KDB 865664 D01 SAR Measurement 100MHz to 6GHz
FCC 47 CFR part 2 (2.1093)

SAR EVALUATION REPORT

For

Sony

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Prepared for

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REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
--	27 June 2014	Initial Issue	--
1	30 June 2014	Made the following changes: 1. Typo error corrected in section 6.6, page 14 2. Typo error corrected in section 7.75, page 61 3. Missing information of the dielectrics parameters added in Appendix 6	Naseer Mirza
2	03 July 2014	Made the following changes 1. Replaced UMTS FDD 2Head table with retest measurements, page 69 2. SAR distribution scan was updated with retest graphics 3. System performance check was updated with new test table	Naseer Mirza
3	01 Aug 2014	Made the following changes: 1. In section 1, The EUT is a GSM/WCDMA/LTE Phone + Bluetooth, DTS/UNII a/b/g/n/ac + NFC & ANT+ 2. Description sentence removed in section 6.2	Naseer Mirza

TABLE OF CONTENTS

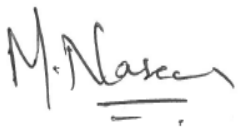
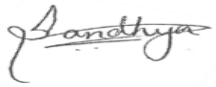
1. Attestation of Test Results....4
2. Test Specification, Methods and Procedures....5
3. Facilities and Accreditation....6
4. SAR Measurement System & Test Equipment....7
5. Measurement Uncertainty....8
6. Equipment Under Test (EUT)....9
7. RF Exposure Conditions (Test Configurations)....25
8. System Check and Dielectric Parameters....63
9. Measurements, Examinations and Derived Results....64
Appendix 1. Test Equipment Used....112
Appendix 2. Measurement Methods....116
Appendix 3. SAR Distribution Scans....118
Appendix 4. Photographs....118
Appendix 5. Simulated Tissues....164
Appendix 6. System Check and Dielectric Parameters....165
Appendix 7. measurement Uncertainty Table....177
Appendix 8. 3G Test set-up....187
Appendix 9. CAT24 Test set-up....194
Appendix 10: Antenna Schematics....201

1. Attestation of Test Results

Applicant Name:	Sony Mobile Communications Inc			
Application Purpose	☒ Original Grant			
DUT Description	The EUT is a GSM/WCDMA/LTE Phone + Bluetooth, DTS/UNII a/b/g/n/ac + NFC & ANT+			
Test Device is	An identical prototype			
Device category	Portable			
Exposure Category	General Population/Uncontrolled Exposure (1g SAR limit: 1.6 W/kg)			
Date Tested	27 May 2014 to 02 July 2014			
The highest reported SAR values	RF Exposure Conditions	Equipment Class		
		Licensed	DTS	UNII
	Head	0.885 W/kg	0.659 W/kg	0.555 W/kg
	Body-worn Accessory	1.316 W/kg	0.114 W/kg	0.266 W/kg
	Wireless Router (Hotspot)	1.501 W/kg	0.114 W/kg	0.266 W/kg
	Simultaneous Transmission	1.544 W/kg	1.544 W/kg	1.535 W/kg
Applicable Standards	FCC 47 CFR part 2 (2.1093) KDB publication IEEE Std 1528-2013			
Test Results	Pass			

UL Verification Services Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties are in accordance with the above standard and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample(s), under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by UKAS. This report is written to support regulatory compliance of the applicable standards stated above.

Approved & Released By:	Prepared By:
	
Naseer Mirza Project Lead UL Verification Services Ltd.	Sandhya Menon Laboratory Engineer UL Verification Services Ltd.

2. Test Specification, Methods and Procedures

2.1. Test Specification

Reference:	KDB 865664 D01 SAR Measurement 100 Mhz to 6 GHz v01r03
Title:	SAR Measurement Requirements for 100 MHz to 6 GHz
Purpose of Test:	Field probes, tissue dielectric properties, SAR scans, measurement accuracy and variability of the measured results are discussed. The field probe and SAR scan requirements are derived from criteria considered in draft standard IEEE P1528-2011.
The Equipment Under Test complied with the Specific Absorption Rate for general population/uncontrolled exposure limit of 1.6 W/kg as specified in FCC 47 CFR part 2 (2.1093) and ANSI C95.1-1992 and has been tested in accordance with the reference documents in section 2.2 of this report.	

2.2. Methods and Procedures Reference Documentation

The methods and procedures used were as detailed in:

IEEE 1528: 2013
IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques

Thomas Schmid, Oliver Egger and Neils Kuster, “Automated E-field scanning system for dosimetric assessments”, IEEE Transaction on microwave theory and techniques,
Vol. 44, pp. 105-113, January 1996.

Neils Kuster, Ralph Kastle and Thomas Schmid, “Dosimetric evaluation of mobile communications equipment with known precision”, IEICE Transactions of communications, Vol. E80-B, No.5, pp. 645-652, May 1997.

FCC KDB Publication:

KDB 248227 D01 SAR measurements for 802.11a/b/g v01r02

KDB 447498 D01 General RF Exposure Guidance v05r02

KDB 648474 D04 SAR Handsets SAR v01r02

KDB 941225 D01 SAR test for 3G devices v02

KDB 941225 D03 SAR Test Reduction GSM GPRS EDGE v01

KDB 941225 D05 SAR for LTE Devices v02r03

KDB 941225 D06 Hotspot Mode SAR v01r01

KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r03

KDB 865664 D02 SAR Reporting v01r01

2.3. Definition of Measurement Equipment

The measurement equipment used complied with the requirements of the standards referenced in the methods & procedures section above. Appendix 1 contains a list of the test equipment used.

3. Facilities and Accreditation

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

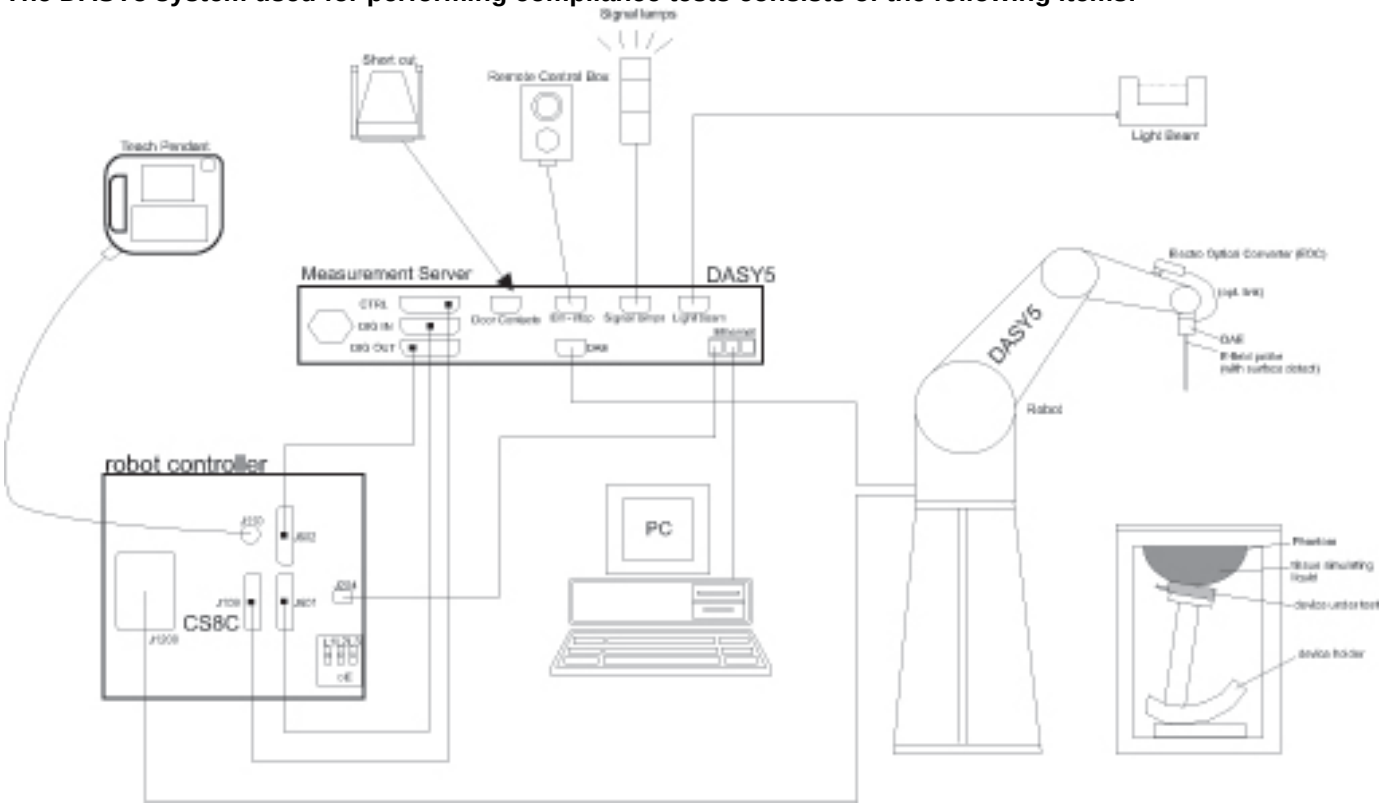
Pavilion A, Ashwood Park, Ashwood Way, Basingstoke, Hampshire, RG23 8BG UK	Facility Type
SAR Lab 56	Controlled Environment Chamber
SAR Lab 57	Controlled Environment Chamber
SAR Lab 58	Controlled Environment Chamber
SAR Lab 59	Controlled Environment Chamber
SAR Lab 60	Controlled Environment Chamber
SAR Lab 61	Controlled Environment Chamber

UL Verification Services Ltd, is accredited by UKAS (United Kingdom Accreditation Service), Laboratory UKAS Code 0644.

4. SAR Measurement System & Test Equipment

4.1. SAR Measurement System

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



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

4.2. Test Equipment

The measuring equipment used to perform the tests documented in this report has been calibrated in accordance with the manufacturers' recommendations, and is traceable to recognized national standards. Appendix 1 of the report details the equipment used.

5. Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently, the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor, such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Test Name	Confidence Level	Calculated Uncertainty
Specific Absorption Rate-GSM 850 / UMTS FDD 5 / LTE Band 5 / LTE Band 13 / LTE Band 17 Head Configuration 1g	95%	±18.77%
Specific Absorption Rate-GSM / GPRS / EDGE 850 / UMTS FDD 5 / LTE Band 5 / LTE Band 13 / LTE Band 17 Body Configurations 1g	95%	±18.36%
Specific Absorption Rate-UMTS FDD 4 / LTE Band 4 Head Configuration 1g	95%	±18.45%
Specific Absorption Rate-UMTS FDD 4 / LTE Band 4 Body Configuration 1g	95%	±18.45%
Specific Absorption Rate-PCS 1900 / UMTS FDD 2/ LTE Band 2 Head Configuration 1g	95%	±18.88%
Specific Absorption Rate-GSM / GPRS / EDGE 1900 / UMTS FDD 2 / LTE Band 2 Body Configuration 1g	95%	±18.26%
Specific Absorption Rate- LTE Band 7 / Wi-Fi 2450 MHz Head Configuration 1g	95%	±18.13%
Specific Absorption Rate-LTE Band 7 / Wi-Fi 2450 MHz Body Configuration 1g	95%	±18.35%
Specific Absorption Rate-Wi-Fi 5GHz Head Configuration 1g	95%	±21.25%
Specific Absorption Rate-Wi-Fi 5GHz Body Configuration 1g	95%	±19.90%

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty, the published guidance of the appropriate accreditation body is followed.

See Appendix 7 for all uncertainty tables.

6. Equipment Under Test (EUT)

6.1. Identification of Equipment Under Test (EUT)

Serial Number/ IMEI Number:	**Cellular Radiated Samples:** CB5A1Z7PBG; 004402452705407 - used to perform GSM850 SAR measurements only. CB5A1Z7PR3; 004402452705308 - used to perform PCS1900 SAR measurements only. CB5A1Z7PAQ; 004402452705365 - used to perform UMTS FDD 2, UMTS FDD 4 Head and UMTS FDD 5 SAR measurements only. CB5A1Z7PPA; 004402452705332 - used to perform UMTS FDD 4 Body SAR measurements only. CB5A1Z7PAR;004402452705357-used to perform LTE Band 4 SAR measurements only. CB5A1Z7PQU; 004402452705339 - used to perform LTE Band 2, LTE Band 7 Body and LTE Band 13 Head SAR measurements only. CB5A1Z7PGU; 004402452705324 - used to perform LTE Band 5, LTE Band 7 Head, LTE Band 13 Body, LTE Band 17 SAR measurements only. **Cellular Conducted Sample:** CB5A1Z7PGM; 004402452706124 - used to perform Cellular Conducted power measurements CB5A1Z7PRF; 004402452706140 - used to perform Cellular Conducted power measurements CB5A1Z7PGT; 004402452706108 - used to perform Cellular Conducted power measurements for UMTS FDD 2, 4 Hotspot Mode only. CB5A1Z6Z3P; 004402452704053 - used to perform Cellular Conducted power measurements for PCS1900 Hotspot Mode. **WLAN Radiated Samples:** CB5A1Z7PJV; 004402452705423 - used to perform WLAN 2.4GHz and Bluetooth SAR measurements only. CB5A1Z7PB4; 004402452704723 - used to perform WLAN 5GHz Head measurement only CB5A1Z7PPD; 004402452705282 - used to perform WLAN 5GHz Body measurement only **WLAN Conducted Sample:** CB5A1Z7PHB; 004402452706116 - used to perform WLAN Conducted power measurements.
Hardware Version Number:	Cellular Sample: A; WLAN Sample: A
Software Version Number:	Cellular Sample: ATPV:1283-9868 ; WLAN Sample: 0_25_3_16_A
Country of Manufacture:	China
Date of Receipt:	09 June 2014

6.2. Further Description of EUT

The EUT supports GSM 850/1900MHz bands, WCDMA FDD bands 2/4/5, LTE FDD bands 2/4/5/7/13/17 bands. It also supports Dual Transfer Mode Class 11 (DTM ~Voice +Data), GPRS service with multi-slots class 33, EGPRS service with multi-slots class 33, HSPA with HSDPA (Category 24) and HSUPA (Category 6) features are also supported. It has MP3, camera, FM radio, USB memory, GPS receiver, NFC, Mobile High-Definition Link (MHL), Bluetooth (EDR and Bluetooth 4.0), WLAN (802.11 a/b/g/n/ac), Antenna Tuner and Wi-Fi hotspot functions with 'Auto RF Power Back-Off' (PCS1900, UMTS FDD 2/4, LTE Band 2/4/7) mode capabilities.

6.3. Modifications Incorporated in the EUT

There were no modification during the course of testing the device

6.4. Accessories

The following accessories were supplied with the EUT during testing:

Description:	Memory Card	Personal Hands-Free Kit (PHF)	Dummy Battery
Brand Name:	None Stated (Generic)	Sony	None Stated
Model Name or Number:	None Stated	MH410c	None Stated
Serial Number:	None Stated	None Stated	None Stated
Cable Length and Type:	Not Applicable	~1.2 m	~0.5m
Country of Manufacture:	China	None Stated	None Stated
Connected to Port	Micro SD Slot	3.5mm Audio jack and custom type	Unique to Manufacturer

Note(s):

The Dummy Battery was only used to perform conducted power measurements.

6.5. Support Equipment

The following support equipment was used to exercise the EUT during testing:

Description:	Brand Name:	Model Name or Number:	Serial Number:	Cable Length and Type:	Connected to Port
Communication Test Set	Agilent	8960 Series 10 (E5515C)	GB46311280	~4.0m Utiflex Cable	RF (Input / Output) Air Link
Communication Test Set	Agilent	8960 Series 10 (E5515E)	GB46200666	~4.0m Utiflex Cable	RF (Input / Output) Air Link
Communication Test Set	Anritsu	MT8820C	6200938937	~4.0m Utiflex Cable	RF (Input / Output) Air Link
Communication Test Set	CMU200	1100.0008K02	119317	~4.0m Utiflex Cable	RF (Input / Output) Air Link
Communication Test Set	CMW500	1201.0002K50	145922	~4.0m Utiflex Cable	RF (Input / Output) Air Link
Communication Test Set	CMW500	1201.0002K50	146526	~4.0m Utiflex Cable	RF (Input / Output) Air Link
Communication Test Set	CMW500	1201.0002K50	145921	~4.0m Utiflex Cable	RF (Input / Output) Air Link

6.6.Additional Information Related to Testing

Equipment Category	2G GSM PCS	TDMA 850/ 1900	Voice DTM (Voice + Data) GPRS (Data) EDGE (Data)
	3G UMTS Band	FDD 2 / 4 / 5	RMC12.2 HSDPA Cat 24 HSPA Data Cat 6
	4G LTE Band	FDD 2 / 4 / 5 / 7 / 13 / 17	Data
	Wi-Fi Band	(2.4 / 5.0) GHz	Data 802.11a/b/g/n/ac
Type of Unit	Portable Transceiver		
Intended Operating Environment:	Within GSM, UMTS, LTE , Wi-Fi and *Bluetooth* Coverage		
Transmitter Maximum Output Power Characteristics:	GSM850	Communication Test Set was configured to allow the EUT to transmit at a maximum power using Power Control Level (PCL) setting of 5.	
	PCS1900	Communication Test Set was configured to allow the EUT to transmit at a maximum power using Power Control Level (PCL) setting of 0.	
	UMTS FDD 2	Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D01.	
	UMTS FDD 4	Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D01.	
	UMTS FDD 5	Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D01.	
	LTE Band 2	Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D05.	
	LTE Band 4	Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D05.	
	LTE Band 5	Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D05.	
	LTE Band 7	Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D05.	
	LTE Band 13	Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D05.	
	LTE Band 17	Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D05.	
	2.4 GHz Wi-Fi 802.11b/g/n	Test Software was used to configure the EUT to transmit at a maximum measured power of up to 13.4Bm.	
	5.0 GHz Wi-Fi 802.11a	Test Software was used to configure the EUT to transmit at a maximum measured power of up to 16.5 dBm.	
	5.0 GHz Wi-Fi 802.11n (HT20 / HT40)	Test Software was used to configure the EUT to transmit at a maximum measured power of up to 16.7 dBm for HT20 and 14.6 dBm for HT40.	
	5.0 GHz Wi-Fi 802.11ac (VHT20 / VHT40 / VHT80)	Test Software was used to configure the EUT to transmit at a maximum measured power of up to 16.8 dBm for VHT20, 14.6 dBm for VHT40 and 14.6 dBm for VHT80.	

Additional Information Related to Testing (Continued):

Transmitter Frequency Range:	GSM850	(824 to 849) MHz
	PCS1900	(1850 to 1910) MHz
	UMTS FDD 2	(1852 to 1908) MHz
	UMTS FDD 4	(1712 to 1753) MHz
	UMTS FDD 5	(826 to 847) MHz
	LTE Band 2	(1850 to 1910) MHz
	LTE Band 4	(1710 to 1755) MHz
	LTE Band 5	(820 to 850) MHz
	LTE Band 7	(2505 to 2570) MHz
	LTE Band 13	(775 to 790) MHz
	LTE Band 17	(705 to 715) MHz
	2.4 GHz Wi-Fi 802.11b/g/n	(2412 to 2462) MHz
	5.0 GHz Sub band 1 Wi-Fi 802.11a/n/ac	(5180 to 5240) MHz
	5.0 GHz Sub band 2 Wi-Fi 802.11a/n/ac	(5260 to 5320) MHz
	5.0 GHz Sub band 3 Wi-Fi 802.11a/n/ac	(5500 to 5700) MHz
	5.0 GHz Sub band 4 Wi-Fi 802.11a/n/ac	(5745 to 5825) MHz

Additional Information Related to Testing (Continued)

Transmitter Frequency Allocation of EUT When Under Test:	Bands	Channel Number	Channel Description	Frequency (MHz)
	GSM850	128	Low	824.2
		190	Middle	836.6
		251	High	848.8
	PCS1900	512	Low	1850.2
		661	Middle	1880.0
		810	High	1909.8
	UMTS FDD 2	9262	Low	1852.4
		9400	Middle	1880.0
		9538	High	1907.6
	UMTS FDD 4	1312	Low	1712.4
		1412	Middle	1732.6
		1513	High	1752.6
	UMTS FDD 5	4132	Low	826.4
		4183	Middle	836.6
		4233	High	846.6
	LTE Band 2	18700	Low	1860.0
		18900	Middle	1880.0
		19100	High	1900.0
	LTE Band 4	20050	Low	1720.0
		20175	Middle	1732.5
		20300	High	1745.0
	LTE Band 5	20450	Low	829.0
		20525	Middle	836.5
		20625	High	844.0
	LTE Band 7	20850	Low	2510.0
		21100	Middle	2535.0
		21350	High	2560.0
	LTE Band 13	23780	Low	709.0
		23790	Middle	710.0
		23800	High	711.0
	LTE Band 17	24250	Low	842.0
		24300	Middle	847.0
		24350	High	852.0

Additional Information Related to Testing (Continued)

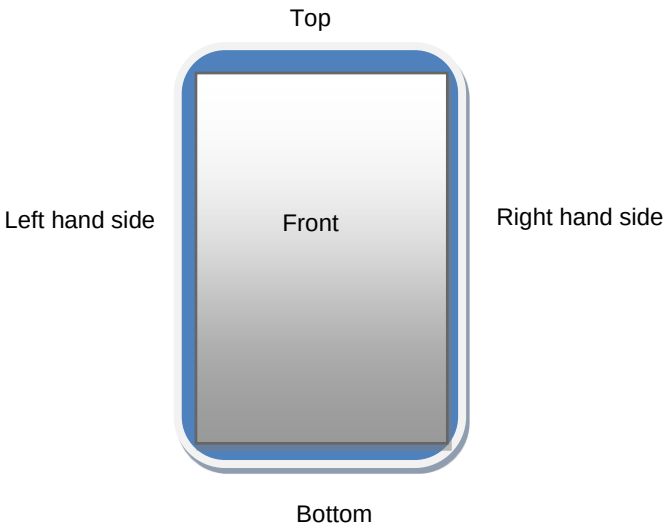
Transmitter Frequency Allocation of EUT When Under Test:	Band: 2.4 / 5.0 GHz Wi-Fi 802.11a/n/AC (HT20 / HT40/HT80)						
	Rule	20 MHz BW Ch.#	Frq. (MHz)	40 MHz BW Ch.#	Frq. (MHz)	80 MHz BW Ch.#	Frq. (MHz)
	15.247	1	2412.0				
		6	2436.0				
		11	2462.0				
	5.2 U-NII-1	36	5180.0	38	5190.0		
		40	5200.0			42	5210.0
		44	5220.0	46	5230.0		
		48	5240.0				
	5.3 U-NII-2A	52	5260.0	54	5270.0		
		56	5280.0			58	5290.0
		60	5300.0	62	5310.0		
		64	5320.0				
	5.6 U-NII-2C	100	5500.0	102	5510.0		
		104	5520.0			106	5530.0
		108	5540.0	110	5550.0		
		112	5560.0				
		116	5580.0	118	5590.0		
		120	5600.0			122	5610.0
		124	5620.0	126	5630.0		
		128	5640.0				
		132	5660.0	134	5670.0		
		136	5680.0				
		140	5700.0				
	5.8 UNII-3	149	5745.0	151	5755.0		
		153	5765.0			155	5775.0
		157	5785.0	159	5795.0		
		161	5805.0				
		165	5825.0				

Modulation(s):	GMSK (DTM / GSM / GPRS):	217 Hz
	QPSK(UMTS / HSDPA/HSPA):	0Hz
	DBPSK, BPSK, CCK (Wi-Fi):	0 Hz
	QPSK, 16QAM (LTE):	0 Hz
Modulation Scheme (Crest Factor):	GMSK (DTM Class 9 2-Uplink):	4
	GMSK (GPRS1900 4- Uplink):	2
	DBPSK, BPSK, CCK (Wi-Fi802.11a/b/g/n/ac):	1
	QPSK(UMTS/ FDD / HSDPA):	1
	QPSK, 16QAM (LTE):	1
Antenna Type:	Internal integral	
Antenna Length:	As specified in Appendix 10	
Number of Antenna Positions:	WWAN ~ LTE / UMTS / GSM	1 fixed
	WLAN/ BT	1 fixed
	Felica/NFC	1 fixed
	Sub/GPS	1 fixed
Power Supply Requirement:	4.2 V	
Battery Type(s):	Embedded Li-ion	

Additional Information Related to LTE Test parameter

#	Description	Parameter
1	Identify the operating frequency range of each LTE transmission FCC band used by the device	Band 2: frequency range – 1850 MHz– 1910 MHz Band 4: frequency range – 1710 MHz– 1755 MHz Band 5: frequency range-820 MHz-850 MHz Band 7: frequency range-2505 MHz-2570 MHz Band 13: frequency range – 704 to 711 MHz Band 17: frequency range-705 MHz-715MHz
2	Identify the channel bandwidths used in each frequency band; e.g.: 1.4, 3, 5, 10, 15, 20 MHz etc.	Channel Bandwidths used are: B2 (1.4, 3, 5, 10, 15, 20) MHz B4 (1.4, 3, 5, 10, 15, 20) MHz B5 (1.4, 3, 5, 10) MHz B7 (5, 10, 15, 20) MHz B13 (5, 10) MHz B17 (5, 10) MHz
3	Identify the high, middle and low (L, M, H) channel numbers and frequencies tested in each LTE frequency band	B2 -20 MHz (H,M,L)= CH (19100,18900,18700); Freq (1900, 1880, 1860) MHz B4 -20 MHz (H,M,L)= CH (20300, 20175, 20050); Freq (1745, 1732.5, 1720) MHz B5 -10 MHz (H,M,L)= CH (20625, 20525, 20450); Freq (844, 836.5, 829) MHz B7 -20 MHz (H,M,L)= CH (21350, 21100, 20850); Freq (2560, 2535, 2510) MHz B13 -10MHz (M)= CH (23230); Freq (782) MHz B17 -10 MHz (H,M,L)= CH (23800, 23790, 23780); Freq (711, 710, 709) MHz
4	Specify the UE category and uplink modulations used	The UE Category is 4 and the Uplink modulations used are QPSK, 16QAM.
5	Descriptions of the LTE transmitter and antenna implementation & identify whether it is a standalone transmitter operating independently of other wireless transmitters in the device or sharing hardware components and/or antenna(s) with other transmitters etc.	This model has only one main antenna for LTE/UMTS/GSM bands (as pictured in Appendix 10).

Additional Information Related to LTE Test parameter (Continued):

#	Description	Parameter
6	Identify the LTE Band Voice/data requirements in each operating mode and exposure condition with respect to head and body test configurations, antenna locations, handset flip-cover or slide positions, antenna diversity conditions, etc.	The following exposure condition with respect to head and body test are required for both voice and data modes due to EUT functionality and antenna locations. 1) Body-worn SAR is required at 15 mm separation distance 2) Mobile Hot Spot Mode will be tested by positioning the smart phone with 10 mm separation distance. - Wireless Personal Hotspot mode with consideration for the Front Display of EUT, Back of EUT, Left Hand side of EUT, Right Hand side of EUT, Top Edge of EUT and Bottom Edge of EUT with respect to the antenna location. The test separation distance between the EUT edge and phantom flat surface for this mode will be 10mm as the dimensions of the device is > 9cm x 5cm. 3) Head SAR is required in LTE Data Mode (QPSK) as this model does not supports SVLTE operation. 

Additional Information Related to LTE Test parameter (Continued):

#	Description	Parameter
7	Identify if Maximum Power Reduction (MPR) is optional or mandatory, i.e. built-in by design: a) only mandatory MPR may be considered during SAR testing, when the maximum output power is permanently limited by the MPR implemented within the UE; and only for the applicable RB (resource block) configurations specified in LTE standards b) A-MPR (additional MPR) must be disabled.	The EUT incorporates MPR as per 36.101 as shown in the section 8. MPR cannot be disabled after the phone is manufactured, MPR is mandatory. * Target MPR
8	Include the maximum average conducted output power measured on the required test channels for each channel bandwidth and UL modulation used in each frequency band: a) using 1 RB allocated at the low edge, centered and high edge of a channel b) using 50% RB allocated at the low edge, centered and high edge of a channel c) using 100% RB allocation	This is included in the section 8.3 of this report.
9	Identify all other U.S. wireless operating modes (3G, Wi-Fi, WiMax, Bluetooth etc), device/exposure configurations (head and body, antenna and handset flip-cover or slide positions, antenna diversity conditions etc.) and frequency bands used for these modes	The following bands are supported for the exposure conditions 1) GSM (850/1900) and UMTS FDD (850, 1700, 1900) - Exposure conditions: Head/Body worn SAR required for GSM / UMTS FDD and wireless personal hotspot. DTM is not supported. 2) Bluetooth 2.4GHz (Basic Rate & EDR) - Exposure conditions: BT SAR is not required as per 10.3.1 3) Wi-Fi 2.4GHz - Exposure conditions: Head/Body SAR required for wireless personal hotspot. No Power reduction is supported. 4) Wi-Fi 5 GHz - Exposure conditions: Head/Body SAR required for wireless personal hotspot. No power reduction is supported,

Additional Information Related to LTE Test parameter (Continued):

#	Description	Parameter
10	Include the maximum average conducted output power measured for the other wireless mode and frequency bands	This is included in the section 8 of this report.
11	Identify the simultaneous transmission conditions for the voice and data configurations supported by all wireless modes, device configurations and frequency bands, for the head and body exposure conditions and device operating configurations (handset flip or cover positions, antenna diversity conditions etc.)	Bluetooth average power measurement is below the rated threshold therefore Individual SAR will not be tested. Sim_Tx consideration will be based on the estimated SAR level. All simultaneous transmission combinations are identified and summarised in Section 9.4 of the report.
12	When power reduction is applied to certain wireless modes to satisfy SAR compliance for simultaneous transmission conditions, other equipment certification or operating requirements, include the maximum average conducted output power measured in each power reduction mode applicable to the simultaneous voice/data transmission configurations for such wireless configurations and frequency bands; and also include details of the power reduction implementation and measurement setup	Not applicable.
13	Include descriptions of the test equipment, test software, built-in test firmware etc. required to support testing the device when power reduction is applied to one or more transmitters/antennas for simultaneous voice/data transmission	Anritsu MT8820C and R&S CMW500 communication simulator Communication tester which support LTE modes (Data) were used for testing.
14	When appropriate, include a SAR test plan proposal with respect to the above.	Not Applicable
15	If applicable, include preliminary SAR test data and/or supporting information in laboratory testing inquiries to address specific issues and concerns or for requesting further test reduction considerations appropriate for the device; for example simultaneous transmission configurations.	Not Applicable

6.6.1. Operating Modes

The EUT was tested in the following operating mode(s) unless otherwise stated:

- GSM850 Head and Body-Worn – DTM Class 9 – DTM (Voice + Data) allocated mode with Communication Test Set configured to allow the EUT to transmit at a maximum power using Power Control Level (PCL) setting of 5. Tested using 2 Uplink time slots with DTM multi class 9 (1 uplink for voice + 1 uplink for GPRS with CS1).
- GSM850 Hotspot Mode – DTM (Voice + Data) allocated mode with Communication Test Set configured to allow the EUT to transmit at a maximum power using Power Control Level (PCL) setting of 5. Tested using 2 Uplink time slots with DTM multi class 9 (1 uplink for voice + 1 uplink for GPRS with CS1).
- PCS1900 Head and Body-Worn – DTM (Voice + Data) allocated mode with Communication Test Set configured to allow the EUT to transmit at a maximum power using Power Control Level (PCL) setting of 5. Tested using 3 Uplink time slots with DTM multi class 11 (1 uplink for voice + 2 uplink for GPRS with CS1).
- PCS1900 Hotspot Mode – Data allocated mode with Communication Test Set configured to allow the EUT to transmit at a maximum power using Power Control Level (PCL) setting of 0. Tested using 4 Uplink time slots with CS1 for GPRS.

GSM850: Power Table Settings used for Test Set	
Power Control Level PCL	Nominal Power (dBm)
0 … 2	39
3	37
4	35
5	**33**
6	31
7	29
8	27
9	25
10	23
11	21
12	19
13	17
14	15
15	13
16	11
17	9
18	7
19 ... 31	5

PCS1900: Power Table Settings used for Test Set	
Power Control Level PCL	Nominal Power (dBm)
22 … 29	Reserved
30	33
31	32
0	**30**
1	28
2	26
3	24
4	22
5	20
6	18
7	16
8	14
9	12
10	10
11	8
12	6
13	4
14	2
15	0
16 … 21	Reserved

- UMTS FDD 2, 4, 5 RMC 12.2kbps allocated mode with Communication Test Set configured to all “1’s” to allow the EUT to transmit at a maximum as per KDB 941225 D01.
- UMTS FDD 2, 4, 5 - RMC 12.2kbps + HSUPA with Test loop mode 1 and TPC bits configured to all "1's", Sub-test 5, AG Index set to 21 and E-TFCI set to 81 with Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D01.
- UMTS FDD 2, 4, 5 - RMC 12.2kbps + HSDPA with Test loop mode 1 and TPC bits configured to all "1's", Sub-test 1 with Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D01.
- UMTS FDD 2, 4, 5 - DC HSDPA (Cat 24) with Test loop mode 1 and TPC bits configured to all "1's", Sub-test 1 with Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D01. (See Appendix 9 for detailed description)

Operating Modes (Continued)

- LTE Band 2, LTE Band 4 and LTE Band 7 data allocated mode at QPSK on 20MHz BW channels, using a Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D05.
- LTE Band 5, LTE Band 13 and LTE Band 17 data allocated mode at QPSK on 20MHz BW channels, using a Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D05.
- 2.4 GHz Wi-Fi802.11b/g/n Data allocated mode using 'HyperTerminal' software to excise mode ‘b’, ‘g’ and ‘n’, with maximum power of up to 13.2 dBm for ‘b’ mode and 13.4 dBm for ‘g’ and 13.0 dBm for ‘n’ modes.
- 5.0 GHz Wi-Fi802.11a/n Data allocated mode using 'HyperTerminal' software to excise mode ‘a’ and ‘n’, with maximum power of up to 16.5 dBm for ‘a’ mode and 16.7 dBm for ‘n’ modes.

6.7.Nominal and Maximum Output power:

Power Back-Off Not Supported

Bands	Speech (Voice Mode)	
	Target (dBm)	Tolerance ± (dB)
GSM850	32.5	-0.9~+0.6

Power Back-Off Supported & Disabled

Bands	Speech (Voice Mode)	
	Target (dBm)	Tolerance ± (dB)
PCS1900	30.0	-0.7~+0.7

Power Back-Off Supported & Enabled

Bands	Speech (Voice Mode)	
	Target (dBm)	Tolerance ± (dB)
PCS1900	25.0	-0.7~+0.7

Power Back-Off Not Supported

Bands	GPRS							
	Tx Slot 1		Tx Slot 2		Tx Slot 3		Tx Slot 4	
	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)
GSM850	32.5	-0.9~+0.6	31.0	-1.5~+0.6	29.0	-1.5~+0.6	28.0	-1.5~+0.6
Bands	**EDGE GMSK (MCS1-4)**							
GSM850	32.5	-0.9~+0.6	31.0	-1.5~+0.6	29.0	-1.5~+0.6	28.0	-1.5~+0.6
Bands	**EDGE 8PSK (MCS5-9)**							
GSM850	27.0	-1.5~+1.0	25.0	-1.5~+1.0	24.0	-1.5~+1.0	22.0	-1.5~+1.0

Power Back-Off Supported & Disabled

Bands	GPRS							
	Tx Slot 1		Tx Slot 2		Tx Slot 3		Tx Slot 4	
	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)
PCS1900	30.0	-0.7~+0.7	28.0	-1.5~+0.6	27.0	-1.5~+0.6	26.0	-1.5~+0.6
Bands	**EDGE GMSK (MCS1-4)**							
PCS1900	30.0	-0.7~+0.7	28.0	-1.5~+0.6	27.0	-1.5~+0.6	26.0	-1.5~+0.6
Bands	**EDGE 8PSK (MCS5-9)**							
PCS1900	26.0	-1.5~+1.0	24.0	-1.5~+1.0	23.0	-1.5~+1.0	22.2	-1.5~+1.0

Power Back-Off Supported & Enabled

Bands	GPRS							
	Tx Slot 1		Tx Slot 2		Tx Slot 3		Tx Slot 4	
	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)
PCS1900	25.0	-1.5~+1.0	23.0	-1.5~+1.0	22.0	-1.5~+1.0	21.0	-1.5~+1.0
Bands	**EDGE GMSK (MCS1-4)**							
PCS1900	25.0	-1.5~+1.0	23.0	-1.5~+1.0	22.0	-1.5~+1.0	21.0	-1.5~+1.0
Bands	**EDGE 8PSK (MCS5-9)**							
PCS1900	24.5	-1.5~+1.5	22.5	-1.5~+1.5	21.5	-1.5~+1.5	20.5	-1.5~+1.5

Nominal and Maximum Output power:

Power Back-Off Not Supported

Band	CS		HS	
	Target (dBm)	Tolerance ± (dB)	Target (dBm)	Tolerance ± (dB)
UMTS FDD 5	24.0	-0.7~+0.5	24.0	-0.7~+0.5
Power Back-Off Supported & Disabled				
UMTS FDD 2	23.5	-0.7~+0.5	23.5	-0.7~+0.5
UMTS FDD 4	23.5	-0.7~+0.5	23.5	-0.7~+0.5
Power Back-Off Supported & Enabled				
UMTS FDD 2	19.5	-0.7~+0.5	19.5	-0.7~+0.5
UMTS FDD 4	22.0	-0.7~+0.5	22.0	-0.7~+0.5

Power Back-Off Not Supported

Bands	Target (dBm)						Tolerance ± (dB)
	QPSK			16QAM			
	1RB	50% RB	100% RB	1RB	50% RB	100% RB	
LTE Band 5	23.0	22.0	22.0	22.0	21.0	21.0	-1.0 ~ +1.0
LTE Band 13	23.0	22.0	22.0	22.0	21.0	21.0	-1.0 ~ +1.0
LTE Band 17	23.0	22.0	22.0	22.0	21.0	21.0	-1.0 ~ +1.0

Power Back-Off Supported & Disabled

Bands	Target (dBm)						Tolerance ± (dB)
	QPSK			16QAM			
	1RB	50% RB	100% RB	1RB	50% RB	100% RB	
LTE Band 2	23.2	22.2	22.2	22.2	21.2	21.2	-1.0 ~ +1.0
LTE Band 4	23.3	22.3	22.3	22.3	21.3	21.3	-1.0 ~ +1.0
LTE Band 7	23.5	22.5	22.5	22.5	21.5	21.5	-1.0 ~ +1.0

Power Back-Off Supported & Enabled

Bands	Target (dBm)						Tolerance ± (dB)
	QPSK			16QAM			
	1RB	50% RB	100% RB	1RB	50% RB	100% RB	
LTE Band 2	19.0	19.0	19.0	19.0	19.0	19.0	-1.0 ~ +1.0
LTE Band 4	21.0	21.0	21.0	21.0	21.0	21.0	-1.0 ~ +1.0
LTE Band 7	23.0	22.0	22.0	22.0	21.0	21.0	-1.0 ~ +1.0

Nominal and Maximum Output power (Continued):

Power Back-Off Not Supported

	WLAN Modes					
	2.4 GHz 802.11b		2.4 GHz 802.11g		2.4 GHz 802.11n	
	1 Mbps	11 Mbps	6 Mbps	54 Mbps	6.5 Mbps	65 Mbps
Max Power {Target + Upper Tolerance} (dBm)	13.5	13.5	13.4	13.4	13.4	13.4

Power Back-Off Not Supported

5.0 GHz 802.11a	5.2 GHz 802.11a		5.3 GHz 802.11a		5.6 GHz 802.11a		5.8 GHz 802.11a	
	6 Mbps	54 Mbps	6 Mbps	54 Mbps	6 Mbps	54 Mbps	6 Mbps	54 Mbps
Max Power {Target + Upper Tolerance} (dBm)	16.3	16.3	16.3	16.3	16.5	16.5	16.5	16.5
5.0 GHz 802.11n HT-20 / 11ac VHT-20	5.2 GHz 802.11n		5.3 GHz 802.11n		5.6 GHz 802.11n		5.8 GHz 802.11n	
	6.5 Mbps	65 Mbps	6.5 Mbps	65 Mbps	6.5 Mbps	65 Mbps	6.5 Mbps	65 Mbps
Max Power {Target + Upper Tolerance} (dBm)	16.3	13.3	16.3	13.3	16.6	13.7	16.6	13.7
5.0 GHz 802.11n HT-40 / 11ac VHT-40	5.2 GHz 802.11n		5.3 GHz 802.11n		5.6 GHz 802.11n		5.8 GHz 802.11n	
	13.5 Mbps	135 Mbps	13.5 Mbps	135 Mbps	13.5 Mbps	135 Mbps	13.5 Mbps	135 Mbps
Max Power {Target + Upper Tolerance} (dBm)	14.3	12.3	14.3	12.3	14.7	12.7	14.7	12.7
5.0 GHz 802.11ac VHT-80	5.2 GHz 802.11ac		5.3 GHz 802.11ac		5.6 GHz 802.11ac		5.8 GHz 802.11ac	
	13.5 Mbps	135 Mbps	13.5 Mbps	135 Mbps	13.5 Mbps	135 Mbps	13.5 Mbps	135 Mbps
Max Power {Target + Upper Tolerance} (dBm)	14.2	12.2	14.2	12.2	14.5	12.6	14.5	12.6

Band		Max Power {Target (dBm) + Upper Tolerance (dBm)}		
	Channel	BR	EDR	BLE
Bluetooth	Low	7.9	5.9	2.4
	Mid	10.0	7.9	2.4
	High	7.9	4.9	2.4

Note:

1. As per KDB865664 D02 SAR Reporting v01, 2.1.4(a), the nominal and maximum average source based rated power, declared by manufacturer are shown in the above tables.
2. These are specified maximum allowed average power for all the wireless modes and frequencies bands supported.

6.8. Simultaneous Transmission Conditions

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the *reported* standalone SAR of each applicable simultaneous transmitting antenna.

	Simultaneous transmission conditions					
	WWAN			WLAN		WPAN
#	LTE BAND Data	GSM Voice / Data / Dual Transfer Mode (DTM)	UMTS Voice / Data	Wi-Fi 802.11b/g/n	Wi-Fi 802.11a/n	*Bluetooth*
1	X			X		
2		X		X		
3			X	X		
4	X				X	
5		X			X	
6			X		X	
7	X					X
8		X				X
9			X			X
10					X	X
11	X				X	X
12		X			X	X
13			X		X	X

Note:

Based on the customer declaration, the following are the possible combination of the Simultaneous Transmission possibilities in the EUT:

1. WWAN + WLAN 2.4 GHz
2. WWAN + WLAN 5.0 GHz
3. WWAN + WPAN
4. WPAN + WLAN 5.0 GHz
5. WWAN + WLAN 5.0 GHz + WPAN

7. RF Exposure Conditions (Test Configurations)

Refer to Appendix 10 “Antenna Locations and Separation Distances” for the specific details of the antenna-to-antenna and antenna-to-edge(s) distances.

7.1. Configuration and Peripherals

The EUT was tested in the following configuration(s) unless otherwise stated:

- Standalone fully charged battery powered.
- Head, Hotspot Mode and Body-worn configurations were evaluated.
- The applied FCC body-worn Personal Hotspot orientations where the corresponding edge(s) closest to the user with the most conservative exposure condition were all evaluated at 10 mm from the body. For body-worn configuration indicated below the test position overlap with hotspot and the power back –off was not supported meaning hotspot mode was most conservative.
- GSM, DTM, GPRS and EDGE power measurement were all measured as per FCC pubs. 941225 D03. Although power reduction was allowed SAR test was performed on GPRS using GMSK. Test reduction was applied to EDGE using GMSK and 8PSK modulation scheme.

Head Configuration

a) The EUT was placed in a normal operating position with the centre of the ear-piece aligned with the ear canal on the phantom.

b) With the ear-piece touching the phantom the centre line of the EUT was aligned with an imaginary plane (X and Y axis) consisting of three lines connecting both ears and the mouth.

c) For the cheek position the EUT was gradually moved towards the cheek until any point of the mouth-piece or keypad touched the cheek.

d) For the tilted position the EUT was positioned as for the cheek position, and then the horizontal angle was increased by fifteen degrees (the phone keypad was moved away from the cheek by fifteen degrees).

e) SAR measurements were evaluated at maximum power and the unit was operated for an appropriate period prior to the evaluation in order to minimise the drift.

f) The device was keyed to operate continuously in the transmit mode for the duration of the test.

g) The location of the maximum spatial SAR distribution (hotspot) was determined relative to the EUT and its antenna.

h) The EUT was transmitting at full power throughout the duration of the test powered by a fully charged battery.

Body Configuration

a) The EUT was placed in a normal operating position where the centre of EUT was aligned with the centre reference point on the flat section of the ‘SAM’ or ‘Eli’ phantom.

b) With the EUT touching the phantom at an imaginary centre line. The EUT was aligned with a marked plane (X and Y axis) consisting of two lines.

c) For the touch-safe position the EUT was gradually moved towards the flat section of the ‘SAM’ phantom until any point of the EUT touched the phantom.

d) For position(s) greater then 0mm separation the EUT was positioned as per the touch-safe position, and then the vertical height was decreased/adjusted as required.

e) SAR measurements were evaluated at maximum power and the unit was operated for an appropriate period prior to the evaluation in order to minimise the drift.

f) The device was keyed to operate continuously in the transmit mode for the duration of the test.

g) The location of the maximum spatial SAR distribution (hotspot) was determined relative to the EUT and its antenna.

h) The EUT was transmitting at full power throughout the duration of the test powered by a fully charged battery.

7.2. Configuration Consideration

Technology Antenna	Configuration	Antenna-to-User Separation	Position	Antenna-to-Edge Separation	Evaluation Considered
WWAN	Head	0mm	Touch Left	<25mm	Yes
			Tilt Left	<25mm	Yes
			Touch Right	<25mm	Yes
			Tilt Right	<25mm	Yes
	Hotspot	10mm	Front	<25mm	Yes
			Back	<25mm	Yes
			Top Edge	>25mm	No
			Bottom Edge	<25mm	Yes
			Right Edge	<25mm	Yes
			Left Edge	<25mm	Yes
	Body	15mm	Front	<25mm	Yes
			Back	<25mm	Yes
WLAN	Head	0mm	Touch Left	<25mm	Yes
			Tilt Left	<25mm	Yes
			Touch Right	<25mm	Yes
			Tilt Right	<25mm	Yes
	Hotspot	10mm	Front	<25mm	Yes
			Back	<25mm	Yes
			Top Edge	<25mm	Yes
			Bottom Edge	>25mm	No
			Right Edge	>25mm	No
			Left Edge	<25mm	Yes
	Body	15mm	Front	<25mm	Yes
			Back	<25mm	Yes

Note:

1. Test distances are as per FCC KDB publication 447498 D01v05 for mobile handsets.
2. Bluetooth standalone SAR is excluded as the output power meets the exclusion threshold:

1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:

[(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)] · [$\sqrt{f_{(GHz)}}$] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR,[16] where

- $f_{(GHz)}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation[17]
- The result is rounded to one decimal place for comparison

" **Taken from FCC KDB publication 447498 D01v05r02**

7.3. SAR Test Exclusion Consideration

Frequency Band	Configuration(s)		
	Head	Hotspot Mode	Body-worn
GSM850	No	No	No
PCS1900	No	No	No
UMTS FDD 2	No	No	No
UMTS FDD 4	No	No	No
UMTS FDD 5	No	No	No
LTE Band 2	No	No	No
LTE Band 4	No	No	No
LTE Band 5	No	No	No
LTE Band 7	No	No	No
LTE Band 13	No	No	No
LTE Band 17	No	No	No
WLAN 2.4 GHz	No	No	No
WLAN 5.0 GHz	No	No	No
Bluetooth	N/A	Yes#	Yes#

Note:

1. As per KDB 447498 D01 General RF Exposure Guidance v05r02, The Frequency Bands with Rated Power including Upper tolerance, which qualify for **Standalone SAR Test Exclusion,** are as per the above table.

   The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
   [(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)] * [$\sqrt{f_{(GHz)}}$] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

   - $f_{(GHz)}$ is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest *mW* and *mm* before calculation
   - The result is rounded to one decimal place for comparison

   The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

   Applying the above formula for *Bluetooth* Hotspot Mode we get:
   - For 2450MHz, [(10)/10]*[√2.45] =1.6 ≤ 3.0

   Applying the above formula for *Bluetooth* Body-worn we get:
   - For 2450MHz, [(10)/15]*[√2.45] =1.1 ≤ 3.0

   # Although *Bluetooth* qualifies for Low Power Exemption, testing was performed on Hotspot Mode and Body-Worn to give the exact SAR levels.

2. The details for the ***Maximum Rated Power*** and tolerance(s) can be found in section 6.7.

7.4. RF Output Average Power Measurement: 2G

7.4.1. GSM850
Power Back-Off NOT Supported

Voice Mode GSM (GMSK)

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)	Frame Power (dB*m*)
128	824.2	32.8	23.8
190	836.6	32.8	23.8
251	848.8	32.8	23.8

GPRS (GMSK) – Coding Scheme: CS1

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dB*m*)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
128	824.2	32.8	31.0	28.8	27.7	23.8	**25.0**	24.5	24.7
190	836.6	32.7	31.0	28.9	27.8	23.7	**25.0**	24.6	24.8
251	848.8	32.8	30.9	28.9	27.8	23.8	**24.9**	24.6	24.8

EDGE (GMSK) – Coding Scheme: MCS4

128	824.2	32.7	30.9	28.8	27.8	23.7	24.9	24.5	24.8
190	836.6	32.7	31.0	28.8	27.8	23.7	25.0	24.5	24.8
251	848.8	32.7	30.9	28.8	27.7	23.7	24.9	24.5	24.7

EDGE (8PSK) – Coding Scheme: MCS9

128	824.2	27.6	25.5	24.6	22.5	18.6	19.5	20.3	19.5
190	836.6	27.7	25.5	24.6	22.5	18.7	19.5	20.3	19.5
251	848.8	27.6	25.5	24.6	22.6	18.6	19.5	20.3	19.6

DTM - Voice Mode GSM (GMSK) + GPRS (GMSK) – Coding Scheme: CS1

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)						Frame Power (dBm)					
		Class 5		Class 9		Class 11		Class 5		Class 9		Class 11	
		GSM 1 Uplink	GPRS 1 Uplink	GSM 1 Uplink	GPRS 1 Uplink	GSM 1 Uplink	GPRS 2 Uplink	GSM 1 Uplink	GPRS 1 Uplink	GSM 1 Uplink	GPRS 1 Uplink	GSM 1 Uplink	GPRS 2 Uplink
128	824.2	31.3	31.2	31.4	31.3	29.1	29.0	25.3	25.2	**25.4**	**25.3**	24.8	24.7
190	836.6	31.4	31.3	31.4	31.3	29.2	29.1	25.4	25.3	**25.4**	**25.3**	24.9	24.8
251	848.8	31.2	31.1	31.3	31.2	29.3	29.2	25.2	25.1	**25.3**	**25.2**	25.0	24.9

DTM - Voice Mode GSM (GMSK) + EDGE (GMSK) – Coding Scheme: MCS4

128	824.2	31.4	31.3	31.3	31.2	29.1	29.0	25.4	25.3	25.3	25.2	24.8	24.7
190	836.6	31.4	31.3	31.3	31.2	29.2	29.1	25.4	25.3	25.3	25.2	24.9	24.8
251	848.8	31.2	31.1	31.2	31.1	29.2	29.1	25.2	25.1	25.2	25.1	24.9	24.8

DTM - Voice Mode GSM (GMSK) + EDGE (8PSK) – Coding Scheme: MCS9

128	824.2	31.2	25.4	31.2	25.4	24.6	24.6	19.4	25.2	19.4	25.2	20.3	20.3
190	836.6	31.3	25.5	31.3	25.4	24.6	24.5	19.5	25.3	19.4	25.3	20.2	20.3
251	848.8	31.1	25.5	31.2	25.5	24.5	24.6	19.5	25.1	19.5	25.2	20.3	20.2

GSM850 (Continued)

Note:

Scale factor for uplink time slot:

1. 1 Uplink: time slot ratio = 8:1 => 10*log(8/1) = **9.03 dB**
2. 2 Uplink: time slot ratio = 8:2 => 10*log(8/2) = **6.02 dB**
3. 3 Uplink: time slot ratio = 8:3 => 10*log(8/3) = **4.26 dB**
4. 4 Uplink: time slot ratio = 8:4 => 10*log(8/4) = **3.01 dB**

Conclusions:

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

- For Head SAR Testing, GSM and DTM should be evaluated; therefore the EUT was set in **DTM Multi-slot class 9** due its highest Frame Average Power (dBm)
- For Hotspot Mode SAR Testing, GPRS and DTM should be evaluated; therefore the EUT was set in **GPRS 2 Tx** due its highest Frame Average Power (dBm)
- For Body worn SAR Testing, GSM and DTM should be evaluated, therefore the EUT was set in **DTM Multi-slot class 9** due its highest Frame Average Power (dBm)

7.4.2.PCS1900
Power Back-Off Supported & Disabled

Voice Mode GSM (GMSK)

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)	Frame Power (dB*m*)
512	1850.2	30.6	21.6
661	1880.0	30.4	21.4
810	1909.8	30.4	21.4

GPRS (GMSK) – Coding Scheme: CS1

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dB*m*)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
512	1850.2	30.5	28.1	26.8	25.8	21.5	22.1	22.5	22.8
661	1880.0	30.3	28.0	26.8	25.9	21.3	22.0	22.5	22.9
810	1909.8	30.4	28.0	26.8	25.8	21.4	22.0	22.5	22.8

EDGE (GMSK) – Coding Scheme: MCS4

512	1850.2	30.5	28.2	26.8	25.8	21.5	22.2	22.5	22.8
661	1880.0	30.4	28.1	26.8	25.8	21.4	22.1	22.5	22.8
810	1909.8	30.4	28.1	26.8	25.8	21.4	22.1	22.5	22.8

EDGE (8PSK) – Coding Scheme: MCS9

512	1850.2	26.8	24.9	23.8	22.9	17.8	18.9	19.5	19.9
661	1880.0	26.8	24.9	23.8	23.0	17.8	18.9	19.5	20.0
810	1909.8	26.8	24.9	23.8	23.0	17.8	18.9	19.5	20.0

DTM - Voice Mode GSM (GMSK) + GPRS (GMSK) – Coding Scheme: CS1

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)						Frame Power (dBm)					
		Class 5		Class 9		Class 11		Class 5		Class 9		Class 11	
		GSM 1 Uplink	GPRS 1 Uplink	GSM 1 Uplink	GPRS 1 Uplink	GSM 1 Uplink	GPRS 2 Uplink	GSM 1 Uplink	GPRS 1 Uplink	GSM 1 Uplink	GPRS 1 Uplink	GSM 1 Uplink	GPRS 2 Uplink
512	1850.2	28.2	28.2	28.2	28.2	26.9	26.8	22.2	22.2	22.2	22.2	**22.6**	**22.5**
661	1880.0	28.2	28.1	28.1	28.1	26.9	26.8	22.2	22.1	22.1	22.1	**22.6**	**22.5**
810	1909.8	28.2	28.1	28.2	28.1	26.9	26.8	22.2	22.1	22.2	22.1	**22.6**	**22.5**

DTM - Voice Mode GSM (GMSK) + EDGE (GMSK) – Coding Scheme: MCS4

512	1850.2	28.1	28.1	28.1	28.1	26.9	26.8	22.1	22.1	22.1	22.1	22.6	22.5
661	1880.0	28.1	28.0	28.1	28.0	26.9	26.8	22.1	22.0	22.1	22.0	22.6	22.5
810	1909.8	28.1	28.0	28.1	28.0	26.9	26.8	22.1	22.0	22.1	22.0	22.6	22.5

DTM - Voice Mode GSM (GMSK) + EDGE (8PSK) – Coding Scheme: MCS9

512	1850.2	28.1	24.8	28.2	24.8	23.7	23.7	22.1	18.8	22.2	18.8	19.4	19.4
661	1880.0	28.1	24.9	28.1	24.8	23.8	23.7	22.1	18.9	22.1	18.8	19.5	19.4
810	1909.8	28.1	24.9	28.1	24.8	23.8	23.7	22.1	18.9	22.1	18.8	19.5	19.4

7.4.3.PCS1900
Power Back-Off Supported & Enabled

Voice Mode GSM (GMSK)

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)	Frame Power (dB*m*)
512	1850.2	26.0	17.0
661	1880.0	26.0	17.0
810	1909.8	26.0	17.0

GPRS (GMSK) – Coding Scheme: CS1

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dB*m*)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
512	1850.2	26.0	23.4	22.2	21.2	17.0	17.4	17.9	**18.2**
661	1880.0	26.0	23.5	22.2	21.3	17.0	17.5	17.9	**18.3**
810	1909.8	26.1	23.5	22.3	21.4	17.1	17.5	18.0	**18.4**

EDGE (GMSK) – Coding Scheme: MCS4

512	880.2	25.9	23.2	22.1	21.2	16.9	17.2	17.8	18.2
661	897.4	25.9	23.4	22.1	21.3	16.9	17.4	17.8	18.3
810	914.8	26.0	23.4	22.2	21.3	17.0	17.4	17.9	18.3

EDGE (8PSK) – Coding Scheme: MCS9

512	1850.2	25.1	22.8	21.3	20.2	16.1	16.8	17.0	17.2
661	1880.0	25.2	22.9	21.3	20.3	16.2	16.9	17.0	17.3
810	1909.8	25.2	22.9	21.3	20.4	16.2	16.9	17.0	17.4

DTM - Voice Mode GSM (GMSK) + GPRS (GMSK) – Coding Scheme: CS1

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)						Frame Power (dBm)					
		Class 5		Class 9		Class 11		Class 5		Class 9		Class 11	
		GSM 1 Uplink	GPRS 1 Uplink	GSM 1 Uplink	GPRS 1 Uplink	GSM 1 Uplink	GPRS 2 Uplink	GSM 1 Uplink	GPRS 1 Uplink	GSM 1 Uplink	GPRS 1 Uplink	GSM 1 Uplink	GPRS 2 Uplink
512	1850.2	23.2	23.2	23.2	23.2	22.1	22.0	17.2	17.2	17.2	17.2	**17.8**	**17.7**
661	1880.0	23.3	23.3	23.3	23.3	22.1	22.1	17.3	17.3	17.3	17.3	**17.8**	**17.8**
810	1909.8	23.3	23.3	23.3	23.3	22.2	22.1	17.3	17.3	17.3	17.3	**17.9**	**17.8**

DTM - Voice Mode GSM (GMSK) + EDGE (GMSK) – Coding Scheme: MCS4

512	1850.2	23.2	23.1	23.1	23.1	22.0	22.0	17.2	17.1	17.1	17.1	17.7	17.7
661	1880.0	23.3	23.3	23.3	23.3	22.1	22.0	17.3	17.3	17.3	17.3	17.8	17.7
810	1909.8	23.3	23.3	23.3	23.3	22.2	22.1	17.3	17.3	17.3	17.3	17.9	17.8

DTM - Voice Mode GSM (GMSK) + EDGE (8PSK) – Coding Scheme: MCS9

512	1850.2	23.3	22.6	23.2	22.4	21.1	21.1	16.6	17.3	17.2	16.4	16.8	16.8
661	1880.0	23.5	22.7	23.3	22.5	21.2	21.1	16.7	17.5	17.3	16.5	16.9	16.8
810	1909.8	23.5	22.8	23.3	22.5	21.2	21.2	16.8	17.5	17.3	16.5	16.9	16.9

PCS1900 (Continued):
Note:

Scale factor for uplink time slot:

1. 1 Uplink: time slot ratio = 8:1 => 10*log(8/1) = **9.03 dB**
2. 2 Uplink: time slot ratio = 8:2 => 10*log(8/2) = **6.02 dB**
3. 3 Uplink: time slot ratio = 8:3 => 10*log(8/3) = **4.26 dB**
4. 4 Uplink: time slot ratio = 8:4 => 10*log(8/4) = **3.01 dB**

Conclusions:

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

- For Head SAR Testing, GSM and DTM should be evaluated; therefore the EUT was set in **DTM Multi-slot class 11, Power Back-Off Disabled Mode** due its highest Frame Average Power (dBm)
- For Hotspot Mode SAR Testing, GSM and DTM should be evaluated, therefore the EUT was set in GPRS 4Tx, **Power Back-Off Enabled Mode** due its highest Frame Average Power (dBm)
- For Body-Worn SAR Testing, GPRS and DTM should be evaluated; therefore the EUT was set in **DTM Multi-slot class 11, Power Back-Off Disabled Mode** slots due its highest Frame Average Power (dBm)

7.5. RF Output Average Power Measurement: 3G

7.5.1. WCDMA Band 2, Band 4 and Band 5 on RMC / HSDPA / HSUPA modes

Power Back-Off NOT Supported

Modes		HSDPA				HSUPA					WCDMA
Sets		1	2	3	4	1	2	3	4	5	Voice / RMC 12.2kbps
Band	Channel	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]
850 (Band 5)	4132 4357	24.3	24.3	23.9	23.8	23.4	22.5	23.1	22.5	24.2	24.3
	4183 4408	24.3	24.3	23.8	23.8	24.0	22.7	23.7	22.6	24.2	24.3
	4233 4458	24.2	24.2	23.8	23.8	24.1	22.1	23.8	22.2	24.2	24.2

Power Back-Off Supported & Disabled

1900 (Band 2)	9262 9662	23.2	23.2	23.3	23.3	22.8	21.6	22.5	21.5	23.3	23.7
	9400 9800	23.3	23.3	23.3	23.3	23.1	21.8	22.8	21.6	23.3	23.8
	9538 9938	23.1	23.1	23.1	23.1	23.0	21.9	22.7	21.7	23.2	23.5
1700 (Band 4)	1312 1537	23.1	23.1	23.1	23.1	22.9	21.6	22.6	21.5	23.2	23.5
	1412 1637	23.1	23.1	23.1	23.1	23.1	21.8	22.8	21.7	23.2	23.6
	1513 1738	23.2	23.2	23.2	23.2	23.0	21.7	22.7	21.7	23.2	23.6
ßc		2	12	15	15	11	6	15	2	15	
ßd		15	15	8	4	15	15	9	15	15	
ΔACK, ΔNACK, ΔCQI		8	8	8	8	8	8	8	8	8	
AGV		-	-	-	-	20	12	15	17	21	

7.5.2. WCDMA Band 2, Band 4 and Band 5 on DC-HSDPA (Cat 24)

Power Back-Off NOT Supported

Modes		DC HSDPA (Cat 24)				WCDMA
Sets		1	2	3	4	Voice / RMC 12.2kbps
Band	Channel	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]
850 (Band 5)	4132 4357	21.2	21.5	21.4	21.6	24.3
	4183 4408	21.3	21.5	21.4	21.5	24.3
	4233 4458	21.2	21.4	21.4	21.5	24.2
Power Back-Off Supported & Disabled						
1900 (Band 2)	9262 9662	20.8	21.2	21.1	20.8	23.7
	9400 9800	21.0	21.3	21.2	21.2	23.8
	9538 9938	20.9	20.0	21.0	20.9	23.5
1700 (Band 4)	1312 1537	21.1	21.1	21.0	21.0	23.5
	1412 1637	20.9	20.8	21.0	21.0	23.6
	1513 1738	21.0	21.0	21.0	21.0	23.6
ßc		2	12	15	15	
ßd		15	15	8	4	
ΔACK, ΔNACK, ΔCQI		8	8	8	8	
AGV		-	-	-	-	

7.5.3. WCDMA Band 2 and Band 4 on RMC / HSDPA / HSUPA:

Power Back-Off Supported & Enabled

Modes		HSDPA				HSUPA					WCDMA
Sets		1	2	3	4	1	2	3	4	5	Voice / RMC 12.2kbps
Band	Channel	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]
1900 (Band 2)	9262 9662	18.6	18.7	18.7	18.7	18.5	17.4	18.3	17.3	18.7	19.3
	9400 9800	18.8	18.7	18.8	18.8	18.9	17.6	18.7	17.5	18.7	19.3
	9538 9938	18.6	18.5	18.6	18.6	18.3	17.3	18.1	17.2	18.6	19.1
1700 (Band 4)	1312 1537	21.3	21.2	21.3	21.3	21.2	20.8	21.0	20.7	21.3	21.7
	1412 1637	21.3	21.3	21.3	21.4	21.2	20.7	21.0	20.7	21.3	21.8
	1513 1738	21.4	21.4	21.4	21.4	21.3	20.8	21.1	20.7	21.3	21.8

Power Back-Off Supported & Enabled

Modes		DC HSDPA (Cat 24)				WCDMA
Sets		1	2	3	4	Voice / RMC 12.2kbps
Band	Channel	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]
1900 (Band 2)	9262 9662	18.2	18.3	18.2	18.2	19.3
	9400 9800	18.2	18.2	18.2	18.2	19.3
	9538 9938	18.3	18.1	18.2	18.2	19.1
1700 (Band 4)	1312 1537	19.8	19.7	19.8	19.7	21.7
	1412 1637	19.9	19.7	19.8	19.6	21.8
	1513 1738	20.0	19.9	19.9	19.7	21.8
ßc		2	12	15	15	
ßd		15	15	8	4	
ΔACK, ΔNACK, ΔCQI		8	8	8	8	
AGV		-	-	-	-	

Note: The measured power on HSDPA subsets did not follow the trend as per 3GPP specification. But, RMC is most conservative measured power than the HSDPA.

The module power levels were measured in both HSPA and 3G RMC 12.2kbps modes and compared to ensure the correct mode of operation had been established.

The following tables taken from FCC 3G SAR procedures (KDB 941225 D01 SAR test for 3G devices v02) below were applied using an wireless communications test set which supports 3G / HSDPA release 5 / HSUPA release 6.

Sub-test Setup for Release 5 HSDPA

Sub-test	β_c	β_d	B_d *(SF)*	β_c/β_d	β_{hs} (1)	SM (dB) (2)
1	2/15	15/15	64	2/15	4/15	0.0
2	12/15 (3)	15/15 (3)	64	12/15 (3)	24/15	1.0
3	15/15	8/15	64	15/8	30/15	1.5
4	15/15	4/15	64	15/4	30/15	1.5

Note 1: Δ_{ACK}, Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $B_{hs}/\beta_c = 24/15$

Note 3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$

Sub-test Setup for Release 6 HSUPA

Sub-test	β_c	β_d	B_d *(SF)*	β_c/β_d	β_{hs} (1)	B_{oc}	B_{od}	B_{od} *(SF)*	B_{od} *(codes)*	CM (2) (dB)	Power Back-Off (dB)	AG (4) Index	E-TFCI
1	11/15 (3)	15/15 (3)	64	11/15 (3)	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	31/15	B_{al1}: 47/15 B_{al2}: 47/15	4	1	2.0	1.0	15	92
4	2/15	15/15	64	2/15	2/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 (4)	15/15 (4)	64	15/15 (4)	24/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $B_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH AND E-DPCCH for the Power Back-Off is based on the relative CM difference.

Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$.

Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$.

Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Tavle 5.1g.

Note 6: B_{od} can not be set directly; it is set by Absolute Grant Value.

7.6. RF Output Average Power Measurement: LTE

7.6.1. LTE Band 2 (1900 MHz)

Power Back-Off Supported & Disabled

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1860.0 MHz** (Low)	Frequency **1880.0 MHz** (Middle)	Frequency **1900.0 MHz** (High)
20 MHz	QPSK	1	Low	0	(0)	23.0	23.8	23.8	23.8
		1	Mid	49	(0)	23.0	23.7	23.8	23.9
		1	High	99	(0)	23.0	23.7	23.9	23.8
		50	low	0	(1)	22.0	22.9	22.9	22.8
		50	Mid	25	(1)	22.0	22.8	22.9	22.9
		50	High	50	(1)	22.0	22.8	22.9	22.9
		100	-	0	(1)	22.0	23.0	22.9	22.9
	16QAM	1	Low	0	(1)	22.0	23.0	23.4	22.8
		1	Mid	49	(1)	22.0	22.9	23.4	22.8
		1	High	99	(1)	22.0	22.9	23.5	22.8
		50	low	0	(2)	21.0	22.0	22.0	21.8
		50	Mid	25	(2)	21.0	22.0	22.0	21.9
		50	High	50	(2)	21.0	22.0	22.0	21.9
		100	-	0	(2)	21.0	22.1	22.1	21.9

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1857.5 MHz** (Low)	Frequency **1880.0 MHz** (Middle)	Frequency **1902.5 MHz** (High)
15 MHz	QPSK	1	Low	0	(0)	23.0	23.9	23.8	23.8
		1	Mid	37	(0)	23.0	23.9	23.8	23.7
		1	High	74	(0)	23.0	23.9	23.8	23.7
		36	low	0	(1)	22.0	22.9	22.9	22.9
		36	Mid	19	(1)	22.0	23.0	22.9	22.9
		36	High	39	(1)	22.0	22.9	22.9	22.8
		75	-	0	(1)	22.0	23.0	23.0	23.0
	16QAM	1	Low	0	(1)	22.0	23.0	22.9	22.9
		1	Mid	37	(1)	22.0	23.0	22.9	22.9
		1	High	74	(1)	22.0	22.9	22.9	22.9
		36	low	0	(2)	21.0	21.9	21.9	21.9
		36	Mid	19	(2)	21.0	21.9	21.9	22.0
		36	High	39	(2)	21.0	21.8	21.9	21.9
		75	-	0	(2)	21.0	21.9	21.9	21.9

LTE Band 2 (1900 MHz)

Power Back-Off Supported & Disabled (Continued)

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1855.0 MHz** (Low)	Frequency **1880.0 MHz** (Middle)	Frequency **1905.0 MHz** (High)
10 MHz	QPSK	1	Low	0	(0)	23.0	23.8	23.8	23.8
		1	Mid	24	(0)	23.0	23.8	23.8	23.9
		1	High	49	(0)	23.0	23.8	23.8	23.8
		25	Low	0	(1)	22.0	23.0	22.9	23.0
		25	Mid	12	(1)	22.0	22.9	22.9	22.9
		25	High	25	(1)	22.0	22.9	22.9	22.9
		50	-	0	(1)	22.0	22.9	22.9	22.9
	16QAM	1	Low	0	(1)	22.0	23.0	22.9	22.8
		1	mid	24	(1)	22.0	22.9	22.9	23.0
		1	High	49	(1)	22.0	22.9	22.8	23.0
		25	Low	0	(2)	21.0	22.0	21.9	21.9
		25	Mid	12	(2)	21.0	21.9	21.9	21.9
		25	High	25	(2)	21.0	21.9	21.8	21.9
		50	-	0	(2)	21.0	21.9	21.8	21.9

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1852.5 MHz** (Low)	Frequency **1880.0 MHz** (Middle)	Frequency **1907.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	23.0	23.9	23.8	23.8
		1	Mid	12	(0)	23.0	23.9	23.7	23.7
		1	High	24	(0)	23.0	23.9	23.8	23.8
		12	low	0	(1)	22.0	22.9	22.9	22.8
		12	Mid	6	(1)	22.0	22.9	22.8	22.8
		12	High	13	(1)	22.0	22.9	22.9	22.9
		25	-	0	(1)	22.0	22.9	22.9	22.8
	16QAM	1	Low	0	(1)	22.0	23.0	23.0	23.0
		1	Mid	12	(1)	22.0	22.8	23.0	22.9
		1	High	24	(1)	22.0	22.9	23.1	23.0
		12	low	0	(2)	21.0	21.9	21.8	21.9
		12	Mid	6	(2)	21.0	21.8	21.8	21.9
		12	High	13	(2)	21.0	21.9	21.9	21.8
		25	-	0	(2)	21.0	21.9	21.8	21.9

LTE Band 2 (1900 MHz)

Power Back-Off Supported & Disabled (Continued)

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1851.5 MHz** (Low)	Frequency **1880 MHz** (Middle)	Frequency **1908.5 MHz** (High)
3 MHz	QPSK	1	Low	0	(0)	23.0	23.9	23.8	23.9
		1	Mid	7	(0)	23.0	23.8	23.7	23.7
		1	High	14	(0)	23.0	23.8	23.9	23.8
		8	Low	0	(1)	22.0	22.9	22.8	22.8
		8	Mid	4	(1)	22.0	22.9	22.9	22.8
		8	High	7	(1)	22.0	22.9	22.9	22.9
		15	-	0	(1)	22.0	22.9	22.9	22.9
	16QAM	1	Low	0	(1)	22.0	23.0	23.0	22.9
		1	Mid	7	(1)	22.0	22.8	22.9	22.9
		1	High	14	(1)	22.0	22.9	23.0	22.9
		8	Low	0	(2)	21.0	22.9	21.8	21.9
		8	Mid	4	(2)	21.0	21.9	21.9	21.8
		8	High	7	(2)	21.0	21.8	21.9	21.8
		15	-	0	(2)	21.0	21.9	21.9	21.9

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1850.7 MHz** (Low)	Frequency **1880 MHz** (Middle)	Frequency **1909.3 MHz** (High)
1.4 MHz	QPSK	1	Low	0	(0)	23.0	23.9	23.9	23.9
		1	Mid	3	(0)	23.0	23.9	23.9	23.8
		1	High	5	(0)	23.0	24.0	23.8	23.9
		3	Low	0	(0)	23.0	23.9	23.8	23.8
		3	Mid	1	(0)	23.0	23.9	23.8	23.8
		3	high	3	(0)	23.0	23.9	23.8	23.8
		6	-	0	(1)	22.0	22.9	22.8	22.9
	16QAM	1	Low	0	(1)	22.0	22.9	22.8	22.9
		1	Mid	3	(1)	22.0	22.8	22.9	22.9
		1	High	5	(1)	22.0	22.9	23.0	22.8
		3	Low	0	(1)	22.0	22.8	22.6	22.9
		3	Mid	1	(1)	22.0	22.6	22.9	22.8
		3	high	3	(1)	22.0	22.7	22.9	22.8
		6	-	0	(2)	21.0	21.9	21.9	21.9

7.6.2.LTE Band 2 (1900 MHz)

Power Back-Off Supported & Enabled

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1860.0 MHz** (Low)	Frequency **1880.0 MHz** (Middle)	Frequency **1900.0 MHz** (High)
20 MHz	QPSK	1	Low	0	(0)	19.0	19.6	19.7	19.6
		1	Mid	49	(0)	19.0	19.6	19.6	19.6
		1	High	99	(0)	19.0	19.7	19.7	19.7
		50	low	0	(0)	19.0	19.7	19.7	19.6
		50	Mid	25	(0)	19.0	19.7	19.7	19.6
		50	High	50	(0)	19.0	19.7	19.7	19.6
		100	-	0	(1)	19.0	19.7	19.6	19.6
	16QAM	1	Low	0	(1)	19.0	19.6	20.1	19.5
		1	Mid	49	(1)	19.0	19.6	20.0	19.5
		1	High	99	(1)	19.0	19.6	20.0	19.6
		50	low	0	(2)	19.0	19.7	19.7	19.6
		50	Mid	25	(2)	19.0	19.7	19.6	19.6
		50	High	50	(2)	19.0	19.7	19.7	19.6
		100	-	0	(2)	19.0	19.7	19.7	19.7
Ch. BW	**Modulations**	**RB Config**	**Start RB Offset**		**Power Back-Off**	**Actual Max Power (dBm)**	**Measured Avg Power (dBm).**		
							Frequency **1857.5 MHz** (Low)	Frequency **1880.0 MHz** (Middle)	Frequency **1902.5 MHz** (High)
15 MHz	QPSK	1	Low	0	(0)	19.0	19.7	19.6	19.5
		1	Mid	37	(0)	19.0	19.7	19.6	19.5
		1	High	74	(0)	19.0	19.7	19.6	19.6
		36	low	0	(1)	19.0	19.7	19.7	19.6
		36	Mid	19	(1)	19.0	19.7	19.6	19.6
		36	High	39	(1)	19.0	19.8	19.6	19.6
		75	-	0	(1)	19.0	19.7	19.7	19.7
	16QAM	1	Low	0	(1)	19.0	19.7	19.7	19.7
		1	Mid	37	(1)	19.0	19.7	19.6	19.6
		1	High	74	(1)	19.0	19.8	19.6	19.7
		36	low	0	(2)	19.0	19.7	19.7	19.6
		36	Mid	19	(2)	19.0	19.7	19.6	19.6
		36	High	39	(2)	19.0	19.7	19.7	19.7
		75	-	0	(2)	19.0	19.7	19.7	19.6

LTE Band 2 (1900 MHz)

Power Back-Off Supported & Enabled (Continued)

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1855.0 MHz** (Low)	Frequency **1880.0 MHz** (Middle)	Frequency **1905.0 MHz** (High)
10 MHz	QPSK	1	Low	0	(0)	19.0	19.5	19.6	19.5
		1	Mid	24	(0)	19.0	19.5	19.4	19.7
		1	High	49	(0)	19.0	19.7	19.6	19.6
		25	Low	0	(1)	19.0	19.6	19.7	19.6
		25	Mid	12	(1)	19.0	19.6	19.6	19.6
		25	High	25	(1)	19.0	19.6	19.6	19.6
		50	-	0	(1)	19.0	19.6	19.6	19.6
	16QAM	1	Low	0	(1)	19.0	19.5	19.7	19.6
		1	mid	24	(1)	19.0	19.7	19.5	19.7
		1	High	49	(1)	19.0	19.7	19.7	19.6
		25	Low	0	(2)	19.0	19.7	19.6	19.7
		25	Mid	12	(2)	19.0	19.6	19.7	19.6
		25	High	25	(2)	19.0	19.6	19.7	19.7
		50	-	0	(2)	19.0	19.6	19.7	19.5
Ch. BW	**Modulations**	**RB Config**	**Start RB Offset**		**Power Back-Off**	**Actual Max Power (dBm)**	**Measured Avg Power (dBm).**		
							Frequency **1852.5 MHz** (Low)	Frequency **1880.0 MHz** (Middle)	Frequency **1907.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	19.0	19.7	19.5	19.6
		1	Mid	12	(0)	19.0	19.7	19.5	19.6
		1	High	24	(0)	19.0	19.7	19.6	19.7
		12	low	0	(1)	19.0	19.7	19.7	19.6
		12	Mid	6	(1)	19.0	19.7	19.7	19.6
		12	High	13	(1)	19.0	19.7	19.7	19.7
		25	-	0	(1)	19.0	19.8	19.6	19.7
	16QAM	1	Low	0	(1)	19.0	19.9	19.8	19.6
		1	Mid	12	(1)	19.0	19.9	19.7	19.5
		1	High	24	(1)	19.0	19.9	19.8	19.6
		12	low	0	(2)	19.0	19.7	19.7	19.6
		12	Mid	6	(2)	19.0	19.7	19.7	19.6
		12	High	13	(2)	19.0	19.7	19.7	19.6
		25	-	0	(2)	19.0	19.7	19.7	19.7

LTE Band 2 (1900 MHz)

Power Back-Off Supported & Enabled (Continued)

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1851.5 MHz** (Low)	Frequency **1880 MHz** (Middle)	Frequency **1908.5 MHz** (High)
3 MHz	QPSK	1	Low	0	(0)	19.0	19.8	19.6	19.6
		1	Mid	7	(0)	19.0	19.7	19.6	19.6
		1	High	14	(0)	19.0	19.8	19.6	19.6
		8	Low	0	(1)	19.0	19.7	19.6	19.7
		8	Mid	4	(1)	19.0	19.7	19.6	19.6
		8	High	7	(1)	19.0	19.7	19.6	19.7
		15	-	0	(1)	19.0	19.7	19.7	19.7
	16QAM	1	Low	0	(1)	19.0	19.8	19.6	19.7
		1	Mid	7	(1)	19.0	19.7	19.6	19.7
		1	High	14	(1)	19.0	19.7	19.6	19.7
		8	Low	0	(2)	19.0	19.7	19.7	19.7
		8	Mid	4	(2)	19.0	19.7	19.7	19.7
		8	High	7	(2)	19.0	19.7	19.7	19.7
		15	-	0	(2)	19.0	19.7	19.7	19.7

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1850.7 MHz** (Low)	Frequency **1880 MHz** (Middle)	Frequency **1909.3 MHz** (High)
1.4 MHz	QPSK	1	Low	0	(0)	19.0	19.8	19.7	19.7
		1	Mid	3	(0)	19.0	19.7	19.6	19.6
		1	High	5	(0)	19.0	19.8	19.7	19.8
		3	Low	0	(0)	19.0	19.7	19.6	19.7
		3	Mid	1	(0)	19.0	19.7	19.7	19.6
		3	high	3	(0)	19.0	19.8	19.7	19.6
		6	-	0	(1)	19.0	19.8	19.7	19.7
	16QAM	1	Low	0	(1)	19.0	19.7	19.7	19.7
		1	Mid	3	(1)	19.0	19.7	19.6	19.6
		1	High	5	(1)	19.0	19.8	19.6	19.7
		3	Low	0	(1)	19.0	19.7	19.7	19.6
		3	Mid	1	(1)	19.0	19.7	19.6	19.6
		3	high	3	(1)	19.0	19.7	19.7	19.7
		6	-	0	(2)	19.0	19.7	19.7	19.6

7.6.3. LTE Band 4 (1700 MHz)

Power Back-Off Supported & Disabled

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1720.0 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1745.0 MHz** (High)
20 MHz	QPSK	1	Low	0	(0)	23.0	23.8	24.0	23.9
		1	Mid	49	(0)	23.0	23.9	24.0	23.9
		1	High	99	(0)	23.0	24.0	24.0	23.9
		50	low	0	(1)	22.0	23.0	23.0	23.0
		50	Mid	25	(1)	22.0	23.0	23.0	22.9
		50	High	50	(1)	22.0	23.0	23.0	23.0
		100	-	0	(1)	22.0	23.0	23.1	22.9
	16QAM	1	Low	0	(1)	22.0	22.8	23.3	22.8
		1	Mid	49	(1)	22.0	22.8	23.3	22.8
		1	High	99	(1)	22.0	22.9	23.3	22.9
		50	low	0	(2)	21.0	21.9	21.9	21.9
		50	Mid	25	(2)	21.0	21.9	21.9	21.8
		50	High	50	(2)	21.0	22.0	21.9	21.9
		100	-	0	(2)	21.0	22.0	22.0	21.9

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1717.5.0 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1747.5 MHz** (High)
15 MHz	QPSK	1	Low	0	(0)	23.0	23.9	24.0	23.9
		1	Mid	37	(1)	23.0	24.0	24.0	23.8
		1	High	74	(1)	23.0	24.0	23.9	23.8
		36	low	0	(1)	22.0	23.0	23.1	23.0
		36	Mid	19	(1)	22.0	23.0	23.0	23.0
		36	High	39	(1)	22.0	23.0	23.0	23.0
		75	-	0	(1)	22.0	23.1	23.1	23.0
	16QAM	1	Low	0	(1)	22.0	22.9	23.0	23.1
		1	Mid	37	(2)	22.0	23.0	23.0	23.0
		1	High	74	(2)	22.0	23.0	23.0	23.0
		36	low	0	(2)	21.0	22.0	22.0	22.0
		36	Mid	19	(2)	21.0	22.0	22.0	21.9
		36	High	39	(0)	21.0	22.0	22.0	22.0
		75	-	0	(0)	21.0	22.0	22.0	22.0

LTE Band 4 (1700 MHz)

Power Back-Off Supported & Disabled (Continued)

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1715.0 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1750 MHz** (High)
10 MHz	QPSK	1	Low	0	(0)	23.0	23.9	23.9	23.8
		1	Mid	24	(0)	23.0	24.0	23.9	23.8
		1	High	49	(0)	23.0	24.0	23.9	23.8
		25	Low	0	(1)	22.0	23.0	23.0	22.9
		25	Mid	12	(1)	22.0	23.0	23.0	22.9
		25	High	25	(1)	22.0	22.9	23.0	22.9
		50	-	0	(1)	22.0	23.0	23.0	22.9
	16QAM	1	Low	0	(1)	22.0	22.9	22.9	23.0
		1	mid	24	(1)	22.0	23.0	22.9	23.0
		1	High	49	(1)	22.0	23.0	22.8	22.9
		25	Low	0	(2)	21.0	21.9	22.0	21.9
		25	Mid	12	(2)	21.0	21.9	22.0	21.9
		25	High	25	(2)	21.0	22.0	22.0	21.8
		50	-	0	(2)	21.0	21.9	22.0	21.9

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1712.5 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1752.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	23.0	23.9	23.9	23.9
		1	Mid	12	(1)	23.0	23.9	23.8	23.8
		1	High	24	(1)	23.0	23.9	23.9	23.8
		12	low	0	(1)	22.0	23.0	23.0	22.9
		12	Mid	6	(1)	22.0	23.0	23.0	22.8
		12	High	13	(1)	22.0	23.0	23.0	22.8
		25	-	0	(1)	22.0	23.0	23.0	22.9
	16QAM	1	Low	0	(1)	22.0	22.8	23.2	23.1
		1	Mid	12	(2)	22.0	22.8	23.1	22.9
		1	High	24	(2)	22.0	22.8	23.2	23.0
		12	low	0	(2)	21.0	21.9	21.9	21.9
		12	Mid	6	(2)	21.0	21.9	21.9	21.9
		12	High	13	(0)	21.0	21.9	21.9	21.9
		25	-	0	(0)	21.0	22.0	22.0	21.8

LTE Band 4 (1700 MHz)

Power Back-Off Supported & Disabled (Continued)

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1711.5 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1753.5 MHz** (High)
3 MHz	QPSK	1	Low	0	(0)	23.0	24.0	24.0	23.8
		1	Mid	7	(0)	23.0	24.0	23.9	23.7
		1	High	14	(0)	23.0	24.0	24.0	23.8
		8	Low	0	(1)	22.0	22.9	23.0	22.9
		8	Mid	4	(1)	22.0	23.0	23.0	22.9
		8	High	7	(1)	22.0	23.0	23.0	22.9
		15	-	0	(1)	22.0	23.0	23.0	22.9
	16QAM	1	Low	0	(1)	22.0	23.0	23.0	22.8
		1	Mid	7	(1)	22.0	23.0	23.0	22.8
		1	High	14	(1)	22.0	23.1	23.0	22.8
		8	Low	0	(2)	21.0	21.9	21.9	21.8
		8	Mid	4	(2)	21.0	22.0	21.9	21.8
		8	High	7	(2)	21.0	21.9	22.0	21.9
		15	-	0	(2)	21.0	22.0	22.0	21.9

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1710.7 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1754.3 MHz** (High)
1.4 MHz	QPSK	1	Low	0	1	23.0	23.9	24.0	24.0
		1	Mid	3	1	23.0	23.9	23.9	23.9
		1	High	5	1	23.0	23.9	24.1	23.9
		3	Low	0	3	23.0	23.9	24.0	23.9
		3	Mid	1	3	23.0	23.9	24.0	23.8
		3	high	3	3	23.0	23.9	24.0	23.9
		6	-	0	6	22.0	22.9	23.0	23.0
	16QAM	1	Low	0	1	22.0	22.8	23.0	22.8
		1	Mid	3	1	22.0	23.0	23.0	22.8
		1	High	5	1	22.0	23.0	23.0	23.0
		3	Low	0	3	22.0	22.8	23.0	22.8
		3	Mid	1	3	22.0	22.9	22.7	22.8
		3	high	3	3	22.0	22.8	22.7	22.8
		6	-	0	6	21.0	21.9	22.1	21.9

7.6.4.LTE Band 4 (1700 MHz)

Power Back-Off Supported & Enabled

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1720.0 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1745.0 MHz** (High)
20 MHz	QPSK	1	Low	0	(0)	21.0	21.7	21.8	21.7
		1	Mid	49	(0)	21.0	21.8	21.8	21.7
		1	High	99	(0)	21.0	21.8	21.8	21.7
		50	low	0	(1)	21.0	21.8	21.8	21.7
		50	Mid	25	(1)	21.0	21.8	21.8	21.7
		50	High	50	(1)	21.0	21.8	21.7	21.7
		100	-	0	(1)	21.0	21.8	21.8	21.8
	16QAM	1	Low	0	(1)	21.0	22.0	21.8	21.8
		1	Mid	49	(1)	21.0	22.0	21.8	21.7
		1	High	99	(1)	21.0	22.0	21.8	21.8
		50	low	0	(2)	21.0	21.8	21.8	21.8
		50	Mid	25	(2)	21.0	21.8	21.8	21.8
		50	High	50	(2)	21.0	21.8	21.8	21.8
		100	-	0	(2)	21.0	21.8	21.8	21.8

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1717.5.0 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1747.5 MHz** (High)
15 MHz	QPSK	1	Low	0	(0)	21.0	21.7	22.0	21.9
		1	Mid	37	(1)	21.0	21.7	21.9	21.9
		1	High	74	(1)	21.0	21.8	22.0	21.9
		36	low	0	(1)	21.0	21.9	21.9	21.9
		36	Mid	19	(1)	21.0	21.9	21.9	21.9
		36	High	39	(1)	21.0	21.8	21.9	21.9
		75	-	0	(1)	21.0	21.9	21.9	21.9
	16QAM	1	Low	0	(1)	21.0	22.1	22.0	21.9
		1	Mid	37	(2)	21.0	22.0	22.0	21.9
		1	High	74	(2)	21.0	22.0	21.9	21.9
		36	low	0	(2)	21.0	21.9	22.0	21.9
		36	Mid	19	(2)	21.0	21.9	22.0	21.9
		36	High	39	(0)	21.0	21.9	22.0	21.9
		75	-	0	(0)	21.0	22.0	22.0	21.9

LTE Band 4 (1700 MHz)

Power Back-Off Supported & Enabled (Continued)

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1715.0 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1750 MHz** (High)
10 MHz	QPSK	1	Low	0	(0)	21.0	21.6	21.9	21.6
		1	Mid	24	(0)	21.0	21.7	22.0	21.6
		1	High	49	(0)	21.0	21.8	21.9	21.8
		25	Low	0	(1)	21.0	21.9	21.8	21.8
		25	Mid	12	(1)	21.0	21.7	21.9	21.7
		25	High	25	(1)	21.0	21.9	21.9	21.8
		50	-	0	(1)	21.0	21.9	21.9	21.8
	16QAM	1	Low	0	(1)	21.0	21.7	21.9	21.7
		1	mid	24	(1)	21.0	21.7	21.9	21.7
		1	High	49	(1)	21.0	22.0	21.9	21.7
		25	Low	0	(2)	21.0	21.9	21.9	21.8
		25	Mid	12	(2)	21.0	21.8	21.9	21.8
		25	High	25	(2)	21.0	21.8	21.9	21.8
		50	-	0	(2)	21.0	21.7	21.9	21.8

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1712.5 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1752.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	21.0	21.7	21.9	21.8
		1	Mid	12	(1)	21.0	21.8	21.9	21.8
		1	High	24	(1)	21.0	21.7	21.9	21.8
		12	low	0	(1)	21.0	21.9	21.9	21.8
		12	Mid	6	(1)	21.0	21.8	21.9	21.7
		12	High	13	(1)	21.0	21.8	21.9	21.8
		25	-	0	(1)	21.0	21.7	21.9	21.8
	16QAM	1	Low	0	(1)	21.0	22.0	21.9	21.7
		1	Mid	12	(2)	21.0	22.0	21.9	21.7
		1	High	24	(2)	21.0	22.0	21.9	21.8
		12	low	0	(2)	21.0	22.0	21.9	21.7
		12	Mid	6	(2)	21.0	21.9	21.9	21.8
		12	High	13	(0)	21.0	21.9	21.9	21.8
		25	-	0	(0)	21.0	21.9	21.9	21.7

LTE Band 4 (1700 MHz)

Power Back-Off Supported & Enabled (Continued)

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1711.5 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1753.5 MHz** (High)
3 MHz	QPSK	1	Low	0	(0)	21.0	21.6	21.9	21.8
		1	Mid	7	(0)	21.0	21.7	21.9	21.8
		1	High	14	(0)	21.0	21.7	21.9	21.8
		8	Low	0	(1)	21.0	21.8	21.9	21.8
		8	Mid	4	(1)	21.0	21.8	21.9	21.8
		8	High	7	(1)	21.0	21.9	21.9	21.8
		15	-	0	(1)	21.0	21.9	21.9	21.8
	16QAM	1	Low	0	(1)	21.0	22.2	21.9	21.8
		1	Mid	7	(1)	21.0	21.9	21.9	21.8
		1	High	14	(1)	21.0	22.0	21.9	21.8
		8	Low	0	(2)	21.0	21.9	21.9	21.8
		8	Mid	4	(2)	21.0	22.0	21.9	21.8
		8	High	7	(2)	21.0	22.0	21.9	21.8
		15	-	0	(2)	21.0	21.9	21.9	21.8

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1710.7 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1754.3 MHz** (High)
1.4 MHz	QPSK	1	Low	0	1	21.0	21.7	22.0	21.9
		1	Mid	3	1	21.0	21.6	21.9	21.8
		1	High	5	1	21.0	21.7	22.0	21.8
		3	Low	0	3	21.0	21.8	21.9	21.8
		3	Mid	1	3	21.0	21.8	22.0	21.8
		3	high	3	3	21.0	21.8	21.9	21.8
		6	-	0	6	21.0	21.8	22.0	21.8
	16QAM	1	Low	0	1	21.0	21.8	22.0	21.8
		1	Mid	3	1	21.0	21.8	21.9	21.8
		1	High	5	1	21.0	22.0	21.9	21.8
		3	Low	0	3	21.0	21.6	21.9	21.8
		3	Mid	1	3	21.0	21.7	22.0	21.8
		3	high	3	3	21.0	21.9	21.9	21.8
		6	-	0	6	21.0	21.9	21.9	21.8

7.6.5.LTE Band 5 (850 MHz)

Power Back-Off NOT Supported

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **829.0 MHz** (Low)	Frequency **836.5 MHz** (Middle)	Frequency **844.0 MHz** (High)
10 MHz	QPSK	1	Low	0	(0)	23.0	23.2	23.2	23.2
		1	Mid	24	(0)	23.0	23.2	23.2	23.2
		1	High	49	(0)	23.0	23.2	23.2	23.2
		25	Low	0	(1)	22.0	22.4	22.4	22.4
		25	Mid	12	(1)	22.0	22.4	22.4	22.4
		25	High	25	(1)	22.0	22.4	22.4	22.4
		50	-	0	(1)	22.0	22.4	22.4	22.4
	16QAM	1	Low	0	(1)	22.0	22.4	22.5	22.4
		1	mid	24	(1)	22.0	22.4	22.4	22.4
		1	High	49	(1)	22.0	22.4	22.4	22.4
		25	Low	0	(2)	21.0	21.4	21.4	21.4
		25	Mid	12	(2)	21.0	21.3	21.3	21.3
		25	High	25	(2)	21.0	21.4	21.3	21.4
		50	-	0	(2)	21.0	21.3	21.3	21.3

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **826.5 MHz** (Low)	Frequency **836.5 MHz** (Middle)	Frequency **846.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	23.0	23.2	23.2	23.2
		1	Mid	12	(0)	23.0	23.2	23.3	23.2
		1	High	24	(0)	23.0	23.2	23.3	23.3
		12	low	0	(1)	22.0	22.3	22.4	22.3
		12	Mid	6	(1)	22.0	22.4	22.3	22.4
		12	High	13	(1)	22.0	22.4	22.4	22.4
		25	-	0	(1)	22.0	22.3	22.3	22.3
	16QAM	1	Low	0	(1)	22.0	22.2	22.2	22.2
		1	Mid	12	(1)	22.0	22.2	22.2	22.3
		1	High	24	(1)	22.0	22.3	22.3	22.3
		12	low	0	(2)	21.0	21.3	21.3	21.3
		12	Mid	6	(2)	21.0	21.3	21.2	21.2
		12	High	13	(2)	21.0	21.3	21.3	21.3
		25	-	0	(2)	21.0	21.4	21.4	21.4

LTE Band 5 (850 MHz)

Power Back-Off NOT Supported (Continued):

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **825.5 MHz** (Low)	Frequency **836.5 MHz** (Middle)	Frequency **847.5 MHz** (High)
3 MHz	QPSK	1	Low	0	(0)	23.0	23.3	23.3	23.3
		1	Mid	7	(0)	23.0	23.2	23.2	23.2
		1	High	14	(0)	23.0	23.3	23.3	23.3
		8	Low	0	(1)	22.0	22.4	22.4	22.4
		8	Mid	4	(1)	22.0	22.4	22.4	22.4
		8	High	7	(1)	22.0	22.4	22.4	22.4
		15	-	0	(1)	22.0	22.4	22.4	22.4
	16QAM	1	Low	0	(1)	22.0	22.5	22.5	22.5
		1	Mid	7	(1)	22.0	22.4	22.4	22.4
		1	High	14	(1)	22.0	22.5	22.5	22.5
		8	Low	0	(2)	21.0	21.4	21.4	21.4
		8	Mid	4	(2)	21.0	21.4	21.4	21.4
		8	High	7	(2)	21.0	21.4	21.4	21.4
		15	-	0	(2)	21.0	21.4	21.4	21.4

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **824.7 MHz** (Low)	Frequency **836.5 MHz** (Middle)	Frequency **848.3 MHz** (High)
1.4 MHz	QPSK	1	Low	0	(0)	23.0	23.4	23.4	23.4
		1	Mid	3	(0)	23.0	23.3	23.3	23.3
		1	High	5	(0)	23.0	23.4	23.4	23.4
		3	Low	0	(0)	22.0	23.3	23.3	23.3
		3	Mid	1	(0)	22.0	23.3	23.3	23.3
		3	high	3	(0)	22.0	23.4	23.4	23.4
		6	-	0	(1)	22.0	22.4	22.4	22.4
	16QAM	1	Low	0	(1)	22.0	22.7	22.5	22.6
		1	Mid	3	(1)	22.0	22.8	22.5	22.6
		1	High	5	(1)	22.0	22.8	22.6	22.5
		3	Low	0	(1)	21.0	22.3	22.3	22.2
		3	Mid	1	(1)	21.0	22.3	22.3	22.2
		3	high	3	(1)	21.0	22.3	22.2	22.2
		6	-	0	(2)	21.0	21.4	21.5	21.4

7.6.6.LTE Band 7 (2600 MHz)

Power Back-Off Supported & Disabled

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **2510.0 MHz** (Low)	Frequency **2535.0 MHz** (Middle)	Frequency **2560.0 MHz** (High)
20 MHz	QPSK	1	Low	0	(0)	23.0	23.7	23.9	24.0
		1	Mid	49	(0)	23.0	23.9	23.8	24.1
		1	High	99	(0)	23.0	23.8	23.8	**24.4**
		50	low	0	(1)	22.0	22.9	22.9	23.3
		50	Mid	25	(1)	22.0	23.0	23.0	23.1
		50	High	50	(1)	22.0	23.0	22.9	**23.3**
		100	-	0	(1)	22.0	22.9	23.0	23.2
	16QAM	1	Low	0	(1)	22.0	22.7	22.9	22.9
		1	Mid	49	(1)	22.0	23.2	22.7	22.9
		1	High	99	(1)	22.0	23.2	22.8	23.1
		50	low	0	(2)	21.0	21.9	21.9	22.1
		50	Mid	25	(2)	21.0	21.9	21.9	21.9
		50	High	50	(2)	21.0	21.9	21.9	22.0
		100	-	0	(2)	21.0	21.9	21.9	22.0

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **2507.5 MHz** (Low)	Frequency **2535.0 MHz** (Middle)	Frequency **2562.5 MHz** (High)
15 MHz	QPSK	1	Low	0	(0)	23.0	23.9	23.8	23.9
		1	Mid	37	(1)	23.0	23.9	23.8	23.8
		1	High	74	(1)	23.0	23.9	23.9	23.9
		36	low	0	(1)	22.0	22.9	23.1	23.2
		36	Mid	19	(1)	22.0	22.9	23.0	23.0
		36	High	39	(1)	22.0	22.9	23.0	23.2
		75	-	0	(1)	22.0	22.8	23.0	23.1
	16QAM	1	Low	0	(1)	22.0	22.9	22.9	23.1
		1	Mid	37	(2)	22.0	22.9	22.8	23.0
		1	High	74	(2)	22.0	23.0	22.9	23.2
		36	low	0	(2)	21.0	22.0	22.0	22.0
		36	Mid	19	(2)	21.0	21.9	21.9	22.0
		36	High	39	(0)	21.0	21.9	21.9	22.0
		75	-	0	(0)	21.0	21.9	21.9	22.0

LTE Band 7 (2600 MHz)

Power Back-Off Supported & Disabled (Continued):

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **2505.0 MHz** (Low)	Frequency **2535.0 MHz** (Middle)	Frequency **2565.0 MHz** (High)
10 MHz	QPSK	1	Low	0	(0)	23.0	23.9	23.9	24.0
		1	Mid	24	(0)	23.0	23.8	23.8	24.0
		1	High	49	(0)	23.0	23.9	23.9	24.3
		25	Low	0	(1)	22.0	22.9	23.0	23.1
		25	Mid	12	(1)	22.0	22.9	22.9	23.2
		25	High	25	(1)	22.0	22.9	23.0	23.2
		50	-	0	(1)	22.0	22.9	23.0	23.1
	16QAM	1	Low	0	(1)	22.0	22.9	22.9	23.0
		1	mid	24	(1)	22.0	23.0	22.9	23.0
		1	High	49	(1)	22.0	22.8	22.9	23.1
		25	Low	0	(2)	21.0	21.9	22.0	22.1
		25	Mid	12	(2)	21.0	22.0	21.8	22.2
		25	High	25	(2)	21.0	21.9	22.0	22.1
		50	-	0	(2)	21.0	21.9	22.0	22.1

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **2510.0 MHz** (Low)	Frequency **2535.0 MHz** (Middle)	Frequency **2567.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	23.0	23.9	23.8	24.1
		1	Mid	12	(1)	23.0	23.9	23.7	24.1
		1	High	24	(1)	23.0	23.9	23.7	24.1
		12	low	0	(1)	22.0	22.9	22.9	23.1
		12	Mid	6	(1)	22.0	22.8	22.8	23.1
		12	High	13	(1)	22.0	23.0	22.8	23.2
		25	-	0	(1)	22.0	22.8	22.8	23.2
	16QAM	1	Low	0	(1)	22.0	22.9	22.9	23.3
		1	Mid	12	(2)	22.0	22.7	23.0	23.2
		1	High	24	(2)	22.0	22.8	23.0	23.2
		12	low	0	(2)	21.0	21.8	21.8	22.1
		12	Mid	6	(2)	21.0	21.8	21.8	22.1
		12	High	13	(0)	21.0	21.9	21.7	22.1
		25	-	0	(0)	21.0	21.9	21.8	22.1

7.6.7.LTE Band 7 (2600 MHz)

Power Back-Off Supported & Enabled

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **2510.0 MHz** (Low)	Frequency **2535.0 MHz** (Middle)	Frequency **2560.0 MHz** (High)
20 MHz	QPSK	1	Low	0	(0)	23.0	23.4	23.5	23.8
		1	Mid	49	(0)	23.0	23.4	23.5	23.8
		1	High	99	(0)	23.0	23.4	23.6	23.8
		50	low	0	(1)	22.0	22.5	22.6	22.9
		50	Mid	25	(1)	22.0	22.5	22.6	22.8
		50	High	50	(1)	22.0	22.5	22.7	22.8
		100	-	0	(1)	22.0	22.5	22.7	22.8
	16QAM	1	Low	0	(1)	22.0	22.4	22.9	22.7
		1	Mid	49	(1)	22.0	22.4	22.9	22.7
		1	High	99	(1)	22.0	22.4	23.0	22.7
		50	low	0	(2)	21.0	21.5	21.6	21.9
		50	Mid	25	(2)	21.0	21.4	21.6	21.7
		50	High	50	(2)	21.0	21.4	21.7	21.7
		100	-	0	(2)	21.0	21.6	21.6	21.7

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **2507.5 MHz** (Low)	Frequency **2535.0 MHz** (Middle)	Frequency **2562.5 MHz** (High)
15 MHz	QPSK	1	Low	0	(0)	23.0	23.5	23.5	23.6
		1	Mid	37	(1)	23.0	23.6	23.5	23.6
		1	High	74	(1)	23.0	23.5	23.7	23.6
		36	low	0	(1)	22.0	22.6	22.6	22.8
		36	Mid	19	(1)	22.0	22.5	22.6	22.7
		36	High	39	(1)	22.0	22.5	22.8	22.7
		75	-	0	(1)	22.0	22.5	22.7	22.7
	16QAM	1	Low	0	(1)	22.0	22.5	22.6	22.7
		1	Mid	37	(2)	22.0	22.6	22.5	22.7
		1	High	74	(2)	22.0	22.6	22.6	22.7
		36	low	0	(2)	21.0	21.5	21.6	21.6
		36	Mid	19	(2)	21.0	21.5	21.6	21.7
		36	High	39	(0)	21.0	21.5	21.8	21.7
		75	-	0	(0)	21.0	21.8	21.6	21.7

LTE Band 7 (2600 MHz)

Power Back-Off Supported & Enabled (Continued):

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **2505.0 MHz** (Low)	Frequency **2535.0 MHz** (Middle)	Frequency **2565.0 MHz** (High)
10 MHz	QPSK	1	Low	0	(0)	23.0	23.5	23.5	23.6
		1	Mid	24	(0)	23.0	23.5	23.6	23.6
		1	High	49	(0)	23.0	23.4	23.8	23.7
		25	Low	0	(1)	22.0	22.5	22.6	22.8
		25	Mid	12	(1)	22.0	22.6	22.6	22.8
		25	High	25	(1)	22.0	22.5	22.6	22.8
		50	-	0	(1)	22.0	22.6	22.6	22.9
	16QAM	1	Low	0	(1)	22.0	22.6	22.6	22.8
		1	mid	24	(1)	22.0	22.5	22.6	22.7
		1	High	49	(1)	22.0	22.5	22.8	22.7
		25	Low	0	(2)	21.0	21.5	21.6	21.8
		25	Mid	12	(2)	21.0	21.6	21.7	21.7
		25	High	25	(2)	21.0	21.6	21.6	21.8
		50	-	0	(2)	21.0	21.6	21.6	21.8
Ch. BW	**Modulations**	**RB Config**	**Start RB Offset**		**Power Back-Off**	**Actual Max Power (dBm)**	**Measured Avg Power (dBm).**		
							Frequency **2510.0 MHz** (Low)	Frequency **2535.0 MHz** (Middle)	Frequency **2567.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	23.0	23.5	23.4	23.7
		1	Mid	12	(1)	23.0	23.5	23.4	23.7
		1	High	24	(1)	23.0	23.6	23.5	23.7
		12	low	0	(1)	22.0	22.5	22.7	22.8
		12	Mid	6	(1)	22.0	22.5	22.6	22.8
		12	High	13	(1)	22.0	22.6	22.6	22.8
		25	-	0	(1)	22.0	22.5	22.6	22.8
	16QAM	1	Low	0	(1)	22.0	22.6	22.6	22.6
		1	Mid	12	(2)	22.0	22.7	22.7	22.7
		1	High	24	(2)	22.0	22.7	22.8	22.7
		12	low	0	(2)	21.0	21.4	21.7	21.7
		12	Mid	6	(2)	21.0	21.4	21.6	21.7
		12	High	13	(0)	21.0	21.5	21.6	21.7
		25	-	0	(0)	21.0	21.4	21.6	21.8

7.6.8.LTE Band 13 (750 MHz)

Power Back-Off NOT Supported

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Band Edge	Frequency **782.0 MHz** (Middle)	Band Edge
10 MHz	QPSK	1	Low	0	(0)	23.0	Not Supported	23.3	Not Supported
		1	Mid	24	(0)	23.0		23.4	
		1	High	49	(0)	23.0		23.4	
		25	Low	0	(1)	22.0		22.5	
		25	Mid	12	(1)	22.0		22.5	
		25	High	25	(1)	22.0		22.5	
		50	-	0	(1)	22.0		22.5	
	16QAM	1	Low	0	(1)	22.0		22.4	
		1	mid	24	(1)	22.0		22.4	
		1	High	49	(1)	22.0		22.5	
		25	Low	0	(2)	21.0		21.4	
		25	Mid	12	(2)	21.0		21.5	
		25	High	25	(2)	21.0		21.5	
		50	-	0	(2)	21.0		21.4	

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **779.5 MHz** (Low)	Frequency **782.0 MHz** (Middle)	Frequency **784.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	23.0	Not Supported	23.4	Not Supported
		1	Mid	12	(0)	23.0		23.4	
		1	High	24	(0)	23.0		23.4	
		12	low	0	(1)	22.0		22.5	
		12	Mid	6	(1)	22.0		22.5	
		12	High	13	(1)	22.0		22.5	
		25	-	0	(1)	22.0		22.5	
	16QAM	1	Low	0	(1)	22.0		22.4	
		1	Mid	12	(1)	22.0		22.4	
		1	High	24	(1)	22.0		22.4	
		12	low	0	(2)	21.0		21.4	
		12	Mid	6	(2)	21.0		21.5	
		12	High	13	(2)	21.0		21.4	
		25	-	0	(2)	21.0		21.6	

7.6.9.LTE Band 17 (700 MHz)

Power Back-Off NOT Supported

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **709.0 MHz** (Low)	Frequency **710.0 MHz** (Middle)	Frequency **711.0 MHz** (High)
10 MHz	QPSK	1	Low	0	(0)	23.0	23.4	23.3	23.2
		1	Mid	24	(0)	23.0	23.3	23.2	23.2
		1	High	49	(0)	23.0	23.4	23.3	23.3
		25	Low	0	(1)	22.0	22.4	22.3	22.4
		25	Mid	12	(1)	22.0	22.4	22.4	22.4
		25	High	25	(1)	22.0	22.5	22.4	22.4
		50	-	0	(1)	22.0	22.3	22.4	22.5
	16QAM	1	Low	0	(1)	22.0	22.3	22.4	22.5
		1	mid	24	(1)	22.0	22.2	22.3	22.4
		1	High	49	(1)	22.0	22.3	22.5	22.5
		25	Low	0	(2)	21.0	21.4	21.3	21.4
		25	Mid	12	(2)	21.0	21.4	21.3	21.4
		25	High	25	(2)	21.0	21.5	21.4	21.4
		50	-	0	(2)	21.0	21.3	21.3	21.4

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-Off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **706.5 MHz** (Low)	Frequency **710.0 MHz** (Middle)	Frequency **713.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	23.0	Not Supported	23.3	Not Supported
		1	Mid	12	(0)	23.0		23.3	
		1	High	24	(0)	23.0		23.4	
		12	low	0	(1)	22.0		22.4	
		12	Mid	6	(1)	22.0		22.4	
		12	High	13	(1)	22.0		22.4	
		25	-	0	(1)	22.0		22.4	
	16QAM	1	Low	0	(1)	22.0		22.2	
		1	Mid	12	(1)	22.0		22.2	
		1	High	24	(1)	22.0		22.3	
		12	low	0	(2)	21.0		21.3	
		12	Mid	6	(2)	21.0		21.3	
		12	High	13	(2)	21.0		21.3	
		25	-	0	(2)	21.0		21.5	

7.7.RF Output Average Power Measurement: Wi-Fi

7.7.1.Wi-Fi 802.11b/g/n (2.4 GHz)
Power Back-Off NOT Supported

		Avg Power (dBm)	
Channel Number	**Frequency (MHZ)**	**(1Mbps)**	**Operating Mode**
1	2412.0	12.8	**802.11b**
6	2437.0	12.8	
11	2462.0	13.2	
Channel Number	**Frequency (MHZ)**	**(6Mbps)**	**Operating Mode**
1	2412.0	12.9	**802.11g**
6	2437.0	13.4	
11	2462.0	13.1	
Channel Number	**Frequency (MHZ)**	**(6.5Mbps)**	**Operating Mode**
1	2412.0	12.8	**802.11n HT20**
6	2437.0	12.6	
11	2462.0	13.0	

7.7.2.Wi-Fi802.11a/n/ac (5.0 GHz) –Sub Band 1 (5.2 GHz UNII)
Power Back-Off NOT Supported

		Avg Power (dBm)	
Channel Number	**Frequency (MHZ)**	**6 Mbps**	**Operating Mode**
36	5180.0	15.9	**802.11a**
40	5200.0	15.8	
44	5220.0	16.1	
48	5240.0	16.3	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**Operating Mode**
36	5180.0	15.8	**802.11n, HT20**
40	5200.0	16.0	
44	5220.0	15.9	
48	5240.0	16.0	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**Operating Mode**
36	5180.0	15.7	**802.11ac, VHT20**
40	5200.0	16.0	
44	5220.0	15.9	
48	5240.0	16.0	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**Operating Mode**
38	5190.0	13.7	**802.11n, HT40**
46	5230.0	14.1	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**Operating Mode**
38	5190.0	14.0	**802.11ac, VHT40**
46	5230.0	14.0	
Channel Number	**Frequency (MHZ)**	**29.3 Mbps**	**Operating Mode**
42	5210.0	13.9	**802.11ac, VHT80**

7.7.3.Wi-Fi802.11a/n/ac (5.0 GHz) –Sub Band 2 (5.3 GHz UNII)
Power Back-Off NOT Supported

		Avg Power (dBm)	
Channel Number	**Frequency (MHZ)**	**6 Mbps**	**Operating Mode**
52	5260.0	16.1	**802.11a**
56	5280.0	16.0	
60	5300.0	15.9	
64	5320.0	16.3	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**Operating Mode**
52	5260.0	16.0	**802.11n, HT20**
56	5280.0	15.8	
60	5300.0	16.1	
64	5320.0	16.1	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**Operating Mode**
52	5260.0	16.2	**802.11ac, VHT20**
56	5280.0	16.1	
60	5300.0	16.0	
64	5320.0	16.3	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**Operating Mode**
54	5270.0	13.9	**802.11n, HT40**
62	5310.0	14.1	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**Operating Mode**
54	5270.0	14.0	**802.11ac, VHT40**
62	5310.0	14.0	
Channel Number	**Frequency (MHZ)**	**29.3 Mbps**	**Operating Mode**
58	5290.0	14.0	**802.11ac, VHT80**

7.7.4.Wi-Fi802.11a/n/ac (5.0 GHz) –Sub Band 3 (5.5 GHz UNII)
Power Back-Off NOT Supported

		Avg Power (dBm)	
Channel Number	**Frequency (MHZ)**	**6 Mbps**	**Operating Mode**
100	5500.0	16.5	**802.11a**
104	5520.0	16.4	
108	5540.0	16.4	
112	5560.0	16.6	
116	5580.0	16.3	
132	5660.0	16.4	
136	5680.0	16.3	
140	5700.0	16.6	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**Operating Mode**
100	5500.0	16.1	**802.11n, HT20**
104	5520.0	16.7	
108	5540.0	16.5	
112	5560.0	16.3	
116	5580.0	16.7	
132	5660.0	16.5	
136	5680.0	16.3	
140	5700.0	16.4	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**Operating Mode**
100	5500.0	16.6	**802.11ac, VHT20**
104	5520.0	16.4	
108	5540.0	16.7	
112	5560.0	16.2	
116	5580.0	16.8	
132	5660.0	16.4	
136	5680.0	16.5	
140	5700.0	16.4	

Wi-Fi802.11a/n/ac (5.0 GHz) –Sub Band 3 (5.5 GHz UNII)
Power Back-Off NOT Supported (Continued)

Channel Number	Frequency (MHZ)	13.5 Mbps	135 Mbps	Operating Mode
102	5510.0	14.6	14.9	802.11n, HT40
110	5550.0	14.6	15.1	
134	5670.0	14.5	14.9	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**180 Mbps**	**Operating Mode**
102	5510.0	14.6	15.1	802.11ac, VHT40
110	5550.0	14.5	15.0	
134	5670.0	14.4	14.9	
Channel Number	**Frequency (MHZ)**	**29.3 Mbps**	**390 Mbps**	**Operating Mode**
106	5530.0	14.3	14.8	802.11ac, VHT80

7.7.5.Wi-Fi802.11a/n/ac (5.0 GHz) –Sub Band 4 (5.8 GHzUNII)
Power Back-Off NOT Supported

		Avg Power (dBm)	
Channel Number	**Frequency (MHZ)**	**6 Mbps**	**Operating Mode**
149	5745.0	16.1	**802.11a**
153	5765.0	16.0	
157	5785.0	15.9	
161	5805.0	16.2	
165	5825.0	16.2	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**Operating Mode**
149	5745.0	16.3	**802.11n, HT20**
153	5765.0	16.1	
157	5785.0	16.1	
161	5805.0	16.1	
165	5825.0	16.0	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**Operating Mode**
149	5745.0	15.9	**802.11ac, VHT20**
153	5765.0	16.0	
157	5785.0	16.3	
161	5805.0	16.5	
165	5825.0	16.2	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**Operating Mode**
151	5755.0	14.2	**802.11n, HT40**
159	5795.0	14.0	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**Operating Mode**
151	5755.0	14.1	**802.11ac, VHT40**
159	5795.0	14.1	
Channel Number	**Frequency (MHZ)**	**29.3 Mbps**	**Operating Mode**
155	5775.0	14.1	**802.11ac, VHT80**

7.8.RF Output Average Power Measurement: Bluetooth

7.8.1.Bluetooth (2.4 GHz)
Power Back-Off NOT Supported

		Avg Power (dBm)	
Channel Number	**Frequency (MHZ)**	**(1Mbps)**	**Operating Mode**
0	2402.0	6.1	**BR**
39	2441.0	9.3	
78	2480.0	6.5	
Channel Number	**Frequency (MHZ)**	**(2Mbps)**	**Operating Mode**
0	2402.0	4.2	**EDR**
39	2441.0	6.3	
78	2480.0	3.1	
Channel Number	**Frequency (MHZ)**	**(3Mbps)**	**Operating Mode**
0	2402.0	4.2	**EDR**
39	2441.0	6.3	
78	2480.0	3.1	
Channel Number	**Frequency (MHZ)**	**BLE (Mbps)**	**Operating Mode**
0	2402.0	2.3	**BLE**
39	2441.0	2.3	
78	2480.0	2.4	

8. System Check and Dielectric Parameters

See Appendix 5 and Appendix 6 for tables and measurements.

9. Measurements, Examinations and Derived Results

9.1. General Comments

This section contains test results only.

Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to section 5 for details of measurement uncertainties.

Prior to testing the FCC was contacted for LTE Release 10 SAR evaluations on the EUT and testing was performed as per KDB 941225 after their confirmation.

Prior to testing the FCC was contacted for Antenna Tuner SAR evaluations and testing was performed as per FCC response.

9.2. Specific Absorption Rate - Test Results
For All SAR measurement in this report the 1g-SAR limit tested to is 1.6 W/Kg

9.2.1. GSM 850 - Head - Power Back-Off Not Supported

Max Reported SAR = 0.360 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
GMSK (DTM Class 9)	0	Touch Left	190	836.6	N/A	N/A	31.6	31.3	0.178	0.191	1	1
GMSK (DTM Class 9)	0	Tilt Left	190	836.6	N/A	N/A	31.6	31.3	0.117	0.125	1	2
GMSK (DTM Class 9)	0	Touch Right	190	836.6	N/A	N/A	31.6	31.3	0.194	0.208	1	3
GMSK (DTM Class 9)	0	Tilt Right	190	836.6	N/A	N/A	31.6	31.3	0.172	0.184	1	4
GMSK (DTM Class 9)	0	Touch Right	128	824.2	N/A	N/A	31.6	31.3	0.284	0.304	1	5
GMSK (DTM Class 9)	0	Touch Right	251	848.8	N/A	N/A	31.6	31.2	0.328	0.360	1	6

Note(s):

1. DTM Multi-slot Class 9 - Tested using 2 Uplink time slots (with 1 time slots set as CS1 for GPRS and 1 time slot set for voice).

9.2.2. GSM 850 Hotspot Mode - Power Back-Off Not Supported

Max Reported SAR = 0.631 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
GMSK (DTM Class 9)	10	Front	190	836.6	N/A	N/A	31.6	31.3	0.479	0.513	1	7
GMSK (DTM Class 9)	10	Back	190	836.6	N/A	N/A	31.6	31.3	0.509	0.545	1	8
GMSK (DTM Class 9)	10	Left Hand Side	190	836.6	N/A	N/A	31.6	31.3	0.342	0.366	1	9
GMSK (DTM Class 9)	10	Right Hand Side	190	836.6	N/A	N/A	31.6	31.3	0.588	0.630	1	10
GMSK (DTM Class 9)	10	Bottom	190	836.6	N/A	N/A	31.6	31.3	0.154	0.165	1	11
GMSK (DTM Class 9)	10	Right Hand Side	128	824.2	N/A	N/A	31.6	31.3	0.589	0.631	1	12
GMSK (DTM Class 9)	10	Right Hand Side	251	848.8	N/A	N/A	31.6	31.2	0.525	0.576	1	13

Note(s):

1. DTM Multi-slot Class 9 - Tested using 2 Uplink time slots (with 1 time slots set as CS1 for GPRS and 1 time slot set for voice).

*KDB 941225 D03 - SAR is not required for GPRS and EDGE technology when the maximum average output power is lower than that measured on the corresponding DTM channels.

9.2.3. GSM 850 - Body-Worn - Power Back-Off Not Supported

Max Reported SAR = 0.490 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
GMSK (DTM Class 9)	15	Front	190	836.6	N/A	N/A	31.6	31.3	0.421	0.451	1	14
GMSK (DTM Class 9)	15	Back	190	836.6	N/A	N/A	31.6	31.3	0.427	0.458	1	15
GMSK (DTM Class 9)	15	Back	128	824.2	N/A	N/A	31.6	31.3	0.457	0.490	1	16
GMSK (DTM Class 9)	15	Back	251	848.8	N/A	N/A	31.6	31.2	0.410	0.450	1	17

Note(s):

1. DTM Multi-slot Class 9 - Tested using 2 Uplink time slots (with 1 time slots set as CS1 for GPRS and 1 time slot set for voice).

*As per 648474 D04 Handsets SAR v01r02, ‘’When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset’’. Hence, Body worn configurations were not evaluated with PHF attached.

9.2.4. PCS 1900 - Head - Power Back-Off Supported and Disabled

Max Reported SAR = 0.762 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
GMSK (DTM Class 11)	0	Touch Left	661	1880.0	N/A	N/A	27.6	26.8	0.391	0.470	1	18
GMSK (DTM Class 11)	0	Tilt Left	661	1880.0	N/A	N/A	27.6	26.8	0.151	0.182	1	19
GMSK (DTM Class 11)	0	Touch Right	661	1880.0	N/A	N/A	27.6	26.8	0.578	0.695	1	20
GMSK (DTM Class 11)	0	Tilt Right	661	1880.0	N/A	N/A	27.6	26.8	0.136	0.164	1	21
GMSK (DTM Class 11)	0	Touch Right	512	1850.2	N/A	N/A	27.6	26.8	0.612	0.736	1	22
GMSK (DTM Class 11)	0	Touch Right	810	1909.8	N/A	N/A	27.6	26.8	0.634	0.762	1	23

Note(s):

1. DTM Multi-slot Class 11 - Tested using 3 Uplink time slots (with 2 time slots set as CS1 for GPRS and 1 time slot set for voice).

9.2.5. PCS 1900 - Hotspot Mode - Power Back-Off Supported and Enabled

Max Reported SAR = 1.144 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
GMSK (Data 4 Slot)	10	Front	661	1880.0	N/A	N/A	22.5	21.3	0.619	0.816	-	24
GMSK (Data 4 Slot)	10	Front	512	1850.2	N/A	N/A	22.5	21.2	0.465	0.627	-	25
GMSK (Data 4 Slot)	10	Front	810	1909.8	N/A	N/A	22.5	21.4	0.394	0.508	-	26
GMSK (Data 4 Slot)	10	Back	661	1880.0	N/A	N/A	22.5	21.3	0.540	0.712	-	27
GMSK (Data 4 Slot)	10	Left Hand Side	661	1880.0	N/A	N/A	22.5	21.3	0.071	0.094	-	28
GMSK (Data 4 Slot)	10	Right Hand Side	661	1880.0	N/A	N/A	22.5	21.3	0.017	0.022	-	29
GMSK (Data 4 Slot)	10	Bottom	661	1880.0	N/A	N/A	22.5	21.3	0.868	1.144	-	30
GMSK (Data 4 Slot)	10	Bottom	512	1850.2	N/A	N/A	22.5	21.2	0.504	0.680	-	31
GMSK (Data 4 Slot)	10	Bottom	810	1909.8	N/A	N/A	22.5	21.4	0.724	0.933	-	32

Note(s):

*KDB 941225 D03 - SAR is not required for EDGE or DTM technology when the maximum average output power is lower than that measured on the corresponding GPRS channels.

9.2.6. PCS 1900 - Body-Worn - Power Back-Off Supported and Disabled

Max Reported SAR = 1.250 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
GMSK (DTM Class 11)	15	Front	661	1880.0	N/A	N/A	27.6	26.8	0.775	0.932	-	33
GMSK (DTM Class 11)	15	Front	512	1850.2	N/A	N/A	27.6	26.8	0.648	0.779	-	34
GMSK (DTM Class 11)	15	Front	810	1909.8	N/A	N/A	27.6	26.8	1.040	1.250	1	35
GMSK (DTM Class 11)	15	Back	661	1880.0	N/A	N/A	27.6	26.8	0.712	0.856	-	36
GMSK (DTM Class 11)	15	Back	512	1850.2	N/A	N/A	27.6	26.8	0.648	0.797	-	37
GMSK (DTM Class 11)	15	Back	810	1909.8	N/A	N/A	27.6	26.8	0.635	0.781	-	38
GMSK (DTM Class 11)	15	Front with PHF	810	1909.8	N/A	N/A	27.6	26.8	0.847	1.042	-	39

Note(s):

1. As per 865664 D01, the highest SAR measured > 0.8 W/kg has been re-measured and included in the report in section 9.3 under ***SAR Measurement Variability and Measurement Uncertainty Analysis Results*** Table.

9.2.7. UMTS FDD 2 - Head - Power Back-Off Supported and Disabled

Max Reported SAR = 0.598 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	0	Touch Left	9400	1880.0	N/A	N/A	24.0	23.8	0.212	0.222	1	40
QPSK	0	Tilt Left	9400	1880.0	N/A	N/A	24.0	23.8	0.113	0.118	1	41
QPSK	0	Touch Right	9400	1880.0	N/A	N/A	24.0	23.7	0.525	0.563	1	42
QPSK	0	Tilt Right	9400	1880.0	N/A	N/A	24.0	23.8	0.154	0.161	1	43
QPSK	0	Touch Right	9262	1852.4	N/A	N/A	24.0	23.8	0.571	0.598	1	44
QPSK	0	Touch Right	9538	1907.6	N/A	N/A	24.0	23.5	0.462	0.518	1	45

Note(s):

1. Circuit Switch (CS) - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"

9.2.8. UMTS FDD 2 - Hotspot Mode - Power Back-Off Supported and Enabled

Max Reported SAR = 1.501 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	10	Front	9400	1880.0	N/A	N/A	20.0	19.3	0.679	0.798	1	46
QPSK	10	Back	9400	1880.0	N/A	N/A	20.0	19.3	0.644	0.757	1	47
QPSK	10	Left Hand Side	9400	1880.0	N/A	N/A	20.0	19.3	0.077	0.090	1	48
QPSK	10	Right Hand Side	9400	1880.0	N/A	N/A	20.0	19.3	0.054	0.063	1	49
QPSK	10	Bottom	9400	1880.0	N/A	N/A	20.0	19.3	0.967	1.136	1	50
QPSK	10	Bottom	9262	1852.4	N/A	N/A	20.0	19.3	0.728	0.855	1	51
QPSK	10	Bottom	9538	1907.6	N/A	N/A	20.0	19.1	1.220	1.501	1, 2	52
QPSK	10	Bottom	9538	1907.6	N/A	N/A	20.0	18.6	1.070	1.477	3, 6	53
QPSK	10	Bottom	9538	1907.6	N/A	N/A	20.0	18.6	1.060	1.463	4, 6	54
QPSK	10	Bottom	9538	1907.6	N/A	N/A	20.0	18.3	0.879	1.300	5, 6	55

Note(s):

1. Circuit Switch (CS) - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's".
2. As per 865664 D01, the highest SAR measured > 0.8 W/kg has been re-measured and included in the report in section 9.3 under ***SAR Measurement Variability and Measurement Uncertainty Analysis Results*** Table.
3. Packet Switch (PS) - RMC 12.2kbps + HSDPA with Test loop mode 1 and TPC bits configured to all "1's", Sub-test 1 with Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D01.
4. Packet Switch (PS) - RMC 12.2kbps + HSUPA with Test loop mode 1 and TPC bits configured to all "1's", Sub-test 5, AG Index set to 21 and E-TFCI set to 81 with Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D01.
5. Packet Switch (PS) - RMC 12.2kbps + DC HSDPA (Cat 24) with Test loop mode 1 and TPC bits configured to all "1's", Sub-test 1 with Communication Test Set configured to allow to EUT to transmit at a maximum power as per KDB 941225 D01.
6. As per KDB 941225 D01, “SAR is measured for HSPA using additional body SAR procedures in the “Release 6 HSPA Data Devices” section of this document, on the maximum output channel with the body exposure configuration that results in the highest SAR in 12.2 kbps RMC for that RF channel”.

9.2.9. UMTS FDD 2 - Body-Worn - Power Back-Off Supported and Disabled

Max Reported SAR = 1.156 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	15	Front	9400	1880.0	N/A	N/A	24.0	23.8	1.040	1.089	-	56
QPSK	15	Front	9262	1852.4	N/A	N/A	24.0	23.7	0.939	1.006	-	57
QPSK	15	Front	9538	1907.6	N/A	N/A	24.0	23.5	1.030	1.156	-	58
QPSK	15	Back	9400	1880.0	N/A	N/A	24.0	23.8	0.958	1.003	-	59
QPSK	15	Back	9262	1852.4	N/A	N/A	24.0	23.7	0.810	0.868	-	60
QPSK	15	Back	9538	1907.6	N/A	N/A	24.0	23.5	0.928	1.041	-	61

Note(s):

1. Circuit Switch (CS) - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"

*KDB 941225 D02 - SAR is not required for RMC+HSPA or RMC+DC-HSDPA (HSDPA/HSUPA/DC-HSDPA) channels when the maximum average output power is less than ¼ dB higher than that measured on the corresponding RMC channels and 1g SAR level reported in 'RMC 12.2kbps' is <75% SAR limit.

*As per 648474 D04 Handsets SAR v01r02, ''When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset''. Hence, Body worn configurations were not evaluated with PHF attached.

9.2.10. UMTS FDD 4 Head - Power Back-Off Not Supported

Max Reported SAR = 0.885 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	0	Touch Left	1412	1732.6	N/A	N/A	24.0	23.6	0.566	0.621	1	62
QPSK	0	Tilt Left	1412	1732.6	N/A	N/A	24.0	23.6	0.361	0.396	1	63
QPSK	0	Touch Right	1412	1732.6	N/A	N/A	24.0	23.6	0.807	0.885	1, 2	64
QPSK	0	Tilt Right	1412	1732.6	N/A	N/A	24.0	23.6	0.228	0.250	1	65
QPSK	0	Touch Right	1312	1712.4	N/A	N/A	24.0	23.5	0.725	0.813	1	66
QPSK	0	Touch Right	1513	1752.6	N/A	N/A	24.0	23.6	0.798	0.875	1	67

Note(s):

1. Circuit Switch (CS) - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"
2. As per 865664 D01, the highest SAR measured > 0.8 W/kg has been re-measured and included in the report in section 9.3 under ***SAR Measurement Variability and Measurement Uncertainty Analysis Results*** Table.

9.2.11. UMTS FDD 4 - Hotspot Mode - Power Back-Off Supported and Enabled

Max Reported SAR = 0.936 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	10	Front	1412	1732.6	N/A	N/A	22.5	21.8	0.616	0.724	1	68
QPSK	10	Back	1412	1732.6	N/A	N/A	22.5	21.8	0.524	0.616	1	69
QPSK	10	Left Hand Side	1412	1732.6	N/A	N/A	22.5	21.8	0.233	0.274	1	70
QPSK	10	Right Hand Side	1412	1732.6	N/A	N/A	22.5	21.8	0.117	0.137	1	71
QPSK	10	Bottom	1412	1732.6	N/A	N/A	22.5	21.8	0.638	0.750	1	72
QPSK	10	Bottom	1312	1712.4	N/A	N/A	22.5	21.7	0.486	0.584	1	73
QPSK	10	Bottom	1513	1752.6	N/A	N/A	22.5	21.8	0.797	0.936	1, 2	74

Note(s):

1. Circuit Switch (CS) - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"

*KDB 941225 D02 - SAR is not required for RMC+HSPA or RMC+DC-HSDPA (HSDPA/HSUPA/DC-HSDPA) channels when the maximum average output power is less than ¼ dB higher than that measured on the corresponding RMC channels and 1g SAR level reported in 'RMC 12.2kbps' is <75% SAR limit.

9.2.12. UMTS FDD 4 - Body-Worn- Power Back-Off Supported and Disabled

Max Reported SAR = 0.550 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	15	Front	1412	1732.6	N/A	N/A	24.0	23.6	0.350	0.384	1	75
QPSK	15	Back	1412	1732.6	N/A	N/A	24.0	23.6	0.380	0.417	1	76
QPSK	15	Back	1312	1712.4	N/A	N/A	24.0	23.5	0.420	0.471	1	77
QPSK	15	Back	1513	1752.6	N/A	N/A	24.0	23.6	0.502	0.550	1	78

Note(s):

1. Circuit Switch (CS) - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"

*KDB 941225 D02 - SAR is not required for RMC+HSPA or RMC+DC-HSDPA (HSDPA/HSUPA/DC-HSDPA) channels when the maximum average output power is less than ¼ dB higher than that measured on the corresponding RMC channels and 1g SAR level reported in 'RMC 12.2kbps' is <75% SAR limit.

*As per 648474 D04 Handsets SAR v01r02, ''When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset''. Hence, Body worn configurations were not evaluated with PHF attached.

9.2.13. UMTS FDD 5 - Head - Power Back-Off Not Supported

Max Reported SAR = 0.407 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	0	Touch Left	4183	836.6	N/A	N/A	24.5	24.3	0.362	0.379	1	79
QPSK	0	Tilt Left	4183	836.6	N/A	N/A	24.5	24.3	0.192	0.201	1	80
QPSK	0	Touch Right	4183	836.6	N/A	N/A	24.5	24.3	0.333	0.349	1	81
QPSK	0	Tilt Right	4183	836.6	N/A	N/A	24.5	24.3	0.180	0.188	1	82
QPSK	0	Touch Left	4132	826.4	N/A	N/A	24.5	24.3	0.356	0.373	1	83
QPSK	0	Touch Left	4233	848.8	N/A	N/A	24.5	24.2	0.380	0.407	1	84

Note(s):

1. Circuit Switch (CS) - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"

9.2.14. UMTS FDD 5 - Hotspot Mode - Power Back-Off Not Supported

Max Reported SAR = 0.403 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	10	Front	4183	836.6	N/A	N/A	24.5	24.3	0.350	0.366	1	85
QPSK	10	Back	4183	836.6	N/A	N/A	24.5	24.3	0.378	0.396	1	86
QPSK	10	Left Hand Side	4183	836.6	N/A	N/A	24.5	24.3	0.278	0.291	1	87
QPSK	10	Right Hand Side	4183	836.6	N/A	N/A	24.5	24.3	0.207	0.217	1	88
QPSK	10	Bottom	4183	836.6	N/A	N/A	24.5	24.3	0.077	0.081	1	89
QPSK	10	Back	4132	826.4	N/A	N/A	24.5	24.3	0.385	0.403	1	90
QPSK	10	Back	4233	848.8	N/A	N/A	24.5	24.2	0.361	0.387	1	91

Note(s):

1. Circuit Switch (CS) - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"

*KDB 941225 D02 - SAR is not required for RMC+HSPA or RMC+DC-HSDPA (HSDPA/HSUPA/DC-HSDPA) channels when the maximum average output power is less than ¼ dB higher than that measured on the corresponding RMC channels and 1g SAR level reported in 'RMC 12.2kbps' is <75% SAR limit.

9.2.15. UMTS FDD 5 - Body-Worn - Power Back-Off Not Supported

Max Reported SAR = 0.403 (W/kg)

For body-worn configuration indicated below the test position overlap with hotspot and the power back –off was not supported meaning hotspot mode was most conservative.

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	15	Front	4183	836.6	N/A	N/A	24.5	24.3	0.350	0.366	1	85
QPSK	15	Back	4183	836.6	N/A	N/A	24.5	24.3	0.378	0.396	1	86
QPSK	15	Back	4132	826.4	N/A	N/A	24.5	24.3	0.385	0.403	1	90
QPSK	15	Back	4233	848.8	N/A	N/A	24.5	24.2	0.361	0.387	1	91

Note(s):

1. Circuit Switch (CS) - RMC 12.2kbps with Test loop mode 1 and TPC bits configured to All "1's"

*KDB 941225 D02 - SAR is not required for RMC+HSPA or RMC+DC-HSDPA (HSDPA/HSUPA/DC-HSDPA) channels when the maximum average output power is less than ¼ dB higher than that measured on the corresponding RMC channels and 1g SAR level reported in 'RMC 12.2kbps' is <75% SAR limit.

*As per 648474 D04 Handsets SAR v01r02, ''When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset''. Hence, Body worn configurations were not evaluated with PHF attached.

9.2.16. GENERAL NOTE FOR LTE SAR TESTING

As per KDB 941225 D05 SAR for LTE Devices v02r02, the following steps were followed to perform SAR evaluation Largest Channel BW

1. QPSK 1RB Allocation

Start with 1RB offset Config with the highest maximum output power on required test channel (1RB low, 1RB high or 1RB mid). If value in (1) is <0.8W/kg, testing of remaining RB offset configurations and test channels not required for 1RB

2. QPSK 50% RB Allocation

Apply steps followed in (1) for measuring 50% RB

3. QPSK 100% RB Allocation

SAR not required if highest output power from (1) and (2) is higher than 100% RB output power and if SAR Values in step (1) and (2) ≤0.8W/kg

4. 16 QAM

Apply steps (1), (2) and (3) for testing 16-QAM/64-QAM, for each configuration SAR required only when highest maximum output power for the highest order modulation (ex. 16-QAM) > QPSK by 0.5dB or when reported SAR for QPSK > 1.45W/kg

9.2.17. LTE Band 2; 20MHz Channel BW Head - Power Back-Off Supported and Disabled

Max Reported SAR = 0.508 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	0	Touch Left	18900	1880.0	1	99	24.2	23.9	0.289	0.310	-	92
QPSK	0	Touch Left	18900	1880.0	50	25	23.2	22.9	0.227	0.243	-	93
QPSK	0	Tilt Left	18900	1880.0	1	99	24.2	23.9	0.170	0.182	-	94
QPSK	0	Tilt Left	18900	1880.0	50	25	23.2	22.9	0.169	0.181	-	95
QPSK	0	Touch Right	18900	1880.0	1	99	24.2	23.9	0.415	0.445	-	96
QPSK	0	Touch Right	18900	1880.0	50	25	23.2	22.9	0.370	0.396	-	97
QPSK	0	Tilt Right	18900	1880.0	1	99	24.2	23.9	0.076	0.081	-	98
QPSK	0	Tilt Right	18900	1880.0	50	25	23.2	22.9	0.078	0.084	-	99
QPSK	0	Touch Right	18700	1860.0	1	99	24.2	23.7	0.453	0.508	-	100
QPSK	0	Touch Right	19100	1900.0	1	99	24.2	23.8	0.297	0.326	-	101

Note(s):

9.2.18. LTE Band 2; 20MHz Channel BW - Hotspot Mode – Power Back-Off Supported and Enabled

Max Reported SAR = 1.339 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	10	Front	18900	1880.0	1	99	20.0	19.7	0.733	0.785	-	102
QPSK	10	Front	18900	1880.0	50	25	20.0	19.7	0.738	0.791	-	103
QPSK	10	Back	18900	1880.0	1	99	20.0	19.7	0.680	0.729	-	104
QPSK	10	Back	18900	1880.0	50	25	20.0	19.7	0.690	0.739	-	105
QPSK	10	Left Hand Side	18900	1880.0	1	99	20.0	19.7	0.090	0.096	-	106
QPSK	10	Left Hand Side	18900	1880.0	50	25	20.0	19.7	0.086	0.092	-	107
QPSK	10	Right Hand Side	18900	1880.0	1	99	20.0	19.7	0.052	0.056	-	108
QPSK	10	Right Hand Side	18900	1880.0	50	25	20.0	19.7	0.054	0.058	-	109
QPSK	10	Bottom	18900	1880.0	1	99	20.0	19.7	1.090	1.168	-	110
QPSK	10	Bottom	18700	1860.0	1	99	20.0	19.7	0.944	1.012	-	111
QPSK	10	Bottom	19100	1900.0	1	99	20.0	19.7	1.250	1.339	1	112
QPSK	10	Bottom	18900	1880.0	50	25	20.0	19.7	1.060	1.136	-	113
QPSK	10	Bottom	18700	1860.0	50	25	20.0	19.7	0.825	0.884	-	114
QPSK	10	Bottom	19100	1900.0	50	25	20.0	19.6	1.120	1.228	-	115
QPSK	10	Bottom	19100	1900.0	1	99	20.0	19.7	1.170	1.254	-	116

Note(s):

1. As per 865664 D01, the highest SAR measured > 0.8 W/kg has been re-measured and included in the report in section 9.3 under ***SAR Measurement Variability and Measurement Uncertainty Analysis Results*** Table

9.2.19. LTE Band 2; 20MHz Channel BW - Body-Worn - Power Back-Off Supported and Disabled

Max Reported SAR = 1.316 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	15	Front	18900	1880.0	1	99	24.2	23.9	1.140	1.222	-	117
QPSK	15	Front	18700	1860.0	1	99	24.2	23.7	1.040	1.167	-	118
QPSK	15	Front	19100	1900.0	1	99	24.2	23.8	1.200	1.316	-	119
QPSK	15	Front	18900	1880.0	50	25	23.2	22.9	0.777	0.833	-	120
QPSK	15	Front	18700	1860.0	50	25	23.2	22.8	0.645	0.707	-	121
QPSK	15	Front	19100	1900.0	50	25	23.2	22.9	0.775	0.830	-	122
QPSK	15	Front	19100	1900.0	100	0	23.2	22.9	0.775	0.830	-	123
QPSK	15	Back	18900	1880.0	1	99	24.2	23.9	1.040	1.114	-	124
QPSK	15	Back	18700	1860.0	1	99	24.2	23.7	1.010	1.133	-	125
QPSK	15	Back	19100	1900.0	1	99	24.2	23.8	1.100	1.206	-	126
QPSK	15	Back	18900	1880.0	50	25	23.2	22.9	0.708	0.759	-	127
QPSK	15	Back	18700	1860.0	100	0	23.2	23.0	0.621	0.650	-	128
QPSK	15	Front with PHF	19100	1900.0	1	99	24.2	23.8	0.977	1.071	1	129

Note(s):

1. As per 648474 D04 Handsets SAR v01r02, ‘‘When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset’’.

9.2.20. LTE Band 4; 20MHz Channel BW - Head - Power Back-Off Supported and Disabled

Max Reported SAR = 0.820 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	0	Touch Left	20175	1732.5	1	49	24.3	24.0	0.507	0.543	-	130
QPSK	0	Touch Left	20175	1732.5	50	25	23.3	23.0	0.254	0.272	-	131
QPSK	0	Tilt Left	20175	1732.5	1	49	24.3	24.0	0.377	0.404	-	132
QPSK	0	Tilt Left	20175	1732.5	50	25	23.3	23.0	0.237	0.254	-	133
QPSK	0	Touch Right	20175	1732.5	1	49	24.3	24.0	0.759	0.813	-	134
QPSK	0	Touch Right	20175	1732.5	50	25	23.3	23.0	0.623	0.668	-	135
QPSK	0	Tilt Right	20175	1732.5	1	49	24.3	24.0	0.242	0.259	-	136
QPSK	0	Tilt Right	20175	1732.5	50	25	23.3	23.0	0.156	0.167	-	137
QPSK	0	Touch Right	20050	1720.0	1	49	24.3	23.9	0.720	0.789	-	138
QPSK	0	Touch Right	20300	1745.0	1	49	24.3	23.9	0.748	0.820	-	139

Note(s):

9.2.21. LTE Band 4; 20MHz Channel BW - Hotspot Mode Power Back-Off Supported and Enabled

Max Reported SAR = 0.797 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	10	Front	20175	1732.5	1	49	22.0	21.8	0.761	0.797	-	140
QPSK	10	Front	20175	1732.5	50	25	22.0	21.8	0.459	0.481	-	141
QPSK	10	Back	20175	1732.5	1	49	22.0	21.8	0.473	0.495	-	142
QPSK	10	Back	20175	1732.5	50	25	22.0	21.8	0.462	0.484	-	143
QPSK	10	Left Hand Side	20175	1732.5	1	49	22.0	21.8	0.193	0.202	-	144
QPSK	10	Left Hand Side	20175	1732.5	50	25	22.0	21.8	0.164	0.172	-	145
QPSK	10	Right Hand Side	20175	1732.5	1	49	22.0	21.8	0.170	0.178	-	146
QPSK	10	Right Hand Side	20175	1732.5	50	25	22.0	21.8	0.135	0.141	-	147
QPSK	10	Bottom	20175	1732.5	1	49	22.0	21.8	0.469	0.491	-	148
QPSK	10	Bottom	20175	1732.5	50	25	22.0	21.8	0.375	0.393	-	149
QPSK	10	Front	20050	1720.0	1	49	22.0	21.8	0.478	0.501	-	150
QPSK	10	Front	20300	1745.0	1	49	22.0	21.7	0.529	0.567	-	151

Note(s):

9.2.22. LTE Band 4; 20MHz Channel BW - Body-Worn - Power Back-Off Supported and Disabled

Max Reported SAR = 0.447 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	15	Front	20175	1732.5	1	49	24.3	24.0	0.392	0.420	-	152
QPSK	15	Front	20175	1732.5	50	25	23.3	23.0	0.210	0.225	-	153
QPSK	15	Back	20175	1732.5	1	49	24.3	24.0	0.372	0.399	-	154
QPSK	15	Back	20175	1732.5	50	25	23.3	23.0	0.194	0.208	-	155
QPSK	15	Front	20050	1720.0	1	49	24.3	23.9	0.379	0.416	-	156
QPSK	15	Front	20300	1745.0	1	49	24.3	23.9	0.408	0.447	-	157

Note(s):

*As per 648474 D04 Handsets SAR v01r02, ''When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset''. Hence, Body worn configurations were not evaluated with PHF attached.

9.2.23. LTE Band 5; 10MHz Channel BW Head - Power Back-Off Not Supported

Max Reported SAR = 0.310 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	0	Touch Left	20525	836.5	1	24	24.0	23.2	0.176	0.212	-	158
QPSK	0	Touch Left	20525	836.5	25	12	23.0	22.4	0.143	0.164	-	159
QPSK	0	Tilt Left	20525	836.5	1	24	24.0	23.4	0.090	0.103	-	160
QPSK	0	Tilt Left	20525	836.5	25	12	23.0	22.4	0.073	0.084	-	161
QPSK	0	Touch Right	20525	836.5	1	24	24.0	23.2	0.182	0.219	-	162
QPSK	0	Touch Right	20525	836.5	25	12	23.0	22.4	0.149	0.171	-	163
QPSK	0	Tilt Right	20525	836.5	1	24	24.0	23.2	0.124	0.149	-	164
QPSK	0	Tilt Right	20525	836.5	25	12	23.0	22.4	0.097	0.111	-	165
QPSK	0	Touch Right	20450	829.0	1	24	24.0	23.2	0.251	0.302	-	166
QPSK	0	Touch Right	20600	844.0	1	24	24.0	23.2	0.258	0.310	-	167

Note(s):

9.2.24. LTE Band 5; 10MHz Channel BW - Hotspot Mode Power Back-Off Not Supported

Max Reported SAR = 0.553 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	10	Front	20525	836.5	1	24	24.0	23.2	0.343	0.412	-	168
QPSK	10	Front	20525	836.5	25	12	23.0	22.4	0.332	0.381	-	169
QPSK	10	Back	20525	836.5	1	24	24.0	23.2	0.400	0.481	-	170
QPSK	10	Back	20525	836.5	25	12	23.0	22.4	0.278	0.319	-	171
QPSK	10	Left Hand Side	20525	836.5	1	24	24.0	23.2	0.254	0.305	-	172
QPSK	10	Left Hand Side	20525	836.5	25	12	23.0	22.4	0.205	0.235	-	173
QPSK	10	Right Hand Side	20525	836.5	1	24	24.0	23.2	0.449	0.540	-	174
QPSK	10	Right Hand Side	20525	836.5	25	12	23.0	22.4	0.365	0.419	-	175
QPSK	10	Bottom	20525	836.5	1	24	24.0	23.2	0.130	0.156	-	176
QPSK	10	Bottom	20525	836.5	25	12	23.0	22.4	0.106	0.122	-	177
QPSK	10	Right Hand Side	20450	829.0	1	24	24.0	23.2	0.417	0.501	-	178
QPSK	10	Right Hand Side	20600	844.0	1	24	24.0	23.2	0.460	0.553	-	179

Note(s):

9.2.25. LTE Band 5; 10MHz Channel BW - Body-Worn - Power Back-Off Not Supported

Max Reported SAR = 0.481 (W/kg)

For body-worn configuration indicated below the test position overlap with hotspot and the power back –off was not supported meaning hotspot mode was most conservative.

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	15	Front	20525	836.5	1	24	24.0	23.2	0.343	0.412	-	168
QPSK	15	Front	20525	836.5	25	12	23.0	22.4	0.332	0.381	-	169
QPSK	15	Back	20525	836.5	1	24	24.0	23.2	0.400	0.481	-	170
QPSK	15	Back	20525	836.5	25	12	23.0	22.4	0.278	0.319	-	171

Note(s):

*As per 648474 D04 Handsets SAR v01r02, ‘’When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset’’. Hence, Body worn configurations were not evaluated with PHF attached.

9.2.26. LTE Band 7; 20MHz Channel BW Head - Power Back-Off Supported and Disabled

Max Reported SAR = 0.474 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	0	Touch Left	21350	2560.0	1	99	24.5	24.4	0.463	0.474	-	180
QPSK	0	Touch Left	21350	2560.0	50	49	23.5	23.3	0.349	0.365	-	181
QPSK	0	Tilt Left	21350	2560.0	1	99	24.5	24.4	0.059	0.060	-	182
QPSK	0	Tilt Left	21350	2560.0	50	49	23.5	23.3	0.051	0.053	-	183
QPSK	0	Touch Right	21350	2560.0	1	99	24.5	24.4	0.207	0.212	-	184
QPSK	0	Touch Right	21350	2560.0	50	49	23.5	23.3	0.138	0.145	-	185
QPSK	0	Tilt Right	21350	2560.0	1	99	24.5	24.4	0.091	0.093	-	186
QPSK	0	Tilt Right	21350	2560.0	50	49	23.5	23.3	0.070	0.073	-	187
QPSK	0	Touch Left	20850	2510.0	1	99	24.5	23.8	0.334	0.392	-	188
QPSK	0	Touch Left	21100	2535.0	1	99	24.5	23.8	0.319	0.375	-	189

Note(s):

9.2.27. LTE Band 7; 20MHz Channel BW - Hotspot Mode Power Back-Off Supported and Enabled

Max Reported SAR = 1.424 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	10	Front	21350	2560.0	1	49	24.0	23.8	0.951	0.996	-	190
QPSK	10	Front	20850	2510.0	1	49	24.0	23.4	1.240	1.424	1	191
QPSK	10	Front	21100	2535.0	1	49	24.0	23.5	0.959	1.076	-	192
QPSK	10	Front	21350	2560.0	50	0	23.0	22.9	0.728	0.745	-	193
QPSK	10	Front	21350	2560.0	100	0	23.0	22.8	0.923	0.966	-	194
QPSK	10	Back	21350	2560.0	1	49	24.0	23.8	1.010	1.058	-	195
QPSK	10	Back	20850	2510.0	1	49	24.0	23.4	0.995	1.142	-	196
QPSK	10	Back	21100	2535.0	1	49	24.0	23.5	1.020	1.144	-	197
QPSK	10	Back	21350	2560.0	50	0	23.0	22.9	0.760	0.778	-	198
QPSK	10	Back	21350	2560.0	100	0	23.0	22.8	0.753	0.788	-	199
QPSK	10	Left Hand Side	21350	2560.0	1	49	24.0	23.8	0.357	0.374	-	200
QPSK	10	Left Hand Side	21350	2560.0	50	0	23.0.	22.9	0.272	0.278	-	201
QPSK	10	Right Hand Side	21350	2560.0	1	49	24.0	23.8	0.123	0.129	-	202
QPSK	10	Right Hand Side	21350	2560.0	50	0	23.0	22.9	0.102	0.104	-	203
QPSK	10	Bottom	21350	2560.0	1	49	24.0	23.8	0.779	0.816	-	204
QPSK	10	Bottom	20850	2510.0	1	49	24.0	23.4	0.784	0.900	-	205
QPSK	10	Bottom	21100	2535.0	1	49	24.0	23.5	0.751	0.843	-	206
QPSK	10	Bottom	21350	2560.0	50	0	23.0	22.9	0.552	0.565	-	207
QPSK	10	Bottom	20850	2510.0	100	0	23.0	22.5	0.599	0.672	-	208

Note(s):

9.2.28. LTE Band 7; 20MHz Channel BW - Body-Worn - Power Back-Off Supported and Disabled

Max Reported SAR = 0.577 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	15	Front	21350	2560.0	1	99	24.5	24.4	0.500	0.512	-	209
QPSK	15	Front	21350	2560.0	50	49	23.5	23.3	0.372	0.390	-	210
QPSK	15	Back	21350	2560.0	1	99	24.5	24.4	0.476	0.487	-	211
QPSK	15	Back	21350	2560.0	50	49	23.5	23.3	0.372	0.390	-	212
QPSK	15	Front	20850	2510.0	1	99	24.5	23.8	0.467	0.549	-	213
QPSK	15	Front	21100	2535.0	1	99	24.5	23.8	0.491	0.577	-	214

Note(s):

*As per 648474 D04 Handsets SAR v01r02, ‘’When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset’’. Hence, Body worn configurations were not evaluated with PHF attached.

9.2.29. LTE Band 13; 10MHz Channel BW Head - Power Back-Off Not Supported

Max Reported SAR = 0.178 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	0	Touch Left	23230	782.0	1	24	24.0	23.4	0.154	0.177	-	215
QPSK	0	Touch Left	23230	782.0	25	12	23.0	22.5	0.126	0.141	-	216
QPSK	0	Tilt Left	23230	782.0	1	24	24.0	23.4	0.090	0.103	-	217
QPSK	0	Tilt Left	23230	782.0	25	12	23.0	22.5	0.072	0.081	-	218
QPSK	0	Touch Right	23230	782.0	1	24	24.0	23.4	0.155	0.178	-	219
QPSK	0	Touch Right	23230	782.0	25	12	23.0	22.5	0.126	0.141	-	220
QPSK	0	Tilt Right	23230	782.0	1	24	24.0	23.4	0.094	0.108	-	221
QPSK	0	Tilt Right	23230	782.0	25	12	23.0	22.5	0.074	0.083	-	222

Note(s):

9.2.30. LTE Band 13; 10MHz Channel BW - Hotspot Mode Power Back-Off Not Supported

Max Reported SAR = 0.351 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	10	Front	23230	782.0	1	24	24.0	23.4	0.251	0.288	-	223
QPSK	10	Front	23230	782.0	25	12	23.0	22.5	0.207	0.232	-	224
QPSK	10	Back	23230	782.0	1	24	24.0	23.4	0.299	0.343	-	225
QPSK	10	Back	23230	782.0	25	12	23.0	22.5	0.248	0.278	-	226
QPSK	10	Left Hand Side	23230	782.0	1	24	24.0	23.4	0.302	0.347	-	227
QPSK	10	Left Hand Side	23230	782.0	25	12	23.0	22.5	0.247	0.277	-	228
QPSK	10	Right Hand Side	23230	782.0	1	24	24.0	23.4	0.306	0.351	-	229
QPSK	10	Right Hand Side	23230	782.0	25	12	23.0	22.5	0.245	0.275	-	230
QPSK	10	Bottom	23230	782.0	1	24	24.0	23.4	0.031	0.036	-	231
QPSK	10	Bottom	23230	782.0	25	12	23.0	22.5	0.028	0.031	-	232

Note(s):

9.2.31. LTE Band 13; 10MHz Channel BW - Body-Worn - Power Back-Off Not Supported

Max Reported SAR = 0.343 (W/kg)

For body-worn configuration indicated below the test position overlap with hotspot and the power back –off was not supported meaning hotspot mode was most conservative.

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	15	Front	23230	782.0	1	24	24.0	23.4	0.251	0.288	-	219
QPSK	15	Front	23230	782.0	25	12	23.0	22.5	0.207	0.232	-	220
QPSK	15	Back	23230	782.0	1	24	24.0	23.4	0.299	0.343	-	221
QPSK	15	Back	23230	782.0	25	12	23.0	22.5	0.248	0.278	-	222

Note(s):

*As per 648474 D04 Handsets SAR v01r02, ‘’When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset’’. Hence, Body worn configurations were not evaluated with PHF attached.

9.2.32. LTE Band 17; 10MHz Channel BW Head - Power Back-Off Not Supported

Max Reported SAR = 0.178 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	0	Touch Left	23780	710.0	1	49	24.0	23.4	0.155	0.178	-	233
QPSK	0	Touch Left	23780	710.0	25	25	23.0	22.5	0.158	0.177	-	234
QPSK	0	Tilt Left	23780	710.0	1	49	24.0	23.4	0.088	0.101	-	235
QPSK	0	Tilt Left	23780	710.0	25	25	23.0	22.5	0.089	0.100	-	236
QPSK	0	Touch Right	23780	710.0	1	49	24.0	23.4	0.141	0.162	-	237
QPSK	0	Touch Right	23780	710.0	25	25	23.0	22.5	0.154	0.173	-	238
QPSK	0	Tilt Right	23780	710.0	1	49	24.0	23.4	0.089	0.102	-	239
QPSK	0	Tilt Right	23780	710.0	25	25	23.0	22.5	0.082	0.092	-	240
QPSK	0	Touch Left	23790	709.0	1	49	24.0	23.3	0.131	0.154	-	241
QPSK	0	Touch Left	23800	711.0	1	49	24.0	23.3	0.124	0.146	-	242

Note(s):

9.2.33. LTE Band 17; 10MHz Channel BW - Hotspot Mode Power Back-Off Not Supported

Max Reported SAR = 0.241 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	10	Front	23780	710.0	1	49	24.0	23.4	0.210	0.241	-	243
QPSK	10	Front	23780	710.0	25	25	23.0	22.5	0.177	0.199	-	244
QPSK	10	Back	23780	710.0	1	49	24.0	23.4	0.196	0.225	-	245
QPSK	10	Back	23780	710.0	25	25	23.0	22.5	0.211	0.237	-	246
QPSK	10	Left Hand Side	23780	710.0	1	49	24.0	23.4	0.185	0.212	-	247
QPSK	10	Left Hand Side	23780	710.0	25	25	23.0	22.5	0.142	0.159	-	248
QPSK	10	Right Hand Side	23780	710.0	1	49	24.0	23.4	0.159	0.183	-	249
QPSK	10	Right Hand Side	23780	710.0	25	25	23.0	22.5	0.127	0.142	-	250
QPSK	10	Bottom	23780	710.0	1	49	24.0	23.4	0.023	0.026	-	251
QPSK	10	Bottom	23780	710.0	25	25	23.0	22.5	0.018	0.020	-	252
QPSK	10	Front	23790	709.0	1	49	24.0	23.3	0.169	0.199	-	253
QPSK	10	Front	23800	711.0	1	49	24.0	23.3	0.203	0.239	-	254

Note(s):

9.2.34. LTE Band 17; 10MHz Channel BW - Body-Worn - Power Back-Off Not Supported

Max Reported SAR = 0.241 (W/kg)

For body-worn configuration indicated below the test position overlap with hotspot and the power back –off was not supported meaning hotspot mode was most conservative.

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
QPSK	10	Front	23780	710.0	1	49	24.0	23.4	0.210	0.241	-	243
QPSK	10	Front	23780	710.0	25	25	23.0	22.5	0.177	0.199	-	244
QPSK	10	Back	23780	710.0	1	49	24.0	23.4	0.196	0.225	-	245
QPSK	10	Back	23780	710.0	25	25	23.0	22.5	0.211	0.237	-	246
QPSK	10	Front	23790	709.0	1	49	24.0	23.3	0.169	0.199	-	253
QPSK	10	Front	23800	711.0	1	49	24.0	23.3	0.203	0.239	-	254

Note(s):

*As per 648474 D04 Handsets SAR v01r02, ‘’When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset’’. Hence, Body worn configurations were not evaluated with PHF attached.

9.2.35. Wi-Fi 2.4 GHz - Head - Power Back-Off Not Supported

Max Reported SAR = 0.659 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
DBPSK (802.11g 6Mbps)	0	Touch Left	6	2436.0	N/A	N/A	13.4	13.4	0.217	0.217	-	255
DBPSK (802.11g 6Mbps)	0	Tilt Left	6	2436.0	N/A	N/A	13.4	13.4	0.218	0.218	-	256
DBPSK (802.11g 6Mbps)	0	Touch Right	6	2436.0	N/A	N/A	13.4	13.4	0.611	0.611	-	257
DBPSK (802.11g 6Mbps)	0	Tilt Right	6	2436.0	N/A	N/A	13.4	13.4	0.206	0.206	-	258
DBPSK (802.11g 6Mbps)	0	Touch Right	1	2412.0	N/A	N/A	13.4	12.9	0.587	0.659	-	259
DBPSK (802.11g 6Mbps)	0	Touch Right	11	2462.0	N/A	N/A	13.4	13.1	0.530	0.568	-	260

Note(s):

*KDB 248227 - SAR is not required for 802.11b/n channels when the maximum average output power is equal to that measured on the corresponding 802.11g channels.

9.2.36. Wi-Fi 2.4 GHz - Hotspot Mode - Power Back-Off Not Supported

Max Reported SAR = 0.077 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
DBPSK (802.11g 6Mbps)	10	Front	6	2436.0	N/A	N/A	13.4	13.4	0.021	0.021	-	261
DBPSK (802.11g 6Mbps)	10	Back	6	2436.0	N/A	N/A	13.4	13.4	0.008	0.008	-	262
DBPSK (802.11g 6Mbps)	10	Left Hand Side	6	2436.0	N/A	N/A	13.4	13.4	0.009	0.009	-	263
DBPSK (802.11g 6Mbps)	10	Top	6	2436.0	N/A	N/A	13.4	13.4	0.003	0.003	-	264
DBPSK (802.11g 6Mbps)	10	Front	1	2412.0	N/A	N/A	13.4	12.9	0.069	0.077	-	265
DBPSK (802.11g 6Mbps)	10	Front	11	2462.0	N/A	N/A	13.4	13.1	0.056	0.060	-	266

Note(s):

*KDB 248227 - SAR is not required for 802.11b/n channels when the maximum average output power is equal to that measured on the corresponding 802.11g channels.

9.2.37. Wi-Fi 2.4 GHz - Body-Worn - Power Back-Off Not Supported

Max Reported SAR = 0.077 (W/kg)

For body-worn configuration indicated below the test position overlap with hotspot and the power back –off was not supported meaning hotspot mode was most conservative.

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Separation Dist (mm)	EUT Position	Channel No.	Freq (MHz)	RB Allocation	RB Offset	Tune up limit	Meas.	Meas. Level (W/kg)	Reported SAR (W/kg)	Note(s)	Scan No.
DBPSK (802.11g 6Mbps)	10	Front	6	2436.0	N/A	N/A	13.4	13.4	0.021	0.021	-	261
DBPSK (802.11g 6Mbps)	10	Back	6	2436.0	N/A	N/A	13.4	13.4	0.008	0.008	-	262
DBPSK (802.11g 6Mbps)	10	Front	1	2412.0	N/A	N/A	13.4	12.9	0.069	0.077	-	265
DBPSK (802.11g 6Mbps)	10	Front	11	2462.0	N/A	N/A	13.4	13.1	0.056	0.060	-	266

Note(s):

*KDB 248227 - SAR is not required for 802.11b/n channels when the maximum average output power is equal to that measured on the corresponding 802.11g channels.

*As per 648474 D04 Handsets SAR v01r02, ‘’When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset’’. Hence, Body worn configurations were not evaluated with PHF attached.

9.2.38. Wi-Fi 5.0 GHz - Head - Power Back-Off Not Supported

Max Reported SAR =0.555 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Dist (mm)	Test Position	Ch No.	Freq (MHz)	RB Allocation	RB Offset	Tune-up limit	Meas.	Meas.	Scaled	Note(s)	Scan No.
BPSK (802.11a HT20 6Mbps)	0	Touch Left	48	5240.0	N/A	N/A	16.3	16.3	0.330	0.330	-	267
BPSK (802.11a HT20 6Mbps)	0	Tilt Left	48	5240.0	N/A	N/A	16.3	16.3	0.246	0.246	-	268
BPSK (802.11a HT20 6Mbps)	0	Touch Right	48	5240.0	N/A	N/A	16.3	16.3	0.455	0.455	-	269
BPSK (802.11a HT20 6Mbps)	0	Tilt Right	48	5240.0	N/A	N/A	16.3	16.3	0.207	0.207	-	270
BPSK (802.11a HT20 6Mbps)	0	Touch Right	64	5320.0	N/A	N/A	16.3	16.3	0.551	0.551	-	271
BPSK (802.11a HT20 6Mbps)	0	Touch Right	100	5500.0	N/A	N/A	16.5	16.5	0.254	0.254	-	272
BPSK (802.11a HT20 6Mbps)	0	Touch Right	165	5825.0	N/A	N/A	16.5	16.2	0.481	0.515	-	273
BPSK (802.11ac VHT40 13.5Mbps)	0	Touch Right	38	5190.0	N/A	N/A	14.3	14.0	0.197	0.211	-	274
BPSK (802.11ac VHT40 13.5Mbps)	0	Touch Right	54	5270.0	N/A	N/A	14.3	14.0	0.302	0.324	-	275
BPSK (802.11ac VHT40 13.5Mbps)	0	Touch Right	102	5510.0	N/A	N/A	14.7	14.6	0.192	0.196	-	276
BPSK (802.11ac VHT40 13.5Mbps)	0	Touch Right	151	5755.0	N/A	N/A	14.7	14.1	0.233	0.268	-	277
BPSK (802.11ac VHT80 29.3Mbps)	0	Touch Right	42	5210.0	N/A	N/A	14.2	13.9	0.362	0.388	-	278
BPSK (802.11ac VHT80 29.3Mbps)	0	Touch Right	58	5290.0	N/A	N/A	14.2	14.0	0.482	0.505	-	279
BPSK (802.11ac VHT80 29.3Mbps)	0	Touch Right	106	5530.0	N/A	N/A	14.5	14.3	0.530	0.555	-	280
BPSK (802.11ac VHT80 29.3Mbps)	0	Touch Right	155	5775.0	N/A	N/A	14.5	14.1	0.245	0.269	-	281

Note(s):

*For frequency bands with an operating range of ≤ 100 MHz, when the SAR measured for the highest output power channel within is ≤ 0.8 W/kg, SAR for the remaining channels is not required. Per KDB 447498 D01, section 4.3.3

*For frequency bands with an operating range of ≥ 200 MHz, when the SAR for the highest output power channel within is ≤ 0.4 W/kg, SAR for the remaining channels is not required. Per KDB 447498 D01, section 4.3.3

*KDB 248227 - SAR is not required for 802.11n HT20 / 802.11ac VHT20 channels as the maximum average output power is less than ¼ dB higher than 802.11a.

*KDB 248227 - SAR is not required for 802.11n HT40 channels as the maximum average output power is less than ¼ dB higher than 802.11ac VHT40.

9.2.39. Wi-Fi 5.0 GHz Hotspot Mode - Power Back-Off Not Supported

Max Reported SAR = 0.266 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Dist (mm)	Test Position	Ch No.	Freq (MHz)	RB Allocation	RB Offset	Tune-up limit	Meas.	Meas.	Scaled	Note(s)	Scan No.
BPSK (802.11a HT20 6Mbps)	10	Front	48	5240.0	N/A	N/A	16.3	16.3	0.072	0.072	-	282
BPSK (802.11a HT20 6Mbps)	10	Back	48	5240.0	N/A	N/A	16.3	16.3	0.198	0.198	-	283
BPSK (802.11a HT20 6Mbps)	10	Left Hand Side	48	5240.0	N/A	N/A	16.3	16.3	0.031	0.031	-	284
BPSK (802.11a HT20 6Mbps)	10	Top	48	5240.0	N/A	N/A	16.3	16.3	0.000	0.000	-	-
BPSK (802.11a HT20 6Mbps)	10	Back	64	5320.0	N/A	N/A	16.3	16.3	0.266	0.266	-	285
BPSK (802.11a HT20 6Mbps)	10	Back	100	5500.0	N/A	N/A	16.5	16.5	0.139	0.139	-	286
BPSK (802.11a HT20 6Mbps)	10	Back	165	5825.0	N/A	N/A	16.5	16.2	0.106	0.114	-	287
BPSK (802.11ac VHT40 13.5Mbps)	10	Back	38	5190.0	N/A	N/A	14.3	14.0	0.137	0.147	-	288
BPSK (802.11ac VHT40 13.5Mbps)	10	Back	54	5270.0	N/A	N/A	14.3	14.0	0.201	0.215	-	289
BPSK (802.11ac VHT40 13.5Mbps)	10	Back	102	5510.0	N/A	N/A	14.7	14.6	0.065	0.067	-	290
BPSK (802.11ac VHT40 13.5Mbps)	10	Back	151	5755.0	N/A	N/A	14.7	14.1	0.051	0.059	-	291
BPSK (802.11ac VHT80 29.3Mbps)	10	Back	42	5210.0	N/A	N/A	14.2	13.9	0.114	0.122	-	292
BPSK (802.11ac VHT80 29.3Mbps)	10	Back	58	5290.0	N/A	N/A	14.2	14.0	0.130	0.136	-	293
BPSK (802.11ac VHT80 29.3Mbps)	10	Back	106	5530.0	N/A	N/A	14.5	14.3	0.057	0.060	-	294
BPSK (802.11ac VHT80 29.3Mbps)	10	Back	155	5775.0	N/A	N/A	14.5	14.1	0.049	0.054	-	295

Note(s):

*For frequency bands with an operating range of ≤ 100 MHz, when the SAR measured for the highest output power channel within is ≤ 0.8 W/kg, SAR for the remaining channels is not required. Per KDB 447498 D01, section 4.3.3

*For frequency bands with an operating range of ≥ 200 MHz, when the SAR for the highest output power channel within is ≤ 0.4 W/kg, SAR for the remaining channels is not required. Per KDB 447498 D01, section 4.3.3

*KDB 248227 - SAR is not required for 802.11n HT20 / 802.11ac VHT20 channels as the maximum average output power is less than ¼ dB higher than 802.11a.

*KDB 248227 - SAR is not required for 802.11n HT40 channels as the maximum average output power is less than ¼ dB higher than 802.11ac VHT40.

9.2.40. Wi-Fi 5.0 GHz - Body-Worn - Power Back-Off Not Supported

Max Reported SAR = 0.266 (W/kg)

For body-worn configuration indicated below the test position overlap with hotspot and the power back –off was not supported meaning hotspot mode was most conservative.

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Dist (mm)	Test Position	Ch No.	Freq (MHz)	RB Allocation	RB Offset	Tune-up limit	Meas.	Meas.	Scaled	Note(s)	Scan No.
BPSK (802.11a HT20 6Mbps)	10	Front	48	5240.0	N/A	N/A	16.3	16.3	0.072	0.072	-	282
BPSK (802.11a HT20 6Mbps)	10	Back	48	5240.0	N/A	N/A	16.3	16.3	0.198	0.198	-	283
BPSK (802.11a HT20 6Mbps)	10	Back	64	5320.0	N/A	N/A	16.3	16.3	0.266	0.266	-	285
BPSK (802.11a HT20 6Mbps)	10	Back	100	5500.0	N/A	N/A	16.5	16.5	0.139	0.139	-	286
BPSK (802.11a HT20 6Mbps)	10	Back	165	5825.0	N/A	N/A	16.5	16.2	0.106	0.114	-	287
BPSK (802.11ac VHT40 13.5Mbps)	10	Back	38	5190.0	N/A	N/A	14.3	14.0	0.137	0.147	-	288
BPSK (802.11ac VHT40 13.5Mbps)	10	Back	54	5270.0	N/A	N/A	14.3	14.0	0.201	0.215	-	289
BPSK (802.11ac VHT40 13.5Mbps)	10	Back	102	5510.0	N/A	N/A	14.7	14.6	0.065	0.067	-	290
BPSK (802.11ac VHT40 13.5Mbps)	10	Back	151	5755.0	N/A	N/A	14.7	14.1	0.051	0.059	-	291
BPSK (802.11ac VHT80 29.3Mbps)	10	Back	42	5210.0	N/A	N/A	14.2	13.9	0.114	0.122	-	292
BPSK (802.11ac VHT80 29.3Mbps)	10	Back	58	5290.0	N/A	N/A	14.2	14.0	0.130	0.136	-	293
BPSK (802.11ac VHT80 29.3Mbps)	10	Back	106	5530.0	N/A	N/A	14.5	14.3	0.057	0.060	-	294
BPSK (802.11ac VHT80 29.3Mbps)	10	Back	155	5775.0	N/A	N/A	14.5	14.1	0.049	0.054	-	295

Note(s):

*For frequency bands with an operating range of ≤ 100 MHz, when the SAR measured for the highest output power channel within is ≤ 0.8 W/kg, SAR for the remaining channels is not required. Per KDB 447498 D01, section 4.3.3

*For frequency bands with an operating range of ≥ 200 MHz, when the SAR for the highest output power channel within is ≤ 0.4 W/kg, SAR for the remaining channels is not required. Per KDB 447498 D01, section 4.3.3

*KDB 248227 - SAR is not required for 802.11n HT20 / 802.11ac VHT20 channels as the maximum average output power is less than ¼ dB higher than 802.11a.

*KDB 248227 - SAR is not required for 802.11n HT40 channels as the maximum average output power is less than ¼ dB higher than 802.11ac VHT40.

9.2.41. Bluetooth – Hotspot Mode - Power Back-Off Not Supported

Max Reported SAR = 0.039 (W/kg)

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Dist (mm)	Test Position	Ch No.	Freq (MHz)	RB Allocation	RB Offset	Tune-up limit	Meas.	Meas.	Scaled	Note(s)	Scan No.
GFSK (BR 1Mbps)	10	Front	39	2441.0	N/A	N/A	10.0	9.3	0.033	0.039	-	296
GFSK (BR 1Mbps)	10	Back	39	2441.0	N/A	N/A	10.0	9.3	0.026	0.031	-	297
GFSK (BR 1Mbps)	10	Left Hand Side	39	2441.0	N/A	N/A	10.0	9.3	0.006	0.007	-	298
GFSK (BR 1Mbps)	10	Top	39	2441.0	N/A	N/A	10.0	9.3	0.000	0.000	-	299
GFSK (BR 1Mbps)	10	Front	0	2402.0	N/A	N/A	7.9	6.1	0.014	0.021	-	300
GFSK (BR 1Mbps)	10	Front	78	2480.0	N/A	N/A	7.9	6.5	0.023	0.032	-	301

9.2.42. Bluetooth - Body-Worn - Power Back-Off Not Supported

Max Reported SAR = 0.039 (W/kg)

For body-worn configuration indicated below the test position overlap with hotspot and the power back –off was not supported meaning hotspot mode was most conservative.

					For LTE Only		Power (dBm)		1g: SAR Results (W/kg)			
Mode or Modulation	Dist (mm)	Test Position	Ch No.	Freq (MHz)	RB Allocation	RB Offset	Tune-up limit	Meas.	Meas.	Scaled	Note(s)	Scan No.
GFSK (BR 1Mbps)	15	Front	39	2441.0	N/A	N/A	10.0	9.3	0.033	0.039	-	296
GFSK (BR 1Mbps)	15	Back	39	2441.0	N/A	N/A	10.0	9.3	0.026	0.031	-	297
GFSK (BR 1Mbps)	15	Front	0	2402.0	N/A	N/A	7.9	6.1	0.014	0.021	-	300
GFSK (BR 1Mbps)	15	Front	78	2480.0	N/A	N/A	7.9	6.5	0.023	0.032	-	301

9.3. SAR measurement variability and measurement uncertainty analysis:

Exposure Configuration	Technology Band	Measured 1g -SAR (W/Kg)	Equipment Class	Max Meas. Source base Avg Power [dBm]	Ratio of Largest to Smallest SAR Measured
HEAD (Separation Distance 0mm)	UMTS FDD 4	0.807	DTS	23.6	1.01
		0.797			
HOTSPOT (Separation Distance 10mm)	UMTS FDD 2	1.220	PCE	19.1	1.03
		1.190			
	LTE Band 2	1.250		19.7	1.07
		1.170			
	LTE Band 7	1.240		23.4	1.15
		1.080			
BODY-WORN (Separation Distance 15mm)	PCS1900	1.040	PCE	26.8	1.13
		0.922			

Note(s):

1. The following step below were followed as per KDB publication 865664 D01:

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

9.4. Simultaneous Transmission SAR Analysis

According to the worst case configuration Simultaneous transmission analysis of worst cases is shown in the tables below.

Overall Worst Case:

1. WWAN + WLAN 2.4 GHz
2. WWAN + WLAN 5.0 GHz
3. WWAN + WPAN
4. WPAN + WLAN 5.0 GHz
5. WWAN + WLAN 5.0 GHz + WPAN

Simultaneous Transmission SAR Analysis (Continued)

Head 1g – Worst cases measurements WWAN + WLAN 2.4GHz

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	GSM850	PCS1900	UMTS FDD 2	UMTS FDD 4	Wi-Fi	
Touch Left	0.191				0.217	0.408
Tilt Left	0.125				0.218	0.343
Touch Right	0.360				0.659	1.019
Tilt Right	0.184				0.206	0.390
Touch Left		0.470			0.217	0.687
Tilt Left		0.182			0.218	0.400
Touch Right		0.762			0.659	1.421
Tilt Right		0.164			0.206	0.370
Touch Left			0.222		0.217	0.439
Tilt Left			0.118		0.218	0.357
Touch Right			0.598		0.659	1.257
Tilt Right			0.161		0.206	0.367
Touch Left				0.621	0.217	0.838
Tilt Left				0.396	0.218	0.614
Touch Right				0.885	0.659	1.544
Tilt Right				0.250	0.206	0.456

Head 1g – Worst cases measurements WWAN + WLAN 2.4GHz

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	UMTS FDD 5	LTE Band 2	LTE Band 4	LTE Band 5	Wi-Fi	
Touch Left	0.407				0.217	0.624
Tilt Left	0.201				0.218	0.419
Touch Right	0.349				0.659	1.008
Tilt Right	0.188				0.206	0.394
Touch Left		0.310			0.217	0.527
Tilt Left		0.182			0.218	0.400
Touch Right		0.508			0.659	1.167
Tilt Right		0.084			0.206	0.290
Touch Left			0.543		0.217	0.760
Tilt Left			0.404		0.218	0.622
Touch Right			0.820		0.659	1.479
Tilt Right			0.259		0.206	0.465
Touch Left				0.212	0.217	0.429
Tilt Left				0.103	0.218	0.321
Touch Right				0.310	0.659	0.969
Tilt Right				0.149	0.206	0.355

Head 1g – Worst cases measurements WWAN + WLAN 2.4GHz

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	LTE Band 7	LTE Band 13	LTE Band 17	-	Wi-Fi	
Touch Left	0.474				0.217	0.691
Tilt Left	0.060				0.218	0.278
Touch Right	0.212				0.659	0.871
Tilt Right	0.093				0.206	0.299
Touch Left		0.177			0.217	0.394
Tilt Left		0.103			0.218	0.321
Touch Right		0.178			0.659	0.837
Tilt Right		0.108			0.206	0.314
Touch Left			0.178		0.217	0.395
Tilt Left			0.101		0.218	0.319
Touch Right			0.173		0.659	0.832
Tilt Right			0.102		0.206	0.308

Simultaneous Transmission SAR Analysis (Continued)

Hotspot Mode 1g – Worst cases measurements WWAN + WLAN 2.4GHz

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	GSM850	PCS1900	UMTS FDD 2	UMTS FDD 4	Wi-Fi 802.11b/g/n	
Front	0.513				0.077	0.590
Back	0.555				0.008	0.563
Left Hand Side	0.366				0.009	0.375
Right Hand Side	0.631					0.631
Bottom	0.165					0.165
Top					0.003	0.003
Front		0.816			0.077	0.893
Back		0.712			0.008	0.720
Left Hand Side		0.094			0.009	0.103
Right Hand Side		0.022				0.022
Bottom		1.144				1.144
Top					0.003	0.003
Front			0.798		0.077	0.875
Back			0.757		0.008	0.765
Left Hand Side			0.090		0.009	0.099
Right Hand Side			0.063			0.063
Bottom			1.501			1.501
Top					0.003	0.003
Front				0.724	0.077	0.801
Back				0.616	0.008	0.624
Left Hand Side				0.274	0.009	0.283
Right Hand Side				0.137		0.137
Bottom				0.936		0.936
Top					0.003	0.003

Simultaneous Transmission SAR Analysis (Continued)

Hotspot Mode 1g – Worst cases measurements WWAN + WLAN 2.4GHz

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	UMTS FDD 5	LTE Band 2	LTE Band 4	LTE Band 5	Wi-Fi 802.11b/g/n	
Front	0.366				0.077	0.443
Back	0.403				0.008	0.411
Left Hand Side	0.291				0.009	0.300
Right Hand Side	0.217					0.217
Bottom	0.081					0.081
Top					0.003	0.003
Front		0.791			0.077	0.868
Back		0.739			0.008	0.747
Left Hand Side		0.096			0.009	0.105
Right Hand Side		0.058				0.058
Bottom		1.339				1.339
Top					0.003	0.003
Front			0.797		0.077	0.874
Back			0.495		0.008	0.503
Left Hand Side			0.202		0.009	0.211
Right Hand Side			0.178			0.178
Bottom			0.491			0.491
Top					0.003	0.003
Front				0.412	0.077	0.489
Back				0.481	0.008	0.489
Left Hand Side				0.305	0.009	0.314
Right Hand Side				0.553		0.553
Bottom				0.156		0.156
Top					0.003	0.003

Hotspot Mode 1g – Worst cases measurements WWAN + WLAN 2.4GHz

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	LTE Band 7	LTE Band 13	LTE Band 17	-	Wi-Fi 802.11b/g/n	
Front	1.424				0.077	1.501
Back	1.144				0.008	1.152
Left Hand Side	0.374				0.009	0.383
Right Hand Side	0.129					0.129
Bottom	0.900					0.900
Top					0.003	0.003
Front		0.288			0.077	0.365
Back		0.343			0.008	0.351
Left Hand Side		0.347			0.009	0.356
Right Hand Side		0.351				0.351
Bottom		0.036				0.036
Top					0.003	0.003
Front			0.241		0.077	0.318
Back			0.237		0.008	0.245
Left Hand Side			0.212		0.009	0.221
Right Hand Side			0.183			0.183
Bottom			0.026			0.026
Top					0.003	0.003

Simultaneous Transmission SAR Analysis (Continued)

Body-worn 1g – Worst cases measurements WWAN + WLAN 2.4GHz

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	GSM850	PCS1900	UMTS FDD 2	UMTS FDD 4	Wi-Fi 802.11b/g/n	
Front	0.451				0.077	0.528
Back	0.490				0.008	0.498
Front		1.250			0.077	1.327
Back		0.856			0.008	0.864
Front			1.156		0.077	1.233
Back			1.041		0.008	1.049
Front				0.384	0.077	0.461
Back				0.550	0.008	0.558

Body-worn 1g – Worst cases measurements WWAN + WLAN 2.4GHz

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	UMTS FDD 5	LTE Band 2	LTE Band 4	LTE Band 5	Wi-Fi 802.11b/g/n	
Front	0.366				0.077	0.443
Back	0.403				0.008	0.411
Front		1.316			0.077	1.393
Back		1.206			0.008	1.214
Front			0.420		0.077	0.497
Back			0.447		0.008	0.455
Front				0.412	0.077	0.489
Back				0.481	0.008	0.489

Body-worn 1g – Worst cases measurements WWAN + WLAN 2.4GHz

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	LTE Band 7	LTE Band 13	LTE Band 17	-	Wi-Fi 802.11b/g/n	
Front	0.577				0.077	0.654
Back	0.487				0.008	0.495
Front		0.288			0.077	0.365
Back		0.343			0.008	0.351
Front			0.241		0.077	0.318
Back			0.237		0.008	0.245

Simultaneous Transmission SAR Analysis (Continued)

Head 1g – Worst cases measurements WWAN + WLAN 5.0GHz

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	GSM850	PCS1900	UMTS FDD 2	UMTS FDD 4	Wi-Fi	
Touch Left	0.191				0.330	0.521
Tilt Left	0.125				0.246	0.371
Touch Right	0.360				0.555	0.915
Tilt Right	0.184				0.207	0.391
Touch Left		0.470			0.330	0.800
Tilt Left		0.182			0.246	0.428
Touch Right		0.762			0.555	1.317
Tilt Right		0.164			0.207	0.371
Touch Left			0.222		0.330	0.552
Tilt Left			0.118		0.246	0.364
Touch Right			0.598		0.555	1.153
Tilt Right			0.161		0.207	0.368
Touch Left				0.621	0.330	0.951
Tilt Left				0.396	0.246	0.642
Touch Right				0.885	0.555	1.440
Tilt Right				0.250	0.207	0.457

Head 1g – Worst cases measurements WWAN + WLAN 5.0GHz

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	UMTS FDD 5	LTE Band 2	LTE Band 4	LTE Band 5	Wi-Fi	
Touch Left	0.407				0.330	0.737
Tilt Left	0.201				0.246	0.447
Touch Right	0.349				0.555	0.904
Tilt Right	0.188				0.207	0.395
Touch Left		0.310			0.330	0.640
Tilt Left		0.182			0.246	0.428
Touch Right		0.508			0.555	1.063
Tilt Right		0.084			0.207	0.291
Touch Left			0.543		0.330	0.873
Tilt Left			0.404		0.246	0.650
Touch Right			0.820		0.555	1.375
Tilt Right			0.259		0.207	0.466
Touch Left				0.212	0.330	0.542
Tilt Left				0.103	0.246	0.349
Touch Right				0.310	0.555	0.865
Tilt Right				0.149	0.207	0.356

Head 1g – Worst cases measurements WWAN + WLAN 5.0GHz

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	LTE Band 7	LTE Band 13	LTE Band 17		Wi-Fi	
Touch Left	0.474				0.330	0.804
Tilt Left	0.060				0.246	0.306
Touch Right	0.212				0.555	0.767
Tilt Right	0.093				0.207	0.300
Touch Left		0.177			0.330	0.507
Tilt Left		0.103			0.246	0.349
Touch Right		0.178			0.555	0.733
Tilt Right		0.108			0.207	0.315
Touch Left			0.178		0.330	0.508
Tilt Left			0.101		0.246	0.347
Touch Right			0.173		0.555	0.728
Tilt Right			0.102		0.207	0.309

Simultaneous Transmission SAR Analysis (Continued)

Hotspot Mode 1g – Worst cases measurements WWAN + WLAN 5.0GHz

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	GSM850	PCS1900	UMTS FDD 2	UMTS FDD 4	Wi-Fi 802.11a/n/ac	
Front	0.513				0.072	0.585
Back	0.555				0.266	0.821
Left Hand Side	0.366				0.031	0.397
Right Hand Side	0.631					0.631
Bottom	0.165					0.165
Top					0.000	0.000
Front		0.816			0.072	0.888
Back		0.712			0.266	0.978
Left Hand Side		0.094			0.031	0.125
Right Hand Side		0.022				0.022
Bottom		1.144				1.144
Top					0.000	0.000
Front			0.798		0.072	0.870
Back			0.757		0.266	1.023
Left Hand Side			0.090		0.031	0.121
Right Hand Side			0.063			0.063
Bottom			1.501			1.501
Top					0.000	0.000
Front				0.724	0.072	0.796
Back				0.616	0.266	0.882
Left Hand Side				0.274	0.031	0.305
Right Hand Side				0.137		0.137
Bottom				0.936		0.936
Top					0.000	0.000

Simultaneous Transmission SAR Analysis (Continued)

Hotspot Mode 1g – Worst cases measurements WWAN + WLAN 5.0GHz

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	UMTS FDD 5	LTE Band 2	LTE Band 4	LTE Band 5	Wi-Fi 802.11a/n/ac	
Front	0.366				0.072	0.438
Back	0.403				0.266	0.669
Left Hand Side	0.291				0.031	0.322
Right Hand Side	0.217					0.217
Bottom	0.081					0.081
Top					0.000	0.000
Front		0.791			0.072	0.863
Back		0.739			0.266	1.005
Left Hand Side		0.096			0.031	0.127
Right Hand Side		0.058				0.058
Bottom		1.339				1.339
Top					0.000	0.000
Front			0.797		0.072	0.869
Back			0.495		0.266	0.761
Left Hand Side			0.202		0.031	0.233
Right Hand Side			0.178			0.178
Bottom			0.491			0.491
Top					0.000	0.000
Front				0.412	0.072	0.484
Back				0.481	0.266	0.747
Left Hand Side				0.305	0.031	0.336
Right Hand Side				0.553		0.553
Bottom				0.156		0.156
Top					0.000	0.000

Hotspot Mode 1g – Worst cases measurements WWAN + WLAN 5.0GHz

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	LTE Band 7	LTE Band 13	LTE Band 17	-	Wi-Fi 802.11a/n/ac	
Front	1.424				0.072	1.496
Back	1.144				0.266	1.410
Left Hand Side	0.374				0.031	0.405
Right Hand Side	0.129					0.129
Bottom	0.900					0.900
Top					0.000	0.000
Front		0.288			0.072	0.360
Back		0.343			0.266	0.609
Left Hand Side		0.347			0.031	0.378
Right Hand Side		0.351				0.351
Bottom		0.036				0.036
Top					0.000	0.000
Front			0.241		0.072	0.313
Back			0.237		0.266	0.503
Left Hand Side			0.212		0.031	0.243
Right Hand Side			0.183			0.183
Bottom			0.026			0.026
Top					0.000	0.000

Simultaneous Transmission SAR Analysis (Continued)

Body-worn 1g – Worst cases measurements WWAN + WLAN 5.0GHz

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	GSM850	PCS1900	UMTS FDD 2	UMTS FDD 4	Wi-Fi 802.11a/n/ac	
Front	0.451				0.072	0.523
Back	0.490				0.266	0.756
Front		1.250			0.072	1.322
Back		0.856			0.266	1.122
Front			1.156		0.072	1.228
Back			1.041		0.266	1.307
Front				0.384	0.072	0.456
Back				0.550	0.266	0.816

Body-worn 1g – Worst cases measurements WWAN + WLAN 5.0GHz

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	UMTS FDD 5	LTE Band 2	LTE Band 4	LTE Band 5	Wi-Fi 802.11a/n/ac	
Front	0.366				0.072	0.438
Back	0.403				0.266	0.669
Front		1.316			0.072	1.388
Back		1.206			0.266	1.472
Front			0.420		0.072	0.492
Back			0.447		0.266	0.713
Front				0.412	0.072	0.484
Back				0.481	0.266	0.747

Body-worn 1g – Worst cases measurements WWAN + WLAN 5.0GHz

	Reported SAR 1g (W/Kg)					
	WWAN				WLAN	Sum of WWAN & WLAN
EUT Position	LTE Band 7	LTE Band 13	LTE Band 17	-	Wi-Fi 802.11a/n/ac	
Front	0.577				0.072	0.649
Back	0.487				0.266	0.753
Front		0.288			0.072	0.360
Back		0.343			0.266	0.609
Front			0.241		0.072	0.313
Back			0.237		0.266	0.503

Simultaneous Transmission SAR Analysis (Continued)

Hotspot Mode 1g – Worst cases measurements WWAN + WPAN

	Reported SAR 1g (W/Kg)					
	WWAN				WPAN	Sum of WWAN & WPAN
EUT Position	GSM850	PCS1900	UMTS FDD 2	UMTS FDD 4	*Bluetooth*	
Front	0.513				0.039	0.552
Back	0.555				0.032	0.587
Left Hand Side	0.366				0.007	0.373
Right Hand Side	0.631					0.631
Bottom	0.165					0.165
Top					0.000	0.000
Front		0.816			0.039	0.855
Back		0.712			0.032	0.744
Left Hand Side		0.094			0.007	0.101
Right Hand Side		0.022				0.022
Bottom		1.144				1.144
Top					0.000	0.000
Front			0.798		0.039	0.837
Back			0.757		0.032	0.789
Left Hand Side			0.090		0.007	0.097
Right Hand Side			0.063			0.063
Bottom			1.501			1.501
Top					0.000	0.000
Front				0.724	0.039	0.763
Back				0.616	0.032	0.648
Left Hand Side				0.274	0.007	0.281
Right Hand Side				0.137		0.137
Bottom				0.936		0.936
Top					0.000	0.000

Hotspot Mode 1g – Worst cases measurements WWAN + WPAN

	Reported SAR 1g (W/Kg)					
	WWAN				WPAN	Sum of WWAN & WPAN
EUT Position	UMTS FDD 5	LTE Band 2	LTE Band 4	LTE Band 5	*Bluetooth*	
Front	0.366				0.039	0.405
Back	0.403				0.032	0.435
Left Hand Side	0.291				0.007	0.298
Right Hand Side	0.217					0.217
Bottom	0.081					0.081
Top					0.000	0.000
Front		0.791			0.039	0.830
Back		0.739			0.032	0.771
Left Hand Side		0.096			0.007	0.103
Right Hand Side		0.058				0.058
Bottom		1.339				1.339
Top					0.000	0.000
Front			0.797		0.039	0.836
Back			0.495		0.032	0.527
Left Hand Side			0.202		0.007	0.209
Right Hand Side			0.178			0.178
Bottom			0.491			0.491
Top					0.000	0.000
Front				0.412	0.039	0.451
Back				0.481	0.032	0.513
Left Hand Side				0.305	0.007	0.312
Right Hand Side				0.553		0.553
Bottom				0.156		0.156
Top					0.000	0.000

Simultaneous Transmission SAR Analysis (Continued)

Hotspot Mode 1g – Worst cases measurements WWAN + WPAN

	Reported SAR 1g (W/Kg)					
	WWAN				WPAN	Sum of WWAN & WPAN
EUT Position	LTE Band 7	LTE Band 13	LTE Band 17	-	*Bluetooth*	
Front	1.424				0.039	1.463
Back	1.144				0.032	1.176
Left Hand Side	0.374				0.007	0.381
Right Hand Side	0.129					0.129
Bottom	0.900					0.900
Top					0.000	0.000
Front		0.288			0.039	0.327
Back		0.343			0.032	0.375
Left Hand Side		0.347			0.007	0.354
Right Hand Side		0.351				0.351
Bottom		0.036				0.036
Top					0.000	0.000
Front			0.241		0.039	0.280
Back			0.237		0.032	0.269
Left Hand Side			0.212		0.007	0.219
Right Hand Side			0.183			0.183
Bottom			0.026			0.026
Top					0.000	0.000

Simultaneous Transmission SAR Analysis (Continued)

Body-worn 1g – Worst cases measurements WWAN + WPAN

	Reported SAR 1g (W/Kg)					
	WWAN				WPAN	Sum of WWAN & WLAN
EUT Position	GSM850	PCS1900	UMTS FDD 2	UMTS FDD 4	*Bluetooth*	
Front	0.451				0.039	0.490
Back	0.490				0.032	0.522
Front		1.250			0.039	1.289
Back		0.856			0.032	0.888
Front			1.156		0.039	1.195
Back			1.041		0.032	1.073
Front				0.384	0.039	0.423
Back				0.550	0.032	0.582

Body-worn 1g – Worst cases measurements WWAN + WPAN

	Reported SAR 1g (W/Kg)					
	WWAN				WPAN	Sum of WWAN & WLAN
EUT Position	UMTS FDD 5	LTE Band 2	LTE Band 4	LTE Band 5	*Bluetooth*	
Front	0.366				0.039	0.405
Back	0.403				0.032	0.435
Front		1.316			0.039	1.355
Back		1.206			0.032	1.238
Front			0.420		0.039	0.459
Back			0.447		0.032	0.479
Front				0.412	0.039	0.451
Back				0.481	0.032	0.513

Body-worn 1g – Worst cases measurements WWAN + WPAN

	Reported SAR 1g (W/Kg)					
	WWAN				WPAN	Sum of WWAN & WLAN
EUT Position	LTE Band 7	LTE Band 13	LTE Band 17	-	*Bluetooth*	
Front	0.577				0.039	0.616
Back	0.487				0.032	0.519
Front		0.288			0.039	0.327
Back		0.343			0.032	0.375
Front			0.241		0.039	0.280
Back			0.237		0.032	0.269

Simultaneous Transmission SAR Analysis (Continued)

Hotspot Mode 1g – Worst cases measurements WWAN + WLAN 5.0GHz + WPAN

	Reported SAR 1g (W/Kg)						
	WWAN				WLAN	WPAN	Sum of WWAN, WLAN & WPAN
EUT Position	GSM850	PCS1900	UMTS FDD 2	UMTS FDD 4	Wi-Fi	*Bluetooth*	
Front	0.513				0.072	0.039	0.624
Back	0.555				0.266	0.032	0.853
Left Hand Side	0.366				0.031	0.007	0.404
Right Hand Side	0.631						0.631
Bottom	0.165						0.165
Top					0.000	0.000	0.000
Front		0.816			0.072	0.039	0.927
Back		0.712			0.266	0.032	1.010
Left Hand Side		0.094			0.031	0.007	0.132
Right Hand Side		0.022					0.022
Bottom		1.144					1.144
Top					0.000	0.000	0.000
Front			0.798		0.072	0.039	0.909
Back			0.757		0.266	0.032	1.055
Left Hand Side			0.090		0.031	0.007	0.128
Right Hand Side			0.063				0.063
Bottom			1.501				1.501
Top					0.000	0.000	0.000
Front				0.724	0.072	0.039	0.835
Back				0.616	0.266	0.032	0.914
Left Hand Side				0.274	0.031	0.007	0.312
Right Hand Side				0.137			0.137
Bottom				0.936			0.936
Top					0.000	0.000	0.000

Simultaneous Transmission SAR Analysis (Continued)

Hotspot Mode 1g – Worst cases measurements WWAN + WLAN 5.0GHz + WPAN

	Reported SAR 1g (W/Kg)						
	WWAN				WLAN	WPAN	Sum of WWAN, WLAN & WPAN
EUT Position	UMTS FDD 5	LTE Band 2	LTE Band 4	LTE Band 5	Wi-Fi	*Bluetooth*	
Front	0.366				0.072	0.039	0.477
Back	0.403				0.266	0.032	0.701
Left Hand Side	0.291				0.031	0.007	0.329
Right Hand Side	0.217						0.217
Bottom	0.081						0.081
Top					0.000	0.000	0.000
Front		0.791			0.072	0.039	0.902
Back		0.739			0.266	0.032	1.037
Left Hand Side		0.096			0.031	0.007	0.134
Right Hand Side		0.058					0.058
Bottom		1.339					1.339
Top					0.000	0.000	0.000
Front			0.797		0.072	0.039	0.908
Back			0.495		0.266	0.032	0.793
Left Hand Side			0.202		0.031	0.007	0.240
Right Hand Side			0.178				0.178
Bottom			0.491				0.491
Top					0.000	0.000	0.000
Front				0.412	0.072	0.039	0.523
Back				0.481	0.266	0.032	0.779
Left Hand Side				0.305	0.031	0.007	0.343
Right Hand Side				0.553			0.553
Bottom				0.156			0.156
Top					0.000	0.000	0.000

Hotspot Mode 1g – Worst cases measurements WWAN + WLAN 5.0GHz + WPAN

	Reported SAR 1g (W/Kg)						
	WWAN				WLAN	WPAN	Sum of WWAN, WLAN & WPAN
EUT Position	LTE Band 7	LTE Band 13	LTE Band 17	-	Wi-Fi	*Bluetooth*	
Front	1.424				0.072	0.039	1.535
Back	1.144				0.266	0.032	1.442
Left Hand Side	0.374				0.031	0.007	0.412
Right Hand Side	0.129						0.129
Bottom	0.900						0.900
Top					0.000	0.000	0.000
Front		0.288			0.072	0.039	0.399
Back		0.343			0.266	0.032	0.641
Left Hand Side		0.347			0.031	0.007	0.385
Right Hand Side		0.351					0.351
Bottom		0.036					0.036
Top					0.000	0.000	0.000
Front			0.241		0.072	0.039	0.352
Back			0.237		0.266	0.032	0.535
Left Hand Side			0.212		0.031	0.007	0.250
Right Hand Side			0.183				0.183
Bottom			0.026				0.026
Top					0.000	0.000	0.000

Simultaneous Transmission SAR Analysis (Continued)

Body-Worn 1g – Worst cases measurements WWAN + WLAN 5.0GHz + WPAN

	Reported SAR 1g (W/Kg)						
	WWAN				WLAN	WPAN	Sum of WWAN, WLAN & WPAN
EUT Position	GSM850	PCS1900	UMTS FDD 2	UMTS FDD 4	Wi-Fi 802.11b/g/n	*Bluetooth*	
Front	0.451				0.072	0.039	0.562
Back	0.490				0.266	0.032	0.788
Front		1.250			0.072	0.039	1.361
Back		0.856			0.266	0.032	1.154
Front			1.156		0.072	0.039	1.267
Back			1.003		0.266	0.032	1.301
Front				0.384	0.072	0.039	0.495
Back				0.550	0.266	0.032	0.848

Body-Worn 1g – Worst cases measurements WWAN + WLAN 5.0GHz + WPAN

	Reported SAR 1g (W/Kg)						
	WWAN				WLAN	WPAN	Sum of WWAN, WLAN & WPAN
EUT Position	UMTS FDD 5	LTE Band 2	LTE Band 4	LTE Band 5	Wi-Fi 802.11b/g/n	*Bluetooth*	
Front	0.366				0.072	0.039	0.477
Back	0.403				0.266	0.032	0.701
Front		1.316			0.072	0.039	1.427
Back		1.206			0.266	0.032	1.504
Front			0.420		0.072	0.039	0.531
Back			0.447		0.266	0.032	0.745
Front				0.412	0.072	0.039	0.523
Back				0.481	0.266	0.032	0.779

Body-Worn 1g – Worst cases measurements WWAN + WLAN 5.0GHz + WPAN

	Reported SAR 1g (W/Kg)						
	WWAN				WLAN	WPAN	Sum of WWAN, WLAN & WPAN
EUT Position	LTE Band 7	LTE Band 13	LTE Band 17	-	Wi-Fi 802.11b/g/n	*Bluetooth*	
Front	0.577				0.072	0.039	0.688
Back	0.487				0.266	0.032	0.785
Front		0.288			0.072	0.039	0.399
Back		0.343			0.266	0.032	0.641
Front			0.241		0.072	0.039	0.352
Back			0.237		0.266	0.032	0.535

Note(s):

1. The sum of reported SAR does not exceed 1.6 W/kg in any of the above cases and hence, the SAR to peak location separation ratio distance was not calculated.

Appendix 1. Test Equipment Used

UL No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
A034	Narda 20W Termination	Narda	374BNM	8706	Calibrated as part of system	-
A1097	SMA Directional Coupler	MiDISCO	MDC6223-30	None	Calibrated as part of system	-
A1137	3dB Attenuator	Narda	779	04690	Calibrated as part of system	-
A1174	Dielectric Probe Kit	Agilent Technologies	85070C	Us99360072	Calibrated before use	-
A1328	Handset Positioner	Schmid & Partner Engineering AG	Modification	SD 000 H01 DA	-	-
A1182	Handset Positioner	Schmid & Partner Engineering AG	V3.0	None	-	-
A2111	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE3	432	28 Aug 2014	12
A2110	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE3	431	18 Nov 2014	12
A1234	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE3	450	12 Nov 2014	12
A2109	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE3	417	10 Apr 2014	12
A2546	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE4	1435	12 May 2014	12
A2547	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE4	1438	12 May 2014	12
A2077	Probe	Schmid & Partner Engineering AG	EX3 DV4	3814	24 Sep 2014	12
A1185	Probe	Schmid & Partner Engineering AG	ET3 DV6	1528	16 Apr 2014	12
A1186	Probe	Schmid & Partner Engineering AG	ET3 DV6	1529	22 May 2014	12
A2243	Probe	Schmid & Partner Engineering AG	ES3 DV3	3304	02 Sept 2014	12
A2436	Probe	Schmid & Partner Engineering AG	ES3 DV3	3335	09 Jan 2015	12
A2544	Probe	Schmid & Partner Engineering AG	EX3 DV4	3994	09 May 2015	12
A2545	Probe	Schmid & Partner Engineering AG	EX3 DV4	3995	09 May 2015	12
A1985	750 MHz Dipole Kit	Schmid & Partner Engineering AG	D75V3	1011	13 Feb 2013	24
A2201	900 MHz Dipole Kit	Schmid & Partner Engineering AG	D900V2	035	20 Jan 2014	12
A1236	1800 MHz Dipole Kit	Schmid & Partner Engineering AG	D1800V2	2d009	16 Jan 2014	12
A2200	1900 MHz Dipole Kit	Schmid & Partner Engineering AG	D1900V2	537	22 Jan 2014	12
A2202	2440 MHz Dipole Kit	Schmid & Partner Engineering AG	D2440V2	701	14 Jan 2014	12
A2244	2600 MHz Dipole Kit	Schmid & Partner Engineering AG	D2600V2	1046	20 Aug 2013	12
A1377	5.0 GHz Dipole Kit	Schmid & Partner Engineering AG	D5GHzV2	1016	20 Feb 2014	12
A1497	Amplifier	Mini-Circuits	zhl-42w (sma)	e020105	Calibrated as part of system	-
A1566	SAM Phantom	Schmid & Partner Engineering AG	SAM a (Site 56)	002	Calibrated before use	-

UL No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
A1238	SAM Phantom	Schmid & Partner Engineering AG	SAM b (Site 56)	001	Calibrated before use	-
A2125	SAM Phantom	Schmid & Partner Engineering AG	SAM b (Site 57)	TP-1031	Calibrated before use	-
A2124	SAM Phantom	Schmid & Partner Engineering AG	SAM a (Site 57)	TP-1030	Calibrated before use	-
A2438	SAM Phantom	Schmid & Partner Engineering AG	SAM a	1805	Calibrated before use	-
A2551	SAM Phantom	Schmid & Partner Engineering AG	SAM a	1832	Calibrated before use	-
A2552	SAM Phantom	Schmid & Partner Engineering AG	SAM a	1836	Calibrated before use	-
A2437	Eli Phantom	Schmid & Partner Engineering AG	Eli5	1235	Calibrated before use	-
A2252	2mm Oval Phantom	Schmid & Partner Engineering AG	Eli5	1177	Calibrated before use	-
A2549	2mm Oval Phantom	Schmid & Partner Engineering AG	Eli5	00T01 DA	Calibrated before use	-
A2550	2mm Oval Phantom	Schmid & Partner Engineering AG	Eli5	00T01 DA	Calibrated before use	-
A215	20 dB Attenuator	Narda	766-20	9402	Calibrated as part of system	-
A1531	Antenna	AARONIA AG	7025	02458	-	-
A2263	Digital Camera	Samsung	PL211	9453C90B 607487L	-	-
M1015	Network Analyser	Agilent Technologies	8753ES	US39172406	04 Oct 2013	12
C1145	Cable	Rosenberger MICRO-COAX	FA147A F003003030	41843-1	Calibrated as part of system	-
C1146	Cable	Rosenberger MICRO-COAX	FA147A F030003030	41752-1	Calibrated as part of system	-
G0528	Robot Power Supply	Schmid & Partner Engineering AG	DASY4	None	Calibrated before use	-
GO591	Robot Power Supply	Schmid & Partner Engineering AG	DASY4	None	Calibrated before use	-
G0592	Robot Power Supply	Schmid & Partner Engineering AG	DASY53	None	Calibrated before use	-
G0610	Robot Power Supply	Schmid & Partner Engineering AG	DASY53	None	Calibrated before use	-
G0611	Robot Power Supply	Schmid & Partner Engineering AG	DASY53	None	Calibrated before use	-
G0612	Robot Power Supply	Schmid & Partner Engineering AG	DASY53	None	Calibrated before use	-
G087	PSU	Thurlby Thandar	CPX200	100701	Calibrated before use	-
M1047	Robot Arm	Staubli	RX908 L	F00/SD8 9A1/A/01	Calibrated before use	-
M1653	Robot Arm	Staubli	RX908 L	F01/5J8 6A1/C/01	Calibrated before use	-
M1680	Robot Arm	Staubli	TX60 L	F12/5MZ7 A1/A/01	Calibrated before use	-
M1875	Robot Arm	Staubli	TX60 L	F13/5SC6F1/A/01	Calibrated	-

UL No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
					before use	
M1876	Robot Arm	Staubli	TX60 L	F14/5T5ZA1/A/01	Calibrated before use	-
M1877	Robot Arm	Staubli	TX60 L	F14/5UA6A1/A/01	Calibrated before use	-
M1839	Signal Generator	R&S	SME06	837633/001	15 Apr 2014	-
M1838	Signal Generator	R&S	SME06	831377/005	15 Apr 2014	-
M1270	Digital Thermometer	RS	N/A	N/A	Internal Cal 06 May 2014	12
M1023	Dual Channel Power Meter	R & S	NRVD	863715/030	06 July 2013	12
S0566	SAR Lab	UL	Site 56	N/A	Calibrated before use	-
S0567	SAR Lab	UL	Site 57	N/A	Calibrated before use	-
S0568	SAR Lab	UL	Site 58	N/A	Calibrated before use	-
S0569	SAR Lab	UL	Site 59	N/A	Calibrated before use	-
S0570	SAR Lab	UL	Site 60	N/A	Calibrated before use	-
S0571	SAR Lab	UL	Site 61	N/A	Calibrated before use	-