


| Mode | Peak SAR mW/g | X m | Y m | Z m |
|--------------|------------------|-----------|---------|--------|
| GPRS 850 | 2.16 | -0.0051 | -0.0915 | -0.184 |
| WiFi 5.2 GHz | 7.24 | -0.000154 | 0.035 | -0.182 |

| |
|-----------------------------|
| d: Calculated distance (mm) |
| 126.61 |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (15)

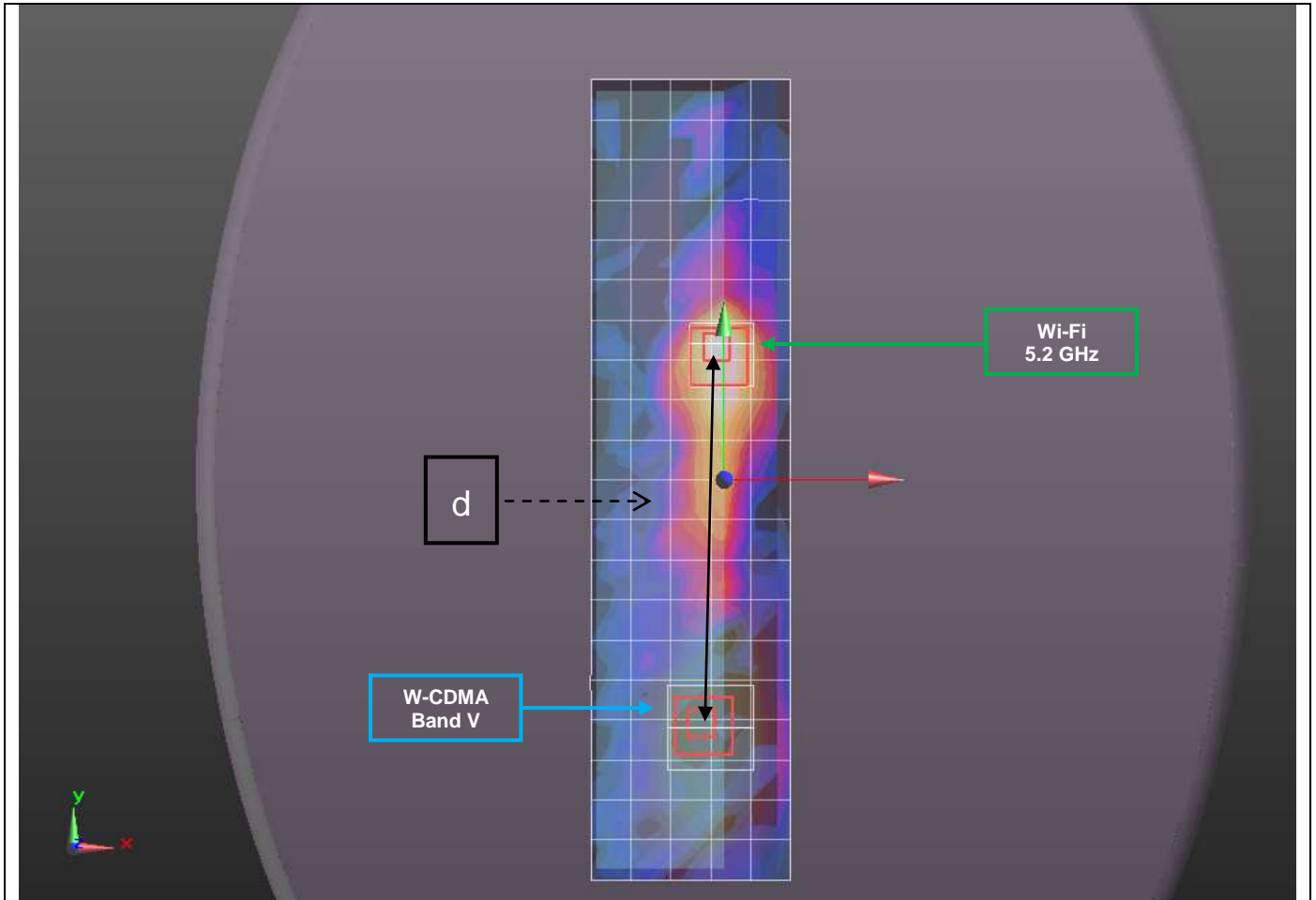


| Mode | Peak SAR mW/g | X m | Y m | Z m |
|--------------|------------------|-----------|---------|--------|
| GPRS 1900 | 3.06 | -0.00046 | -0.0842 | -0.181 |
| WiFi 5.2 GHz | 7.24 | -0.000154 | 0.035 | -0.182 |

| |
|-----------------------------|
| d: Calculated distance (mm) |
| 119.20 |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

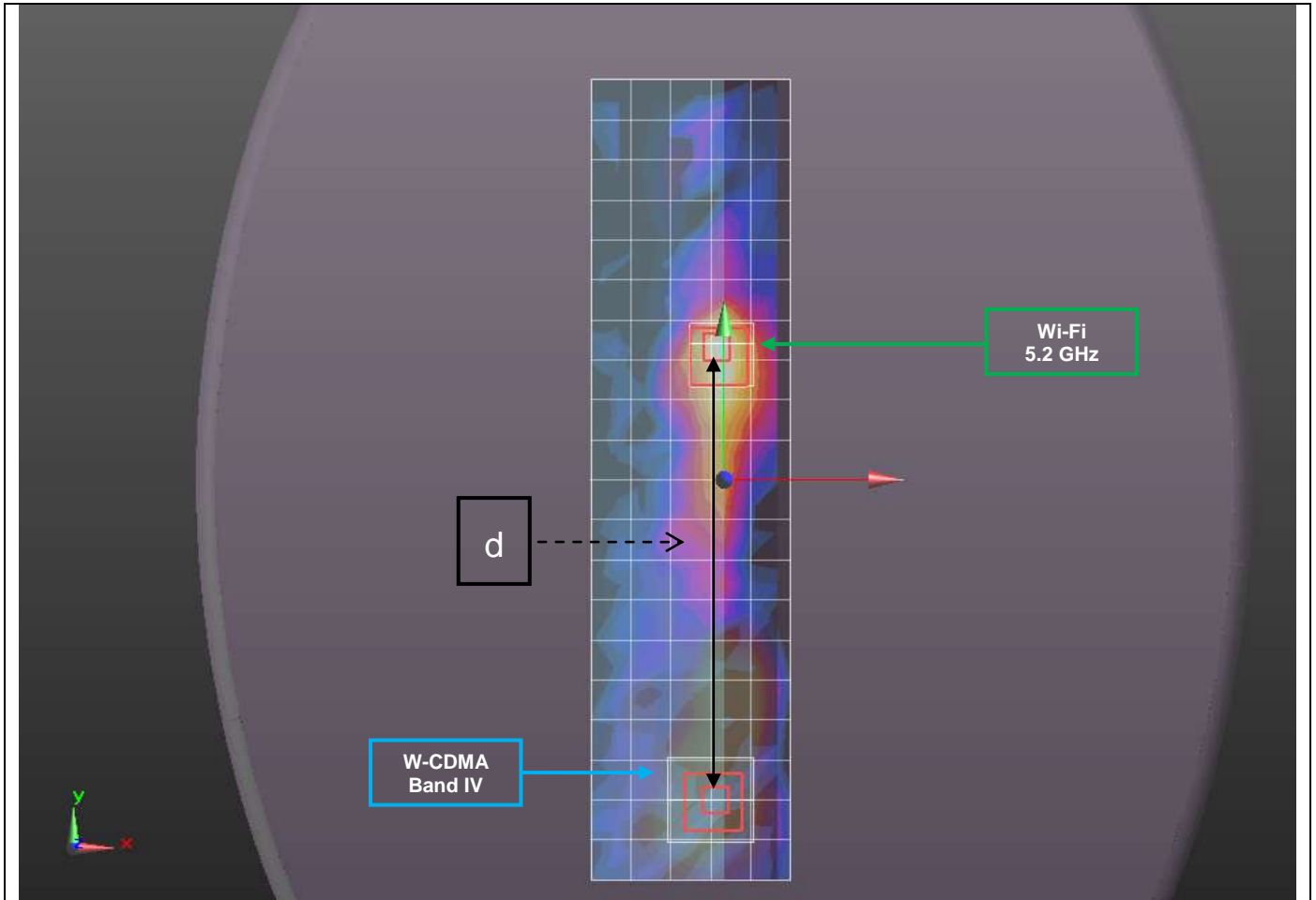
Figure (16)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|-----------|---------|--------|
| W-CDMA Band V | 1.68 | -0.00815 | -0.0898 | -0.182 |
| WiFi 5.2 GHz | 7.24 | -0.000154 | 0.035 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 125.06 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

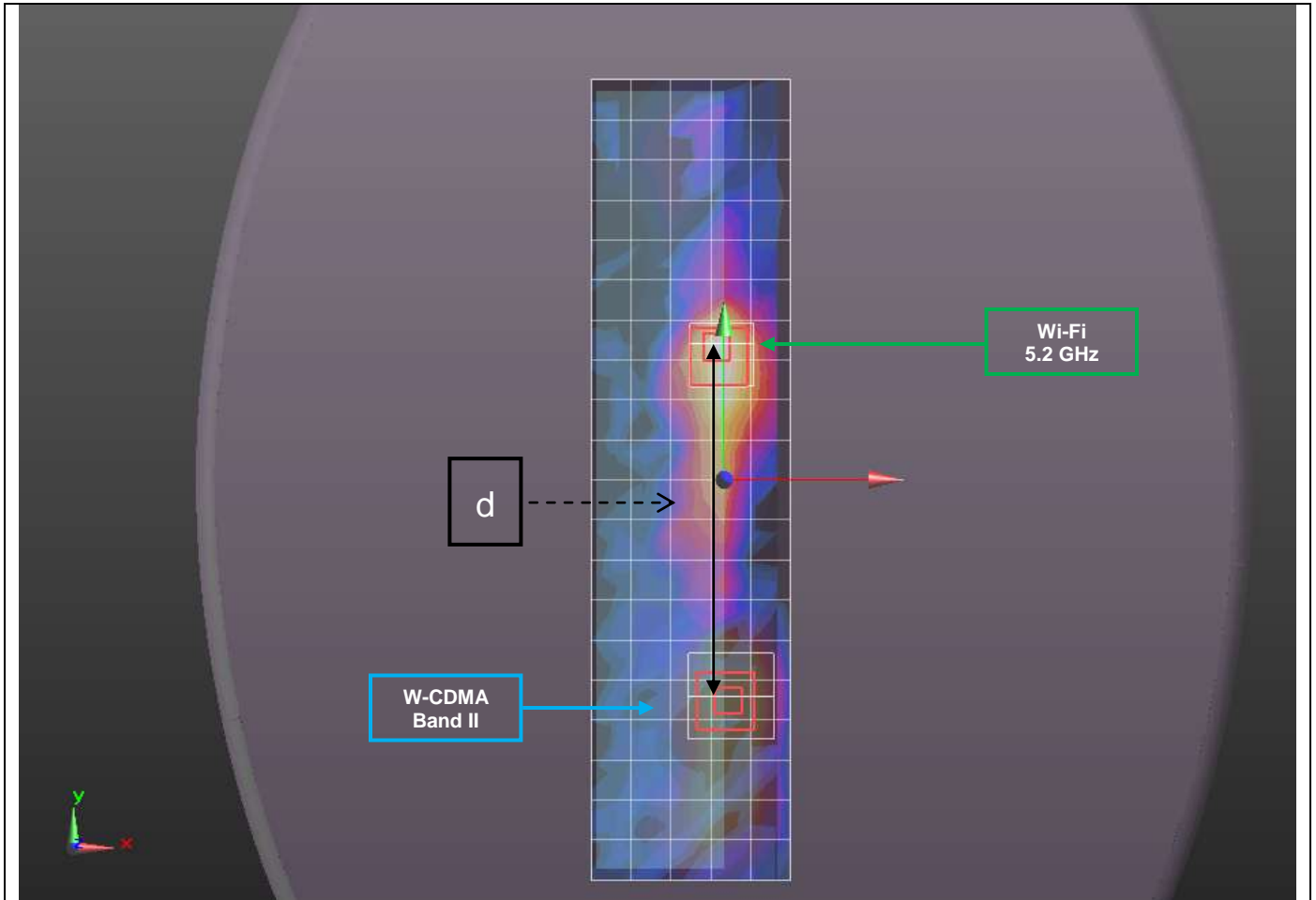
Figure (17)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|-----------|--------|--------|
| W-CDMA Band IV | 2.77 | -0.0034 | -0.118 | -0.186 |
| WiFi 5.2 GHz | 7.24 | -0.000154 | 0.035 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 153.09 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

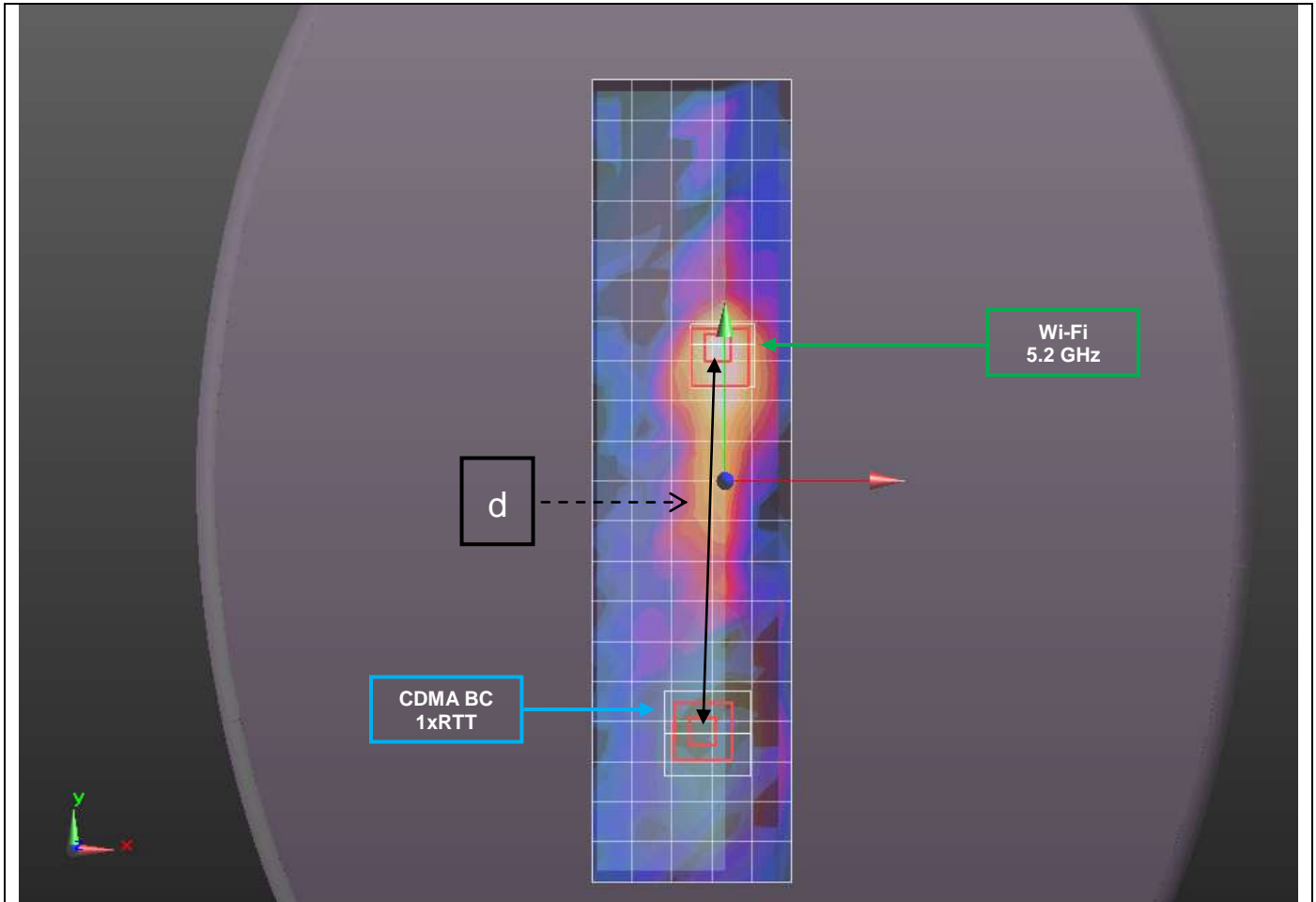
Figure (18)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|-----------|---------|--------|
| W-CDMA Band II | 2.34 | 0.00244 | -0.0826 | -0.181 |
| WiFi 5.2 GHz | 7.24 | -0.000154 | 0.035 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 117.63 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

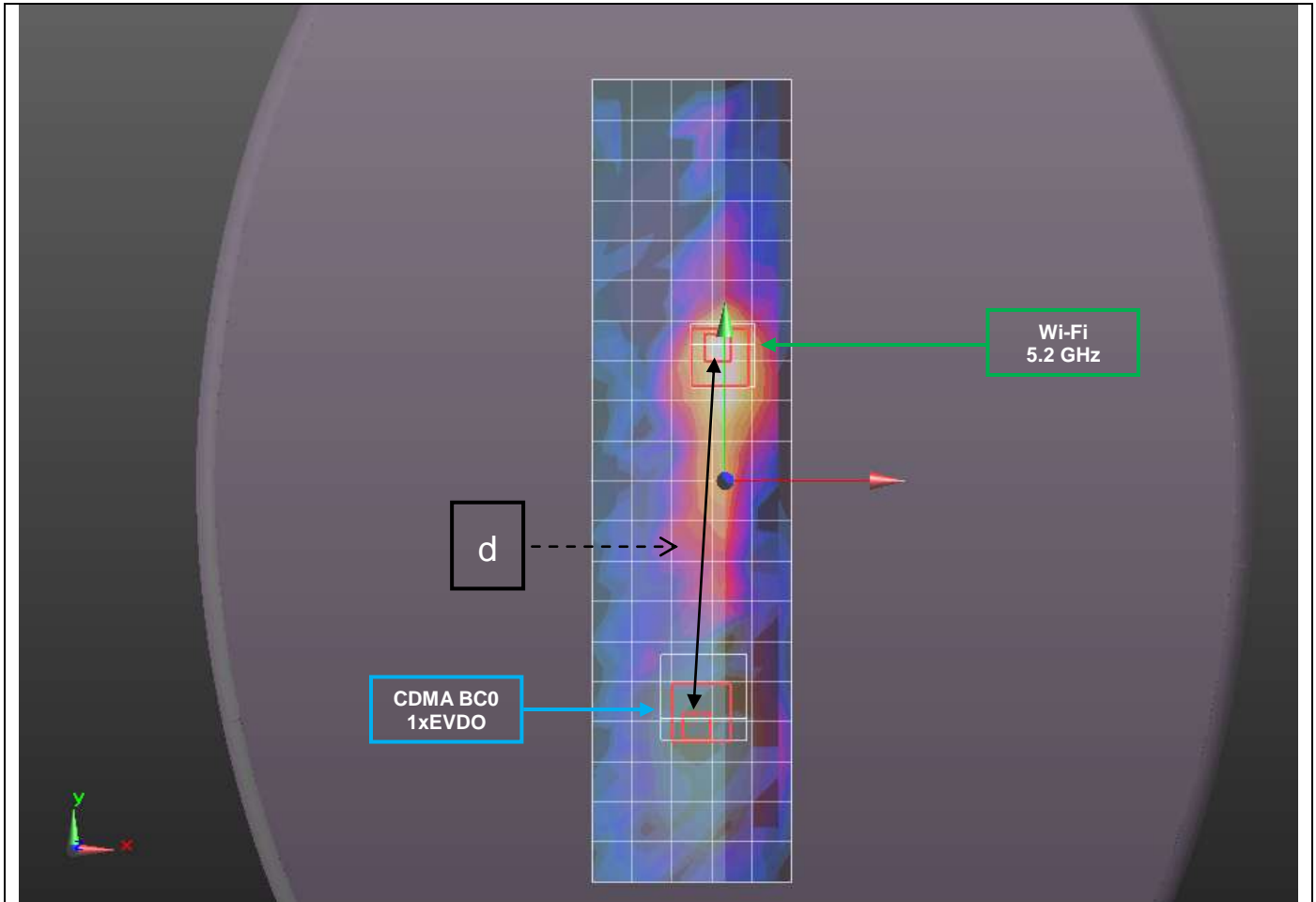
Figure (19)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|-----------|---------|--------|
| CDMA BC0 1xRTT | 1.66 | -0.00816 | -0.0929 | -0.182 |
| WiFi 5.2 GHz | 7.24 | -0.000154 | 0.035 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 128.15 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

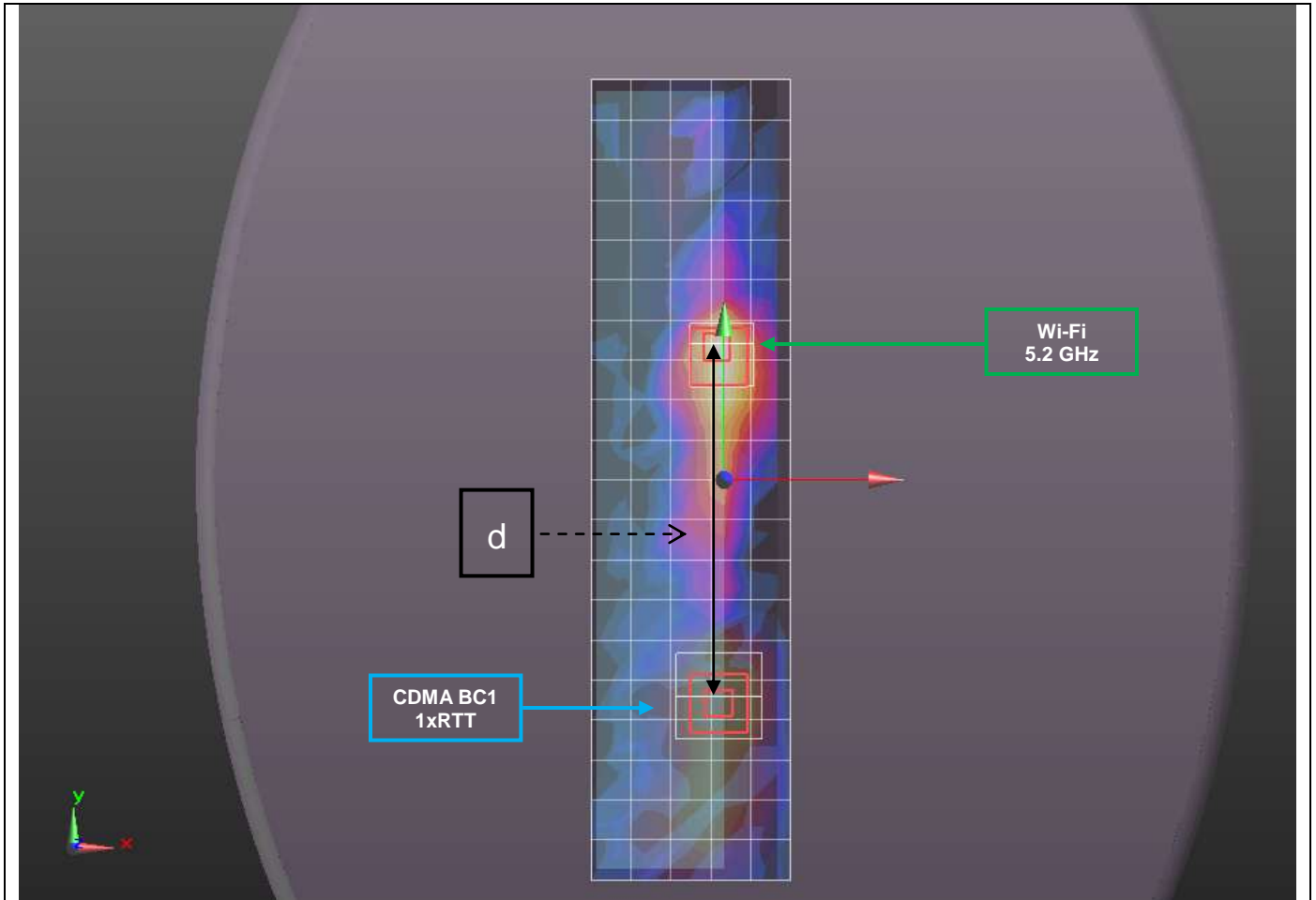
Figure (20)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|-----------|---------|--------|
| CDMA BC0 1xEVDO | 2.23 | -0.0112 | -0.0906 | -0.184 |
| WiFi 5.2 GHz | 7.24 | -0.000154 | 0.035 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 126.10 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

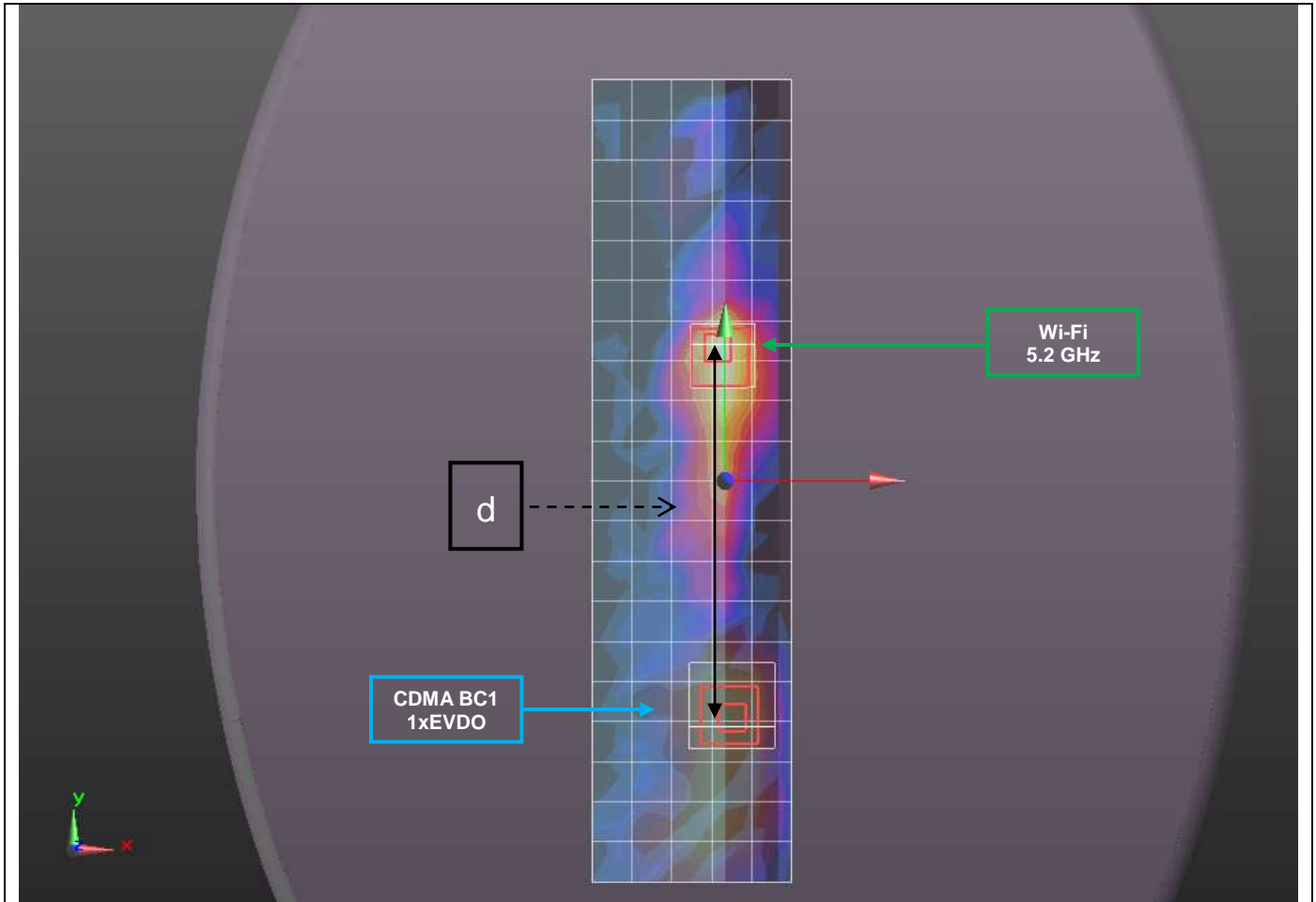
Figure (21)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|-----------|---------|--------|
| CDMA BC1 1xRTT | 3.42 | -0.00198 | -0.0826 | -0.182 |
| WiFi 5.2 GHz | 7.24 | -0.000154 | 0.035 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 117.61 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (22)

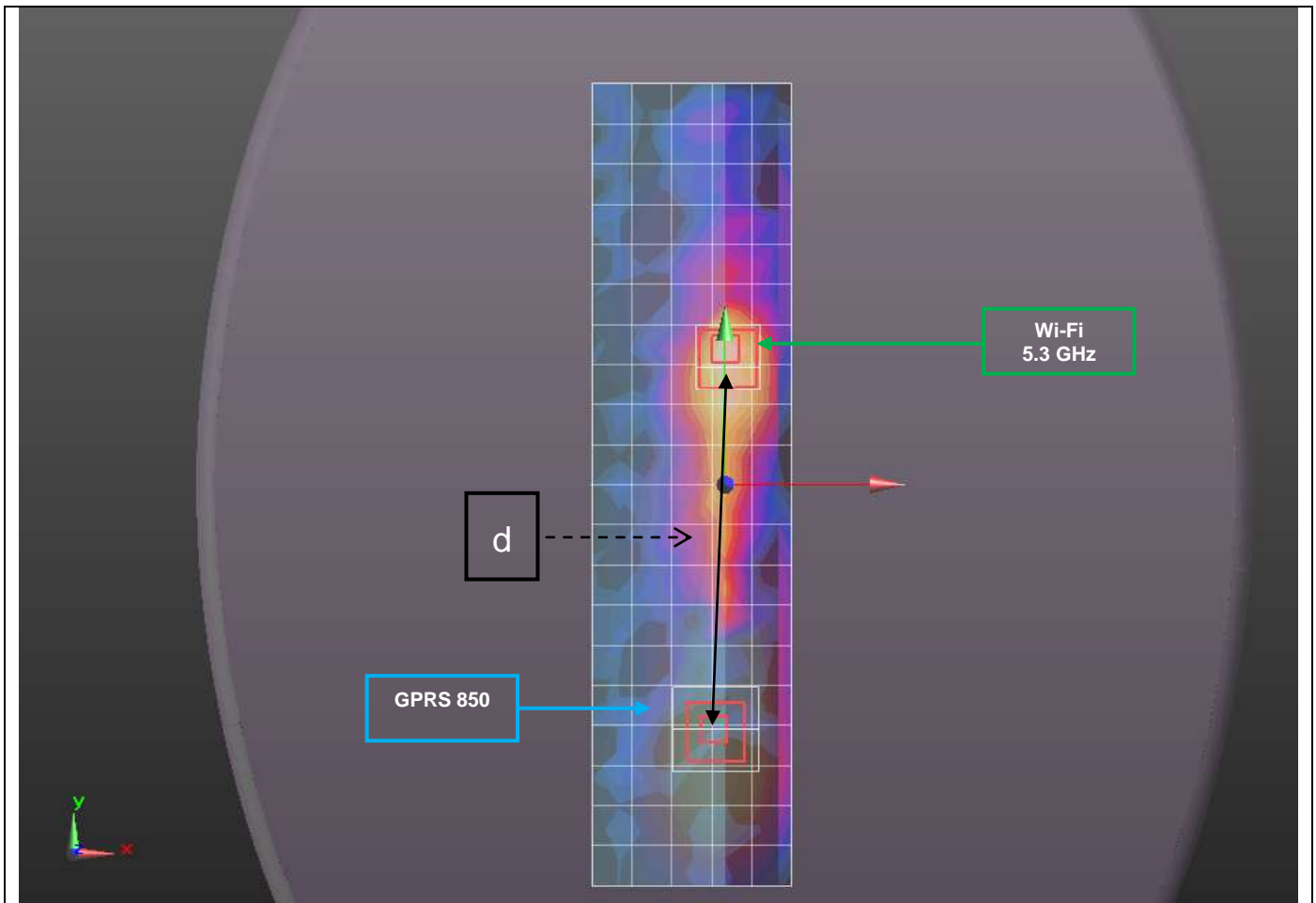


| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|-----------|---------|--------|
| CDMA BC1 1xEVDO | 3.04 | 0.0025 | -0.0904 | -0.184 |
| WiFi 5.2 GHz | 7.24 | -0.000154 | 0.035 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 125.44 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

14.10.3. Wi-Fi 5.3 GHz and WWAN

Figure (23)

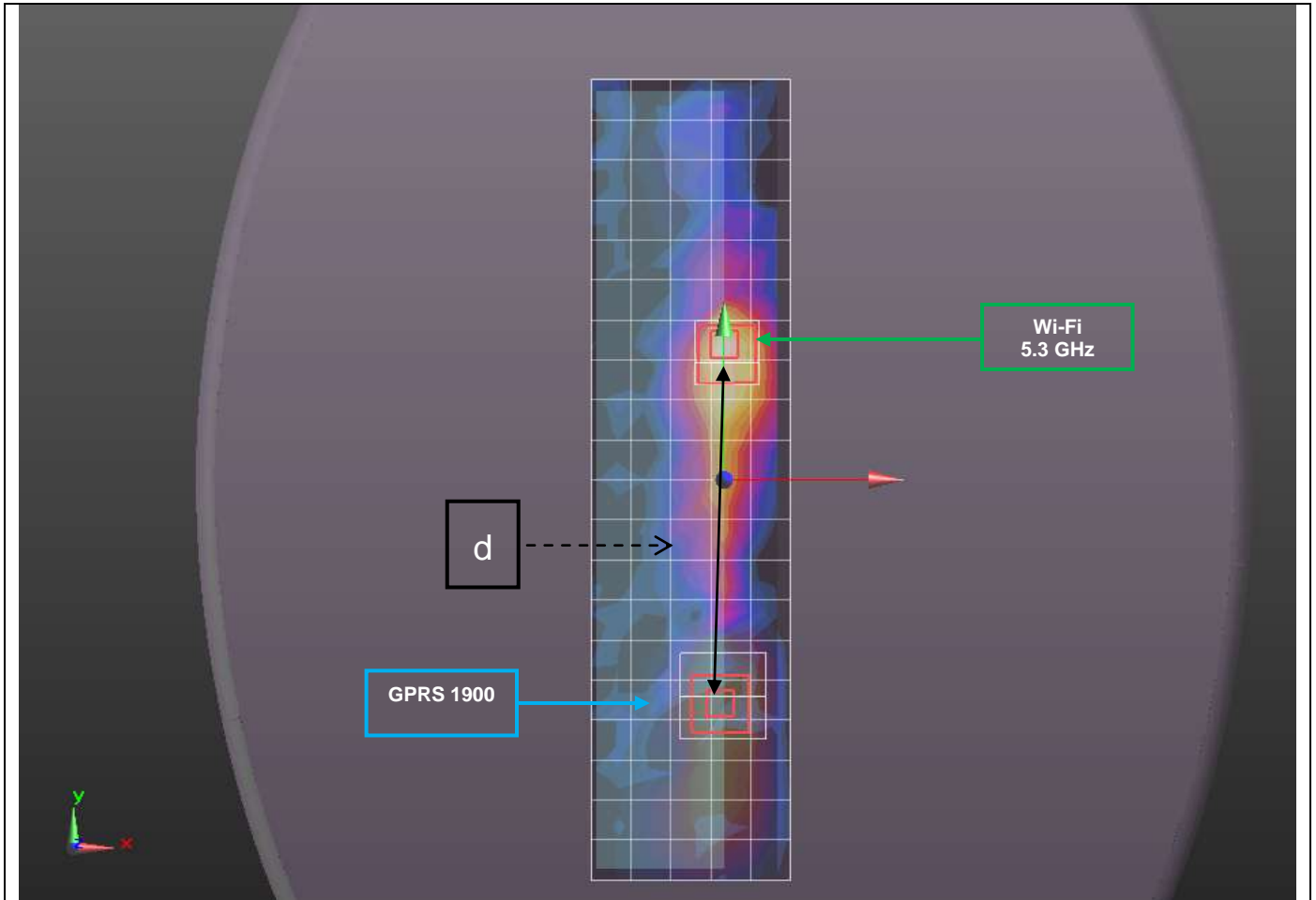


| Mode | Peak SAR mW/g | X m | Y m | Z m |
|--------------|------------------|---------|---------|--------|
| GPRS 850 | 2.16 | -0.0051 | -0.0915 | -0.184 |
| WiFi 5.3 GHz | 8.02 | 0.00266 | 0.036 | -0.182 |

| |
|-----------------------------|
| d: Calculated distance (mm) |
| 127.75 |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

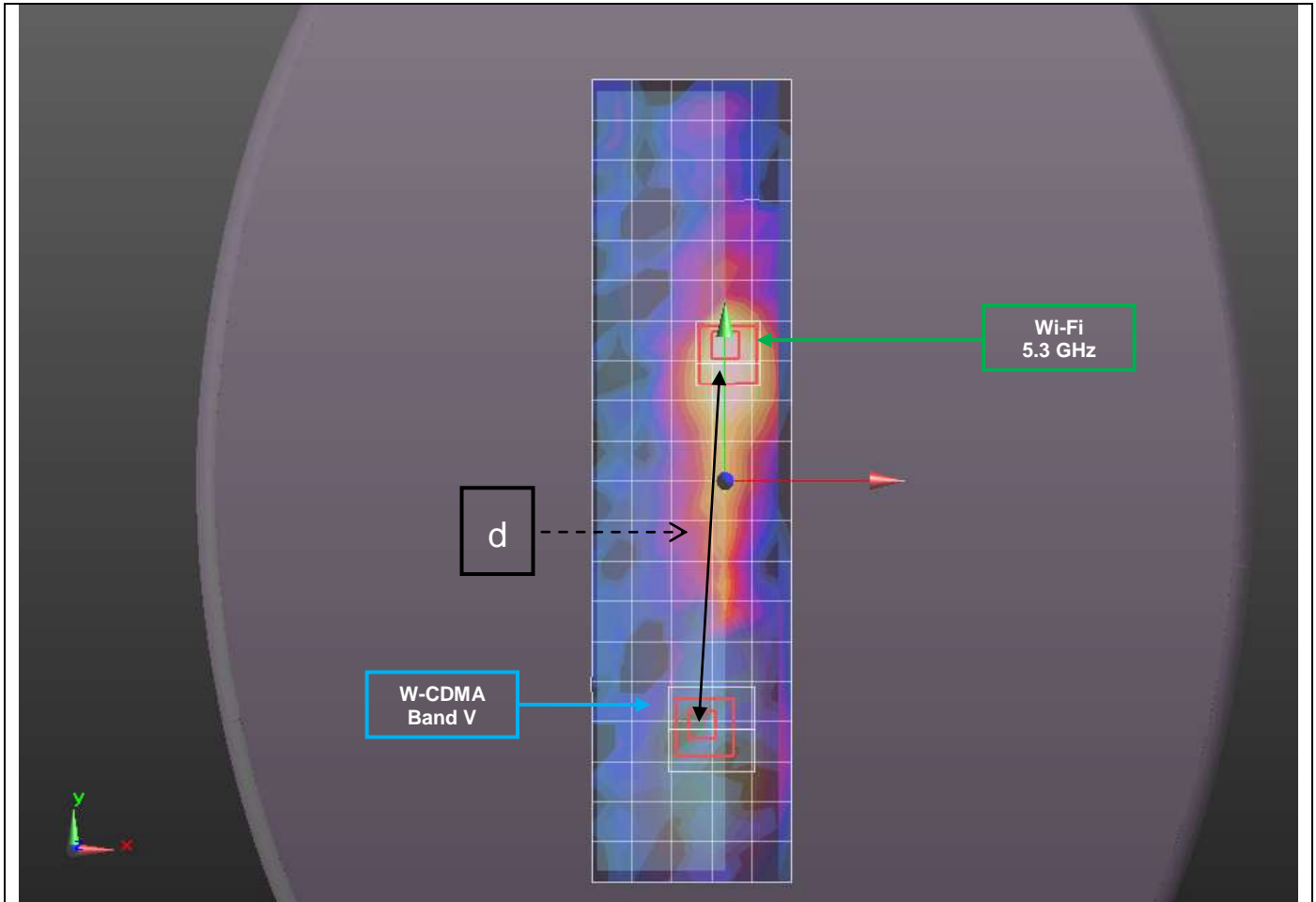
Figure (24)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|----------|---------|--------|
| GPRS 1900 | 3.06 | -0.00046 | -0.0842 | -0.181 |
| WiFi 5.3 GHz | 8.02 | 0.00266 | 0.036 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 120.24 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

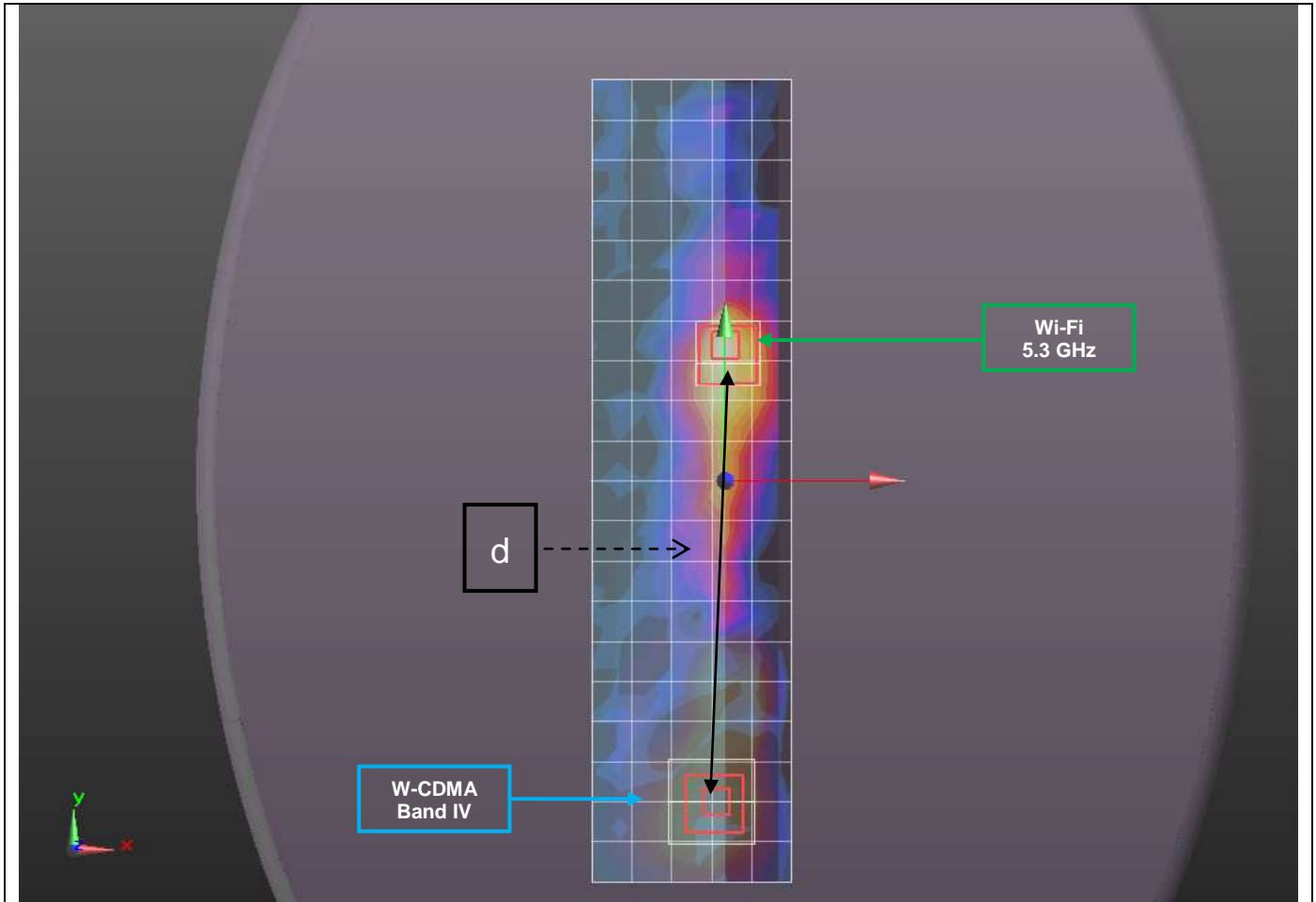
Figure (25)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|----------|---------|--------|
| W-CDMA Band V | 1.68 | -0.00815 | -0.0898 | -0.182 |
| WiFi 5.3 GHz | 8.02 | 0.00266 | 0.036 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 126.26 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

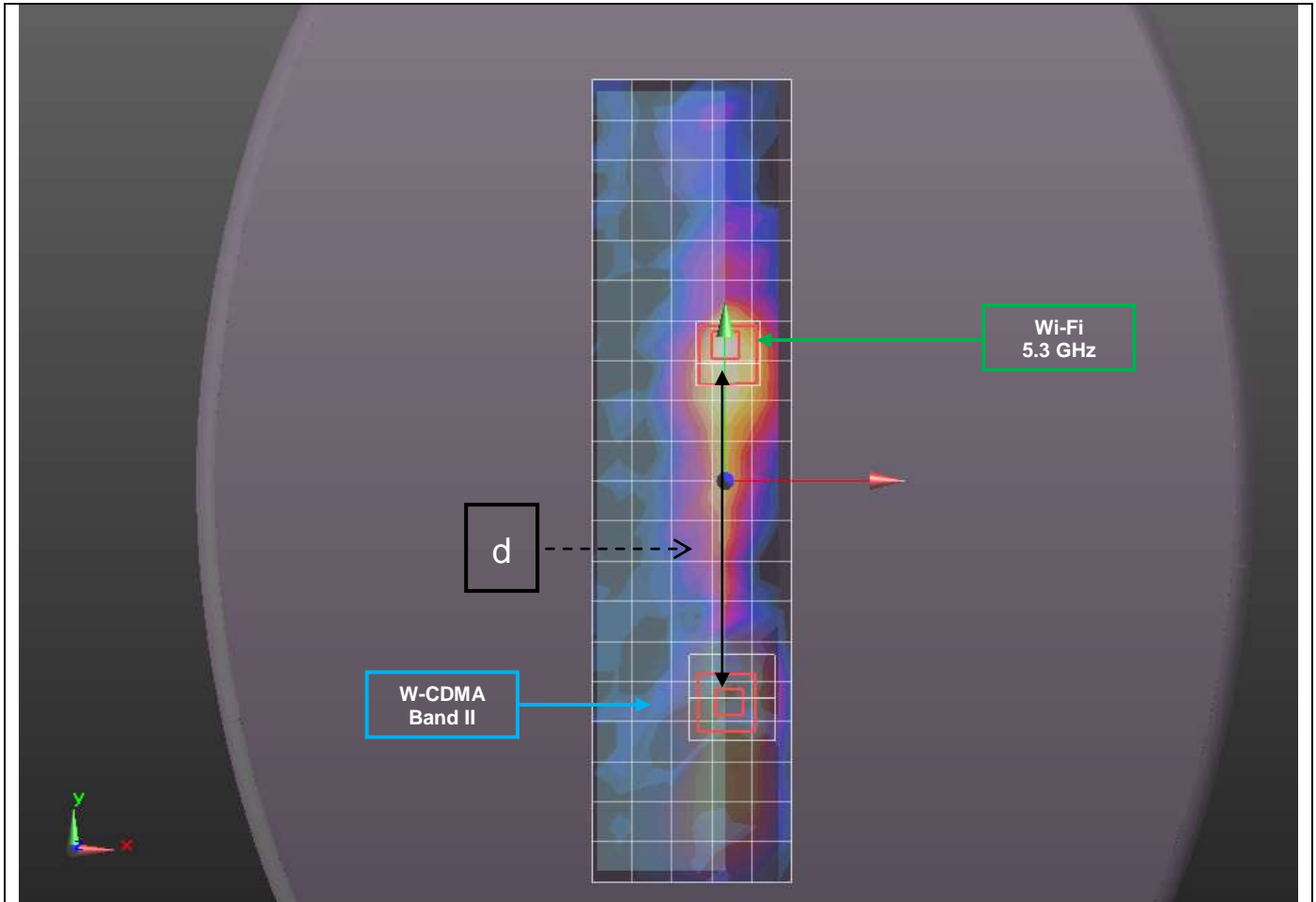
Figure (26)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|---------|--------|--------|
| W-CDMA Band IV | 2.77 | -0.0034 | -0.118 | -0.186 |
| WiFi 5.3 GHz | 8.02 | 0.00266 | 0.036 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 154.17 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

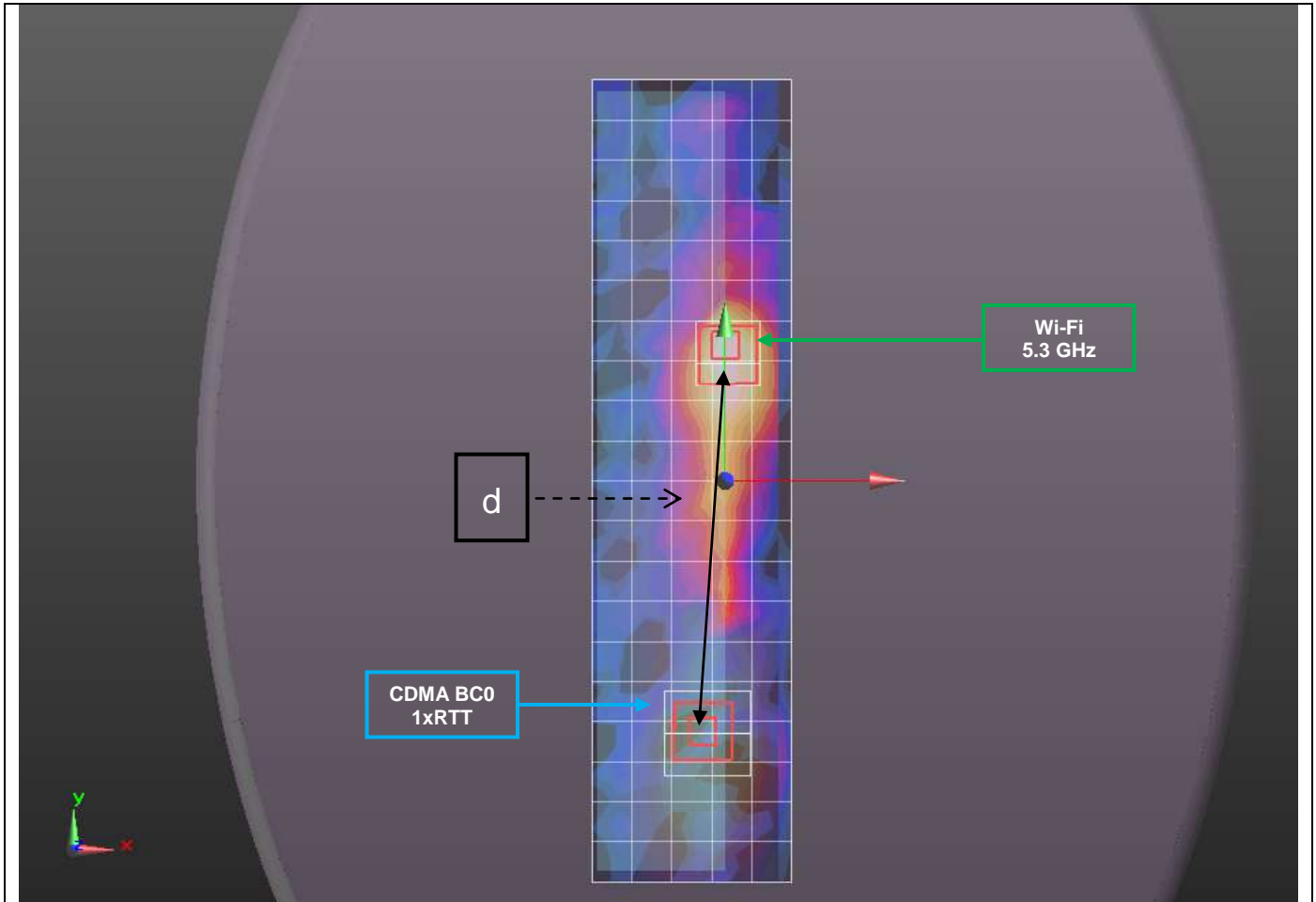
Figure (27)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|---------|---------|--------|
| W-CDMA Band II | 2.34 | 0.00244 | -0.0826 | -0.181 |
| WiFi 5.3 GHz | 8.02 | 0.00266 | 0.036 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 118.60 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

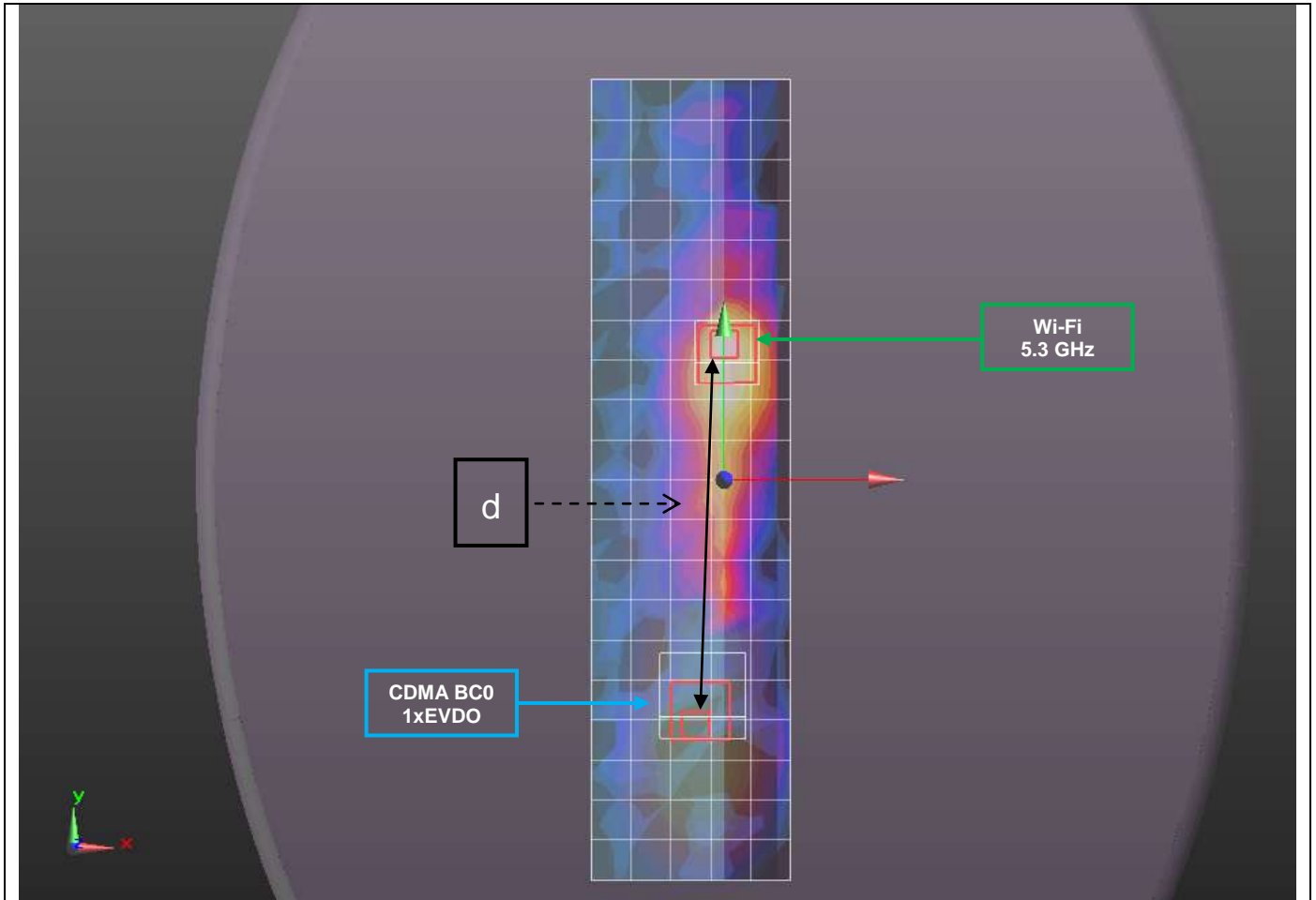
Figure (28)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|----------|---------|--------|
| CDMA BC0 1xRTT | 1.66 | -0.00816 | -0.0929 | -0.182 |
| WiFi 5.3 GHz | 8.02 | 0.00266 | 0.036 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 129.35 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

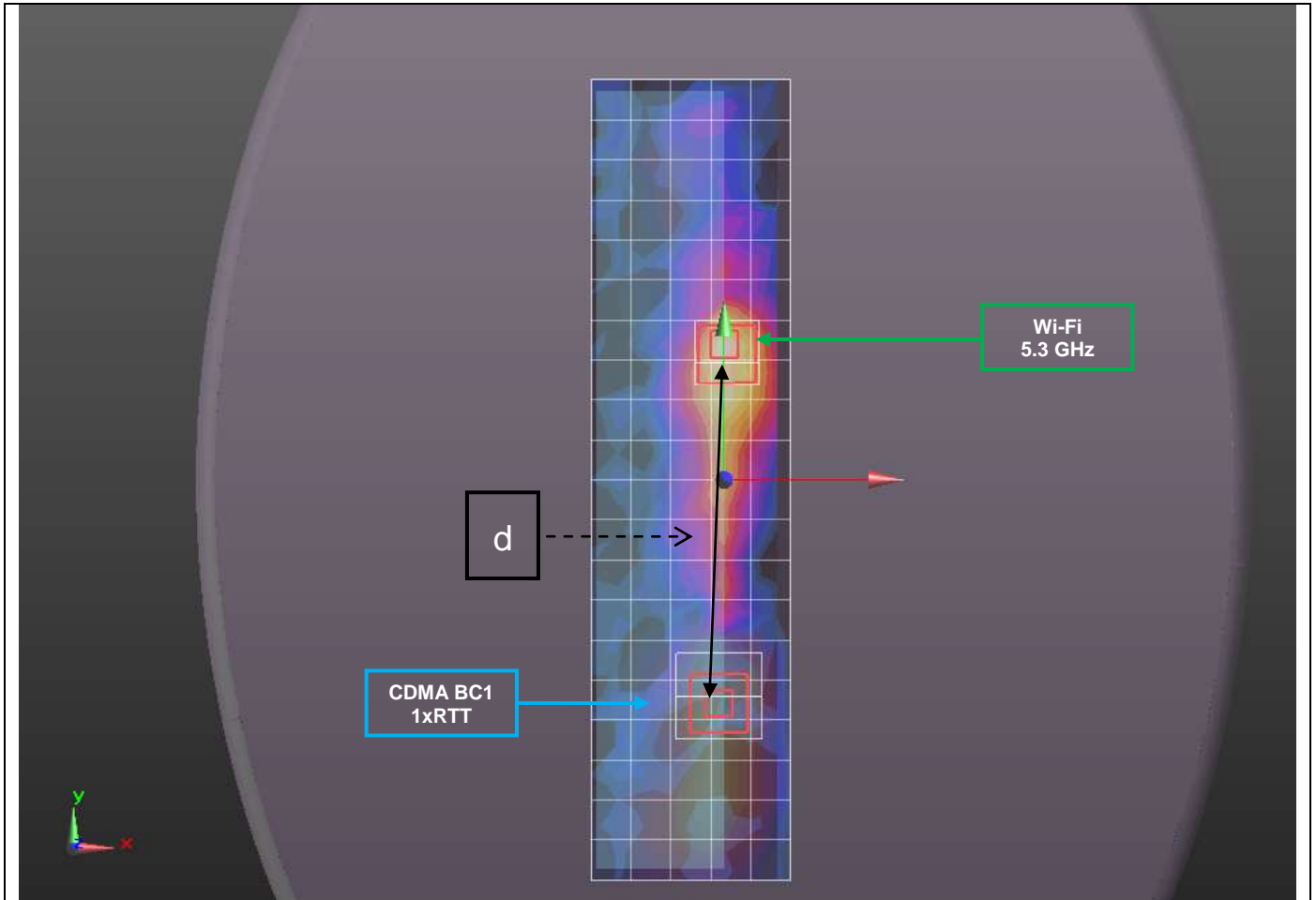
Figure (29)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|---------|---------|--------|
| CDMA BC0 1xEVDO | 2.23 | -0.0112 | -0.0906 | -0.184 |
| WiFi 5.3 GHz | 8.02 | 0.00266 | 0.036 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 127.37 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

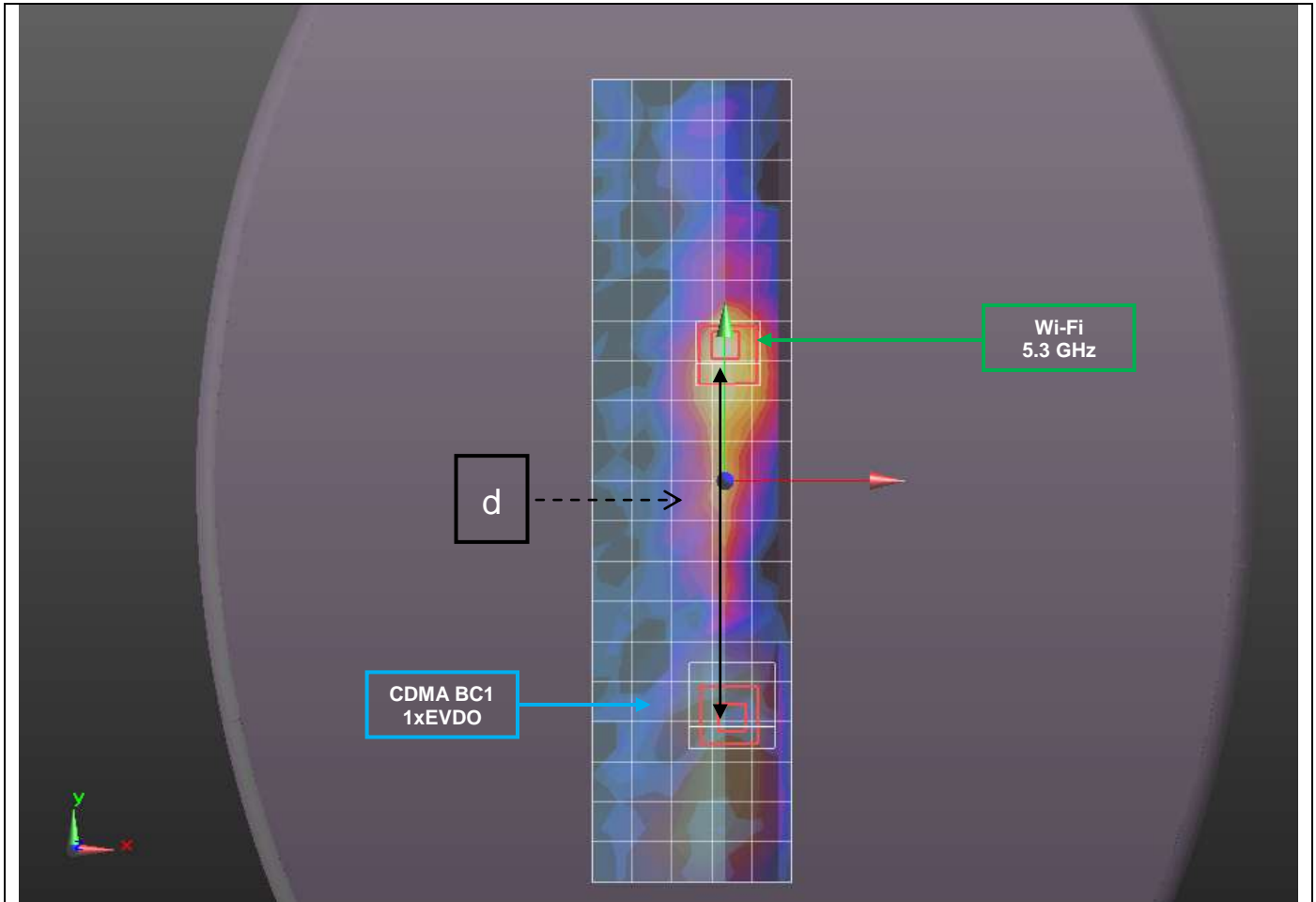
Figure (30)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|----------|---------|--------|
| CDMA BC1 1xRTT | 3.42 | -0.00198 | -0.0826 | -0.182 |
| WiFi 5.3 GHz | 8.02 | 0.00266 | 0.036 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 118.69 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (31)

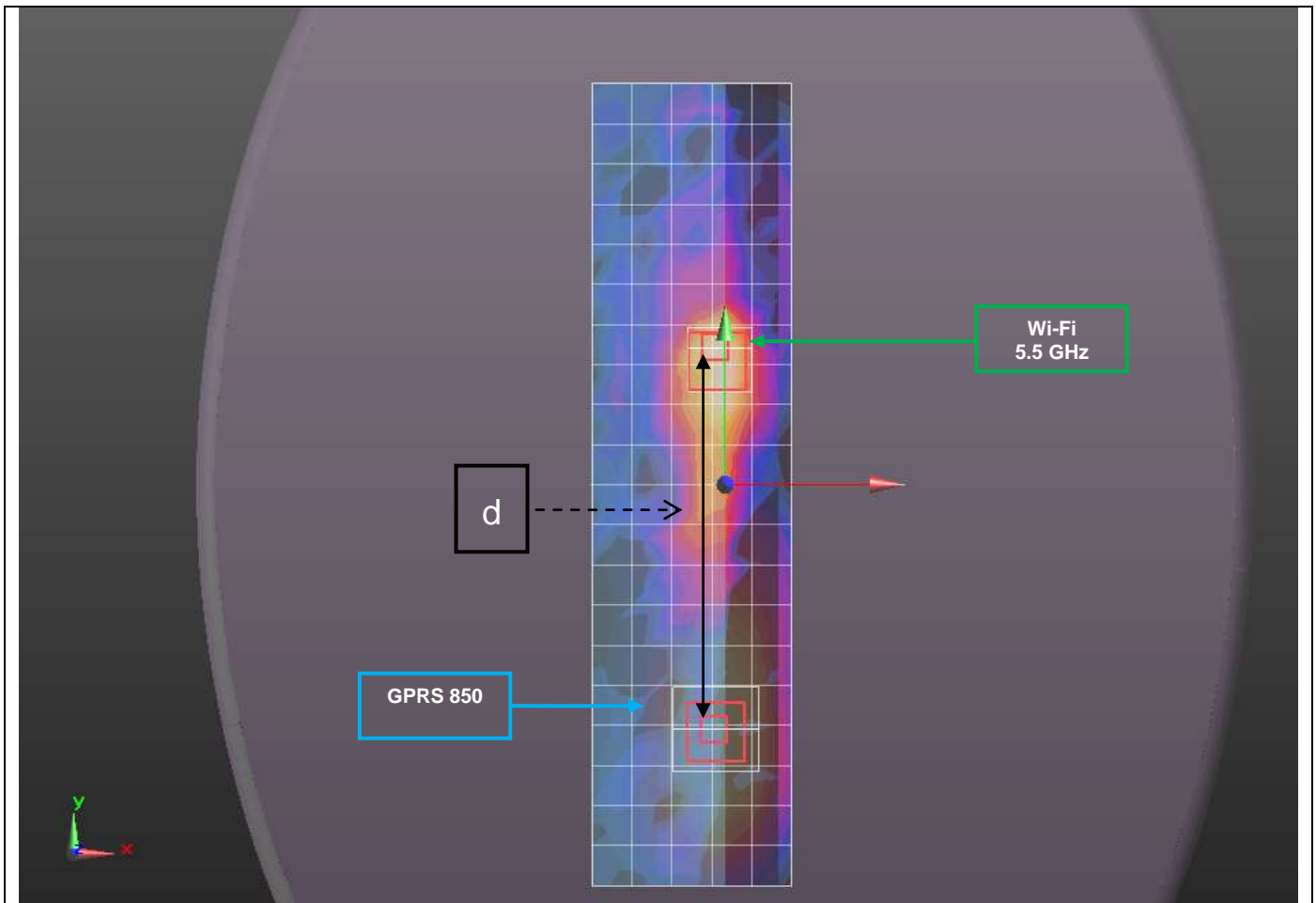


| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|---------|---------|--------|
| CDMA BC1 1xEVDO | 3.04 | 0.0025 | -0.0904 | -0.184 |
| WiFi 5.3 GHz | 8.02 | 0.00266 | 0.036 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 126.42 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

14.10.4. Wi-Fi 5.5 GHz and WWAN

Figure (32)

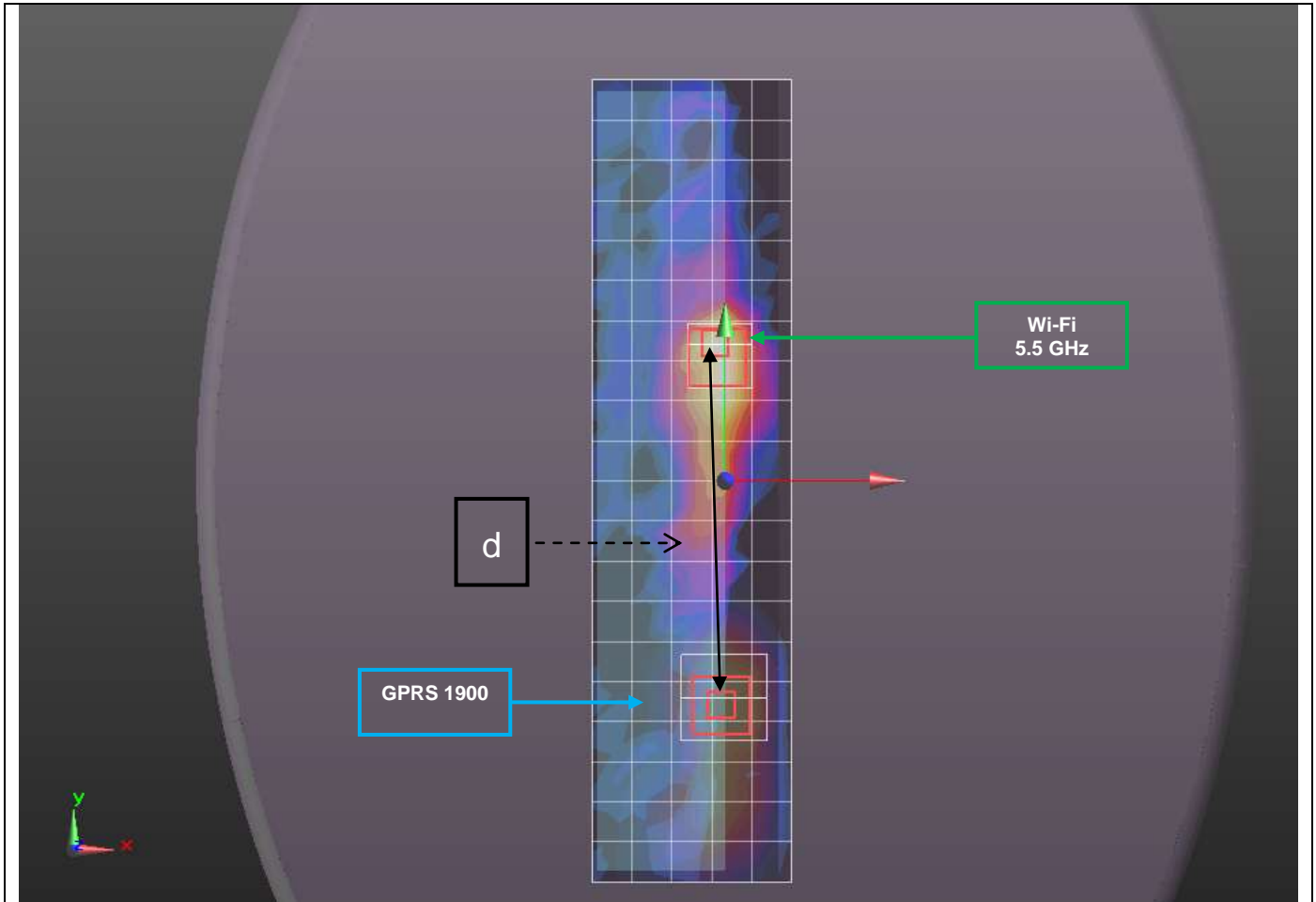


| Mode | Peak SAR mW/g | X m | Y m | Z m |
|--------------|------------------|----------|---------|--------|
| GPRS 850 | 2.16 | -0.0051 | -0.0915 | -0.184 |
| WiFi 5.5 GHz | 9.92 | -0.00112 | 0.0374 | -0.182 |

| |
|-----------------------------|
| d: Calculated distance (mm) |
| 128.98 |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

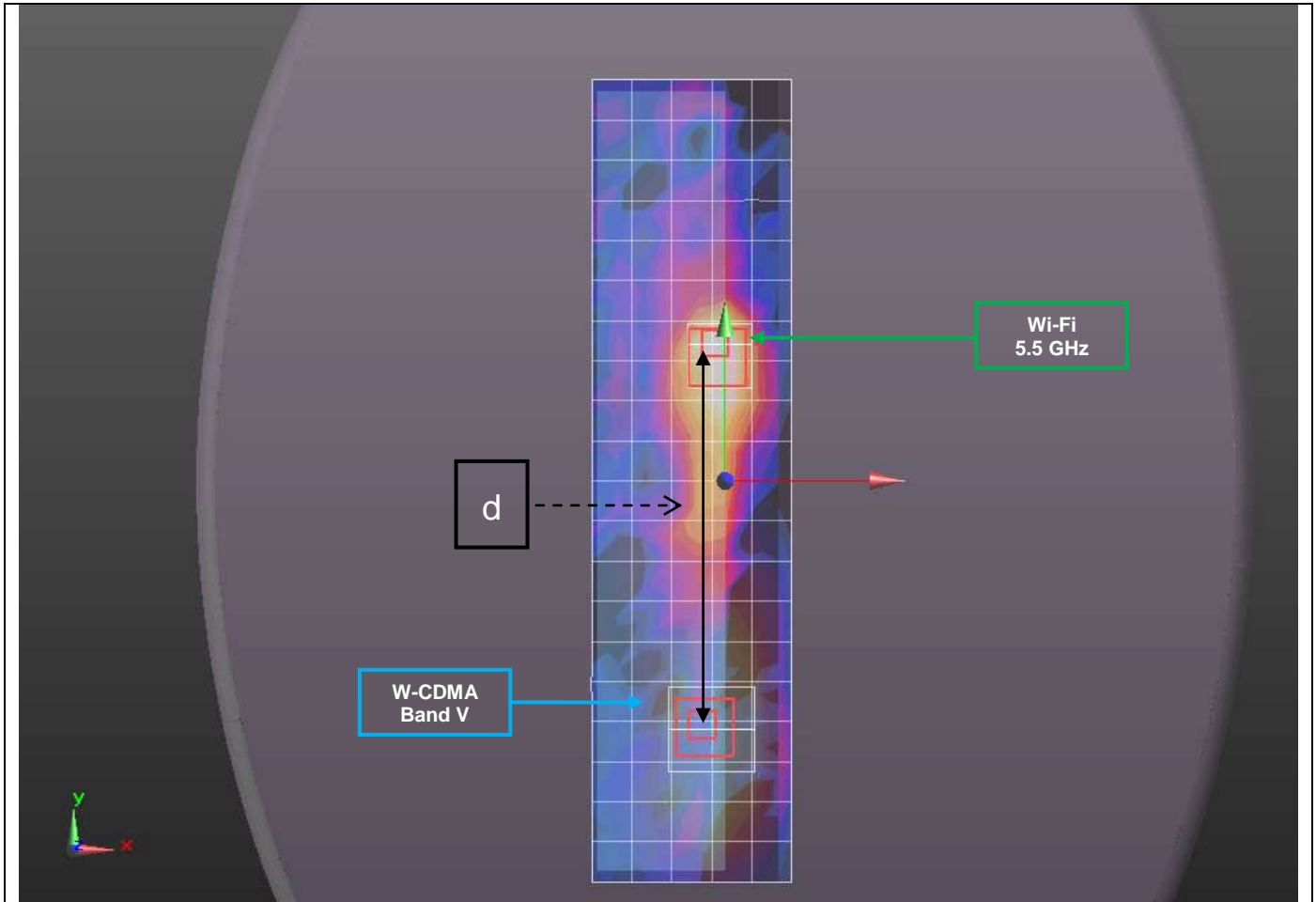
Figure (33)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|----------|---------|--------|
| GPRS 1900 | 3.06 | -0.00046 | -0.0842 | -0.181 |
| WiFi 5.5 GHz | 9.92 | -0.00112 | 0.0374 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 121.61 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

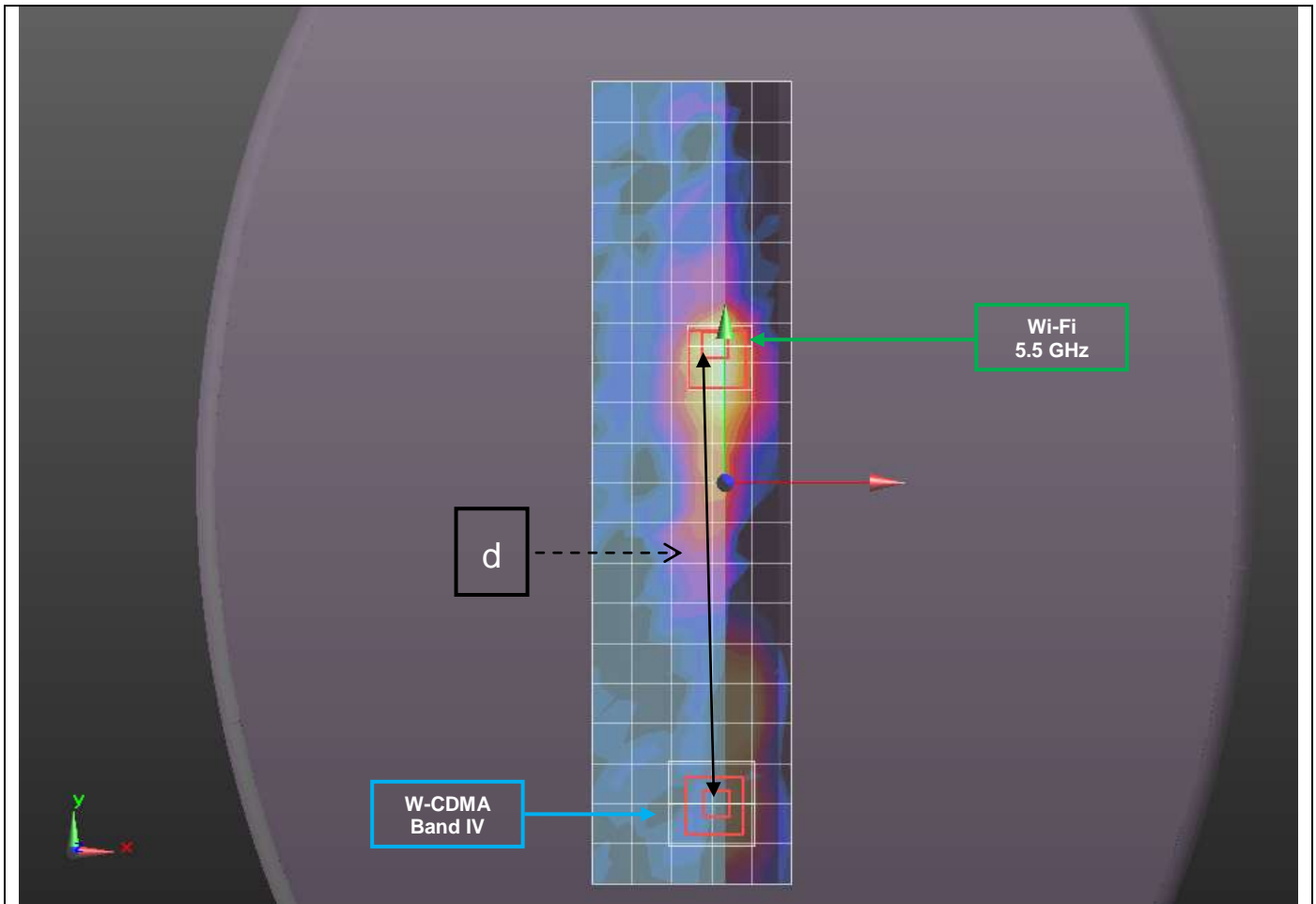
Figure (34)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|----------|---------|--------|
| W-CDMA Band V | 1.68 | -0.00815 | -0.0898 | -0.182 |
| WiFi 5.5 GHz | 9.92 | -0.00112 | 0.0374 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 127.39 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

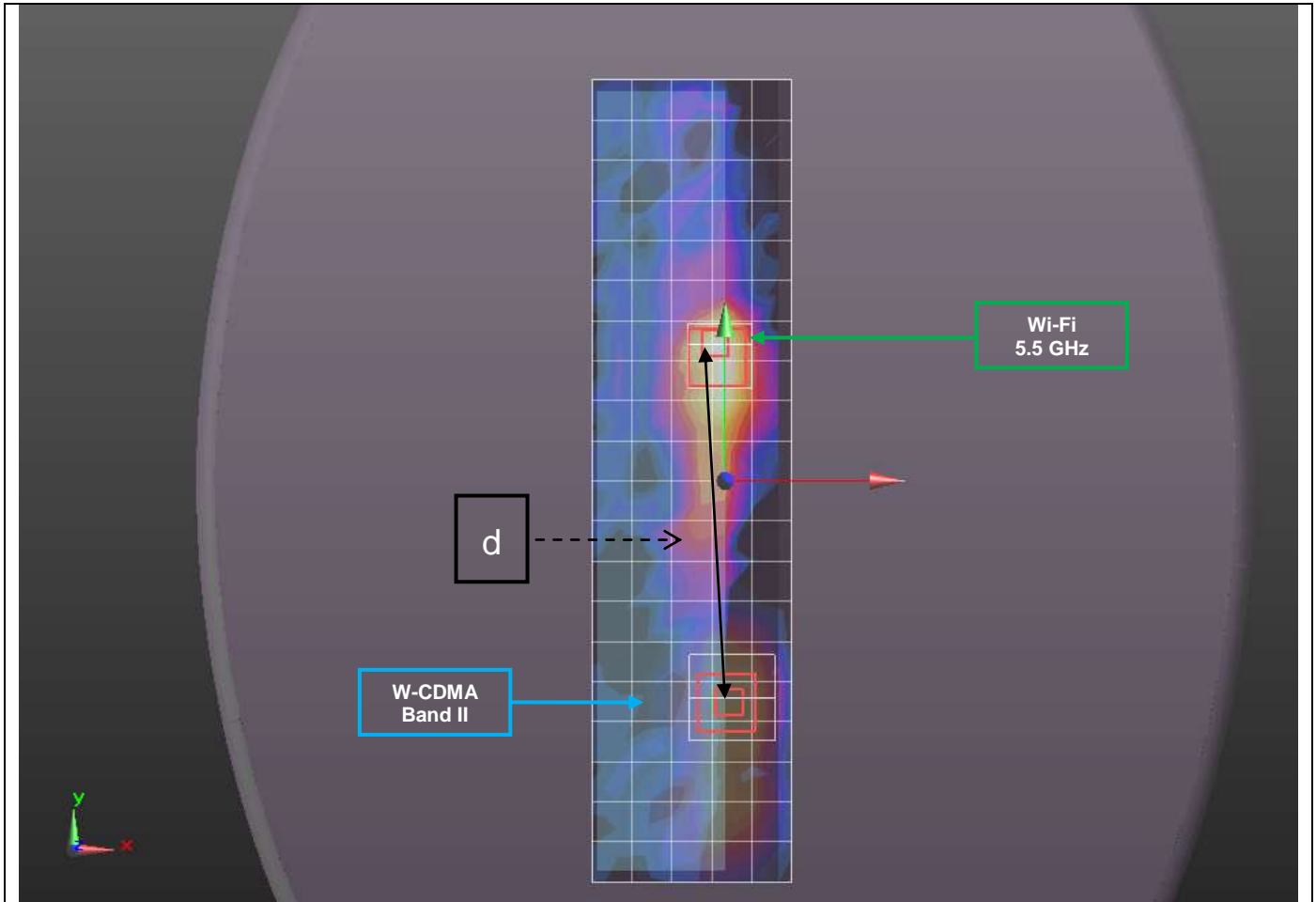
Figure (35)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|----------|--------|--------|
| W-CDMA Band IV | 2.77 | -0.0034 | -0.118 | -0.186 |
| WiFi 5.5 GHz | 9.92 | -0.00112 | 0.0374 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 155.47 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

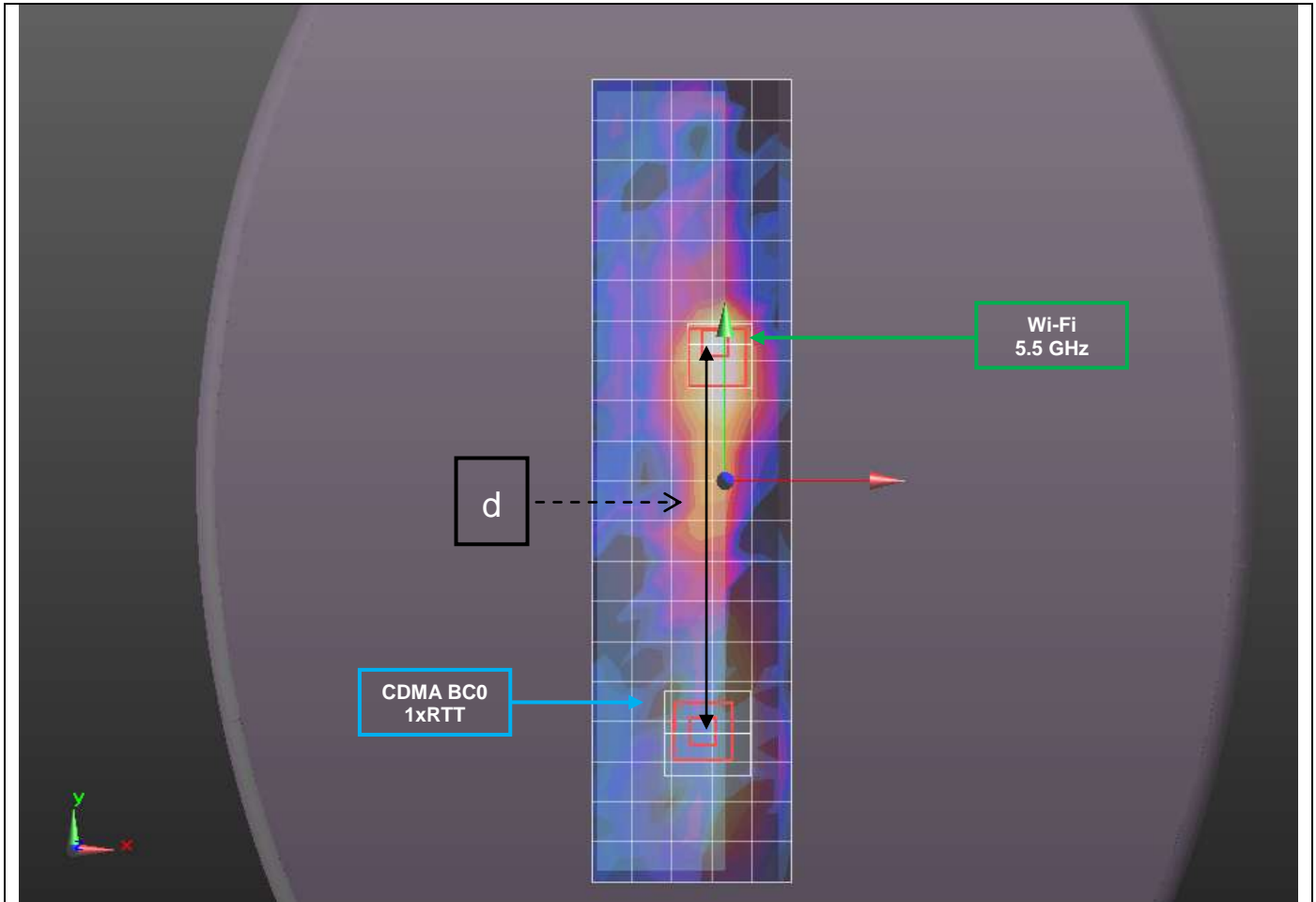
Figure (36)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|----------|---------|--------|
| W-CDMA Band II | 2.34 | 0.00244 | -0.0826 | -0.181 |
| WiFi 5.5 GHz | 9.92 | -0.00112 | 0.0374 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 120.06 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

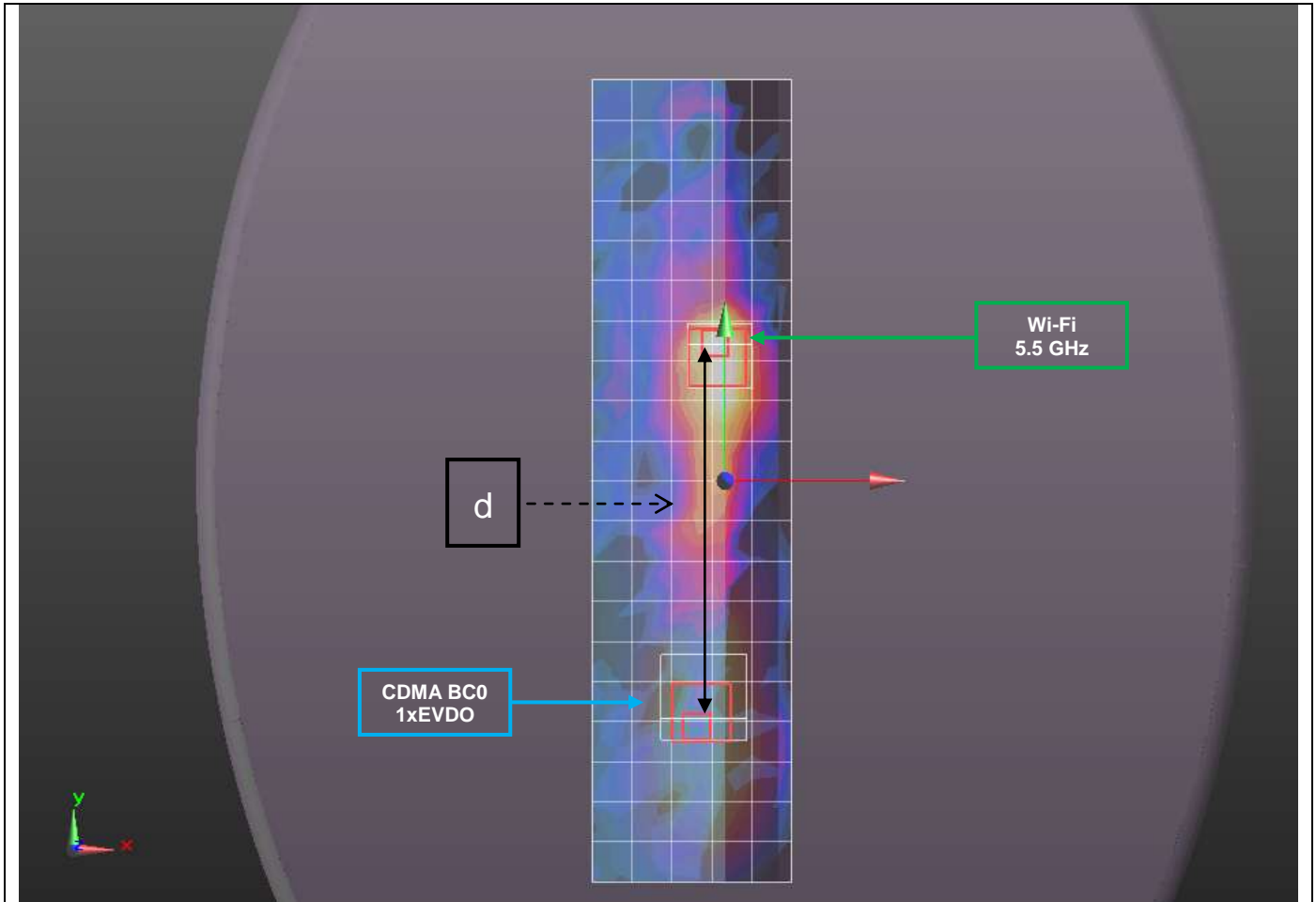
Figure (37)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|----------|---------|--------|
| CDMA BC0 1xRTT | 1.66 | -0.00816 | -0.0929 | -0.182 |
| WiFi 5.5 GHz | 9.92 | -0.00112 | 0.0374 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 130.49 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

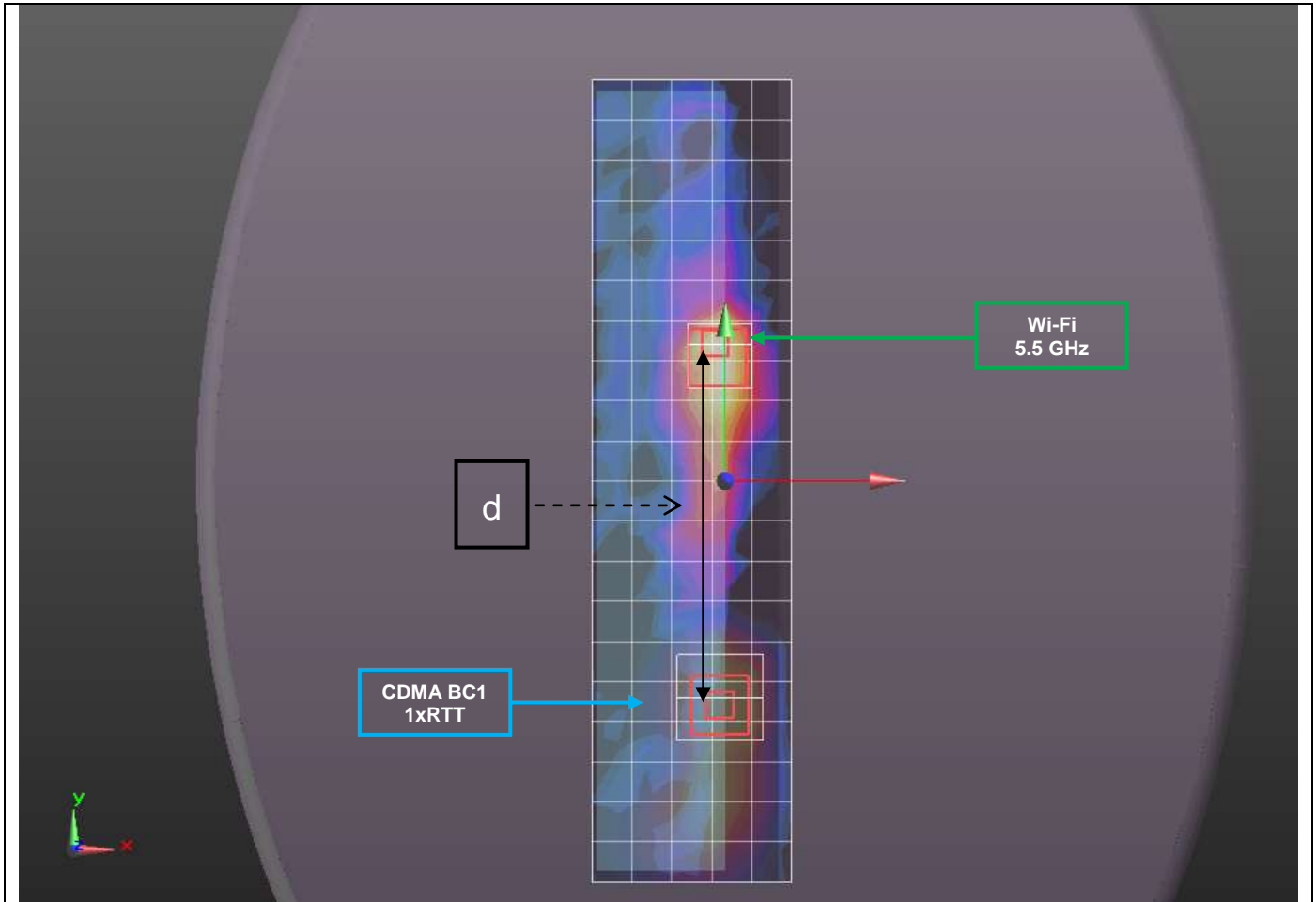
Figure (38)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|----------|---------|--------|
| CDMA BC0 1xEVDO | 2.23 | -0.0112 | -0.0906 | -0.184 |
| WiFi 5.5 GHz | 9.92 | -0.00112 | 0.0374 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 128.41 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

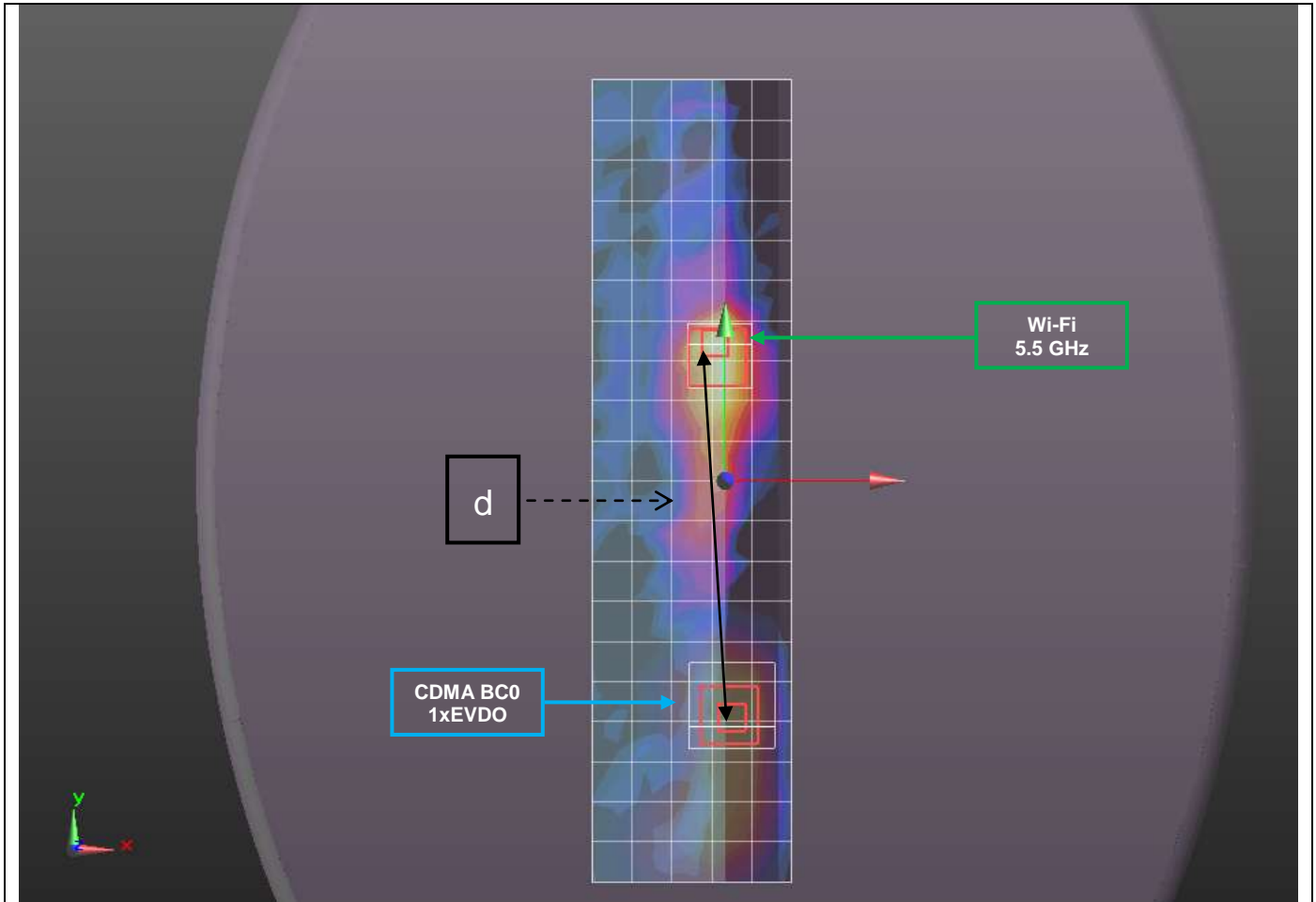
Figure (39)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|----------|---------|--------|
| CDMA BC1 1xRTT | 3.42 | -0.00198 | -0.0826 | -0.182 |
| WiFi 5.5 GHz | 9.92 | -0.00112 | 0.0374 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 120.00 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (40)

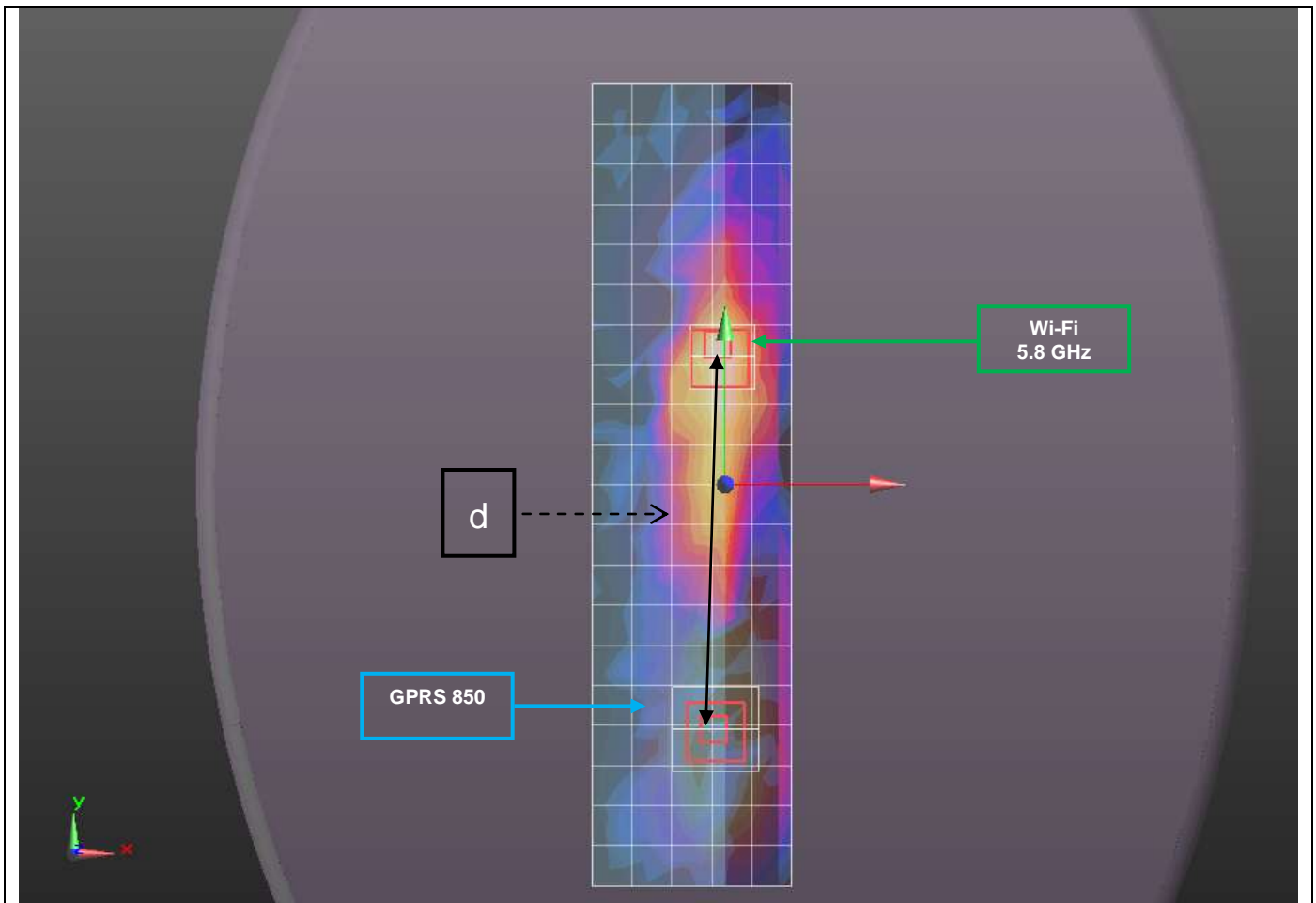


| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|----------|---------|--------|
| CDMA BC1 1xEVDO | 3.04 | 0.0025 | -0.0904 | -0.184 |
| WiFi 5.5 GHz | 9.92 | -0.00112 | 0.0374 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 127.87 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

14.10.5. Wi-Fi 5.8 GHz and WWAN

Figure (41)

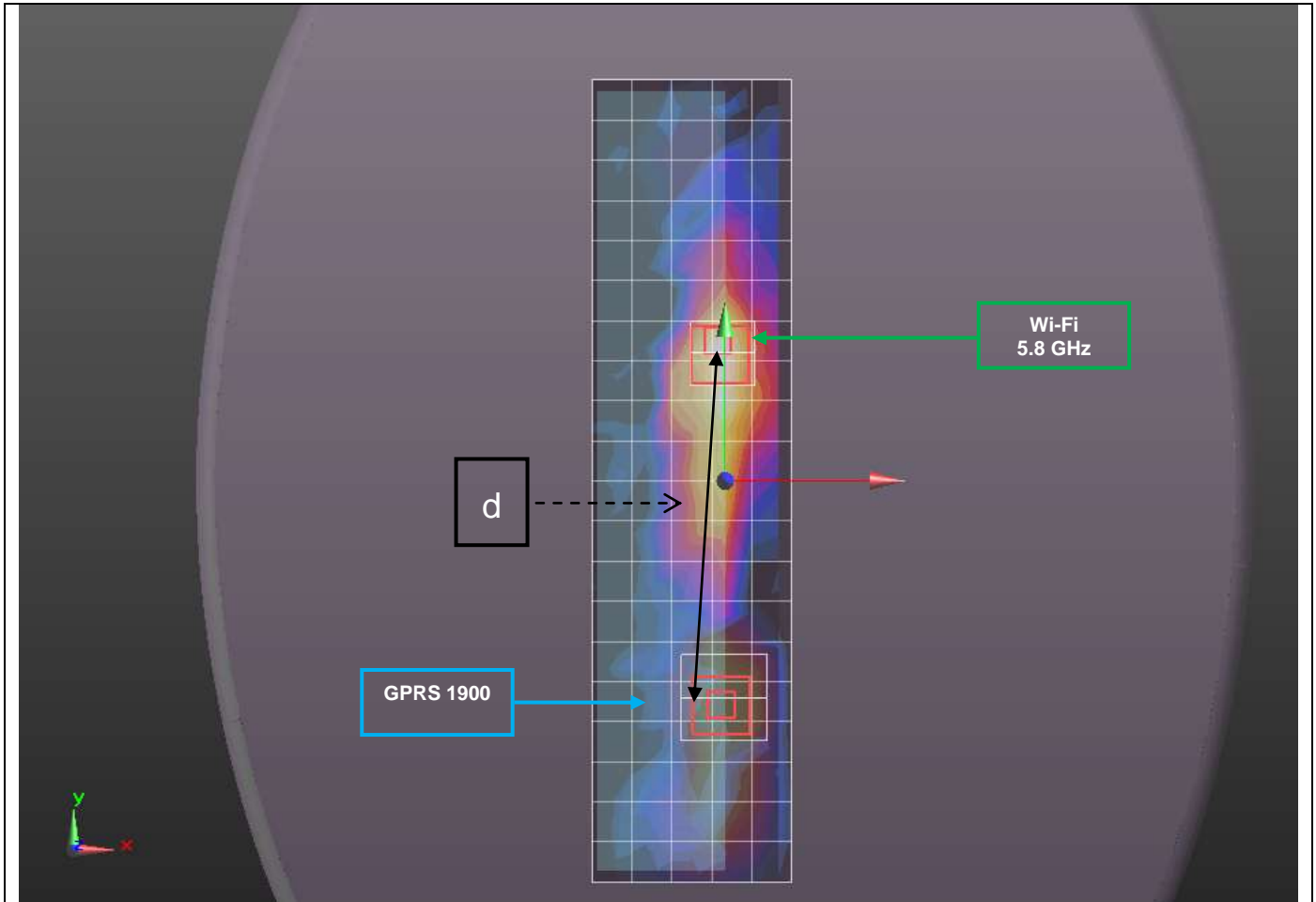


| Mode | Peak SAR mW/g | X m | Y m | Z m |
|--------------|------------------|-----------|---------|--------|
| GPRS 850 | 2.16 | -0.0051 | -0.0915 | -0.184 |
| WiFi 5.8 GHz | 9.55 | -0.000155 | 0.036 | -0.182 |

| |
|-----------------------------|
| d: Calculated distance (mm) |
| 127.61 |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

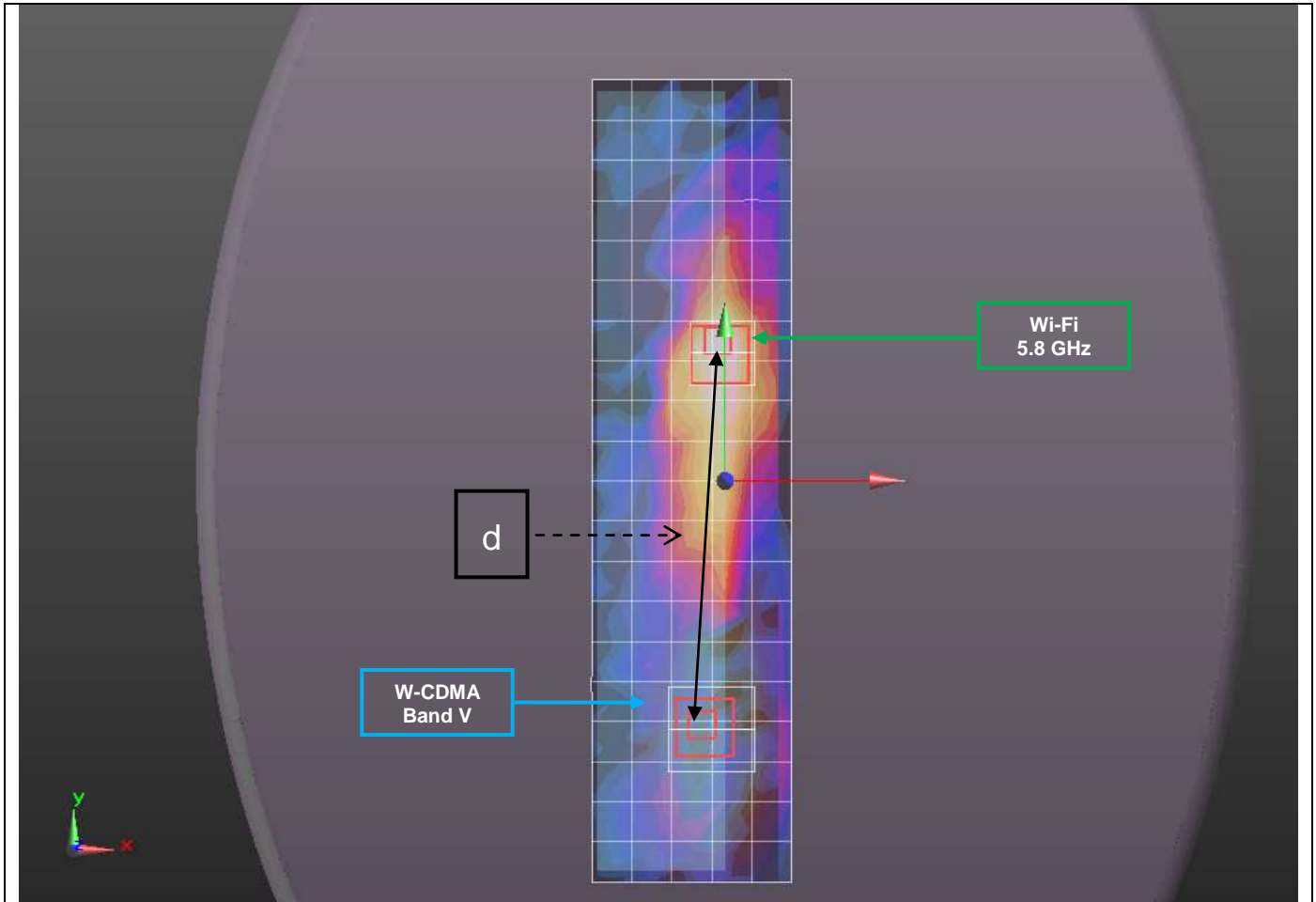
Figure (42)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|-----------|---------|--------|
| GPRS 1900 | 3.06 | -0.00046 | -0.0842 | -0.181 |
| WiFi 5.8 GHz | 9.55 | -0.000155 | 0.036 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 120.20 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

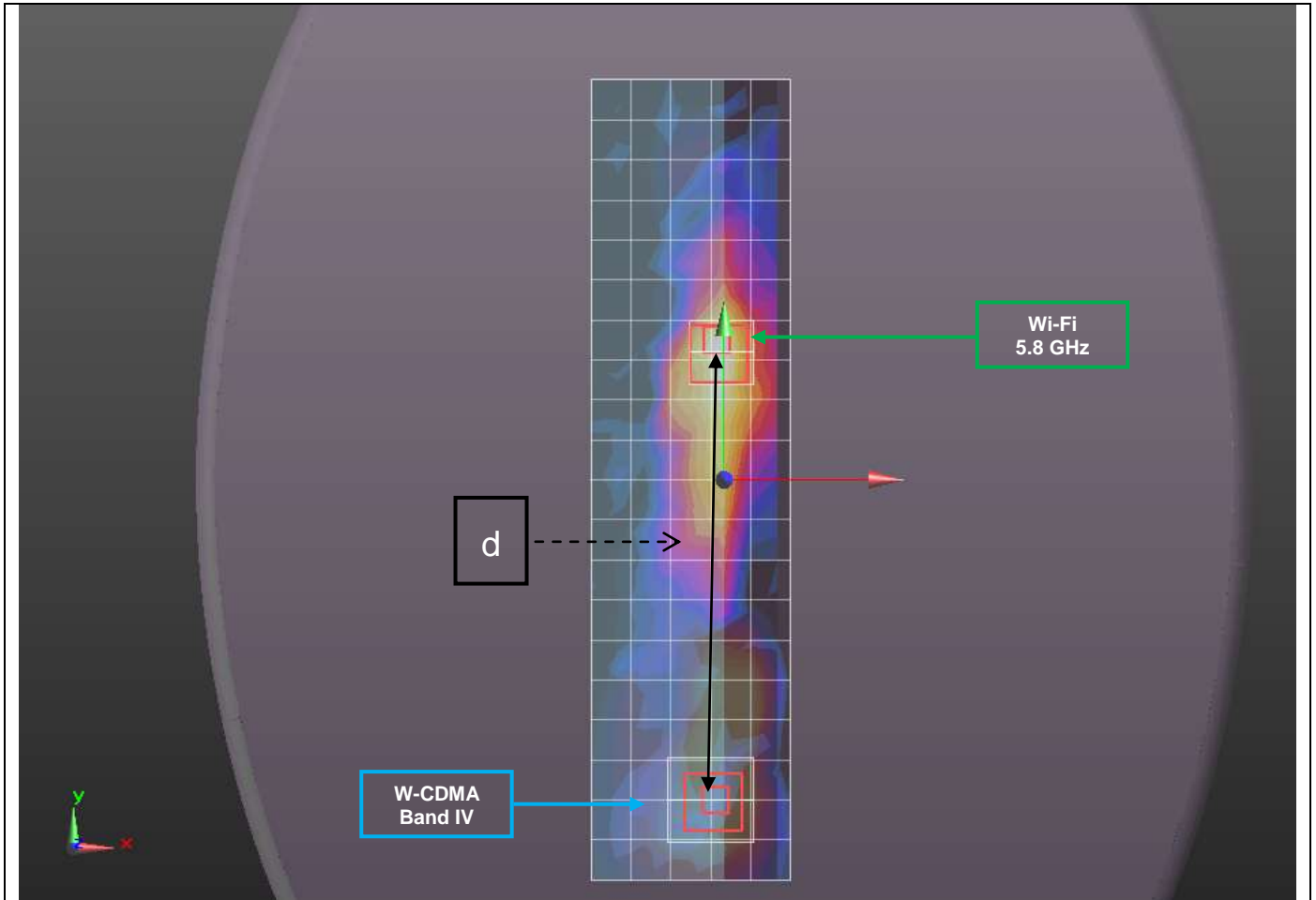
Figure (43)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|-----------|---------|--------|
| W-CDMA Band V | 1.68 | -0.00815 | -0.0898 | -0.182 |
| WiFi 5.8 GHz | 9.55 | -0.000155 | 0.036 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 126.05 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

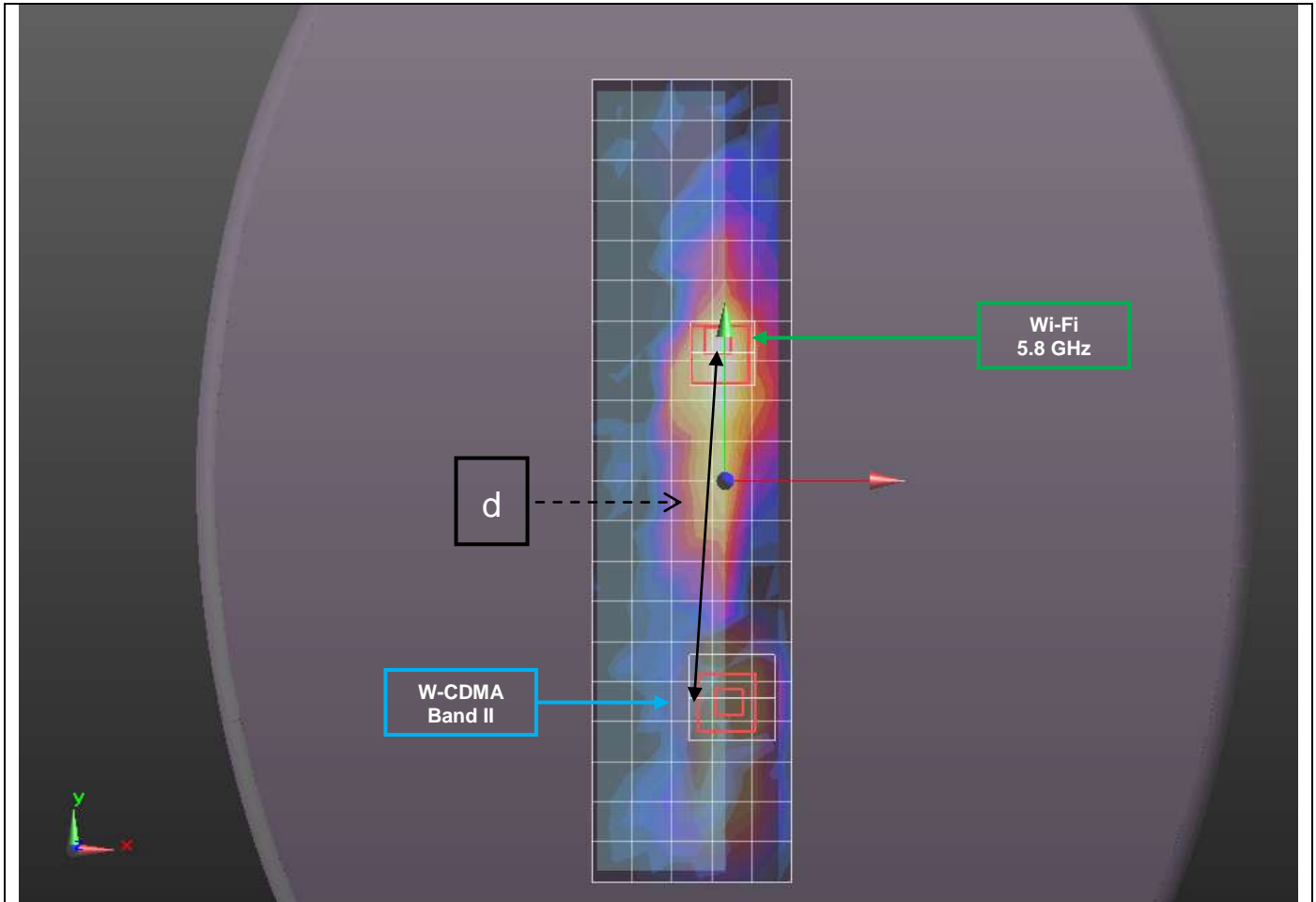
Figure (44)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|-----------|--------|--------|
| W-CDMA Band IV | 2.77 | -0.0034 | -0.118 | -0.186 |
| WiFi 5.8 GHz | 9.55 | -0.000155 | 0.036 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 154.09 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

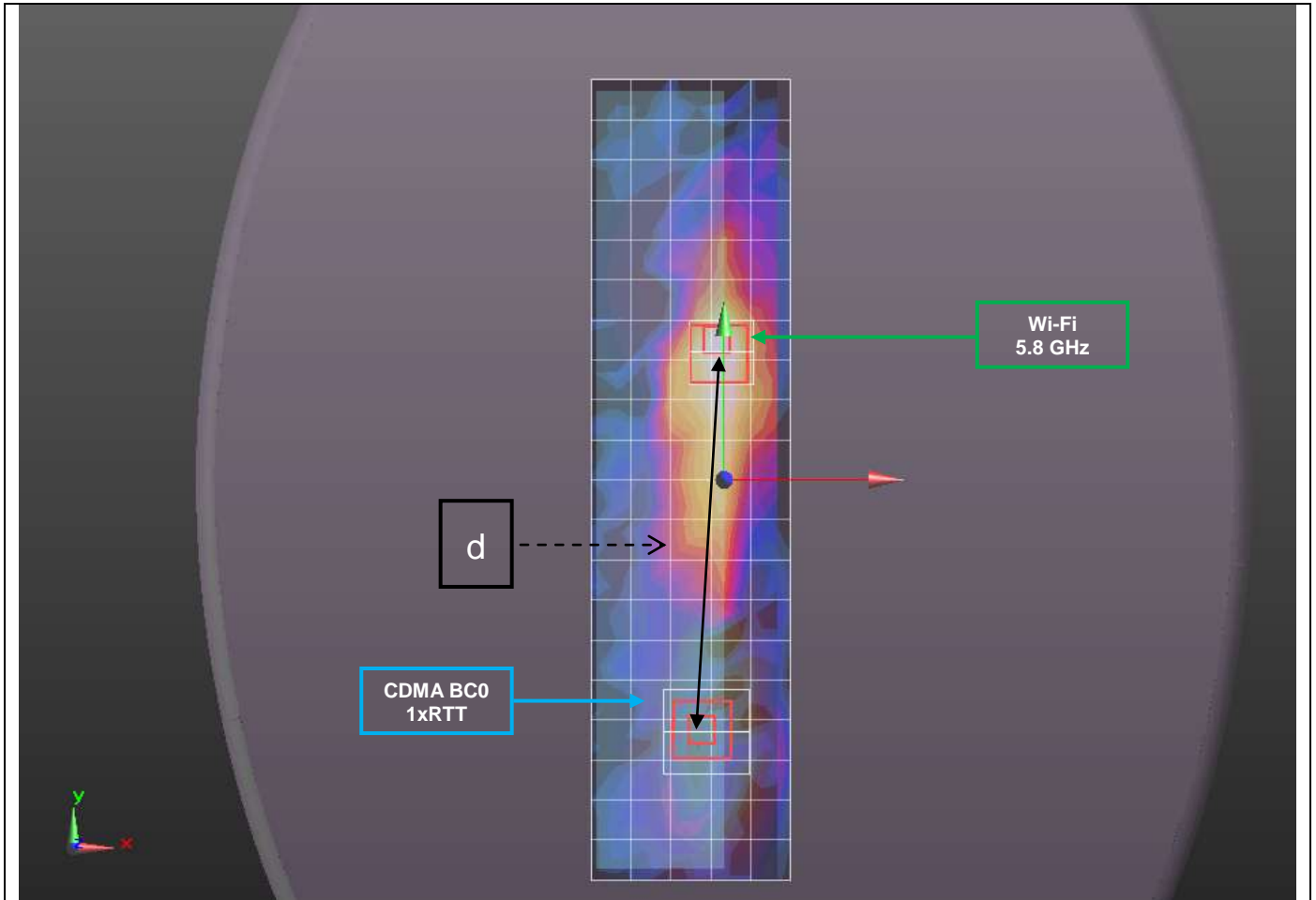
Figure (45)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|-----------|---------|--------|
| W-CDMA Band II | 2.34 | 0.00244 | -0.0826 | -0.181 |
| WiFi 5.8 GHz | 9.55 | -0.000155 | 0.036 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 118.63 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

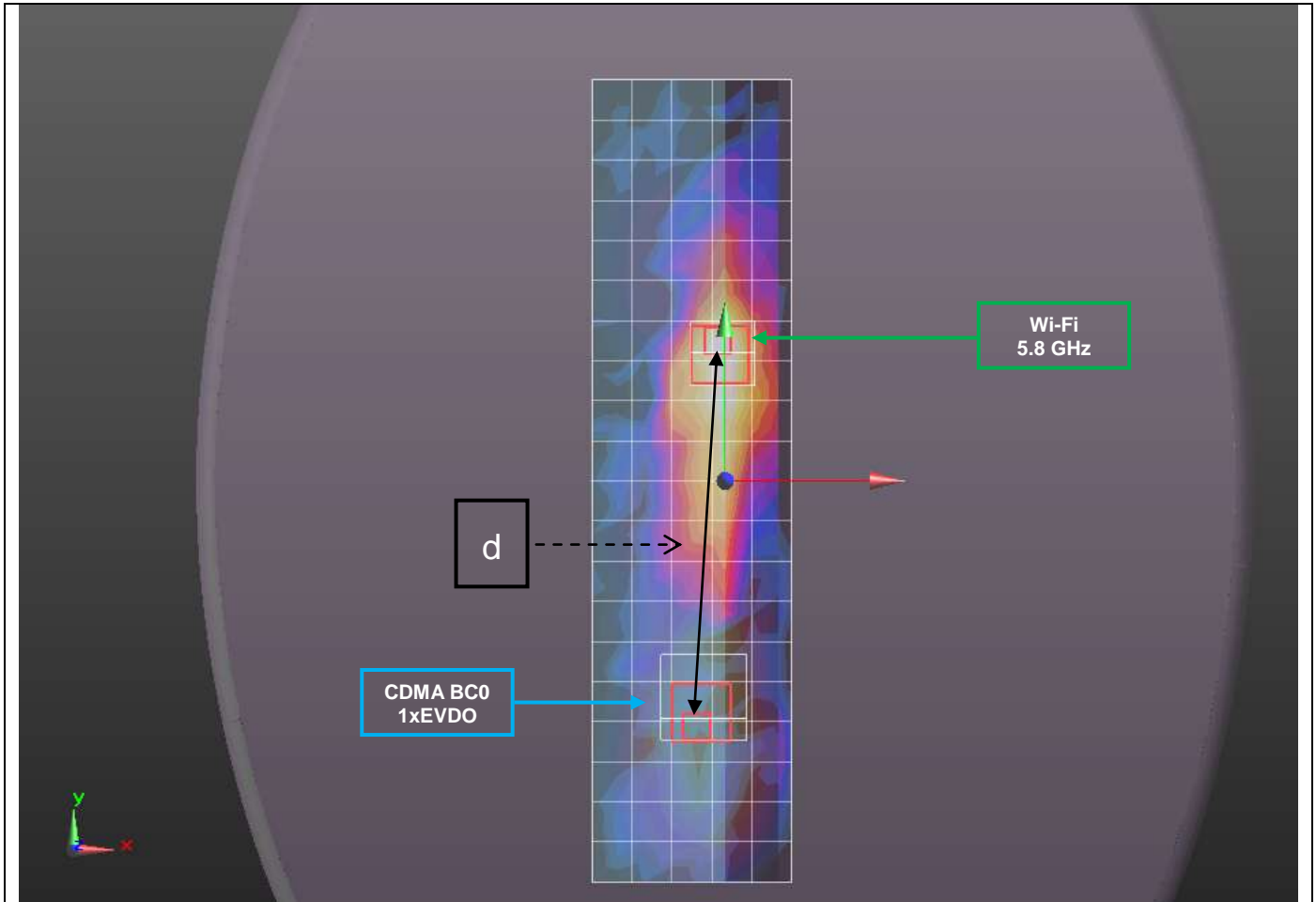
Figure (46)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|-----------|---------|--------|
| CDMA BC0 1xRTT | 1.66 | -0.00816 | -0.0929 | -0.182 |
| WiFi 5.8 GHz | 9.55 | -0.000155 | 0.036 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 129.15 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

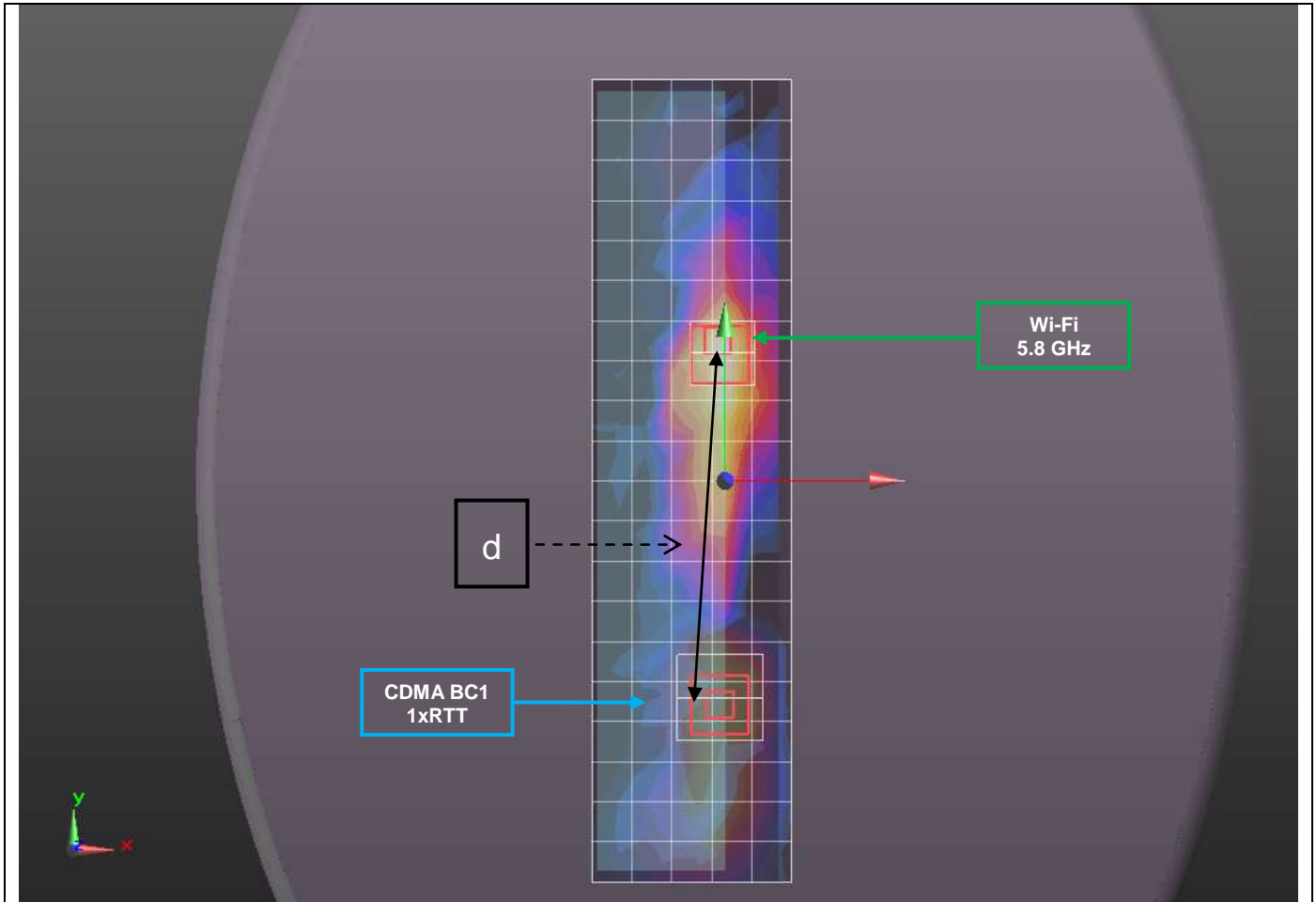
Figure (47)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|-----------|---------|--------|
| CDMA BC0 1xEVDO | 2.23 | -0.0112 | -0.0906 | -0.184 |
| WiFi 5.8 GHz | 9.55 | -0.000155 | 0.036 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 127.10 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

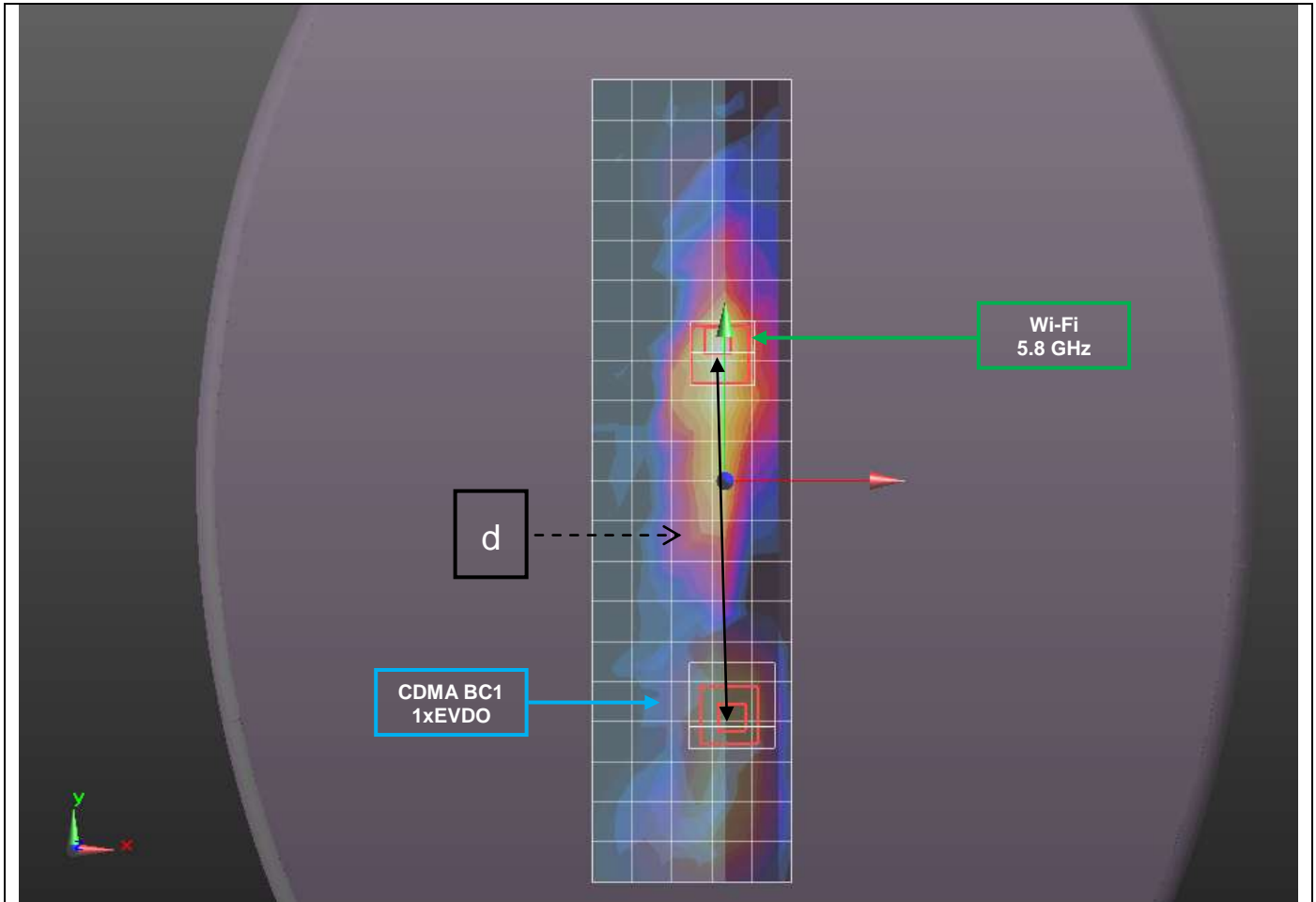
Figure (48)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|-----------|---------|--------|
| CDMA BC1 1xRTT | 3.42 | -0.00198 | -0.0826 | -0.182 |
| WiFi 5.8 GHz | 9.55 | -0.000155 | 0.036 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 118.61 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (49)



| Mode | Peak SAR mW/g | X m | Y m | Z m |
|-----------------------------|------------------|-----------|---------|--------|
| CDMA BC1 1xEVDO | 3.04 | 0.0025 | -0.0904 | -0.184 |
| WiFi 5.8 GHz | 9.55 | -0.000155 | 0.036 | -0.182 |
| d: Calculated distance (mm) | | | | |
| 126.44 | | | | |

Note: $d = \text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

15. Appendixes

Refer to separated files for the following appendixes.

- 15.1. System Performance Check Plots
- 15.2. SAR Test Plots for GSM850
- 15.3. SAR Test Plots for GSM1900
- 15.4. SAR Test Plots for W-CDMA Band V
- 15.5. SAR Test Plots for W-CDMA Band IV
- 15.6. SAR Test Plots for W-CDMA Band II
- 15.7. SAR Test Plots for CDMA BC0
- 15.8. SAR Test Plots for CDMA BC1
- 15.9. SAR Test Plots for Measurement Variability and Uncertainty
- 15.10. Calibration Certificate for E-Field Probe EX3DV4 - SN 3749
- 15.11. Calibration Certificate for E-Field Probe EX3DV4 - SN 3772
- 15.12. Calibration Certificate for E-Field Probe EX3DV4 - SN 3773
- 15.13. Calibration Certificate for D835V2 - SN 4d117
- 15.14. Calibration Certificate for D1750V2 - SN 1050
- 15.15. Calibration Certificate for D1900V2 - SN 5d140