SAR TEST REPORT

Report No.:	BCTC2209694979-4E
Applicant:	Telecell Mobile (H.K) Ltd.
Product Name:	LTE Flip Phone
Model/Type Ref.:	T2
Tested Date:	2022-09-13 to 2022-09-25
Issued Date:	2022-10-12

Shenzhen BCTC Testing Co., Ltd.

FCC ID: 2ADX3T2

Product Name:	LTE Flip Phone
Trademark:	FiGO
Model/Type Ref.:	T2
Applicant:	Telecell Mobile (H.K) Ltd.
Address:	RM 801 Metro Ctr II, 21 Lam Hing Street Kln Bay, Hong Kong
Manufacturer:	Telecell Mobile (H.K) Ltd.
Address:	RM 801 Metro Ctr II, 21 Lam Hing Street Kln Bay, Hong Kong
Factory:	N/A
Address:	N/A
Prepared By:	Shenzhen BCTC Testing Co., Ltd.
Address:	1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date:	2022-09-13
Sample tested Date:	2022-09-13 to 2022-09-25
Issue Date:	2022-10-12
Test Standards:	IEEE Std C95.1, 2019/ IEEE Std 1528™-2013/FCC Part 2.1093
Test Results:	PASS
Remark:	This is SAR test report

Tested by:

Jack Li

Jack Li/Project Handler

Approved by:

Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

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(Note: N/A Means Not Applicable)

1. Version

Report No.	Issue Date	Description	Approved
BCTC2209694979-4E	2022-10-12	Original	Valid

2. Test Standards

IEEE Std C95.1-2019: IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz.It specifies the maximum exposure limit of 1.6 W/kg as averaged over any 1 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.
IEEE Std 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.
FCC Part 2.1093 Radiofrequency Radiation Exposure Evaluation:Portable Devices
KDB447498 D01 General RF Exposure Guidance v06 : Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies
KDB447498 D02 SAR Procedures for Dongle Xmtr v02r01: SAR Measurement Procedures For USB Dongle Transmitters.
KDB865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04 : SAR Measurement Requirements for 100 MHz to 6 GHz
KDB865664 D02 RF Exposure Reporting v01r02: RF Exposure Compliance Reporting and Documentation Considerations
KDB 248227 D01 802.11 Wi-Fi SAR v02r02: SAR GUIDANCE FOR IEEE 802.11 (Wi-Fi) TRANSMITTERS
KDB941225 D01 3G SAR Procedures: 3G SAR MEAUREMENT PROCEDURES
KDB 941225 D05 SAR for LTE Devices: SAR Evaluation Considerations For LTE Devices
KDB648474 D04: Handset SAR v01r03: SAR Evaluation Considerations for Wireless Handsets

3. Test Summary

The maximum results of Specific Absorption Rate (SAR) have found during testing are as follows:

Frequency Band	Head SAR	Body (10mm Gap)	SAR_{1g} Limit (W/kg)
	Report SAR_{1g} (W/kg)	Report SAR_{1g} (W/kg)	
GSM 850	0.453	0.472	1.6
GSM1900	0.737	0.555	1.6
WCDMA Band V	0.026	**0.569**	1.6
WCDMA Band IV	0.290	0.155	1.6
WCDMA Band II	0.212	0.254	1.6
LTE band 2	0.173	0.399	1.6
LTE band 4	0.185	0.556	1.6
LTE band 5	0.067	0.345	1.6
LTE band 7	0.176	0.396	1.6
LTE band 12	0.086	0.162	1.6
LTE band 17	0.089	0.123	1.6
LTE band 66	0.122	0.264	1.6
BT	0.058	**0.094**	1.6

The device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-2019, and had been tested in accordance with the measurement methods and procedure specified in IEEE 1528-2013.

<Highest Reported simultaneous SAR Summary>

Exposure Position	Classment Class	Highest Reported Simultaneous Transmission SAR1-g (W/kg)
Body-worn (hotspot open)	PCE	**0.663**
	DTS	

4. SAR Limits

FCC Limit (1g Tissue)

EXPOSURE LIMITS	SAR (W/kg)	
	(General Population / Uncontrolled Exposure Environment)	(Occupational / Controlled Exposure Environment)
Spatial Average(averaged over the whole body)	0.08	0.4
Spatial Peak(averaged over any 1 g of tissue)	1.6	8.0
Spatial Peak(hands/wrists/ feet/anklesaveraged over 10 g)	4.0	20.0

Population/Uncontrolled Environments are defined as locations where there is the exposure of individual who have no knowledge or control of their exposure.
Occupational/Controlled Environments are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure (i.e. as a result of employment or occupation).

5. Measurement Uncertainty

Not required as SAR measurement uncertainty analysis is required in SAR reports only when the highestmeasured SAR in a frequency band is ≥ 1.5 W/kg for 1-g SAR accoridng to KDB865664D01.

Uncertainty Component	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	Veff
Measurement System								
Probe calibration	5.8	N	1	1	1	5.80	5.80	∞
Axial Isotropy	3.5	R	√3	$\sqrt{1-C_p}$	$\sqrt{1-C_p}$	1.43	1.43	∞
Hemispherical Isotropy	5.9	R	√3	$\sqrt{C_p}$	$\sqrt{C_p}$	2.41	2.41	∞
Boundary effect	1.0	R	√3	1	1	0.58	0.58	∞
Linearity	4.7	R	√3	1	1	2.71	2.71	∞
System detection limits	1.0	R	√3	1	1	0.58	0.58	∞
Readout Electronics	0.5	N	1	1	1	0.50	0.50	∞
Response Time	0.0	R	√3	1	1	0.00	0.00	∞
Integration Time	1.4	R	√3	1	1	0.81	0.81	∞
RF ambient Conditions - Noise	3.0	R	√3	1	1	1.73	1.73	∞
RF ambient Conditions - Reflections	3.0	R	√3	1	1	1.73	1.73	∞
Probe positioner Mechanical Tolerance	1.4	R	√3	1	1	0.81	0.81	∞
Probe positioning with respect to Phantom Shell	1.4	R	√3	1	1	0.81	0.81	∞
Max. SAR Evaluation	1.0	R	√3	1	1	0.6	0.6	∞
Test sample Related								
Device positioning	2.6	N	1	1	1	2.6	2.6	11
Device holder	3.0	N	1	1	1	3.0	3.0	7
Drift of output power	5.0	N	√3	1	1	2.89	2.89	∞
Phantom and Tissue Parameters								
Phantom uncertainty	4.00	R	√3	1	1	2.31	2.31	∞
Liquid conductivity (target)	2.50	N	1	0.78	0.71	1.95	1.78	5
Liquid conductivity (meas)	4.00	N	1	0.23	0.26	0.92	1.04	5
Liquid Permittivity (target)	2.50	N	1	0.78	0.71	1.95	1.78	∞
Liquid Permittivity (meas)	5.00	N	1	0.23	0.26	1.15	1.30	∞
Combined Standard		RSS	$U_c = \sqrt{\sum_{i=1}^{n} C_i^2 U_i^2}$			10.63 %	10.54%	

Expanded Uncertainty (95% Confidence interval)	U = k UC , k=2	21.26 %	21.08%	

6. Product Information And Test Setup

6.1 Product Information

Model/Type Ref.:	T2
Model differences:	N/A
Hardware Version:	N/A
Software Version:	N/A
Connecting I/O Port(s)	Please refer to the User's Manual
Ratings:	DC 5V from adapter /DC 3.7V from battery
Adapter:	Model:T2 Input: AC100-240V 50/60Hz 150mA Output: DC 5.0V 600mA

Operation Frequency:	GSM/GPRS/EGPRS 850: TX: 824~849MHz; RX: 869~894MHz; GSM/GPRS/EGPRS 1900: TX:1850~1910MHz; RX:1930~1990MHz; WCDMA Band II: TX: 1852.40~1907.60MHz; Rx: 1932.60~1987.40MHz; WCDMA Band IV: TX: 1712.40~1752.60MHz; RX: 2112.60 – 2452.40MHz WCDMA Band V: TX: 826.40~846.60MHz; RX: 871.40~ 891.60MHz;
GPRS Class:	Class 12
Max RF Output Power:	GSM/GPRS/EGPRS 850: 32.58dBm, GSM/GPRS/EGPRS 1900: 29.83dBm WCDMA Band II: 22.77 dBm WCDMA Band IV: 22.85 dBm WCDMA Band V: 22.25 dBm
Type of Modulation:	GSM with GMSK Modulation WCDMA Mode with BPSK Modulation HSDPA Mode with QPSK, 16QAM Modulation HSUPA Mode with QPSK, 16QAM Modulation
Type of Emission:	GSM/GPRS 850: 252KGXW EGPRS 850:247KG7W GSM/GPRS 1900: 249KGXW EGPRS 1900:247KG7W WCDMA Band II: 4M18F9W WCDMA Band IV: 4M16F9W WCDMA Band V: 4M17F9W
Antenna installation:	Internal antenna
Antenna Gain:	GSM850: 0.5 dBi GSM1900: 1 dBi WCDMA Band II: 1 dBi WCDMA Band IV: 1 dBi WCDMA Band V: 0.5 dBi

Tx Frequency:	LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500MHz-2570MHz

	LTE Band 12: 699 MHz ~ 716 MHz LTE Band 17: 704MHz-716MHz LTE Band 66: 1710 MHz ~ 1780 MHz
Rx Frequency:	LTE Band 2: 1930 MHz ~ 1990 MHz LTE Band 4: 2110 MHz ~ 2155 MHz LTE Band 5: 869 MHz ~ 894 MHz LTE Band 7: 2620MHz-2690MHz LTE Band 12: 729 MHz ~ 746 MHz LTE Band 17: 734MHz-746MHz LTE Band 66: 2110 MHz ~ 2180 MHz
Bandwidth:	LTE Band 2: 1.4MHz /3MHz /5MHz /10MHz /15MHz /20MHz LTE Band 4: 1.4MHz /3MHz /5MHz /10MHz /15MHz /20MHz LTE Band 5: 1.4MHz /3MHz /5MHz /10MHz LTE Band 7: 5MHz /10MHz /15MHz /20MHz LTE Band 12: 1.4MHz /3MHz /5MHz /10MHz LTE Band 17: 5MHz /10MHz LTE Band 66: 1.4MHz /3MHz /5MHz /10MHz /15MHz /20MHz
Maximum Output Power to Antenna:	LTE Band 2: 23.3 dBm LTE Band 4: 23.59 dBm LTE Band 5: 21.04 dBm LTE Band 7: 22.09 dBm LTE Band 12: 20.82 dBm LTE Band 17: 20.65 dBm LTE Band 66: 23.73 dBm
99% Occupied Bandwidth:	LTE Band 2: 18M1G7D LTE Band 4: 18M0G7D LTE Band 5: 9M01G7D LTE Band 7: 18M1G7D LTE Band 12: 9M06G7D LTE Band 17: 8M94G7D LTE Band 66: 18M0G7D
Type of Modulation:	QPSK/16QAM
Antenna Type:	Internal Antenna
Antenna Gain:	LTE Band 2: 1 dBi LTE Band 4: 1 dBi LTE Band 5: 0.5 dBi LTE Band 7: 1.2 dBi LTE Band 12: 0.4 dBi LTE Band 17: 0.4 dBi LTE Band 66: 1 dBi

Operation Frequency:	2402-2480MHz
Type of Modulation:	GFSK, π/ 4 DQPSK, 8DPSK
Number Of Channel	79CH
Antenna installation:	Internal antenna
Antenna Gain:	-0.02 dBi

6.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

6.3 Support Equipment

Cable of Product

No.	Cable Type	Quantity	Provider	Length (m)	Shielded	Note
1	--	--	Applicant	---	Yes/No	--
2	--	--	BCTC	--	Yes/No	--

No.	Device Type	Brand	Model	Series No.	Note
1.	---	---	---	---	---
2.	--	--	--	--	--

Notes:
1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer’s requirements and conditions for the intended use.

6.4 Test Environment

1. Normal Test Conditions:

Humidity(%):	54
Atmospheric Pressure(kPa):	101
Temperature(℃):	22

2.Extreme Test Conditions:
N/A

7. Test Facility And Test Instrument Used

7.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

7.2 Test Instrument Used

Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
PC	DELL	\	\	N/A	N/A
SAR Measurement system	SATIMO	\	\	N/A	N/A
Signal Generator	Agilent	83712A	\	May 24, 2022	May 23, 2023
Multimeter	Keithley	1160271	\	Nov. 12, 2021	Nov 11, 2022
S-parameter Network Analyzer	R&S	ZVB 8	101353	Dec. 09, 2021	Dec. 08, 2022
Wideband Radio Communication Tester	R&S	CMW500	\	Nov. 12, 2021	Nov 11, 2022
E SAR PROBE 6GHz	MVG	SSE2	SN EPGO362	Nov. 20, 2021	Nov. 19, 2022
DIPOLE 835	SATIMO	SID 835	SN 47/21 DIP 0G835-621	Nov. 20, 2021	Nov. 19, 2024
DIPOLE 900	SATIMO	SID 900	SN 47/21 DIP 0G900-622	Nov. 20, 2021	Nov. 19, 2024
DIPOLE 1800	SATIMO	SID 1800	SN 47/21 DIP 1G800-623	Nov. 20, 2021	Nov. 19, 2024
DIPOLE 2100	SATIMO	SID 2100	SN 47/21 DIP 2G100-625	Nov. 20, 2021	Nov. 19, 2024
DIPOLE 2450	SATIMO	SID 2450	SN 47/21 DIP 2G450-627	Nov. 20, 2021	Nov. 19, 2024
DIPOLE 2600	SATIMO	SID 2600	SN 47/21 DIP 2G600-628	Nov. 25, 2021	Nov. 24, 2024
COMOSAR OPENCoaxial Probe	SATIMO	\	\	Nov. 20, 2021	Nov. 19, 2022
SAR Locator	SATIMO	\	\	Nov. 20, 2021	Nov. 19, 2022
Communication Antenna	SATIMO	\	\	Nov. 20, 2021	Nov. 19, 2022
FEATURE PHONEPOSITIONING DEVICE	SATIMO	\	\	N/A	N/A
DUMMY PROBE	SATIMO	\	\	N/A	N/A
SAM Phantom	MVG	\	SN 13/09 SAM68	N/A	N/A
Liquid measurement Kit	HP	85033D	3423A08186	Nov. 20, 2021	Nov. 19, 2022
Power meter	Agilent	E4419	\	May 24, 2022	May 23, 2023
Power meter	Agilent	E4419	\	May 24, 2022	May 23, 2023
Power sensor	Agilent	E9300A	\	May 24, 2022	May 23, 2023
Power sensor	Agilent	E9300A	\	May 24, 2022	May 23, 2023

Directional Coupler	Krytar 158020	131467	\	Nov. 12, 2021	Nov 11, 2022

Note:
Per KDB865664D01 requirements for dipole calibration, the test laboratory has adopted three year extended calibration interval. Each measured dipole is expected to evalute with following criteria at least on annual interval.

5 There is no physical damage on the dipole;
6 System check with specific dipole is within 10% of calibrated values;
7 The most recent return-loss results,measued at least annually,deviates by no more than 20% from the previous measurement;
8 The most recent measurement of the real or imaginary parts of the impedance, measured at least annually is within 5Ω from the provious measurement.

Network analyzer probe calibration against air, distilled water and a shorting block performed before measuring liquid parameters.

8. Specific Absorption Rate (SAR)

8.1 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 techiques 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.

8.2 SAR Definition

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

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

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

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

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

Where: C is the specific heat capacity, δ T is the temperature rise and δ t is the exposure duration, or related to the

electrical field in the tissue by

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

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

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

9. SAR Measurement System

9.1 The Measurement System

Comosar is a system that is able to determine the SAR distribution inside a phantom of human being according to different standards. The Comosar system consists of the following items:
- Main computer to control all the system
- 6 axis robot
- Data acquisition system
- Miniature E-field probe
- Phone holder
- Head simulating tissue

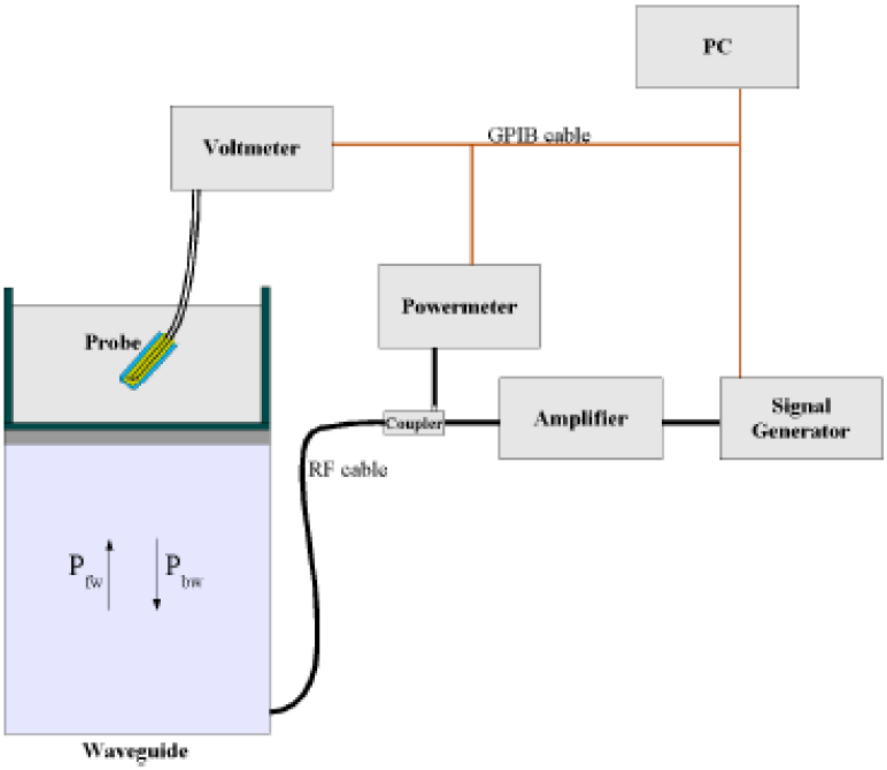
The following figure shows the system.

The EUT under test operating at the maximum power level is placed in the phone holder, under the phantom, which is filled with head simulating liquid. The E-Field probe measures the electric field inside the phantom. The OpenSAR software computes the results to give a SAR value in a 1g or 10g mass.

9.2 Probe

For the measurements the Specific Dosimetric E-Field Probe SN 46/21 EPGO362 with following specifications is used
- Dynamic range: 0.01-100 W/kg
- Tip Diameter : 5 mm
- Distance between probe tip and sensor center: 2.10mm
- Distance between sensor center and the inner phantom surface: 4 mm (repeatability better than +/- 1mm)
- Probe linearity: ＜0.25 dB
- Axial Isotropy: ＜0.25 dB
- Spherical Isotropy: ＜0.50 dB
- Calibration range: 835 to 2500MHz for head & body simulating liquid.

Angle between probe axis (evaluation axis) and surface normal line:1ess than 30°
Probe calibration is realized, in compliance with EN 62209-1 and IEEE 1528 STD, with CALISAR, Antennessa proprietary calibration system. The calibration is performed with the EN 62209-1 annex technique using reference guide at the five frequencies.



$$SAR = \frac{4(p_{\int w} - p_{Pbw})}{ab\delta} cos^2 \left(\pi \frac{y}{a}\right) c^{(2\pi/\delta)}$$

Where :
Pfw = Forward Power
Pbw = Backward Power
a and b =Waveguide dimensions
l = Skin depth

Keithley configuration:
Rate = Medium; Filter = ON; RDGS = 10; Filter type = Moving Average; Range auto after each calibration, a SAR measurement is performed on a validation dipole and compared with a NPL calibrated probe, to verify it.

The calibration factors, CF(N), for the 3 sensors corresponding to dipole 1, dipole 2 and dipole 3 are:

CF(N)=SAR(N)/Vlin(N) (N=1,2,3)

The linearised output voltage Vlin(N) is obtained from the displayed output voltage V(N) using

Vlin(N)=V(N)*(1+V(N)/DCP(N)) (N=1,2,3)

where DCP is the diode compression point in mV.

9.3 Test Procedure

Dosimetric Assessment Procedure
Each E-Probe/Probe Amplifier combination has unique calibration parameters. SATIMO Probe calibration procedure is conducted to determine the proper amplifier settings to enter in the probe parameters. The amplifier settings are determined for a given frequency by subjecting the probe to a known E-field density (1 mW/cm2) using an with CALISAR, Antenna proprietary calibration system.

Free Space Assessment Procedure
The free space E-field from amplified probe outputs is determined in a test chamber. This calibration can be performed in a TEM cell if the frequency is below 1 GHz and in a waveguide or other methodologies above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is rotated 360 degrees until the three channels show the maximum reading. The power density readings equates to 1mW/cm2.

Temperature Assessment Procedure
E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated head tissue. The E-field in the medium correlates with the temperature rise in the dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$SAR = C\frac{\Delta T}{\Delta t}$$

Where:
Δt = exposure time (30 seconds),
C = heat capacity of tissue (brain or muscle),
ΔT = temperature increase due to RF exposure.

SAR is proportional to $\Delta T/\Delta t$, the initial rate of tissue heating, before thermal diffusion takes place. The electric field in the simulated tissue can be used to estimate SAR by equating the thermally derived SAR to that with the E- field component.

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

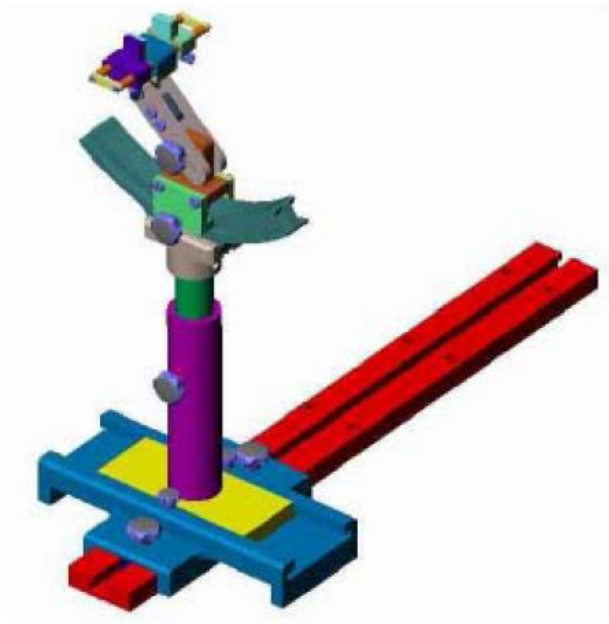
Where:
σ = simulated tissue conductivity,
ρ = Tissue density (1.25 g/cm3 for brain tissue)

9.4 Phantom

For the measurements the Specific Anthropomorphic Mannequin (SAM) defined by the IEEE SCC-34/SC2 group is used. The phantom is a polyurethane shell integrated in a wooden table. The thickness of the phantom amounts to 2mm +/- 0.2mm. It enables the dosimetric evaluation of left and right phone usage and includes an additional flat phantom part for the simplified performance check. The phantom set-up includes a cover, which prevents the evaporation of the liquid.

9.5 Phantom

The positioning system allows obtaining cheek and tilting position with a very good accuracy. In compliance with CENELEC, the tilt angle uncertainty is lower than 1°.



System Material	Permittivity	Loss Tangent
Delrin	3.7	0.005

10. Tissue Simulating Liquids

10.1 Composition of Tissue Simulating Liquid

For the measurement of the field distribution inside the SAM phantom with SMTIMO, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. Please see the following photos for the liquid height.

Liquid Height for Body SAR

The Composition of Tissue Simulating Liquid

Frequency (MHz)	Water (%)	Salt (%)	1,2-Propane diol (%)	HEC (%)	Preventol (%)	DGBE (%)
Head/Body						
835	40.3	1.4	57.9	0.2	0.2	0
900	40.3	1.4	57.9	0.2	0.2	0
1800-2000	55.2	0.3	0	0	0	44.5
2450	55.0	0.1	0	0	0	44.9
2600	54.9	0.1	0	0	0	45.0

Frequency (MHz)	Water (%)	Hexyl Carbitol (%)	Triton X-100 (%)
Head/Body			
5000-6000	65.52	17.24	17.24

10.2 Limit

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 variations 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.

Target Frequency (MHz)	Head/Body	
	Conductivity (σ)	Permittivity (ε_r)
150	0.76	52.3
300	0.87	45.3
450	0.87	43.5
750	0.89	41.9
835	**0.90**	**41.5**
900	**0.97**	**41.5**
915	0.98	41.5
1450	1.20	40.5
1610	1.29	40.3
1800-2000	**1.40**	**40.0**
2450	**1.80**	**39.2**
2600	**1.96**	**39.0**
3000	2.40	38.5
5200	4.66	36.0
5400	4.86	35.8
5600	5.07	35.5
5800	5.27	35.3

10.3 Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using an R&S ZVB 8. Dielectric Probe Kit and an Agilent Network Analyzer.

Calibration Result for Dielectric Parameters of Tissue Simulating Liquid

Frequency(MHz)	Liquid	Target Permitivity (F/m)	Target Conductivity (S/m)	Measured Permitivity (F/m)	Measured Conductivity (S/m)	Deviation Perm.|Cond.(%)	Date	Temp. Ambient|TSL (°C)
835	Head	41.5	0.90	40.8	0.97	-1.69|7.78	09/13/2022	20.0
900	Head	41.5	0.97	40.9	1.05	-1.45|8.25	09/14/2022	20.0
1800	Head	40.0	1.40	39.2	1.52	-2.00|8.57	09/15/2022	20.0
2100	Head	39.8	1.49	38.5	1.61	-3.27|8.05	09/16/2022	20.0
2450	Head	39.2	1.80	38.6	1.95	-1.53|8.33	09/24/2022	20.0
2535	Head	39.09	1.89	39.09	1.89	-0.01|-0.16	09/25/2022	20.0

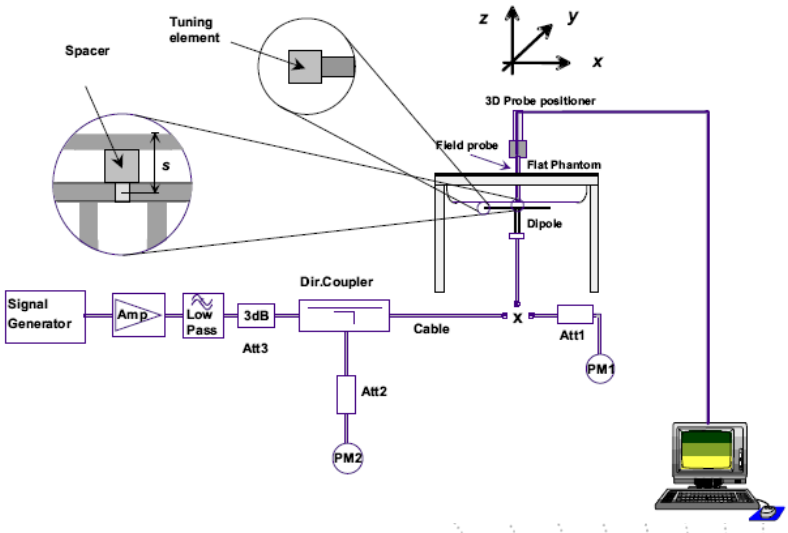
11. SAR Measurement Evaluation

11.1 Purpose of System Performance Check

At the device test frequencies. System check verifies the measurement repeatability of a SAR system before compliance testing and is not a validation of all system specifications. The latter is not required for testing a device but is mandatory before the system is deployed. The system check detects possible short-term drift and unacceptable measurement errors or uncertainties in the system.

11.2 System Setup

In the simplified setup for system evaluation, the EUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave which comes from a signal generator at frequency 850MHz,900 MHz,1800MHz,2000MHz, 2450MHz,2600MHz. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The output power on dipole port must be calibrated to 24 dBm (250 mW) before dipole is connected.



11.3 Validation Results

Comparing to the original SAR value provided by SATIMO, the validation data should be within its specification of 10 %. The following table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion.

Mixture Type	Frequency (MHz)	Power	SAR1g (W/Kg)	SAR10g (W/Kg)	Drift (%)	1W Target		Difference percentage		Liquid Temp	Date
						SAR1g (W/Kg)	SAR10g (W/Kg)	1g	10g		
Head	835	100 mW	0.987	0.638	-0.33	9.56	6.22	3.24%	2.57%	20.0	09/13/2022
		Normalize to 1 Watt	9.87	6.38							
Head	900	100 mW	1.124	0.719	-0.36	10.9	6.99	3.12%	2.86%	20.0	09/14/2022
		Normalize	11.24	7.19							

		to 1 Watt									
Head	1800	100 mW	3.940	1.995	0.07	38.4	20.1	2.60%	-0.50%	20.0	09/15/2022
		Normalize to 1 Watt	39.4	20.0							
Head	2100	100 mW	4.458	2.155	0.10	43.6	21.9	2.29%	-1.37%	20.0	09/16/2022
		Normalize to 1 Watt	44.6	21.6							
Head	2450	100 mW	5.085	2.457	0.36	52.4	24	-2.86%	2.50%	20.0	09/24/2022
		Normalize to 1 Watt	50.9	24.6							
Head	2600	100 mW	5.30	2.34	0.23	55.3	24.6	-4.20%	-4.9%	20.0	09/25/2022
		Normalize to 1 Watt	53.0	23.4							

12. EUT Testing Position

12.1 Define Two Imaginary Lines on The Handset

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

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

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

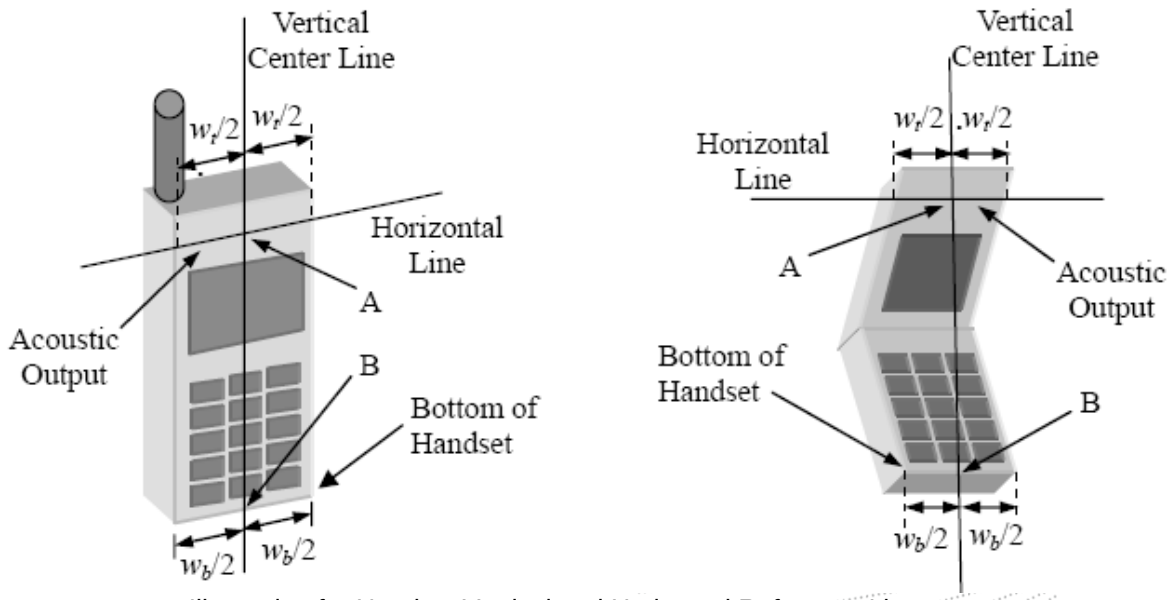


Illustration for Handset Vertical and Horizontal Reference Lines

12.2 Cheek Position

(a) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE.
(b) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost (see below).

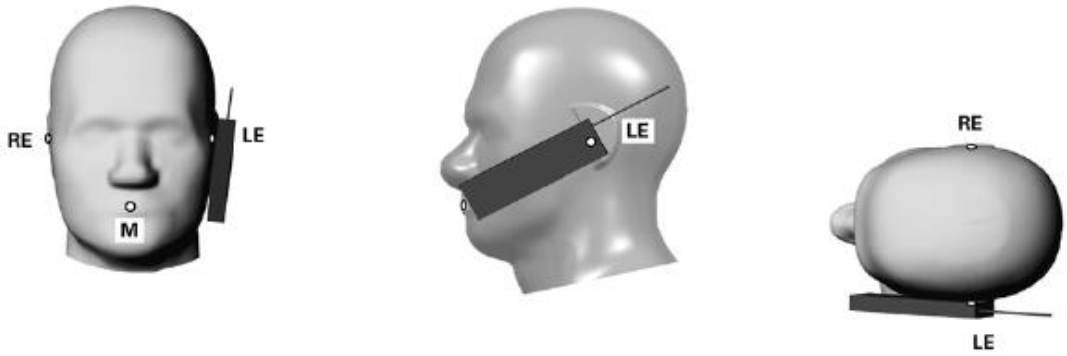


Illustration for Cheek Position

12.3 Tilted Position

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

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

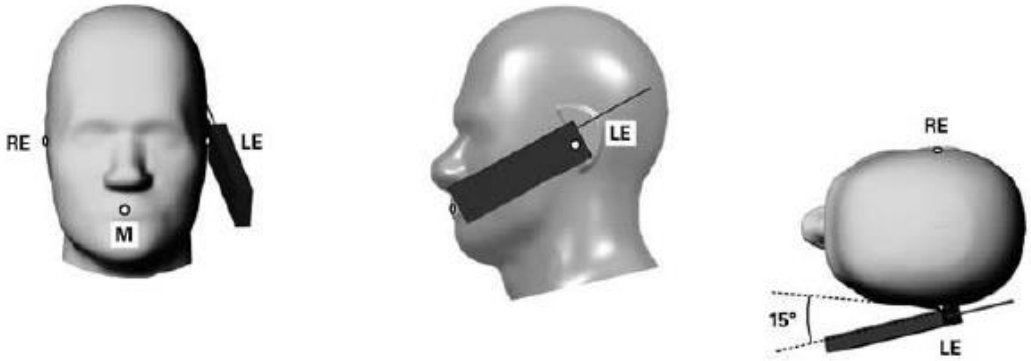


Illustration for Tilted Position

12.4 Body Position

(a) To position the device parallel to the phantom surface with each side.
(b) To adjust the device parallel to the flat phantom.
(c) To adjust the distance between the device surface and the flat phantom to 5mm. a separation distance of 5mm between the phone and the body is used in the measurement conducted for body SAR. This distance represents a typical phone-skin distance when the phone is close to the body e.g. located in pants pocket taking into consideration typical average clothing fabric thickness.

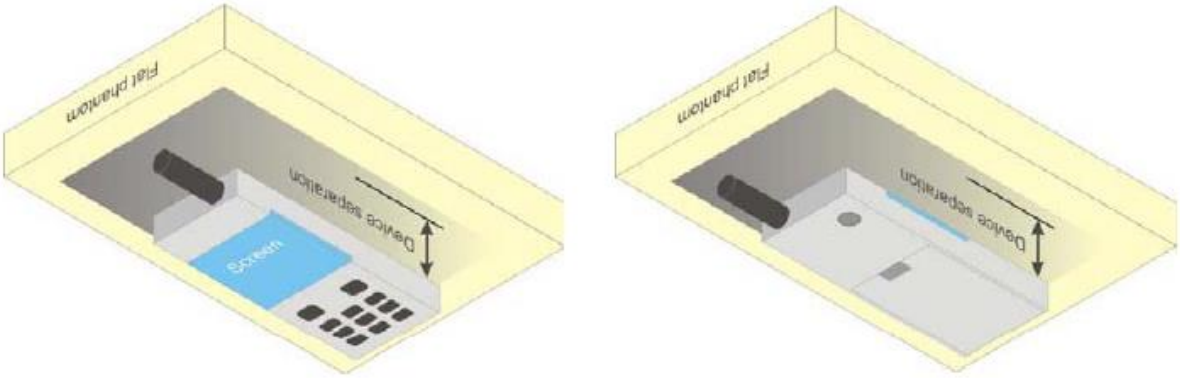


Illustration for Body Worn Position

13. SAR Measurement Procedures

13.1 Measurement Procedures

The measurement procedures are as follows:
(a) Use base station simulator (if applicable) or engineering software to transmit RF power continuously (continuous Tx) in the highest power channel.
(b) Keep EUT to radiate maximum output power or 100% factor (if applicable)
(c) Measure output power through RF cable and power meter.
(d) Place the EUT in the positions as Annex D demonstrates.
(e) Set scan area, grid size and other setting on the SATIMO software.
(f) Measure SAR results for the highest power channel on each testing position.
(g) Find out the largest SAR result on these testing positions of each band
(h) Measure SAR results for other channels in worst SAR testing position if the SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:
(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

13.2 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The SATIMO software includes all numerical procedures necessary to evaluate the spatial peak SAR value.
The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.
The entire evaluation of the spatial peak values is performed within the post-processing engine. The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:
(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

13.3 Area & Zoom Scan Procedures

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan measures 5x5x7 points with step size 8, 8 and 5 mm for 300 MHz to 3 GHz, and 8x8x8 points with step size 4, 4 and 2.5 mm for 3 GHz to 6 GHz. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g.

13.4 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing (step-size is 4, 4 and 2.5 mm). When all volume scan were completed, the software can combine and subsequently superpose these measurement data to calculating the multiband SAR.

13.5 SAR Averaged Methods

The local SAR inside the phantom is measured using small dipole sensing elements inside a probe body. The probe tip must not be in contact with the phantom surface in order to minimize measurements errors, but the highest local SAR will occur at the surface of the phantom.

An extrapolation is using to determinate this highest local SAR values. The extrapolation is based on a fourth-order least-square polynomial fit of measured data. The local SAR value is then extrapolated from the liquid surface with a 1mm step.

The measurements have to be performed over a limited time (due to the duration of the battery) so the step of measurement is high. It could vary between 5 and 8 mm. To obtain an accurate assessment of the maximum SAR averaged over 10g and 1 g requires a very fine resolution in the three dimensional scanned data array.

13.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In SATIMO measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures

measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drift more than 5%, the SAR will be retested.

14. SAR Test Result

14.1 Conducted RF Output Power

According KDB 447498 D01 General RF Exposure Guidance v06 Section 4.1 2) states that "Unless it is specified differently in the published RF exposure KDB procedures, these requirements also apply to test reduction and test exclusion considerations. Time-averaged maximum conducted output power applies to SAR and, as required by § 2.1091(c), time-averaged ERP applies to MPE. When an antenna port is not available on the device to support conducted power measurement, such as FRS and certain Part 15 transmitters with built-in integral antennas, the maximum output power allowed for production units should be used to determine RF exposure test exclusion and compliance."

<GSM Conducted Power>
General Note:
1. Per KDB 447498 D01v06, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. According to October 2013TCB Workshop, for GSM / GPRS / EGPRS, the number of time slots to test for SAR should correspond to the highest frame-average maximum output power configuration, considering the possibility of e.g. 3rd party VoIP operation for head and body-worn SAR testing, the EUT was set in GPRS (4Tx slot) for GSM850/GSM1900 band due to their highest frame-average power.
3. For hotspot mode SAR testing, GPRS should be evaluated, therefore the EUT was set in GPRS (4 Tx slots) for GSM850/GSM1900 band due to its highest frame-average power.

Conducted power measurement results for GSM850/PCS1900

GSM 850		Tune-up	Burst Conducted power (dBm)			Division Factors	Tune-up	Average power (dBm)		
			Channel/Frequency(MHz)					Channel/Frequency(MHz)		
		Max	128/ 824.2	190/ 836.6	251/ 848.8		Max	128/ 824.2	190/ 836.6	251/848.8
GSM		33.00	32.28	32.57	32.52	-9.03dB	23.97	23.25	23.54	23.49
GPRS (GMSK)	1TX slot	33.00	32.28	32.58	32.52	-9.03dB	23.97	23.25	23.55	23.49
	2TX slot	**30.50**	**30.21**	**30.48**	**30.28**	**-6.02dB**	**24.48**	**24.19**	**24.46**	**24.26**
	3TX slot	28.50	28.24	28.49	28.35	-4.26dB	24.24	23.98	24.23	24.09
	4TX slot	26.50	25.88	26.15	25.99	-3.01dB	23.49	22.87	23.14	22.98
EGPRS (8PSK)	1TX slot	33.00	32.25	32.54	32.51	-9.03dB	23.97	23.22	23.51	23.48
	2TX slot	30.50	30.18	30.45	30.24	-6.02dB	24.48	24.16	24.43	24.22
	3TX slot	28.50	28.21	28.46	28.29	-4.26dB	24.24	23.95	24.20	24.03
	4TX slot	26.50	25.89	26.06	25.94	-3.01dB	23.49	22.88	23.05	22.93
GSM 1900		Tune-up	Burst Conducted power (dBm)			Division Factors	Tune-up	Average power (dBm)		
			Channel/Frequency(MHz)					Channel/Frequency(MHz)		
		Max	512/ 1850.2	661/ 1880	810/ 1909.8		Max.	512/ 1850.2	661/ 1880	810/ 1909.8
GSM		30.00	29.79	29.39	29.05	-9.03dB	20.97	20.76	20.36	20.02
GPRS (GMSK)	1TX slot	30.00	29.83	29.43	29.1	-9.03dB	20.97	20.80	20.40	20.07
	2TX slot	27.50	27.46	26.96	26.38	-6.02dB	21.48	21.44	20.94	20.36
	3TX slot	**26.00**	**25.88**	**25.37**	**24.74**	**-4.26dB**	**21.74**	**21.62**	**21.11**	**20.48**
	4TX slot	24.00	23.73	23.26	22.67	-3.01dB	20.99	20.72	20.25	19.66
EGPRS (8PSK)	1TX slot	30.00	29.81	29.41	29.06	-9.03dB	20.97	20.78	20.38	20.03
	2TX slot	27.50	27.44	26.94	26.38	-6.02dB	21.48	21.42	20.92	20.36
	3TX slot	26.00	25.87	25.35	24.74	-4.26dB	21.74	21.61	21.09	20.48

	4TX slot	24.00	23.72	23.25	22.66	-3.01dB	20.99	20.71	20.24	19.65

Notes:
1. Division Factors
To average the power, the division factor is as follows:
1TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.00dB
2TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.00dB
3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB
4TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.00dB
2. According to the conducted power as above, the GPRS measurements are performed with 3Txslot for GPRS850 and 3Txslot GPRS1900.
<UMTS Conducted Power>
The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.A summary of these settings are illustrated below:

HSDPA Setup Configuration:

a. The EUT was connected to Base Station E5515C referred to theSetup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set Gain Factors (βc and βd) and parameters were set according to each
   ii. Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
   iii. Set RMC 12.2Kbps + HSDPA mode.
   iv. Set Cell Power = -86 dBm
   v. Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
   vi. Select HSDPA Uplink Parameters
   vii. Set Delta ACK, Delta NACK and Delta CQI = 8
   viii. Set Ack-Nack Repetition Factor to 3
   ix. Set CQI Feedback Cycle (k) to 4 ms
   x. Set CQI Repetition Factor to 2
   xi. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	β_c	β_d	β_d *(SF)*	β_c/β_d	β_{HS} *(Note1, Note 2)*	CM (dB) *(Note 3)*	MPR (dB) *(Note 3)*
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 *(Note 4)*	15/15 *(Note 4)*	64	12/15 *(Note 4)*	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and Δ_{NACK} = 30/15 with β_{hs} = 30/15 * β_c, and Δ_{CQI} = 24/15 with β_{hs} = 24/15 * β_c.

Note 3: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15.

Setup Configuration

HSUPA Setup Configuration:

a. The EUT was connected to Base StationR&S CMU200 referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.

c. A call was established between EUT and Base Station with following setting * :
   i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
   ii. Set the Gain Factors (βc and βd) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
   iii. Set Cell Power = -86 dBm
   iv. Set Channel Type = 12.2k + HSPA
   v. Set UE Target Power
   vi. Power Ctrl Mode= Alternating bits
   vii. Set and observe the E-TFCI
   viii. Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (Note 5) (Note 6)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 6)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed}1: 47/15 β_{ed}2: 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 (Note 4)	15/15 (Note 4)	64	15/15 (Note 4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.
Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.
Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.
Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 14/15 and β_d = 15/15.
Note 5: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.
Note 6: β_{ed} can not be set directly, it is set by Absolute Grant Value.

General Note
1. Per KDB 941225 D01, RMC 12.2kbps setting is used to evaluate SAR. If AMR 12.2kbps power is < 0.25dB higher than RMC 12.2kbps, SAR tests with AMR 12.2kbps can be excluded.
2. By design, AMR and HSDPA/HSUPA RF power will not be larger than RMC 12.2kbps, detailed information is included in Tune-up Procure exhibit.
3. It is expected by the manufacturer that MPR for some HSDPA/HSUPA subtests may differ from the specification of 3GPP, according to the chipset implementation in this model. The implementation and expected deviation are detailed in tune-up procedure exhibit.

Conducted Power Measurement Results(WCDMA Band II/V)

Band	WCDMA Band II		
Channel	**9262**	**9400**	**9538**
Frequency(MHz)	**1852.4**	**1880.0**	**1907.6**
WCDMA RMC 12.2K	21.59	21.50	21.26
HSDPA Subtest-1	22.10	**22.77**	22.54
HSDPA Subtest-2	21.69	22.46	22.26
HSDPA Subtest-3	21.33	22.11	21.96

HSDPA Subtest-4	21.17	21.96	21.87
HSUPA Subtest-1	21.96	22.46	22.31
HSUPA Subtest-2	21.99	22.70	22.45
HSUPA Subtest-3	21.66	22.36	22.14
HSUPA Subtest-4	21.99	22.56	22.45
HSUPA Subtest-5	21.79	22.48	22.27

Band	**WCDMA Band IV**		
Channel	**1312**	**1450**	**1513**
Frequency(MHz)	**1712.4**	**1740**	**1752.6**
WCDMA RMC 12.2K	21.76	21.73	21.76
HSDPA Subtest-1	22.82	**22.85**	22.83
HSDPA Subtest-2	22.41	22.56	22.40
HSDPA Subtest-3	22.06	22.26	22.07
HSDPA Subtest-4	21.85	22.10	21.69
HSUPA Subtest-1	22.45	22.77	22.57
HSUPA Subtest-2	22.70	22.81	22.77
HSUPA Subtest-3	22.16	22.34	22.35
HSUPA Subtest-4	22.45	22.80	22.77
HSUPA Subtest-5	22.28	22.59	22.35

Band	**WCDMA Band V**		
Channel	**4132**	**4182**	**4233**
Frequency(MHz)	**826.4**	**836.4**	**846.6**
WCDMA RMC 12.2K	**22.25**	22.06	22.01
HSDPA Subtest-1	21.98	22.19	22.01
HSDPA Subtest-2	21.54	22.00	21.83
HSDPA Subtest-3	21.23	21.78	21.59
HSDPA Subtest-4	21.20	21.64	21.32
HSUPA Subtest-1	21.90	22.12	21.76
HSUPA Subtest-2	21.87	22.22	22.01
HSUPA Subtest-3	21.60	21.98	21.46
HSUPA Subtest-4	21.91	22.21	22.01
HSUPA Subtest-5	21.66	22.08	21.74

Note:1.When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤1/2dB higher than the primary mode (RMC12.2kbps) or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	EIRP (dBm)
Band2	1.4	18607	1	#0	QPSK	23.09
Band2	1.4	18607	1	#Mid	QPSK	23.12
Band2	1.4	18607	1	#Max	QPSK	23.14
Band2	1.4	18607	3	#0	QPSK	23.01
Band2	1.4	18607	3	#Mid	QPSK	23.05
Band2	1.4	18607	3	#Max	QPSK	22.99
Band2	1.4	18607	6	#0	QPSK	22.05
Band2	1.4	18607	1	#0	QAM16	23.07
Band2	1.4	18607	1	#Mid	QAM16	23.03
Band2	1.4	18607	1	#Max	QAM16	23.07
Band2	1.4	18607	3	#0	QAM16	22.25
Band2	1.4	18607	3	#Mid	QAM16	22.29
Band2	1.4	18607	3	#Max	QAM16	22.23
Band2	1.4	18607	6	#0	QAM16	21.12
Band2	1.4	18900	1	#0	QPSK	22.83
Band2	1.4	18900	1	#Mid	QPSK	22.80
Band2	1.4	18900	1	#Max	QPSK	22.82
Band2	1.4	18900	3	#0	QPSK	23.02
Band2	1.4	18900	3	#Mid	QPSK	22.99
Band2	1.4	18900	3	#Max	QPSK	22.92
Band2	1.4	18900	6	#0	QPSK	22.03
Band2	1.4	18900	1	#0	QAM16	22.26
Band2	1.4	18900	1	#Mid	QAM16	22.14
Band2	1.4	18900	1	#Max	QAM16	22.18
Band2	1.4	18900	3	#0	QAM16	22.06
Band2	1.4	18900	3	#Mid	QAM16	22.07
Band2	1.4	18900	3	#Max	QAM16	22.15
Band2	1.4	18900	6	#0	QAM16	21.10
Band2	1.4	19193	1	#0	QPSK	22.82
Band2	1.4	19193	1	#Mid	QPSK	22.81
Band2	1.4	19193	1	#Max	QPSK	22.89
Band2	1.4	19193	3	#0	QPSK	22.76
Band2	1.4	19193	3	#Mid	QPSK	22.77
Band2	1.4	19193	3	#Max	QPSK	22.80
Band2	1.4	19193	6	#0	QPSK	21.86
Band2	1.4	19193	1	#0	QAM16	22.09
Band2	1.4	19193	1	#Mid	QAM16	22.12
Band2	1.4	19193	1	#Max	QAM16	22.13
Band2	1.4	19193	3	#0	QAM16	22.18
Band2	1.4	19193	3	#Mid	QAM16	22.20
Band2	1.4	19193	3	#Max	QAM16	22.17
Band2	1.4	19193	6	#0	QAM16	21.00
Band2	3	18615	1	#0	QPSK	23.06
Band2	3	18615	1	#Mid	QPSK	23.04
Band2	3	18615	1	#Max	QPSK	23.07
Band2	3	18615	8	#0	QPSK	22.02
Band2	3	18615	8	#Mid	QPSK	22.01
Band2	3	18615	8	#Max	QPSK	22.06
Band2	3	18615	15	#0	QPSK	22.00
Band2	3	18615	1	#0	QAM16	22.34
Band2	3	18615	1	#Mid	QAM16	22.33
Band2	3	18615	1	#Max	QAM16	22.38
Band2	3	18615	8	#0	QAM16	21.13
Band2	3	18615	8	#Mid	QAM16	21.12
Band2	3	18615	8	#Max	QAM16	21.16

Band2	3	18615	15	#0	QAM16	21.13
Band2	3	18900	1	#0	QPSK	22.86
Band2	3	18900	1	#Mid	QPSK	22.89
Band2	3	18900	1	#Max	QPSK	22.88
Band2	3	18900	8	#0	QPSK	22.19
Band2	3	18900	8	#Mid	QPSK	21.88
Band2	3	18900	8	#Max	QPSK	21.96
Band2	3	18900	15	#0	QPSK	22.01
Band2	3	18900	1	#0	QAM16	22.59
Band2	3	18900	1	#Mid	QAM16	22.61
Band2	3	18900	1	#Max	QAM16	22.60
Band2	3	18900	8	#0	QAM16	21.05
Band2	3	18900	8	#Mid	QAM16	21.01
Band2	3	18900	8	#Max	QAM16	20.94
Band2	3	18900	15	#0	QAM16	21.22
Band2	3	19185	1	#0	QPSK	22.63
Band2	3	19185	1	#Mid	QPSK	22.62
Band2	3	19185	1	#Max	QPSK	22.64
Band2	3	19185	8	#0	QPSK	21.70
Band2	3	19185	8	#Mid	QPSK	21.70
Band2	3	19185	8	#Max	QPSK	21.75
Band2	3	19185	15	#0	QPSK	21.76
Band2	3	19185	1	#0	QAM16	22.37
Band2	3	19185	1	#Mid	QAM16	22.39
Band2	3	19185	1	#Max	QAM16	22.40
Band2	3	19185	8	#0	QAM16	21.06
Band2	3	19185	8	#Mid	QAM16	21.08
Band2	3	19185	8	#Max	QAM16	21.04
Band2	3	19185	15	#0	QAM16	20.88
Band2	5	18625	1	#0	QPSK	22.98
Band2	5	18625	1	#Mid	QPSK	22.91
Band2	5	18625	1	#Max	QPSK	22.97
Band2	5	18625	12	#0	QPSK	21.95
Band2	5	18625	12	#Mid	QPSK	21.97
Band2	5	18625	12	#Max	QPSK	22.07
Band2	5	18625	25	#0	QPSK	22.00
Band2	5	18625	1	#0	QAM16	22.05
Band2	5	18625	1	#Mid	QAM16	21.98
Band2	5	18625	1	#Max	QAM16	22.01
Band2	5	18625	12	#0	QAM16	21.15
Band2	5	18625	12	#Mid	QAM16	21.17
Band2	5	18625	12	#Max	QAM16	21.14
Band2	5	18625	25	#0	QAM16	21.15
Band2	5	18900	1	#0	QPSK	22.86
Band2	5	18900	1	#Mid	QPSK	22.86
Band2	5	18900	1	#Max	QPSK	22.87
Band2	5	18900	12	#0	QPSK	22.04
Band2	5	18900	12	#Mid	QPSK	22.07
Band2	5	18900	12	#Max	QPSK	21.99
Band2	5	18900	25	#0	QPSK	21.93
Band2	5	18900	1	#0	QAM16	22.06
Band2	5	18900	1	#Mid	QAM16	22.01
Band2	5	18900	1	#Max	QAM16	22.06
Band2	5	18900	12	#0	QAM16	21.07
Band2	5	18900	12	#Mid	QAM16	21.01
Band2	5	18900	12	#Max	QAM16	20.98
Band2	5	18900	25	#0	QAM16	21.21

Band2	5	19175	1	#0	QPSK	22.82
Band2	5	19175	1	#Mid	QPSK	22.80
Band2	5	19175	1	#Max	QPSK	22.81
Band2	5	19175	12	#0	QPSK	21.75
Band2	5	19175	12	#Mid	QPSK	21.72
Band2	5	19175	12	#Max	QPSK	21.80
Band2	5	19175	25	#0	QPSK	21.76
Band2	5	19175	1	#0	QAM16	21.52
Band2	5	19175	1	#Mid	QAM16	21.54
Band2	5	19175	1	#Max	QAM16	21.64
Band2	5	19175	12	#0	QAM16	20.75
Band2	5	19175	12	#Mid	QAM16	20.69
Band2	5	19175	12	#Max	QAM16	20.77
Band2	5	19175	25	#0	QAM16	20.91
Band2	10	18650	1	#0	QPSK	22.96
Band2	10	18650	1	#Mid	QPSK	22.96
Band2	10	18650	1	#Max	QPSK	22.97
Band2	10	18650	25	#0	QPSK	21.99
Band2	10	18650	25	#Mid	QPSK	21.94
Band2	10	18650	25	#Max	QPSK	22.01
Band2	10	18650	50	#0	QPSK	21.98
Band2	10	18650	1	#0	QAM16	23.15
Band2	10	18650	1	#Mid	QAM16	23.21
Band2	10	18650	1	#Max	QAM16	23.19
Band2	10	18650	25	#0	QAM16	21.12
Band2	10	18650	25	#Mid	QAM16	21.05
Band2	10	18650	25	#Max	QAM16	20.96
Band2	10	18900	1	#0	QPSK	23.01
Band2	10	18900	1	#Mid	QPSK	22.99
Band2	10	18900	1	#Max	QPSK	23.00
Band2	10	18900	25	#0	QPSK	21.88
Band2	10	18900	25	#Mid	QPSK	21.98
Band2	10	18900	25	#Max	QPSK	21.97
Band2	10	18900	50	#0	QPSK	22.01
Band2	10	18900	1	#0	QAM16	22.06
Band2	10	18900	1	#Mid	QAM16	22.12
Band2	10	18900	1	#Max	QAM16	22.11
Band2	10	18900	25	#0	QAM16	21.11
Band2	10	18900	25	#Mid	QAM16	21.15
Band2	10	18900	25	#Max	QAM16	21.14
Band2	10	19150	1	#0	QPSK	22.92
Band2	10	19150	1	#Mid	QPSK	22.84
Band2	10	19150	1	#Max	QPSK	22.85
Band2	10	19150	25	#0	QPSK	21.74
Band2	10	19150	25	#Mid	QPSK	21.81
Band2	10	19150	25	#Max	QPSK	21.76
Band2	10	19150	50	#0	QPSK	21.86
Band2	10	19150	1	#0	QAM16	22.26
Band2	10	19150	1	#Mid	QAM16	22.19
Band2	10	19150	1	#Max	QAM16	22.11
Band2	10	19150	25	#0	QAM16	20.98
Band2	10	19150	25	#Mid	QAM16	20.96
Band2	10	19150	25	#Max	QAM16	20.96
Band2	15	18675	1	#0	QPSK	23.01
Band2	15	18675	1	#Mid	QPSK	23.00
Band2	15	18675	1	#Max	QPSK	22.95
Band2	15	18675	36	#0	QPSK	22.06

Band2	15	18675	36	#Mid	QPSK	21.98
Band2	15	18675	36	#Max	QPSK	21.85
Band2	15	18675	75	#0	QPSK	21.94
Band2	15	18675	1	#0	QAM16	22.86
Band2	15	18675	1	#Mid	QAM16	22.82
Band2	15	18675	1	#Max	QAM16	22.84
Band2	15	18675	36	#0	QAM16	21.13
Band2	15	18675	36	#Mid	QAM16	21.13
Band2	15	18675	36	#Max	QAM16	21.16
Band2	15	18900	1	#0	QPSK	22.74
Band2	15	18900	1	#Mid	QPSK	22.82
Band2	15	18900	1	#Max	QPSK	22.77
Band2	15	18900	36	#0	QPSK	21.86
Band2	15	18900	36	#Mid	QPSK	22.06
Band2	15	18900	36	#Max	QPSK	21.87
Band2	15	18900	75	#0	QPSK	22.07
Band2	15	18900	1	#0	QAM16	23.11
Band2	15	18900	1	#Mid	QAM16	23.12
Band2	15	18900	1	#Max	QAM16	23.07
Band2	15	18900	36	#0	QAM16	21.12
Band2	15	18900	36	#Mid	QAM16	21.14
Band2	15	18900	36	#Max	QAM16	21.18
Band2	15	19125	1	#0	QPSK	22.84
Band2	15	19125	1	#Mid	QPSK	22.70
Band2	15	19125	1	#Max	QPSK	22.69
Band2	15	19125	36	#0	QPSK	21.86
Band2	15	19125	36	#Mid	QPSK	21.91
Band2	15	19125	36	#Max	QPSK	21.71
Band2	15	19125	75	#0	QPSK	21.88
Band2	15	19125	1	#0	QAM16	22.67
Band2	15	19125	1	#Mid	QAM16	22.57
Band2	15	19125	1	#Max	QAM16	22.43
Band2	15	19125	36	#0	QAM16	21.09
Band2	15	19125	36	#Mid	QAM16	20.99
Band2	15	19125	36	#Max	QAM16	21.00
Band2	20	18700	1	#0	QPSK	23.09
Band2	20	18700	1	#Mid	QPSK	22.98
Band2	20	18700	1	#Max	QPSK	22.99
Band2	20	18700	50	#0	QPSK	22.11
Band2	20	18700	50	#Mid	QPSK	21.91
Band2	20	18700	50	#Max	QPSK	21.94
Band2	20	18700	100	#0	QPSK	21.92
Band2	20	18700	1	#0	QAM16	21.85
Band2	20	18700	1	#Mid	QAM16	21.72
Band2	20	18700	1	#Max	QAM16	21.75
Band2	20	18700	50	#0	QAM16	21.27
Band2	20	18700	50	#Mid	QAM16	21.30
Band2	20	18700	50	#Max	QAM16	21.18
Band2	20	18900	1	#0	QPSK	23.17
Band2	20	18900	1	#Mid	QPSK	23.30
Band2	20	18900	1	#Max	QPSK	23.27
Band2	20	18900	50	#0	QPSK	21.95
Band2	20	18900	50	#Mid	QPSK	22.05
Band2	20	18900	50	#Max	QPSK	22.10
Band2	20	18900	100	#0	QPSK	21.98
Band2	20	18900	1	#0	QAM16	21.64
Band2	20	18900	1	#Mid	QAM16	21.77

Band2	20	18900	1	#Max	QAM16	21.78
Band2	20	18900	50	#0	QAM16	21.11
Band2	20	18900	50	#Mid	QAM16	21.16
Band2	20	18900	50	#Max	QAM16	21.10
Band2	20	19100	1	#0	QPSK	23.06
Band2	20	19100	1	#Mid	QPSK	22.99
Band2	20	19100	1	#Max	QPSK	22.97
Band2	20	19100	50	#0	QPSK	21.93
Band2	20	19100	50	#Mid	QPSK	21.80
Band2	20	19100	50	#Max	QPSK	21.85
Band2	20	19100	100	#0	QPSK	21.89
Band2	20	19100	1	#0	QAM16	21.82
Band2	20	19100	1	#Mid	QAM16	21.88
Band2	20	19100	1	#Max	QAM16	21.76
Band2	20	19100	50	#0	QAM16	21.00
Band2	20	19100	50	#Mid	QAM16	21.01
Band2	20	19100	50	#Max	QAM16	20.86

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	EIRP (dBm)
Band4	1.4	19957	1	#0	QPSK	23.31
Band4	1.4	19957	1	#Mid	QPSK	23.34
Band4	1.4	19957	1	#Max	QPSK	23.37
Band4	1.4	19957	3	#0	QPSK	23.25
Band4	1.4	19957	3	#Mid	QPSK	23.31
Band4	1.4	19957	3	#Max	QPSK	23.32
Band4	1.4	19957	6	#0	QPSK	22.29
Band4	1.4	19957	1	#0	QAM16	23.09
Band4	1.4	19957	1	#Mid	QAM16	23.11
Band4	1.4	19957	1	#Max	QAM16	23.15
Band4	1.4	19957	3	#0	QAM16	22.52
Band4	1.4	19957	3	#Mid	QAM16	22.52
Band4	1.4	19957	3	#Max	QAM16	22.51
Band4	1.4	19957	6	#0	QAM16	21.31
Band4	1.4	20175	1	#0	QPSK	23.10
Band4	1.4	20175	1	#Mid	QPSK	23.19
Band4	1.4	20175	1	#Max	QPSK	23.09
Band4	1.4	20175	3	#0	QPSK	23.14
Band4	1.4	20175	3	#Mid	QPSK	23.21
Band4	1.4	20175	3	#Max	QPSK	23.18
Band4	1.4	20175	6	#0	QPSK	22.14
Band4	1.4	20175	1	#0	QAM16	22.98
Band4	1.4	20175	1	#Mid	QAM16	23.07
Band4	1.4	20175	1	#Max	QAM16	22.96
Band4	1.4	20175	3	#0	QAM16	22.36
Band4	1.4	20175	3	#Mid	QAM16	22.35
Band4	1.4	20175	3	#Max	QAM16	22.41
Band4	1.4	20175	6	#0	QAM16	21.27
Band4	1.4	20393	1	#0	QPSK	23.59
Band4	1.4	20393	1	#Mid	QPSK	23.56
Band4	1.4	20393	1	#Max	QPSK	23.53
Band4	1.4	20393	3	#0	QPSK	23.27
Band4	1.4	20393	3	#Mid	QPSK	23.30
Band4	1.4	20393	3	#Max	QPSK	23.26
Band4	1.4	20393	6	#0	QPSK	22.35
Band4	1.4	20393	1	#0	QAM16	22.61
Band4	1.4	20393	1	#Mid	QAM16	22.56
Band4	1.4	20393	1	#Max	QAM16	22.66
Band4	1.4	20393	3	#0	QAM16	22.64
Band4	1.4	20393	3	#Mid	QAM16	22.60
Band4	1.4	20393	3	#Max	QAM16	22.56
Band4	1.4	20393	6	#0	QAM16	21.45
Band4	3	19965	1	#0	QPSK	23.07
Band4	3	19965	1	#Mid	QPSK	23.14
Band4	3	19965	1	#Max	QPSK	23.11
Band4	3	19965	8	#0	QPSK	22.27
Band4	3	19965	8	#Mid	QPSK	22.26
Band4	3	19965	8	#Max	QPSK	22.28
Band4	3	19965	15	#0	QPSK	22.25
Band4	3	19965	1	#0	QAM16	23.20
Band4	3	19965	1	#Mid	QAM16	23.28
Band4	3	19965	1	#Max	QAM16	23.35
Band4	3	19965	8	#0	QAM16	21.26
Band4	3	19965	8	#Mid	QAM16	21.31
Band4	3	19965	8	#Max	QAM16	21.25

Band4	3	19965	15	#0	QAM16	21.46
Band4	3	20175	1	#0	QPSK	23.09
Band4	3	20175	1	#Mid	QPSK	23.18
Band4	3	20175	1	#Max	QPSK	23.17
Band4	3	20175	8	#0	QPSK	22.20
Band4	3	20175	8	#Mid	QPSK	22.18
Band4	3	20175	8	#Max	QPSK	22.23
Band4	3	20175	15	#0	QPSK	22.22
Band4	3	20175	1	#0	QAM16	23.03
Band4	3	20175	1	#Mid	QAM16	22.99
Band4	3	20175	1	#Max	QAM16	23.03
Band4	3	20175	8	#0	QAM16	21.56
Band4	3	20175	8	#Mid	QAM16	21.56
Band4	3	20175	8	#Max	QAM16	21.58
Band4	3	20175	15	#0	QAM16	21.35
Band4	3	20385	1	#0	QPSK	23.55
Band4	3	20385	1	#Mid	QPSK	23.53
Band4	3	20385	1	#Max	QPSK	23.57
Band4	3	20385	8	#0	QPSK	22.35
Band4	3	20385	8	#Mid	QPSK	22.36
Band4	3	20385	8	#Max	QPSK	22.30
Band4	3	20385	15	#0	QPSK	22.35
Band4	3	20385	1	#0	QAM16	22.53
Band4	3	20385	1	#Mid	QAM16	22.58
Band4	3	20385	1	#Max	QAM16	22.56
Band4	3	20385	8	#0	QAM16	21.40
Band4	3	20385	8	#Mid	QAM16	21.38
Band4	3	20385	8	#Max	QAM16	21.42
Band4	3	20385	15	#0	QAM16	21.29
Band4	5	19975	1	#0	QPSK	23.20
Band4	5	19975	1	#Mid	QPSK	23.15
Band4	5	19975	1	#Max	QPSK	23.21
Band4	5	19975	12	#0	QPSK	22.31
Band4	5	19975	12	#Mid	QPSK	22.34
Band4	5	19975	12	#Max	QPSK	22.31
Band4	5	19975	25	#0	QPSK	22.24
Band4	5	19975	1	#0	QAM16	22.53
Band4	5	19975	1	#Mid	QAM16	22.53
Band4	5	19975	1	#Max	QAM16	22.55
Band4	5	19975	12	#0	QAM16	21.31
Band4	5	19975	12	#Mid	QAM16	21.27
Band4	5	19975	12	#Max	QAM16	21.30
Band4	5	19975	25	#0	QAM16	21.42
Band4	5	20175	1	#0	QPSK	23.21
Band4	5	20175	1	#Mid	QPSK	23.23
Band4	5	20175	1	#Max	QPSK	23.22
Band4	5	20175	12	#0	QPSK	22.18
Band4	5	20175	12	#Mid	QPSK	22.19
Band4	5	20175	12	#Max	QPSK	22.17
Band4	5	20175	25	#0	QPSK	22.21
Band4	5	20175	1	#0	QAM16	21.97
Band4	5	20175	1	#Mid	QAM16	21.96
Band4	5	20175	1	#Max	QAM16	22.05
Band4	5	20175	12	#0	QAM16	21.16
Band4	5	20175	12	#Mid	QAM16	21.18
Band4	5	20175	12	#Max	QAM16	21.16
Band4	5	20175	25	#0	QAM16	21.36

Band4	5	20375	1	#0	QPSK	23.23
Band4	5	20375	1	#Mid	QPSK	23.19
Band4	5	20375	1	#Max	QPSK	23.21
Band4	5	20375	12	#0	QPSK	22.27
Band4	5	20375	12	#Mid	QPSK	22.33
Band4	5	20375	12	#Max	QPSK	22.23
Band4	5	20375	25	#0	QPSK	22.34
Band4	5	20375	1	#0	QAM16	22.27
Band4	5	20375	1	#Mid	QAM16	22.32
Band4	5	20375	1	#Max	QAM16	22.30
Band4	5	20375	12	#0	QAM16	21.39
Band4	5	20375	12	#Mid	QAM16	21.40
Band4	5	20375	12	#Max	QAM16	21.38
Band4	5	20375	25	#0	QAM16	21.32
Band4	10	20000	1	#0	QPSK	23.10
Band4	10	20000	1	#Mid	QPSK	23.12
Band4	10	20000	1	#Max	QPSK	23.17
Band4	10	20000	25	#0	QPSK	22.31
Band4	10	20000	25	#Mid	QPSK	22.17
Band4	10	20000	25	#Max	QPSK	22.22
Band4	10	20000	50	#0	QPSK	22.23
Band4	10	20000	1	#0	QAM16	23.23
Band4	10	20000	1	#Mid	QAM16	23.40
Band4	10	20000	1	#Max	QAM16	23.45
Band4	10	20000	25	#0	QAM16	21.29
Band4	10	20000	25	#Mid	QAM16	21.27
Band4	10	20000	25	#Max	QAM16	21.25
Band4	10	20175	1	#0	QPSK	23.04
Band4	10	20175	1	#Mid	QPSK	23.17
Band4	10	20175	1	#Max	QPSK	23.19
Band4	10	20175	25	#0	QPSK	22.16
Band4	10	20175	25	#Mid	QPSK	22.25
Band4	10	20175	25	#Max	QPSK	22.16
Band4	10	20175	50	#0	QPSK	22.29
Band4	10	20175	1	#0	QAM16	22.94
Band4	10	20175	1	#Mid	QAM16	23.01
Band4	10	20175	1	#Max	QAM16	23.00
Band4	10	20175	25	#0	QAM16	21.37
Band4	10	20175	25	#Mid	QAM16	21.42
Band4	10	20175	25	#Max	QAM16	21.35
Band4	10	20350	1	#0	QPSK	23.38
Band4	10	20350	1	#Mid	QPSK	23.43
Band4	10	20350	1	#Max	QPSK	23.41
Band4	10	20350	25	#0	QPSK	22.31
Band4	10	20350	25	#Mid	QPSK	22.33
Band4	10	20350	25	#Max	QPSK	22.27
Band4	10	20350	50	#0	QPSK	22.40
Band4	10	20350	1	#0	QAM16	22.91
Band4	10	20350	1	#Mid	QAM16	22.83
Band4	10	20350	1	#Max	QAM16	22.94
Band4	10	20350	25	#0	QAM16	21.42
Band4	10	20350	25	#Mid	QAM16	21.46
Band4	10	20350	25	#Max	QAM16	21.38
Band4	15	20025	1	#0	QPSK	23.14
Band4	15	20025	1	#Mid	QPSK	23.11
Band4	15	20025	1	#Max	QPSK	23.10
Band4	15	20025	36	#0	QPSK	22.25

Band4	15	20025	36	#Mid	QPSK	22.12
Band4	15	20025	36	#Max	QPSK	22.09
Band4	15	20025	75	#0	QPSK	22.15
Band4	15	20025	1	#0	QAM16	23.23
Band4	15	20025	1	#Mid	QAM16	23.38
Band4	15	20025	1	#Max	QAM16	23.42
Band4	15	20025	36	#0	QAM16	21.29
Band4	15	20025	36	#Mid	QAM16	21.34
Band4	15	20025	36	#Max	QAM16	21.30
Band4	15	20175	1	#0	QPSK	23.11
Band4	15	20175	1	#Mid	QPSK	23.16
Band4	15	20175	1	#Max	QPSK	23.20
Band4	15	20175	36	#0	QPSK	22.17
Band4	15	20175	36	#Mid	QPSK	22.12
Band4	15	20175	36	#Max	QPSK	22.22
Band4	15	20175	75	#0	QPSK	22.15
Band4	15	20175	1	#0	QAM16	22.94
Band4	15	20175	1	#Mid	QAM16	22.99
Band4	15	20175	1	#Max	QAM16	22.94
Band4	15	20175	36	#0	QAM16	21.38
Band4	15	20175	36	#Mid	QAM16	21.44
Band4	15	20175	36	#Max	QAM16	21.45
Band4	15	20325	1	#0	QPSK	23.24
Band4	15	20325	1	#Mid	QPSK	23.22
Band4	15	20325	1	#Max	QPSK	23.26
Band4	15	20325	36	#0	QPSK	22.25
Band4	15	20325	36	#Mid	QPSK	22.21
Band4	15	20325	36	#Max	QPSK	22.23
Band4	15	20325	75	#0	QPSK	22.15
Band4	15	20325	1	#0	QAM16	23.24
Band4	15	20325	1	#Mid	QAM16	23.03
Band4	15	20325	1	#Max	QAM16	23.09
Band4	15	20325	36	#0	QAM16	21.30
Band4	15	20325	36	#Mid	QAM16	21.29
Band4	15	20325	36	#Max	QAM16	21.30
Band4	20	20050	1	#0	QPSK	23.36
Band4	20	20050	1	#Mid	QPSK	23.24
Band4	20	20050	1	#Max	QPSK	23.19
Band4	20	20050	50	#0	QPSK	22.26
Band4	20	20050	50	#Mid	QPSK	22.22
Band4	20	20050	50	#Max	QPSK	22.21
Band4	20	20050	100	#0	QPSK	22.16
Band4	20	20050	1	#0	QAM16	22.06
Band4	20	20050	1	#Mid	QAM16	21.95
Band4	20	20050	1	#Max	QAM16	21.94
Band4	20	20050	50	#0	QAM16	21.37
Band4	20	20050	50	#Mid	QAM16	21.42
Band4	20	20050	50	#Max	QAM16	21.37
Band4	20	20175	1	#0	QPSK	23.13
Band4	20	20175	1	#Mid	QPSK	23.28
Band4	20	20175	1	#Max	QPSK	23.26
Band4	20	20175	50	#0	QPSK	22.15
Band4	20	20175	50	#Mid	QPSK	22.23
Band4	20	20175	50	#Max	QPSK	22.24
Band4	20	20175	100	#0	QPSK	22.27
Band4	20	20175	1	#0	QAM16	22.49
Band4	20	20175	1	#Mid	QAM16	22.44

Band4	20	20175	1	#Max	QAM16	22.60
Band4	20	20175	50	#0	QAM16	21.26
Band4	20	20175	50	#Mid	QAM16	21.38
Band4	20	20175	50	#Max	QAM16	21.36
Band4	20	20300	1	#0	QPSK	23.32
Band4	20	20300	1	#Mid	QPSK	23.29
Band4	20	20300	1	#Max	QPSK	23.34
Band4	20	20300	50	#0	QPSK	22.23
Band4	20	20300	50	#Mid	QPSK	22.35
Band4	20	20300	50	#Max	QPSK	22.38
Band4	20	20300	100	#0	QPSK	22.25
Band4	20	20300	1	#0	QAM16	22.58
Band4	20	20300	1	#Mid	QAM16	22.48
Band4	20	20300	1	#Max	QAM16	22.48
Band4	20	20300	50	#0	QAM16	21.36
Band4	20	20300	50	#Mid	QAM16	21.38
Band4	20	20300	50	#Max	QAM16	21.48

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	ERP (dBm)
Band5	1.4	20407	1	#0	QPSK	20.95
Band5	1.4	20407	1	#Mid	QPSK	21.01
Band5	1.4	20407	1	#Max	QPSK	21.04
Band5	1.4	20407	3	#0	QPSK	21.02
Band5	1.4	20407	3	#Mid	QPSK	20.99
Band5	1.4	20407	3	#Max	QPSK	20.95
Band5	1.4	20407	6	#0	QPSK	20.04
Band5	1.4	20407	1	#0	QAM16	20.52
Band5	1.4	20407	1	#Mid	QAM16	20.53
Band5	1.4	20407	1	#Max	QAM16	20.47
Band5	1.4	20407	3	#0	QAM16	20.46
Band5	1.4	20407	3	#Mid	QAM16	20.31
Band5	1.4	20407	3	#Max	QAM16	20.35
Band5	1.4	20407	6	#0	QAM16	19.50
Band5	1.4	20525	1	#0	QPSK	20.79
Band5	1.4	20525	1	#Mid	QPSK	20.78
Band5	1.4	20525	1	#Max	QPSK	20.84
Band5	1.4	20525	3	#0	QPSK	20.83
Band5	1.4	20525	3	#Mid	QPSK	20.73
Band5	1.4	20525	3	#Max	QPSK	20.77
Band5	1.4	20525	6	#0	QPSK	19.73
Band5	1.4	20525	1	#0	QAM16	20.82
Band5	1.4	20525	1	#Mid	QAM16	20.83
Band5	1.4	20525	1	#Max	QAM16	20.83
Band5	1.4	20525	3	#0	QAM16	20.08
Band5	1.4	20525	3	#Mid	QAM16	20.13
Band5	1.4	20525	3	#Max	QAM16	20.10
Band5	1.4	20525	6	#0	QAM16	18.98
Band5	1.4	20643	1	#0	QPSK	20.72
Band5	1.4	20643	1	#Mid	QPSK	20.81
Band5	1.4	20643	1	#Max	QPSK	20.75
Band5	1.4	20643	3	#0	QPSK	20.76
Band5	1.4	20643	3	#Mid	QPSK	20.78
Band5	1.4	20643	3	#Max	QPSK	20.81
Band5	1.4	20643	6	#0	QPSK	19.65
Band5	1.4	20643	1	#0	QAM16	20.16
Band5	1.4	20643	1	#Mid	QAM16	20.16
Band5	1.4	20643	1	#Max	QAM16	20.21
Band5	1.4	20643	3	#0	QAM16	19.89
Band5	1.4	20643	3	#Mid	QAM16	19.83
Band5	1.4	20643	3	#Max	QAM16	19.84
Band5	1.4	20643	6	#0	QAM16	18.71
Band5	3	20415	1	#0	QPSK	20.93
Band5	3	20415	1	#Mid	QPSK	21.03
Band5	3	20415	1	#Max	QPSK	20.91
Band5	3	20415	8	#0	QPSK	19.98
Band5	3	20415	8	#Mid	QPSK	19.92
Band5	3	20415	8	#Max	QPSK	19.91
Band5	3	20415	15	#0	QPSK	19.91
Band5	3	20415	1	#0	QAM16	20.47
Band5	3	20415	1	#Mid	QAM16	20.37
Band5	3	20415	1	#Max	QAM16	20.46
Band5	3	20415	8	#0	QAM16	19.27
Band5	3	20415	8	#Mid	QAM16	19.31
Band5	3	20415	8	#Max	QAM16	19.30

Band5	3	20415	15	#0	QAM16	19.38
Band5	3	20525	1	#0	QPSK	20.76
Band5	3	20525	1	#Mid	QPSK	20.76
Band5	3	20525	1	#Max	QPSK	20.66
Band5	3	20525	8	#0	QPSK	19.83
Band5	3	20525	8	#Mid	QPSK	19.82
Band5	3	20525	8	#Max	QPSK	19.81
Band5	3	20525	15	#0	QPSK	19.81
Band5	3	20525	1	#0	QAM16	20.77
Band5	3	20525	1	#Mid	QAM16	20.75
Band5	3	20525	1	#Max	QAM16	20.73
Band5	3	20525	8	#0	QAM16	18.80
Band5	3	20525	8	#Mid	QAM16	18.78
Band5	3	20525	8	#Max	QAM16	18.80
Band5	3	20525	15	#0	QAM16	18.88
Band5	3	20635	1	#0	QPSK	20.72
Band5	3	20635	1	#Mid	QPSK	20.74
Band5	3	20635	1	#Max	QPSK	20.82
Band5	3	20635	8	#0	QPSK	19.60
Band5	3	20635	8	#Mid	QPSK	19.77
Band5	3	20635	8	#Max	QPSK	19.61
Band5	3	20635	15	#0	QPSK	19.73
Band5	3	20635	1	#0	QAM16	20.26
Band5	3	20635	1	#Mid	QAM16	20.24
Band5	3	20635	1	#Max	QAM16	20.29
Band5	3	20635	8	#0	QAM16	18.97
Band5	3	20635	8	#Mid	QAM16	19.02
Band5	3	20635	8	#Max	QAM16	18.99
Band5	3	20635	15	#0	QAM16	18.79
Band5	5	20425	1	#0	QPSK	20.89
Band5	5	20425	1	#Mid	QPSK	20.84
Band5	5	20425	1	#Max	QPSK	20.83
Band5	5	20425	12	#0	QPSK	20.00
Band5	5	20425	12	#Mid	QPSK	19.80
Band5	5	20425	12	#Max	QPSK	19.93
Band5	5	20425	25	#0	QPSK	19.92
Band5	5	20425	1	#0	QAM16	20.10
Band5	5	20425	1	#Mid	QAM16	20.06
Band5	5	20425	1	#Max	QAM16	20.03
Band5	5	20425	12	#0	QAM16	19.21
Band5	5	20425	12	#Mid	QAM16	19.23
Band5	5	20425	12	#Max	QAM16	19.27
Band5	5	20425	25	#0	QAM16	19.37
Band5	5	20525	1	#0	QPSK	20.79
Band5	5	20525	1	#Mid	QPSK	20.77
Band5	5	20525	1	#Max	QPSK	20.73
Band5	5	20525	12	#0	QPSK	19.74
Band5	5	20525	12	#Mid	QPSK	19.78
Band5	5	20525	12	#Max	QPSK	19.88
Band5	5	20525	25	#0	QPSK	19.89
Band5	5	20525	1	#0	QAM16	19.50
Band5	5	20525	1	#Mid	QAM16	19.45
Band5	5	20525	1	#Max	QAM16	19.52
Band5	5	20525	12	#0	QAM16	18.77
Band5	5	20525	12	#Mid	QAM16	18.76
Band5	5	20525	12	#Max	QAM16	18.77
Band5	5	20525	25	#0	QAM16	18.96

Band5	5	20625	1	#0	QPSK	20.69
Band5	5	20625	1	#Mid	QPSK	20.64
Band5	5	20625	1	#Max	QPSK	20.69
Band5	5	20625	12	#0	QPSK	19.64
Band5	5	20625	12	#Mid	QPSK	19.64
Band5	5	20625	12	#Max	QPSK	19.78
Band5	5	20625	25	#0	QPSK	19.79
Band5	5	20625	1	#0	QAM16	19.76
Band5	5	20625	1	#Mid	QAM16	19.68
Band5	5	20625	1	#Max	QAM16	19.69
Band5	5	20625	12	#0	QAM16	18.68
Band5	5	20625	12	#Mid	QAM16	18.79
Band5	5	20625	12	#Max	QAM16	18.72
Band5	5	20625	25	#0	QAM16	18.72
Band5	10	20450	1	#0	QPSK	20.99
Band5	10	20450	1	#Mid	QPSK	20.86
Band5	10	20450	1	#Max	QPSK	20.85
Band5	10	20450	25	#0	QPSK	19.82
Band5	10	20450	25	#Mid	QPSK	19.94
Band5	10	20450	25	#Max	QPSK	19.86
Band5	10	20450	50	#0	QPSK	19.97
Band5	10	20450	1	#0	QAM16	21.02
Band5	10	20450	1	#Mid	QAM16	20.92
Band5	10	20450	1	#Max	QAM16	20.81
Band5	10	20450	25	#0	QAM16	19.29
Band5	10	20450	25	#Mid	QAM16	18.88
Band5	10	20450	25	#Max	QAM16	18.87
Band5	10	20525	1	#0	QPSK	20.73
Band5	10	20525	1	#Mid	QPSK	20.73
Band5	10	20525	1	#Max	QPSK	20.69
Band5	10	20525	25	#0	QPSK	19.77
Band5	10	20525	25	#Mid	QPSK	19.91
Band5	10	20525	25	#Max	QPSK	19.81
Band5	10	20525	50	#0	QPSK	19.92
Band5	10	20525	1	#0	QAM16	20.45
Band5	10	20525	1	#Mid	QAM16	20.48
Band5	10	20525	1	#Max	QAM16	20.49
Band5	10	20525	25	#0	QAM16	18.93
Band5	10	20525	25	#Mid	QAM16	18.94
Band5	10	20525	25	#Max	QAM16	19.25
Band5	10	20600	1	#0	QPSK	20.68
Band5	10	20600	1	#Mid	QPSK	20.67
Band5	10	20600	1	#Max	QPSK	20.83
Band5	10	20600	25	#0	QPSK	19.62
Band5	10	20600	25	#Mid	QPSK	19.77
Band5	10	20600	25	#Max	QPSK	19.63
Band5	10	20600	50	#0	QPSK	19.81
Band5	10	20600	1	#0	QAM16	20.05
Band5	10	20600	1	#Mid	QAM16	20.04
Band5	10	20600	1	#Max	QAM16	20.01
Band5	10	20600	25	#0	QAM16	18.83
Band5	10	20600	25	#Mid	QAM16	18.80
Band5	10	20600	25	#Max	QAM16	18.81

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	EIRP (dBm)

Band7	5	20775	1	#0	QPSK	21.76
Band7	5	20775	1	#Mid	QPSK	21.81
Band7	5	20775	1	#Max	QPSK	21.85
Band7	5	20775	12	#0	QPSK	20.87
Band7	5	20775	12	#Mid	QPSK	20.89
Band7	5	20775	12	#Max	QPSK	20.88
Band7	5	20775	25	#0	QPSK	20.79
Band7	5	20775	1	#0	QAM16	20.51
Band7	5	20775	1	#Mid	QAM16	20.58
Band7	5	20775	1	#Max	QAM16	20.69
Band7	5	20775	12	#0	QAM16	19.77
Band7	5	20775	12	#Mid	QAM16	19.93
Band7	5	20775	12	#Max	QAM16	19.85
Band7	5	20775	25	#0	QAM16	20.01
Band7	5	21100	1	#0	QPSK	21.69
Band7	5	21100	1	#Mid	QPSK	21.67
Band7	5	21100	1	#Max	QPSK	21.86
Band7	5	21100	12	#0	QPSK	20.79
Band7	5	21100	12	#Mid	QPSK	20.88
Band7	5	21100	12	#Max	QPSK	20.90
Band7	5	21100	25	#0	QPSK	20.81
Band7	5	21100	1	#0	QAM16	20.82
Band7	5	21100	1	#Mid	QAM16	20.94
Band7	5	21100	1	#Max	QAM16	20.96
Band7	5	21100	12	#0	QAM16	19.89
Band7	5	21100	12	#Mid	QAM16	19.96
Band7	5	21100	12	#Max	QAM16	19.94
Band7	5	21100	25	#0	QAM16	19.92
Band7	5	21425	1	#0	QPSK	21.94
Band7	5	21425	1	#Mid	QPSK	21.80
Band7	5	21425	1	#Max	QPSK	21.87
Band7	5	21425	12	#0	QPSK	20.85
Band7	5	21425	12	#Mid	QPSK	20.80
Band7	5	21425	12	#Max	QPSK	20.98
Band7	5	21425	25	#0	QPSK	20.76
Band7	5	21425	1	#0	QAM16	21.05
Band7	5	21425	1	#Mid	QAM16	20.87
Band7	5	21425	1	#Max	QAM16	20.98
Band7	5	21425	12	#0	QAM16	19.91
Band7	5	21425	12	#Mid	QAM16	19.86
Band7	5	21425	12	#Max	QAM16	19.90
Band7	5	21425	25	#0	QAM16	20.07
Band7	10	20800	1	#0	QPSK	21.74
Band7	10	20800	1	#Mid	QPSK	21.78
Band7	10	20800	1	#Max	QPSK	21.92
Band7	10	20800	25	#0	QPSK	20.88
Band7	10	20800	25	#Mid	QPSK	20.89
Band7	10	20800	25	#Max	QPSK	20.84
Band7	10	20800	50	#0	QPSK	20.86
Band7	10	20800	1	#0	QAM16	21.89
Band7	10	20800	1	#Mid	QAM16	22.07
Band7	10	20800	1	#Max	QAM16	22.07
Band7	10	20800	25	#0	QAM16	19.86
Band7	10	20800	25	#Mid	QAM16	19.93
Band7	10	20800	25	#Max	QAM16	19.94
Band7	10	21100	1	#0	QPSK	21.74
Band7	10	21100	1	#Mid	QPSK	21.76

Band7	10	21100	1	#Max	QPSK	21.88
Band7	10	21100	25	#0	QPSK	20.81
Band7	10	21100	25	#Mid	QPSK	20.77
Band7	10	21100	25	#Max	QPSK	20.87
Band7	10	21100	50	#0	QPSK	20.84
Band7	10	21100	1	#0	QAM16	21.52
Band7	10	21100	1	#Mid	QAM16	21.54
Band7	10	21100	1	#Max	QAM16	21.73
Band7	10	21100	25	#0	QAM16	19.91
Band7	10	21100	25	#Mid	QAM16	19.97
Band7	10	21100	25	#Max	QAM16	20.07
Band7	10	21400	1	#0	QPSK	21.88
Band7	10	21400	1	#Mid	QPSK	21.91
Band7	10	21400	1	#Max	QPSK	21.89
Band7	10	21400	25	#0	QPSK	21.02
Band7	10	21400	25	#Mid	QPSK	20.91
Band7	10	21400	25	#Max	QPSK	20.87
Band7	10	21400	50	#0	QPSK	20.99
Band7	10	21400	1	#0	QAM16	21.56
Band7	10	21400	1	#Mid	QAM16	21.46
Band7	10	21400	1	#Max	QAM16	21.39
Band7	10	21400	25	#0	QAM16	20.13
Band7	10	21400	25	#Mid	QAM16	20.11
Band7	10	21400	25	#Max	QAM16	20.07
Band7	15	20825	1	#0	QPSK	21.76
Band7	15	20825	1	#Mid	QPSK	21.74
Band7	15	20825	1	#Max	QPSK	21.88
Band7	15	20825	36	#0	QPSK	20.81
Band7	15	20825	36	#Mid	QPSK	20.79
Band7	15	20825	36	#Max	QPSK	20.80
Band7	15	20825	75	#0	QPSK	20.94
Band7	15	20825	1	#0	QAM16	21.95
Band7	15	20825	1	#Mid	QAM16	22.09
Band7	15	20825	1	#Max	QAM16	22.03
Band7	15	20825	36	#0	QAM16	19.95
Band7	15	20825	36	#Mid	QAM16	20.01
Band7	15	20825	36	#Max	QAM16	20.02
Band7	15	21100	1	#0	QPSK	21.65
Band7	15	21100	1	#Mid	QPSK	21.71
Band7	15	21100	1	#Max	QPSK	21.79
Band7	15	21100	36	#0	QPSK	20.74
Band7	15	21100	36	#Mid	QPSK	20.91
Band7	15	21100	36	#Max	QPSK	20.94
Band7	15	21100	75	#0	QPSK	20.73
Band7	15	21100	1	#0	QAM16	21.40
Band7	15	21100	1	#Mid	QAM16	21.53
Band7	15	21100	1	#Max	QAM16	21.64
Band7	15	21100	36	#0	QAM16	20.02
Band7	15	21100	36	#Mid	QAM16	20.09
Band7	15	21100	36	#Max	QAM16	20.15
Band7	15	21375	1	#0	QPSK	22.02
Band7	15	21375	1	#Mid	QPSK	21.93
Band7	15	21375	1	#Max	QPSK	21.98
Band7	15	21375	36	#0	QPSK	20.93
Band7	15	21375	36	#Mid	QPSK	20.94
Band7	15	21375	36	#Max	QPSK	20.77
Band7	15	21375	75	#0	QPSK	20.97

Band7	15	21375	1	#0	QAM16	21.87
Band7	15	21375	1	#Mid	QAM16	21.80
Band7	15	21375	1	#Max	QAM16	21.99
Band7	15	21375	36	#0	QAM16	20.11
Band7	15	21375	36	#Mid	QAM16	19.99
Band7	15	21375	36	#Max	QAM16	19.95
Band7	20	20850	1	#0	QPSK	21.93
Band7	20	20850	1	#Mid	QPSK	21.97
Band7	20	20850	1	#Max	QPSK	21.96
Band7	20	20850	50	#0	QPSK	20.80
Band7	20	20850	50	#Mid	QPSK	20.95
Band7	20	20850	50	#Max	QPSK	20.91
Band7	20	20850	100	#0	QPSK	20.80
Band7	20	20850	1	#0	QAM16	21.23
Band7	20	20850	1	#Mid	QAM16	21.35
Band7	20	20850	1	#Max	QAM16	21.35
Band7	20	20850	50	#0	QAM16	20.08
Band7	20	20850	50	#Mid	QAM16	20.08
Band7	20	20850	50	#Max	QAM16	20.04
Band7	20	21100	1	#0	QPSK	21.75
Band7	20	21100	1	#Mid	QPSK	21.83
Band7	20	21100	1	#Max	QPSK	21.90
Band7	20	21100	50	#0	QPSK	20.91
Band7	20	21100	50	#Mid	QPSK	20.80
Band7	20	21100	50	#Max	QPSK	21.00
Band7	20	21100	100	#0	QPSK	20.80
Band7	20	21100	1	#0	QAM16	20.92
Band7	20	21100	1	#Mid	QAM16	21.01
Band7	20	21100	1	#Max	QAM16	21.16
Band7	20	21100	50	#0	QAM16	19.79
Band7	20	21100	50	#Mid	QAM16	20.02
Band7	20	21100	50	#Max	QAM16	20.02
Band7	20	21350	1	#0	QPSK	22.09
Band7	20	21350	1	#Mid	QPSK	22.01
Band7	20	21350	1	#Max	QPSK	21.91
Band7	20	21350	50	#0	QPSK	20.99
Band7	20	21350	50	#Mid	QPSK	20.93
Band7	20	21350	50	#Max	QPSK	21.02
Band7	20	21350	100	#0	QPSK	20.95
Band7	20	21350	1	#0	QAM16	21.20
Band7	20	21350	1	#Mid	QAM16	21.27
Band7	20	21350	1	#Max	QAM16	21.18
Band7	20	21350	50	#0	QAM16	20.07
Band7	20	21350	50	#Mid	QAM16	20.08
Band7	20	21350	50	#Max	QAM16	19.91

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	ERP (dBm)
Band12	1.4	23017	1	#0	QPSK	20.67
Band12	1.4	23017	1	#Mid	QPSK	20.61
Band12	1.4	23017	1	#Max	QPSK	20.65
Band12	1.4	23017	3	#0	QPSK	20.54
Band12	1.4	23017	3	#Mid	QPSK	20.69
Band12	1.4	23017	3	#Max	QPSK	20.49
Band12	1.4	23017	6	#0	QPSK	19.64
Band12	1.4	23017	1	#0	QAM16	20.52
Band12	1.4	23017	1	#Mid	QAM16	20.55
Band12	1.4	23017	1	#Max	QAM16	20.66
Band12	1.4	23017	3	#0	QAM16	19.78
Band12	1.4	23017	3	#Mid	QAM16	19.80
Band12	1.4	23017	3	#Max	QAM16	19.77
Band12	1.4	23017	6	#0	QAM16	18.60
Band12	1.4	23095	1	#0	QPSK	20.52
Band12	1.4	23095	1	#Mid	QPSK	20.59
Band12	1.4	23095	1	#Max	QPSK	20.57
Band12	1.4	23095	3	#0	QPSK	20.67
Band12	1.4	23095	3	#Mid	QPSK	20.56
Band12	1.4	23095	3	#Max	QPSK	20.61
Band12	1.4	23095	6	#0	QPSK	19.52
Band12	1.4	23095	1	#0	QAM16	20.28
Band12	1.4	23095	1	#Mid	QAM16	20.35
Band12	1.4	23095	1	#Max	QAM16	20.26
Band12	1.4	23095	3	#0	QAM16	19.52
Band12	1.4	23095	3	#Mid	QAM16	19.54
Band12	1.4	23095	3	#Max	QAM16	19.55
Band12	1.4	23095	6	#0	QAM16	18.44
Band12	1.4	23173	1	#0	QPSK	20.50
Band12	1.4	23173	1	#Mid	QPSK	20.48
Band12	1.4	23173	1	#Max	QPSK	20.44
Band12	1.4	23173	3	#0	QPSK	20.47
Band12	1.4	23173	3	#Mid	QPSK	20.47
Band12	1.4	23173	3	#Max	QPSK	20.47
Band12	1.4	23173	6	#0	QPSK	19.54
Band12	1.4	23173	1	#0	QAM16	20.31
Band12	1.4	23173	1	#Mid	QAM16	20.38
Band12	1.4	23173	1	#Max	QAM16	20.38
Band12	1.4	23173	3	#0	QAM16	19.80
Band12	1.4	23173	3	#Mid	QAM16	19.85
Band12	1.4	23173	3	#Max	QAM16	19.74
Band12	1.4	23173	6	#0	QAM16	18.57
Band12	3	23025	1	#0	QPSK	20.46
Band12	3	23025	1	#Mid	QPSK	20.82
Band12	3	23025	1	#Max	QPSK	20.52
Band12	3	23025	8	#0	QPSK	19.49
Band12	3	23025	8	#Mid	QPSK	19.48
Band12	3	23025	8	#Max	QPSK	19.57
Band12	3	23025	15	#0	QPSK	19.50
Band12	3	23025	1	#0	QAM16	20.47
Band12	3	23025	1	#Mid	QAM16	20.46
Band12	3	23025	1	#Max	QAM16	20.44
Band12	3	23025	8	#0	QAM16	18.38
Band12	3	23025	8	#Mid	QAM16	18.39
Band12	3	23025	8	#Max	QAM16	18.31

Band12	3	23025	15	#0	QAM16	18.63
Band12	3	23095	1	#0	QPSK	20.53
Band12	3	23095	1	#Mid	QPSK	20.58
Band12	3	23095	1	#Max	QPSK	20.58
Band12	3	23095	8	#0	QPSK	19.48
Band12	3	23095	8	#Mid	QPSK	19.43
Band12	3	23095	8	#Max	QPSK	19.52
Band12	3	23095	15	#0	QPSK	19.56
Band12	3	23095	1	#0	QAM16	20.27
Band12	3	23095	1	#Mid	QAM16	20.24
Band12	3	23095	1	#Max	QAM16	20.20
Band12	3	23095	8	#0	QAM16	18.74
Band12	3	23095	8	#Mid	QAM16	18.66
Band12	3	23095	8	#Max	QAM16	18.61
Band12	3	23095	15	#0	QAM16	18.51
Band12	3	23165	1	#0	QPSK	20.50
Band12	3	23165	1	#Mid	QPSK	20.52
Band12	3	23165	1	#Max	QPSK	20.53
Band12	3	23165	8	#0	QPSK	19.36
Band12	3	23165	8	#Mid	QPSK	19.38
Band12	3	23165	8	#Max	QPSK	19.38
Band12	3	23165	15	#0	QPSK	19.50
Band12	3	23165	1	#0	QAM16	20.37
Band12	3	23165	1	#Mid	QAM16	20.33
Band12	3	23165	1	#Max	QAM16	20.36
Band12	3	23165	8	#0	QAM16	18.39
Band12	3	23165	8	#Mid	QAM16	18.44
Band12	3	23165	8	#Max	QAM16	18.49
Band12	3	23165	15	#0	QAM16	18.52
Band12	5	23035	1	#0	QPSK	20.48
Band12	5	23035	1	#Mid	QPSK	20.51
Band12	5	23035	1	#Max	QPSK	20.44
Band12	5	23035	12	#0	QPSK	19.53
Band12	5	23035	12	#Mid	QPSK	19.47
Band12	5	23035	12	#Max	QPSK	19.49
Band12	5	23035	25	#0	QPSK	19.60
Band12	5	23035	1	#0	QAM16	19.51
Band12	5	23035	1	#Mid	QAM16	19.47
Band12	5	23035	1	#Max	QAM16	19.53
Band12	5	23035	12	#0	QAM16	18.45
Band12	5	23035	12	#Mid	QAM16	18.40
Band12	5	23035	12	#Max	QAM16	18.44
Band12	5	23035	25	#0	QAM16	18.45
Band12	5	23095	1	#0	QPSK	20.51
Band12	5	23095	1	#Mid	QPSK	20.55
Band12	5	23095	1	#Max	QPSK	20.53
Band12	5	23095	12	#0	QPSK	19.57
Band12	5	23095	12	#Mid	QPSK	19.66
Band12	5	23095	12	#Max	QPSK	19.47
Band12	5	23095	25	#0	QPSK	19.44
Band12	5	23095	1	#0	QAM16	19.69
Band12	5	23095	1	#Mid	QAM16	19.66
Band12	5	23095	1	#Max	QAM16	19.55
Band12	5	23095	12	#0	QAM16	18.36
Band12	5	23095	12	#Mid	QAM16	18.30
Band12	5	23095	12	#Max	QAM16	18.28
Band12	5	23095	25	#0	QAM16	18.71

Band12	5	23155	1	#0	QPSK	20.54
Band12	5	23155	1	#Mid	QPSK	20.47
Band12	5	23155	1	#Max	QPSK	20.45
Band12	5	23155	12	#0	QPSK	19.58
Band12	5	23155	12	#Mid	QPSK	19.55
Band12	5	23155	12	#Max	QPSK	19.52
Band12	5	23155	25	#0	QPSK	19.54
Band12	5	23155	1	#0	QAM16	19.10
Band12	5	23155	1	#Mid	QAM16	19.09
Band12	5	23155	1	#Max	QAM16	19.16
Band12	5	23155	12	#0	QAM16	18.37
Band12	5	23155	12	#Mid	QAM16	18.32
Band12	5	23155	12	#Max	QAM16	18.32
Band12	5	23155	25	#0	QAM16	18.47
Band12	10	23060	1	#0	QPSK	20.57
Band12	10	23060	1	#Mid	QPSK	20.43
Band12	10	23060	1	#Max	QPSK	20.49
Band12	10	23060	25	#0	QPSK	19.55
Band12	10	23060	25	#Mid	QPSK	19.56
Band12	10	23060	25	#Max	QPSK	19.62
Band12	10	23060	50	#0	QPSK	19.47
Band12	10	23060	1	#0	QAM16	20.60
Band12	10	23060	1	#Mid	QAM16	20.52
Band12	10	23060	1	#Max	QAM16	20.54
Band12	10	23060	25	#0	QAM16	18.35
Band12	10	23060	25	#Mid	QAM16	18.48
Band12	10	23060	25	#Max	QAM16	18.50
Band12	10	23095	1	#0	QPSK	20.49
Band12	10	23095	1	#Mid	QPSK	20.58
Band12	10	23095	1	#Max	QPSK	20.54
Band12	10	23095	25	#0	QPSK	19.54
Band12	10	23095	25	#Mid	QPSK	19.50
Band12	10	23095	25	#Max	QPSK	19.41
Band12	10	23095	50	#0	QPSK	19.47
Band12	10	23095	1	#0	QAM16	20.09
Band12	10	23095	1	#Mid	QAM16	20.20
Band12	10	23095	1	#Max	QAM16	20.17
Band12	10	23095	25	#0	QAM16	18.55
Band12	10	23095	25	#Mid	QAM16	18.51
Band12	10	23095	25	#Max	QAM16	18.50
Band12	10	23130	1	#0	QPSK	20.61
Band12	10	23130	1	#Mid	QPSK	20.62
Band12	10	23130	1	#Max	QPSK	20.62
Band12	10	23130	25	#0	QPSK	19.48
Band12	10	23130	25	#Mid	QPSK	19.64
Band12	10	23130	25	#Max	QPSK	19.61
Band12	10	23130	50	#0	QPSK	19.50
Band12	10	23130	1	#0	QAM16	20.20
Band12	10	23130	1	#Mid	QAM16	20.12
Band12	10	23130	1	#Max	QAM16	20.23
Band12	10	23130	25	#0	QAM16	18.50
Band12	10	23130	25	#Mid	QAM16	18.47
Band12	10	23130	25	#Max	QAM16	18.49

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	ERP (dBm)
Band17	5	23755	1	#0	QPSK	20.48
Band17	5	23755	1	#Mid	QPSK	20.49
Band17	5	23755	1	#Max	QPSK	20.55
Band17	5	23755	12	#0	QPSK	19.61
Band17	5	23755	12	#Mid	QPSK	19.54
Band17	5	23755	12	#Max	QPSK	19.56
Band17	5	23755	25	#0	QPSK	19.57
Band17	5	23755	1	#0	QAM16	19.17
Band17	5	23755	1	#Mid	QAM16	19.22
Band17	5	23755	1	#Max	QAM16	19.20
Band17	5	23755	12	#0	QAM16	18.45
Band17	5	23755	12	#Mid	QAM16	18.41
Band17	5	23755	12	#Max	QAM16	18.39
Band17	5	23755	25	#0	QAM16	18.59
Band17	5	23790	1	#0	QPSK	20.51
Band17	5	23790	1	#Mid	QPSK	20.46
Band17	5	23790	1	#Max	QPSK	20.38
Band17	5	23790	12	#0	QPSK	19.46
Band17	5	23790	12	#Mid	QPSK	19.43
Band17	5	23790	12	#Max	QPSK	19.48
Band17	5	23790	25	#0	QPSK	19.49
Band17	5	23790	1	#0	QAM16	19.60
Band17	5	23790	1	#Mid	QAM16	19.55
Band17	5	23790	1	#Max	QAM16	19.56
Band17	5	23790	12	#0	QAM16	18.49
Band17	5	23790	12	#Mid	QAM16	18.54
Band17	5	23790	12	#Max	QAM16	18.53
Band17	5	23790	25	#0	QAM16	18.33
Band17	5	23825	1	#0	QPSK	20.48
Band17	5	23825	1	#Mid	QPSK	20.53
Band17	5	23825	1	#Max	QPSK	20.44
Band17	5	23825	12	#0	QPSK	19.49
Band17	5	23825	12	#Mid	QPSK	19.53
Band17	5	23825	12	#Max	QPSK	19.53
Band17	5	23825	25	#0	QPSK	19.51
Band17	5	23825	1	#0	QAM16	19.60
Band17	5	23825	1	#Mid	QAM16	19.64
Band17	5	23825	1	#Max	QAM16	19.67
Band17	5	23825	12	#0	QAM16	18.40
Band17	5	23825	12	#Mid	QAM16	18.40
Band17	5	23825	12	#Max	QAM16	18.33
Band17	5	23825	25	#0	QAM16	18.66
Band17	10	23780	1	#0	QPSK	20.38
Band17	10	23780	1	#Mid	QPSK	20.48
Band17	10	23780	1	#Max	QPSK	20.48
Band17	10	23780	25	#0	QPSK	19.62
Band17	10	23780	25	#Mid	QPSK	19.44
Band17	10	23780	25	#Max	QPSK	19.53
Band17	10	23780	50	#0	QPSK	19.55
Band17	10	23780	1	#0	QAM16	20.51
Band17	10	23780	1	#Mid	QAM16	20.53
Band17	10	23780	1	#Max	QAM16	20.46
Band17	10	23780	25	#0	QAM16	18.41
Band17	10	23780	25	#Mid	QAM16	18.41
Band17	10	23780	25	#Max	QAM16	18.34

Band17	10	23790	1	#0	QPSK	20.51
Band17	10	23790	1	#Mid	QPSK	20.53
Band17	10	23790	1	#Max	QPSK	20.46
Band17	10	23790	25	#0	QPSK	19.64
Band17	10	23790	25	#Mid	QPSK	19.43
Band17	10	23790	25	#Max	QPSK	19.45
Band17	10	23790	50	#0	QPSK	19.50
Band17	10	23790	1	#0	QAM16	20.20
Band17	10	23790	1	#Mid	QAM16	20.11
Band17	10	23790	1	#Max	QAM16	20.14
Band17	10	23790	25	#0	QAM16	18.51
Band17	10	23790	25	#Mid	QAM16	18.51
Band17	10	23790	25	#Max	QAM16	18.55
Band17	10	23800	1	#0	QPSK	20.65
Band17	10	23800	1	#Mid	QPSK	20.60
Band17	10	23800	1	#Max	QPSK	20.61
Band17	10	23800	25	#0	QPSK	19.46
Band17	10	23800	25	#Mid	QPSK	19.60
Band17	10	23800	25	#Max	QPSK	19.56
Band17	10	23800	50	#0	QPSK	19.64
Band17	10	23800	1	#0	QAM16	20.23
Band17	10	23800	1	#Mid	QAM16	20.22
Band17	10	23800	1	#Max	QAM16	20.24
Band17	10	23800	25	#0	QAM16	18.47
Band17	10	23800	25	#Mid	QAM16	18.57
Band17	10	23800	25	#Max	QAM16	18.61

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	EIRP (dBm)
Band66	1.4	131979	1	#0	QPSK	23.18
Band66	1.4	131979	1	#Mid	QPSK	23.24
Band66	1.4	131979	1	#Max	QPSK	23.25
Band66	1.4	131979	3	#0	QPSK	23.14
Band66	1.4	131979	3	#Mid	QPSK	23.19
Band66	1.4	131979	3	#Max	QPSK	23.19
Band66	1.4	131979	6	#0	QPSK	22.19
Band66	1.4	131979	1	#0	QAM16	22.99
Band66	1.4	131979	1	#Mid	QAM16	23.10
Band66	1.4	131979	1	#Max	QAM16	23.10
Band66	1.4	131979	3	#0	QAM16	22.45
Band66	1.4	131979	3	#Mid	QAM16	22.44
Band66	1.4	131979	3	#Max	QAM16	22.45
Band66	1.4	131979	6	#0	QAM16	21.23
Band66	1.4	132322	1	#0	QPSK	22.94
Band66	1.4	132322	1	#Mid	QPSK	22.98
Band66	1.4	132322	1	#Max	QPSK	22.91
Band66	1.4	132322	3	#0	QPSK	23.15
Band66	1.4	132322	3	#Mid	QPSK	23.20
Band66	1.4	132322	3	#Max	QPSK	23.20
Band66	1.4	132322	6	#0	QPSK	22.21
Band66	1.4	132322	1	#0	QAM16	22.63
Band66	1.4	132322	1	#Mid	QAM16	22.60
Band66	1.4	132322	1	#Max	QAM16	22.56
Band66	1.4	132322	3	#0	QAM16	22.55
Band66	1.4	132322	3	#Mid	QAM16	22.54
Band66	1.4	132322	3	#Max	QAM16	22.56
Band66	1.4	132322	6	#0	QAM16	21.15
Band66	1.4	132665	1	#0	QPSK	23.21
Band66	1.4	132665	1	#Mid	QPSK	23.27
Band66	1.4	132665	1	#Max	QPSK	23.29
Band66	1.4	132665	3	#0	QPSK	23.21
Band66	1.4	132665	3	#Mid	QPSK	23.25
Band66	1.4	132665	3	#Max	QPSK	23.17
Band66	1.4	132665	6	#0	QPSK	22.24
Band66	1.4	132665	1	#0	QAM16	22.56
Band66	1.4	132665	1	#Mid	QAM16	22.55
Band66	1.4	132665	1	#Max	QAM16	22.53
Band66	1.4	132665	3	#0	QAM16	22.72
Band66	1.4	132665	3	#Mid	QAM16	22.66
Band66	1.4	132665	3	#Max	QAM16	22.66
Band66	1.4	132665	6	#0	QAM16	21.45
Band66	3	131987	1	#0	QPSK	22.95
Band66	3	131987	1	#Mid	QPSK	23.00
Band66	3	131987	1	#Max	QPSK	23.03
Band66	3	131987	8	#0	QPSK	22.16
Band66	3	131987	8	#Mid	QPSK	22.23
Band66	3	131987	8	#Max	QPSK	22.27
Band66	3	131987	15	#0	QPSK	22.16
Band66	3	131987	1	#0	QAM16	23.12
Band66	3	131987	1	#Mid	QAM16	23.18
Band66	3	131987	1	#Max	QAM16	23.25
Band66	3	131987	8	#0	QAM16	21.13
Band66	3	131987	8	#Mid	QAM16	21.13
Band66	3	131987	8	#Max	QAM16	21.15

Band66	3	131987	15	#0	QAM16	21.31
Band66	3	132322	1	#0	QPSK	22.88
Band66	3	132322	1	#Mid	QPSK	22.84
Band66	3	132322	1	#Max	QPSK	22.87
Band66	3	132322	8	#0	QPSK	22.08
Band66	3	132322	8	#Mid	QPSK	22.11
Band66	3	132322	8	#Max	QPSK	22.16
Band66	3	132322	15	#0	QPSK	22.12
Band66	3	132322	1	#0	QAM16	22.61
Band66	3	132322	1	#Mid	QAM16	22.60
Band66	3	132322	1	#Max	QAM16	22.59
Band66	3	132322	8	#0	QAM16	21.38
Band66	3	132322	8	#Mid	QAM16	21.45
Band66	3	132322	8	#Max	QAM16	21.41
Band66	3	132322	15	#0	QAM16	21.36
Band66	3	132657	1	#0	QPSK	23.24
Band66	3	132657	1	#Mid	QPSK	23.29
Band66	3	132657	1	#Max	QPSK	23.30
Band66	3	132657	8	#0	QPSK	22.27
Band66	3	132657	8	#Mid	QPSK	22.24
Band66	3	132657	8	#Max	QPSK	22.24
Band66	3	132657	15	#0	QPSK	22.22
Band66	3	132657	1	#0	QAM16	22.61
Band66	3	132657	1	#Mid	QAM16	22.59
Band66	3	132657	1	#Max	QAM16	22.51
Band66	3	132657	8	#0	QAM16	21.37
Band66	3	132657	8	#Mid	QAM16	21.28
Band66	3	132657	8	#Max	QAM16	21.36
Band66	3	132657	15	#0	QAM16	21.32
Band66	5	131997	1	#0	QPSK	23.08
Band66	5	131997	1	#Mid	QPSK	23.06
Band66	5	131997	1	#Max	QPSK	23.10
Band66	5	131997	12	#0	QPSK	22.10
Band66	5	131997	12	#Mid	QPSK	22.18
Band66	5	131997	12	#Max	QPSK	22.14
Band66	5	131997	25	#0	QPSK	22.20
Band66	5	131997	1	#0	QAM16	22.39
Band66	5	131997	1	#Mid	QAM16	22.41
Band66	5	131997	1	#Max	QAM16	22.50
Band66	5	131997	12	#0	QAM16	21.18
Band66	5	131997	12	#Mid	QAM16	21.09
Band66	5	131997	12	#Max	QAM16	21.16
Band66	5	131997	25	#0	QAM16	21.27
Band66	5	132322	1	#0	QPSK	23.22
Band66	5	132322	1	#Mid	QPSK	23.24
Band66	5	132322	1	#Max	QPSK	23.19
Band66	5	132322	12	#0	QPSK	22.12
Band66	5	132322	12	#Mid	QPSK	22.15
Band66	5	132322	12	#Max	QPSK	22.13
Band66	5	132322	25	#0	QPSK	22.17
Band66	5	132322	1	#0	QAM16	21.98
Band66	5	132322	1	#Mid	QAM16	21.97
Band66	5	132322	1	#Max	QAM16	21.97
Band66	5	132322	12	#0	QAM16	21.08
Band66	5	132322	12	#Mid	QAM16	21.11
Band66	5	132322	12	#Max	QAM16	21.14
Band66	5	132322	25	#0	QAM16	21.28

Band66	5	132647	1	#0	QPSK	23.23
Band66	5	132647	1	#Mid	QPSK	23.19
Band66	5	132647	1	#Max	QPSK	23.23
Band66	5	132647	12	#0	QPSK	22.27
Band66	5	132647	12	#Mid	QPSK	22.22
Band66	5	132647	12	#Max	QPSK	22.22
Band66	5	132647	25	#0	QPSK	22.35
Band66	5	132647	1	#0	QAM16	22.26
Band66	5	132647	1	#Mid	QAM16	22.26
Band66	5	132647	1	#Max	QAM16	22.23
Band66	5	132647	12	#0	QAM16	21.30
Band66	5	132647	12	#Mid	QAM16	21.37
Band66	5	132647	12	#Max	QAM16	21.35
Band66	5	132647	25	#0	QAM16	21.29
Band66	10	132022	1	#0	QPSK	23.00
Band66	10	132022	1	#Mid	QPSK	23.06
Band66	10	132022	1	#Max	QPSK	23.17
Band66	10	132022	25	#0	QPSK	22.23
Band66	10	132022	25	#Mid	QPSK	22.20
Band66	10	132022	25	#Max	QPSK	22.23
Band66	10	132022	50	#0	QPSK	22.25
Band66	10	132022	1	#0	QAM16	23.14
Band66	10	132022	1	#Mid	QAM16	23.32
Band66	10	132022	1	#Max	QAM16	23.43
Band66	10	132022	25	#0	QAM16	21.24
Band66	10	132022	25	#Mid	QAM16	21.20
Band66	10	132022	25	#Max	QAM16	21.24
Band66	10	132322	1	#0	QPSK	23.04
Band66	10	132322	1	#Mid	QPSK	23.00
Band66	10	132322	1	#Max	QPSK	22.94
Band66	10	132322	25	#0	QPSK	22.27
Band66	10	132322	25	#Mid	QPSK	22.17
Band66	10	132322	25	#Max	QPSK	22.22
Band66	10	132322	50	#0	QPSK	22.09
Band66	10	132322	1	#0	QAM16	22.68
Band66	10	132322	1	#Mid	QAM16	22.60
Band66	10	132322	1	#Max	QAM16	22.56
Band66	10	132322	25	#0	QAM16	21.33
Band66	10	132322	25	#Mid	QAM16	21.30
Band66	10	132322	25	#Max	QAM16	21.33
Band66	10	132622	1	#0	QPSK	23.31
Band66	10	132622	1	#Mid	QPSK	23.35
Band66	10	132622	1	#Max	QPSK	23.35
Band66	10	132622	25	#0	QPSK	22.22
Band66	10	132622	25	#Mid	QPSK	22.21
Band66	10	132622	25	#Max	QPSK	22.26
Band66	10	132622	50	#0	QPSK	22.16
Band66	10	132622	1	#0	QAM16	22.69
Band66	10	132622	1	#Mid	QAM16	22.74
Band66	10	132622	1	#Max	QAM16	22.64
Band66	10	132622	25	#0	QAM16	21.38
Band66	10	132622	25	#Mid	QAM16	21.38
Band66	10	132622	25	#Max	QAM16	21.40
Band66	15	132047	1	#0	QPSK	23.01
Band66	15	132047	1	#Mid	QPSK	23.13
Band66	15	132047	1	#Max	QPSK	23.16
Band66	15	132047	36	#0	QPSK	22.14

Band66	15	132047	36	#Mid	QPSK	22.08
Band66	15	132047	36	#Max	QPSK	22.25
Band66	15	132047	75	#0	QPSK	22.19
Band66	15	132047	1	#0	QAM16	23.14
Band66	15	132047	1	#Mid	QAM16	23.37
Band66	15	132047	1	#Max	QAM16	23.52
Band66	15	132047	36	#0	QAM16	21.28
Band66	15	132047	36	#Mid	QAM16	21.24
Band66	15	132047	36	#Max	QAM16	21.32
Band66	15	132322	1	#0	QPSK	23.23
Band66	15	132322	1	#Mid	QPSK	22.95
Band66	15	132322	1	#Max	QPSK	22.97
Band66	15	132322	36	#0	QPSK	22.17
Band66	15	132322	36	#Mid	QPSK	22.18
Band66	15	132322	36	#Max	QPSK	22.08
Band66	15	132322	75	#0	QPSK	22.04
Band66	15	132322	1	#0	QAM16	22.79
Band66	15	132322	1	#Mid	QAM16	22.59
Band66	15	132322	1	#Max	QAM16	22.56
Band66	15	132322	36	#0	QAM16	21.34
Band66	15	132322	36	#Mid	QAM16	21.32
Band66	15	132322	36	#Max	QAM16	21.34
Band66	15	132597	1	#0	QPSK	23.15
Band66	15	132597	1	#Mid	QPSK	23.12
Band66	15	132597	1	#Max	QPSK	23.14
Band66	15	132597	36	#0	QPSK	22.22
Band66	15	132597	36	#Mid	QPSK	22.30
Band66	15	132597	36	#Max	QPSK	22.24
Band66	15	132597	75	#0	QPSK	22.29
Band66	15	132597	1	#0	QAM16	23.15
Band66	15	132597	1	#Mid	QAM16	23.17
Band66	15	132597	1	#Max	QAM16	23.12
Band66	15	132597	36	#0	QAM16	21.23
Band66	15	132597	36	#Mid	QAM16	21.30
Band66	15	132597	36	#Max	QAM16	21.27
Band66	20	132072	1	#0	QPSK	23.24
Band66	20	132072	1	#Mid	QPSK	23.23
Band66	20	132072	1	#Max	QPSK	23.24
Band66	20	132072	50	#0	QPSK	22.31
Band66	20	132072	50	#Mid	QPSK	22.24
Band66	20	132072	50	#Max	QPSK	22.21
Band66	20	132072	100	#0	QPSK	22.23
Band66	20	132072	1	#0	QAM16	22.00
Band66	20	132072	1	#Mid	QAM16	21.98
Band66	20	132072	1	#Max	QAM16	22.02
Band66	20	132072	50	#0	QAM16	21.38
Band66	20	132072	50	#Mid	QAM16	21.41
Band66	20	132072	50	#Max	QAM16	21.42
Band66	20	132322	1	#0	QPSK	23.73
Band66	20	132322	1	#Mid	QPSK	23.08
Band66	20	132322	1	#Max	QPSK	23.10
Band66	20	132322	50	#0	QPSK	22.20
Band66	20	132322	50	#Mid	QPSK	22.15
Band66	20	132322	50	#Max	QPSK	22.20
Band66	20	132322	100	#0	QPSK	22.24
Band66	20	132322	1	#0	QAM16	22.77
Band66	20	132322	1	#Mid	QAM16	22.58

Band66	20	132322	1	#Max	QAM16	22.59
Band66	20	132322	50	#0	QAM16	21.31
Band66	20	132322	50	#Mid	QAM16	21.30
Band66	20	132322	50	#Max	QAM16	21.33
Band66	20	132572	1	#0	QPSK	23.36
Band66	20	132572	1	#Mid	QPSK	23.38
Band66	20	132572	1	#Max	QPSK	23.44
Band66	20	132572	50	#0	QPSK	22.23
Band66	20	132572	50	#Mid	QPSK	22.24
Band66	20	132572	50	#Max	QPSK	22.17
Band66	20	132572	100	#0	QPSK	22.26
Band66	20	132572	1	#0	QAM16	22.12
Band66	20	132572	1	#Mid	QAM16	22.20
Band66	20	132572	1	#Max	QAM16	22.21
Band66	20	132572	50	#0	QAM16	21.25
Band66	20	132572	50	#Mid	QAM16	21.32
Band66	20	132572	50	#Max	QAM16	21.38

BT

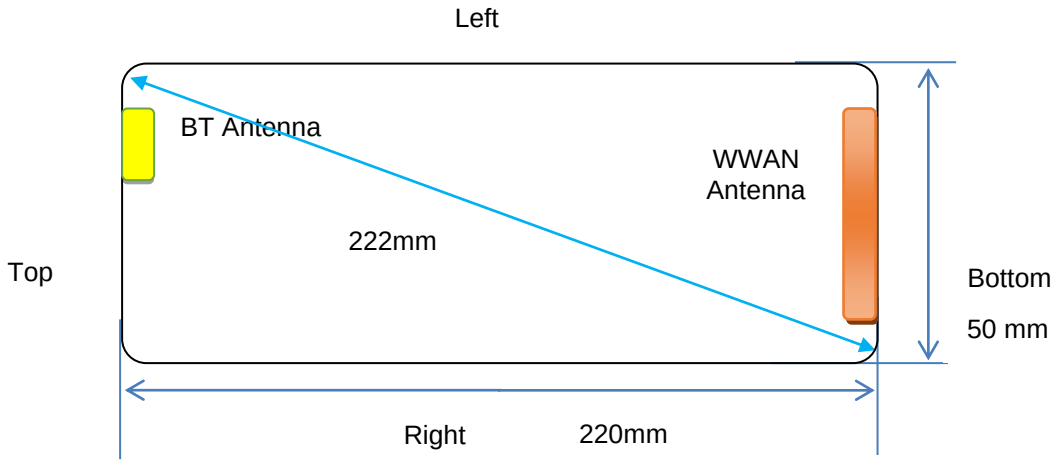
Mode	Frequency (MHz)	Conducted Power (dBm)
1-DH1	2402	8.75
1-DH1	2441	8.89
1-DH1	2480	6.53
2-DH1	2402	9.05
2-DH1	2441	9.3
2-DH1	2480	6.86
3-DH1	2402	9.02
3-DH1	2441	9.24
3-DH1	2480	6.89

Per KDB 447498 D01v06, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separationdistances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] •[√ f(GHz)] ≤ 3.0 for1-g SAR and ≤ 7.5 for 10-g extremity SAR
f(GHz) is the RF channel transmit frequency in GHz
Power and distance are rounded to the nearest mW and mm before calculation
The result is rounded to one decimal place for comparison

Bluetooth Turn up Power (dBm)	Separation Distance (mm)	Frequency (GHz)	Exclusion Thresholds
9.5	5	2.45	2.8

Per KDB 447498 D01v06, when the minimum test separation distance is < 5 mm, a distance of 5 mm is applied todetermine SAR test exclusion. The test exclusion threshold is 2.8< 3.0, SAR testing is not required.

14.2 Transmit Antennas and SAR Measurement Position



Rear View

Antenna information:

BT Antenna	TX/RX
234G Antenna	TX/RX

Note:
1). Per KDB648474 D04, 10-g extremity SAR is not required when Body-Worn mode 1-g reported SAR < 1.2 W/Kg.
2). According to the KDB941225 D06 Hot Spot SAR v02, the edges with less than 25 mm distance to the antennas need to be tested for SAR.

Distance of The Antenna to the EUT surface and edge (mm)						
Antennas	Front	Back	Top Side	Bottom Side	Left Side	Right Side
BT	<5	<5	<5	200	<5	30
WWAN	<5	<5	201	<5	<5	<5

Positions for SAR tests; Hotspot mode						
Antennas	Front	Back	Top Side	Bottom Side	Left Side	Right Side
BT	Yes	Yes	Yes	No	Yes	No
WWAN	Yes	Yes	No	Yes	Yes	Yes

General Note: Referring to KDB 941225 D06 v02, When the overall device length and width are 9cm*5cm, the test distance is 0mm, SAR must be measured for all sides and surfaces with a transmitting antenna located with 25mm from that surface or edge.

14.3 Test Results for Standalone SAR Test

The calculated SAR is obtained by the following formula:

Reported SAR=Measured SAR*10(Ptarget-Pmeasured))/10
Scaling factor=10(Ptarget-Pmeasured))/10
Reported SAR= Measured SAR* Scaling factor

Where
Ptarget is the power of manufacturing upper limit;
Pmeasured is the measured power;
Measured SAR is measured SAR at measured power which including power drift)
Reported SAR which including Power Drift and Scaling factor

Duty Cycle

Test Mode	Duty Cycle
GSM	3:8
UMTS	1:1
LTE	1:1
BT	1:1

SAR Values [GSM 850]

Ch.	Freq. (MHz)	Time slots	Test Position	Conducted Power (dBm)	Maximum Allowed Power (dBm)	Power Drift (%)	Scaling Factor	SAR1-g results(W/kg)		Graph Results
								Measured	Reported	
measured / reported SAR numbers – Head										
190	836.6	Voice	Left Cheek	32.57	33.00	N/A	1.104	**0.410**	**0.453**	**Plot 1**
190	836.6	Voice	Left Tilt	32.57	33.00	N/A	1.104	0.221	0.244	
190	836.6	Voice	Right Cheek	32.57	33.00	N/A	1.104	0.374	0.413	
190	836.6	Voice	Right Tilt	32.57	33.00	N/A	1.104	0.203	0.224	
measured / reported SAR numbers - Body (hotspot open, distance 10mm)										
190	836.6	2Txslots	Front	30.48	30.50	N/A	1.005	0.398	0.400	
190	836.6	2Txslots	Rear	30.48	30.50	N/A	1.005	**0.470**	**0.472**	**Plot 2**
190	836.6	2Txslots	Left	30.48	30.50	N/A	1.005	0.354	0.356	
190	836.6	2Txslots	Right	30.48	30.50	N/A	1.005	0.312	0.313	
190	836.6	2Txslots	Bottom	30.48	30.50	N/A	1.005	0.300	0.301	

Remark:
1. The value with black color is the maximum SAR Value of each test band.
2. The frame average of GPRS (4Tx slots) higher than GSM and sample can support VoIP function, tested at GPRS (4Tx slots) mode for head.
3. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is optional for such test configuration(s).

SAR Values [GSM 1900]

Ch.	Freq. (MHz)	Time slots	Test Position	Conducted Power (dBm)	Maximum Allowed Power (dBm)	Power Drift (%)	Scaling Factor	SAR1-g results(W/kg)		Graph Results
								Measured	*Reported*	
measured / reported SAR numbers – Head										
512	1850.2	Voice	Left Cheek	29.79	30.00	N/A	1.050	**0.702**	**0.737**	**Plot 3**
512	1850.2	Voice	Left Tilt	29.79	30.00	N/A	1.050	0.423	0.444	
512	1850.2	Voice	Right Cheek	29.79	30.00	N/A	1.050	0.645	0.677	
512	1850.2	Voice	Right Tilt	29.79	30.00	N/A	1.050	0.356	0.374	

measured / reported SAR numbers - Body (hotspot open, distance 10mm)										
512	1850.2	3Txslots	Front	25.88	26.00	N/A	1.028	0.462	0.475	
512	1850.2	3Txslots	Rear	25.88	26.00	N/A	1.028	**0.540**	**0.555**	**Plot 4**
512	1850.2	3Txslots	Left	25.88	26.00	N/A	1.028	0.503	0.517	
512	1850.2	3Txslots	Right	25.88	26.00	N/A	1.028	0.471	0.484	
512	1850.2	3Txslots	Bottom	25.88	26.00	N/A	1.028	0.422	0.434	

Remark:
1. The value with black color is the maximum SAR Value of each test band.
2. The frame average of GPRS (4Tx slots) higher than GSM and sample can support VoIP function, tested at GPRS (4Tx slots) mode for head.
3. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is optional for such test configuration(s).

SAR Values [WCDMA Band II]

Ch.	Freq. (MHz)	Time slots	Test Position	Conducted Power (dBm)	Maximum Allowed Power (dBm)	Power Drift (%)	Scaling Factor	SAR1-g results(W/kg)		Graph Results
								Measured	*Reported*	
measured / reported SAR numbers – Head										
9400	1880.0	RMC*	Left Cheek	22.77	23.00	N/A	1.054	**0.025**	**0.026**	**Plot 5**
9400	1880.0	RMC*	Left Tilt	22.77	23.00	N/A	1.054	0.017	0.018	
9400	1880.0	RMC*	Right Cheek	22.77	23.00	N/A	1.054	0.020	0.021	
9400	1880.0	RMC*	Right Tilt	22.77	23.00	N/A	1.054	0.012	0.013	
measured / reported SAR numbers - Body (hotspot open, distance 10mm)										
9400	1880.0	RMC*	Front	22.77	23.00	N/A	1.054	0.478	0.504	
9400	1880.0	RMC*	Rear	22.77	23.00	N/A	1.054	**0.540**	**0.569**	**Plot 6**
9400	1880.0	RMC*	Left	22.77	23.00	N/A	1.054	0.320	0.337	
9400	1880.0	RMC*	Right	22.77	23.00	N/A	1.054	0.306	0.323	
9400	1880.0	RMC*	Bottom	22.77	23.00	N/A	1.054	0.278	0.293	

Remark:
1. The value with black color is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is optional for such test configuration(s).
3. RMC - RMC 12.2kbps mode;*

SAR Values [WCDMA Band IV]

Ch.	Freq. (MHz)	Time slots	Test Position	Conducted Power (dBm)	Maximum Allowed Power (dBm)	Power Drift (%)	Scaling Factor	SAR1-g results(W/kg)		Graph Results
								Measured	*Reported*	
measured / reported SAR numbers – Head										
1450	1740.0	RMC*	Left Cheek	22.85	23.00	N/A	1.035	**0.280**	**0.290**	**Plot 7**
1450	1740.0	RMC*	Left Tilt	22.85	23.00	N/A	1.035	0.203	0.210	
1450	1740.0	RMC*	Right Cheek	22.85	23.00	N/A	1.035	0.251	0.260	
1450	1740.0	RMC*	Right Tilt	22.85	23.00	N/A	1.035	0.163	0.169	
measured / reported SAR numbers - Body (hotspot open, distance 10mm)										
1450	1740.0	RMC*	Front	22.85	23.00	N/A	1.035	0.130	0.135	
1450	1740.0	RMC*	Rear	22.85	23.00	N/A	1.035	**0.150**	**0.155**	**Plot 8**
1450	1740.0	RMC*	Left	22.85	23.00	N/A	1.035	0.110	0.114	
1450	1740.0	RMC*	Right	22.85	23.00	N/A	1.035	0.089	0.092	
1450	1740.0	RMC*	Bottom	22.85	23.00	N/A	1.035	0.070	0.072	

Remark:
1. The value with black color is the maximum SAR Value of each test band.

2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is optional for such test configuration(s).
3. RMC - RMC 12.2kbps mode;*

SAR Values [WCDMA Band V]

Ch.	Freq. (MHz)	Time slots	Test Position	Conducted Power (dBm)	Maximum Allowed Power (dBm)	Power Drift (%)	Scaling Factor	SAR1-g results(W/kg)		Graph Results
								Measured	*Reported*	
measured / reported SAR numbers – Head										
4132	826.4	RMC*	Left Cheek	22.25	22.50	N/A	1.059	**0.200**	**0.212**	**Plot 9**
4132	826.4	RMC*	Left Tilt	22.25	22.50	N/A	1.059	0.168	0.178	
4132	826.4	RMC*	Right Cheek	22.25	22.50	N/A	1.059	0.187	0.198	
4132	826.4	RMC*	Right Tilt	22.25	22.50	N/A	1.059	0.135	0.143	
measured / reported SAR numbers - Body (hotspot open, distance 10mm)										
4132	826.4	RMC*	Front	22.25	22.50	N/A	1.059	0.213	0.226	
4132	826.4	RMC*	Rear	22.25	22.50	N/A	1.059	**0.240**	**0.254**	**Plot 10**
4132	826.4	RMC*	Left	22.25	22.50	N/A	1.059	0.177	0.187	
4132	826.4	RMC*	Right	22.25	22.50	N/A	1.059	0.154	0.163	
4132	826.4	RMC*	Bottom	22.25	22.50	N/A	1.059	0.130	0.138	

Remark:
1. The value with black color is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is optional for such test configuration(s).
3. RMC - RMC 12.2kbps mode;*

SAR Values [LTE Band 2]

Ch.	Freq. (MHz)	Time slots	Test Position	Conducted Power (dBm)	Maximum Allowed Power (dBm)	Power Drift (%)	Scaling Factor	SAR1-g results(W/kg)		Graph Results
								Measured	*Reported*	
measured / reported SAR numbers – Head										
18900	1880.0	1RB	Left Cheek	23.17	23.50	N/A	1.079	**0.160**	**0.173**	**Plot 11**
18900	1880.0	1RB	Left Tilt	23.17	23.50	N/A	1.079	0.092	0.099	
18900	1880.0	1RB	Right Cheek	23.17	23.50	N/A	1.079	0.121	0.131	
18900	1880.0	1RB	Right Tilt	23.17	23.50	N/A	1.079	0.060	0.065	
18900	1880.0	50%RB	Left Cheek	22.10	22.50	N/A	1.096	0.150	0.164	
18900	1880.0	50%RB	Left Tilt	22.10	22.50	N/A	1.096	0.075	0.082	
18900	1880.0	50%RB	Right Cheek	22.10	22.50	N/A	1.096	0.103	0.113	
18900	1880.0	50%RB	Right Tilt	22.10	22.50	N/A	1.096	0.048	0.053	
measured / reported SAR numbers - Body (hotspot open, distance 10mm)										
18900	1880.0	1RB	Front	23.17	23.50	N/A	1.079	0.321	0.346	
18900	1880.0	1RB	Rear	23.17	23.50	N/A	1.079	**0.370**	**0.399**	Plot 12
18900	1880.0	1RB	Left	23.17	23.50	N/A	1.079	0.300	0.324	
18900	1880.0	1RB	Right	23.17	23.50	N/A	1.079	0.265	0.286	
18900	1880.0	1RB	Bottom	23.17	23.50	N/A	1.079	0.240	0.259	
18900	1880.0	50%RB	Front	22.10	22.50	N/A	1.096	0.306	0.336	
18900	1880.0	50%RB	Rear	22.10	22.50	N/A	1.096	0.354	0.388	
18900	1880.0	50%RB	Left	22.10	22.50	N/A	1.096	0.277	0.304	
18900	1880.0	50%RB	Right	22.10	22.50	N/A	1.096	0.220	0.241	
18900	1880.0	50%RB	Bottom	22.10	22.50	N/A	1.096	0.203	0.223	

SAR Values [LTE Band 4]

Ch.	Freq. (MHz)	Time slots	Test Position	Conducted Power (dBm)	Maximum Allowed Power (dBm)	Power Drift (%)	Scaling Factor	SAR1-g results(W/kg)		Graph Results
								Measured	*Reported*	
measured / reported SAR numbers – Head										
19957	1720.0	1RB	Left Cheek	23.37	23.50	N/A	1.030	**0.180**	**0.185**	**Plot 13**
19957	1720.0	1RB	Left Tilt	23.37	23.50	N/A	1.030	0.096	0.099	
19957	1720.0	1RB	Right Cheek	23.37	23.50	N/A	1.030	0.154	0.159	
19957	1720.0	1RB	Right Tilt	23.37	23.50	N/A	1.030	0.072	0.074	
19957	1720.0	50%RB	Left Cheek	23.32	23.50	N/A	1.042	0.163	0.170	
19957	1720.0	50%RB	Left Tilt	23.32	23.50	N/A	1.042	0.076	0.079	
19957	1720.0	50%RB	Right Cheek	23.32	23.50	N/A	1.042	0.120	0.125	
19957	1720.0	50%RB	Right Tilt	23.32	23.50	N/A	1.042	0.050	0.052	
measured / reported SAR numbers - Body (hotspot open, distance 10mm)										
19957	1720.0	1RB	Front	23.37	23.50	N/A	1.030	0.456	0.470	
19957	1720.0	1RB	Rear	23.37	23.50	N/A	1.030	**0.540**	**0.556**	**Plot 14**
19957	1720.0	1RB	Left	23.37	23.50	N/A	1.030	0.403	0.415	
19957	1720.0	1RB	Right	23.37	23.50	N/A	1.030	0.356	0.367	
19957	1720.0	1RB	Bottom	23.37	23.50	N/A	1.030	0.321	0.331	
19957	1720.0	50%RB	Front	23.32	23.50	N/A	1.042	0.420	0.438	
19957	1720.0	50%RB	Rear	23.32	23.50	N/A	1.042	0.503	0.524	
19957	1720.0	50%RB	Left	23.32	23.50	N/A	1.042	0.365	0.380	
19957	1720.0	50%RB	Right	23.32	23.50	N/A	1.042	0.301	0.314	
19957	1720.0	50%RB	Bottom	23.32	23.50	1.99	1.042	0.278	0.290	

SAR Values [LTE Band 5]

Ch.	Freq. (MHz)	Time slots	Test Position	Conducted Power (dBm)	Maximum Allowed Power (dBm)	Power Drift (%)	Scaling Factor	SAR1-g results(W/kg)		Graph Results
								Measured	*Reported*	
measured / reported SAR numbers – Head										
20407	824.7	1RB	Left Cheek	21.04	21.50	N/A	1.112	**0.060**	**0.067**	**Plot 15**
20407	824.7	1RB	Left Tilt	21.04	21.50	N/A	1.112	0.039	0.043	
20407	824.7	1RB	Right Cheek	21.04	21.50	N/A	1.112	0.050	0.056	
20407	824.7	1RB	Right Tilt	21.04	21.50	N/A	1.112	0.030	0.033	
20407	824.7	50%RB	Left Cheek	21.02	21.50	N/A	1.117	0.054	0.060	
20407	824.7	50%RB	Left Tilt	21.02	21.50	N/A	1.117	0.031	0.035	
20407	824.7	50%RB	Right Cheek	21.02	21.50	N/A	1.117	0.045	0.050	
20407	824.7	50%RB	Right Tilt	21.02	21.50	N/A	1.117	0.021	0.023	
measured / reported SAR numbers - Body (hotspot open, distance 10mm)										
20407	824.7	1RB	Front	21.04	21.50	N/A	1.112	0.274	0.305	
20407	824.7	1RB	Rear	21.04	21.50	N/A	1.112	**0.310**	**0.345**	**Plot 16**
20407	824.7	1RB	Left	21.04	21.50	N/A	1.112	0.245	0.272	
20407	824.7	1RB	Right	21.04	21.50	N/A	1.112	0.203	0.226	
20407	824.7	1RB	Bottom	21.04	21.50	N/A	1.112	0.178	0.198	
20407	824.7	50%RB	Front	21.02	21.50	N/A	1.117	0.245	0.274	
20407	824.7	50%RB	Rear	21.02	21.50	N/A	1.117	0.291	0.325	
20407	824.7	50%RB	Left	21.02	21.50	N/A	1.117	0.213	0.238	
20407	824.7	50%RB	Right	21.02	21.50	N/A	1.117	0.178	0.199	
20407	824.7	50%RB	Bottom	21.02	21.50	N/A	1.117	0.150	0.168	

SAR Values [LTE Band 7]

Ch.	Freq. (MHz)	Time slots	Test Position	Conducted Powe	Maximum Allowed	Power Drift	Scaling Factor	SAR1-g results(W/kg)		Graph Results
								Measured	*Reporte*	

				r (dBm)	Power (dBm)	(%)			*d*	
measured / reported SAR numbers – Head										
21350	2560.0	1RB	Left Cheek	22.09	22.50	N/A	1.099	**0.160**	**0.176**	**Plot 17**
21350	2560.0	1RB	Left Tilt	22.09	22.50	N/A	1.099	0.087	0.096	
21350	2560.0	1RB	Right Cheek	22.09	22.50	N/A	1.099	0.123	0.135	
21350	2560.0	1RB	Right Tilt	22.09	22.50	N/A	1.099	0.045	0.049	
21350	2560.0	50%RB	Left Cheek	21.02	21.50	N/A	1.117	0.150	0.168	
21350	2560.0	50%RB	Left Tilt	21.02	21.50	N/A	1.117	0.071	0.079	
21350	2560.0	50%RB	Right Cheek	21.02	21.50	N/A	1.117	0.102	0.114	
21350	2560.0	50%RB	Right Tilt	21.02	21.50	N/A	1.117	0.034	0.038	
measured / reported SAR numbers - Body (hotspot open, distance 10mm)										
21350	2560.0	1RB	Front	22.09	22.50	N/A	1.099	0.201	0.221	
21350	2560.0	1RB	Rear	22.09	22.50	N/A	1.099	**0.360**	**0.396**	**Plot 18**
21350	2560.0	1RB	Left	22.09	22.50	N/A	1.099	0.174	0.191	
21350	2560.0	1RB	Right	22.09	22.50	N/A	1.099	0.142	0.156	
21350	2560.0	1RB	Bottom	22.09	22.50	N/A	1.099	0.112	0.123	
21350	2560.0	50%RB	Front	21.02	21.50	N/A	1.117	0.157	0.175	
21350	2560.0	50%RB	Rear	21.02	21.50	N/A	1.117	0.312	0.348	
21350	2560.0	50%RB	Left	21.02	21.50	N/A	1.117	0.145	0.162	
21350	2560.0	50%RB	Right	21.02	21.50	N/A	1.117	0.103	0.115	
21350	2560.0	50%RB	Bottom	21.02	21.50	N/A	1.117	0.079	0.088	

SAR Values [LTE Band 12]

Ch.	Freq. (MHz)	Time slots	Test Position	Conducted Power (dBm)	Maximum Allowed Power (dBm)	Power Drift (%)	Scaling Factor	SAR1-g results(W/kg)		Graph Results
								Measured	*Reported*	
measured / reported SAR numbers – Head										
23017	704.0	1RB	Left Cheek	20.67	21.00	N/A	1.079	**0.080**	**0.086**	**Plot 19**
23017	704.0	1RB	Left Tilt	20.67	21.00	N/A	1.079	0.042	0.045	
23017	704.0	1RB	Right Cheek	20.67	21.00	N/A	1.079	0.067	0.072	
23017	704.0	1RB	Right Tilt	20.67	21.00	N/A	1.079	0.034	0.037	
23017	704.0	50%RB	Left Cheek	20.69	21.00	N/A	1.074	0.071	0.076	
23017	704.0	50%RB	Left Tilt	20.69	21.00	N/A	1.074	0.036	0.039	
23017	704.0	50%RB	Right Cheek	20.69	21.00	N/A	1.074	0.045	0.048	
23017	704.0	50%RB	Right Tilt	20.69	21.00	N/A	1.074	0.027	0.029	
measured / reported SAR numbers - Body (hotspot open, distance 10mm)										
23017	704.0	1RB	Front	20.67	21.00	N/A	1.079	0.120	0.129	
23017	704.0	1RB	Rear	20.67	21.00	N/A	1.079	**0.150**	**0.162**	**Plot 20**
23017	704.0	1RB	Left	20.67	21.00	N/A	1.079	0.106	0.114	
23017	704.0	1RB	Right	20.67	21.00	N/A	1.079	0.085	0.092	
23017	704.0	1RB	Bottom	20.67	21.00	N/A	1.079	0.062	0.067	
23017	704.0	50%RB	Front	20.69	21.00	N/A	1.074	0.110	0.118	
23017	704.0	50%RB	Rear	20.69	21.00	N/A	1.074	0.120	0.129	
23017	704.0	50%RB	Left	20.69	21.00	N/A	1.074	0.082	0.088	
23017	704.0	50%RB	Right	20.69	21.00	N/A	1.074	0.071	0.076	
23017	704.0	50%RB	Bottom	20.69	21.00	N/A	1.074	0.050	0.054	

SAR Values [LTE Band 17]

Ch.	Freq. (MHz)	Time slots	Test Position	Conducted Power	Maximum Allowed Power	Power Drift (%)	Scaling Factor	SAR1-g results(W/kg)		Graph Results
								Measured	*Reported*	

				(dBm)	(dBm)					
measured / reported SAR numbers – Head										
23780	709.0	1RB	Left Cheek	20.53	21.00	N/A	1.114	**0.080**	**0.089**	**Plot 21**
23780	709.0	1RB	Left Tilt	20.53	21.00	N/A	1.114	0.041	0.046	
23780	709.0	1RB	Right Cheek	20.53	21.00	N/A	1.114	0.068	0.076	
23780	709.0	1RB	Right Tilt	20.53	21.00	N/A	1.114	0.036	0.040	
23780	709.0	50%RB	Left Cheek	18.41	18.50	N/A	1.021	0.073	0.075	
23780	709.0	50%RB	Left Tilt	18.41	18.50	N/A	1.021	0.030	0.031	
23780	709.0	50%RB	Right Cheek	18.41	18.50	N/A	1.021	0.050	0.051	
23780	709.0	50%RB	Right Tilt	18.41	18.50	N/A	1.021	0.027	0.028	
measured / reported SAR numbers - Body (hotspot open, distance 10mm)										
23780	709.0	1RB	Front	20.53	21.00	N/A	1.114	0.103	0.115	
23780	709.0	1RB	Rear	20.53	21.00	N/A	1.114	**0.110**	**0.123**	**Plot 22**
23780	709.0	1RB	Left	20.53	21.00	N/A	1.114	0.088	0.098	
23780	709.0	1RB	Right	20.53	21.00	N/A	1.114	0.076	0.085	
23780	709.0	1RB	Bottom	20.53	21.00	N/A	1.114	0.060	0.067	
23780	709.0	50%RB	Front	18.41	18.50	N/A	1.021	0.091	0.093	
23780	709.0	50%RB	Rear	18.41	18.50	N/A	1.021	0.103	0.105	
23780	709.0	50%RB	Left	18.41	18.50	N/A	1.021	0.074	0.076	
23780	709.0	50%RB	Right	18.41	18.50	N/A	1.021	0.060	0.061	
23780	709.0	50%RB	Bottom	18.41	18.50	N/A	1.021	0.048	0.049	

SAR Values [LTE Band 66]

Ch.	Freq. (MHz)	Time slots	Test Position	Conducted Power (dBm)	Maximum Allowed Power (dBm)	Power Drift (%)	Scaling Factor	SAR1-g results(W/kg)		Graph Results
								Measured	*Reported*	
measured / reported SAR numbers – Head										
132572	1770.0	1RB	Left Cheek	23.44	23.50	N/A	1.014	**0.120**	**0.122**	**Plot 23**
132572	1770.0	1RB	Left Tilt	23.44	23.50	N/A	1.014	0.070	0.071	
132572	1770.0	1RB	Right Cheek	23.44	23.50	N/A	1.014	0.097	0.098	
132572	1770.0	1RB	Right Tilt	23.44	23.50	N/A	1.014	0.057	0.058	
132572	1770.0	50%RB	Left Cheek	22.24	22.50	N/A	1.062	0.110	0.117	
132572	1770.0	50%RB	Left Tilt	22.24	22.50	N/A	1.062	0.061	0.065	
132572	1770.0	50%RB	Right Cheek	22.24	22.50	N/A	1.062	0.082	0.087	
132572	1770.0	50%RB	Right Tilt	22.24	22.50	N/A	1.062	0.045	0.048	
measured / reported SAR numbers - Body (hotspot open, distance 10mm)										
132572	1770.0	1RB	Front	23.44	23.50	N/A	1.014	0.178	0.180	
132572	1770.0	1RB	Rear	23.44	23.50	N/A	1.014	**0.260**	**0.264**	**Plot 24**
132572	1770.0	1RB	Left	23.44	23.50	N/A	1.014	0.145	0.147	
132572	1770.0	1RB	Right	23.44	23.50	N/A	1.014	0.120	0.122	
132572	1770.0	1RB	Bottom	23.44	23.50	N/A	1.014	0.100	0.101	
132572	1770.0	50%RB	Front	22.24	22.50	N/A	1.062	0.150	0.159	
132572	1770.0	50%RB	Rear	22.24	22.50	N/A	1.062	0.231	0.245	
132572	1770.0	50%RB	Left	22.24	22.50	N/A	1.062	0.120	0.127	
132572	1770.0	50%RB	Right	22.24	22.50	N/A	1.062	0.101	0.107	
132572	1770.0	50%RB	Bottom	22.24	22.50	N/A	1.062	0.085	0.090	

SAR Values [BT]

Ch.	Freq. (MHz)	Service	Test Position	Conducted Power (dBm)	Maximum Allowed Power (dBm)	Power Drift (%)	Scaling Factor	SAR1-g results(W/kg)		Graph Results
								Measured	*Reported*	

measured / reported SAR numbers – Head										
19	2441.0	GFSK	Left Cheek	9.30	9.50	N/A	1.047	**0.055**	**0.058**	**Plot 25**
19	2441.0	GFSK	Left Tilt	9.30	9.50	N/A	1.047	0.038	0.040	
19	2441.0	GFSK	Right Cheek	9.30	9.50	N/A	1.047	0.048	0.050	
19	2441.0	GFSK	Right Tilt	9.30	9.50	N/A	1.047	0.032	0.034	
measured / reported SAR numbers - Body (hotspot open, distance 10mm)										
19	2441.0	GFSK	Front	9.30	9.50	N/A	1.047	0.074	0.077	
19	2441.0	GFSK	Rear	9.30	9.50	N/A	1.047	**0.090**	**0.094**	**Plot 26**
19	2441.0	GFSK	Left	9.30	9.50	N/A	1.047	0.065	0.068	
19	2441.0	GFSK	Top	9.30	9.50	N/A	1.047	0.057	0.060	

14.4 Standalone SAR Test Exclusion Considerations and Estimated SAR

Per KDB447498 requires when the standalone SAR test exclusion of section 4.3.1 is applied to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to the following to determine simultaneous transmission SAR test exclusion;

● (max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)/x] W/kg for test separation distances ≤ 50 mm;

where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.

● 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the test separation distances is > 50 mm

Per FCC KD B447498 D01,simultaneous transmission SAR test exclusion may be applied when the sum of the 1-g SAR for all the transmitting antenna in a specific a physical test configuration is ≤1.6 W/Kg.When the sum is greater than the SAR limit,SAR test exclusion is determined by the SAR to peak location separation ratio.

$$\text{Ratio}=\frac{(SAR_1+SAR_2)^{1.5}}{(\text{peak location separation,mm})}<0.04$$

Estimated stand alone SAR					
Communication system	Frequency (MHz)	Configuration	Maximum Power (dBm)	Separation Distance (mm)	Estimated SAR1-g (W/kg)
Bluetooth*	2450	Body-worn	N/A	5	N/A

Remark:

1. Bluetooth*- Including Lower power Bluetooth
2. Maximum average power including tune-up tolerance;
3. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion
4. Body as body use distance is 5mm from manufacturer declaration of user manual

14.5 Simultaneous TX SAR Considerations

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmiting antenna.The device has 1 antenna, WWAN main antenna.;

Application Simultaneous Transmission information:

Combination No.	Mode
1	WWAN+BT

The maximum value of simultaneous emission is 0.663W/kg.

14.6 SAR Measurement Variability

According to KDB865664, Repeated measurements are required only when the measured SAR is ≥ 0.80 W/kg. If the measured SAR value of the initial repeated measurement is < 1.45 W/kg with ≤ 20% variation, only one repeated measurement is required to reaffirm that the results are not expected to have substantial variations, which may introduce significant compliance concerns. A second repeated measurement is required only if the measured result for the initial repeated measurement is within 10% of the SAR limit and vary by more than 20%, which are often related to device and measurement setup difficulties. The following procedures are applied to determine if repeated measurements are required. The same procedures should be adapted for measurements according to extremity and occupational exposure limits

by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.19 The repeated measurement results must be clearly identified in the SAR report. All measured SAR, including the repeated results, must be considered to determine compliance and for reporting according to KDB 690783.Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

1) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
2) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
3) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.
4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20

Frequency Band (MHz)	Air Interface	RF Exposure Configuration	Test Position	Repeated SAR (yes/no)	Highest Measured SAR1-g (W/Kg)	First Repeated	
						Measued SAR1-g (W/Kg)	Largest to Smallest SAR Ratio
750	LTE Band 12	Standalone	Body-Rear	no	0.150	n/a	n/a
	LTE Band 17	Standalone	Body-Rear	no	0.110	n/a	n/a
850	GSM 850	Standalone	Body-Rear	no	0.470	n/a	n/a
	WCDMA Band V	Standalone	Body-Rear	no	0.240	n/a	n/a
	LTE Band 5	Standalone	Body-Rear	no	0.310	n/a	n/a
1800	LTE Band 4	Standalone	Body-Rear	no	0.540	n/a	n/a
	LTE Band 66	Standalone	Body-Rear	no	0.260	n/a	n/a
	WCDMA Band IV	Standalone	Head-Left	no	0.280	n/a	n/a
1900	GSM 1900	Standalone	Head-Left	no	0.702	n/a	n/a
	WCDMA Band II	Standalone	Body-Rear	no	0.540	n/a	n/a
	LTE Band 2	Standalone	Body-Rear	no	0.370	n/a	n/a
2441	BT	Standalone	Body-Rear	no	0.090	n/a	n/a
2600	LTE Band 7	Standalone	Body-Rear	no	0.360	n/a	n/a

Remark:
1. Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the orignal and first repeated measurement is not > 1.20 or 3 (1-g or 10-g respectively)

14.7 General description of test procedures

1. The DUT is tested using CMU 200 communications testers as controller unit to set test channels and maximum output power to the DUT, as well as for measuring the conducted peak power.
2. Test positions as described in the tables above are in accordance with the specified test standard.
3. Tests in body position were performed in that configuration, which generates the highest time based averaged output power (see conducted power results).
4. Tests in head position with GSM were performed in voice mode with 1 timeslot unless GPRS/EGPRS/DTM function allows parallel voice and data traffic on 2 or more timeslots.
5. UMTS was tested in RMC mode with 12.2 kbit/s and TPC bits set to ‘all 1’.
6. WiFi was tested in 802.11b/g/n mode with 1 Mbit/s and 6 Mbit/s. According to KDB 248227 the SAR testing for 802.11g/n is not required since 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 ≤ 1.2 W/kg.

7. Required WiFi test channels were selected according to KDB 248227
8. According to FCC KDB pub 248227 D01, When there are multiple test channels with the same measured maximum output power, the channel closest to mid-band frequency is selected for SAR measurement and when there are multiple test channels with the same measured maximum output power and equal separation from mid-band frequency; for example, high and low channels or two mid-band channels, the higher frequency (number) channel is selected for SAR measurement.
9. According to FCC KDB pub 941225 D06 this device has been tested with 10 mm distance to the phantom for operation in WiFi hot spot mode.
10. Per FCC KDB pub 941225 D06 the edges with antennas within 2.5 cm are required to be evaluated for SAR to cover WiFi hot spot function.
11. According to IEEE 1528 the SAR test shall be performed at middle channel. Testing of top and bottom channel is optional.
12. According to KDB 447498 D01 testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:
    ● ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
    ● ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
    ● ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
13. IEEE 1528 require the middle channel to be tested first. This generally applies to wireless devices that are designed to operate in technologies with tight tolerances for maximum output power variations across channels in the band.
14. Per KDB648474 D04 require when the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is < 1.2 W/kg.
15. Per KDB648474 D04 require when the separation distance required for body-worn accessory testing is larger than or equal to that tested for hotspot mode, using the same wireless mode test configuration for voice and data, such as UMTS, LTE and Wi-Fi, and for the same surface of the phone, the hotspot mode SAR data may be used to support body-worn accessory SAR compliance for that particular configuration (surface)
16. 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g SAR > 1.2 W/kg.
17. Per KDB648474 D04 require for phablet SAR test considerations，For Smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.
18. 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g SAR > 1.2 W/kg.

15. Test Plots

15.1 System Performance Check

System check at 835 MHz

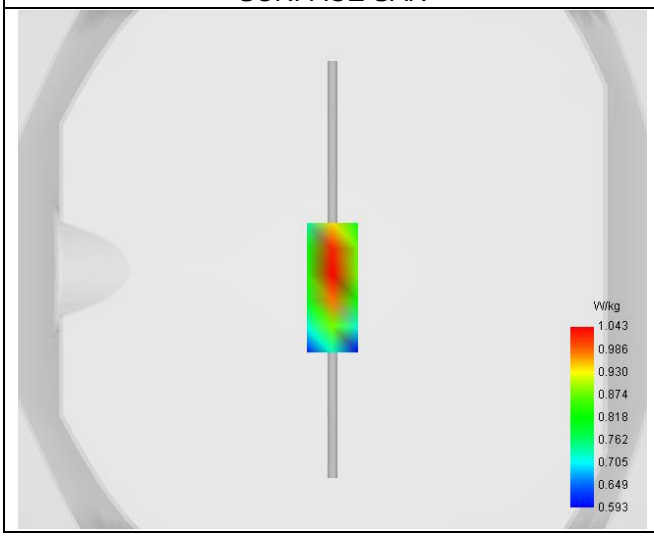
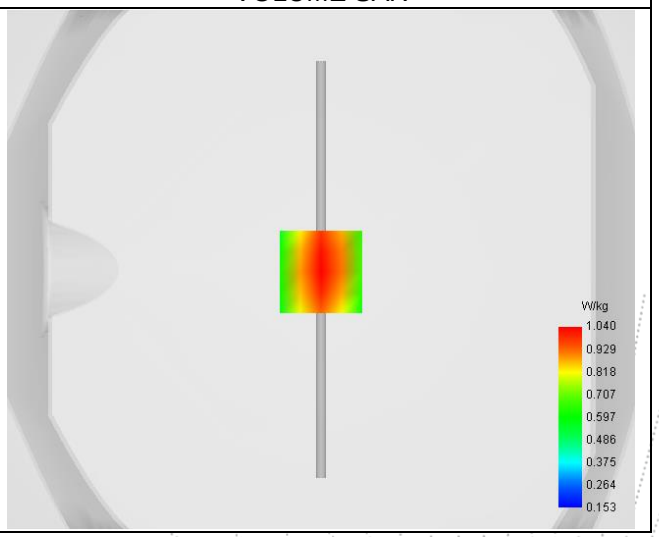
A. Experimental conditions.

Probe	SN EPGO362
ConvF	25.00
Area Scan	dx=10mm dy=10mm, Adaptative 2 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Dipole
Band	CW835
Channels	Middle
Signal	CW (Crest factor: 1.0)

B. Permitivity

Frequency (MHz)	835.000
Relative permitivity (real part)	40.830
Relative permitivity (imaginary part)	20.910
Conductivity (S/m)	0.970

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

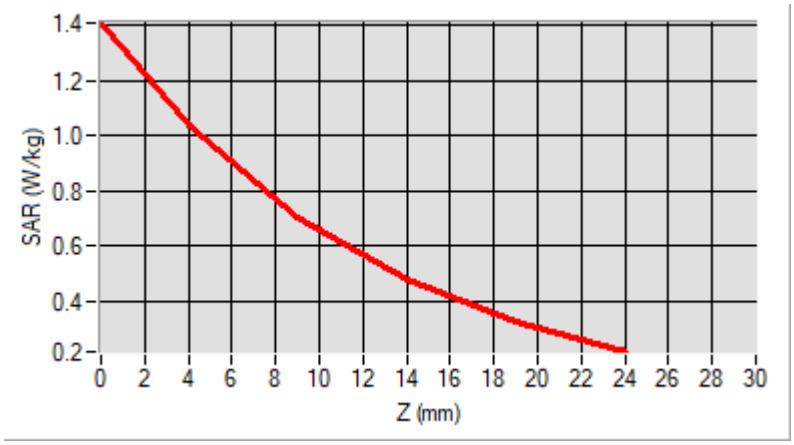
Maximum location: X=0.00, Y=-1.00 ; SAR Peak: 1.41 W/kg

D. SAR 1g & 10g

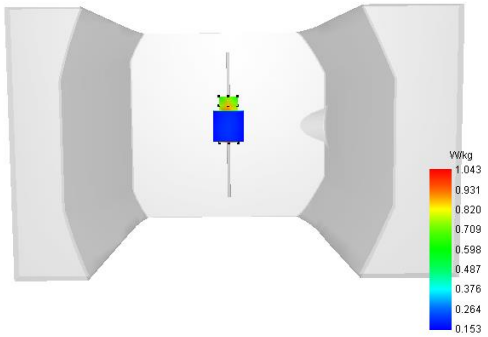
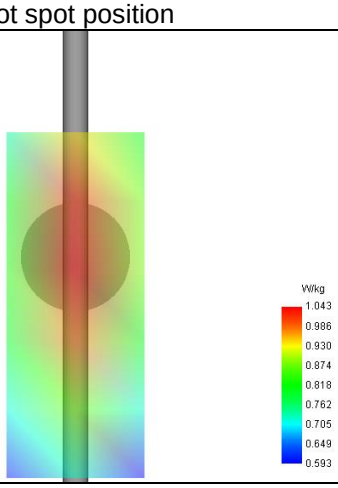
SAR 10g (W/Kg)	0.638
SAR 1g (W/Kg)	0.987
Variation (%)	-0.330
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.411	1.040	0.704	0.477	0.325



F. 3D Image

3D screen shot	Hot spot position
	

System check at 900 MHz

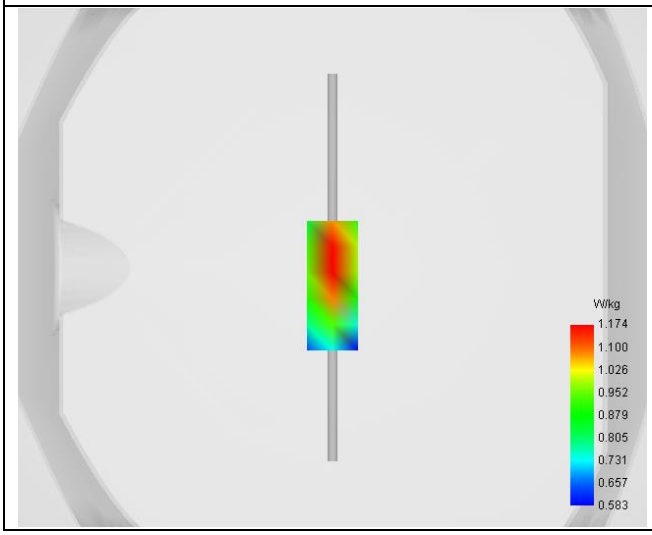
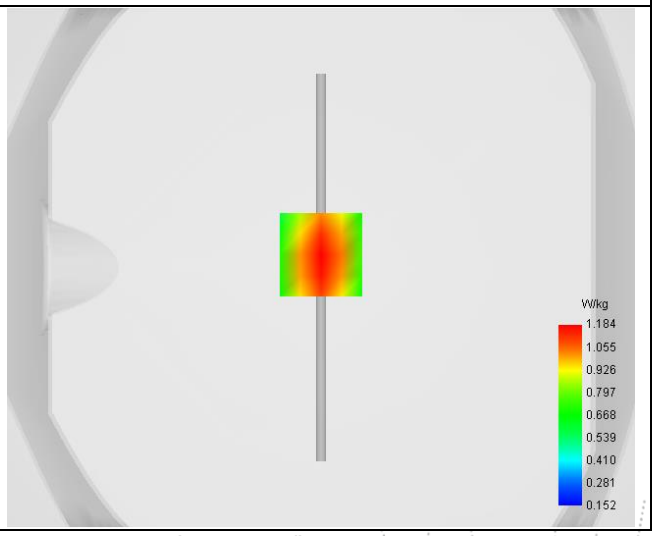
A. Experimental conditions.

Probe	SN EPGO362
ConvF	23.97
Area Scan	dx=10mm dy=10mm, Adaptative 2 max
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Dipole
Band	CW900
Channels	Middle
Signal	CW (Crest factor: 1.0)

B. Permitivity

Frequency (MHz)	900.000
Relative permitivity (real part)	40.900
Relative permitivity (imaginary part)	21.000
Conductivity (S/m)	1.050

C. SAR Surface and Volume

SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=5.00 ; SAR Peak: 1.62 W/kg

D. SAR 1g & 10g

SAR 10g (W/Kg)	0.719
SAR 1g (W/Kg)	1.124
Variation (%)	-0.360
Horizontal validation criteria: minimum distance (mm)	0.000000
Vertical validation criteria: SAR ratio M2/M1 (%)	0.000000

E. Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.616	1.184	0.796	0.537	0.366