



FCC SAR TEST REPORT

Report No.: SET2022-11891

Product: Mobile phone

Trade Name: MASON

Model No.: D450C1

FCC ID: 2AJZP-D450C1

Applicant: Mason America, Inc.

Address: 2101 4TH AVE STE 1550 SEATTLE, WA 98121-2316 , United States

Issued by: CCIC Southern Testing Co., Ltd.

Lab Location: Electronic Testing Building, No. 43 Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China.

Tel: 86 755 26627338 **Fax:** 86 755 26627238

Mail: manager@ccic-set.com **Website:** <http://www.ccic-set.com>

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Test Report

Product: Mobile phone
Model No.: D450C1
Brand Name.....: MASON
FCC ID.....: 2AJZP-D450C1
IC.....: 24360-D450C1
Applicant.....: Mason America, Inc.
Applicant Address.....: 2101 4TH AVE STE 1550 SEATTLE, WA 98121-2316 , United States
Manufacturer.....: Mason America, Inc.
Manufacturer Address: 2101 4TH AVE STE 1550 SEATTLE, WA 98121-2316 , United States

Test Standards.....: **47CFR §2.1093-** Radiofrequency Radiation Exposure Evaluation: Portable Devices;
ANSI C95.1–1992: Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.(IEEE Std C95.1-1991)
RSS-102: Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)(Issue 5 of March 2015)
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
IEC/IEEE 62209-1528:2020 Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices –Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz)

Test Result.....: Pass
Test Date.....: 2020.05.13-2022.08.27

Tested by.....: Carl Wei 2022-08-29
 Carl Wei, Test Engineer

Reviewed by.....: Chris You 2022-08-29
 Chris You, Senior Engineer

Approved by.....: Shuangwen Zhang 2022-08-29
 Shuangwen Zhang , Manager



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1. Administrative Data

1.1 Testing Laboratory

Test Site: CCIC Southern Testing Co., Ltd.

Address: Electronic Testing Building, No. 43 Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China

CNAS Lab Code: CCIC-SET is a third party testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L1659.

NVLAP Lab Code: CCIC-SET is a third party testing organization accredited by NVLAP according to ISO/IEC 17025. The accreditation certificate number is 201008-0.

FCC Registration: CCIC Southern Testing Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Designation Number: CN5031, valid time is until December 31, 2020.

ISED Registration: CCIC Southern Testing Co., Ltd.. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A-1 on Aug. 04, 2016, valid time is until December 31, 2020.

Test Environment Temperature (°C): 18 °C ~25 °C

Condition: Relative Humidity (%): 35%~75% RH

Atmospheric Pressure (kPa): 86KPa-106KPa

2. Equipment Under Test (EUT)

Identification of the Equipment under Test

Device Type:	Portable	
Exposure Category:	Population/Uncontrolled	
Sample Name:	Mobile phone	
Brand Name:	MASON	
Model Name:	D450C1	
	Support Band	WCDMA 850MHz/1900MHz/1700MHz, LTE Band 2/4/5/7/12/17/41/66/71,WIFI 2.4G/5G, BT,GPS
	Test Band	WCDMA 850MHz/1900MHz/1700MHz, LTE Band 2/4/5/7/12/17/41/66/71,WIFI 2.4G/5G, BT,GPS
	IMEI	359333095209989
	Device Class	Class B
	Multi Class	N/A
	Development Stage	Identical Prototype
General description:	Accessories	Power Supply
	Hotspot	2.4GHz WLAN support Hotspot mode
	Antenna type	Internal Antenna
	Operation mode	WCDMA / LTE /WIFI
	Modulation mode	UMTS(QPSK),LTE(QPSK,16QAM,64QAM), WIFI(OFDM/DSSS),BT(GFSK/ π /4-DQPSK/8-DPSK)
	DTM mode	Not support
	Hardware Version	H01
	Software Version	S009
	Battery options :	Capacitance:4000mAh Charge Limit:4.4V
	Max. SAR Value	Head: 0.387 W/Kg Body: 1.089 W/Kg(Limit:1.6W/Kg, 10mm distance)

NOTE:

- a. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
- b. This report is based on the SET2020-05992 report. Increase the frequency band of LTE Band 71. So SAR only needs to test LTE Band 71.



EUT testing configuration

Tested frequency range(s)	Transmitter Frequency Range	Receiver Frequency Range
UMTS Band II:	1850-1910 MHz	1930-1990 MHz
UMTS Band IV:	1710-1755 MHz	2110-2155 MHz
UMTS Band V:	824-849 MHz	869-894 MHz
LTE Band2:	1850-1910 MHz	1930-1990 MHz
LTE Band4:	1710-1755 MHz	2110-2155 MHz
LTE Band5:	824-849 MHz	869-894 MHz
LTE Band7:	2500-2570 MHz	2620-2690 MHz
LTE Band12:	698-716 MHz	728-746 MHz
LTE Band17:	704-716 MHz	734-746 MHz
LTE Band41:	2496-2690 MHz	
LTE Band66:	1710-1780 MHz	2110-2200 MHz
LTE Band71:	663-698MHz	617-652MHz
WIFI(tested):	2412-2462 MHz	
	5150-5250 MHz	
	5250-5350 MHz	
	5470-5725 MHz	
	5745-5825 MHz	
Bluetooth:	2402-2480 MHz	
Test channels(low-mid-high):	9262-9400-9538(UMTS Band II)	
	1312-1412-1513(UMTS Band IV)	
	4132-4183-4233(UMTS Band V)	
	18700-18900-19100(LTE Band 2 Bandwidth 20M)	
	20050-20175-20300(LTE Band 4 Bandwidth 20M)	
	20450-20525-20600(LTE Band 5 Bandwidth 10M)	
	20850-21100-21350(LTE Band 7 Bandwidth 10M)	
	23060-23095-23130(LTE Band 12 Bandwidth 10M)	
	23780-23790-23800(LTE Band 17 Bandwidth 10M)	
	39750-40620-41490(LTE Band 41 Bandwidth 20M)	
	27310-27460-27560(LTE Band 66 Bandwidth 20M)	
	133222-133322-133372(LTE Band 71 Bandwidth 20M)	
	1-6-11(Wi-Fi 2.4G 802.11b)	
	5190-5270-5590-5795(Wi-Fi 5G)	
	0-39-78(BT)	



3. SAR Summary

Highest Standalone SAR Summary

Exposure Position	Frequency Band	Scaled 1g-SAR(W/kg)	Highest Scaled 1g-SAR(W/kg)
Head	WCDMA Band II	0.204	0.387
	WCDMA Band IV	0.048	
	WCDMA Band V	0.221	
	LTE Band 2	0.153	
	LTE Band 4	0.052	
	LTE Band 5	0.214	
	LTE Band 7	0.098	
	LTE Band 12	0.387	
	LTE Band 17	0.124	
	LTE Band 41	0.030	
	LTE Band 66	0.057	
	LTE Band 71	0.330	
	2.4G WIFI	0.235	
	5G WIFI	0.232	
	BT	0.166	

Exposure Position	Frequency Band	Scaled 1g-SAR(W/kg)	Highest Scaled 1g-SAR(W/kg)
Body-worn (10mm Gap)	WCDMA Band II	0.564	1.089
	WCDMA Band IV	0.774	
	WCDMA Band V	0.260	
	LTE Band 2	0.564	
	LTE Band 4	0.896	
	LTE Band 5	0.229	
	LTE Band 7	0.479	
	LTE Band 12	0.505	
	LTE Band 17	0.171	
	LTE Band 41	0.151	
	LTE Band 66	1.089	
	LTE Band 71	0.542	
	2.4G WIFI	0.073	
	5G WIFI	0.047	
	BT	0.034	



Exposure Position	Frequency Band	Scaled 1g-SAR(W/kg)	Highest Scaled 1g-SAR(W/kg)
Hotspot (10mm Gap)	WCDMA Band II	0.564	1.089
	WCDMA Band IV	0.774	
	WCDMA Band V	0.260	
	LTE Band 2	0.564	
	LTE Band 4	0.896	
	LTE Band 5	0.229	
	LTE Band 7	0.737	
	LTE Band 12	0.505	
	LTE Band 17	0.171	
	LTE Band 41	0.234	
	LTE Band 66	1.089	
	LTE Band 71	0.628	
	2.4G WIFI	0.073	

Highest Simultaneous SAR Summary

Exposure Position	Frequency Band	Highest Scaled 1g-SAR(W/kg)
Hotspot (10mm Gap)	WWAN(LTE Band66)&WIFI 2.4G	1.162

4. Specific Absorption Rate (SAR)

4.1 Introduction

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

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

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

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

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

$$\text{SAR} = C \frac{\delta T}{\delta t}$$

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

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

where σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the rms electrical field strength.

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



4.2 Applicable Standards and Limits

4.2.1 Applicable Standards

47CFR §2.1093	Radiofrequency Radiation Exposure Evaluation: Portable Devices
ANSI C95.1-1992	Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.(IEEE Std C95.1-1991)
RSS-102	:Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)(Issue 5 of March 2015)
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
IEC/IEEE 62209-1528:2020	Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices –Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz)
KDB 248227 D01	v02r02 802.11 Wi-Fi SAR
KDB 447498 D01	v06 General RF Exposure Guidance
KDB 648474 D04	v01r03 Handset SAR
KDB 865664 D01	v01r04 SAR Measurement 100MHz to 6GHz
KDB 865664 D02	v01r02 SAR Exposure Reporting
KDB 941225 D01	v03r01 3G SAR Procedures
KDB 941225 D05	v02r05 SAR for LTE Devices
KDB 941225 D05A	v01r02 LTE Rel.10 KDB Inquiry Sheet
KDB 941225 D06	v02r01 Hotspot Mode

4.2.2 RF exposure Limits

Human Exposure	Uncontrolled Environment General Population
Spatial Peak SAR* (Brain/Body)	1.60 mW/g
Spatial Average SAR** (Whole Body)	0.08 mW/g
Spatial Peak SAR*** (Limbs)	4.00 mW/g

The limit applied in this test report is shown in bold letters.

Notes:

* The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time

** The Spatial Average value of the SAR averaged over the whole body.

*** The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

4.3 Phantoms

The phantom used for all tests i.e. for both system checks and device testing, was the twin-headed "SAM Phantom", manufactured by SATIMO. The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region, where shell thickness increases to 6mm).

System checking was performed using the flat section, whilst Head SAR tests used the left and right head profile sections. Body SAR testing also used the flat section between the head profiles.

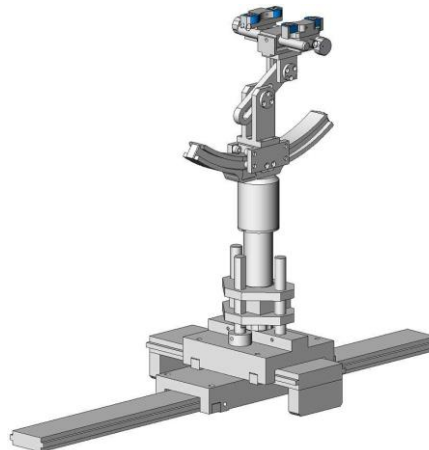


SAM Twin Phantom

4.4 Device Holder

The device was placed in the device holder (illustrated below) that is supplied by SATIMO as an integral part of the COMOSAR test system.

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



Device holder

4.5 Probe Specification

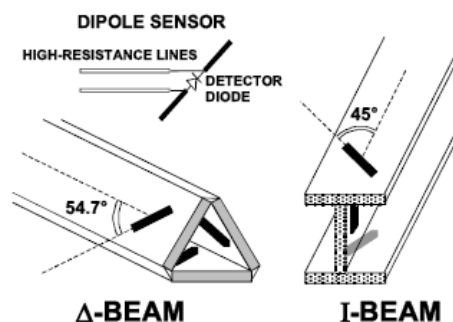


Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available.
Frequency	700 MHz to 3 GHz; Linearity: ± 0.5 dB (700 MHz to 3 GHz)
Directivity	± 0.25 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	1.5 μ W/g to 100 mW/g; Linearity: ± 0.5 dB
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 5 mm Distance from probe tip to dipole centers: <2.7 mm
Application	General dosimetry up to 3 GHz Dosimetry in strong gradient fields Compliance tests of mobile phones
Compatibility	COMOSAR

Isotropic E-Field Probe

The isotropic E-Field probe has been fully calibrated and assessed for isotropicity, and boundary effect within a controlled environment. Depending on the frequency for which the probe is calibrated the method utilized for calibration will change.

The E-Field probe utilizes a triangular sensor arrangement as detailed in the diagram below:



5. Tissue check and recommend Dielectric Parameters

5.1 Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness Power drifts in a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in P1528.

Table 1: Recommended Dielectric Performance of Tissue

Ingredients (% by weight)	Frequency (MHz)											
	450		835		915		1900		2450		2600	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	38.56	51.16	41.46	52.4	41.05	56.0	54.9	40.4	62.7	73.2	55.24	64.49
Salt (NaCl)	3.95	1.49	1.45	1.4	1.35	0.76	0.18	0.5	0.5	0.04	0.5	0.024
Sugar	56.32	46.78	56.0	45.0	56.5	41.76	0.0	58.0	0.0	0.0	0.0	0.0
HEC	0.98	0.52	1.0	1.0	1.0	1.21	0.0	1.0	0.0	0.0	0.0	0.0
Bactericide	0.19	0.05	0.1	0.1	0.1	0.27	0.0	0.1	0.0	0.0	0.0	0.0
Triton x-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.8	0.0	44.45	32.25
DGBE	0.0	0.0	0.0	0.0	0.0	0.0	44.92	0.0	0.0	26.7	0.0	26.7
Dielectric Constant	43.42	58.0	42.54	56.1	42.0	56.8	39.9	54.0	39.2	52.5	39.0	52.5
Conductivity (s/m)	0.85	0.83	0.91	0.95	1.0	1.07	1.42	1.45	1.80	1.78	1.96	2.16

MSL/HSL750 (Body and Head liquid for 650 – 850 MHz)

Item	Head Tissue Simulation Liquid HSL750 Muscle(body)Tissue Simulation Liquid MSL750			
H2O	Water, 35 – 58%			
Sucrose	Sugar, white, refined, 40-60%			
NaCl	Sodium Chloride, 0-6%			
Hydroxyethyl-cellulose	Medium Viscosity (CAS# 9004-62-0), <0.3%			
Preventol-D7	Preservative: aqueous preparation, (CAS# 55965-84-9), containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyl-3(2H)-isothiazolone, 0.1-0.7%			
Frequency (MHz)	Head ϵ_r	Head σ (S/m)	Body ϵ_r	Body σ (S/m)
750	41.9	0.89	55.2	0.97

Note: The liquid of 700MHz&2600MHz typical liquid composition is provided by SATIMO.

Frequency:5200/5400/5600/5800MHz	
Ingredients	(% by weight)
Water	78
Mineral oil	11
Emulsifiers	9
Additives and Salt	2

Table 2 Recommended Tissue Dielectric Parameters

Frequency (MHz)	Head Tissue		Body Tissue	
	ϵ_r	σ (S/m)	ϵ_r	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800-2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5800	35.3	5.27	48.2	6.00

5.2 Simulate liquid

Table 3: Dielectric Performance of Head Tissue Simulating Liquid

Temperature: 23.2 °C; Humidity: 64%;			
/	Frequency	Permittivity ϵ	Conductivity σ (S/m)
Target value	750MHz	41.9 \pm 5%	0.89 \pm 5%
Validation value (2020-05-13)	700MHz	41.89	0.88
	704MHz	41.89	0.89
	707.5MHz	41.88	0.90
	709MHz	41.88	0.90
	710MHz	41.88	0.90
	711MHz	41.88	0.90
	720MHz	41.90	0.89
750MHz	41.87	0.90	
Target value	835MHz	41.5 \pm 5%	0.90 \pm 5%
Validation value (2020-05-14)	825MHz	41.54	0.93
	826MHz	41.54	0.93
	835MHz	41.53	0.92
	836MHz	41.53	0.92
	845MHz	41.52	0.91
	846MHz	41.52	0.91
Target value	1800MHz	40.5 \pm 5%	1.40 \pm 5%
Validation value (2020-05-16)	1710MHz	40.49	1.40
	1712.4MHz	40.49	1.40
	1730MHz	40.52	1.41
	1732.4MHz	40.52	1.41
	1750MHz	40.50	1.41
	1752.6MHz	40.50	1.41
	1780MHz	40.52	1.39
	1800MHz	40.51	1.41
Target value	1900MHz	40.5 \pm 5%	1.40 \pm 5%
Validation value (2020-05-17)	1850MHz	40.47	1.38
	1852.4MHz	40.47	1.38
	1880MHz	40.48	1.40
	1900MHz	40.46	1.40
	1907.6MHz	40.46	1.40
	1910MHz	40.49	1.39
Target value	2450MHz	39.2 \pm 5%	1.80 \pm 5%
Validation value (2020-05-18)	2402MHz	39.23	1.85
	2410MHz	39.23	1.84
	2412 MHz	39.23	1.84
	2437MHz	39.22	1.83
	2440MHz	39.22	1.83



	2441MHz	39.22	1.83
	2450MHz	39.24	1.83
	2460MHz	39.23	1.82
	2462MHz	39.23	1.82
	2480MHz	39.21	1.81
Target value	2600MHz	39.0±5%	1.96±5%
Validation value (2020-05-18)	2500MHz	39.02	1.97
	2506MHz	39.02	1.97
	2535MHz	39.01	1.96
	2560MHz	39.03	1.98
	2593MHz	39.00	1.96
	2600MHz	39.00	1.96
	2690MHz	38.87	1.95
Target value	5200MHz	36.0±5%	4.66±5%
Validation value (2020-05-19)	5190MHz	36.01	4.68
	5200MHz	36.01	4.67
	5260MHz	36.01	4.67
Target value	5400MHz	35.8±5%	4.86±5%
Validation value (2020-05-19)	5400MHz	35.78	4.85
Target value	5600MHz	35.5±5%	5.07±5%
Validation value (2020-05-19)	5600MHz	35.52	5.08
	5700 MHz	35.52	5.05
Target value	5800MHz	35.3±5%	5.27±5%
Validation value (2020-05-19)	5745MHz	35.30	5.29
	5800MHz	35.30	5.27

Dielectric Performance of Body Tissue Simulating Liquid

Temperature: 23.2 °C; Humidity: 64%;			
/	Frequency	Permittivity ε	Conductivity σ (S/m)
Target value	750MHz	55.5±5%	0.96±5%
Validation value (2020-05-13)	700MHz	55.48	0.97
	704MHz	55.48	0.97
	707.5MHz	55.50	0.95
	709MHz	55.50	0.95
	710MHz	55.50	0.95
	711MHz	55.50	0.95
	720MHz	55.51	0.96
	750MHz	55.49	0.95
Target value	835MHz	55.2±5%	0.97±5%
Validation value	825MHz	55.22	0.99
	826MHz	55.22	0.99



(2020-05-14)	835MHz	55.20	0.97
	836MHz	55.20	0.97
	845MHz	55.21	0.98
	846MHz	55.21	0.98
Target value	1800MHz	53.3 ±5%	1.52 ±5%
Validation value (2020-05-16)	1710MHz	53.32	1.51
	1712.4MHz	53.32	1.51
	1730MHz	53.31	1.54
	1732.4MHz	53.31	1.54
	1750MHz	53.32	1.54
	1752.6MHz	53.32	1.54
	1780MHz	53.30	1.52
	1800MHz	53.33	1.54
Target value	1900MHz	53.3 ±5%	1.52 ±5%
Validation value (2020-05-17)	1850MHz	53.30	1.52
	1852.4MHz	53.30	1.52
	1880MHz	53.29	1.50
	1900MHz	53.27	1.50
	1907.6MHz	53.28	1.51
	1910MHz	53.28	1.51
Target value	2450MHz	52.7 ±5%	1.95 ±5%
Validation value (2020-05-18)	2402MHz	52.73	1.98
	2410MHz	52.73	1.98
	2412 MHz	52.73	1.98
	2437MHz	52.71	1.97
	2440MHz	52.71	1.97
	2441MHz	52.72	1.97
	2450MHz	52.72	1.98
	2460MHz	52.74	1.99
	2462MHz	52.74	1.99
	2480MHz	52.72	1.96
Target value	2600MHz	52.5 ±5%	2.16 ±5%
Validation value (2020-05-18)	2500MHz	52.52	2.17
	2506MHz	52.52	2.17
	2535MHz	52.51	2.16
	2560MHz	52.53	2.18
	2593MHz	52.50	2.16
	2600MHz	52.50	2.16
	2680MHz	52.47	2.15
	2690MHz	52.47	2.15
Target value	5200MHz	49.0 ±5%	5.30 ±5%
Validation value (2020-05-19)	5190MHz	49.03	5.31
	5200MHz	49.03	5.31
	5260MHz	49.03	5.30



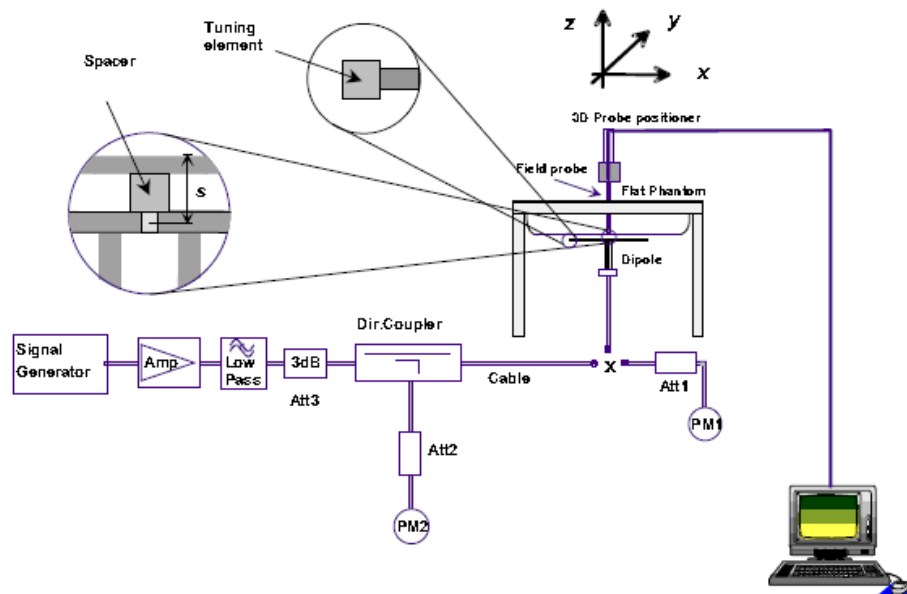
Target value	5400MHz	48.7±5%	5.53±5%
Validation value (2020-05-19)	5400MHz	48.74	5.56
Target value	5600MHz	48.5±5%	5.77±5%
Validation value (2020-05-19)	5600MHz	48.53	5.78
	5700MHz	48.53	5.77
Target value	5800MHz	48.2±5%	6.0±5%
Validation value (2020-05-19)	5745 MHz	48.20	6.02
	5800MHz	48.20	6.00

Temperature: 22.9 °C			
/	Frequency	Permittivity ϵ	Conductivity σ (S/m)
Target value	750MHz	41.9±5%	0.89±5%
Validation value (2022-08-27)	673MHz	42.26	0.88
	683MHz	42.31	0.90
	688MHz	42.28	0.89
	750MHz	42.12	0.90

SAR System validation

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

The following procedure, recommended for performing validation tests using box phantoms is based on the procedures described in the IEEE standard P1528. Setup according to the setup diagram below:



With the SG and Amp and with directional coupler in place, set up the source signal at the relevant frequency and use a power meter to measure the power at the end of the SMA cable that you intend to connect to the balanced dipole. Adjust the SG to make this, say, 0.01W (10 dBm). If this level is too high to read directly with the power meter sensor, insert a calibrated attenuator (e.g. 10 or 20 dB) and make a suitable correction to the power meter reading.

Note 1: In this method, the directional coupler is used for monitoring rather than setting the exact feed power level.

If, however, the directional coupler is used for power measurement, you should check the frequency range and power rating of the coupler and measure the coupling factor (referred to output) at the test frequency using a VNA.

Note 2: Remember that the use of a 3dB attenuator (as shown in Figure 8.1 of P1528) means that you need an RF amplifier of 2 times greater power for the same feed power. The other issue is the cable length. You might get up to 1dB of loss per meter of cable, so the cable length after the coupler needs to be quite short.

Note 3: For the validation testing done using CW signals, most power meters are suitable. However, if you are measuring the output of a modulated signal from either a signal generator or a handset, you must ensure that the power meter correctly reads the modulated signals.

The measured 1-gram averaged SAR values of the device against the phantom are provided in Tables 5 and Table 6. The humidity and ambient temperature of test facility were 64% and 23.2 °C respectively. The body phantom were full of the body tissue simulating liquid. The EUT was supplied with full-charged battery for each measurement.

The distance between the back of the EUT and the bottom of the flat phantom is 10 mm (taking into account of the IEEE 1528 and the place of the antenna).

Table 4: Head SAR system validation (1g)

Frequency	Duty cycle	Target value (W/kg)	Test value (W/kg)	
			10 mW	1W
750MHz(2020-05-13)	1:1	8.62±10%	0.0804	8.04
835MHz(2020-05-14)	1:1	9.61±10%	0.0987	9.87
1800MHz(2020-05-16)	1:1	37.35±10%	0.4060	40.60
1900MHz(2020-05-17)	1:1	39.35±10%	0.3733	37.33
2450MHz(2020-05-18)	1:1	52.67±10%	0.5016	50.16
2600MHz(2020-05-18)	1:1	55.47±10%	0.5138	51.38
5200MHz(2020-05-19)	1:1	164.1±10%	1.7267	172.67
5400MHz(2020-05-19)	1:1	171.25±10%	1.8611	186.11
5600MHz(2020-05-19)	1:1	178.98±10%	1.7960	179.60
5800MHz(2020-05-19)	1:1	185.54±10%	1.8463	184.63

Body SAR system validation (1g)

Frequency	Duty cycle	Target value (W/kg)	Test value (W/kg)	
			10 mW	1W
750MHz(2020-05-13)	1:1	8.68±10%	0.0911	9.11
835MHz(2020-05-14)	1:1	9.88±10%	0.1037	10.37
1800MHz(2020-05-16)	1:1	37.68±10%	0.4032	40.32
1900MHz(2020-05-17)	1:1	38.84±10%	0.4026	40.26
2450MHz(2020-05-18)	1:1	51.42±10%	0.5466	54.66
2600MHz(2020-05-18)	1:1	53.45±10%	0.5633	56.33
5200MHz(2020-05-19)	1:1	155.78±10%	1.7123	171.23
5400MHz(2020-05-19)	1:1	160.24±10%	1.7536	175.36
5600MHz(2020-05-19)	1:1	167.61±10%	1.6871	168.71
5800MHz(2020-05-19)	1:1	170.49±10%	1.7795	177.95

Head SAR system validation (1g)

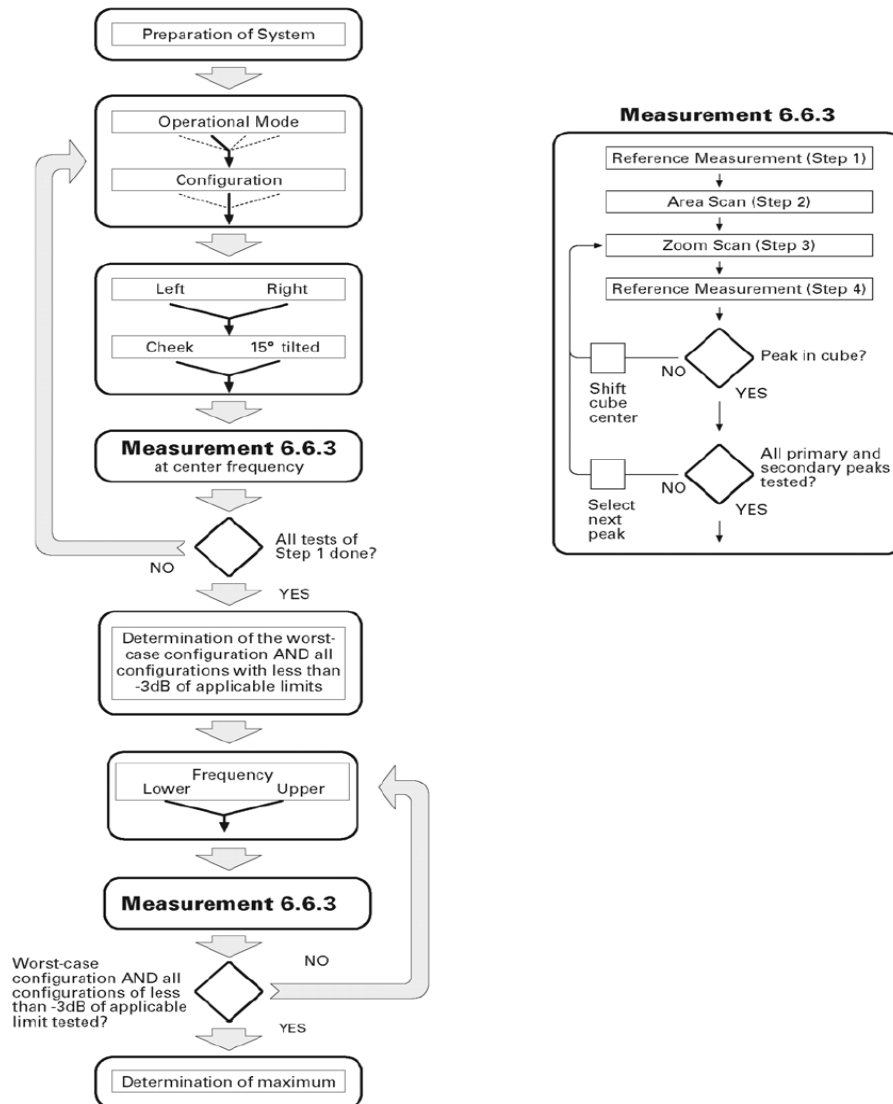
Frequency	Duty cycle	Target value (W/kg)	Test value (W/kg)	
			10 mW	1W
750MHz(2022-08-27)	1:1	8.73 W/kg±10% (7.857~9.603)	0.0858	8.58

* Note: Target value was referring to the measured value in the calibration certificate of reference dipole.

Note: All SAR values are normalized to 1W forward power.

6. SAR measurement procedure

The SAR test against the head phantom was carried out as follow:



Establish a call with the maximum output power with a base station simulator, the connection between the EUT and the base station simulator is established via air interface.

After an area scan has been done at a fixed distance of 2mm from the surface of the phantom on the source side, a 3D scan is set up around the location of the maximum spot SAR. First, a point within the scan area is visited by the probe and a SAR reading taken at the start of testing. At the end of testing, the probe is returned to the same point and a second reading is taken. Comparison between these start and end readings enables the power drift during measurement to be assessed.

Above is the scanning procedure flow chart and table from the IEEE p1528 standard. This is the procedure for which all compliant testing should be carried out to ensure that all variations of the device position and transmission behavior are tested.

7. Conducted RF Output Power

7.1 WCDMA Conducted output Power

UMTS1900 (Band II)		Average Power (dBm)		
		9262CH	9400CH	9538cH
WCDMA	12.2kbps RMC	23.21	23.29	23.2
HSDPA	Subtest 1	23.13	23.2	23.09
	Subtest 2	23.02	23.12	22.98
	Subtest 3	22.94	23.01	22.87
	Subtest 4	22.83	22.92	22.79
HSUPA	Subtest 1	22.74	22.81	22.67
	Subtest 2	22.61	22.7	22.58
	Subtest 3	22.52	22.61	22.49
	Subtest 4	22.45	22.53	22.37
	Subtest 5	22.34	22.44	22.26
UMTS1700 (Band IV)		Average Power (dBm)		
		1313CH	1413CH	1513CH
WCDMA	12.2kbps RMC	22.71	22.82	22.76
HSDPA	Subtest 1	22.63	22.74	22.68
	Subtest 2	22.52	22.66	22.55
	Subtest 3	22.43	22.55	22.46
	Subtest 4	22.31	22.43	22.37
HSUPA	Subtest 1	22.23	22.34	22.28
	Subtest 2	22.12	22.25	22.16
	Subtest 3	22.03	22.17	22.07
	Subtest 4	21.92	22.06	21.98
	Subtest 5	22.71	22.82	22.76
UMTS850 (Band V)		Average Power (dBm)		
		4132CH	4183CH	4233CH
WCDMA	12.2kbps RMC	22.43	22.5	22.48
HSDPA	Subtest 1	22.33	22.41	22.37
	Subtest 2	22.24	22.32	22.29
	Subtest 3	22.12	22.21	22.17
	Subtest 4	22.03	22.1	22.08
HSUPA	Subtest 1	21.95	22.02	21.97
	Subtest 2	21.81	21.89	21.86
	Subtest 3	21.72	21.8	21.78
	Subtest 4	21.6	21.71	21.67
	Subtest 5	21.49	21.62	21.6

Note:

- WCDMA SAR was tested under RMC 12.2kbps with HSPA Inactive per KDB Publication 941225 D01v03r01. HSPA SAR was not required since the average output power of the HSPA subtests was not more than 0.25dB higher than the RMC level and SAR was less than 1.2W/kg.

2. It is expected by the manufacturer that MPR for some HSPA subtests may be up to 2dB more than specified by 3GPP, but also as low as 0dB according to the chipset implementation in this model

7.2 LTE Conducted peak output Power

LTE Test Configurations

The CMW500 Wide Band Radio Communication Tester was used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR test were performed with the same number of RB and RB offsets transmitting on all frames.

1) Spectrum Plots for RB configurations

A properly configured base station simulator was used for LTE output power measurements and SAR testing. Therefore, spectrum plots for RB configurations were not required to be included in this report.

2) MPR

When MPR is implemented permanently within the UE, regardless of network requirements, only those RB configurations allowed by 3GPP for the channel bandwidth and modulation combinations may be tested with MPR active. Configurations with RB allocations less than the RB thresholds required by 3GPP must be tested without MPR.

The allowed Maximum Power Reduction(MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101:

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

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

3)A-MPR LTE procedures for SAR testing

A-MPR(Additional MPR) has been disabled for all SAR tests by using Network Signaling Value of “NS_01” on the base station simulator.

4)LTE procedures for SAR testing

A) Largest channel bandwidth standalone SAR test

requirements i) QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is $\leq 0.8\text{W/kg}$, testing of the remaining RB offset configurations and required test channels is not required for 1RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is $> 1.45\text{W/kg}$, SAR is required for all three RB offset configurations for that required test channel.



The priority Main Antenna:

1. LTE Band 2 Conducted Power Test Verdict:

LTE FDD Band 2				Conducted Power(dBm)			Tune up
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			
				18607/1850.7	18900/1880	19193/1909.3	
1.4MHz	QPSK	1	0	21.22	21.38	21.2	20.5±1.0
		1	3	21.16	21.18	21.09	
		1	5	21.03	21.3	21.19	
		3	0	20.89	21.06	20.94	20.5±1.0
		3	2	20.74	20.93	20.92	
		3	3	20.75	20.99	20.81	
	6	0	20.47	20.73	20.55	20.0±1.0	
	16QAM	1	0	20	20.17	19.95	19.5±1.0
		1	3	19.94	19.97	19.84	
		1	5	19.81	20.09	19.94	
		3	0	19.67	19.85	19.69	19.5±1.0
		3	2	19.52	19.72	19.67	
		3	3	19.53	19.78	19.56	
	6	0	19.25	19.52	19.3	19.0±1.0	
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
3MHz	QPSK	1	0	21.29	21.43	21.28	20.5±1.0
		1	7	21.23	21.23	21.17	
		1	14	21.1	21.35	21.27	
		8	0	20.96	21.11	21.02	20.5±1.0
		8	4	20.81	20.98	21	
		8	7	20.82	21.04	20.89	
	15	0	20.54	20.78	20.63	20.0±1.0	
	16QAM	1	0	20.07	20.22	20.03	19.5±1.0
		1	7	20.01	20.02	19.92	
		1	14	19.88	20.14	20.02	
		8	0	19.74	19.9	19.77	19.5±1.0
		8	4	19.59	19.77	19.75	
		8	7	19.6	19.83	19.64	
	15	0	19.32	19.57	19.38	19.0±1.0	



LTE FDD Band 2				Conducted Power(dBm)			Tune up
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			
				18625/1852.5	18900/1880	19175/1907.5	
5MHz	QPSK	1	0	21.34	21.46	21.32	20.5±1.0
		1	13	21.28	21.26	21.21	
		1	24	21.15	21.38	21.31	
		12	0	21.01	21.14	21.06	20.5±1.0
		12	6	20.86	21.01	21.04	
		12	13	20.87	21.07	20.93	
	25	0	20.59	20.81	20.67	20.0±1.0	
	16QAM	1	0	20.12	20.25	20.07	19.5±1.0
		1	13	20.06	20.05	19.96	
		1	24	19.93	20.17	20.06	
		12	0	19.79	19.93	19.81	19.5±1.0
		12	6	19.64	19.8	19.79	
		12	13	19.65	19.86	19.68	
		25	0	19.37	19.6	19.42	19.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
10MHz	QPSK	1	0	21.39	21.49	21.36	20.5±1.0
		1	25	21.33	21.29	21.25	
		1	49	21.2	21.41	21.35	
		25	0	21.06	21.17	21.1	20.5±1.0
		25	13	20.91	21.04	21.08	
		25	25	20.92	21.1	20.97	
	50	0	20.64	20.84	20.71	20.0±1.0	
	16QAM	1	0	20.17	20.28	20.11	19.5±1.0
		1	25	20.11	20.08	20	
		1	49	19.98	20.2	20.1	
		25	0	19.84	19.96	19.85	19.5±1.0
		25	13	19.69	19.83	19.83	
		25	25	19.7	19.89	19.72	
		50	0	19.42	19.63	19.46	19.0±1.0



LTE FDD Band 2				Conducted Power(dBm)			Tune up
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			
				18675/1857.5	18900/1880	19125/1902.5	
15MHz	QPSK	1	0	21.45	21.53	21.42	20.8±1.0
		1	38	21.39	21.33	21.31	
		1	74	21.26	21.45	21.41	
		36	0	21.12	21.21	21.16	20.5±1.0
		36	18	20.97	21.08	21.14	
		36	39	20.98	21.14	21.03	
		75	0	20.7	20.88	20.77	20.0±1.0
	16QAM	1	0	20.23	20.32	20.17	19.5±1.0
		1	38	20.17	20.12	20.06	
		1	74	20.04	20.24	20.16	
		36	0	19.9	20	19.91	19.5±1.0
		36	18	19.75	19.87	19.89	
		36	39	19.76	19.93	19.78	
		75	0	19.48	19.67	19.52	19.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
20MHz	QPSK	1	0	21.53	21.66	21.48	20.8±1.0
		1	50	21.47	21.36	21.37	
		1	99	21.34	21.48	21.47	
		50	0	21.2	21.24	21.22	20.5±1.0
		50	25	21.05	21.11	21.2	
		50	50	21.06	21.17	21.09	
		100	0	20.78	20.91	20.83	20.0±1.0
	16QAM	1	0	20.31	20.45	20.23	19.5±1.0
		1	50	20.25	20.15	20.12	
		1	99	20.12	20.27	20.22	
		50	0	19.98	20.03	19.97	19.5±1.0
		50	25	19.83	19.9	19.95	
		50	50	19.84	19.96	19.84	
		100	0	19.56	19.7	19.58	19.0±1.0



2. LTE Band 4 Conducted Power Test Verdict:

LTE FDD Band 4				Conducted Power(dBm)			Tune up
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			
				19957/1710.7	20175/1732.5	20393/1754.3	
1.4MHz	QPSK	1	0	21.48	21.64	21.41	21.0±1.0
		1	3	21.42	21.25	21.31	
		1	5	21.16	21.51	21.44	
		3	0	20.98	21.13	20.86	20.5±1.0
		3	2	20.82	20.87	20.94	
		3	3	20.89	20.99	20.93	
		6	0	20.29	20.49	20.28	20.0±1.0
	16QAM	1	0	20.15	20.34	20.06	20.0±1.0
		1	3	20.09	19.95	19.96	
		1	5	19.83	20.21	20.09	
		3	0	19.65	19.83	19.51	19.5±1.0
		3	2	19.49	19.57	19.59	
		3	3	19.56	19.69	19.58	
		6	0	18.96	19.19	18.93	19.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
3MHz	QPSK	1	0	21.54	21.69	21.46	21.0±1.0
		1	7	21.48	21.3	21.36	
		1	14	21.22	21.56	21.49	
		8	0	21.04	21.18	20.91	20.5±1.0
		8	4	20.88	20.92	20.99	
		8	7	20.95	21.04	20.98	
		15	0	20.35	20.54	20.33	20.0±1.0
	16QAM	1	0	20.21	20.39	20.11	20.0±1.0
		1	7	20.15	20	20.01	
		1	14	19.89	20.26	20.14	
		8	0	19.71	19.88	19.56	19.5±1.0
		8	4	19.55	19.62	19.64	
		8	7	19.62	19.74	19.63	
		15	0	19.02	19.24	18.98	19.0±1.0



LTE FDD Band 4				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				19975/1712.5	20175/1732.5	20375/1752.5	
5MHz	QPSK	1	0	21.6	21.73	21.51	21.0±1.0
		1	13	21.54	21.34	21.41	
		1	24	21.28	21.6	21.54	
		12	0	21.1	21.22	20.96	20.5±1.0
		12	6	20.94	20.96	21.04	
		12	13	21.01	21.08	21.03	
	25	0	20.41	20.58	20.38	20.0±1.0	
	16QAM	1	0	20.27	20.43	20.16	20.0±1.0
		1	13	20.21	20.04	20.06	
		1	24	19.95	20.3	20.19	
		12	0	19.77	19.92	19.61	19.5±1.0
		12	6	19.61	19.66	19.69	
		12	13	19.68	19.78	19.68	
		25	0	19.08	19.28	19.03	19.0±1.0
Bandwidth		Modulation	RB size	RB offset	Channel/Frequency		
	20000/1715				20175/1732.5	20350/1750	
10MHz	QPSK	1	0	21.66	21.77	21.56	21.0±1.0
		1	25	21.6	21.38	21.46	
		1	49	21.34	21.64	21.59	
		25	0	21.16	21.26	21.01	20.5±1.0
		25	13	21	21	21.09	
		25	25	21.07	21.12	21.08	
	50	0	20.47	20.62	20.43	20.0±1.0	
	16QAM	1	0	20.33	20.47	20.21	20.0±1.0
		1	25	20.27	20.08	20.11	
		1	49	20.01	20.34	20.24	
		25	0	19.83	19.96	19.66	19.5±1.0
		25	13	19.67	19.7	19.74	
		25	25	19.74	19.82	19.73	
		50	0	19.14	19.32	19.08	19.0±1.0



LTE FDD Band 4				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				20025/1717.5	20175/1732.5	20325/1747.5	
15MHz	QPSK	1	0	21.73	21.82	21.64	21.0±1.0
		1	38	21.67	21.43	21.54	
		1	74	21.41	21.69	21.67	
		36	0	21.23	21.31	21.09	20.5±1.0
		36	18	21.07	21.05	21.17	
		36	39	21.14	21.17	21.16	
		75	0	20.54	20.67	20.51	20.0±1.0
	16QAM	1	0	20.4	20.52	20.29	20.0±1.0
		1	38	20.34	20.13	20.19	
		1	74	20.08	20.39	20.32	
		36	0	19.9	20.01	19.74	19.5±1.0
		36	18	19.74	19.75	19.82	
		36	39	19.81	19.87	19.81	
		75	0	19.21	19.37	19.16	19.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				20050/1720	20175/1732.5	20300/1745	
20MHz	QPSK	1	0	21.76	21.86	21.67	21.0±1.0
		1	50	21.5	21.69	21.66	
		1	99	21.64	21.63	21.51	
		50	0	21.27	21.32	21.08	20.5±1.0
		50	25	21.07	21.18	21.16	
		50	50	21.08	21.14	21.01	
		100	0	20.61	20.74	20.52	20.0±1.0
	16QAM	1	0	20.43	20.56	20.32	20.0±1.0
		1	50	20.07	20.28	20.06	
		1	99	20.18	20.36	20.25	
		50	0	19.94	20.02	19.73	19.5±1.0
		50	25	19.82	19.71	19.7	
		50	50	19.87	19.79	19.67	
		100	0	19.28	19.44	19.17	19.0±1.0



3. LTE Band 5 Conducted Power Test Verdict:

LTE FDD Band 5				Conducted Power(dBm)			Tune up	
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency				
				20407/824.7	20525/836.5	20643/848.3		
1.4MHz	QPSK	1	0	21.43	21.55	21.48	20.8±1.0	
		1	3	21.42	21.43	21.29		
		1	5	21.42	21.57	21.31		
		3	0	21.12	21.2	20.98	20.5±1.0	
		3	2	20.88	20.96	21.03		
		3	3	20.98	21.07	21.05		
	16QAM	16QAM	6	0	20.6	20.75	20.73	20.0±1.0
			1	0	20.18	20.32	20.22	19.5±1.0
			1	3	20.14	20.18	20.02	
			1	5	20.14	20.32	20.04	
			3	0	19.84	19.97	19.68	19.5±1.0
			3	2	19.6	19.71	19.76	
			3	3	19.7	19.82	19.78	
			6	0	19.32	19.5	19.46	19.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up	
3MHz	QPSK	1	0	21.52	21.60	21.56	20.8±1.0	
		1	7	21.51	21.48	21.37		
		1	14	21.51	21.62	21.39		
		8	0	21.21	21.25	21.06	20.5±1.0	
		8	4	20.97	21.01	21.11		
		8	7	21.07	21.12	21.13		
		15	0	20.69	20.8	20.81	20.0±1.0	
	16QAM	16QAM	1	0	20.27	20.37	20.3	19.5±1.0
			1	7	20.23	20.23	20.1	
			1	14	20.23	20.37	20.12	
			8	0	19.93	20.02	19.76	19.5±1.0
			8	4	19.69	19.76	19.84	
			8	7	19.79	19.87	19.86	
			15	0	19.41	19.55	19.54	19.0±1.0



LTE FDD Band 5				Conducted Power(dBm)			Tune up
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			
				20425/826.5	20525/836.5	20625/846.5	
5MHz	QPSK	1	0	21.55	21.62	21.57	20.8±1.0
		1	13	21.53	21.48	21.45	
		1	24	21.48	21.41	21.55	
		12	0	21.21	21.27	21.03	20.5±1.0
		12	6	20.96	21.12	21.12	
		12	13	21.05	21.06	20.96	
		25	0	20.71	20.73	20.77	20.0±1.0
	16QAM	1	0	20.27	20.37	20.3	19.5±1.0
		1	13	20.25	20.23	20.18	
		1	24	20.2	20.16	20.28	
		12	0	19.93	20.02	19.76	19.5±1.0
		12	6	19.68	19.87	19.85	
		12	13	19.77	19.81	19.69	
		25	0	19.43	19.48	19.5	19.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
10MHz	QPSK	1	0	21.61	21.67	21.62	20.8±1.0
		1	25	21.59	21.53	21.5	
		1	49	21.54	21.46	21.6	
		25	0	21.27	21.32	21.08	20.5±1.0
		25	13	21.02	21.17	21.17	
		25	25	21.11	21.11	21.01	
		50	0	20.77	20.78	20.82	20.0±1.0
	16QAM	1	0	20.33	20.42	20.35	19.5±1.0
		1	25	20.31	20.28	20.23	
		1	49	20.26	20.21	20.33	
		25	0	19.99	20.07	19.81	19.5±1.0
		25	13	19.74	19.92	19.9	
		25	25	19.83	19.86	19.74	
		50	0	19.49	19.53	19.55	19.0±1.0



4. LTE Band 7 Conducted Power Test Verdict:

LTE FDD Band 7				Conducted Power(dBm)			Tune up
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			
				20775/2502.5	21100/2535	21425/2567.5	
5MHz	QPSK	1	0	21.32	21.46	21.41	20.5±1.0
		1	13	21.19	21.25	21.17	
		1	24	21.39	21.43	21.27	
		12	0	21.11	20.98	20.87	20.5±1.0
		12	6	20.77	20.87	20.94	
		12	13	20.82	20.86	20.78	
	16QAM	25	0	20.51	20.61	20.61	20.0±1.0
		1	0	20.04	20.21	20.14	19.5±1.0
		1	13	19.91	20	19.9	
		1	24	20.11	20.18	20	
		12	0	19.83	19.73	19.6	19.5±1.0
		12	6	19.49	19.62	19.67	
		12	13	19.54	19.61	19.51	
		25	0	19.23	19.36	19.34	19.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
10MHz	QPSK	1	0	21.41	21.51	21.49	20.7±1.0
		1	25	21.28	21.3	21.25	
		1	49	21.48	21.48	21.35	
		25	0	21.2	21.03	20.95	20.5±1.0
		25	13	20.86	20.92	21.02	
		25	25	20.91	20.91	20.86	
		50	0	20.6	20.66	20.69	
	16QAM	1	0	20.13	20.26	20.22	19.5±1.0
		1	25	20	20.05	19.98	
		1	49	20.2	20.23	20.08	
		25	0	19.92	19.78	19.68	19.5±1.0
		25	13	19.58	19.67	19.75	
		25	25	19.63	19.66	19.59	
		50	0	19.32	19.41	19.42	



LTE FDD Band 7				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				20825/2507.5	21100/2535	21375/2562.5	
15MHz	QPSK	1	0	21.5	21.56	21.57	20.7±1.0
		1	38	21.37	21.35	21.33	
		1	74	21.57	21.53	21.43	
		36	0	21.29	21.08	21.03	20.5±1.0
		36	18	20.95	20.97	21.1	
		36	39	21	20.96	20.94	
		75	0	20.69	20.71	20.77	20.0±1.0
	16QAM	1	0	20.22	20.31	20.3	19.5±1.0
		1	38	20.09	20.1	20.06	
		1	74	20.29	20.28	20.16	
		36	0	20.01	19.83	19.76	19.5±1.0
		36	18	19.67	19.72	19.83	
		36	39	19.72	19.71	19.67	
		75	0	19.41	19.46	19.5	19.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
20MHz	QPSK	1	0	21.59	21.61	21.65	20.7±1.0
		1	50	21.46	21.4	21.41	
		1	99	21.66	21.58	21.51	
		50	0	21.38	21.13	21.11	20.5±1.0
		50	25	21.04	21.02	21.18	
		50	50	21.09	21.01	21.02	
		100	0	20.78	20.76	20.85	20.0±1.0
	16QAM	1	0	20.31	20.36	20.38	19.5±1.0
		1	50	20.18	20.15	20.14	
		1	99	20.38	20.33	20.24	
		50	0	20.1	19.88	19.84	19.5±1.0
		50	25	19.76	19.77	19.91	
		50	50	19.81	19.76	19.75	
		100	0	19.5	19.51	19.58	19.0±1.0



5. LTE Band 12 Conducted Power Test Verdict:

LTE FDD Band 12				Conducted Power(dBm)			Tune up
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			
				23017/699.7	23095/707.5	23173/715.3	
1.4MHz	QPSK	1	0	21.58	21.61	21.43	21.0±1.0
		1	3	21.25	21.5	21.41	
		1	5	21.25	21.5	21.34	
		3	0	20.98	21.15	20.94	20.5±1.0
		3	2	20.9	20.86	20.87	
		3	3	20.8	20.86	20.94	
		6	0	20.55	20.68	20.51	20.0±1.0
	16QAM	1	0	20.3	20.36	20.16	20.0±1.0
		1	3	19.99	20.05	20.16	
		1	5	20.12	20.03	20.05	
		3	0	19.7	19.9	19.67	19.5±1.0
		3	2	19.62	19.61	19.6	
		3	3	19.52	19.61	19.67	
		6	0	19.27	19.43	19.24	19.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
3MHz	QPSK	1	0	21.67	21.66	21.51	21.0±1.0
		1	7	21.34	21.55	21.49	
		1	14	21.34	21.55	21.42	
		8	0	21.07	21.2	21.02	20.5±1.0
		8	4	20.99	20.91	20.95	
		8	7	20.89	20.91	21.02	
		15	0	20.64	20.73	20.59	20.0±1.0
	16QAM	1	0	20.39	20.41	20.24	20.0±1.0
		1	7	20.08	20.1	20.24	
		1	14	20.21	20.08	20.13	
		8	0	19.79	19.95	19.75	19.5±1.0
		8	4	19.71	19.66	19.68	
		8	7	19.61	19.66	19.75	
		15	0	19.36	19.48	19.32	19.0±1.0



LTE FDD Band 12				Conducted Power(dBm)			Tune up
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			
				23035/701.5	23095/707.5	23155/713.5	
5MHz	QPSK	1	0	21.76	21.71	21.59	21.0±1.0
		1	13	21.43	21.6	21.57	
		1	24	21.43	21.6	21.5	
		12	0	21.16	21.25	21.1	20.5±1.0
		12	6	21.08	20.96	21.03	
		12	13	20.98	20.96	21.1	
		25	0	20.73	20.78	20.67	20.0±1.0
	16QAM	1	0	20.48	20.46	20.32	20.0±1.0
		1	13	20.17	20.15	20.32	
		1	24	20.3	20.13	20.21	
		12	0	19.88	20	19.83	19.5±1.0
		12	6	19.8	19.71	19.76	
		12	13	19.7	19.71	19.83	
		25	0	19.45	19.53	19.4	19.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
10MHz	QPSK	1	0	21.85	21.76	21.67	21.0±1.0
		1	25	21.52	21.65	21.65	
		1	49	21.52	21.65	21.58	
		25	0	21.25	21.3	21.18	20.5±1.0
		25	13	21.17	21.01	21.11	
		25	25	21.07	21.01	21.18	
		50	0	20.82	20.83	20.75	20.0±1.0
	16QAM	1	0	20.57	20.51	20.4	20.0±1.0
		1	25	20.26	20.2	20.4	
		1	49	20.39	20.18	20.29	
		25	0	19.97	20.05	19.91	19.5±1.0
		25	13	19.89	19.76	19.84	
		25	25	19.79	19.76	19.91	
		50	0	19.54	19.58	19.48	19.0±1.0
Bandwidth	Modulation	RB size	RB offset	23060/704	23095/707.5	23130/711	Tune up

6. LTE Band 17 Conducted Power Test Verdict:

LTE FDD Band 17				Conducted Power(dBm)			Tune up
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			
				23755/706.5	23790/710	23825/713.5	
5MHz	QPSK	1	0	21.59	21.76	21.68	21.0±1.0
		1	13	21.49	21.51	21.57	
		1	24	21.34	21.63	21.44	
		12	0	21.23	21.08	21.23	20.5±1.0
		12	6	21.1	21.02	21.07	
		12	13	20.98	21.03	21.1	
	16QAM	25	0	20.69	20.84	20.68	20.0±1.0
		1	0	20.31	20.51	20.41	20.0±1.0
		1	13	20.21	20.26	20.3	
		1	24	20.06	20.38	20.17	
		12	0	19.95	19.83	19.96	19.5±1.0
		12	6	19.82	19.77	19.8	
		12	13	19.7	19.78	19.83	
		25	0	19.41	19.59	19.41	19.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
10MHz	QPSK	1	0	21.68	21.81	21.76	21.0±1.0
		1	25	21.58	21.56	21.65	
		1	49	21.43	21.68	21.52	
		25	0	21.32	21.13	21.31	20.5±1.0
		25	13	21.19	21.07	21.15	
		25	25	21.07	21.08	21.18	
	16QAM	50	0	20.78	20.89	20.76	20.0±1.0
		1	0	20.4	20.56	20.49	20.0±1.0
		1	25	20.3	20.31	20.38	
		1	49	20.15	20.43	20.25	
		25	0	20.04	19.88	20.04	19.5±1.0
		25	13	19.91	19.82	19.88	
		25	25	19.79	19.83	19.91	
		50	0	19.5	19.64	19.49	19.0±1.0



7. LTE Band 41 Conducted Power Test Verdict:

LTE FDD Band 41				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				39675/2498.5	40620/2593	41565/2687.5	
5MHz	QPSK	1	0	21.14	21.3	21.18	20.5±1.0
		1	13	21.13	21.17	21.12	
		1	24	20.93	21.22	20.97	
		12	0	20.97	21.13	21.08	20.5±1.0
		12	6	20.89	21.05	20.91	
		12	13	20.86	20.97	20.77	
		25	0	20.49	20.65	20.55	20.0±1.0
	16QAM	1	0	19.86	20.05	19.91	19.5±1.0
		1	13	19.85	19.92	19.85	
		1	24	19.65	19.97	19.7	
		12	0	19.69	19.88	19.81	19.5±1.0
		12	6	19.61	19.8	19.64	
		12	13	19.58	19.72	19.5	
		25	0	19.21	19.4	19.28	19.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				39700/2501	40620/2593	41540/2685	
10MHz	QPSK	1	0	21.23	21.35	21.26	20.5±1.0
		1	25	21.22	21.22	21.2	
		1	49	21.02	21.27	21.05	
		25	0	21.06	21.18	21.16	20.5±1.0
		25	13	20.98	21.1	20.99	
		25	25	20.95	21.02	20.85	
		50	0	20.58	20.7	20.63	20.0±1.0
	16QAM	1	0	19.95	20.1	19.99	19.5±1.0
		1	25	19.94	19.97	19.93	
		1	49	19.74	20.02	19.78	
		25	0	19.78	19.93	19.89	19.5±1.0
		25	13	19.7	19.85	19.72	
		25	25	19.67	19.77	19.58	
		50	0	19.3	19.45	19.36	19.0±1.0



LTE FDD Band 41				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				39725/2503.5	40620/2593	41515/2682.5	
15MHz	QPSK	1	0	21.32	21.4	21.34	20.5±1.0
		1	38	21.31	21.27	21.28	
		1	74	21.11	21.32	21.13	
		36	0	21.15	21.23	21.24	20.5±1.0
		36	18	21.07	21.15	21.07	
		36	39	21.04	21.07	20.93	
		75	0	20.67	20.75	20.71	20.0±1.0
	16QAM	1	0	20.04	20.15	20.07	19.5±1.0
		1	38	20.03	20.02	20.01	
		1	74	19.83	20.07	19.86	
		36	0	19.87	19.98	19.97	19.5±1.0
		36	18	19.79	19.9	19.8	
		36	39	19.76	19.82	19.66	
		75	0	19.39	19.5	19.44	19.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
20MHz	QPSK	1	0	21.41	21.45	21.42	20.5±1.0
		1	50	21.4	21.32	21.36	
		1	99	21.2	21.37	21.21	
		50	0	21.24	21.28	21.32	20.5±1.0
		50	25	21.16	21.2	21.15	
		50	50	21.13	21.12	21.01	
		100	0	20.76	20.8	20.79	20.0±1.0
	16QAM	1	0	20.13	20.2	20.15	19.5±1.0
		1	50	20.12	20.07	20.09	
		1	99	19.92	20.12	19.94	
		50	0	19.96	20.03	20.05	19.5±1.0
		50	25	19.88	19.95	19.88	
		50	50	19.85	19.87	19.74	
		100	0	19.48	19.55	19.52	19.0±1.0



8. LTE Band 66 Conducted Power Test Verdict:

LTE FDD Band 66				Conducted Power(dBm)			Tune up
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			
				131979/1710.7	132322/1745	132665/1779.3	
1.4MHz	QPSK	1	0	21.07	21.18	20.95	20.5±1.0
		1	3	20.89	21.18	20.96	
		1	5	20.98	21.12	20.98	
		3	0	20.64	20.68	20.45	20.0±1.0
		3	2	20.58	20.69	20.41	
		3	3	20.51	20.53	20.35	
		6	0	20.34	20.45	20.22	20.0±1.0
	16QAM	1	0	20.07	20.08	19.85	19.5±1.0
		1	3	20.1	20.22	20.04	
		1	5	19.96	20.2	19.89	
		3	0	19.71	19.8	19.59	19.5±1.0
		3	2	19.72	19.81	19.6	
		3	3	19.8	19.71	19.68	
		6	0	19.45	19.55	19.42	19.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
3MHz	QPSK	1	0	21.12	21.21	21.01	20.5±1.0
		1	7	20.94	21.21	21.02	
		1	14	21.03	21.15	21.04	
		8	0	20.69	20.71	20.51	20.0±1.0
		8	4	20.63	20.72	20.47	
		8	7	20.56	20.56	20.41	
		15	0	20.39	20.48	20.28	20.0±1.0
	16QAM	1	0	20.12	20.11	19.91	19.5±1.0
		1	7	20.15	20.25	20.1	
		1	14	20.01	20.23	19.95	
		8	0	19.76	19.83	19.65	19.5±1.0
		8	4	19.77	19.84	19.66	
		8	7	19.85	19.74	19.74	
		15	0	19.5	19.58	19.48	19.0±1.0



LTE FDD Band 66				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				131997/1712.5	132322/1745	132647/1777.5	
5MHz	QPSK	1	0	21.17	21.24	21.07	20.5±1.0
		1	13	20.99	21.24	21.08	
		1	24	21.08	21.18	21.1	
		12	0	20.74	20.74	20.57	20.0±1.0
		12	6	20.68	20.75	20.53	
		12	13	20.61	20.59	20.47	
		25	0	20.44	20.51	20.34	20.0±1.0
	16QAM	1	0	20.17	20.14	19.97	19.5±1.0
		1	13	20.2	20.28	20.16	
		1	24	20.06	20.26	20.01	
		12	0	19.81	19.86	19.71	19.5±1.0
		12	6	19.82	19.87	19.72	
		12	13	19.9	19.77	19.8	
		25	0	19.55	19.61	19.54	19.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				132022/1715	132322/1745	132622/1775	
10MHz	QPSK	1	0	21.23	21.28	21.15	20.5±1.0
		1	25	21.05	21.28	21.16	
		1	49	21.14	21.22	21.18	
		25	0	20.8	20.78	20.65	20.0±1.0
		25	13	20.74	20.79	20.61	
		25	25	20.67	20.63	20.55	
		50	0	20.5	20.55	20.42	20.0±1.0
	16QAM	1	0	20.23	20.18	20.05	19.5±1.0
		1	25	20.26	20.32	20.24	
		1	49	20.12	20.3	20.09	
		25	0	19.87	19.9	19.79	19.5±1.0
		25	13	19.88	19.91	19.8	
		25	25	19.96	19.81	19.88	
		50	0	19.61	19.65	19.62	19.0±1.0



LTE FDD Band 66				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				132047/1717.5	132322/1745	132597/1772.5	
15MHz	QPSK	1	0	21.29	21.32	21.23	20.5±1.0
		1	38	21.11	21.32	21.24	
		1	74	21.2	21.26	21.26	
		36	0	20.86	20.82	20.73	20.0±1.0
		36	18	20.8	20.83	20.69	
		36	39	20.73	20.67	20.63	
		75	0	20.56	20.59	20.5	20.0±1.0
	16QAM	1	0	20.29	20.22	20.13	19.5±1.0
		1	38	20.32	20.36	20.32	
		1	74	20.18	20.34	20.17	
		36	0	19.93	19.94	19.87	19.5±1.0
		36	18	19.94	19.95	19.88	
		36	39	20.02	19.85	19.96	
		75	0	19.67	19.69	19.7	19.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				132072/1720	132322/1745	132572/1770	
20MHz	QPSK	1	0	21.35	21.36	21.31	20.5±1.0
		1	50	21.17	21.36	21.32	
		1	99	21.26	21.3	21.34	
		50	0	20.92	20.86	20.81	20.0±1.0
		50	25	20.86	20.87	20.77	
		50	50	20.79	20.71	20.71	
		100	0	20.62	20.63	20.58	20.0±1.0
	16QAM	1	0	20.35	20.26	20.21	19.5±1.0
		1	50	20.38	20.4	20.4	
		1	99	20.24	20.38	20.25	
		50	0	19.99	19.98	19.95	19.5±1.0
		50	25	20.00	19.99	19.96	
		50	50	20.08	19.89	20.04	
		100	0	19.73	19.73	19.78	19.0±1.0



9. LTE Band 71 Conducted Power Test Verdict:

LTE FDD Band 71				Conducted Power(dBm)			Tune up
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			
				133147/665.5	133297/680.5	133447/695.5	
5MHz	QPSK	1	0	23.42	23.38	23.35	23.0±1.0
		1	13	23.49	23.39	23.34	
		1	24	23.33	23.39	23.41	
		12	0	22.37	22.47	22.38	22.0±1.0
		12	6	22.35	22.36	22.39	
		12	13	22.46	22.41	22.38	
	16QAM	25	0	22.35	22.48	22.36	22.0±1.0
		1	0	22.43	22.39	22.47	22.0±1.0
		1	13	22.38	22.51	22.35	
		1	24	22.30	22.36	22.33	
		21.0±1.0	12	0	21.31	21.36	21.37
			12	6	21.29	21.47	21.38
12	13		21.34	21.53	21.28		
25	0	21.32	21.42	21.24	21.0±1.0		
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				133172/668.0	133297/680.5	133422/693.0	
10MHz	QPSK	1	0	23.47	23.44	23.59	23.0±1.0
		1	25	23.32	23.40	23.41	
		1	49	23.37	23.50	23.36	
		22.0±1.0	25	0	22.42	22.38	22.46
			25	13	22.39	22.37	22.47
			25	25	22.40	22.39	22.45
			50	0	22.38	22.33	22.41
	16QAM	1	0	22.68	22.49	22.52	22.0±1.0
		1	25	22.47	22.51	22.47	
		1	49	22.55	22.50	22.44	
		21.0±1.0	25	0	21.48	21.51	21.56
			25	13	21.47	21.52	21.58
			25	25	21.45	21.50	21.57
			50	0	21.43	21.49	21.43



LTE FDD Band 71				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				133197/670.5	133297/680.5	133397/690.5	
15MHz	QPSK	1	0	23.46	23.42	23.38	23.0±1.0
		1	38	23.49	23.32	23.43	
		1	74	23.34	23.36	23.27	
		36	0	22.45	22.41	22.31	22.0±1.0
		36	18	22.44	22.39	22.32	
		36	39	22.32	22.48	22.33	
		75	0	22.39	22.28	22.31	22.0±1.0
	16QAM	1	0	22.53	22.42	22.49	22.0±1.0
		1	38	22.61	22.31	22.42	
		1	74	22.49	22.35	22.55	
		36	0	21.37	21.45	21.33	21.0±1.0
		36	18	21.36	21.34	21.33	
		36	39	21.35	21.44	21.33	
		75	0	21.34	21.34	21.32	21.0±1.0
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency			Tune up
				133222/673.0	133322/683.0	133372/688.0	
20MHz	QPSK	1	0	23.72	23.69	23.60	23.0±1.0
		1	50	23.43	23.41	23.31	
		1	99	23.38	23.55	23.40	
		50	0	22.64	22.45	22.43	22.0±1.0
		50	25	22.60	22.44	22.44	
		50	50	22.44	22.26	22.25	
		100	0	22.54	22.39	22.34	22.0±1.0
	16QAM	1	0	22.70	22.60	22.65	22.0±1.0
		1	50	22.45	22.19	22.46	
		1	99	22.44	22.57	22.52	
		50	0	21.55	21.29	21.45	21.0±1.0
		50	25	21.55	21.29	21.33	
		50	50	21.29	21.20	21.27	
		100	0	21.45	21.28	21.27	21.0±1.0



7.4 WIFI Conducted Power

WLAN 2.4GHz Band Conducted Power

Channel/Freq.(MHz)	Maximum Conducted Out Power (dBm)		
	802.11b	802.11g	802.11n(HT20)
1(2412)	16.48	14.80	13.77
6(2437)	16.16	14.97	13.20
11(2462)	16.64	14.56	13.00
Channel/Freq.(MHz)	Maximum Conducted Out Power (dBm)		
	802.11n(HT40)		
3(2422)	11.26		
6(2437)	11.74		
9(2452)	11.37		

WLAN 5GHz Band Conducted Power

U-NII-1 AVGSA Output Power

Mode	Test Frequency (MHz)	Max Conducted Output Power (dBm)
802.11n (20MHz)	5180	11.43
802.11n (20MHz)	5220	11.14
802.11n (20MHz)	5240	11.72
802.11n (40MHz)	5190	11.99
802.11n (40MHz)	5230	10.64
802.11a (20MHz)	5180	11.52
802.11a (20MHz)	5220	10.70
802.11a (20MHz)	5240	11.34
802.11ac (20MHz)	5180	11.61
802.11ac (20MHz)	5220	11.11
802.11ac (20MHz)	5240	10.67
802.11ac (40MHz)	5190	11.95
802.11ac (40MHz)	5230	11.14
802.11ac (80MHz)	5210	11.62



U-NII-2a AVGSA Output Power

Mode	Test Frequency (MHz)	Max Conducted Output Power (dBm)
802.11n (20MHz)	5260	11.90
802.11n (20MHz)	5300	11.47
802.11n (20MHz)	5320	11.36
802.11n (40MHz)	5270	11.06
802.11n (40MHz)	5310	10.25
802.11ac (20MHz)	5260	11.64
802.11ac (20MHz)	5300	11.40
802.11ac (20MHz)	5320	11.47
802.11ac (40MHz)	5270	10.59
802.11ac (40MHz)	5310	10.48
802.11ac (80MHz)	5290	10.11
802.11a (20MHz)	5260	11.35
802.11a (20MHz)	5300	11.03
802.11a (20MHz)	5320	11.04

U-NII-2C Output Power

Mode	Test Frequency (MHz)	Max Conducted Output Power (dBm)
802.11n (20MHz)	5500	11.49
802.11n (20MHz)	5600	11.91
802.11n (20MHz)	5700	12.10
802.11n (40MHz)	5510	10.18
802.11n (40MHz)	5590	10.50
802.11n (40MHz)	5670	11.29
802.11ac (20MHz)	5500	11.61
802.11ac (20MHz)	5600	11.91
802.11ac (20MHz)	5700	12.05
802.11ac (40MHz)	5510	10.03
802.11ac (40MHz)	5590	10.60
802.11ac (40MHz)	5670	11.35
802.11ac (80MHz)	5530	9.64
802.11ac (80MHz)	5610	9.89



U-NII-3 AVGSA Output Power

Mode	Test Frequency (MHz)	Max Conducted Output Power (dBm)
802.11n (20MHz)	5745	12.10
802.11n (20MHz)	5785	12.03
802.11n (20MHz)	5825	11.86
802.11n (40MHz)	5755	10.27
802.11n (40MHz)	5795	10.15
802.11ac (20MHz)	5745	12.28
802.11ac (20MHz)	5785	12.14
802.11ac (20MHz)	5825	11.81
802.11ac (40MHz)	5755	10.32
802.11ac (40MHz)	5795	9.96
802.11ac (80MHz)	5775	9.24
802.11a (20MHz)	5745	11.42
802.11a (20MHz)	5785	11.90
802.11a (20MHz)	5825	11.64

7.5 Bluetooth Output Power

Channel	Frequency (MHz)	BT3.0 Output Power(dBm)		
		GFSK	$\pi/4$ -DQPSK	8-DPSK
CH 0	2402	9.39	9.65	8.20
CH 39	2441	9.89	8.61	8.91
CH 78	2480	8.67	8.54	8.69
Channel	Frequency (MHz)	BT4.0 Output Power(dBm)		
		GFSK		
CH 0	2402	2.459		
CH 20	2442	2.850		
CH 39	2480	2.032		

Note:

1. Per KDB248227 D01 v02r02, choose the highest output power channel to test SAR and determine further SAR exclusion
2. For each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of these configurations is less than 1/4dB higher than those measured at lowest data rate
3. Per KDB248227 D01 v02r02, 802.11g /11n-HT20/11n-HT40 is not required. . When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is $\leq 1.2W/Kg$. Thus the SAR can be excluded.

Antenna Location:



Antenna-to-User (Edge Side) distance (mm):

Antenna	Front	Back	Edge A	Edge B	Edge C	Edge D
WWAN Main Antenna	3	2	149	9	1	10
WIFI/BT	3	2	15	3	115	55

Note: The diagonal distance of the overall section is 15.5cm.

The Body SAR measurement positions of each band are as below:

Antenna	Front	Back	Edge A	Edge B	Edge C	Edge D
WWAN Antenna Body-worn	Yes	Yes	No	No	No	No
WWAN Antenna hotspot	Yes	Yes	No	Yes	Yes	Yes
WIFI Antenna Body-worn	Yes	Yes	No	No	No	No
WIFI 2.4G Antenna hotspot	Yes	Yes	Yes	Yes	No	No

Note: According to KDB 941225 D06 v02r01, when antenna-to-edge>2.5cm, SAR is not required.

8. Scaling Factor calculation

Operation Mode	Channel /Frequency	Output Power(dBm)	Tune up Power in tolerance (dBm)	Max. Tune up(dBm)	Scaling Factor
WCDMA850	4132/826.4	22.43	21.5 ± 1.0	22.50	1.016
	4183/836.6	22.50	21.5 ± 1.0	22.50	1.000
	4233/846.6	22.48	21.5 ± 1.0	22.50	1.005
WCDMA1900	9262/1852.4	23.21	22.5 ± 1.0	23.50	1.069
	9400/1880.0	23.29	22.5 ± 1.0	23.50	1.050
	9538/1907.6	23.20	22.5 ± 1.0	23.50	1.072
WCDMA1700	1312/1712.4	22.71	22.0 ± 1.0	23.00	1.069
	1413/1732.6	22.82	22.0 ± 1.0	23.00	1.042
	1513/1752.6	22.76	22.0 ± 1.0	23.00	1.057
LTE B2 20MHz 1RB#0	18700/1860	21.53	20.8 ± 1.0	21.80	1.064
	18900/1880	21.66	20.8 ± 1.0	21.80	1.033
	19100/1900	21.48	20.8 ± 1.0	21.80	1.076
LTE B2 20MHz 50RB#50	18700/1860	21.20	20.5 ± 1.0	21.50	1.072
	18900/1880	21.24	20.5 ± 1.0	21.50	1.062
	19100/1900	21.22	20.5 ± 1.0	21.50	1.067
LTE B4 20MHz 1RB#0	20050/1720	21.76	21.0 ± 1.0	22.00	1.057
	20175/1732.5	21.86	21.0 ± 1.0	22.00	1.033
	20300/1745	21.67	21.0 ± 1.0	22.00	1.079
LTE B4 20MHz 50RB#0	20050/1720	21.27	20.5 ± 1.0	21.50	1.054
	20175/1732.5	21.32	20.5 ± 1.0	21.50	1.042
	20300/1745	21.08	20.5 ± 1.0	21.50	1.102
LTE B5 10MHz 1RB#0	20450/829	21.61	20.8 ± 1.0	21.80	1.045
	20525/836.5	21.67	20.8 ± 1.0	21.80	1.030
	20600/844	21.62	20.8 ± 1.0	21.80	1.042
LTE B5 10MHz 25RB#0	20450/829	21.27	20.5 ± 1.0	21.50	1.054
	20525/836.5	21.32	20.5 ± 1.0	21.50	1.042
	20600/844	21.08	20.5 ± 1.0	21.50	1.102
LTE B7 20MHz 1RB#0	20850/2510	21.59	20.7 ± 1.0	21.70	1.026
	21100/2535	21.61	20.7 ± 1.0	21.70	1.021
	21350/2560	21.65	20.7 ± 1.0	21.70	1.012
LTE B7 20MHz 50RB#0	20850/2510	21.38	20.5 ± 1.0	21.50	1.028
	21100/2535	21.13	20.5 ± 1.0	21.50	1.089
	21350/2560	21.11	20.5 ± 1.0	21.50	1.094



LTE B12 10MHz 1RB#0	23060/704	21.85	21.0 ±1.0	22.00	1.035
	23095/707.5	21.76	21.0 ±1.0	22.00	1.057
	23130/711	21.67	21.0 ±1.0	22.00	1.079
LTE B12 10MHz 25RB#0	23060/704	21.25	20.5 ±1.0	21.50	1.059
	23095/707.5	21.30	20.5 ±1.0	21.50	1.047
	23130/711	21.18	20.5 ±1.0	21.50	1.076
LTE B17 10MHz 1RB#0	23780/709	21.68	21.0 ±1.0	22.00	1.076
	23790/710	21.81	21.0 ±1.0	22.00	1.045
	23800/711	21.76	21.0 ±1.0	22.00	1.057
LTE B17 10MHz 25RB#0	23780/709	21.32	20.5 ±1.0	21.50	1.042
	23790/710	21.13	20.5 ±1.0	21.50	1.089
	23800/711	21.31	20.5 ±1.0	21.50	1.045
LTE B41 20MHz 1RB#0	39750/2506	21.41	20.5 ±1.0	21.50	1.021
	40620/2593	21.45	20.5 ±1.0	21.50	1.012
	41490/2680	21.42	20.5 ±1.0	21.50	1.019
LTE B41 20MHz 50RB#0	39750/2506	21.24	20.5 ±1.0	21.50	1.062
	40620/2593	21.28	20.5 ±1.0	21.50	1.052
	41490/2680	21.32	20.5 ±1.0	21.50	1.042
LTE B66 20MHz 1RB#0	132072/1720	21.35	20.5 ±1.0	21.50	1.035
	132322/1745	21.36	20.5 ±1.0	21.50	1.033
	132572/1770	21.31	20.5 ±1.0	21.50	1.045
LTE B66 20MHz 50RB#0	132072/1720	20.92	20.0 ±1.0	21.00	1.019
	132322/1745	20.86	20.0 ±1.0	21.00	1.033
	132572/1770	20.81	20.0 ±1.0	21.00	1.045
LTE B71 20MHz 1RB#0	133222/673.0	23.72	23.0 ±1.0	24.00	1.067
	133322/683.0	23.69	23.0 ±1.0	24.00	1.074
	133372/688.0	23.60	23.0 ±1.0	24.00	1.096
LTE B71 20MHz 50RB#0	133222/673.0	22.64	22.0 ±1.0	23.00	1.086
	133322/683.0	22.45	22.0 ±1.0	23.00	1.135
	133372/688.0	22.43	22.0 ±1.0	23.00	1.140
WIFI 2.4G 802.11b	1/2412.0	16.48	16.0 ±1.0	17.00	1.127
	6/2437.0	16.16	16.0 ±1.0	17.00	1.213
	11/2462.0	16.64	16.0 ±1.0	17.00	1.086
BT 3.0 GFSK	0/2402.0	9.39	9.0 ±1.0	10.00	1.151
	39/2441.0	9.89	9.0 ±1.0	10.00	1.026
	78/2480.0	8.67	9.0 ±1.0	10.00	1.358
WIFI 5G BAND I	38/5190.0	11.99	11.0 ±1.0	12.00	1.002



WIFI5G BAND II	52/5260.0	11.90	11.0 ±1.0	12.00	1.023
WIFI5GBAND III	140/5700.0	12.10	11.5 ±1.0	12.50	1.096
WIFI5GBAND IV	149/5745.0	12.28	11.5 ±1.0	12.50	1.052

Note: for LTE power tolerance, only QPSK modulation mode was provide here.

9. Test Results

Results overview of WCDMA850

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Left Cheek	4183/836.6	RMC	0.201	-2.26	1.000	0.201	/
Left Tilt 15 °	4183/836.6	RMC	0.164	-3.95	1.000	0.164	/
Right Cheek	4132/826.4	RMC	0.208	0.78	1.016	0.211	/
Right Cheek	4183/836.6	RMC	0.221	4.00	1.000	0.221	Yes
Right Cheek	4233/846.6	RMC	0.213	-3.66	1.005	0.214	/
Right Tilt 15 °	4183/836.6	RMC	0.133	4.80	1.000	0.133	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	4132/826.4	RMC	0.243	0.77	1.016	0.247	/
Back Upward	4183/836.6	RMC	0.260	-1.24	1.000	0.260	Yes
Back Upward	4233/846.6	RMC	0.238	1.98	1.005	0.239	/
Face Upward	4183/836.6	RMC	0.157	2.15	1.000	0.157	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	4132/826.4	RMC	0.243	0.77	1.016	0.247	/
Back Upward	4183/836.6	RMC	0.260	-1.24	1.000	0.260	Yes
Back Upward	4233/846.6	RMC	0.238	1.98	1.005	0.239	/
Face Upward	4183/836.6	RMC	0.157	2.15	1.000	0.157	/
Edge B	4183/836.6	RMC	0.232	4.59	1.000	0.232	/
Edge C	4183/836.6	RMC	0.096	-0.75	1.000	0.096	/
Edge D	4183/836.6	RMC	0.131	3.31	1.000	0.131	/



Results overview of WCDMA1900

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Left Cheek	9400/1880.0	RMC	0.162	-3.49	1.050	0.170	/
Left Tilt 15 °	9400/1880.0	RMC	0.110	2.61	1.050	0.115	/
Right Cheek	9262/1852.4	RMC	0.177	0.43	1.069	0.189	/
Right Cheek	9400/1880.0	RMC	0.194	-3.90	1.050	0.204	Yes
Right Cheek	9538/1907.6	RMC	0.175	-2.10	1.072	0.188	/
Right Tilt 15 °	9400/1880.0	RMC	0.124	2.48	1.050	0.130	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	9262/1852.4	RMC	0.522	0.34	1.069	0.558	/
Back Upward	9400/1880.0	RMC	0.537	-1.40	1.050	0.564	Yes
Back Upward	9538/1907.6	RMC	0.524	-0.21	1.072	0.562	/
Face Upward	9400/1880.0	RMC	0.261	0.06	1.050	0.274	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	9262/1852.4	RMC	0.522	0.34	1.069	0.558	/
Back Upward	9400/1880.0	RMC	0.537	-1.40	1.050	0.564	Yes
Back Upward	9538/1907.6	RMC	0.524	-0.21	1.072	0.562	/
Face Upward	9400/1880.0	RMC	0.261	0.06	1.050	0.274	/
Edge B	9400/1880.0	RMC	0.145	0.45	1.050	0.152	/
Edge C	9400/1880.0	RMC	0.261	-3.87	1.050	0.274	/
Edge D	9400/1880.0	RMC	0.088	-0.38	1.050	0.092	/



Results overview of WCDMA1700

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Left Cheek	1413/1732.6	RMC	0.028	2.44	1.042	0.029	/
Left Tilt 15 °	1413/1732.6	RMC	0.024	-0.89	1.042	0.025	/
Right Cheek	1312/1712.4	RMC	0.040	0.44	1.069	0.043	/
Right Cheek	1413/1732.6	RMC	0.046	-1.12	1.042	0.048	Yes
Right Cheek	1513/1752.6	RMC	0.038	-0.21	1.057	0.040	/
Right Tilt 15 °	1413/1732.6	RMC	0.027	1.90	1.042	0.028	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	1312/1712.4	RMC	0.720	0.42	1.069	0.770	/
Back Upward	1413/1732.6	RMC	0.743	-1.19	1.042	0.774	Yes
Back Upward	1513/1752.6	RMC	0.724	-0.11	1.057	0.765	/
Face Upward	1413/1732.6	RMC	0.171	3.51	1.042	0.178	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	1312/1712.4	RMC	0.720	0.42	1.069	0.770	/
Back Upward	1413/1732.6	RMC	0.743	-1.19	1.042	0.774	Yes
Back Upward	1513/1752.6	RMC	0.724	-0.11	1.057	0.765	/
Face Upward	1413/1732.6	RMC	0.171	3.51	1.042	0.178	/
Edge B	1413/1732.6	RMC	0.051	-4.65	1.042	0.053	/
Edge C	1413/1732.6	RMC	0.455	-3.06	1.042	0.474	/
Edge D	1413/1732.6	RMC	0.023	-4.20	1.042	0.024	/



Results overview of FDD LTE Band 2, QPSK, 20MHz Bandwidth

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Left Cheek	18900/1880	Data	0.145	2.77	1.033	0.150	/
Left Tilt 15 °	18900/1880	Data	0.087	-0.75	1.033	0.090	/
Right Cheek	18700/1860	Data	0.139	0.88	1.064	0.148	/
Right Cheek	18900/1880	Data	0.148	-1.76	1.033	0.153	Yes
Right Cheek	19100/1900	Data	0.140	0.34	1.076	0.151	/
Right Tilt 15 °	18900/1880	Data	0.103	-0.90	1.033	0.106	/
50%RB#0							
Left Cheek	18900/1880	Data	0.132	2.36	1.062	0.140	/
Left Tilt 15 °	18900/1880	Data	0.071	-3.70	1.062	0.075	/
Right Cheek	18900/1880	Data	0.137	1.76	1.062	0.145	/
Right Tilt 15 °	18900/1880	Data	0.090	3.36	1.062	0.096	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	18700/1860	Data	0.522	-1.10	1.064	0.555	/
Back Upward	18900/1880	Data	0.546	-0.07	1.033	0.564	Yes
Back Upward	19100/1900	Data	0.518	-0.24	1.076	0.557	/
Face Upward	18900/1880	Data	0.263	-1.88	1.033	0.272	/
50%RB#0							
Back Upward	18900/1880	Data	0.523	2.68	1.062	0.555	/
Face Upward	18900/1880	Data	0.230	4.81	1.062	0.244	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	18700/1860	Data	0.522	-1.10	1.064	0.555	/
Back Upward	18900/1880	Data	0.546	-0.07	1.033	0.564	Yes
Back Upward	19100/1900	Data	0.518	-0.24	1.076	0.557	/
Face Upward	18900/1880	Data	0.263	-1.88	1.033	0.272	/
Edge B	18900/1880	Data	0.131	1.00	1.033	0.135	/
Edge C	18900/1880	Data	0.319	-3.30	1.033	0.329	/
Edge D	18900/1880	Data	0.078	-4.18	1.033	0.081	/
50%RB#0							
Back Upward	18900/1880	Data	0.523	2.68	1.062	0.555	/
Face Upward	18900/1880	Data	0.230	4.81	1.062	0.244	/
Edge B	18900/1880	Data	0.102	3.94	1.062	0.108	/
Edge C	18900/1880	Data	0.294	2.15	1.062	0.312	/
Edge D	18900/1880	Data	0.066	-4.73	1.062	0.070	/



Results overview of FDD LTE Band 4, QPSK, 20MHz Bandwidth

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Left Cheek	20175/1732.5	Data	0.036	-1.86	1.033	0.037	/
Left Tilt 15 °	20175/1732.5	Data	0.027	-3.58	1.033	0.028	/
Right Cheek	20050/1720	Data	0.045	0.87	1.057	0.048	/
Right Cheek	20175/1732.5	Data	0.050	2.77	1.033	0.052	Yes
Right Cheek	20300/1745	Data	0.043	1.08	1.079	0.046	/
Right Tilt 15 °	20175/1732.5	Data	0.036	0.53	1.033	0.037	/
50%RB#0							
Left Cheek	20175/1732.5	Data	0.030	4.85	1.042	0.031	/
Left Tilt 15 °	20175/1732.5	Data	0.021	1.06	1.042	0.022	/
Right Cheek	20175/1732.5	Data	0.042	-2.42	1.042	0.044	/
Right Tilt 15 °	20175/1732.5	Data	0.030	2.86	1.042	0.031	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	20050/1720	Data	0.844	1.22	1.057	0.892	/
Back Upward	20175/1732.5	Data	0.868	-2.77	1.033	0.896	Yes
Back Upward	20300/1745	Data	0.826	4.01	1.079	0.891	/
Back Upward (Repeated)	20050/1720	Data	0.801	-3.42	1.057	0.847	/
	20175/1732.5	Data	0.822	-1.55	1.033	0.849	/
	20300/1745	Data	0.784	-0.26	1.079	0.846	/
Face Upward	20175/1732.5	Data	0.238	-3.23	1.033	0.246	/
50%RB#0							
Back Upward	20175/1732.5	Data	0.767	-4.46	1.042	0.799	/
Face Upward	20175/1732.5	Data	0.210	-0.57	1.042	0.219	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	20050/1720	Data	0.844	1.22	1.057	0.892	/
Back Upward	20175/1732.5	Data	0.868	-2.77	1.033	0.896	Yes
Back Upward	20300/1745	Data	0.826	4.01	1.079	0.891	/
Back Upward (Repeated)	20050/1720	Data	0.801	-3.42	1.057	0.847	/
	20175/1732.5	Data	0.822	-1.55	1.033	0.849	/
	20300/1745	Data	0.784	-0.26	1.079	0.846	/
Face Upward	20175/1732.5	Data	0.238	-3.23	1.033	0.246	/
Edge B	20175/1732.5	Data	0.072	-4.12	1.033	0.074	/
Edge C	20175/1732.5	Data	0.605	3.54	1.033	0.625	/
Edge D	20175/1732.5	Data	0.018	3.63	1.033	0.019	/
50%RB#0							
Back Upward	20175/1732.5	Data	0.767	-4.46	1.042	0.799	/
Face Upward	20175/1732.5	Data	0.210	-0.57	1.042	0.219	/
Edge B	20175/1732.5	Data	0.061	-4.33	1.042	0.064	/
Edge C	20175/1732.5	Data	0.584	3.84	1.042	0.609	/
Edge D	20175/1732.5	Data	0.014	-0.27	1.042	0.015	/



Results overview of FDD LTE Band 5, QPSK, 10MHz Bandwidth

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Left Cheek	20525/836.5	Data	0.173	2.58	1.030	0.178	/
Left Tilt 15 °	20525/836.5	Data	0.138	0.18	1.030	0.142	/
Right Cheek	20450/829	Data	0.201	0.89	1.045	0.210	/
Right Cheek	20525/836.5	Data	0.208	-2.13	1.030	0.214	Yes
Right Cheek	20600/844	Data	0.203	0.65	1.042	0.212	/
Right Tilt 15 °	20525/836.5	Data	0.136	2.13	1.030	0.140	/
50%RB#0							
Left Cheek	20525/836.5	Data	0.161	-0.92	1.042	0.168	/
Left Tilt 15 °	20525/836.5	Data	0.114	3.08	1.042	0.119	/
Right Cheek	20525/836.5	Data	0.182	-4.44	1.042	0.190	/
Right Tilt 15 °	20525/836.5	Data	0.110	-1.59	1.042	0.115	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	20450/829	Data	0.213	0.77	1.045	0.223	/
Back Upward	20525/836.5	Data	0.222	-1.22	1.030	0.229	Yes
Back Upward	20600/844	Data	0.210	0.48	1.042	0.219	/
Face Upward	20525/836.5	Data	0.148	-1.14	1.030	0.152	/
50%RB#0							
Back Upward	20525/836.5	Data	0.201	-1.79	1.042	0.210	/
Face Upward	20525/836.5	Data	0.124	-4.51	1.042	0.129	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	20450/829	Data	0.213	0.77	1.045	0.223	/
Back Upward	20525/836.5	Data	0.222	-1.22	1.030	0.229	Yes
Back Upward	20600/844	Data	0.210	0.48	1.042	0.219	/
Face Upward	20525/836.5	Data	0.148	-1.14	1.030	0.152	/
Edge B	20525/836.5	Data	0.200	-2.21	1.030	0.206	/
Edge C	20525/836.5	Data	0.083	2.84	1.030	0.086	/
Edge D	20525/836.5	Data	0.097	3.70	1.030	0.100	/
50%RB#0							
Back Upward	20525/836.5	Data	0.201	-1.79	1.042	0.210	/
Face Upward	20525/836.5	Data	0.124	-4.51	1.042	0.129	/
Edge B	20525/836.5	Data	0.177	3.60	1.042	0.184	/
Edge C	20525/836.5	Data	0.070	-1.65	1.042	0.073	/
Edge D	20525/836.5	Data	0.082	3.18	1.042	0.085	/



Results overview of FDD LTE Band 7, QPSK, 20MHz Bandwidth

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Left Cheek	20850/2510	Data	0.093	1.08	1.026	0.095	/
Left Cheek	21100/2535	Data	0.096	-2.60	1.021	0.098	Yes
Left Cheek	21350/2560	Data	0.096	-0.55	1.012	0.097	/
Left Tilt 15 °	21100/2535	Data	0.046	4.84	1.021	0.047	/
Right Cheek	21100/2535	Data	0.064	2.02	1.021	0.065	/
Right Tilt 15 °	21100/2535	Data	0.043	4.24	1.021	0.044	/
50%RB#0							
Left Cheek	21100/2535	Data	0.089	-1.19	1.089	0.097	/
Left Tilt 15 °	21100/2535	Data	0.040	-2.10	1.089	0.044	/
Right Cheek	21100/2535	Data	0.056	-1.96	1.089	0.061	/
Right Tilt 15 °	21100/2535	Data	0.035	-2.27	1.089	0.038	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	21100/2535	Data	0.381	3.75	1.021	0.389	/
Face Upward	20850/2510	Data	0.458	0.77	1.026	0.470	/
Face Upward	21100/2535	Data	0.469	-4.78	1.021	0.479	Yes
Face Upward	21350/2560	Data	0.467	0.45	1.012	0.473	/
50%RB#0							
Back Upward	21100/2535	Data	0.354	4.58	1.089	0.385	/
Face Upward	21100/2535	Data	0.418	4.36	1.089	0.455	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	21100/2535	Data	0.381	3.75	1.021	0.389	/
Face Upward	21100/2535	Data	0.469	-4.78	1.021	0.479	/
Edge B	21100/2535	Data	0.225	-1.65	1.021	0.230	/
Edge C	20850/2510	Data	0.718	0.87	1.026	0.737	/
Edge C	21100/2535	Data	0.722	-4.49	1.021	0.737	Yes
Edge C	21350/2560	Data	0.720	-0.64	1.012	0.729	/
Edge D	21100/2535	Data	0.190	3.86	1.021	0.194	/
50%RB#0							
Back Upward	21100/2535	Data	0.354	4.58	1.089	0.385	/
Face Upward	21100/2535	Data	0.418	4.36	1.089	0.455	/
Edge B	21100/2535	Data	0.188	-3.37	1.089	0.205	/
Edge C	21100/2535	Data	0.666	3.81	1.089	0.725	/
Edge D	21100/2535	Data	0.145	-3.55	1.089	0.158	/



Results overview of FDD LTE Band 12, QPSK, 10MHz Bandwidth

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Left Cheek	23060/704	Data	0.365	0.97	1.035	0.378	/
Left Cheek	23095/707.5	Data	0.366	2..74	1.057	0.387	Yes
Left Cheek	23130/711	Data	0.343	-0.99	1.079	0.370	/
Left Tilt 15 °	23095/707.5	Data	0.306	-3.60	1.057	0.323	/
Right Cheek	23095/707.5	Data	0.363	0.77	1.057	0.384	/
Right Tilt 15 °	23095/707.5	Data	0.252	-2.35	1.057	0.266	/
50%RB#0							
Left Cheek	23095/707.5	Data	0.341	0.37	1.047	0.357	/
Left Tilt 15 °	23095/707.5	Data	0.279	3.06	1.047	0.292	/
Right Cheek	23095/707.5	Data	0.335	-4.03	1.047	0.351	/
Right Tilt 15 °	23095/707.5	Data	0.213	-3.48	1.047	0.223	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	23060/704	Data	0.478	-1.77	1.035	0.495	/
Back Upward	23095/707.5	Data	0.478	-0.05	1.057	0.505	Yes
Back Upward	23130/711	Data	0.470	0.32	1.079	0.507	/
Face Upward	23095/707.5	Data	0.359	4.33	1.057	0.379	/
50%RB#0							
Back Upward	23095/707.5	Data	0.440	4.65	1.047	0.461	/
Face Upward	23095/707.5	Data	0.321	3.32	1.047	0.336	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	23060/704	Data	0.478	-1.77	1.035	0.495	/
Back Upward	23095/707.5	Data	0.478	-0.05	1.057	0.505	Yes
Back Upward	23130/711	Data	0.470	0.32	1.079	0.507	/
Face Upward	23095/707.5	Data	0.359	4.33	1.057	0.379	/
Edge B	23095/707.5	Data	0.328	-2.15	1.057	0.347	/
Edge C	23095/707.5	Data	0.075	-2.51	1.057	0.079	/
Edge D	23095/707.5	Data	0.234	-2.76	1.057	0.247	/
50%RB#0							
Back Upward	23095/707.5	Data	0.440	4.65	1.047	0.461	/
Face Upward	23095/707.5	Data	0.321	3.32	1.047	0.336	/
Edge B	23095/707.5	Data	0.290	-0.14	1.047	0.304	/
Edge C	23095/707.5	Data	0.063	-1.82	1.047	0.066	/
Edge D	23095/707.5	Data	0.201	-4.47	1.047	0.210	/



Results overview of FDD LTE Band 17, QPSK, 10MHz Bandwidth

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Left Cheek	23790/710	Data	0.117	2.63	1.045	0.122	/
Left Tilt 15 °	23790/710	Data	0.091	1.36	1.045	0.095	/
Right Cheek	23780/709	Data	0.108	0.05	1.076	0.116	
Right Cheek	23790/710	Data	0.119	-1.18	1.045	0.124	Yes
Right Cheek	23800/711	Data	0.112	-0.43	1.057	0.118	
Right Tilt 15 °	23790/710	Data	0.090	1.88	1.045	0.094	/
50%RB#0							
Left Cheek	23790/710	Data	0.094	-4.62	1.089	0.102	/
Left Tilt 15 °	23790/710	Data	0.077	-0.42	1.089	0.084	/
Right Cheek	23790/710	Data	0.100	4.66	1.089	0.109	/
Right Tilt 15 °	23790/710	Data	0.075	-1.89	1.089	0.082	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	23780/709	Data	0.149	0.48	1.076	0.160	/
Back Upward	23790/710	Data	0.164	1.45	1.045	0.171	Yes
Back Upward	23800/711	Data	0.157	0.92	1.057	0.166	/
Face Upward	23790/710	Data	0.110	3.62	1.045	0.115	/
50%RB#0							
Back Upward	23790/710	Data	0.143	4.35	1.089	0.156	/
Face Upward	23790/710	Data	0.096	4.04	1.089	0.105	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	23780/709	Data	0.149	0.48	1.076	0.160	/
Back Upward	23790/710	Data	0.164	1.45	1.045	0.171	Yes
Back Upward	23800/711	Data	0.157	0.92	1.057	0.166	/
Face Upward	23790/710	Data	0.110	3.62	1.045	0.115	/
Edge B	23790/710	Data	0.101	-3.51	1.045	0.106	/
Edge C	23790/710	Data	0.020	-2.76	1.045	0.021	/
Edge D	23790/710	Data	0.078	2.43	1.045	0.081	/
50%RB#0							
Back Upward	23790/710	Data	0.143	4.35	1.089	0.156	/
Face Upward	23790/710	Data	0.096	4.04	1.089	0.105	/
Edge B	23790/710	Data	0.084	-0.73	1.089	0.091	/
Edge C	23790/710	Data	0.013	-3.23	1.089	0.014	/
Edge D	23790/710	Data	0.062	0.80	1.089	0.068	/



Results overview of TDD LTE Band 41, QPSK, 20MHz Bandwidth

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Left Cheek	39750/2506	Data	0.026	0.07	1.021	0.027	/
Left Cheek	40620/2593	Data	0.030	-2.01	1.012	0.030	Yes
Left Cheek	41490/2680	Data	0.028	-1.98	1.019	0.029	/
Left Tilt 15 °	40620/2593	Data	0.024	2.81	1.012	0.024	/
Right Cheek	40620/2593	Data	0.017	-3.19	1.012	0.017	/
Right Tilt 15 °	40620/2593	Data	0.014	0.42	1.012	0.014	/
50%RB#0							
Left Cheek	40620/2593	Data	0.025	-3.21	1.052	0.026	/
Left Tilt 15 °	40620/2593	Data	0.020	-4.80	1.052	0.021	/
Right Cheek	40620/2593	Data	0.015	3.52	1.052	0.016	/
Right Tilt 15 °	40620/2593	Data	0.011	-4.31	1.052	0.012	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	40620/2593	Data	0.133	-1.94	1.012	0.135	/
Face Upward	39750/2506	Data	0.144	0.77	1.021	0.147	/
Face Upward	40620/2593	Data	0.149	-1.15	1.012	0.151	Yes
Face Upward	41490/2680	Data	0.145	0.56	1.019	0.148	/
50%RB#0							
Back Upward	40620/2593	Data	0.114	1.09	1.052	0.120	/
Face Upward	40620/2593	Data	0.123	-4.55	1.052	0.129	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	40620/2593	Data	0.133	-1.94	1.012	0.135	/
Face Upward	40620/2593	Data	0.149	-1.15	1.012	0.151	/
Edge B	40620/2593	Data	0.045	-4.33	1.012	0.046	/
Edge C	39750/2506	Data	0.225	-2.05	1.021	0.230	/
Edge C	40620/2593	Data	0.231	-1.28	1.012	0.234	Yes
Edge C	41490/2680	Data	0.230	-1.35	1.019	0.234	/
Edge D	40620/2593	Data	0.036	1.64	1.012	0.036	/
50%RB#0							
Back Upward	40620/2593	Data	0.114	1.09	1.052	0.120	/
Face Upward	40620/2593	Data	0.123	-4.55	1.052	0.129	/
Edge B	40620/2593	Data	0.037	2.53	1.052	0.039	/
Edge C	40620/2593	Data	0.210	-0.10	1.052	0.221	/
Edge D	40620/2593	Data	0.030	-0.93	1.052	0.032	/



Results overview of FDD LTE Band 66, QPSK, 20MHz Bandwidth

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Left Cheek	132322/1745	Data	0.037	-2.99	1.033	0.038	/
Left Tilt 15 °	132322/1745	Data	0.021	-2.40	1.033	0.022	/
Right Cheek	132072/1720	Data	0.051	1.21	1.035	0.053	/
Right Cheek	132322/1745	Data	0.055	-4.54	1.033	0.057	Yes
Right Cheek	132572/1770	Data	0.050	-0.19	1.045	0.052	/
Right Tilt 15 °	132322/1745	Data	0.033	-1.62	1.033	0.034	/
50%RB#0							
Left Cheek	132322/1745	Data	0.032	4.62	1.033	0.033	/
Left Tilt 15 °	132322/1745	Data	0.016	-0.80	1.033	0.017	/
Right Cheek	132322/1745	Data	0.048	-2.97	1.033	0.050	/
Right Tilt 15 °	132322/1745	Data	0.025	2.64	1.033	0.026	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	132072/1720	Data	1.033	2.70	1.035	1.069	/
Back Upward	132322/1745	Data	1.054	0.31	1.033	1.089	Yes
Back Upward	132572/1770	Data	1.026	2.21	1.045	1.072	/
Back Upward (Repeated)	132072/1720	Data	0.970	-1.54	1.035	1.004	/
	132322/1745	Data	0.976	-3.37	1.033	1.008	/
	132572/1770	Data	0.952	-4.96	1.045	0.995	/
Face Upward	132322/1745	Data	0.264	2.04	1.033	0.273	/
50%RB#0							
Back Upward	132322/1745	Data	0.774	-3.68	1.033	0.799	/
Face Upward	132322/1745	Data	0.230	-3.47	1.033	0.238	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	132072/1720	Data	1.033	2.70	1.035	1.069	/
Back Upward	132322/1745	Data	1.054	0.31	1.033	1.089	Yes
Back Upward	132572/1770	Data	1.026	2.21	1.045	1.072	/
Back Upward (Repeated)	132072/1720	Data	0.970	-1.54	1.035	1.004	/
	132322/1745	Data	0.976	-3.37	1.033	1.008	/
	132572/1770	Data	0.952	-4.96	1.045	0.995	/
Face Upward	132322/1745	Data	0.264	-0.30	1.033	0.273	/
Edge B	132322/1745	Data	0.078	-1.58	1.033	0.081	/
Edge C	132322/1745	Data	0.644	-0.85	1.033	0.665	/
Edge D	132322/1745	Data	0.018	-4.65	1.033	0.019	/
50%RB#0							
Back Upward	132322/1745	Data	0.774	-3.68	1.033	0.799	/
Face Upward	132322/1745	Data	0.230	-3.47	1.033	0.238	/
Edge B	132322/1745	Data	0.066	-3.90	1.033	0.068	/
Edge C	132322/1745	Data	0.602	0.70	1.033	0.622	/
Edge D	132322/1745	Data	0.013	3.37	1.033	0.013	/



Results overview of FDD LTE Band 71, QPSK, 10MHz Bandwidth

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Left Cheek	133222/673.0	Data	0.309	-1.24	1.067	0.330	Yes
Left Cheek	133322/683.0	Data	0.275	-0.39	1.074	0.295	/
Left Cheek	133372/688.0	Data	0.262	0.88	1.096	0.287	/
Left Tilt 15 °	133322/683.0	Data	0.148	-1.77	1.074	0.159	/
Right Cheek	133322/683.0	Data	0.247	-2.71	1.074	0.265	/
Right Tilt 15 °	133322/683.0	Data	0.130	1.37	1.074	0.140	/
50%RB#0							
Left Cheek	133322/683.0	Data	0.252	-0.29	1.135	0.286	/
Left Tilt 15 °	133322/683.0	Data	0.126	-0.36	1.135	0.143	/
Right Cheek	133322/683.0	Data	0.229	0.61	1.135	0.260	/
Right Tilt 15 °	133322/683.0	Data	0.113	-2.11	1.135	0.128	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	133222/673.0	Data	0.508	-2.66	1.067	0.542	Yes
Back Upward	133322/683.0	Data	0.487	0.82	1.074	0.523	/
Back Upward	133372/688.0	Data	0.451	-1.02	1.096	0.494	/
Face Upward	133322/683.0	Data	0.379	-0.79	1.074	0.407	/
50%RB#0							
Back Upward	133322/683.0	Data	0.432	-2.90	1.135	0.490	/
Face Upward	133322/683.0	Data	0.305	0.85	1.135	0.346	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
1RB#0							
Back Upward	133322/683.0	Data	0.487	0.82	1.074	0.523	/
Face Upward	133322/683.0	Data	0.379	-0.79	1.074	0.407	/
Edge B	133222/673.0	Data	0.589	0.52	1.067	0.628	Yes
Edge B	133322/683.0	Data	0.551	-0.41	1.074	0.592	/
Edge B	133372/688.0	Data	0.532	-2.66	1.096	0.583	/
Edge C	133322/683.0	Data	0.221	-1.81	1.074	0.237	/
Edge D	133322/683.0	Data	0.347	-0.89	1.074	0.373	/
50%RB#0							
Back Upward	133322/683.0	Data	0.432	-2.90	1.135	0.490	/
Face Upward	133322/683.0	Data	0.305	0.85	1.135	0.346	/
Edge B	133322/683.0	Data	0.522	0.07	1.135	0.592	/
Edge C	133322/683.0	Data	0.192	1.66	1.135	0.218	/
Edge D	133322/683.0	Data	0.312	1.30	1.135	0.354	/



Results overview of WIFI2.4G 802.11b

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Left Cheek	1/2412	DSSS	0.194	0.84	1.127	0.219	/
Left Cheek	6/2437	DSSS	0.194	-3.88	1.213	0.235	Yes
Left Cheek	11/2462	DSSS	0.193	-1.25	1.086	0.210	/
Left Tilt 15 °	6/2437	DSSS	0.189	3.41	1.213	0.229	/
Right Cheek	6/2437	DSSS	0.088	-0.06	1.213	0.107	/
Right Tilt 15 °	6/2437	DSSS	0.083	2.98	1.213	0.101	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	1/2412	DSSS	0.059	0.83	1.127	0.066	/
Back Upward	6/2437	DSSS	0.060	-1.62	1.213	0.073	Yes
Back Upward	11/2462	DSSS	0.059	-2.98	1.086	0.064	/
Face Upward	6/2437	DSSS	0.058	-3.42	1.213	0.070	/
Hotspot(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	1/2412	DSSS	0.059	0.83	1.127	0.066	/
Back Upward	6/2437	DSSS	0.060	-1.62	1.213	0.073	Yes
Back Upward	11/2462	DSSS	0.059	-2.98	1.086	0.064	/
Face Upward	6/2437	DSSS	0.058	-3.42	1.213	0.070	/
Edge A	6/2437	DSSS	0.044	3.51	1.213	0.053	/
Edge B	6/2437	DSSS	0.038	-4.91	1.213	0.046	/
Edge D	6/2437	DSSS	0.020	1.32	1.213	0.024	/

Results overview of BT

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Left Cheek	0/2402	DH5	0.136	0.95	1.151	0.157	/
Left Cheek	39/2441	DH5	0.162	1.64	1.026	0.166	Yes
Left Cheek	78/2480	DH5	0.121	-3.12	1.358	0.164	/
Left Tilt 15 °	39/2441	DH5	0.155	-2.82	1.026	0.159	/
Right Cheek	39/2441	DH5	0.073	0.33	1.026	0.075	/
Right Tilt 15 °	39/2441	DH5	0.064	0.56	1.026	0.066	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	0/2402	DH5	0.027	0.76	1.151	0.031	/
Back Upward	39/2441	DH5	0.033	-2.66	1.026	0.034	Yes
Back Upward	78/2480	DH5	0.024	-1.23	1.358	0.033	/
Face Upward	39/2441	DH5	0.021	1.73	1.026	0.022	/

Results overview of WIFI 5G 802.11n40-5190

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Left Cheek	38/5190	OFDM	0.192	-1.58	1.002	0.192	Yes
Left Tilt 15 °	38/5190	OFDM	0.183	-4.45	1.002	0.183	/
Right Cheek	38/5190	OFDM	0.070	-3.02	1.002	0.070	/
Right Tilt 15 °	38/5190	OFDM	0.061	-1.99	1.002	0.061	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	38/5190	OFDM	0.035	0.53	1.002	0.035	Yes
Face Upward	38/5190	OFDM	0.026	1.34	1.002	0.026	/

Results overview of WIFI 5G 802.11n20-5260

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Left Cheek	52/5260	OFDM	0.188	4.25	1.023	0.192	Yes
Left Tilt 15 °	52/5260	OFDM	0.179	-1.89	1.023	0.183	/
Right Cheek	52/5260	OFDM	0.065	-3.64	1.023	0.067	/
Right Tilt 15 °	52/5260	OFDM	0.058	-4.22	1.023	0.059	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	52/5260	OFDM	0.031	1.41	1.023	0.032	Yes
Face Upward	52/5260	OFDM	0.022	-2.84	1.023	0.023	/

Results overview of WIFI 5G 802.11n20-5700

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Left Cheek	140/5700	OFDM	0.203	-1.54	1.096	0.223	Yes
Left Tilt 15 °	140/5700	OFDM	0.191	-3.33	1.096	0.209	/
Right Cheek	140/5700	OFDM	0.075	1.28	1.096	0.082	/
Right Tilt 15 °	140/5700	OFDM	0.068	0.79	1.096	0.075	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	140/5700	OFDM	0.041	-1.10	1.096	0.045	Yes
Face Upward	140/5700	OFDM	0.032	-0.55	1.096	0.035	/

Results overview of WIFI 5G 802.11ac20-5745

Test Position of Head	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Left Cheek	149/5745	OFDM	0.221	-0.52	1.052	0.232	Yes
Left Tilt 15 °	149/5745	OFDM	0.208	1.62	1.052	0.219	/
Right Cheek	149/5745	OFDM	0.080	-3.75	1.052	0.084	/
Right Tilt 15 °	149/5745	OFDM	0.073	-2.11	1.052	0.077	/
Body-worn(10mm)	Channel /Frequency	Mode	SAR Value (W/kg)1-g	Power drift(%)	Scaled Factor	Scaled SAR (W/Kg)1-g	SAR Plot.
Back Upward	149/5745	OFDM	0.045	1.29	1.052	0.047	Yes
Face Upward	149/5745	OFDM	0.035	4.41	1.052	0.037	/

Note:

Per KDB941225 D06 v02r01, When the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested. As the manufacture requirement the separation distance use 5mm for Hotspot mode.

Per KDB Publication 941225 D01v03r01. RMC 12.2kbps was as primary mode SAR, when the primary mode SAR less than 1.2W/kg, secondary SAR (HSPA) was not requires.

When the 1-g SAR for the mid-band channel or the channel with the highest output power satisfy the following conditions, testing of the other channels in the band is not required. (Per KDB 447498 D01 General RF Exposure Guidance v06)

- ≤ 0.8 W/kg, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg, when the transmission band is ≥ 200 MHz

The priority (Main) and secondary(upper) antenna cannot transmit at the same time.



10. Simultaneous Transmissions Analysis

Localized Specific Absorption Rate (SAR) of this portable wireless device has been measured in all cases requested by the relevant standards cited in Clause 6 of this report. Maximum localized SAR is **below** exposure limits specified in the relevant standards.

Simultaneous SAR

No.	Transmitter Combinations	Scenario Supported or not	Supported for Mobile Hotspot or not
1	WWAN + BT	Yes	No
2	WWAN + WIFI 2.4G	Yes	Yes
3	WCDMA +WIFI 5G	Yes	No
4	WIFI+BT	No	No

Simultaneous Tx Combination of GSM/WCDMA/LTE and BT/WIFI (Head)

Test Position/Freq.	Left Cheek	Left Tilt 15 °	Right Cheek	Right Tilt 15 °	
Head MAX 1-g SAR(W/Kg)	WCDMA 850	0.201	0.164	0.221	0.133
	WCDMA 1900	0.170	0.115	0.204	0.130
	WCDMA 1700	0.029	0.025	0.048	0.028
	LTE Band2	0.150	0.090	0.153	0.106
	LTE Band4	0.037	0.028	0.052	0.037
	LTE Band5	0.178	0.142	0.214	0.140
	LTE Band7	0.098	0.047	0.065	0.044
	LTE Band12	0.387	0.323	0.384	0.266
	LTE Band17	0.122	0.095	0.124	0.094
	LTE Band41	0.030	0.024	0.017	0.014
	LTE Band66	0.038	0.022	0.057	0.034
	LTE Band71	0.330	0.159	0.265	0.140
	WIFI 2.4G	0.235	0.229	0.107	0.101
	WIFI 5G	0.232	0.219	0.084	0.077
	BT	0.166	0.159	0.075	0.066
WIFI 2.4G Simultaneous \sum 1-g SAR(W/Kg)	0.622	0.552	0.491	0.367	
WIFI 5G Simultaneous \sum 1-g SAR(W/Kg)	0.619	0.542	0.468	0.343	
BT Simultaneous \sum 1-g SAR(W/Kg)	0.553	0.482	0.459	0.332	



Simultaneous Tx Combination of GSM/WCDMA/LTE and BT/WIFI (Body).

Test Position/Freq.	BACK	FACE	Edge A	Edge B	Edge C	Edge D
Body MAX 1-g SAR(W/Kg) 10mm distance	WCDMA 850	0.260	0.157	/	/	/
	WCDMA 1900	0.564	0.274	/	/	/
	WCDMA 1700	0.774	0.178	/	/	/
	LTE Band2	0.564	0.272	/	/	/
	LTE Band4	0.896	0.246	/	/	/
	LTE Band5	0.229	0.152	/	/	/
	LTE Band7	0.389	0.479	/	/	/
	LTE Band12	0.505	0.379	/	/	/
	LTE Band17	0.171	0.115	/	/	/
	LTE Band41	0.135	0.151	/	/	/
	LTE Band66	1.089	0.273	/	/	/
	LTE Band71	0.542	0.407	/	/	/
	WIFI 2.4G	0.073	0.070	/	/	/
	WIFI 5G	0.047	0.037	/	/	/
BT	0.034	0.022	/	/	/	
WIFI 2.4G Simultaneous \sum 1-g SAR(W/Kg)	1.162	0.549	/	/	/	/
WIFI 5G Simultaneous \sum 1-g SAR(W/Kg)	1.136	0.516	/	/	/	/
BT Simultaneous \sum 1-g SAR(W/Kg)	1.123	0.501	/	/	/	/

Simultaneous Tx Combination of GSM/WCDMA/LTE and WIFI (Body).

Test Position/Freq.	BACK	FACE	Edge A	Edge B	Edge C	Edge D	
Hotspot MAX 1-g SAR(W/Kg) 10mm distance	WCDMA 850	0.260	0.157	/	0.232	0.096	0.131
	WCDMA 1900	0.564	0.274	/	0.152	0.274	0.092
	WCDMA 1700	0.774	0.178	/	0.053	0.474	0.024
	LTE Band2	0.564	0.272	/	0.135	0.329	0.081
	LTE Band4	0.896	0.246	/	0.074	0.625	0.019
	LTE Band5	0.229	0.152	/	0.206	0.086	0.100
	LTE Band7	0.389	0.479	/	0.230	0.737	0.194
	LTE Band12	0.505	0.379	/	0.347	0.079	0.247
	LTE Band17	0.171	0.115	/	0.106	0.021	0.081
	LTE Band41	0.135	0.151	/	0.046	0.234	0.036
	LTE Band66	1.089	0.273	/	0.081	0.665	0.019
	LTE Band71	0.523	0.407	/	0.628	0.237	0.373
	WIFI 2.4G	0.073	0.070	0.053	0.046	/	0.024
WIFI 2.4G Simultaneous \sum 1-g SAR(W/Kg)	1.162	0.549	0.053	0.674	0.737	0.271	

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required

11. Measurement Uncertainty

No.	Uncertainty Component	Type	Uncertainty Value (%)	Probability Distribution	k	ci	Standard Uncertainty (%) $u_i(\%)$	Degree of freedom ν_{eff} or ν_i
Measurement System								
1	- Probe Calibration	B	5.8	N	1	1	5.8	∞
2	- Axial isotropy	B	3.5	R	$\sqrt{3}$	0.5	1.43	∞
3	- Hemispherical Isotropy	B	5.9	R	$\sqrt{3}$	0.5	2.41	∞
4	- Boundary Effect	B	1	R	$\sqrt{3}$	1	0.58	∞
5	- Linearity	B	4.7	R	$\sqrt{3}$	1	2.71	∞
6	- System Detection Limits	B	1.0	R	$\sqrt{3}$	1	0.58	∞
7	Modulation response	B	3	N	1	1	3.00	
8	- Readout Electronics	B	0.5	N	1	1	0.50	∞
9	- Response Time	B	1.4	R	$\sqrt{3}$	1	0.81	∞
10	- Integration Time	B	3.0	R	$\sqrt{3}$	1	1.73	∞
11	- RF Ambient Conditions	B	3.0	R	$\sqrt{3}$	1	1.73	∞
12	- Probe Position Mechanical tolerance	B	1.4	R	$\sqrt{3}$	1	0.81	∞
13	- Probe Position with respect to Phantom Shell	B	1.4	R	$\sqrt{3}$	1	0.81	∞
14	- Extrapolation, Interpolation and Integration Algorithms for Max. SAR evaluation	B	2.3	R	$\sqrt{3}$	1	1.33	∞
Uncertainties of the DUT								

15	- Position of the DUT	A	2.6	N	$\sqrt{3}$	1	2.6	5
16	- Holder of the DUT	A	3	N	$\sqrt{3}$	1	3.0	5
17	- Output Power Variation -SAR drift measurement	B	5.0	R	$\sqrt{3}$	1	2.89	∞
Phantom and Tissue Parameters								
18	- Phantom Uncertainty(shape and thickness tolerances)	B	4	R	$\sqrt{3}$	1	2.31	∞
19	Uncertainty in SAR correction for deviation(in permittivity and conductivity)	B	2	N	1	1	2.00	
20	- Liquid Conductivity Target -tolerance	B	2.5	R	$\sqrt{3}$	0.6	1.95	∞
21	- Liquid Conductivity -measurement Uncertainty)	B	4	N	$\sqrt{3}$	1	0.92	9
22	- Liquid Permittivity Target tolerance	B	2.5	R	$\sqrt{3}$	0.6	1.95	∞
23	- Liquid Permittivity -measurement uncertainty	B	5	N	$\sqrt{3}$	1	1.15	∞
Combined Standard Uncertainty				RSS			10.63	
Expanded uncertainty (Confidence interval of 95 %)				K=2			21.26	

System Check Uncertainty

No.	Uncertainty Component	Type	Uncertainty Value (%)	Probability Distribution	k	ci	Standard Uncertainty (%) $u_i(\%)$	Degree of freedom V_{eff} or v_i
Measurement System								
1	- Probe Calibration	B	5.8	N	1	1	5.8	∞
2	- Axial isotropy	B	3.5	R	$\sqrt{3}$	0.5	1.43	∞

3	– Hemispherical Isotropy	B	5.9	R	$\sqrt{3}$	0.5	2.41	∞
4	- Boundary Effect	B	1	R	$\sqrt{3}$	1	0.58	∞
5	- Linearity	B	4.7	R	$\sqrt{3}$	1	2.71	∞
6	- System Detection Limits	B	1	R	$\sqrt{3}$	1	0.58	∞
7	Modulation response	B	0	N	1	1	0.00	
8	- Readout Electronics	B	0.5	N	1	1	0.50	∞
9	- Response Time	B	0.00	R	$\sqrt{3}$	1	0.00	∞
10	- Integration Time	B	1.4	R	$\sqrt{3}$	1	0.81	∞
11	- RF Ambient Conditions	B	3.0	R	$\sqrt{3}$	1	1.73	∞
12	- Probe Position Mechanical tolerance	B	1.4	R	$\sqrt{3}$	1	0.81	∞
13	- Probe Position with respect to Phantom Shell	B	1.4	R	$\sqrt{3}$	1	0.81	∞
14	- Extrapolation, Interpolation and Integration Algorithms for Max. SAR evaluation	B	2.3	R	$\sqrt{3}$	1	1.33	∞
Uncertainties of the DUT								
15	Deviation of experimental source from numerical source	A	4	N	1	1	4.00	5
16	Input Power and SAR drift measurement	A	5	R	$\sqrt{3}$	1	2.89	5
17	Dipole Axis to Liquid Distance	B	2	R	$\sqrt{3}$	1	1.2	∞
Phantom and Tissue Parameters								
18	- Phantom Uncertainty(shape	B	4	R	$\sqrt{3}$	1	2.31	∞



	and thickness tolerances)							
19	Uncertainty in SAR correction for deviation(in permittivity and conductivity)	B	2	N	1	1	2.00	
20	- Liquid Conductivity Target -tolerance	B	2.5	R	$\sqrt{3}$	0.6	1.95	∞
21	- Liquid Conductivity -measurement Uncertainty)	B	4	N	$\sqrt{3}$	1	0.92	9
22	- Liquid Permittivity Target tolerance	B	2.5	R	$\sqrt{3}$	0.6	1.95	∞
23	- Liquid Permittivity -measurement uncertainty	B	5	N	$\sqrt{3}$	1	1.15	∞
Combined Standard Uncertainty				RSS			10.15	
Expanded uncertainty (Confidence interval of 95 %)				K=2			20.29	



12. Equipment List

This table is a complete overview of the SAR measurement equipment. Devices used during the test described are marked .

	EQUIPMENT	Model	Serial number	Calibration Date	Due Date
<input checked="" type="checkbox"/>	SAR Probe	SSE2	SN41/18 EPGO330	2019/05/21	2020/05/20
<input checked="" type="checkbox"/>	Dipole	SID750	SN 23/15 DIP0G750-378	2017/11/27	2020/11/26
<input checked="" type="checkbox"/>	Dipole	SID835	SN 09/13 DIP0G835-217	2017/11/27	2020/11/26
<input type="checkbox"/>	Dipole	SID900	SN 09/13 DIP0G900-215	2017/11/27	2020/11/26
<input checked="" type="checkbox"/>	Dipole	SID1800	SN 09/13 DIP1G800-216	2017/11/27	2020/11/26
<input checked="" type="checkbox"/>	Dipole	SID1900	SN 09/13 DIP2G000-218	2017/11/27	2020/11/26
<input type="checkbox"/>	Dipole	SID2000	SN 09/13 DIP2G000-219	2017/11/27	2020/11/26
<input checked="" type="checkbox"/>	Dipole	SID2450	SN_09/13_DIP2G450-220	2017/11/27	2020/11/26
<input checked="" type="checkbox"/>	Dipole	SID2600	SN 32/14_DIP2G600-338	2017/11/27	2020/11/26
<input checked="" type="checkbox"/>	Dipole	SWG5500	SN15/15 WGA39	2017/11/27	2020/11/26
<input checked="" type="checkbox"/>	Multimeter	Keithley-2000	4014020	2020/04/03	2021/04/03
<input checked="" type="checkbox"/>	System Simulator(Agilent 8960)	E5515C	GB 47200710	2019/11/27	2020/11/26
<input checked="" type="checkbox"/>	System Simulator(R&S)	CMW500	130805	2019/07/30	2020/07/29
<input checked="" type="checkbox"/>	KEYSIGHT	E7515A	MY56040357	2020/04/03	2021/04/03
<input checked="" type="checkbox"/>	Vector Network Analyzer(R&S)	ZVB8	A0802530	2020/04/03	2021/04/03
<input checked="" type="checkbox"/>	PC 3.5 Fixed Match Calibration Kit	ZV-Z32	100571	2019/11/29	2020/11/28
<input checked="" type="checkbox"/>	Dielectric Probe Kit	SCLMP	SN 09/13 OCPG51	2019/11/27	2020/11/26
<input checked="" type="checkbox"/>	Signal Generator	SMU200A	A140801888	2020/03/16	2021/03/15
<input checked="" type="checkbox"/>	Amplifier	Nucletudes	143060	2020/03/16	2021/03/15
<input checked="" type="checkbox"/>	Directional Coupler	DC6180A	305827	2020/03/16	2021/03/15
<input checked="" type="checkbox"/>	Power Meter	NRP2	A140401673	2020/03/16	2021/03/15
<input checked="" type="checkbox"/>	Power Sensor	NPR-Z11	1138.3004.02-114072-nq	2020/03/16	2021/03/15
<input checked="" type="checkbox"/>	Power Meter	NRVS	A0802531	2020/03/16	2021/03/15
<input checked="" type="checkbox"/>	Power Sensor	NRV-Z4	100069	2020/03/16	2021/03/15
	EQUIPMENT	Model	Serial number	Calibration Date	Due Date
<input checked="" type="checkbox"/>	SAR Probe	SSE2	SN 41/18 EPGO330	2022/01/24	2023/01/23
<input checked="" type="checkbox"/>	Dipole	SID750	SN23/15 DIP0G750-378	2020/06/25	2023/06/24
<input checked="" type="checkbox"/>	Multimeter	Keithley-2000	4014020	2022/03/25	2023/03/24
<input checked="" type="checkbox"/>	System Simulator(R&S)	CMW500	130805	2022/03/25	2023/03/24
<input checked="" type="checkbox"/>	KEYSIGHT	E7515A	MY56040357	2022/03/25	2023/03/24
<input checked="" type="checkbox"/>	Vector Network Analyzer(R&S)	ZVB8	A0802530	2022/03/25	2023/03/24
<input checked="" type="checkbox"/>	PC 3.5 Fixed Match Calibration Kit	ZV-Z32	100571	2022/03/25	2023/03/24
<input checked="" type="checkbox"/>	Dielectric Probe Kit	SCLMP	SN 09/13 OCPG51	2022/03/25	2023/03/24
<input checked="" type="checkbox"/>	Signal Generator	SMU200A	A140801888	2022/03/25	2023/03/24
<input checked="" type="checkbox"/>	Amplifier	Nucletudes	143060	2022/03/25	2023/03/24
<input checked="" type="checkbox"/>	Directional Coupler	DC6180A	305827	2022/03/25	2023/03/24
<input checked="" type="checkbox"/>	Power Meter	NRP2	A140401673	2022/03/25	2023/03/24



ANNEX A: Appendix A: SAR System performance Check Plots

(Please See Appendix A)

ANNEX B: Appendix B: SAR Measurement results Plots

(Please See Appendix B)

ANNEX C: Appendix C: Calibration reports

(Please See Appendix C)

ANNEX D: Appendix D: SAR Test Setup

(Please See Appendix D)

—End of the Report—