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

SAR EVALUATION REPORT

For
LTE Phone Bluetooth and WLAN

Model: US780, LG-US780, LGUS780 AS780, LG-AS780 and LGAS780
FCC ID: ZNFUS780

Report Number: 13U14784-1B
Issue Date: 3/12/2013

Prepared for
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	2/19/2013	Initial Issue	--
A	3/1/2013	1. Section 1.1: Corrected RF Exposure rule part. 2. Section 7.3: Corrected Channel and Frequency numbers.	Devin Chang
A1	3/7/2013	1. Section 7.3: Added the following statement in column of Power reduction: "Device implements SVLTE power reduction. Refer to section 9.9. Even though the SAR summations had no situations where it exceeded 1.6 W/kg, the manufacturer will still implement power reduction when the RF Power conditions as in accordance with their stated values"	Sunny Shih
B	3/12/2013	1. Removed "1x Advance" from report	Sunny Shih

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1. Attestation of Test Results

Applicant	LG ELECTRONICS MOBILECOMM U.S.A., INC.
DUT description	LTE Phone Bluetooth and WLAN
Model	US780, LG-US780, LGUS780 AS780, LG-AS780 and LGAS780
Test device is	An identical prototype
Device category	Portable
Exposure category	General Population/Uncontrolled Exposure
Date tested	1/14/2013 – 1/25/2013
Highest Reported SAR	Refer to Section 1.1

Applicable Standards	Test Results
FCC Published RF exposure KDB procedures, TCB workshop updates and OET Bulletin 65 Supplement C, IEEE Std 1528-2003 and IEEE Std 1528a-2005	Pass

UL CCS tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government (NIST Handbook 150, Annex A). This report is written to support regulatory compliance of the applicable standards stated above.

Approved & Released For UL CCS By:

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1.1. Highest Reported SA

Worst Case SAR data for each Frequency Band

RF Exposure Rule	Freq. Range	Highest Reported SAR	Limit
22 (CDMA BC0)	824-849 MHz	Head: 0.346 W/kg, sum-SAR = 0.941 W/kg Body-worn: 0.652 W/kg, sum-SAR = 1.373 W/kg Hotspot: 0.652 W/kg, sum-SAR = 1.373 W/kg	1.6 W/kg
24 (CDMA BC1)	1850-1910 MHz	Head: 0.516 W/kg, sum-SAR = 1.111 W/kg Body-worn: 0.669 W/kg, sum-SAR = 1.390 W/kg Hotspot: 0.669 W/kg, sum-SAR = 1.390 W/kg	
27 (CDMA BC15)	1710~1755 MHz	Head: 0.376 W/kg, sum-SAR = 0.971 W/kg Body-worn: 0.635 W/kg, sum-SAR = 1.356 W/kg Hotspot: 0.635 W/kg, sum-SAR = 1.356 W/kg	
24 (LTE Band 2)	1850~1910 MHz	Head: 0.313 W/kg, sum-SAR = 1.014 W/kg Body-worn: 0.484 W/kg, sum-SAR = 1.390 W/kg Hotspot: 0.484 W/kg, sum-SAR = 1.390 W/kg	
27 (LTE Band 4)	1710~1755 MHz	Head: 0.135 W/kg, sum-SAR = 0.936 W/kg Body-worn: 0.306 W/kg, sum-SAR = 1.212 W/kg Hotspot: 0.306 W/kg, sum-SAR = 1.212 W/kg	
22 (LTE Band 5)	824~849 MHz	Head: 0.302 W/kg, sum-SAR = 1.111 W/kg Body-worn: 0.265 W/kg, sum-SAR = 1.171 W/kg Hotspot: 0.265 W/kg, sum-SAR = 1.171 W/kg	
27 (LTE Band 12)	699~716 MHz	Head: 0.173 W/kg, sum-SAR = 0.955 W/kg Body-worn: 0.356 W/kg, sum-SAR = 1.261 W/kg Hotspot: 0.356 W/kg, sum-SAR = 1.261 W/kg	
24 (LTE Band 25)	1850-1915 MHz	Head: 0.300 W/kg, sum-SAR = 1.003 W/kg Body-worn: 0.484 W/kg, sum-SAR = 1.390 W/kg Hotspot: 0.484 W/kg, sum-SAR = 1.390 W/kg	
15.247	2412-2462 MHz	Head: 0.329 W/kg Body-worn: 0.229 W/kg Hotspot: 0.229 W/kg	
15.407	5150-5250 MHz	Head: 0.248 W/kg Body-worn: 0.168 W/kg	
	5250-5350 MHz	Head: 0.292 W/kg Body-worn: 0.234 W/kg	
	5500-5700 MHz	Head: 0.241 W/kg Body-worn: 0.237 W/kg	
15.247	5725-5850 MHz	Head: 0.122 W/kg Body-worn: 0.173 W/kg	
Simultaneous transmission condition		1.390 W/kg (highest SAR across exposure conditions)	

2. Test Methodology

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

- 447498 D01 General RF Exposure Guidance v05
- 648474 D04 SAR Handsets Multi Xmiter and Ant v01
- 941225 D01 SAR test for 3G devices v02
- 941225 D05 SAR for LTE Devices v02
- 941225 D06 Hot Spot SAR v01
- 248227 D01 SAR Meas for 802 11abg v01r02
- 865664 D01 SAR Measurement 100 MHz to 6 GHz v01
- 865664 D02 SAR Reporting v01
- 690783 D01 SAR Listings on Grants v01r02

3. Facilities and Accreditation

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

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

4. Calibration and Uncertainty

4.1. Measuring Instrument Calibration

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

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due date		
				MM	DD	Year
S-Parameter Network Analyzer	Agilent	8753ES	MY40001647	6	27	2013
Dielectronic Probe kit	SPEAG	SM DAK 040 CA	1082	9	18	2013
ENA Series Network Analyzer	Agilent	E5071B	MY42100131	2	11	2013
Dielectronic Probe kit	HP	85070E	594	N/A		
Synthesized Signal Generator	HP	8665B	3438A00633	2	22	2013
Power Meter	HP	438A	3513U04320	9	17	2013
Power Sensor A	HP	8481A	2237A31744	8	17	2013
Power Sensor B	HP	8481A	3318A95392	8	17	2013
Amplifier	MITEQ	4D00400600-50-30P	1622052	N/A		
Directional coupler	Werlatone	C8060-102	2149	N/A		
Synthesized Signal Generator	HP	8665B	3744A01084	5	3	2013
Power Meter	HP	438A	2822A05684	10	7	2013
Power Sensor A	HP	8481A	2702A66876	8	1	2013
Power Sensor B	HP	8482A	2349A08568	4	14	2013
Amplifier	MITEQ	4D00400600-50-30P	1620606	N/A		
Directional coupler	Werlatone	C8060-102	2141	N/A		
Base Station Simulator	R & S	CMU200	106301	6	6	2013
Base Station Simulator	R & S	CMU200	118339	5	20	2013
Base Station Simulator	Agilent	8960	GB42361452	4	4	2013
Thermometer	TRACEABLE	4242	122529162	9	19	2013
E-Field Probe	SPEAG	EX3DV4	3885	10	9	2013
E-Field Probe	SPEAG	EX3DV4	3871	8	20	2013
Data Acquisition Electronics	SPEAG	DAE4	1352	10	8	2013
Data Acquisition Electronics	SPEAG	DAE4	1343	8	20	2013
System Validation Dipole	SPEAG	D750V2	1019	2	9	2013
System Validation Dipole	SPEAG	D835V2	4d142	10	4	2013
System Validation Dipole	SPEAG	D1750V2	1053	8	15	2013
System Validation Dipole	SPEAG	D1900V2	5d140	4	12	2013
System Validation Dipole	SPEAG	D2450V2	748	2	7	2013
System Validation Dipole	SPEAG	D5GHzV2	1003	9	18	2013
Power Meter	Agilent	N1912A	MY52310061	7	5	2013
Power Sensor Ch A	Agilent	N1921A	MY52260009	7	5	2013
Power Sensor Ch B	Agilent	N1921A	MY52270022	7	21	2013

4.2. Measurement Uncertainty

Measurement uncertainty for 300 MHz to 3 GHz averaged over 1 gram

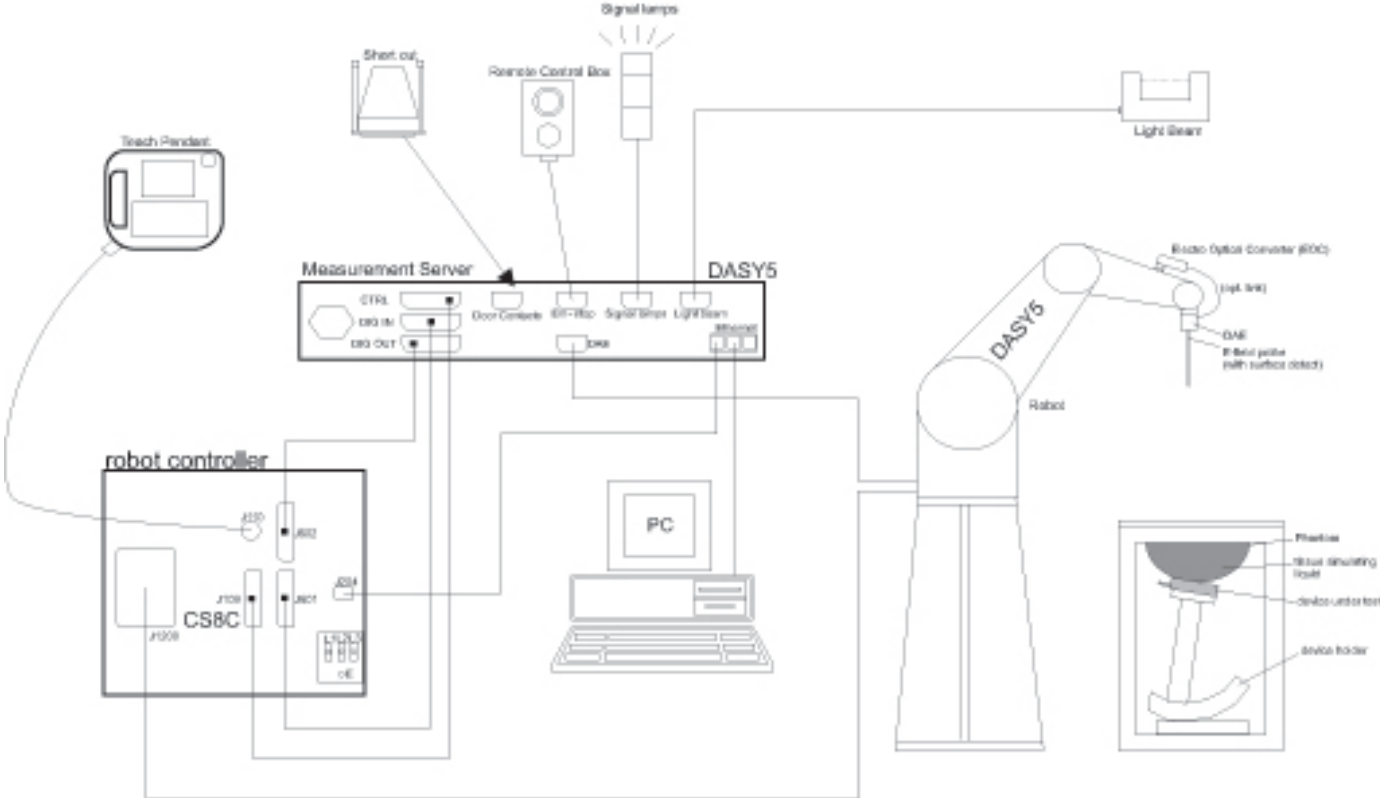
Component	Error, %	Distribution	Divisor	Sensitivity	U (Xi), %
Measurement System					
Probe Calibration (k=1)	**6.00**	Normal	1	1	6.00
Axial Isotropy	1.15	Rectangular	1.732	0.7071	0.47
Hemispherical Isotropy	2.30	Rectangular	1.732	0.7071	0.94
Boundary Effect	0.90	Rectangular	1.732	1	0.52
Probe Linearity	3.45	Rectangular	1.732	1	1.99
System Detection Limits	1.00	Rectangular	1.732	1	0.58
Readout Electronics	0.30	Normal	1	1	0.30
Response Time	0.80	Rectangular	1.732	1	0.46
Integration Time	2.60	Rectangular	1.732	1	1.50
RF Ambient Conditions - Noise	3.00	Rectangular	1.732	1	1.73
RF Ambient Conditions - Reflections	3.00	Rectangular	1.732	1	1.73
Probe Positioner Mechanical Tolerance	0.40	Rectangular	1.732	1	0.23
Probe Positioning with respect to Phantom	2.90	Rectangular	1.732	1	1.67
Extrapolation, Interpolation and Integration	1.00	Rectangular	1.732	1	0.58
Test Sample Related					
Test Sample Positioning	2.90	Normal	1	1	2.90
Device Holder Uncertainty	3.60	Normal	1	1	3.60
Output Power Variation - SAR Drift	5.00	Rectangular	1.732	1	2.89
Phantom and Tissue Parameters					
Phantom Uncertainty (shape and thickness)	4.00	Rectangular	1.732	1	2.31
Liquid Conductivity - deviation from target	5.00	Rectangular	1.732	0.64	1.85
Liquid Conductivity - measurement	**4.77**	Normal	1	0.64	3.05
Liquid Permittivity - deviation from target	5.00	Rectangular	1.732	0.6	1.73
Liquid Permittivity - measurement uncertainty	**-4.34**	Normal	1	0.6	-2.60
				Combined Standard Uncertainty Uc(y) =	10.53
				Expanded Uncertainty U, Coverage Factor = 2, > 95 % Confidence =	21.07 %
				Expanded Uncertainty U, Coverage Factor = 2, > 95 % Confidence =	1.66 dB

Measurement uncertainty for 3 to 6 GHz averaged over 1 gram

Component	Error, %	Distribution	Divisor	Sensitivity	U (Xi), %
Measurement System					
Probe Calibration (k=1)	**6.55**	Normal	1	1	6.55
Axial Isotropy	1.15	Rectangular	1.732	0.7071	0.47
Hemispherical Isotropy	2.30	Rectangular	1.732	0.7071	0.94
Boundary Effect	0.90	Rectangular	1.732	1	0.52
Probe Linearity	3.45	Rectangular	1.732	1	1.99
System Detection Limits	1.00	Rectangular	1.732	1	0.58
Readout Electronics	1.00	Normal	1	1	1.00
Response Time	0.80	Rectangular	1.732	1	0.46
Integration Time	2.60	Rectangular	1.732	1	1.50
RF Ambient Conditions - Noise	3.00	Rectangular	1.732	1	1.73
RF Ambient Conditions - Reflections	3.00	Rectangular	1.732	1	1.73
Probe Positioner Mechanical Tolerance	0.40	Rectangular	1.732	1	0.23
Probe Positioning with respect to Phantom	2.90	Rectangular	1.732	1	1.67
Extrapolation, Interpolation and Integration	3.90	Rectangular	1.732	1	2.25
Test Sample Related					
Test Sample Positioning	1.10	Normal	1	1	1.10
Device Holder Uncertainty	3.60	Normal	1	1	3.60
Output Power Variation - SAR Drift	5.00	Rectangular	1.732	1	2.89
Phantom and Tissue Parameters					
Phantom Uncertainty (shape and thickness)	4.00	Rectangular	1.732	1	2.31
Liquid Conductivity - deviation from target	5.00	Rectangular	1.732	0.64	1.85
Liquid Conductivity - measurement	**3.43**	Normal	1	0.64	2.20
Liquid Permittivity - deviation from target	10.00	Rectangular	1.732	0.6	3.46
Liquid Permittivity - measurement uncertainty	**3.13**	Normal	1	0.6	1.88
				Combined Standard Uncertainty Uc(y), %:	10.84
				Expanded Uncertainty U, Coverage Factor = 1.96, > 95 % Confidence =	21.25 %
				Expanded Uncertainty U, Coverage Factor = 1.96, > 95 % Confidence =	1.67 dB

5. Measurement System Description and Setup

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



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

6. SAR Measurement Procedure

6.1. Normal SAR Measurement Procedure

Step 1: Power Reference Measurement

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

Step 2: Area Scan

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

Area Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

Step 3: Zoom Scan

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

Zoom Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01 (Draft)

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

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

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

Step 4: Power drift measurement

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

Step 5: Z-Scan (FCC only)

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

6.2. Volume Scan Procedures

Step 1: Repeat Step 1-4 in Section 6.1

Step 2: Volume Scan
Volume Scans are used to assess peak SAR and averaged SAR measurements in largely extended 3-dimensional volumes within any phantom. This measurement does not need any previous area scan. The grid can be anchored to a user specific point or to the current probe location.

Step 3: Power drift measurement
The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

7. Device Under Test

Model US US780, LG-US780, LGUS780 AS780, LG-AS780 and LGAS780 LTE Phone Bluetooth and WLAN	
Operating Configuration(s)	Held to head, Body-worn (Voice call)
RF Exposure Condition(s)	Head, Body-worn Accessory, Hotspot (wireless router) - WiFi Hotspot mode permits the device to share its cellular data connection with other 2.4 GHz WiFi-enabled devices (channels 1 - 11).
Device dimension (L x W)	13.16 cm x 6.84 cm
Accessory	Headset

7.1. Band and Air Interfaces

Wireless Technology and Frequency Bands	CDMA BC0 / BC1 / BC15 LTE Band 2, 4, 5, 12, 25 WiFi: 2.4 GHz / 5 GHz Bluetooth: 2.4 GHz.
Mode	CDMA: 1xRTT 1xEv-Do (Rel. 0) 1xEv-Do (Rev. A) LTE: QPSK, 16QAM WiFi 802.11a/b/g/n HT20/HT40 Bluetooth 4.0+LE
Duty Cycle	CDMA BC0, BC1, BC15: 100% LTE Band 2, 4, 5, 12, 25: 100% WiFi 802.11a/b/g/n: 100%
DTM (Dual Tx Mode) Class	Not Supported
WiFi Direct	WiFi Direct support • 2.4 GHz band • 5.2 GHz band (5.15-5.25) channel 36, 40, 44 and 48 • 5.8 GHz band (5.745-5.805) channel 149, 153, 157 and 161 WiFi Direct support Client Mode only for 5 GHz band only

7.2. Simultaneous Transmission Condition

RF Exposure Condition	Capable Transmit Configurations
Head	• CDMA BC0, BC1, BC15 Voice + 2.4GHz WiFi • CDMA BC0, BC1, BC15 Voice + 5GHz WiFi • CDMA BC0, BC1, BC15 Data/EVDO + 2.4GHz WiFi • CDMA BC0, BC1, BC15 Data/EVDO + 5GHz WiFi • LTE B2, 4, 5, 12, 25 Data + 2.4GHz WiFi • LTE B2, 4, 5, 12, 25 Data + 5GHz WiFi • CDMA BC0, BC1, BC15 Voice + LTE B2, 4, 5, 12, 25 Data (SV-LTE) • CDMA BC0, BC1, BC15 Voice + LTE B2, 4, 5, 12, 25 Data + 2.4GHz WiFi (SV-LTE) • CDMA BC0, BC1, BC15 Voice + LTE B2, 4, 5, 12, 25 Data + 5GHz WiFi (SV-LTE)
Body-worn Accessory	• CDMA BC0, BC1, BC15 Voice + 2.4GHz WiFi • CDMA BC0, BC1, BC15 Voice + 5GHz WiFi • CDMA BC0, BC1, BC15 Data/EVDO + 2.4GHz WiFi • CDMA BC0, BC1, BC15 Data/EVDO + 5GHz WiFi • LTE B25 Data + 2.4GHz WiFi • LTE B25 Data + 5GHz WiFi • CDMA BC0, BC1, BC15 Voice + LTE B2, 4, 5, 12, 25 Data (SV-LTE) • CDMA BC0, BC1, BC15 Voice + LTE B2, 4, 5, 12, 25 Data + 2.4GHz WiFi (SV-LTE) • CDMA BC0, BC1, BC15 Voice + LTE B2, 4, 5, 12, 25 Data + 5GHz WiFi (SV-LTE) • CDMA BC0, BC1, BC15 Voice + 2.4GHz Bluetooth • LTE B2, 4, 5, 12, 25 Data + 2.4GHz Bluetooth • CDMA BC0, BC1, BC15 Voice+ LTE B2, 4, 5, 12, 25 Data + 2.4GHz Bluetooth (SV-LTE)
Hotspot	• CDMA BC0, BC1, BC15 Data/EVDO + 2.4GHz WiFi • LTE B2, 4, 5, 12, 25 Data + 2.4GHz WiFi • CDMA BC0, BC1, BC15 Voice+ LTE B2, 4, 5, 12, 25 Data + 2.4GHz WiFi (SV-LTE)

Note:

1. Simultaneous transmission between BT and WiFi is not supported.
2. Simultaneous transmission between CDMA 1xdata/EVDO and LTE data is not supported.
3. SVLTE is supported only. (SVDO is not supported.)
4. VoIP is supported.
5. Maximum output power will be used for SAR compliance. If necessary, power reduction will be used for SAR compliance.

7.3. KDB 941225 D05 SAR for LTE Devices v02

Item	Description						
Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 2						
	Tx: 1850 - 1910 MHz		Rx: 1930 - 1990 MHz				
	Band 4						
	Tx: 1710 - 1755 MHz		Rx: 2100 - 2155 MHz				
	Band 5						
	Tx: 824 - 849 MHz		Rx: 869 - 894 MHz				
	Band 12						
	Tx: 699 - 716 MHz		Rx: 729 - 746 MHz				
	Band 25						
	Tx: 1850 - 1915 MHz		Rx: 1930 - 1995 MHz				
	Band 2	Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			18650/ 1855	18625/ 1852.5	18615/ 1851.5	18607/ 1850.7
	Mid			18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880
	High			19150/ 1905	19175/ 1907.5	19185/ 1908.5	19193/ 1909.3
	Band 4	Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			20000/ 1715	19975/ 1712.5	19965/ 1711.5	19957/ 1710.7
	Mid			20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5
	High			20350/ 1750	20375/ 1752.5	20385/ 1753.5	20393/ 1754.3
	Band 5	Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			20450/ 829	20425/ 826.5	20415/ 825.5	20407/ 824.7
	Mid			20525/ 836.5	20525/ 836.5	20525/ 836.5	20525/ 836.5
	High			20600/ 844	20625/ 846.5	20635/ 847.5	20643/ 848.3
	Band 12	Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			23060/ 704	23035/ 701.5	23025/ 700.5	23017/ 699.7
	Mid			23095/ 707.5	23095/ 707.5	23095/ 707.5	23095/ 707.5
	High			23130/ 711	23155/ 713.5	23165/ 714.5	23173/ 715.3
	Band 25	Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			26090/ 1855	26065/ 1852.5	26055/ 1851.5	26047/ 1850.7
	Mid			26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5
	High			26640/ 1910	26665/ 1912.5	26675/ 1913.5	26683/ 1914.3

941225 D05 SAR for LTE Devices v02 (Continued)

<table>
<tr><td>LTE transmitter and antenna implementation</td><td>CDMA has one Tx/Rx antenna and LTE has on TX/RX antenna and one Rx only antenna.</td></tr>
<tr><td>Maximum power reduction (MPR)</td><td>
Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3
<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (RB)</th><th rowspan="2">MPR (dB)</th></tr>
<tr><th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr>
<tr><td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr>
<tr><td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr>
</table>
MPR Built-in by design
A-MPR (additional MPR) was disabled during SAR testing
</td></tr>
<tr><td>Power reduction</td><td>Device implements SVLTE power reduction. Refer to section 9.9. Even though the SAR summations had no situations where it exceeded 1.6 W/kg, the manufacturer will still implement power reduction when the RF Power conditions as in accordance with their stated values</td></tr>
<tr><td>Spectrum plots for RB configurations</td><td>When a properly configured base station simulator is not used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration should be included in the SAR report to demonstrate that the tested RB allocations have been correctly established at the maximum output power conditions.</td></tr>
</table>

8. Exposure Conditions

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

8.1. Head Exposure Conditions for WWAN and LTE and WiFi

Test Configurations	SAR Required	Note
Left Touch	Yes	
Left Tilt (15°)	Yes	
Right Touch	Yes	
Right Tilt (15°)	Yes	

8.2. Body-worn Accessory Exposure Conditions

For WWAN

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Rear	1 mm	Yes	
Front	6 mm	Yes	

For LTE Band 2, 4, 12 and 25

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Rear	1 mm	Yes	
Front	7 mm	Yes	

For LTE Band 5

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Rear	1 mm	Yes	
Front	7 mm	Yes	

For WiFi

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Rear	1 mm	Yes	
Front	8 mm	Yes	

8.3. Hotspot Mode Exposure Conditions

For WWAN

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Rear	1 mm	Yes	
Front	6 mm	Yes	
Edge 1 (Top)	117.3 mm	No	SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR v01
Edge 2 (Right)	47.2 mm	No	SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR v01
Edge 3 (Bottom)	2.6 mm	Yes	
Edge 4 (Left)	2 mm	Yes	

For LTE Band 2, 4, 12 and 25

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Rear	1 mm	Yes	
Front	7 mm	Yes	
Edge 1 (Top)	118.6 mm	No	SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR v01
Edge 2 (Right)	3 mm	Yes	
Edge 3 (Bottom)	2.6 mm	Yes	
Edge 4 (Left)	32.9 mm	No	SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR v01

For LTE Band 5

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Rear	1 mm	Yes	
Front	7 mm	Yes	
Edge 1 (Top)	3 mm	Yes	
Edge 2 (Right)	3 mm	Yes	
Edge 3 (Bottom)	90.3 mm	No	SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR v01
Edge 4 (Left)	69.7 mm	No	SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR v01

For WiFi

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Rear	1 mm	Yes	
Front	8 mm	Yes	
Edge 1 (Top)	3 mm	Yes	
Edge 2 (Right)	40.8 mm	No	SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR v01
Edge 3 (Bottom)	126.5 mm	No	SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR v01
Edge 4 (Left)	33.8 mm	No	SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR v01

9. RF Output Power Measurement

9.1. CDMA BC0

	Min	Max
Tune-up Tolerance (dB):	-1.5	0.5

Output Power Tolerance	1xRTT (dBm)	1xEVDO Rel. 0 (dBm)	1xEVDO Rev. A (dBm)
Max	26.2	26.2	26.2
Target	**25.7**	**25.7**	**25.7**
Min	24.2	24.2	24.2

1xRTT

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
CDMA2000 Mobile Test	B.13.08, L

- Call Setup > Shift & Preset
- Cell Info > Cell Parameters > System ID (SID) > 7
  > Network ID (NID) > 1
  > Reg. Ch. #.: 610
- Protocol Rev > 6 (IS-2000-0)
- Radio Config (RC) > Please see following table or details
- FCH Service Option (SO) Setup > Please see following table or details
- Traffic Data Rate > Full
- TDSO SCH Info > F-SCH Parameters > F-SCH Data Rate > 153.6 kbps
  > R-SCH Parameters > R-SCH Data Rate > 153.6 kbps
- Rvs Power Ctrl > Active bits
  - Rvs Power Ctrl > All Up bits (Maximum TxPout)

RESULTS

Band	Mode	Ch	Freq. (MHz)	Avg Pwr (dBm)
BC 0	RC1 SO55 (Loopback)	1013	824.70	26.2
		384	836.52	26.2
		777	848.31	26.2
	RC3 SO55 (Loopback)	1013	824.70	26.2
		384	836.52	26.2
		777	848.31	26.1
	RC3 SO32 (+F-SCH)	1013	824.70	26.2
		384	836.52	26.1
		777	848.31	26.2

1xEv-Do Rel. 0

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
1xEV-DO Terminal Test	B.13.10, L

EVDO Release 0 - RTAPS

- Call Setup > Shift & Preset
- Call Control:
  - Access Network Info > Cell Parameters > Sector ID > 00000000 : 00000000 : 00000000 : 00000000 >
  - Subnet Mask > 0
  - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
  - Cell Power > -93 dBm/1.23 MHz
  - System ID: 7; NID: 1, Reg. Ch. #.: 610
  - Channel > (Enter channel number)
  - Application Config > Enhanced Test Application Protocol > RTAP
  - RTAP Rate > 153.6 kbps
  - Rvs Power Ctrl > Active bits
  - Protocol Rel > 0 (1xEV-DO)
- Press “Start Data Connection” when “Session Open” appear in “Active Cell”
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

EVDO Release 0 - FTAP

- Call Setup > Shift & Preset
- Call Control:
  - Access Network Info > Cell Parameters > Sector ID > 00000000 : 00000000 : 00000000 : 00000000 >
  - Subnet Mask > 0
  - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
  - Cell Power > -93 dBm/1.23 MHz
  - Cell Band > (Select US Cellular or US PCS)
  - Channel > (Enter channel number)
  - Application Config > Enhanced Test Application Protocol > FTAP (default)
  - FTAP Rate > 307.2 kbps (2 Slot, QPSK)
  - Rvs Power Ctrl > Active bits
  - Protocol Rel > 0 (1xEV-DO)
- Press “Start Data Connection” when “Session Open” appear in “Active Cell”
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

RESULTS

Band	FTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
BC0	307.2 kbps (2 slot, QPSK)	1013	824.70	26.2
		384	836.52	26.2
		777	848.31	26.2

1xEv-Do Rev. A

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
1xEV-DO Terminal Test	B.13.10, L

EVDO Rev. A – RETAP

- Call Setup > Shift & Preset
- Cell Power > --93 and -96 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > RETAP
- R-Data Pkt Size > 4096
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots
- Rvs Power Ctrl > All Up bits (to get the maximum power)

EVDO Rev. A - FETAP

- Call Setup > Shift & Preset
- Cell Power > -93, and -96 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > FETAP
- F-Traffic Format > 4 (1024, 2,128) Canonical (307.2k, QPSK)
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2
- PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots
- Rvs Power Ctrl > All Up bits (to get the maximum power)

RESULTS

Band	FETAP Traffic Format	Channel	f (MHz)	Avg Pwr (dBm)
BC0	307.2k, QPSK/ ACK channel is transmitted at all the slots	1013	824.70	26.2
		384	836.52	26.2
		777	848.31	26.2

9.2. CDMA BC1

	Min	Max
Tune-up Tolerance (dB):	-1.5	0.5

Output Power Tolerance	1xRTT (dBm)	1xEVDO Rel. 0 (dBm)	1xEVDO Rev. A (dBm)
Max	25.2	25.2	25.2
Target	**24.7**	**24.7**	**24.7**
Min	23.2	23.2	23.2

1xRTT

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
CDMA2000 Mobile Test	B.13.08, L

- Call Setup > Shift & Preset
- Cell Info > Cell Parameters > System ID (SID) > 7
  > Network ID (NID) > 1
  > Reg. Ch. #.: 600
- Protocol Rev > 6 (IS-2000-0)
- Radio Config (RC) > Please see following table or details
- FCH Service Option (SO) Setup > Please see following table or details
- Traffic Data Rate > Full
- TDSO SCH Info > F-SCH Parameters > F-SCH Data Rate > 153.6 kbps
  > R-SCH Parameters > R-SCH Data Rate > 153.6 kbps
- Rvs Power Ctrl > Active bits
  - Rvs Power Ctrl > All Up bits (Maximum TxPout)

RESULTS

Band	Mode	Ch	Freq. (MHz)	Avg Pwr (dBm)
BC 1	RC1 SO55 (Loopback)	25	1851.25	25.2
		600	1880.00	25.2
		1175	1908.75	25.2
	RC3 SO55 (Loopback)	25	1851.25	25.2
		600	1880.00	25.2
		1175	1908.75	25.2
	RC3 SO32 (+F-SCH)	25	1851.25	25.2
		600	1880.00	25.2
		1175	1908.75	25.1

1xEv-Do Rel. 0

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
1xEV-DO Terminal Test	B.13.10, L

EVDO Release 0 - RTAPS

- Call Setup > Shift & Preset
- Call Control:
  - Access Network Info > Cell Parameters > Sector ID > 00000000 : 00000000 : 00000000 : 00000000 >
  - Subnet Mask > 0
  - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
  - Cell Power > -93 dBm/1.23 MHz
  - System ID: 7; NID: 1, Reg. Ch. #.: 600
  - Channel > (Enter channel number)
  - Application Config > Enhanced Test Application Protocol > RTAP
  - RTAP Rate > 153.6 kbps
  - Rvs Power Ctrl > Active bits
  - Protocol Rel > 0 (1xEV-DO)
- Press “Start Data Connection” when “Session Open” appear in “Active Cell”
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

EVDO Release 0 - FTAP

- Call Setup > Shift & Preset
- Call Control:
  - Access Network Info > Cell Parameters > Sector ID > 00000000 : 00000000 : 00000000 : 00000000 >
  - Subnet Mask > 0
  - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
  - Cell Power > -93 dBm/1.23 MHz
  - Cell Band > (Select US Cellular or US PCS)
  - Channel > (Enter channel number)
  - Application Config > Enhanced Test Application Protocol > FTAP (default)
  - FTAP Rate > 307.2 kbps (2 Slot, QPSK)
  - Rvs Power Ctrl > Active bits
  - Protocol Rel > 0 (1xEV-DO)
- Press “Start Data Connection” when “Session Open” appear in “Active Cell”
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

RESULTS

Band	FTAP Rate	RTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
BC1	307.2 kbps (2 slot, QPSK)	153.6 kbps	25	1851.25	26.2
			600	1880.00	26.2
			1175	1908.75	26.2

1xEv-Do Rev. A

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
1xEV-DO Terminal Test	B.13.10, L

EVDO Rev. A – RETAP

- Call Setup > Shift & Preset
- Cell Power > --93 and -96 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > RETAP
- R-Data Pkt Size > 4096
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots
- Rvs Power Ctrl > All Up bits (to get the maximum power)

EVDO Rev. A - FETAP

- Call Setup > Shift & Preset
- Cell Power > -93, and -96 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > FETAP
- F-Traffic Format > 4 (1024, 2,128) Canonical (307.2k, QPSK)
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2
- PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots
- Rvs Power Ctrl > All Up bits (to get the maximum power)

RESULTS

Band	FETAP Traffic Format	RETAP Data Payload	Channel	f (MHz)	Avg Pwr (dBm)
BC1	307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	25	1851.25	25.2
			600	1880.00	25.2
			1175	1908.75	25.2

9.3. CDMA BC15

	Min	Max
Tune-up Tolerance (dB):	-1.5	0.5

Output Power Tolerance	1xRTT (dBm)	1xEVDO Rel. 0 (dBm)	1xEVDO Rev. A (dBm)
Max	25.2	25.2	25.2
Target	**24.7**	**24.7**	**24.7**
Min	23.2	23.2	23.2

1xRTT

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
CDMA2000 Mobile Test	B.13.08, L

- Call Setup > Shift & Preset
- Cell Info > Cell Parameters > System ID (SID) > 7
  > Network ID (NID) > 1
  > Reg. Ch. #.: 500
- Protocol Rev > 6 (IS-2000-0)
- Radio Config (RC) > Please see following table or details
- FCH Service Option (SO) Setup > Please see following table or details
- Traffic Data Rate > Full
- TDSO SCH Info > F-SCH Parameters > F-SCH Data Rate > 153.6 kbps
  > R-SCH Parameters > R-SCH Data Rate > 153.6 kbps
- Rvs Power Ctrl > Active bits
  - Rvs Power Ctrl > All Up bits (Maximum TxPout)

RESULTS

Band	Mode	Ch	Freq. (MHz)	Avg Pwr (dBm)
BC 15	RC1 SO55 (Loopback)	25	1711.25	25.2
		450	1732.50	25.2
		875	1753.75	25.1
	RC3 SO55 (Loopback)	25	1711.25	25.2
		450	1732.50	25.2
		875	1753.75	25.1
	RC3 SO32 (+F-SCH)	25	1711.25	25.2
		450	1732.50	25.2
		875	1753.75	25.1

1xEv-Do Rel. 0

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
1xEV-DO Terminal Test	B.13.10, L

EVDO Release 0 - RTAPS

- Call Setup > Shift & Preset
- Call Control:
  - Access Network Info > Cell Parameters > Sector ID > 00000000 : 00000000 : 00000000 : 00000000 >
  - Subnet Mask > 0
  - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
  - Cell Power > -93 dBm/1.23 MHz
  - System ID: 7; NID: 1, Reg. Ch. #.: 500
  - Channel > (Enter channel number)
  - Application Config > Enhanced Test Application Protocol > RTAP
  - RTAP Rate > 153.6 kbps
  - Rvs Power Ctrl > Active bits
  - Protocol Rel > 0 (1xEV-DO)
- Press “Start Data Connection” when “Session Open” appear in “Active Cell”
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

EVDO Release 0 - FTAP

- Call Setup > Shift & Preset
- Call Control:
  - Access Network Info > Cell Parameters > Sector ID > 00000000 : 00000000 : 00000000 : 00000000 >
  - Subnet Mask > 0
  - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
  - Cell Power > -93 dBm/1.23 MHz
  - Cell Band > (Select US Cellular or US PCS)
  - Channel > (Enter channel number)
  - Application Config > Enhanced Test Application Protocol > FTAP (default)
  - FTAP Rate > 307.2 kbps (2 Slot, QPSK)
  - Rvs Power Ctrl > Active bits
  - Protocol Rel > 0 (1xEV-DO)
- Press “Start Data Connection” when “Session Open” appear in “Active Cell”
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

RESULTS

Band	FTAP Rate	Channel	f (MHz)	Avg Pwr (dBm)
BC15	307.2 kbps (2 slot, QPSK)	25	1711.25	25.2
		450	1732.50	25.2
		875	1753.75	25.1

1xEv-Do Rev. A

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
1xEV-DO Terminal Test	B.13.10, L

EVDO Rev. A – RETAP

- Call Setup > Shift & Preset
- Cell Power > --93 and -96 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > RETAP
- R-Data Pkt Size > 4096
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots
- Rvs Power Ctrl > All Up bits (to get the maximum power)

EVDO Rev. A - FETAP

- Call Setup > Shift & Preset
- Cell Power > -93, and -96 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > FETAP
- F-Traffic Format > 4 (1024, 2,128) Canonical (307.2k, QPSK)
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2
- PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots
- Rvs Power Ctrl > All Up bits (to get the maximum power)

RESULTS

Band	FETAP Traffic Format	Channel	f (MHz)	Avg Pwr (dBm)
BC15	307.2k, QPSK/ ACK channel is transmitted at all the slots	25	1711.25	25.2
		450	1732.50	25.2
		875	1753.75	25.1

9.4. LTE Band 2

	Min	Max
Tune-up Tolerance (dB):	-1.5	0.5

Output Power Tolerance	QPSK (dBm)	16QAM (dBm)
Max	23.7	22.7
Target	**23.2**	**22.2**
Min	21.7	20.7

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

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

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

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signalling Value of "NS_01".

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

Results

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
10	18650	1855.0	QPSK	1	0	0	23.6
				1	24	0	23.7
				1	49	0	23.6
				25	0	1	22.6
				25	12	1	22.6
				25	24	1	22.5
				50	0	1	22.5
			16QAM	1	0	1	22.4
				1	24	1	22.5
				1	49	1	22.4
				25	0	2	21.3
				25	12	2	21.4
				25	24	2	21.4
				50	0	2	21.3
	18900	1880.0	QPSK	1	0	0	23.6
				1	24	0	23.7
				1	49	0	23.6
				25	0	1	22.5
				25	12	1	22.4
				25	24	1	22.5
				50	0	1	22.4
			16QAM	1	0	1	22.3
				1	24	1	22.4
				1	49	1	22.3
				25	0	2	21.2
				25	12	2	21.2
				25	24	2	21.2
				50	0	2	21.1
	19150	1905.0	QPSK	1	0	0	23.5
				1	24	0	23.6
				1	49	0	23.4
				25	0	1	22.3
				25	12	1	22.3
				25	24	1	22.2
				50	0	1	22.2
			16QAM	1	0	1	22.7
				1	24	1	22.7
				1	49	1	22.5
				25	0	2	21.0
				25	12	2	21.1
				25	24	2	21.0
				50	0	2	21.0

LTE Band 2 Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
5	18625	1855.0	QPSK	1	0	0	23.4
				1	12	0	23.5
				1	24	0	23.5
				12	0	1	22.6
				12	6	1	22.5
				12	11	1	22.6
				25	0	1	22.5
			16QAM	1	0	1	22.5
				1	12	1	22.6
				1	24	1	22.6
				12	0	2	21.4
				12	6	2	21.3
				12	11	2	21.3
				25	0	2	21.3
	18900	1880.0	QPSK	1	0	0	23.6
				1	12	0	23.6
				1	24	0	23.6
				12	0	1	22.6
				12	6	1	22.6
				12	11	1	22.7
				25	0	1	22.6
			16QAM	1	0	1	22.7
				1	12	1	22.7
				1	24	1	22.3
				12	0	2	21.2
				12	6	2	21.2
				12	11	2	21.3
				25	0	2	21.3
	19175	1907.5	QPSK	1	0	0	23.6
				1	12	0	23.5
				1	24	0	23.5
				12	0	1	22.5
				12	6	1	22.5
				12	11	1	22.4
				25	0	1	22.4
			16QAM	1	0	1	22.4
				1	12	1	22.5
				1	24	1	22.4
				12	0	2	21.3
				12	6	2	21.2
				12	11	2	21.2
				25	0	2	21.2

LTE Band 2 Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
3	18615	1851.5	QPSK	1	0	0	23.5
				1	12	0	23.6
				1	24	0	23.5
				12	0	1	22.6
				12	6	1	22.6
				12	11	1	22.7
				25	0	1	22.6
			16QAM	1	0	1	21.8
				1	12	1	22.0
				1	24	1	22.0
				12	0	2	21.4
				12	6	2	21.4
				12	11	2	21.5
				25	0	2	21.3
	18900	1880.0	QPSK	1	0	0	23.7
				1	12	0	23.7
				1	24	0	23.7
				12	0	1	22.6
				12	6	1	22.6
				12	11	1	22.6
				25	0	1	22.6
			16QAM	1	0	1	22.6
				1	12	1	22.6
				1	24	1	22.7
				12	0	2	21.4
				12	6	2	21.4
				12	11	2	21.4
				25	0	2	21.3
	19185	1908.5	QPSK	1	0	0	23.7
				1	12	0	23.6
				1	24	0	23.6
				12	0	1	22.5
				12	6	1	22.5
				12	11	1	22.6
				25	0	1	22.5
			16QAM	1	0	1	22.5
				1	12	1	22.4
				1	24	1	22.4
				12	0	2	21.3
				12	6	2	21.3
				12	11	2	21.3
				25	0	2	21.3

LTE Band 2 Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
1.4	18607	1850.7	QPSK	1	0	0	23.5
				1	12	0	23.5
				1	24	0	23.6
				12	0	0	23.5
				12	6	0	23.5
				12	11	0	23.7
				25	0	1	22.1
			16QAM	1	0	1	22.1
				1	12	1	22.2
				1	24	1	22.2
				12	0	1	22.6
				12	6	1	22.6
				12	11	1	22.7
				25	0	2	21.2
	18900	1880.0	QPSK	1	0	0	23.6
				1	12	0	23.6
				1	24	0	23.6
				12	0	0	23.6
				12	6	0	23.6
				12	11	0	23.7
				25	0	1	22.5
			16QAM	1	0	1	22.7
				1	12	1	22.7
				1	24	1	22.7
				12	0	1	22.5
				12	6	1	22.5
				12	11	1	22.6
				25	0	2	21.2
	19193	1909.3	QPSK	1	0	0	23.5
				1	12	0	23.3
				1	24	0	23.5
				12	0	0	23.6
				12	6	0	23.5
				12	11	0	23.5
				25	0	1	22.4
			16QAM	1	0	1	22.2
				1	12	1	22.3
				1	24	1	22.3
				12	0	1	22.7
				12	6	1	22.7
				12	11	1	22.7
				25	0	2	21.2

9.5. LTE Band 4

	Min	Max
Tune-up Tolerance (dB):	-1.5	0.5

Output Power Tolerance	QPSK (dBm)	16QAM (dBm)
Max	23.7	22.7
Target	**23.2**	**22.2**
Min	21.7	20.7

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

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

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

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signalling Value of "NS_01".

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

Results

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
10	20000	1715.0	QPSK	1	0	0	23.5
				1	24	0	23.6
				1	49	0	23.3
				25	0	1	22.4
				25	12	1	22.4
				25	24	1	22.6
				50	0	1	22.5
			16QAM	1	0	1	22.4
				1	24	1	22.5
				1	49	1	22.5
				25	0	2	21.1
				25	12	2	21.2
				25	24	2	21.3
				50	0	2	21.1
	20175	1732.5	QPSK	1	0	0	23.5
				1	24	0	23.6
				1	49	0	23.7
				25	0	1	22.6
				25	12	1	22.5
				25	24	1	22.4
				50	0	1	22.5
			16QAM	1	0	1	22.3
				1	24	1	22.3
				1	49	1	22.5
				25	0	2	21.2
				25	12	2	21.1
				25	24	2	21.0
				50	0	2	21.0
	20350	1750.0	QPSK	1	0	0	23.6
				1	24	0	23.5
				1	49	0	23.4
				25	0	1	22.6
				25	12	1	22.5
				25	24	1	22.5
				50	0	1	22.4
			16QAM	1	0	1	22.2
				1	24	1	22.1
				1	49	1	22.0
				25	0	2	21.1
				25	12	2	21.1
				25	24	2	21.0
				50	0	2	21.0

LTE Band 4 Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
5	19975	1712.5	QPSK	1	0	0	23.4
				1	12	0	23.5
				1	24	0	23.5
				12	0	1	22.4
				12	6	1	22.3
				12	11	1	22.4
				25	0	1	22.4
			16QAM	1	0	1	22.4
				1	12	1	22.6
				1	24	1	22.6
				12	0	2	20.8
				12	6	2	20.9
				12	11	2	21.0
				25	0	2	20.9
	20175	1732.5	QPSK	1	0	0	23.4
				1	12	0	23.5
				1	24	0	23.4
				12	0	1	22.6
				12	6	1	22.4
				12	11	1	22.4
				25	0	1	22.4
			16QAM	1	0	1	22.3
				1	12	1	22.3
				1	24	1	22.2
				12	0	2	21.4
				12	6	2	21.3
				12	11	2	21.2
				25	0	2	21.0
	20375	1752.5	QPSK	1	0	0	23.7
				1	12	0	23.6
				1	24	0	23.5
				12	0	1	22.4
				12	6	1	22.4
				12	11	1	22.3
				25	0	1	22.3
			16QAM	1	0	1	22.5
				1	12	1	22.4
				1	24	1	22.4
				12	0	2	21.0
				12	6	2	21.0
				12	11	2	20.9
				25	0	2	20.9

LTE Band 4 Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
3	19965	1711.5	QPSK	1	0	0	23.3
				1	7	0	23.5
				1	14	0	23.6
				8	0	1	22.5
				8	4	1	22.4
				8	7	1	22.4
				15	0	1	22.5
			16QAM	1	0	1	21.8
				1	7	1	21.8
				1	14	1	21.9
				8	0	2	21.1
				8	4	2	21.1
				8	7	2	21.0
				15	0	2	20.9
	20175	1732.5	QPSK	1	0	0	23.6
				1	7	0	23.4
				1	14	0	23.5
				8	0	1	22.5
				8	4	1	22.4
				8	7	1	22.4
				15	0	1	22.4
			16QAM	1	0	1	22.1
				1	7	1	21.8
				1	14	1	21.9
				8	0	2	21.2
				8	4	2	21.0
				8	7	2	21.0
				15	0	2	20.9
	20385	1753.5	QPSK	1	0	0	23.6
				1	7	0	23.5
				1	14	0	23.4
				8	0	1	22.5
				8	4	1	22.4
				8	7	1	22.4
				15	0	1	22.4
			16QAM	1	0	1	22.6
				1	7	1	22.4
				1	14	1	22.4
				8	0	2	21.0
				8	4	2	21.0
				8	7	2	21.0
				15	0	2	21.0

LTE Band 4 Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
1.4	19957	1710.7	QPSK	1	0	0	23.4
				1	2	0	23.4
				1	5	0	23.4
				3	0	0	23.5
				3	1	0	23.5
				3	2	0	23.4
				6	0	1	22.4
			16QAM	1	0	1	22.5
				1	2	1	22.6
				1	5	1	22.6
				3	0	1	22.5
				3	1	1	22.5
				3	2	1	22.5
				6	0	2	21.5
	20175	1732.5	QPSK	1	0	0	23.5
				1	2	0	23.4
				1	5	0	23.4
				3	0	0	23.5
				3	1	0	23.4
				3	2	0	23.4
				6	0	1	22.6
			16QAM	1	0	1	22.6
				1	2	1	22.6
				1	5	1	22.5
				3	0	1	22.5
				3	1	1	22.4
				3	2	1	22.3
				6	0	2	21.4
	20393	1754.3	QPSK	1	0	0	23.4
				1	2	0	23.4
				1	5	0	23.4
				3	0	0	23.4
				3	1	0	23.4
				3	2	0	23.5
				6	0	1	22.4
			16QAM	1	0	1	22.5
				1	2	1	22.6
				1	5	1	22.5
				3	0	1	22.4
				3	1	1	22.4
				3	2	1	22.4
				6	0	2	21.4

9.6. LTE Band 5

	Min	Max
Tune-up Tolerance (dB):	-1.5	0.5

Output Power Tolerance	QPSK (dBm)	16QAM (dBm)
Max	23.7	22.7
Target	**23.2**	**22.2**
Min	21.7	20.7

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

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

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

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signalling Value of "NS_01".

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

Results

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
10	20450	829.0	QPSK	1	0	0	23.7
				1	24	0	23.6
				1	49	0	23.7
				25	0	1	22.6
				25	12	1	22.6
				25	24	1	22.6
				50	0	1	22.5
			16QAM	1	0	1	22.5
				1	24	1	22.3
				1	49	1	22.5
				25	0	2	21.5
				25	12	2	21.4
				25	24	2	21.5
				50	0	2	21.4
	20525	836.5	QPSK	1	0	0	23.7
				1	24	0	23.7
				1	49	0	23.6
				25	0	1	22.6
				25	12	1	22.6
				25	24	1	22.6
				50	0	1	22.5
			16QAM	1	0	1	22.7
				1	24	1	22.7
				1	49	1	22.6
				25	0	2	21.6
				25	12	2	21.5
				25	24	2	21.5
				50	0	2	21.4
	20600	844.0	QPSK	1	0	0	23.7
				1	24	0	23.7
				1	49	0	23.5
				25	0	1	22.5
				25	12	1	22.6
				25	24	1	22.6
				50	0	1	22.4
			16QAM	1	0	1	22.6
				1	24	1	22.6
				1	49	1	22.5
				25	0	2	21.5
				25	12	2	21.4
				25	24	2	21.5
				50	0	2	21.3

LTE Band 5 Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
5	20425	826.5	QPSK	1	0	0	23.7
				1	12	0	23.6
				1	24	0	23.6
				12	0	1	22.6
				12	6	1	22.6
				12	11	1	22.6
				25	0	1	22.5
			16QAM	1	0	1	22.7
				1	12	1	22.7
				1	24	1	22.5
				12	0	2	21.4
				12	6	2	21.5
				12	11	2	21.5
				25	0	2	21.5
	20525	836.5	QPSK	1	0	0	23.6
				1	12	0	23.6
				1	24	0	23.6
				12	0	1	22.6
				12	6	1	22.6
				12	11	1	22.5
				25	0	1	22.5
			16QAM	1	0	1	22.7
				1	12	1	22.4
				1	24	1	22.3
				12	0	2	21.4
				12	6	2	21.3
				12	11	2	21.3
				25	0	2	21.4
	20625	846.5	QPSK	1	0	0	23.6
				1	12	0	23.5
				1	24	0	23.5
				12	0	1	22.5
				12	6	1	22.5
				12	11	1	22.4
				25	0	1	22.5
			16QAM	1	0	1	22.6
				1	12	1	22.5
				1	24	1	22.5
				12	0	2	21.4
				12	6	2	21.4
				12	11	2	21.4
				25	0	2	21.5

LTE Band 5 Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
3	20415	825.5	QPSK	1	0	0	23.7
				1	7	0	23.7
				1	14	0	23.6
				8	0	1	22.5
				8	4	1	22.5
				8	7	1	22.5
				15	0	1	22.4
			16QAM	1	0	1	22.7
				1	7	1	22.7
				1	14	1	22.7
				8	0	2	21.5
				8	4	2	21.5
				8	7	2	21.6
				15	0	2	21.4
	20525	836.5	QPSK	1	0	0	23.6
				1	7	0	23.6
				1	14	0	23.6
				8	0	1	22.5
				8	4	1	22.5
				8	7	1	22.4
				15	0	1	22.4
			16QAM	1	0	1	22.5
				1	7	1	22.4
				1	14	1	22.5
				8	0	2	21.3
				8	4	2	21.4
				8	7	2	21.4
				15	0	2	21.4
	20635	847.5	QPSK	1	0	0	23.6
				1	7	0	23.5
				1	14	0	23.5
				8	0	1	22.4
				8	4	1	22.5
				8	7	1	22.4
				15	0	1	22.4
			16QAM	1	0	1	22.6
				1	7	1	22.6
				1	14	1	22.5
				8	0	2	21.3
				8	4	2	21.4
				8	7	2	21.3
				15	0	2	21.4

LTE Band 5 Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
1.4	20407	824.7	QPSK	1	0	0	23.6
				1	2	0	23.6
				1	5	0	23.6
				3	0	0	23.5
				3	1	0	23.6
				3	2	0	23.6
				6	0	1	22.7
			16QAM	1	0	1	22.6
				1	2	1	22.6
				1	5	1	22.6
				3	0	1	22.7
				3	1	1	22.6
				3	2	1	22.7
				6	0	2	21.4
	20525	836.5	QPSK	1	0	0	23.6
				1	2	0	23.6
				1	5	0	23.7
				3	0	0	23.7
				3	1	0	23.7
				3	2	0	23.7
				6	0	1	22.7
			16QAM	1	0	1	22.7
				1	2	1	22.7
				1	5	1	22.6
				3	0	1	22.5
				3	1	1	22.6
				3	2	1	22.6
				6	0	2	21.6
	20643	848.3	QPSK	1	0	0	23.6
				1	2	0	23.5
				1	5	0	23.5
				3	0	0	23.6
				3	1	0	23.5
				3	2	0	23.5
				6	0	1	22.6
			16QAM	1	0	1	22.4
				1	2	1	22.3
				1	5	1	22.3
				3	0	1	22.7
				3	1	1	22.7
				3	2	1	22.6
				6	0	2	21.6

9.7. LTE Band 12

	Min	Max
Tune-up Tolerance (dB):	-1.5	0.5

Output Power Tolerance	QPSK (dBm)	16QAM (dBm)
Max	23.7	22.7
Target	**23.2**	**22.2**
Min	21.7	20.7

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

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

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

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signalling Value of “NS_01”.

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

Results

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
10	23060	704.0	QPSK	1	0	0	23.6
				1	24	0	23.6
				1	49	0	23.4
				25	0	1	22.5
				25	12	1	22.5
				25	24	1	22.6
				50	0	1	22.4
			16QAM	1	0	1	22.6
				1	24	1	22.5
				1	49	1	22.5
				25	0	2	21.0
				25	12	2	21.1
				25	24	2	21.2
				50	0	2	21.0
	23095	707.5	QPSK	1	0	0	23.5
				1	24	0	23.6
				1	49	0	23.6
				25	0	1	22.5
				25	12	1	22.5
				25	24	1	22.4
				50	0	1	22.4
			16QAM	1	0	1	22.7
				1	24	1	22.7
				1	49	1	22.7
				25	0	2	21.0
				25	12	2	21.1
				25	24	2	21.2
				50	0	2	21.2
	23130	711.0	QPSK	1	0	0	23.6
				1	24	0	23.4
				1	49	0	23.6
				25	0	1	22.5
				25	12	1	22.5
				25	24	1	22.5
				50	0	1	22.4
			16QAM	1	0	1	22.6
				1	24	1	22.6
				1	49	1	22.6
				25	0	2	21.0
				25	12	2	21.1
				25	24	2	21.2
				50	0	2	21.0

LTE Band 12 Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
5	23035	701.5	QPSK	1	0	0	23.6
				1	12	0	23.6
				1	24	0	23.5
				12	0	1	22.4
				12	6	1	22.5
				12	11	1	22.4
				25	0	1	22.3
			16QAM	1	0	1	22.5
				1	12	1	22.7
				1	24	1	22.5
				12	0	2	21.2
				12	6	2	21.0
				12	11	2	21.2
				25	0	2	21.0
	23095	707.5	QPSK	1	0	0	23.6
				1	12	0	23.6
				1	24	0	23.4
				12	0	1	22.5
				12	6	1	22.4
				12	11	1	22.4
				25	0	1	22.4
			16QAM	1	0	1	22.4
				1	12	1	22.5
				1	24	1	22.3
				12	0	2	21.0
				12	6	2	20.9
				12	11	2	21.0
				25	0	2	21.0
	23155	713.5	QPSK	1	0	0	23.6
				1	12	0	23.6
				1	24	0	23.7
				12	0	1	22.5
				12	6	1	22.6
				12	11	1	22.6
				25	0	1	22.5
			16QAM	1	0	1	22.7
				1	12	1	22.7
				1	24	1	22.7
				12	0	2	21.0
				12	6	2	21.1
				12	11	2	21.1
				25	0	2	21.0

LTE Band 12 Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
3	23025	700.5	QPSK	1	0	0	23.6
				1	7	0	23.5
				1	14	0	23.6
				8	0	1	22.4
				8	4	1	22.3
				8	7	1	22.4
				15	0	1	22.4
			16QAM	1	0	1	22.7
				1	7	1	22.6
				1	14	1	22.7
				8	0	2	21.0
				8	4	2	21.1
				8	7	2	21.2
				15	0	2	21.0
	23095	707.5	QPSK	1	0	0	23.6
				1	7	0	23.5
				1	14	0	23.4
				8	0	1	22.7
				8	4	1	22.6
				8	7	1	22.6
				15	0	1	22.5
			16QAM	1	0	1	22.7
				1	7	1	22.7
				1	14	1	22.5
				8	0	2	21.1
				8	4	2	21.4
				8	7	2	21.5
				15	0	2	21.1
	23165	714.5	QPSK	1	0	0	23.6
				1	7	0	23.7
				1	14	0	23.5
				8	0	1	22.7
				8	4	1	22.7
				8	7	1	22.6
				15	0	1	22.6
			16QAM	1	0	1	22.7
				1	7	1	22.7
				1	14	1	22.6
				8	0	2	21.1
				8	4	2	21.1
				8	7	2	21.0
				15	0	2	21.1

LTE Band 12 Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
1.4	23017	699.7	QPSK	1	0	0	23.5
				1	2	0	23.6
				1	5	0	23.4
				3	0	0	23.6
				3	1	0	23.6
				3	2	0	23.5
				6	0	1	22.5
			16QAM	1	0	1	22.6
				1	2	1	22.7
				1	5	1	22.5
				3	0	1	22.7
				3	1	1	22.6
				3	2	1	22.6
				6	0	2	21.1
	23095	707.5	QPSK	1	0	0	23.5
				1	2	0	23.6
				1	5	0	23.6
				3	0	0	23.6
				3	1	0	23.6
				3	2	0	23.6
				6	0	1	22.7
			16QAM	1	0	1	22.6
				1	2	1	22.7
				1	5	1	22.6
				3	0	1	22.6
				3	1	1	22.5
				3	2	1	22.4
				6	0	2	21.3
	23173	715.3	QPSK	1	0	0	23.6
				1	2	0	22.6
				1	5	0	23.5
				3	0	0	23.7
				3	1	0	23.5
				3	2	0	23.5
				6	0	1	22.7
			16QAM	1	0	1	22.5
				1	2	1	22.5
				1	5	1	22.4
				3	0	1	22.7
				3	1	1	22.7
				3	2	1	22.7
				6	0	2	21.4

9.8. LTE Band 25

	Min	Max
Tune-up Tolerance (dB):	-1.5	0.5

Output Power Tolerance	QPSK (dBm)	16QAM (dBm)
Max	23.7	22.7
Target	**23.2**	**22.2**
Min	21.7	20.7

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

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

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

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signalling Value of "NS_01".

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

Results

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
10	26090	1855.0	QPSK	1	0	0	23.7
				1	24	0	23.7
				1	49	0	23.7
				25	0	1	22.5
				25	12	1	22.6
				25	24	1	22.6
				50	0	1	22.5
			16QAM	1	0	1	22.2
				1	24	1	22.3
				1	49	1	22.4
				25	0	2	21.4
				25	12	2	21.5
				25	24	2	21.4
				50	0	2	21.4
	26365	1882.5	QPSK	1	0	0	23.6
				1	24	0	23.5
				1	49	0	23.4
				25	0	1	22.5
				25	12	1	22.5
				25	24	1	22.4
				50	0	1	22.4
			16QAM	1	0	1	22.5
				1	24	1	22.6
				1	49	1	22.5
				25	0	2	21.4
				25	12	2	21.4
				25	24	2	21.3
				50	0	2	21.3
	26640	1910.0	QPSK	1	0	0	23.6
				1	24	0	23.6
				1	49	0	23.6
				25	0	1	22.6
				25	12	1	22.6
				25	24	1	22.6
				50	0	1	22.7
			16QAM	1	0	1	22.4
				1	24	1	22.5
				1	49	1	22.5
				25	0	2	21.4
				25	12	2	21.5
				25	24	2	21.5
				50	0	2	21.4

LTE Band 25 Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
5	26065	1852.5	QPSK	1	0	0	23.5
				1	12	0	23.6
				1	24	0	23.7
				12	0	1	22.6
				12	6	1	22.7
				12	11	1	22.7
				25	0	1	22.6
			16QAM	1	0	1	22.2
				1	12	1	22.3
				1	24	1	22.4
				12	0	2	21.4
				12	6	2	21.4
				12	11	2	21.5
				25	0	2	21.4
	26365	1882.5	QPSK	1	0	0	23.5
				1	12	0	23.6
				1	24	0	23.5
				12	0	1	22.7
				12	6	1	22.7
				12	11	1	22.7
				25	0	1	22.6
			16QAM	1	0	1	22.7
				1	12	1	22.7
				1	24	1	22.6
				12	0	2	21.6
				12	6	2	21.6
				12	11	2	21.6
				25	0	2	21.5
	26665	1912.5	QPSK	1	0	0	23.7
				1	12	0	23.7
				1	24	0	23.5
				12	0	1	22.7
				12	6	1	22.6
				12	11	1	22.6
				25	0	1	22.6
			16QAM	1	0	1	22.5
				1	12	1	22.5
				1	24	1	22.2
				12	0	2	21.6
				12	6	2	21.6
				12	11	2	21.7
				25	0	2	21.7

LTE Band 25 Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
3	26055	1851.5	QPSK	1	0	0	23.5
				1	7	0	23.6
				1	14	0	23.7
				8	0	1	22.6
				8	4	1	22.7
				8	7	1	22.7
				15	0	1	22.6
			16QAM	1	0	1	22.3
				1	7	1	22.4
				1	14	1	22.5
				8	0	2	21.5
				8	4	2	21.5
				8	7	2	21.5
				15	0	2	21.5
	26365	1882.5	QPSK	1	0	0	23.6
				1	7	0	23.6
				1	14	0	23.6
				8	0	1	22.7
				8	4	1	22.7
				8	7	1	22.7
				15	0	1	22.7
			16QAM	1	0	1	22.5
				1	7	1	22.6
				1	14	1	22.5
				8	0	2	21.4
				8	4	2	21.4
				8	7	2	21.4
				15	0	2	21.6
	26675	1913.5	QPSK	1	0	0	23.7
				1	7	0	23.7
				1	14	0	23.5
				8	0	1	22.4
				8	4	1	22.4
				8	7	1	22.3
				15	0	1	22.4
			16QAM	1	0	1	22.0
				1	7	1	22.0
				1	14	1	22.7
				8	0	2	21.5
				8	4	2	21.4
				8	7	2	21.2
				15	0	2	21.7

LTE Band 25 Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)
1.4	26047	1850.7	QPSK	1	0	0	23.4
				1	2	0	23.4
				1	5	0	23.5
				3	0	0	23.5
				3	1	0	23.4
				3	2	0	23.4
				6	0	1	22.6
			16QAM	1	0	1	22.3
				1	2	1	22.2
				1	5	1	22.3
				3	0	1	22.7
				3	1	1	22.7
				3	2	1	22.7
				6	0	2	21.3
	26365	1882.5	QPSK	1	0	0	23.5
				1	2	0	23.6
				1	5	0	23.6
				3	0	0	23.6
				3	1	0	23.6
				3	2	0	23.6
				6	0	1	22.6
			16QAM	1	0	1	22.4
				1	2	1	22.4
				1	5	1	22.4
				3	0	1	22.3
				3	1	1	22.2
				3	2	1	22.2
				6	0	2	21.5
	26683	1914.3	QPSK	1	0	0	23.5
				1	2	0	23.4
				1	5	0	23.5
				3	0	0	23.5
				3	1	0	23.5
				3	2	0	23.5
				6	0	1	22.5
			16QAM	1	0	1	22.7
				1	2	1	22.7
				1	5	1	22.5
				3	0	1	22.7
				3	1	1	22.7
				3	2	1	22.7
				6	0	2	21.6

9.9. Power Reduction for SV-LTE Mode

Mode	CDMA Current Voice Power for BC0, BC1 & BC15	LTE Max. Power (Limited)
SV-LTE	P ≤ 18.5 dBm	23.2 dBm
	P > 18.5 dBm	19.2 dBm

- LTE power reduction is determined by CDMA current voice power.

  The CDMA current voice power criterion has been mentioned on the table above.

  This power reduction algorithm for SVLTE is totally based on Qualcomm's chipset solution.

  Normally, manufacturer determines the CDMA current voice power criterion and the reduction value.

* Reference

For US780, CDMA current voice power criterion: 18.5dBm for SVLTE mode

Reduction value for SVLTE mode: 4 dB

- CDMA BC0= Cellular CDMA, CDMA BC1= PCS CDMA, CDMA BC15= AWS
- CDMA Nominal power.

  CDMA BC0 power: 25.7dBm, CDMA BC1 power: 24.7dBm, CDMA BC15 power: 24.7dBm
- LTE Nominal power.

  LTE Band data power: 23.2dBm

  Power tune-up tolerance: +0.5dB/-1.5dB

SV-LTE: (CDMA BC0 + LTE Band 2)

CMU200		R&S CMW 500			
CDMA BC0 (1xRTT) P > 18.5 dBm		LTE Band 2 (QPSK) Limited = 19.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
1013	26.2	18650	1	0	19.6
			1	24	19.6
			1	49	19.6
			25	0	19.6
			25	12	19.5
			25	24	19.6
			50	0	19.5
384	26.2	18900	1	0	19.5
			1	24	19.4
			1	49	19.5
			25	0	19.5
			25	12	19.4
			25	24	19.3
			50	0	19.4
777	26.1	19150	1	0	19.5
			1	24	19.4
			1	49	19.5
			25	0	19.5
			25	12	19.5
			25	24	19.3
			50	0	19.4

CMU200		R&S CMW 500			
CDMA BC0 (1xRTT) P ≤ 18.5 dBm		LTE Band 2 (QPSK) Limited = 23.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
1013	18.2	18650	1	0	23.6
			1	24	23.7
			1	49	23.6
			25	0	22.6
			25	12	22.6
			25	24	22.5
			50	0	22.5
384	18.2	18900	1	0	23.6
			1	24	23.7
			1	49	23.6
			25	0	22.5
			25	12	22.4
			25	24	22.5
			50	0	22.4
777	18.2	19150	1	0	23.5
			1	24	23.6
			1	49	23.4
			25	0	22.3
			25	12	22.3
			25	24	22.2
			50	0	22.2

SV-LTE: (CDMA BC0 + LTE Band 4)

CMU200		R&S CMW 500			
CDMA BC0 (1xRTT) P > 18.5 dBm		LTE Band 4 (QPSK) Limited = 19.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
1013	26.2	20000	1	0	19.4
			1	24	19.5
			1	49	19.3
			25	0	19.4
			25	12	19.5
			25	24	19.5
			50	0	19.5
384	26.2	20175	1	0	19.3
			1	24	19.3
			1	49	19.2
			25	0	19.2
			25	12	19.2
			25	24	19.2
			50	0	19.2
777	26.1	20350	1	0	19.4
			1	24	19.5
			1	49	19.4
			25	0	19.3
			25	12	19.3
			25	24	19.2
			50	0	19.2

CMU200		R&S CMW 500			
CDMA BC0 (1xRTT) P ≤ 18.5 dBm		LTE Band 4 (QPSK) Limited = 23.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
1013	18.2	20000	1	0	23.5
			1	24	23.6
			1	49	23.3
			25	0	22.4
			25	12	22.4
			25	24	22.6
			50	0	22.5
384	18.2	20175	1	0	23.5
			1	24	23.6
			1	49	23.7
			25	0	22.6
			25	12	22.5
			25	24	22.4
			50	0	22.5
777	18.2	20350	1	0	23.6
			1	24	23.5
			1	49	23.4
			25	0	22.6
			25	12	22.5
			25	24	22.5
			50	0	22.4

SV-LTE: (CDMA BC0 + LTE Band 5)

CMU200		R&S CMW 500			
CDMA BC0 (1xRTT) P > 18.5 dBm		LTE Band 5 (QPSK) Limited = 19.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
1013	26.2	20450	1	0	19.7
			1	24	19.5
			1	49	19.4
			25	0	19.3
			25	12	19.3
			25	24	19.3
			50	0	19.3
384	26.2	20525	1	0	19.5
			1	24	19.4
			1	49	19.4
			25	0	19.3
			25	12	19.3
			25	24	19.3
			50	0	19.3
777	26.1	20600	1	0	19.5
			1	24	19.5
			1	49	19.5
			25	0	19.4
			25	12	19.3
			25	24	19.2
			50	0	19.3

CMU200		R&S CMW 500			
CDMA BC0 (1xRTT) P ≤ 18.5 dBm		LTE Band 5 (QPSK) Limited = 23.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
1013	18.1	20450	1	0	23.7
			1	24	23.6
			1	49	23.7
			25	0	22.6
			25	12	22.6
			25	24	22.6
			50	0	22.5
384	18.1	20525	1	0	23.7
			1	24	23.7
			1	49	23.6
			25	0	22.6
			25	12	22.6
			25	24	22.6
			50	0	22.5
777	18.2	20600	1	0	23.7
			1	24	23.7
			1	49	23.5
			25	0	22.5
			25	12	22.6
			25	24	22.6
			50	0	22.4

SV-LTE: (CDMA BC0 + LTE Band 12)

CMU200		R&S CMW 500			
CDMA BC0 (1xRTT) P > 18.5 dBm		LTE Band 12 (QPSK) Limited = 19.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
1013	26.2	23060	1	0	19.6
			1	24	19.6
			1	49	19.5
			25	0	19.4
			25	12	19.3
			25	24	19.3
			50	0	19.3
384	26.2	23095	1	0	19.2
			1	24	19.2
			1	49	19.4
			25	0	19.4
			25	12	19.5
			25	24	19.4
			50	0	19.4
777	26.1	23130	1	0	19.6
			1	24	19.5
			1	49	19.6
			25	0	19.5
			25	12	19.5
			25	24	19.6
			50	0	19.5

CMU200		R&S CMW 500			
CDMA BC0 (1xRTT) P ≤ 18.5 dBm		LTE Band 12 (QPSK) Limited = 23.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
1013	18.1	23060	1	0	23.6
			1	24	23.6
			1	49	23.4
			25	0	22.5
			25	12	22.5
			25	24	22.6
			50	0	22.4
384	18.1	23095	1	0	23.5
			1	24	23.6
			1	49	23.6
			25	0	22.5
			25	12	22.5
			25	24	22.4
			50	0	22.4
777	18.1	23130	1	0	23.6
			1	24	23.4
			1	49	23.6
			25	0	22.5
			25	12	22.5
			25	24	22.5
			50	0	22.4

SV-LTE: (CDMA BC0 + LTE Band 25)

CMU200		R&S CMW 500			
CDMA BC0 (1xRTT) P > 18.5 dBm		LTE Band 25 (QPSK) Limited = 19.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
1013	26.2	26090	1	0	19.4
			1	24	19.4
			1	49	19.5
			25	0	19.4
			25	12	19.4
			25	24	19.4
			50	0	19.4
384	26.2	26365	1	0	19.3
			1	24	19.2
			1	49	19.2
			25	0	19.3
			25	12	19.3
			25	24	19.4
			50	0	19.4
777	26.1	26640	1	0	19.4
			1	24	19.2
			1	49	19.2
			25	0	19.2
			25	12	19.2
			25	24	19.2
			50	0	19.2

CMU200		R&S CMW 500			
CDMA BC0 (1xRTT) P ≤ 18.5 dBm		LTE Band 25 (QPSK) Limited = 23.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
1013	18.1	26090	1	0	23.7
			1	24	23.7
			1	49	23.7
			25	0	22.5
			25	12	22.6
			25	24	22.6
			50	0	22.5
384	18.2	26365	1	0	23.6
			1	24	23.5
			1	49	23.4
			25	0	22.5
			25	12	22.5
			25	24	22.4
			50	0	22.4
777	18.1	26640	1	0	23.6
			1	24	23.6
			1	49	23.6
			25	0	22.6
			25	12	22.6
			25	24	22.6
			50	0	22.7

SV-LTE: (CDMA BC1 + LTE Band 2)

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P > 18.5 dBm		LTE Band 2 (QPSK) Limited = 19.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	25.2	18650	1	0	19.7
			1	24	19.7
			1	49	19.7
			25	0	19.5
			25	12	19.5
			25	24	19.6
			50	0	19.6
600	25.2	18900	1	0	19.5
			1	24	19.5
			1	49	19.4
			25	0	19.4
			25	12	19.4
			25	24	19.4
			50	0	19.4
1175	25.2	19150	1	0	19.5
			1	24	19.5
			1	49	19.6
			25	0	19.5
			25	12	19.3
			25	24	19.3
			50	0	19.4

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P ≤ 18.5 dBm		LTE Band 2 (QPSK) Limited = 23.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	18.2	18650	1	0	23.6
			1	24	23.7
			1	49	23.6
			25	0	22.6
			25	12	22.6
			25	24	22.5
			50	0	22.5
600	18.2	18900	1	0	23.6
			1	24	23.7
			1	49	23.6
			25	0	22.5
			25	12	22.4
			25	24	22.5
			50	0	22.4
1175	18.2	19150	1	0	23.5
			1	24	23.6
			1	49	23.4
			25	0	22.3
			25	12	22.3
			25	24	22.2
			50	0	22.2

SV-LTE: (CDMA BC1 + LTE Band 4)

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P > 18.5 dBm		LTE Band 4 (QPSK) Limited = 19.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	25.2	20000	1	0	19.5
			1	24	19.5
			1	49	19.5
			25	0	19.5
			25	12	19.5
			25	24	19.5
			50	0	19.5
600	25.2	20175	1	0	19.3
			1	24	19.2
			1	49	19.0
			25	0	19.2
			25	12	19.2
			25	24	19.2
			50	0	19.1
1175	25.2	20350	1	0	19.4
			1	24	19.2
			1	49	19.2
			25	0	19.2
			25	12	19.3
			25	24	19.2
			50	0	19.3

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P ≤ 18.5 dBm		LTE Band 4 (QPSK) Limited = 23.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	18.2	20000	1	0	23.5
			1	24	23.6
			1	49	23.3
			25	0	22.4
			25	12	22.4
			25	24	22.6
			50	0	22.5
600	18.2	20175	1	0	23.5
			1	24	23.6
			1	49	23.7
			25	0	22.6
			25	12	22.5
			25	24	22.4
			50	0	22.5
1175	18.2	20350	1	0	23.6
			1	24	23.5
			1	49	23.4
			25	0	22.6
			25	12	22.5
			25	24	22.5
			50	0	22.4

SV-LTE: (CDMA BC1 + LTE Band 5)

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P > 18.5 dBm		LTE Band 5 (QPSK) Limited = 19.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	25.2	20450	1	0	19.6
			1	24	19.5
			1	49	19.3
			25	0	19.3
			25	12	19.3
			25	24	19.3
			50	0	19.3
600	25.2	20525	1	0	19.4
			1	24	19.4
			1	49	19.3
			25	0	19.2
			25	12	19.3
			25	24	19.3
			50	0	19.4
1175	25.2	20600	1	0	19.5
			1	24	19.4
			1	49	19.4
			25	0	19.4
			25	12	19.3
			25	24	19.2
			50	0	19.2

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P ≤ 18.5 dBm		LTE Band 5 (QPSK) Limited = 23.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	18.2	20450	1	0	23.7
			1	24	23.6
			1	49	23.7
			25	0	22.6
			25	12	22.6
			25	24	22.6
			50	0	22.5
600	18.2	20525	1	0	23.7
			1	24	23.7
			1	49	23.6
			25	0	22.6
			25	12	22.6
			25	24	22.6
			50	0	22.5
1175	18.2	20600	1	0	23.7
			1	24	23.7
			1	49	23.5
			25	0	22.5
			25	12	22.6
			25	24	22.6
			50	0	22.4

SV-LTE: (CDMA BC1 + LTE Band 12)

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P > 18.5 dBm		LTE Band 12 (QPSK) Limited = 19.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	25.2	23060	1	0	19.6
			1	24	19.5
			1	49	19.4
			25	0	19.3
			25	12	19.4
			25	24	19.3
			50	0	19.2
600	25.2	23095	1	0	19.3
			1	24	19.4
			1	49	19.6
			25	0	19.4
			25	12	19.4
			25	24	19.4
			50	0	19.3
1175	25.2	23130	1	0	19.5
			1	24	19.5
			1	49	19.6
			25	0	19.5
			25	12	19.4
			25	24	19.6
			50	0	19.5

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P ≤ 18.5 dBm		LTE Band 12 (QPSK) Limited = 23.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	18.2	23060	1	0	23.6
			1	24	23.6
			1	49	23.4
			25	0	22.5
			25	12	22.5
			25	24	22.6
			50	0	22.4
600	18.2	23095	1	0	23.5
			1	24	23.6
			1	49	23.6
			25	0	22.5
			25	12	22.5
			25	24	22.4
			50	0	22.4
1175	18.2	23130	1	0	23.6
			1	24	23.4
			1	49	23.6
			25	0	22.5
			25	12	22.5
			25	24	22.5
			50	0	22.4

SV-LTE: (CDMA BC1 + LTE Band 25)

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P > 18.5 dBm		LTE Band 25 (QPSK) Limited = 19.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	25.2	26090	1	0	19.4
			1	24	19.6
			1	49	19.6
			25	0	19.6
			25	12	19.4
			25	24	19.4
			50	0	19.4
600	25.2	26365	1	0	19.3
			1	24	19.3
			1	49	19.3
			25	0	19.3
			25	12	19.4
			25	24	19.4
			50	0	19.3
1175	25.2	26640	1	0	19.3
			1	24	19.4
			1	49	19.2
			25	0	19.2
			25	12	19.2
			25	24	19.2
			50	0	19.2

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P ≤ 18.5 dBm		LTE Band 25 (QPSK) Limited = 23.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	18.1	26090	1	0	23.7
			1	24	23.7
			1	49	23.7
			25	0	22.5
			25	12	22.6
			25	24	22.6
			50	0	22.5
600	18.2	26365	1	0	23.6
			1	24	23.5
			1	49	23.4
			25	0	22.5
			25	12	22.5
			25	24	22.4
			50	0	22.4
1175	18.2	26640	1	0	23.6
			1	24	23.6
			1	49	23.6
			25	0	22.6
			25	12	22.6
			25	24	22.6
			50	0	22.7

SV-LTE: (CDMA BC15 + LTE Band 2)

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P > 18.5 dBm		LTE Band 2 (QPSK) Limited = 19.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	25.2	18650	1	0	19.6
			1	24	19.5
			1	49	19.6
			25	0	19.5
			25	12	19.6
			25	24	19.6
			50	0	19.6
450	25.2	18900	1	0	19.5
			1	24	19.4
			1	49	19.5
			25	0	19.5
			25	12	19.5
			25	24	19.4
			50	0	19.4
875	25.1	19150	1	0	19.6
			1	24	19.6
			1	49	19.5
			25	0	19.7
			25	12	19.6
			25	24	19.4
			50	0	19.5

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P ≤ 18.5 dBm		LTE Band 2 (QPSK) Limited = 23.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	18.1	18650	1	0	23.6
			1	24	23.7
			1	49	23.6
			25	0	22.6
			25	12	22.6
			25	24	22.5
			50	0	22.5
450	18.1	18900	1	0	23.6
			1	24	23.7
			1	49	23.6
			25	0	22.5
			25	12	22.4
			25	24	22.5
			50	0	22.4
875	18.1	19150	1	0	23.5
			1	24	23.6
			1	49	23.4
			25	0	22.3
			25	12	22.3
			25	24	22.2
			50	0	22.2

SV-LTE: (CDMA BC15 + LTE Band 4)

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P > 18.5 dBm		LTE Band 4 (QPSK) Limited = 19.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	25.2	20000	1	0	19.5
			1	24	19.4
			1	49	19.4
			25	0	19.5
			25	12	19.5
			25	24	19.5
			50	0	19.4
450	25.2	20175	1	0	19.2
			1	24	19.0
			1	49	19.0
			25	0	19.2
			25	12	19.2
			25	24	19.2
			50	0	19.2
875	25.1	20350	1	0	19.4
			1	24	19.2
			1	49	19.2
			25	0	19.2
			25	12	19.3
			25	24	19.2
			50	0	19.2

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P ≤ 18.5 dBm		LTE Band 4 (QPSK) Limited = 23.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	18.1	20000	1	0	23.5
			1	24	23.6
			1	49	23.3
			25	0	22.4
			25	12	22.4
			25	24	22.6
			50	0	22.5
450	18.1	20175	1	0	23.5
			1	24	23.6
			1	49	23.7
			25	0	22.6
			25	12	22.5
			25	24	22.4
			50	0	22.5
875	18.1	20350	1	0	23.6
			1	24	23.5
			1	49	23.4
			25	0	22.6
			25	12	22.5
			25	24	22.5
			50	0	22.4

SV-LTE: (CDMA BC15 + LTE Band 5)

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P > 18.5 dBm		LTE Band 5 (QPSK) Limited = 19.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	25.2	20450	1	0	19.7
			1	24	19.7
			1	49	19.4
			25	0	19.4
			25	12	19.4
			25	24	19.3
			50	0	19.3
450	25.2	20525	1	0	19.4
			1	24	19.4
			1	49	19.4
			25	0	19.4
			25	12	19.4
			25	24	19.4
			50	0	19.4
875	25.1	20600	1	0	19.4
			1	24	19.3
			1	49	19.4
			25	0	19.4
			25	12	19.4
			25	24	19.4
			50	0	19.4

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P ≤ 18.5 dBm		LTE Band 5 (QPSK) Limited = 23.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	18.1	20450	1	0	23.7
			1	24	23.6
			1	49	23.7
			25	0	22.6
			25	12	22.6
			25	24	22.6
			50	0	22.5
450	18.1	20525	1	0	23.7
			1	24	23.7
			1	49	23.6
			25	0	22.6
			25	12	22.6
			25	24	22.6
			50	0	22.5
875	18.1	20600	1	0	23.7
			1	24	23.7
			1	49	23.5
			25	0	22.5
			25	12	22.6
			25	24	22.6
			50	0	22.4

SV-LTE: (CDMA BC15 + LTE Band 12)

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P > 18.5 dBm		LTE Band 12 (QPSK) Limited = 19.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	25.2	23060	1	0	19.4
			1	24	19.5
			1	49	19.6
			25	0	19.4
			25	12	19.4
			25	24	19.5
			50	0	19.4
450	25.2	23095	1	0	19.3
			1	24	19.4
			1	49	19.5
			25	0	19.4
			25	12	19.4
			25	24	19.3
			50	0	19.4
875	25.1	23130	1	0	19.6
			1	24	19.6
			1	49	19.6
			25	0	19.5
			25	12	19.5
			25	24	19.5
			50	0	19.5

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P ≤ 18.5 dBm		LTE Band 12 (QPSK) Limited = 23.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	18.1	23060	1	0	23.6
			1	24	23.6
			1	49	23.4
			25	0	22.5
			25	12	22.5
			25	24	22.6
			50	0	22.4
450	18.1	23095	1	0	23.5
			1	24	23.6
			1	49	23.6
			25	0	22.5
			25	12	22.5
			25	24	22.4
			50	0	22.4
875	18.1	23130	1	0	23.6
			1	24	23.4
			1	49	23.6
			25	0	22.5
			25	12	22.5
			25	24	22.5
			50	0	22.4

SV-LTE: (CDMA BC15 + LTE Band 25)

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P > 18.5 dBm		LTE Band 25 (QPSK) Limited = 19.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	25.2	26090	1	0	19.4
			1	24	19.4
			1	49	19.4
			25	0	19.5
			25	12	19.3
			25	24	19.4
			50	0	19.5
450	25.2	26365	1	0	19.4
			1	24	19.4
			1	49	19.4
			25	0	19.3
			25	12	19.3
			25	24	19.4
			50	0	19.4
875	25.1	26640	1	0	19.4
			1	24	19.4
			1	49	19.2
			25	0	19.2
			25	12	19.2
			25	24	19.3
			50	0	19.2

CMU200		R&S CMW 500			
CDMA BC1 (1xRTT) P ≤ 18.5 dBm		LTE Band 25 (QPSK) Limited = 23.7 dBm			
Ch. #	Avg Pwr (dBm)	Ch. #	UL RB Setting		Avg Pwr (dBm)
25	18.1	26090	1	0	23.7
			1	24	23.7
			1	49	23.7
			25	0	22.5
			25	12	22.6
			25	24	22.6
			50	0	22.5
450	18.1	26365	1	0	23.6
			1	24	23.5
			1	49	23.4
			25	0	22.5
			25	12	22.5
			25	24	22.4
			50	0	22.4
875	18.1	26640	1	0	23.6
			1	24	23.6
			1	49	23.6
			25	0	22.6
			25	12	22.6
			25	24	22.6
			50	0	22.7

9.10. WiFi (2.4 GHz Band)

	Min	Max
Tune-up Tolerance (dB):	-2	0.7

Output Power Tolerance	IEEE 802.11 (dBm)		
	b	g	n (HT20)
Max	16.7	14.7	13.7
Target	**16.0**	**14.0**	**13.0**
Min	14.0	12.0	11.0

Required Test Channels per KDB 248227 D01

Mode	Band	**GHz**	Channel	"Default Test Channels"	
				802.11b	802.11g
802.11b/g	2.4 GHz	**2.412**	1#	√	∇
		2.437	6	√	∇
		2.462	11#	√	∇

Notes:
√ = "default test channels"
∇ = possible 802.11g channels with maximum average output ¼ dB ≥ the "default test channels"
= when output power is reduced for channel 1 and /or 11 to meet restricted band requirements the highest output channels closest to each of these channels should be tested.

Band (MHz)	Mode	Ch #	Freq. (MHz)	Avg Pwr (dBm)
2.4	802.11b	1	2412	16.2
		6	2437	16.2
		11	2462	16.1
	802.11g	1	2412	14.5
		6	2437	14.2
		11	2462	14.4
	802.11n (HT20)	1	2412	13.2
		6	2437	13.1
		11	2462	13.1

Note(s):
Per KDB 248227 D01, SAR is not required for 802.11g/HT20 channels when the maximum average output power is less than 1/4 dB higher than that measured on the corresponding 802.11b channels.

9.11. WiFi (5 GHz Bands)

	Min	Max
Tune-up Tolerance (dB):	-2	0.7

Output Power Tolerance	IEEE 802.11 (dBm)		
	a	n (HT20)	n (HT40)
Max	12.7	11.7	12.2
Target	**12.0**	**11.0**	**11.5**
Min	10.0	9.0	9.5

Required Test Channels per KDB 248227 D01

Mode		Band	GHz	Channel	"Default Test Channels" 802.11a	
802.11a	UNII (15.407)	5.2 GHz	5.180	36	√	
			5.200	40		*
			2.220	44		*
			5.240	48	√	
		5.3 GHz	5.260	52	√	
			5.280	56		*
			5.300	60		*
			5.320	64	√	
		5.5 GHz	5.500	100		
			5.520	104	√	
			5.540	108		*
			5.560	112		*
			5.580	116	√	
			5.600	120		*
			5.620	124	√	
			5.640	128		*
			5.660	132		*
			5.680	136	√	
			5.700	140		*
	DTS (15.247)	5.8 GHz	5.745	149	√	
			5.765	153		*
			5.785	157	√	
			5.805	161		*
			5.825	165	√	

√ = "default test channels"

* = possible 802.11a channels with maximum average output > the "default test channels"

= when output power is reduced for channel 1 and /or 11 to meet restricted band requirements the highest output channels closest to each of these channels should be tested.

Band (MHz)	Mode	Ch #	Freq. (MHz)	Avg Pwr (dBm)
5.2	802.11a	36	5180	12.1
		40	5200	12.1
		44	5220	11.9
		48	5240	12.3
	802.11n (HT20)	36	5180	11.3
		40	5200	11.0
		48	5240	11.1
	802.11n (HT40)	38	5190	12.1
		46	5230	12.2
5.3	802.11a	52	5260	12.4
		56	5280	12.0
		60	5300	12.4
		64	5320	12.5
	802.11n (HT20)	52	5260	11.2
		60	5300	11.4
		64	5320	11.6
	802.11n (HT40)	54	5270	12.1
		62	5310	12.2
5.5	802.11a	100	5500	11.8
		104	5520	11.6
		108	5540	11.8
		112	5560	11.9
		116	5580	12.2
		120	5600	Not supported
		124	5620	Not supported
		128	5640	Not supported
		132	5660	11.9
		136	5680	12.0
		140	5700	12.3
	802.11n (HT20)	100	5500	10.7
		116	5580	11.2
		140	5700	11.2
	802.11n (HT40)	102	5510	11.3
		110	5550	11.7
		134	5670	11.8
5.8	802.11a	149	5745	12.2
		153	5765	12.2
		157	5785	12.5
		161	5805	12.4
		165	5825	12.4
	802.11n (HT20)	149	5745	11.6
		157	5785	11.4
		161	5805	11.3
	802.11n (HT40)	151	5755	11.2
		159	5795	11.1

Note(s):

SAR is not required for 802.11n HT20/HT40 channels when the maximum average output power is less than 1/4 dB higher than that measured on the corresponding 802.11a/b channels. As per KDB 248227

9.12. Bluetooth

	Min	Max
Tune-up Tolerance (dB):	-3.5	1.5

Output Power Tolerance	IEEE 802.15 (dBm)
Max	10.5
Target	**9.0**
Min	5.5

Refer to Report of Part 15 subpart C for BT RF conducted power

10. Tissue Dielectric Properties

IEEE Std 1528-2003 Table 2

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

FCC OET Bulletin 65 Supplement C 01-01

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

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

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

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

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

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

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

MSL/HSL1750 (Body and Head liquids for 1700 – 1800 MHz)

Item	Head Tissue Simulation Liquids HSL1750 Muscle (body) Tissue Simulation Liquids MSL1750
Type No	SL AAM 175
Manufacturer	SPEAG
-The item is composed of the following ingredients:	
H^2O	Water, 52 – 75%
C8H18O3	Diethylene glycol monobutyl ether (DGBE), 25-48%
NaCl	Sodium Chloride, <1.0%

Simulating Liquids for 5 GHz, Manufactured by SPEAG

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

10.2. Tissue Dielectric Parameter Check Results

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized.

The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 3 – 4 days of use; or earlier if the dielectric parameters can become out of tolerance; for example, when the parameters are marginal at the beginning of the measurement series.

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

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
1/15/2013	Body 5180	e'	48.6100	Relative Permittivity (ϵ_r):	48.61	49.05	-0.89	10
		e"	18.5700	Conductivity (σ):	5.35	5.27	1.46	5
	Body 5200	e'	48.5500	Relative Permittivity (ϵ_r):	48.55	49.02	-0.96	10
		e"	18.5800	Conductivity (σ):	5.37	5.29	1.46	5
	Body 5600	e'	47.8700	Relative Permittivity (ϵ_r):	47.87	48.48	-1.25	10
		e"	18.9400	Conductivity (σ):	5.90	5.76	2.37	5
	Body 5800	e'	47.5600	Relative Permittivity (ϵ_r):	47.56	48.20	-1.33	10
		e"	19.1900	Conductivity (σ):	6.19	6.00	3.15	5
	Body 5825	e'	47.5300	Relative Permittivity (ϵ_r):	47.53	48.20	-1.39	10
		e"	19.1600	Conductivity (σ):	6.21	6.00	**3.43**	5
1/15/2013	Body 1750	e'	52.2700	Relative Permittivity (ϵ_r):	52.27	53.44	-2.19	5
		e"	15.5900	Conductivity (σ):	1.52	1.49	2.08	5
	Body 1710	e'	52.4400	Relative Permittivity (ϵ_r):	52.44	53.54	-2.06	5
		e"	15.4600	Conductivity (σ):	1.47	1.46	0.58	5
	Body 1755	e'	52.2500	Relative Permittivity (ϵ_r):	52.25	53.43	-2.21	5
		e"	15.5900	Conductivity (σ):	1.52	1.49	2.16	5
1/16/2013	Body 2450	e'	51.7600	Relative Permittivity (ϵ_r):	51.76	52.70	-1.78	5
		e"	14.4900	Conductivity (σ):	1.97	1.95	1.23	5
	Body 2410	e'	51.8700	Relative Permittivity (ϵ_r):	51.87	52.76	-1.69	5
		e"	14.3400	Conductivity (σ):	1.92	1.91	0.74	5
	Body 2475	e'	51.6500	Relative Permittivity (ϵ_r):	51.65	52.67	-1.93	5
		e"	14.5000	Conductivity (σ):	2.00	1.99	0.52	5
1/16/2013	Head 1900	e'	39.1900	Relative Permittivity (ϵ_r):	39.19	40.00	-2.03	5
		e"	13.3300	Conductivity (σ):	1.41	1.40	0.59	5
	Head 1850	e'	39.4000	Relative Permittivity (ϵ_r):	39.40	40.00	-1.50	5
		e"	13.2400	Conductivity (σ):	1.36	1.40	-2.72	5
	Head 1910	e'	39.1800	Relative Permittivity (ϵ_r):	39.18	40.00	-2.05	5
		e"	13.3500	Conductivity (σ):	1.42	1.40	1.27	5
1/17/2013	Body 750	e'	53.4300	Relative Permittivity (ϵ_r):	53.43	55.55	-3.81	5
		e"	23.3200	Conductivity (σ):	0.97	0.96	0.98	5
	Body 700	e'	53.9800	Relative Permittivity (ϵ_r):	53.98	55.74	-3.15	5
		e"	23.7100	Conductivity (σ):	0.92	0.96	-3.79	5
	Body 790	e'	52.9900	Relative Permittivity (ϵ_r):	52.99	55.39	**-4.34**	5
		e"	23.0100	Conductivity (σ):	1.01	0.97	4.62	5

Tissue Dielectric Parameter Check Results (continued)

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
1/17/2013	Head 5180	e'	37.1400	Relative Permittivity (ϵ_r):	37.14	36.01	**3.13**	10
		e"	15.6000	Conductivity (σ):	4.49	4.63	-2.97	5
	Head 5200	e'	37.1000	Relative Permittivity (ϵ_r):	37.10	35.99	3.08	10
		e"	15.5900	Conductivity (σ):	4.51	4.65	-3.08	5
	Head 5600	e'	36.5500	Relative Permittivity (ϵ_r):	36.55	35.53	2.86	10
		e"	15.8000	Conductivity (σ):	4.92	5.06	-2.78	5
	Head 5800	e'	36.3000	Relative Permittivity (ϵ_r):	36.30	35.30	2.83	10
		e"	15.9000	Conductivity (σ):	5.13	5.27	-2.70	5
	Head 5825	e'	36.2600	Relative Permittivity (ϵ_r):	36.26	35.30	2.72	10
		e"	15.9200	Conductivity (σ):	5.16	5.27	-2.16	5
1/20/2013	Head 835	e'	39.9700	Relative Permittivity (ϵ_r):	39.97	41.50	-3.69	5
		e"	18.9700	Conductivity (σ):	0.88	0.90	-2.14	5
	Head 820	e'	40.1600	Relative Permittivity (ϵ_r):	40.16	41.60	-3.47	5
		e"	19.0000	Conductivity (σ):	0.87	0.90	-3.58	5
	Head 850	e'	39.8500	Relative Permittivity (ϵ_r):	39.85	41.50	-3.98	5
		e"	18.9300	Conductivity (σ):	0.89	0.92	-2.22	5
1/20/2013	Body 835	e'	54.0000	Relative Permittivity (ϵ_r):	54.00	55.20	-2.17	5
		e"	21.2800	Conductivity (σ):	0.99	0.97	1.86	5
	Body 820	e'	54.1300	Relative Permittivity (ϵ_r):	54.13	55.28	-2.07	5
		e"	21.3800	Conductivity (σ):	0.97	0.97	0.66	5
	Body 850	e'	53.8700	Relative Permittivity (ϵ_r):	53.87	55.16	-2.33	5
		e"	21.2400	Conductivity (σ):	1.00	0.99	1.69	5
1/21/2013	Head 2450	e'	40.7800	Relative Permittivity (ϵ_r):	40.78	39.20	4.03	5
		e"	13.0200	Conductivity (σ):	1.77	1.80	-1.46	5
	Head 2410	e'	40.9400	Relative Permittivity (ϵ_r):	40.94	39.28	4.23	5
		e"	12.9300	Conductivity (σ):	1.73	1.76	-1.58	5
	Head 2475	e'	40.7200	Relative Permittivity (ϵ_r):	40.72	39.17	3.96	5
		e"	13.1000	Conductivity (σ):	1.80	1.83	-1.33	5
1/21/2013	Head 1750	e'	40.2800	Relative Permittivity (ϵ_r):	40.28	40.08	0.49	5
		e"	14.6200	Conductivity (σ):	1.42	1.37	3.92	5
	Head 1710	e'	40.5000	Relative Permittivity (ϵ_r):	40.50	40.15	0.88	5
		e"	14.5900	Conductivity (σ):	1.39	1.35	3.03	5
	Head 1755	e'	40.2600	Relative Permittivity (ϵ_r):	40.26	40.08	0.46	5
		e"	14.6500	Conductivity (σ):	1.43	1.37	4.21	5
1/22/2013	Head 750	e'	42.3991	Relative Permittivity (ϵ_r):	42.40	41.96	1.04	5
		e"	21.6442	Conductivity (σ):	0.90	0.89	1.07	5
	Head 700	e'	43.0856	Relative Permittivity (ϵ_r):	43.09	42.22	2.06	5
		e"	22.0324	Conductivity (σ):	0.86	0.89	-3.56	5
	Head 790	e'	41.8836	Relative Permittivity (ϵ_r):	41.88	41.76	0.30	5
		e"	21.3741	Conductivity (σ):	0.94	0.90	**4.77**	5
1/24/2013	Body 5180	e'	48.0700	Relative Permittivity (ϵ_r):	48.07	49.05	-1.99	10
		e"	18.2800	Conductivity (σ):	5.27	5.27	-0.12	5
	Body 5200	e'	48.0500	Relative Permittivity (ϵ_r):	48.05	49.02	-1.98	10
		e"	18.2800	Conductivity (σ):	5.29	5.29	-0.18	5
	Body 5600	e'	47.4800	Relative Permittivity (ϵ_r):	47.48	48.48	-2.06	10
		e"	18.7400	Conductivity (σ):	5.84	5.76	1.29	5
	Body 5800	e'	47.2200	Relative Permittivity (ϵ_r):	47.22	48.20	-2.03	10
		e"	18.9300	Conductivity (σ):	6.10	6.00	1.75	5
	Body 5825	e'	47.1600	Relative Permittivity (ϵ_r):	47.16	48.20	-2.16	10
		e"	18.9900	Conductivity (σ):	6.15	6.00	2.51	5

11. System Performance Check

SAR system verification is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device. The same SAR probe(s) and tissue-equivalent media combinations used with each specific SAR system for system verification must be used for device testing. When multiple probe calibration points are required to cover substantially large transmission bands, independent system verifications are required for each probe calibration point. A system verification must be performed before each series of SAR measurements using the same probe calibration point and tissue-equivalent medium. Additional system verification should be considered according to the conditions of the tissue-equivalent medium and measured tissue dielectric parameters, typically every three to four days when the liquid parameters are remeasured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.

11.1. System Performance Check Measurement Conditions

- The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 ±0.2 mm (bottom plate) filled with Body or Head simulating liquid of the following parameters.
- The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm ± 0.5 cm for SAR measurements ≤ 3 GHz and ≥ 10.0 cm ± 0.5 cm for measurements > 3 GHz.
- The DASY system with an E-Field Probe was used for the measurements.
- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10 mm (above 1 GHz) and 15 mm (below 1 GHz) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 15 mm was aligned with the dipole.
  For 5 GHz band - The coarse grid with a grid spacing of 10 mm was aligned with the dipole.
- Special 7x7x7 (below 3 GHz) and/or 8x8x7 (above 3 GHz) fine cube was chosen for the cube.
- Distance between probe sensors and phantom surface was set to 3 mm.
  For 5 GHz band - Distance between probe sensors and phantom surface was set to 2.5 mm
- The dipole input power (forward power) was 100 mW.
- The results are normalized to 1 W input power.

11.2. Reference SAR Values for System Performance Check

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

System Dipole	Serial No.	Cal. Date	Freq. (MHz)	Target SAR Values (mW/g)		
				1g/10g	Head	Body
D750V3	1019	2/9/12	750	1g	8.44	8.84
				10g	5.53	5.84
D835V2	4d117	4/10/12	835	1g	9.38	9.52
				10g	6.15	6.31
D1750V2	1053	8/15/12	1750	1g	35.9	37.5
				10g	19.1	20.2
D1900V2	5d140	4/12/12	1900	1g	39.8	40.2
				10g	20.8	21.3
D2450V2	748	2/7/12	2450	1g	52.7	49.9
				10g	24.6	23.4
D5GHV2	1003	9/18/2012	5.2GHz	1g	76.5	74.8
				10g	21.9	20.9
			5.6GHz	1g	82.8	79.0
				10g	23.6	22.0
			5.8GHz	1g	76.9	77.0
				10g	22.0	21.4

11.3. System Performance Check Results

The 1-g and 10-g SAR measured with a reference dipole, using the required tissue-equivalent medium at the test frequency, must be within 10% of the manufacturer calibrated dipole SAR target.

Date Tested	System Dipole		T.S. Liquid		Measured Results			Target (Ref. Value)	Delta ±10 %	Est./Zoom Ratio ±3 %	Plot No.
	Type	Serial #			Area Scan	Zoom Scan	Normalize to 1 W				
1/15/2013	D5GHzV2 5.2GHz	1003	Body	1g	8.09	7.18	71.8	74.8	-4.01	11.25	
				10g	2.22	2.03	20.3	20.9	-2.87		
1/15/2013	D5GHzV2 5.6GHz	1003	Body	1g	6.85	7.40	74.0	79.0	**-6.33**	-8.03	1,2
				10g	1.87	2.08	20.8	22.0	-5.45		
1/15/2013	D5GHzV2 5.8GHz	1003	Body	1g	6.37	6.98	69.8	77.0	**-9.35**	-9.58	3,4
				10g	1.76	1.97	19.7	21.4	-7.94		
1/15/2013	D1750V2	1053	Body	1g	3.68	3.60	36.0	37.5	**-4.00**	2.17	5,6
				10g	1.93	1.92	19.2	20.2	-4.95		
1/16/2013	D2450V2	748	Body	1g	5.21	5.31	53.1	49.9	**6.41**	-1.92	7,8
				10g	2.27	2.47	24.7	23.4	5.56		
1/16/2013	D1900V2	5d140	Head	1g	4.23	4.07	40.7	39.8	2.26	3.78	
				10g	2.16	2.12	21.2	20.8	1.92		
1/17/2013	D750V3	1019	Body	1g	0.891	0.872	8.7	8.84	-1.36	2.13	
				10g	0.604	0.58	5.8	5.84	-0.68		
1/17/2013	D5GHzV2 5.2GHz	1003	Head	1g	7.60	7.97	79.7	76.5	4.18	-4.87	
				10g	2.09	2.29	22.9	21.9	4.57		
1/17/2013	D5GHzV2 5.6GHz	1003	Head	1g	7.19	7.82	78.2	82.8	-5.56	-8.76	
				10g	1.95	2.23	22.3	23.6	-5.51		
1/17/2013	D5GHzV2 5.8GHz	1003	Head	1g	6.66	7.29	72.9	76.9	-5.20	-9.46	
				10g	1.82	2.07	20.7	22.0	-5.91		
1/18/2013	D1900V2	5d140	Body	1g	3.90	3.86	38.6	40.2	**-3.98**	1.03	9,10
				10g	1.98	2.03	20.3	21.3	-4.69		
1/20/2013	D835V2	4d117	Head	1g	0.987	0.956	9.6	9.38	**1.92**	3.14	11,12
				10g	0.664	0.624	6.2	6.15	1.46		
1/20/2013	D835V2	4d117	Body	1g	1.01	0.97	9.7	9.52	1.89	3.96	
				10g	0.68	0.639	6.4	6.31	1.27		
1/21/2013	D2450V2	748	Head	1g	5.18	5.13	51.3	52.7	-2.66	0.97	
				10g	2.30	2.33	23.3	24.6	-5.28		
1/21/2013	D1750V2	1053	Head	1g	3.68	3.52	35.2	35.9	-1.95	4.35	
				10g	1.96	1.86	18.6	19.1	-2.62		
1/22/2013	D750V3	1019	Head	1g	0.897	0.861	8.6	8.44	**2.01**	4.01	13,14
				10g	0.61	0.561	5.6	5.53	1.45		
1/24/2013	D5GHzV2 5.2GHz	1003	Body	1g	7.60	8.03	80.3	74.8	**7.35**	-5.66	15,16
				10g	2.11	2.29	22.9	20.9	9.57		
1/24/2013	D5GHzV2 5.8GHz	1003	Body	1g	7.05	7.13	71.3	77.0	-7.40	-1.13	
				10g	1.94	2.01	21.0	21.4	-1.87		

12. SAR Test Results

12.1. CDMA BC0

12.1.1. Head Exposure Conditions

Test Position	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
				Tune-up limit	Meas.	Meas.	Scaled		
Left Touch	1xRTT (RC3 SO55)	1013	824.70	26.2	26.2				1
		384	836.52	26.2	26.2	0.315	0.315		
		777	848.31	26.2	26.1				1
Left Tilt (15°)	1xRTT (RC3 SO55)	1013	824.70	26.2	26.2				1
		384	836.52	26.2	26.2	0.216	0.216		
		777	848.31	26.2	26.1				1
Right Touch	1xRTT (RC3 SO55)	1013	824.70	26.2	26.2				1
		384	836.52	26.2	26.2	0.292	0.292		
		777	848.31	26.2	26.1				1
Right Tilt (15°)	1xRTT (RC3 SO55)	1013	824.70	26.2	26.2				1
		384	836.52	26.2	26.2	0.205	0.205		
		777	848.31	26.2	26.1				1
Test Position	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
				Tune-up limit	Meas.	Meas.	Scaled		
Left Touch	1xEVDO (Rel. 0)	1013	824.70	26.2	26.2				1
		384	836.52	26.2	26.2	0.346	**0.346**	1	
		777	848.31	26.2	26.2				1
Left Tilt (15°)	1xEVDO (Rel. 0)	1013	824.70	26.2	26.2				1
		384	836.52	26.2	26.2	0.227	0.227		
		777	848.31	26.2	26.2				1
Right Touch	1xEVDO (Rel. 0)	1013	824.70	26.2	26.2				1
		384	836.52	26.2	26.2	0.302	0.302		
		777	848.31	26.2	26.2				1
Right Tilt (15°)	1xEVDO (Rel. 0)	1013	824.70	26.2	26.2				1
		384	836.52	26.2	26.2	0.218	0.218		
		777	848.31	26.2	26.2				1

Note(s):

1. According to KDB 447498, 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.

12.1.2. Body-worn Accessory Exposure Conditions

Test Position	Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	1xRTT (RC3 SO32)	10	1013	824.70	26.2	26.2				1
			384	836.52	26.2	26.2	0.595	0.595		
			777	848.31	26.2	26.1				1
Front	1xRTT (RC3 SO32)	10	1013	824.70	26.2	26.2				1
			384	836.52	26.2	26.2	0.323	0.323		
			777	848.31	26.2	26.1				1
Test Position	Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	1xEVDO (Rel. 0)	10	1013	824.70	26.2	26.2				1
			384	836.52	26.2	26.2	0.652	**0.652**	2	
			777	848.31	26.2	26.2				1
Front	1xEVDO (Rel. 0)	10	1013	824.70	26.2	26.2				1
			384	836.52	26.2	26.2	0.358	0.358		
			777	848.31	26.2	26.2				1

Note(s):

1. According to KDB 447498, 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.

12.1.3. Hotspot Mode Exposure Conditions

Rear and Front Test Configuration is covered by Body-worn Accessory Exposure Conditions.

Test Position	Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 3	1xRTT (RC3 SO32)	10	1013	824.70	26.2	26.2				1
			384	836.52	26.2	26.2	0.153	0.153		
			777	848.31	26.2	26.1				1
Edge 4	1xRTT (RC3 SO32)	10	1013	824.70	26.2	26.2				1
			384	836.52	26.2	26.2	0.381	0.381		
			777	848.31	26.2	26.1				1
Test Position	Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 3	1xEVDO (Rel. 0)	10	1013	824.70	26.2	26.2				1
			384	836.52	26.2	26.2	0.168	0.168		
			777	848.31	26.2	26.2				1
Edge 4	1xEVDO (Rel. 0)	10	1013	824.70	26.2	26.2				1
			384	836.52	26.2	26.2	0.379	0.379		
			777	848.31	26.2	26.2				1

Note(s):

1. According to KDB 447498, 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.

12.2. CDMA BC1

12.2.1. Head Exposure Conditions

Test Position	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
				Tune-up limit	Meas.	Meas.	Scaled		
Left Touch	1xRTT (RC3 SO55)	25	1851.25	25.2	25.2				1
		600	1880.00	25.2	25.2	0.516	**0.516**	1	
		1175	1908.75	25.2	25.2				1
Left Tilt (15°)	1xRTT (RC3 SO55)	25	1851.25	25.2	25.2				1
		600	1880.00	25.2	25.2	0.191	0.191		
		1175	1908.75	25.2	25.2				1
Right Touch	1xRTT (RC3 SO55)	25	1851.25	25.2	25.2				1
		600	1880.00	25.2	25.2	0.333	0.333		
		1175	1908.75	25.2	25.2				1
Right Tilt (15°)	1xRTT (RC3 SO55)	25	1851.25	25.2	25.2				1
		600	1880.00	25.2	25.2	0.179	0.179		
		1175	1908.75	25.2	25.2				1
Test Position	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
				Tune-up limit	Meas.	Meas.	Scaled		
Left Touch	1xEVDO (Rel. 0)	25	1851.25	25.2	25.2				1
		600	1880.00	25.2	25.2	0.507	0.507		
		1175	1908.75	25.2	25.2				1
Left Tilt (15°)	1xEVDO (Rel. 0)	25	1851.25	25.2	25.2				1
		600	1880.00	25.2	25.2	0.193	0.193		
		1175	1908.75	25.2	25.2				1
Right Touch	1xEVDO (Rel. 0)	25	1851.25	25.2	25.2				1
		600	1880.00	25.2	25.2	0.356	0.356		
		1175	1908.75	25.2	25.2				1
Right Tilt (15°)	1xEVDO (Rel. 0)	25	1851.25	25.2	25.2				1
		600	1880.00	25.2	25.2	0.187	0.187		
		1175	1908.75	25.2	25.2				1

Note(s):

1. According to KDB 447498, 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.

12.2.2. Body-worn Accessory Exposure Conditions

Test Position	Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	1xRTT (RC3 SO32)	10	25	1851.25	25.2	25.2				1
			600	1880.00	25.2	25.2	0.669	**0.669**	2	
			1175	1908.75	25.2	25.1				1
Front	1xRTT (RC3 SO32)	10	25	1851.25	25.2	25.2				1
			600	1880.00	25.2	25.2	0.388	0.388		
			1175	1908.75	25.2	25.1				1
Test Position	Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	1xEVDO (Rel. 0)	10	25	1851.25	25.2	25.2				1
			600	1880.00	25.2	25.2	0.610	0.610		
			1175	1908.75	25.2	25.2				1
Front	1xEVDO (Rel. 0)	10	25	1851.25	25.2	25.2				1
			600	1880.00	25.2	25.2	0.376	0.376		
			1175	1908.75	25.2	25.2				1

Note(s):

1. According to KDB 447498, 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.

12.2.3. Hotspot Mode Exposure Conditions

Rear and Front Test Configuration is covered by Body-worn Accessory Exposure Conditions.

Test Position	Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 3	1xRTT (RC3 SO32)	10	25	1851.25	25.2	25.2				1
			600	1880.00	25.2	25.2	0.300	0.300		
			1175	1908.75	25.2	25.1				1
Edge 4	1xRTT (RC3 SO32)	10	25	1851.25	25.2	25.2				1
			600	1880.00	25.2	25.2	0.355	0.355		
			1175	1908.75	25.2	25.1				1
Test Position	Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 3	1xEVDO (Rel. 0)	10	25	1851.25	25.2	25.2				1
			600	1880.00	25.2	25.2	0.303	0.303		
			1175	1908.75	25.2	25.2				1
Edge 4	1xEVDO (Rel. 0)	10	25	1851.25	25.2	25.2				1
			600	1880.00	25.2	25.2	0.351	0.351		
			1175	1908.75	25.2	25.2				1

Note(s):

1. According to KDB 447498, 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.

12.3. CDMA BC15

12.3.1. Head Exposure Conditions

Test Position	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
				Tune-up limit	Meas.	Meas.	Scaled		
Left Touch	1xRTT (RC3 SO55)	25	1711.25	25.2	25.2				1
		450	1732.50	25.2	25.2	0.376	**0.376**	1	
		875	1753.75	25.2	25.1				1
Left Tilt (15°)	1xRTT (RC3 SO55)	25	1711.25	25.2	25.2				1
		450	1732.50	25.2	25.2	0.170	0.170		
		875	1753.75	25.2	25.1				1
Right Touch	1xRTT (RC3 SO55)	25	1711.25	25.2	25.2				1
		450	1732.50	25.2	25.2	0.274	0.274		
		875	1753.75	25.2	25.1				1
Right Tilt (15°)	1xRTT (RC3 SO55)	25	1711.25	25.2	25.2				1
		450	1732.50	25.2	25.2	0.172	0.172		
		875	1753.75	25.2	25.1				1

Test Position	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
				Tune-up limit	Meas.	Meas.	Scaled		
Left Touch	1xEVDO (Rel. 0)	25	1711.25	25.2	25.2				1
		450	1732.50	25.2	25.2	0.336	0.336		
		875	1753.75	25.2	25.1				1
Left Tilt (15°)	1xEVDO (Rel. 0)	25	1711.25	25.2	25.2				1
		450	1732.50	25.2	25.2	0.155	0.155		
		875	1753.75	25.2	25.1				1
Right Touch	1xEVDO (Rel. 0)	25	1711.25	25.2	25.2				1
		450	1732.50	25.2	25.2	0.206	0.206		
		875	1753.75	25.2	25.1				1
Right Tilt (15°)	1xEVDO (Rel. 0)	25	1711.25	25.2	25.2				1
		450	1732.50	25.2	25.2	0.143	0.143		
		875	1753.75	25.2	25.1				1

Note(s):

1. According to KDB 447498, 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.

12.3.2. Body-worn Accessory Exposure Conditions

Test Position	Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	1xRTT (RC3 SO32)	10	25	1711.25	25.2	25.2				1
			450	1732.50	25.2	25.2	0.626	0.626		
			875	1753.75	25.2	25.1				1
Front	1xRTT (RC3 SO32)	10	25	1711.25	25.2	25.2				1
			450	1732.50	25.2	25.2	0.412	0.412		
			875	1753.75	25.2	25.1				1
Test Position	Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	1xEVDO (Rel. 0)	10	25	1711.25	25.2	25.2				1
			450	1732.50	25.2	25.2	0.635	**0.635**	2	
			875	1753.75	25.2	25.1				1
Front	1xEVDO (Rel. 0)	10	25	1711.25	25.2	25.2				1
			450	1732.50	25.2	25.2	0.370	0.370		
			875	1753.75	25.2	25.1				1

Note(s):

1. According to KDB 447498, 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.

12.3.3. Hotspot Mode Exposure Conditions

Rear and Front Test Configuration is covered by Body-worn Accessory Exposure Conditions.

Test Position	Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 3	1xRTT (RC3 SO32)	10	25	1711.25	25.2	25.2				1
			450	1732.50	25.2	25.2	0.373	0.373		
			875	1753.75	25.2	25.1				1
Edge 4	1xRTT (RC3 SO32)	10	25	1711.25	25.2	25.2				1
			450	1732.50	25.2	25.2	0.258	0.258		
			875	1753.75	25.2	25.1				1
Test Position	Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 3	1xEVDO (Rel. 0)	10	25	1711.25	25.2	25.2				1
			450	1732.50	25.2	25.2	0.293	0.293		
			875	1753.75	25.2	25.1				1
Edge 4	1xEVDO (Rel. 0)	10	25	1711.25	25.2	25.2				1
			450	1732.50	25.2	25.2	0.254	0.254		
			875	1753.75	25.2	25.1				1

Note(s):

1. According to KDB 447498, 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.

12.4. LTE Band 2 (10MHz Bandwidth)

12.4.1. Head Exposure Conditions

Test Position	Mode	UL Ch #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
						Tune-up limit	Meas.	Meas.	Scaled		
Left Touch	QPSK	18650	1855.0	1	24	23.7	23.7				1
				25	0	22.7	22.6				1
		18900	1880.0	1	24	23.7	23.7	0.205	0.205		
				25	0	22.7	22.5	0.162	0.170		
		19150	1905.0	1	24	23.7	23.6				1
				25	0	22.7	22.3				1
Left Tilt (15°)	QPSK	18650	1855.0	1	24	23.7	23.7				1
				25	0	22.7	22.6				1
		18900	1880.0	1	24	23.7	23.7	0.143	0.143		
				25	0	22.7	22.5	0.111	0.116		
		19150	1905.0	1	24	23.7	23.6				1
				25	0	22.7	22.3				1
Right Touch	QPSK	18650	1855.0	1	24	23.7	23.7				1
				25	0	22.7	22.6				1
		18900	1880.0	1	24	23.7	23.7	0.313	**0.313**	1	
				25	0	22.7	22.5	0.244	0.255		
		19150	1905.0	1	24	23.7	23.6				1
				25	0	22.7	22.3				1
Right Tilt (15°)	QPSK	18650	1855.0	1	24	23.7	23.7				1
				25	0	22.7	22.6				1
		18900	1880.0	1	24	23.7	23.7	0.103	0.103		
				25	0	22.7	22.5	0.106	0.111		
		19150	1905.0	1	24	23.7	23.6				1
				25	0	22.7	22.3				1

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are ≥ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.4.2. Body-worn Accessory Exposure Conditions

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	10	QPSK	18650	1855.0	1	24	23.7	23.7				1
					25	12	22.7	22.6				1
			18900	1880.0	1	24	23.7	23.7	0.484	**0.484**	2	
					25	0	22.7	22.5	0.382	0.400		
			19150	1905.0	1	24	23.7	23.6				1
					25	12	22.7	22.3				1
Front	10	QPSK	18650	1855.0	1	24	23.7	23.7				1
					25	12	22.7	22.6				1
			18900	1880.0	1	24	23.7	23.7	0.255	0.255		
					25	0	22.7	22.5	0.265	0.277		
			19150	1905.0	1	24	23.7	23.6				1
					25	12	22.7	22.3				1

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are $\geq$ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.4.3. Hotspot Mode Exposure Conditions

Rear and Front Test Configuration is covered by Body-worn Accessory Exposure Conditions.

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Edge 2	10	QPSK	18650	1855.0	1	24	23.7	23.7				1
					25	12	22.7	22.6				1
			18900	1880.0	1	24	23.7	23.7	0.225	0.225		
					25	0	22.7	22.5	0.186	0.195		
			19150	1905.0	1	24	23.7	23.6				1
					25	12	22.7	22.3				1
Edge 3	10	QPSK	18650	1855.0	1	24	23.7	23.7				1
					25	12	22.7	22.6				1
			18900	1880.0	1	24	23.7	23.7	0.205	0.205		
					25	0	22.7	22.5	0.152	0.159		
			19150	1905.0	1	24	23.7	23.6				1
					25	12	22.7	22.3				1

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are $\geq$ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.5. LTE Band 4 (10MHz Bandwidth)

12.5.1. Head Exposure Conditions

Test Position	Mode	UL Ch #	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
						Tune-up limit	Meas.	Meas.	Scaled		
Left Touch	QPSK	20000	1715.0	1	24	23.7	23.6				1
				25	24	22.7	22.6				1
		20175	1732.5	1	49	23.7	23.7	0.127	0.127		
				25	0	22.7	22.6	0.110	0.113		
		20350	1750.0	1	0	23.7	23.6				1
				25	0	22.7	22.6				1
Left Tilt (15°)	QPSK	20000	1715.0	1	24	23.7	23.6				1
				25	24	22.7	22.6				1
		20175	1732.5	1	49	23.7	23.7	0.058	0.058		
				25	0	22.7	22.6	0.052	0.054		
		20350	1750.0	1	0	23.7	23.6				1
				25	0	22.7	22.6				1
Right Touch	QPSK	20000	1715.0	1	24	23.7	23.6				1
				25	24	22.7	22.6				1
		20175	1732.5	1	49	23.7	23.7	0.135	**0.135**		
				25	0	22.7	22.6	0.116	0.119		
		20350	1750.0	1	0	23.7	23.6				1
				25	0	22.7	22.6				1
Right Tilt (15°)	QPSK	20000	1715.0	1	24	23.7	23.6				1
				25	24	22.7	22.6				1
		20175	1732.5	1	49	23.7	23.7	0.055	0.055		
				25	0	22.7	22.6	0.050	0.051		
		20350	1750.0	1	0	23.7	23.6				1
				25	0	22.7	22.6				1

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are ≥ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.5.2. Body-worn Accessory Exposure Conditions

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	10	QPSK	20000	1715.0	1	24	23.7	23.6				1
					25	24	22.7	22.6				1
			20175	1732.5	1	49	23.7	23.7	0.306	**0.306**	2	
					25	0	22.7	22.6	0.211	0.216		
			20350	1750.0	1	0	23.7	23.6				1
					25	0	22.7	22.6				1
Front	10	QPSK	20000	1715.0	1	24	23.7	23.6				1
					25	24	22.7	22.6				1
			20175	1732.5	1	49	23.7	23.7	0.229	0.229		
					25	0	22.7	22.6	0.170	0.174		
			20350	1750.0	1	0	23.7	23.6				1
					25	0	22.7	22.6				1

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are $\geq$ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.5.3. Hotspot Mode Exposure Conditions

Rear and Front Test Configuration is covered by Body-worn Accessory Exposure Conditions.

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Edge 2	10	QPSK	20000	1715.0	1	24	23.7	23.6				1
					25	24	22.7	22.6				1
			20175	1732.5	1	49	23.7	23.7	0.118	0.118		
					25	0	22.7	22.6	0.087	0.089		
			20350	1750.0	1	0	23.7	23.6				1
					25	0	22.7	22.6				1
Edge 3	10	QPSK	20000	1715.0	1	24	23.7	23.6				1
					25	24	22.7	22.6				1
			20175	1732.5	1	49	23.7	23.7	0.102	0.102		
					25	0	22.7	22.6	0.058	0.060		
			20350	1750.0	1	0	23.7	23.6				1
					25	0	22.7	22.6				1

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are $\geq$ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.6. LTE Band 5 (10MHz Bandwidth)

12.6.1. Head Exposure Conditions

Test Position	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
						Tune-up limit	Meas.	Meas.	Scaled		
Left Touch	QPSK	20450	829.0	1	0	23.7	23.7				1
				25	12	22.7	22.6				1
		20525	836.6	1	0	23.7	23.7	0.302	**0.302**	1	
				25	12	22.7	22.6	0.222	0.227		
		20600	844.0	1	0	23.7	23.7				1
				25	12	22.7	22.6				1
Left Tilt (15°)	QPSK	20450	829.0	1	0	23.7	23.7				1
				25	12	22.7	22.6				1
		20525	836.6	1	0	23.7	23.7	0.229	0.229		
				25	12	22.7	22.6	0.169	0.173		
		20600	844.0	1	0	23.7	23.7				1
				25	12	22.7	22.6				1
Right Touch	QPSK	20450	829.0	1	0	23.7	23.7				1
				25	12	22.7	22.6				1
		20525	836.6	1	0	23.7	23.7	0.202	0.202		
				25	12	22.7	22.6	0.153	0.157		
		20600	844.0	1	0	23.7	23.7				1
				25	12	22.7	22.6				1
Right Tilt (15°)	QPSK	20450	829.0	1	0	23.7	23.7				1
				25	12	22.7	22.6				1
		20525	836.6	1	0	23.7	23.7	0.163	0.163		
				25	12	22.7	22.6	0.122	0.125		
		20600	844.0	1	0	23.7	23.7				1
				25	12	22.7	22.6				1

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are ≥ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.6.2. Body-worn Accessory Exposure Conditions

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	10	QPSK	20450	829.0	1	0	23.7	23.7				1
					25	12	22.7	22.6				1
			20525	836.6	1	0	23.7	23.7	0.265	**0.265**	2	
					25	12	22.7	22.6	0.198	0.203		
			20600	844.0	1	0	23.7	23.7				1
					25	12	22.7	22.6				1
Front	10	QPSK	20450	829.0	1	0	23.7	23.7				1
					25	12	22.7	22.6				1
			20525	836.6	1	0	23.7	23.7	0.110	0.110		
					25	12	22.7	22.6	0.080	0.082		
			20600	844.0	1	0	23.7	23.7				1
					25	12	22.7	22.6				1

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are $\geq$ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.6.3. Hotspot Mode Exposure Conditions

Rear and Front Test Configuration is covered by Body-worn Accessory Exposure Conditions.

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	10	QPSK	20450	829.0	1	0	23.7	23.7				1
					25	12	22.7	22.6				1
			20525	836.6	1	0	23.7	23.7	0.078	0.078		
					25	12	22.7	22.6	0.057	0.058		
			20600	844.0	1	0	23.7	23.7				1
					25	12	22.7	22.6				1
Edge 2	10	QPSK	20450	829.0	1	0	23.7	23.7				1
					25	12	22.7	22.6				1
			20525	836.6	1	0	23.7	23.7	0.142	0.142		
					25	12	22.7	22.6	0.102	0.104		
			20600	844.0	1	0	23.7	23.7				1
					25	12	22.7	22.6				1

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are $\geq$ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.7. LTE Band 12 (10MHz Bandwidth)

12.7.1. Head Exposure Conditions

Test Position	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
						Tune-up limit	Meas.	Meas.	Scaled		
Left Touch	QPSK	23060	704.0	1	24	23.7	23.6				1
				25	24	22.7	23.6				1
		23095	707.5	1	24	23.7	23.6	0.143	0.146		
				25	12	22.7	22.5	0.112	0.117		
		23130	711.0	1	49	23.7	23.6				1
				25	12	22.7	22.5				1
Left Tilt (15°)	QPSK	23060	704.0	1	24	23.7	23.6				1
				25	24	22.7	23.6				1
		23095	707.5	1	24	23.7	23.6	0.083	0.085		
				25	12	22.7	22.5	0.065	0.068		
		23130	711.0	1	49	23.7	23.6				1
				25	12	22.7	22.5				1
Right Touch	QPSK	23060	704.0	1	24	23.7	23.6				1
				25	24	22.7	23.6				1
		23095	707.5	1	24	23.7	23.6	0.169	**0.173**	1	
				25	12	22.7	22.5	0.132	0.138		
		23130	711.0	1	49	23.7	23.6				1
				25	12	22.7	22.5				1
Right Tilt (15°)	QPSK	23060	704.0	1	24	23.7	23.6				1
				25	24	22.7	23.6				1
		23095	707.5	1	24	23.7	23.6	0.094	0.096		
				25	12	22.7	22.5	0.071	0.074		
		23130	711.0	1	49	23.7	23.6				1
				25	12	22.7	22.5				1

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are $\geq$ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.7.2. Body-worn Accessory Exposure Conditions

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	10	QPSK	23060	704.0	1	24	23.7	23.6				1
					25	24	22.7	23.6				1
			23095	707.5	1	24	23.7	23.6	0.348	**0.356**	2	
					25	12	22.7	22.5	0.278	0.291		
			23130	711.0	1	49	23.7	23.6				1
					25	12	22.7	22.5				1
Front	10	QPSK	23060	704.0	1	24	23.7	23.6				1
					25	24	22.7	23.6				1
			23095	707.5	1	24	23.7	23.6	0.145	0.148		
					25	12	22.7	22.5	0.114	0.119		
			23130	711.0	1	49	23.7	23.6				1
					25	12	22.7	22.5				1

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are $\geq$ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.7.3. Hotspot Mode Exposure Conditions

Rear and Front Test Configuration is covered by Body-worn Accessory Exposure Conditions.

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Edge 2	10	QPSK	23060	704.0	1	24	23.7	23.6				1
					25	24	22.7	23.6				1
			23095	707.5	1	24	23.7	23.6	0.237	0.243		
					25	12	22.7	22.5	0.184	0.193		
			23130	711.0	1	49	23.7	23.6				1
					25	12	22.7	22.5				1
Edge 3	10	QPSK	23060	704.0	1	24	23.7	23.6				1
					25	24	22.7	23.6				1
			23095	707.5	1	24	23.7	23.6	0.080	0.082		
					25	12	22.7	22.5	0.066	0.069		
			23130	711.0	1	49	23.7	23.6				1
					25	12	22.7	22.5				1

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are $\geq$ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.8. LTE Band 25 (10MHz Bandwidth)

12.8.1. Head Exposure Conditions

Test Position	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
						Tune-up limit	Meas.	Meas.	Scaled		
Left Touch	QPSK	26090	1855.0	1	24	23.7	23.7				1
				25	12	23.7	22.6				1
		26365	1882.5	1	0	23.7	23.6	0.190	0.194		
				25	12	23.7	22.5	0.138	0.182		
		26640	1910.0	1	0	23.7	23.6				1
				25	12	23.7	22.6				1
Left Tilt (15°)	QPSK	26090	1855.0	1	24	23.7	23.7				1
				25	12	23.7	22.6				1
		26365	1882.5	1	0	23.7	23.6	0.150	0.153		
				25	12	23.7	22.5	0.109	0.144		
		26640	1910.0	1	0	23.7	23.6				1
				25	12	23.7	22.6				1
Right Touch	QPSK	26090	1855.0	1	24	23.7	23.7				1
				25	12	23.7	22.6				1
		26365	1882.5	1	0	23.7	23.6	0.293	**0.300**	1	
				25	12	23.7	22.5	0.215	0.283		
		26640	1910.0	1	0	23.7	23.6				1
				25	12	22.7	22.6				1
Right Tilt (15°)	QPSK	26090	1855.0	1	24	23.7	23.7				1
				25	12	23.7	22.6				1
		26365	1882.5	1	0	23.7	23.6	0.143	0.146		
				25	12	23.7	22.5	0.105	0.138		
		26640	1910.0	1	0	23.7	23.6				1
				25	12	23.7	22.6				1

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are ≥ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.8.2. Body-worn Accessory Exposure Conditions

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Rear	10	QPSK	26090	1855.0	1	24	23.7	23.7				1
					25	12	23.7	22.6				1
			26365	1882.5	1	0	23.7	23.6	0.473	**0.484**	2	
					25	12	23.7	22.5	0.339	0.447		
			26640	1910.0	1	0	23.7	23.6				1
					25	12	23.7	22.6				1
Front	10	QPSK	26090	1855.0	1	24	23.7	23.7				1
					25	12	23.7	22.6				1
			26365	1882.5	1	0	23.7	23.6	0.313	0.320		
					25	12	23.7	22.5	0.224	0.295		
			26640	1910.0	1	0	23.7	23.6				1
					25	12	23.7	22.6				1

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are $\geq$ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.8.3. Hotspot Mode Exposure Conditions

Rear and Front Test Configuration is covered by Body-worn Accessory Exposure Conditions.

Test Position	Dist. (mm)	Mode	UL Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
							Tune-up limit	Meas.	Meas.	Scaled		
Edge 2	10	QPSK	26090	1855.0	1	24	23.7	23.7				1
					25	12	23.7	22.6				1
			26365	1882.5	1	0	23.7	23.6	0.192	0.196		
					25	12	23.7	22.5	0.141	0.186		
			26640	1910.0	1	0	23.7	23.6				1
					25	12	22.7	22.6				1
Edge 3	10	QPSK	26090	1855.0	1	24	23.7	23.7				1
					25	12	23.7	22.6				1
			26365	1882.5	1	0	23.7	23.6	0.196	0.201		
					25	12	23.7	22.5	0.150	0.198		
			26640	1910.0	1	0	23.7	23.6				1
					25	12	23.7	22.6				1

Note(s):

1. Per KDB 941225 D05 SAR for LTE Devices v02, SAR test reduction is applied using the following criteria:

- Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
- Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are $\geq$ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
- Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
- Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.9. Wi-Fi (2.4 GHz Band)

12.9.1. Head Exposure Conditions

Test Position	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
				Tune-up limit	Meas.	Meas.	Scaled		
Left Touch	802.11b	1	2412	16.7	16.2				1
		6	2437	16.7	16.2	0.262	0.293		
		11	2462	16.7	16.1				1
Left Tilt (15°)	802.11b	1	2412	16.7	16.2				1
		6	2437	16.7	16.2	0.295	**0.329**	1	
		11	2462	16.7	16.1				1
Right Touch	802.11b	1	2412	16.7	16.2				1
		6	2437	16.7	16.2	0.209	0.233		
		11	2462	16.7	16.1				1
Right Tilt (15°)	802.11b	1	2412	16.7	16.2				1
		6	2437	16.7	16.2	0.219	0.245		
		11	2462	16.7	16.1				1

Note(s):
1. According to KDB 447498, 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.

12.9.2. Body-worn Accessory Exposure Conditions

Test Position	Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Rear	802.11b	10	1	2412	16.7	16.2				1
			6	2437	16.7	16.2	0.205	**0.229**	2	
			11	2462	16.7	16.1				1
Front	802.11b	10	1	2412	16.7	16.2				1
			6	2437	16.7	16.2	0.080	0.089		
			11	2462	16.7	16.1				1

Note(s):
1. According to KDB 447498, 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.

12.9.3. Hotspot Mode Exposure Conditions

Rear and Front Test Configuration is covered by Body-worn Accessory Exposure Conditions.

Test Position	Mode	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	Note
					Tune-up limit	Meas.	Meas.	Scaled		
Edge 1	802.11b	10	1	2412	16.7	16.2				1
			6	2437	16.7	16.2	0.138	0.154		
			11	2462	16.7	16.1				1

Note(s):
1. According to KDB 447498, 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.

12.10. Wi-Fi (5 GHz Bands)

12.10.1. Head Exposure Conditions

Band	Test Position	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
					Tune-up limit	Meas.	Meas.	Scaled	
5.2	Left Touch	802.11a	36	5180	12.7	12.1	0.192	0.220	
			48	5240	12.7	12.3	0.226	**0.248**	1
	Left Tilt (15°)	802.11a	36	5180	12.7	12.1	0.160	0.184	
			48	5240	12.7	12.3	0.208	0.228	
	Right Touch	802.11a	36	5180	12.7	12.1	0.110	0.126	
			48	5240	12.7	12.3	0.116	0.127	
	Right Tilt (15°)	802.11a	36	5180	12.7	12.1	0.110	0.126	
			48	5240	12.7	12.3	0.142	0.156	
5.3	Left Touch	802.11a	52	5260	12.7	12.4	0.247	0.265	
			64	5320	12.7	12.5	0.279	**0.292**	2
	Left Tilt (15°)	802.11a	52	5260	12.7	12.4	0.184	0.197	
			64	5320	12.7	12.5	0.274	0.287	
	Right Touch	802.11a	52	5260	12.7	12.4	0.141	0.151	
			64	5320	12.7	12.5	0.174	0.182	
	Right Tilt (15°)	802.11a	52	5260	12.7	12.4	0.175	0.188	
			64	5320	12.7	12.5	0.215	0.225	
5.5	Left Touch	802.11a	100	5500	12.7	11.8	0.170	0.209	
			112	5560	12.7	11.9	0.148	0.178	
			124	5620	Not supported				
			140	5700	12.7	12.3	0.149	0.163	
	Left Tilt (15°)	802.11a	100	5500	12.7	11.8	0.196	**0.241**	3
			112	5560	12.7	11.9	0.200	0.240	
			124	5620	Not supported				
			140	5700	12.7	12.3	0.141	0.155	
	Right Touch	802.11a	100	5500	12.7	11.8	0.097	0.119	
			112	5560	12.7	11.9	0.112	0.135	
			124	5620	Not supported				
			140	5700	12.7	12.3	0.076	0.083	
	Right Tilt (15°)	802.11a	100	5500	12.7	11.8	0.138	0.170	
			112	5560	12.7	11.9	0.139	0.167	
			124	5620	Not supported				
			140	5700	12.7	12.3	0.102	0.112	
5.8	Left Touch	802.11a	149	5745	12.7	12.2	0.109	**0.122**	4
			157	5785	12.7	12.5	0.065	0.068	
			165	5825	12.7	12.4	0.064	0.069	
	Left Tilt (15°)	802.11a	149	5745	12.7	12.2	0.108	0.121	
			157	5785	12.7	12.5	0.087	0.091	
			165	5825	12.7	12.4	0.080	0.086	
	Right Touch	802.11a	149	5745	12.7	12.2	0.067	0.075	
			157	5785	12.7	12.5	0.051	0.053	
			165	5825	12.7	12.4	0.052	0.056	
	Right Tilt (15°)	802.11a	149	5745	12.7	12.2	0.081	0.091	
			157	5785	12.7	12.5	0.070	0.073	
			165	5825	12.7	12.4	0.062	0.066	

12.10.2. Body-worn Accessory Exposure Conditions

Band	Test Position	Mode	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
					Tune-up limit	Meas.	Meas.	Scaled	
5.2	Rear	802.11a	36	5180	12.7	12.1	0.107	0.123	
			48	5240	12.7	12.3	0.153	**0.168**	
	Front	802.11a	36	5180	12.7	12.1	0.015	0.017	
			48	5240	12.7	12.3	0.026	0.029	
5.3	Rear	802.11a	52	5260	12.7	12.4	0.171	0.183	
			64	5320	12.7	12.5	0.223	**0.234**	
	Front	802.11a	52	5260	12.7	12.4	0.030	0.032	
			64	5320	12.7	12.5	0.033	0.035	
5.5	Rear	802.11a	100	5500	12.7	11.8	0.187	0.230	
			112	5560	12.7	11.9	0.197	**0.237**	
			124	5620	Not supported				
			140	5700	12.7	12.3	0.142	0.156	
	Front	802.11a	100	5500	12.7	11.8	0.032	0.039	
			112	5560	12.7	11.9	0.032	0.038	
			124	5620	Not supported				
			140	5700	12.7	12.3	0.025	0.027	
5.8	Rear	802.11a	149	5745	12.7	12.2	0.154	**0.173**	
			157	5785	12.7	12.5	0.100	0.105	
			165	5825	12.7	12.4	0.065	0.070	
	Front	802.11a	149	5745	12.7	12.2	0.024	0.027	
			157	5785	12.7	12.5	0.030	0.031	
			165	5825	12.7	12.4	0.024	0.026	

13. SAR Measurement Variability

In accordance with published RF Exposure KDB procedure 865664 D01 SAR measurement 100 MHz to 6 GHz v01. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

13.1. The Highest Measured SAR Configuration in Each Frequency Band

Head Exposure Condition

Not Applicable. Highest measured SAR is < 0.80 W/kg.

Body-worn Accessory Exposure Condition

Not Applicable. Highest measured SAR is < 0.80 W/kg.

Note(s):

1. Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg.
2. Repeated measurement was performed on the highest measured SAR configuration in each frequency band only.

13.2. Repeated Measurement Results

Head Exposure Condition

Not Applicable. Highest measured SAR is < 0.80 W/kg.

Body-worn Accessory Exposure Condition

Not Applicable. Highest measured SAR is < 0.80 W/kg.

Note(s):

1. Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the original and first repeated measurement is not > 1.20.

14. Simultaneous Transmission SAR Analysis

KDB 447498 D01 General RF Exposure Guidance v05, introduces a new formula for calculating the SAR to Peak Location Ratio (SPLSR) between pairs of simultaneously transmitting antennas:

$$SPLSR = (SAR_1 + SAR_2)^{1.5} / Ri$$

Where:

SAR_1 is the highest measured or estimated SAR for the first of a pair of simultaneous transmitting antennas, in a specific test operating mode and exposure condition

SAR_2 is the highest measured or estimated SAR for the second of a pair of simultaneous transmitting antennas, in the same test operating mode and exposure condition as the first

Ri is the separation distance between the pair of simultaneous transmitting antennas. When the SAR is measured, for both antennas in the pair, it is determined by the actual x, y and z coordinates in the 1-g SAR for each SAR peak location, based on the extrapolated and interpolated result in the zoom scan measurement, using the formula of $[(x_1-x_2)^2 + (y_1-y_2)^2 + (z_1-z_2)^2]$

A new threshold of 0.04 is also introduced in the draft KDB. Thus, in order for a pair of simultaneous transmitting antennas with the sum of 1-g SAR > 1.6 W/kg to qualify for exemption from Simultaneous Transmission SAR measurements, it has to satisfy the condition of:

$$(SAR_1 + SAR_2)^{1.5} / Ri < 0.04$$

14.1. Estimated SAR for Bluetooth

14.1.1. Standalone SAR Test Exclusion

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

[(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)]·[√f(GHz)] ≤ 3.0, for 1-g SAR

Body-worn Accessory Exposure Conditions

Max. Power of Channel		Min. Test Spearation Distance (mm)	Frequency (GHz)	Result
(dBm)	(mW)			
10.5	11	10	2.441	1.8

Conclusion:

The computed value is < 3; therefore, Bluetooth qualifies for Standalone SAR test exclusion.

14.1.2. Estimated SAR

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

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

With x = 7.5 for 1-g SAR

This standalone SAR estimation was performed in accordance with the separation distances listed in Section 17.“Antenna Locations” and only at the applicable simultaneous transmission test positions. The estimated SAR results are as follow:

Test Position	Max. Power of Channel (mW)	Min. Test Spearation Distance (mm)	Frequency (GHz)	Estimated 1-g SAR Values (W/kg)
Rear/Front	11	10	2.441	0.229

Note(s):

1. Power and distance are rounded to the nearest mW and mm before calculation
2. If the minimum test separation distance is <5mm then 5mm is used in the calculation

14.2. Head Exposure Conditions

14.2.1. Sum of the SAR for CDMA & WiFi 2.4 / 5 GHz Bands

Test Position	Voice/Data (Highest SAR)	Data					∑ 1-g SAR (mW/g)
	CDMA BC0	WiFi 2.4 GHz	WiFi 5.2 GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.346	0.293					0.639
	0.346		0.248				0.594
	0.346			0.292			0.638
	0.346				0.209		0.555
	0.346					0.122	0.468
Left Tilt	0.227	0.329					0.556
	0.227		0.228				0.455
	0.227			0.287			0.514
	0.227				0.241		0.468
	0.227					0.121	0.348
Right Touch	0.302	0.233					0.535
	0.302		0.127				0.429
	0.302			0.182			0.484
	0.302				0.135		0.437
	0.302					0.075	0.377
Right Tilt	0.218	0.245					0.463
	0.218		0.156				0.374
	0.218			0.225			0.443
	0.218				0.170		0.388
	0.218					0.091	0.309

Test Position	Voice/Data (Highest SAR)	Data					∑ 1-g SAR (mW/g)
	CDMA BC1	WiFi 2.4 GHz	WiFi 5.2 GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.516	0.293					0.809
	0.516		0.248				0.764
	0.516			0.292			0.808
	0.516				0.209		0.725
	0.516					0.122	0.638
Left Tilt	0.193	0.329					0.522
	0.193		0.228				0.421
	0.193			0.287			0.480
	0.193				0.241		0.434
	0.193					0.121	0.314
Right Touch	0.356	0.233					0.589
	0.356		0.127				0.483
	0.356			0.182			0.538
	0.356				0.135		0.491
	0.356					0.075	0.431
Right Tilt	0.187	0.245					0.432
	0.187		0.156				0.343
	0.187			0.225			0.412
	0.187				0.170		0.357
	0.187					0.091	0.278

Sum of the SAR for CDMA & WiFi 2.4 / 5 GHz Bands (continued)

Test Position	Voice/Data (Highest SAR)	Data					∑ 1-g SAR (mW/g)
	CDMA BC15	WiFi 2.4 GHz	WiFi 5.2 GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.376	0.293					0.669
	0.376		0.248				0.624
	0.376			0.292			0.668
	0.376				0.209		0.585
	0.376					0.122	0.498
Left Tilt	0.170	0.329					0.499
	0.170		0.228				0.398
	0.170			0.287			0.457
	0.170				0.241		0.411
	0.170					0.121	0.291
Right Touch	0.274	0.233					0.507
	0.274		0.127				0.401
	0.274			0.182			0.456
	0.274				0.135		0.409
	0.274					0.075	0.349
Right Tilt	0.172	0.245					0.417
	0.172		0.156				0.328
	0.172			0.225			0.397
	0.172				0.170		0.342
	0.172					0.091	0.263

SAR to Peak Location Separation Ratio (SPLSR)

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

Conclusion:

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

14.2.2. Sum of the SAR for LTE & WiFi 2.4 / 5 GHz Bands

Test Position	Data	Data					∑ 1-g SAR (mW/g)
	LTE Band 2	WiFi 2.4 GHz	WiFi 5.2 GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.205	0.293					0.498
	0.205		0.248				0.453
	0.205			0.292			0.497
	0.205				0.209		0.414
	0.205					0.122	0.327
Left Tilt	0.143	0.329					0.472
	0.143		0.228				0.371
	0.143			0.287			0.430
	0.143				0.241		0.384
	0.143					0.121	0.264
Right Touch	0.313	0.233					0.546
	0.313		0.127				0.440
	0.313			0.182			0.495
	0.313				0.135		0.448
	0.313					0.075	0.388
Right Tilt	0.111	0.245					0.356
	0.111		0.156				0.267
	0.111			0.225			0.336
	0.111				0.170		0.281
	0.111					0.091	0.202

Test Position	Data	Data					∑ 1-g SAR (mW/g)
	LTE Band 4	WiFi 2.4 GHz	WiFi 5.2 GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.127	0.293					0.420
	0.127		0.248				0.375
	0.127			0.292			0.419
	0.127				0.209		0.336
	0.127					0.122	0.249
Left Tilt	0.058	0.329					0.387
	0.058		0.228				0.286
	0.058			0.287			0.345
	0.058				0.241		0.299
	0.058					0.121	0.179
Right Touch	0.135	0.233					0.368
	0.135		0.127				0.262
	0.135			0.182			0.317
	0.135				0.135		0.270
	0.135					0.075	0.210
Right Tilt	0.055	0.245					0.300
	0.055		0.156				0.211
	0.055			0.225			0.280
	0.055				0.170		0.225
	0.055					0.091	0.146

Sum of the SAR for LTE & WiFi 2.4 / 5 GHz Bands (continued)

Test Position	Data	Data					∑ 1-g SAR (mW/g)
	LTE Band 5	WiFi 2.4 GHz	WiFi 5.2 GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.302	0.293					0.595
	0.302		0.248				0.550
	0.302			0.292			0.594
	0.302				0.209		0.511
	0.302					0.122	0.424
Left Tilt	0.229	0.329					0.558
	0.229		0.228				0.457
	0.229			0.287			0.516
	0.229				0.241		0.470
	0.229					0.121	0.350
Right Touch	0.202	0.233					0.435
	0.202		0.127				0.329
	0.202			0.182			0.384
	0.202				0.135		0.337
	0.202					0.075	0.277
Right Tilt	0.163	0.245					0.408
	0.163		0.156				0.319
	0.163			0.225			0.388
	0.163				0.170		0.333
	0.163					0.091	0.254

Test Position	Data	Data					∑ 1-g SAR (mW/g)
	LTE Band 12	WiFi 2.4 GHz	WiFi 5.2 GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.146	0.293					0.439
	0.146		0.248				0.394
	0.146			0.292			0.438
	0.146				0.209		0.355
	0.146					0.122	0.268
Left Tilt	0.085	0.329					0.414
	0.085		0.228				0.313
	0.085			0.287			0.372
	0.085				0.241		0.326
	0.085					0.121	0.206
Right Touch	0.173	0.233					0.406
	0.173		0.127				0.300
	0.173			0.182			0.355
	0.173				0.135		0.308
	0.173					0.075	0.248
Right Tilt	0.096	0.245					0.341
	0.096		0.156				0.252
	0.096			0.225			0.321
	0.096				0.170		0.266
	0.096					0.091	0.187

Sum of the SAR for LTE & WiFi 2.4 / 5 GHz Bands (continued)

Test Position	Data	Data					∑ 1-g SAR (mW/g)
	LTE Band 25	WiFi 2.4 GHz	WiFi 5.2 GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.194	0.293					0.487
	0.194		0.248				0.442
	0.194			0.292			0.486
	0.194				0.209		0.403
	0.194					0.122	0.316
Left Tilt	0.153	0.329					0.482
	0.153		0.228				0.381
	0.153			0.287			0.440
	0.153				0.241		0.394
	0.153					0.121	0.274
Right Touch	0.300	0.233					0.533
	0.300		0.127				0.427
	0.300			0.182			0.482
	0.300				0.135		0.435
	0.300					0.075	0.375
Right Tilt	0.146	0.245					0.391
	0.146		0.156				0.302
	0.146			0.225			0.371
	0.146				0.170		0.316
	0.146					0.091	0.237

SAR to Peak Location Separation Ratio (SPLSR)

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

Conclusion:

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

14.2.3. Sum of the SAR for SV-LTE (Max. Pwr) & WiFi 2.4 / 5 GHz Bands

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data					∑ 1-g SAR (mW/g)
	CDMA BC0	LTE Band 2	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.346	0.205	0.293					0.844
	0.346	0.205		0.248				0.799
	0.346	0.205			0.292			0.843
	0.346	0.205				0.209		0.760
	0.346	0.205					0.122	0.673
Left Tilt	0.227	0.143	0.329					0.699
	0.227	0.143		0.228				0.598
	0.227	0.143			0.287			0.657
	0.227	0.143				0.241		0.611
	0.227	0.143					0.121	0.491
Right Touch	0.302	0.313	0.233					0.848
	0.302	0.313		0.127				0.742
	0.302	0.313			0.182			0.797
	0.302	0.313				0.135		0.750
	0.302	0.313					0.075	0.690
Right Tilt	0.218	0.111	0.245					0.574
	0.218	0.111		0.156				0.485
	0.218	0.111			0.225			0.554
	0.218	0.111				0.170		0.499
	0.218	0.111					0.091	0.420

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data					∑ 1-g SAR (mW/g)
	CDMA BC0	LTE Band 4	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.346	0.127	0.293					0.766
	0.346	0.127		0.248				0.721
	0.346	0.127			0.292			0.765
	0.346	0.127				0.209		0.682
	0.346	0.127					0.122	0.595
Left Tilt	0.227	0.058	0.329					0.614
	0.227	0.058		0.228				0.513
	0.227	0.058			0.287			0.572
	0.227	0.058				0.241		0.526
	0.227	0.058					0.121	0.406
Right Touch	0.302	0.135	0.233					0.670
	0.302	0.135		0.127				0.564
	0.302	0.135			0.182			0.619
	0.302	0.135				0.135		0.572
	0.302	0.135					0.075	0.512
Right Tilt	0.218	0.055	0.245					0.518
	0.218	0.055		0.156				0.429
	0.218	0.055			0.225			0.498
	0.218	0.055				0.170		0.443
	0.218	0.055					0.091	0.364

Sum of the SAR for SV-LTE (Max. Pwr) & WiFi 2.4 / 5 GHz Bands (continued)

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data					∑ 1-g SAR (mW/g)
	CDMA BC0	LTE Band 5	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.346	0.302	0.293					0.941
	0.346	0.302		0.248				0.896
	0.346	0.302			0.292			0.940
	0.346	0.302				0.209		0.857
	0.346	0.302					0.122	0.770
Left Tilt	0.227	0.229	0.329					0.785
	0.227	0.229		0.228				0.684
	0.227	0.229			0.287			0.743
	0.227	0.229				0.241		0.697
	0.227	0.229					0.121	0.577
Right Touch	0.302	0.202	0.233					0.737
	0.302	0.202		0.127				0.631
	0.302	0.202			0.182			0.686
	0.302	0.202				0.135		0.639
	0.302	0.202					0.075	0.579
Right Tilt	0.218	0.163	0.245					0.626
	0.218	0.163		0.156				0.537
	0.218	0.163			0.225			0.606
	0.218	0.163				0.170		0.551
	0.218	0.163					0.091	0.472

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data					∑ 1-g SAR (mW/g)
	CDMA BC0	LTE Band 12	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.346	0.146	0.293					0.785
	0.346	0.146		0.248				0.740
	0.346	0.146			0.292			0.784
	0.346	0.146				0.209		0.701
	0.346	0.146					0.122	0.614
Left Tilt	0.227	0.085	0.329					0.641
	0.227	0.085		0.228				0.540
	0.227	0.085			0.287			0.599
	0.227	0.085				0.241		0.553
	0.227	0.085					0.121	0.433
Right Touch	0.302	0.173	0.233					0.708
	0.302	0.173		0.127				0.602
	0.302	0.173			0.182			0.657
	0.302	0.173				0.135		0.610
	0.302	0.173					0.075	0.550
Right Tilt	0.218	0.096	0.245					0.559
	0.218	0.096		0.156				0.470
	0.218	0.096			0.225			0.539
	0.218	0.096				0.170		0.484
	0.218	0.096					0.091	0.405

Sum of the SAR for SV-LTE (Max. Pwr) & WiFi 2.4 / 5 GHz Bands (continued)

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data					∑ 1-g SAR (mW/g)
	CDMA BC0	LTE Band 25	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.346	0.194	0.293					0.833
	0.346	0.194		0.248				0.788
	0.346	0.194			0.292			0.832
	0.346	0.194				0.209		0.749
	0.346	0.194					0.122	0.662
Left Tilt	0.227	0.153	0.329					0.709
	0.227	0.153		0.228				0.608
	0.227	0.153			0.287			0.667
	0.227	0.153				0.241		0.621
	0.227	0.153					0.121	0.501
Right Touch	0.302	0.300	0.233					0.835
	0.302	0.300		0.127				0.729
	0.302	0.300			0.182			0.784
	0.302	0.300				0.135		0.737
	0.302	0.300					0.075	0.677
Right Tilt	0.218	0.146	0.245					0.609
	0.218	0.146		0.156				0.520
	0.218	0.146			0.225			0.589
	0.218	0.146				0.170		0.534
	0.218	0.146					0.091	0.455

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data					∑ 1-g SAR (mW/g)
	CDMA BC1	LTE Band 2	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.516	0.205	0.293					1.014
	0.516	0.205		0.248				0.969
	0.516	0.205			0.292			1.013
	0.516	0.205				0.209		0.930
	0.516	0.205					0.122	0.843
Left Tilt	0.193	0.143	0.329					0.665
	0.193	0.143		0.228				0.564
	0.193	0.143			0.287			0.623
	0.193	0.143				0.241		0.577
	0.193	0.143					0.121	0.457
Right Touch	0.356	0.313	0.233					0.902
	0.356	0.313		0.127				0.796
	0.356	0.313			0.182			0.851
	0.356	0.313				0.135		0.804
	0.356	0.313					0.075	0.744
Right Tilt	0.187	0.111	0.245					0.543
	0.187	0.111		0.156				0.454
	0.187	0.111			0.225			0.523
	0.187	0.111				0.170		0.468
	0.187	0.111					0.091	0.389

Sum of the SAR for SV-LTE (Max. Pwr) & WiFi 2.4 / 5 GHz Bands (continued)

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data					∑ 1-g SAR (mW/g)
	CDMA BC1	LTE Band 4	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.516	0.127	0.293					0.936
	0.516	0.127		0.248				0.891
	0.516	0.127			0.292			0.935
	0.516	0.127				0.209		0.852
	0.516	0.127					0.122	0.765
Left Tilt	0.193	0.058	0.329					0.580
	0.193	0.058		0.228				0.479
	0.193	0.058			0.287			0.538
	0.193	0.058				0.241		0.492
	0.193	0.058					0.121	0.372
Right Touch	0.356	0.135	0.233					0.724
	0.356	0.135		0.127				0.618
	0.356	0.135			0.182			0.673
	0.356	0.135				0.135		0.626
	0.356	0.135					0.075	0.566
Right Tilt	0.187	0.055	0.245					0.487
	0.187	0.055		0.156				0.398
	0.187	0.055			0.225			0.467
	0.187	0.055				0.170		0.412
	0.187	0.055					0.091	0.333

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data					∑ 1-g SAR (mW/g)
	CDMA BC1	LTE Band 5	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.516	0.302	0.293					1.111
	0.516	0.302		0.248				1.066
	0.516	0.302			0.292			1.110
	0.516	0.302				0.209		1.027
	0.516	0.302					0.122	0.940
Left Tilt	0.193	0.229	0.329					0.751
	0.193	0.229		0.228				0.650
	0.193	0.229			0.287			0.709
	0.193	0.229				0.241		0.663
	0.193	0.229					0.121	0.543
Right Touch	0.356	0.202	0.233					0.791
	0.356	0.202		0.127				0.685
	0.356	0.202			0.182			0.740
	0.356	0.202				0.135		0.693
	0.356	0.202					0.075	0.633
Right Tilt	0.187	0.163	0.245					0.595
	0.187	0.163		0.156				0.506
	0.187	0.163			0.225			0.575
	0.187	0.163				0.170		0.520
	0.187	0.163					0.091	0.441

Sum of the SAR for SV-LTE (Max. Pwr) & WiFi 2.4 / 5 GHz Bands (continued)

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data					∑ 1-g SAR (mW/g)
	CDMA BC1	LTE Band 12	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.516	0.146	0.293					0.955
	0.516	0.146		0.248				0.910
	0.516	0.146			0.292			0.954
	0.516	0.146				0.209		0.871
	0.516	0.146					0.122	0.784
Left Tilt	0.193	0.085	0.329					0.607
	0.193	0.085		0.228				0.506
	0.193	0.085			0.287			0.565
	0.193	0.085				0.241		0.519
	0.193	0.085					0.121	0.399
Right Touch	0.356	0.173	0.233					0.762
	0.356	0.173		0.127				0.656
	0.356	0.173			0.182			0.711
	0.356	0.173				0.135		0.664
	0.356	0.173					0.075	0.604
Right Tilt	0.187	0.096	0.245					0.528
	0.187	0.096		0.156				0.439
	0.187	0.096			0.225			0.508
	0.187	0.096				0.170		0.453
	0.187	0.096					0.091	0.374

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data					∑ 1-g SAR (mW/g)
	CDMA BC1	LTE Band 25	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.516	0.194	0.293					1.003
	0.516	0.194		0.248				0.958
	0.516	0.194			0.292			1.002
	0.516	0.194				0.209		0.919
	0.516	0.194					0.122	0.832
Left Tilt	0.193	0.153	0.329					0.675
	0.193	0.153		0.228				0.574
	0.193	0.153			0.287			0.633
	0.193	0.153				0.241		0.587
	0.193	0.153					0.121	0.467
Right Touch	0.356	0.300	0.233					0.889
	0.356	0.300		0.127				0.783
	0.356	0.300			0.182			0.838
	0.356	0.300				0.135		0.791
	0.356	0.300					0.075	0.731
Right Tilt	0.187	0.146	0.245					0.578
	0.187	0.146		0.156				0.489
	0.187	0.146			0.225			0.558
	0.187	0.146				0.170		0.503
	0.187	0.146					0.091	0.424

Sum of the SAR for SV-LTE (Max. Pwr) & WiFi 2.4 / 5 GHz Bands (continued)

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data					∑ 1-g SAR (mW/g)
	CDMA BC15	LTE Band 2	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.376	0.205	0.293					0.874
	0.376	0.205		0.248				0.829
	0.376	0.205			0.292			0.873
	0.376	0.205				0.209		0.790
	0.376	0.205					0.122	0.703
Left Tilt	0.170	0.143	0.329					0.642
	0.170	0.143		0.228				0.541
	0.170	0.143			0.287			0.600
	0.170	0.143				0.241		0.554
	0.170	0.143					0.121	0.434
Right Touch	0.274	0.313	0.233					0.820
	0.274	0.313		0.127				0.714
	0.274	0.313			0.182			0.769
	0.274	0.313				0.135		0.722
	0.274	0.313					0.075	0.662
Right Tilt	0.172	0.111	0.245					0.528
	0.172	0.111		0.156				0.439
	0.172	0.111			0.225			0.508
	0.172	0.111				0.170		0.453
	0.172	0.111					0.091	0.374

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data					∑ 1-g SAR (mW/g)
	CDMA BC15	LTE Band 4	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.376	0.127	0.293					0.796
	0.376	0.127		0.248				0.751
	0.376	0.127			0.292			0.795
	0.376	0.127				0.209		0.712
	0.376	0.127					0.122	0.625
Left Tilt	0.170	0.058	0.329					0.557
	0.170	0.058		0.228				0.456
	0.170	0.058			0.287			0.515
	0.170	0.058				0.241		0.469
	0.170	0.058					0.121	0.349
Right Touch	0.274	0.135	0.233					0.642
	0.274	0.135		0.127				0.536
	0.274	0.135			0.182			0.591
	0.274	0.135				0.135		0.544
	0.274	0.135					0.075	0.484
Right Tilt	0.172	0.055	0.245					0.472
	0.172	0.055		0.156				0.383
	0.172	0.055			0.225			0.452
	0.172	0.055				0.170		0.397
	0.172	0.055					0.091	0.318

Sum of the SAR for SV-LTE (Max. Pwr) & WiFi 2.4 / 5 GHz Bands (continued)

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data					∑ 1-g SAR (mW/g)
	CDMA BC15	LTE Band 5	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.376	0.302	0.293					0.971
	0.376	0.302		0.248				0.926
	0.376	0.302			0.292			0.970
	0.376	0.302				0.209		0.887
	0.376	0.302					0.122	0.800
Left Tilt	0.170	0.229	0.329					0.728
	0.170	0.229		0.228				0.627
	0.170	0.229			0.287			0.686
	0.170	0.229				0.241		0.640
	0.170	0.229					0.121	0.520
Right Touch	0.274	0.202	0.233					0.709
	0.274	0.202		0.127				0.603
	0.274	0.202			0.182			0.658
	0.274	0.202				0.135		0.611
	0.274	0.202					0.075	0.551
Right Tilt	0.172	0.163	0.245					0.580
	0.172	0.163		0.156				0.491
	0.172	0.163			0.225			0.560
	0.172	0.163				0.170		0.505
	0.172	0.163					0.091	0.426

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data					∑ 1-g SAR (mW/g)
	CDMA BC15	LTE Band 12	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.376	0.146	0.293					0.815
	0.376	0.146		0.248				0.770
	0.376	0.146			0.292			0.814
	0.376	0.146				0.209		0.731
	0.376	0.146					0.122	0.644
Left Tilt	0.170	0.085	0.329					0.584
	0.170	0.085		0.228				0.483
	0.170	0.085			0.287			0.542
	0.170	0.085				0.241		0.496
	0.170	0.085					0.121	0.376
Right Touch	0.274	0.173	0.233					0.680
	0.274	0.173		0.127				0.574
	0.274	0.173			0.182			0.629
	0.274	0.173				0.135		0.582
	0.274	0.173					0.075	0.522
Right Tilt	0.172	0.096	0.245					0.513
	0.172	0.096		0.156				0.424
	0.172	0.096			0.225			0.493
	0.172	0.096				0.170		0.438
	0.172	0.096					0.091	0.359

Sum of the SAR for SV-LTE (Max. Pwr) & WiFi 2.4 / 5 GHz Bands (continued)

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data					∑ 1-g SAR (mW/g)
	CDMA BC15	LTE Band 25	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	
Left Touch	0.376	0.194	0.293					0.863
	0.376	0.194		0.248				0.818
	0.376	0.194			0.292			0.862
	0.376	0.194				0.209		0.779
	0.376	0.194					0.122	0.692
Left Tilt	0.170	0.153	0.329					0.652
	0.170	0.153		0.228				0.551
	0.170	0.153			0.287			0.610
	0.170	0.153				0.241		0.564
	0.170	0.153					0.121	0.444
Right Touch	0.274	0.300	0.233					0.807
	0.274	0.300		0.127				0.701
	0.274	0.300			0.182			0.756
	0.274	0.300				0.135		0.709
	0.274	0.300					0.075	0.649
Right Tilt	0.172	0.146	0.245					0.563
	0.172	0.146		0.156				0.474
	0.172	0.146			0.225			0.543
	0.172	0.146				0.170		0.488
	0.172	0.146					0.091	0.409

SAR to Peak Location Separation Ratio (SPLSR)

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

Conclusion:

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

14.3. Body-worn Accessory Exposure Conditions

14.3.1. Sum of the SAR for CDMA, WiFi 2.4 / 5 GHz Bands & Bluetooth

Test Position	Voice/Data (Highest SAR)	Data						∑ 1-g SAR (mW/g)
	CDMA BC0	WiFi 2.4 GHz	WiFi 5.2 GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth	
Rear	0.652	0.229						0.881
	0.652		0.168					0.820
	0.652			0.234				0.886
	0.652				0.237			0.889
	0.652					0.173		0.825
	0.652						0.229	0.881
Front	0.358	0.089						0.447
	0.358		0.029					0.387
	0.358			0.035				0.393
	0.358				0.039			0.397
	0.358					0.031		0.389
	0.358						0.229	0.587

Test Position	Voice/Data (Highest SAR)	Data						∑ 1-g SAR (mW/g)
	CDMA BC1	WiFi 2.4 GHz	WiFi 5.2 GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth	
Rear	0.669	0.229						0.898
	0.669		0.168					0.837
	0.669			0.234				0.903
	0.669				0.237			0.906
	0.669					0.173		0.842
	0.669						0.229	0.898
Front	0.388	0.089						0.477
	0.388		0.029					0.417
	0.388			0.035				0.423
	0.388				0.039			0.427
	0.388					0.031		0.419
	0.388						0.229	0.617

Sum of the SAR for CDMA, WiFi 2.4 / 5 GHz Bands & Bluetooth (continued)

Test Position	Voice/Data (Highest SAR)	Data						∑ 1-g SAR (mW/g)
	CDMA BC15	WiFi 2.4 GHz	WiFi 5.2 GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth	
Rear	0.635	0.229						0.864
	0.635		0.168					0.803
	0.635			0.234				0.869
	0.635				0.237			0.872
	0.635					0.173		0.808
	0.635						0.229	0.864
Front	0.412	0.089						0.501
	0.412		0.029					0.441
	0.412			0.035				0.447
	0.412				0.039			0.451
	0.412					0.031		0.443
	0.412						0.229	0.641

SAR to Peak Location Separation Ratio (SPLSR)

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

Conclusion:

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

14.3.2. Sum of the SAR for LTE, WiFi 2.4 / 5 GHz Bands & Bluetooth

Test Position	Data	Data						∑ 1-g SAR (mW/g)
	LTE Band 2	WiFi 2.4 GHz	WiFi 5.2 GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth	
Rear	0.484	0.229						0.713
	0.484		0.168					0.652
	0.484			0.234				0.718
	0.484				0.237			0.721
	0.484					0.173		0.657
	0.484						0.229	0.713
Front	0.277	0.089						0.366
	0.277		0.029					0.306
	0.277			0.035				0.312
	0.277				0.039			0.316
	0.277					0.031		0.308
	0.277						0.229	0.506

Test Position	Data	Data						∑ 1-g SAR (mW/g)
	LTE Band 4	WiFi 2.4 GHz	WiFi 5.2 GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth	
Rear	0.306	0.229						0.535
	0.306		0.168					0.474
	0.306			0.234				0.540
	0.306				0.237			0.543
	0.306					0.173		0.479
	0.306						0.229	0.535
Front	0.229	0.089						0.318
	0.229		0.029					0.258
	0.229			0.035				0.264
	0.229				0.039			0.268
	0.229					0.031		0.260
	0.229						0.229	0.458

Test Position	Data	Data						∑ 1-g SAR (mW/g)
	LTE Band 5	WiFi 2.4 GHz	WiFi 5.2 GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth	
Rear	0.265	0.229						0.494
	0.265		0.168					0.433
	0.265			0.234				0.499
	0.265				0.237			0.502
	0.265					0.173		0.438
	0.265						0.229	0.494
Front	0.110	0.089						0.199
	0.110		0.029					0.139
	0.110			0.035				0.145
	0.110				0.039			0.149
	0.110					0.031		0.141
	0.110						0.229	0.339

Sum of the SAR for TE, WiFi 2.4 / 5 GHz Bands & Bluetooth (continued)

Test Position	Data	Data						∑ 1-g SAR (mW/g)
	LTE Band 12	WiFi 2.4 GHz	WiFi 5.2 GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth	
Rear	0.356	0.229						0.585
	0.356		0.168					0.524
	0.356			0.234				0.590
	0.356				0.237			0.593
	0.356					0.173		0.529
	0.356						0.229	0.585
Front	0.148	0.089						0.237
	0.148		0.029					0.177
	0.148			0.035				0.183
	0.148				0.039			0.187
	0.148					0.031		0.179
	0.148						0.229	0.377
Test Position	Data	Data						∑ 1-g SAR (mW/g)
	LTE Band 25	WiFi 2.4 GHz	WiFi 5.2 GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth	
Rear	0.484	0.229						0.713
	0.484		0.168					0.652
	0.484			0.234				0.718
	0.484				0.237			0.721
	0.484					0.173		0.657
	0.484						0.229	0.713
Front	0.320	0.089						0.409
	0.320		0.029					0.349
	0.320			0.035				0.355
	0.320				0.039			0.359
	0.320					0.031		0.351
	0.320						0.229	0.549

SAR to Peak Location Separation Ratio (SPLSR)

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

Conclusion:

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

14.3.3. Sum of the SAR for SV-LTE (Max. Pwr), WiFi 2.4 / 5 GHz Bands & Bluetooth

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data						∑ 1-g SAR (mW/g)	Note
	CDMA BC0	LTE Band 2	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth		
Rear	0.652	0.484	0.229						1.365	
	0.652	0.484		0.168					1.304	
	0.652	0.484			0.234				1.370	
	0.652	0.484				0.237			1.373	
	0.652	0.484					0.173		1.309	
	0.652	0.484						0.229	1.365	
Front	0.358	0.277	0.089						0.724	
	0.358	0.277		0.029					0.664	
	0.358	0.277			0.035				0.670	
	0.358	0.277				0.039			0.674	
	0.358	0.277					0.031		0.666	
	0.358	0.277						0.229	0.864	

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data						∑ 1-g SAR (mW/g)	Note
	CDMA BC0	LTE Band 4	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth		
Rear	0.652	0.306	0.229						1.187	
	0.652	0.306		0.168					1.126	
	0.652	0.306			0.234				1.192	
	0.652	0.306				0.237			1.195	
	0.652	0.306					0.173		1.131	
	0.652	0.306						0.229	1.187	
Front	0.358	0.229	0.089						0.676	
	0.358	0.229		0.029					0.616	
	0.358	0.229			0.035				0.622	
	0.358	0.229				0.039			0.626	
	0.358	0.229					0.031		0.618	
	0.358	0.229						0.229	0.816	

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data						∑ 1-g SAR (mW/g)	Note
	CDMA BC0	LTE Band 5	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth		
Rear	0.652	0.265	0.229						1.146	
	0.652	0.265		0.168					1.085	
	0.652	0.265			0.234				1.151	
	0.652	0.265				0.237			1.154	
	0.652	0.265					0.173		1.090	
	0.652	0.265						0.229	1.146	
Front	0.358	0.110	0.089						0.557	
	0.358	0.110		0.029					0.497	
	0.358	0.110			0.035				0.503	
	0.358	0.110				0.039			0.507	
	0.358	0.110					0.031		0.499	
	0.358	0.110						0.229	0.697	

Sum of the SAR for SV-LTE (Max. Pwr), WiFi 2.4 / 5 GHz Bands & Bluetooth (continued)

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data						∑ 1-g SAR (mW/g)	Note
	CDMA BC0	LTE Band 12	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth		
Rear	0.652	0.356	0.229						1.237	
	0.652	0.356		0.168					1.176	
	0.652	0.356			0.234				1.242	
	0.652	0.356				0.237			1.245	
	0.652	0.356					0.173		1.181	
	0.652	0.356						0.229	1.237	
Front	0.358	0.148	0.089						0.595	
	0.358	0.148		0.029					0.535	
	0.358	0.148			0.035				0.541	
	0.358	0.148				0.039			0.545	
	0.358	0.148					0.031		0.537	
	0.358	0.148						0.229	0.735	

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data						∑ 1-g SAR (mW/g)	Note
	CDMA BC0	LTE Band 25	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth		
Rear	0.652	0.484	0.229						1.365	
	0.652	0.484		0.168					1.304	
	0.652	0.484			0.234				1.370	
	0.652	0.484				0.237			1.373	
	0.652	0.484					0.173		1.309	
	0.652	0.484						0.229	1.365	
Front	0.358	0.320	0.089						0.767	
	0.358	0.320		0.029					0.707	
	0.358	0.320			0.035				0.713	
	0.358	0.320				0.039			0.717	
	0.358	0.320					0.031		0.709	
	0.358	0.320						0.229	0.907	

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data						∑ 1-g SAR (mW/g)	Note
	CDMA BC1	LTE Band 2	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth		
Rear	0.669	0.484	0.229						1.382	
	0.669	0.484		0.168					1.321	
	0.669	0.484			0.234				1.387	
	0.669	0.484				0.237			**1.390**	
	0.669	0.484					0.173		1.326	
	0.669	0.484						0.229	1.382	
Front	0.388	0.277	0.089						0.754	
	0.388	0.277		0.029					0.694	
	0.388	0.277			0.035				0.700	
	0.388	0.277				0.039			0.704	
	0.388	0.277					0.031		0.696	
	0.388	0.277						0.229	0.894	

Sum of the SAR for SV-LTE (Max. Pwr), WiFi 2.4 / 5 GHz Bands & Bluetooth (continued)

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data						∑ 1-g SAR (mW/g)	Note
	CDMA BC1	LTE Band 4	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth		
Rear	0.669	0.306	0.229						1.204	
	0.669	0.306		0.168					1.143	
	0.669	0.306			0.234				1.209	
	0.669	0.306				0.237			1.212	
	0.669	0.306					0.173		1.148	
	0.669	0.306						0.229	1.204	
Front	0.388	0.229	0.089						0.706	
	0.388	0.229		0.029					0.646	
	0.388	0.229			0.035				0.652	
	0.388	0.229				0.039			0.656	
	0.388	0.229					0.031		0.648	
	0.388	0.229						0.229	0.846	

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data						∑ 1-g SAR (mW/g)	Note
	CDMA BC1	LTE Band 5	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth		
Rear	0.669	0.265	0.229						1.163	
	0.669	0.265		0.168					1.102	
	0.669	0.265			0.234				1.168	
	0.669	0.265				0.237			1.171	
	0.669	0.265					0.173		1.107	
	0.669	0.265						0.229	1.163	
Front	0.388	0.110	0.089						0.587	
	0.388	0.110		0.029					0.527	
	0.388	0.110			0.035				0.533	
	0.388	0.110				0.039			0.537	
	0.388	0.110					0.031		0.529	
	0.388	0.110						0.229	0.727	

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data						∑ 1-g SAR (mW/g)	Note
	CDMA BC1	LTE Band 12	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth		
Rear	0.669	0.356	0.229						1.254	
	0.669	0.356		0.168					1.193	
	0.669	0.356			0.234				1.259	
	0.669	0.356				0.237			1.262	
	0.669	0.356					0.173		1.198	
	0.669	0.356						0.229	1.254	
Front	0.388	0.148	0.089						0.625	
	0.388	0.148		0.029					0.565	
	0.388	0.148			0.035				0.571	
	0.388	0.148				0.039			0.575	
	0.388	0.148					0.031		0.567	
	0.388	0.148						0.229	0.765	

Sum of the SAR for SV-LTE (Max. Pwr), WiFi 2.4 / 5 GHz Bands & Bluetooth (continued)

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data						∑ 1-g SAR (mW/g)	Note
	CDMA BC1	LTE Band 25	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth		
Rear	0.669	0.484	0.229						1.382	
	0.669	0.484		0.168					1.321	
	0.669	0.484			0.234				1.387	
	0.669	0.484				0.237			1.390	
	0.669	0.484					0.173		1.326	
	0.669	0.484						0.229	1.382	
Front	0.388	0.320	0.089						0.797	
	0.388	0.320		0.029					0.737	
	0.388	0.320			0.035				0.743	
	0.388	0.320				0.039			0.747	
	0.388	0.320					0.031		0.739	
	0.388	0.320						0.229	0.937	

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data						∑ 1-g SAR (mW/g)	Note
	CDMA BC15	LTE Band 2	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth		
Rear	0.635	0.484	0.229						1.348	
	0.635	0.484		0.168					1.287	
	0.635	0.484			0.234				1.353	
	0.635	0.484				0.237			1.356	
	0.635	0.484					0.173		1.292	
	0.635	0.484						0.229	1.348	
Front	0.412	0.277	0.089						0.778	
	0.412	0.277		0.029					0.718	
	0.412	0.277			0.035				0.724	
	0.412	0.277				0.039			0.728	
	0.412	0.277					0.031		0.720	
	0.412	0.277						0.229	0.918	

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data						∑ 1-g SAR (mW/g)	Note
	CDMA BC15	LTE Band 4	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth		
Rear	0.635	0.306	0.229						1.170	
	0.635	0.306		0.168					1.109	
	0.635	0.306			0.234				1.175	
	0.635	0.306				0.237			1.178	
	0.635	0.306					0.173		1.114	
	0.635	0.306						0.229	1.170	
Front	0.412	0.229	0.089						0.730	
	0.412	0.229		0.029					0.670	
	0.412	0.229			0.035				0.676	
	0.412	0.229				0.039			0.680	
	0.412	0.229					0.031		0.672	
	0.412	0.229						0.229	0.870	

Sum of the SAR for SV-LTE (Max. Pwr), WiFi 2.4 / 5 GHz Bands & Bluetooth (continued)

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data						∑ 1-g SAR (mW/g)	Note
	CDMA BC15	LTE Band 5	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth		
Rear	0.635	0.265	0.229						1.129	
	0.635	0.265		0.168					1.068	
	0.635	0.265			0.234				1.134	
	0.635	0.265				0.237			1.137	
	0.635	0.265					0.173		1.073	
	0.635	0.265						0.229	1.129	
Front	0.412	0.110	0.089						0.611	
	0.412	0.110		0.029					0.551	
	0.412	0.110			0.035				0.557	
	0.412	0.110				0.039			0.561	
	0.412	0.110					0.031		0.553	
	0.412	0.110						0.229	0.751	

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data						∑ 1-g SAR (mW/g)	Note
	CDMA BC15	LTE Band 12	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth		
Rear	0.635	0.356	0.229						1.220	
	0.635	0.356		0.168					1.159	
	0.635	0.356			0.234				1.225	
	0.635	0.356				0.237			1.228	
	0.635	0.356					0.173		1.164	
	0.635	0.356						0.229	1.220	
Front	0.412	0.148	0.089						0.649	
	0.412	0.148		0.029					0.589	
	0.412	0.148			0.035				0.595	
	0.412	0.148				0.039			0.599	
	0.412	0.148					0.031		0.591	
	0.412	0.148						0.229	0.789	

Sum of the SAR for SV-LTE (Max. Pwr), WiFi 2.4 / 5 GHz Bands & Bluetooth (continued)

Test Position	Voice (Max. Pwr)	Data (Max. Pwr)	Data						∑ 1-g SAR (mW/g)	Note
	CDMA BC15	LTE Band 25	WiFi 2.4 GHz	WiFi 5.2GHz	WiFi 5.3 GHz	WiFi 5.5 GHz	WiFi 5.8 GHz	Bluetooth		
Rear	0.635	0.484	0.229						1.348	
	0.635	0.484		0.168					1.287	
	0.635	0.484			0.234				1.353	
	0.635	0.484				0.237			1.356	
	0.635	0.484					0.173		1.292	
	0.635	0.484						0.229	1.348	
Front	0.412	0.320	0.089						0.821	
	0.412	0.320		0.029					0.761	
	0.412	0.320			0.035				0.767	
	0.412	0.320				0.039			0.771	
	0.412	0.320					0.031		0.763	
	0.412	0.320						0.229	0.961	

SAR to Peak Location Separation Ratio (SPLSR)

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

Conclusion:

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

14.4. Hotspot Mode Exposure Conditions

14.4.1. Sum of the SAR for CDMA & WiFi 2.4 GHz Band

Test Position	Voice/Data (Highest SAR)			Data	∑ 1-g SAR (mW/g)
	CDMA BC0	CDMA BC1	CDMA BC15	WiFi 2.4 GHz	
Rear	0.652			0.229	0.881
		0.669		0.229	0.898
			0.635	0.229	0.864
Front	0.358			0.089	0.447
		0.388		0.089	0.477
			0.412	0.089	0.501
Edge 1	0			0.154	0.154
		0		0.154	0.154
			0	0.154	0.154
Edge 2	0			0	0
		0		0	0
			0	0	0
Edge 3	0.168			0	0.168
		0.303		0	0.303
			0.373	0	0.373
Edge 4	0.381			0	0.381
		0.355		0	0.355
			0.258	0	0.258

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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

14.4.2. Sum of the SAR for LTE & WiFi 2.4 GHz Band

Test Position	Data					Data	∑ 1-g SAR (mW/g)
	LTE Band 2	LTE Band 4	LTE Band 5	LTE Band 12	LTE Band 25	WiFi 2.4 GHz	
Rear	0.484					0.229	0.713
		0.306				0.229	0.535
			0.265			0.229	0.494
				0.356		0.229	0.585
					0.484	0.229	0.713
Front	0.277					0.089	0.366
		0.229				0.089	0.318
			0.110			0.089	0.199
				0.148		0.089	0.237
					0.320	0.089	0.409
Edge 1	0					0.154	0.154
		0				0.154	0.154
			0.078			0.154	0.232
				0		0.154	0.154
					0	0.154	0.154
Edge 2	0.225					0	0.225
		0.118				0	0.118
			0.142			0	0.142
				0.243		0	0.243
					0.196	0	0.196
Edge 3	0.205					0	0.205
		0.102				0	0.102
			0			0	0
				0.082		0	0.082
					0.201	0	0.201
Edge 4	0					0	0
		0				0	0
			0			0	0
				0		0	0
					0	0	0

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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

14.4.3. Sum of the SAR for SV-LTE (Max. Pwr) & WiFi 2.4 GHz Band

Test Position	Voice (Max. Pwr)			Data (Max. Pwr)	Data	∑ 1-g SAR (mW/g)	Note
	CDMA BC0	CDMA BC1	CDMA BC15	LTE Band 2	WiFi 2.4 GHz		
Rear	0.652			0.484	0.229	1.365	
		0.669		0.484	0.229	1.382	
			0.635	0.484	0.229	1.348	
Front	0.358			0.277	0.089	0.724	
		0.388		0.277	0.089	0.754	
			0.412	0.277	0.089	0.778	
Edge 1	0			0	0.154	0.154	
		0		0	0.154	0.154	
			0	0	0.154	0.154	
Edge 2	0			0.225	0	0.225	
		0		0.225	0	0.225	
			0	0.225	0	0.225	
Edge 3	0.168			0.205	0	0.373	
		0.303		0.205	0	0.508	
			0.373	0.205	0	0.578	
Edge 4	0.381			0	0	0.381	
		0.355		0	0	0.355	
			0.258	0	0	0.258	

Test Position	Voice (Max. Pwr)			Data (Max. Pwr)	Data	∑ 1-g SAR (mW/g)	Note
	CDMA BC0	CDMA BC1	CDMA BC15	LTE Band 4	WiFi 2.4 GHz		
Rear	0.652			0.306	0.229	1.187	
		0.669		0.306	0.229	1.204	
			0.635	0.306	0.229	1.170	
Front	0.358			0.229	0.089	0.676	
		0.388		0.229	0.089	0.706	
			0.412	0.229	0.089	0.730	
Edge 1	0			0	0.154	0.154	
		0		0	0.154	0.154	
			0	0	0.154	0.154	
Edge 2	0			0.118	0	0.118	
		0		0.118	0	0.118	
			0	0.118	0	0.118	
Edge 3	0.168			0.102	0	0.270	
		0.303		0.102	0	0.405	
			0.373	0.102	0	0.475	
Edge 4	0.381			0	0	0.381	
		0.355		0	0	0.355	
			0.258	0	0	0.258	

Sum of the SAR for SV-LTE (Max. Pwr) & WiFi 2.4 GHz Band (continued)

Test Position	Voice (Max. Pwr)			Data (Max. Pwr)	Data	∑ 1-g SAR (mW/g)	Note
	CDMA BC0	CDMA BC1	CDMA BC15	LTE Band 5	WiFi 2.4 GHz		
Rear	0.652			0.265	0.229	1.146	
		0.669		0.265	0.229	1.163	
			0.635	0.265	0.229	1.129	
Front	0.358			0.110	0.089	0.557	
		0.388		0.110	0.089	0.587	
			0.412	0.110	0.089	0.611	
Edge 1	0			0.078	0.154	0.232	
		0		0.078	0.154	0.232	
			0	0.078	0.154	0.232	
Edge 2	0			0.142	0	0.142	
		0		0.142	0	0.142	
			0	0.142	0	0.142	
Edge 3	0.168			0	0	0.168	
		0.303		0	0	0.303	
			0.373	0	0	0.373	
Edge 4	0.381			0	0	0.381	
		0.355		0	0	0.355	
			0.258	0	0	0.258	

Test Position	Voice (Max. Pwr)			Data (Max. Pwr)	Data	∑ 1-g SAR (mW/g)	Note
	CDMA BC0	CDMA BC1	CDMA BC15	LTE Band 12	WiFi 2.4 GHz		
Rear	0.652			0.356	0.229	1.237	
		0.669		0.356	0.229	1.254	
			0.635	0.356	0.229	1.220	
Front	0.358			0.148	0.089	0.595	
		0.388		0.148	0.089	0.625	
			0.412	0.148	0.089	0.649	
Edge 1	0			0	0.154	0.154	
		0		0	0.154	0.154	
			0	0	0.154	0.154	
Edge 2	0			0.243	0	0.243	
		0		0.243	0	0.243	
			0	0.243	0	0.243	
Edge 3	0.168			0.082	0	0.250	
		0.303		0.082	0	0.385	
			0.373	0.082	0	0.455	
Edge 4	0.381			0	0	0.381	
		0.355		0	0	0.355	
			0.258	0	0	0.258	

Sum of the SAR for SV-LTE (Max. Pwr) & WiFi 2.4 GHz Band (continued)

Test Position	Voice (Max. Pwr)			Data (Max. Pwr)	Data	∑ 1-g SAR (mW/g)	Note
	CDMA BC0	CDMA BC1	CDMA BC15	LTE Band 25	WiFi 2.4 GHz		
Rear	0.652			0.484	0.229	1.365	
		0.669		0.484	0.229	1.382	
			0.635	0.484	0.229	1.348	
Front	0.358			0.320	0.089	0.767	
		0.388		0.320	0.089	0.797	
			0.412	0.320	0.089	0.821	
Edge 1	0			0	0.154	0.154	
		0		0	0.154	0.154	
			0	0	0.154	0.154	
Edge 2	0			0.196	0	0.196	
		0		0.196	0	0.196	
			0	0.196	0	0.196	
Edge 3	0.168			0.201	0	0.369	
		0.303		0.201	0	0.504	
			0.373	0.201	0	0.574	
Edge 4	0.381			0	0	0.381	
		0.355		0	0	0.355	
			0.258	0	0	0.258	

SAR to Peak Location Separation Ratio (SPLSR)

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

Conclusion:

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

15. Appendixes

Refer to separated files for the following appendixes.

15.1. System Performance Check Plots

15.2. SAR Test Plots for CDMA BC0

15.3. SAR Test Plots for CDMA BC1

15.4. SAR Test Plots for CDMA BC15

15.5. SAR Test Plots for LTE Band 2

15.6. SAR Test Plots for LTE Band 4

15.7. SAR Test Plots for LTE Band 5

15.8. SAR Test Plots for LTE Band 12

15.9. SAR Test Plots for LTE Band 25

15.10. SAR Test Plots for WiFi 2.4 GHz Band

15.11. SAR Test Plots for WiFi 5 GHz Bands

15.12. Calibration Certificate for E-Field Probe EX3DV4 - SN 3885

15.13. Calibration Certificate for E-Field Probe EX3DV4 - SN 3871

15.14. Calibration Certificate for D750V2 - SN 1019

15.15. Calibration Certificate for D835V2 - SN 4d117

15.16. Calibration Certificate for D1750V2 - SN 1053

15.17. Calibration Certificate for D1900V2 - SN 5d140

15.18. Calibration Certificate for D2450V2 - SN 748

15.19. Calibration Certificate for D5GHzV2 - SN 1003