FCC SAR Test Report

APPLICANT	:	**Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd.**
EQUIPMENT	:	**mobile phone**
BRAND NAME	:	**Coolpad**
MODEL NAME	:	**Coolpad 801E**
FCC ID	:	**R38YL801E**
STANDARD	:	**FCC 47 CFR Part 2 (2.1093)** **ANSI/IEEE C95.1-1992** **IEEE 1528-2003** **FCC OET Bulletin 65 Supplement C (Edition 01-01)**

The product was completely tested on Jan. 25, 2013. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:

Jones Tsai

Jones Tsai / Manager

Testing Laboratory 2353

SPORTON INTERNATIONAL (SHENZHEN) INC.
No. 101, Complex Building C, Guanglong Village, Xili Town, Nanshan District, Shenzhen, Guangdong, P.R.C.

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA311602	Rev. 01	Initial issue of report	Feb. 05, 2013

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd. mobile phone, Coolpad, Coolpad 801E**, are as follows.

<Highest Reported standalone SAR Summary>

Exposure Position	Frequency Band	Highest Reported 1g-SAR (W/kg)	Equipment Class	Highest Reported 1g-SAR (W/kg)
Head	CDMA 2000 BC0	**0.45**	PCE	1.09
	CDMA 2000 BC15	**0.49**		
	CDMA 2000 BC1	**0.30**		
	LTE Band 12	**0.35**		
	LTE Band 4	**0.79**		
	LTE Band 25	**1.09**		
	WLAN 2.4GHz Band	**0.14**	DTS	0.14
Hotspot (1cm Gap)	CDMA 2000 BC0	**0.99**	PCE	1.37
	CDMA 2000 BC15	**1.35**		
	CDMA 2000 BC1	**1.34**		
	LTE Band 12	**0.63**		
	LTE Band 4	**0.76**		
	LTE Band 25	**1.37**		
	WLAN 2.4GHz Band	**0.09**	DTS	0.09
Body-worn (1cm Gap)	CDMA 2000 BC0	**1.03**	PCE	1.41
	CDMA 2000 BC15	**1.41**		
	CDMA 2000 BC1	**1.37**		
	LTE Band 12	**0.63**		
	LTE Band 4	**0.76**		
	LTE Band 25	**1.37**		
	WLAN 2.4GHz Band	**0.09**	DTS	0.09

<Highest Simultaneous transmission SAR>

Frequency Band	Equipment Class	Exposure Position	Highest Reported Simultaneous Transmission 1g-SAR (W/kg)
CDMA BC0	PCE	Body-worn	1.56
LTE Band 4			
Bluetooth 2.4GHz	DSS		

Frequency Band	Equipment Class	Exposure Position	Highest Reported Simultaneous Transmission 1g-SAR (W/kg)
CDMA2000 BC15	PCE	Head	1.56
LTE Band 25			
WLAN 2.4GHz Band	DTS		

Remark:
The highest simultaneous transmission is scalar summation of reported standalone SAR per FCC KDB 690783 D01 v01r02. Simultaneous transmission SAR measurement is exempted according to the SPLSR analysis per KDB 447498 D01v05

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2003 and FCC OET Bulletin 65 Supplement C (Edition 01-01).

2. Administration Data

2.1 Testing Laboratory

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.
Test Site Location	No. 101, Complex Building C, Guanglong Village, Xili Town, Nanshan District, Shenzhen, Guangdong, P.R.C. TEL:+86-755-8637-9589 FAX: +86-755-8637-9595

2.2 Applicant

Company Name	Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd.
Address	Hi-Tech Industry Park(North), Nanshan District, Shenzhen City, Guangdong Province, P.R.C

2.3 Manufacturer

Company Name	Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd.
Address	Hi-Tech Industry Park(North), Nanshan District, Shenzhen City, Guangdong Province, P.R.C

2.4 Application Details

Date of Start during the Test	Jan. 13, 2013
Date of End during the Test	Jan. 25, 2013

3. General Information

3.1 Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT	mobile phone
Brand Name	Coolpad
Model Name	Coolpad 801E
FCC ID	R38YL801E
MEID Code	99000216854000
TX Frequency	CDMA2000 BC0: 824.7 MHz ~ 848.31 MHz CDMA 2000 BC15: 1711.25 MHz ~ 1753.75 MHz CDMA 2000 BC1: 1851.25 MHz ~ 1908.75 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz (Optional) LTE Band 25: 1850.7 MHz ~ 1914.3 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz

Product Feature & Specification	
Antenna Type	WWAN: PIFA Antenna WLAN: PIFA Antenna Bluetooth: PIFA Antenna
HW Version	P0
SW Version	4.1.012.P0.130105.QC1
Uplink Modulations	CDMA2000 : QPSK CDMA2000 1xEV-DO : 8PSK LTE: QPSK, 16QAM 802.11b: DSSS (DBPSK / DQPSK / CCK) 802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) Bluetooth : GFSK Bluetooth EDR : π/4-DQPSK, 8-DPSK Bluetooth 4.0 LE: GFSK
DUT Stage	Identical Prototype

Remark:
1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. This device supports WLAN 2.4GHz hotspot operation
3. By design, LTE band 2 and LTE band 25 can be switched by software.

3.2 Maximum RF output power among production units

Band	CDMA2000 BC0	CDMA2000 BC15	CDMA2000 BC1
	Average power(dBm)		
1xRTT RC1 SO55	24	24	24
1xRTT RC3 SO55	24	24	24
1xRTT RC3 SO32	24	24	24
1xEV-DO Rev 0 (RTAP 153.6kbps)	24	24	24
1xEV-DO Rev A (RETAP 4096 bits)	24	24	24

LTE Band 2				
Average power(dBm)				
Modulation	BW (MHz)	RB size	Target MPR	Maximum Power
QPSK	10	≤ 12	0	23.5
QPSK	10	> 12	1	22.5
16QAM	10	≤ 12	1	22.5
16QAM	10	> 12	2	21.5
QPSK	5	≤ 8	0	23.5
QPSK	5	> 8	1	22.5
16QAM	5	≤ 8	1	22.5
16QAM	5	> 8	2	21.5
QPSK	3	≤ 4	0	23.5
QPSK	3	> 4	1	22.5
16QAM	3	≤ 4	1	22.5
16QAM	3	> 4	2	21.5
QPSK	1.4	≤ 5	0	23.5
QPSK	1.4	> 5	1	22.5
16QAM	1.4	≤ 5	1	22.5
16QAM	1.4	> 5	2	21.5

LTE Band 4				
Average power(dBm)				
Modulation	**BW (MHz)**	**RB size**	**Target MPR**	**Maximum Power**
QPSK	10	≤ 12	**0**	**23.5**
QPSK	10	> 12	**1**	**22.5**
16QAM	10	≤ 12	**1**	**22.5**
16QAM	10	> 12	**2**	**21.5**
QPSK	5	≤ 8	**0**	**23.5**
QPSK	5	> 8	**1**	**22.5**
16QAM	5	≤ 8	**1**	**22.5**
16QAM	5	> 8	**2**	**21.5**
QPSK	3	≤ 4	**0**	**23.5**
QPSK	3	> 4	**1**	**22.5**
16QAM	3	≤ 4	**1**	**22.5**
16QAM	3	> 4	**2**	**21.5**
QPSK	1.4	≤ 5	**0**	**23.5**
QPSK	1.4	> 5	**1**	**22.5**
16QAM	1.4	≤ 5	**1**	**22.5**
16QAM	1.4	> 5	**2**	**21.5**

LTE Band 12				
Average power(dBm)				
Modulation	**BW (MHz)**	**RB size**	**Target MPR**	**Maximum Power**
QPSK	10	≤ 12	**0**	**24**
QPSK	10	> 12	**1**	**23**
16QAM	10	≤ 12	**1**	**23**
16QAM	10	> 12	**2**	**22**
QPSK	5	≤ 8	**0**	**24**
QPSK	5	> 8	**1**	**23**
16QAM	5	≤ 8	**1**	**23**
16QAM	5	> 8	**2**	**22**
QPSK	3	≤ 4	**0**	**24**
QPSK	3	> 4	**1**	**23**
16QAM	3	≤ 4	**1**	**23**
16QAM	3	> 4	**2**	**22**
QPSK	1.4	≤ 5	**0**	**24**
QPSK	1.4	> 5	**1**	**23**
16QAM	1.4	≤ 5	**1**	**23**
16QAM	1.4	> 5	**2**	**22**

LTE Band 25				
Average power(dBm)				
Modulation	BW (MHz)	RB size	Target MPR	Maximum Power
QPSK	10	≤ 12	**0**	**23.5**
QPSK	10	> 12	**1**	**22.5**
16QAM	10	≤ 12	**1**	**22.5**
16QAM	10	> 12	**2**	**21.5**
QPSK	5	≤ 8	**0**	**23.5**
QPSK	5	> 8	**1**	**22.5**
16QAM	5	≤ 8	**1**	**22.5**
16QAM	5	> 8	**2**	**21.5**
QPSK	3	≤ 4	**0**	**23.5**
QPSK	3	> 4	**1**	**22.5**
16QAM	3	≤ 4	**1**	**22.5**
16QAM	3	> 4	**2**	**21.5**
QPSK	1.4	≤ 5	**0**	**23.5**
QPSK	1.4	> 5	**1**	**22.5**
16QAM	1.4	≤ 5	**1**	**22.5**
16QAM	1.4	> 5	**2**	**21.5**

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

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

Remark:

1. By design, maximum LTE RF power of smaller supported bandwidth does not exceed the RF power of largest supported bandwidth; the information is included in “tune-up procedure” exhibit
2. LTE MPR implementation is the same for normal mode and power reduction mode.

IEEE 802.11 average power(dBm)				
Mode/Band	a	b	g	n
WLAN 2.4GHz		15	13.5	13.5

Mode / Band	Bluetooth average power(dBm)			
	1Mbps (GFSK)	2Mbps (π/4-DQPSK)	3Mbps (8-DPSK)	BT4.0-LE (GFSK)
2.4 GHz Bluetooth	2	1	1	1

The table below summarized necessary items addressed in KDB 941225 D05 v02.

FCC ID	R38YL801E
EUT	mobile phone
Operating Frequency Range of each LTE transmission band	LTE Band 12: 699.7 MHz ~ 715.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz
Channel Bandwidth	1.4MHz, 3MHz, 5MHz, 10MHz

Transmission (H, M, L) channel numbers and frequencies in each LTE band

LTE Band 12

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	23017	699.7	23025	700.5	23035	701.5	23060	704
M	23095	707.5	23095	707.5	23095	707.5	23095	707.5
H	23173	715.3	23165	714.5	23155	713.5	23130	711

LTE Band 4

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750

LTE Band 2

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855
M	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905

LTE Band 25

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26047	1850.7	26055	1851.5	26065	1852.5	26090	1855
M	26365	1882.5	26365	1882.5	26365	1882.5	26365	1882.5
H	26683	1914.3	26675	1913.5	26665	1912.5	26640	1910

E category, uplink modulations used	Category 3, QPSK, and 16QAM
LTE transmitter and antenna implementation (standalone or sharing hardware components / antennas)	A primary antenna is used for LTE transmitting and receiving, standalone. A 2nd antenna is used for LTE receiving only, standalone.
LTE Voice / Data requirements	Data only
LTE MPR permanently built-in by design	Yes, per 3GPP TS 36.101 v11.0.0
LTE A-MPR	In the base simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing.
Base station simulator used for Testing	Anritsu MT8820C
Power reduction applied to satisfy SAR compliance	Yes, SVLTE mode (1xRTT and LTE simultaneously) power reduction.

The SVLTE operating mode for all frequency bands, power reduction is needed for SAR compliance. The power reduction is implemented on this device and cannot be changed by end users or overridden by power control command from base stations.
The power reduction implementation is defined as following table.

CDMA2000 1x voice BC0/BC15/BC1	LTE data mode Band 2/4/25	LTE data mode Band 12
P ≥ 20	19.5	20
P < 20	23.5	24

Table 3.1-A: Power Reduction Implementation (Unit: dBm)

CDMA 1xRTT		LTE Band 2/4/25 BW=1.4/3/5/10MHz, QPSK 1RB			LTE Band 12 BW=1.4/3/5/10MHz, QPSK 1RB		
		Output Power (dBm)					
Output Power Level (dBm)		Low Ch.	Middle Ch.	High Ch.	Low Ch.	Middle Ch.	High Ch.
BC0	12	23.5	23.5	23.5	24	24	24
	16	23.5	23.5	23.5	24	24	24
	20	19.5	19.5	19.5	20	20	20
	24	19.5	19.5	19.5	20	20	20
BC15	12	23.5	23.5	23.5	24	24	24
	16	23.5	23.5	23.5	24	24	24
	20	19.5	19.5	19.5	20	20	20
	24	19.5	19.5	19.5	20	20	20
BC1	12	23.5	23.5	23.5	24	24	24
	16	23.5	23.5	23.5	24	24	24
	20	19.5	19.5	19.5	20	20	20
	24	19.5	19.5	19.5	20	20	20

Table 3.1-B: Target Power Reduction (Unit: dBm)

3.3 Product Photos

Please refer to Appendix D.

3.4 Applied Standard

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2003
- FCC OET Bulletin 65 Supplement C (Edition 01-01)
- FCC KDB 447498 D01 v05
- FCC KDB 648474 D04 v01
- FCC KDB 248227 D01 v01r02
- FCC KDB 941225 D01 v02
- FCC KDB 941225 D05 v02
- FCC KDB 941225 D06 v01
- FCC KDB 865664 D01 v01

3.5 Device Category and SAR Limits

This device belongs to portable device category because its radiating structure is allowed to be used within 20 centimeters of the body of the user. Limit for General Population/Uncontrolled exposure should be applied for this device, it is 1.6 W/kg as averaged over any 1 gram of tissue.

3.6 Test Conditions

3.6.1 Ambient Condition

Ambient Temperature	20 to 24 ℃
Humidity	< 60 %

3.6.2 Test Configuration

For WWAN SAR testing, the device was controlled by using a base station emulator. Communication between the device and the emulator was established by air link. The distance between the EUT and the antenna of the emulator is larger than 50 cm and the output power radiated from the emulator antenna is at least 30 dB smaller than the output power of EUT.

During WLAN SAR testing EUT is configured with the WLAN continuous TX tool. For WLAN SAR testing, WLAN engineering testing software installed on the EUT can provide continuous transmitting RF signal.

4. Specific Absorption Rate (SAR)

4.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

4.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

$$\mathbf{SAR} = \frac{\mathbf{d}}{\mathbf{dt}}\left(\frac{\mathbf{dW}}{\mathbf{dm}}\right) = \frac{\mathbf{d}}{\mathbf{dt}}\left(\frac{\mathbf{dW}}{\boldsymbol{\rho}\mathbf{dv}}\right)$$

SAR is expressed in units of Watts per kilogram (W/kg)

SAR measurement can be either related to the temperature elevation in tissue by

$$\mathbf{SAR} = \mathbf{C}\left(\frac{\boldsymbol{\delta}\mathbf{T}}{\boldsymbol{\delta}\mathbf{t}}\right)$$

Where: C is the specific heat capacity, δT is the temperature rise and δt is the exposure duration, or related to the electrical field in the tissue by

$$\mathbf{SAR} = \frac{\boldsymbol{\sigma}|\mathbf{E}|^2}{\boldsymbol{\rho}}$$

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

5. SAR Measurement System

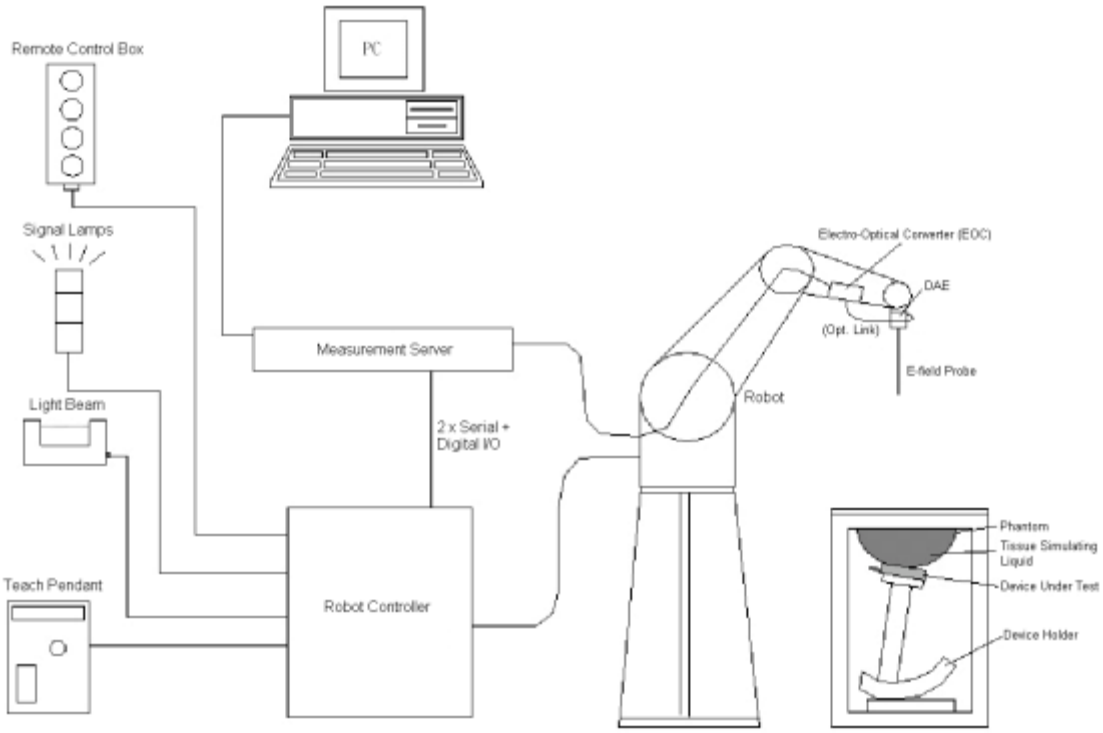


Fig 5.1 SPEAG DASY System Configurations

The DASY system for performance compliance tests is illustrated above graphically. This system consists of the following items:

- A standard high precision 6-axis robot with controller, a teach pendant and software
- A data acquisition electronic (DAE) attached to the robot arm extension
- A dosimetric probe equipped with an optical surface detector system
- The electro-optical converter (EOC) performs the conversion between optical and electrical signals
- A measurement server performs the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the accuracy of the probe positioning
- A computer operating Windows XP
- DASY software
- Remove control with teach pendant and additional circuitry for robot safety such as warming lamps, etc.
- The SAM twin phantom
- A device holder
- Tissue simulating liquid
- Dipole for evaluating the proper functioning of the system

Component details are described in in the following sub-sections.

5.1 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG).The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

5.1.1 E-Field Probe Specification

<EX3DV4 / ES3DV4 Probe>

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Frequency	10 MHz to 6 GHz; Linearity: ± 0.2 dB
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 µW/g to 100 mW/g; Linearity: ± 0.2 dB (noise: typically < 1 µW/g)
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm

Fig 5.2 Photo of EX3DV4/ES3DV4

5.1.2 E-Field Probe Calibration

Each probe needs to be calibrated according to a dosimetric assessment procedure with accuracy better than ± 10%. The spherical isotropy shall be evaluated and within ± 0.25dB. The sensitivity parameters (NormX, NormY, and NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested. The calibration data can be referred to appendix C of this report.

5.2 Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.
The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Fig 5.3 Photo of DAE

5.3 Robot

The SPEAG DASY system uses the high precision robots (DASY4: RX90BL; DASY5: TX90XL) type from Stäubli SA (France). For the 6-axis controller system, the robot controller version (DASY4: CS7MB; DASY5: CS8c) from Stäubli is used. The Stäubli robot series have many features that are important for our application:

- High precision (repeatability ±0.035 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)

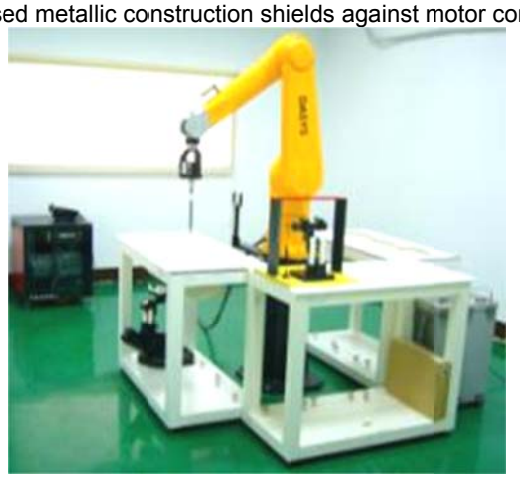


Fig 5.4 Photo of DASY5

5.4 Measurement Server

The measurement server is based on a PC/104 CPU board with CPU (DASY4: 166 MHz, Intel Pentium; DASY5: 400 MHz, Intel Celeron), chipdisk (DASY4: 32 MB; DASY5: 128 MB), RAM (DASY4: 64 MB, DASY5: 128 MB). The necessary circuits for communication with the DAE electronic box, as well as the 16 bit AD converter system for optical detection and digital I/O interface are contained on the DASY I/O board, which is directly connected to the PC/104 bus of the CPU board.

The measurement server performs all the real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operations.

Fig 5.5 Photo of Server for DASY5

5.5 Phantom

<SAM Twin Phantom>

Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Hand, Right Hand, Flat Phantom

Fig 5.6 Photo of SAM Phantom

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

<ELI4 Phantom>

Shell Thickness	2 ± 0.2 mm (sagging: <1%)
Filling Volume	Approx. 30 liters
Dimensions	Major ellipse axis: 600 mm Minor axis: 400 mm

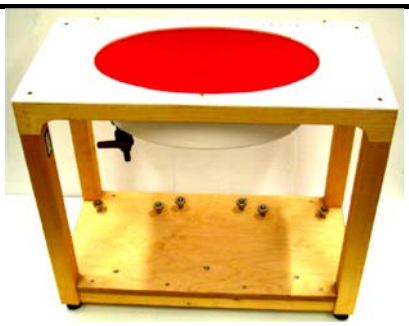


Fig 5.7 Photo of ELI4 Phantom

The ELI4 phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

5.6 Device Holder

<Device Holder for SAM Twin Phantom>

The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source at 5 mm distance, a positioning uncertainty of ± 0.5 mm would produce a SAR uncertainty of ± 20 %. Accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards.

The DASY device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.

The DASY device holder is constructed of low-loss POM material having the following dielectric parameters: relative permittivity ε = 3 and loss tangent δ = 0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

Fig 5.8 Device Holder

<Laptop Extension Kit>

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.

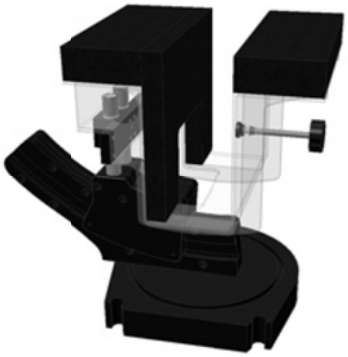


Fig 5.9 Laptop Extension Kit

5.7 Data Storage and Evaluation

5.7.1 Data Storage

The DASY software stores the assessed data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all the necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files. The post-processing software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of erroneous parameter settings. For example, if a measurement has been performed with an incorrect crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be reevaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type (e.g., [V/m], [A/m], [mW/g]). Some of these units are not available in certain situations or give meaningless results, e.g., a SAR-output in a non-lose media, will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

5.7.2 Data Evaluation

The DASY post-processing software (SEMCAD) automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software：

Probe parameters：	- Sensitivity	$Norm_i$, a_{i0}, a_{i1}, a_{i2}
	- Conversion factor	$ConvF_i$
	- Diode compression point	dcp_i
Device parameters：	- Frequency	f
	- Crest factor	cf
Media parameters：	- Conductivity	σ
	- Density	ρ

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY components. In the direct measuring mode of the multi-meter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power.

The formula for each channel can be given as :

$$\mathbf{V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i}}$$

with V_i = compensated signal of channel i, (i = x, y, z)
U_i = input signal of channel i, (i = x, y, z)
cf = crest factor of exciting field (DASY parameter)
dcp_i = diode compression point (DASY parameter)

From the compensated input signals, the primary field data for each channel can be evaluated :

E-field Probes : $\mathbf{E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}}$

H-field Probes : $\mathbf{H_i = \sqrt{V_i} \cdot \frac{a_{i0} + a_{i1} f + a_{i2} f^2}{f}}$

with V_i = compensated signal of channel i, (i = x, y, z)
$Norm_i$ = sensor sensitivity of channel i, (i = x, y, z), μV/(V/m)^2 for E-field Probes
ConvF = sensitivity enhancement in solution
a_{ij} = sensor sensitivity factors for H-field probes
f = carrier frequency [GHz]
E_i = electric field strength of channel i in V/m
H_i = magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude) :

$$\mathbf{E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}}$$

The primary field data are used to calculate the derived field units.

$$\mathbf{SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1000}}$$

with SAR = local specific absorption rate in mW/g
E_{tot} = total field strength in V/m
σ = conductivity in [mho/m] or [Siemens/m]
ρ = equivalent tissue density in g/cm^3

Note that the density is set to 1, to account for actual head tissue density rather than the density of the tissue simulating liquid.

5.8 Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	735MHz System Validation Kit	D750V3	1065	Jul. 12, 2012	Jul. 11, 2013
SPEAG	835MHz System Validation Kit	D835V2	4d091	Nov. 18, 2011	Nov. 16, 2013
SPEAG	735MHz System Validation Kit	D1750V2	1069	Jul. 13, 2012	Jul. 12, 2013
SPEAG	1900MHz System Validation Kit	D1900V2	5d118	Nov. 21, 2011	Nov. 16, 2013
SPEAG	2450MHz System Validation Kit	D2450V2	736	Jul. 25, 2011	Jul. 24, 2013
SPEAG	Data Acquisition Electronics	DAE4	1303	Nov. 22, 2012	Nov. 21, 2013
SPEAG	Dosimetric E-Field Probe	EX3DV4	3819	Nov. 26, 2012	Nov. 25, 2013
SPEAG	SAM Twin Phantom	QD 000 P40 CD	TP-1670	NCR	NCR
SPEAG	SAM Twin Phantom	QD 000 P40 CD	TP-1671	NCR	NCR
Anritsu	Radio Communication Analyzer	MT8820C	6201091028	Jun. 10, 2012	Jun. 09, 2013
Agilent	Base Station	E5515C	MY50267224	Dec. 29, 2011	Dec. 28, 2013
Agilent	ENA Series Network Analyzer	E5071C	MY46111157	Apr. 13, 2012	Apr. 12, 2013
Agilent	Dielectric Probe Kit	85070E	MY44300475	NCR	NCR
AR	Amplifier	551G4	333096	NCR	NCR
Anritsu	Power Sensor	MA2411B	1207253	May 08, 2012	May 07, 2013
ARRA	Power Divider	A3200-2	N/A	NA	NA
Woken	Attenuator 1	WK0602-XX	N/A	Note 4	
PE	Attenuator 2	PE7005-10	N/A	Note 4	
PE	Attenuator 3	PE7005- 3	N/A	Note 4	
Agilent	Dual Directional Coupler	778D	50422	Note 4	
Agilent	Dielectric Probe Kit	85070D	US01440205	Note 5	
AR	Power Amplifier	5S1G4M2	0328767	Note 6	
R&S	Spectrum Analyzer	FSP30	101400	Jun. 01, 2012	May 31, 2013

Table 5.1 Test Equipment List

Note:

1. The calibration certificate of DASY can be referred to appendix C of this report.
2. Referring to KDB 865664 D01v01, the dipole calibration interval can be extended to 3 years with justification. The dipoles are also not physically damaged, or repaired during the interval.
3. The justification data of dipole D835V2, SN: 4D091, D1900V2, SN: 5d118, D2450V2, SN: 736, can be found in appendix C. The return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration.
4. The Insertion Loss calibration of Dual Directional Coupler and Attenuator were characterized via the network analyzer and compensated during system check.
5. The dielectric probe kit was calibrated via the network analyzer, with the specified procedure (calibrated in pure water) and calibration kit (standard) short circuit, before the dielectric measurement. The specific procedure and calibration kit are provided by Agilent.
6. In system check we need to monitor the level on the power meter, and adjust the power amplifier level to have precise power level to the dipole; the measured SAR will be normalized to 1W input power according to the ratio of 1W to the input power to the dipole. For system check, the calibration of the power amplifier is deemed not critically required for correct measurement; the power meter is critical and we do have calibration for it.
7. Attenuator 1 insertion loss is calibrated by the network Analyzer, which the calibration is valid, before system check.

6. Tissue Simulating Liquids

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 6.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 6.2.

Fig 6.1 Photo of Liquid Height for Head SAR

Fig 6.2 Photo of Liquid Height for Body SAR

The following table gives the recipes for tissue simulating liquid.

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (ε_r)
For Head								
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
For Body								
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0	0	31.4	1.95	52.7

Table 6.1 Recipes of Tissue Simulating Liquid

The dielectric parameters of the liquids were verified prior to the SAR evaluation using an Agilent 85070D Dielectric Probe Kit and an Agilent Network Analyzer.

The following table shows the measuring results for simulating liquid.

Frequency (MHz)	Liquid Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	Head	21.8	0.878	40.673	0.89	41.9	-1.35	-2.93	±5	Jan. 14, 2013
750	Head	21.1	0.894	41.019	0.89	41.9	0.45	-2.10	±5	Feb. 02, 2013
835	Head	21.5	0.929	41.793	0.90	41.5	3.22	0.71	±5	Jan. 16, 2013
835	Head	21.4	0.901	40.589	0.90	41.5	0.11	-2.20	±5	Feb. 02, 2013
1750	Head	21.6	1.378	41.34	1.37	40.1	0.58	3.09	±5	Jan. 13, 2013
1750	Head	21.1	1.406	41.525	1.37	40.1	2.63	3.55	±5	Jan. 17, 2013
1750	Head	21.2	1.388	41.364	1.37	40.1	1.31	3.15	±5	Feb. 02, 2013
1900	Head	21.2	1.427	41.191	1.40	40.0	1.93	2.98	±5	Jan. 13, 2013
1900	Head	21.3	1.407	39.644	1.40	40.0	0.50	-0.89	±5	Jan. 15, 2013
1900	Head	21.8	1.419	40.609	1.40	40.0	1.36	1.52	±5	Jan. 17, 2013
1900	Head	21.5	1.412	39.311	1.40	40.0	0.86	-1.72	±5	Feb. 02, 2013
2450	Head	21.3	1.825	39.664	1.8	39.2	1.39	1.18	±5	Jan. 24, 2013
2450	Head	21.5	1.834	39.654	1.8	39.2	1.89	1.16	±5	Feb. 03, 2013
750	Body	21.7	0.97	54.633	0.96	55.5	1.04	-1.56	±5	Jan. 14, 2013
750	Body	21.1	0.963	54.233	0.96	55.5	0.31	-2.28	±5	Jan. 22, 2013
750	Body	21.6	0.965	54.349	0.96	55.5	0.52	-2.07	±5	Feb. 02, 2013
835	Body	21.3	0.977	54.395	0.97	55.2	0.72	-1.46	±5	Jan. 16, 2013
835	Body	21.5	0.964	56.27	0.97	55.2	-0.62	1.94	±5	Jan. 22, 2013
835	Body	21.5	0.977	54.928	0.97	55.2	0.72	-0.49	±5	Feb. 02, 2013
1750	Body	21.4	1.516	55.169	1.49	53.4	1.74	3.31	±5	Jan. 13, 2013
1750	Body	21.7	1.515	55.246	1.49	53.4	1.68	3.46	±5	Jan. 16, 2013
1750	Body	21.6	1.512	55.574	1.49	53.4	1.48	4.07	±5	Feb. 02, 2013
1900	Body	21.5	1.528	54.867	1.52	53.3	0.53	2.94	±5	Jan. 13, 2013
1900	Body	21.4	1.525	54.504	1.52	53.3	0.33	2.26	±5	Jan. 14, 2013
1900	Body	21.5	1.512	53.903	1.52	53.3	-0.53	1.13	±5	Jan. 15, 2013
1900	Body	21.2	1.547	53.803	1.52	53.3	1.78	0.94	±5	Jan. 23, 2013
1900	Body	21.4	1.535	54.579	1.52	53.3	0.99	2.40	±5	Feb. 02, 2013
2450	Body	21.5	1.939	53.98	1.95	52.7	-0.56	2.43	±5	Jan. 24, 2013
2450	Body	21.2	1.976	54.13	1.95	52.7	1.33	2.71	±5	Feb. 03, 2013

Table 6.2 Measuring Results for Simulating Liquid

7. SAR System Verification

Each DASY system is equipped with one or more system validation kits. These units, together with the predefined measurement procedures within the DASY software, enable the user to conduct the system performance check and system validation. System validation kit includes a dipole, tripod holder to fix it underneath the flat phantom and a corresponding distance holder.

7.1 Purpose of System Performance check

The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results. The system performance check uses normal SAR measurements in a simplified setup with a well characterized source. This setup was selected to give a high sensitivity to all parameters that might fail or vary over time. The system check does not intend to replace the calibration of the components, but indicates situations where the system uncertainty is exceeded due to drift or failure.

7.2 System Setup

In the simplified setup for system evaluation, the EUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave that comes from a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The equipment setup is shown below:

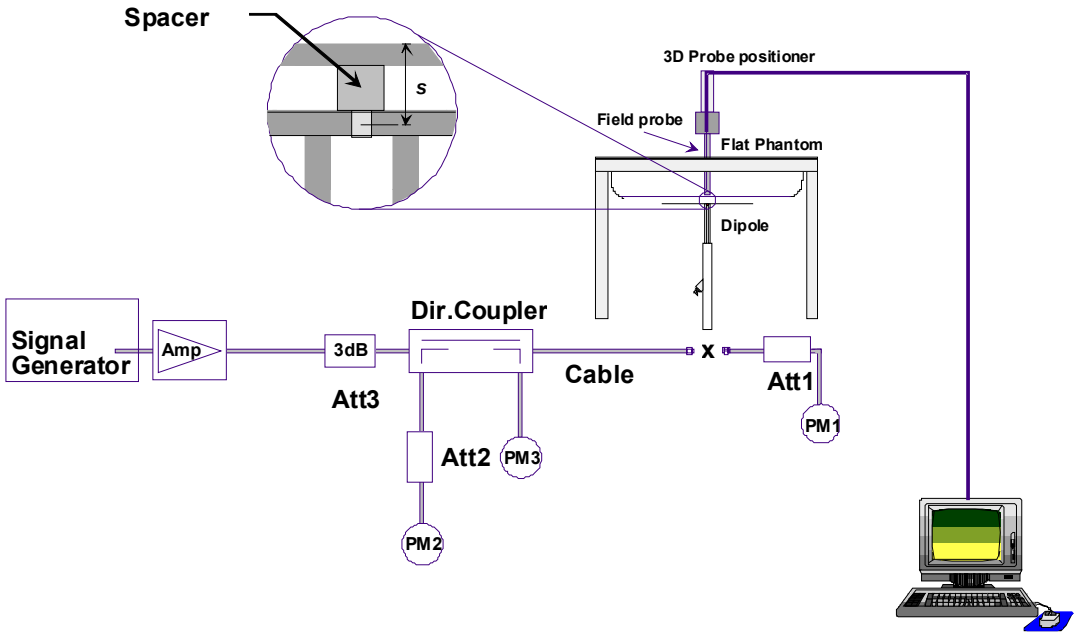


Fig 7.1 System Setup for System Evaluation

1. Signal Generator
2. Amplifier
3. Directional Coupler
4. Power Meter
5. Calibrated Dipole

Fig 7.2 Photo of Dipole Setup

7.3 SAR System Verification Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Table 7.1 shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

Frequency (MHz)	Liquid Type	Power fed onto reference dipole (mW)	Target SAR_{1g} (W/kg)	Measured SAR_{1g} (W/kg)	Normalized SAR_{1g} (W/kg)	Deviation (%)
750	Head	250	8.37	2.16	8.64	3.23
750	Head	250	8.37	1.99	7.96	-4.90
835	Head	250	9.40	2.5	10	6.38
835	Head	250	9.40	2.44	9.76	3.83
1750	Head	250	36.4	9.05	36.2	-0.55
1750	Head	250	36.4	9.33	37.32	2.53
1750	Head	250	36.4	8.76	35.04	-3.74
1900	Head	250	40.3	10.2	40.8	1.24
1900	Head	250	40.3	9.91	39.64	-1.64
1900	Head	250	40.3	10.3	41.2	2.23
1900	Head	250	40.3	10.5	42	4.22

Frequency (MHz)	Liquid Type	Power fed onto reference dipole (mW)	Target SAR_{1g} (W/kg)	Measured SAR_{1g} (W/kg)	Normalized SAR_{1g} (W/kg)	Deviation (%)
2450	Head	250	54.8	13.8	55.2	0.73
2450	Head	250	54.8	13.9	55.6	1.46
750	Body	250	8.71	2.32	9.28	6.54
750	Body	250	8.71	2.25	9	3.33
750	Body	250	8.71	2.11	8.44	-3.10
835	Body	250	9.42	2.48	9.92	5.31
835	Body	250	9.42	2.52	10.08	7.01
835	Body	250	9.42	2.49	9.96	5.73
1750	Body	250	37.1	9.61	38.44	3.61
1750	Body	250	37.1	9.51	38.04	2.53
1750	Body	250	37.1	9.4	37.6	1.35
1900	Body	250	41.8	10.3	41.2	-1.44
1900	Body	250	41.8	10.4	41.6	-0.48
1900	Body	250	41.8	10.1	40.4	-3.35
1900	Body	250	41.8	10.5	42	0.48
1900	Body	250	41.8	10.7	42.8	2.39
2450	Body	250	52.3	12.8	51.2	-2.10
2450	Body	250	52.3	13.2	52.8	0.96

Table 7.1 Target and Measurement SAR after Normalized

8. EUT Testing Position

This EUT was tested in ten different positions. They are right cheek, right tilted, left cheek, left tilted, Front of the EUT with phantom 1 cm gap, Back of the EUT with phantom 1 cm gap, Top Side of the EUT with phantom 1 cm gap, Bottom Side of the EUT with phantom 1 cm gap, Right Side of the EUT with phantom 1 cm gap, and Left Side of the EUT with phantom 1 cm gap, as illustrated below.

8.1 Define two imaginary lines on the handset

(a) The vertical centerline passes through two points on the front side of the handset - the midpoint of the width w_t of the handset at the level of the acoustic output, and the midpoint of the width w_b of the bottom of the handset.

(b) The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.

(c) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.

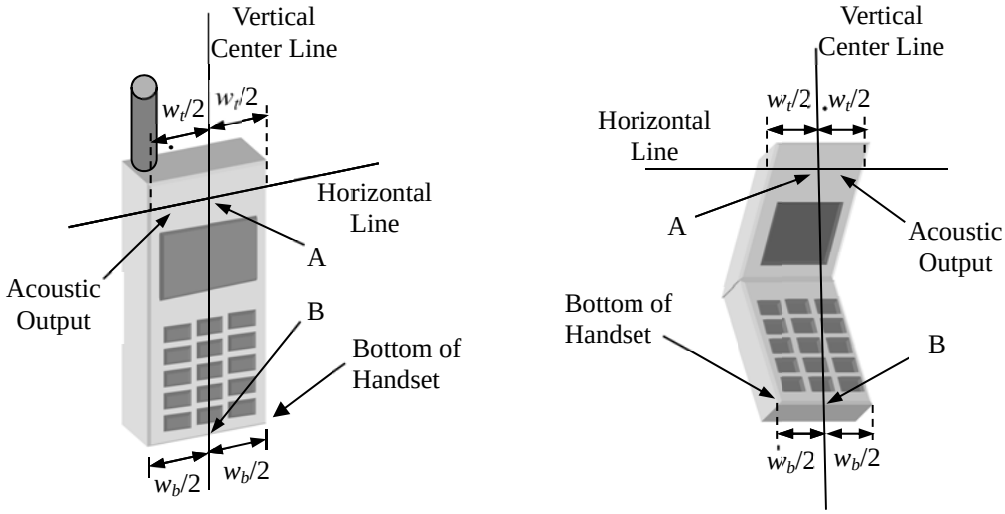


Fig 8.1 Illustration for Handset Vertical and Horizontal Reference Lines

8.2 Cheek Position

(a) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE.

(b) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost (see Fig. 8.2).

Fig 8.2 Illustration for Cheek Position

8.3 Tilted Position

(a) To position the device in the "cheek" position described above.

(b) While maintaining the device the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost (see Fig. 8.3).

Fig 8.3 Illustration for Tilted Position

8.4 Body Worn Position

(a) To position the device parallel to the phantom surface with either keypad up or down.
(b) To adjust the device parallel to the flat phantom.
(c) To adjust the distance between the device surface and the flat phantom to 1 cm.

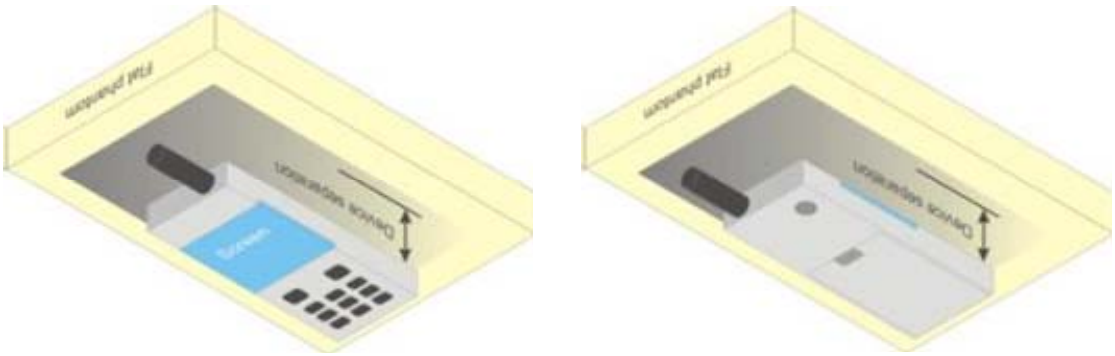


Fig 8.4 Illustration for Body Worn Position

8.5 Hotspot Position

(a) To position the device parallel to the phantom surface with all sides and either keypad up or down.
(b) To adjust the device parallel to the flat phantom.
(c) To adjust the distance between the device and the flat phantom to 1 cm.

<EUT Setup Photos>

Please refer to Appendix E for the test setup photos.

9. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

(a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
(b) Read the WWAN RF power level from the base station simulator.
(c) For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band
(d) Connect EUT RF port through RF cable to the power meter, and measure WLAN/BT output power

<SAR measurement>

(a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
(b) Place the EUT in the positions as Appendix E demonstrates.
(c) Set scan area, grid size and other setting on the DASY software.
(d) Measure SAR results for the highest power channel on each testing position.
(e) Find out the largest SAR result on these testing positions of each band
(f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

9.1 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

9.2 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. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

9.3 Area & Zoom Scan Procedures

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. Area scan and zoom scan resolution setting follows KDB 865664 D01v01 quoted below.

For any secondary peaks found in the area scan which are within 2 dB of the maximum peak and are not within this zoom scan, the zoom scan should be repeated

			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}			≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the *reported* SAR from the area scan based *1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

9.4 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

9.5 SAR Averaged Methods

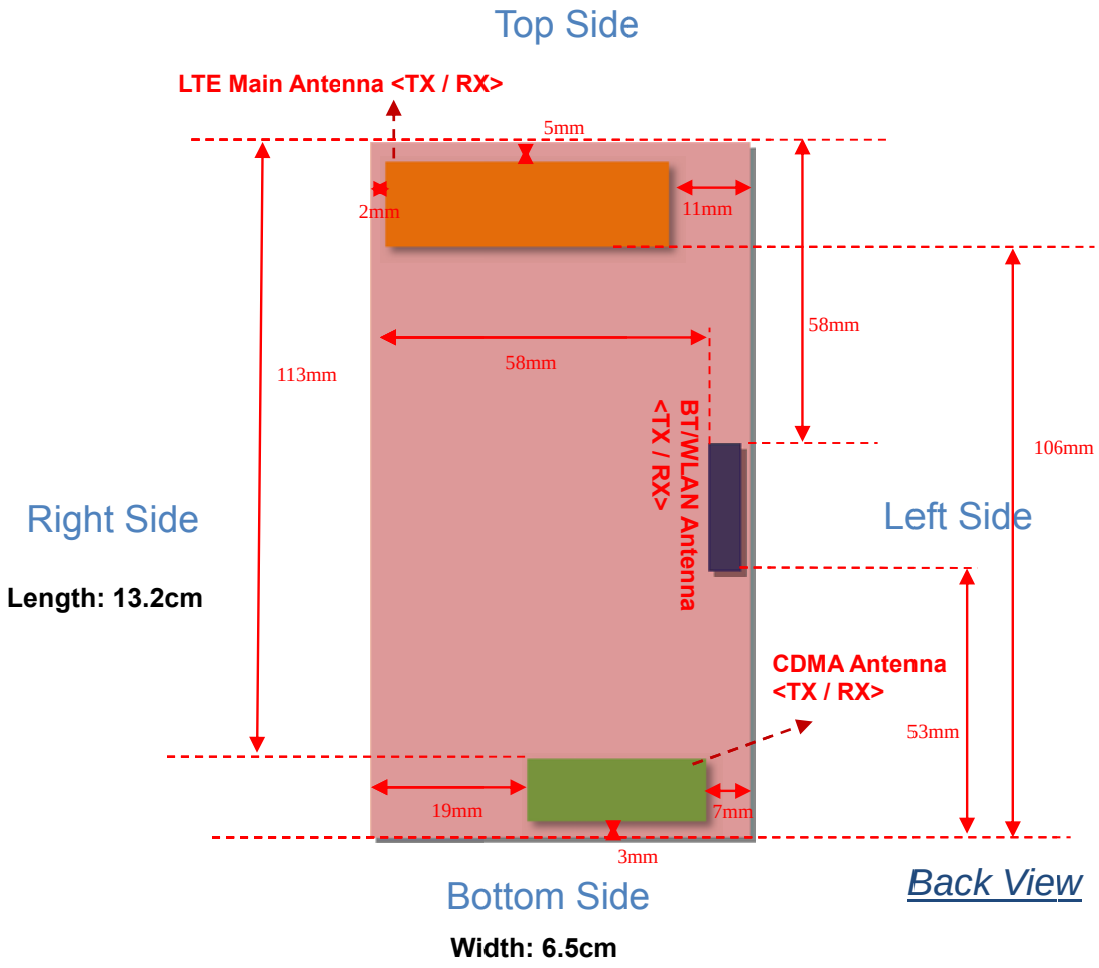
In DASY, the interpolation and extrapolation are both based on the modified Quadratic Shepard's method. The interpolation scheme combines a least-square fitted function method and a weighted average method which are the two basic types of computational interpolation and approximation.

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1 g and 10 g cubes, the extrapolation distance should not be larger than 5 mm.

9.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5%, the SAR will be retested.

10. Exposure Positions Consideration



Antennas	Wireless Interface
CDMA Antenna (Tx / Rx)	CDMA2000 BC0 CDMA 2000 BC15 CDMA 2000 BC1
LTE Main Antenna (Tx / Rx)	LTE Band 12 LTE Band 4 LTE Band 2 LTE Band 25
BT&WLAN Antenna (Tx / Rx)	WLAN 2.4GHz Bluetooth

Distance of the Antenna to the EUT surface/edge						
Antennas	**Back**	**Front**	**Top Side**	**Bottom Side**	**Right Side**	**Left Side**
CDMA	≤ 25mm	≤ 25mm	113mm	≤ 25mm	≤ 25mm	≤ 25mm
LTE Main	≤ 25mm	≤ 25mm	≤ 25mm	106mm	≤ 25mm	≤ 25mm
BT&WLAN	≤ 25mm	≤ 25mm	58mm	53mm	58mm	≤ 25mm

Positions for SAR tests; Hotspot mode Test distance: 10 mm						
Antennas	**Back**	**Front**	**Top Side**	**Bottom Side**	**Right Side**	**Left Side**
CDMA	Yes	Yes	NO	Yes	Yes	Yes
LTE Main	Yes	Yes	Yes	NO	Yes	Yes
BT&WLAN	Yes	Yes	NO	NO	NO	Yes

1. Referring to KDB 941225 D06 v01, when the overall device length and width are ≥ 9cm*5cm, the test distance is 10 mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.
2. Per KDB 447498 D01v05, for handsets the *test separation distance* is determined by the smallest distance between the outer surface of the device and the user; which is 0mm for head SAR, 10mm for hotspot SAR, 10mm for body-worn SAR.
3. If the test separation distance (antenna-user) is < 5mm, 5mm is used for excluded SAR calculation
4. For minimum test separation distance ≤50mm, Bluetooth standalone SAR is excluded according to [(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR.

	Wireless Interface	Bluetooth
Tune-up Maximum power (dBm)		2
Tune-up Maximum rated power (mW)		1.58
Head	Antenna to user (mm)	5
	SAR exclusion threshold (mW)	10
	SAR testing required?	**NO**
Body	Antenna to user (mm)	10
	SAR exclusion threshold (mW)	19
	SAR testing required?	**NO**

11. Conducted RF Output Power (Unit: dBm)

<CDMA2000 Conducted Power>

Note:

1. According to KDB 941225 D01, Head SAR for RC1+SO55 is not required because the maximum average output power of RC1 is less than 1/4 dB higher than RC3+SO55.
2. Referring to KDB 941225 D01, the CDMA Handset Body-worn SAR tests based on RC3+SO32. RC1, Ev-Do Rev 0 (RTAP 153.6kbps) Ev-Do Rev A(RETAP 4096 bits) power are all less than 1/4 dB higher than RC3, thus SAR testing in these modes are not required.
3. Referring to KDB 941225 D01, in Hotspot mode EUT is treated as data device and SAR is tested with Ev-Do Rev 0 (RTAP 153.6kbps). If 1xRTT and Ev-Do Rev A (RETAP 4096 bits) power is less than 1/4dB higher than Re v0, SAR tests with those settings are not necessary.
4. Considering VOIP capability, EVDO RevA SAR was repeated on the worst position of 1xRTT head SAR and body SAR.

<1xRTT>

Band	CDMA2000 BC0			CDMA2000 BC1			CDMA2000 BC15		
Channel	1013	384	777	25	600	1175	25	425	875
Frequency	824.7	836.52	848.31	1851.25	1880	1908.75	1711.25	1731.25	1753.75
1x Voice Mode	Full Power (24.0dBm)			Full Power (24.0dBm)			Full Power (24.0dBm)		
1xRTT RC1+SO55	23.65	23.72	23.63	23.86	23.53	23.52	23.70	23.71	23.91
1xRTT RC3+SO55	23.72	**23.75**	23.69	**23.88**	23.58	23.54	23.71	23.74	**23.94**
1xRTT RC3+SO32(+F-SCH)	23.71	23.71	23.68	23.84	23.57	23.51	23.70	23.71	23.92
1xRTT RC3+SO32(+SCH)	23.70	23.72	23.65	23.83	23.55	23.53	23.68	23.72	23.89
1x Voice Mode	Reduced Power (20.0dBm)			Reduced Power (20.0dBm)			Reduced Power (20.0dBm)		
1xRTT RC1+SO55	19.53	19.48	19.48	19.54	19.36	19.44	19.46	19.61	19.77
1xRTT RC3+SO55	**19.55**	19.51	19.52	**19.56**	19.37	19.46	19.48	19.64	**19.81**
1xRTT RC3+SO32(+F-SCH)	19.51	19.47	19.46	19.51	19.36	19.45	19.47	19.62	19.80
1xRTT RC3+SO32(+SCH)	19.50	19.51	19.51	19.51	19.35	19.44	19.42	19.53	19.75

<1xEVDO>

Band	CDMA2000 BC0			CDMA2000 BC1			CDMA2000 BC15		
Channel	1013	384	777	25	600	1175	25	425	875
Frequency	824.7	836.52	848.31	1851.25	1880	1908.75	1711.25	1731.25	1753.75
EVDO data mode	Full Power (24.0dBm)			Full Power (24.0dBm)			Full Power (24.0dBm)		
1xEVDO RTAP 153.6	23.66	23.67	23.62	23.84	23.55	23.54	23.70	23.72	23.92
1xEVDO RETAP 4096	23.61	23.63	23.59	23.82	23.51	23.52	23.66	23.66	23.87
EVDO data mode	Reduced Power (20.0dBm)			Reduced Power (20.0dBm)			Reduced Power (20.0dBm)		
1xEVDO RTAP 153.6	19.50	19.48	19.46	19.51	19.36	19.45	19.47	19.58	19.78
1xEVDO RETAP 4096	19.45	19.44	19.42	19.47	19.34	19.42	19.45	19.54	19.72

<LTE Conducted Power>

Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each *required test channel*.
4. Per KDB 941225 D05v02, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
5. 16QAM output power for each RB allocation configuration is not > ½ dB higher than the same configuration in QPSK
6. Smaller bandwidth output power for each RB allocation configuration is not > ½ dB higher than the same configuration in the largest supported bandwidth

<LTE Band 2>

		Full Power (23.5dBm)							Reduced Power (19.5dBm)						
BW	Mod / RB	Average Power. (dBm)			3GPP	MPR Result (dB)			Average Power. (dBm)			3GPP	MPR Result (dB)		
[MHz]	(Size - Offset)	Low Ch	Mid Ch	High Ch	MPR	Low Ch	Mid Ch	High Ch	Low Ch	Mid Ch	High Ch	MPR	Low Ch	Mid Ch	High
Channel		18650	18900	19150		18650	18900	19150	18650	18900	19150		18650	18900	19150
Frequency (MHz)		1855	1880	1905		1855	1880	1905	1855	1880	1905		1855	1880	1905
10	QPSK 1-0	23.28	23.32	23.28	0	0.12	0.03	0.14	18.79	18.94	18.92	0	0.33	0.12	0.15
10	QPSK 1-24	23.40	23.35	23.42		0.00	0.00	0.00	19.12	19.06	19.07		0.00	0.00	0.00
10	QPSK 1-49	23.32	23.30	23.07		0.08	0.05	0.35	18.83	19.06	19.01		0.29	0.00	0.06
10	QPSK 25-0	22.45	22.40	22.49	≤ 1	0.95	0.95	0.93	18.06	18.27	18.02	≤ 1	1.06	0.79	1.05
10	QPSK 25-12	22.44	22.30	22.43		0.96	1.05	0.99	17.95	17.94	17.95		1.17	1.12	1.12
10	QPSK 25-24	22.36	22.18	22.25		1.04	1.17	1.17	17.96	18.00	17.87		1.16	1.06	1.20
10	QPSK 50-0	22.25	22.21	22.28		1.15	1.14	1.14	17.88	17.95	17.96		1.24	1.11	1.11
10	16QAM 1-0	22.30	22.30	22.18	≤ 1	1.10	1.05	1.24	17.99	18.02	17.91	≤ 1	1.13	1.04	1.16
10	16QAM 1-24	22.40	22.32	22.38		1.00	1.03	1.04	18.20	18.10	18.00		0.92	0.96	1.07
10	16QAM 1-49	22.37	22.09	22.09		1.03	1.26	1.33	18.11	18.01	17.95		1.01	1.05	1.12
10	16QAM 25-0	21.41	21.47	21.38	≤ 2	1.99	1.88	2.04	17.25	16.98	16.98	≤ 2	1.87	2.08	2.09
10	16QAM 25-12	21.34	21.28	21.36		2.06	2.07	2.06	16.92	17.00	16.72		2.20	2.06	2.35
10	16QAM 25-24	21.33	21.26	21.24		2.07	2.09	2.18	16.62	16.66	16.11		2.50	2.40	2.96
10	16QAM 50-0	21.22	21.25	21.35		2.18	2.10	2.07	16.88	16.88	16.50		2.24	2.18	2.57
Channel		18625	18900	19175		18625	18900	19175	18625	18900	19175		18625	18900	19175
Frequency (MHz)		1852.5	1880	1907.5		1852.5	1880	1907.5	1852.5	1880	1907.5		1852.5	1880	1907.5
5	QPSK 1-0	23.20	23.30	23.33	0	0.24	0.07	0.00	18.76	18.95	18.94	0	0.33	0.07	0.00
5	QPSK 1-12	23.44	23.37	23.23		0.00	0.00	0.10	19.06	19.02	18.92		0.03	0.00	0.02
5	QPSK 1-24	23.34	23.13	23.07		0.10	0.24	0.26	19.09	18.98	18.79		0.00	0.04	0.15
5	QPSK 12-0	22.43	22.35	22.35	≤ 1	1.01	1.02	0.98	18.05	18.11	18.06	≤ 1	1.04	0.91	0.88
5	QPSK 12-5	22.38	22.29	22.28		1.06	1.08	1.05	18.06	18.09	17.86		1.03	0.93	1.08
5	QPSK 12-11	22.39	22.33	22.26		1.05	1.04	1.07	18.07	18.09	17.98		1.02	0.93	0.96
5	QPSK 25-0	22.37	22.24	22.16	≤ 1	1.07	1.13	1.17	18.00	17.84	17.90	≤ 1	1.09	1.18	1.04
5	16QAM 1-0	22.20	22.19	22.33		1.24	1.18	1.00	17.97	18.06	17.98		1.12	0.96	0.96
5	16QAM 1-12	22.40	22.31	22.21		1.04	1.06	1.12	18.19	18.19	17.98		0.90	0.83	0.96
5	16QAM 1-24	22.35	22.07	21.93	≤ 2	1.09	1.30	1.40	18.13	18.03	17.88	≤ 2	0.96	0.99	1.06
5	16QAM 12-0	21.36	21.38	21.44		2.08	1.99	1.89	16.88	17.10	17.08		2.21	1.92	1.86
5	16QAM 12-5	21.32	21.32	21.26		2.12	2.05	2.07	17.04	17.11	16.85		2.05	1.91	2.09
5	16QAM 12-11	21.37	21.35	21.22		2.07	2.02	2.11	17.05	17.09	16.74		2.04	1.93	2.20
5	16QAM 25-0	21.27	21.23	21.09		2.17	2.14	2.24	16.95	17.02	16.64		2.14	2.00	2.30
Channel		18615	18900	19185		18615	18900	19185	18615	18900	19185		18615	18900	19185
Frequency (MHz)		1851.5	1880	1908.5		1851.5	1880	1908.5	1851.5	1880	1908.5		1851.5	1880	1908.5
3	QPSK 1-0	23.12	23.34	23.17	0	0.32	0.03	0.00	18.78	19.01	18.97	0	0.29	0.01	0.05
3	QPSK 1-7	23.44	23.37	23.13		0.00	0.00	0.04	19.07	19.02	19.02		0.00	0.00	0.00
3	QPSK 1-14	23.36	23.30	23.03		0.08	0.07	0.14	19.00	18.99	18.84		0.07	0.03	0.18
3	QPSK 8-0	22.32	22.34	22.29	≤ 1	1.12	1.03	0.88	18.02	18.13	18.02	≤ 1	1.05	0.89	1.00
3	QPSK 8-4	22.39	22.33	22.26		1.05	1.04	0.91	17.89	18.10	17.98		1.18	0.92	1.04
3	QPSK 8-7	22.46	22.24	22.19		0.98	1.13	0.98	17.95	18.07	17.94		1.12	0.95	1.08
3	QPSK 15-0	22.31	22.26	22.18		1.13	1.11	0.99	17.90	18.09	17.89		1.17	0.93	1.13
3	16QAM 1-0	22.01	22.18	22.20	≤ 1	1.43	1.19	0.97	17.65	18.02	17.97	≤ 1	1.42	1.00	1.05
3	16QAM 1-7	22.36	22.47	22.23		1.08	0.90	0.94	17.95	18.06	17.99		1.12	0.96	1.03
3	16QAM 1-14	22.29	22.26	21.93		1.15	1.11	1.24	17.83	18.07	17.83		1.24	0.95	1.19
3	16QAM 8-0	21.36	21.24	21.22	≤ 2	2.08	2.13	1.95	16.75	17.07	16.83	≤ 2	2.32	1.95	2.19
3	16QAM 8-4	21.35	21.26	21.13		2.09	2.11	2.04	16.63	17.03	16.90		2.44	1.99	2.12
3	16QAM 8-7	21.47	21.29	21.11		1.97	2.08	2.06	16.63	17.05	16.77		2.44	1.97	2.25
3	16QAM 15-0	21.41	21.36	21.19		2.03	2.01	1.98	16.51	17.09	16.77		2.56	1.93	2.25
Channel		18607	18900	19193		18607	18900	19193	18607	18900	19193		18607	18900	19193
Frequency (MHz)		1850.7	1880	1909.3		1850.7	1880	1909.3	1850.7	1880	1909.3		1850.7	1880	1909.3
1.4	QPSK 1-0	23.15	23.32	23.16	0	0.13	0.03	0.01	18.73	19.02	19.03	0	0.18	0.15	0.00
1.4	QPSK 1-2	23.19	23.27	23.17		0.09	0.08	0.00	18.74	19.07	18.94		0.17	0.10	0.09
1.4	QPSK 1-5	23.28	23.27	23.00		0.00	0.08	0.17	18.86	19.00	18.93		0.05	0.17	0.10
1.4	QPSK 3-0	23.09	23.23	23.10		0.19	0.12	0.07	18.78	19.10	19.01		0.13	0.07	0.02
1.4	QPSK 3-1	23.20	23.26	23.08		0.08	0.09	0.09	18.82	19.06	18.99		0.09	0.11	0.04
1.4	QPSK 3-2	23.28	23.35	23.02		0.00	0.00	0.15	18.91	19.17	18.96		0.00	0.00	0.07
1.4	QPSK 6-0	22.36	22.43	22.25	≤ 1	0.92	0.92	0.92	17.78	18.09	17.96	≤ 1	1.13	1.08	1.07
1.4	16QAM 1-0	22.02	22.25	22.09	≤ 1	1.26	1.10	1.08	17.91	18.04	17.96	≤ 1	1.00	1.13	1.07
1.4	16QAM 1-2	22.20	22.29	22.06		1.08	1.06	1.11	17.97	18.10	18.00		0.94	1.07	1.03
1.4	16QAM 1-5	22.19	22.33	22.03		1.09	1.02	1.14	18.01	18.07	17.92		0.90	1.10	1.11
1.4	16QAM 3-0	22.16	22.29	22.15		1.12	1.06	1.02	17.72	18.02	17.98		1.19	1.15	1.05
1.4	16QAM 3-1	22.25	22.35	22.11		1.03	1.00	1.06	17.77	18.09	17.98		1.14	1.08	1.05
1.4	16QAM 3-2	22.35	22.36	22.23		0.93	0.99	0.94	17.77	18.13	17.94		1.14	1.04	1.09
1.4	16QAM 6-0	21.33	21.32	21.24	≤ 2	1.95	2.03	1.93	16.79	17.39	16.99	≤ 2	2.12	1.78	2.04

<LTE Band 25>

BW [MHz]	Mod / RB (Size - Offset)	Full Power (23.5dBm)							Reduced Power (19.5dBm)						
		Average Power. (dBm)			3GPP MPR	MPR Result (dB)			Average Power. (dBm)			3GPP MPR	MPR Result (dB)		
		Low Ch	Mid Ch	High Ch		Low Ch	Mid Ch	High Ch	Low Ch	Mid Ch	High Ch		Low Ch	Mid Ch	High Ch
Channel		26090	26365	26640		26090	26365	26640	26090	26365	26640		26090	26365	26640
Frequency (MHz)		1855	1882.5	1910		1855	1882.5	1910	1855	1882.5	1910		1855	1882.5	1910
10	QPSK 1-0	23.25	23.35	23.32	0	0.00	0.00	0.00	19.06	19.01	18.65	0	0.03	0.09	0.30
10	QPSK 1-24	23.17	23.33	23.27		0.08	0.02	0.05	19.09	19.10	18.95		0.00	0.00	0.00
10	QPSK 1-49	23.03	23.06	23.26		0.22	0.29	0.06	18.94	18.97	18.54		0.15	0.13	0.41
10	QPSK 25-0	22.34	22.34	22.27	≤ 1	0.91	1.01	1.05	18.08	18.07	17.06	≤ 1	1.01	1.03	1.89
10	QPSK 25-12	22.22	22.18	22.15		1.03	1.17	1.17	17.82	17.84	16.96		1.27	1.26	1.99
10	QPSK 25-24	22.12	21.95	22.28		1.13	1.40	1.04	17.34	17.37	17.18		1.75	1.73	1.77
10	QPSK 50-0	22.09	22.10	22.06		1.16	1.25	1.26	17.71	17.75	17.28		1.38	1.35	1.67
10	16QAM 1-0	22.27	22.37	22.32	≤ 1	0.98	0.98	1.00	17.85	17.84	18.07	≤ 1	1.24	1.26	0.88
10	16QAM 1-24	22.24	22.31	22.22		1.01	1.04	1.10	17.81	17.67	18.17		1.28	1.43	0.78
10	16QAM 1-49	22.11	22.03	22.13		1.14	1.32	1.19	17.09	16.97	18.05		2.00	2.13	0.90
10	16QAM 25-0	21.15	21.38	21.31	≤ 2	2.10	1.97	2.01	16.53	16.53	16.16	≤ 2	2.56	2.57	2.79
10	16QAM 25-12	21.19	21.14	21.13		2.06	2.21	2.19	16.43	16.28	16.07		2.66	2.82	2.88
10	16QAM 25-24	21.06	21.04	21.24		2.19	2.31	2.08	16.16	16.17	16.34		2.93	2.93	2.61
10	16QAM 50-0	21.01	21.10	20.99		2.24	2.25	2.33	16.33	16.30	16.16		2.76	2.80	2.79
Channel		26065	26365	26665		26065	26365	26665	26065	26365	26665		26065	26365	26665
Frequency (MHz)		1852.5	1882.5	1912.5		1852.5	1882.5	1912.5	1852.5	1882.5	1912.5		1852.5	1882.5	1912.5
5	QPSK 1-0	23.24	23.33	23.13	0	0.00	0.00	0.00	19.04	19.01	18.81	0	0.11	0.07	0.05
5	QPSK 1-12	23.23	23.14	23.12		0.01	0.19	0.01	19.15	19.08	18.86		0.00	0.00	0.00
5	QPSK 1-24	23.06	22.93	23.08		0.18	0.40	0.05	18.87	19.06	18.69		0.28	0.02	0.17
5	QPSK 12-0	22.29	22.35	22.25	≤ 1	0.95	0.98	0.88	18.08	17.93	17.37	≤ 1	1.07	1.15	1.49
5	QPSK 12-6	22.24	22.20	22.23		1.00	1.13	0.90	18.12	17.87	17.51		1.03	1.21	1.35
5	QPSK 12-11	22.22	22.16	22.22		1.02	1.17	0.91	18.03	17.62	17.59		1.12	1.46	1.27
5	QPSK 25-0	22.21	22.24	22.09		1.03	1.09	1.04	18.00	17.72	17.39		1.15	1.36	1.47
5	16QAM 1-0	22.29	22.16	22.09	≤ 1	0.95	1.17	1.04	18.07	18.04	17.89	≤ 1	1.08	1.04	0.97
5	16QAM 1-12	22.20	22.13	22.06		1.04	1.20	1.07	18.21	18.00	18.13		0.94	1.08	0.73
5	16QAM 1-24	22.27	22.08	22.03		0.97	1.25	1.10	17.46	17.23	17.80		1.69	1.85	1.06
5	16QAM 12-0	21.33	21.37	21.33	≤ 2	1.91	1.96	1.80	16.90	16.67	16.38	≤ 2	2.25	2.41	2.48
5	16QAM 12-6	21.29	21.24	21.31		1.95	2.09	1.82	16.75	16.66	16.81		2.40	2.42	2.05
5	16QAM 12-11	21.23	21.26	21.30		2.01	2.07	1.83	16.61	16.40	16.99		2.54	2.68	1.87
5	16QAM 25-0	21.13	21.14	21.14		2.11	2.19	1.99	16.60	16.49	16.72		2.55	2.59	2.14
Channel		26055	26365	26675		26055	26365	26675	26055	26365	26675		26055	26365	26675
Frequency (MHz)		1851.5	1882.5	1913.5		1851.5	1882.5	1913.5	1851.5	1882.5	1913.5		1851.5	1882.5	1913.5
3	QPSK 1-0	23.27	23.25	23.15	0	0.00	0.00	0.00	19.04	19.04	18.62	0	0.00	0.22	0.00
3	QPSK 1-7	23.21	23.19	23.13		0.06	0.06	0.02	18.94	19.26	18.46		0.10	0.00	0.16
3	QPSK 1-14	23.15	23.02	23.13		0.12	0.23	0.02	18.84	19.03	18.49		0.20	0.23	0.13
3	QPSK 8-0	22.35	22.33	22.19	≤ 1	0.92	0.92	0.96	18.20	18.16	17.86	≤ 1	0.84	1.10	0.76
3	QPSK 8-4	22.33	22.08	22.16		0.94	1.17	0.99	18.17	17.96	18.14		0.87	1.30	0.48
3	QPSK 8-7	22.25	22.14	22.15		1.02	1.11	1.00	18.14	17.85	18.20		0.90	1.41	0.42
3	QPSK 15-0	22.27	22.21	22.09		1.00	1.04	1.06	18.08	17.87	18.06		0.96	1.39	0.56
3	16QAM 1-0	22.23	22.21	22.15	≤ 1	1.04	1.04	1.00	17.85	18.04	17.84	≤ 1	1.19	1.22	0.78
3	16QAM 1-7	22.13	22.19	22.13		1.14	1.06	1.02	18.04	18.08	17.85		1.00	1.18	0.77
3	16QAM 1-14	22.19	22.02	22.10		1.08	1.23	1.05	17.40	17.79	18.15		1.64	1.47	0.47
3	16QAM 8-0	21.32	21.20	21.19	≤ 2	1.95	2.05	1.96	16.73	17.00	16.42	≤ 2	2.31	2.26	2.20
3	16QAM 8-4	21.26	21.05	21.16		2.01	2.20	1.99	16.80	16.95	16.77		2.24	2.31	1.85
3	16QAM 8-7	21.32	21.13	21.14		1.95	2.12	2.01	16.63	16.80	16.85		2.41	2.46	1.77
3	16QAM 15-0	21.31	21.20	21.28		1.96	2.05	1.87	16.67	16.81	16.58		2.37	2.45	2.04
Channel		26047	26365	26683		26047	26365	26683	26047	26365	26683		26047	26365	26683
Frequency (MHz)		1850.7	1882.5	1914.3		1850.7	1882.5	1914.3	1850.7	1882.5	1914.3		1850.7	1882.5	1914.3
1.4	QPSK 1-0	23.32	23.25	23.17	0	0.00	0.00	0.00	18.95	19.01	18.75	0	0.12	0.27	0.00
1.4	QPSK 1-2	23.28	23.16	23.15		0.04	0.09	0.02	18.98	19.22	18.50		0.09	0.06	0.25
1.4	QPSK 1-5	23.18	23.04	23.16		0.14	0.21	0.01	18.94	19.28	18.71		0.13	0.00	0.04
1.4	QPSK 3-0	23.20	23.11	23.15		0.12	0.14	0.02	19.01	19.15	18.56		0.06	0.13	0.19
1.4	QPSK 3-1	23.20	23.17	23.09		0.12	0.08	0.08	18.95	19.10	18.65		0.12	0.18	0.10
1.4	QPSK 3-2	23.22	23.12	23.14		0.10	0.13	0.03	19.07	19.12	18.69		0.00	0.16	0.06
1.4	QPSK 6-0	22.35	22.25	22.25	≤ 1	0.97	1.00	0.92	18.14	18.09	17.61	≤ 1	0.93	1.19	1.14
1.4	16QAM 1-0	22.25	22.25	22.21	≤ 1	1.07	1.00	0.96	18.02	18.19	17.91	≤ 1	1.05	1.09	0.84
1.4	16QAM 1-2	22.18	22.19	22.19		1.14	1.06	0.98	17.92	18.32	18.00		1.15	0.96	0.75
1.4	16QAM 1-5	22.14	22.17	22.11		1.18	1.08	1.06	17.91	18.19	18.39		1.16	1.09	0.36
1.4	16QAM 3-0	22.21	22.15	22.11		1.11	1.10	1.06	17.80	18.00	17.74		1.27	1.28	1.01
1.4	16QAM 3-1	22.18	22.12	22.18		1.14	1.13	0.99	17.65	17.95	17.81		1.42	1.33	0.94
1.4	16QAM 3-2	22.22	22.10	22.17		1.10	1.15	1.00	17.66	18.06	17.95		1.41	1.22	0.80
1.4	16QAM 6-0	21.34	21.26	21.28	≤ 2	1.98	1.99	1.89	16.59	16.93	16.83	≤ 2	2.48	2.35	1.92

<LTE Band 12>

BW [MHz]	Mod / RB (Size - Offset)	Full Power (24dBm)							Reduced Power (20dBm)						
		Average Power. (dBm)			3GPP MPR	MPR Result (dB)			Average Power. (dBm)			3GPP MPR	MPR Result (dB)		
		Low Ch	Mid Ch	High Ch		Low Ch	Mid Ch	High Ch	Low Ch	Mid Ch	High Ch		Low Ch	Mid Ch	High Ch
Channel		23060	23095	23130		23060	23095	23130	23060	23095	23130		23060	23095	23130
Frequency (MHz)		704	707.5	711		704	707.5	711	704	707.5	711		704	707.5	711
10	QPSK 1-0	23.42	22.85	22.51	0	0.00	0.53	0.96	19.27	18.92	18.65	0	0.00	0.00	0.88
10	QPSK 1-24	22.95	22.54	23.19		0.47	0.84	0.28	18.42	18.53	18.71		0.85	0.39	0.82
10	QPSK 1-49	22.75	23.38	23.47		0.67	0.00	0.00	18.50	18.90	19.53		0.77	0.02	0.00
10	QPSK 25-0	22.25	21.59	22.49	≤ 1	1.17	1.79	0.98	18.42	17.77	17.19	≤ 1	0.85	1.15	2.34
10	QPSK 25-12	21.91	21.52	22.09		1.51	1.86	1.38	18.06	17.64	17.25		1.21	1.28	2.28
10	QPSK 25-24	21.63	21.83	22.49		1.79	1.55	0.98	17.83	17.92	17.91		1.44	1.00	1.62
10	QPSK 50-0	21.88	21.71	22.02		1.54	1.67	1.45	18.14	17.77	17.35		1.13	1.15	2.18
10	16QAM 1-0	22.42	21.84	21.51	≤ 1	1.00	1.54	1.96	18.51	18.31	17.02	≤ 1	0.76	0.61	2.51
10	16QAM 1-24	22.12	21.57	22.38		1.30	1.81	1.09	17.86	17.89	17.48		1.41	1.03	2.05
10	16QAM 1-49	21.75	22.46	22.43		1.67	0.92	1.04	17.49	17.82	18.68		1.78	1.10	0.85
10	16QAM 25-0	21.23	20.57	20.38	≤ 2	2.19	2.81	3.09	17.18	16.06	16.12	≤ 2	2.09	2.86	3.41
10	16QAM 25-12	20.82	20.50	21.15		2.60	2.88	2.32	16.75	16.02	16.33		2.52	2.90	3.20
10	16QAM 25-24	20.75	20.75	21.48		2.67	2.63	1.99	16.53	16.27	16.96		2.74	2.65	2.57
10	16QAM 50-0	20.86	20.61	21.10		2.56	2.77	2.37	16.68	16.20	16.42		2.59	2.72	3.11
Channel		23035	23095	23155		23035	23095	23155	23035	23095	23155		23035	23095	23155
Frequency (MHz)		701.5	707.5	713.5		701.5	707.5	713.5	701.5	707.5	713.5		701.5	707.5	713.5
5	QPSK 1-0	23.41	22.40	23.13	0	0.00	0.27	0.30	19.22	18.18	18.75	0	0.00	0.28	0.80
5	QPSK 1-12	23.25	22.55	23.43		0.16	0.12	0.00	19.19	18.15	19.22		0.03	0.31	0.33
5	QPSK 1-24	22.91	22.67	23.25		0.50	0.00	0.18	18.32	18.46	19.55		0.90	0.00	0.00
5	QPSK 12-0	22.41	21.39	22.32	≤ 1	1.00	1.28	1.11	18.13	17.70	17.56	≤ 1	1.09	0.76	1.99
5	QPSK 12-6	22.28	21.43	22.40		1.13	1.24	1.03	18.16	17.66	18.16		1.06	0.80	1.39
5	QPSK 12-11	22.18	21.61	22.43		1.23	1.06	1.00	17.87	17.61	18.37		1.35	0.85	1.18
5	QPSK 25-0	22.27	21.48	22.44		1.14	1.19	0.99	18.05	17.68	18.06		1.17	0.78	1.49
5	16QAM 1-0	22.44	21.32	22.35	≤ 1	0.97	1.35	1.08	18.23	17.45	17.49	≤ 1	0.99	1.01	2.06
5	16QAM 1-12	22.38	21.41	22.35		1.03	1.26	1.08	18.41	17.29	18.31		0.81	1.17	1.24
5	16QAM 1-24	21.91	21.46	22.41		1.50	1.21	1.02	17.71	17.45	18.74		1.51	1.01	0.81
5	16QAM 12-0	21.48	20.47	21.31	≤ 2	1.93	2.20	2.12	17.39	16.17	16.65	≤ 2	1.83	2.29	2.90
5	16QAM 12-6	21.41	20.58	21.43		2.00	2.09	2.00	17.34	16.16	17.25		1.88	2.30	2.30
5	16QAM 12-11	21.24	20.67	21.41		2.17	2.00	2.02	17.12	16.13	17.46		2.10	2.33	2.09
5	16QAM 25-0	21.21	20.64	21.34		2.20	2.03	2.09	17.31	16.21	17.05		1.91	2.25	2.50
Channel		23025	23095	23165		23025	23095	23165	23025	23095	23165		23025	23095	23165
Frequency (MHz)		700.5	707.5	714.5		700.5	707.5	714.5	700.5	707.5	714.5		700.5	707.5	714.5
3	QPSK 1-0	23.36	22.41	23.35	0	0.04	0.07	0.05	19.32	18.61	19.14	0	0.08	0.00	0.42
3	QPSK 1-7	23.40	22.48	23.40		0.00	0.00	0.00	19.40	18.53	19.16		0.00	0.08	0.40
3	QPSK 1-14	23.22	22.42	23.28		0.18	0.06	0.12	19.21	18.46	19.56		0.19	0.15	0.00
3	QPSK 8-0	22.35	21.50	22.38	≤ 1	1.05	0.98	1.02	18.47	17.60	18.26	≤ 1	0.93	1.01	1.30
3	QPSK 8-4	22.42	21.42	22.44		0.98	1.06	0.96	18.42	17.59	18.34		0.98	1.02	1.22
3	QPSK 8-7	22.31	21.50	22.32		1.09	0.98	1.08	18.32	17.54	18.53		1.08	1.07	1.03
3	QPSK 15-0	22.38	21.47	22.37		1.02	1.01	1.03	18.34	17.63	18.33		1.06	0.98	1.23
3	16QAM 1-0	22.26	22.40	22.36	≤ 1	1.14	0.08	1.04	18.24	18.01	18.18	≤ 1	1.16	0.60	1.38
3	16QAM 1-7	22.47	22.46	22.42		0.93	0.02	0.98	18.75	17.95	18.42		0.65	0.66	1.14
3	16QAM 1-14	22.12	22.45	22.29		1.28	0.03	1.11	18.62	17.90	18.51		0.78	0.71	1.05
3	16QAM 8-0	21.48	21.43	21.42	≤ 2	1.92	1.05	1.98	17.78	16.81	17.11	≤ 2	1.62	1.80	2.45
3	16QAM 8-4	21.37	21.45	21.44		2.03	1.03	1.96	17.72	16.83	17.34		1.68	1.78	2.22
3	16QAM 8-7	21.30	21.49	21.44		2.10	0.99	1.96	17.63	16.77	17.45		1.77	1.84	2.11
3	16QAM 15-0	21.45	21.45	21.48		1.95	1.03	1.92	17.58	16.83	17.26		1.82	1.78	2.30
Channel		23017	23095	23173		23017	23095	23173	23017	23095	23173		23017	23095	23173
Frequency (MHz)		699.7	707.5	715.3		699.7	707.5	715.3	699.7	707.5	715.3		699.7	707.5	715.3
1.4	QPSK 1-0	23.33	22.47	23.27	0	0.11	0.15	0.04	19.36	18.46	19.44	0	0.22	0.15	0.16
1.4	QPSK 1-2	23.40	22.62	23.29		0.04	0.00	0.02	19.46	18.56	19.50		0.12	0.05	0.10
1.4	QPSK 1-5	23.44	22.49	23.25		0.00	0.13	0.06	19.35	18.51	19.60		0.23	0.10	0.00
1.4	QPSK 3-0	23.35	22.60	23.29		0.09	0.02	0.02	19.39	18.59	19.49		0.19	0.02	0.11
1.4	QPSK 3-1	23.38	22.56	23.31		0.06	0.06	0.00	19.47	18.55	19.57		0.11	0.06	0.03
1.4	QPSK 3-2	23.37	22.51	23.29		0.07	0.11	0.02	19.58	18.61	19.56		0.00	0.00	0.04
1.4	QPSK 6-0	22.44	21.72	22.49	≤ 1	1.00	0.90	0.82	18.52	17.65	18.56	≤ 1	1.06	0.96	1.04
1.4	16QAM 1-0	22.38	22.36	22.44	≤ 1	1.06	0.26	0.87	18.24	17.89	18.61	≤ 1	1.34	0.72	0.99
1.4	16QAM 1-2	22.43	22.43	22.48		1.01	0.19	0.83	18.48	17.99	18.68		1.10	0.62	0.92
1.4	16QAM 1-5	22.45	22.39	22.48		0.99	0.23	0.83	18.37	17.83	18.64		1.21	0.78	0.96
1.4	16QAM 3-0	22.44	22.37	22.42		1.00	0.25	0.89	18.16	17.67	18.52		1.42	0.94	1.08
1.4	16QAM 3-1	22.42	22.41	22.41		1.02	0.21	0.90	18.24	17.66	18.57		1.34	0.95	1.03
1.4	16QAM 3-2	22.41	22.42	22.49		1.03	0.20	0.82	18.30	17.70	18.53		1.28	0.91	1.07
1.4	16QAM 6-0	21.42	21.39	21.44	≤ 2	2.02	1.23	1.87	17.25	16.76	17.47	≤ 2	2.33	1.85	2.13

<LTE Band 4>

BW [MHz]	Mod / RB (Size - Offset)	Full Power (23.5dBm)							Reduced Power (19.5dBm)						
		Average Power. (dBm)			3GPP MPR	MPR Result (dB)			Average Power. (dBm)			3GPP MPR	MPR Result (dB)		
		Low Ch	Mid Ch	High Ch		Low Ch	Mid Ch	High Ch	Low Ch	Mid Ch	High Ch		Low Ch	Mid Ch	High Ch
Channel		20000	20175	20350		20000	20175	20350	20000	20175	20350		20000	20175	20350
Frequency (MHz)		1715	1732.5	1750		1715	1732.5	1750	1715	1732.5	1750		1715	1732.5	1750
10	QPSK 1-0	22.96	23.03	23.02	0	0.00	0.00	0.00	19.09	18.85	19.05	0	0.00	0.21	0.05
10	QPSK 1-24	22.94	22.96	22.98		0.02	0.07	0.04	19.07	19.02	19.10		0.02	0.04	0.00
10	QPSK 1-49	22.81	23.01	23.00		0.15	0.02	0.02	18.97	19.06	18.84		0.12	0.00	0.26
10	QPSK 25-0	22.10	21.82	22.15	≤ 1	0.86	1.21	0.87	18.07	17.94	18.24	≤ 1	1.02	1.12	0.86
10	QPSK 25-12	21.99	21.68	22.02		0.97	1.35	1.00	17.99	17.90	18.19		1.10	1.16	0.91
10	QPSK 25-24	21.95	21.70	21.94		1.01	1.33	1.08	18.08	17.85	18.03		1.01	1.21	1.07
10	QPSK 50-0	21.79	21.61	21.91		1.17	1.42	1.11	17.97	17.72	18.06		1.12	1.34	1.04
10	16QAM 1-0	22.12	21.89	22.29	≤ 1	0.84	1.14	0.73	18.05	17.87	18.01	≤ 1	1.04	1.19	1.09
10	16QAM 1-24	22.10	21.81	22.27		0.86	1.22	0.75	17.99	17.99	18.17		1.10	1.07	0.93
10	16QAM 1-49	21.92	21.82	22.28		1.04	1.21	0.74	17.97	17.87	16.76		1.12	1.19	2.34
10	16QAM 25-0	20.79	20.72	21.01	≤ 2	2.17	2.31	2.01	16.86	16.43	17.07	≤ 2	2.23	2.63	2.03
10	16QAM 25-12	20.76	20.58	20.96		2.20	2.45	2.06	16.99	16.72	16.52		2.10	2.34	2.58
10	16QAM 25-24	20.80	20.69	21.00		2.16	2.34	2.02	16.91	16.91	16.21		2.18	2.15	2.89
10	16QAM 50-0	20.66	20.53	20.86		2.30	2.50	2.16	16.95	16.75	16.42		2.14	2.31	2.68
Channel		19975	20175	20375		19975	20175	20375	19975	20175	20375		19975	20175	20375
Frequency (MHz)		1712.5	1732.5	1752.5		1712.5	1732.5	1752.5	1712.5	1732.5	1752.5		1712.5	1732.5	1752.5
5	QPSK 1-0	22.95	22.89	23.03	0	0.00	0.00	0.00	19.12	18.91	18.98	0	0.00	0.12	0.18
5	QPSK 1-12	22.89	22.82	23.02		0.06	0.07	0.01	19.08	19.03	19.16		0.04	0.00	0.00
5	QPSK 1-24	22.90	22.86	23.01		0.05	0.03	0.02	19.08	18.92	18.70		0.04	0.11	0.46
5	QPSK 12-0	21.97	21.68	22.14	≤ 1	0.98	1.21	0.89	18.18	17.84	17.94	≤ 1	0.94	1.19	1.22
5	QPSK 12-6	21.85	21.84	22.10		1.10	1.05	0.93	18.21	18.03	18.02		0.91	1.00	1.14
5	QPSK 12-11	21.86	21.84	22.11		1.09	1.05	0.92	18.18	17.93	18.12		0.94	1.10	1.04
5	QPSK 25-0	21.80	21.88	22.08		1.15	1.01	0.95	18.08	17.95	18.11		1.04	1.08	1.05
5	16QAM 1-0	22.11	21.78	22.11	≤ 1	0.84	1.11	0.92	18.12	17.81	17.97	≤ 1	1.00	1.22	1.19
5	16QAM 1-12	22.10	21.75	22.06		0.85	1.14	0.97	18.43	17.92	18.11		0.69	1.11	1.05
5	16QAM 1-24	21.91	21.77	22.07		1.04	1.12	0.96	18.38	17.90	17.91		0.74	1.13	1.25
5	16QAM 12-0	20.90	20.87	21.06	≤ 2	2.05	2.02	1.97	16.87	17.13	17.17	≤ 2	2.25	1.90	1.99
5	16QAM 12-6	20.87	20.97	21.08		2.08	1.92	1.95	16.94	17.12	17.32		2.18	1.91	1.84
5	16QAM 12-11	20.81	20.84	21.08		2.14	2.05	1.95	16.73	17.04	16.76		2.39	1.99	2.40
5	16QAM 25-0	20.75	20.82	20.98		2.20	2.07	2.05	16.79	16.96	16.88		2.33	2.07	2.28
Channel		19965	20175	20385		19965	20175	20385	19965	20175	20385		19965	20175	20385
Frequency (MHz)		1711.5	1732.5	1753.5		1711.5	1732.5	1753.5	1711.5	1732.5	1753.5		1711.5	1732.5	1753.5
3	QPSK 1-0	22.95	22.93	22.99	0	0.00	0.00	0.00	19.01	18.94	19.07	0	0.12	0.07	0.16
3	QPSK 1-7	22.87	22.92	22.97		0.08	0.01	0.02	19.08	19.01	19.23		0.05	0.00	0.00
3	QPSK 1-14	22.75	22.90	22.94		0.20	0.03	0.05	19.13	19.01	18.88		0.00	0.00	0.35
3	QPSK 8-0	21.88	21.85	22.28	≤ 1	1.07	1.08	0.71	18.13	17.94	18.10	≤ 1	1.00	1.07	1.13
3	QPSK 8-4	21.98	21.98	22.09		0.97	0.95	0.90	18.14	17.99	18.28		0.99	1.02	0.95
3	QPSK 8-7	21.89	21.88	22.04		1.06	1.05	0.95	18.26	17.94	18.22		0.87	1.07	1.01
3	QPSK 15-0	21.97	21.86	22.17		0.98	1.07	0.82	18.08	18.01	18.17		1.05	1.00	1.06
3	16QAM 1-0	21.88	21.83	22.17	≤ 1	1.07	1.10	0.82	18.16	17.83	18.02	≤ 1	0.97	1.18	1.21
3	16QAM 1-7	21.84	21.82	22.16		1.11	1.11	0.83	18.10	17.91	18.26		1.03	1.10	0.97
3	16QAM 1-14	21.79	21.82	21.96		1.16	1.11	1.03	18.14	17.91	18.01		0.99	1.10	1.22
3	16QAM 8-0	20.75	20.74	21.13	≤ 2	2.20	2.19	1.86	17.39	16.72	17.16	≤ 2	1.74	2.29	2.07
3	16QAM 8-4	20.83	20.89	20.96		2.12	2.04	2.03	17.46	16.82	17.12		1.67	2.19	2.11
3	16QAM 8-7	20.76	20.81	21.00		2.19	2.12	1.99	17.28	16.67	16.93		1.85	2.34	2.30
3	16QAM 15-0	20.66	20.85	21.13		2.29	2.08	1.86	17.20	16.69	16.96		1.93	2.32	2.27
Channel		19957	20175	20393		19957	20175	20393	19957	20175	20393		19957	20175	20393
Frequency (MHz)		1710.7	1732.5	1754.3		1710.7	1732.5	1754.3	1710.7	1732.5	1754.3		1710.7	1732.5	1754.3
1.4	QPSK 1-0	22.99	22.85	22.96	0	0.00	0.00	0.00	19.01	18.95	19.00	0	0.11	0.08	0.06
1.4	QPSK 1-2	22.92	22.82	22.92		0.07	0.03	0.04	19.03	19.00	19.01		0.09	0.03	0.05
1.4	QPSK 1-5	22.92	22.82	22.88		0.07	0.03	0.08	18.92	18.97	18.84		0.20	0.06	0.22
1.4	QPSK 3-0	22.97	22.78	22.87		0.02	0.07	0.09	19.00	18.93	19.06		0.12	0.10	0.00
1.4	QPSK 3-1	22.97	22.67	22.91		0.02	0.18	0.05	19.12	18.95	19.00		0.00	0.08	0.06
1.4	QPSK 3-2	22.91	22.77	22.89		0.08	0.08	0.07	19.08	19.03	19.05		0.04	0.00	0.01
1.4	QPSK 6-0	21.84	22.11	22.26	≤ 1	1.15	0.74	0.70	18.02	18.00	18.08	≤ 1	1.10	1.03	0.98
1.4	16QAM 1-0	21.98	21.93	22.13	≤ 1	1.01	0.92	0.83	18.03	17.85	18.01	≤ 1	1.09	1.18	1.05
1.4	16QAM 1-2	21.93	21.87	22.01		1.06	0.98	0.95	18.14	17.92	18.15		0.98	1.11	0.91
1.4	16QAM 1-5	21.97	21.88	22.04		1.02	0.97	0.92	18.02	18.00	18.18		1.10	1.03	0.88
1.4	16QAM 3-0	21.96	21.89	22.01		1.03	0.96	0.95	18.02	17.96	18.10		1.10	1.07	0.96
1.4	16QAM 3-1	21.90	21.91	22.08		1.09	0.94	0.88	18.13	17.93	18.08		0.99	1.10	0.98
1.4	16QAM 3-2	21.85	21.81	22.04		1.14	1.04	0.92	18.04	18.05	18.07		1.08	0.98	0.99
1.4	16QAM 6-0	20.83	20.86	21.07	≤ 2	2.16	1.99	1.89	17.21	16.91	17.01	≤ 2	1.91	2.12	2.05

<WLAN 2.4GHz Conducted Power>

WLAN 2.4G 802.11b Average Power (dBm)					
Channel	Frequency (MHz)	Data Rate (bps)			
		1M	2M	5.5M	11M
CH 01	2412	14.12	14.01	14.09	14.14
CH 06	2437	14.66	14.47	14.60	14.65
CH 11	2462	14.56	14.34	14.36	14.50

WLAN 2.4G 802.11g Average Power (dBm)									
Channel	Frequency (MHz)	Data Rate (bps)							
		6M	9M	12M	18M	24M	36M	48M	54M
CH 01	2412	11.94	12.03	12.10	12.03	12.32	12.19	12.26	12.31
CH 06	2437	12.77	12.83	12.77	12.89	13.10	13.02	13.06	13.18
CH 11	2462	12.01	12.04	12.13	12.15	12.32	12.25	12.29	12.34

WLAN 2.4G 802.11n (BW 20MHz) Average Power (dBm)									
Channel	Frequency (MHz)	MCS Index							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 01	2412	12.00	12.17	12.23	12.28	12.32	12.30	12.32	12.35
CH 06	2437	12.78	12.93	13.04	13.06	13.09	12.96	13.09	13.14
CH 11	2462	12.12	12.22	12.25	12.26	12.37	12.38	12.39	12.38

Note:

1. Per KDB 248227 D01 v01r02, choose the highest output power channel to test SAR and determine further SAR exclusion
2. For each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of these configurations is less than 1/4dB higher than those measured at the lowest data rate
3. Per KDB 248227 D01 v01r02, 11g and 11n-HT20 output power is less than 1/4dB higher than 11b mode, thus the SAR can be excluded.

<Bluetooth Conducted Power>

Channel	Frequency (MHz)	Average power (dBm)		
		Mode		
		GFSK	π/4-DQPSK	8-DPSK
CH 00	2402	0.12	-0.60	-0.56
CH 39	2441	1.72	0.89	0.89
CH 78	2480	-1.51	-1.59	-2.07

Channel	Frequency (MHz)	Average power (dBm)
		Mode
		BT v4.0 LE, GFSK
CH 00	2402	0.15
CH 19	2440	0.58
CH 39	2480	-1.50

12. SAR Test Results

Note:

1. Per KDB 447498 D01v05, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   Scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   Reported SAR(W/kg)= Measured SAR(W/kg) Scaling Factor*
2. Per KDB 447498 D01v05, for each exposure position, if the highest output channel reported SAR ≤0.8W/kg, other channels SAR testing are not necessary
3. For Hotspot SAR testing, per KDB 941225 D06, for EUT dimension ≥ 9cm*5cm, the test distance is 1cm. SAR must be measured for all surfaces and sides with a transmitting antenna located within 2.5cm from that surface or edge.
4. Considering the possibility of VOIP operation, per KDB 941225 D01 1xEv-Do RevA (4096 bits) SAR for the head exposure positions and body-worn positions are performed.

12.1 Test Records for Head SAR Test

<CDMA2000>

Plot No.	Band	Mode	Test Position	Ch.	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)	Reduced Power (dB)
113	CDMA2000 BC0	RC3 SO55	Right Cheek	384	23.75	24	1.059	-0.01	0.392	0.415	0
114	CDMA2000 BC0	RC3 SO55	Right Tilted	384	23.75	24	1.059	0.01	0.264	0.280	0
115	**CDMA2000 BC0**	**RC3 SO55**	**Left Cheek**	**384**	**23.75**	**24**	**1.059**	**0.01**	**0.422**	**0.447**	**0**
116	CDMA2000 BC0	RC3 SO55	Left Tilted	384	23.75	24	1.059	-0.09	0.334	0.354	0
166	CDMA2000 BC0	RTEAP 4096	Left Cheek	384	23.63	24	1.089	-0.09	0.376	0.376	0
24	**CDMA2000 BC15**	**RC3 SO55**	**Right Cheek**	**875**	**23.94**	**24**	**1.014**	**0.16**	**0.484**	**0.491**	**0**
25	CDMA2000 BC15	RC3 SO55	Right Tilted	875	23.94	24	1.014	0.01	0.174	0.176	0
26	CDMA2000 BC15	RC3 SO55	Left Cheek	875	23.94	24	1.014	0.02	0.326	0.331	0
27	CDMA2000 BC15	RC3 SO55	Left Tilted	875	23.94	24	1.014	-0.04	0.208	0.211	0
167	CDMA2000 BC15	RTEAP 4096	Right Cheek	875	23.87	24	1.030	-0.07	0.455	0.455	0
28	**CDMA2000 BC1**	**RC3 SO55**	**Right Cheek**	**25**	**23.88**	**24**	**1.028**	**0.07**	**0.291**	**0.299**	**0**
29	CDMA2000 BC1	RC3 SO55	Right Tilted	25	23.88	24	1.028	-0.11	0.111	0.114	0
30	CDMA2000 BC1	RC3 SO55	Left Cheek	25	23.88	24	1.028	0.15	0.245	0.252	0
31	CDMA2000 BC1	RC3 SO55	Left Tilted	25	23.88	24	1.028	-0.17	0.104	0.107	0
168	CDMA2000 BC1	RTEAP 4096	Right Cheek	25	23.82	24	1.042	-0.05	0.244	0.244	0

<LTE>

Plot No.	Band	Mode	BW (MHz)	RB Size	RB Offset	Test Position	Ch.	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)	Reduced Power (dB)
80	**LTE Band 12**	**QPSK**	**10**	**1**	**49**	**Right Cheek**	**23130**	**23.47**	**24**	**1.130**	**-0.14**	**0.305**	**0.345**	**0**
81	LTE Band 12	QPSK	10	1	49	Right Tilted	23130	23.47	24	1.130	-0.04	0.22	0.249	0
82	LTE Band 12	QPSK	10	1	49	Left Cheek	23130	23.47	24	1.130	-0.02	0.286	0.323	0
83	LTE Band 12	QPSK	10	1	49	Left Tilted	23130	23.47	24	1.130	0.06	0.261	0.295	0
84	LTE Band 12	QPSK	10	25	0	Right Cheek	23130	22.49	23	1.125	-0.09	0.154	0.173	0
85	LTE Band 12	QPSK	10	25	0	Right Tilted	23130	22.49	23	1.125	-0.11	0.142	0.160	0
86	LTE Band 12	QPSK	10	25	0	Left Cheek	23130	22.49	23	1.125	-0.06	0.211	0.237	0
87	LTE Band 12	QPSK	10	25	0	Left Tilted	23130	22.49	23	1.125	-0.04	0.165	0.186	0
32	LTE Band 4	QPSK	10	1	0	Right Cheek	20175	23.03	23.5	1.114	-0.15	0.495	0.552	0
33	LTE Band 4	QPSK	10	1	0	Right Tilted	20175	23.03	23.5	1.114	-0.03	0.567	0.632	0
34	LTE Band 4	QPSK	10	1	0	Left Cheek	20175	23.03	23.5	1.114	-0.04	0.64	0.713	0
35	LTE Band 4	QPSK	10	1	0	Left Tilted	20175	23.03	23.5	1.114	0.12	0.651	0.725	0
36	LTE Band 4	QPSK	10	25	0	Right Cheek	20350	22.15	22.5	1.084	0.14	0.552	0.598	0
37	LTE Band 4	QPSK	10	25	0	Right Tilted	20350	22.15	22.5	1.084	-0.12	0.611	0.662	0
38	**LTE Band 4**	**QPSK**	**10**	**25**	**0**	**Left Cheek**	**20350**	**22.15**	**22.5**	**1.084**	**-0.01**	**0.727**	**0.788**	**0**
39	LTE Band 4	QPSK	10	25	0	Left Tilted	20350	22.15	22.5	1.084	0.09	0.697	0.755	0

Plot No.	Band	Mode	BW (MHz)	RB Size	RB Offset	Test Position	Ch.	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)	Reduced Power (dB)
40	LTE Band 25	QPSK	10	1	0	Right Cheek	26365	23.35	23.5	1.035	0.06	0.515	0.533	0
41	LTE Band 25	QPSK	10	1	0	Right Tilted	26365	23.35	23.5	1.035	-0.02	0.66	0.683	0
42	LTE Band 25	QPSK	10	1	0	Left Cheek	26365	23.35	23.5	1.035	0.14	0.778	0.805	0
43	LTE Band 25	QPSK	10	1	0	Left Tilted	26365	23.35	23.5	1.035	0.02	0.8	0.828	0
44	LTE Band 25	QPSK	10	1	0	Left Cheek	26090	23.25	23.5	1.059	0.12	0.714	0.756	0
45	**LTE Band 25**	**QPSK**	**10**	**1**	**0**	**Left Cheek**	**26640**	**23.32**	**23.5**	**1.042**	**-0.02**	**1.05**	**1.094**	**0**
46	LTE Band 25	QPSK	10	1	0	Left Tilted	26090	23.25	23.5	1.059	0.1	0.856	0.907	0
47	LTE Band 25	QPSK	10	1	0	Left Tilted	26640	23.32	23.5	1.042	-0.04	0.885	0.922	0
88	LTE Band 25	QPSK	10	25	0	Right Cheek	26365	22.34	22.5	1.038	0.01	0.414	0.430	0
89	LTE Band 25	QPSK	10	25	0	Right Tilted	26365	22.34	22.5	1.038	-0.08	0.515	0.534	0
90	LTE Band 25	QPSK	10	25	0	Left Cheek	26365	22.34	22.5	1.038	-0.02	0.654	0.679	0
91	LTE Band 25	QPSK	10	25	0	Left Tilted	26365	22.34	22.5	1.038	0.03	0.512	0.531	0
92	LTE Band 25	QPSK	10	50	0	Right Cheek	26365	22.10	22.5	1.096	-0.01	0.388	0.425	0
93	LTE Band 25	QPSK	10	50	0	Right Tilted	26365	22.10	22.5	1.096	-0.06	0.503	0.552	0
94	LTE Band 25	QPSK	10	50	0	Left Cheek	26365	22.10	22.5	1.096	0.05	0.63	0.691	0
95	LTE Band 25	QPSK	10	50	0	Left Tilted	26365	22.10	22.5	1.096	-0.02	0.491	0.538	0

Note:

1. Per KDB 941225 D05v02, when reported SAR of 1RB and 50%RB allocation for QPSK ≤0.8W/kg, and 100%RB with QPSK output power is less than 1RB and 50%RB, 100%RB allocation for QPSK is not required.
2. Per KDB 941225 D05v02, when reported SAR of 1RB and 50%RB allocation for QPSK >0.8W/kg for any exposure position, SAR testing of 100%RB allocation for QPSK is performed at the highest power channel.
3. 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the *reported* SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02, 16QAM SAR testing is not required.
4. Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth.

<WLAN SAR DTS>

Plot No.	Band	Mode	Data Rate	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
149	WLAN2.4GHz	802.11b	1M	Right Cheek	6	2437.00	14.66	15	1.081	0.02	0.066	0.071
150	WLAN2.4GHz	802.11b	1M	Right Tilted	6	2437.00	14.66	15	1.081	-0.1	0.024	0.026
151	**WLAN2.4GHz**	**802.11b**	**1M**	**Left Cheek**	**6**	**2437.00**	**14.66**	**15**	**1.081**	**0.06**	**0.126**	**0.136**
152	WLAN2.4GHz	802.11b	1M	Left Tilted	6	2437.00	14.66	15	1.081	-0.07	0.031	0.034

12.2 Test Records for Hotspot SAR Test

<CDMA2000>

Plot No.	Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)	Reduced Power (dB)
117	CDMA2000 BC0	RTAP 153.6	Front	1	384	836.52	23.67	24	1.079	-0.01	0.474	0.511	0
118	CDMA2000 BC0	RTAP 153.6	Back	1	384	836.52	23.67	24	1.079	-0.02	0.805	0.869	0
119	CDMA2000 BC0	RTAP 153.6	Left Side	1	384	836.52	23.67	24	1.079	-0.11	0.625	0.674	0
120	CDMA2000 BC0	RTAP 153.6	Right Side	1	384	836.52	23.67	24	1.079	-0.01	0.649	0.700	0
121	CDMA2000 BC0	RTAP 153.6	Bottom Side	1	384	836.52	23.67	24	1.079	-0.09	0.142	0.153	0
122	CDMA2000 BC0	RTAP 153.6	Back	1	1013	824.70	23.66	24	1.081	-0.04	0.759	0.821	0
123	**CDMA2000 BC0**	**RTAP 153.6**	**Back**	**1**	**777**	**848.31**	**23.62**	**24**	**1.091**	**0.01**	**0.91**	**0.993**	**0**
132	CDMA2000 BC15	RTAP 153.6	Front	1	875	1753.75	23.92	24	1.019	0.1	0.755	0.769	0
133	**CDMA2000 BC15**	**RTAP 153.6**	**Back**	**1**	**875**	**1753.75**	**23.92**	**24**	**1.019**	**-0.04**	**1.32**	**1.345**	**0**
134	CDMA2000 BC15	RTAP 153.6	Left Side	1	875	1753.75	23.92	24	1.019	0.01	0.234	0.238	0
135	CDMA2000 BC15	RTAP 153.6	Right Side	1	875	1753.75	23.92	24	1.019	-0.07	0.173	0.176	0
136	CDMA2000 BC15	RTAP 153.6	Bottom Side	1	875	1753.75	23.92	24	1.019	0.08	1.13	1.151	0
137	CDMA2000 BC15	RTAP 153.6	Back	1	25	1711.25	23.7	24	1.072	0.03	0.969	1.038	0
138	CDMA2000 BC15	RTAP 153.6	Back	1	425	1731.25	23.72	24	1.067	-0.05	0.688	0.734	0
139	CDMA2000 BC15	RTAP 153.6	Bottom Side	1	25	1711.25	23.7	24	1.072	-0.01	0.962	1.031	0
140	CDMA2000 BC15	RTAP 153.6	Bottom Side	1	425	1731.25	23.72	24	1.067	0.02	0.618	0.659	0
96	CDMA2000 BC1	RTAP 153.6	Front	1	25	1851.25	23.84	24	1.038	0.01	0.524	0.544	0
97	CDMA2000 BC1	RTAP 153.6	Back	1	25	1851.25	23.84	24	1.038	-0.03	1.25	1.297	0
98	CDMA2000 BC1	RTAP 153.6	Left Side	1	25	1851.25	23.84	24	1.038	-0.02	0.17	0.176	0
99	CDMA2000 BC1	RTAP 153.6	Right Side	1	25	1851.25	23.84	24	1.038	-0.03	0.085	0.088	0
100	CDMA2000 BC1	RTAP 153.6	Bottom Side	1	25	1851.25	23.84	24	1.038	-0.04	0.905	0.939	0
101	**CDMA2000 BC1**	**RTAP 153.6**	**Back**	**1**	**600**	**1880.00**	**23.55**	**24**	**1.109**	**-0.06**	**1.21**	**1.342**	**0**
102	CDMA2000 BC1	RTAP 153.6	Back	1	1175	1908.75	23.54	24	1.112	-0.01	0.911	1.013	0
103	CDMA2000 BC1	RTAP 153.6	Bottom Side	1	600	1880.00	23.55	24	1.109	0.07	0.97	1.076	0
104	CDMA2000 BC1	RTAP 153.6	Bottom Side	1	1175	1908.75	23.54	24	1.112	0.04	0.692	0.769	0

<LTE SAR>

Plot No.	Band	Mode	BW [MHz]	RB Size	RB Offset	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)	Reduced Power (dB)
48	LTE Band 12	QPSK	10M	1	49	Front	1	23130	711.00	23.47	24	1.130	0.01	0.23	0.260	0
49	**LTE Band 12**	**QPSK**	**10M**	**1**	**49**	**Back**	**1**	**23130**	**711.00**	**23.47**	**24**	**1.130**	**-0.03**	**0.561**	**0.634**	**0**
50	LTE Band 12	QPSK	10M	1	49	Left Side	1	23130	711.00	23.47	24	1.130	-0.11	0.186	0.210	0
51	LTE Band 12	QPSK	10M	1	49	Right Side	1	23130	711.00	23.47	24	1.130	-0.14	0.297	0.336	0
52	LTE Band 12	QPSK	10M	1	49	Top Side	1	23130	711.00	23.47	24	1.130	-0.06	0.12	0.136	0
54	LTE Band 12	QPSK	10M	25	0	Front	1	23130	711.00	22.49	23	1.125	-0.01	0.114	0.128	0
55	LTE Band 12	QPSK	10M	25	0	Back	1	23130	711.00	22.49	23	1.125	-0.1	0.425	0.478	0
56	LTE Band 12	QPSK	10M	25	0	Left Side	1	23130	711.00	22.49	23	1.125	0.01	0.103	0.116	0
57	LTE Band 12	QPSK	10M	25	0	Right Side	1	23130	711.00	22.49	23	1.125	0.08	0.135	0.152	0
58	LTE Band 12	QPSK	10M	25	0	Top Side	1	23130	711.00	22.49	23	1.125	0.02	0.07	0.079	0
01	LTE Band 4	QPSK	10M	1	0	Front	1	20175	1732.50	23.03	23.5	1.114	0.05	0.272	0.303	0
02	**LTE Band 4**	**QPSK**	**10M**	**1**	**0**	**Back**	**1**	**20175**	**1732.50**	**23.03**	**23.5**	**1.114**	**-0.08**	**0.678**	**0.755**	**0**
03	LTE Band 4	QPSK	10M	1	0	Left Side	1	20175	1732.50	23.03	23.5	1.114	-0.13	0.106	0.118	0
04	LTE Band 4	QPSK	10M	1	0	Right Side	1	20175	1732.50	23.03	23.5	1.114	0.13	0.117	0.130	0
05	LTE Band 4	QPSK	10M	1	0	Top Side	1	20175	1732.50	23.03	23.5	1.114	-0.07	0.472	0.526	0
07	LTE Band 4	QPSK	10M	25	0	Front	1	20350	1750.00	22.15	22.5	1.084	0.04	0.315	0.341	0
08	LTE Band 4	QPSK	10M	25	0	Back	1	20350	1750.00	22.15	22.5	1.084	0.06	0.683	0.740	0
09	LTE Band 4	QPSK	10M	25	0	Left Side	1	20350	1750.00	22.15	22.5	1.084	0.16	0.124	0.134	0
10	LTE Band 4	QPSK	10M	25	0	Right Side	1	20350	1750.00	22.15	22.5	1.084	0.01	0.117	0.127	0
11	LTE Band 4	QPSK	10M	25	0	Top Side	1	20350	1750.00	22.15	22.5	1.084	-0.01	0.517	0.560	0

Plot No.	Band	Mode	BW [MHz]	RB Size	RB Offset	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)	Reduced Power (dB)
13	LTE Band 25	QPSK	10M	1	0	Front	1	26365	1882.50	23.35	23.5	1.035	-0.01	0.241	0.249	0
14	LTE Band 25	QPSK	10M	1	0	Back	1	26365	1882.50	23.35	23.5	1.035	-0.1	1.17	1.211	0
15	LTE Band 25	QPSK	10M	1	0	Left Side	1	26365	1882.50	23.35	23.5	1.035	-0.05	0.101	0.105	0
16	LTE Band 25	QPSK	10M	1	0	Right Side	1	26365	1882.50	23.35	23.5	1.035	-0.05	0.132	0.137	0
17	LTE Band 25	QPSK	10M	1	0	Top Side	1	26365	1882.50	23.35	23.5	1.035	0.1	0.626	0.648	0
18	LTE Band 25	QPSK	10M	1	0	Back	1	26090	1855.00	23.25	23.5	1.059	0.1	1.12	1.186	0
19	**LTE Band 25**	**QPSK**	**10M**	**1**	**0**	**Back**	**1**	**26640**	**1910.00**	**23.32**	**23.5**	**1.042**	**-0.05**	**1.31**	**1.365**	**0**
60	LTE Band 25	QPSK	10M	25	0	Front	1	26365	1882.50	22.34	22.5	1.038	-0.05	0.156	0.162	0
61	LTE Band 25	QPSK	10M	25	0	Back	1	26365	1882.50	22.34	22.5	1.038	0.01	0.938	0.973	0
62	LTE Band 25	QPSK	10M	25	0	Left Side	1	26365	1882.50	22.34	22.5	1.038	-0.11	0.085	0.088	0
63	LTE Band 25	QPSK	10M	25	0	Right Side	1	26365	1882.50	22.34	22.5	1.038	-0.01	0.102	0.106	0
64	LTE Band 25	QPSK	10M	25	0	Top Side	1	26365	1882.50	22.34	22.5	1.038	0.06	0.503	0.522	0
65	LTE Band 25	QPSK	10M	25	0	Back	1	26090	1855.00	22.34	22.5	1.038	-0.03	0.882	0.915	0
66	LTE Band 25	QPSK	10M	25	0	Back	1	26640	1910.00	22.27	22.5	1.054	-0.1	1.04	1.097	0
70	LTE Band 25	QPSK	10M	50	0	Front	1	26365	1882.50	22.10	22.5	1.096	0.1	0.149	0.163	0
71	LTE Band 25	QPSK	10M	50	0	Back	1	26365	1882.50	22.10	22.5	1.096	-0.09	0.869	0.953	0
72	LTE Band 25	QPSK	10M	50	0	Left Side	1	26365	1882.50	22.10	22.5	1.096	-0.07	0.082	0.090	0
73	LTE Band 25	QPSK	10M	50	0	Right Side	1	26365	1882.50	22.10	22.5	1.096	-0.04	0.099	0.109	0
74	LTE Band 25	QPSK	10M	50	0	Top Side	1	26365	1882.50	22.10	22.5	1.096	-0.04	0.471	0.516	0

Note:

1. Per KDB 941225 D05v02, when reported SAR of 1RB and 50%RB allocation for QPSK ≤0.8W/kg, and 100%RB with QPSK output power is less than 1RB and 50%RB, 100%RB allocation for QPSK is not required.
2. Per KDB 941225 D05v02, when reported SAR of 1RB and 50%RB allocation for QPSK >0.8W/kg for any exposure position, SAR testing of 100%RB allocation for QPSK is performed at the highest power channel.
3. 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the *reported* SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02, 16QAM SAR testing is not required.
4. Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the *reported* SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02, 16QAM SAR testing is not required.

<WLAN SAR DTS>

Plot No.	Band	Mode	Data Rate	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
153	WLAN 2.4GHz	802.11b	1M	Front	1	6	2437.00	14.66	15	1.081	0.07	0.025	0.027
154	**WLAN 2.4GHz**	**802.11b**	**1M**	**Back**	**1**	**6**	**2437.00**	**14.66**	**15**	**1.081**	**-0.07**	**0.085**	**0.092**
155	WLAN 2.4GHz	802.11b	1M	Left Side	1	6	2437.00	14.66	15	1.081	0.03	0.052	0.056

12.3 Test Records for Body-worn SAR Test

Note:

1. "V" in the Headset column means the Headset is plugged during SAR testing.
2. Body-worn SAR testing was performed at 10mm separation, and this distance is determined by the handset manufacturer that there will be body-worn accessories that users may acquire at the time of equipment certification, to enable users to purchase aftermarket body-worn accessories with the required minimum separation.
3. Though per KDB 648474 D04v01, when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤ 1.2 W/kg, the SAR testing with a headset connected to the handset is not required, but considered the simultaneous SAR for body-worn, we still perform the SAR with headset mode.

<CDMA2000>

Plot No.	Band	Mode	Test Position	Gap (cm)	Headset	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)	Reduced Power (dB)
124	CDMA2000 BC0	RC3 SO32	Front	1	-	777	848.31	23.69	24	1.074	-0.02	0.645	0.693	0
125	**CDMA2000 BC0**	**RC3 SO32**	**Back**	**1**	**-**	**777**	**848.31**	**23.69**	**24**	**1.074**	**-0.01**	**0.96**	**1.031**	**0**
163	CDMA2000 BC0	RC3 SO32	Back	1	-	777	848.31	19.46	20	1.132	-0.03	0.381	0.431	4
126	CDMA2000 BC0	RC3 SO32	Back	1	-	1013	824.70	23.72	24	1.067	-0.01	0.759	0.810	0
127	CDMA2000 BC0	RC3 SO32	Back	1	-	384	836.52	23.75	24	1.059	0.01	0.756	0.801	0
169	CDMA2000 BC0	RTEAP 4096	Back	1	-	777	848.31	23.59	24	1.099	-0.04	0.882	0.882	0
170	CDMA2000 BC0	RTEAP 4096	Back	1	-	1013	824.70	23.61	24	1.094	-0.09	0.67	0.670	0
171	CDMA2000 BC0	RTEAP 4096	Back	1	-	384	836.52	23.63	24	1.089	0.03	0.778	0.778	0
128	CDMA2000 BC0	RC3 SO32	Back	1	V	777	848.31	23.69	24	1.074	-0.02	0.805	0.865	0
129	CDMA2000 BC0	RC3 SO32	Back	1	V	1013	824.70	23.72	24	1.067	-0.12	0.729	0.778	0
130	CDMA2000 BC0	RC3 SO32	Back	1	V	384	836.52	23.75	24	1.059	0.01	0.737	0.781	0
141	CDMA2000 BC15	RC3 SO32	Front	1	-	875	1753.75	23.92	24	1.019	0.01	0.739	0.753	0
142	**CDMA2000 BC15**	**RC3 SO32**	**Back**	**1**	**-**	**875**	**1753.75**	**23.92**	**24**	**1.019**	**0.02**	**1.38**	**1.406**	**0**
143	CDMA2000 BC15	RC3 SO32	Back	1	-	25	1711.25	23.7	24	1.072	0.07	1.04	1.114	0
144	CDMA2000 BC15	RC3 SO32	Back	1	-	425	1731.25	23.71	24	1.069	-0.04	0.693	0.741	0
173	CDMA2000 BC15	RTEAP 4096	Back	1	-	875	1753.75	23.87	24	1.030	0.01	1.34	1.340	0
174	CDMA2000 BC15	RTEAP 4096	Back	1	-	25	1711.25	23.66	24	1.081	0.03	1.07	1.070	0
175	CDMA2000 BC15	RTEAP 4096	Back	1	-	425	1731.25	23.66	24	1.081	-0.07	0.701	0.701	0
145	CDMA2000 BC15	RC3 SO32	Back	1	V	875	1753.75	23.92	24	1.019	-0.01	1.34	1.365	0
146	CDMA2000 BC15	RC3 SO32	Back	1	V	25	1711.25	23.7	24	1.072	0.01	1.04	1.114	0
147	CDMA2000 BC15	RC3 SO32	Back	1	V	425	1731.25	23.71	24	1.069	-0.02	0.682	0.729	0
105	CDMA2000 BC1	RC3 SO32	Front	1	-	25	1851.25	23.84	24	1.038	-0.07	0.548	0.569	0
106	CDMA2000 BC1	RC3 SO32	Back	1	-	25	1851.25	23.84	24	1.038	-0.01	1.21	1.255	0
107	**CDMA2000 BC1**	**RC3 SO32**	**Back**	**1**	**-**	**600**	**1880.00**	**23.57**	**24**	**1.104**	**0.03**	**1.24**	**1.369**	**0**
108	CDMA2000 BC1	RC3 SO32	Back	1	-	1175	1908.75	23.51	24	1.119	0.01	0.926	1.037	0
176	CDMA2000 BC1	RTEAP 4096	Back	1	-	25	1851.25	23.82	24	1.042	-0.04	1.19	1.190	0
177	CDMA2000 BC1	RTEAP 4096	Back	1	-	600	1880.00	23.51	24	1.119	-0.06	1.12	1.120	0
178	CDMA2000 BC1	RTEAP 4096	Back	1	-	1175	1908.75	23.52	24	1.117	-0.07	0.931	0.931	0
109	CDMA2000 BC1	RC3 SO32	Back	1	V	600	1880.00	23.57	24	1.104	-0.11	1.17	1.292	0
110	CDMA2000 BC1	RC3 SO32	Back	1	V	25	1851.25	23.84	24	1.038	0.01	1.14	1.183	0
111	CDMA2000 BC1	RC3 SO32	Back	1	V	1175	1908.75	23.51	24	1.119	0.02	0.733	0.821	0

<LTE SAR>

Plot No.	Band	Mode	BW [MHz]	RB Size	RB Offset	Test Position	Gap (cm)	Headset	Ch.	Freq. (MHz)	Average Power (dBm)	Tune -Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)	Reduced Power (dB)
48	LTE Band 12	QPSK	10M	1	49	Front	1	-	23130	711.00	23.47	24	1.130	0.01	0.23	0.260	0
49	**LTE Band 12**	**QPSK**	**10M**	**1**	**49**	**Back**	**1**	**-**	**23130**	**711.00**	**23.47**	**24**	**1.130**	**-0.03**	**0.561**	**0.634**	**0**
165	LTE Band 12	QPSK	10M	1	49	Back	1	-	23130	711.00	19.53	20	1.114	-0.01	0.226	0.252	4
54	LTE Band 12	QPSK	10M	25	0	Front	1	-	23130	711.00	22.49	23	1.125	-0.01	0.114	0.128	0
55	LTE Band 12	QPSK	10M	25	0	Back	1	-	23130	711.00	22.49	23	1.125	-0.1	0.425	0.478	0
53	LTE Band 12	QPSK	10M	1	49	Back	1	V	23130	711.00	23.47	24	1.130	0.04	0.447	0.505	0
59	LTE Band 12	QPSK	10M	25	0	Back	1	V	23130	711.00	22.49	23	1.125	0.12	0.298	0.335	0
01	LTE Band 4	QPSK	10M	1	0	Front	1	-	20175	1732.50	23.03	23.5	1.114	0.05	0.272	0.303	0
02	**LTE Band 4**	**QPSK**	**10M**	**1**	**0**	**Back**	**1**	**-**	**20175**	**1732.50**	**23.03**	**23.5**	**1.114**	**-0.08**	**0.678**	**0.755**	**0**
07	LTE Band 4	QPSK	10M	25	0	Front	1	-	20350	1750.00	22.15	22.5	1.084	0.04	0.315	0.341	0
08	LTE Band 4	QPSK	10M	25	0	Back	1	-	20350	1750.00	22.15	22.5	1.084	0.06	0.683	0.740	0
06	LTE Band 4	QPSK	10M	1	0	Front	1	V	20175	1732.50	23.03	23.5	1.114	-0.12	0.528	0.588	0
12	LTE Band 4	QPSK	10M	25	0	Back	1	V	20350	1750.00	22.15	22.5	1.084	0.1	0.607	0.658	0

Plot No.	Band	Mode	BW [MHz]	RB Size	RB Offset	Test Position	Gap (cm)	Headset	Ch.	Freq. (MHz)	Average Power (dBm)	Tune -Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)	Reduced Power (dB)
13	LTE Band 25	QPSK	10M	1	0	Front	1	-	26365	1882.50	23.35	23.5	1.035	-0.01	0.241	0.249	0
14	LTE Band 25	QPSK	10M	1	0	Back	1	-	26365	1882.50	23.35	23.5	1.035	-0.1	1.17	1.211	0
18	LTE Band 25	QPSK	10M	1	0	Back	1	-	26090	1855.00	23.25	23.5	1.059	0.1	1.12	1.186	0
19	**LTE Band 25**	**QPSK**	**10M**	**1**	**0**	**Back**	**1**	**-**	**26640**	**1910.00**	**23.32**	**23.5**	**1.042**	**-0.05**	**1.31**	**1.365**	**0**
164	LTE Band 25	QPSK	10M	1	0	Back	1	-	26640	1910.00	18.65	19.5	1.216	-0.02	0.663	0.806	4
60	LTE Band 25	QPSK	10M	25	0	Front	1	-	26365	1882.50	22.34	22.5	1.038	-0.05	0.156	0.162	0
61	LTE Band 25	QPSK	10M	25	0	Back	1	-	26365	1882.50	22.34	22.5	1.038	0.01	0.938	0.973	0
65	LTE Band 25	QPSK	10M	25	0	Back	1	-	26090	1855.00	22.34	22.5	1.038	-0.03	0.882	0.915	0
66	LTE Band 25	QPSK	10M	25	0	Back	1	-	26640	1910.00	22.27	22.5	1.054	-0.1	1.04	1.097	0
70	LTE Band 25	QPSK	10M	50	0	Front	1	-	26365	1882.50	22.10	22.5	1.096	0.1	0.149	0.163	0
71	LTE Band 25	QPSK	10M	50	0	Back	1	-	26365	1882.50	22.10	22.5	1.096	-0.09	0.869	0.953	0
20	LTE Band 25	QPSK	10M	1	0	Back	1	V	26640	1910.00	23.32	23.5	1.042	-0.07	1.31	1.365	0
21	LTE Band 25	QPSK	10M	1	0	Back	1	V	26090	1855.00	23.25	23.5	1.059	-0.03	1.05	1.112	0
22	LTE Band 25	QPSK	10M	1	0	Back	1	V	26365	1882.50	23.35	23.5	1.035	-0.08	1.1	1.139	0
67	LTE Band 25	QPSK	10M	25	0	Back	1	V	26640	1910.00	22.27	22.5	1.054	-0.05	1.02	1.075	0
68	LTE Band 25	QPSK	10M	25	0	Back	1	V	26090	1855.00	22.34	22.5	1.038	0.1	0.87	0.903	0
69	LTE Band 25	QPSK	10M	25	0	Back	1	V	26365	1882.50	22.34	22.5	1.038	-0.01	0.901	0.935	0
77	LTE Band 25	QPSK	10M	50	0	Back	1	V	26640	1910.00	22.06	22.5	1.107	-0.09	0.84	0.930	0

<WLAN SAR DTS>

Plot No.	Band	Mode	Data Rate	Test Position	Gap (cm)	Headset	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
153	WLAN 2.4GHz	802.11b	1M	Front	1	-	6	2437.00	14.66	15	1.081	0.07	0.025	0.027
154	**WLAN 2.4GHz**	**802.11b**	**1M**	**Back**	**1**	**-**	**6**	**2437.00**	**14.66**	**15**	**1.081**	**-0.07**	**0.085**	**0.092**
156	WLAN 2.4GHz	802.11b	1M	Back	1	V	6	2437.00	14.66	15	1.081	-0.09	0.081	0.088

12.4 Repeated SAR Measurement

Plot No.	Band	BW (MHz)	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Ratio	Reported SAR_{1g} (W/kg)
125	CDMA2000 BC0	-	RC3 SO32	Back	1	777	848.31	23.69	24	1.074	-0.01	0.96	1	1.031
131	CDMA2000 BC0	-	RC3 SO32	Back	1	777	848.31	23.69	24	1.074	-0.01	0.957	1.003	1.028
142	CDMA2000 BC15	-	RC3 SO32	Back	1	875	1753.75	23.92	24	1.019	0.02	1.38	1	1.406
148	CDMA2000 BC15	-	RC3 SO32	Back	1	875	1753.75	23.92	24	1.019	-0.07	1.35	1.022	1.375
97	CDMA2000 BC1	-	RTAP 153.6	Back	1	25	1851.25	23.84	24	1.038	-0.03	1.25	1	1.297
112	CDMA2000 BC1	-	RTAP 153.6	Back	1	25	1851.25	23.84	24	1.038	-0.01	1.14	1.096	1.183
19	LTE Band 25	10M	QPSK 1RB 0offset	Back	1	26640	1910.00	23.32	23.5	1.042	-0.05	1.31	1	1.365
23	LTE Band 25	10M	QPSK 1RB 0offset	Back	1	26640	1910.00	23.32	23.5	1.042	0.03	1.22	1.074	1.272

Note:

1. Per KDB 865664 D01v01, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg
2. Per KDB 865664 D01v01, if the deviation among the repeated measurement is ≤20% and the measured SAR <1.45W/kg, only one repeated measurement is required.
3. The deviation is the difference in percentage between original and repeated *measured SAR*.
4. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

12.5 Highest SAR Plot

Plot No.	Band	BW (MHz)	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
125	CDMA2000 BC0	-	RC3 SO32	Back	1	777	848.31	23.69	24	1.074	-0.01	0.96	1.031
142	CDMA2000 BC15	-	RC3 SO32	Back	1	875	1753.75	23.92	24	1.019	0.02	1.38	1.406
107	CDMA2000 BC1		RC3 SO32	Back	1	600	1880.00	23.57	24	1.104	0.03	1.24	1.369
49	LTE Band 12	10M	QPSK 1RB 49offset	Back	1	23130	711.00	23.47	24	1.130	-0.03	0.561	0.634
38	LTE Band 4	10M	QPSK 25RB 0offset	Left Cheek	-	20350	1750.00	22.15	22.5	1.084	-0.01	0.727	0.788
19	LTE Band 25	10M	QPSK 1RB 0offset	Back	1	26640	1910.00	23.32	23.5	1.042	-0.05	1.31	1.365
151	802.11b	-	-	Left Cheek	-	6	2437.00	14.66	15	1.081	0.06	0.126	0.136

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 16.01.2013

125_CDMA2000 BC0_RC3 SO32_Back_1cm_Ch777

DUT: 311602

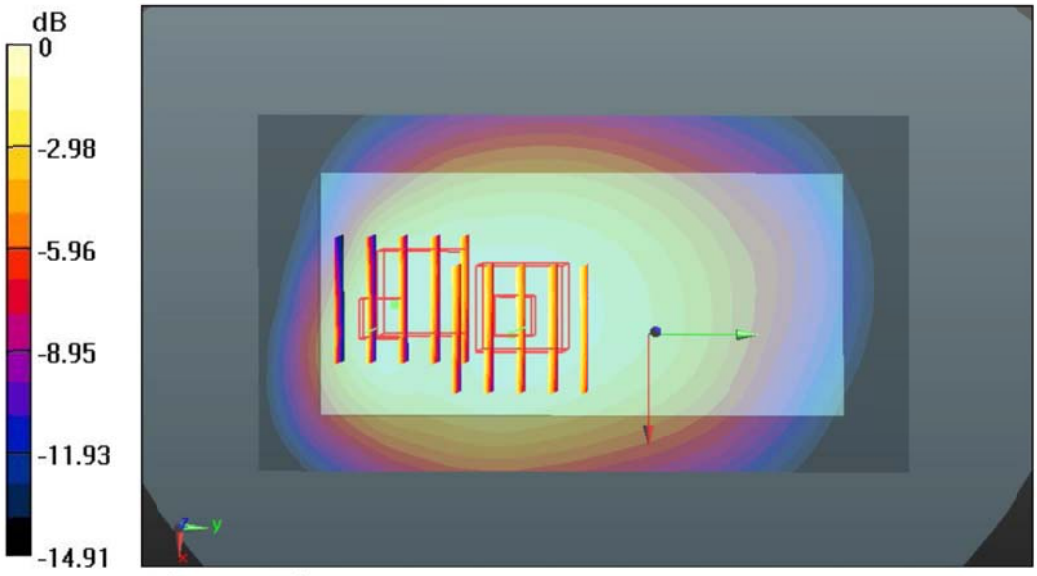
Communication System: CDMA2000; Frequency: 848.31 MHz;Duty Cycle: 1:1
Medium: MSL_835_130116 Medium parameters used: f = 848.31 MHz, σ = 0.989 mho/m; ε_r = 54.284; ρ = 1000 kg/m^3
Ambient Temperature : 23.5 ℃; Liquid Temperature : 21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(9.5, 9.5, 9.5); Calibrated: 26.11.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1303; Calibrated: 22.11.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch777/Area Scan (61x111x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.23 W/kg

Ch777/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.395 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.263 mW/g
SAR(1 g) = 0.960 mW/g; SAR(10 g) = 0.709 mW/g
Maximum value of SAR (measured) = 1.12 W/kg

Ch777/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.395 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.424 mW/g
SAR(1 g) = 0.819 mW/g; SAR(10 g) = 0.562 mW/g



0 dB = 1.12 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 16.01.2013

142_CDMA2000 BC15_RC3 SO32_Back_1cm_Ch875

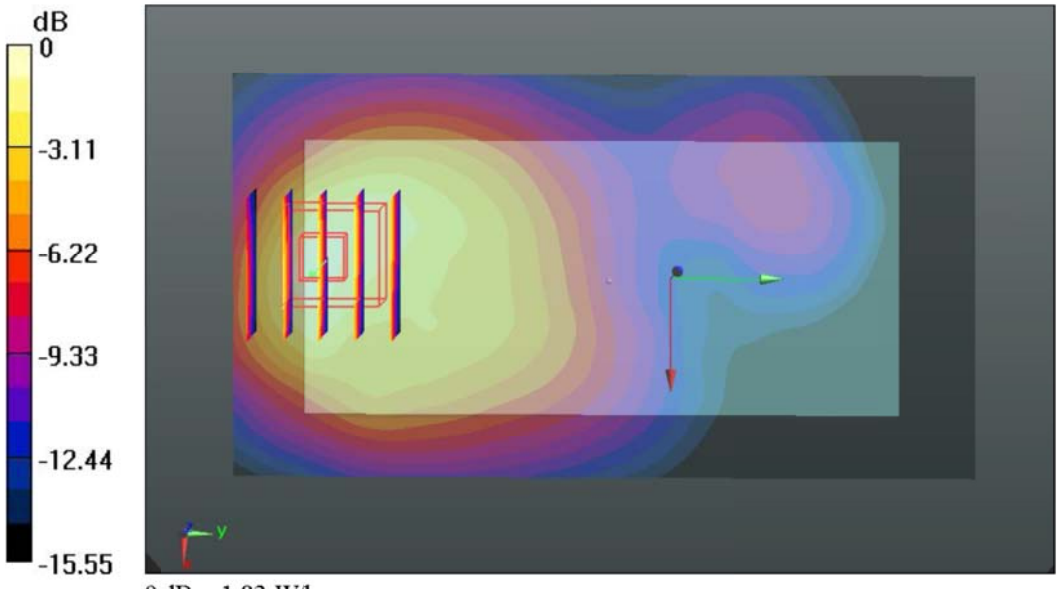
DUT: 311602

Communication System: CDMA2000; Frequency: 1753.75 MHz;Duty Cycle: 1:1
Medium: MSL_1800_130116 Medium parameters used: f = 1754 MHz; σ = 1.52 mho/m; ε_r = 55.241; ρ = 1000 kg/m^3
Ambient Temperature : 23.5 ℃; Liquid Temperature : 21.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(8, 8, 8); Calibrated: 26.11.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1303; Calibrated: 22.11.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch875/Area Scan (61x111x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.74 W/kg

Ch875/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 35.037 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 2.151 mW/g
SAR(1 g) = 1.38 mW/g; SAR(10 g) = 0.803 mW/g
Maximum value of SAR (measured) = 1.83 W/kg



0 dB = 1.83 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 15.01.2013

107_CDMA2000 BC1_RC3 SO32_Back_1cm_Ch600

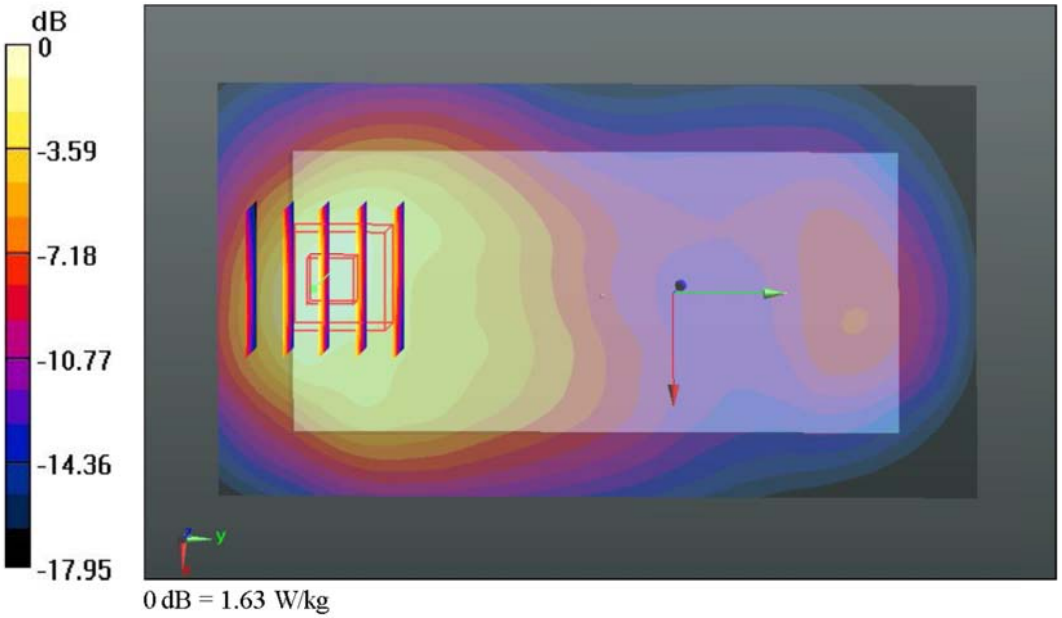
DUT: 311602

Communication System: CDMA2000; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130115 Medium parameters used: f = 1880 MHz; σ = 1.489 mho/m; ε_r = 53.955; ρ = 1000 kg/m^3
Ambient Temperature : 23.5 ℃; Liquid Temperature : 21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(7.67, 7.67, 7.67); Calibrated: 26.11.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1303; Calibrated: 22.11.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch600/Area Scan (61x111x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.57 W/kg

Ch600/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.033 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 2.029 mW/g
SAR(1 g) = 1.24 mW/g; SAR(10 g) = 0.690 mW/g
Maximum value of SAR (measured) = 1.63 W/kg



0 dB = 1.63 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 14.01.2013

49_LTE Band 12_10M_QPSK 1RB 49offset_Back_1cm_Ch23130

DUT: 311602

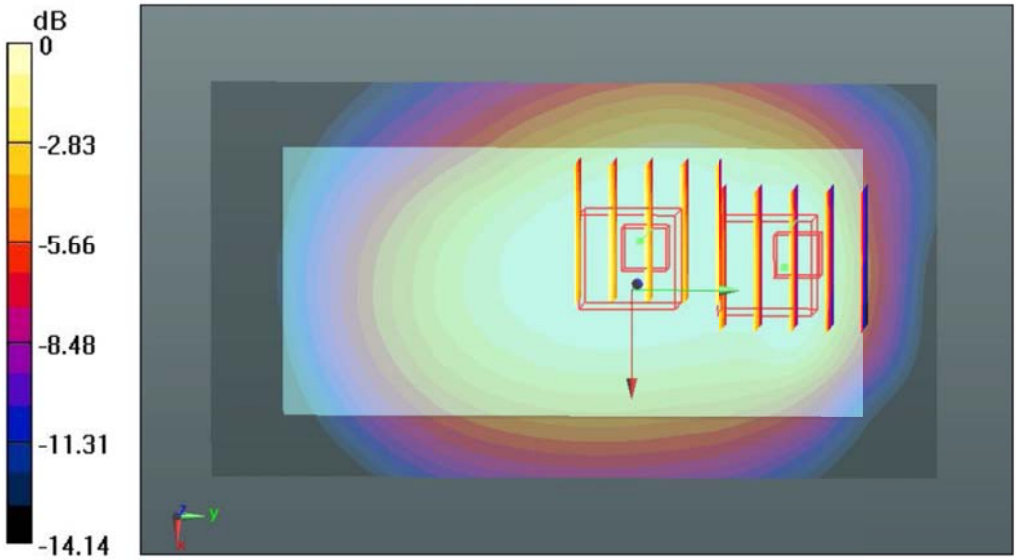
Communication System: LTE; Frequency: 711 MHz;Duty Cycle: 1:1
Medium: MSL_750_130114 Medium parameters used: f = 711 MHz; σ = 0.944 mho/m; ε_r = 55.542; ρ = 1000 kg/m^3
Ambient Temperature : 23.5 ℃; Liquid Temperature : 21.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(9.72, 9.72, 9.72); Calibrated: 26.11.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1303; Calibrated: 22.11.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch23130/Area Scan (61x111x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.668 W/kg

Ch23130/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.862 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.730 mW/g
SAR(1 g) = 0.561 mW/g; SAR(10 g) = 0.423 mW/g
Maximum value of SAR (measured) = 0.658 W/kg

Ch23130/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.862 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.720 mW/g
SAR(1 g) = 0.456 mW/g; SAR(10 g) = 0.321 mW/g
Maximum value of SAR (measured) = 0.570 W/kg



0 dB = 0.570 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 13.01.2013

38_LTE Band 4_10M_QPSK 25RB 0offset_Left Cheek_Ch20350

DUT: 311602

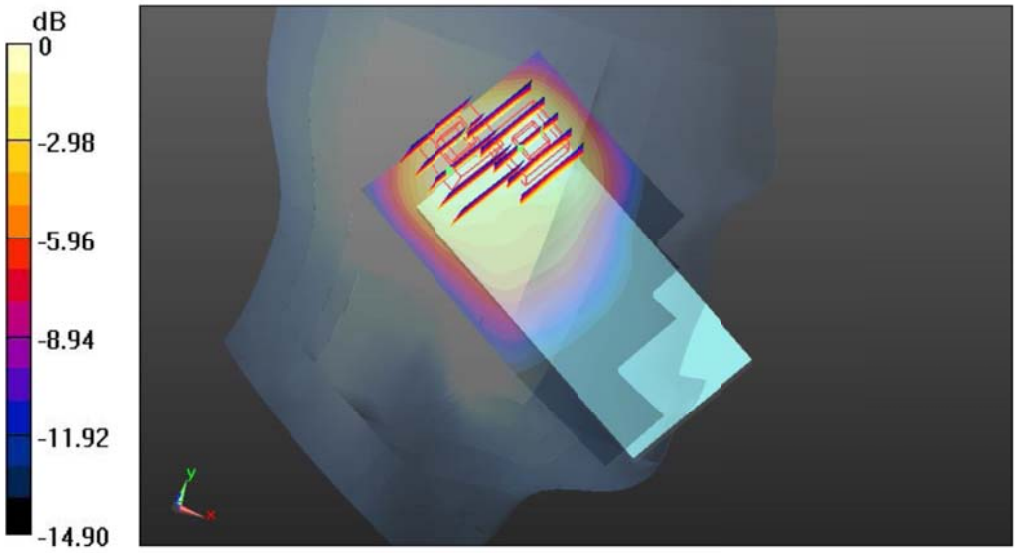
Communication System: LTE; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: HSL_1800_130113 Medium parameters used: f = 1750 MHz; σ = 1.378 mho/m; ε_r = 41.34; ρ = 1000 kg/m^3
Ambient Temperature : 23.5 ℃; Liquid Temperature : 21.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(8.2, 8.2, 8.2); Calibrated: 26.11.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1303; Calibrated: 22.11.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch20350/Area Scan (61x111x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.909 W/kg

Ch20350/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.628 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.371 mW/g
SAR(1 g) = 0.727 mW/g; SAR(10 g) = 0.375 mW/g
Maximum value of SAR (measured) = 0.951 W/kg

Ch20350/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.628 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.727 mW/g
SAR(1 g) = 0.447 mW/g; SAR(10 g) = 0.261 mW/g
Maximum value of SAR (measured) = 0.612 W/kg



0 dB = 0.612 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 13.01.2013

19_LTE Band 25_10M_QPSK 1RB 0offset_Back_1cm_Ch26640

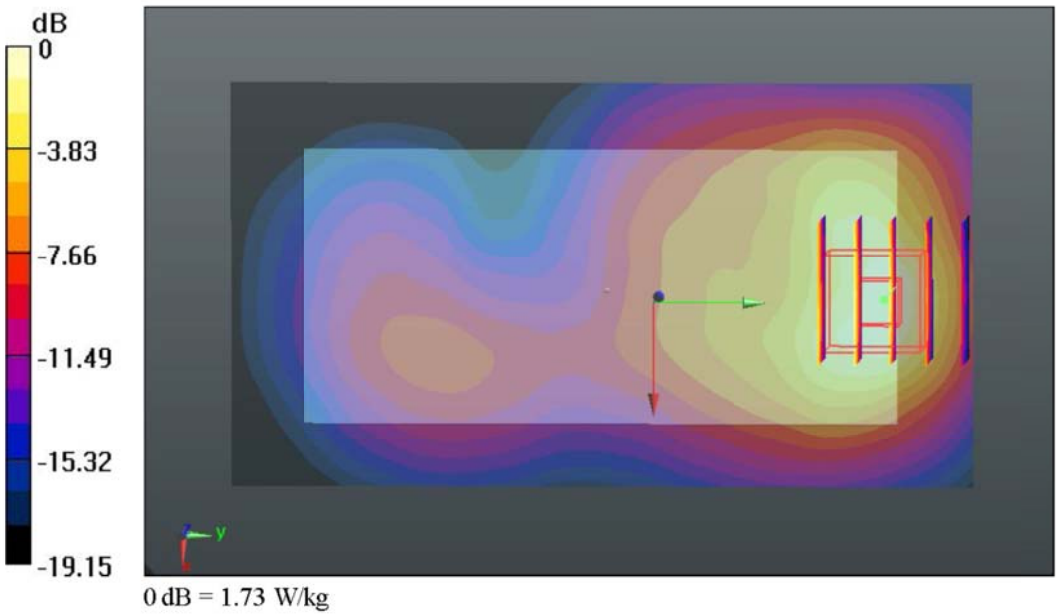
DUT: 311602

Communication System: LTE; Frequency: 1910 MHz;Duty Cycle: 1:1
Medium: MSL_1900_130113 Medium parameters used: f = 1910 MHz; σ = 1.536 mho/m; ε_r = 54.849; ρ = 1000 kg/m^3
Ambient Temperature : 23.5 ℃; Liquid Temperature : 21.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(7.67, 7.67, 7.67); Calibrated: 26.11.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1303; Calibrated: 22.11.2012
- Phantom: SAM2; Type: QD000P40CD; Serial: TP:1671
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch26640/Area Scan (61x111x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.73 W/kg

Ch26640/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.715 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 2.194 mW/g
SAR(1 g) = 1.31 mW/g; SAR(10 g) = 0.723 mW/g
Maximum value of SAR (measured) = 1.73 W/kg



0 dB = 1.73 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 24.01.2013

151_WLAN 2.4GHz_802.11b_Left Cheek_Ch6

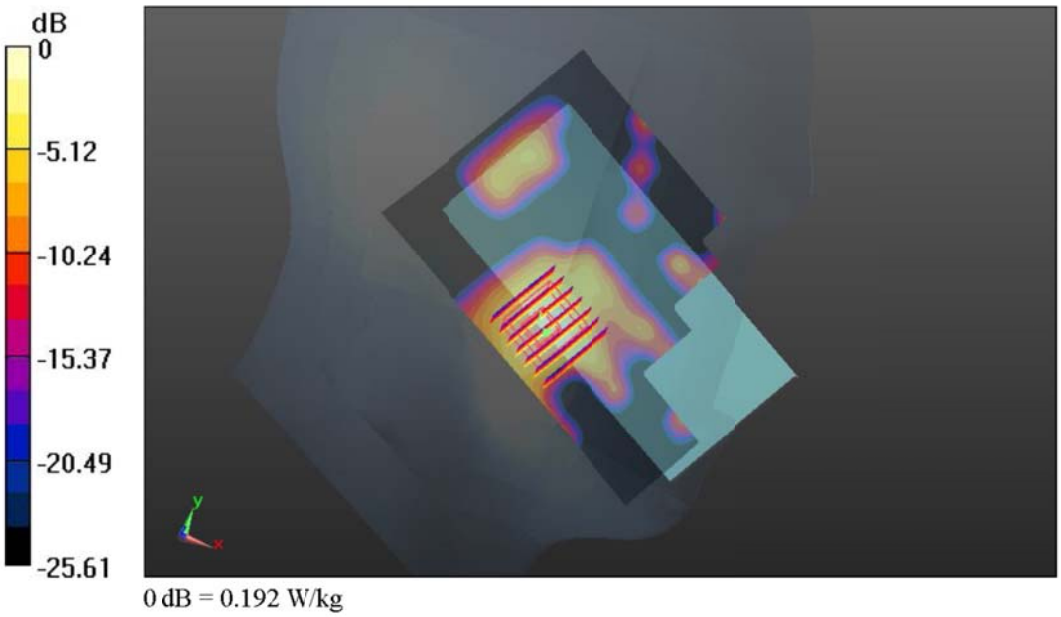
DUT: 311602

Communication System: WIFI; Frequency: 2437 MHz;Duty Cycle: 1:1.132
Medium: HSL_2450_130124 Medium parameters used: f = 2437 MHz; σ = 1.811 mho/m; ε_r = 39.709; ρ = 1000 kg/m^3
Ambient Temperature : 23.4 ℃; Liquid Temperature : 21.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3819; ConvF(6.99, 6.99, 6.99); Calibrated: 26.11.2012;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1303; Calibrated: 22.11.2012
- Phantom: SAM1; Type: QD000P40CD; Serial: TP:1670
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Ch6/Area Scan (81x131x1): Interpolated grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.207 W/kg

Ch6/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.185 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.278 mW/g
SAR(1 g) = 0.126 mW/g; SAR(10 g) = 0.058 mW/g
Maximum value of SAR (measured) = 0.192 W/kg



0 dB = 0.192 W/kg

12.6 Simultaneous Multi-band Transmission Analysis

	Position	Applicable Combination
Simultaneous Transmission	Head	1x CDMA (voice) + WLAN 2.4GHz
		1x CDMA (voice) + LTE (data) + WLAN 2.4GHz (router)
		1x CDMA (voice) + BT
		1x CDMA (voice) + LTE (data) + BT
	Hotspot	1x CDMA (data) + WLAN 2.4GHz (router)
		LTE (data) + WLAN 2.4GHz (router)
	Body-worn	1x CDMA (voice) + WLAN 2.4GHz
		1x CDMA (voice) + LTE (data) + WLAN 2.4GHz (router)
		1x CDMA (voice) + BT
		1x CDMA (voice) + LTE (data) + BT

Note:

1. WLAN 2.4GHz and Bluetooth share the same antenna, and cannot transmit simultaneously.
2. Simultaneous transmission analysis for hotspot mode 1cm separation to the body represents the compliance for hand-held and near-body use conditions. Simultaneous transmission of Hotspot mode for head and body-worn conditions was covered under simultaneous transmission analysis of head and body-worn positions, due to the possible WWAN voice call and data transmission SAR was considered in standalone SAR measurement for those exposure positions
3. For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB 447498 D01v05 based on the formula below.
4. The Scaled SAR summation is calculated based on the same configuration and test position.
5. For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB 447498 D01v05 based on the formula below.
   i) (*max. power of channel, including tune-up tolerance, mW*) / (*min. test separation distance, mm*)]·[$\sqrt{}$f(GHz)/*x*] W/kg for *test separation distances* ≤ 50 mm; where *x* = 7.5 for 1-g SAR, and *x* = 18.75 for 10-g SAR.
   ii) 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the test separation distances is > 50 mm.

Max Power	Exposure Position	Head	Body 1cm
	Test separation	0 mm	10 mm
2 dBm	Estimated SAR (W/kg)	0.066W/kg	0.033W/kg

6. Per KDB 447498 D01v05, simultaneous transmission SAR is compliant if,

(i) Scalar SAR summation < 1.6W/kg.

(ii) SPLSR = (SAR1 + SAR2)1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)2 + (y1-y2)2 + (z1-z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan
If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary

(iii) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg

The implemented power combinations (Unit: dBm)

SVLTE Mode		Data Mode	Data Mode
Voice		LTE Band 2/4/25 BW=1.4/3/5/10MHz QPSK 1RB	LTE Band 12 BW=1.4/3/5/10MHz QPSK 1RB
1xRTT BC0/BC15/BC1	20 dBm	23.5 dBm	24 dBm
	24 dBm	19.5 dBm	20 dBm

Alternative combinations (Unit: dBm) – For analysis purpose only

Power combination	CDMA2000 1x voice	LTE data mode
#1	**Full Power** BC0/BC15/BC1: 24 dBm	**Full Power** LTE Band 2/4/25: 23.5 dBm LTE Band 12: 24 dBm
#2	**Reduced Power** BC0/BC15/BC1: 20 dBm	**Full Power** LTE Band 2/4/25: 23.5 dBm LTE Band 12: 24 dBm
#3	**Full Power** BC0/BC15/BC1: 24 dBm	**Reduced Power** LTE Band 2/4/25: 19.5 dBm LTE Band 12: 20 dBm

Note:

1. For SVLTE mode which means LTE (data) and CDMA 1xRTT (voice) transmitting simultaneously, power reduction is implemented.
2. When EUT 1xRTT output power is > 20dBm, LTE maximum output power is limited to 20dBm regardless of the power control command from the base station.

Analysis Procedure:

Step1

1. Per KDB 941225 D05, maximum power standalone SAR of 1xRTT/EVDO/LTE is used for simultaneous transmission analysis.
2. Start analysis from full power combination (Alternative Power combination #1).
3. If 1g-SAR scalar summation < 1.6W/kg, simultaneous SAR measurement and further evaluations are not necessary.
4. If 1g-SAR summation >1.6W/kg, SPLSR calculation is necessary.
5. If resulting SPLSR ≤ 0.04, further evaluation is not required.
6. If resulting SPLSR > 0.04, step2 analysis is required.

Step2

7. For the cases from step1, power combinations #2/#3 are used in further step2 analysis.
8. If 1g-SAR scalar summation < 1.6W/kg, simultaneous SAR measurement and further evaluations are not necessary.
9. If resulting SPLSR ≤ 0.04, further evaluation is not required.

Table 12.6-A1: Head SAR analysis <Step1>

	Position	Applicable Combination
Simultaneous Transmission	Head	1x CDMA (voice) + WLAN 2.4GHz
		1x CDMA (voice) + LTE (data) + WLAN 2.4GHz (router)
		1x CDMA (voice) + BT
		1x CDMA (voice) + LTE (data) + BT

	CDMA2000 (voice)				LTE (data)				WLAN 2.4GHz (router)			WWAN + WLAN 2.4GHz	SPLSR	Case No
Position	WWAN Band	Plot No	Average Power (dBm)	Reported SAR_{1g} (W/kg)	WWAN Band	Plot No	Average Power (dBm)	Reported SAR_{1g} (W/kg)	Plot No	Average Power (dBm)	Reported SAR_{1g} (W/kg)			
Right Cheek	CDMA2000 BC0	113	23.75	0.415	LTE Band12	80	23.47	0.345	149	14.66	0.071	**0.83**	-	-
	CDMA2000 BC0	113	23.75	0.415	LTE Band 4	36	22.15	0.598	149	14.66	0.071	**1.08**	-	-
	CDMA2000 BC0	113	23.75	0.415	LTE Band 25	40	23.35	0.533	149	14.66	0.071	**1.02**	-	-
	CDMA2000 BC15	24	23.94	0.491	LTE Band12	80	23.47	0.345	149	14.66	0.071	**0.91**	-	-
	CDMA2000 BC15	24	23.94	0.491	LTE Band 4	36	22.15	0.598	149	14.66	0.071	**1.16**	-	-
	CDMA2000 BC15	24	23.94	0.491	LTE Band 25	40	23.35	0.533	149	14.66	0.071	**1.10**	-	-
	CDMA2000 BC1	28	23.88	0.299	LTE Band12	80	23.47	0.345	149	14.66	0.071	**0.72**	-	-
	CDMA2000 BC1	28	23.88	0.299	LTE Band 4	36	22.15	0.598	149	14.66	0.071	**0.97**	-	-
	CDMA2000 BC1	28	23.88	0.299	LTE Band 25	40	23.35	0.533	149	14.66	0.071	**0.90**	-	-
Right Tilted	CDMA2000 BC0	114	23.75	0.280	LTE Band12	81	23.47	0.249	150	14.66	0.026	**0.56**	-	-
	CDMA2000 BC0	114	23.75	0.280	LTE Band 4	37	22.15	0.662	150	14.66	0.026	**0.97**	-	-
	CDMA2000 BC0	114	23.75	0.280	LTE Band 25	41	23.35	0.683	150	14.66	0.026	**0.99**	-	-
	CDMA2000 BC15	25	23.94	0.176	LTE Band12	81	23.47	0.249	150	14.66	0.026	**0.45**	-	-
	CDMA2000 BC15	25	23.94	0.176	LTE Band 4	37	22.15	0.662	150	14.66	0.026	**0.86**	-	-
	CDMA2000 BC15	25	23.94	0.176	LTE Band 25	41	23.35	0.683	150	14.66	0.026	**0.89**	-	-
	CDMA2000 BC1	29	23.88	0.114	LTE Band12	81	23.47	0.249	150	14.66	0.026	**0.39**	-	-
	CDMA2000 BC1	29	23.88	0.114	LTE Band 4	37	22.15	0.662	150	14.66	0.026	**0.80**	-	-
	CDMA2000 BC1	29	23.88	0.114	LTE Band 25	41	23.35	0.683	150	14.66	0.026	**0.82**	-	-
Left Cheek	CDMA2000 BC0	115	23.75	0.447	LTE Band12	82	23.47	0.323	151	14.66	0.136	**0.91**	-	-
	CDMA2000 BC0	115	23.75	0.447	LTE Band 4	38	22.15	0.788	151	14.66	0.136	**1.37**	-	-
	CDMA2000 BC0	115	23.75	0.447	LTE Band 25	45	23.32	1.094	151	14.66	0.136	**1.68**	**0.03**	#A1-1
	CDMA2000 BC15	26	23.94	0.331	LTE Band12	82	23.47	0.323	151	14.66	0.136	**0.79**	-	-
	CDMA2000 BC15	26	23.94	0.331	LTE Band 4	38	22.15	0.788	151	14.66	0.136	**1.26**	-	-
	CDMA2000 BC15	26	23.94	0.331	LTE Band 25	45	23.32	1.094	151	14.66	0.136	**1.56**	-	-
	CDMA2000 BC1	30	23.88	0.252	LTE Band12	82	23.47	0.323	151	14.66	0.136	**0.71**	-	-
	CDMA2000 BC1	30	23.88	0.252	LTE Band 4	38	22.15	0.788	151	14.66	0.136	**1.18**	-	-
	CDMA2000 BC1	30	23.88	0.252	LTE Band 25	45	23.32	1.094	151	14.66	0.136	**1.48**	-	-
Left Tilted	CDMA2000 BC0	116	23.75	0.354	LTE Band12	83	23.47	0.295	152	14.66	0.034	**0.68**	-	-
	CDMA2000 BC0	116	23.75	0.354	LTE Band 4	39	22.15	0.755	152	14.66	0.034	**1.14**	-	-
	CDMA2000 BC0	116	23.75	0.354	LTE Band 25	47	23.32	0.922	152	14.66	0.034	**1.31**	-	-
	CDMA2000 BC15	27	23.94	0.211	LTE Band12	83	23.47	0.295	152	14.66	0.034	**0.54**	-	-
	CDMA2000 BC15	27	23.94	0.211	LTE Band 4	39	22.15	0.755	152	14.66	0.034	**1.00**	-	-
	CDMA2000 BC15	27	23.94	0.211	LTE Band 25	47	23.32	0.922	152	14.66	0.034	**1.17**	-	-
	CDMA2000 BC1	31	23.88	0.107	LTE Band12	83	23.47	0.295	152	14.66	0.034	**0.44**	-	-
	CDMA2000 BC1	31	23.88	0.107	LTE Band 4	39	22.15	0.755	152	14.66	0.034	**0.90**	-	-
	CDMA2000 BC1	31	23.88	0.107	LTE Band 25	47	23.32	0.922	152	14.66	0.034	**1.06**	-	-

Position	CDMA2000 (voice)				LTE (data)				Bluetooth		WWAN + Bluetooth	SPLSR	Case No
	WWAN Band	Plot No	Average Power (dBm)	Reported SAR_{1g} (W/kg)	WWAN Band	Plot No	Average Power (dBm)	Reported SAR_{1g} (W/kg)	Average Power (dBm)	Estimated SAR_{1g} (W/kg)			
Right Cheek	CDMA2000 BC0	113	23.75	0.415	LTE Band12	80	23.47	0.345	1.72	0.066	**0.83**	-	-
	CDMA2000 BC0	113	23.75	0.415	LTE Band 4	36	22.15	0.598	1.72	0.066	**1.08**	-	-
	CDMA2000 BC0	113	23.75	0.415	LTE Band 25	40	23.35	0.533	1.72	0.066	**1.01**	-	-
	CDMA2000 BC15	24	23.94	0.491	LTE Band12	80	23.47	0.345	1.72	0.066	**0.90**	-	-
	CDMA2000 BC15	24	23.94	0.491	LTE Band 4	36	22.15	0.598	1.72	0.066	**1.16**	-	-
	CDMA2000 BC15	24	23.94	0.491	LTE Band 25	40	23.35	0.533	1.72	0.066	**1.09**	-	-
	CDMA2000 BC1	28	23.88	0.299	LTE Band12	80	23.47	0.345	1.72	0.066	**0.71**	-	-
	CDMA2000 BC1	28	23.88	0.299	LTE Band 4	36	22.15	0.598	1.72	0.066	**0.96**	-	-
	CDMA2000 BC1	28	23.88	0.299	LTE Band 25	40	23.35	0.533	1.72	0.066	**0.90**	-	-
Right Tilted	CDMA2000 BC0	114	23.75	0.280	LTE Band12	81	23.47	0.249	1.72	0.066	**0.60**	-	-
	CDMA2000 BC0	114	23.75	0.280	LTE Band 4	37	22.15	0.662	1.72	0.066	**1.01**	-	-
	CDMA2000 BC0	114	23.75	0.280	LTE Band 25	41	23.35	0.683	1.72	0.066	**1.03**	-	-
	CDMA2000 BC15	25	23.94	0.176	LTE Band12	81	23.47	0.249	1.72	0.066	**0.49**	-	-
	CDMA2000 BC15	25	23.94	0.176	LTE Band 4	37	22.15	0.662	1.72	0.066	**0.90**	-	-
	CDMA2000 BC15	25	23.94	0.176	LTE Band 25	41	23.35	0.683	1.72	0.066	**0.93**	-	-
	CDMA2000 BC1	29	23.88	0.114	LTE Band12	81	23.47	0.249	1.72	0.066	**0.43**	-	-
	CDMA2000 BC1	29	23.88	0.114	LTE Band 4	37	22.15	0.662	1.72	0.066	**0.84**	-	-
	CDMA2000 BC1	29	23.88	0.114	LTE Band 25	41	23.35	0.683	1.72	0.066	**0.86**	-	-
Left Cheek	CDMA2000 BC0	115	23.75	0.447	LTE Band12	82	23.47	0.323	1.72	0.066	**0.84**	-	-
	CDMA2000 BC0	115	23.75	0.447	LTE Band 4	38	22.15	0.788	1.72	0.066	**1.30**	-	-
	CDMA2000 BC0	115	23.75	0.447	LTE Band 25	45	23.32	1.094	1.72	0.066	**1.61**	**0.03**	#A1-2
	CDMA2000 BC15	26	23.94	0.331	LTE Band12	82	23.47	0.323	1.72	0.066	**0.72**	-	-
	CDMA2000 BC15	26	23.94	0.331	LTE Band 4	38	22.15	0.788	1.72	0.066	**1.19**	-	-
	CDMA2000 BC15	26	23.94	0.331	LTE Band 25	45	23.32	1.094	1.72	0.066	**1.49**	-	-
	CDMA2000 BC1	30	23.88	0.252	LTE Band12	82	23.47	0.323	1.72	0.066	**0.64**	-	-
	CDMA2000 BC1	30	23.88	0.252	LTE Band 4	38	22.15	0.788	1.72	0.066	**1.11**	-	-
	CDMA2000 BC1	30	23.88	0.252	LTE Band 25	45	23.32	1.094	1.72	0.066	**1.41**	-	-
Left Tilted	CDMA2000 BC0	116	23.75	0.354	LTE Band12	83	23.47	0.295	1.72	0.066	**0.72**	-	-
	CDMA2000 BC0	116	23.75	0.354	LTE Band 4	39	22.15	0.755	1.72	0.066	**1.18**	-	-
	CDMA2000 BC0	116	23.75	0.354	LTE Band 25	47	23.32	0.922	1.72	0.066	**1.34**	-	-
	CDMA2000 BC15	27	23.94	0.211	LTE Band12	83	23.47	0.295	1.72	0.066	**0.57**	-	-
	CDMA2000 BC15	27	23.94	0.211	LTE Band 4	39	22.15	0.755	1.72	0.066	**1.03**	-	-
	CDMA2000 BC15	27	23.94	0.211	LTE Band 25	47	23.32	0.922	1.72	0.066	**1.20**	-	-
	CDMA2000 BC1	31	23.88	0.107	LTE Band12	83	23.47	0.295	1.72	0.066	**0.47**	-	-
	CDMA2000 BC1	31	23.88	0.107	LTE Band 4	39	22.15	0.755	1.72	0.066	**0.93**	-	-
	CDMA2000 BC1	31	23.88	0.107	LTE Band 25	47	23.32	0.922	1.72	0.066	**1.10**	-	-

Table 12.6-B1: Hotspot mode SAR analysis <Step1>

Refer to Exposure Positions Consideration in section 10

Positions for SAR tests; Hotspot mode Test distance: 10 mm						
Antennas	**Back**	**Front**	**Top Side**	**Bottom Side**	**Right Side**	**Left Side**
CDMA	Yes	Yes	NO	Yes	Yes	Yes
LTE Main	Yes	Yes	Yes	NO	Yes	Yes
BT&WLAN	Yes	Yes	NO	NO	NO	Yes

	Position	**Applicable Combination**
Simultaneous Transmission	**Hotspot**	1x CDMA (data) + WLAN 2.4GHz (router)
		LTE (data) + WLAN 2.4GHz (router)

	CDMA2000 (data)				WLAN 2.4GHz (router)			WWAN + WLAN 2.4GHz	SPLSR	Case No
Position	**WWAN Band**	**Plot No**	**Average Power (dBm)**	**Reported SAR_{1g} (W/kg)**	**Plot No**	**Average Power (dBm)**	**Reported SAR_{1g} (W/kg)**			
Front	CDMA2000 BC0	117	23.67	0.511	153	14.66	0.027	**0.54**	-	-
	CDMA2000 BC15	132	23.92	0.769	153	14.66	0.027	**0.80**	-	-
	CDMA2000 BC1	96	23.84	0.544	153	14.66	0.027	**0.57**	-	-
Back	CDMA2000 BC0	123	23.62	0.993	154	14.66	0.092	**1.09**	-	-
	CDMA2000 BC15	133	23.92	1.345	154	14.66	0.092	**1.44**	-	-
	CDMA2000 BC1	101	23.55	1.342	154	14.66	0.092	**1.43**	-	-
Left Side	CDMA2000 BC0	119	23.67	0.674	155	14.66	0.056	**0.73**	-	-
	CDMA2000 BC15	134	23.92	0.238	155	14.66	0.056	**0.29**	-	-
	CDMA2000 BC1	98	23.84	0.176	155	14.66	0.056	**0.23**	-	-
Right Side	CDMA2000 BC0	120	23.67	0.700	-		-	**0.70**	-	-
	CDMA2000 BC15	135	23.92	0.176	-		-	**0.18**	-	-
	CDMA2000 BC1	99	23.84	0.088	-		-	**0.09**	-	-
Bottom Side	CDMA2000 BC0	121	23.67	0.153	-		-	**0.15**	-	-
	CDMA2000 BC15	136	23.92	1.151	-		-	**1.15**	-	-
	CDMA2000 BC1	103	23.55	1.076	-		-	**1.08**	-	-

	LTE (data)				WLAN 2.4GHz (router)			WWAN + WLAN 2.4GHz	SPLSR	Case No
Position	**WWAN Band**	**Plot No**	**Average Power (dBm)**	**Reported SAR_{1g} (W/kg)**	**Plot No**	**Average Power (dBm)**	**Reported SAR_{1g} (W/kg)**			
Front	LTE Band12	48	23.47	0.26	153	14.66	0.027	**0.29**	-	-
	LTE Band 4	07	22.15	0.341	153	14.66	0.027	**0.37**	-	-
	LTE Band 25	13	23.35	0.249	153	14.66	0.027	**0.28**	-	-
Back	LTE Band12	49	23.47	0.634	154	14.66	0.092	**0.73**	-	-
	LTE Band 4	02	23.03	0.755	154	14.66	0.092	**0.85**	-	-
	LTE Band 25	19	23.32	1.365	154	14.66	0.092	**1.46**	-	-
Left Side	LTE Band12	50	23.47	0.21	155	14.66	0.056	**0.27**	-	-
	LTE Band 4	09	22.15	0.134	155	14.66	0.056	**0.19**	-	-
	LTE Band 25	15	23.35	0.105	155	14.66	0.056	**0.16**	-	-
Right Side	LTE Band12	51	23.47	0.336	-		-	**0.34**	-	-
	LTE Band 4	04	23.03	0.13	-		-	**0.13**	-	-
	LTE Band 25	16	23.35	0.137	-		-	**0.14**	-	-
Top Side	LTE Band12	52	23.47	0.136	-		-	**0.14**	-	-
	LTE Band 4	11	22.15	0.56	-		-	**0.56**	-	-
	LTE Band 25	17	23.35	0.648	-		-	**0.65**	-	-

Table 12.6-C1: Body-worn mode SAR analysis <Step1>

	Position	Applicable Combination
Simultaneous Transmission	Body-worn	1x CDMA (voice) + WLAN 2.4GHz
		1x CDMA (voice) + LTE (data) + WLAN 2.4GHz (router)
		1x CDMA (voice) + BT
		1x CDMA (voice) + LTE (data) + BT

	CDMA2000 (voice)				LTE (data)				WLAN 2.4GHz (router)			WWAN + WLAN 2.4GHz	SPLSR	Case No
Position	WWAN Band	Plot No	Average Power (dBm)	Reported SAR_{1g} (W/kg)	WWAN Band	Plot No	Average Power (dBm)	Reported SAR_{1g} (W/kg)	Plot No	Average Power (dBm)	Reported SAR_{1g} (W/kg)			
Front	CDMA2000 BC0	124	23.69	0.693	LTE Band12	48	23.47	0.26	153	14.66	0.027	**0.98**	-	-
	CDMA2000 BC0	124	23.69	0.693	LTE Band 4	07	22.15	0.341	153	14.66	0.027	**1.06**	-	-
	CDMA2000 BC0	124	23.69	0.693	LTE Band 25	13	23.35	0.249	153	14.66	0.027	**0.97**	-	-
	CDMA2000 BC15	141	23.92	0.753	LTE Band12	48	23.47	0.26	153	14.66	0.027	**1.04**	-	-
	CDMA2000 BC15	141	23.92	0.753	LTE Band 4	07	22.15	0.341	153	14.66	0.027	**1.12**	-	-
	CDMA2000 BC15	141	23.92	0.753	LTE Band 25	13	23.35	0.249	153	14.66	0.027	**1.03**	-	-
	CDMA2000 BC1	105	23.84	0.569	LTE Band12	48	23.47	0.26	153	14.66	0.027	**0.86**	-	-
	CDMA2000 BC1	105	23.84	0.569	LTE Band 4	07	22.15	0.341	153	14.66	0.027	**0.94**	-	-
	CDMA2000 BC1	105	23.84	0.569	LTE Band 25	13	23.35	0.249	153	14.66	0.027	**0.85**	-	-
Back	CDMA2000 BC0	125	23.69	1.031	LTE Band12	49	23.47	0.634	154	14.66	0.092	**1.76**	**0.06**	#C1-1
	CDMA2000 BC0	125	23.69	1.031	LTE Band 4	02	23.03	0.755	154	14.66	0.092	**1.88**	**0.04**	#C1-2
	CDMA2000 BC0	125	23.69	1.031	LTE Band 25	19	23.32	1.365	154	14.66	0.092	**2.49**	**0.05**	#C1-3
	CDMA2000 BC15	142	23.92	1.406	LTE Band12	49	23.47	0.634	154	14.66	0.092	**2.13**	**0.04**	#C1-4
	CDMA2000 BC15	142	23.92	1.406	LTE Band 4	02	23.03	0.755	154	14.66	0.092	**2.25**	**0.02**	#C1-5
	CDMA2000 BC15	142	23.92	1.406	LTE Band 25	19	23.32	1.365	154	14.66	0.092	**2.86**	**0.04**	#C1-6
	CDMA2000 BC1	107	23.57	1.369	LTE Band12	49	23.47	0.634	154	14.66	0.092	**2.10**	**0.04**	#C1-7
	CDMA2000 BC1	107	23.57	1.369	LTE Band 4	02	23.03	0.755	154	14.66	0.092	**2.22**	**0.03**	#C1-8
	CDMA2000 BC1	107	23.57	1.369	LTE Band 25	19	23.32	1.365	154	14.66	0.092	**2.83**	**0.04**	#C1-9
Back (w/ Headset)	CDMA2000 BC0	128	23.69	0.865	LTE Band12	53	23.47	0.505	156	14.66	0.088	**1.46**	-	-
	CDMA2000 BC0	128	23.69	0.865	LTE Band 4	12	22.15	0.658	156	14.66	0.088	**1.61**	**0.03**	#C1-10
	CDMA2000 BC0	128	23.69	0.865	LTE Band 25	20	23.32	1.365	156	14.66	0.088	**2.32**	**0.04**	#C1-11
	CDMA2000 BC15	145	23.92	1.365	LTE Band12	53	23.47	0.505	156	14.66	0.088	**1.96**	**0.03**	#C1-12
	CDMA2000 BC15	145	23.92	1.365	LTE Band 4	12	22.15	0.658	156	14.66	0.088	**2.11**	**0.02**	#C1-13
	CDMA2000 BC15	145	23.92	1.365	LTE Band 25	20	23.32	1.365	156	14.66	0.088	**2.11**	**0.02**	#C1-14
	CDMA2000 BC1	109	23.57	1.292	LTE Band12	53	23.47	0.505	156	14.66	0.088	**1.89**	**0.03**	#C1-15
	CDMA2000 BC1	109	23.57	1.292	LTE Band 4	12	22.15	0.658	156	14.66	0.088	**2.04**	**0.02**	#C1-16
	CDMA2000 BC1	109	23.57	1.292	LTE Band 25	20	23.32	1.365	156	14.66	0.088	**2.75**	**0.04**	#C1-17

Note: #C1-1 and #C1-3 resulting SPLSR > 0.04, step2 analysis is required.

Position	CDMA2000 (voice)				LTE (data)				Bluetooth		WWAN + Bluetooth	SPLSR	Case No
	WWAN Band	Plot No	Average Power (dBm)	Reported SAR_{1g} (W/kg)	WWAN Band	Plot No	Average Power (dBm)	Reported SAR_{1g} (W/kg)	Average Power (dBm)	Estimated SAR_{1g} (W/kg)			
Front	CDMA2000 BC0	124	23.69	0.693	LTE Band12	48	23.47	0.26	1.72	0.033	0.99	-	-
	CDMA2000 BC0	124	23.69	0.693	LTE Band 4	7	22.15	0.341	1.72	0.033	1.07	-	-
	CDMA2000 BC0	124	23.69	0.693	LTE Band 25	13	23.35	0.249	1.72	0.033	0.98	-	-
	CDMA2000 BC15	141	23.92	0.753	LTE Band12	48	23.47	0.26	1.72	0.033	1.04	-	-
	CDMA2000 BC15	141	23.92	0.753	LTE Band 4	7	22.15	0.341	1.72	0.033	1.12	-	-
	CDMA2000 BC15	141	23.92	0.753	LTE Band 25	13	23.35	0.249	1.72	0.033	1.03	-	-
	CDMA2000 BC1	105	23.84	0.569	LTE Band12	48	23.47	0.26	1.72	0.033	0.86	-	-
	CDMA2000 BC1	105	23.84	0.569	LTE Band 4	7	22.15	0.341	1.72	0.033	0.94	-	-
	CDMA2000 BC1	105	23.84	0.569	LTE Band 25	13	23.35	0.249	1.72	0.033	0.85	-	-
Back	CDMA2000 BC0	125	23.69	0.92	LTE Band12	49	23.47	0.634	1.72	0.033	1.70	0.06	#C1-18
	CDMA2000 BC0	125	23.69	0.92	LTE Band 4	2	23.03	0.755	1.72	0.033	1.82	0.04	#C1-19
	CDMA2000 BC0	125	23.69	0.92	LTE Band 25	19	23.32	1.365	1.72	0.033	2.43	0.05	#C1-20
	CDMA2000 BC15	142	23.92	1.406	LTE Band12	49	23.47	0.634	1.72	0.033	2.07	0.04	#C1-21
	CDMA2000 BC15	142	23.92	1.406	LTE Band 4	2	23.03	0.755	1.72	0.033	2.19	0.02	#C1-22
	CDMA2000 BC15	142	23.92	1.406	LTE Band 25	19	23.32	1.365	1.72	0.033	2.80	0.04	#C1-23
	CDMA2000 BC1	107	23.57	1.369	LTE Band12	49	23.47	0.634	1.72	0.033	2.04	0.04	#C1-24
	CDMA2000 BC1	107	23.57	1.369	LTE Band 4	2	23.03	0.755	1.72	0.033	2.16	0.02	#C1-25
	CDMA2000 BC1	107	23.57	1.369	LTE Band 25	19	23.32	1.365	1.72	0.033	2.77	0.04	#C1-26
Back (w/ Headset)	CDMA2000 BC0	128	23.69	0.865	LTE Band12	53	23.47	0.505	1.72	0.033	1.40	-	-
	CDMA2000 BC0	128	23.69	0.865	LTE Band 4	12	22.15	0.658	1.72	0.033	1.56	-	-
	CDMA2000 BC0	128	23.69	0.865	LTE Band 25	20	23.32	1.365	1.72	0.033	2.26	0.04	#C1-27
	CDMA2000 BC15	145	23.92	1.365	LTE Band12	53	23.47	0.505	1.72	0.033	1.90	0.03	#C1-28
	CDMA2000 BC15	145	23.92	1.365	LTE Band 4	12	22.15	0.658	1.72	0.033	2.05	0.02	#C1-29
	CDMA2000 BC15	145	23.92	1.365	LTE Band 25	20	23.32	1.365	1.72	0.033	2.76	0.04	#C1-30
	CDMA2000 BC1	109	23.57	1.292	LTE Band12	53	23.47	0.505	1.72	0.033	1.83	0.03	#C1-31
	CDMA2000 BC1	109	23.57	1.292	LTE Band 4	12	22.15	0.658	1.72	0.033	1.98	0.02	#C1-32
	CDMA2000 BC1	109	23.57	1.292	LTE Band 25	20	23.32	1.365	1.72	0.033	2.69	0.04	#C1-33

Note: #C1-18 and #C1-20 resulting SPLSR > 0.04, step2 analysis is required.

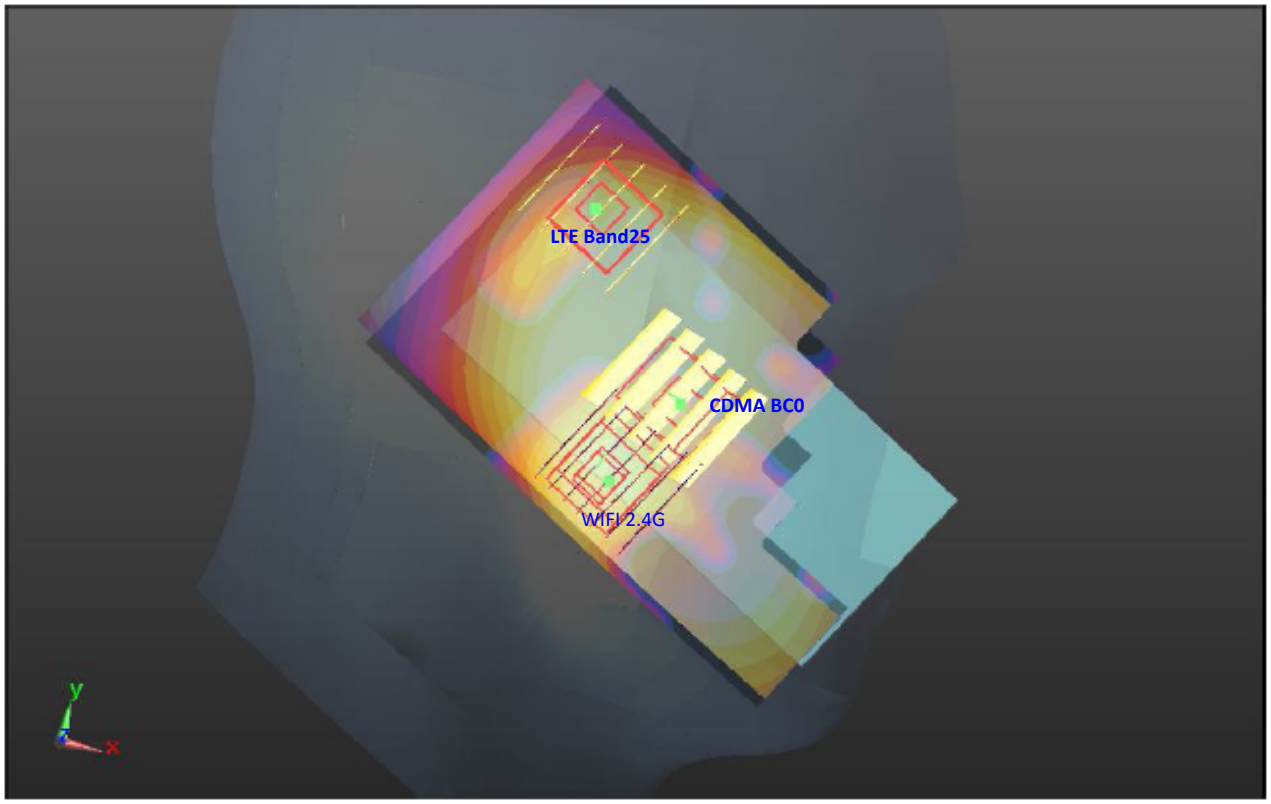
Table 12.6-C2: Body-worn mode SAR analysis <Step2>

Position	CDMA2000 (voice)				LTE (data)				WLAN 2.4GHz (router)			WWAN + WLAN 2.4GHz	SPLSR	Case No
	WWAN Band	Plot No	Average Power (dBm)	Reported SAR_{1g} (W/kg)	WWAN Band	Plot No	Average Power (dBm)	Reported SAR_{1g} (W/kg)	Plot No	Average Power (dBm)	Reported SAR_{1g} (W/kg)			
Back	CDMA2000 BC0	125	23.69	1.031	LTE Band12	49	23.47	0.634	154	14.66	0.092	1.76	0.06	#C1-1
	CDMA2000 BC0	163	19.46	0.431	LTE Band12	49	23.47	0.634	154	14.66	0.092	1.16	-	-
	CDMA2000 BC0	125	23.69	1.031	LTE Band12	165	19.53	0.252	154	14.66	0.092	1.38	-	-
	CDMA2000 BC0	125	23.69	1.031	LTE Band25	19	23.32	1.365	154	14.66	0.092	2.49	0.05	#C1-3
	CDMA2000 BC0	163	19.46	0.431	LTE Band25	19	23.32	1.365	154	14.66	0.092	1.89	0.03	#C2-1
	CDMA2000 BC0	125	23.69	1.031	LTE Band25	164	18.65	0.828	154	14.66	0.092	1.95	0.04	#C2-2

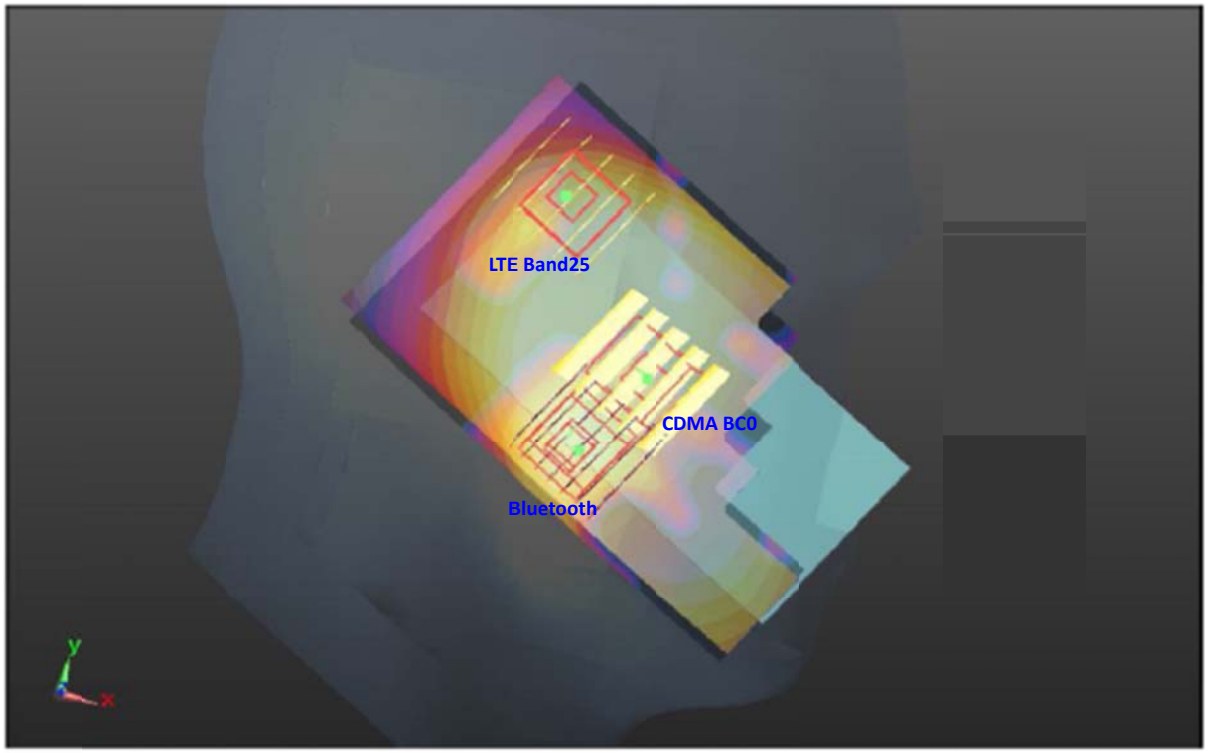
Position	CDMA2000 (voice)				LTE (data)				Bluetooth		WWAN + Bluetooth	SPLSR	Case No
	WWAN Band	Plot No	Average Power (dBm)	Reported SAR_{1g} (W/kg)	WWAN Band	Plot No	Average Power (dBm)	Reported SAR_{1g} (W/kg)	Average Power (dBm)	Estimated SAR_{1g} (W/kg)			
Back	CDMA2000 BC0	125	23.69	1.031	LTE Band12	49	23.47	0.634	1.72	0.033	1.70	0.06	#C1-18
	CDMA2000 BC0	163	19.46	0.431	LTE Band12	49	23.47	0.634	1.72	0.033	1.10	-	-
	CDMA2000 BC0	125	23.69	1.031	LTE Band12	165	19.53	0.252	1.72	0.033	1.32	-	-
	CDMA2000 BC0	125	23.69	1.031	LTE Band 25	19	23.32	1.365	1.72	0.033	2.43	0.05	#C1-20
	CDMA2000 BC0	163	19.46	0.431	LTE Band 25	19	23.32	1.365	1.72	0.033	1.83	0.03	#C2-3
	CDMA2000 BC0	125	23.69	1.031	LTE Band 25	164	18.65	1.806	1.72	0.033	1.8	0.04	#C2-4

12.7 Simultaneous analysis - SPLSR calculation

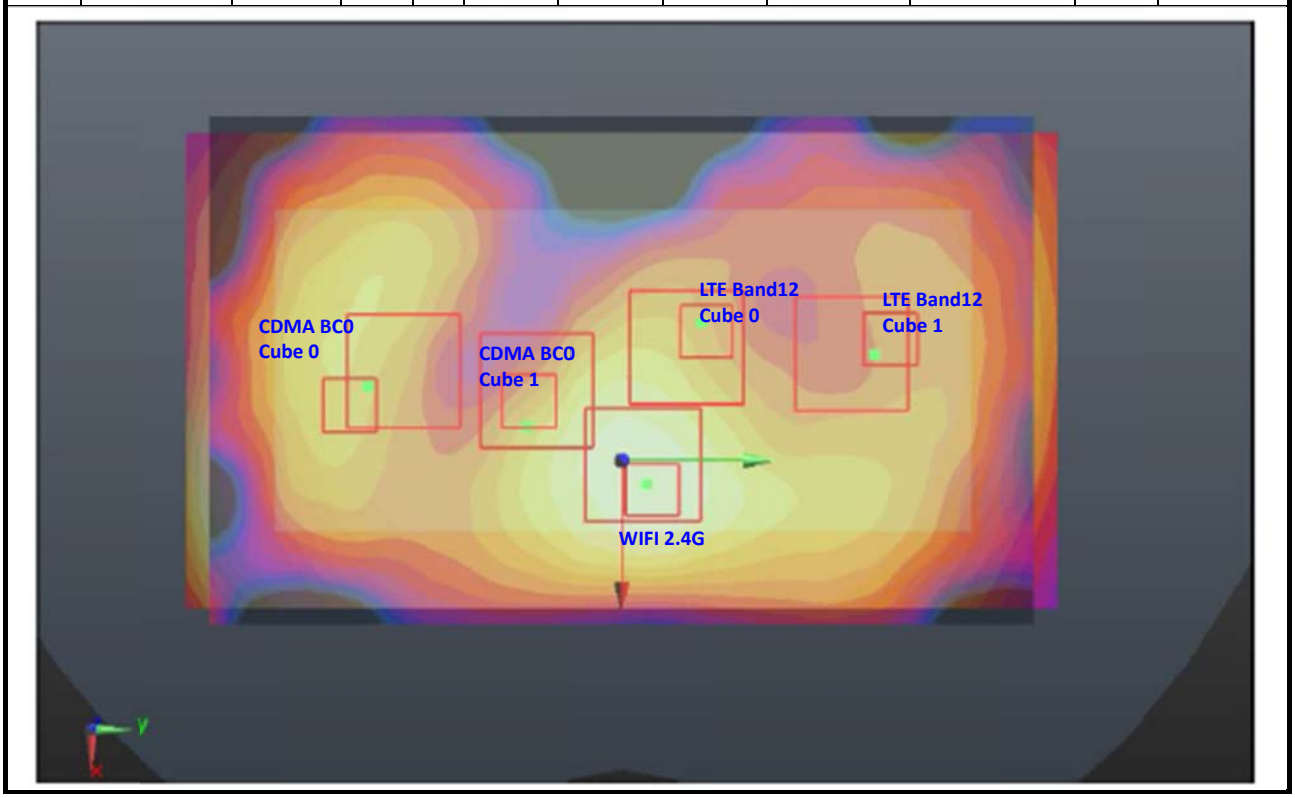
Case #A1-1 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
115	CDMA2000 BC0	Left Cheek	0.447	-	0.0665	0.278	-0.175	57.2	1.54	0.03	Not required
45	LTE Band 25		1.094	-	0.0325	0.324	-0.173				
115	CDMA2000 BC0		0.447	-	0.0665	0.278	-0.175	29.7	0.58	0.02	Not required
151	WLAN 2.4GHz		0.136	-	0.0467	0.256	-0.173				
45	LTE Band 25		0.447	-	0.0325	0.324	-0.173	69.5	0.58	0.01	Not required
151	WLAN 2.4GHz		0.136	-	0.0467	0.256	-0.173				



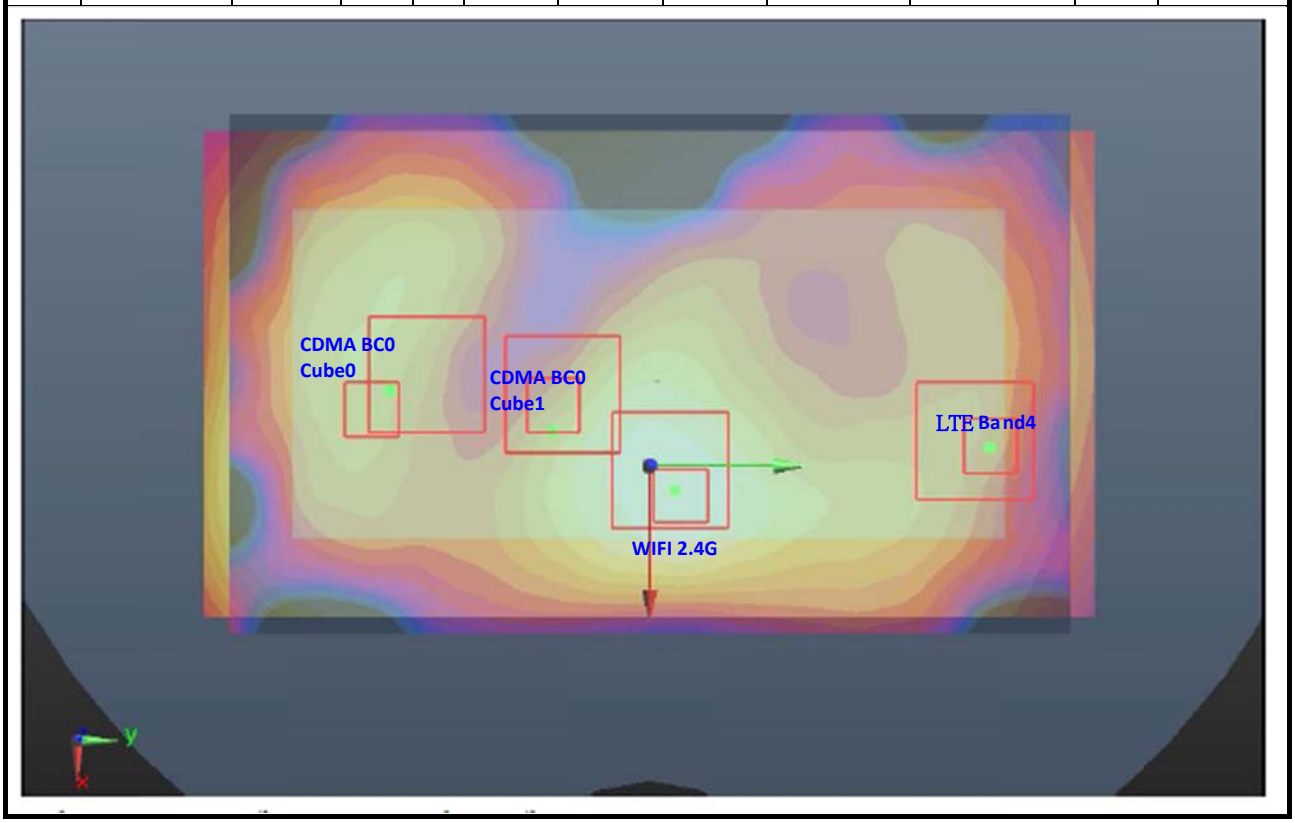
Case #A1-2 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
115	CDMA2000 BC0	Left Cheek	0.447	-	0.0665	0.278	-0.175	57.2	1.54	0.03	Not required
45	LTE Band 25		1.094	-	0.0325	0.324	-0.173				
115	CDMA2000 BC0		0.447	-	0.0665	0.278	-0.175	29.7	0.51	0.01	Not required
-	Bluetooth		0.066	-	0.0467	0.256	-0.173				
45	LTE Band 25		0.447	-	0.0325	0.324	-0.173	69.5	0.51	0.01	Not required
-	Bluetooth		0.092	-	0.0096	0.0048	-0.206				



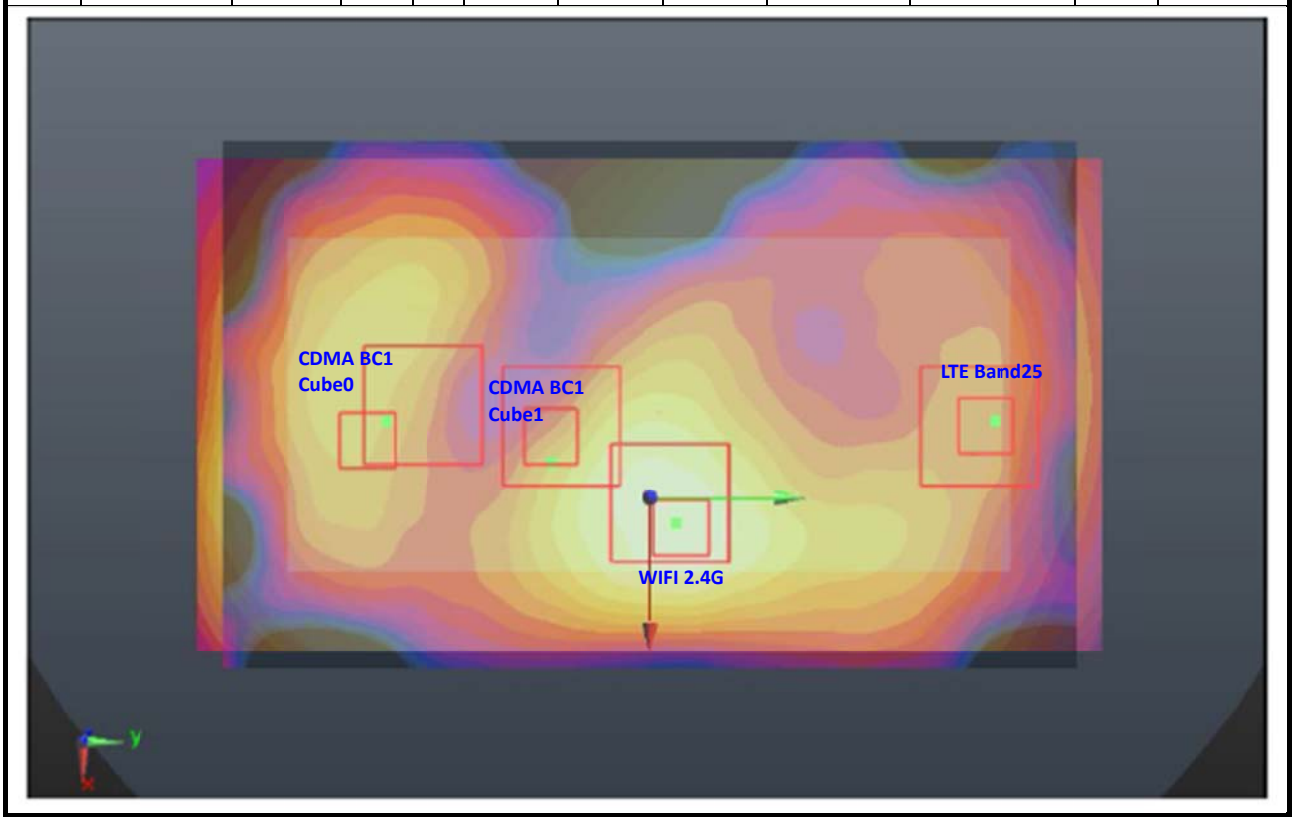
Case #C1-1 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
125	CDMA2000 BC0	Back	1.031	1	-0.0075	-0.017	-0.206	38.3	1.67	0.06	Step 2
49	LTE Band12		0.634	1	-0.027	0.016	-0.206				
125	CDMA2000 BC0		1.031	1	-0.0075	-0.017	-0.206	69.4	1.55	0.03	Not required
49	LTE Band12		0.515	1	-0.029	0.049	-0.206				
125	CDMA2000 BC0		0.88	1	-0.007	-0.055	-0.206	73.8	1.51	0.03	Not required
49	LTE Band12		0.634	1	-0.027	0.016	-0.206				
125	CDMA2000 BC0		0.88	1	-0.007	-0.055	-0.206	106.3	1.40	0.02	Not required
49	LTE Band12		0.515	1	-0.029	0.049	-0.206				
125	CDMA2000 BC0		1.031	1	-0.0075	-0.017	-0.206	27.7	1.12	0.04	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
125	CDMA2000 BC0		0.88	1	-0.007	-0.055	-0.206	62.1	0.97	0.02	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
49	LTE Band12		0.634	1	-0.027	0.016	-0.206	38.3	0.73	0.02	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
49	LTE Band12		0.515	1	-0.029	0.049	-0.206	58.7	0.61	0.01	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				



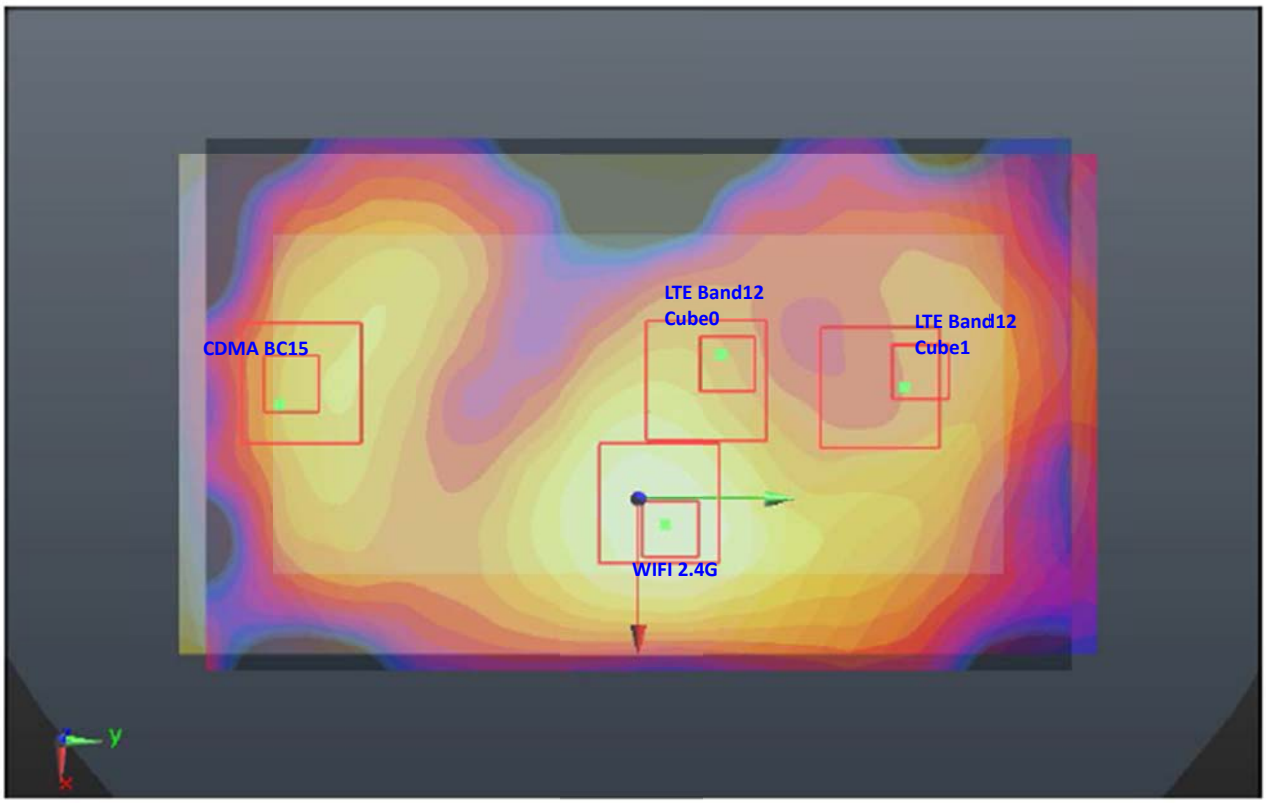
Case #C1-2 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
125	CDMA2000 BC0	Back	1.031	1	-0.0075	-0.017	-0.206	81.1	1.79	0.03	Not required
2	LTE Band 4		0.755	1	-0.0045	0.064	-0.205				
125	CDMA2000 BC0		0.88	1	-0.007	-0.055	-0.206	119.0	1.64	0.02	Not required
2	LTE Band 4		0.755	1	-0.0045	0.064	-0.205				
125	CDMA2000 BC0		1.031	1	-0.0075	-0.017	-0.206	27.7	1.12	0.04	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
125	CDMA2000 BC0		0.88	1	-0.007	-0.055	-0.206	62.1	0.97	0.02	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
2	LTE Band 4		0.755	1	-0.0045	0.064	-0.205	60.9	0.85	0.01	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				



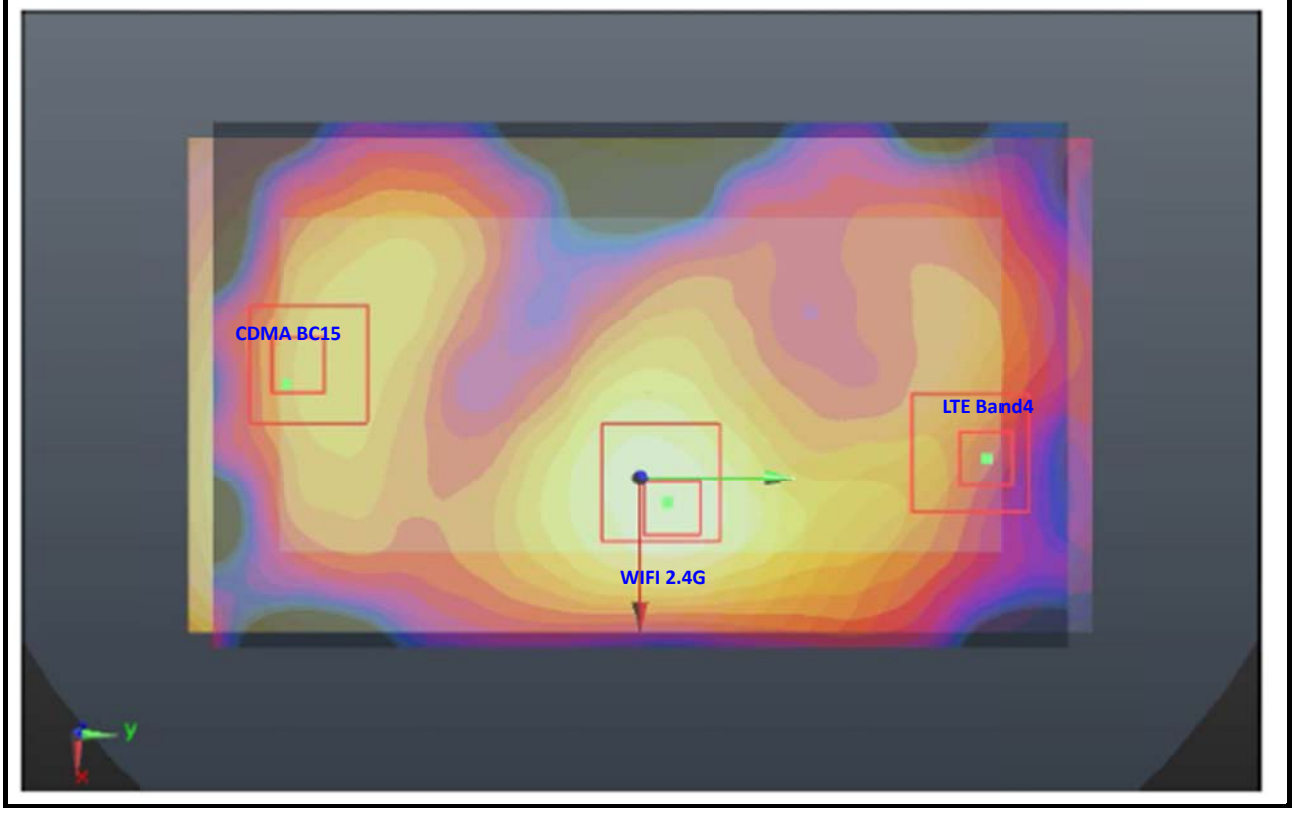
Case #C1-3 / Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
125	CDMA2000 BC0	Back	1.031	1	-0.0075	-0.017	-0.206	81.4	2.40	0.05	Step 2
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205				
125	CDMA2000 BC0		0.88	1	-0.007	-0.055	-0.206	119.3	2.25	0.03	Not required
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205				
125	CDMA2000 BC0		1.031	1	-0.0075	-0.017	-0.206	27.7	1.12	0.04	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
125	CDMA2000 BC0		0.88	1	-0.007	-0.055	-0.206	62.1	0.97	0.02	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205	64.1	1.46	0.03	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				



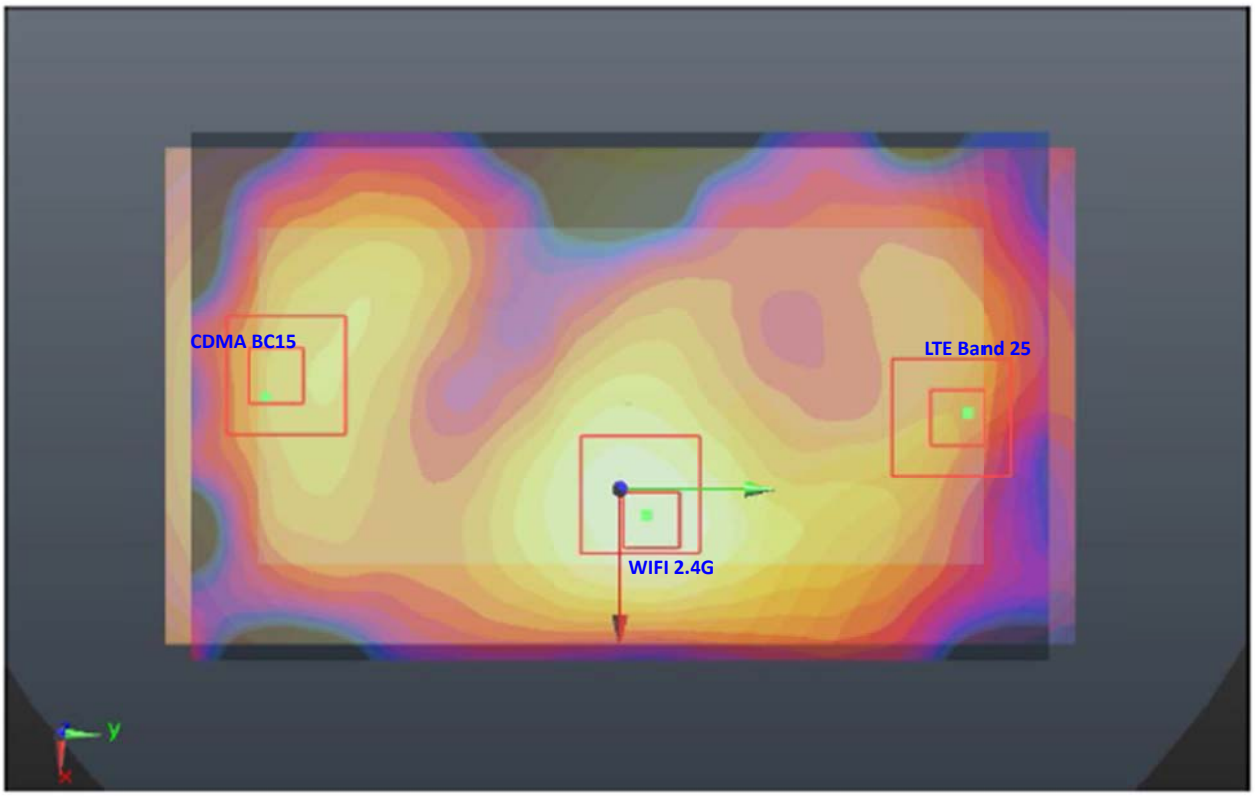
Case #C1-4 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
142	CDMA2000 BC15	Back	1.406	1	-0.018	-0.0635	-0.206	80.0	2.04	0.04	Not required
49	LTE Band12		0.634	1	-0.027	0.016	-0.206				
142	CDMA2000 BC15		1.406	1	-0.018	-0.0635	-0.206	113.0	1.92	0.02	Not required
49	LTE Band12		0.515	1	-0.029	0.049	-0.206				
142	CDMA2000 BC15		1.406	1	-0.018	-0.0635	-0.206	73.7	1.50	0.02	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
49	LTE Band12		0.634	1	-0.027	0.016	-0.206	38.3	0.73	0.02	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
49	LTE Band12		0.515	1	-0.029	0.049	-0.206	58.7	0.61	0.01	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				



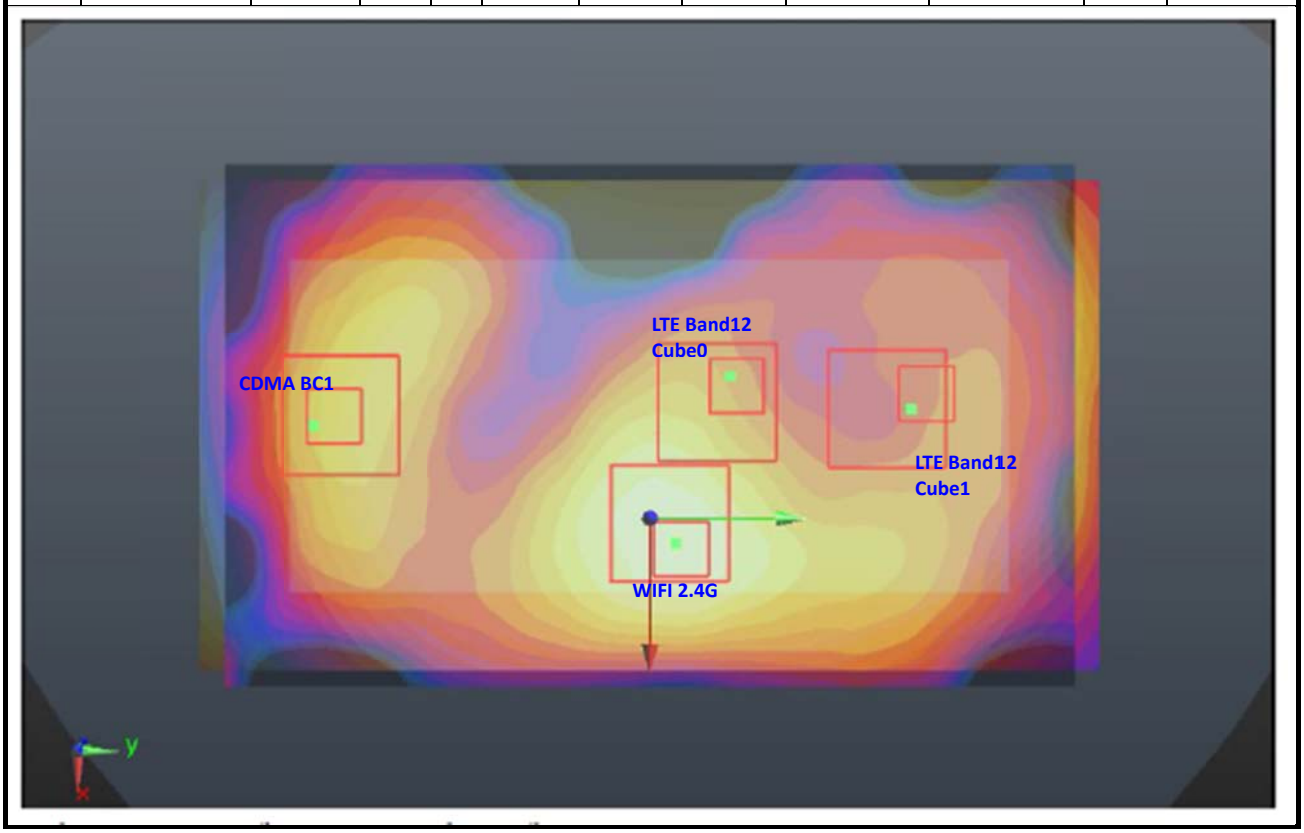
Case #C1-5 / Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
142	CDMA2000 BC15	Back	1.406	1	-0.018	-0.0635	-0.206	128.2	2.160	0.02	Not required
2	LTE Band 4		0.755	1	-0.0045	0.064	-0.205				
142	CDMA2000 BC15		1.406	1	-0.018	-0.0635	-0.206	73.7	1.500	0.02	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
2	LTE Band 4		0.755	1	-0.0045	0.064	-0.205	60.9	0.850	0.01	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				



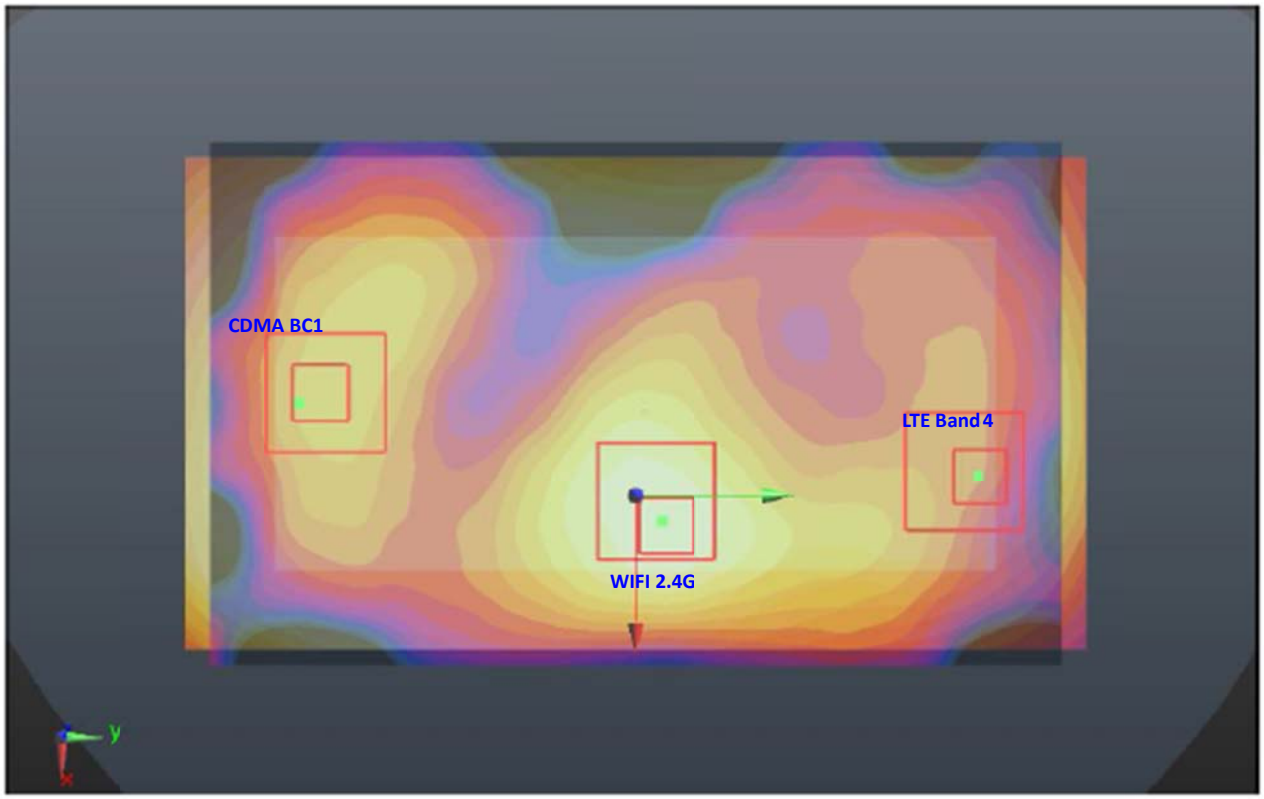
Case #C1-6 / Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
142	CDMA2000 BC15	Back	1.406	1	-0.018	-0.0635	-0.206	127.5	2.77	0.04	Not required
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205				
142	CDMA2000 BC15		1.406	1	-0.018	-0.0635	-0.206	73.7	1.50	0.02	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205	64.1	1.46	0.03	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				



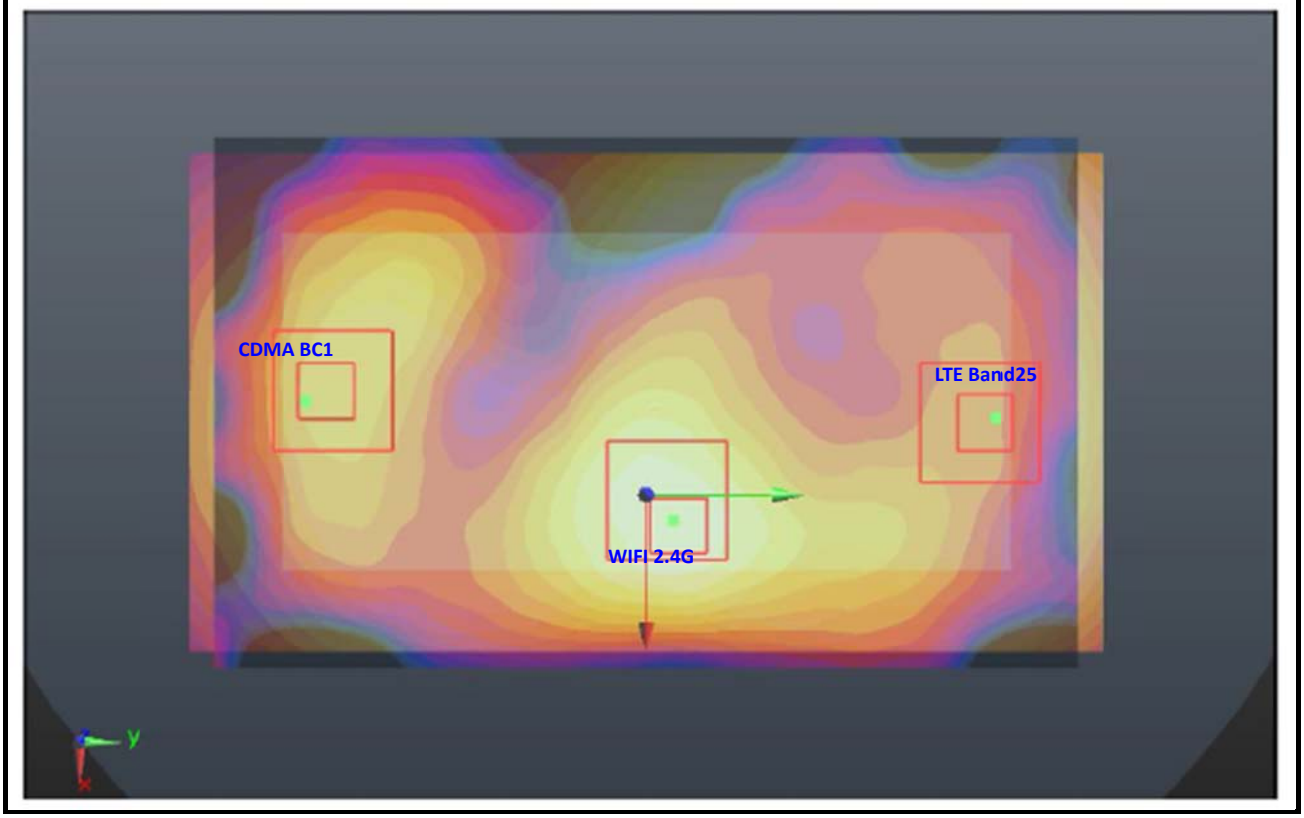
Case #C1-7 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
107	CDMA2000 BC1	Back	1.375	1	-0.018	-0.0605	-0.206	77.0	2.01	0.04	Not required
49	LTE Band12		0.634	1	-0.027	0.016	-0.206				
107	CDMA2000 BC1		1.375	1	-0.018	-0.0605	-0.206	110.1	1.89	0.02	Not required
49	LTE Band12		0.515	1	-0.029	0.049	-0.206				
107	CDMA2000 BC1		1.375	1	-0.018	-0.0605	-0.206	70.9	1.47	0.03	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
49	LTE Band12		0.634	1	-0.027	0.016	-0.206	38.3	0.73	0.02	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
49	LTE Band12		0.515	1	-0.029	0.049	-0.206	58.7	0.61	0.01	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				



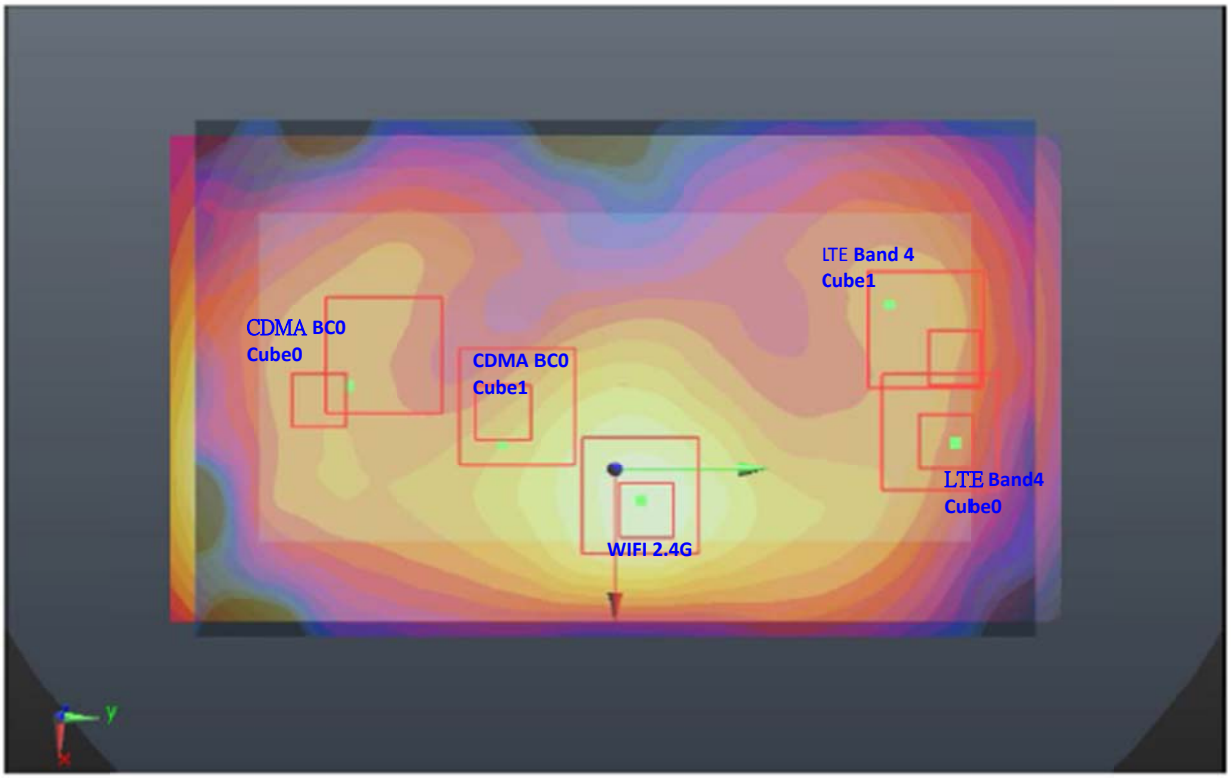
Case #C1-8 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
107	CDMA2000 BC1	Back	1.375	1	-0.018	-0.0605	-0.206	125.2	2.13	0.02	Not required
2	LTE Band 4		0.755	1	-0.0045	0.064	-0.205				
107	CDMA2000 BC1		1.375	1	-0.018	-0.0605	-0.206	70.9	1.47	0.03	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
2	LTE Band 4		0.755	1	-0.0045	0.064	-0.205	60.9	0.85	0.01	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				



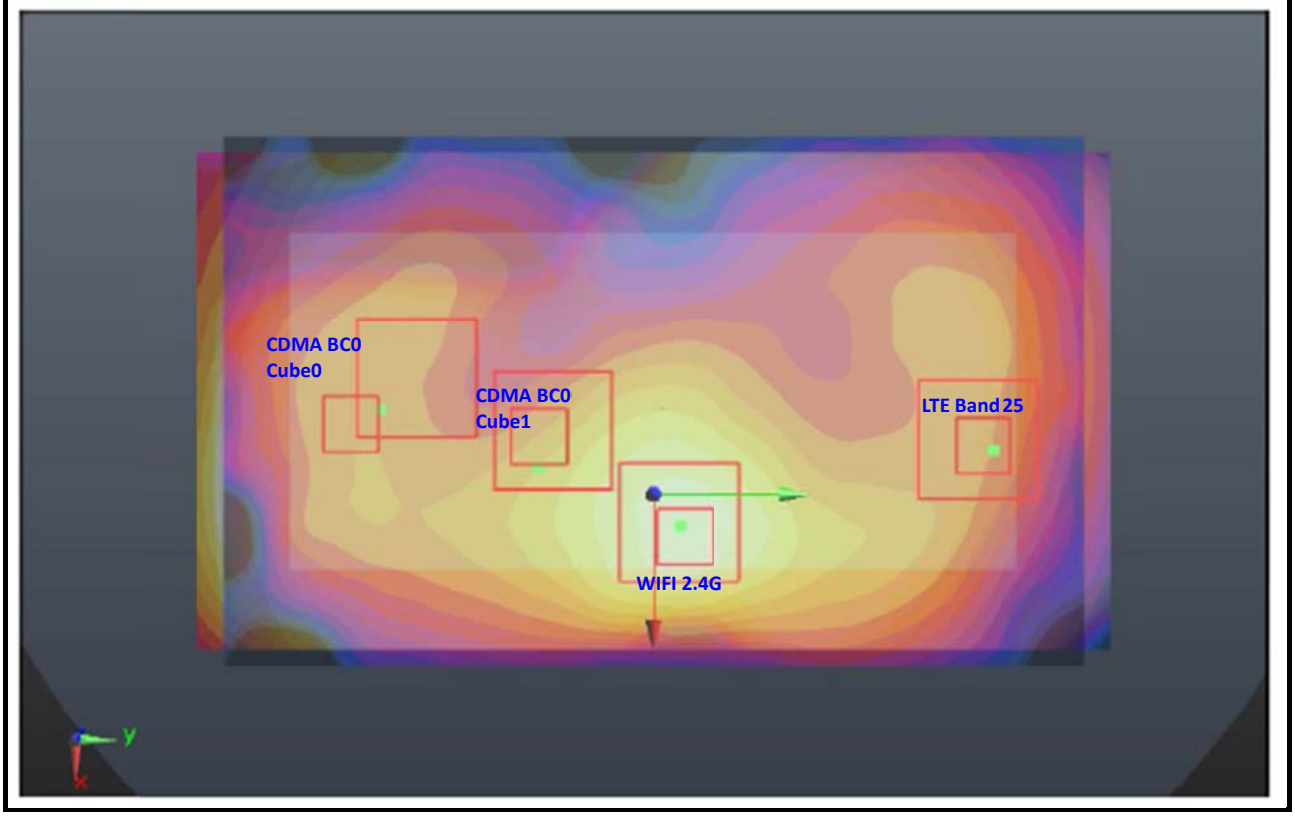
Case #C1-9 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
107	CDMA2000 BC1	Back	1.375	1	-0.018	-0.0605	-0.206	124.5	2.74	0.04	Not required
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205				
107	CDMA2000 BC1		1.375	1	-0.018	-0.0605	-0.206	70.9	1.47	0.03	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205	64.1	1.46	0.03	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				



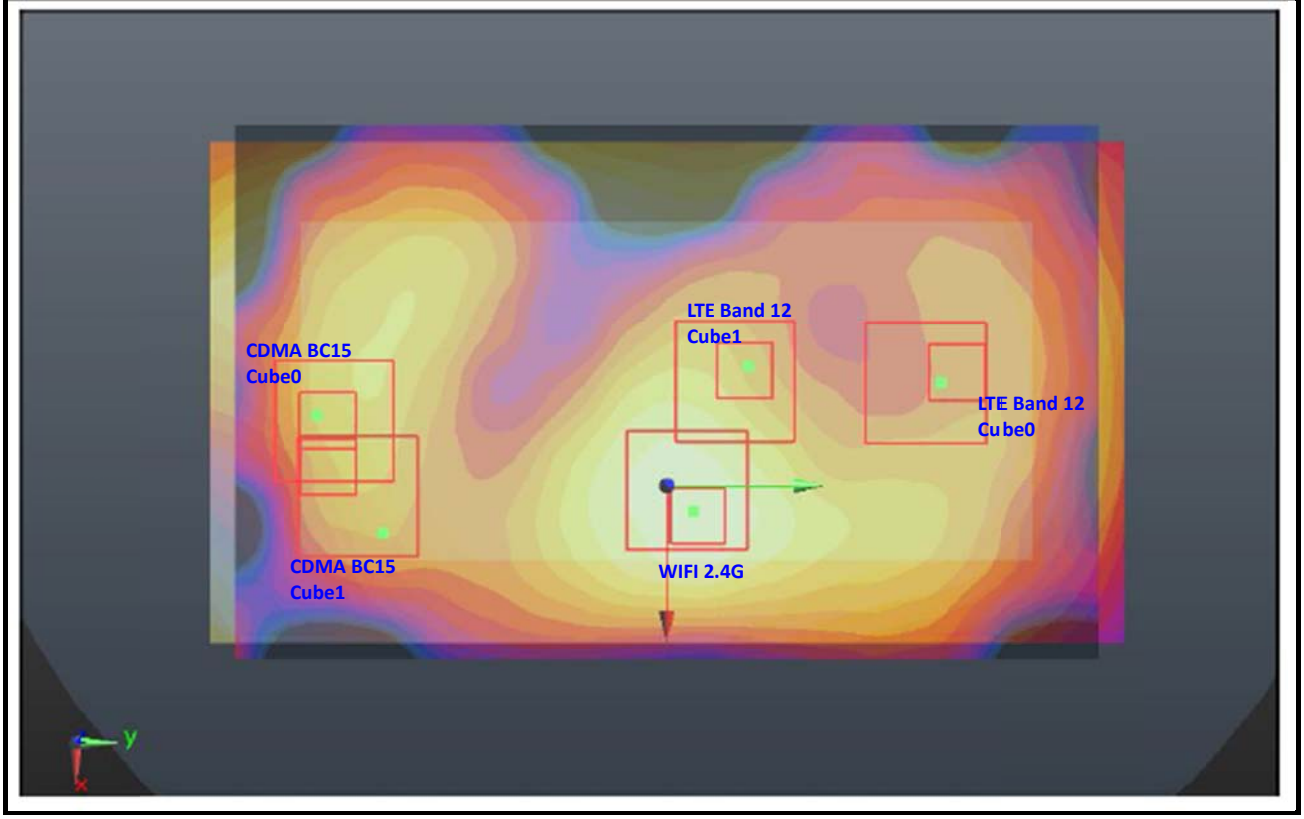
Case #C1-10 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
128	CDMA2000 BC0	Back	0.758	1	-0.0085	-0.0565	-0.206	120.5	1.42	0.01	Not required
12	LTE Band 4		0.658	1	-0.006	0.064	-0.205				
128	CDMA2000 BC0		0.758	1	-0.0085	-0.0565	-0.206	116.7	1.23	0.01	Not required
12	LTE Band 4		0.468	1	-0.0155	0.06	-0.205				
128	CDMA2000 BC0		0.865	1	-0.006	-0.02	-0.206	84.0	1.52	0.02	Not required
12	LTE Band 4		0.658	1	-0.006	0.064	-0.205				
128	CDMA2000 BC0		0.865	1	-0.006	-0.02	-0.206	80.6	1.33	0.02	Not required
12	LTE Band 4		0.468	1	-0.0155	0.06	-0.205				
128	CDMA2000 BC0		0.758	1	-0.0085	-0.0565	-0.206	64.3	0.85	0.01	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				
128	CDMA2000 BC0		0.865	1	-0.006	-0.02	-0.206	30.0	0.95	0.03	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				
12	LTE Band 4		0.658	1	-0.006	0.064	-0.205	61.5	0.75	0.01	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				
12	LTE Band 4		0.468	1	-0.0155	0.06	-0.205	61.2	0.56	0.01	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				



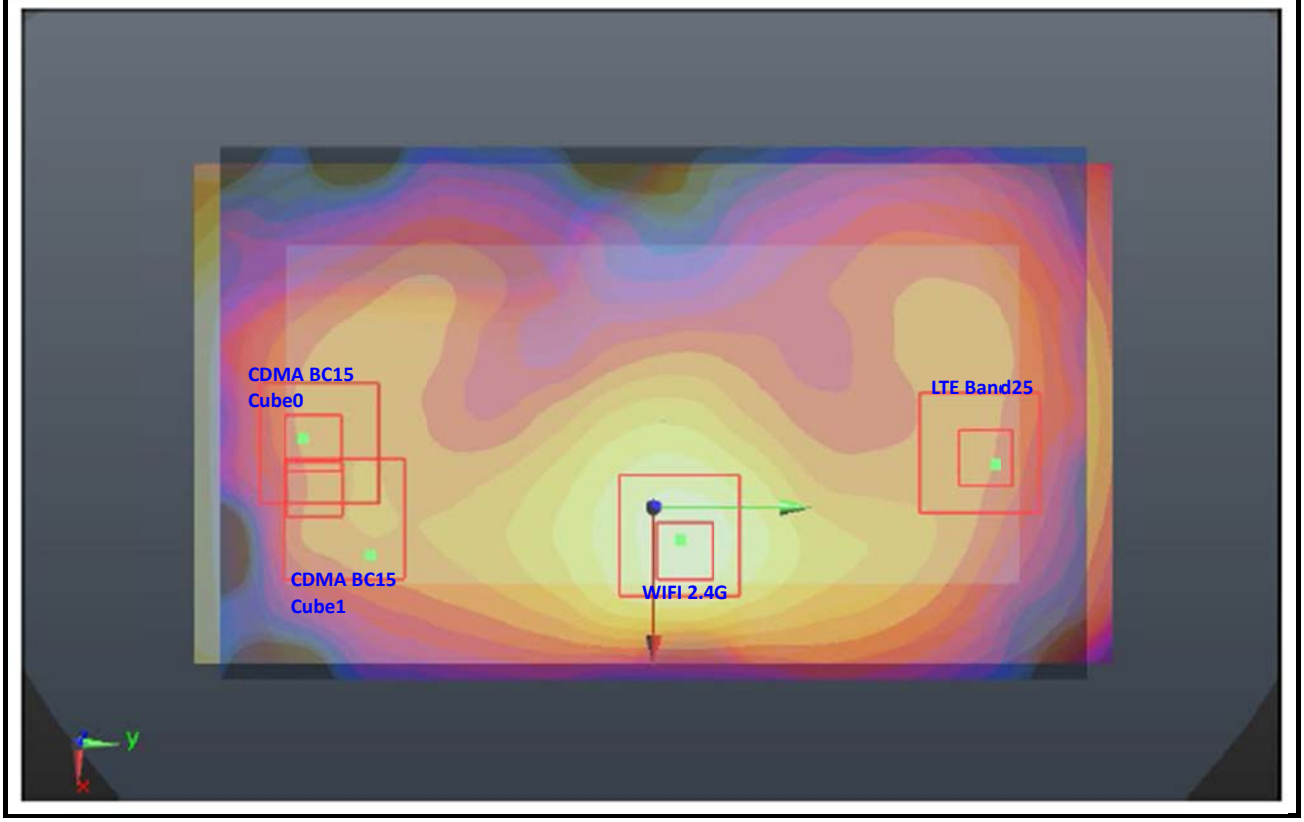
Case #C1-11 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
128	CDMA2000 BC0	Back	0.758	1	-0.0085	-0.0565	-0.206	119.0	2.12	0.03	Not required
20	LTE Band 25		1.365	1	-0.009	0.0625	-0.206				
128	CDMA2000 BC0		0.865	1	-0.006	-0.02	-0.206	82.6	2.23	0.04	Not required
20	LTE Band 25		1.365	1	-0.009	0.0625	-0.206				
128	CDMA2000 BC0		0.758	1	-0.0085	-0.0565	-0.206	64.3	0.85	0.01	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				
128	CDMA2000 BC0		0.865	1	-0.006	-0.02	-0.206	30.0	0.95	0.03	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				
20	LTE Band 25		1.365	1	-0.009	0.0625	-0.206	61.0	1.45	0.03	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				



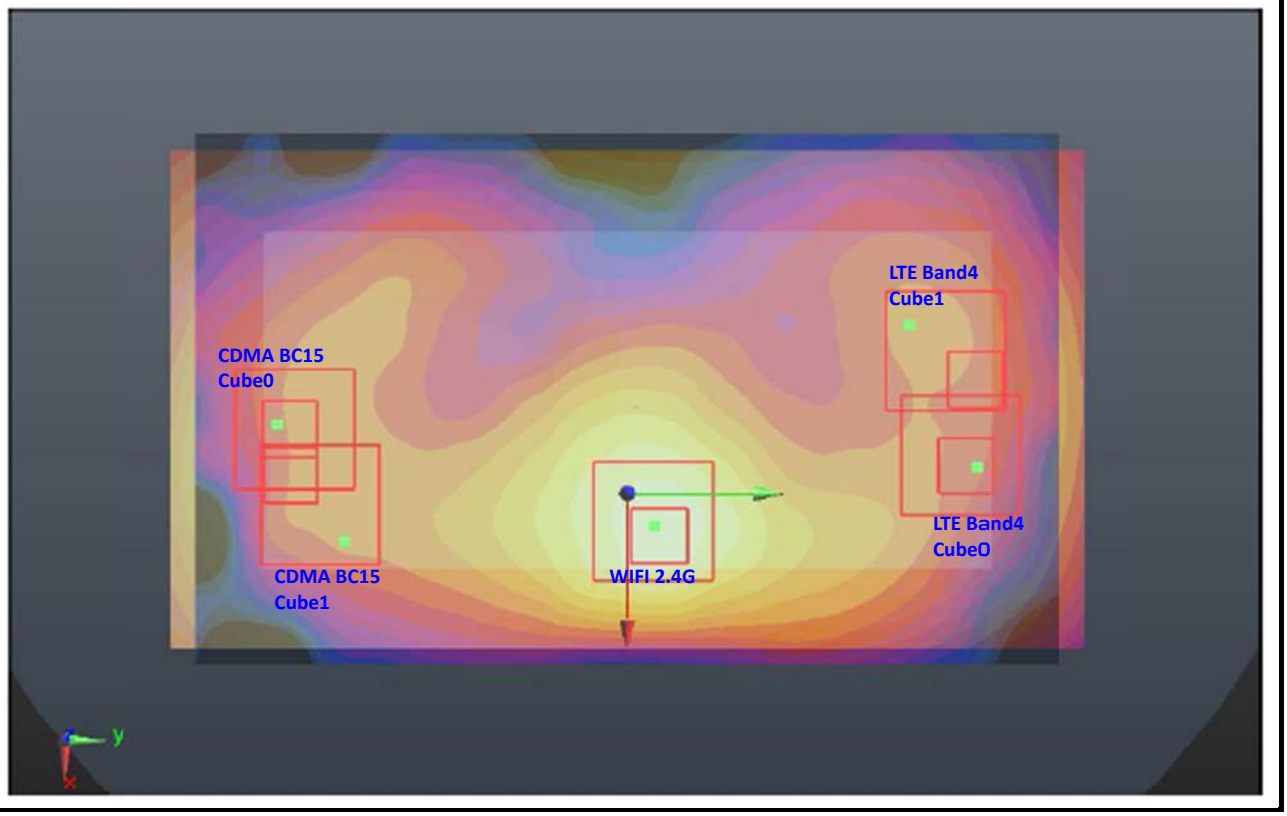
Case #C1-12 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
145	CDMA2000 BC15	Back	1.365	1	-0.0135	-0.062	-0.206	112.7	1.87	0.02	Not required
53	LTE Band12		0.505	1	-0.0195	0.0505	-0.206				
145	CDMA2000 BC15		1.182	1	-0.0085	-0.058	-0.206	109.1	1.69	0.02	Not required
53	LTE Band12		0.505	1	-0.0195	0.0505	-0.206				
145	CDMA2000 BC15		1.365	1	-0.0135	-0.062	-0.206	78.5	1.86	0.03	Not required
53	LTE Band12		0.493	1	-0.0225	0.016	-0.206				
145	CDMA2000 BC15		1.182	1	-0.0085	-0.058	-0.206	75.3	1.68	0.03	Not required
53	LTE Band12		0.493	1	-0.0225	0.016	-0.206				
145	CDMA2000 BC15		1.365	1	-0.0135	-0.062	-0.206	71.1	1.45	0.02	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				
145	CDMA2000 BC15		1.182	1	-0.0085	-0.058	-0.206	65.7	1.27	0.02	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				
53	LTE Band12		0.505	1	-0.0195	0.0505	-0.206	54.8	0.59	0.01	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				
53	LTE Band12		0.493	1	-0.0225	0.016	-0.206	35.1	0.58	0.01	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				



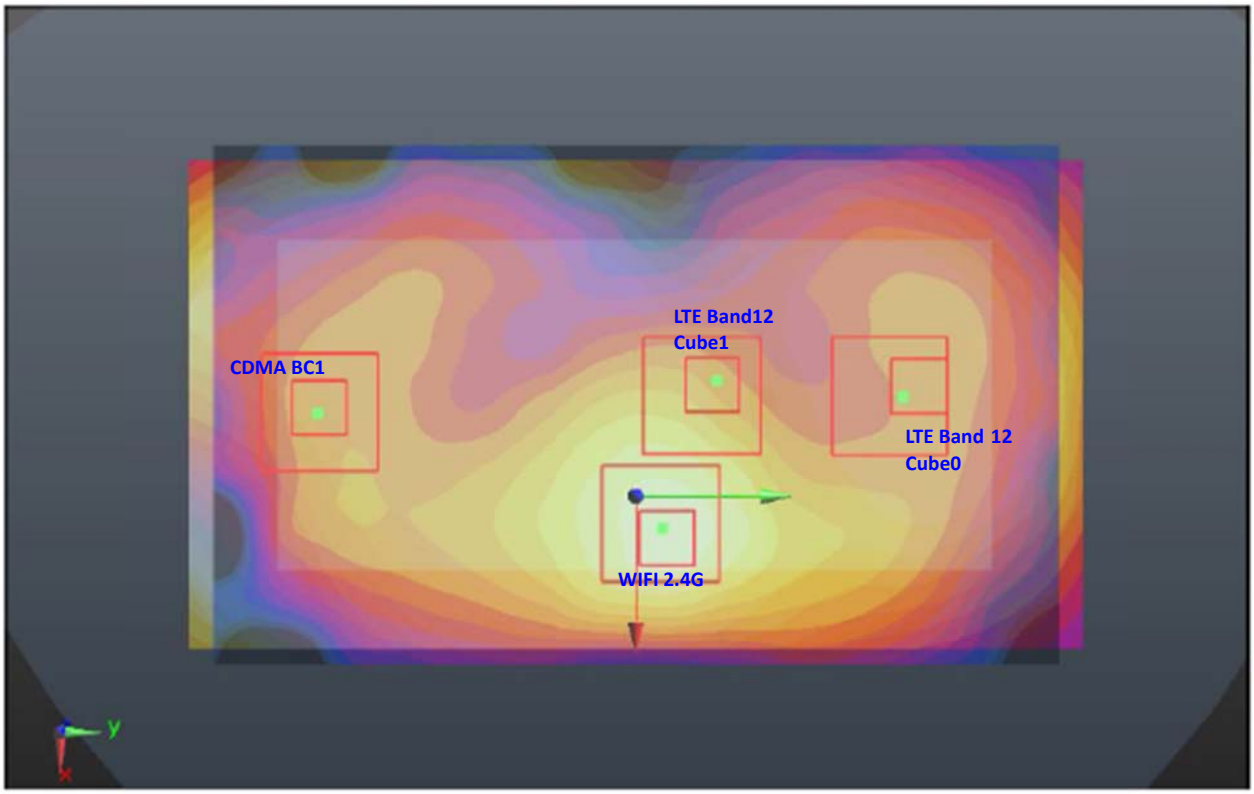
Case #C1-13 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
145	CDMA2000 BC15	Back	1.365	1	-0.0135	-0.062	-0.206	124.6	2.73	0.04	Not required
20	LTE Band 25		1.365	1	-0.009	0.0625	-0.206				
145	CDMA2000 BC15		1.182	1	-0.0085	-0.058	-0.206	120.5	2.55	0.03	Not required
20	LTE Band 25		1.365	1	-0.009	0.0625	-0.206				
145	CDMA2000 BC15		1.365	1	-0.0135	-0.062	-0.206	71.1	1.45	0.02	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				
145	CDMA2000 BC15		1.182	1	-0.0085	-0.058	-0.206	65.7	1.27	0.02	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				
20	LTE Band 25		1.365	1	-0.009	0.0625	-0.206	61.0	1.45	0.03	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				



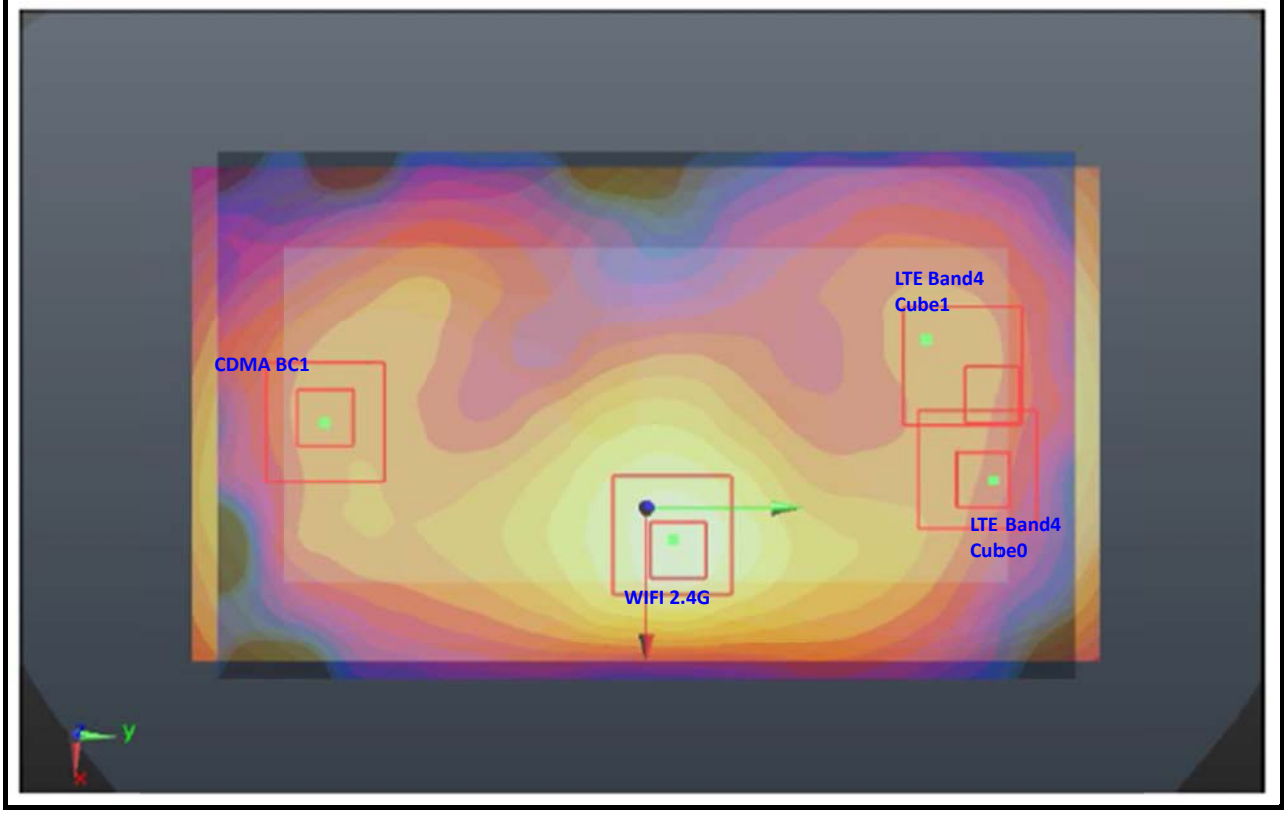
Case #C1-14 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
145	CDMA2000 BC15	Back	1.365	1	-0.0135	-0.062	-0.206	126.2	2.02	0.02	Not required
12	LTE Band 4		0.658	1	-0.006	0.064	-0.205				
145	CDMA2000 BC15		1.182	1	-0.0085	-0.058	-0.206	122.0	1.84	0.02	Not required
12	LTE Band 4		0.658	1	-0.006	0.064	-0.205				
145	CDMA2000 BC15		1.365	1	-0.0135	-0.062	-0.206	122.0	1.83	0.02	Not required
12	LTE Band 4		0.468	1	-0.0155	0.06	-0.205				
145	CDMA2000 BC15		1.182	1	-0.0085	-0.058	-0.206	118.2	1.65	0.02	Not required
12	LTE Band 4		0.468	1	-0.0155	0.06	-0.205				
145	CDMA2000 BC15		1.365	1	-0.0135	-0.062	-0.206	71.1	1.45	0.02	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				
145	CDMA2000 BC15		1.182	1	-0.0085	-0.058	-0.206	65.7	1.27	0.02	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				
12	LTE Band 4		0.658	1	-0.006	0.064	-0.205	61.5	0.75	0.01	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				
12	LTE Band 4		0.468	1	-0.0155	0.06	-0.205	61.2	0.56	0.01	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				



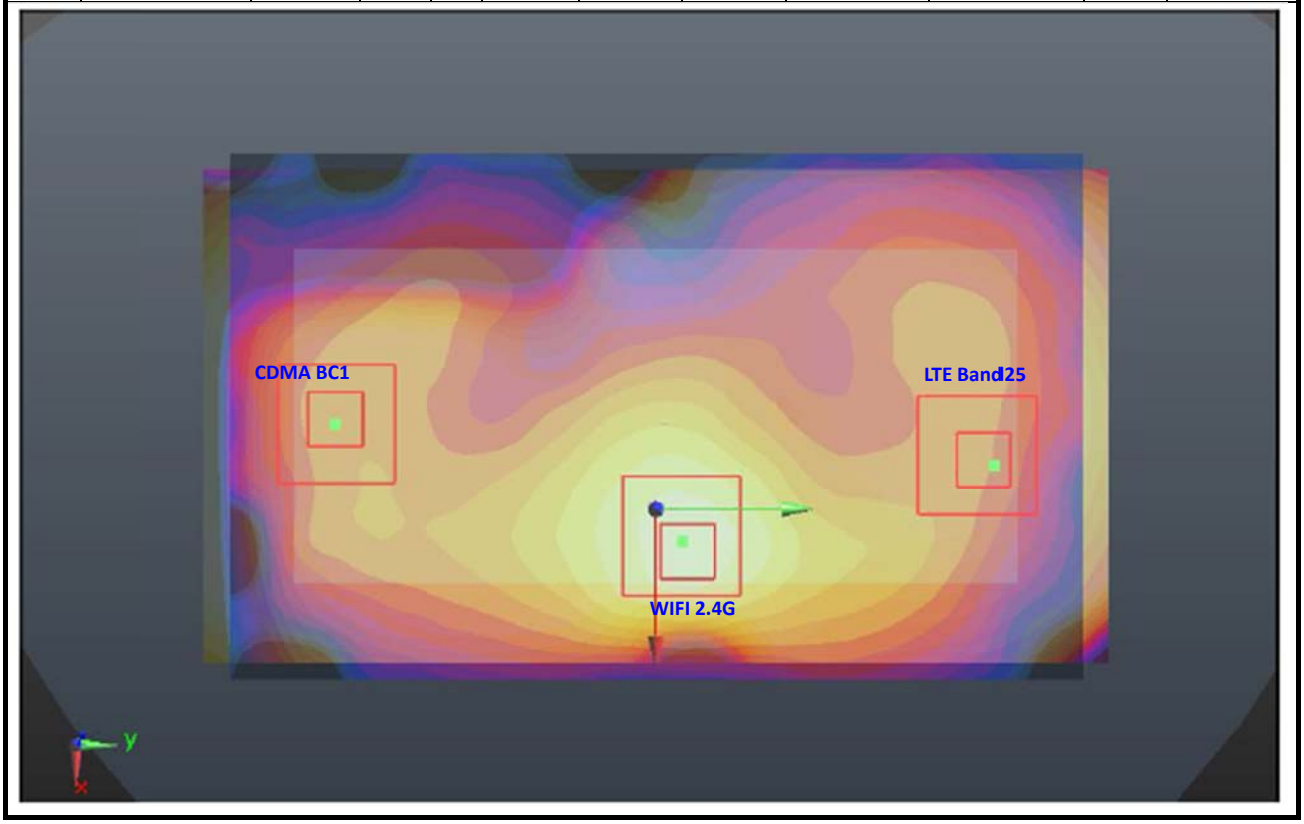
Case #C1-15 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
109	CDMA2000 BC1	Back	1.292	1	-0.0165	-0.0575	-0.206	108.0	1.80	0.02	Not required
53	LTE Band12		0.505	1	-0.0195	0.0505	-0.206				
109	CDMA2000 BC1		1.292	1	-0.0165	-0.0575	-0.206	73.7	1.79	0.03	Not required
53	LTE Band12		0.493	1	-0.0225	0.016	-0.206				
109	CDMA2000 BC1		1.292	1	-0.0165	-0.0575	-0.206	68.0	1.38	0.02	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				
53	LTE Band12		0.505	1	-0.0195	0.0505	-0.206	54.8	0.59	0.01	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				
53	LTE Band12		0.493	1	-0.0225	0.016	-0.206	35.1	0.58	0.01	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				



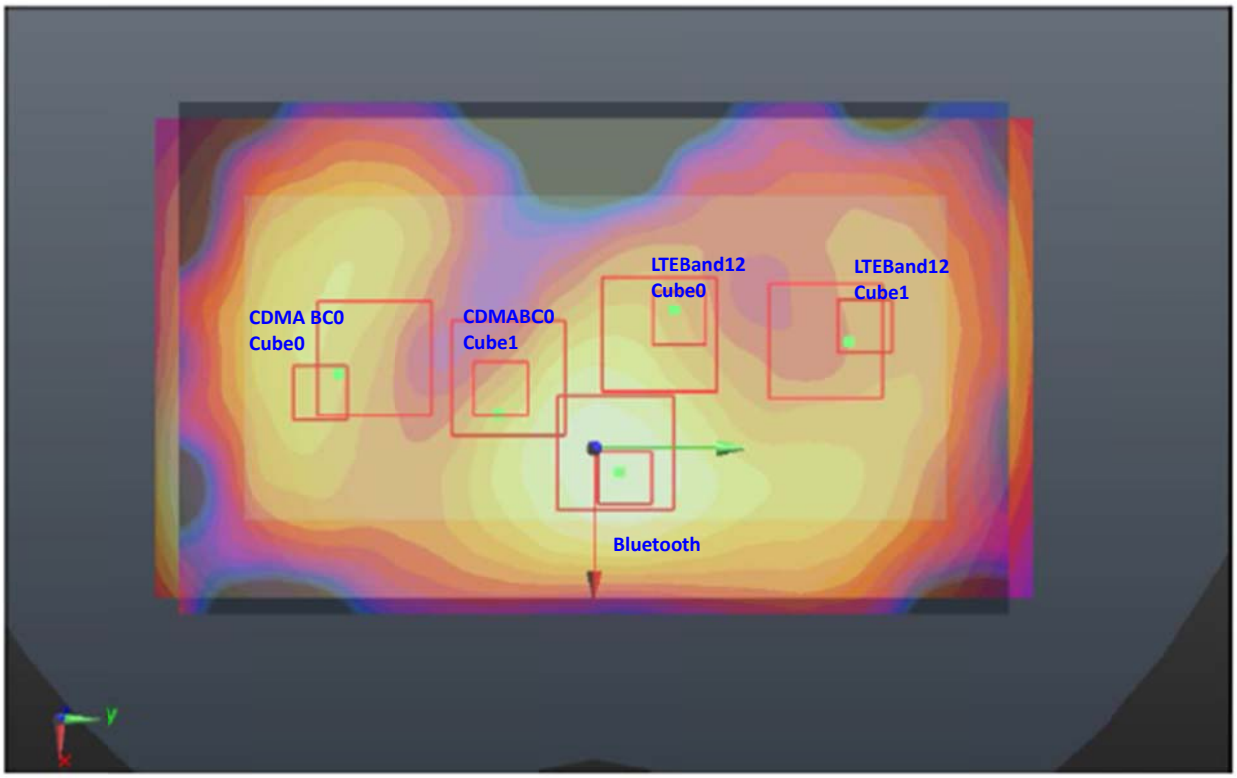
Case #C1-16 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
109	CDMA2000 BC1	Back	1.292	1	-0.0165	-0.0575	-0.206	122.0	1.95	0.02	Not required
12	LTE Band 4		0.658	1	-0.006	0.064	-0.205				
109	CDMA2000 BC1		1.292	1	-0.0165	-0.0575	-0.206	117.5	1.76	0.02	Not required
12	LTE Band 4		0.468	1	-0.0155	0.06	-0.205				
109	CDMA2000 BC1		1.292	1	-0.0165	-0.0575	-0.206	68.0	1.38	0.02	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				
12	LTE Band 4		0.658	1	-0.006	0.064	-0.205	61.5	0.75	0.01	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				
12	LTE Band 4		0.468	1	-0.0155	0.06	-0.205	61.2	0.56	0.01	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				



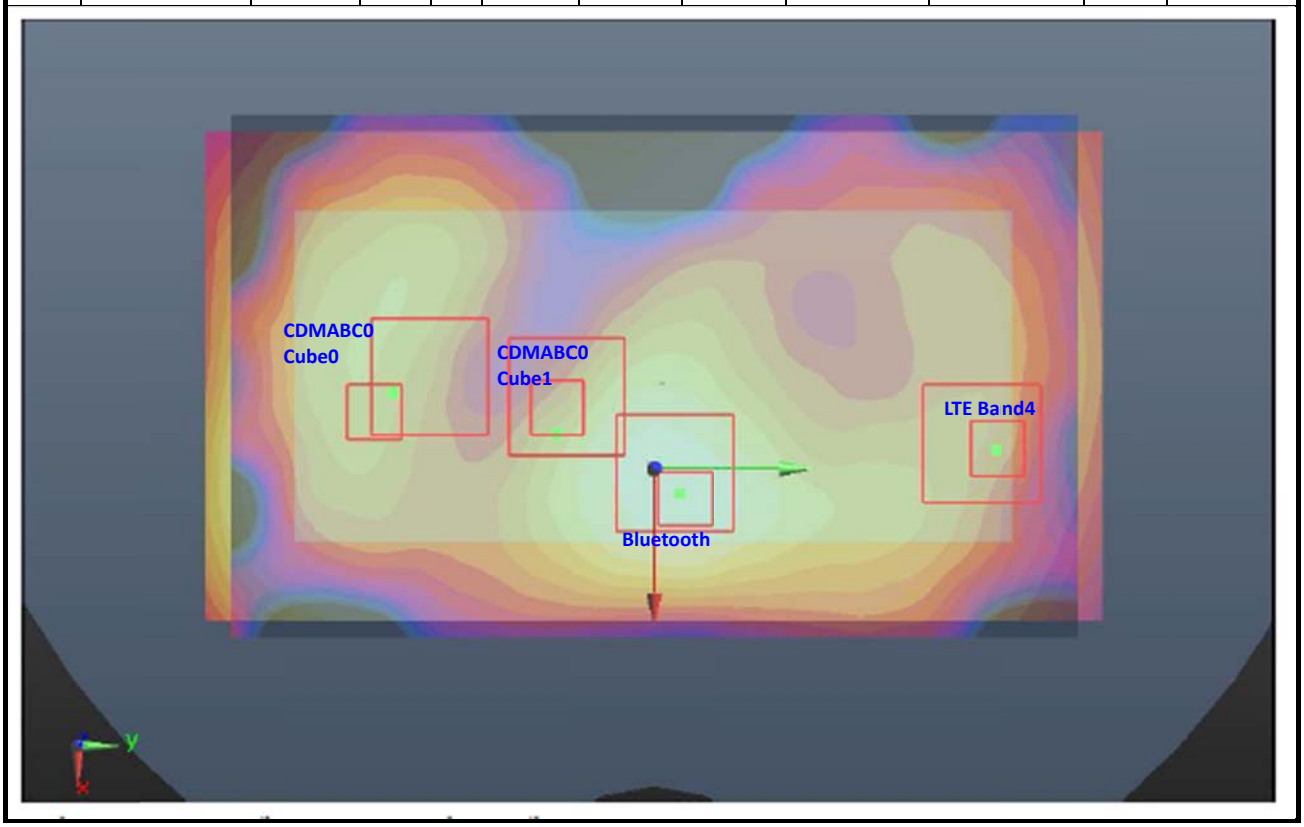
Case #C1-17 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
109	CDMA2000 BC1	Back	1.292	1	-0.0165	-0.0575	-0.206	120.2	2.66	0.04	Not required
20	LTE Band 25		1.365	1	-0.009	0.0625	-0.206				
109	CDMA2000 BC1		1.292	1	-0.0165	-0.0575	-0.206	68.0	1.38	0.02	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				
20	LTE Band 25		1.365	1	-0.009	0.0625	-0.206	61.0	1.45	0.03	Not required
156	WLAN 2.4GHz		0.088	1	0.0108	0.0048	-0.206				



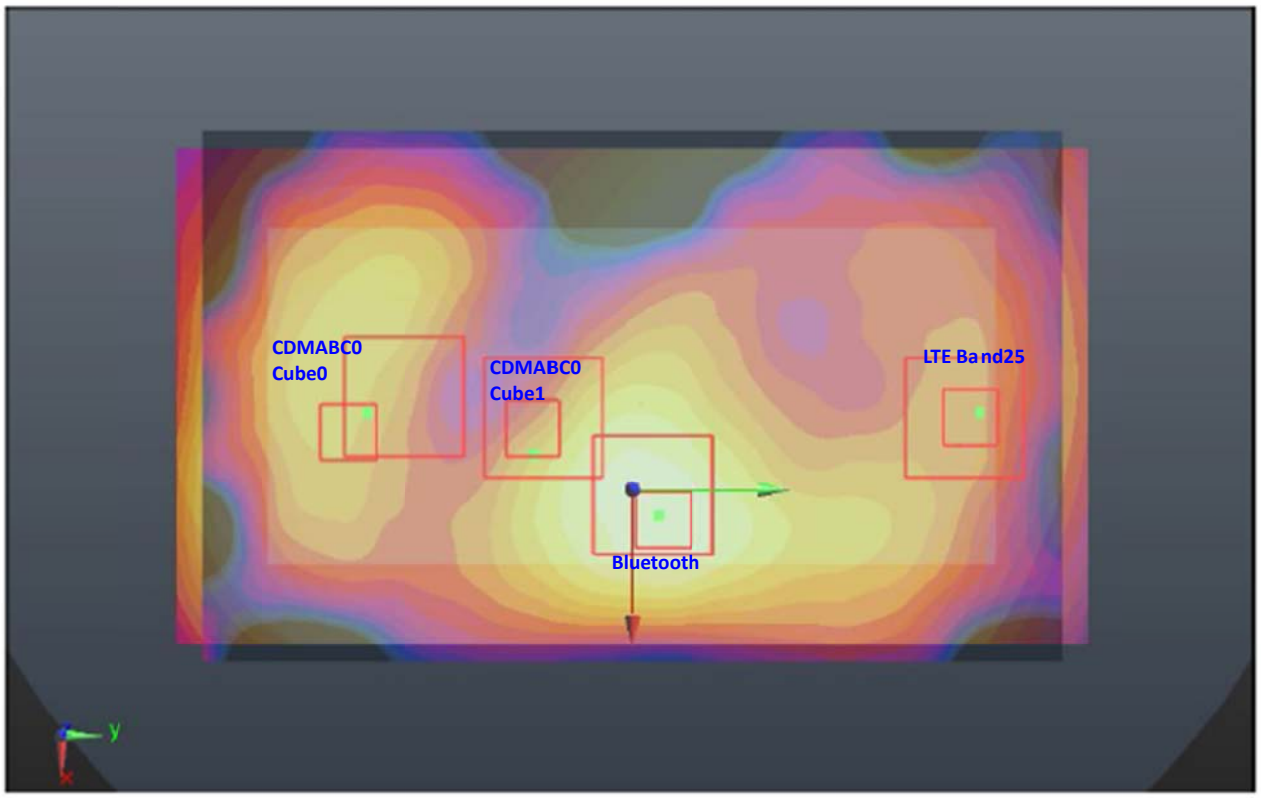
Case #C1-18 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
125	CDMA2000 BC0	Back	1.031	1	-0.0075	-0.017	-0.206	38.3	1.67	0.06	Required
49	LTE Band12		0.634	1	-0.027	0.016	-0.206				
125	CDMA2000 BC0		1.031	1	-0.0075	-0.017	-0.206	69.4	1.55	0.03	Not required
49	LTE Band12		0.515	1	-0.029	0.049	-0.206				
125	CDMA2000 BC0		0.88	1	-0.007	-0.055	-0.206	73.8	1.51	0.03	Not required
49	LTE Band12		0.634	1	-0.027	0.016	-0.206				
125	CDMA2000 BC0		0.88	1	-0.007	-0.055	-0.206	106.3	1.40	0.02	Not required
49	LTE Band12		0.515	1	-0.029	0.049	-0.206				
125	CDMA2000 BC0		1.031	1	-0.0075	-0.017	-0.206	27.7	1.06	0.04	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				
125	CDMA2000 BC0		0.88	1	-0.007	-0.055	-0.206	62.1	0.91	0.01	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				
49	LTE Band12		0.634	1	-0.027	0.016	-0.206	38.3	0.67	0.01	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				
49	LTE Band12		0.515	1	-0.029	0.049	-0.206	58.7	0.55	0.01	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				



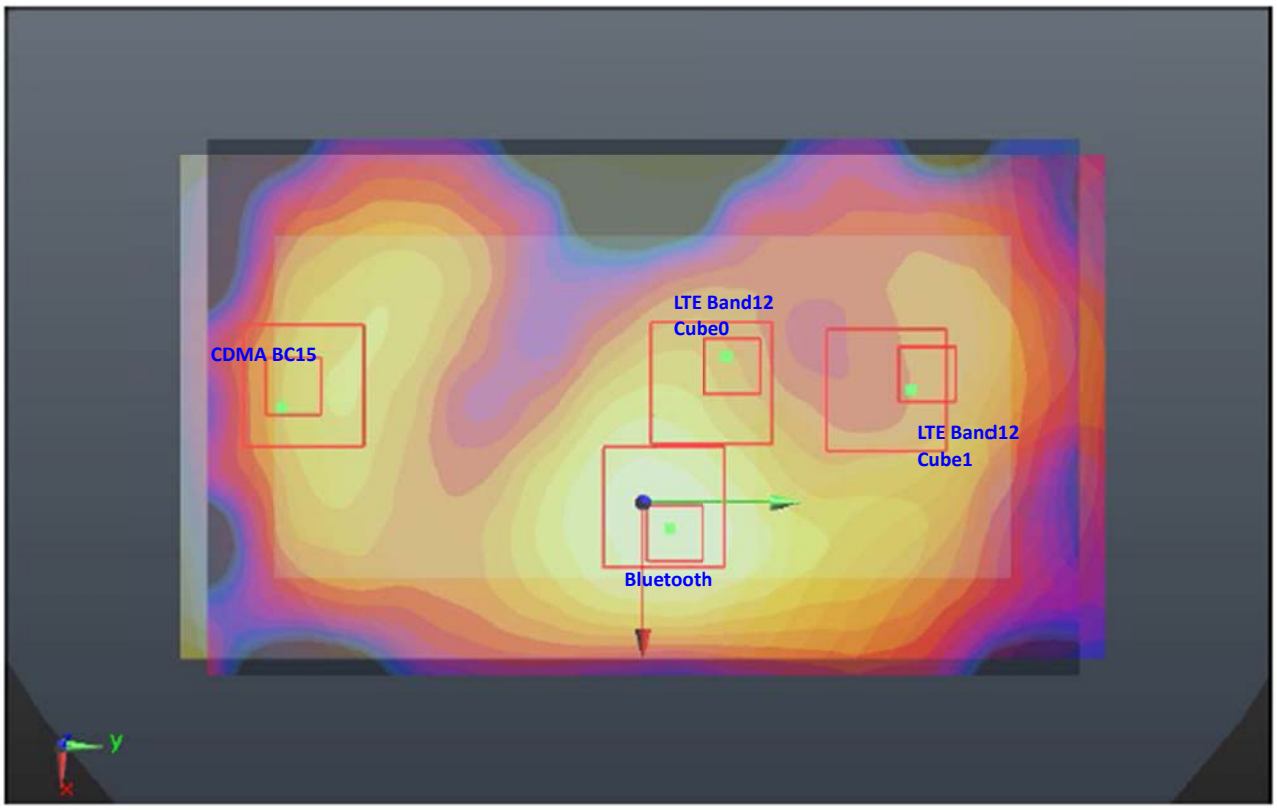
Case #C1-19 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
125	CDMA2000 BC0	Back	1.031	1	-0.0075	-0.017	-0.206	81.1	1.79	0.03	Not required
2	LTE Band 4		0.755	1	-0.0045	0.064	-0.205				
125	CDMA2000 BC0		0.88	1	-0.007	-0.055	-0.206	119.0	1.64	0.02	Not required
2	LTE Band 4		0.755	1	-0.0045	0.064	-0.205				
125	CDMA2000 BC0		1.031	1	-0.0075	-0.017	-0.206	27.7	1.12	0.04	Not required
-	Bluetooth		0.092	1	0.0096	0.0048	-0.206				
125	CDMA2000 BC0		0.88	1	-0.007	-0.055	-0.206	62.1	0.91	0.01	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				
2	LTE Band 4		0.755	1	-0.0045	0.064	-0.205	60.9	0.79	0.01	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				



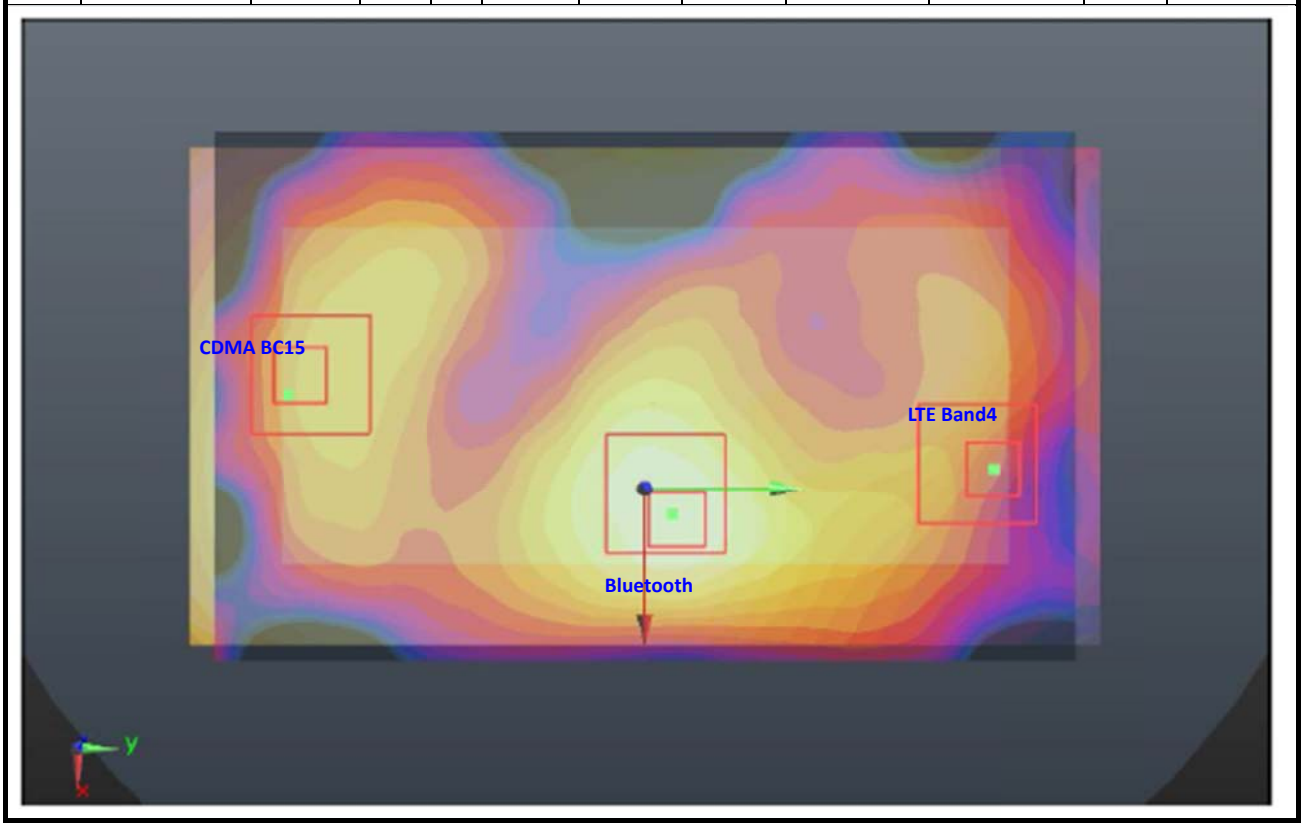
Case #C1-20 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
125	CDMA2000 BC0	Back	1.031	1	-0.0075	-0.017	-0.206	81.4	2.40	0.05	Step 2
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205				
125	CDMA2000 BC0		0.88	1	-0.007	-0.055	-0.206	119.3	2.25	0.03	Not required
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205				
125	CDMA2000 BC0		1.031	1	-0.0075	-0.017	-0.206	27.7	1.06	0.04	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				
125	CDMA2000 BC0		0.88	1	-0.007	-0.055	-0.206	62.1	0.91	0.01	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205	64.1	1.40	0.03	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				



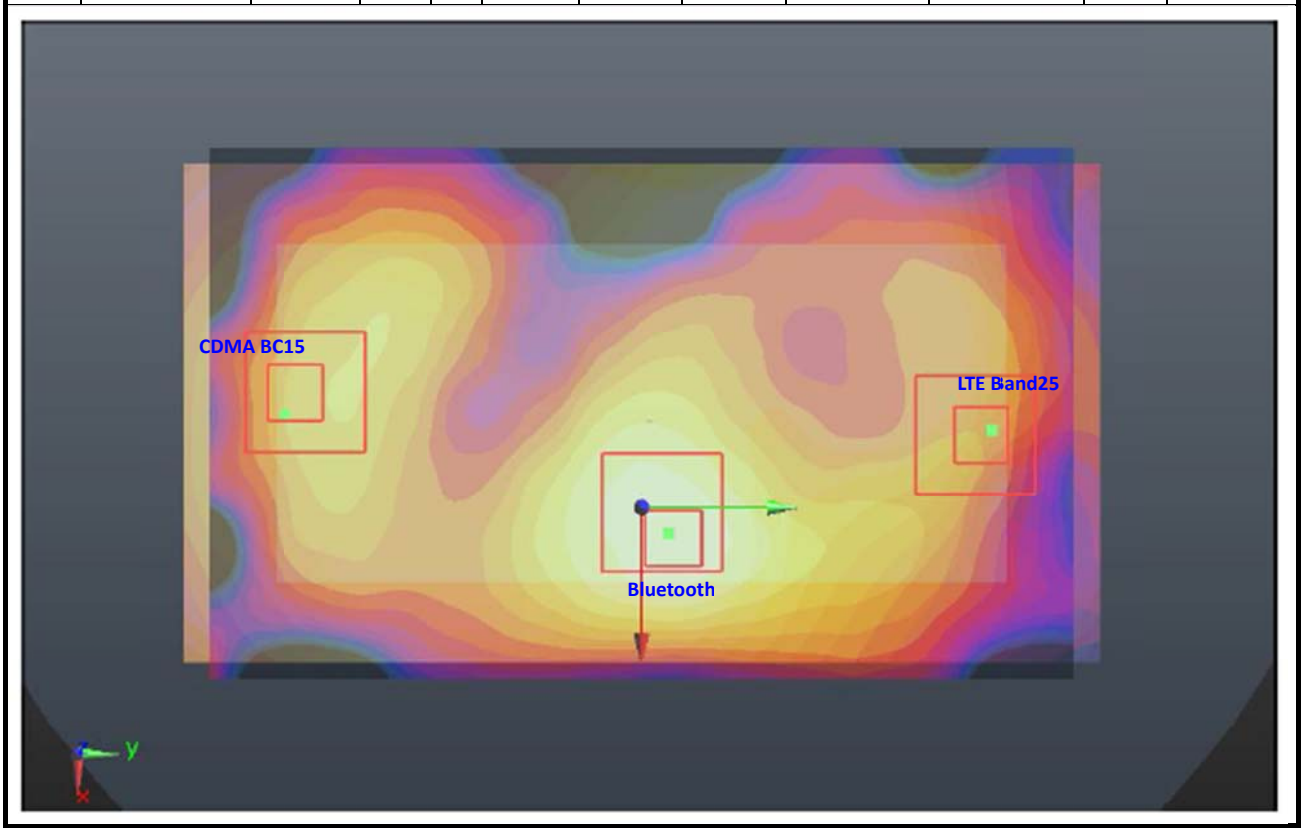
Case #C1-21 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
142	CDMA2000 BC15	Back	1.406	1	-0.018	-0.0635	-0.206	80.0	2.04	0.04	Not required
49	LTE Band12		0.634	1	-0.027	0.016	-0.206				
142	CDMA2000 BC15		1.406	1	-0.018	-0.0635	-0.206	113.0	1.92	0.02	Not required
49	LTE Band12		0.515	1	-0.029	0.049	-0.206				
142	CDMA2000 BC15		1.406	1	-0.018	-0.0635	-0.206	73.7	1.44	0.02	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				
49	LTE Band12		0.634	1	-0.027	0.016	-0.206	38.3	0.67	0.01	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				
49	LTE Band12		0.515	1	-0.029	0.049	-0.206	58.7	0.55	0.01	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				



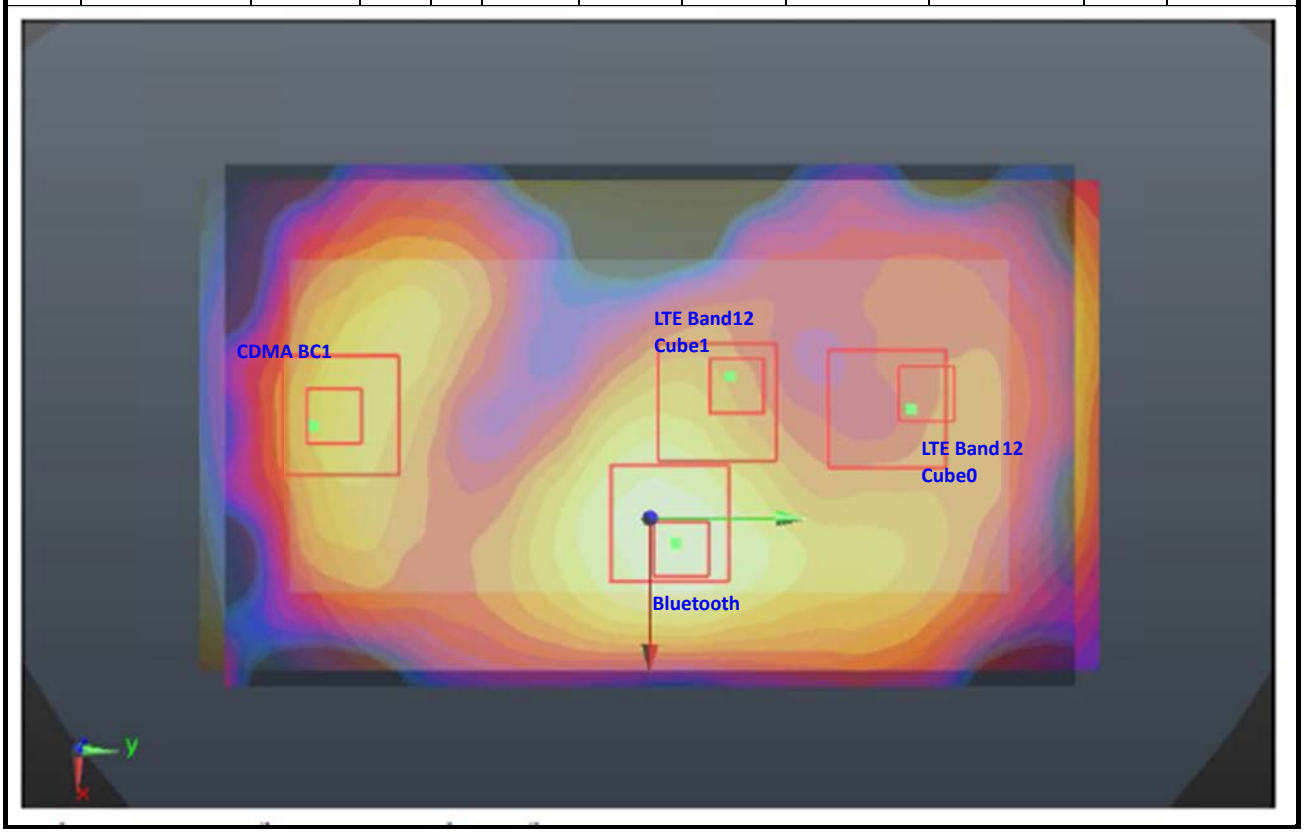
Case #C1-22 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
142	CDMA2000 BC15	Back	1.406	1	-0.018	-0.0635	-0.206	128.2	2.16	0.02	Not required
2	LTE Band 4		0.755	1	-0.0045	0.064	-0.205				
142	CDMA2000 BC15		1.406	1	-0.018	-0.0635	-0.206	73.7	1.44	0.02	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				
2	LTE Band 4		0.755	1	-0.0045	0.064	-0.205	60.9	0.79	0.01	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				



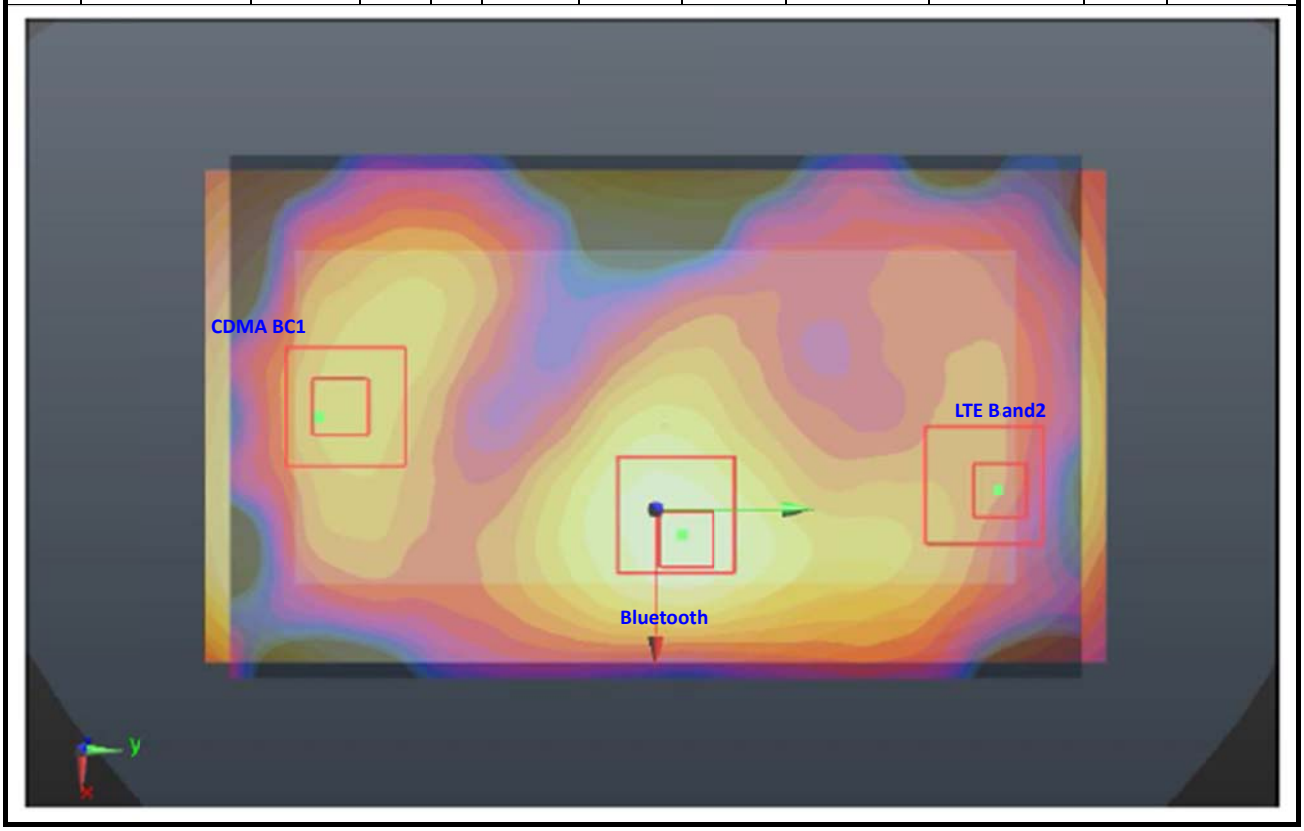
Case #C1-23 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
142	CDMA2000 BC15	Back	1.406	1	-0.018	-0.0635	-0.206	127.5	2.77	0.04	Not required
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205				
142	CDMA2000 BC15		1.406	1	-0.018	-0.0635	-0.206	73.7	1.44	0.02	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205	64.1	1.40	0.03	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				



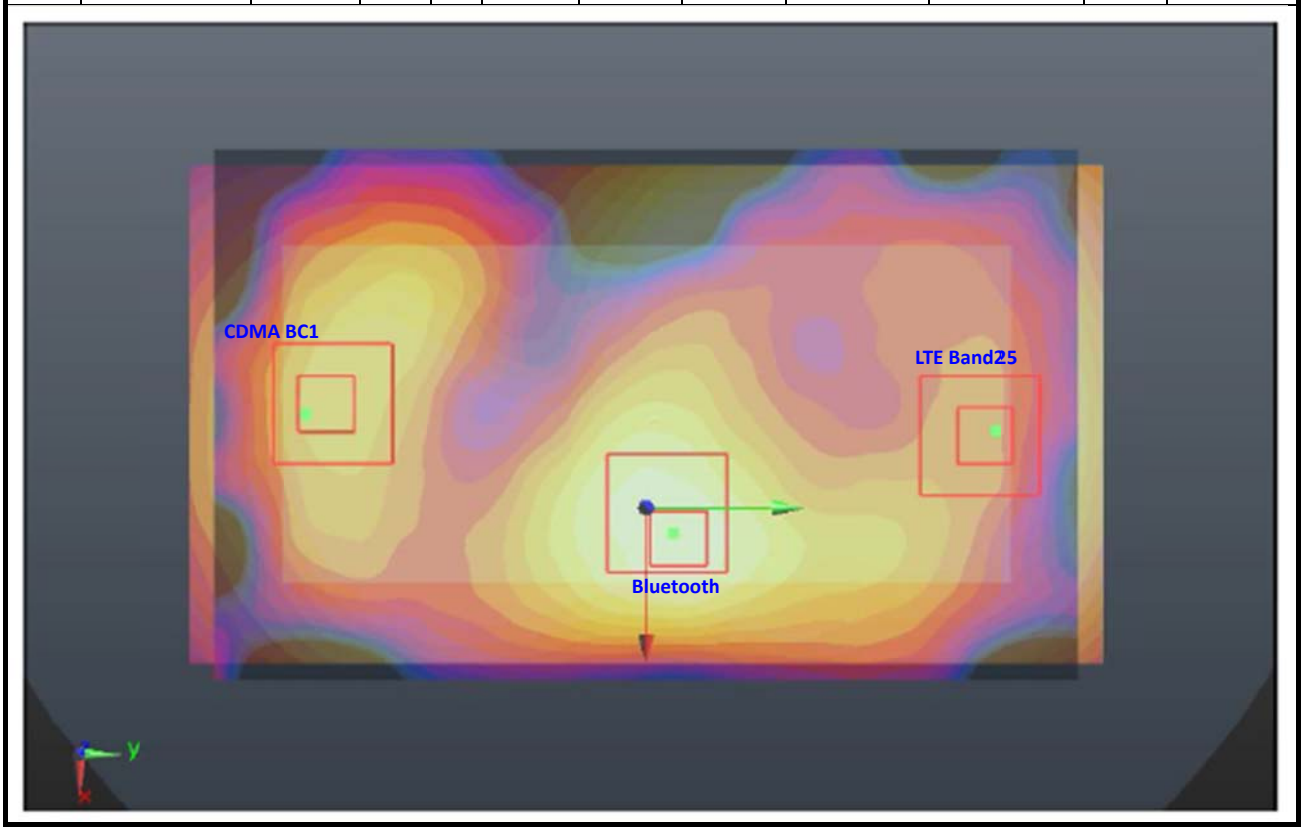
Case #C1-24 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
107	CDMA2000 BC1	Back	1.375	1	-0.018	-0.0605	-0.206	77.0	2.01	0.04	Not required
49	LTE Band12		0.634	1	-0.027	0.016	-0.206				
107	CDMA2000 BC1		1.375	1	-0.018	-0.0605	-0.206	110.1	1.89	0.02	Not required
49	LTE Band12		0.515	1	-0.029	0.049	-0.206				
107	CDMA2000 BC1		1.375	1	-0.018	-0.0605	-0.206	70.9	1.41	0.02	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				
49	LTE Band12		0.634	1	-0.027	0.016	-0.206	38.3	0.67	0.01	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				
49	LTE Band12		0.515	1	-0.029	0.049	-0.206	58.7	0.55	0.01	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				



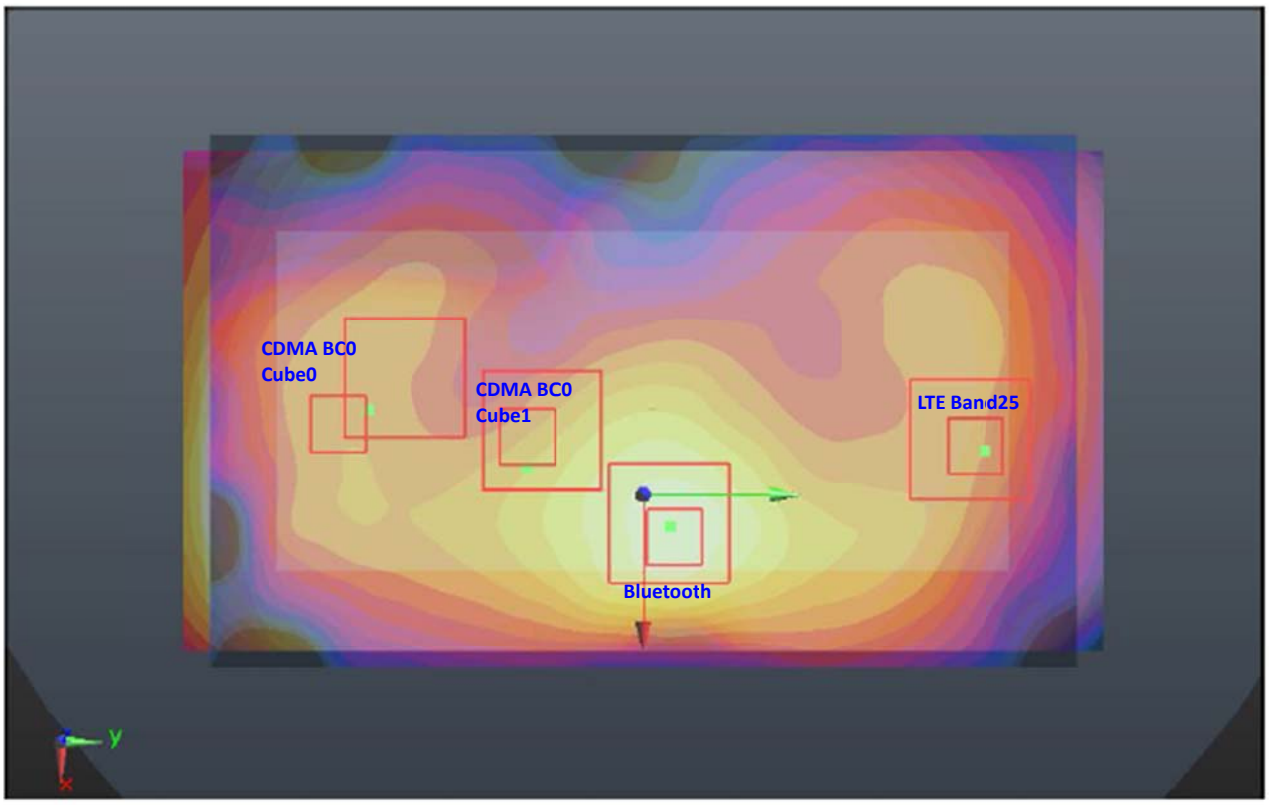
Case #C1-25 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
107	CDMA2000 BC1	Back	1.375	1	-0.018	-0.0605	-0.206	125.2	2.13	0.02	Not required
2	LTE Band 4		0.755	1	-0.0045	0.064	-0.205				
107	CDMA2000 BC1		1.375	1	-0.018	-0.0605	-0.206	70.9	1.41	0.02	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				
2	LTE Band 4		0.755	1	-0.0045	0.064	-0.205	60.9	0.79	0.01	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				



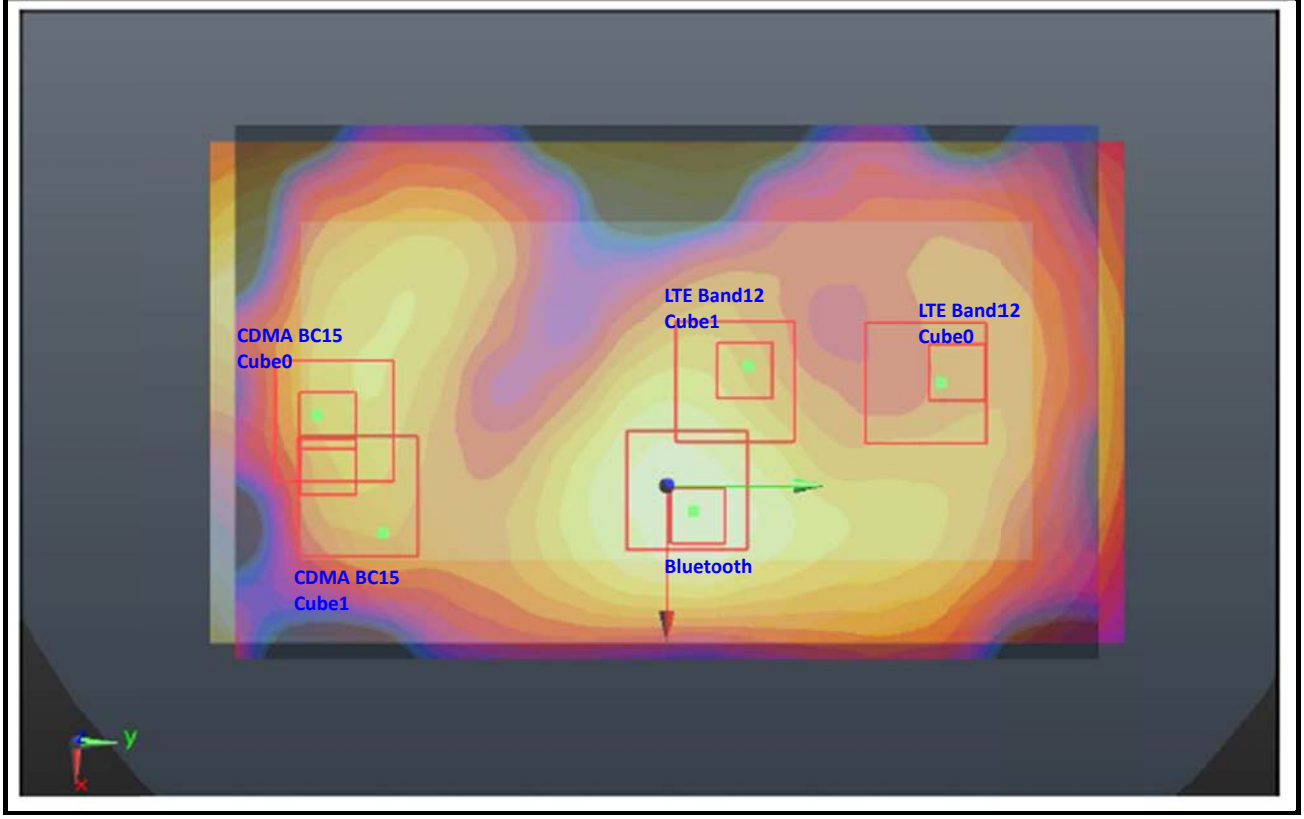
Case #C1-26 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
107	CDMA2000 BC1	Back	1.375	1	-0.018	-0.0605	-0.206	124.5	2.74	0.04	Not required
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205				
107	CDMA2000 BC1		1.375	1	-0.018	-0.0605	-0.206	70.9	1.41	0.02	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205	64.1	1.40	0.03	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				



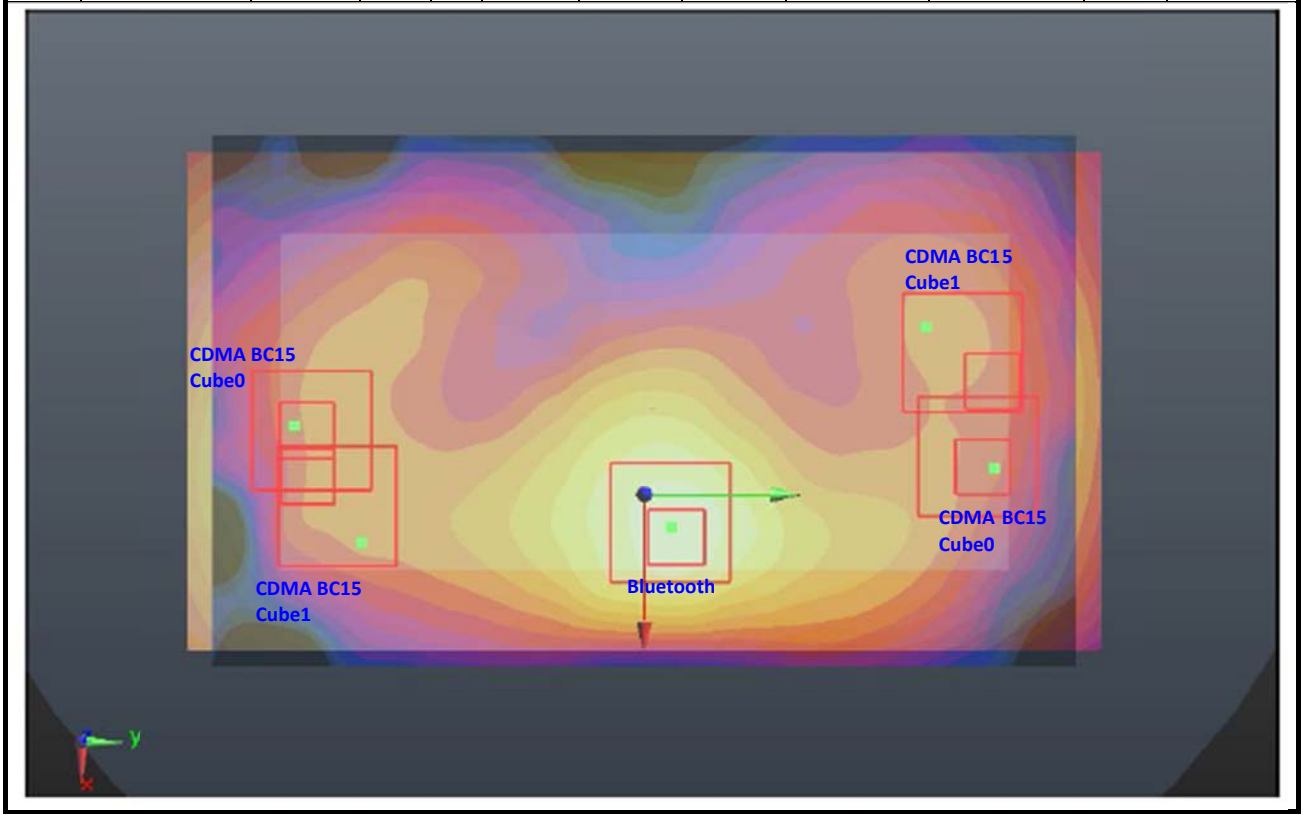
Case #C1-27 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
128	CDMA2000 BC0	Back	0.758	1	-0.0085	-0.0565	-0.206	119.0	2.12	0.03	Not required
20	LTE Band 25		1.365	1	-0.009	0.0625	-0.206				
128	CDMA2000 BC0		0.865	1	-0.006	-0.02	-0.206	82.6	2.23	0.04	Not required
20	LTE Band 25		1.365	1	-0.009	0.0625	-0.206				
128	CDMA2000 BC0		0.758	1	-0.0085	-0.0565	-0.206	64.3	0.79	0.01	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				
128	CDMA2000 BC0		0.865	1	-0.006	-0.02	-0.206	30.0	0.90	0.03	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				
20	LTE Band 25		1.365	1	-0.009	0.0625	-0.206	61.0	1.40	0.03	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				



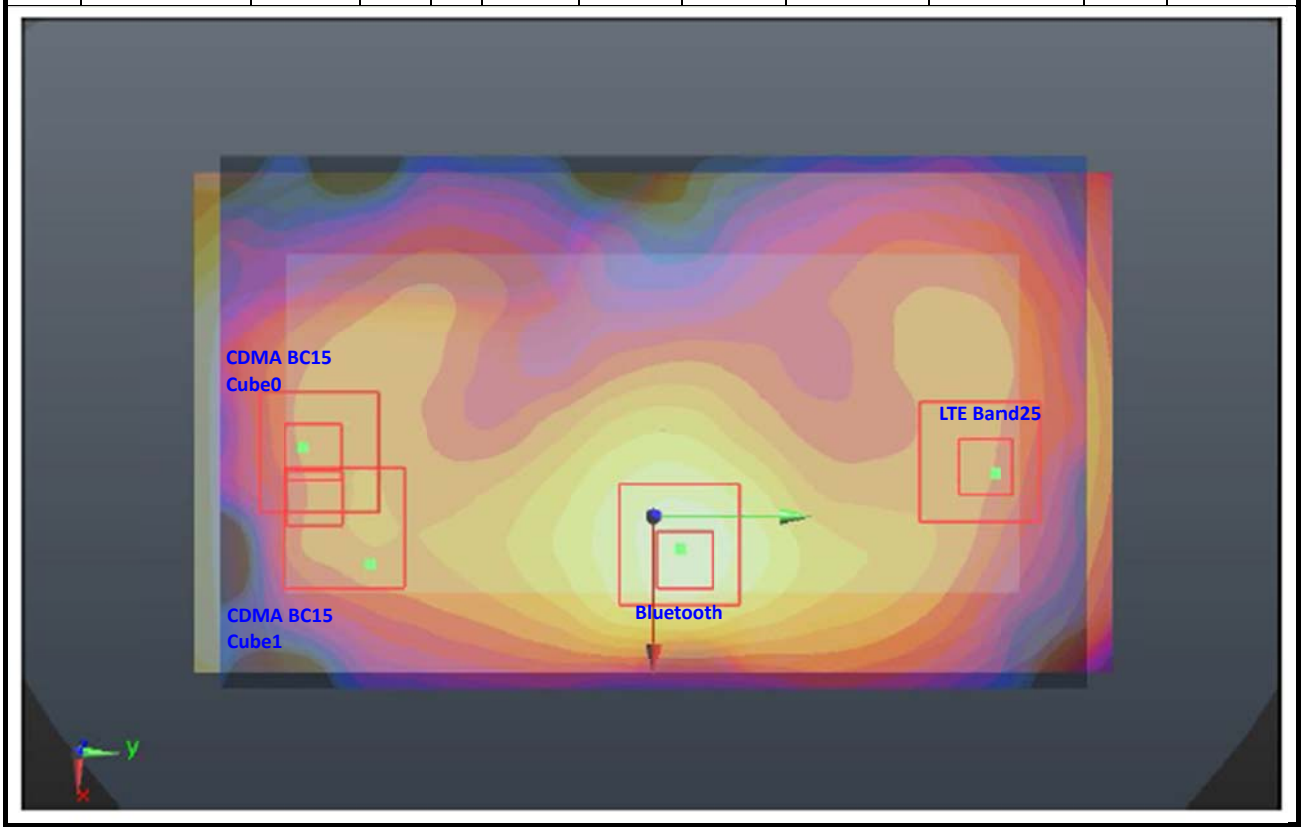
Case #C1-28 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
145	CDMA2000 BC15	Back	1.365	1	-0.0135	-0.062	-0.206	112.7	1.87	0.02	Not required
53	LTE Band12		0.505	1	-0.0195	0.0505	-0.206				
145	CDMA2000 BC15		1.182	1	-0.0085	-0.058	-0.206	109.1	1.69	0.02	Not required
53	LTE Band12		0.505	1	-0.0195	0.0505	-0.206				
145	CDMA2000 BC15		1.365	1	-0.0135	-0.062	-0.206	78.5	1.86	0.03	Not required
53	LTE Band12		0.493	1	-0.0225	0.016	-0.206				
145	CDMA2000 BC15		1.182	1	-0.0085	-0.058	-0.206	75.3	1.68	0.03	Not required
53	LTE Band12		0.493	1	-0.0225	0.016	-0.206				
145	CDMA2000 BC15		1.365	1	-0.0135	-0.062	-0.206	71.1	1.40	0.02	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				
145	CDMA2000 BC15		1.182	1	-0.0085	-0.058	-0.206	65.7	1.22	0.02	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				
53	LTE Band12		0.505	1	-0.0195	0.0505	-0.206	54.8	0.54	0.01	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				
53	LTE Band12		0.493	1	-0.0225	0.016	-0.206	35.1	0.53	0.01	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				



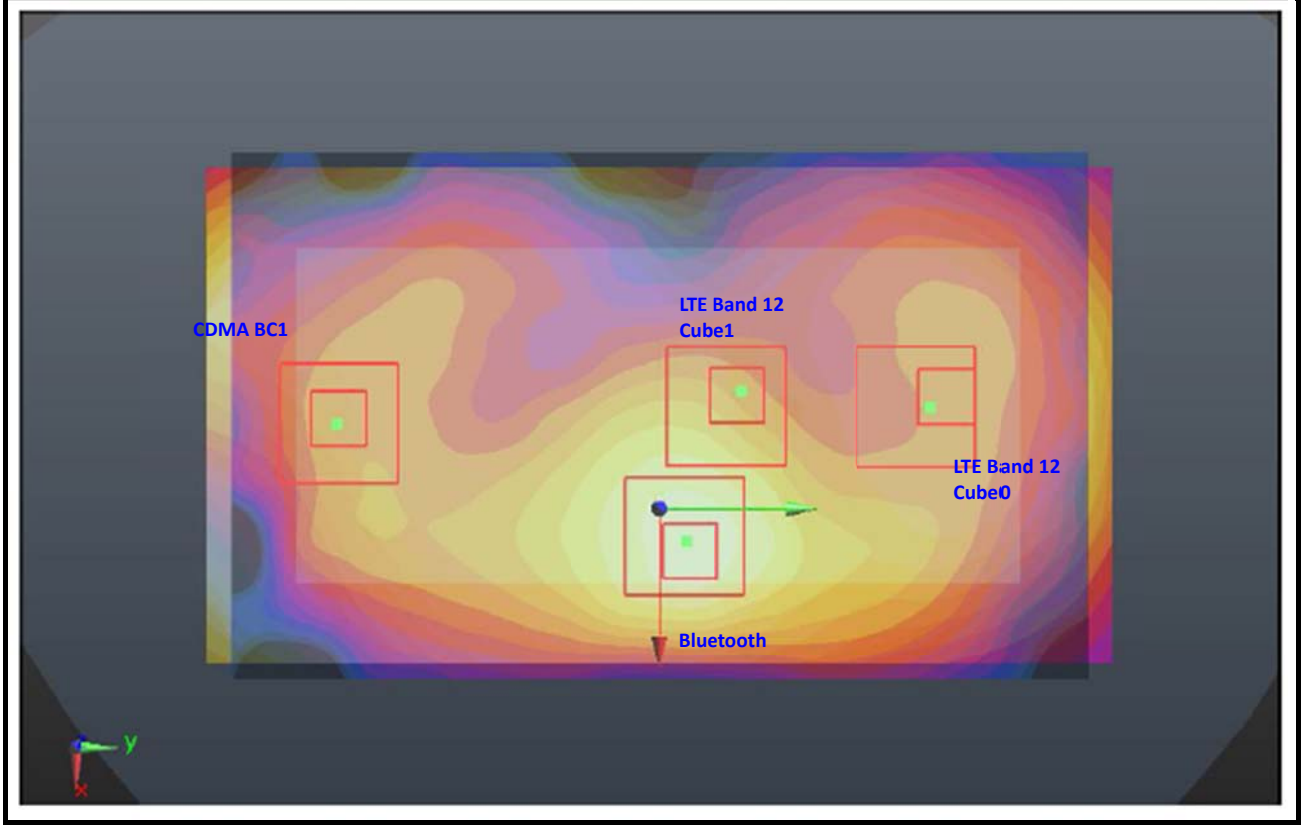
Case #C1-29 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
145	CDMA2000 BC15	Back	1.365	1	-0.0135	-0.062	-0.206	126.2	2.02	0.02	Not required
12	LTE Band 4		0.658	1	-0.006	0.064	-0.205				
145	CDMA2000 BC15		1.182	1	-0.0085	-0.058	-0.206	122.0	1.84	0.02	Not required
12	LTE Band 4		0.658	1	-0.006	0.064	-0.205				
145	CDMA2000 BC15		1.365	1	-0.0135	-0.062	-0.206	122.0	1.83	0.02	Not required
12	LTE Band 4		0.468	1	-0.0155	0.06	-0.205				
145	CDMA2000 BC15		1.182	1	-0.0085	-0.058	-0.206	118.2	1.65	0.02	Not required
12	LTE Band 4		0.468	1	-0.0155	0.06	-0.205				
145	CDMA2000 BC15		1.365	1	-0.0135	-0.062	-0.206	71.1	1.40	0.02	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				
145	CDMA2000 BC15		1.182	1	-0.0085	-0.058	-0.206	65.7	1.22	0.02	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				
12	LTE Band 4		0.658	1	-0.006	0.064	-0.205	61.5	0.69	0.01	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				
12	LTE Band 4		0.468	1	-0.0155	0.06	-0.205	61.2	0.50	0.01	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				



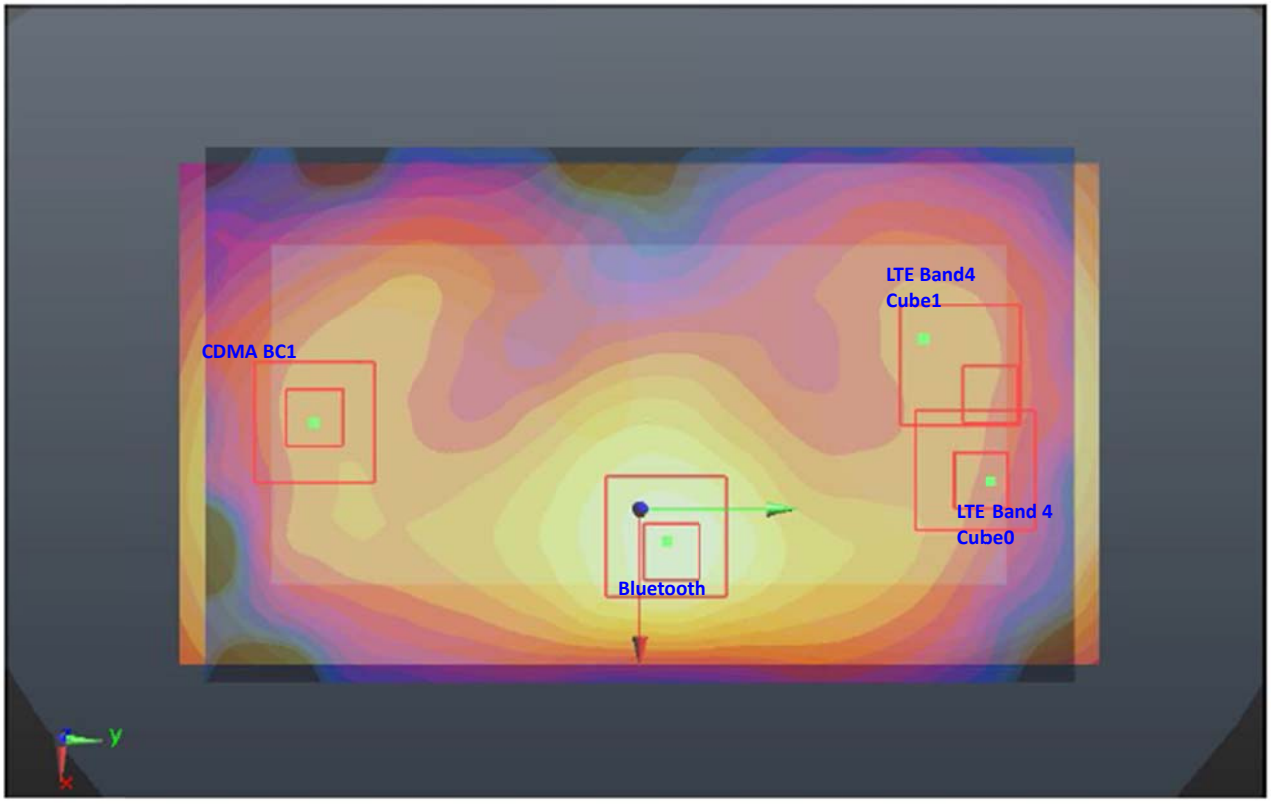
Case #C1-30 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
145	CDMA2000 BC15	Back	1.365	1	-0.0135	-0.062	-0.206	124.6	2.73	0.04	Not required
20	LTE Band 25		1.365	1	-0.009	0.0625	-0.206				
145	CDMA2000 BC15		1.182	1	-0.0085	-0.058	-0.206	120.5	2.55	0.03	Not required
20	LTE Band 25		1.365	1	-0.009	0.0625	-0.206				
145	CDMA2000 BC15		1.365	1	-0.0135	-0.062	-0.206	71.1	1.40	0.02	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				
145	CDMA2000 BC15		1.182	1	-0.0085	-0.058	-0.206	65.7	1.22	0.02	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				
20	LTE Band 25		1.365	1	-0.009	0.0625	-0.206	61.0	1.40	0.03	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				



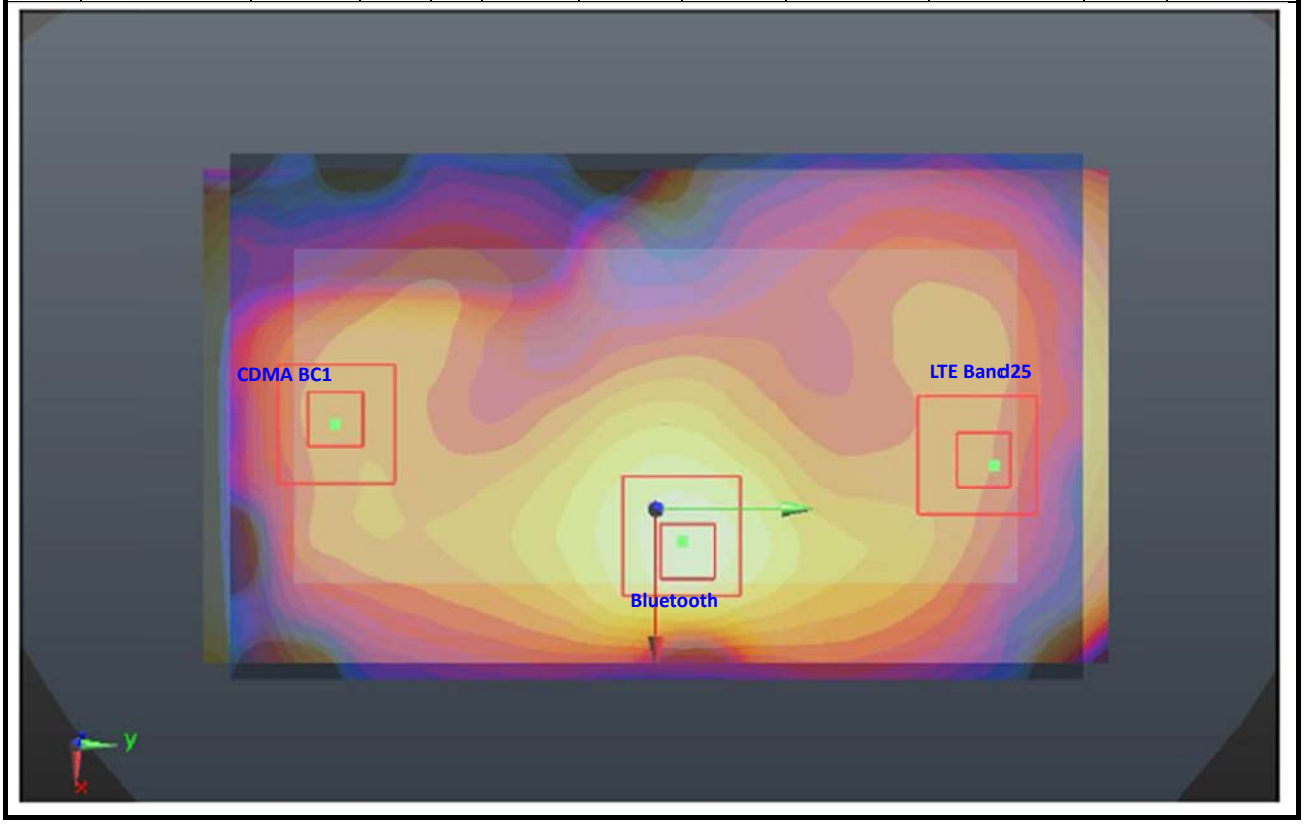
Case #C1-31 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
109	CDMA2000 BC1	Back	1.292	1	-0.0165	-0.0575	-0.206	108.0	1.80	0.02	Not required
53	LTE Band12		0.505	1	-0.0195	0.0505	-0.206				
109	CDMA2000 BC1		1.292	1	-0.0165	-0.0575	-0.206	73.7	1.79	0.03	Not required
53	LTE Band12		0.493	1	-0.0225	0.016	-0.206				
109	CDMA2000 BC1		1.292	1	-0.0165	-0.0575	-0.206	68.0	1.33	0.02	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				
53	LTE Band12		0.505	1	-0.0195	0.0505	-0.206	54.8	0.54	0.01	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				
53	LTE Band12		0.493	1	-0.0225	0.016	-0.206	35.1	0.53	0.01	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				



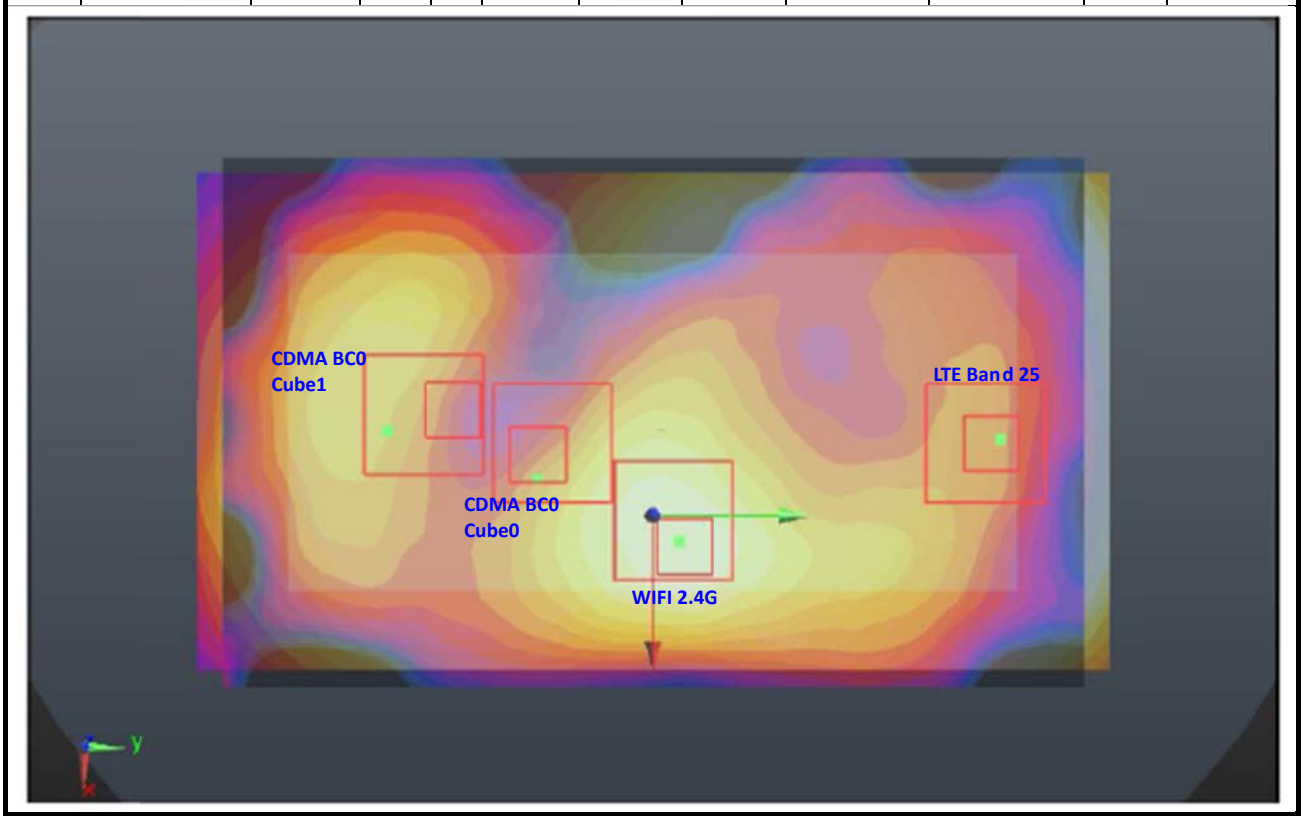
Case #C1-32 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
109	CDMA2000 BC1	Back	1.292	1	-0.0165	-0.0575	-0.206	122.0	1.95	0.02	Not required
12	LTE Band 4		0.658	1	-0.006	0.064	-0.205				
109	CDMA2000 BC1		1.292	1	-0.0165	-0.0575	-0.206	117.5	1.76	0.02	Not required
12	LTE Band 4		0.468	1	-0.0155	0.06	-0.205				
109	CDMA2000 BC1		1.292	1	-0.0165	-0.0575	-0.206	68.0	1.33	0.02	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				
12	LTE Band 4		0.658	1	-0.006	0.064	-0.205	61.5	0.69	0.01	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				
12	LTE Band 4		0.468	1	-0.0155	0.06	-0.205	61.2	0.50	0.01	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				



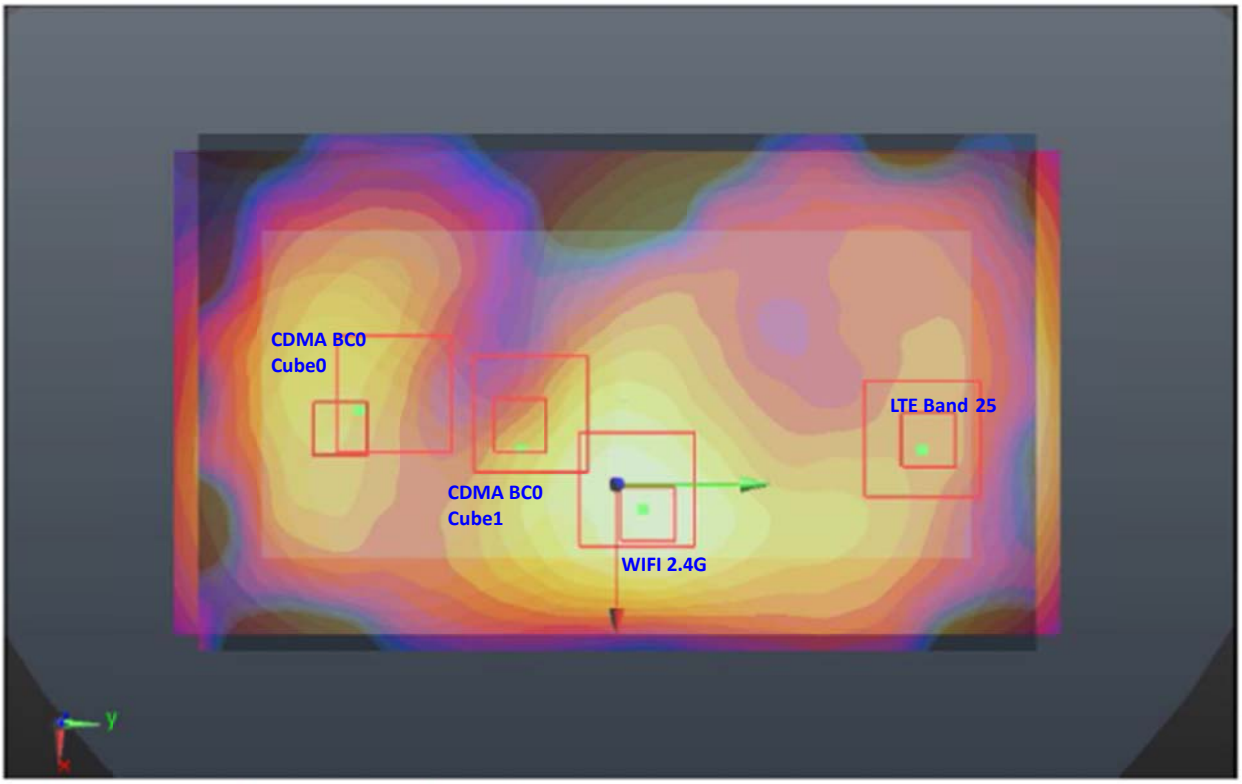
Case #C1-33 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
109	CDMA2000 BC1	Back	1.292	1	-0.0165	-0.0575	-0.206	120.2	2.66	0.04	Not required
20	LTE Band 25		1.365	1	-0.009	0.0625	-0.206				
109	CDMA2000 BC1		1.292	1	-0.0165	-0.0575	-0.206	68.0	1.33	0.02	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				
20	LTE Band 25		1.365	1	-0.009	0.0625	-0.206	61.0	1.40	0.03	Not required
-	Bluetooth		0.033	1	0.0108	0.0048	-0.206				



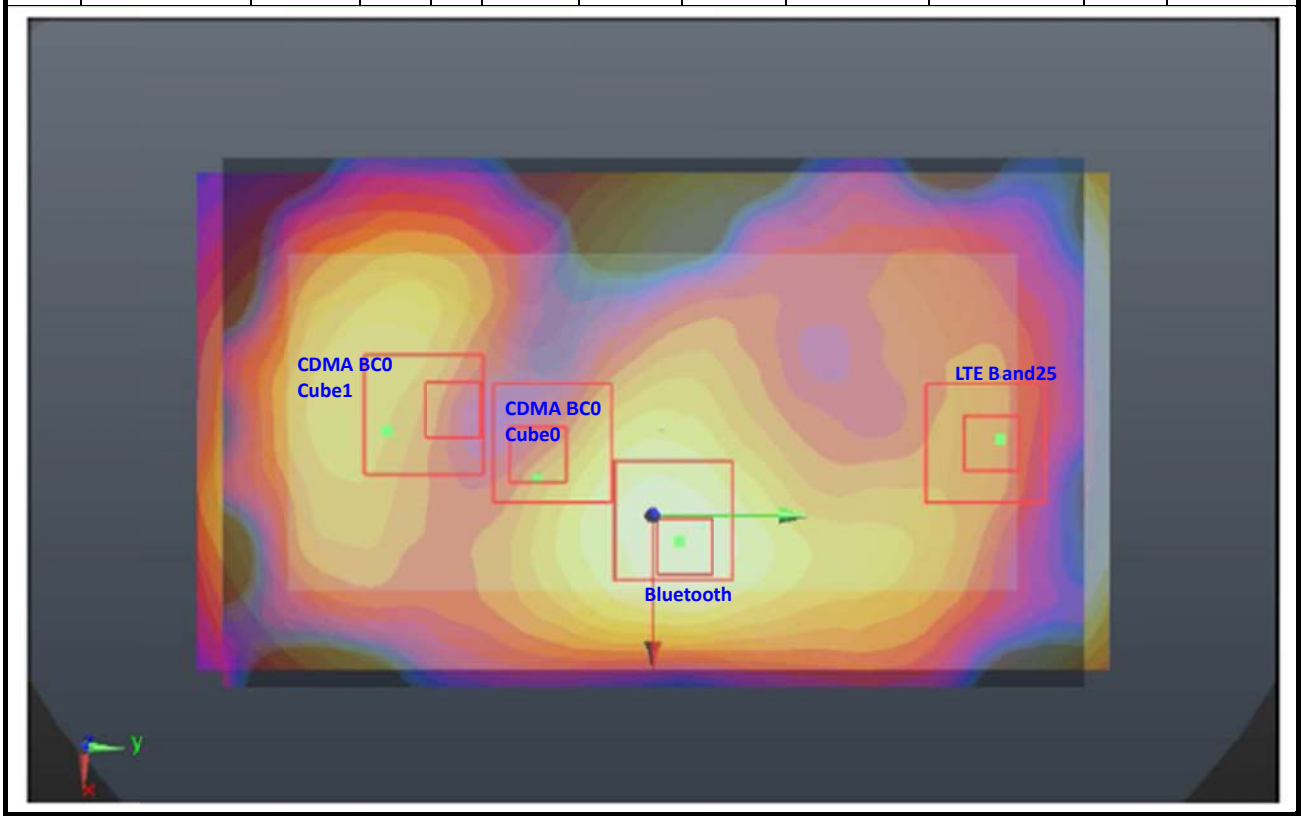
Case #C2-1 / Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
163	CDMA2000 BC0	Back	0.431	1	-0.0075	-0.02	-0.206	84.3	1.80	0.03	Not required
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205				
163	CDMA2000 BC0		0.378	1	-0.0085	-0.055	-0.206	119.2	1.74	0.02	Not required
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205				
163	CDMA2000 BC0		0.431	1	-0.0075	-0.02	-0.206	30.1	0.52	0.01	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
163	CDMA2000 BC0		0.378	1	-0.0085	-0.055	-0.206	62.5	0.47	0.01	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205	64.1	1.46	0.03	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				



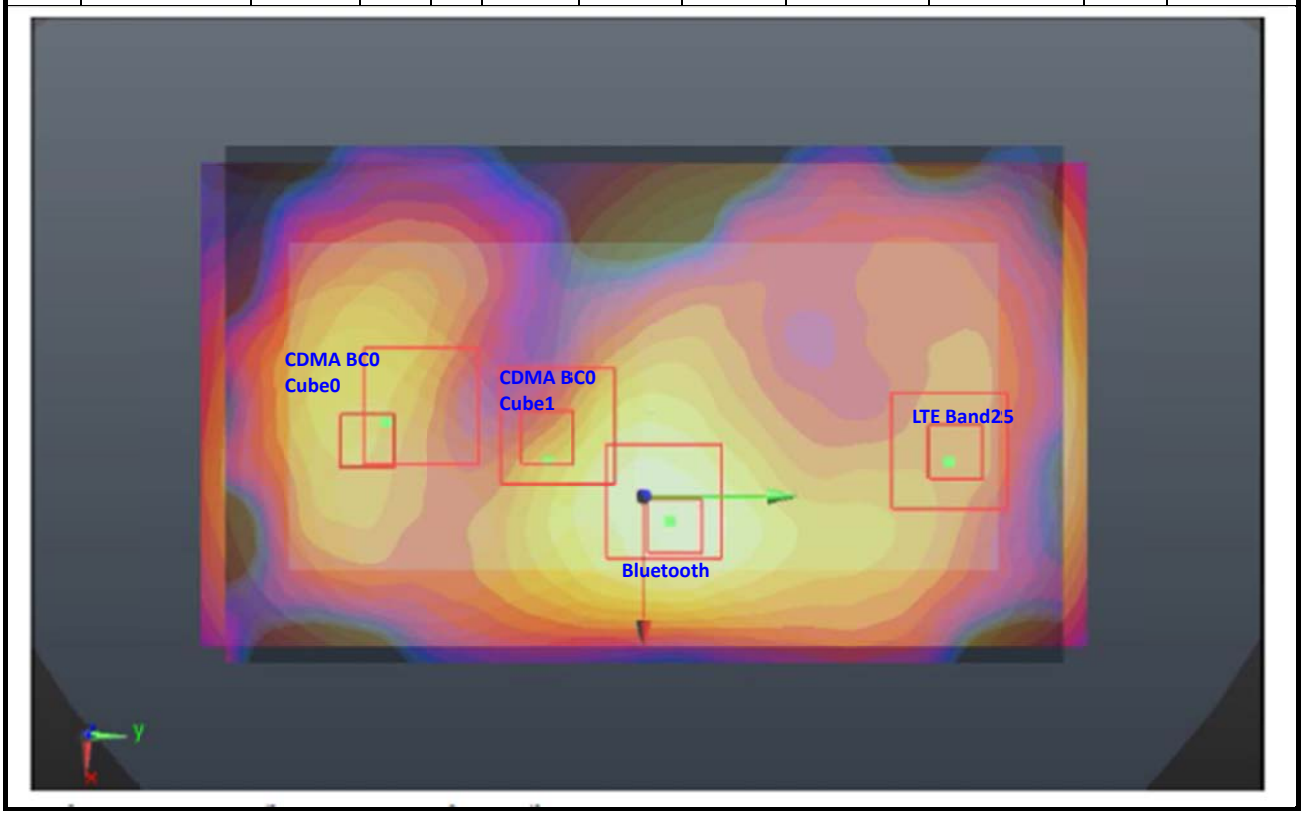
Case #C2-2 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
125	CDMA2000 BC0	Back	1.031	1	-0.0075	-0.017	-0.206	75.0	1.84	0.03	Not required
164	LTE Band 25		0.806	1	-0.0075	0.058	-0.205				
125	CDMA2000 BC0		0.88	1	-0.007	-0.055	-0.206	113.0	1.69	0.02	Not required
164	LTE Band 25		0.806	1	-0.0075	0.058	-0.205				
125	CDMA2000 BC0		1.031	1	-0.0075	-0.017	-0.206	27.7	1.12	0.04	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
125	CDMA2000 BC0		0.88	1	-0.007	-0.055	-0.206	62.1	0.97	0.02	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				
164	LTE Band 25		0.806	1	-0.0075	0.058	-0.205	55.9	0.90	0.02	Not required
154	WLAN 2.4GHz		0.092	1	0.0096	0.0048	-0.206				



Case #C2-3 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
163	CDMA2000 BC0	Back	0.431	1	-0.0075	-0.02	-0.206	84.3	1.80	0.03	Not required
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205				
163	CDMA2000 BC0		0.378	1	-0.0085	-0.055	-0.206	119.2	1.74	0.02	Not required
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205				
163	CDMA2000 BC0		0.431	1	-0.0075	-0.02	-0.206	30.1	0.46	0.01	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				
163	CDMA2000 BC0		0.378	1	-0.0085	-0.055	-0.206	62.5	0.41	0.00	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				
19	LTE Band 25		1.365	1	-0.015	0.064	-0.205	64.1	1.40	0.03	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				



Case #C2-4 Plot No	Band	Position	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (cm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
					X	Y	Z				
125	CDMA2000 BC0	Back	1.031	1	-0.0075	-0.017	-0.206	75.0	1.84	0.03	Not required
164	LTE Band 25		0.806	1	-0.0075	0.058	-0.205				
125	CDMA2000 BC0		0.88	1	-0.007	-0.055	-0.206	113.0	1.69	0.02	Not required
164	LTE Band 25		0.806	1	-0.0075	0.058	-0.205				
125	CDMA2000 BC0		1.031	1	-0.0075	-0.017	-0.206	27.7	1.06	0.04	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				
125	CDMA2000 BC0		0.88	1	-0.007	-0.055	-0.206	62.1	0.91	0.01	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				
164	LTE Band 25		0.806	1	-0.0075	0.058	-0.205	55.9	0.84	0.01	Not required
-	Bluetooth		0.033	1	0.0096	0.0048	-0.206				



Note:

1. Per KDB 447498 D01v05, SAR test exclusion is determined by the SAR to peak location separation ratio, SPLSR
2. For SPLSR calculation Bluetooth SAR peak position is estimated using WLAN 2.4GHz peak location, due to the WLAN and Bluetooth shares the same RF trace to the same antenna, and the operational frequency range is the same.
3. If SPLSR ≤ 0.04, simultaneously transmission SAR is not necessary.

Test Engineer： Kat Yin

13. Uncertainty Assessment

The component of uncertainly may generally be categorized according to the methods used to evaluate them. The evaluation of uncertainly by the statistical analysis of a series of observations is termed a Type An evaluation of uncertainty. The evaluation of uncertainty by means other than the statistical analysis of a series of observation is termed a Type B evaluation of uncertainty. Each component of uncertainty, however evaluated, is represented by an estimated standard deviation, termed standard uncertainty, which is determined by the positive square root of the estimated variance.

A Type A evaluation of standard uncertainty may be based on any valid statistical method for treating data. This includes calculating the standard deviation of the mean of a series of independent observations; using the method of least squares to fit a curve to the data in order to estimate the parameter of the curve and their standard deviations; or carrying out an analysis of variance in order to identify and quantify random effects in certain kinds of measurement.

A type B evaluation of standard uncertainty is typically based on scientific judgment using all of the relevant information available. These may include previous measurement data, experience, and knowledge of the behavior and properties of relevant materials and instruments, manufacture's specification, data provided in calibration reports and uncertainties assigned to reference data taken from handbooks. Broadly speaking, the uncertainty is either obtained from an outdoor source or obtained from an assumed distribution, such as the normal distribution, rectangular or triangular distributions indicated in Table 12.1

Uncertainty Distributions	Normal	Rectangular	Triangular	U-Shape
Multi-plying Factor[(a)]	1/k[(b)]	1/√3	1/√6	1/√2

(a) standard uncertainty is determined as the product of the multiplying factor and the estimated range of variations in the measured quantity

(b) κ is the coverage factor

Table 12.1 Standard Uncertainty for Assumed Distribution

The combined standard uncertainty of the measurement result represents the estimated standard deviation of the result. It is obtained by combining the individual standard uncertainties of both Type A and Type B evaluation using the usual "root-sum-squares" (RSS) methods of combining standard deviations by taking the positive square root of the estimated variances.

Expanded uncertainty is a measure of uncertainty that defines an interval about the measurement result within which the measured value is confidently believed to lie. It is obtained by multiplying the combined standard uncertainty by a coverage factor. Typically, the coverage factor ranges from 2 to 3. Using a coverage factor allows the true value of a measured quantity to be specified with a defined probability within the specified uncertainty range. For purpose of this document, a coverage factor two is used, which corresponds to confidence interval of about 95 %. The DASY uncertainty Budget is shown in the following tables.

Error Description	Uncertainty Value (±%)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (1g)	Standard Uncertainty (10g)
Measurement System							
Probe Calibration	6.0	Normal	1	1	1	± 6.0 %	± 6.0 %
Axial Isotropy	4.7	Rectangular	√3	0.7	0.7	± 1.9 %	± 1.9 %
Hemispherical Isotropy	9.6	Rectangular	√3	0.7	0.7	± 3.9 %	± 3.9 %
Boundary Effects	1.0	Rectangular	√3	1	1	± 0.6 %	± 0.6 %
Linearity	4.7	Rectangular	√3	1	1	± 2.7 %	± 2.7 %
System Detection Limits	1.0	Rectangular	√3	1	1	± 0.6 %	± 0.6 %
Readout Electronics	0.3	Normal	1	1	1	± 0.3 %	± 0.3 %
Response Time	0.8	Rectangular	√3	1	1	± 0.5 %	± 0.5 %
Integration Time	2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %
RF Ambient Noise	3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %
RF Ambient Reflections	3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %
Probe Positioner	0.4	Rectangular	√3	1	1	± 0.2 %	± 0.2 %
Probe Positioning	2.9	Rectangular	√3	1	1	± 1.7 %	± 1.7 %
Max. SAR Eval.	1.0	Rectangular	√3	1	1	± 0.6 %	± 0.6 %
Test Sample Related							
Device Positioning	2.9	Normal	1	1	1	± 2.9 %	± 2.9 %
Device Holder	3.6	Normal	1	1	1	± 3.6 %	± 3.6 %
Power Drift	5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %
Phantom and Setup							
Phantom Uncertainty	4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %
Liquid Conductivity (Target)	5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %
Liquid Conductivity (Meas.)	2.5	Normal	1	0.64	0.43	± 1.6 %	± 1.1 %
Liquid Permittivity (Target)	5.0	Rectangular	√3	0.6	0.49	± 1.7 %	± 1.4 %
Liquid Permittivity (Meas.)	2.5	Normal	1	0.6	0.49	± 1.5 %	± 1.2 %
Combined Standard Uncertainty						± 11.0 %	± 10.8 %
Coverage Factor for 95 %						K=2	
Expanded Uncertainty						**± 22.0 %**	**± 21.5 %**

Table 12.2 Uncertainty Budget of DASY for frequency range 300 MHz to 3 GHz

14. References

[1] FCC 47 CFR Part 2 “Frequency Allocations and Radio Treaty Matters; General Rules and Regulations”

[2] ANSI/IEEE Std. C95.1-1992, “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz”, September 1992

[3] IEEE Std. 1528-2003, “Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques”, December 2003

[4] FCC OET Bulletin 65 (Edition 97-01) Supplement C (Edition 01-01), “Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields”, June 2001

[5] SPEAG DASY System Handbook

[6] FCC KDB 447498 D01 v05, “Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies”, October 2012

[7] FCC KDB 648474 D04 v01, “SAR Evaluation Considerations for Handsets with Multiple Transmitters and Antennas”, October 2012

[8] FCC KDB 941225 D01 v02, “SAR Measurement Procedures for 3G Devices – CDMA 2000 / Ev-Do / WCDMA / HSDPA / HSPA”, October 2007

[9] FCC KDB 941225 D05 v02 ,SAR Evaluation Considerations for LTE Devices

[10] FCC KDB 941225 D06 v01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", April 2011

[11] FCC KDB 248227 D01 v01r02, “SAR Measurement Procedures for 802.11 a/b/g Transmitters”, May 2007

[12] FCC KDB 865664 D01 v01, “SAR Measurement Requirements for 100MHz to 6 GHz”, October 2012.

Appendix A. Plots of System Performance Check

The plots are shown as follows.

Appendix B. Plots of SAR Measurement

The plots are shown as follows.

Appendix C. DASY Calibration Certificate

The DASY calibration certificates are shown as follows.