



SAR EVALUATION REPORT

**FCC 47 CFR § 2.1093
IEEE Std 1528-2013**

For
SMARTPHONE

**FCC ID: BCG-E3234A
Model Name: A2101**

**Report Number: 12204512-S1V1
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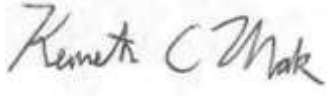
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1. Attestation of Test Results

Applicant Name	APPLE, INC.			
FCC ID	BCG-E3234A			
Model Name	A2101			
Applicable Standards	FCC 47 CFR § 2.1093 Published RF exposure KDB procedures IEEE Std 1528-2013			
Exposure Category	SAR Limits (W/Kg)			
	Peak spatial-average(1g of tissue)		Extremities (hands, wrists, ankles, etc.) (10g of tissue)	
General population / Uncontrolled exposure	1.6		4	
RF Exposure Conditions	Equipment Class - Highest Reported SAR (W/kg)			
	PCE	DTS	NII	DSS
Head	0.998	1.131	1.194	0.407
Body-worn (Dist.= 5 mm)	0.997	1.058	1.153	0.427
Hotspot (Dist.= 5 mm)	0.997	1.058	1.153	0.427
Simultaneous TX	Head	1.397	1.378	1.397
	Body-worn	1.509	1.389	1.509
	Hotspot	1.509	1.389	1.509
Date Tested	6/26/2018 to 8/1/2018			
Test Results	Pass			
UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. 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 Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. 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 By:		Prepared By:		
				
Devin Chang Senior Test Engineer UL Verification Services Inc.		Kenneth C. Mak Test Engineer UL Verification Services Inc.		

2. Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE STD 1528-2013, the following FCC Published RF exposure [KDB](#) procedures:

- 248227 D01 802.11 Wi-Fi SAR v02r02
- 447498 D01 General RF Exposure Guidance v06
- 447498 D03 Supplement C Cross-Reference v01
- 648474 D04 Handset SAR v01r03
- 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- 865664 D02 RF Exposure Reporting v01r02
- 941225 D01 3G SAR Procedures v03r01
- 941225 D05 SAR for LTE Devices v02r05
- 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02
- 941225 D06 Hotspot Mode v02r01

In addition to the above, the following information was used:

- [TCB workshop](#) April 2015; RF Exposure Procedures Update (Overlapping LTE Bands)
- [TCB workshop](#) October 2014; RF Exposure Procedures Update (Other LTE Considerations)
- [TCB workshop](#) October 2015; RF Exposure Procedures (KDB 941225 D05A)
- [TCB workshop](#) April 2016; RF Exposure Procedures (LTE Carrier Aggregation for DL)
- [TCB workshop](#) October 2016; RF Exposure Procedures (LTE Carrier Aggregation for UL)
- [TCB workshop](#) October 2016; RF Exposure Procedures (Bluetooth Duty Factor)
- [TCB workshop](#) May 2017; RF Exposure Procedures (LTE Band 41 Power Class 2)
- [TCB workshop](#) October 2016; RF Exposure Procedures (DUT Holder Perturbations)
- [TCB workshop](#) November 2017; RF Exposure Procedures (LTE UL/DL Carrier Aggregation SAR)
- [TCB workshop](#) April 2018; RF Exposure Procedures (LTE DL CA SAR Test Exclusion)

3. Facilities and Accreditation

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

47173 Benicia Street	47266 Benicia Street
SAR Lab A	SAR Lab 1
SAR Lab B	SAR Lab 2
SAR Lab C	SAR Lab 3
SAR Lab D	SAR Lab 4
SAR Lab E	
SAR Lab F	
SAR Lab G	
SAR Lab H	

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0.

4.2. SAR Scan Procedures

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

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
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 $\leq$ 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

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			≤ 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: $\Delta z_{\text{Zoom}}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{\text{Zoom}}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{\text{Zoom}}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$	
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 <u>reported</u> SAR from the <i>area scan based 1-g SAR estimation</i> 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.

4.3. Test Equipment

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

Dielectric Property Measurements

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Network Analyzer	Agilent	8753ES	MY40001647	9/15/2018
Dielectric Probe kit	SPEAG	DAK-3.5	1087	11/14/2018
Shorting block	SPEAG	DAK-3.5 Short	SM DAK 200 BA	2/6/2019
Thermometer	Traceable Calibration Control Co.	4242	140493798	12/8/2018
Network Analyzer	Agilent	8753ES	MY40000980	5/14/2019
Dielectric Probe kit	SPEAG	DAK-3.5	1082	10/17/2018
Shorting block	SPEAG	DAK-3.5 Short	SM DAK 200 BA	10/17/2018
Thermometer	Traceable Calibration Control Co.	4242	140562250	11/7/2018

System Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Synthesized Signal Generator	Agilent	N5181A	MY50140630	5/25/2019
Power Meter	HP	437B	3125U12345	8/10/2018
Power Meter	HP	437B	3125U11347	8/15/2018
Power Sensor	HP	8481A	1926A27048	8/10/2018
Power Sensor	HP	8481A	3318A92374	8/15/2018
Amplifier	MITEQ	AMF-4D-00400600-50-30P	1795092	N/A
Directional coupler	Werlatone	C8060-102	2141	N/A
DC Power Supply	HP	1611	215-02292	N/A
Synthesized Signal Generator	Agilent	N5181A	MY50140610	6/7/2019
Power Meter	Keysight	N1912A	MY50001018	10/17/2019
Power Sensor	Agilent	N1921A	MY53020038	4/23/2019
Power Sensor	Agilent	N1921A	MY52260009	1/8/2019
Amplifier	MITEQ	AMF-4D-00400600-50-30P	1795093	N/A
Directional coupler	Werlatone	C8060-102	2149	N/A
DC Power Supply	HP	6296A	2841A-05955	N/A

Lab Equipment

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
E-Field Probe (SAR Lab A)	SPEAG	EX3DV4	7356	4/24/2019
E-Field Probe (SAR Lab A)	SPEAG	EX3DV4	3991	5/24/2019
E-Field Probe (SAR Lab B)	SPEAG	EX3DV4	3772	2/13/2019
E-Field Probe (SAR Lab C)	SPEAG	EX3DV4	3749	1/16/2019
E-Field Probe (SAR Lab D)	SPEAG	EX3DV4	3902	5/24/2019
E-Field Probe (SAR Lab E)	SPEAG	EX3DV4	3989	1/16/2019
E-Field Probe (SAR Lab F)	SPEAG	EX3DV4	3929	3/16/2019
E-Field Probe (SAR Lab G)	SPEAG	EX3DV4	3773	4/23/2019
E-Field Probe (SAR Lab H)	SPEAG	EX3DV4	7483	12/12/2018
E-Field Probe (SAR Lab 1)	SPEAG	EX3DV4	7448	4/16/2019
E-Field Probe (SAR Lab 3)	SPEAG	EX3DV4	7335	3/16/2019
E-Field Probe (SAR Lab 4)	SPEAG	EX3DV4	3871	8/23/2018
Data Acquisition Electronics (SAR Lab A)	SPEAG	DAE4	1540	2/23/2019
Data Acquisition Electronics (SAR Lab B)	SPEAG	DAE4	1352	11/8/2018
Data Acquisition Electronics (SAR Lab C)	SPEAG	DAE4	1472	3/8/2019
Data Acquisition Electronics (SAR Lab D)	SPEAG	DAE4	1433	3/7/2019
Data Acquisition Electronics (SAR Lab E)	SPEAG	DAE4	1259	1/10/2019
Data Acquisition Electronics (SAR Lab E)	SPEAG	DAE4	1548	5/3/2019
Data Acquisition Electronics (SAR Lab F)	SPEAG	DAE4	1377	10/11/2018
Data Acquisition Electronics (SAR Lab G)	SPEAG	DAE4	1377	10/11/2018
Data Acquisition Electronics (SAR Lab G)	SPEAG	DAE4	1359	2/9/2019
Data Acquisition Electronics (SAR Lab H)	SPEAG	DAE4	1257	10/11/2018
Data Acquisition Electronics (SAR Lab 1)	SPEAG	DAE4	1544	4/12/2019
Data Acquisition Electronics (SAR Lab 3)	SPEAG	DAE4	1434	5/11/2019
Data Acquisition Electronics (SAR Lab 4)	SPEAG	DAE4	1343	8/21/2018
System Validation Dipole	SPEAG	D750V3	1071	11/21/2018
System Validation Dipole	SPEAG	D835V2	4d002	11/21/2018
System Validation Dipole	SPEAG	D835V2	4d142	10/12/2018
System Validation Dipole	SPEAG	D1750V2	1053	8/24/2018
System Validation Dipole	SPEAG	D1750V2	1077	10/5/2018
System Validation Dipole	SPEAG	D1900V2	5d163	10/5/2018
System Validation Dipole	SPEAG	D1900V2	5d140	4/11/2019
System Validation Dipole	SPEAG	D2300V2	1002	3/16/2019
System Validation Dipole	SPEAG	D2300V2	1058	8/31/2018
System Validation Dipole	SPEAG	D2450V2	706	5/18/2019
System Validation Dipole	SPEAG	D2450V2	748	2/14/2019
System Validation Dipole	SPEAG	D2600V2	1006	10/5/2018
System Validation Dipole	SPEAG	D2600V2	1036	3/16/2019
System Validation Dipole	SPEAG	D5GHzV2	1003	3/13/2019
System Validation Dipole	SPEAG	D5GHzV2	1138	10/26/2018

Other

Name of Equipment	Manufacturer	Type/Model	T Number	Serial No.	Cal. Due Date
Power Meter	Agilent	N1912A	T733	MY50001018	10/17/2018
Power Sensor	Agilent	N1921A	T309	MY52270022	12/28/2018
DC Power Supply	HP	6296A	N/A	2841A-05955	N/A
Base station Simulator	R&S	CMW500	T978	137877	2/19/2019
Base station Simulator	R&S	CMW500	T960	135384	2/20/2019
Base station Simulator	R&S	CMW500	T948	135393	2/17/2019
Base station Simulator	R&S	CMW500	T958	134855	2/15/2019
Base station Simulator	R&S	CMW500	T259	124594	2/21/2019
Base station Simulator	R&S	CMW500	T1526	147543	2/17/2019
Base station Simulator	R&S	CMW500	T964	134853	2/16/2019
Base station Simulator	R&S	CMW500	T268	124593	2/22/2019
Base station Simulator	R&S	CMW500	T953	135390	2/16/2019
Base station Simulator	R&S	CMW500	T959	137873	2/17/2019
Base station Simulator	R&S	CMW500	T919	125236	2/21/2019

5. Measurement Uncertainty

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be $\leq 30\%$, for a confidence interval of $k = 2$. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval.

Therefore, the measurement uncertainty is not required.

6. Device Under Test (DUT) Information

6.1. DUT Description

The Apple iPhone, is a smartphone with multimedia functions (music, application support, and video), cellular GSM, GPRS, EGPRS, UMTS, LTE, TD-SCDMA, CDMA, IEEE 802.11a/b/g/n/ac, Bluetooth, GPS and NFC. All models support at least one UICC based SIM. The second SIM is either UICC based, electronic SIM (e-SIM), or second SIM is not present. The device has a built-in inductive charging receiver which is not user accessible. The rechargeable battery is not user accessible.

This device has Four WWAN antennas (ANT1 , ANT2, ANT3, and ANT 4) as well as multiple Wi-Fi/Bluetooth antennas (ANT3 and ANT4 for Wi-Fi/BT 2.4GHz, ANT5 and ANT6 for Wi-Fi 5GHz).

The device utilizes two power modes: Mode A and Mode B. Power selection is determined by the device's positioning and use case as described in Sec. 10. Mode A power is used when the device is used against the user's head, or away from the body. Mode B is used when the device is used in a body-worn configuration by the user.

The WWAN transmit antenna switching mechanism between WWAN antennas is implemented with a physical "break-before-make" switch so that only one antenna can be used for WWAN transmission at one time.

In Airplay mode, the device uses same power and power control mechanism as Wi-Fi. Airplay is not supported in hotspot mode. Airplay utilize the same 802.11 modes, modulation, MIMO, Channel Bandwidth, etc. as Wi-Fi does. Therefore Airplay usage is categorized by the Wi-Fi SAR testing contained in Section 10.

There are two vendors of the Wi-Fi/Bluetooth radio modules: variant 1 and variant 2. The Wi-Fi/BT radio modules have the same mechanical outline (e.g., the same package dimension and pin-out layout), use the same on-board antenna matching circuit, have an identical antenna structure, and are built and tested to conform to the same specifications and to operate within the same tolerances. It is confirmed that Variant 1 represents the worst case.

Device Dimension	Overall (Length x Width): 156.6 mm x 77.5 mm Overall Diagonal: 175.26 mm (6.9 inch) Display Diagonal: 165.1 mm (6.5 inch)
Back Cover	The Back Cover is not removable
Battery Options	The rechargeable battery is not user accessible.
Accessory	Headset
Wireless Router (Hotspot)	Wi-Fi Hotspot mode permits the device to share its WWAN data connection with other Wi-Fi-enabled devices. ☒ Mobile Hotspot (Wi-Fi 2.4 GHz) ☐ Mobile Hotspot (Wi-Fi 5 GHz)
AirPlay	AirPlay mode enabled devices transfer data directly between each other ☒ AirPlay (Wi-Fi 2.4 GHz) ☒ AirPlay (Wi-Fi 5 GHz)
Bluetooth Tethering	BT Tethering mode permits the device to share its cellular data connection with other devices. ☒ BT Tethering (Bluetooth 2.4 GHz)

6.2. Wireless Technologies

Wireless technologies	Frequency bands	Operating mode		Duty Cycle used for SAR testing
GSM	850 1900	Voice (GMSK) GPRS (GMSK) EDGE (8PSK)	GSM Class : B Multi-Slot Class: Class 10 - 2 Up, 4 Down	GSM Voice: 12.5% (E)GPRS: 1 Slot: 12.5% 2 Slots: 25%
Does this device support DTM (Dual Transfer Mode)? ☐ Yes ☒ No				
CDMA (CDMA2000)	BC0 BC1 BC10	1xRTT (Voice & Data) 1xEV-DO Rel. 0 1xEV-DO Rev. A 1xAdvanced		100%
Does this device support SV-DO (1xRTT-1xEVDO)? ☐ Yes ☒ No				
W-CDMA (UMTS)	Band 2 Band 4 Band 5	UMTS Rel. 99 (Voice & Data) HSDPA (Rel. 5) HSUPA (Rel. 6) HSPA+ (Rel. 7) DC-HSDPA (Rel. 9)		100%
LTE ⁴	FDD Band 2 FDD Band 4 FDD Band 5 FDD Band 7 FDD Band 12 FDD Band 13 FDD Band 14 FDD Band 17 FDD Band 25 FDD Band 26 FDD Band 29 (DL Only) FDD Band 30 TDD Band 41 ² TDD Band 46 (DL Only) FDD Band 66 Carrier Aggregation ³ FDD Band 7_2CC TDD Band 41_2CC	QPSK 16QAM 64AQM Carrier Aggregation (2 Uplinks and 4 Downlinks)		100% (FDD) 63.3% (TDD) Power Class 3 43.3% (TDD) Power Class 2 Refer to §6.4
Does this device support SV-LTE (1xRTT-LTE)? ☐ Yes ☒ No				
Wi-Fi	2.4 GHz ¹	802.11b 802.11g 802.11n (HT20)		99.92% (802.11b) 98.87% (802.11g/n 20MHz BW)
	5 GHz ¹	802.11a 802.11n (HT20) 802.11n (HT40) 802.11ac (VHT20) 802.11ac (VHT40) 802.11ac (VHT80)		98.92% (802.11a/n/ac 20MHz BW) 97.84% (802.11n/ac 40MHz BW) 95.44% (802.11n/ac 80MHz BW)
	Does this device support bands 5.60 ~ 5.65 GHz? ☒ Yes ☐ No			
	Does this device support Band gap channel(s)? ☒ Yes ☐ No			
Bluetooth	2.4 GHz	Version 5.0 LE		100%

Note(s):

1. Duty cycle for Wi-Fi and BT is referenced from the DTS and U-NII and BT reports.
2. This device supports Power Class 2 and Power Class 3 for LTE Band 41.
3. LTE Uplink 2CA is the total combined power of the UL CA.
4. LTE Uplink Cat 13, LTE 3GPP Rel-13 (LTE 3GPP Rel-14 for B41 PC2)

6.3. General LTE SAR Test and Reporting Considerations

Item	Description						
Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 2	Frequency range: 1850 - 1910 MHz (BW = 60 MHz)					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	18700 /1860	18675/ 1857.5	18650/ 1855	18625/ 1852.5	18615/ 1851.5	18607/ 1850.7
	Mid	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880
	High	19100/ 1900	19125/ 1902.5	19150/ 1905	19175/ 1907.5	19185/ 1908.5	19193/ 1909.3
	Band 4	Frequency range: 1710 - 1755 MHz (BW = 45 MHz)					
		Channel Bandwidth					
		20 MHz ²	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	20050/ 1720	20025/ 1717.5	20000/ 1715	19975/ 1712.5	19965/ 1711.5	19957/ 1710.7
	Mid	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5
	High	20300/ 1745	20325/ 1747.5	20350/ 1750	20375/ 1752.5	20385/ 1753.5	20393/ 1754.3
	Band 5	Frequency range: 824 - 849 MHz (BW = 25 MHz)					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz ²	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 7	Frequency range: 2500 - 2570 MHz (BW = 70 MHz)					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	20850 2510	20825 2507.5	20800 2505	20775 2502.5		
	Mid	21100 2535	21100 2535	21100 2535	21100 2535		
	High	21350 2560	21375 2562.5	21400 2565	21425 2567.5		
	Band 12	Frequency range: 699 – 716 MHz (BW = 17 MHz)					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz ²	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 13	Frequency range: 777 - 787 MHz (BW = 10 MHz)					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz ²	5 MHz ²	3 MHz	1.4 MHz
	Low				23205/ 779.5		
	Mid			23230/ 782	23230/ 782		
	High				23255/ 784.5		

General LTE SAR Test and Reporting Considerations (Continued)

Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 14	Frequency range: 788 - 798 MHz (BW = 10 MHz)					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz ²	5 MHz ²	3 MHz	1.4 MHz
	Low				23305/ 790.5		
	Mid			23330/ 793	23330/ 793		
	High				23355/ 795.5		
	Band 17	Frequency range: 704 - 716 MHz (BW = 12 MHz)					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz ²	5 MHz ²	3 MHz	1.4 MHz
	Low			23780/ 709	23755/ 706.5		
	Mid			23790/ 710	23790/ 710		
	High			23800/ 711	23825/ 713.5		
	Band 25	Frequency range: 1850 - 1915 MHz (BW = 65 MHz)					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	26140/ 1860	26115/ 1857.5	26090/ 1855	26065/ 1852.5	26055/ 1851.5	26047/ 1850.7
	Mid	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5
	High	26590/ 1905	26615/ 1907.5	26640/ 1910	26665/ 1912.5	26675/ 1913.5	26683/ 1914.3
	Band 26	Frequency range: 814 - 849 MHz (BW = 35 MHz)					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			26740/ 819	26715/ 816.5	26705/ 815.5	26697/ 814.7
	Mid			26865/ 831.5	26865/ 831.5	26865/ 831.5	26865/ 831.5
	High			26990/ 844	27015/ 846.5	27025/ 847.5	27033/ 848.3
	Band 30	Frequency range: 2305 - 2315 MHz (BW = 10 MHz)					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz ²	5 MHz	3 MHz	1.4 MHz
	Low				27685/ 2307.5		
	Mid			27710/ 2310	27710/ 2310		
	High				27735/ 2312.5		
	Band 41 ¹	Frequency range: 2496 - 2690 MHz (BW = 194 MHz)					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Low	39750 / 2506.0				
		Low-Mid	40185 / 2549.5				
		Mid	40620 / 2593.0				
		Mid-High	41055 / 2636.5				
		High	41490 / 2680.0				

General LTE SAR Test and Reporting Considerations (Continued)

Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 66	Frequency range: 1710 - 1780 MHz (BW = 70 MHz)																																																																		
		Channel Bandwidth																																																																		
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz																																																													
	Low	132072/ 1720	132047/ 1717.5	132022/ 1715	131997/ 1712.5	131987/ 1711.5	131979/ 1710.7																																																													
	Mid	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745																																																													
High	132572/ 1770	132597/ 1772.5	132622/ 1775	132647/ 1777.5	132657/ 1778.5	132665/ 1779.3																																																														
LTE transmitter and antenna implementation	LTE can transmit from either ANT1, ANT2, ANT3, and ANT4. Then antenna switching is implemented with a physical, "break-before-make" switch such that only one antenna can be used for LTE transmission at a time.																																																																			
Maximum power reduction (MPR)	Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3 <table><tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{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>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr><tr><td>256 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr><tr><td>256 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr><tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr></table> MPR Built-in by design. The manufacturer MPR values are always within the 3GPP maximum MPR allowance but may not follow the default MPR values. A-MPR (additional MPR) was disabled during SAR testing						Modulation	Channel bandwidth / Transmission bandwidth (N _{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	64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2	256 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2	256 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3	256 QAM	≥ 1						≤ 5
Modulation	Channel bandwidth / Transmission bandwidth (N _{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																																																													
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2																																																													
256 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2																																																													
256 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3																																																													
256 QAM	≥ 1						≤ 5																																																													
Spectrum plots for RB configurations	A properly configured base station simulator was used for the SAR and power measurements; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.																																																																			

Note(s):

1. LTE band 41 test channels in accordance with October 2014 TCB workshop for all channels bandwidths.
2. Maximum bandwidth does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE Devices.
3. SAR Testing for LTE was performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

6.4. LTE (TDD) Considerations

According to KDB 941225 D05 SAR for LTE Devices, for Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

LTE TDD Bands support 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$(1+X) \cdot 2192 \cdot T_s$	$(1+X) \cdot 2560 \cdot T_s$	$7680 \cdot T_s$	$(1+X) \cdot 2192 \cdot T_s$	$(1+X) \cdot 2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$	$(2+X) \cdot 2192 \cdot T_s$	$(2+X) \cdot 2560 \cdot T_s$	$7680 \cdot T_s$	$(2+X) \cdot 2192 \cdot T_s$	$(2+X) \cdot 2560 \cdot T_s$
5	$6592 \cdot T_s$			$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$	$13152 \cdot T_s$	$12800 \cdot T_s$	-	-	-
9	$13168 \cdot T_s$			-	-	-
10	$13168 \cdot T_s$			-	-	-

Table 4.2-2: Uplink-downlink configurations & Calculated Duty Cycle

Uplink-Downlink Configuration	Downlink-to-Uplink Switch-point Periodicity	Subframe Number										Calculated Duty Cycle (%)
		0	1	2	3	4	5	6	7	8	9	
0	5 ms	D	S	U	U	U	D	S	U	U	U	63.3%
1	5 ms	D	S	U	U	D	D	S	U	U	D	43.3%
2	5 ms	D	S	U	D	D	D	S	U	D	D	23.3%
3	10 ms	D	S	U	U	U	D	D	D	D	D	31.7%
4	10 ms	D	S	U	U	D	D	D	D	D	D	21.7%
5	10 ms	D	S	U	D	D	D	D	D	D	D	11.7%
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.3%

Calculated Duty Cycle = Extended cyclic prefix in uplink * (T_s) * # of S + # of U / period

Note(s):

This device supports uplink-downlink configurations 0-6. The configuration with highest duty cycle was used for SAR Testing: configuration 0 at 63.3%(Power Class 3) and configuration 1 at 43.3%(Power Class 2) duty cycle.

7. RF Exposure Conditions (Test Configurations)

This device has a total of 6 antennas. From Front of the device, antennas and supported frequencies are described and located as follows:

ANT1 (support all WWAN frequency bands) - located at lower right corner of the device.

ANT2 (support WWAN frequencies 663 MHz to 2700 MHz) - located at upper left corner of the device.

ANT3 (support WWAN frequencies 1700 MHz to 2700 MHz and Wi-Fi 2.4 GHz and Bluetooth) – located at lower left corner of the device. CDMA BC1 is not supported for this antenna.

ANT4 (support WWAN frequencies 1700 MHz to 2700 MHz and Wi-Fi 2.4 GHz and Bluetooth) – located at upper right corner of the device. CDMA BC1 is not supported for this antenna.

ANT5 (support Wi-Fi 5GHz Bands) – located at lower left corner of the device.

ANT6 (support Wi-Fi 5GHz Bands) – located at upper left corner of the device.

Refer to separate filing submission document for the proprietary design details of the antenna-to-antenna and antenna-to-edge(s) distances.

The Body-worn accessory test configurations were tested using a conservative minimum test separation distance of 5 mm.

Lower Antenna

Wireless technologies	RF Exposure Conditions	DUT-to-User Separation	Test Position	Antenna-to-edge/surface	SAR Required	Note
WWAN (ANT1)	Head	0 mm	Left Touch	N/A	Yes	
			Left Tilt (15°)	N/A	Yes	
			Right Touch	N/A	Yes	
			Right Tilt (15°)	N/A	Yes	
	Body/Hotspot	5 mm	Rear	< 25 mm	Yes	2
			Front	< 25 mm	Yes	2
	Hotspot	5 mm	Edge 1 (Top)	> 25 mm	No	1
			Edge 2 (Right)	< 25 mm	Yes	
			Edge 3 (Bottom)	< 25 mm	Yes	
			Edge 4 (Left)	< 25 mm	Yes	
WWAN and Wi-Fi 2.4 GHz and Bluetooth (ANT3)	Head	0 mm	Left Touch	N/A	Yes	
			Left Tilt (15°)	N/A	Yes	
			Right Touch	N/A	Yes	
			Right Tilt (15°)	N/A	Yes	
	Body/Hotspot	5 mm	Rear	< 25 mm	Yes	2
			Front	< 25 mm	Yes	2
	Hotspot	5 mm	Edge 1 (Top)	> 25 mm	No	1
			Edge 2 (Right)	> 25 mm	No	1
			Edge 3 (Bottom)	< 25 mm	Yes	
			Edge 4 (Left)	< 25 mm	Yes	
Wi-Fi 5 GHz (ANT5)	Head	0 mm	Left Touch	N/A	Yes	
			Left Tilt (15°)	N/A	Yes	
			Right Touch	N/A	Yes	
			Right Tilt (15°)	N/A	Yes	
	Body/Airplay	5 mm	Rear	< 25 mm	Yes	2
			Front	< 25 mm	Yes	2
	Airplay	5 mm	Edge 1 (Top)	> 25 mm	No	1
			Edge 2 (Right)	> 25 mm	No	1
			Edge 3 (Bottom)	< 25 mm	Yes	
			Edge 4 (Left)	< 25 mm	Yes	

Note(s):

- SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hotspot Mode.
- The Body-worn minimum separation distance is 5 mm. To cover both body-worn and hotspot RF exposure conditions testing was performed at a separation distance of 5 mm.

Upper Antenna

Wireless technologies	RF Exposure Conditions	DUT-to-User Separation	Test Position	Antenna-to-edge/surface	SAR Required	Note
WWAN (ANT2)	Head	0 mm	Left Touch	N/A	Yes	
			Left Tilt (15°)	N/A	Yes	
			Right Touch	N/A	Yes	
			Right Tilt (15°)	N/A	Yes	
	Body/Hotspot	5 mm	Rear	< 25 mm	Yes	2
			Front	< 25 mm	Yes	2
	Hotspot	5 mm	Edge 1 (Top)	< 25 mm	Yes	
			Edge 2 (Right)	< 25 mm	Yes	
			Edge 3 (Bottom)	> 25 mm	No	1
			Edge 4 (Left)	< 25 mm	Yes	
WWAN and Wi-Fi 2.4 GHz and Bluetooth (ANT4)	Head	0 mm	Left Touch	N/A	Yes	
			Left Tilt (15°)	N/A	Yes	
			Right Touch	N/A	Yes	
			Right Tilt (15°)	N/A	Yes	
	Body/Hotspot	5 mm	Rear	< 25 mm	Yes	2
			Front	< 25 mm	Yes	2
	Hotspot	5 mm	Edge 1 (Top)	< 25 mm	Yes	
			Edge 2 (Right)	< 25 mm	Yes	
			Edge 3 (Bottom)	> 25 mm	No	1
			Edge 4 (Left)	> 25 mm	No	1
Wi-Fi 5 GHz (ANT6)	Head	0 mm	Left Touch	N/A	Yes	
			Left Tilt (15°)	N/A	Yes	
			Right Touch	N/A	Yes	
			Right Tilt (15°)	N/A	Yes	
	Body/Airplay	5 mm	Rear	< 25 mm	Yes	2
			Front	< 25 mm	Yes	2
	Airplay	5 mm	Edge 1 (Top)	< 25 mm	Yes	
			Edge 2 (Right)	> 25 mm	No	1
			Edge 3 (Bottom)	> 25 mm	No	1
			Edge 4 (Left)	< 25 mm	Yes	

Note(s):

1. SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR.
2. The Body-worn minimum separation distance is 5 mm. To cover both body-worn and hotspot RF exposure conditions testing was performed at a separation distance of 5 mm.

8. Dielectric Property Measurements & System Check

8.1. Dielectric Property Measurements

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within $\pm 2^\circ\text{C}$ 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.

The dielectric constant (ϵ_r) and conductivity (σ) of typical tissue-equivalent media recipes are expected to be within $\pm 5\%$ of the required target values; but for SAR measurement systems that have implemented the SAR error compensation algorithms documented in IEEE Std 1528-2013, to automatically compensate the measured SAR results for deviations between the measured and required tissue dielectric parameters, the tolerance for ϵ_r and σ may be relaxed to $\pm 10\%$. This is limited to frequencies $\leq 3\text{ GHz}$.

Tissue Dielectric Parameters

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

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

IEEE Std 1528-2013

Refer to Table 3 within the IEEE Std 1528-2013

Dielectric Property Measurements Results:

SAR Lab	Date	Band (MHz)	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
					Measured	Target	Delta (%)	Measured	Target	Delta (%)
A	6/27/2018	2600	Head	2600	39.10	39.01	0.23	2.03	1.96	3.36
				2495	39.43	39.14	0.73	1.92	1.85	3.70
				2690	38.77	38.90	-0.33	2.13	2.06	3.43
A	7/1/2018	2600	Head	2600	37.35	39.01	-4.26	2.05	1.96	4.48
				2495	37.71	39.14	-3.66	1.94	1.85	4.67
				2690	36.96	38.90	-4.98	2.14	2.06	3.81
A	7/5/2018	2600	Head	2600	39.95	39.01	2.41	1.89	1.96	-3.83
				2495	40.23	39.14	2.78	1.79	1.85	-3.39
				2690	39.65	38.90	1.94	1.99	2.06	-3.52
A	7/8/2018	2600	Body	2600	50.68	52.51	-3.49	2.22	2.16	2.69
				2495	51.07	52.64	-2.99	2.09	2.01	3.76
				2690	50.43	52.40	-3.75	2.32	2.29	1.60
A	7/11/2018	2600	Head	2600	37.42	39.01	-4.08	2.03	1.96	3.30
				2495	37.78	39.14	-3.48	1.91	1.85	3.37
				2690	37.05	38.90	-4.75	2.12	2.06	2.94
A	7/13/2018	2600	Body	2600	50.84	52.51	-3.18	2.14	2.16	-0.78
				2495	51.17	52.64	-2.80	2.02	2.01	0.53
				2690	50.56	52.40	-3.51	2.26	2.29	-1.32
A	7/21/2018	2600	Body	2600	50.41	52.51	-4.00	2.16	2.16	-0.22
				2495	50.79	52.64	-3.52	2.03	2.01	0.88
				2690	50.12	52.40	-4.35	2.27	2.29	-0.93
A	7/21/2018	2600	Head	2600	37.73	39.01	-3.28	1.97	1.96	0.20
				2495	38.12	39.14	-2.61	1.84	1.85	-0.31
				2690	37.38	38.90	-3.90	2.06	2.06	-0.12
A	7/25/2018	2600	Body	2600	50.82	52.51	-3.22	2.15	2.16	-0.32
				2495	51.14	52.64	-2.86	2.03	2.01	0.73
				2690	50.52	52.40	-3.58	2.25	2.29	-1.67
A	7/29/2018	2600	Head	2600	39.79	39.01	2.00	1.99	1.96	1.52
				2495	40.09	39.14	2.42	1.87	1.85	1.26
				2690	39.49	38.90	1.52	2.09	2.06	1.53

SAR Lab	Date	Band (MHz)	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
					Measured	Target	Delta (%)	Measured	Target	Delta (%)
B	6/27/2018	1750	Head	1750	40.75	40.08	1.66	1.41	1.37	2.85
				1710	40.77	40.15	1.55	1.39	1.35	3.39
				1755	40.72	40.08	1.60	1.41	1.37	3.08
B	6/30/2018	1750	Body	1750	51.18	53.44	-4.23	1.53	1.49	2.68
				1710	51.30	53.54	-4.19	1.48	1.46	1.40
				1755	51.19	53.43	-4.19	1.53	1.49	2.54
B	7/1/2018	1750	Head	1750	40.94	40.08	2.13	1.40	1.37	2.41
				1710	41.01	40.15	2.15	1.38	1.35	2.20
				1755	40.95	40.08	2.18	1.40	1.37	2.20
B	7/5/2018	1750	Body	1750	51.55	53.44	-3.54	1.56	1.49	4.90
				1710	51.71	53.54	-3.42	1.51	1.46	3.52
				1755	55.43	53.43	-3.52	1.56	1.49	4.95
B	7/6/2018	1900	Body	1900	55.52	53.30	4.17	1.52	1.52	0.07
				1850	55.65	53.30	4.41	1.46	1.52	-3.68
				1920	55.54	53.30	4.20	1.54	1.52	1.32
B	7/9/2018	1750	Body	1750	54.08	53.44	1.20	1.47	1.49	-0.95
				1710	54.17	53.54	1.17	1.43	1.46	-2.02
				1755	54.07	53.43	1.20	1.47	1.49	-1.02
B	7/9/2018	1750	Head	1750	38.15	40.08	-4.83	1.42	1.37	3.87
				1710	38.33	40.15	-4.52	1.41	1.35	4.65
				1755	38.13	40.08	-4.86	1.42	1.37	3.59
B	7/13/2018	1750	Body	1750	54.91	53.44	2.75	1.47	1.49	-0.89
				1710	54.98	53.54	2.68	1.43	1.46	-2.50
				1755	54.86	53.43	2.68	1.48	1.49	-0.69
B	7/13/2018	1750	Head	1750	38.80	40.08	-3.20	1.35	1.37	-1.09
				1710	38.86	40.15	-3.20	1.32	1.35	-1.66
				1755	38.80	40.08	-3.19	1.36	1.37	-0.86
B	7/13/2018	2600	Head	2600	39.16	39.01	0.38	1.95	1.96	-0.62
				2495	39.35	39.14	0.53	1.87	1.85	1.05
				2690	38.99	38.90	0.24	2.02	2.06	-1.77
B	7/17/2018	1750	Body	1750	52.94	53.44	-0.94	1.49	1.49	0.19
				1710	53.11	53.54	-0.81	1.45	1.46	-0.65
				1755	52.97	53.43	-0.86	1.49	1.49	0.32
B	7/24/2018	2600	Body	2600	51.69	52.51	-1.56	2.23	2.16	3.02
				2495	51.96	52.64	-1.30	2.11	2.01	4.56
				2690	51.49	52.40	-1.73	2.35	2.29	2.65
B	7/28/2018	2600	Head	2600	37.96	39.01	-2.69	1.98	1.93	1.01
				2495	38.14	39.14	-2.56	1.90	1.85	2.78
				2690	37.78	38.90	-2.87	2.06	2.06	-0.12
B	7/29/2018	2600	Body	2600	50.43	52.51	-3.96	2.23	2.16	3.11
				2495	50.79	52.64	-3.52	2.10	2.01	4.41
				2690	50.10	52.40	-4.38	2.33	2.29	1.95
B	8/1/2018	2450	Body	2450	50.32	52.70	-4.52	2.01	1.95	3.18
				2400	50.46	52.77	-4.38	1.95	1.90	2.95
				2480	50.18	52.66	-4.71	2.05	1.99	2.70

SAR Lab	Date	Band (MHz)	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
					Measured	Target	Delta (%)	Measured	Target	Delta (%)
C	6/27/2018	1900	Head	1900	38.93	40.00	-2.68	1.43	1.40	2.21
				1850	39.02	40.00	-2.45	1.41	1.40	0.50
				1920	38.95	40.00	-2.62	1.45	1.40	3.29
C	7/1/2018	1900	Head	1900	38.87	40.00	-2.83	1.43	1.40	2.29
				1850	39.00	40.00	-2.50	1.40	1.40	-0.21
				1920	38.85	40.00	-2.88	1.44	1.40	2.93
C	7/2/2018	1900	Body	1900	52.50	53.30	-1.50	1.51	1.52	-0.92
				1850	52.63	53.30	-1.26	1.45	1.52	-4.67
				1920	52.42	53.30	-1.65	1.53	1.52	0.33
C	7/6/2018	1900	Head	1900	40.54	40.00	1.35	1.40	1.40	-0.14
				1850	40.48	40.00	1.20	1.37	1.40	-2.21
				1920	40.58	40.00	1.45	1.40	1.40	0.07
C	7/6/2018	1900	Body	1900	51.40	53.30	-3.56	1.56	1.52	2.70
				1850	51.62	53.30	-3.15	1.50	1.52	-1.45
				1920	51.37	53.30	-3.62	1.59	1.52	4.47
C	7/12/2018	1900	Head	1900	40.12	40.00	0.30	1.41	1.40	0.57
				1850	40.25	40.00	0.63	1.39	1.40	-0.86
				1920	40.10	40.00	0.25	1.42	1.40	1.57
C	7/12/2018	1900	Body	1900	52.53	53.30	-1.44	1.55	1.52	2.11
				1850	52.76	53.30	-1.01	1.49	1.52	-1.78
				1920	52.52	53.30	-1.46	1.58	1.52	4.01
C	7/21/2018	1900	Body	1900	51.07	53.30	-4.18	1.56	1.52	2.57
				1850	51.17	53.30	-4.00	1.51	1.52	-0.92
				1920	50.96	53.30	-4.39	1.58	1.52	4.01
C	7/21/2018	1900	Head	1900	40.18	40.00	0.45	1.44	1.40	2.93
				1850	40.21	40.00	0.53	1.40	1.40	0.29
				1920	40.14	40.00	0.35	1.45	1.40	3.43
C	7/24/2018	2600	Head	2600	38.09	39.01	-2.36	1.96	1.96	-0.31
				2495	38.26	39.14	-2.26	1.87	1.85	1.21
				2690	37.99	38.90	-2.33	2.03	2.06	-1.48
D	6/27/2018	2300	Head	2300	38.08	39.47	-3.53	1.72	1.66	3.20
				2350	37.87	39.38	-3.85	1.78	1.71	4.00
				2400	37.75	39.30	-3.94	1.84	1.75	4.82
D	6/27/2018	2600	Head	2600	37.35	39.01	-4.26	2.04	1.96	3.92
				2495	37.74	39.14	-3.58	1.93	1.85	4.45
				2690	36.99	38.90	-4.90	2.14	2.06	3.77
D	7/1/2018	2300	Head	2300	39.38	39.47	-0.23	1.71	1.66	2.78
				2350	39.21	39.38	-0.44	1.76	1.71	3.24
				2400	39.01	39.30	-0.73	1.82	1.75	3.85
D	7/1/2018	2600	Head	2600	38.32	39.01	-1.77	2.04	1.96	4.17
				2495	38.70	39.14	-1.13	1.93	1.85	4.29
				2690	37.99	38.90	-2.33	2.13	2.06	3.57

SAR Lab	Date	Band (MHz)	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
					Measured	Target	Delta (%)	Measured	Target	Delta (%)
D	7/2/2018	2300	Body	2300	52.30	52.90	-1.14	1.83	1.80	1.52
				2350	52.17	52.84	-1.27	1.88	1.85	1.53
				2400	52.07	52.77	-1.33	1.93	1.90	1.90
D	7/5/2018	2300	Body	2300	53.09	52.90	0.35	1.81	1.80	0.58
				2350	52.99	52.84	0.29	1.86	1.85	0.55
				2400	52.77	52.77	0.00	1.91	1.90	0.53
D	7/5/2018	2600	Body	2600	52.40	52.51	-0.21	2.11	2.16	-2.21
				2495	52.64	52.64	-0.01	2.00	2.01	-0.81
				2690	52.09	52.40	-0.59	2.22	2.29	-3.12
D	7/9/2018	2300	Body	2300	51.50	52.90	-2.65	1.86	1.80	3.19
				2350	51.29	52.84	-2.93	1.92	1.85	3.47
				2400	51.15	52.77	-3.07	1.96	1.90	3.42
D	7/9/2018	2600	Body	2600	50.46	52.51	-3.91	2.23	2.16	3.39
				2495	50.84	52.64	-3.43	2.11	2.01	4.76
				2690	50.17	52.40	-4.25	2.35	2.29	2.52
D	7/13/2018	2300	Body	2300	51.50	52.90	-2.65	1.86	1.80	3.19
				2350	51.34	52.84	-2.84	1.92	1.85	3.52
				2400	51.22	52.77	-2.94	1.97	1.90	4.00
D	7/13/2018	2600	Body	2600	50.60	52.51	-3.64	2.20	2.16	1.86
				2495	50.93	52.64	-3.25	2.07	2.01	3.02
				2690	50.29	52.40	-4.02	2.30	2.29	0.56
D	7/20/2018	2300	Body	2300	51.20	52.90	-3.22	1.86	1.80	2.91
				2350	51.03	52.84	-3.42	1.92	1.85	3.47
				2400	50.94	52.77	-3.47	1.97	1.90	3.74
D	7/20/2018	2300	Head	2300	38.99	39.47	-1.22	1.73	1.66	3.80
				2350	38.77	39.38	-1.56	1.78	1.71	4.41
				2400	38.61	39.30	-1.75	1.84	1.75	4.76
D	7/24/2018	2600	Body	2600	52.56	52.51	0.09	2.14	2.16	-0.78
				2495	52.83	52.64	0.35	2.02	2.01	0.29
				2690	52.35	52.40	-0.09	2.25	2.29	-1.46
D	7/25/2018	2300	Body	2300	50.57	52.90	-4.41	1.86	1.80	3.13
				2350	50.41	52.84	-4.60	1.86	1.85	0.50
				2400	50.25	52.77	-4.78	1.97	1.90	3.79
D	7/25/2018	2300	Head	2300	38.06	39.47	-3.58	1.71	1.66	2.60
				2350	37.83	39.38	-3.95	1.76	1.71	3.06
				2400	37.67	39.30	-4.14	1.81	1.75	3.39
D	8/1/2018	2450	Body	2450	50.27	52.70	-4.61	2.02	1.95	3.38
				2400	50.42	52.77	-4.46	1.95	1.90	2.90
				2480	50.17	52.66	-4.73	2.05	1.99	3.10

SAR Lab	Date	Band (MHz)	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
					Measured	Target	Delta (%)	Measured	Target	Delta (%)
E	6/28/2018	5750	Head	5750	35.95	35.36	1.66	5.31	5.21	1.79
				5700	36.03	35.42	1.72	5.28	5.16	2.24
				5850	35.87	35.30	1.61	5.43	5.27	2.94
E	6/30/2018	5800	Body	5800	46.28	48.20	-3.98	6.19	6.00	3.17
				5700	46.59	48.34	-3.62	6.08	5.88	3.51
				5850	46.27	48.20	-4.00	6.28	6.00	4.65
E	7/2/2018	5750	Head	5750	33.96	35.36	-3.97	5.25	5.21	0.62
				5700	34.04	35.42	-3.90	5.20	5.16	0.74
				5850	33.79	35.30	-4.28	5.31	5.27	0.74
E	7/5/2018	5800	Body	5800	48.35	48.20	0.31	6.08	6.00	1.32
				5700	48.37	48.34	0.06	5.98	5.88	1.66
				5850	48.34	48.20	0.29	6.22	6.00	3.58
E	7/6/2018	5800	Head	5800	35.60	35.30	0.85	5.02	5.27	-4.76
				5700	35.80	35.42	1.07	4.95	5.16	-4.19
				5850	35.69	35.30	1.10	5.09	5.27	-3.42
E	7/8/2018	5200	Body	5200	48.75	49.02	-0.55	5.14	5.29	-2.85
				5150	48.93	49.09	-0.32	5.09	5.24	-2.87
				5350	48.56	48.82	-0.53	5.35	5.47	-2.13
E	7/9/2018	5200	Head	5200	37.42	35.99	3.97	4.47	4.65	-3.85
				5150	37.52	36.05	4.09	4.41	4.60	-4.17
				5350	37.28	35.82	4.08	4.61	4.80	-4.05
E	7/20/2018	5750	Body	5750	47.64	48.27	-1.31	6.01	5.94	1.23
				5700	47.94	48.34	-0.83	5.99	5.88	1.96
				5850	47.62	48.20	-1.20	6.14	6.00	2.40
E	7/20/2018	5750	Head	5750	34.07	35.36	-3.66	4.99	5.21	-4.35
				5700	34.23	35.42	-3.36	4.98	5.16	-3.54
				5850	33.96	35.30	-3.80	5.09	5.27	-3.51
E	7/24/2018	5750	Head	5750	34.80	35.36	-1.59	5.20	5.21	-0.21
				5700	34.88	35.42	-1.52	5.16	5.16	-0.07
				5850	34.73	35.30	-1.61	5.35	5.27	1.44
E	7/24/2018	5750	Body	5750	48.36	48.27	0.18	5.99	5.94	0.84
				5700	48.55	48.34	0.43	5.91	5.88	0.55
				5850	48.29	48.20	0.19	6.16	6.00	2.60
E	7/27/2018	5200	Head	5200	34.78	35.99	-3.36	4.51	4.65	-3.12
				5150	34.81	36.05	-3.43	4.47	4.60	-2.80
				5350	34.52	35.82	-3.63	4.64	4.80	-3.44
E	7/28/2018	5250	Body	5250	48.90	48.95	-0.11	5.56	5.35	3.94
				5150	49.07	49.09	-0.04	5.44	5.24	3.79
				5350	48.87	48.82	0.11	5.67	5.47	3.57

SAR Lab	Date	Band (MHz)	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
					Measured	Target	Delta (%)	Measured	Target	Delta (%)
F	6/28/2018	5250	Head	5250	36.57	35.93	1.77	4.69	4.70	-0.32
				5150	36.73	36.05	1.89	4.57	4.60	-0.67
				5350	36.36	35.82	1.51	4.78	4.80	-0.47
F	6/28/2018	5250	Body	5250	46.92	48.95	-4.15	5.51	5.35	2.97
				5150	47.12	49.09	-4.01	5.37	5.24	2.46
				5350	46.64	48.82	-4.46	5.66	5.47	3.39
F	7/2/2018	5250	Body	5250	46.54	48.95	-4.93	5.38	5.35	0.58
				5150	46.65	49.09	-4.97	5.25	5.24	0.30
				5350	46.48	48.82	-4.79	5.51	5.47	0.67
F	7/2/2018	5250	Head	5250	34.33	35.93	-4.46	4.52	4.70	-3.83
				5150	34.53	36.05	-4.21	4.40	4.60	-4.26
				5350	34.24	35.82	-4.41	4.62	4.80	-3.94
F	7/6/2018	5200	Body	5200	48.91	49.02	-0.22	5.24	5.29	-0.98
				5150	49.04	49.09	-0.10	5.17	5.24	-1.36
				5350	48.74	48.82	-0.16	5.43	5.47	-0.80
F	7/6/2018	5200	Head	5200	35.63	35.99	-1.00	4.49	4.65	-3.42
				5150	35.72	36.05	-0.91	4.44	4.60	-3.47
				5350	35.52	35.82	-0.83	4.60	4.80	-4.30
F	7/8/2018	2450	Body	2450	54.44	52.70	3.30	1.91	1.95	-2.10
				2400	54.58	52.77	3.43	1.84	1.90	-2.90
				2480	54.32	52.66	3.15	1.94	1.99	-2.47
F	7/26/2018	5250	Body	5250	49.78	48.95	1.69	5.26	5.35	-1.81
				5150	50.00	49.09	1.86	5.13	5.24	-2.13
				5350	49.67	48.82	1.75	5.37	5.47	-1.78
F	7/27/2018	5200	Head	5200	37.74	35.99	4.86	4.48	4.65	-3.74
				5150	37.37	36.05	3.67	4.37	4.60	-4.93
				5350	37.59	35.82	4.94	4.59	4.80	-4.42
F	7/30/2018	2450	Body	2450	50.48	52.70	-4.21	2.03	1.95	4.21
				2400	50.71	52.77	-3.91	1.96	1.90	3.37
				2480	50.38	52.66	-4.33	2.08	1.99	4.51
G	6/30/2018	2450	Body	2450	50.48	52.70	-4.21	1.97	1.95	3.33
				2400	50.56	52.77	-4.19	1.93	1.90	4.58
				2480	50.47	52.66	-4.16	1.99	1.99	2.55
G	6/30/2018	2450	Head	2450	38.49	39.20	-1.81	1.88	1.80	-0.22
				2400	38.66	39.30	-1.62	1.84	1.75	0.25
				2480	38.51	39.16	-1.67	1.90	1.83	-1.12
G	7/5/2018	2450	Body	2450	52.60	52.70	-0.19	2.00	1.95	4.00
				2400	52.67	52.77	-0.19	1.97	1.90	4.48
				2480	52.55	52.66	-0.21	2.03	1.99	3.41
G	7/8/2018	2450	Head	2450	38.34	39.20	-2.19	1.86	1.80	3.56
				2400	38.40	39.30	-2.28	1.83	1.75	4.19
				2480	38.22	39.16	-2.41	1.88	1.83	2.32

SAR Lab	Date	Band (MHz)	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
					Measured	Target	Delta (%)	Measured	Target	Delta (%)
G	7/9/2018	2450	Body	2450	51.86	52.70	-1.59	2.02	1.95	3.33
				2400	51.93	52.77	-1.60	1.99	1.90	4.58
				2480	51.77	52.66	-1.69	2.04	1.99	2.55
G	7/12/2018	2450	Head	2450	38.05	39.20	-2.93	1.80	1.80	-0.22
				2400	38.17	39.30	-2.87	1.76	1.75	0.25
				2480	38.00	39.16	-2.97	1.81	1.83	-1.12
G	7/12/2018	2450	Body	2450	51.68	52.70	-1.94	2.03	1.95	4.00
				2400	51.71	52.77	-2.01	1.98	1.90	4.48
				2480	51.64	52.66	-1.94	2.06	1.99	3.41
G	7/20/2018	2450	Body	2450	51.33	52.70	-2.60	2.01	1.95	3.23
				2400	51.39	52.77	-2.62	1.97	1.90	3.90
				2480	51.30	52.66	-2.59	2.03	1.99	2.00
G	7/24/2018	2450	Body	2450	52.37	52.70	-0.63	2.02	1.95	3.49
				2400	52.51	52.77	-0.50	1.98	1.90	4.42
				2480	52.33	52.66	-0.63	2.06	1.99	3.30
G	7/24/2018	2450	Head	2450	38.60	39.20	-1.53	1.85	1.80	2.94
				2400	38.68	39.30	-1.57	1.82	1.75	3.85
				2480	38.57	39.16	-1.51	1.88	1.83	2.60
G	7/27/2018	2450	Head	2450	38.79	39.20	-1.05	1.85	1.80	2.67
				2400	38.86	39.30	-1.11	1.80	1.75	2.93
				2480	38.78	39.16	-0.98	1.87	1.83	2.21
G	7/27/2018	2450	Body	2450	51.89	52.70	-1.54	2.02	1.95	3.49
				2400	51.95	52.77	-1.56	1.96	1.90	3.37
				2480	51.89	52.66	-1.47	2.05	1.99	2.70
H	6/28/2018	5600	Head	5600	34.47	35.53	-2.99	4.88	5.06	-3.52
				5500	34.49	35.65	-3.25	4.83	4.96	-2.62
				5725	34.30	35.39	-3.08	5.05	5.19	-2.74
H	6/29/2018	5600	Body	5600	46.99	48.48	-3.07	5.67	5.76	-1.65
				5500	47.25	48.61	-2.80	5.60	5.64	-0.79
				5725	46.93	48.31	-2.85	5.91	5.91	0.07
H	7/2/2018	5600	Head	5600	33.88	35.53	-4.65	5.10	5.06	0.81
				5500	34.03	35.65	-4.54	5.01	4.96	0.99
				5725	33.77	35.39	-4.58	5.22	5.19	0.52
H	7/5/2018	5600	Body	5600	47.45	48.48	-2.12	5.49	5.76	-4.74
				5500	47.60	48.61	-2.08	5.42	5.64	-3.96
				5725	47.36	48.31	-1.96	5.68	5.91	-3.87
H	7/6/2018	5600	Head	5600	34.54	35.53	-2.80	4.93	5.06	-2.57
				5500	34.59	35.65	-2.97	4.89	4.96	-1.47
				5725	34.52	35.39	-2.46	5.08	5.19	-2.14

SAR Lab	Date	Band (MHz)	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
					Measured	Target	Delta (%)	Measured	Target	Delta (%)
H	7/9/2018	5600	Body	5600	49.39	48.48	1.88	5.58	5.76	-3.21
				5500	49.47	48.61	1.76	5.47	5.64	-3.16
				5725	49.23	48.31	1.91	5.79	5.91	-1.91
H	7/11/2018	5600	Head	5600	35.17	35.53	-1.02	4.93	5.06	-2.49
				5500	35.28	35.65	-1.03	4.82	4.96	-2.72
				5725	34.94	35.39	-1.28	5.06	5.19	-2.47
H	7/16/2018	5600	Head	5600	34.23	35.53	-3.67	4.90	5.06	-3.19
				5500	34.35	35.65	-3.64	4.83	4.96	-2.68
				5725	34.12	35.39	-3.59	5.03	5.19	-2.99
H	7/21/2018	5600	Body	5600	47.57	48.48	-1.87	5.61	5.76	-2.64
				5500	47.94	48.61	-1.38	5.50	5.64	-2.61
				5725	47.50	48.31	-1.67	5.77	5.91	-2.30
H	7/21/2018	5600	Head	5600	36.87	35.53	3.76	5.13	5.06	1.34
				5500	37.16	35.65	4.24	4.97	4.96	0.22
				5725	36.63	35.39	3.50	5.28	5.19	1.79
H	7/24/2018	5250	Head	5250	37.09	35.93	3.22	4.52	4.70	-3.79
				5150	37.29	36.05	3.45	4.45	4.60	-3.21
				5350	37.00	35.82	3.30	4.64	4.80	-3.34
H	7/25/2018	5600	Head	5600	34.31	35.53	-3.44	4.89	5.06	-3.29
				5500	34.51	35.65	-3.19	4.83	4.96	-2.58
				5725	34.27	35.39	-3.17	5.05	5.19	-2.76
H	7/26/2018	5600	Body	5600	49.42	48.48	1.94	5.72	5.76	-0.80
				5500	49.53	48.61	1.89	5.52	5.64	-2.24
				5725	49.31	48.31	2.07	5.89	5.91	-0.28
H	7/29/2018	5600	Head	5600	37.12	35.53	4.46	5.02	5.06	-0.89
				5500	37.22	35.65	4.41	4.90	4.96	-1.11
				5725	36.91	35.39	4.29	5.20	5.19	0.19
H	7/29/2018	5600	Body	5600	48.30	48.48	-0.37	5.51	5.76	-4.34
				5500	48.46	48.61	-0.32	5.38	5.64	-4.65
				5725	48.12	48.31	-0.39	5.72	5.91	-3.14
1	6/26/2018	750	Body	750	54.85	55.55	-1.25	0.96	0.96	-0.32
				695	55.50	55.76	-0.46	0.91	0.96	-4.80
				790	54.53	55.39	-1.56	1.00	0.97	3.92
1	6/27/2018	750	Head	750	43.38	41.96	3.38	0.90	0.89	1.22
				660	43.77	42.42	3.17	0.87	0.89	-1.74
				790	43.24	41.76	3.55	0.91	0.90	1.86
1	6/30/2018	750	Body	750	56.08	55.55	0.96	0.97	0.96	0.29
				660	56.92	55.89	1.84	0.88	0.96	-7.90
				790	55.63	55.39	0.43	1.01	0.97	4.02

SAR Lab	Date	Band (MHz)	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
					Measured	Target	Delta (%)	Measured	Target	Delta (%)
1	7/1/2018	750	Body	750	53.52	55.55	-3.65	0.96	0.96	0.02
				660	54.53	55.89	-2.44	0.88	0.96	-8.46
				790	53.12	55.39	-4.10	1.00	0.97	3.81
1	7/2/2018	750	Body	750	56.36	55.55	1.47	0.96	0.96	-0.82
				660	57.14	55.89	2.23	0.87	0.96	-8.84
				790	55.89	55.39	0.90	0.99	0.97	2.63
1	7/3/2018	835	Head	835	42.26	41.50	1.83	0.91	0.90	1.04
				805	42.39	41.68	1.70	0.90	0.90	0.40
				905	42.23	41.50	1.76	0.94	0.97	-3.34
1	7/5/2018	750	Body	750	56.28	55.55	1.32	0.97	0.96	0.35
				695	56.92	55.76	2.08	0.91	0.96	-4.61
				790	55.94	55.39	0.99	1.00	0.97	3.71
1	7/5/2018	835	Body	835	54.02	55.20	-2.14	0.96	0.97	-0.70
				805	54.41	55.33	-1.67	0.92	0.97	-4.38
				905	53.45	55.00	-2.82	1.04	1.05	-1.38
1	7/6/2018	2600	Head	2600	38.85	39.01	-0.41	1.95	1.96	-0.72
				2495	39.01	39.14	-0.34	1.88	1.85	1.59
				2690	38.70	38.90	-0.51	2.02	2.06	-2.16
1	7/9/2018	835	Head	835	40.85	41.50	-1.57	0.91	0.90	1.53
				805	40.89	41.68	-1.89	0.90	0.90	0.71
				905	40.64	41.50	-2.07	0.94	0.97	-3.28
1	7/10/2018	2600	Head	2600	37.77	39.01	-3.18	1.92	1.96	-2.00
				2495	37.90	39.14	-3.18	1.84	1.85	-0.31
				2690	37.62	38.90	-3.28	2.00	2.06	-3.13
1	7/10/2018	2300	Head	2300	38.40	39.47	-2.72	1.71	1.66	2.84
				2350	38.27	39.38	-2.83	1.74	1.71	1.95
				2400	38.20	39.30	-2.79	1.78	1.75	1.85
1	7/20/2018	2300	Body	2300	50.73	52.90	-4.11	1.80	1.80	-0.42
				2350	50.60	52.84	-4.24	1.86	1.85	0.66
				2400	50.43	52.77	-4.44	1.91	1.90	0.79
1	7/22/2018	2600	Body	2600	50.59	52.51	-3.66	2.24	2.16	3.57
				2495	50.88	52.64	-3.35	2.10	2.01	4.46
				2690	50.32	52.40	-3.96	2.35	2.29	2.52
1	7/25/2018	2600	Head	2600	38.65	39.01	-0.92	1.90	1.96	-3.17
				2495	38.79	39.14	-0.90	1.82	1.85	-1.55
				2690	38.49	38.90	-1.05	1.98	2.06	-3.91
1	7/26/2018	2600	Body	2600	50.25	52.51	-4.31	2.24	2.16	3.62
				2495	50.59	52.64	-3.90	2.11	2.01	4.71
				2690	50.00	52.40	-4.58	2.34	2.29	2.48
1	7/27/2018	835	Body	835	53.78	55.20	-2.57	0.96	0.97	-0.69
				805	54.15	55.33	-2.14	0.94	0.97	-2.61
				905	53.11	55.00	-3.44	1.04	1.05	-1.00

SAR Lab	Date	Band (MHz)	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
					Measured	Target	Delta (%)	Measured	Target	Delta (%)
3	6/26/2018	835	Body	835	53.49	55.20	-3.10	0.98	0.97	0.75
				805	53.79	55.33	-2.79	0.95	0.97	-1.80
				905	52.75	55.00	-4.09	1.06	1.05	0.33
3	6/26/2018	835	Head	835	43.27	41.50	4.27	0.94	0.90	4.02
				805	43.42	41.68	4.18	0.92	0.90	2.83
				905	43.11	41.50	3.88	0.96	0.97	-0.90
3	6/30/2018	835	Body	835	53.33	55.20	-3.39	0.99	0.97	1.68
				805	53.66	55.33	-3.03	0.95	0.97	-1.61
				905	52.60	55.00	-4.36	1.05	1.05	0.14
3	6/30/2018	835	Head	835	42.43	41.50	2.24	0.92	0.90	2.69
				805	42.50	41.68	1.97	0.91	0.90	1.64
				905	42.25	41.50	1.81	0.95	0.97	-2.43
3	7/2/2018	2600	Head	2600	39.78	39.01	1.97	1.97	1.96	0.45
				2495	39.92	39.14	1.98	1.88	1.85	1.91
				2690	39.61	38.90	1.83	2.03	2.06	-1.28
3	7/2/2018	2600	Body	2600	50.42	52.51	-3.98	2.12	2.16	-2.07
				2495	50.70	52.64	-3.69	1.99	2.01	-1.06
				2690	50.13	52.40	-4.33	2.21	2.29	-3.47
3	7/5/2018	2300	Body	2300	52.40	52.90	-0.95	1.87	1.80	3.74
				2350	52.21	52.84	-1.19	1.93	1.85	4.33
				2400	52.03	52.77	-1.41	1.99	1.90	4.58
3	7/6/2018	2600	Head	2600	38.70	39.01	-0.80	1.97	1.96	0.14
				2495	38.88	39.14	-0.67	1.88	1.85	1.91
				2690	38.59	38.90	-0.79	2.03	2.06	-1.24
3	7/8/2018	2600	Body	2600	52.44	52.51	-0.13	2.21	2.16	2.46
				2495	52.80	52.64	0.30	2.09	2.01	3.96
				2690	52.22	52.40	-0.34	2.32	2.29	1.34
3	7/12/2018	2600	Body	2600	53.41	52.51	1.71	2.22	2.16	2.55
				2495	53.65	52.64	1.91	2.09	2.01	3.91
				2690	53.12	52.40	1.38	2.33	2.29	1.65
3	7/20/2018	2300	Body	2300	52.26	52.90	-1.22	1.77	1.80	-2.08
				2350	52.11	52.84	-1.38	1.83	1.85	-1.28
				2400	51.93	52.77	-1.60	1.88	1.90	-1.00
3	7/22/2018	1900	Body	1900	52.24	53.30	-1.99	1.57	1.52	3.09
				1850	52.34	53.30	-1.80	1.51	1.52	-0.53
				1920	52.16	53.30	-2.14	1.59	1.52	4.34
3	7/22/2018	2600	Body	2600	51.98	52.51	-1.01	2.16	2.16	-0.13
				2495	52.28	52.64	-0.69	2.03	2.01	0.73
				2690	51.75	52.40	-1.24	2.26	2.29	-1.06

SAR Lab	Date	Band (MHz)	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
					Measured	Target	Delta (%)	Measured	Target	Delta (%)
3	7/26/2018	2600	Head	2600	37.14	39.01	-4.80	1.93	1.96	-1.79
				2495	37.26	39.14	-4.81	1.85	1.85	0.02
				2690	37.02	38.90	-4.83	2.00	2.06	-2.98
3	7/26/2018	2300	Body	2300	48.82	52.90	-7.72	1.89	1.80	4.85
				2350	48.64	52.84	-7.95	1.95	1.85	5.15
				2400	48.46	52.77	-8.17	2.00	1.90	5.53
3	7/27/2018	1900	Body	1900	50.78	53.30	-4.73	1.55	1.52	2.04
				1850	51.03	53.30	-4.26	1.51	1.52	-0.59
				1920	50.74	53.30	-4.80	1.57	1.52	3.36
3	7/27/2018	1750	Body	1750	52.58	53.44	-1.61	1.49	1.49	-0.08
				1710	52.66	53.54	-1.65	1.45	1.46	-0.79
				1755	52.66	53.43	-1.44	1.49	1.49	-0.15
4	6/25/2018	835	Body	835	54.08	55.20	-2.03	0.95	0.97	-1.98
				805	54.28	55.33	-1.91	0.92	0.97	-4.68
				905	53.35	55.00	-3.00	1.03	1.05	-2.52
4	6/25/2018	835	Head	835	41.98	41.50	1.16	0.92	0.90	2.53
				805	42.03	41.68	0.84	0.91	0.90	1.50
				905	41.80	41.50	0.72	0.95	0.97	-2.56
4	6/29/2018	835	Body	835	54.03	55.20	-2.12	0.96	0.97	-0.77
				805	54.23	55.33	-2.00	0.93	0.97	-3.38
				905	53.35	55.00	-3.00	1.05	1.05	-0.71
4	6/29/2018	835	Head	835	42.08	41.50	1.40	0.93	0.90	3.76
				805	42.07	41.68	0.94	0.93	0.90	3.78
				905	41.90	41.50	0.96	0.97	0.97	-0.20
4	7/2/2018	1900	Head	1900	40.86	40.00	2.15	1.45	1.40	3.21
				1850	40.97	40.00	2.43	1.42	1.40	1.36
				1920	40.89	40.00	2.23	1.46	1.40	3.93
4	7/2/2018	1900	Body	1900	55.61	53.30	4.33	1.56	1.52	2.43
				1850	55.75	53.30	4.60	1.52	1.52	-0.26
				1920	55.57	53.30	4.26	1.59	1.52	4.28
4	7/6/2018	1900	Head	1900	38.96	40.00	-2.60	1.45	1.40	3.36
				1850	39.05	40.00	-2.38	1.42	1.40	1.43
				1920	38.94	40.00	-2.65	1.46	1.40	4.29
4	7/6/2018	1900	Body	1900	49.69	53.30	-6.77	1.49	1.52	-2.06
				1850	49.92	53.30	-6.34	1.44	1.52	-5.01
				1920	49.62	53.30	-6.91	1.51	1.52	-0.76
4	7/7/2018	1900	Body	1900	48.60	53.30	-8.82	1.63	1.52	6.97
				1850	48.73	53.30	-8.57	1.58	1.52	3.75
				1920	48.50	53.30	-9.01	1.65	1.52	8.29

SAR Lab	Date	Band (MHz)	Tissue Type	Frequency (MHz)	Relative Permittivity (ϵ_r)			Conductivity (σ)		
					Measured	Target	Delta (%)	Measured	Target	Delta (%)
4	7/8/2018	1900	Body	1900	53.42	53.30	0.23	1.65	1.52	8.68
				1850	53.59	53.30	0.54	1.59	1.52	4.74
				1920	53.37	53.30	0.13	1.67	1.52	9.74
4	7/9/2018	1900	Body	1900	53.45	53.30	0.28	1.59	1.52	4.74
				1850	53.68	53.30	0.71	1.54	1.52	1.38
				1920	53.42	53.30	0.23	1.61	1.52	5.79
4	7/10/2018	1900	Body	1900	55.73	53.30	4.56	1.58	1.52	3.75
				1850	55.87	53.30	4.82	1.53	1.52	0.92
				1920	55.73	53.30	4.56	1.59	1.52	4.87
4	7/11/2018	1900	Head	1900	40.71	40.00	1.78	1.43	1.40	1.93
				1850	40.83	40.00	2.08	1.40	1.40	0.00
				1920	40.67	40.00	1.68	1.44	1.40	2.64
4	7/20/2018	2600	Body	2600	52.05	52.51	-0.88	2.06	2.16	-4.57
				2495	52.30	52.64	-0.65	1.93	2.01	-3.99
				2690	51.80	52.40	-1.14	2.18	2.29	-4.87
4	7/24/2018	2600	Body	2600	54.52	52.51	3.83	2.21	2.16	2.18
				2495	54.81	52.64	4.12	2.10	2.01	4.16
				2690	54.29	52.40	3.61	2.33	2.29	1.78
4	7/27/2018	750	Body	750	57.78	55.55	4.02	0.97	0.96	0.84
				695	58.29	55.76	4.54	0.92	0.96	-4.53
				790	57.35	55.39	3.53	1.01	0.97	4.64

8.2. System 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 re-measured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.

System Performance Check Measurement Conditions:

- The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 $\pm$ 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 $\geq$ 15.0 cm for SAR measurements $\leq$ 3 GHz and $\geq$ 10.0 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.

System 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 $\pm 10\%$ of the manufacturer calibrated dipole SAR target. Refer to Appendix B for the SAR System Check Plots.

SAR Lab	Date	Tissue Type	Dipole Type Serial #	Dipole Cal. Due Date	Measured Results for 1g SAR				Measured Results for 10g SAR				Plot No.
					Zoom Scan to 100 mW	Normalize to 1 W	Target (Ref. Value)	Delta $\pm 10\%$	Zoom Scan to 100 mW	Normalize to 1 W	Target (Ref. Value)	Delta $\pm 10\%$	
A	6/27/2018	Head	D2600V2 SN:1006	10/5/2018	5.880	58.80	55.73	5.51	2.550	25.50	25.08	1.67	
A	7/1/2018	Head	D2600V2 SN:1006	10/5/2018	6.000	60.00	55.73	7.66	2.590	25.90	25.08	3.27	1,2
A	7/5/2018	Head	D2600V2 SN:1006	10/5/2018	5.480	54.80	55.73	-1.67	2.380	23.80	25.08	-5.10	
A	7/8/2018	Body	D2600V2 SN:1006	10/5/2018	5.690	56.90	56.13	1.37	2.480	24.80	25.00	-0.80	
A	7/11/2018	Head	D2600V2 SN:1006	10/5/2018	5.800	58.00	55.73	4.07	2.530	25.30	25.08	0.88	
A	7/13/2018	Body	D2600V2 SN:1006	10/5/2018	5.250	52.50	56.13	-6.47	2.300	23.00	25.00	-8.00	
A	7/21/2018	Body	D2600V2 SN:1006	10/5/2018	5.650	56.50	56.13	0.66	2.450	24.50	25.00	-2.00	
A	7/21/2018	Head	D2600V2 SN:1006	10/5/2018	5.590	55.90	55.73	0.31	2.430	24.30	25.08	-3.11	
A	7/25/2018	Body	D2600V2 SN:1006	10/5/2018	5.520	55.20	56.13	-1.66	2.410	24.10	25.00	-3.60	
A	7/29/2018	Head	D2600V2 SN:1006	10/5/2018	5.910	59.10	55.73	6.05	2.550	25.50	25.08	1.67	
B	6/27/2018	Head	D1750V2 SN:1053	8/24/2018	3.850	38.50	39.45	-2.41	2.050	20.50	20.58	-0.39	
B	6/30/2018	Body	D1750V2 SN:1053	8/24/2018	3.130	31.30	32.44	-3.51	1.650	16.50	17.31	-4.68	
B	7/1/2018	Head	D1750V2 SN:1053	8/24/2018	3.730	37.30	39.45	-5.45	1.980	19.80	20.58	-3.79	
B	7/5/2018	Body	D1750V2 SN:1053	8/24/2018	3.410	34.10	32.44	5.12	1.800	18.00	17.31	3.99	
B	7/6/2018	Body	D1900V2 SN:5d163	10/5/2018	4.120	41.20	42.99	-4.16	2.110	21.10	21.97	-3.96	3,4
B	7/9/2018	Body	D1750V2 SN:1053	8/24/2018	3.190	31.90	32.44	-1.66	1.680	16.80	17.31	-2.95	
B	7/9/2018	Head	D1750V2 SN:1053	8/24/2018	3.920	39.20	39.45	-0.63	2.080	20.80	20.58	1.07	
B	7/13/2018	Body	D1750V2 SN:1053	8/24/2018	3.440	34.40	32.44	6.04	1.820	18.20	17.31	5.14	
B	7/13/2018	Head	D1750V2 SN:1053	8/24/2018	3.690	36.90	39.45	-6.46	1.960	19.60	20.58	-4.76	5,6
B	7/13/2018	Head	D2600V2 SN:1006	10/5/2018	5.520	55.20	55.73	-0.95	2.470	24.70	25.08	-1.52	7,8
B	7/17/2018	Body	D1750V2 SN:1053	8/24/2018	3.220	32.20	32.44	-0.74	1.690	16.90	17.31	-2.37	
B	7/24/2018	Body	D2600V2 SN:1006	10/5/2018	5.770	57.70	56.13	2.80	2.510	25.10	25.00	0.40	
B	7/28/2018	Head	D2600V2 SN:1006	10/5/2018	5.960	59.60	55.73	6.94	2.670	26.70	25.08	6.46	
B	7/29/2018	Body	D2600V2 SN:1006	10/5/2018	5.580	55.80	56.13	-0.59	2.430	24.30	25.00	-2.80	
B	8/1/2018	Body	D2450V2 SN:748	2/14/2019	5.500	55.00	50.95	7.95	2.510	25.10	23.80	5.46	9,10
C	6/27/2018	Head	D1900V2 SN:5d163	10/5/2018	4.260	42.60	38.77	9.88	2.210	22.10	20.10	9.95	11,12
C	7/1/2018	Head	D1900V2 SN:5d163	10/5/2018	3.820	38.20	38.77	-1.47	2.010	20.10	20.10	0.00	
C	7/2/2018	Body	D1900V2 SN:5d163	10/5/2018	4.080	40.80	42.99	-5.09	2.110	21.10	21.97	-3.96	
C	7/6/2018	Head	D1900V2 SN:5d163	10/5/2018	3.850	38.50	38.77	-0.70	1.990	19.90	20.10	-1.00	
C	7/6/2018	Body	D1900V2 SN:5d163	10/5/2018	4.100	41.00	42.99	-4.63	2.130	21.30	21.97	-3.05	
C	7/12/2018	Head	D1900V2 SN:5d140	4/11/2019	3.990	39.90	38.93	2.49	2.070	20.70	20.14	2.78	
C	7/12/2018	Body	D1900V2 SN:5d140	4/11/2019	4.060	40.60	41.00	-0.98	2.120	21.20	21.05	0.71	
C	7/21/2018	Body	D1900V2 SN:5d140	4/11/2019	4.330	43.30	41.00	5.61	2.240	22.40	21.05	6.41	
C	7/21/2018	Head	D1900V2 SN:5d140	4/11/2019	4.170	41.70	38.93	7.12	2.160	21.60	20.14	7.25	13,14
C	7/24/2018	Head	D2600V2 SN:1006	10/5/2018	6.100	61.00	55.73	9.46	2.720	27.20	25.08	8.45	15,16
C	7/30/2018	Head	D1900V2 SN:5d140	4/11/2019	4.180	41.80	38.93	7.37	2.150	21.50	20.14	6.75	

SAR Lab	Date	Tissue Type	Dipole Type _Serial #	Dipole Cal. Due Date	Measured Results for 1g SAR				Measured Results for 10g SAR				Plot No.
					Zoom Scan to 100 mW	Normalize to 1 W	Target (Ref. Value)	Delta ±10 %	Zoom Scan to 100 mW	Normalize to 1 W	Target (Ref. Value)	Delta ±10 %	
D	6/27/2018	Head	D2300V2 SN:1002	3/16/2019	4.840	48.40	51.75	-6.47	2.280	22.80	24.68	-7.62	17,18
D	6/27/2018	Head	D2600V2 SN:1006	10/5/2018	5.680	56.80	55.73	1.92	2.490	24.90	25.08	-0.72	
D	7/1/2018	Head	D2300V2 SN:1058	8/31/2018	4.950	49.50	53.74	-7.89	2.330	23.30	25.31	-7.94	19,20
D	7/1/2018	Head	D2600V2 SN:1006	10/5/2018	5.590	55.90	55.73	0.31	2.440	24.40	25.08	-2.71	
D	7/2/2018	Body	D2300V2 SN:1058	8/31/2018	5.380	53.80	54.14	-0.63	2.590	25.90	24.88	4.10	
D	7/5/2018	Body	D2300V2 SN:1058	8/31/2018	5.480	54.80	54.14	1.22	2.590	25.90	24.88	4.10	
D	7/5/2018	Body	D2600V2 SN:1006	10/5/2018	5.720	57.20	56.13	1.91	2.500	25.00	25.00	0.00	
D	7/9/2018	Body	D2300V2 SN:1058	8/31/2018	5.250	52.50	54.14	-3.03	2.510	25.10	24.88	0.88	
D	7/9/2018	Body	D2600V2 SN:1006	10/5/2018	5.260	52.60	56.13	-6.29	2.310	23.10	25.00	-7.60	21,22
D	7/13/2018	Body	D2600V2 SN:1006	10/5/2018	5.350	53.50	56.13	-4.69	2.460	24.60	25.00	-1.60	
D	7/13/2018	Body	D2300V2 SN:1058	8/31/2018	4.990	49.90	54.14	-7.83	2.370	23.70	24.88	-4.74	
D	7/20/2018	Body	D2300V2 SN:1058	8/31/2018	5.000	50.00	54.14	-7.65	2.380	23.80	24.88	-4.34	
D	7/20/2018	Head	D2300V2 SN:1058	8/31/2018	5.030	50.30	53.74	-6.40	2.360	23.60	25.31	-6.76	
D	7/24/2018	Body	D2600V2 SN:1006	10/5/2018	5.750	57.50	56.13	2.44	2.520	25.20	25.00	0.80	
D	7/25/2018	Body	D2300V2 SN:1058	8/31/2018	5.610	56.10	54.14	3.62	2.690	26.90	24.88	8.12	
D	7/25/2018	Head	D2300V2 SN:1058	8/31/2018	5.000	50.00	53.74	-6.96	2.360	23.60	25.31	-6.76	
D	8/1/2018	Body	D2450V2 SN:748	2/14/2019	5.270	52.70	50.95	3.43	2.410	24.10	23.80	1.26	23,24
E	6/28/2018	Head	D5GHzV2 SN:1003 (5.75 GHz)	3/13/2019	7.790	77.90	78.40	-0.64	2.230	22.30	22.20	0.45	
E	6/30/2018	Body	D5GHzV2 SN:1138 (5.8 GHz)	10/26/2018	8.340	83.40	76.80	8.59	2.330	23.30	21.30	9.39	
E	7/2/2018	Head	D5GHzV2 SN:1003 (5.75 GHz)	3/13/2019	7.530	75.30	78.40	-3.95	2.150	21.50	22.20	-3.15	
E	7/5/2018	Body	D5GHzV2 SN:1138 (5.8 GHz)	10/26/2018	8.130	81.30	76.80	5.86	2.250	22.50	21.30	5.63	25,26
E	7/6/2018	Head	D5GHzV2 SN:1138 (5.8 GHz)	10/26/2018	7.960	79.60	79.70	-0.13	2.240	22.40	22.70	-1.32	
E	7/8/2018	Body	D5GHzV2 SN:1138 (5.2 GHz)	10/26/2018	7.730	77.30	73.40	5.31	2.190	21.90	20.60	6.31	
E	7/9/2018	Head	D5GHzV2 SN:1138 (5.2 GHz)	10/26/2018	7.380	73.80	77.70	-5.02	2.120	21.20	22.20	-4.50	
E	7/20/2018	Body	D5GHzV2 SN:1003 (5.75 GHz)	3/13/2019	7.410	74.10	73.90	0.27	2.070	20.70	20.60	0.49	
E	7/20/2018	Head	D5GHzV2 SN:1003 (5.75 GHz)	3/13/2019	7.520	75.20	78.40	-4.08	2.160	21.60	22.20	-2.70	
E	7/24/2018	Head	D5GHzV2 SN:1003 (5.75 GHz)	3/13/2019	7.800	78.00	78.40	-0.51	2.240	22.40	22.20	0.90	
E	7/24/2018	Body	D5GHzV2 SN:1003 (5.75 GHz)	3/13/2019	8.020	80.20	73.90	8.53	2.240	22.40	20.60	8.74	27,28
E	7/27/2018	Head	D5GHzV2 SN:1138 (5.2 GHz)	10/26/2018	7.440	74.40	77.70	-4.25	2.160	21.60	22.20	-2.70	
E	7/28/2018	Body	D5GHzV2 SN:1003 (5.25 GHz)	3/13/2019	7.670	76.70	73.60	4.21	2.160	21.60	20.50	5.37	
F	6/28/2018	Head	D5GHzV2 SN:1003 (5.25 GHz)	3/13/2019	7.770	77.70	80.60	-3.60	2.230	22.30	23.20	-3.88	
F	6/28/2018	Body	D5GHzV2 SN:1003 (5.25 GHz)	3/13/2019	6.760	67.60	73.60	-8.15	1.970	19.70	20.50	-3.90	29,30
F	7/2/2018	Body	D5GHzV2 SN:1003 (5.25 GHz)	3/13/2019	7.810	78.10	73.60	6.11	2.230	22.30	20.50	8.78	
F	7/2/2018	Head	D5GHzV2 SN:1003 (5.25 GHz)	3/13/2019	7.780	77.80	80.60	-3.47	2.210	22.10	23.20	-4.74	
F	7/6/2018	Body	D5GHzV2 SN:1138 (5.2 GHz)	10/26/2018	7.570	75.70	73.40	3.13	2.160	21.60	20.60	4.85	
F	7/6/2018	Head	D5GHzV2 SN:1138 (5.2 GHz)	10/26/2018	7.130	71.30	77.70	-8.24	2.030	20.30	22.20	-8.56	31,32
F	7/8/2018	Body	D2450V2 SN:706	5/18/2019	4.930	49.30	50.60	-2.57	2.300	23.00	23.70	-2.95	33,34
F	7/26/2018	Body	D5GHzV2 SN:1003 (5.25 GHz)	3/13/2019	7.880	78.80	73.60	7.07	2.240	22.40	20.50	9.27	
F	7/27/2018	Head	D5GHzV2 SN:1003 (5.25 GHz)	3/13/2019	8.080	80.80	80.60	0.25	2.320	23.20	23.20	0.00	
F	7/30/2018	Body	D2450V2 SN:748	2/14/2019	5.410	54.10	50.95	6.18	2.520	25.20	23.80	5.88	35,36

SAR Lab	Date	Tissue Type	Dipole Type Serial #	Dipole Cal. Due Date	Measured Results for 1g SAR				Measured Results for 10g SAR				Plot No.
					Zoom Scan to 100 mW	Normalize to 1 W	Target (Ref. Value)	Delta ±10 %	Zoom Scan to 100 mW	Normalize to 1 W	Target (Ref. Value)	Delta ±10 %	
G	6/30/2018	Body	D2450V2 SN:706	5/18/2019	5.360	53.60	50.60	5.93	2.470	24.70	23.70	4.22	
G	6/30/2018	Head	D2450V2 SN:706	5/18/2019	5.480	54.80	52.60	4.18	2.540	25.40	24.60	3.25	
G	7/5/2018	Body	D2450V2 SN:706	5/18/2019	5.460	54.60	50.60	7.91	2.510	25.10	23.70	5.91	37,38
G	7/8/2018	Head	D2450V2 SN:706	5/18/2019	5.480	54.80	52.60	4.18	2.540	25.40	24.60	3.25	
G	7/9/2018	Body	D2450V2 SN:706	5/18/2019	5.370	53.70	50.60	6.13	2.450	24.50	23.70	3.38	
G	7/12/2018	Head	D2450V2 SN:706	5/18/2019	5.100	51.00	52.60	-3.04	2.430	24.30	24.60	-1.22	
G	7/12/2018	Body	D2450V2 SN:748	2/14/2019	5.550	55.50	50.95	8.93	2.580	25.80	23.80	8.40	39,40
G	7/20/2018	Body	D2450V2 SN:748	2/14/2019	5.330	53.30	50.95	4.61	2.460	24.60	23.80	3.36	
G	7/24/2018	Body	D2450V2 SN:748	2/14/2019	5.500	55.00	50.95	7.95	2.530	25.30	23.80	6.30	
G	7/24/2018	Head	D2450V2 SN:748	2/14/2019	5.430	54.30	52.94	2.57	2.500	25.00	24.60	1.63	
G	7/27/2018	Head	D2450V2 SN:748	2/14/2019	5.530	55.30	52.94	4.46	2.550	25.50	24.60	3.66	
G	7/27/2018	Body	D2450V2 SN:748	2/14/2019	5.410	54.10	50.95	6.18	2.510	25.10	23.80	5.46	
H	6/28/2018	Head	D5GHzV2 SN:1003 (5.60 GHz)	3/13/2019	8.120	81.20	84.50	-3.91	2.290	22.90	24.00	-4.58	
H	6/29/2018	Body	D5GHzV2 SN:1138 (5.6 GHz)	10/26/2018	7.850	78.50	79.50	-1.26	2.220	22.20	22.30	-0.45	
H	7/2/2018	Head	D5GHzV2 SN:1003 (5.60 GHz)	3/13/2019	7.790	77.90	84.50	-7.81	2.190	21.90	24.00	-8.75	
H	7/5/2018	Body	D5GHzV2 SN:1138 (5.6 GHz)	10/26/2018	8.410	84.10	79.50	5.79	2.400	24.00	22.30	7.62	
H	7/6/2018	Head	D5GHzV2 SN:1138 (5.6 GHz)	10/26/2018	8.320	83.20	83.20	0.00	2.340	23.40	23.70	-1.27	
H	7/9/2018	Body	D5GHzV2 SN:1138 (5.6 GHz)	10/26/2018	7.310	73.10	79.50	-8.05	2.080	20.80	22.30	-6.73	41,42
H	7/11/2018	Head	D5GHzV2 SN:1003 (5.60 GHz)	3/13/2019	8.420	84.20	84.50	-0.36	2.380	23.80	24.00	-0.83	
H	7/16/2018	Head	D5GHzV2 SN:1003 (5.60 GHz)	3/13/2019	7.860	78.60	84.50	-6.98	2.210	22.10	24.00	-7.92	
H	7/21/2018	Body	D5GHzV2 SN:1003 (5.60 GHz)	3/13/2019	7.720	77.20	77.70	-0.64	2.190	21.90	21.70	0.92	
H	7/21/2018	Head	D5GHzV2 SN:1003 (5.60 GHz)	3/13/2019	7.950	79.50	84.50	-5.92	2.250	22.50	24.00	-6.25	
H	7/24/2018	Head	D5GHzV2 SN:1003 (5.25 GHz)	3/13/2019	8.520	85.20	80.60	5.71	2.470	24.70	23.20	6.47	
H	7/25/2018	Head	D5GHzV2 SN:1003 (5.60 GHz)	3/13/2019	7.720	77.20	84.50	-8.64	2.190	21.90	24.00	-8.75	43,44
H	7/26/2018	Body	D5GHzV2 SN:1003 (5.60 GHz)	3/13/2019	8.010	80.10	77.70	3.09	2.260	22.60	21.70	4.15	
H	7/29/2018	Head	D5GHzV2 SN:1003 (5.60 GHz)	3/13/2019	8.020	80.20	84.50	-5.09	2.270	22.70	24.00	-5.42	
H	7/29/2018	Body	D5GHzV2 SN:1003 (5.60 GHz)	3/13/2019	8.400	84.00	77.70	8.11	2.370	23.70	21.70	9.22	
1	6/26/2018	Body	D750V3 SN:1071	11/21/2018	0.797	7.97	8.52	-6.46	0.532	5.32	5.69	-6.50	45,46
1	6/27/2018	Head	D750V3 SN:1071	11/21/2018	0.812	8.12	8.59	-5.47	0.538	5.38	5.73	-6.11	
1	6/30/2018	Body	D750V3 SN:1071	11/21/2018	0.892	8.92	8.52	4.69	0.596	5.96	5.69	4.75	
1	6/30/2018	Head	D750V3 SN:1071	11/21/2018	0.825	8.25	8.59	-3.96	0.544	5.44	5.73	-5.06	
1	7/3/2018	Head	D835V2 SN:4d002	11/21/2018	0.964	9.64	10.27	-6.13	0.632	6.32	6.76	-6.51	
1	7/5/2018	Body	D750V3 SN:1071	11/21/2018	0.885	8.85	8.52	3.87	0.591	5.91	5.69	3.87	
1	7/5/2018	Body	D835V2 SN:4d002	11/21/2018	0.959	9.59	10.23	-6.26	0.632	6.32	6.80	-7.06	47,48
1	7/6/2018	Head	D2600V2 SN:1036	3/16/2019	5.630	56.30	54.54	3.23	2.520	25.20	24.56	2.61	
1	7/9/2018	Head	D835V2 SN:4d002	11/21/2018	0.988	9.88	10.27	-3.80	0.646	6.46	6.76	-4.44	
1	7/10/2018	Head	D2600V2 SN:1036	3/16/2019	5.730	57.30	54.54	5.06	2.560	25.60	24.56	4.23	49,50
1	7/10/2018	Head	D2300V2 SN:1002	3/16/2019	4.870	48.70	51.75	-5.89	2.310	23.10	24.68	-6.40	51,52
1	7/20/2018	Body	D2300V2 SN:1002	3/16/2019	4.990	49.90	50.16	-0.52	2.320	23.20	23.72	-2.19	
1	7/22/2018	Body	D2600V2 SN:1036	3/16/2019	5.660	56.60	56.13	0.84	2.430	24.30	25.04	-2.96	
1	7/25/2018	Head	D2600V2 SN:1036	3/16/2019	5.620	56.20	54.54	3.04	2.530	25.30	24.56	3.01	
1	7/26/2018	Body	D2600V2 SN:1006	10/5/2018	5.460	54.60	56.13	-2.73	2.350	23.50	25.00	-6.00	
1	7/27/2018	Body	D835V2 SN:4d002	11/21/2018	0.977	9.77	10.23	-4.50	0.644	6.44	6.80	-5.29	

SAR Lab	Date	Tissue Type	Dipole Type _Serial #	Dipole Cal. Due Data	Measured Results for 1g SAR				Measured Results for 10g SAR				Plot No.
					Zoom Scan to 100 mW	Normalize to 1 W	Target (Ref. Value)	Delta ±10 %	Zoom Scan to 100 mW	Normalize to 1 W	Target (Ref. Value)	Delta ±10 %	
3	6/26/2018	Body	D835V2 SN:4d142	10/12/2018	1.030	10.30	9.63	6.96	0.676	6.76	6.27	7.81	53,54
3	6/26/2018	Head	D835V2 SN:4d142	10/12/2018	0.960	9.60	9.64	-0.41	0.630	6.30	6.22	1.29	
3	6/30/2018	Body	D835V2 SN:4d002	11/21/2018	1.030	10.30	10.23	0.68	0.678	6.78	6.80	-0.29	
3	6/30/2018	Head	D835V2 SN:4d002	11/21/2018	1.000	10.00	10.27	-2.63	0.657	6.57	6.76	-2.81	55,56
3	7/2/2018	Head	D2600V2 SN:1036	3/16/2019	5.580	55.80	54.54	2.31	2.500	25.00	24.56	1.79	
3	7/2/2018	Body	D2600V2 SN:1036	3/16/2019	5.650	56.50	56.13	0.66	2.490	24.90	25.04	-0.56	
3	7/5/2018	Body	D2300V2 SN:1058	8/31/2018	4.990	49.90	54.14	-7.83	2.320	23.20	24.88	-6.75	57,58
3	7/6/2018	Head	D2600V2 SN:1036	3/16/2019	5.370	53.70	54.54	-1.54	2.410	24.10	24.56	-1.87	
3	7/8/2018	Body	D2600V2 SN:1036	3/16/2019	5.410	54.10	56.13	-3.62	2.320	23.20	25.04	-7.35	59,60
3	7/12/2018	Body	D2600V2 SN:1036	3/16/2019	5.470	54.70	56.13	-2.55	2.340	23.40	25.04	-6.55	
3	7/20/2018	Body	D2300V2 SN:1002	3/16/2019	4.600	46.00	50.16	-8.29	2.230	22.30	23.72	-5.99	61,62
3	7/22/2018	Body	D1900V2 SN:5d163	10/5/2018	4.100	41.00	42.99	-4.63	2.110	21.10	21.97	-3.96	63,64
3	7/22/2018	Body	D2600V2 SN:1036	3/16/2019	5.710	57.10	56.13	1.73	2.520	25.20	25.04	0.64	
3	7/26/2018	Head	D2600V2 SN:1006	10/5/2018	5.270	52.70	55.73	-5.44	2.350	23.50	25.08	-6.30	65,66
3	7/26/2018	Body	D2300V2 SN:1002	3/16/2019	5.070	50.70	50.16	1.08	2.480	24.80	23.72	4.55	
3	7/27/2018	Body	D1900V2 SN:5d163	10/5/2018	4.230	42.30	42.99	-1.61	2.180	21.80	21.97	-0.77	
3	7/27/2018	Body	D1750V2 SN:1077	10/5/2018	3.820	38.20	37.34	2.30	2.030	20.30	19.98	1.60	67,68
4	6/25/2018	Body	D835V2 SN:4d142	10/12/2018	0.983	9.83	9.63	2.08	0.651	6.51	6.27	3.83	69,70
4	6/25/2018	Head	D835V2 SN:4d142	10/12/2018	0.976	9.76	9.64	1.24	0.638	6.38	6.22	2.57	
4	6/29/2018	Body	D835V2 SN:4d002	11/21/2018	0.966	9.66	10.23	-5.57	0.641	6.41	6.80	-5.74	71,72
4	6/29/2018	Head	D835V2 SN:4d002	11/21/2018	0.971	9.71	10.27	-5.45	0.635	6.35	6.76	-6.07	
4	7/2/2018	Head	D1900V2 SN:5d140	4/11/2019	4.210	42.10	38.93	8.14	2.190	21.90	20.14	8.74	
4	7/2/2018	Body	D1900V2 SN:5d140	4/11/2019	4.090	40.90	41.00	-0.24	2.110	21.10	21.05	0.24	
4	7/6/2018	Head	D1900V2 SN:5d140	4/11/2019	3.780	37.80	38.93	-2.90	1.960	19.60	20.14	-2.68	
4	7/6/2018	Body	D1900V2 SN:5d163	10/5/2018	4.210	42.10	42.99	-2.07	2.170	21.70	21.97	-1.23	73,74
4	7/10/2018	Body	D1900V2 SN:5d140	4/11/2019	3.720	37.20	41.00	-9.27	1.910	19.10	21.05	-9.26	75,76
4	7/11/2018	Head	D1900V2 SN:5d140	4/11/2019	3.820	38.20	38.93	-1.88	1.980	19.80	20.14	-1.69	
4	7/20/2018	Body	D2600V2 SN:1036	3/16/2019	5.540	55.40	56.13	-1.30	2.450	24.50	25.04	-2.16	77,78
4	7/24/2018	Body	D2600V2 SN:1036	3/16/2019	5.580	55.80	56.13	-0.59	2.420	24.20	25.04	-3.35	
4	7/27/2018	Body	D750V3 SN:1071	11/21/2018	0.781	7.81	8.52	-8.33	0.525	5.25	5.69	-7.73	79,80

9. Conducted Output Power Measurements

Power measurements were performed in accordance to the device's two power modes, Mode A and Mode B for each antenna. Mode A power is used when the device is used against the user's head or away from the body. Mode B power is used when the device is used in a Body-worn configuration by the user.

The selection between antennas ANT1, ANT2, ANT3, ANT4, ANT5, and ANT6 in the application is based on RSSI based antenna selection. The full details of power selections are described in the operational description. Refer to Sec. 7 and Sec. 10 for details of the testing. Test reductions have applied accordingly following the SAR KDB Procedure for the supported wireless technologies of the DUT. This is noted in detail for each technology in their respective Sections.

The Tune-up limit already includes component tolerance of ± 0.5 dB for modulations other than LTE 2CA, where a ± 1.0 dB tolerance is included. KDB 447498 sec.4.1.(d) at the maximum rated output power and within the tune-up tolerance range specified for the product, but not more than 2 dB lower than the maximum tune-up tolerance limit.

9.1. GSM

Per KDB 941225 D01 3G SAR Procedures for GSM:

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

When different maximum output power applies to GSM voice or GPRS/EDGE time slots, GSM voice and GPRS/EDGE time slots should be tested separately to determine compliance by summing the corresponding reported SAR.

The GMSK EDGE configurations are grouped with GPRS and considered with respect to time-averaged maximum output power to determine compliance

Per October 2013 TCB Workshop:

When the maximum frame-averaged powers levels are within 0.25 dB of each other, test the configuration with the most number of time slots.

Maximum Output Power (Tune-up Limit) for GSM

SAR is not required for EDGE (8PSK) mode because the maximum output power and tune-up limit is $\leq 1/4$ dB higher than GPRS/EDGE (GMSK) or the adjusted SAR of the highest reported SAR of GPRS/EDGE (GMSK) is ≤ 1.2 W/kg.

RF Air interface	Mode	Maximum Output Power (Tune-up Limit) (dBm)							
		ANT1		ANT2		ANT3		ANT4	
		Mode A	Mode B	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B
GSM850	Voice/GPRS (1 slot)	33.00	33.00	31.00	31.00				
	GPRS 2 slots	32.00	32.00	30.00	30.00				
	EGPRS 1 slot	27.50	27.50	25.50	25.50				
	EGPRS 2 slots	26.50	26.50	24.50	24.50				
GSM1900	Voice/GPRS (1 slot)	31.50	29.50	29.00	29.00	31.00	29.70	29.00	29.00
	GPRS 2 slots	30.50	26.50	28.00	26.50	30.00	26.70	27.50	28.00
	EGPRS 1 slot	26.50	26.50	24.00	24.00	26.00	26.00	24.00	24.00
	EGPRS 2 slots	25.50	25.50	23.00	23.00	25.00	25.00	23.00	23.00

GSM850 Measured Results (ANT1)

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Power Mode A (dBm)				Power Mode B (dBm)			
					Measured		Tune-up Limit		Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GPRS/EDGE (GMSK)	CS1	1	128	824.2	32.10	23.07	33.00	23.97	32.10	23.07	33.00	23.97
			190	836.6	32.00	22.97			32.00	22.97		
			251	848.8	32.00	22.97			32.00	22.97		
		2	128	824.2	32.00	25.98	32.00	25.98	32.00	25.98	32.00	25.98
			190	836.6	32.00	25.98			32.00	25.98		
			251	848.8	32.00	25.98			32.00	25.98		
EDGE (8PSK)	MCS5	1	128	824.2	27.00	17.97	27.50	18.47	27.00	17.97	27.50	18.47
			190	836.6	26.90	17.87			26.90	17.87		
			251	848.8	26.90	17.87			26.90	17.87		
		2	128	824.2	26.50	20.48	26.50	20.48	26.50	20.48	26.50	20.48
			190	836.6	26.50	20.48			26.50	20.48		
			251	848.8	26.50	20.48			26.50	20.48		

Note(s):

GPRS/EDGE (GMSK) mode with 2 time slots for power Mode A and 2 time slots for power Mode B, based on the Tune-up Procedure.

GSM850 Measured Results (ANT2)

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Power Mode A (dBm)				Power Mode B (dBm)			
					Measured		Tune-up Limit		Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GPRS/EDGE (GMSK)	CS1	1	128	824.2	31.00	21.97	31.00	21.97	31.00	21.97	31.00	21.97
			190	836.6	31.00	21.97			31.00	21.97		
			251	848.8	31.00	21.97			31.00	21.97		
		2	128	824.2	30.00	23.98	30.00	23.98	30.00	23.98	30.00	23.98
			190	836.6	30.00	23.98			30.00	23.98		
			251	848.8	30.00	23.98			30.00	23.98		
EDGE (8PSK)	MCS5	1	128	824.2	25.40	16.37	25.50	16.47	25.40	16.37	25.50	16.47
			190	836.6	25.40	16.37			25.40	16.37		
			251	848.8	25.40	16.37			25.40	16.37		
		2	128	824.2	24.50	18.48	24.50	18.48	24.50	18.48	24.50	18.48
			190	836.6	24.50	18.48			24.50	18.48		
			251	848.8	24.50	18.48			24.50	18.48		

Note(s):

GPRS/EDGE (GMSK) mode with 2 time slots for power Mode A and 2 time slots for power Mode B, based on the Tune-up Procedure.

GSM1900 Measured Results (ANT1)

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Power Mode A (dBm)				Power Mode B (dBm)			
					Measured		Tune-up Limit		Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GPRS/EDGE (GMSK)	CS1	1	512	1850.2	30.50	21.47	31.50	22.47	29.40	20.37	29.50	20.47
			661	1880.0	30.30	21.27			29.20	20.17		
			810	1909.8	30.50	21.47			29.20	20.17		
		2	512	1850.2	30.50	24.48	30.50	24.48	26.40	20.38	26.50	20.48
			661	1880.0	30.40	24.38			26.40	20.38		
			810	1909.8	30.50	24.48			26.40	20.38		
EDGE (8PSK)	MCS5	1	512	1850.2	25.50	16.47	26.50	17.47	25.40	16.37	26.50	17.47
			661	1880.0	25.30	16.27			25.20	16.17		
			810	1909.8	25.40	16.37			25.40	16.37		
		2	512	1850.2	25.50	19.48	25.50	19.48	25.40	19.38	25.50	19.48
			661	1880.0	25.30	19.28			25.20	19.18		
			810	1909.8	25.50	19.48			25.30	19.28		

Note(s):

GPRS/EDGE (GMSK) mode with 2 time slots for power Mode A and 2 time slots for power Mode B, based on the Tune-up Procedure.

GSM1900 Measured Results (ANT2)

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Power Mode A (dBm)				Power Mode B (dBm)			
					Measured		Tune-up Limit		Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GPRS/EDGE (GMSK)	CS1	1	512	1850.2	28.47	19.44	29.00	19.97	28.47	19.44	29.00	19.97
			661	1880.0	28.38	19.35			28.38	19.35		
			810	1909.8	28.45	19.42			28.45	19.42		
		2	512	1850.2	27.50	21.48	28.00	21.98	25.89	19.87	26.50	20.48
			661	1880.0	27.60	21.58			25.90	19.88		
			810	1909.8	27.60	21.58			25.89	19.87		
EDGE (8PSK)	MCS5	1	512	1850.2	23.25	14.22	24.00	14.97	23.25	14.22	24.00	14.97
			661	1880.0	23.21	14.18			23.21	14.18		
			810	1909.8	23.29	14.26			23.29	14.26		
		2	512	1850.2	22.24	16.22	23.00	16.98	22.24	16.22	23.00	16.98
			661	1880.0	22.16	16.14			22.16	16.14		
			810	1909.8	22.29	16.27			22.29	16.27		

Note(s):

GPRS/EDGE (GMSK) mode with 2 time slots for power Mode A and 2 time slots for power Mode B, based on the Tune-up Procedure.

GSM1900 Measured Results (ANT3)

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Power Mode A (dBm)				Power Mode B (dBm)			
					Measured		Tune-up Limit		Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GPRS/EDGE (GMSK)	CS1	1	512	1850.2	30.41	21.38	31.00	21.97	29.26	20.23	29.70	20.67
			661	1880.0	30.28	21.25			29.03	20.00		
			810	1909.8	30.36	21.33			29.10	20.07		
		2	512	1850.2	29.58	23.56	30.00	23.98	26.24	20.22	26.70	20.68
			661	1880.0	29.35	23.33			26.60	20.58		
			810	1909.8	29.46	23.44			26.40	20.38		
EDGE (8PSK)	MCS5	1	512	1850.2	25.47	16.44	26.00	16.97	25.47	16.44	26.00	16.97
			661	1880.0	25.24	16.21			25.24	16.21		
			810	1909.8	25.42	16.39			25.42	16.39		
		2	512	1850.2	24.41	18.39	25.00	18.98	24.41	18.39	25.00	18.98
			661	1880.0	24.24	18.22			24.24	18.22		
			810	1909.8	24.42	18.40			24.42	18.40		

Note(s):

GPRS/EDGE (GMSK) mode with 2 time slots for power Mode A and 2 time slots for power Mode B, based on the Tune-up Procedure.

GSM1900 Measured Results (ANT4)

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Power Mode A (dBm)				Power Mode B (dBm)			
					Measured		Tune-up Limit		Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GPRS/EDGE (GMSK)	CS1	1	512	1850.2	28.58	19.55	29.00	19.97	28.58	19.55	29.00	19.97
			661	1880.0	28.45	19.42			28.45	19.42		
			810	1909.8	28.72	19.69			28.72	19.69		
		2	512	1850.2	27.22	21.20	27.50	21.48	27.56	21.54	28.00	21.98
			661	1880.0	27.21	21.19			27.31	21.29		
			810	1909.8	27.16	21.14			27.70	21.68		
EDGE (8PSK)	MCS5	1	512	1850.2	23.44	14.41	24.00	14.97	23.44	14.41	24.00	14.97
			661	1880.0	23.25	14.22			23.25	14.22		
			810	1909.8	23.58	14.55			23.58	14.55		
		2	512	1850.2	22.36	16.34	23.00	16.98	22.36	16.34	23.00	16.98
			661	1880.0	22.24	16.22			22.24	16.22		
			810	1909.8	22.57	16.55			22.57	16.55		

Note(s):

GPRS/EDGE (GMSK) mode with 2 time slots for power Mode A and 2 time slots for power Mode B, based on the Tune-up Procedure.

9.2. W-CDMA

Per KDB 941225 D01 3G SAR Procedures for W-CDMA:

Maximum output power is verified on the high, middle and low channels and using the appropriate 12.2 kbps RMC with TPC (transmit power control) set to all "1's"

Release 99 Setup Procedures used to establish the test signals

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1. A summary of these settings are illustrated below:

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 2
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	β_c/β_d	8/15

HSDPA Setup Procedures used to establish the test signals

The following 4 Sub-tests were completed according to Release 5 procedures in table C.10.1.4 of 3GPP TS 34.121-1. A summary of these settings are illustrated below:

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

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

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{HS} = 30/15 * \beta_c$.

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

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

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

HSUPA Setup Procedures used to establish the test signals

The following 5 Sub-tests were completed according to Release 6 procedures in table C.11.1.3 of 3GPP TS 34.121-1. A summary of these settings are illustrated below:

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

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note 1)	β_{EC}	β_{ES} (Note 4) (Note 5)	β_{ES} (SF)	β_{ES} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2) (Note 6)	AG Index (Note 5)	E- TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/25	1309/225	4	1	1.0	0.0	20	75
2	8/15	15/15	64	8/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ES1}: 47/15$ $\beta_{ES2}: 47/15$	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

Note 1: For sub-test 1 to 4, Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 30/15$ with $\beta_{HS} = 30/15 * \beta_c$. For sub-test 5, Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 5/15$ with $\beta_{HS} = 5/15 * \beta_c$.

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{HS}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPCCH and E-DPCCH the MPR is based on the relative CM difference.

Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$. In case of testing by UE using E-DPCCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.

Note 4: β_{ES} can not be set directly; it is set by Absolute Grant Value.

Note 5: For subtests 2, 3 and 4, UE may perform E-DPCCH power scaling at max power which could results in slightly smaller MPR values.

DC-HSDPA Setup Procedures used to establish the test signals

The following 4 Sub-tests for DC-HSDPA were completed according to Release 8 procedures in table C08.1.12 of 3GPP TS 34.121-1. A summary of subtest settings are illustrated below:

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Processes	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.		
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

HSPA+ Setup Procedures used to establish the test signals

The following 1 Sub-test was completed according to Release 7 procedures in table C.11.1.4 of 3GPP TS34.121. A summary of these settings are illustrated below:

Table C.11.1.4: β values for transmitter characteristics tests with HS-DPCCH and E-DCH with 16QAM

Sub-test	β_c (Note 3)	β_d	β_{HS} (Note 1)	β_{EC}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed1} : 30/15 β_{ed2} : 30/15	β_{ed3} : 24/15 β_{ed4} : 24/15	3.5	2.5	14	105	105
Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CGI} = 30/15$ with $\beta_{HS} = 30/15 \cdot \beta_c$. Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0). Note 3: CM is not configured, therefore the β_c is set to 1 and $\beta_d = 0$ by default. Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value. Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signalled to use the extrapolation algorithm.											

Maximum Output Power (Tune-up Limit) for W-CDMA

SAR measurement is not required for the HSDPA, HSUPA, DC-HSDPA and HSPA+. When primary mode and the adjusted SAR is ≤ 1.2 W/kg and secondary mode is $\leq 1/4$ dB higher than the primary mode

RF Air interface	Mode	Maximum Output Power (Tune-up Limit) (dBm)							
		ANT1		ANT2		ANT3		ANT4	
		Mode A	Mode B	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B
W-CDMA Band 2	R99	25.50	19.50	20.50	18.50	25.00	20.00	21.20	21.00
	HSDPA	25.50	19.50	20.50	18.50	25.00	20.00	21.20	21.00
	HSUPA	25.50	19.50	20.50	18.50	25.00	20.00	21.20	21.00
	DC-HSDPA	25.50	19.50	20.50	18.50	25.00	20.00	21.20	21.00
	HSPA+	25.50	19.50	20.50	18.50	25.00	20.00	21.20	21.00
W-CDMA Band 4	R99	25.50	18.70	21.50	20.50	25.00	21.50	21.50	22.00
	HSDPA	25.50	18.70	21.50	20.50	25.00	21.50	21.50	22.00
	HSUPA	25.50	18.70	21.50	20.50	25.00	21.50	21.50	22.00
	DC-HSDPA	25.50	18.70	21.50	20.50	25.00	21.50	21.50	22.00
	HSPA+	25.50	18.70	21.50	20.50	25.00	21.50	21.50	22.00
W-CDMA Band 5	R99	25.50	25.50	24.50	24.50				
	HSDPA	25.50	25.50	24.50	24.50				
	HSUPA	25.50	25.50	24.50	24.50				
	DC-HSDPA	25.50	25.50	24.50	24.50				
	HSPA+	25.50	25.50	24.50	24.50				

W-CDMA Band 2 Measured Results (ANT1)

Mode		UL Ch No.	Freq. (MHz)	Power Mode A (dBm)			Power Mode B (dBm)		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	9262	1852.4	24.80	N/A	25.50	19.50	N/A	19.50
		9400	1880.0	24.80			19.45		
		9538	1907.6	24.80			19.40		
HSDPA	Subtest 1	9262	1852.4	24.70	0	25.50	18.80	0	19.50
		9400	1880.0	24.80			18.80		
		9538	1907.6	24.70			18.80		
	Subtest 2	9262	1852.4	24.40	0	25.50	18.70	0	19.50
		9400	1880.0	24.40			18.80		
		9538	1907.6	24.40			18.70		
	Subtest 3	9262	1852.4	24.20	0.5	25.00	18.80	0.5	19.00
		9400	1880.0	24.20			18.80		
		9538	1907.6	24.10			18.80		
	Subtest 4	9262	1852.4	24.00	0.5	25.00	18.80	0.5	19.00
		9400	1880.0	24.00			18.80		
		9538	1907.6	24.00			18.70		
HSUPA	Subtest 1	9262	1852.4	24.70	0	25.50	18.70	0	19.50
		9400	1880.0	24.80			18.80		
		9538	1907.6	24.70			18.70		
	Subtest 2	9262	1852.4	22.70	2	23.50	16.80	2	17.50
		9400	1880.0	22.80			16.80		
		9538	1907.6	22.80			16.70		
	Subtest 3	9262	1852.4	23.80	1	24.50	17.70	1	18.50
		9400	1880.0	23.70			17.70		
		9538	1907.6	23.70			17.70		
	Subtest 4	9262	1852.4	22.70	2	23.50	16.80	2	17.50
		9400	1880.0	22.80			16.70		
		9538	1907.6	22.70			16.70		
	Subtest 5	9262	1852.4	24.70	0	25.50	18.70	0	19.50
		9400	1880.0	24.70			18.80		
		9538	1907.6	24.70			18.70		
DC-HSDPA	Subtest 1	9262	1852.4	24.80	0	25.50	18.70	0	19.50
		9400	1880.0	24.80			18.80		
		9538	1907.6	24.70			18.70		
	Subtest 2	9262	1852.4	24.80	0	25.50	18.70	0	19.50
		9400	1880.0	24.70			18.70		
		9538	1907.6	24.70			18.70		
	Subtest 3	9262	1852.4	24.50	0.5	25.00	18.30	0.5	19.00
		9400	1880.0	24.40			18.30		
		9538	1907.6	24.50			18.40		
	Subtest 4	9262	1852.4	24.30	0.5	25.00	18.40	0.5	19.00
		9400	1880.0	24.30			18.40		
		9538	1907.6	24.40			18.30		
HSPA+	Subtest 1	9262	1852.4	23.00	2.5	23.00	17.00	2.5	17.00
		9400	1880.0	23.00			17.00		
		9538	1907.6	23.00			17.00		

W-CDMA Band 2 Measured Results (ANT2)

Mode		UL Ch No.	Freq. (MHz)	Power Mode A (dBm)			Power Mode B (dBm)		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	9262	1852.4	20.50	N/A	20.50	18.30	N/A	18.50
		9400	1880.0	20.50			18.10		
		9538	1907.6	20.50			18.30		
HSDPA	Subtest 1	9262	1852.4	20.46	0	20.50	18.20	0	18.50
		9400	1880.0	20.46			18.10		
		9538	1907.6	20.46			18.30		
	Subtest 2	9262	1852.4	20.45	0	20.50	18.20	0	18.50
		9400	1880.0	20.45			18.10		
		9538	1907.6	20.45			18.30		
	Subtest 3	9262	1852.4	19.97	0.5	20.00	17.99	0.5	18.00
		9400	1880.0	19.97			17.99		
		9538	1907.6	19.97			17.99		
	Subtest 4	9262	1852.4	19.50	0.5	20.00	17.98	0.5	18.00
		9400	1880.0	19.50			17.98		
		9538	1907.6	19.50			17.98		
HSUPA	Subtest 1	9262	1852.4	20.44	0	20.50	18.20	0	18.50
		9400	1880.0	20.44			18.10		
		9538	1907.6	20.44			18.30		
	Subtest 2	9262	1852.4	18.42	2	18.50	16.42	2	16.50
		9400	1880.0	18.42			16.42		
		9538	1907.6	18.42			16.42		
	Subtest 3	9262	1852.4	19.40	1	19.50	17.38	1	17.50
		9400	1880.0	19.40			17.38		
		9538	1907.6	19.40			17.38		
	Subtest 4	9262	1852.4	18.45	2	18.50	16.45	2	16.50
		9400	1880.0	18.45			16.45		
		9538	1907.6	18.45			16.45		
	Subtest 5	9262	1852.4	20.37	0	20.50	18.20	0	18.50
		9400	1880.0	20.37			18.10		
		9538	1907.6	20.37			18.30		
DC-HSDPA	Subtest 1	9262	1852.4	20.46	0	20.50	18.20	0	18.50
		9400	1880.0	20.46			18.10		
		9538	1907.6	20.46			18.30		
	Subtest 2	9262	1852.4	20.45	0	20.50	18.20	0	18.50
		9400	1880.0	20.45			18.10		
		9538	1907.6	20.45			18.30		
	Subtest 3	9262	1852.4	19.97	0.5	20.00	17.99	0.5	18.00
		9400	1880.0	19.97			17.99		
		9538	1907.6	19.97			17.99		
	Subtest 4	9262	1852.4	19.50	0.5	20.00	17.98	0.5	18.00
		9400	1880.0	19.50			17.98		
		9538	1907.6	19.50			17.98		
HSPA+	Subtest 1	9262	1852.4	18.00	2.5	18.00	16.00	2.5	16.00
		9400	1880.0	18.00			16.00		
		9538	1907.6	18.00			16.00		

W-CDMA Band 2 Measured Results (ANT3)

Mode		UL Ch No.	Freq. (MHz)	Power Mode A (dBm)			Power Mode B (dBm)		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	9262	1852.4	24.74	N/A	25.00	19.70	N/A	20.00
		9400	1880.0	24.67			19.80		
		9538	1907.6	24.37			19.90		
HSDPA	Subtest 1	9262	1852.4	24.69	0	25.00	19.70	0	20.00
		9400	1880.0	24.60			19.60		
		9538	1907.6	24.39			19.60		
	Subtest 2	9262	1852.4	24.65	0	25.00	19.70	0	20.00
		9400	1880.0	24.29			19.60		
		9538	1907.6	24.20			19.60		
	Subtest 3	9262	1852.4	23.80	0.5	24.50	19.50	0.5	19.50
		9400	1880.0	24.20			19.50		
		9538	1907.6	23.80			19.40		
	Subtest 4	9262	1852.4	23.90	0.5	24.50	19.50	0.5	19.50
		9400	1880.0	24.20			19.50		
		9538	1907.6	23.90			19.40		
HSUPA	Subtest 1	9262	1852.4	24.69	0	25.00	19.70	0	20.00
		9400	1880.0	24.60			19.60		
		9538	1907.6	24.39			19.60		
	Subtest 2	9262	1852.4	22.90	2	23.00	17.90	2	18.00
		9400	1880.0	23.00			18.00		
		9538	1907.6	23.00			18.00		
	Subtest 3	9262	1852.4	24.00	1	24.00	19.00	1	19.00
		9400	1880.0	24.00			19.00		
		9538	1907.6	24.00			19.00		
	Subtest 4	9262	1852.4	22.90	2	23.00	17.90	2	18.00
		9400	1880.0	23.00			17.90		
		9538	1907.6	22.90			17.90		
	Subtest 5	9262	1852.4	24.69	0	25.00	19.70	0	20.00
		9400	1880.0	24.60			19.60		
		9538	1907.6	24.39			19.60		
DC-HSDPA	Subtest 1	9262	1852.4	24.69	0	25.00	19.70	0	20.00
		9400	1880.0	24.60			19.60		
		9538	1907.6	24.39			19.60		
	Subtest 2	9262	1852.4	24.69	0	25.00	19.70	0	20.00
		9400	1880.0	24.60			19.60		
		9538	1907.6	24.39			19.60		
	Subtest 3	9262	1852.4	24.50	0.5	24.50	19.50	0.5	19.50
		9400	1880.0	24.50			19.50		
		9538	1907.6	24.50			19.50		
	Subtest 4	9262	1852.4	24.50	0.5	24.50	19.40	0.5	19.50
		9400	1880.0	24.50			19.50		
		9538	1907.6	24.50			19.40		
HSPA+	Subtest 1	9262	1852.4	22.50	2.5	22.50	17.50	2.5	17.50
		9400	1880.0	22.50			17.50		
		9538	1907.6	22.50			17.50		

W-CDMA Band 2 Measured Results (ANT4)

Mode		UL Ch No.	Freq. (MHz)	Power Mode A (dBm)			Power Mode B (dBm)		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	9262	1852.4	20.80	N/A	21.20	20.80	N/A	21.00
		9400	1880.0	20.80			20.80		
		9538	1907.6	20.90			20.90		
HSDPA	Subtest 1	9262	1852.4	20.81	0	21.20	20.62	0	21.00
		9400	1880.0	20.76			20.58		
		9538	1907.6	20.80			20.63		
	Subtest 2	9262	1852.4	20.77	0	21.20	20.65	0	21.00
		9400	1880.0	20.71			20.58		
		9538	1907.6	20.69			20.56		
	Subtest 3	9262	1852.4	20.20	0.5	20.70	20.01	0.5	20.50
		9400	1880.0	20.22			20.01		
		9538	1907.6	20.23			20.04		
	Subtest 4	9262	1852.4	20.22	0.5	20.70	20.03	0.5	20.50
		9400	1880.0	20.23			20.03		
		9538	1907.6	20.24			20.04		
HSPA	Subtest 1	9262	1852.4	20.70	0	21.20	20.50	0	21.00
		9400	1880.0	20.80			20.60		
		9538	1907.6	20.80			20.60		
	Subtest 2	9262	1852.4	18.20	2	19.20	18.00	2	19.00
		9400	1880.0	18.20			18.00		
		9538	1907.6	18.20			18.00		
	Subtest 3	9262	1852.4	19.20	1	20.20	19.00	1	20.00
		9400	1880.0	19.20			19.00		
		9538	1907.6	19.20			19.00		
	Subtest 4	9262	1852.4	18.20	2	19.20	18.00	2	19.00
		9400	1880.0	18.20			18.00		
		9538	1907.6	18.20			18.00		
	Subtest 5	9262	1852.4	20.81	0	21.20	20.10	0	21.00
		9400	1880.0	20.76			20.10		
		9538	1907.6	20.80			20.10		
DC-HSDPA	Subtest 1	9262	1852.4	20.65	0	21.20	20.45	0	21.00
		9400	1880.0	20.64			20.44		
		9538	1907.6	20.80			20.60		
	Subtest 2	9262	1852.4	20.65	0	21.20	20.45	0	21.00
		9400	1880.0	20.64			20.44		
		9538	1907.6	20.80			20.60		
	Subtest 3	9262	1852.4	20.00	0.5	20.70	19.80	0.5	20.50
		9400	1880.0	20.14			19.94		
		9538	1907.6	20.30			20.10		
	Subtest 4	9262	1852.4	20.00	0.5	20.70	19.80	0.5	20.50
		9400	1880.0	20.14			19.94		
		9538	1907.6	20.30			20.10		
HSPA+	Subtest 1	9262	1852.4	18.70	2.5	18.70	18.50	2.5	18.50
		9400	1880.0	18.70			18.50		
		9538	1907.6	18.70			18.50		

W-CDMA Band 4 Measured Results (ANT1)

Mode		UL Ch No.	Freq. (MHz)	Power Mode A (dBm)			Power Mode B (dBm)		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	1312	1712.4	24.80	N/A	25.50	18.10	N/A	18.70
		1413	1732.6	24.90			18.10		
		1513	1752.6	24.80			18.20		
HSDPA	Subtest 1	1312	1712.4	24.70	0	25.50	18.00	0	18.70
		1413	1732.6	24.70			18.10		
		1513	1752.6	24.60			18.00		
	Subtest 2	1312	1712.4	24.60	0	25.50	18.00	0	18.70
		1413	1732.6	24.60			18.00		
		1513	1752.6	24.70			18.00		
	Subtest 3	1312	1712.4	24.30	0.5	25.00	17.70	0.5	18.20
		1413	1732.6	24.30			17.80		
		1513	1752.6	24.30			17.80		
	Subtest 4	1312	1712.4	24.20	0.5	25.00	17.70	0.5	18.20
		1413	1732.6	24.30			17.70		
		1513	1752.6	24.20			17.70		
HSDPA	Subtest 1	1312	1712.4	24.80	0	25.50	18.00	0	18.70
		1413	1732.6	24.70			18.20		
		1513	1752.6	24.70			18.10		
	Subtest 2	1312	1712.4	23.10	2	23.50	16.20	2	16.70
		1413	1732.6	23.10			16.00		
		1513	1752.6	23.00			16.20		
	Subtest 3	1312	1712.4	23.90	1	24.50	17.10	1	17.70
		1413	1732.6	24.00			17.10		
		1513	1752.6	24.00			17.10		
	Subtest 4	1312	1712.4	23.00	2	23.50	16.20	2	16.70
		1413	1732.6	23.10			16.30		
		1513	1752.6	23.00			16.10		
	Subtest 5	1312	1712.4	24.40	0	25.50	18.20	0	18.70
		1413	1732.6	24.50			18.10		
		1513	1752.6	24.50			18.10		
DC-HSDPA	Subtest 1	1312	1712.4	24.70	0	25.50	18.00	0	18.70
		1413	1732.6	24.70			18.00		
		1513	1752.6	24.70			18.00		
	Subtest 2	1312	1712.4	24.80	0	25.50	18.00	0	18.70
		1413	1732.6	24.90			18.10		
		1513	1752.6	24.90			18.00		
	Subtest 3	1312	1712.4	24.40	0.5	25.00	17.80	0.5	18.20
		1413	1732.6	24.40			17.80		
		1513	1752.6	24.40			17.80		
	Subtest 4	1312	1712.4	24.30	0.5	25.00	17.60	0.5	18.20
		1413	1732.6	24.40			17.80		
		1513	1752.6	24.40			17.80		
HSPA+	Subtest 1	1312	1712.4	22.60	2.5	23.00	15.50	2.5	16.20
		1413	1732.6	22.60			15.50		
		1513	1752.6	22.50			15.40		

W-CDMA Band 4 Measured Results (ANT2)

Mode		UL Ch No.	Freq. (MHz)	Power Mode A (dBm)			Power Mode B (dBm)		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	1312	1712.4	21.50	N/A	21.50	20.50	N/A	20.50
		1413	1732.6	21.50			20.50		
		1513	1752.6	21.50			20.50		
HSDPA	Subtest 1	1312	1712.4	21.45	0	21.50	20.42	0	20.50
		1413	1732.6	21.45			20.42		
		1513	1752.6	21.45			20.42		
	Subtest 2	1312	1712.4	21.43	0	21.50	20.47	0	20.50
		1413	1732.6	21.43			20.47		
		1513	1752.6	21.43			20.47		
	Subtest 3	1312	1712.4	20.30	0.5	21.00	20.00	0.5	20.00
		1413	1732.6	20.30			20.00		
		1513	1752.6	20.30			20.00		
	Subtest 4	1312	1712.4	20.30	0.5	21.00	20.00	0.5	20.00
		1413	1732.6	20.30			20.00		
		1513	1752.6	20.30			20.00		
HSUPA	Subtest 1	1312	1712.4	21.50	0	21.50	20.50	0	20.50
		1413	1732.6	21.50			20.50		
		1513	1752.6	21.50			20.50		
	Subtest 2	1312	1712.4	19.50	2	19.50	18.50	2	18.50
		1413	1732.6	19.50			18.50		
		1513	1752.6	19.50			18.50		
	Subtest 3	1312	1712.4	20.50	1	20.50	19.50	1	19.50
		1413	1732.6	20.50			19.50		
		1513	1752.6	20.50			19.50		
	Subtest 4	1312	1712.4	19.50	2	19.50	18.50	2	18.50
		1413	1732.6	19.50			18.50		
		1513	1752.6	19.50			18.50		
	Subtest 5	1312	1712.4	21.50	0	21.50	20.50	0	20.50
		1413	1732.6	21.50			20.50		
		1513	1752.6	21.50			20.50		
DC-HSDPA	Subtest 1	1312	1712.4	21.45	0	21.50	20.42	0	20.50
		1413	1732.6	21.45			20.42		
		1513	1752.6	21.45			20.42		
	Subtest 2	1312	1712.4	21.43	0	21.50	20.47	0	20.50
		1413	1732.6	21.43			20.47		
		1513	1752.6	21.43			20.47		
	Subtest 3	1312	1712.4	20.30	0.5	21.00	20.00	0.5	20.00
		1413	1732.6	20.30			20.00		
		1513	1752.6	20.30			20.00		
	Subtest 4	1312	1712.4	20.30	0.5	21.00	20.00	0.5	20.00
		1413	1732.6	20.30			20.00		
		1513	1752.6	20.30			20.00		
HSPA+	Subtest 1	1312	1712.4	19.00	2.5	19.00	18.00	2.5	18.00
		1413	1732.6	19.00			18.00		
		1513	1752.6	19.00			18.00		

W-CDMA Band 4 Measured Results (ANT3)

Mode		UL Ch No.	Freq. (MHz)	Power Mode A (dBm)			Power Mode B (dBm)		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	1312	1712.4	24.90	N/A	25.00	21.50	N/A	21.50
		1413	1732.6	24.90			21.50		
		1513	1752.6	24.90			21.50		
HSDPA	Subtest 1	1312	1712.4	24.39	0	25.00	21.50	0	21.50
		1413	1732.6	24.52			21.50		
		1513	1752.6	24.44			21.50		
	Subtest 2	1312	1712.4	23.33	0	25.00	21.50	0	21.50
		1413	1732.6	24.18			21.50		
		1513	1752.6	24.14			21.50		
	Subtest 3	1312	1712.4	22.78	0.5	24.50	21.00	0.5	21.00
		1413	1732.6	23.88			20.90		
		1513	1752.6	23.88			21.00		
	Subtest 4	1312	1712.4	22.51	0.5	24.50	21.00	0.5	21.00
		1413	1732.6	23.61			21.00		
		1513	1752.6	23.65			21.00		
HSUPA	Subtest 1	1312	1712.4	23.13	0	25.00	21.50	0	21.50
		1413	1732.6	23.23			21.50		
		1513	1752.6	23.30			21.50		
	Subtest 2	1312	1712.4	23.00	2	23.00	19.50	2	19.50
		1413	1732.6	22.14			19.50		
		1513	1752.6	22.22			19.50		
	Subtest 3	1312	1712.4	24.00	1	24.00	20.50	1	20.50
		1413	1732.6	23.17			20.50		
		1513	1752.6	23.24			20.50		
	Subtest 4	1312	1712.4	21.28	2	23.00	19.50	2	19.50
		1413	1732.6	22.38			19.50		
		1513	1752.6	22.45			19.50		
	Subtest 5	1312	1712.4	24.80	0	25.00	21.50	0	21.50
		1413	1732.6	24.80			21.50		
		1513	1752.6	24.80			21.50		
DC-HSDPA	Subtest 1	1312	1712.4	24.24	0	25.00	21.40	0	21.50
		1413	1732.6	24.33			21.40		
		1513	1752.6	24.35			21.50		
	Subtest 2	1312	1712.4	23.71	0	25.00	21.50	0	21.50
		1413	1732.6	24.28			21.40		
		1513	1752.6	24.31			21.40		
	Subtest 3	1312	1712.4	23.30	0.5	24.50	21.00	0.5	21.00
		1413	1732.6	24.09			21.00		
		1513	1752.6	24.11			21.00		
	Subtest 4	1312	1712.4	23.31	0.5	24.50	20.90	0.5	21.00
		1413	1732.6	24.08			20.90		
		1513	1752.6	24.13			20.90		
HSPA+	Subtest 1	1312	1712.4	22.35	2.5	22.50	19.00	2.5	19.00
		1413	1732.6	22.38			19.00		
		1513	1752.6	22.42			19.00		

W-CDMA Band 4 Measured Results (ANT4)

Mode		UL Ch No.	Freq. (MHz)	Power Mode A (dBm)			Power Mode B (dBm)		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	1312	1712.4	20.70	N/A	21.50	21.10	N/A	22.00
		1413	1732.6	20.80			21.40		
		1513	1752.6	20.90			21.40		
HSDPA	Subtest 1	1312	1712.4	20.88	0	21.50	21.00	0	22.00
		1413	1732.6	20.80			21.20		
		1513	1752.6	20.88			21.30		
	Subtest 2	1312	1712.4	20.90	0	21.50	21.35	0	22.00
		1413	1732.6	20.80			21.40		
		1513	1752.6	20.87			21.35		
	Subtest 3	1312	1712.4	20.38	0.5	21.00	20.88	0.5	21.50
		1413	1732.6	20.44			20.93		
		1513	1752.6	20.34			20.85		
	Subtest 4	1312	1712.4	20.37	0.5	21.00	20.78	0.5	21.50
		1413	1732.6	20.44			20.94		
		1513	1752.6	20.35			20.86		
HSUPA	Subtest 1	1312	1712.4	20.88	0	21.50	21.40	0	22.00
		1413	1732.6	20.80			21.40		
		1513	1752.6	20.88			21.40		
	Subtest 2	1312	1712.4	18.00	2	19.50	19.00	2	20.00
		1413	1732.6	18.00			19.00		
		1513	1752.6	18.00			19.00		
	Subtest 3	1312	1712.4	19.50	1	20.50	20.10	1	21.00
		1413	1732.6	19.50			20.10		
		1513	1752.6	19.50			20.10		
	Subtest 4	1312	1712.4	17.50	2	19.50	19.00	2	20.00
		1413	1732.6	17.50			19.00		
		1513	1752.6	17.50			19.00		
	Subtest 5	1312	1712.4	20.88	0	21.50	21.40	0	22.00
		1413	1732.6	20.80			21.40		
		1513	1752.6	20.88			21.40		
DC-HSDPA	Subtest 1	1312	1712.4	20.76	0	21.50	21.20	0	22.00
		1413	1732.6	20.82			21.33		
		1513	1752.6	20.73			21.25		
	Subtest 2	1312	1712.4	20.77	0	21.50	21.22	0	22.00
		1413	1732.6	20.82			21.28		
		1513	1752.6	20.71			21.15		
	Subtest 3	1312	1712.4	20.28	0.5	21.00	20.73	0.5	21.50
		1413	1732.6	20.39			20.83		
		1513	1752.6	20.31			20.73		
	Subtest 4	1312	1712.4	20.34	0.5	21.00	20.73	0.5	21.50
		1413	1732.6	20.38			20.77		
		1513	1752.6	20.30			20.72		
HSPA+	Subtest 1	1312	1712.4	18.70	2.5	19.00	19.10	2.5	19.50
		1413	1732.6	18.80			19.20		
		1513	1752.6	18.70			19.20		

W-CDMA Band 5 Measured Results (ANT1)

Mode		UL Ch No.	Freq. (MHz)	Power Mode A (dBm)			Power Mode B (dBm)		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	4132	826.4	25.00	N/A	25.50	25.00	N/A	25.50
		4183	836.6	24.80			24.80		
		4233	846.6	24.80			24.80		
HSDPA	Subtest 1	4132	826.4	24.80	0	25.50	24.80	0	25.50
		4183	836.6	24.80			24.80		
		4233	846.6	24.80			24.80		
	Subtest 2	4132	826.4	24.80	0	25.50	24.80	0	25.50
		4183	836.6	24.80			24.80		
		4233	846.6	24.80			24.80		
	Subtest 3	4132	826.4	24.40	0.5	25.00	24.40	0.5	25.00
		4183	836.6	24.40			24.40		
		4233	846.6	24.40			24.40		
	Subtest 4	4132	826.4	24.20	0.5	25.00	24.20	0.5	25.00
		4183	836.6	24.10			24.10		
		4233	846.6	24.10			24.10		
HSUPA	Subtest 1	4132	826.4	24.80	0	25.50	25.37	0	25.50
		4183	836.6	24.80			25.37		
		4233	846.6	24.80			25.37		
	Subtest 2	4132	826.4	23.50	2	23.50	23.50	2	23.50
		4183	836.6	23.50			23.50		
		4233	846.6	23.50			23.50		
	Subtest 3	4132	826.4	24.01	1	24.50	24.01	1	24.50
		4183	836.6	24.01			24.01		
		4233	846.6	24.01			24.01		
	Subtest 4	4132	826.4	23.20	2	23.50	23.20	2	23.50
		4183	836.6	23.20			23.20		
		4233	846.6	23.20			23.20		
	Subtest 5	4132	826.4	24.80	0	25.50	25.30	0	25.50
		4183	836.6	24.80			25.30		
		4233	846.6	24.80			25.30		
DC-HSDPA	Subtest 1	4132	826.4	24.80	0	25.50	24.80	0	25.50
		4183	836.6	24.80			24.80		
		4233	846.6	24.80			24.80		
	Subtest 2	4132	826.4	24.80	0	25.50	24.80	0	25.50
		4183	836.6	24.80			24.80		
		4233	846.6	24.80			24.80		
	Subtest 3	4132	826.4	24.40	0.5	25.00	24.40	0.5	25.00
		4183	836.6	24.40			24.40		
		4233	846.6	24.40			24.40		
	Subtest 4	4132	826.4	24.20	0.5	25.00	24.20	0.5	25.00
		4183	836.6	24.10			24.10		
		4233	846.6	24.10			24.10		
HSPA+	Subtest 1	4132	826.4	22.90	2.5	23.00	22.90	2.5	23.00
		4183	836.6	22.90			22.90		
		4233	846.6	22.90			22.90		

W-CDMA Band 5 Measured Results (ANT2)

Mode		UL Ch No.	Freq. (MHz)	Power Mode A (dBm)			Power Mode B (dBm)		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	4132	826.4	24.37	N/A	24.50	24.37	N/A	24.50
		4183	836.6	24.37			24.37		
		4233	846.6	24.37			24.37		
HSDPA	Subtest 1	4132	826.4	24.37	0	24.50	24.37	0	24.50
		4183	836.6	24.37			24.37		
		4233	846.6	24.37			24.37		
	Subtest 2	4132	826.4	24.37	0	24.50	24.37	0	24.50
		4183	836.6	24.37			24.37		
		4233	846.6	24.37			24.37		
	Subtest 3	4132	826.4	23.40	0.5	24.00	23.40	0.5	24.00
		4183	836.6	23.40			23.40		
		4233	846.6	23.40			23.40		
	Subtest 4	4132	826.4	23.20	0.5	24.00	23.20	0.5	24.00
		4183	836.6	23.10			23.10		
		4233	846.6	23.10			23.10		
HSUPA	Subtest 1	4132	826.4	24.37	0	24.50	24.37	0	24.50
		4183	836.6	24.37			24.37		
		4233	846.6	24.37			24.37		
	Subtest 2	4132	826.4	22.50	2	22.50	22.50	2	22.50
		4183	836.6	22.50			22.50		
		4233	846.6	22.50			22.50		
	Subtest 3	4132	826.4	23.01	1	23.50	23.01	1	23.50
		4183	836.6	23.01			23.01		
		4233	846.6	23.01			23.01		
	Subtest 4	4132	826.4	22.20	2	22.50	22.20	2	22.50
		4183	836.6	22.20			22.20		
		4233	846.6	22.20			22.20		
	Subtest 5	4132	826.4	24.30	0	24.50	24.30	0	24.50
		4183	836.6	24.30			24.30		
		4233	846.6	24.30			24.30		
DC-HSDPA	Subtest 1	4132	826.4	23.80	0	24.50	23.80	0	24.50
		4183	836.6	23.80			23.80		
		4233	846.6	23.80			23.80		
	Subtest 2	4132	826.4	23.80	0	24.50	23.80	0	24.50
		4183	836.6	23.80			23.80		
		4233	846.6	23.80			23.80		
	Subtest 3	4132	826.4	23.40	0.5	24.00	23.40	0.5	24.00
		4183	836.6	23.40			23.40		
		4233	846.6	23.40			23.40		
	Subtest 4	4132	826.4	23.20	0.5	24.00	23.20	0.5	24.00
		4183	836.6	23.10			23.10		
		4233	846.6	23.10			23.10		
HSPA+	Subtest 1	4132	826.4	21.90	2.5	22.00	21.90	2.5	22.00
		4183	836.6	21.90			21.90		
		4233	846.6	21.90			21.90		

9.3. CDMA

1x Advanced Setup Procedures used to establish the test signals

Call box setup procedure

- Protocol Rev > 6 (IS-2000-0)
- System ID: 331; NID: 65535, Reg. Ch. #.:
- Radio Config (RC) > Fwd11,Rvs8
- Service Option (SO) Setup > SO75 (Loopback)
- Traffic Data Rate > Full
- Rvs Power Ctrl > All Up bits (Maximum TxPout)
- Reverse Power Control Mode: 00-200 to 400 bps
- Smart blanking was disabled.

1xEV-DO Rev. B Setup Procedures used to establish the test signals

Call box setup procedure

- CMW 500 Signal Generator > 1xEV-DO Taskbar Enable
- CMW 500 1xEV-DO Signaling Configuration Window >
- 1xEV-DO Signaling On Window:
Under Access Network Control:
Band Class: BC0: US Cellular
RF Channel: 31
1xEV-DO Power: -70 dBm
Release B
- 1xEV-DO Signaling Configuration Window

Under RF Frequency Band / Channel: Enter Ch. Frequency
➤ Under Carrier Configuration: RF Frequency
For Two Carriers: Low Channel (1013)

	<u>RF Channel</u>	<u>RF Channel Offset</u>
Carrier [0]	31	0
Carrier [1]	1013	982

	<u>Carrier Sector</u>	<u>Active on AN</u>	<u>Assigned to AT</u>
Pilot [0]	C0/S0	✓	✓
	CA/S1	✓	✓

For Three Carriers: Low Channel (1013)

	<u>RF Channel</u>	<u>RF Channel Offset</u>
Carrier [0]	72	0
Carrier [1]	31	-41
Carrier [2]	1013	941

	<u>Carrier Sector</u>	<u>Active on AN</u>	<u>Assigned to AT</u>
Pilot [0]	C0/S0	✓	✓
Pilot [1]	C1/S1	✓	✓
Pilot [2]	C2/S2	✓	✓

- Rvs Power Ctrl > All Up bits (to get the maximum power)

Maximum Output Power (Tune-up Limit) for CDMA

SAR for next to the ear head exposure is measured in RC3 with the handset configured to transmit at full rate in SO55. The 3G SAR test reduction procedure is applied to RC1 with RC3 as the primary mode

Body-worn accessory SAR is measured in RC3 with the handset configured in TDSO/SO32 to transmit at full rate on FCH only with all other code channels disabled. The body-worn accessory procedures in KDB Publication 447498 D01 are applied. The 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH+SCHn), with FCH only as the primary mode.

When VOIP is supported by Ev-Do devices for next to the ear use, head exposure SAR is required.

SAR measurement is not required for the 1xEVDO Rev. A, Rev. B and 1x-Advanced. When primary mode and the adjusted SAR is ≤ 1.2 W/kg and secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode

RF Air interface	Mode	Maximum Output Power (Tune-up Limit) (dBm)							
		ANT1		ANT2		ANT3		ANT4	
		Mode A	Mode B	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B
CDMA BC0	1xRTT	25.5	25.5	24.5	24.5				
	1xAdvanced	25.5	25.5	24.5	24.5				
	1xEVDO Rel. 0	25.5	25.5	24.5	24.5				
	1xEVDO Rev. A	25.5	25.5	24.5	24.5				
CDMA BC1	1xRTT	25.5	19.5	20.5	18.5				
	1xAdvanced	25.5	19.5	20.5	18.5				
	1xEVDO Rel. 0	25.5	19.5	20.5	18.5				
	1xEVDO Rev. A	25.5	19.5	20.5	18.5				
CDMA BC10	1xRTT	25.5	25.5	24.5	24.5				
	1xAdvanced	25.5	25.5	24.5	24.5				
	1xEVDO Rel. 0	25.5	25.5	24.5	24.5				
	1xEVDO Rev. A	25.5	25.5	24.5	24.5				

CDMA BC1 is not supported for ANT3 and ANT 4.

CDMA BC0 Measured Results (ANT1)

Mode		Channel	Freq. (MHz)	Power Mode A (dBm)		Power Mode B (dBm)	
				Measured Pwr	Tune-up Limit	Measured Pwr	Tune-up Limit
1xRTT	RC1, SO55 (Loopback)	1013	824.70	25.20	25.50	25.20	25.50
		384	836.52	25.20		25.20	
		777	848.31	25.20		25.20	
	RC3, SO55 (Loopback)	1013	824.70	25.20		25.20	
		384	836.52	25.20		25.20	
		777	848.31	25.20		25.20	
	RC3, SO32 (+F-SCH)	1013	824.70	25.20		25.20	
		384	836.52	25.20		25.20	
		777	848.31	25.20		25.20	
1xAdvanced	Fwd11/Rvs8 SO75 (Loopback)	1013	824.70	25.40	25.50	25.40	25.50
		384	836.52	25.40		25.40	
		777	848.31	25.40		25.40	
1xEv-Do Rel. 0	307.2 kbps (2 slot, QPSK)	1013	824.70	25.20	25.50	25.20	25.50
		384	836.52	25.20		25.20	
		777	848.31	25.20		25.20	
1xEv-Do Rev. A	307.2k, QPSK/ ACK channel is transmitted at all the slots	1013	824.70	25.01	25.50	25.01	25.50
		384	836.52	25.01		25.01	
		777	848.31	25.01		25.01	

CDMA BC0 Measured Results (ANT2)

Mode		Channel	Freq. (MHz)	Power Mode A (dBm)		Power Mode B (dBm)	
				Measured Pwr	Tune-up Limit	Measured Pwr	Tune-up Limit
1xRTT	RC1, SO55 (Loopback)	1013	824.70	24.44	24.50	24.44	24.50
		384	836.52	24.44		24.44	
		777	848.31	24.44		24.44	
	RC3, SO55 (Loopback)	1013	824.70	24.44		24.44	
		384	836.52	24.44		24.44	
		777	848.31	24.44		24.44	
	RC3, SO32 (+F-SCH)	1013	824.70	24.44		24.44	
		384	836.52	24.44		24.44	
		777	848.31	24.44		24.44	
1xAdvanced	Fwd11/Rvs8 SO75 (Loopback)	1013	824.70	24.40	24.50	24.40	24.50
		384	836.52	24.40		24.40	
		777	848.31	24.40		24.40	
1xEv-Do Rel. 0	307.2 kbps (2 slot, QPSK)	1013	824.70	24.44	24.50	24.44	24.50
		384	836.52	24.44		24.44	
		777	848.31	24.44		24.44	
1xEv-Do Rev. A	307.2k, QPSK/ ACK channel is transmitted at all the slots	1013	824.70	24.40	24.50	24.40	24.50
		384	836.52	24.40		24.40	
		777	848.31	24.40		24.40	

CDMA BC1 Measured Results (ANT1)

Mode		Channel	Freq. (MHz)	Power Mode A (dBm)		Power Mode B (dBm)	
				Measured Pwr	Tune-up Limit	Measured Pwr	Tune-up Limit
1xRTT	RC1, SO55 (Loopback)	25	1851.25	25.00	25.50	19.40	19.50
		600	1880.00	25.00		19.10	
		1175	1908.75	25.00		19.30	
	RC3, SO55 (Loopback)	25	1851.25	25.00		19.40	
		600	1880.00	25.00		19.10	
		1175	1908.75	25.00		19.30	
	RC3, SO32 (+F-SCH)	25	1851.25	25.00		19.40	
		600	1880.00	25.00		19.10	
		1175	1908.75	25.00		19.30	
1xAdvanced	Fwd11/Rvs8 SO75 (Loopback)	25	1851.25	25.00	25.50	19.40	19.50
		600	1880	25.00		19.40	
		1175	1908.75	25.00		19.40	
1xEv-Do Rel. 0	307.2 kbps (2 slot, QPSK)	25	1851.25	25.00	25.50	19.20	19.50
		600	1880.00	25.00		19.20	
		1175	1908.75	25.00		19.20	
1xEv-Do Rev. A	307.2k, QPSK/ ACK channel is transmitted at all the slots	25	1851.25	25.00	25.50	19.20	19.50
		600	1880	25.00		19.20	
		1175	1908.75	25.00		19.20	

CDMA BC1 Measured Results (ANT2)

Mode		Channel	Freq. (MHz)	Power Mode A (dBm)		Power Mode B (dBm)	
				Measured Pwr	Tune-up Limit	Measured Pwr	Tune-up Limit
1xRTT	RC1, SO55 (Loopback)	25	1851.25	20.40	20.50	18.30	18.50
		600	1880.00	20.40		18.30	
		1175	1908.75	20.40		18.30	
	RC3, SO55 (Loopback)	25	1851.25	20.40		18.30	
		600	1880.00	20.40		18.30	
		1175	1908.75	20.40		18.30	
	RC3, SO32 (+F-SCH)	25	1851.25	20.40		18.30	
		600	1880.00	20.40		18.30	
		1175	1908.75	20.40		18.30	
1xAdvanced	Fwd11/Rvs8 SO75 (Loopback)	25	1851.25	20.40	20.50	18.30	18.50
		600	1880	20.40		18.30	
		1175	1908.75	20.30		18.30	
1xEv-Do Rel. 0	307.2 kbps (2 slot, QPSK)	25	1851.25	20.40	20.50	18.30	18.50
		600	1880.00	20.40		18.30	
		1175	1908.75	20.40		18.30	
1xEv-Do Rev. A	307.2k, QPSK/ ACK channel is transmitted at all the slots	25	1851.25	20.40	20.50	18.30	18.50
		600	1880	20.40		18.30	
		1175	1908.75	20.40		18.30	

CDMA BC10 Measured Results (ANT1)

Mode		Channel	Freq. (MHz)	Power Mode A (dBm)		Power Mode B (dBm)	
				Measured Pwr	Tune-up Limit	Measured Pwr	Tune-up Limit
1xRTT	RC1, SO55 (Loopback)	450	817.25	25.20	25.50	25.20	25.50
		560	820.00	25.20		25.20	
		670	822.75	25.20		25.20	
	RC3, SO55 (Loopback)	450	817.25	25.20		25.20	
		560	820.00	25.20		25.20	
		670	822.75	25.20		25.20	
	RC3, SO32 (+F-SCH)	450	817.25	25.20		25.20	
		560	820.00	25.20		25.20	
		670	822.75	25.20		25.20	
1xAdvanced	Fwd11/Rvs8 SO75 (Loopback)	450	817.25	25.20	25.50	25.20	25.50
		560	820	25.20		25.20	
		670	822.75	25.20		25.20	
1xEv-Do Rel. 0	307.2 kbps (2 slot, QPSK)	450	817.25	25.20	25.50	25.20	25.50
		560	820.00	25.20		25.20	
		670	822.75	25.20		25.20	
1xEv-Do Rev. A	307.2k, QPSK/ ACK channel is transmitted at all the slots	450	817.25	25.20	25.50	25.20	25.50
		560	820	25.20		25.20	
		670	822.75	25.20		25.20	

CDMA BC10 Measured Results (ANT2)

Mode		Channel	Freq. (MHz)	Power Mode A (dBm)		Power Mode B (dBm)	
				Measured Pwr	Tune-up Limit	Measured Pwr	Tune-up Limit
1xRTT	RC1, SO55 (Loopback)	450	817.25	24.46	24.50	24.46	24.50
		560	820.00	24.46		24.46	
		670	822.75	24.46		24.46	
	RC3, SO55 (Loopback)	450	817.25	24.46		24.46	
		560	820.00	24.46		24.46	
		670	822.75	24.46		24.46	
	RC3, SO32 (+F-SCH)	450	817.25	24.46		24.46	
		560	820.00	24.46		24.46	
		670	822.75	24.46		24.46	
1xAdvanced	Fwd11/Rvs8 SO75 (Loopback)	450	817.25	24.40	24.50	24.40	24.50
		560	820	24.40		24.40	
		670	822.75	24.40		24.40	
1xEv-Do Rel. 0	307.2 kbps (2 slot, QPSK)	450	817.25	24.46	24.50	24.46	24.50
		560	820.00	24.46		24.46	
		670	822.75	24.46		24.46	
1xEv-Do Rev. A	307.2k, QPSK/ ACK channel is transmitted at all the slots	450	817.25	24.45	24.50	24.45	24.50
		560	820	24.45		24.45	
		670	822.75	24.45		24.45	

9.4. LTE

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 1, 2 and 3

Modulation	Channel bandwidth / Transmission bandwidth (N_{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
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
256 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
256 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3
256 QAM	≥ 1						≤ 5

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 Signaling Value of "NS_01".

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

Network Signalling value	Requirements (subclause)	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	N/A

Maximum Output Power (Tune-up Limit) for LTE

According to April 2015 TCB workshop, SAR test exclusion can be applied for testing overlapping LTE bands as follows:

- a) The maximum output power, including tolerance, for the smaller band must be $\leq$ the larger band to qualify for the SAR test exclusion.
- b) The channel bandwidth and other operating parameters for the smaller band must be fully supported by the larger band.
 - LTE Band 2 (1850-1910 MHz) is covered by LTE Band 25 (1850-1915 MHz)
 - LTE Band 4 (1710-1755 MHz) is covered by LTE Band 66 (1710-1780 MHz)
 - LTE Band 5 (824-849 MHz) is covered by LTE Band 26 (814-849 MHz)
 - LTE Band 17 (704-716 MHz) is covered by LTE Band 12 (699-716 MHz)

LTE QPSK configuration has the highest maximum average output power per 3GPP standard.

SAR measurement is not required for the 16QAM and 64QAM. When primary mode and the adjusted SAR is ≤ 1.2 W/kg and secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode.

Please refer to section 6.3. for LTE detail test channels.

RF Air interface	Mode	Maximum Output Power (Tune-up Limit) (dBm)							
		ANT1		ANT2		ANT3		ANT4	
		Mode A	Mode B	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B
LTE Band 2	QPSK	25.50	19.50	20.50	18.50	25.00	20.00	21.20	21.00
LTE Band 4	QPSK	25.50	18.70	21.50	20.50	25.00	21.50	21.50	22.00
LTE Band 5	QPSK	25.50	25.50	24.50	24.50				
LTE Band 7	QPSK	25.50	20.20	19.50	20.00				
LTE Band 12	QPSK	25.50	25.50	24.50	24.50				
LTE Band 13	QPSK	25.50	25.50	24.50	24.50				
LTE Band 14	QPSK	25.50	25.50	24.50	24.50				
LTE Band 17	QPSK	25.50	25.50	24.50	24.50				
LTE Band 25	QPSK	25.50	19.50	20.50	18.50				
LTE Band 26	QPSK	25.50	25.50	24.50	24.50				
LTE Band 30	QPSK	23.50	20.20	20.50	20.20	23.50	20.20	19.50	20.00
LTE Band 41 (PC 3)	QPSK	25.50	23.50	22.00	22.20	25.50	23.70	21.70	22.50
LTE Band 41 (PC 2)	QPSK	27.00	23.50	22.00	22.20	26.50	23.70	21.70	22.50
LTE Band 66	QPSK	25.50	18.70	21.50	20.50	25.00	21.50	21.50	22.00

Note(s):

* From May 2017 TCB Workshop, Rel. 14 has introduced HPUE Power Class 2 for Band 41 allows 26 ± 2 dBm and does not support uplink-downlink configurations 0 and 6 or inter-band CA. The highest time averaged power for UL-DL configurations is 1 the duty cycle is 43.3%. Please refer to section 6.4. LTE (TDD) Considerations.

LTE Band 7 Measured Results (ANT1) (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)					Power Mode B (dBm)				
				20775	21100	21425	MPR	Tune-up Limit	20775	21100	21425	MPR	Tune-up Limit
				2502.5 MHz	2535 MHz	2567.5 MHz			2502.5 MHz	2535 MHz	2567.5 MHz		
5 MHz	QPSK	1	0	24.84	25.14	25.24	0	25.5	19.89	19.92	19.98	0	20.2
		1	12	24.81	25.07	25.19	0	25.5	19.84	19.88	19.98	0	20.2
		1	24	24.81	25.08	25.13	0	25.5	19.88	19.90	19.96	0	20.2
		12	0	23.91	24.17	24.25	1	24.5	19.83	19.88	19.92	0	20.2
		12	7	23.91	24.19	24.27	1	24.5	19.81	19.86	19.92	0	20.2
		12	13	23.92	24.20	24.20	1	24.5	19.82	19.85	19.86	0	20.2
		25	0	23.93	24.20	24.26	1	24.5	19.83	19.89	19.96	0	20.2
	16QAM	1	0	24.14	24.50	24.24	1	24.5	19.80	19.90	19.83	0	20.2
		1	12	24.19	24.50	24.44	1	24.5	19.75	19.84	19.83	0	20.2
		1	24	24.35	24.50	24.50	1	24.5	19.77	19.86	19.79	0	20.2
		12	0	23.13	23.33	23.42	2	23.5	19.86	19.95	20.01	0	20.2
		12	7	23.11	23.32	23.40	2	23.5	19.87	19.93	20.00	0	20.2
		12	13	23.13	23.34	23.34	2	23.5	19.87	19.94	19.95	0	20.2
		25	0	23.12	23.31	23.38	2	23.5	19.86	19.92	20.01	0	20.2
	64QAM	1	0	23.47	23.50	23.18	2	23.5	19.65	19.81	19.78	0	20.2
		1	12	23.45	23.50	23.35	2	23.5	19.65	19.78	19.78	0	20.2
		1	24	23.32	23.50	23.50	2	23.5	19.69	19.80	19.76	0	20.2
		12	0	22.35	22.43	22.42	3	22.5	19.91	19.93	19.94	0	20.2
		12	7	22.34	22.40	22.42	3	22.5	19.90	19.92	19.98	0	20.2
		12	13	22.35	22.41	22.38	3	22.5	19.91	19.92	19.91	0	20.2
		25	0	22.31	22.40	22.42	3	22.5	19.86	19.93	20.01	0	20.2

LTE Band 7 Measured Results (ANT2) (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)					Power Mode B (dBm)				
				20775	21100	21425	MPR	Tune-up Limit	20775	21100	21425	MPR	Tune-up Limit
				2502.5 MHz	2535 MHz	2567.5 MHz			2502.5 MHz	2535 MHz	2567.5 MHz		
5 MHz	QPSK	1	0	19.18	18.96	19.05	0	19.5	19.71	19.49	19.65	0	20
		1	12	19.07	18.90	19.04	0	19.5	19.62	19.46	19.65	0	20
		1	24	19.11	18.91	19.07	0	19.5	19.66	19.50	19.64	0	20
		12	0	19.12	18.89	19.00	0	19.5	19.68	19.44	19.61	0	20
		12	7	19.06	18.87	19.00	0	19.5	19.61	19.43	19.62	0	20
		12	13	19.06	18.86	19.00	0	19.5	19.61	19.43	19.57	0	20
		25	0	19.06	18.88	19.03	0	19.5	19.62	19.45	19.65	0	20
	16QAM	1	0	19.20	19.42	19.33	0	19.5	19.40	19.97	19.96	0	20
		1	12	19.20	19.34	19.32	0	19.5	19.98	19.93	19.98	0	20
		1	24	19.20	19.37	19.36	0	19.5	19.40	19.95	19.98	0	20
		12	0	19.15	18.96	19.06	0	19.5	19.66	19.50	19.65	0	20
		12	7	19.10	18.93	19.04	0	19.5	19.58	19.50	19.68	0	20
		12	13	19.10	18.94	19.05	0	19.5	19.58	19.50	19.63	0	20
		25	0	19.09	18.93	19.00	0	19.5	19.58	19.49	19.66	0	20
	64QAM	1	0	19.46	19.33	19.30	0	19.5	19.40	19.92	19.96	0	20
		1	12	19.39	19.27	19.26	0	19.5	19.90	19.86	19.95	0	20
		1	24	19.42	19.29	19.32	0	19.5	19.94	19.90	19.94	0	20
		12	0	19.18	18.96	18.93	0	19.5	19.48	19.28	19.37	0	20
		12	7	19.13	18.92	18.96	0	19.5	19.40	19.25	19.37	0	20
		12	13	19.14	18.91	18.95	0	19.5	19.41	19.24	19.32	0	20
		25	0	19.09	18.93	18.98	0	19.5	19.32	19.25	19.42	0	20

LTE Band 7 Measured Results (ANT3) (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)					Power Mode B (dBm)				
				20775	21100	21425	MPR	Tune-up Limit	20775	21100	21425	MPR	Tune-up Limit
				2502.5 MHz	2535 MHz	2567.5 MHz			2502.5 MHz	2535 MHz	2567.5 MHz		
5 MHz	QPSK	1	0	24.95	24.85	24.99	0	25	21.27	21.09	21.14	0	21.5
		1	12	24.70	24.77	24.89	0	25	21.11	21.07	21.13	0	21.5
		1	24	24.74	24.83	24.85	0	25	21.18	21.10	21.25	0	21.5
		12	0	23.88	23.90	24.00	1	24	21.14	21.06	21.10	0	21.5
		12	7	23.81	23.93	24.00	1	24	21.10	21.06	21.12	0	21.5
		12	13	23.84	23.96	23.97	1	24	21.10	21.05	21.20	0	21.5
		25	0	23.86	23.94	24.00	1	24	21.08	21.07	21.14	0	21.5
	16QAM	1	0	24.00	24.00	24.00	1	24	21.50	21.50	21.47	0	21.5
		1	12	24.00	24.00	24.00	1	24	21.46	21.50	21.41	0	21.5
		1	24	24.00	24.00	24.00	1	24	21.50	21.50	21.50	0	21.5
		12	0	23.00	23.00	23.00	2	23	21.15	21.09	21.07	0	21.5
		12	7	23.00	23.00	23.00	2	23	21.09	21.13	21.09	0	21.5
		12	13	23.00	23.00	23.00	2	23	21.11	21.14	21.17	0	21.5
		25	0	23.00	23.00	23.00	2	23	21.09	21.10	21.07	0	21.5
	64QAM	1	0	23.00	23.00	23.00	2	23	21.50	21.50	21.40	0	21.5
		1	12	23.00	23.00	23.00	2	23	21.39	21.50	21.40	0	21.5
		1	24	23.00	23.00	23.00	2	23	21.42	21.50	21.50	0	21.5
		12	0	22.00	22.00	22.00	3	22	21.23	21.09	21.06	0	21.5
		12	7	22.00	22.00	22.00	3	22	21.17	21.09	21.09	0	21.5
		12	13	22.00	22.00	22.00	3	22	21.19	21.09	21.15	0	21.5
		25	0	22.00	22.00	22.00	3	22	21.15	21.09	21.11	0	21.5

LTE Band 7 Measured Results (ANT4) (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)					Power Mode B (dBm)				
				20775	21100	21425	MPR	Tune-up Limit	20775	21100	21425	MPR	Tune-up Limit
				2502.5 MHz	2535 MHz	2567.5 MHz			2502.5 MHz	2535 MHz	2567.5 MHz		
5 MHz	QPSK	1	0	18.51	18.14	18.06	0	18.7	19.38	19.18	19.22	0	19.5
		1	12	18.18	18.09	18.07	0	18.7	19.24	19.18	19.23	0	19.5
		1	24	18.30	18.14	18.06	0	18.7	19.28	19.22	19.19	0	19.5
		12	0	18.23	18.09	18.01	0	18.7	19.26	19.12	19.14	0	19.5
		12	7	18.15	18.08	18.01	0	18.7	19.15	19.11	19.14	0	19.5
		12	13	18.20	18.08	17.96	0	18.7	19.19	19.12	19.09	0	19.5
		25	0	18.18	18.09	18.06	0	18.7	19.17	19.14	19.19	0	19.5
	16QAM	1	0	18.55	18.59	18.37	0	18.7	19.34	19.33	19.18	0	19.5
		1	12	18.58	18.55	18.35	0	18.7	19.28	19.26	19.20	0	19.5
		1	24	18.59	18.57	18.38	0	18.7	19.34	19.28	19.18	0	19.5
		12	0	18.29	18.13	18.05	0	18.7	19.29	19.18	19.15	0	19.5
		12	7	18.20	18.14	18.06	0	18.7	19.19	19.19	19.15	0	19.5
		12	13	18.24	18.15	18.04	0	18.7	19.23	19.17	19.08	0	19.5
		25	0	18.22	18.12	18.05	0	18.7	19.20	19.12	19.11	0	19.5
	64QAM	1	0	18.53	18.58	18.34	0	18.7	19.47	19.27	19.13	0	19.5
		1	12	18.44	18.51	18.38	0	18.7	19.13	19.21	19.16	0	19.5
		1	24	18.49	18.56	18.41	0	18.7	19.21	19.21	19.09	0	19.5
		12	0	18.33	18.18	18.03	0	18.7	19.40	19.32	19.23	0	19.5
		12	7	18.23	18.16	18.07	0	18.7	19.42	19.31	19.20	0	19.5
		12	13	18.27	18.15	18.01	0	18.7	19.47	19.31	19.17	0	19.5
		25	0	18.21	18.17	18.10	0	18.7	19.40	19.30	19.24	0	19.5

LTE Band 12 Measured Results (ANT1) (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)					Power Mode B (dBm)				
				23017	23095	23173	MPR	Tune-up Limit	23017	23095	23173	MPR	Tune-up Limit
				699.7 MHz	707.5 MHz	715.3 MHz			699.7 MHz	707.5 MHz	715.3 MHz		
1.4 MHz	QPSK	1	0	25.12	25.01	24.99	0	25.5	25.12	25.01	24.99	0	25.5
		1	3	25.10	25.01	24.96	0	25.5	25.10	25.01	24.96	0	25.5
		1	5	25.06	25.05	24.97	0	25.5	25.06	25.05	24.97	0	25.5
		3	0	25.09	24.97	24.98	0	25.5	25.09	24.97	24.98	0	25.5
		3	1	25.08	24.98	24.95	0	25.5	25.08	24.98	24.95	0	25.5
		3	3	25.01	25.00	24.96	0	25.5	25.01	25.00	24.96	0	25.5
	16QAM	6	0	24.00	23.93	23.97	1	24.5	24.00	23.93	23.97	1	24.5
		1	0	24.39	24.35	24.26	1	24.5	24.39	24.35	24.26	1	24.5
		1	3	24.38	24.37	24.20	1	24.5	24.38	24.37	24.20	1	24.5
		1	5	24.32	24.45	24.19	1	24.5	24.32	24.45	24.19	1	24.5
		3	0	24.22	24.14	24.18	1	24.5	24.22	24.14	24.18	1	24.5
		3	1	24.20	24.13	24.13	1	24.5	24.20	24.13	24.13	1	24.5
	64QAM	3	3	24.15	24.14	24.09	1	24.5	24.15	24.14	24.09	1	24.5
		6	0	23.07	23.05	23.05	2	23.5	23.07	23.05	23.05	2	23.5
		1	0	23.50	23.50	23.50	2	23.5	23.50	23.50	23.50	2	23.5
		1	3	23.50	23.50	23.50	2	23.5	23.50	23.50	23.50	2	23.5
		1	5	23.50	23.50	23.50	2	23.5	23.50	23.50	23.50	2	23.5
		3	0	23.44	23.50	23.42	2	23.5	23.44	23.50	23.42	2	23.5
	64QAM	3	1	23.43	23.48	23.42	2	23.5	23.43	23.48	23.42	2	23.5
		3	3	23.39	23.49	23.39	2	23.5	23.39	23.49	23.39	2	23.5
		6	0	22.35	22.37	22.39	3	22.5	22.35	22.37	22.39	3	22.5

LTE Band 12 Measured Results (ANT2) (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)					Power Mode B (dBm)				
				23017	23095	23173	MPR	Tune-up Limit	23017	23095	23173	MPR	Tune-up Limit
				699.7 MHz	707.5 MHz	715.3 MHz			699.7 MHz	707.5 MHz	715.3 MHz		
1.4 MHz	QPSK	1	0	24.34	24.27	24.34	0	24.5	24.34	24.27	24.34	0	24.5
		1	3	24.33	24.23	24.39	0	24.5	24.33	24.23	24.39	0	24.5
		1	5	24.36	24.25	24.39	0	24.5	24.36	24.25	24.39	0	24.5
		3	0	24.30	24.23	24.35	0	24.5	24.30	24.23	24.35	0	24.5
		3	1	24.29	24.22	24.33	0	24.5	24.29	24.22	24.33	0	24.5
		3	3	24.29	24.23	24.32	0	24.5	24.29	24.23	24.32	0	24.5
	16QAM	6	0	23.26	23.21	23.29	1	23.5	23.26	23.21	23.29	1	23.5
		1	0	22.76	22.71	22.79	1	23.5	22.76	22.71	22.79	1	23.5
		1	3	23.17	23.01	23.11	1	23.5	23.17	23.01	23.11	1	23.5
		1	5	23.19	22.97	23.13	1	23.5	23.19	22.97	23.13	1	23.5
		3	0	23.43	23.38	23.47	1	23.5	23.43	23.38	23.47	1	23.5
		3	1	23.42	23.37	23.47	1	23.5	23.42	23.37	23.47	1	23.5
	64QAM	3	3	23.43	23.37	23.48	1	23.5	23.43	23.37	23.48	1	23.5
		6	0	22.34	22.33	22.42	2	22.5	22.34	22.33	22.42	2	22.5
		1	0	22.50	22.50	22.50	2	22.5	22.50	22.50	22.50	2	22.5
		1	3	22.50	22.50	22.50	2	22.5	22.50	22.50	22.50	2	22.5
		1	5	22.50	22.50	22.50	2	22.5	22.50	22.50	22.50	2	22.5
		3	0	22.42	22.37	22.48	2	22.5	22.42	22.37	22.48	2	22.5
		3	1	22.41	22.33	22.47	2	22.5	22.41	22.33	22.47	2	22.5
		3	3	22.44	22.34	22.47	2	22.5	22.44	22.34	22.47	2	22.5
		6	0	21.39	21.32	21.32	3	21.5	21.39	21.32	21.32	3	21.5

LTE Band 13 Measured Results (ANT1)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)				Power Mode B (dBm)			
				23230	782 MHz	MPR	Tune-up Limit	23230	782 MHz	MPR	Tune-up Limit
10 MHz	QPSK	1	0	25.12		0	25.5	25.12		0	25.5
		1	25	25.20		0	25.5	25.20		0	25.5
		1	49	24.92		0	25.5	24.92		0	25.5
		25	0	23.91		1	24.5	23.91		1	24.5
		25	12	24.00		1	24.5	24.00		1	24.5
		25	25	23.83		1	24.5	23.83		1	24.5
		50	0	23.90		1	24.5	23.90		1	24.5
	16QAM	1	0	24.48		1	24.5	24.48		1	24.5
		1	25	24.22		1	24.5	24.22		1	24.5
		1	49	24.33		1	24.5	24.33		1	24.5
		25	0	22.88		2	23.5	22.88		2	23.5
		25	12	22.87		2	23.5	22.87		2	23.5
		25	25	22.93		2	23.5	22.93		2	23.5
		50	0	22.93		2	23.5	22.93		2	23.5
	64QAM	1	0	23.23		2	23.5	23.23		2	23.5
		1	25	22.97		2	23.5	22.97		2	23.5
		1	49	23.07		2	23.5	23.07		2	23.5
		25	0	21.75		3	22.5	21.75		3	22.5
		25	12	21.71		3	22.5	21.71		3	22.5
		25	25	21.73		3	22.5	21.73		3	22.5
		50	0	21.72		3	22.5	21.72		3	22.5
BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)				Power Mode B (dBm)			
				23230	782 MHz	MPR	Tune-up Limit	23230	782 MHz	MPR	Tune-up Limit
5 MHz	QPSK	1	0	25.01		0	25.5	25.01		0	25.5
		1	12	24.89		0	25.5	24.89		0	25.5
		1	24	24.91		0	25.5	24.91		0	25.5
		12	0	23.91		1	24.5	23.91		1	24.5
		12	7	23.86		1	24.5	23.86		1	24.5
		12	13	23.87		1	24.5	23.87		1	24.5
		25	0	23.92		1	24.5	23.92		1	24.5
	16QAM	1	0	24.27		1	24.5	24.27		1	24.5
		1	12	24.26		1	24.5	24.26		1	24.5
		1	24	24.26		1	24.5	24.26		1	24.5
		12	0	23.00		2	23.5	23.00		2	23.5
		12	7	22.90		2	23.5	22.90		2	23.5
		12	13	22.93		2	23.5	22.93		2	23.5
		25	0	22.89		2	23.5	22.89		2	23.5
	64QAM	1	0	23.03		2	23.5	23.03		2	23.5
		1	12	22.98		2	23.5	22.98		2	23.5
		1	24	22.98		2	23.5	22.98		2	23.5
		12	0	21.76		3	22.5	21.76		3	22.5
		12	7	21.67		3	22.5	21.67		3	22.5
		12	13	21.68		3	22.5	21.68		3	22.5
		25	0	21.69		3	22.5	21.69		3	22.5

LTE Band 13 Measured Results (ANT2)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)				Power Mode B (dBm)			
				23230	782 MHz	MPR	Tune-up Limit	23230	782 MHz	MPR	Tune-up Limit
10 MHz	QPSK	1	0	24.40		0	24.5	24.40		0	24.5
		1	25	24.50		0	24.5	24.50		0	24.5
		1	49	24.40		0	24.5	24.40		0	24.5
		25	0	23.32		1	23.5	23.32		1	23.5
		25	12	23.40		1	23.5	23.40		1	23.5
		25	25	23.35		1	23.5	23.35		1	23.5
	16QAM	50	0	23.20		1	23.5	23.20		1	23.5
		1	0	23.50		1	23.5	23.50		1	23.5
		1	25	23.46		1	23.5	23.46		1	23.5
		1	49	23.50		1	23.5	23.50		1	23.5
		25	0	22.30		2	22.5	22.30		2	22.5
		25	12	22.27		2	22.5	22.27		2	22.5
	64QAM	25	25	22.33		2	22.5	22.33		2	22.5
		50	0	22.24		2	22.5	22.24		2	22.5
		1	0	22.50		2	22.5	22.50		2	22.5
		1	25	22.50		2	22.5	22.50		2	22.5
		1	49	22.50		2	22.5	22.50		2	22.5
		25	0	21.38		3	21.5	21.38		3	21.5
		25	12	21.34		3	21.5	21.34		3	21.5
		25	25	21.41		3	21.5	21.41		3	21.5
		50	0	21.31		3	21.5	21.31		3	21.5
BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)				Power Mode B (dBm)			
				23230	782 MHz	MPR	Tune-up Limit	23230	782 MHz	MPR	Tune-up Limit
5 MHz	QPSK	1	0	24.41		0	24.5	24.41		0	24.5
		1	12	24.15		0	24.5	24.15		0	24.5
		1	24	24.28		0	24.5	24.28		0	24.5
		12	0	23.32		1	23.5	23.32		1	23.5
		12	7	23.22		1	23.5	23.22		1	23.5
		12	13	23.19		1	23.5	23.19		1	23.5
	16QAM	25	0	23.18		1	23.5	23.18		1	23.5
		1	0	23.50		1	23.5	23.50		1	23.5
		1	12	23.50		1	23.5	23.50		1	23.5
		1	24	23.50		1	23.5	23.50		1	23.5
		12	0	22.32		2	22.5	22.32		2	22.5
		12	7	22.24		2	22.5	22.24		2	22.5
	64QAM	12	13	22.19		2	22.5	22.19		2	22.5
		25	0	22.15		2	22.5	22.15		2	22.5
		1	0	22.20		2	22.5	22.20		2	22.5
		1	12	22.47		2	22.5	22.47		2	22.5
		1	24	22.40		2	22.5	22.40		2	22.5
		12	0	21.34		3	21.5	21.34		3	21.5
		12	7	21.31		3	21.5	21.31		3	21.5
		12	13	21.23		3	21.5	21.23		3	21.5
		25	0	21.21		3	21.5	21.21		3	21.5

LTE Band 14 Measured Results (ANT1)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)				Power Mode B (dBm)			
				23330		MPR	Tune-up Limit	23330		MPR	Tune-up Limit
10 MHz	QPSK	1	0	25.00		0	25.5	25.00		0	25.5
		1	25	25.10		0	25.5	25.10		0	25.5
		1	49	25.01		0	25.5	25.01		0	25.5
		25	0	23.80		1	24.5	23.80		1	24.5
		25	12	24.00		1	24.5	24.00		1	24.5
		25	25	23.94		1	24.5	23.94		1	24.5
	16QAM	50	0	23.92		1	24.5	23.92		1	24.5
		1	0	24.36		1	24.5	24.36		1	24.5
		1	25	24.30		1	24.5	24.30		1	24.5
		1	49	24.38		1	24.5	24.38		1	24.5
		25	0	22.87		2	23.5	22.87		2	23.5
		25	12	22.88		2	23.5	22.88		2	23.5
	64QAM	25	25	22.96		2	23.5	22.96		2	23.5
		50	0	22.97		2	23.5	22.97		2	23.5
		1	0	23.49		2	23.5	23.49		2	23.5
		1	25	23.36		2	23.5	23.36		2	23.5
		1	49	23.50		2	23.5	23.50		2	23.5
		25	0	22.15		3	22.5	22.15		3	22.5
5 MHz	QPSK	25	12	22.22		3	22.5	22.22		3	22.5
		25	25	22.30		3	22.5	22.30		3	22.5
		50	0	22.29		3	22.5	22.29		3	22.5
	16QAM	1	0	24.87		0	25.5	24.87		0	25.5
		1	12	24.92		0	25.5	24.92		0	25.5
		1	24	24.95		0	25.5	24.95		0	25.5
		12	0	23.75		1	24.5	23.75		1	24.5
		12	7	23.81		1	24.5	23.81		1	24.5
		12	13	23.91		1	24.5	23.91		1	24.5
	16QAM	25	0	23.88		1	24.5	23.88		1	24.5
		1	0	24.18		1	24.5	24.18		1	24.5
		1	12	24.27		1	24.5	24.27		1	24.5
		1	24	24.29		1	24.5	24.29		1	24.5
		12	0	22.80		2	23.5	22.80		2	23.5
		12	7	22.92		2	23.5	22.92		2	23.5
	64QAM	12	13	23.03		2	23.5	23.03		2	23.5
		25	0	23.02		2	23.5	23.02		2	23.5
		1	0	23.50		2	23.5	23.50		2	23.5
		1	12	23.50		2	23.5	23.50		2	23.5
		1	24	23.50		2	23.5	23.50		2	23.5
		12	0	22.11		3	22.5	22.11		3	22.5
	64QAM	12	7	22.15		3	22.5	22.15		3	22.5
		12	13	22.27		3	22.5	22.27		3	22.5
		25	0	22.26		3	22.5	22.26		3	22.5

LTE Band 14 Measured Results (ANT2)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)				Power Mode B (dBm)			
				23330	793 MHz	MPR	Tune-up Limit	23330	793 MHz	MPR	Tune-up Limit
10 MHz	QPSK	1	0	24.41		0	24.5	24.41		0	24.5
		1	25	24.42		0	24.5	24.42		0	24.5
		1	49	24.22		0	24.5	24.22		0	24.5
		25	0	23.33		1	23.5	23.33		1	23.5
		25	12	23.40		1	23.5	23.40		1	23.5
		25	25	23.40		1	23.5	23.40		1	23.5
	16QAM	50	0	23.42		1	23.5	23.42		1	23.5
		1	0	23.50		1	23.5	23.50		1	23.5
		1	25	23.50		1	23.5	23.50		1	23.5
		1	49	23.46		1	23.5	23.46		1	23.5
		25	0	22.33		2	22.5	22.33		2	22.5
		25	12	22.36		2	22.5	22.36		2	22.5
	64QAM	25	25	22.35		2	22.5	22.35		2	22.5
		50	0	22.36		2	22.5	22.36		2	22.5
		1	0	22.50		2	22.5	22.50		2	22.5
		1	25	22.50		2	22.5	22.50		2	22.5
		1	49	22.46		2	22.5	22.46		2	22.5
		25	0	21.38		3	21.5	21.38		3	21.5
		25	12	21.43		3	21.5	21.43		3	21.5
		25	25	21.42		3	21.5	21.42		3	21.5
		50	0	21.43		3	21.5	21.43		3	21.5
BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)				Power Mode B (dBm)			
				23330	793 MHz	MPR	Tune-up Limit	23330	793 MHz	MPR	Tune-up Limit
5 MHz	QPSK	1	0	24.34		0	24.5	24.34		0	24.5
		1	12	24.40		0	24.5	24.40		0	24.5
		1	24	24.40		0	24.5	24.40		0	24.5
		12	0	23.25		1	23.5	23.25		1	23.5
		12	7	23.30		1	23.5	23.30		1	23.5
		12	13	23.29		1	23.5	23.29		1	23.5
	16QAM	25	0	23.44		1	23.5	23.44		1	23.5
		1	0	23.50		1	23.5	23.50		1	23.5
		1	12	23.50		1	23.5	23.50		1	23.5
		1	24	23.50		1	23.5	23.50		1	23.5
		12	0	22.34		2	22.5	22.34		2	22.5
		12	7	22.37		2	22.5	22.37		2	22.5
	64QAM	12	13	22.34		2	22.5	22.34		2	22.5
		25	0	22.37		2	22.5	22.37		2	22.5
		1	0	22.50		2	22.5	22.50		2	22.5
		1	12	22.50		2	22.5	22.50		2	22.5
		1	24	22.50		2	22.5	22.50		2	22.5
		12	0	21.40		3	21.5	21.40		3	21.5
		12	7	21.42		3	21.5	21.42		3	21.5
		12	13	21.45		3	21.5	21.45		3	21.5
		25	0	21.40		3	21.5	21.40		3	21.5

LTE Band 25 Measured Results (ANT2)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)					Power Mode B (dBm)				
				26140	26365	26590	MPR	Tune-up Limit	26140	26365	26590	MPR	Tune-up Limit
				1860 MHz	1882.5 MHz	1905 MHz			1860 MHz	1882.5 MHz	1905 MHz		
20 MHz	QPSK	1	0	20.00	19.97	20.20	0	20.5	18.48	18.40	18.36	0	18.5
		1	49	20.50	20.40	20.21	0	20.5	18.50	18.40	18.40	0	18.5
		1	99	20.11	19.97	20.14	0	20.5	18.32	18.34	18.38	0	18.5
		50	0	20.01	19.99	20.05	0	20.5	18.30	18.30	18.26	0	18.5
		50	24	20.30	20.30	20.10	0	20.5	18.40	18.30	18.27	0	18.5
		50	50	19.87	19.96	19.99	0	20.5	18.24	18.24	18.26	0	18.5
	16QAM	100	0	20.03	20.20	20.11	0	20.5	18.23	18.37	18.38	0	18.5
		1	0	20.46	20.33	20.41	0	20.5	18.13	18.19	18.04	0	18.5
		1	49	20.46	20.44	20.39	0	20.5	17.93	18.17	17.97	0	18.5
		1	99	20.46	20.33	20.48	0	20.5	17.97	18.13	18.06	0	18.5
		50	0	20.04	20.07	20.13	0	20.5	18.32	18.35	18.31	0	18.5
		50	24	20.03	20.15	20.07	0	20.5	18.23	18.34	18.27	0	18.5
	64QAM	50	50	19.92	20.10	20.00	0	20.5	18.24	18.25	18.26	0	18.5
		100	0	20.05	20.10	20.14	0	20.5	18.25	18.37	18.37	0	18.5
		1	0	20.50	20.28	20.50	0	20.5	18.16	17.86	18.08	0	18.5
		1	49	20.50	20.36	20.50	0	20.5	17.98	17.81	18.03	0	18.5
		1	99	20.50	20.28	20.50	0	20.5	18.00	17.80	18.09	0	18.5
		50	0	19.69	19.65	19.81	0	20.5	18.32	18.31	18.35	0	18.5
15 MHz	QPSK	50	24	19.63	19.67	19.71	0	20.5	18.20	18.35	18.26	0	18.5
		50	50	19.57	19.62	19.64	0	20.5	18.22	18.31	18.25	0	18.5
		100	0	19.68	19.69	19.80	0	20.5	18.26	18.39	18.37	0	18.5
	16QAM	1	0	20.01	20.13	20.25	0	20.5	18.45	18.38	18.39	0	18.5
		1	37	20.07	20.17	20.19	0	20.5	18.28	18.41	18.30	0	18.5
		1	74	20.01	20.03	20.14	0	20.5	18.27	18.28	18.41	0	18.5
		36	0	19.98	20.09	20.02	0	20.5	18.38	18.29	18.27	0	18.5
		36	20	20.03	20.05	20.00	0	20.5	18.25	18.33	18.24	0	18.5
		36	39	19.98	19.95	19.92	0	20.5	18.20	18.30	18.26	0	18.5
	64QAM	75	0	20.05	19.98	20.05	0	20.5	18.25	18.33	18.29	0	18.5
		1	0	20.33	20.40	20.49	0	20.5	18.13	17.97	18.08	0	18.5
		1	37	20.42	20.39	20.39	0	20.5	18.00	17.99	17.99	0	18.5
		1	74	20.27	20.27	20.44	0	20.5	17.98	17.88	18.07	0	18.5
		36	0	20.02	20.14	20.09	0	20.5	18.37	18.32	18.28	0	18.5
		36	20	20.13	20.23	20.18	0	20.5	18.25	18.35	18.22	0	18.5
10 MHz	QPSK	36	39	20.17	20.11	20.11	0	20.5	18.22	18.29	18.24	0	18.5
		75	0	20.12	20.18	20.16	0	20.5	18.25	18.35	18.27	0	18.5
	16QAM	1	0	20.40	20.48	20.46	0	20.5	18.06	18.02	17.94	0	18.5
		1	37	20.50	20.50	20.43	0	20.5	17.87	18.04	17.85	0	18.5
		1	74	20.32	20.38	20.40	0	20.5	17.86	17.93	17.93	0	18.5
		36	0	19.71	19.69	19.73	0	20.5	18.42	18.37	18.29	0	18.5
	64QAM	36	20	19.78	19.76	19.70	0	20.5	18.29	18.38	18.23	0	18.5
		36	39	19.71	19.62	19.61	0	20.5	18.26	18.31	18.24	0	18.5
		75	0	19.75	19.69	19.71	0	20.5	18.26	18.38	18.28	0	18.5
	QPSK	1	0	20.09	20.23	20.25	0	20.5	18.45	18.38	18.40	0	18.5
		1	25	20.16	20.27	20.12	0	20.5	18.36	18.37	18.31	0	18.5
		1	49	20.18	20.14	20.22	0	20.5	18.30	18.31	18.43	0	18.5
		25	0	20.06	20.10	20.13	0	20.5	18.31	18.32	18.17	0	18.5
		25	12	20.08	20.12	20.03	0	20.5	18.26	18.31	18.20	0	18.5
		25	25	20.13	20.10	19.99	0	20.5	18.21	18.32	18.21	0	18.5
	16QAM	50	0	20.12	20.09	20.08	0	20.5	18.26	18.31	18.26	0	18.5
		1	0	20.34	20.49	20.50	0	20.5	18.13	18.09	17.94	0	18.5
		1	25	20.43	20.50	20.45	0	20.5	18.04	18.09	17.88	0	18.5
		1	49	20.44	20.44	20.50	0	20.5	17.97	18.01	17.97	0	18.5
		25	0	20.14	20.18	20.17	0	20.5	18.33	18.34	18.20	0	18.5
		25	12	20.16	20.19	20.08	0	20.5	18.28	18.34	18.21	0	18.5
	64QAM	25	25	20.20	20.17	20.05	0	20.5	18.23	18.33	18.22	0	18.5
		50	0	20.16	20.14	20.11	0	20.5	18.28	18.31	18.24	0	18.5
		1	0	20.35	20.44	20.43	0	20.5	18.00	18.00	17.86	0	18.5
		1	25	20.42	20.48	20.29	0	20.5	17.87	17.97	17.83	0	18.5
		1	49	20.49	20.41	20.38	0	20.5	17.84	17.94	17.91	0	18.5
		25	0	19.66	19.73	19.70	0	20.5	18.34	18.37	18.24	0	18.5
	64QAM	25	12	19.68	19.76	19.63	0	20.5	18.27	18.36	18.24	0	18.5
		25	25	19.71	19.71	19.61	0	20.5	18.22	18.36	18.26	0	18.5
		50	0	19.68	19.67	19.63	0	20.5	18.29	18.35	18.26	0	18.5

LTE Band 25 Measured Results (ANT2) (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)					Power Mode B (dBm)				
				26065	26365	26665	MPR	Tune-up Limit	26065	26365	26665	MPR	Tune-up Limit
				1852.5 MHz	1882.5 MHz	1912.5 MHz			1852.5 MHz	1882.5 MHz	1912.5 MHz		
5 MHz	QPSK	1	0	20.16	20.21	20.15	0	20.5	18.50	18.47	18.34	0	18.5
		1	12	20.17	20.15	20.09	0	20.5	18.40	18.43	18.38	0	18.5
		1	24	20.22	20.19	20.22	0	20.5	18.39	18.47	18.50	0	18.5
		12	0	20.07	20.19	20.06	0	20.5	18.33	18.42	18.28	0	18.5
		12	7	20.11	20.20	20.07	0	20.5	18.29	18.41	18.33	0	18.5
		12	13	20.13	20.14	20.19	0	20.5	18.30	18.42	18.37	0	18.5
	16QAM	25	0	20.12	20.14	20.08	0	20.5	18.29	18.43	18.34	0	18.5
		1	0	20.44	20.50	20.50	0	20.5	18.03	18.19	18.15	0	18.5
		1	12	20.47	20.50	20.50	0	20.5	18.01	18.14	18.18	0	18.5
		1	24	20.50	20.50	20.50	0	20.5	17.96	18.15	18.24	0	18.5
		12	0	20.11	20.27	20.08	0	20.5	18.37	18.46	18.29	0	18.5
		12	7	20.17	20.30	20.06	0	20.5	18.34	18.44	18.32	0	18.5
	64QAM	12	13	20.18	20.24	20.12	0	20.5	18.34	18.45	18.31	0	18.5
		25	0	20.16	20.22	20.08	0	20.5	18.32	18.43	18.30	0	18.5
		1	0	20.41	20.50	20.50	0	20.5	18.04	18.04	18.07	0	18.5
		1	12	20.48	20.47	20.50	0	20.5	17.95	18.00	18.04	0	18.5
		1	24	20.50	20.50	20.50	0	20.5	17.93	18.05	18.12	0	18.5
		12	0	19.59	19.78	19.61	0	20.5	18.39	18.46	18.26	0	18.5
3 MHz	QPSK	12	7	19.67	19.81	19.62	0	20.5	18.35	18.46	18.28	0	18.5
		12	13	19.68	19.75	19.71	0	20.5	18.34	18.45	18.32	0	18.5
		25	0	19.69	19.70	19.63	0	20.5	18.35	18.42	18.30	0	18.5
	16QAM	1	0	20.07	20.26	20.17	0	20.5	18.41	18.48	18.36	0	18.5
		1	8	20.09	20.24	20.26	0	20.5	18.46	18.50	18.45	0	18.5
		1	14	20.10	20.20	20.20	0	20.5	18.35	18.46	18.46	0	18.5
		8	0	20.06	20.24	20.08	0	20.5	18.42	18.44	18.33	0	18.5
		8	4	20.06	20.24	20.16	0	20.5	18.42	18.43	18.35	0	18.5
		8	7	20.06	20.18	20.15	0	20.5	18.43	18.43	18.36	0	18.5
	64QAM	15	0	20.07	20.16	20.13	0	20.5	18.43	18.42	18.34	0	18.5
		1	0	20.40	20.50	20.39	0	20.5	18.14	18.03	18.08	0	18.5
		1	8	20.46	20.47	20.50	0	20.5	18.16	18.09	18.13	0	18.5
		1	14	20.49	20.42	20.50	0	20.5	18.05	18.03	18.08	0	18.5
		8	0	20.18	20.32	20.15	0	20.5	18.48	17.81	18.39	0	18.5
		8	4	20.16	20.32	20.24	0	20.5	18.48	18.50	18.41	0	18.5
1.4 MHz	QPSK	8	7	20.16	20.26	20.23	0	20.5	18.48	18.49	18.44	0	18.5
		15	0	20.14	20.21	20.23	0	20.5	18.44	18.47	18.41	0	18.5
		1	0	20.45	20.48	20.37	0	20.5	18.03	17.99	17.93	0	18.5
		1	8	20.40	20.48	20.47	0	20.5	18.06	18.02	18.06	0	18.5
		1	14	20.43	20.43	20.42	0	20.5	17.91	17.99	17.95	0	18.5
		8	0	19.70	19.80	19.69	0	20.5	18.49	17.81	18.39	0	18.5
	16QAM	8	4	19.68	19.80	19.74	0	20.5	18.49	17.80	18.38	0	18.5
		8	7	19.68	19.75	19.77	0	20.5	18.49	17.81	18.40	0	18.5
		15	0	19.61	19.71	19.67	0	20.5	18.42	18.47	18.32	0	18.5
		1	0	20.20	20.37	20.31	0	20.5	18.46	18.48	18.48	0	18.5
		1	3	20.17	20.34	20.31	0	20.5	18.44	18.45	18.49	0	18.5
		1	5	20.17	20.33	20.29	0	20.5	18.46	18.49	18.50	0	18.5
	64QAM	3	0	20.10	20.29	20.25	0	20.5	18.42	18.41	18.41	0	18.5
		3	1	20.10	20.28	20.26	0	20.5	18.43	18.40	18.41	0	18.5
		3	3	20.09	20.24	20.27	0	20.5	18.43	18.41	18.41	0	18.5
		6	0	20.07	20.24	20.28	0	20.5	18.41	18.42	18.41	0	18.5
		1	0	20.36	20.50	20.50	0	20.5	18.00	18.09	18.17	0	18.5
		1	3	20.34	20.50	20.50	0	20.5	17.99	18.05	18.18	0	18.5
1.4 MHz	QPSK	1	5	20.36	20.50	20.50	0	20.5	17.99	18.10	18.18	0	18.5
		3	0	20.50	20.50	20.50	0	20.5	17.87	17.90	17.88	0	18.5
		3	1	20.50	20.50	20.50	0	20.5	17.87	17.90	17.89	0	18.5
		3	3	20.50	20.50	20.50	0	20.5	17.88	17.89	17.89	0	18.5
		6	0	20.21	20.36	20.32	0	20.5	17.80	17.82	17.76	0	18.5
		1	0	20.41	20.50	20.50	0	20.5	18.11	17.99	18.04	0	18.5
	16QAM	1	3	20.36	20.50	20.50	0	20.5	18.16	17.95	18.02	0	18.5
		1	5	20.41	20.47	20.50	0	20.5	18.13	18.00	18.09	0	18.5
		3	0	20.50	20.50	20.50	0	20.5	17.95	17.89	17.82	0	18.5
		3	1	20.50	20.50	20.50	0	20.5	17.94	17.87	17.81	0	18.5
		3	3	20.50	20.50	20.50	0	20.5	17.94	17.88	17.84	0	18.5
		6	0	19.69	19.76	19.80	0	20.5	17.81	17.86	17.78	0	18.5

LTE Band 25 Measured Results (ANT3) (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)					Power Mode B (dBm)				
				26065	26365	26665	MPR	Tune-up Limit	26065	26365	26665	MPR	Tune-up Limit
				1852.5 MHz	1882.5 MHz	1912.5 MHz			1852.5 MHz	1882.5 MHz	1912.5 MHz		
5 MHz	QPSK	1	0	24.66	24.85	24.26	0	25	19.70	19.75	19.59	0	20
		1	12	24.77	24.78	24.68	0	25	19.71	19.66	19.57	0	20
		1	24	24.93	24.80	24.63	0	25	19.84	19.72	19.62	0	20
		12	0	23.86	23.91	23.71	1	24	19.61	19.65	19.52	0	20
		12	7	23.97	23.91	23.74	1	24	19.66	19.66	19.52	0	20
		12	13	23.99	23.92	23.71	1	24	19.66	19.60	19.48	0	20
	16QAM	25	0	23.98	23.93	23.77	1	24	19.68	19.60	19.52	0	20
		1	0	23.60	23.90	23.18	1	24	20.00	20.00	19.99	0	20
		1	12	23.80	23.86	23.67	1	24	20.00	19.97	20.00	0	20
		1	24	24.00	23.91	23.76	1	24	20.00	20.00	20.00	0	20
		12	0	22.62	22.69	22.43	2	23	19.63	19.71	19.55	0	20
		12	7	22.78	22.72	22.46	2	23	19.68	19.69	19.55	0	20
	64QAM	12	13	22.81	22.67	22.49	2	23	19.69	19.65	19.51	0	20
		25	0	22.74	22.62	22.51	2	23	19.65	19.61	19.56	0	20
		1	0	22.57	22.94	22.27	2	23	20.00	19.96	19.82	0	20
		1	12	22.66	22.86	22.78	2	23	20.00	19.89	19.85	0	20
		1	24	22.88	22.87	22.96	2	23	20.00	19.98	19.92	0	20
		12	0	21.71	21.86	21.59	3	22	19.59	19.61	19.54	0	20
3 MHz	QPSK	12	7	21.77	21.87	21.61	3	22	19.67	19.62	19.56	0	20
		12	13	21.80	21.86	21.57	3	22	19.68	19.59	19.50	0	20
		25	0	21.80	21.81	21.64	3	22	19.67	19.61	19.52	0	20
	16QAM	1	0	24.62	24.86	24.80	0	25	19.62	19.67	19.55	0	20
		1	8	24.66	24.79	24.73	0	25	19.68	19.65	19.59	0	20
		1	14	24.80	24.73	24.59	0	25	19.69	19.63	19.60	0	20
		8	0	23.89	23.95	23.78	1	24	19.64	19.65	19.52	0	20
		8	4	23.89	23.95	23.71	1	24	19.63	19.66	19.48	0	20
		8	7	23.90	23.91	23.72	1	24	19.64	19.58	19.50	0	20
	64QAM	15	0	23.88	23.90	23.74	1	24	19.63	19.57	19.51	0	20
		1	0	23.46	23.85	23.72	1	24	19.96	19.92	19.97	0	20
		1	8	23.60	23.87	23.69	1	24	20.00	19.93	20.00	0	20
		1	14	23.75	23.80	23.59	1	24	20.00	19.91	20.00	0	20
		8	0	22.69	22.70	22.51	2	23	19.70	19.71	19.59	0	20
		8	4	22.69	22.69	22.50	2	23	19.70	19.73	19.57	0	20
1.4 MHz	QPSK	8	7	22.71	22.66	22.52	2	23	19.71	19.68	19.57	0	20
		15	0	22.65	22.61	22.51	2	23	19.66	19.63	19.53	0	20
	16QAM	1	0	22.54	22.93	22.56	2	23	19.89	19.85	19.78	0	20
		1	8	22.55	22.96	22.80	2	23	19.91	19.83	19.81	0	20
		1	14	22.62	22.94	22.66	2	23	19.95	19.85	19.77	0	20
		8	0	21.83	21.93	21.66	3	22	19.68	19.69	19.59	0	20
	64QAM	8	4	21.84	21.92	21.69	3	22	19.68	19.68	19.50	0	20
		8	7	21.91	21.89	21.71	3	22	19.70	19.65	19.52	0	20
		15	0	21.85	21.82	21.65	3	22	19.63	19.60	19.47	0	20
	QPSK	1	0	24.75	24.89	24.98	0	25	19.65	19.72	19.58	0	20
		1	3	24.68	24.87	24.88	0	25	19.63	19.69	19.55	0	20
		1	5	24.77	24.86	24.82	0	25	19.67	19.66	19.62	0	20
		3	0	24.72	24.87	24.79	0	25	19.62	19.64	19.49	0	20
		3	1	24.72	24.86	24.75	0	25	19.61	19.64	19.49	0	20
		3	3	24.70	24.82	24.74	0	25	19.62	19.56	19.49	0	20
	16QAM	6	0	23.94	23.92	23.83	1	24	19.60	19.56	19.50	0	20
		1	0	23.61	23.85	23.83	1	24	19.88	20.00	19.95	0	20
		1	3	23.61	23.82	23.74	1	24	19.87	19.96	19.96	0	20
		1	5	23.63	23.73	23.75	1	24	19.89	19.93	20.00	0	20
		3	0	23.41	23.69	23.60	1	24	19.75	19.82	19.67	0	20
		3	1	23.40	23.70	23.59	1	24	19.77	19.81	19.67	0	20
	64QAM	3	3	23.43	23.65	23.58	1	24	19.78	19.75	19.67	0	20
		6	0	22.67	22.71	22.65	2	23	19.67	19.67	19.57	0	20
		1	0	22.59	23.00	22.92	2	23	20.00	19.88	19.85	0	20
		1	3	22.58	23.00	22.94	2	23	20.00	19.92	19.85	0	20
		1	5	22.58	23.00	22.98	2	23	20.00	19.88	19.91	0	20
		3	0	22.46	22.94	22.79	2	23	19.80	19.78	19.66	0	20
	64QAM	3	1	22.46	22.93	22.74	2	23	19.79	19.77	19.60	0	20
		3	3	22.46	22.90	22.77	2	23	19.79	19.72	19.59	0	20
		6	0	21.90	21.84	21.80	3	22	19.68	19.68	19.54	0	20

LTE Band 25 Measured Results (ANT4)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)					Power Mode B (dBm)				
				26140	26365	26590	MPR	Tune-up Limit	26140	26365	26590	MPR	Tune-up Limit
				1860 MHz	1882.5 MHz	1905 MHz			1860 MHz	1882.5 MHz	1905 MHz		
20 MHz	QPSK	1	0	20.82	21.01	20.90	0	21.2	20.50	20.40	20.81	0	21
		1	49	20.95	21.10	21.00	0	21.2	20.60	20.50	20.85	0	21
		1	99	20.89	20.88	20.92	0	21.2	20.50	20.40	20.83	0	21
		50	0	20.83	20.80	20.85	0	21.2	20.40	20.40	20.67	0	21
		50	24	20.87	20.82	21.00	0	21.2	20.50	20.50	20.72	0	21
		50	50	20.87	20.75	20.90	0	21.2	20.40	20.40	20.59	0	21
	16QAM	100	0	20.92	20.86	20.90	0	21.2	20.40	20.40	20.76	0	21
		1	0	20.82	20.92	20.86	0	21.2	20.50	20.40	20.81	0	21
		1	49	20.95	20.83	20.82	0	21.2	20.60	20.50	20.85	0	21
		1	99	20.93	20.81	20.82	0	21.2	20.50	20.40	20.83	0	21
		50	0	20.36	20.41	20.44	0.2	21	20.40	20.40	20.67	0	21
		50	24	20.42	20.37	20.34	0.2	21	20.50	20.50	20.72	0	21
	64QAM	50	50	20.47	20.32	20.42	0.2	21	20.40	20.40	20.59	0	21
		100	0	20.47	20.41	20.45	0.2	21	20.40	20.40	20.76	0	21
		1	0	20.66	20.89	20.54	0.2	21	20.80	20.50	20.79	0	21
		1	49	20.82	20.78	20.51	0.2	21	20.90	20.52	20.76	0	21
		1	99	20.76	20.73	20.58	0.2	21	20.70	20.47	20.75	0	21
		50	0	19.41	19.46	19.46	1.2	20	19.49	19.43	19.38	1	20
		50	24	19.44	19.41	19.39	1.2	20	19.44	19.43	19.38	1	20
		50	50	19.48	19.34	19.49	1.2	20	19.32	19.36	19.31	1	20
		100	0	19.47	19.46	19.49	1.2	20	19.47	19.47	19.45	1	20
BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)					Power Mode B (dBm)				
				26115	26365	26615	MPR	Tune-up Limit	26115	26365	26615	MPR	Tune-up Limit
				1857.5 MHz	1882.5 MHz	1907.5 MHz			1857.5 MHz	1882.5 MHz	1907.5 MHz		
15 MHz	QPSK	1	0	20.81	21.06	21.05	0	21.2	20.84	20.82	20.80	0	21
		1	37	20.99	20.91	21.01	0	21.2	21.00	20.85	20.78	0	21
		1	74	21.01	20.81	20.89	0	21.2	20.76	20.72	20.81	0	21
		36	0	20.80	20.87	20.84	0	21.2	20.79	20.81	20.75	0	21
		36	20	20.94	20.87	20.89	0	21.2	20.89	20.81	20.75	0	21
		36	39	20.92	20.82	20.94	0	21.2	20.77	20.67	20.66	0	21
		75	0	20.92	20.87	20.97	0	21.2	20.85	20.83	20.73	0	21
	16QAM	1	0	20.77	20.96	20.97	0	21.2	20.95	20.98	20.87	0	21
		1	37	20.96	20.79	20.90	0	21.2	21.00	21.00	20.86	0	21
		1	74	20.98	20.71	20.83	0	21.2	20.91	20.89	20.88	0	21
		36	0	20.31	20.40	20.36	0.2	21	20.39	20.37	20.32	0	21
		36	20	20.46	20.37	20.39	0.2	21	20.52	20.38	20.30	0	21
		36	39	20.45	20.31	20.39	0.2	21	20.40	20.24	20.22	0	21
		75	0	20.47	20.39	20.45	0.2	21	20.53	20.38	20.33	0	21
	64QAM	1	0	20.54	20.85	20.77	0.2	21	20.63	20.65	20.68	0	21
		1	37	20.70	20.72	20.66	0.2	21	20.80	20.69	20.67	0	21
		1	74	20.74	20.62	20.63	0.2	21	20.52	20.53	20.67	0	21
		36	0	19.35	19.48	19.44	1.2	20	19.46	19.48	19.38	1	20
		36	20	19.51	19.47	19.48	1.2	20	19.56	19.46	19.35	1	20
		36	39	19.49	19.38	19.47	1.2	20	19.43	19.35	19.26	1	20
		75	0	19.49	19.44	19.51	1.2	20	19.54	19.44	19.36	1	20
BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)					Power Mode B (dBm)				
				26090	26365	26640	MPR	Tune-up Limit	26090	26365	26640	MPR	Tune-up Limit
				1855 MHz	1882.5 MHz	1910 MHz			1855 MHz	1882.5 MHz	1910 MHz		
10 MHz	QPSK	1	0	20.88	21.00	21.00	0	21.2	20.83	20.89	20.94	0	21
		1	25	20.97	20.93	21.00	0	21.2	20.92	20.88	20.78	0	21
		1	49	21.09	20.90	20.96	0	21.2	21.00	20.78	20.88	0	21
		25	0	20.80	20.88	20.91	0	21.2	20.83	20.87	20.76	0	21
		25	12	20.89	20.89	20.91	0	21.2	20.81	20.83	20.69	0	21
		25	25	21.00	20.89	20.84	0	21.2	20.90	20.81	20.69	0	21
		50	0	20.86	20.88	20.98	0	21.2	20.81	20.83	20.76	0	21
	16QAM	1	0	20.85	20.96	20.84	0	21.2	20.87	21.00	20.97	0	21
		1	25	20.91	20.92	20.89	0	21.2	20.99	21.00	20.87	0	21
		1	49	21.04	20.86	20.81	0	21.2	21.00	20.98	20.94	0	21
		25	0	20.32	20.40	20.41	0.2	21	20.33	20.46	20.30	0	21
		25	12	20.41	20.42	20.44	0.2	21	20.34	20.40	20.25	0	21
		25	25	20.51	20.43	20.35	0.2	21	20.46	20.38	20.24	0	21
		50	0	20.41	20.39	20.48	0.2	21	20.35	20.38	20.28	0	21
	64QAM	1	0	20.53	20.75	20.69	0.2	21	20.62	20.68	20.64	0	21
		1	25	20.60	20.67	20.71	0.2	21	20.76	20.70	20.53	0	21
		1	49	20.72	20.65	20.59	0.2	21	20.84	20.56	20.59	0	21
		25	0	19.29	19.46	19.47	1.2	20	19.44	19.50	19.29	1	20
		25	12	19.38	19.45	19.47	1.2	20	19.47	19.43	19.22	1	20
		25	25	19.46	19.45	19.38	1.2	20	19.55	19.38	19.21	1	20
		50	0	19.40	19.43	19.49	1.2	20	19.46	19.42	19.25	1	20

LTE Band 25 Measured Results (ANT4) (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)					Power Mode B (dBm)				
				26065	26365	26665	MPR	Tune-up Limit	26065	26365	26665	MPR	Tune-up Limit
				1852.5 MHz	1882.5 MHz	1912.5 MHz			1852.5 MHz	1882.5 MHz	1912.5 MHz		
5 MHz	QPSK	1	0	20.82	20.97	21.06	0	21.2	20.80	20.97	20.80	0	21
		1	12	20.82	20.96	20.98	0	21.2	20.87	20.91	20.79	0	21
		1	24	20.94	20.99	20.96	0	21.2	20.91	20.90	20.86	0	21
		12	0	20.79	20.91	20.90	0	21.2	20.78	20.90	20.67	0	21
		12	7	20.80	20.90	20.84	0	21.2	20.83	20.84	20.67	0	21
		12	13	20.81	20.90	20.79	0	21.2	20.84	20.86	20.76	0	21
	16QAM	25	0	20.79	20.91	20.89	0	21.2	20.83	20.86	20.73	0	21
		1	0	20.87	20.90	20.98	0	21.2	21.00	21.00	20.94	0	21
		1	12	20.85	20.88	20.91	0	21.2	21.00	21.00	20.94	0	21
		1	24	20.98	20.89	20.93	0	21.2	21.00	21.00	21.00	0	21
		12	0	20.29	20.47	20.40	0.2	21	20.38	20.52	20.25	0	21
		12	7	20.32	20.46	20.39	0.2	21	20.43	20.45	20.25	0	21
	64QAM	12	13	20.34	20.47	20.35	0.2	21	20.44	20.47	20.36	0	21
		25	0	20.31	20.44	20.41	0.2	21	20.43	20.42	20.29	0	21
		1	0	20.68	20.71	20.81	0.2	21	20.64	20.84	20.70	0	21
		1	12	20.64	20.70	20.68	0.2	21	20.75	20.73	20.67	0	21
		1	24	20.75	20.74	20.71	0.2	21	20.79	20.74	20.77	0	21
		12	0	19.33	19.46	19.51	1.2	20	19.37	19.56	19.27	1	20
3 MHz	QPSK	12	7	19.32	19.45	19.47	1.2	20	19.43	19.49	19.26	1	20
		12	13	19.34	19.44	19.46	1.2	20	19.44	19.49	19.38	1	20
		25	0	19.31	19.47	19.43	1.2	20	19.45	19.45	19.27	1	20
	16QAM	1	0	20.83	20.95	20.93	0	21.2	20.77	20.98	20.84	0	21
		1	8	20.88	21.00	20.98	0	21.2	20.87	20.96	20.99	0	21
		1	14	20.86	20.95	20.98	0	21.2	20.89	20.86	20.89	0	21
		8	0	20.80	20.97	20.94	0	21.2	20.83	20.89	20.76	0	21
		8	4	20.80	20.96	20.89	0	21.2	20.82	20.89	20.84	0	21
		8	7	20.82	20.96	20.91	0	21.2	20.83	20.90	20.87	0	21
	64QAM	15	0	20.80	20.95	20.90	0	21.2	20.84	20.88	20.86	0	21
		1	0	20.77	20.94	20.90	0	21.2	20.95	21.00	20.91	0	21
		1	8	20.83	20.99	20.89	0	21.2	21.00	21.00	21.00	0	21
		1	14	20.80	20.95	20.85	0	21.2	21.00	20.92	20.99	0	21
		8	0	20.36	20.54	20.51	0.2	21	20.38	20.44	20.33	0	21
		8	4	20.36	20.53	20.47	0.2	21	20.36	20.45	20.39	0	21
1.4 MHz	QPSK	8	7	20.39	20.54	20.49	0.2	21	20.36	20.46	20.42	0	21
		15	0	20.36	20.50	20.42	0.2	21	20.33	20.42	20.39	0	21
	16QAM	1	0	20.56	20.65	20.64	0.2	21	20.52	20.78	20.47	0	21
		1	8	20.59	20.67	20.71	0.2	21	20.60	20.72	20.60	0	21
		1	14	20.58	20.62	20.62	0.2	21	20.67	20.69	20.58	0	21
		8	0	19.38	19.50	19.48	1.2	20	19.42	19.52	19.32	1	20
	64QAM	8	4	19.38	19.50	19.44	1.2	20	19.41	19.52	19.41	1	20
		8	7	19.38	19.50	19.44	1.2	20	19.41	19.52	19.41	1	20
		15	0	19.32	19.46	19.36	1.2	20	19.33	19.46	19.39	1	20
	QPSK	1	0	20.87	21.01	20.97	0	21.2	20.87	21.00	20.98	0	21
		1	3	20.86	20.98	20.97	0	21.2	20.84	21.00	20.98	0	21
		1	5	20.89	21.01	21.02	0	21.2	20.93	21.00	20.98	0	21
		3	0	20.79	20.95	20.95	0	21.2	20.83	20.94	20.91	0	21
		3	1	20.79	20.94	20.88	0	21.2	20.83	20.94	20.91	0	21
		3	3	20.79	20.95	20.88	0	21.2	20.90	20.94	20.93	0	21
	16QAM	6	0	20.78	20.94	20.86	0	21.2	20.89	20.95	20.92	0	21
		1	0	20.76	20.96	20.75	0	21.2	20.91	21.00	21.00	0	21
		1	3	20.71	20.92	20.71	0	21.2	20.87	21.00	21.00	0	21
		1	5	20.78	20.98	20.76	0	21.2	20.96	21.00	21.00	0	21
		3	0	20.97	21.00	21.00	0.2	21	20.76	20.93	20.88	0	21
		3	1	20.96	21.00	21.00	0.2	21	20.77	20.91	20.88	0	21
	64QAM	3	3	20.96	21.00	21.00	0.2	21	20.82	20.92	20.89	0	21
		6	0	20.41	20.50	20.45	0.2	21	20.46	20.57	20.49	0	21
		1	0	20.65	20.70	20.78	0.2	21	20.70	20.67	20.00	0	21
		1	3	20.70	20.68	20.73	0.2	21	20.70	20.62	20.68	0	21
		1	5	20.68	20.70	20.74	0.2	21	20.74	20.69	20.64	0	21
		3	0	20.51	20.56	20.49	0.2	21	20.52	20.56	20.50	0	21
	64QAM	3	1	20.50	20.56	20.48	0.2	21	20.50	20.55	20.49	0	21
		3	3	20.48	20.54	20.49	0.2	21	20.55	20.55	20.51	0	21
		6	0	19.37	19.56	19.47	1.2	20	19.44	19.54	19.47	1	20

LTE Band 26 Measured Results (ANT1) (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)					Power Mode B (dBm)				
				26697	26865	27033	MPR	Tune-up Limit	26697	26865	27033	MPR	Tune-up Limit
				814.7 MHz	831.5 MHz	848.3 MHz			814.7 MHz	831.5 MHz	848.3 MHz		
1.4 MHz	QPSK	1	0	25.02	24.94	24.92	0	25.5	25.02	24.94	24.92	0	25.5
		1	3	24.98	24.87	24.77	0	25.5	24.98	24.87	24.77	0	25.5
		1	5	24.94	24.85	24.78	0	25.5	24.94	24.85	24.78	0	25.5
		3	0	24.99	24.83	24.77	0	25.5	24.99	24.83	24.77	0	25.5
		3	1	24.98	24.81	24.75	0	25.5	24.98	24.81	24.75	0	25.5
		3	3	24.90	24.82	24.76	0	25.5	24.90	24.82	24.76	0	25.5
	16QAM	6	0	23.93	23.87	23.80	1	24.5	23.93	23.87	23.80	1	24.5
		1	0	24.49	24.23	24.10	1	24.5	24.49	24.23	24.10	1	24.5
		1	3	24.42	24.24	24.09	1	24.5	24.42	24.24	24.09	1	24.5
		1	5	24.38	24.25	24.09	1	24.5	24.38	24.25	24.09	1	24.5
		3	0	24.23	24.09	23.99	1	24.5	24.23	24.09	23.99	1	24.5
		3	1	24.22	24.08	23.99	1	24.5	24.22	24.08	23.99	1	24.5
	64QAM	3	3	24.13	24.05	23.99	1	24.5	24.13	24.05	23.99	1	24.5
		6	0	23.08	23.00	22.97	2	23.5	23.08	23.00	22.97	2	23.5
		1	0	23.41	23.37	23.28	2	23.5	23.41	23.37	23.28	2	23.5
		1	3	23.39	23.39	23.30	2	23.5	23.39	23.39	23.30	2	23.5
		1	5	23.33	23.39	23.23	2	23.5	23.33	23.39	23.23	2	23.5
		3	0	23.30	23.27	23.03	2	23.5	23.30	23.27	23.03	2	23.5
		3	1	23.29	23.25	23.02	2	23.5	23.29	23.25	23.02	2	23.5
		3	3	23.29	23.24	23.03	2	23.5	23.29	23.24	23.03	2	23.5
		6	0	22.27	22.10	21.99	3	22.5	22.27	22.10	21.99	3	22.5

LTE Band 26 Measured Results (ANT2) (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)					Power Mode B (dBm)				
				26697	26865	27033	MPR	Tune-up Limit	26697	26865	27033	MPR	Tune-up Limit
				814.7 MHz	831.5 MHz	848.3 MHz			814.7 MHz	831.5 MHz	848.3 MHz		
1.4 MHz	QPSK	1	0	24.50	24.42	23.76	0	24.5	24.50	24.42	23.76	0	24.5
		1	3	24.48	24.40	23.67	0	24.5	24.48	24.40	23.67	0	24.5
		1	5	24.40	24.43	23.58	0	24.5	24.40	24.43	23.58	0	24.5
		3	0	24.33	24.41	23.54	0	24.5	24.33	24.41	23.54	0	24.5
		3	1	24.31	24.40	23.50	0	24.5	24.31	24.40	23.50	0	24.5
		3	3	24.34	24.38	23.50	0	24.5	24.34	24.38	23.50	0	24.5
	16QAM	6	0	23.40	23.37	22.55	1	23.5	23.40	23.37	22.55	1	23.5
		1	0	23.50	23.50	22.50	1	23.5	23.50	23.50	22.50	1	23.5
		1	3	23.50	23.50	22.50	1	23.5	23.50	23.50	22.50	1	23.5
		1	5	23.50	23.50	22.50	1	23.5	23.50	23.50	22.50	1	23.5
		3	0	23.50	23.50	22.50	1	23.5	23.50	23.50	22.50	1	23.5
		3	1	23.50	23.50	22.50	1	23.5	23.50	23.50	22.50	1	23.5
	64QAM	3	3	23.50	23.50	22.50	1	23.5	23.50	23.50	22.50	1	23.5
		6	0	22.50	22.50	21.83	2	22.5	22.50	22.50	21.83	2	22.5
		1	0	22.50	22.50	22.50	2	22.5	22.50	22.50	22.50	2	22.5
		1	3	22.50	22.50	22.50	2	22.5	22.50	22.50	22.50	2	22.5
		1	5	22.50	22.50	22.50	2	22.5	22.50	22.50	22.50	2	22.5
		3	0	22.50	22.50	22.50	2	22.5	22.50	22.50	22.50	2	22.5
	64QAM	3	1	22.50	22.50	22.50	2	22.5	22.50	22.50	22.50	2	22.5
		3	3	22.50	22.50	22.50	2	22.5	22.50	22.50	22.50	2	22.5
		6	0	21.50	21.50	21.50	3	21.5	21.50	21.50	21.50	3	21.5

LTE Band 30 Measured Results (ANT1)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)				Power Mode B (dBm)			
				27710	MPR	Tune-up Limit		27710	MPR	Tune-up Limit	
				2310 MHz				2310 MHz			
10 MHz	QPSK	1	0	23.19	0	23.5		19.96	0	20.2	
		1	25	23.24	0	23.5		20.01	0	20.2	
		1	49	23.22	0	23.5		20.06	0	20.2	
		25	0	22.50	1	22.5		19.95	0	20.2	
		25	12	22.50	1	22.5		20.00	0	20.2	
		25	25	22.50	1	22.5		19.99	0	20.2	
		50	0	22.50	1	22.5		20.20	0	20.2	
	16QAM	1	0	22.50	1	22.5		20.20	0	20.2	
		1	25	22.50	1	22.5		20.20	0	20.2	
		1	49	22.50	1	22.5		20.20	0	20.2	
		25	0	21.50	2	21.5		19.92	0	20.2	
		25	12	21.50	2	21.5		19.89	0	20.2	
		25	25	21.50	2	21.5		19.97	0	20.2	
		50	0	21.50	2	21.5		19.98	0	20.2	
	64QAM	1	0	21.50	2	21.5		20.16	0	20.2	
		1	25	21.50	2	21.5		20.15	0	20.2	
		1	49	21.50	2	21.5		20.20	0	20.2	
		25	0	20.50	3	20.5		20.00	0	20.2	
		25	12	20.50	3	20.5		19.98	0	20.2	
		25	25	20.50	3	20.5		20.00	0	20.2	
		50	0	20.50	3	20.5		19.98	0	20.2	
BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)				Power Mode B (dBm)			
				27710	MPR	Tune-up Limit		27710	MPR	Tune-up Limit	
				2310 MHz				2310 MHz			
5 MHz	QPSK	1	0	23.27	0	23.5		20.05	0	20.2	
		1	12	23.27	0	23.5		20.04	0	20.2	
		1	24	23.26	0	23.5		20.06	0	20.2	
		12	0	22.50	1	22.5		19.97	0	20.2	
		12	7	22.50	1	22.5		19.95	0	20.2	
		12	13	22.50	1	22.5		19.99	0	20.2	
		25	0	22.50	1	22.5		20.03	0	20.2	
	16QAM	1	0	22.50	1	22.5		20.20	0	20.2	
		1	12	22.50	1	22.5		20.20	0	20.2	
		1	24	22.50	1	22.5		20.20	0	20.2	
		12	0	21.50	2	21.5		20.04	0	20.2	
		12	7	21.50	2	21.5		20.01	0	20.2	
		12	13	21.50	2	21.5		20.04	0	20.2	
		25	0	21.50	2	21.5		20.00	0	20.2	
	64QAM	1	0	21.50	2	21.5		20.20	0	20.2	
		1	12	21.50	2	21.5		20.20	0	20.2	
		1	24	21.50	2	21.5		20.20	0	20.2	
		12	0	20.50	3	20.5		20.01	0	20.2	
		12	7	20.50	3	20.5		19.99	0	20.2	
		12	13	20.50	3	20.5		20.02	0	20.2	
		25	0	20.50	3	20.5		20.00	0	20.2	

LTE Band 30 Measured Results (ANT2)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)				Power Mode B (dBm)			
				27710	MPR	Tune-up Limit		27710	MPR	Tune-up Limit	
				2310 MHz				2310 MHz			
10 MHz	QPSK	1	0	20.43	0	20.5		20.10	0	20.2	
		1	25	20.50	0	20.5		20.17	0	20.2	
		1	49	20.50	0	20.5		20.10	0	20.2	
		25	0	20.40	0	20.5		20.10	0	20.2	
		25	12	20.50	0	20.5		20.11	0	20.2	
		25	25	20.45	0	20.5		20.11	0	20.2	
		50	0	20.47	0	20.5		20.14	0	20.2	
	16QAM	1	0	20.50	0	20.5		20.00	0	20.2	
		1	25	20.50	0	20.5		20.00	0	20.2	
		1	49	20.50	0	20.5		20.00	0	20.2	
		25	0	20.46	0	20.5		20.15	0	20.2	
		25	12	20.45	0	20.5		20.15	0	20.2	
		25	25	20.47	0	20.5		20.15	0	20.2	
		50	0	20.48	0	20.5		20.11	0	20.2	
	64QAM	1	0	20.43	0	20.5		20.00	0	20.2	
		1	25	20.50	0	20.5		20.00	0	20.2	
		1	49	20.50	0	20.5		20.00	0	20.2	
		25	0	19.71	0.25	20.25		19.71	0	20.2	
		25	12	19.72	0.25	20.25		19.72	0	20.2	
		25	25	19.73	0.25	20.25		19.72	0	20.2	
		50	0	19.73	0.25	20.25		19.65	0	20.2	
BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)				Power Mode B (dBm)			
				27710	MPR	Tune-up Limit		27710	MPR	Tune-up Limit	
				2310 MHz				2310 MHz			
5 MHz	QPSK	1	0	20.50	0	20.5		20.11	0	20.2	
		1	12	20.50	0	20.5		20.10	0	20.2	
		1	24	20.50	0	20.5		20.14	0	20.2	
		12	0	20.50	0	20.5		20.06	0	20.2	
		12	7	20.50	0	20.5		20.06	0	20.2	
		12	13	20.45	0	20.5		20.07	0	20.2	
		25	0	20.44	0	20.5		20.12	0	20.2	
	16QAM	1	0	20.50	0	20.5		20.00	0	20.2	
		1	12	20.50	0	20.5		20.00	0	20.2	
		1	24	20.50	0	20.5		20.00	0	20.2	
		12	0	20.49	0	20.5		20.13	0	20.2	
		12	7	20.49	0	20.5		20.13	0	20.2	
		12	13	20.48	0	20.5		20.13	0	20.2	
		25	0	20.47	0	20.5		20.14	0	20.2	
	64QAM	1	0	20.50	0	20.5		20.00	0	20.2	
		1	12	20.50	0	20.5		20.00	0	20.2	
		1	24	20.50	0	20.5		20.00	0	20.2	
		12	0	19.71	0.25	20.25		19.75	0	20.2	
		12	7	19.69	0.25	20.25		19.76	0	20.2	
		12	13	19.70	0.25	20.25		19.76	0	20.2	
		25	0	19.70	0.25	20.25		19.73	0	20.2	

LTE Band 30 Measured Results (ANT3)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)				Power Mode B (dBm)			
				27710	MPR	Tune-up Limit		27710	MPR	Tune-up Limit	
				2310 MHz				2310 MHz			
10 MHz	QPSK	1	0	23.22	0	23.5		20.04	0	20.2	
		1	25	23.50	0	23.5		20.10	0	20.2	
		1	49	23.01	0	23.5		19.79	0	20.2	
		25	0	22.50	1	22.5		19.78	0	20.2	
		25	12	22.57	0	23.5		20.00	0	20.2	
		25	25	22.53	0	23.5		19.84	0	20.2	
		50	0	22.50	0	23.5		20.00	0	20.2	
	16QAM	1	0	22.58	0	23.5		20.20	0	20.2	
		1	25	22.80	0	23.5		20.20	0	20.2	
		1	49	22.50	0	23.5		20.13	0	20.2	
		25	0	21.61	1	22.5		19.83	0	20.2	
		25	12	21.65	1	22.5		19.86	0	20.2	
		25	25	21.63	1	22.5		19.87	0	20.2	
		50	0	21.58	1	22.5		19.81	0	20.2	
	64QAM	1	0	21.50	1	22.5		20.19	0	20.2	
		1	25	21.50	1	22.5		20.08	0	20.2	
		1	49	21.50	1	22.5		20.04	0	20.2	
		25	0	20.79	2	21.5		19.80	0	20.2	
		25	12	20.81	2	21.5		19.85	0	20.2	
		25	25	20.81	2	21.5		19.83	0	20.2	
		50	0	20.77	2	21.5		19.79	0	20.2	
BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)				Power Mode B (dBm)			
				27710	MPR	Tune-up Limit		27710	MPR	Tune-up Limit	
				2310 MHz				2310 MHz			
5 MHz	QPSK	1	0	23.50	0	23.5		19.96	0	20.2	
		1	12	23.50	0	23.5		19.89	0	20.2	
		1	24	23.21	0	23.5		20.02	0	20.2	
		12	0	22.50	1	22.5		19.89	0	20.2	
		12	7	22.73	0	23.5		19.87	0	20.2	
		12	13	22.66	0	23.5		19.80	0	20.2	
		25	0	22.64	0	23.5		19.82	0	20.2	
	16QAM	1	0	22.50	0	23.5		20.20	0	20.2	
		1	12	22.94	0	23.5		20.20	0	20.2	
		1	24	22.51	0	23.5		20.20	0	20.2	
		12	0	21.81	1	22.5		19.95	0	20.2	
		12	7	21.79	1	22.5		19.94	0	20.2	
		12	13	21.71	1	22.5		19.86	0	20.2	
		25	0	21.72	1	22.5		19.85	0	20.2	
	64QAM	1	0	21.50	1	22.5		20.20	0	20.2	
		1	12	21.50	1	22.5		20.13	0	20.2	
		1	24	21.55	1	22.5		20.20	0	20.2	
		12	0	21.01	2	21.5		19.91	0	20.2	
		12	7	20.97	2	21.5		19.89	0	20.2	
		12	13	20.92	2	21.5		19.82	0	20.2	
		25	0	20.95	2	21.5		19.84	0	20.2	

LTE Band 30 Measured Results (ANT4)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)				Power Mode B (dBm)			
				27710	MPR	Tune-up Limit		27710	MPR	Tune-up Limit	
				2310 MHz				2310 MHz			
10 MHz	QPSK	1	0	19.41	0	19.5		19.89	0	20	
		1	25	19.50	0	19.5		19.90	0	20	
		1	49	19.21	0	19.5		19.74	0	20	
		25	0	19.19	0	19.5		19.68	0	20	
		25	12	19.26	0	19.5		19.75	0	20	
		25	25	19.16	0	19.5		19.60	0	20	
	16QAM	50	0	19.20	0	19.5		19.70	0	20	
		1	0	19.50	0	19.5		20.00	0	20	
		1	25	19.50	0	19.5		20.00	0	20	
		1	49	19.50	0	19.5		19.91	0	20	
		25	0	19.20	0	19.5		19.72	0	20	
		25	12	19.25	0	19.5		19.79	0	20	
	64QAM	25	25	19.12	0	19.5		19.64	0	20	
		50	0	19.20	0	19.5		19.73	0	20	
		1	0	19.50	0	19.5		20.00	0	20	
		1	25	19.50	0	19.5		19.97	0	20	
		1	49	19.45	0	19.5		19.84	0	20	
		25	0	19.23	0	19.5		19.23	0	20	
		25	12	19.24	0	19.5		19.27	0	20	
		25	25	19.12	0	19.5		19.15	0	20	
		50	0	19.20	0	19.5		19.22	0	20	
BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)				Power Mode B (dBm)			
				27710	MPR	Tune-up Limit		27710	MPR	Tune-up Limit	
				2310 MHz				2310 MHz			
5 MHz	QPSK	1	0	19.25	0	19.5		19.76	0	20	
		1	12	19.25	0	19.5		19.75	0	20	
		1	24	19.22	0	19.5		19.69	0	20	
		12	0	19.30	0	19.5		19.75	0	20	
		12	7	19.30	0	19.5		19.74	0	20	
		12	13	19.30	0	19.5		19.75	0	20	
	16QAM	25	0	19.24	0	19.5		19.75	0	20	
		1	0	19.50	0	19.5		20.00	0	20	
		1	12	19.50	0	19.5		20.00	0	20	
		1	24	19.50	0	19.5		20.00	0	20	
		12	0	19.35	0	19.5		19.79	0	20	
		12	7	19.33	0	19.5		19.77	0	20	
	64QAM	12	13	19.32	0	19.5		19.78	0	20	
		25	0	19.22	0	19.5		19.71	0	20	
		1	0	19.50	0	19.5		20.00	0	20	
		1	12	19.50	0	19.5		20.00	0	20	
		1	24	19.50	0	19.5		20.00	0	20	
		12	0	19.30	0	19.5		19.37	0	20	
		12	7	19.30	0	19.5		19.36	0	20	
		12	13	19.31	0	19.5		19.37	0	20	
		25	0	19.24	0	19.5		19.25	0	20	

LTE Band 41 Power Class 3 Measured Results (ANT1) (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)							Power Mode B (dBm)						
				39750	40185	40620	41055	41490	MPR	Tune-up Limit	39750	40185	40620	41055	41490	MPR	Tune-up Limit
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz			2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
5 MHz	QPSK	1	0	25.44	25.46	25.49	25.32	25.28	0	25.5	22.93	23.17	23.20	22.89	22.60	0	23.5
		1	12	25.39	25.41	25.46	25.33	25.23	0	25.5	22.89	23.13	23.13	22.81	22.65	0	23.5
		1	24	25.42	25.43	25.45	25.35	25.26	0	25.5	22.90	23.14	23.11	22.86	22.67	0	23.5
		12	0	24.33	24.33	24.39	24.23	24.13	1	24.5	22.84	23.06	23.09	22.79	22.51	0	23.5
		12	7	24.31	24.31	24.36	24.27	24.11	1	24.5	22.83	23.04	23.06	22.77	22.50	0	23.5
		12	13	24.30	24.30	24.36	24.27	24.10	1	24.5	22.83	23.03	23.05	22.76	22.57	0	23.5
		25	0	24.33	24.32	24.38	24.29	24.12	1	24.5	22.84	23.05	23.07	22.78	22.59	0	23.5
	16QAM	1	0	24.42	24.43	24.43	24.37	24.43	1	24.5	23.05	23.20	23.40	22.91	22.67	0	23.5
		1	12	24.36	24.49	24.46	24.34	24.39	1	24.5	23.01	23.19	23.32	22.80	22.65	0	23.5
		1	24	24.41	24.47	24.49	24.39	24.41	1	24.5	22.99	23.17	23.31	22.81	22.71	0	23.5
		12	0	23.25	23.35	23.35	23.24	23.15	2	23.5	22.85	23.11	23.10	22.79	22.50	0	23.5
		12	7	23.32	23.33	23.40	23.27	23.13	2	23.5	22.82	23.06	23.04	22.75	22.49	0	23.5
		12	13	23.33	23.36	23.38	23.27	23.13	2	23.5	22.81	23.02	23.05	22.75	22.57	0	23.5
		25	0	23.33	23.38	23.38	23.30	23.13	2	23.5	22.84	23.05	23.05	22.77	22.57	0	23.5
	64QAM	1	0	23.36	23.47	23.46	23.29	23.19	2	23.5	23.10	23.24	23.34	22.88	22.72	0	23.5
		1	12	23.29	23.41	23.40	23.22	23.15	2	23.5	23.04	23.17	23.29	22.81	22.65	0	23.5
		1	24	23.29	23.43	23.50	23.27	23.22	2	23.5	23.05	23.17	23.26	22.91	22.75	0	23.5
		12	0	22.11	22.24	22.35	22.06	22.31	3	22.5	22.45	22.47	22.46	22.31	22.48	1	22.5
		12	7	22.10	22.24	22.33	22.07	22.30	3	22.5	22.22	22.44	22.43	22.16	22.45	1	22.5
		12	13	22.07	22.24	22.32	22.06	22.37	3	22.5	22.24	22.41	22.40	22.16	21.85	1	22.5
		25	0	22.11	22.27	22.30	22.09	22.41	3	22.5	22.22	22.37	22.40	22.15	21.92	1	22.5

LTE Band 41 Power Class 3 Measured Results (ANT2) (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)							Power Mode B (dBm)						
				39750	40185	40620	41055	41490	MPR	Tune-up Limit	39750	40185	40620	41055	41490	MPR	Tune-up Limit
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz			2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
5 MHz	QPSK	1	0	22.00	22.00	22.00	22.00	22.00	0	22	22.00	22.00	22.00	22.00	22.00	0	22.2
		1	12	22.00	22.00	22.00	22.00	22.00	0	22	22.00	22.00	22.00	22.00	22.00	0	22.2
		1	24	22.00	22.00	22.00	22.00	22.00	0	22	22.00	22.00	22.00	22.00	22.00	0	22.2
		12	0	21.79	21.75	21.69	21.55	21.61	0	22	21.79	21.75	21.69	21.55	21.61	0	22.2
		12	7	21.78	21.74	21.68	21.60	21.60	0	22	21.78	21.74	21.68	21.60	21.60	0	22.2
		12	13	21.78	21.75	21.69	21.61	21.59	0	22	21.78	21.75	21.69	21.61	21.59	0	22.2
		25	0	21.79	21.76	21.70	21.62	21.61	0	22	21.79	21.76	21.70	21.62	21.61	0	22.2
	16QAM	1	0	21.97	21.99	21.87	21.73	21.83	0	22	21.97	21.99	21.87	21.73	21.83	0	22.2
		1	12	21.94	21.94	21.80	21.74	21.84	0	22	21.94	21.94	21.80	21.74	21.84	0	22.2
		1	24	22.00	22.00	21.88	21.78	21.90	0	22	22.01	22.03	21.88	21.78	21.90	0	22.2
		12	0	21.39	21.36	21.34	21.12	21.17	0	22	21.99	21.96	21.94	21.72	21.77	0	22.2
		12	7	21.36	21.34	21.30	21.17	21.19	0	22	21.96	21.94	21.90	21.77	21.79	0	22.2
		12	13	21.36	21.35	21.30	21.17	21.19	0	22	21.96	21.95	21.90	21.77	21.79	0	22.2
		25	0	21.37	21.36	21.31	21.20	21.20	0	22	21.97	21.96	21.91	21.80	21.80	0	22.2
	64QAM	1	0	21.53	21.54	21.54	21.30	21.33	0	22	22.13	22.14	22.14	21.90	21.93	0	22.2
		1	12	21.51	21.50	21.52	21.31	21.33	0	22	22.11	22.10	22.12	21.91	21.93	0	22.2
		1	24	21.54	21.51	21.60	21.31	21.40	0	22	22.14	22.11	22.20	21.91	22.00	0	22.2
		12	0	20.94	20.92	20.85	20.80	20.80	0.3	21.8	21.54	21.52	21.45	21.32	21.32	0.5	21.7
		12	7	20.94	20.86	20.85	20.75	20.80	0.3	21.8	21.54	21.46	21.45	21.35	21.30	0.5	21.7
		12	13	20.93	20.88	20.86	20.80	20.80	0.3	21.8	21.53	21.48	21.46	21.33	21.32	0.5	21.7
		25	0	20.95	20.91	20.84	20.77	20.80	0.3	21.8	21.55	21.51	21.44	21.37	21.35	0.5	21.7

LTE Band 41 Power Class 3 Measured Results (ANT3) (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)							Power Mode B (dBm)						
				39750	40185	40620	41055	41490	MPR	Tune-up Limit	39750	40185	40620	41055	41490	MPR	Tune-up Limit
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz			2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
5 MHz	QPSK	1	0	25.12	25.31	25.17	25.25	25.35	0	25.5	23.27	23.47	23.32	23.39	23.49	0	23.7
		1	12	25.22	25.30	25.15	25.23	25.22	0	25.5	23.35	23.46	23.30	23.36	23.39	0	23.7
		1	24	25.35	25.33	25.18	25.27	25.25	0	25.5	23.49	23.50	23.35	23.41	23.42	0	23.7
		12	0	24.08	24.24	24.08	24.18	24.21	1	24.5	23.22	23.36	23.22	23.30	23.38	0	23.7
		12	7	24.13	24.23	24.07	24.16	24.19	1	24.5	23.27	23.37	23.20	23.30	23.37	0	23.7
		12	13	24.17	24.24	24.07	24.16	24.14	1	24.5	23.34	23.39	23.20	23.31	23.31	0	23.7
		25	0	24.15	24.24	24.09	24.17	24.14	1	24.5	23.31	23.40	23.23	23.30	23.31	0	23.7
	16QAM	1	0	24.24	24.27	24.23	24.37	24.41	1	24.5	23.37	23.68	23.37	23.53	23.67	0	23.7
		1	12	24.29	24.22	24.21	24.33	24.43	1	24.5	23.44	23.68	23.37	23.47	23.55	0	23.7
		1	24	24.45	24.26	24.24	24.34	24.46	1	24.5	23.59	23.60	23.43	23.51	23.58	0	23.7
		12	0	23.11	23.22	23.12	23.14	23.18	2	23.5	22.63	22.81	22.69	22.68	22.81	0.2	23.5
		12	7	23.16	23.23	23.08	23.15	23.23	2	23.5	22.67	22.77	22.63	22.69	22.79	0.2	23.5
		12	13	23.19	23.24	23.05	23.15	23.15	2	23.5	22.71	22.76	22.63	22.68	22.70	0.2	23.5
		25	0	23.16	23.22	23.07	23.17	23.16	2	23.5	22.69	22.77	22.59	22.70	22.70	0.2	23.5
	64QAM	1	0	23.23	23.38	23.42	23.35	23.44	2	23.5	22.79	22.90	22.87	22.92	23.00	0.2	23.5
		1	12	23.32	23.37	23.33	23.35	23.31	2	23.5	22.91	22.86	22.82	22.97	22.83	0.2	23.5
		1	24	23.43	23.39	23.40	23.37	23.36	2	23.5	23.04	22.94	22.91	22.99	22.85	0.2	23.5
		12	0	22.05	22.17	22.06	22.14	22.23	3	22.5	22.04	22.17	22.09	22.13	22.26	1.2	22.5
		12	7	22.11	22.19	22.07	22.13	22.22	3	22.5	22.11	22.23	22.09	22.14	22.22	1.2	22.5
		12	13	22.16	22.22	22.07	22.14	22.21	3	22.5	22.13	22.23	22.09	22.14	22.15	1.2	22.5
		25	0	22.09	22.21	22.09	22.10	22.21	3	22.5	22.13	22.24	22.08	22.17	22.16	1.2	22.5

LTE Band 41 Power Class 3 Measured Results (ANT4) (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)							Power Mode B (dBm)						
				39750	40185	40620	41055	41490	MPR	Tune-up Limit	39750	40185	40620	41055	41490	MPR	Tune-up Limit
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz			2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
5 MHz	QPSK	1	0	21.58	21.61	21.41	21.37	21.63	0	21.7	22.32	22.40	22.12	22.13	22.36	0	22.5
		1	12	21.57	21.58	21.37	21.41	21.61	0	21.7	22.22	22.37	22.09	22.14	22.31	0	22.5
		1	24	21.61	21.54	21.41	21.43	21.62	0	21.7	22.29	22.35	22.12	22.17	22.35	0	22.5
		12	0	21.48	21.53	21.31	21.27	21.58	0	21.7	22.16	22.32	22.03	22.05	22.27	0	22.5
		12	7	21.49	21.52	21.29	21.33	21.56	0	21.7	22.16	22.31	22.01	22.08	22.26	0	22.5
		12	13	21.49	21.52	21.24	21.33	21.55	0	21.7	22.17	22.31	22.01	22.09	22.25	0	22.5
	16QAM	25	0	21.50	21.54	21.27	21.35	21.57	0	21.7	22.18	22.32	22.03	22.10	22.27	0	22.5
		1	0	21.70	21.68	21.44	21.54	21.70	0	21.7	22.35	22.40	22.37	22.18	22.41	0	22.5
		1	12	21.70	21.59	21.39	21.56	21.69	0	21.7	22.37	22.39	22.32	22.19	22.35	0	22.5
		1	24	21.70	21.57	21.43	21.58	21.70	0	21.7	22.42	22.35	22.35	22.22	22.40	0	22.5
		12	0	21.42	21.52	21.31	21.28	21.58	0	21.7	21.66	21.85	21.57	21.55	21.79	0	22.5
		12	7	21.42	21.52	21.27	21.33	21.57	0	21.7	21.67	21.80	21.53	21.60	21.78	0	22.5
	64QAM	12	13	21.44	21.53	21.26	21.34	21.57	0	21.7	21.69	21.80	21.53	21.59	21.77	0	22.5
		25	0	21.42	21.55	21.28	21.36	21.57	0	21.7	21.69	21.81	21.53	21.61	21.77	0	22.5
		1	0	21.30	21.45	21.50	21.16	21.50	0	21.7	22.05	21.94	21.84	21.70	21.50	0	22.5
		1	12	21.32	21.46	21.39	21.19	21.47	0	21.7	22.12	21.91	21.83	21.75	21.95	0	22.5
		1	24	21.35	21.41	21.43	21.26	21.49	0	21.7	22.11	21.92	21.75	21.79	21.93	0	22.5
		12	0	20.63	20.79	20.53	20.54	20.80	0.2	21.5	20.71	20.79	20.56	20.52	20.77	1	21.5
		12	7	20.64	20.78	20.52	20.54	20.79	0.2	21.5	20.69	20.76	20.55	20.57	20.77	1	21.5
		12	13	20.67	20.79	20.52	20.57	20.77	0.2	21.5	20.68	20.73	20.56	20.58	20.74	1	21.5
		25	0	20.68	20.76	20.56	20.58	20.76	0.2	21.5	20.73	20.77	20.52	20.61	20.78	1	21.5

LTE Band 66 Measured Results (ANT1)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)					Power Mode B (dBm)				
				132072	132322	132572	MPR	Tune-up Limit	132072	132322	132572	MPR	Tune-up Limit
				1720 MHz	1745 MHz	1770 MHz			1720 MHz	1745 MHz	1770 MHz		
20 MHz	QPSK	1	0	24.97	25.04	25.01	0	25.5	18.39	18.36	18.38	0	18.7
		1	49	25.00	25.10	25.10	0	25.5	18.40	18.40	18.40	0	18.7
		1	99	24.95	24.92	24.92	0	25.5	18.35	18.35	18.27	0	18.7
		50	0	24.10	24.06	24.04	1	24.5	18.31	18.30	18.28	0	18.7
		50	24	24.12	24.09	24.07	1	24.5	18.40	18.40	18.30	0	18.7
		50	50	24.09	24.08	24.06	1	24.5	18.23	18.32	18.29	0	18.7
	16QAM	100	0	24.15	24.12	24.07	1	24.5	18.30	18.38	18.33	0	18.7
		1	0	24.44	24.38	24.39	1	24.5	18.65	18.50	18.50	0	18.7
		1	49	24.41	24.36	24.36	1	24.5	18.56	18.50	18.64	0	18.7
		1	99	24.41	24.39	24.36	1	24.5	18.56	18.50	18.60	0	18.7
		50	0	23.19	23.18	23.16	2	23.5	18.26	18.31	18.29	0	18.7
		50	24	23.22	23.23	23.15	2	23.5	18.26	18.34	18.29	0	18.7
	64QAM	50	50	23.20	23.20	23.17	2	23.5	18.26	18.33	18.29	0	18.7
		100	0	23.28	23.24	23.19	2	23.5	18.32	18.38	18.33	0	18.7
		1	0	23.40	23.40	23.32	2	23.5	18.68	18.50	18.53	0	18.7
		1	49	23.40	23.40	23.22	2	23.5	18.50	18.50	18.50	0	18.7
		1	99	23.40	23.40	23.23	2	23.5	18.50	18.50	18.49	0	18.7
		50	0	22.30	22.28	22.22	3	22.5	18.38	18.46	18.33	0	18.7
15 MHz	QPSK	50	24	22.33	22.32	22.24	3	22.5	18.44	18.49	18.37	0	18.7
		50	50	22.32	22.31	22.23	3	22.5	18.41	18.46	18.40	0	18.7
		100	0	22.38	22.35	22.25	3	22.5	18.41	18.51	18.40	0	18.7
	16QAM	1	0	24.98	25.01	25.15	0	25.5	18.34	18.27	18.31	0	18.7
		1	37	24.90	25.00	25.08	0	25.5	18.27	18.32	18.33	0	18.7
		1	74	24.89	24.97	25.02	0	25.5	18.32	18.31	18.25	0	18.7
		36	0	24.06	24.08	24.05	1	24.5	18.31	18.23	18.22	0	18.7
		36	20	24.04	24.15	24.15	1	24.5	18.27	18.30	18.33	0	18.7
		36	39	24.09	24.13	24.11	1	24.5	18.33	18.29	18.26	0	18.7
	64QAM	75	0	24.06	24.16	24.15	1	24.5	18.30	18.30	18.33	0	18.7
		1	0	24.34	24.32	24.39	1	24.5	18.63	18.61	18.57	0	18.7
		1	37	24.30	24.36	24.40	1	24.5	18.53	18.63	18.55	0	18.7
		1	74	24.27	24.30	24.42	1	24.5	18.66	18.70	18.53	0	18.7
		36	0	23.18	23.14	23.10	2	23.5	18.31	18.26	18.24	0	18.7
		36	20	23.15	23.20	23.26	2	23.5	18.27	18.33	18.34	0	18.7
10 MHz	QPSK	36	39	23.21	23.20	23.23	2	23.5	18.35	18.32	18.27	0	18.7
		75	0	23.17	23.21	23.26	2	23.5	18.31	18.32	18.33	0	18.7
	16QAM	1	0	23.29	23.46	23.48	2	23.5	18.52	18.60	18.56	0	18.7
		1	37	23.25	23.42	23.50	2	23.5	18.56	18.60	18.65	0	18.7
		1	74	23.32	23.44	23.46	2	23.5	18.65	18.60	18.63	0	18.7
		36	0	22.27	22.28	22.19	3	22.5	18.39	18.47	18.43	0	18.7
	64QAM	36	20	22.26	22.34	22.26	3	22.5	18.41	18.49	18.46	0	18.7
		36	39	22.30	22.34	22.22	3	22.5	18.49	18.49	18.43	0	18.7
		75	0	22.26	22.32	22.26	3	22.5	18.38	18.47	18.44	0	18.7
	QPSK	1	0	25.04	25.14	25.17	0	25.5	18.35	18.29	18.38	0	18.7
		1	25	24.95	25.09	25.14	0	25.5	18.30	18.32	18.32	0	18.7
		1	49	25.00	25.11	25.10	0	25.5	18.39	18.32	18.36	0	18.7
		25	0	24.11	24.14	24.14	1	24.5	18.33	18.34	18.35	0	18.7
		25	12	24.08	24.18	24.18	1	24.5	18.28	18.31	18.32	0	18.7
		25	25	24.08	24.18	24.19	1	24.5	18.27	18.30	18.32	0	18.7
	16QAM	50	0	24.10	24.19	24.19	1	24.5	18.31	18.32	18.34	0	18.7
		1	0	24.34	24.42	24.47	1	24.5	18.63	18.68	18.62	0	18.7
		1	25	24.23	24.42	24.50	1	24.5	18.60	18.67	18.62	0	18.7
		1	49	24.40	24.46	24.44	1	24.5	18.70	18.68	18.63	0	18.7
		25	0	23.18	23.29	23.28	2	23.5	18.34	18.37	18.39	0	18.7
		25	12	23.18	23.26	23.24	2	23.5	18.29	18.33	18.32	0	18.7
	64QAM	25	25	23.22	23.27	23.25	2	23.5	18.27	18.33	18.32	0	18.7
		50	0	23.22	23.26	23.24	2	23.5	18.29	18.34	18.33	0	18.7
		1	0	23.41	23.41	23.40	2	23.5	18.46	18.69	18.60	0	18.7
		1	25	23.45	23.45	23.42	2	23.5	18.51	18.67	18.62	0	18.7
		1	49	23.46	23.41	23.47	2	23.5	18.67	18.60	18.63	0	18.7
		25	0	22.30	22.35	22.30	3	22.5	18.35	18.46	18.44	0	18.7
	64QAM	25	12	22.27	22.32	22.28	3	22.5	18.34	18.46	18.43	0	18.7
		25	25	22.27	22.32	22.28	3	22.5	18.35	18.48	18.44	0	18.7
		50	0	22.26	22.34	22.29	3	22.5	18.36	18.45	18.43	0	18.7

LTE Band 66 Measured Results (ANT1) (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)					Power Mode B (dBm)				
				131997	132322	132647	MPR	Tune-up Limit	131997	132322	132647	MPR	Tune-up Limit
				1712.5 MHz	1745 MHz	1777.5 MHz			1712.5 MHz	1745 MHz	1777.5 MHz		
5 MHz	QPSK	1	0	25.09	25.23	25.23	0	25.5	18.33	18.42	18.35	0	18.7
		1	12	24.99	25.19	25.15	0	25.5	18.30	18.37	18.32	0	18.7
		1	24	24.96	25.16	25.18	0	25.5	18.31	18.38	18.37	0	18.7
		12	0	24.04	24.20	24.18	1	24.5	18.30	18.35	18.33	0	18.7
		12	7	24.08	24.18	24.15	1	24.5	18.31	18.34	18.30	0	18.7
		12	13	24.07	24.18	24.15	1	24.5	18.29	18.34	18.31	0	18.7
	16QAM	25	0	24.10	24.19	24.17	1	24.5	18.33	18.36	18.32	0	18.7
		1	0	24.39	24.47	24.50	1	24.5	18.70	18.70	18.70	0	18.7
		1	12	24.40	24.42	24.49	1	24.5	18.67	18.70	18.66	0	18.7
		1	24	24.39	24.46	24.50	1	24.5	18.67	18.70	18.69	0	18.7
		12	0	23.12	23.30	23.29	2	23.5	18.31	18.44	18.34	0	18.7
		12	7	23.25	23.34	23.30	2	23.5	18.36	18.42	18.33	0	18.7
	64QAM	12	13	23.24	23.32	23.31	2	23.5	18.36	18.42	18.35	0	18.7
		25	0	23.22	23.32	23.32	2	23.5	18.36	18.40	18.34	0	18.7
		1	0	23.48	23.50	23.40	2	23.5	18.59	18.69	18.60	0	18.7
		1	12	23.50	23.48	23.40	2	23.5	18.62	18.69	18.60	0	18.7
		1	24	23.50	23.50	23.40	2	23.5	18.64	18.60	18.60	0	18.7
		12	0	22.20	22.37	22.33	3	22.5	18.37	18.52	18.44	0	18.7
3 MHz	QPSK	12	7	22.25	22.35	22.30	3	22.5	18.38	18.50	18.44	0	18.7
		12	13	22.27	22.34	22.29	3	22.5	18.39	18.49	18.44	0	18.7
		25	0	22.29	22.34	22.30	3	22.5	18.38	18.44	18.43	0	18.7
	16QAM	1	0	25.08	25.18	25.30	0	25.5	18.28	18.37	18.32	0	18.7
		1	8	25.14	25.17	25.25	0	25.5	18.31	18.40	18.36	0	18.7
		1	14	25.06	25.11	25.18	0	25.5	18.29	18.34	18.30	0	18.7
		8	0	24.13	24.26	24.22	1	24.5	18.31	18.37	18.33	0	18.7
		8	4	24.11	24.24	24.22	1	24.5	18.29	18.36	18.31	0	18.7
		8	7	24.11	24.24	24.22	1	24.5	18.30	18.36	18.32	0	18.7
	64QAM	15	0	24.11	24.25	24.23	1	24.5	18.29	18.36	18.31	0	18.7
		1	0	24.36	24.50	24.46	1	24.5	18.56	18.65	18.63	0	18.7
		1	8	24.35	24.50	24.50	1	24.5	18.66	18.70	18.69	0	18.7
		1	14	24.37	24.50	24.42	1	24.5	18.58	18.64	18.70	0	18.7
		8	0	23.20	23.36	23.32	2	23.5	18.35	18.42	18.37	0	18.7
		8	4	23.27	23.33	23.33	2	23.5	18.34	18.41	18.37	0	18.7
1.4 MHz	QPSK	8	7	23.26	23.33	23.32	2	23.5	18.34	18.41	18.38	0	18.7
		15	0	23.22	23.27	23.27	2	23.5	18.29	18.38	18.34	0	18.7
	16QAM	1	0	23.33	23.44	23.37	2	23.5	18.52	18.58	18.62	0	18.7
		1	8	23.35	23.41	23.45	2	23.5	18.52	18.66	18.66	0	18.7
		1	14	23.38	23.36	23.39	2	23.5	18.55	18.63	18.62	0	18.7
		8	0	22.30	22.36	22.28	3	22.5	18.42	18.48	18.50	0	18.7
	64QAM	8	4	22.27	22.34	22.29	3	22.5	18.41	18.50	18.49	0	18.7
		8	7	22.26	22.37	22.30	3	22.5	18.40	18.49	18.48	0	18.7
		15	0	22.23	22.33	22.25	3	22.5	18.35	18.45	18.43	0	18.7
	QPSK	1	0	25.20	25.31	25.20	0	25.5	18.29	18.28	18.42	0	18.7
		1	3	25.14	25.24	25.17	0	25.5	18.24	18.26	18.34	0	18.7
		1	5	25.16	25.27	25.21	0	25.5	18.29	18.29	18.35	0	18.7
		3	0	25.13	25.26	25.21	0	25.5	18.24	18.28	18.30	0	18.7
		3	1	25.13	25.24	25.20	0	25.5	18.23	18.26	18.29	0	18.7
		3	3	25.13	25.25	25.21	0	25.5	18.24	18.27	18.29	0	18.7
	16QAM	6	0	24.13	24.23	24.23	1	24.5	18.24	18.27	18.30	0	18.7
		1	0	24.48	24.50	24.43	1	24.5	18.61	18.52	18.67	0	18.7
		1	3	24.42	24.50	24.42	1	24.5	18.56	18.45	18.65	0	18.7
		1	5	24.43	24.50	24.45	1	24.5	18.60	18.48	18.65	0	18.7
		3	0	24.29	24.44	24.34	1	24.5	18.35	18.41	18.49	0	18.7
		3	1	24.28	24.39	24.36	1	24.5	18.34	18.40	18.45	0	18.7
	64QAM	3	3	24.29	24.40	24.31	1	24.5	18.36	18.43	18.44	0	18.7
		6	0	23.33	23.32	23.32	2	23.5	18.25	18.37	18.38	0	18.7
		1	0	23.40	23.41	23.43	2	23.5	18.53	18.60	18.68	0	18.7
		1	3	23.40	23.38	23.43	2	23.5	18.50	18.60	18.66	0	18.7
		1	5	23.40	23.41	23.42	2	23.5	18.51	18.60	18.60	0	18.7
		3	0	23.39	23.36	23.33	2	23.5	18.43	18.58	18.62	0	18.7
	64QAM	3	1	23.39	23.37	23.32	2	23.5	18.43	18.56	18.59	0	18.7
		3	3	23.38	23.36	23.31	2	23.5	18.41	18.55	18.60	0	18.7
		6	0	22.27	22.39	22.26	3	22.5	18.43	18.53	18.53	0	18.7

LTE Band 66 Measured Results (ANT2) (continued)

BW (MHz)	Mode	RB Allocation	RB offset	Power Mode A (dBm)					Power Mode B (dBm)				
				131997	132322	132647	MPR	Tune-up Limit	131997	132322	132647	MPR	Tune-up Limit
				1712.5 MHz	1745 MHz	1777.5 MHz			1712.5 MHz	1745 MHz	1777.5 MHz		
5 MHz	QPSK	1	0	20.70	20.66	20.66	0	21.5	20.04	19.97	19.94	0	20.5
		1	12	20.59	20.67	20.57	0	21.5	19.92	19.97	19.91	0	20.5
		1	24	20.58	20.67	20.52	0	21.5	19.96	20.02	19.90	0	20.5
		12	0	20.66	20.64	20.61	0	21.5	20.01	19.96	19.94	0	20.5
		12	7	20.62	20.65	20.60	0	21.5	19.93	19.97	19.92	0	20.5
		12	13	20.63	20.64	20.56	0	21.5	19.94	19.98	19.88	0	20.5
	16QAM	25	0	20.64	20.64	20.63	0	21.5	19.95	20.00	19.95	0	20.5
		1	0	20.99	20.93	20.99	0	21.5	20.30	20.34	20.34	0	20.5
		1	12	20.92	20.91	20.99	0	21.5	20.15	20.32	20.30	0	20.5
		1	24	20.99	20.99	20.95	0	21.5	20.25	20.35	20.35	0	20.5
		12	0	20.78	20.76	20.76	0	21.5	20.06	20.03	19.99	0	20.5
		12	7	20.71	20.76	20.74	0	21.5	19.96	20.01	19.99	0	20.5
	64QAM	12	13	20.71	20.78	20.68	0	21.5	20.00	20.03	19.93	0	20.5
		25	0	20.71	20.75	20.73	0	21.5	19.97	20.03	19.96	0	20.5
		1	0	21.14	21.03	20.96	0	21.5	20.19	20.13	20.26	0	20.5
		1	12	21.04	21.04	20.94	0	21.5	20.07	20.11	20.22	0	20.5
		1	24	21.09	21.11	20.94	0	21.5	20.09	20.22	20.18	0	20.5
		12	0	20.00	20.00	20.00	0.5	21	19.94	20.00	19.93	0	20.5
3 MHz	QPSK	12	7	20.00	20.00	20.00	0.5	21	19.90	19.98	19.87	0	20.5
		12	13	20.00	20.00	20.00	0.5	21	19.87	20.00	19.82	0	20.5
		25	0	20.00	20.00	20.00	0.5	21	19.90	19.95	19.87	0	20.5
	16QAM	1	0	20.75	20.63	20.68	0	21.5	20.00	19.91	19.87	0	20.5
		1	8	20.76	20.71	20.67	0	21.5	20.05	19.97	19.88	0	20.5
		1	14	20.68	20.66	20.56	0	21.5	19.89	19.92	19.86	0	20.5
		8	0	20.73	20.69	20.70	0	21.5	20.03	19.97	19.90	0	20.5
		8	4	20.71	20.69	20.60	0	21.5	20.02	19.96	19.86	0	20.5
		8	7	20.72	20.70	20.61	0	21.5	20.03	19.98	19.86	0	20.5
	64QAM	15	0	20.70	20.70	20.60	0	21.5	20.02	19.98	19.87	0	20.5
		1	0	20.89	20.94	20.93	0	21.5	20.33	20.21	20.17	0	20.5
		1	8	20.98	21.00	20.89	0	21.5	20.32	20.26	20.16	0	20.5
		1	14	20.85	20.97	20.88	0	21.5	20.15	20.25	20.11	0	20.5
		8	0	20.83	20.82	20.81	0	21.5	20.08	20.04	19.97	0	20.5
		8	4	20.82	20.87	20.73	0	21.5	20.07	20.03	19.90	0	20.5
1.4 MHz	QPSK	8	7	20.82	20.88	20.74	0	21.5	20.07	20.04	19.91	0	20.5
		15	0	20.79	20.83	20.70	0	21.5	20.02	19.99	19.89	0	20.5
	16QAM	1	0	20.94	20.89	20.92	0	21.5	20.20	20.12	20.04	0	20.5
		1	8	20.83	20.97	20.92	0	21.5	20.24	20.19	20.00	0	20.5
		1	14	20.85	20.95	20.84	0	21.5	20.13	20.09	20.00	0	20.5
		8	0	20.00	20.00	20.00	0.5	21	20.10	20.02	19.98	0	20.5
	64QAM	8	4	20.00	20.00	20.00	0.5	21	20.03	20.02	19.89	0	20.5
		8	7	20.00	20.00	20.00	0.5	21	20.04	20.04	19.89	0	20.5
		15	0	20.00	20.00	20.00	0.5	21	19.99	20.01	19.84	0	20.5
	QPSK	1	0	20.92	20.84	20.78	0	21.5	20.03	19.95	19.92	0	20.5
		1	3	20.89	20.82	20.76	0	21.5	19.99	19.93	19.91	0	20.5
		1	5	20.88	20.85	20.71	0	21.5	20.02	19.98	19.94	0	20.5
		3	0	20.88	20.84	20.68	0	21.5	20.01	19.97	19.88	0	20.5
		3	1	20.88	20.83	20.66	0	21.5	19.99	19.97	19.88	0	20.5
		3	3	20.88	20.84	20.64	0	21.5	19.99	19.96	19.88	0	20.5
	16QAM	6	0	20.85	20.81	20.74	0	21.5	19.99	19.97	19.91	0	20.5
		1	0	21.07	21.15	21.00	0	21.5	20.33	20.16	20.17	0	20.5
		1	3	21.04	21.10	21.01	0	21.5	20.29	20.17	20.13	0	20.5
		1	5	21.07	21.15	21.04	0	21.5	20.29	20.22	20.17	0	20.5
		3	0	20.96	20.93	20.89	0	21.5	20.11	20.09	20.01	0	20.5
		3	1	20.93	20.92	20.87	0	21.5	20.10	20.08	20.01	0	20.5
	64QAM	3	3	20.92	20.93	20.85	0	21.5	20.08	20.08	20.02	0	20.5
		6	0	20.93	20.86	20.81	0	21.5	20.02	20.03	19.96	0	20.5
		1	0	21.03	20.75	21.04	0	21.5	20.14	20.21	19.98	0	20.5
		1	3	20.94	21.04	21.10	0	21.5	20.10	20.12	20.23	0	20.5
		1	5	21.02	21.04	21.11	0	21.5	20.18	20.15	20.14	0	20.5
		3	0	20.92	20.88	20.93	0	21.5	20.09	20.05	20.04	0	20.5
	64QAM	3	1	20.91	20.89	20.93	0	21.5	20.07	20.05	20.02	0	20.5
		3	3	20.90	20.89	20.91	0	21.5	20.07	20.04	20.02	0	20.5
		6	0	20.00	20.00	20.00	0.5	21	20.12	20.02	19.90	0	20.5

9.5. LTE Carrier Aggregation

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

For inter-band carrier aggregation with uplink assigned to one E-UTRA band (Table 5.6A-1), the requirements in subclause 6.2.3 apply.

For inter-band carrier aggregation with one component carrier per operating band and the uplink active in two E-UTRA bands, the requirements in subclause 6.2.3 apply for each uplink component carrier.

For intra-band contiguous carrier aggregation the allowed Maximum Power Reduction (MPR) for the maximum output power applicable to the DUT in table below. In case the modulation format is different on different component carriers then the MPR is determined by the rules applied to higher order of those modulations.

Modulation	CA bandwidth Class B and C / Smallest Component Carrier Transmission Bandwidth Configuration				MPR (dB)
	25 RB	50 RB	75 RB	100 RB	
QPSK	> 8 and ≤ 25	> 12 and ≤ 50	> 16 and ≤ 75	> 18 and ≤ 100	≤ 1
QPSK	> 25	> 50	> 75	> 100	≤ 2
16 QAM	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 8 and ≤ 25	> 12 and ≤ 50	> 16 and ≤ 75	> 18 and ≤ 100	≤ 2
16 QAM	> 25	> 50	> 75	> 100	≤ 3
64 QAM	≤ 8 and allocation wholly contained within a single CC	≤ 12 and allocation wholly contained within a single CC	≤ 16 and allocation wholly contained within a single CC	≤ 18 and allocation wholly contained within a single CC	≤ 2
64 QAM	> 8 or allocation extends across two CC's	> 12 or allocation extends across two CC's	> 16 or allocation extends across two CC's	> 18 or allocation extends across two CC's	≤ 3

For PUCCH and SRS transmissions, the allowed MPR is according to that specified for PUSCH WPKD modulation for the corresponding transmission bandwidth.

For intra-band contiguous carrier aggregation bandwidth class C with non-contiguous resource allocation, the allowed Maximum Power Reduction (MPR) for the maximum output power in Table 6.2.2A-1 is specified as follows

$$\text{MPR} = \text{CEIL} \{ \min(M_A, M_{\text{IM5}}), 0.5 \}$$

Where M_A is defined as follows

$$\begin{aligned} M_A = & \quad 8.2 & ; 0 \leq A < 0.025 \\ & 9.2 - 40A & ; 0.025 \leq A < 0.05 \\ & 8 - 16A & ; 0.05 \leq A < 0.25 \\ & 4.83 - 3.33A & ; 0.25 \leq A \leq 0.4 \\ & 3.83 - 0.83A & ; 0.4 \leq A \leq 1 \end{aligned}$$

and M_{IM5} is defined as follows

$$\begin{aligned} M_{\text{IM5}} = & \quad 4.5 & ; \Delta_{\text{IM5}} < 1.5 * \text{BW}_{\text{Channel_CA}} \\ & 6.0 & ; 1.5 * \text{BW}_{\text{Channel_CA}} \leq \Delta_{\text{IM5}} < \text{BW}_{\text{Channel_CA}}/2 + \Delta f_{\text{ooB}} \\ & M_A & ; \Delta_{\text{IM5}} \geq \text{BW}_{\text{Channel_CA}}/2 + \Delta f_{\text{ooB}} \end{aligned}$$

Where

$$A = N_{\text{RB_alloc}} / N_{\text{RB_agg}}$$

$$\Delta_{\text{IM5}} = \max(|F_{\text{C_agg}} - (3 * F_{\text{agg_alloc_low}} - 2 * F_{\text{agg_alloc_high}})|, |F_{\text{C_agg}} - (3 * F_{\text{agg_alloc_high}} - 2 * F_{\text{agg_alloc_low}})|)$$

$\text{CEIL}\{M_A, 0.5\}$ means rounding upwards to closest 0.5dB, i.e. $\text{MPR} \in [3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0, 6.5, 7.0, 7.5, 8.0, 8.5]$

For intra-band carrier aggregation, the MPR is evaluated per slot and given by the maximum value taken over the transmission(s) on all component carriers within the slot; the maximum MPR over the two slots is then applied for the entire subframe.

For intra-band non-contiguous carrier aggregation with one uplink carrier on the PCC, the requirements in the subclause 6.2.3 apply. For intra-band non-contiguous aggregation with two uplink carriers the MPR is defined for those E-UTRA bands where maximum possible $W_{\text{GAP}} \leq 42.2$ MHz as follows

$$\text{MPR} = \text{CEIL}\{M_N, 0.5\}$$

Where M_N is defined as follows

$$\begin{aligned} M_N = & \quad -0.125N + 18.25 & ; 2 \leq N \leq 50 \\ & -0.0333 N + 13.67 & ; 50 < N \leq 200 \end{aligned}$$

Where $N = N_{\text{RB_alloc}}$ is the number of allocated resource blocks.

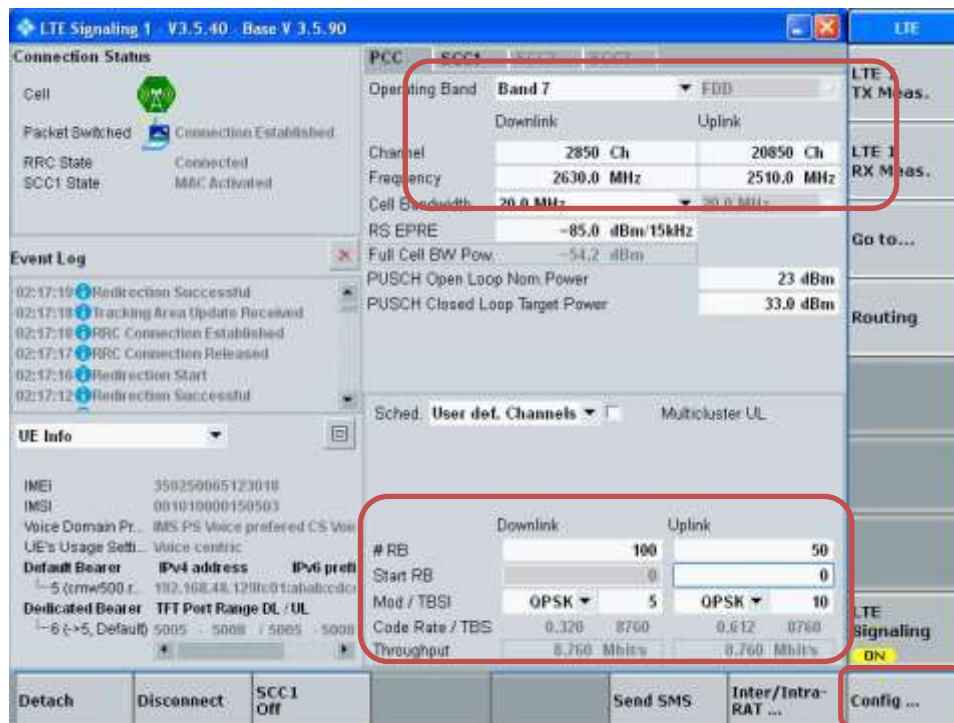
For the UE maximum output power modified by MPR, the power limits specified in subclause 6.2.5A apply.

LTE Carrier Aggregation Test Signal Set-up Procedure

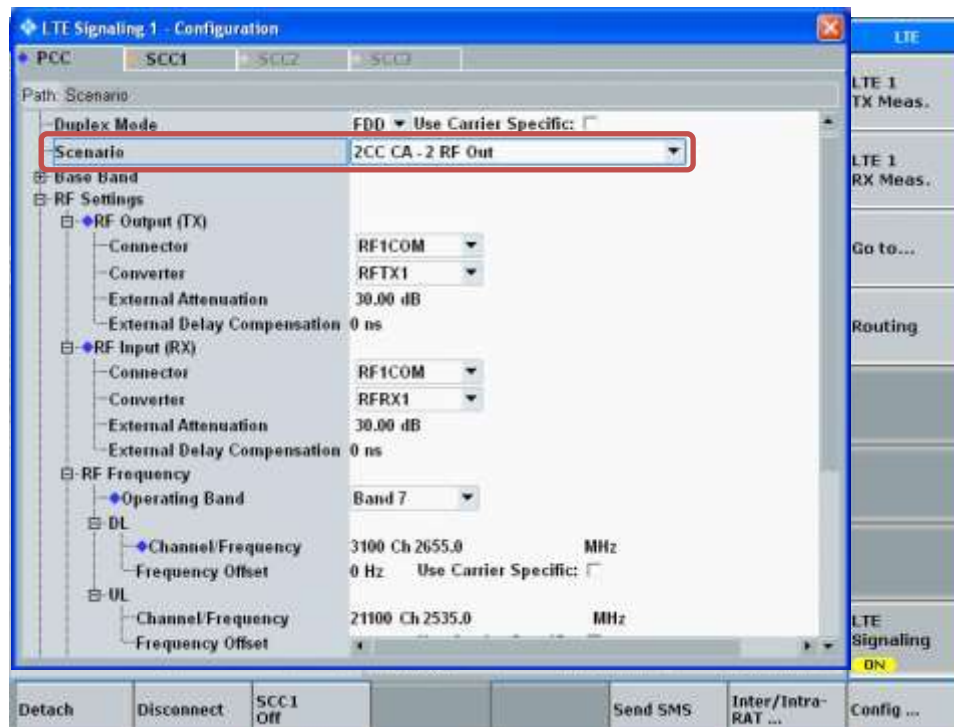
(Use normal LTE set-up procedure in addition with the following steps)

Set to CMW-500 with following parameters:

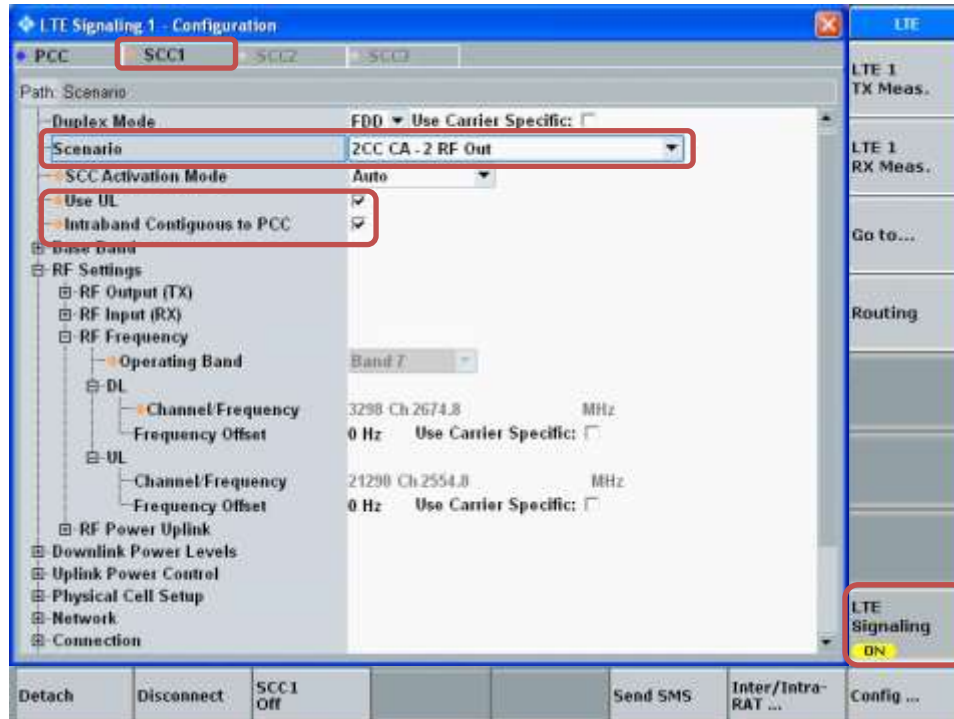
- PCC tab:
 - Select the testing Operating Band, Channel, Frequency, Cell Bandwidth, Uplink RBs
- Go to “Config...”



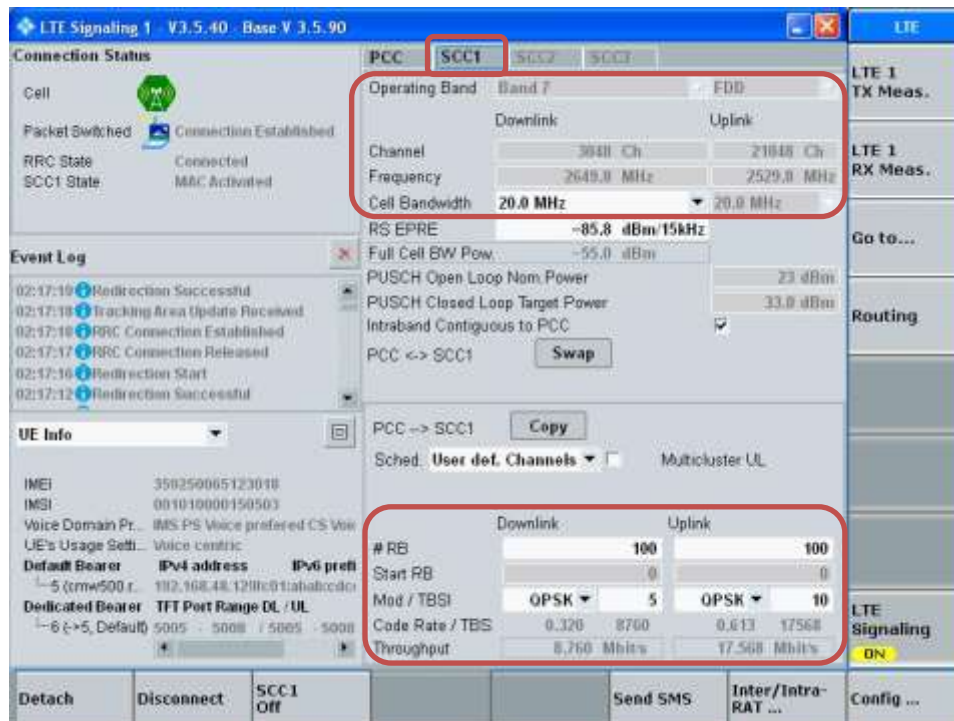
- Go to “Scenario”
- Set to “2CC CA – 2 RF Out”



- Select “SCC1” tab
- Go to “Scenario”
- Set to “2CC CA – 2 RF Out”
- Enable “Use UL”
- Enable “Intraband Contiguous to PCC”
- Select “LTE Signaling” button

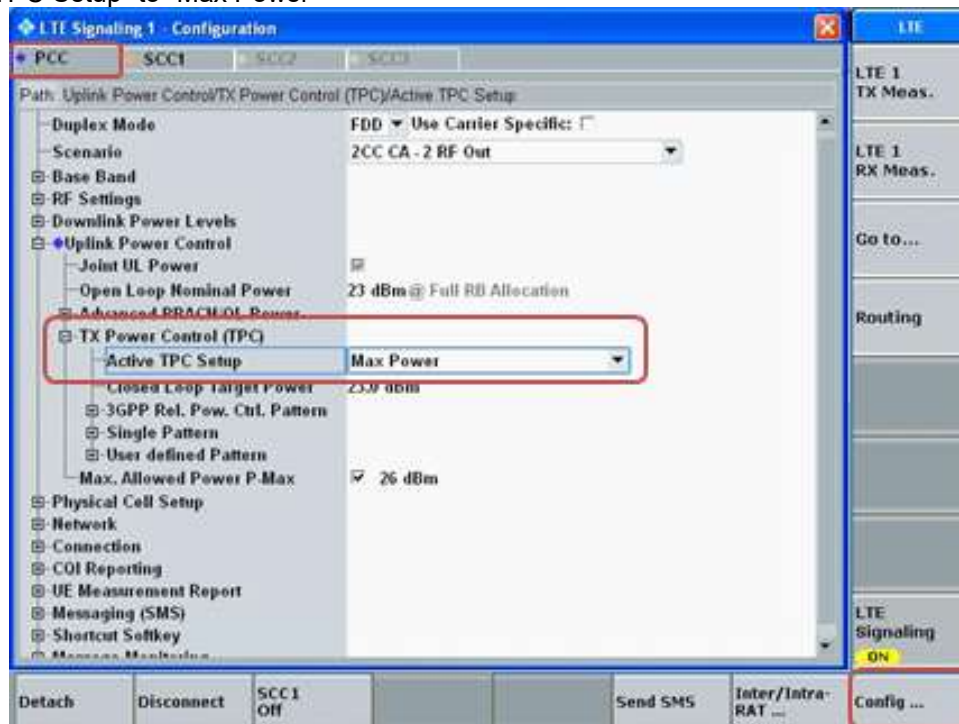


- Select “SCC1” tab
 - Select the testing Cell Bandwidth, Uplink RBs

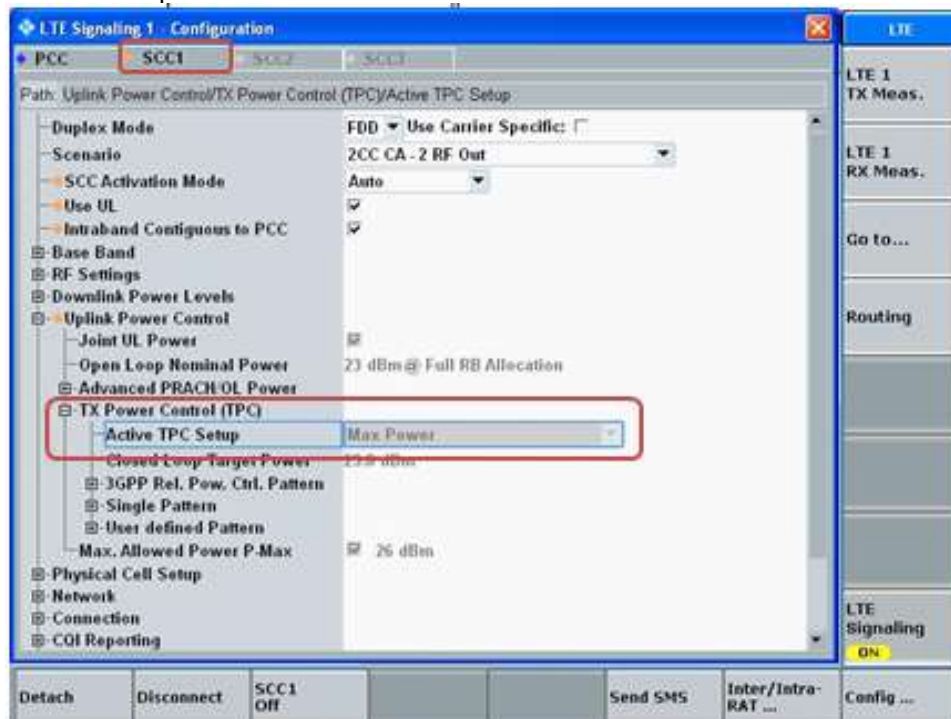


Max Power Setting

- Select “Config ...” button
- Select PCC tab
- Set “Active TPC Setup” to “Max Power”

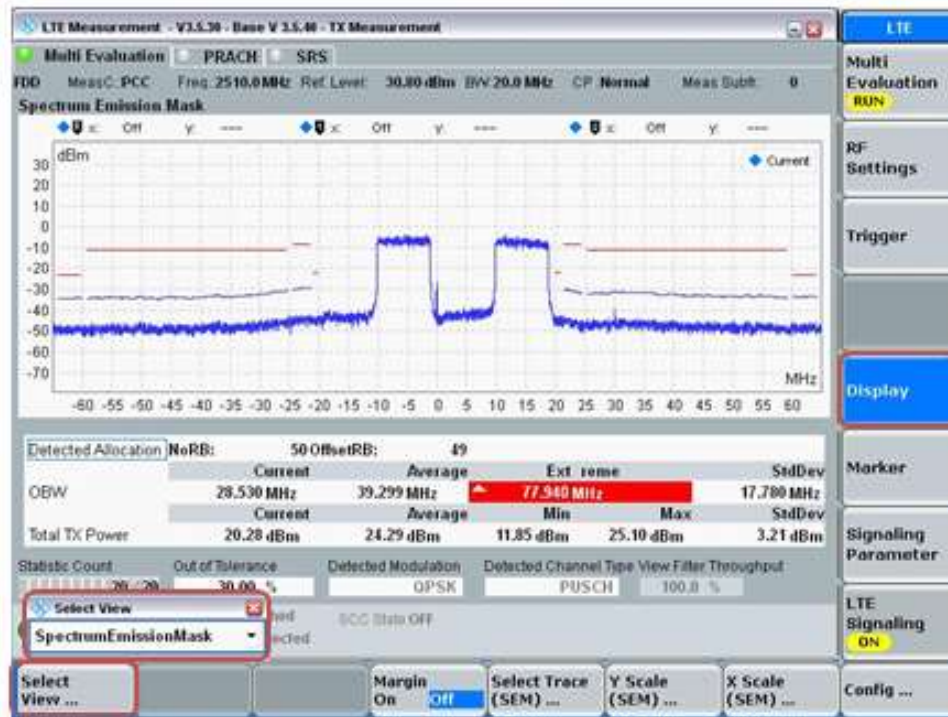


- Select SCC1 tab
- Verify that “Active TPC Setup” is set to “Max Power”



View TX Power

- Go to “Display”
- Select “Select View...”
- Select “Spectrum Emission Mask”



LTE Up-Link Carrier Aggregation**Maximum Output Power (Tune-up Limit) for LTE UL Carrier Aggregation**

UL CA shall be tested based on the worst-case SAR configuration determined from non-CA SAR testing result. The channel BW, channel number, RB allocation, etc. would be selected to allow contiguous CA of PCC and SCC. Uplink output power for UL CA is the total power measured across the PCC and SCC.

UL CA power measurements were performed for each antennas (ANT1, ANT2, ANT3, and ANT4) at with QPSK modulation based on the worst-case standalone SAR. The tune-up limits are provided in table below.

The UL CA mode power measurements represent the total power across both carriers. Measurements were made for all supported PCC bandwidths using the channel/RB combination resulting in the highest standalone output power at the least MPR (0 dB). SCCs were set to use configurations similar to the PCC to establish conservative or worst case equivalent SAR test conditions (highest maximum power with MPR of 0 dB).

The standalone power measurement is the power for the PCC in the non-CA mode (i.e. single carrier power). In all cases the UL CA power is less than or equal to the standalone power, which is in accordance with the tune-up limits in table below.

According to November 2017 TCB workshop, Uplink CA SAR Test Guidance as follows:

- a) When the maximum output for UL CA is $\leq$ standalone LTE mode (without CA)
 - PCC is configured according to the highest standalone SAR configuration tested
 - SCC and subsequent CCs are configured according to procedures used for power measurement and parameters (BW, RB etc.) similar to that used for the PCC
- b) When the Reported SAR for UL CA configuration, described above, is > 1.2 W/kg, UL CA SAR is also required for all required test channels(PCC based)
- c) UL CA SAR is also required for standalone SAR configurations > 1.2 W/kg when they are scaled to the UL CA power level

SAR measurement is not required for the 16QAM and 64QAM. When primary mode and the adjusted SAR is ≤ 1.2 W/kg and secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode

Intra-Band Contiguous	Mode	Maximum Output Power (Tune-up Limit) (dBm)							
		ANT1		ANT2		ANT3		ANT4	
		Mode A	Mode B	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B
CA_7C	QPSK	25.00	20.20	19.50	20.00	24.50	21.50	18.70	19.50
CA_41C (PC3)	QPSK	25.00	23.50	22.00	22.20	24.50	23.70	21.70	22.50

LTE CA 7C Measured Results

RF Exposure Conditions	Antenna	E-UTRA CA configuration (BCS)	Modulation	Bands		UL											
				PCC	SCC	PCC				SCC				Standalone (dBm)	PCC+SCC		
				1st	2nd	BW	RB	Offset	Freq	BW	RB	Offset	Freq		Tune-Up Limit	CA Power (Total PCC+SCC)	Delta
Body	ANT 1	CA_7C	QPSK	7C	7C	20	1	99	2510	20	1	0	2529.8	20.1	20.2	20.1	0.0
Body	ANT 1	CA_7C	QPSK	7C	7C	20	1	99	2525.1	20	1	0	2544.9	20.2	20.2	20.1	-0.1
Body	ANT 1	CA_7C	QPSK	7C	7C	20	1	99	2540.2	20	1	0	2560	20.2	20.2	20.2	0.0
Head	ANT 2	CA_7C	QPSK	7C	7C	20	1	99	2510	20	1	0	2529.8	19.3	19.5	18.8	-0.5
Head	ANT 2	CA_7C	QPSK	7C	7C	20	1	99	2525.1	20	1	0	2544.9	19.3	19.5	18.9	-0.4
Head	ANT 2	CA_7C	QPSK	7C	7C	20	1	99	2540.2	20	1	0	2560	19.3	19.5	19.0	-0.3
Body	ANT 3	CA_7C	QPSK	7C	7C	20	1	99	2510	20	1	0	2529.8	21.3	21.5	20.9	-0.4
Body	ANT 3	CA_7C	QPSK	7C	7C	20	1	99	2525.1	20	1	0	2544.9	21.4	21.5	21.0	-0.4
Body	ANT 3	CA_7C	QPSK	7C	7C	20	1	99	2540.2	20	1	0	2560	21.4	21.5	21.0	-0.4
Head	ANT 4	CA_7C	QPSK	7C	7C	20	1	99	2510	20	1	0	2529.8	18.6	18.7	18.4	-0.2
Head	ANT 4	CA_7C	QPSK	7C	7C	20	1	99	2525.1	20	1	0	2544.9	18.6	18.7	18.5	-0.1
Head	ANT 4	CA_7C	QPSK	7C	7C	20	1	99	2540.2	20	1	0	2560	18.6	18.7	18.5	-0.1

Note(s):

Standalone power is reference from Sec. 9.4 - LTE B7 power.

LTE CA 41C (PC3) Measured Results

RF Exposure Conditions	Antenna	E-UTRA CA configuration (BCS)	Modulation	Bands		UL											
				PCC	SCC	PCC				SCC				Standalone (dBm)	PCC+SCC		
				1st	2nd	BW	RB	Offset	Freq	BW	RB	Offset	Freq		Tune-Up Limit	CA Power (Total PCC+SCC)	Delta
Body	ANT 1	CA_41C	QPSK	41C	41C	20	1	99	2506	20	1	0	2525.8	23.4	23.5	23.00	-0.4
Body	ANT 1	CA_41C	QPSK	41C	41C	20	1	99	2539.6	20	1	0	2559.4	23.3	23.5	23.00	-0.3
Body	ANT 1	CA_41C	QPSK	41C	41C	20	1	99	2583.1	20	1	0	2602.9	23.4	23.5	23.00	-0.4
Body	ANT 1	CA_41C	QPSK	41C	41C	20	1	99	2626.6	20	1	0	2646.4	23.4	23.5	22.90	-0.5
Body	ANT 1	CA_41C	QPSK	41C	41C	20	1	99	2660.2	20	1	0	2680	23.4	23.5	22.90	-0.5
Head	ANT 2	CA_41C	QPSK	41C	41C	20	1	99	2506	20	1	0	2525.8	21.8	22.0	21.60	-0.2
Head	ANT 2	CA_41C	QPSK	41C	41C	20	1	99	2539.6	20	1	0	2559.4	21.8	22.0	21.70	-0.1
Head	ANT 2	CA_41C	QPSK	41C	41C	20	1	99	2583.1	20	1	0	2602.9	21.8	22.0	21.80	0.0
Head	ANT 2	CA_41C	QPSK	41C	41C	20	1	99	2626.6	20	1	0	2646.4	21.8	22.0	21.70	-0.1
Head	ANT 2	CA_41C	QPSK	41C	41C	20	1	99	2660.2	20	1	0	2680	21.7	22.0	21.70	0.0
Body	ANT 3	CA_41C	QPSK	41C	41C	20	1	99	2506	20	1	0	2525.8	23.6	23.7	23.20	-0.4
Body	ANT 3	CA_41C	QPSK	41C	41C	20	1	99	2539.6	20	1	0	2559.4	23.6	23.7	23.30	-0.3
Body	ANT 3	CA_41C	QPSK	41C	41C	20	1	99	2583.1	20	1	0	2602.9	23.6	23.7	23.30	-0.3
Body	ANT 3	CA_41C	QPSK	41C	41C	20	1	99	2626.6	20	1	0	2646.4	23.5	23.7	23.40	-0.1
Body	ANT 3	CA_41C	QPSK	41C	41C	20	1	99	2660.2	20	1	0	2680	23.5	23.7	23.30	-0.2
Head	ANT 4	CA_41C	QPSK	41C	41C	20	1	99	2506	20	1	0	2525.8	21.6	21.7	21.30	-0.3
Head	ANT 4	CA_41C	QPSK	41C	41C	20	1	99	2539.6	20	1	0	2559.4	21.7	21.7	21.40	-0.3
Head	ANT 4	CA_41C	QPSK	41C	41C	20	1	99	2583.1	20	1	0	2602.9	21.7	21.7	21.30	-0.4
Head	ANT 4	CA_41C	QPSK	41C	41C	20	1	99	2626.6	20	1	0	2646.4	21.6	21.7	21.30	-0.3
Head	ANT 4	CA_41C	QPSK	41C	41C	20	1	99	2660.2	20	1	0	2680	21.6	21.7	21.30	-0.3

Note(s):

Standalone power is reference from Sec. 9.4 - LTE B41 power.

LTE Down-Link Carrier Aggregation

The tables below show the supported frequency bands of the device for DL Inter-band and DL Intra-band combinations.

Power measurements were performed on the channel with the highest maximum output power from Tune-up Procedure on ANT1 antenna.

When carrier aggregation is limited to downlink only, uplink maximum output power (single carrier) is measured for the supported combinations of downlink carrier aggregation listed in the table below. In applying the power measurement procedures of KDB 941225 D05A for DL CA to qualify for UL SAR test exclusion, power measurement is required only for the subset in each row with the largest combination of frequency bands and CCs (far right most configuration highlighted in the table below).

Index	2CC	Restriction	Completely Covered by Measurement Superset	Index	3CC	Restriction	Completely Covered by Measurement Superset	Index	4CC	Restriction	Completely Covered by Measurement Superset
Intra-Band Contiguous				Inter-Band				Inter-Band			
2CC # 1	CA_2C		No	3CC # 1	CA_2A-2A-4A-5A		No	4CC # 1	CA_2A-4A-5A-30A		No
2CC # 2	CA_5B		4CC #5	3CC # 2	CA_2A-2A-4A-12A		No	4CC # 2	CA_2A-4A-12A-30A		No
2CC # 3	CA_7B		No	3CC # 3	CA_2A-2A-5A-30A		No	4CC # 3	CA_2A-4A-29A-30A	B29 SCC Only	No
2CC # 4	CA_7C		No	3CC # 4	CA_2A-2A-5A-66A		No	4CC # 4	CA_2A-5A-30A-66A		No
2CC # 5	CA_12B		3CC #20	3CC # 5	CA_2A-2A-5A-66B		No	4CC # 5	CA_2A-5B-30A-66A		No
2CC # 6	CA_38C		No	3CC # 6	CA_2A-2A-5A-66C		No	4CC # 6	CA_2A-12A-30A-66A		No
2CC # 7	CA_41C		No	3CC # 7	CA_2A-2A-12A-30A		No	4CC # 7	CA_2A-14A-30A-66A		No
2CC # 8	CA_41D		No	3CC # 8	CA_2A-2A-12A-66A		No	4CC # 8	CA_2A-29A-30A-66A	B29 SCC Only	No
2CC # 9	CA_41E		No	3CC # 9	CA_2A-2A-13A-66A		No				
2CC # 10	CA_46C	B46 SCC Only	3CC #35	3CC # 10	CA_2A-2A-14A-66A		No				
2CC # 11	CA_46D	B46 SCC Only	3CC #37	3CC # 11	CA_2A-2A-29A-30A	B29 SCC Only	No				
2CC # 12	CA_46E	B46 SCC Only	B46 DL Only	3CC # 12	CA_2A-2A-30A-66A		No				
2CC # 13	CA_66B		3CC #5	3CC # 13	CA_2A-4A-4A-5A		No				
2CC # 14	CA_66C		3CC #6	3CC # 14	CA_2A-4A-4A-12A		No				
2CC # 15	CA_66D		No	3CC # 15	CA_2A-4A-5A		4CC #1				
Intra-Band Non-Contiguous				3CC # 16	CA_2A-4A-5B		No				
2CC # 16	CA_2A-2A		3CC #1	3CC # 17	CA_2A-4A-5B		No				
2CC # 17	CA_4A-4A		3CC #13	3CC # 18	CA_2A-4A-12A		4CC #2				
2CC # 18	CA_7A-7A		No	3CC # 19	CA_2A-4A-12A		4CC #2				
2CC # 19	CA_25A-25A		No	3CC # 20	CA_2A-4A-12B		No				
2CC # 20	CA_41A-41A		No	3CC # 21	CA_2A-4A-12B		No				
2CC # 21	CA_41A-41C		No	3CC # 22	CA_2A-4A-13A		No				
2CC # 22	CA_41A-41C		No	3CC # 23	CA_2A-4A-13A		No				
2CC # 23	CA_41A-41D		No	3CC # 24	CA_2A-4A-29A	B29 SCC Only	4CC #2				
2CC # 24	CA_41C-41C		No	3CC # 25	CA_2A-4A-30A		4CC #2				
2CC # 25	CA_41C-41D		No	3CC # 26	CA_2A-5A-30A		4CC #1				
2CC # 26	CA_46A-46A	B46 SCC Only	B46 DL Only	3CC # 27	CA_2A-5A-66A		4CC #4				
2CC # 27	CA_46A-46C	B46 SCC Only	B46 DL Only	3CC # 28	CA_2A-5A-66A		4CC #4				
2CC # 28	CA_46A-46D	B46 SCC Only	B46 DL Only	3CC # 29	CA_2A-5A-66B		No				
2CC # 29	CA_66A-66A		3CC #38	3CC # 30	CA_2A-5A-66C		No				
2CC # 30	CA_66A-66B		No	3CC # 31	CA_2A-46A-66A	B46 SCC Only	No				
2CC # 31	CA_66A-66C		No	3CC # 32	CA_2A-46A-66A	B46 SCC Only	No				
Inter-Band				3CC # 33	CA_2A-46C-66A	B46 SCC Only	No				
2CC # 32	CA_2A-2A-4A		3CC #1	3CC # 34	CA_2A-46C-66A	B46 SCC Only	No				
2CC # 33	CA_2A-2A-4A-4A		No	3CC # 35	CA_2A-46D-66A	B46 SCC Only	No				
2CC # 34	CA_2A-2A-5A		3CC #3	3CC # 36	CA_2A-5A-66A-66A		4CC #4				
2CC # 35	CA_2A-2A-12A		3CC #7	3CC # 37	CA_2A-5B-30A		4CC #5				
2CC # 36	CA_2A-2A-12B		No	3CC # 38	CA_2A-5B-66A		4CC #5				
2CC # 37	CA_2A-2A-13A		3CC #9	3CC # 39	CA_2A-5B-66A		4CC #5				
2CC # 38	CA_2A-2A-14A		3CC #10	3CC # 40	CA_2A-5B-66A-66A		4CC #5				
2CC # 39	CA_2A-2A-29A	B29 SCC Only	3CC #11	3CC # 41	CA_2A-5B-66C		No				
2CC # 40	CA_2A-2A-30A		3CC #12	3CC # 42	CA_2A-12A-30A		4CC #6				
2CC # 41	CA_2A-2A-46A	B46 SCC Only	No	3CC # 43	CA_2A-12A-66A		4CC #6				
2CC # 42	CA_2A-2A-46C	B46 SCC Only	No	3CC # 44	CA_2A-12A-66A		4CC #6				
2CC # 43	CA_2A-2A-46D	B46 SCC Only	No	3CC # 45	CA_2A-12A-66A-66A		4CC #6				

2CC #	44	CA_2A-2A-66A		3CC #4	3CC #	46	CA_2A-12A-66C		No
2CC #	45	CA_2A-2A-66A-66A		No	3CC #	47	CA_2A-13A-46A	B46 SCC Only	No
2CC #	46	CA_2A-2A-66A-66B		No	3CC #	48	CA_2A-13A-46C	B46 SCC Only	No
2CC #	47	CA_2A-2A-66A-66C		No	3CC #	49	CA_2A-13A-46D	B46 SCC Only	No
2CC #	48	CA_2A-2A-66B		3CC #5	3CC #	50	CA_2A-13A-66A		No
2CC #	49	CA_2A-2A-66C		3CC #6	3CC #	51	CA_2A-13A-66A		No
2CC #	50	CA_2A-4A		3CC #1	3CC #	52	CA_2A-13A-66A-66A		No
2CC #	51	CA_2A-4A		3CC #1	3CC #	53	CA_2A-13A-66B		No
2CC #	52	CA_2A-4A-4A		3CC #13	3CC #	54	CA_2A-13A-66C		No
2CC #	53	CA_2A-5A		3CC #1	3CC #	55	CA_2A-14A-30A		4CC #7
2CC #	54	CA_2A-5B		3CC #16	3CC #	56	CA_2A-14A-66A		4CC #7
2CC #	55	CA_2A-12A		3CC #18	3CC #	57	CA_2A-14A-66A		4CC #7
2CC #	56	CA_2A-12B		3CC #20	3CC #	58	CA_2A-14A-66A-66A		4CC #7
2CC #	57	CA_2A-13A		3CC #22	3CC #	59	CA_2A-29A-30A	B29 SCC Only	4CC #8
2CC #	58	CA_2A-14A		3CC #10	3CC #	60	CA_2A-29A-66A	B29 SCC Only	4CC #8
2CC #	59	CA_2A-17A		No	3CC #	61	CA_2A-29A-66A	B29 SCC Only	4CC #8
2CC #	60	CA_2A-29A	B29 SCC Only	3CC #11	3CC #	62	CA_2A-30A-66A		4CC #8
2CC #	61	CA_2A-30A		3CC #12	3CC #	63	CA_2A-30A-66A		4CC #8
2CC #	62	CA_2A-46A		3CC #33	3CC #	64	CA_2A-30A-66A		4CC #8
2CC #	63	CA_2A-46A-46A	B46 SCC Only	No	3CC #	65	CA_4A-4A-5A-30A		4CC #1
2CC #	64	CA_2A-46A-46C	B46 SCC Only	No	3CC #	66	CA_4A-4A-12A-30A		4CC #2
2CC #	65	CA_2A-46A-46D	B46 SCC Only	No	3CC #	67	CA_4A-5A-30A		4CC #1
2CC #	66	CA_2A-46C	B46 SCC Only	2CC #66	3CC #	68	CA_4A-7A-12A		No
2CC #	67	CA_2A-46D	B46 SCC Only	2CC #67	3CC #	69	CA_4A-12A-30A		4CC #2
2CC #	68	CA_2A-46E	B46 SCC Only	No	3CC #	70	CA_4A-29A-30A	B29 SCC Only	4CC #2
2CC #	69	CA_2A-66A		3CC #52	3CC #	71	CA_5A-30A-66A		No
2CC #	70	CA_2A-66B		3CC #55	3CC #	72	CA_5A-30A-66A-66A		No
2CC #	71	CA_2A-66B		3CC #55	3CC #	73	CA_5B-30A-66A		No
2CC #	72	CA_2A-66C		3CC #56	3CC #	74	CA_5B-30A-66A-66A		No
2CC #	73	CA_2A-66C		3CC #56	3CC #	75	CA_12A-30A-66A		4CC #6
2CC #	74	CA_2A-66A-66A		3CC #38	3CC #	76	CA_12A-30A-66A-66A		4CC #6
2CC #	75	CA_2A-66A-66B		No	3CC #	77	CA_13A-46A-66A	B46 SCC Only	No
2CC #	76	CA_2A-66A-66C		No	3CC #	78	CA_13A-46C-66A	B46 SCC Only	No
2CC #	77	CA_2C-5A		No	3CC #	79	CA_13A-46D-66A	B46 SCC Only	No
2CC #	78	CA_2C-12A		No	3CC #	80	CA_14A-30A-66A		4CC #7
2CC #	79	CA_2C-29A	B29 SCC Only	No	3CC #	81	CA_14A-30A-66A-66A		4CC #7
2CC #	80	CA_2C-30A		No	3CC #	82	CA_29A-30A-66A	B29 SCC Only	4CC #8
2CC #	81	CA_2C-30A		No					
2CC #	82	CA_2C-66A		No					
2CC #	83	CA_2C-66A		No					
2CC #	84	CA_4A-4A-5A		3CC #13					
2CC #	85	CA_4A-4A-5B		No					
2CC #	86	CA_4A-4A-7A		No					
2CC #	87	CA_4A-4A-12A		3CC #14					
2CC #	88	CA_4A-4A-12B		No					
2CC #	89	CA_4A-4A-13A		No					
2CC #	90	CA_4A-4A-29A	B29 SCC Only	No					
2CC #	91	CA_4A-4A-30A		3CC #69					
2CC #	92	CA_4A-5A		3CC #1					
2CC #	93	CA_4A-5B		3CC #16					
2CC #	94	CA_4A-7A		2CC #100					
2CC #	95	CA_4A-7A		2CC #100					
2CC #	96	CA_4A-7A-7A		No					
2CC #	97	CA_4A-12A		3CC #2					
2CC #	98	CA_4A-12B		3CC #20					
2CC #	99	CA_4A-13A		3CC #22					
2CC #	100	CA_4A-17A		No					
2CC #	101	CA_4A-29A	B29 SCC Only	3CC #24					
2CC #	102	CA_4A-30A		3CC #25					
2CC #	103	CA_4A-30A		3CC #25					
2CC #	104	CA_4A-46A	B46 SCC Only	No					

2CC #	105	CA_4A-46A-46A	B46 SCC Only	No
2CC #	106	CA_4A-46A-46C	B46 SCC Only	No
2CC #	107	CA_4A-46A-46D	B46 SCC Only	No
2CC #	108	CA_4A-46C	B46 SCC Only	No
2CC #	109	CA_4A-46D	B46 SCC Only	No
2CC #	110	CA_5A-7A		No
2CC #	111	CA_5A-25A		No
2CC #	112	CA_5A-30A		3CC #3
2CC #	113	CA_5A-41A		No
2CC #	114	CA_5A-46A	B46 SCC Only	No
2CC #	115	CA_5A-46C	B46 SCC Only	No
2CC #	116	CA_5A-46D	B46 SCC Only	No
2CC #	117	CA_5A-66A		3CC #4
2CC #	118	CA_5A-66B		3CC #5
2CC #	119	CA_5A-66C		3CC #6
2CC #	120	CA_5A-66D		No
2CC #	121	CA_5A-66A-66A		3CC #27
2CC #	122	CA_5A-66A-66B		No
2CC #	123	CA_5A-66A-66C		No
2CC #	124	CA_5B-30A		3CC #39
2CC #	125	CA_5B-66A		3CC #40
2CC #	126	CA_5B-66A-66A		3CC #42
2CC #	127	CA_5B-66C		3CC #43
2CC #	128	CA_7A-12A		No
2CC #	129	CA_7A-46A	B46 SCC Only	No
2CC #	130	CA_7A-46C	B46 SCC Only	No
2CC #	131	CA_7A-46D	B46 SCC Only	No
2CC #	132	CA_7A-66A		No
2CC #	133	CA_7A-66A		No
2CC #	134	CA_12A-30A		3CC #7
2CC #	135	CA_12A-66A		3CC #8
2CC #	136	CA_12A-66A-66A		3CC #80
2CC #	137	CA_12A-66C		3CC #48
2CC #	138	CA_13A-46A	B46 SCC Only	3CC #49
2CC #	139	CA_13A-46C	B46 SCC Only	3CC #50
2CC #	140	CA_13A-46D	B46 SCC Only	3CC #51
2CC #	141	CA_13A-46E	B46 SCC Only	No
2CC #	142	CA_13A-66A		3CC #54
2CC #	143	CA_13A-66A-66A		3CC #54
2CC #	144	CA_13A-66A-66B		No
2CC #	145	CA_13A-66A-66C		No
2CC #	146	CA_13A-66B		3CC #55
2CC #	147	CA_13A-66C		3CC #56
2CC #	148	CA_14A-30A		3CC #57
2CC #	149	CA_14A-66A		3CC #58
2CC #	150	CA_14A-66A-66A		3CC #60
2CC #	151	CA_25A-26A		No
2CC #	152	CA_25A-25A-26A		No
2CC #	153	CA_29A-30A	B29 SCC Only	3CC #61
2CC #	154	CA_29A-66A	B29 SCC Only	3CC #62
2CC #	155	CA_29A-66A-66A	B29 SCC Only	No
2CC #	156	CA_30A-66A		3CC #64
2CC #	157	CA_30A-66A		3CC #64
2CC #	158	CA_30A-66A-66A		3CC #76
2CC #	159	CA_46A-46A-66A	B46 SCC Only	B46 DL Only
2CC #	160	CA_46A-46C-66A	B46 SCC Only	B46 DL Only
2CC #	161	CA_46A-46D-66A	B46 SCC Only	B46 DL Only
2CC #	162	CA_46A-66A	B46 SCC Only	B46 DL Only
2CC #	163	CA_46A-66A-66A	B46 SCC Only	B46 DL Only
2CC #	164	CA_46C-66A	B46 SCC Only	B46 DL Only
2CC #	165	CA_46C-66A-66A	B46 SCC Only	B46 DL Only

2CC #	166	CA_46D-66A	B46 SCC Only	B46 DL Only
2CC #	167	CA_46D-66A-66A	B46 SCC Only	B46 DL Only
2CC #	168	CA_46E-66A	B46 SCC Only	B46 DL Only

In applying the power measurement procedures of KDB 941225 D05A for DL CA to qualify for UL SAR test exclusion, power measurement is required only for the CA configuration with the largest aggregated DL CA BW in each frequency band, independently for contiguous and non-contiguous CA; however, if the same frequency band is used for both contiguous and non-contiguous CA, power measurement was performed using the configuration with the largest aggregated BW and maximum output power among contiguous and non-contiguous CA.

DL Intra-Band Contiguous Measured Results

E-UTRA CA configuration (BCS)	3GPP Rel. #	CC1 (UL)					CC2 (DL)			CC3 (DL)			CC4 (DL)			CC5 (DL)			Aggregated BW	MPR	CA Inactive (dBm)	CA Active (dBm)	Delta
		Mode	BW (MHz)	Channel	Freq (MHz)	RB,Offset	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)					
CA_2C	12	QPSK	20	18801	1870.1	1,49	20	999	1969.9										40	0	25.23	25.16	-0.07
CA_7B	13	QPSK	15	21076	2532.6	1,49	5	3169	2661.9										20	0	25.17	25.12	-0.05
CA_7C	13	QPSK	20	21001	2525.1	1,49	20	3199	2664.9										40	0	25.18	25.14	-0.04
CA_38C	11	QPSK	20	37901	2585.1	1,49	20	38099	2604.9										40	0	25.24	25.19	-0.05
CA_41C	13	QPSK	20	40521	2583.1	1,49	20	40719	2602.9										40	0	25.28	25.22	-0.06
CA_41D	12	QPSK	20	40422	2573.2	1,49	20	40620	2593	20	40818	2612.8							60	0	25.23	25.16	-0.07
CA_41E	14	QPSK	20	40320	2563	1,49	20	40520	2583	20	40720	2603	20	40920	2623				80	0	25.31	25.25	-0.06
CA_46E	14	QPSK	20	50490	5520	1,49	20	50688	5539.8	20	50889	5559.9	20	51090	5580				80	0	DL only	DL only	DL only
CA_66D	14	QPSK	20	132224	1735.2	1,49	20	66886	2155	20	67084	2174.8							60	0	25.22	25.19	-0.03

DL Intra-Band Non-Contiguous Measured Results

E-UTRA CA configuration	3GPP Rel. #	CC1 (UL)					CC2 (DL)			CC3 (DL)			CC4 (DL)			CC5 (DL)			Aggregated BW	MPR	CA Inactive (dBm)	CA Active (dBm)	Delta
		Mode	BW (MHz)	Channel	Freq (MHz)	RB,Offset	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)	BW (MHz)	Channel	Freq (MHz)					
CA_7A-7A	12	QPSK	20	20850	2510	1,49	20	3350	2680										40	0	25.21	25.18	-0.03
CA_25A-25A	12	QPSK	20	26140	1860	1,49	20	8590	1985										40	0	25.28	25.24	-0.04
CA_41A-41A	12	QPSK	20	39750	2506	1,49	20	41490	2680										40	0	25.27	25.23	-0.04
CA_41A-41C	12	QPSK	20	39750	2506	1,49	20	41292	2660.2	20	41490	2680							60	0	25.27	25.22	-0.05
CA_41A-41D	13	QPSK	20	39750	2506	1,49	20	41094	2640.4	20	41292	2660.2	20	41490	2680				80	0	25.27	25.21	-0.06
CA_41C-41C	13	QPSK	20	39750	2506	1,49	20	39948	2525.8	20	41292	2660.2	20	41490	2680				80	0	25.27	25.23	-0.04
CA_41C-41D	14	QPSK	20	40521	2583.1	1,49	20	40719	2602.9	20	39750	2506	20	39948	2525.8	20	40146	2545.6	100	0	25.23	25.18	-0.05
CA_66A-66B	14	QPSK	20	132072	1720	1,49	10	67187	2185.1	10	67286	2195							40	0	25.21	25.16	-0.05
CA_66A-66C	14	QPSK	20	132072	1720	1,49	20	67038	2170.2	20	67236	2190							60	0	25.21	25.17	-0.04

9.6. Wi-Fi 2.4 GHz (DTS Band)

Wi-Fi 2.4 GHz ($P_{\text{cell OFF}}$ and $P_{\text{cell ON}}$)

SAR testing is not required for OFDM mode(s) when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

According to KDB publication 248227 D01, simultaneous SAR provisions in KDB Publication 447498 D01 apply to determine simultaneous transmission SAR test exclusion for Wi-Fi MIMO. If the sum of 1-g single transmission chain SAR measurements is <1.6 W/kg and/or the MIMO output power is equal or less than a single chain, then no additional SAR measurements for simultaneously at the specified maximum output power of MIMO operation.

For 2.4 GHz band, there are two use cases:

- $P_{\text{cell ON}}$: This will be used when both WWAN and Wi-Fi radios are ON.
- $P_{\text{cell OFF}}$: This will be used when only Wi-Fi radio is ON

Mode	Channel	Frequency	$P_{\text{cell OFF}}$				$P_{\text{cell ON}}$			
			ANT3		ANT4		ANT3		ANT4	
			Mode A	Mode B	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B
802.11b DSSS (SISO)	1	2412	20.50	20.50	19.75	20.50	20.50	17.00	15.50	17.50
	2	2417	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	3	2422	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	4	2427	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	5	2432	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	6	2437	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	7	2442	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	8	2447	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	9	2452	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	10	2457	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	11	2462	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	12	2467	20.50	20.50	19.75	20.50	20.50	17.00	15.50	17.50
	13	2472	19.00	19.00	19.00	19.00	19.00	17.00	15.50	17.50
Mode	Channel	Frequency	$P_{\text{cell OFF}}$				$P_{\text{cell ON}}$			
			ANT3		ANT4		ANT3		ANT4	
			Mode A	Mode B	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B
802.11g/n OFDM (SISO)	1	2412	17.50	17.50	17.50	17.50	17.50	17.00	15.50	17.50
	2	2417	19.50	19.50	19.50	19.50	19.50	17.00	15.50	17.50
	3	2422	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	4	2427	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	5	2432	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	6	2437	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	7	2442	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	8	2447	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	9	2452	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	10	2457	19.50	19.50	19.50	19.50	19.50	17.00	15.50	17.50
	11	2462	17.50	17.50	17.50	17.50	17.50	17.00	15.50	17.50
	12	2467	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50
	13	2472	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
Mode	Channel	Frequency	$P_{\text{cell OFF}}$				$P_{\text{cell ON}}$			
			ANT3		ANT4		ANT3		ANT4	
			Mode A	Mode B	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B
802.11n OFDM (MIMO)	1	2412	16.50	16.50	16.50	16.50	16.50	16.50	15.50	16.50
	2	2417	18.50	18.50	18.50	18.50	18.50	17.00	15.50	17.50
	3	2422	20.00	20.00	19.75	20.00	20.00	17.00	15.50	17.50
	4	2427	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	5	2432	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	6	2437	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	7	2442	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	8	2447	22.00	21.25	19.75	20.75	22.00	17.00	15.50	17.50
	9	2452	20.00	20.00	19.75	20.00	20.00	17.00	15.50	17.50
	10	2457	18.50	18.50	18.50	18.50	18.50	17.00	15.50	17.50
	11	2462	16.50	16.50	16.50	16.50	16.50	16.50	15.50	16.50
	12	2467	14.50	14.50	14.50	14.50	14.50	14.50	14.50	14.50
	13	2472	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00

Wi-Fi 2.4 GHz Measured Results

The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures.

SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band. Additional output power measurements were not deemed necessary.

SAR testing is not required for OFDM mode(s) when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

Power Mode	Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Power Mode A (dBm)			Power Mode B (dBm)		
						Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)
Pcell OFF	ANT3	DSSS 802.11b	1 Mbps	1	2412	20.50	20.50	Yes	20.50	20.50	Yes
				2	2417	22.00	22.00		21.25	21.25	
				6	2437	22.00	22.00		21.25	21.25	
				11	2462	21.90	22.00		21.25	21.25	
				12	2467	20.50	20.50		20.50	20.50	
				13	2472	19.00	19.00		19.00	19.00	
	ANT4	DSSS 802.11b	1 Mbps	1	2412	19.75	19.75	Yes	20.50	20.50	Yes
				2	2417	19.75	19.75		20.75	20.75	
				6	2437	19.75	19.75		20.75	20.75	
				11	2462	19.75	19.75		20.75	20.75	
12				2467	19.65	19.75	20.50		20.50		
13	2472	19.65	19.00	19.00	19.00						
Power Mode	Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Power Mode A (dBm)			Power Mode B (dBm)		
						Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)
Pcell ON	ANT3	DSSS 802.11b	1 Mbps	1	2412	20.50	20.50	Yes	17.00	17.00	Yes
				2	2417	22.00	22.00		17.00	17.00	
				6	2437	22.00	22.00		17.00	17.00	
				11	2462	22.00	22.00		17.00	17.00	
				12	2467	20.50	20.50		16.90	17.00	
				13	2472	19.00	19.00		16.90	17.00	
	ANT4	DSSS 802.11b	1 Mbps	1	2412	15.50	15.50	Yes	17.50	17.50	Yes
				6	2437	15.50	15.50		17.50	17.50	
				11	2462	15.50	15.50		17.50	17.50	
				12	2467	15.49	15.50		17.49	17.50	
13				2472	15.49	15.50	17.49		17.50		

9.7. Wi-Fi 5 GHz (U-NII Bands)

Wi-Fi 5 GHz (P_{cell} OFF and P_{cell} ON)

When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n then ac) is selected.

When the specified maximum output power is the same for both UNII 1 and UNII 2A, begin SAR measurements in UNII 2A with the channel with the highest measured output power. If the reported SAR for UNII 2A is ≤ 1.2 W/kg, SAR is not required for UNII 1; otherwise treat the remaining bands separately and test them independently for SAR.

According to KDB publication 248227 D01, simultaneous SAR provisions in KDB Publication 447498 D01 apply to determine simultaneous transmission SAR test exclusion for Wi-Fi MIMO. If the sum of 1-g single transmission chain SAR measurements is <1.6 W/kg and/or the MIMO output power is equal or less than a single chain, then no additional SAR measurements for simultaneously at the specified maximum output power of MIMO operation.

For 5GHz band, there are two use cases:

- P_{cell} ON: This will be used when both WWAN and Wi-Fi radios are ON.
- P_{cell} OFF: This will be used when only Wi-Fi radio is ON

Mode	Bandwidth	Channel	Frequency	Pcell OFF				Pcell ON			
				ANT5		ANT6		ANT5		ANT6	
				Mode A	Mode B	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B
U-NII-1 5.2 GHz (SISO)	802.11a/n/ac 20 MHz	36	5180	19.00	18.00	19.00	16.25	19.00	12.75	17.50	12.00
		40	5200	21.00	18.00	21.00	16.25	21.00	12.75	17.50	12.00
		44	5220	21.00	18.00	21.00	16.25	21.00	12.75	17.50	12.00
		48	5240	21.00	18.00	21.00	16.25	21.00	12.75	17.50	12.00
	802.11n/ac 40 MHz	38	5190	18.00	18.00	18.00	16.25	18.00	12.75	17.50	12.00
		46	5230	22.00	18.00	22.00	16.25	22.00	12.75	17.50	12.00
	802.11ac 80 MHz	42	5210	17.50	17.50	17.50	16.25	17.50	12.75	17.50	12.00
U-NII-2A 5.3 GHz (SISO)	802.11a/n/ac 20 MHz	52	5260	21.00	17.00	21.00	15.75	21.00	11.75	17.00	11.50
		56	5280	21.00	17.00	21.00	15.75	21.00	11.75	17.00	11.50
		60	5300	21.00	17.00	21.00	15.75	21.00	11.75	17.00	11.50
		64	5320	19.00	17.00	19.00	15.75	19.00	11.75	17.00	11.50
	802.11n/ac 40 MHz	54	5270	22.00	17.00	22.00	15.75	22.00	11.75	17.00	11.50
		62	5310	18.00	17.00	18.00	15.75	18.00	11.75	17.00	11.50
	802.11ac 80 MHz	58	5290	17.50	17.00	17.50	15.75	17.50	11.75	17.00	11.50
Mode	Bandwidth	Channel	Frequency	Pcell OFF				Pcell ON			
				ANT5		ANT6		ANT5		ANT6	
				Mode A	Mode B	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B
U-NII-2C 5.5 GHz (SISO)	802.11a/n/ac 20 MHz	100	5500	19.00	17.50	19.00	15.75	19.00	12.25	17.25	11.50
		104	5520	21.00	17.50	21.00	15.75	21.00	12.25	17.25	11.50
		108	5540	21.00	17.50	21.00	15.75	21.00	12.25	17.25	11.50
		112	5560	21.00	17.50	21.00	15.75	21.00	12.25	17.25	11.50
		116	5580	21.00	17.50	21.00	15.75	21.00	12.25	17.25	11.50
		120	5600	21.00	17.50	21.00	15.75	21.00	12.25	17.25	11.50
		124	5620	21.00	17.50	21.00	15.75	21.00	12.25	17.25	11.50
		128	5640	21.00	17.50	21.00	15.75	21.00	12.25	17.25	11.50
		132	5660	21.00	17.50	21.00	15.75	21.00	12.25	17.25	11.50
		136	5680	21.00	17.50	21.00	15.75	21.00	12.25	17.25	11.50
	802.11n/ac 40 MHz	140	5700	19.00	17.50	19.00	15.75	19.00	12.25	17.25	11.50
		144	5720	21.00	17.50	21.00	15.75	21.00	12.25	17.25	11.50
		102	5510	18.00	17.50	18.00	15.75	18.00	12.25	17.25	11.50
		110	5550	22.00	17.50	22.00	15.75	22.00	12.25	17.25	11.50
		118	5590	22.00	17.50	22.00	15.75	22.00	12.25	17.25	11.50
		126	5630	22.00	17.50	22.00	15.75	22.00	12.25	17.25	11.50
	802.11ac 80 MHz	134	5670	22.00	17.50	22.00	15.75	22.00	12.25	17.25	11.50
		142	5710	22.00	17.50	22.00	15.75	22.00	12.25	17.25	11.50
		106	5530	17.50	17.50	17.50	15.75	17.50	12.25	17.25	11.50
		122	5610	22.00	17.50	22.00	15.75	22.00	12.25	17.25	11.50
		138	5690	22.00	17.50	22.00	15.75	22.00	12.25	17.25	11.50
Mode	Bandwidth	Channel	Frequency	Pcell OFF				Pcell ON			
				ANT5		ANT6		ANT5		ANT6	
				Mode A	Mode B	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B
U-NII-3 5.8 GHz (SISO)	802.11a/n/ac 20 MHz	149	5745	22.50	17.50	22.50	17.00	22.50	12.25	20.00	12.75
		153	5765	22.50	17.50	22.50	17.00	22.50	12.25	20.00	12.75
		157	5785	22.50	17.50	22.50	17.00	22.50	12.25	20.00	12.75
		161	5805	22.50	17.50	22.50	17.00	22.50	12.25	20.00	12.75
		165	5825	22.50	17.50	22.50	17.00	22.50	12.25	20.00	12.75
	802.11n/ac 40 MHz	151	5755	22.00	17.50	22.00	17.00	22.00	12.25	20.00	12.75
		159	5795	22.00	17.50	22.00	17.00	22.00	12.25	20.00	12.75
	802.11ac 80 MHz	155	5775	22.00	17.50	22.00	17.00	22.00	12.25	20.00	12.75

Mode	Bandwidth	Channel	Frequency	Pcell OFF				Pcell ON			
				ANT5		ANT6		ANT5		ANT6	
				Mode A	Mode B	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B
U-NII-1 5.2 GHz (MIMO)	802.11a/n/ac 20 MHz	36	5180	18.00	18.00	18.00	16.25	18.00	12.75	17.50	12.00
		40	5200	18.00	18.00	18.00	16.25	18.00	12.75	17.50	12.00
		44	5220	18.00	18.00	18.00	16.25	18.00	12.75	17.50	12.00
		48	5240	18.00	18.00	18.00	16.25	18.00	12.75	17.50	12.00
	802.11n/ac 40 MHz	38	5190	17.00	17.00	17.00	16.25	17.00	12.75	17.00	12.00
		46	5230	20.00	18.00	20.00	16.25	20.00	12.75	17.50	12.00
U-NII-2A 5.3 GHz (MIMO)	802.11a/n/ac 20 MHz	52	5260	18.00	17.00	18.00	15.75	18.00	11.75	17.00	11.50
		56	5280	18.00	17.00	18.00	15.75	18.00	11.75	17.00	11.50
		60	5300	18.00	17.00	18.00	15.75	18.00	11.75	17.00	11.50
		64	5320	18.00	17.00	18.00	15.75	18.00	11.75	17.00	11.50
	802.11n/ac 40 MHz	54	5270	20.00	17.00	20.00	15.75	20.00	11.75	17.00	11.50
		62	5310	17.00	17.00	17.00	15.75	17.00	11.75	17.00	11.50
U-NII-2C 5.5 GHz (MIMO)	802.11a/n/ac 20 MHz	58	5290	16.50	16.50	16.50	15.75	16.50	11.75	16.50	11.50
U-NII-2C 5.5 GHz (MIMO)	802.11a/n/ac 20 MHz	100	5500	18.00	17.50	18.00	15.75	18.00	12.25	17.25	11.50
		104	5520	18.00	17.50	18.00	15.75	18.00	12.25	17.25	11.50
		108	5540	18.00	17.50	18.00	15.75	18.00	12.25	17.25	11.50
		112	5560	18.00	17.50	18.00	15.75	18.00	12.25	17.25	11.50
		116	5580	18.00	17.50	18.00	15.75	18.00	12.25	17.25	11.50
		120	5600	18.00	17.50	18.00	15.75	18.00	12.25	17.25	11.50
		124	5620	18.00	17.50	18.00	15.75	18.00	12.25	17.25	11.50
		128	5640	18.00	17.50	18.00	15.75	18.00	12.25	17.25	11.50
		132	5660	18.00	17.50	18.00	15.75	18.00	12.25	17.25	11.50
		136	5680	18.00	17.50	18.00	15.75	18.00	12.25	17.25	11.50
		140	5700	18.00	17.50	18.00	15.75	18.00	12.25	17.25	11.50
		144	5720	18.00	17.50	18.00	15.75	18.00	12.25	17.25	11.50
	802.11n/ac 40 MHz	102	5510	17.00	17.00	17.00	15.75	17.00	12.25	17.00	11.50
		110	5550	20.00	17.50	20.00	15.75	20.00	12.25	17.25	11.50
		118	5590	20.00	17.50	20.00	15.75	20.00	12.25	17.25	11.50
		126	5630	20.00	17.50	20.00	15.75	20.00	12.25	17.25	11.50
	802.11ac 80 MHz	134	5670	20.00	17.50	20.00	15.75	20.00	12.25	17.25	11.50
		142	5710	20.00	17.50	20.00	15.75	20.00	12.25	17.25	11.50
		106	5530	16.50	16.50	16.50	15.75	16.50	12.25	16.50	11.50
		122	5610	20.00	17.50	20.00	15.75	20.00	12.25	17.25	11.50
		138	5690	20.00	17.50	20.00	15.75	20.00	12.25	17.25	11.50
U-NII-3 5.8 GHz (MIMO)	802.11a/n/ac 20 MHz	149	5745	22.50	17.50	22.50	17.00	22.50	12.25	20.00	12.75
		153	5765	22.50	17.50	22.50	17.00	22.50	12.25	20.00	12.75
		157	5785	22.50	17.50	22.50	17.00	22.50	12.25	20.00	12.75
		161	5805	22.50	17.50	22.50	17.00	22.50	12.25	20.00	12.75
		165	5825	22.50	17.50	22.50	17.00	22.50	12.25	20.00	12.75
U-NII-3 5.8 GHz (MIMO)	802.11n/ac 40 MHz	151	5755	22.00	17.50	22.00	17.00	22.00	12.25	20.00	12.75
		159	5795	22.00	17.50	22.00	17.00	22.00	12.25	20.00	12.75
	802.11ac 80 MHz	155	5775	22.00	17.50	22.00	17.00	22.00	12.25	20.00	12.75

Wi-Fi 5 GHz Measured Results

The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures.

When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n then ac) is selected.

SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band. Additional output power measurements were not deemed necessary.

Power Mode	Antenna	Mode	Mode	Ch #	Freq. (MHz)	Power Mode A (dBm)			Power Mode B (dBm)			
						Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)	
Pcell OFF	ANT5	U-NII-2A	802.11n HT40	54	5270	22.00	22.00	Yes				
				62	5310	18.00	18.00					
		U-NII-1	802.11n HT40	38	5190				18.00	18.00	Yes	
				46	5230				18.00	18.00	Yes	
		U-NII-2C	802.11ac VHT80	106	5530	17.50	17.50	Yes	17.50	17.50	Yes	
				122	5610	22.00	22.00		17.50	17.50		
				138	5690	22.00	22.00		17.50	17.50		
		U-NII-3	802.11a HT20	149	5745	22.40	22.50	Yes				
				157	5785	22.50	22.50					
				165	5825	22.40	22.50					
			802.11ac VHT80	155	5775				17.50	17.50	Yes	
	ANT6	U-NII-2A	802.11n HT40	54	5270	22.00	22.00	Yes				
				62	5310	18.00	18.00					
		U-NII-1	802.11ac VHT80	42	5210				16.25	16.25	Yes	
		U-NII-2C	802.11ac VHT80	106	5530	17.50	17.50	Yes	15.75	15.75	Yes	
				122	5610	22.00	22.00		15.75	15.75		
				138	5690	22.00	22.00		15.75	15.75		
		U-NII-3	802.11a HT20	149	5745	22.40	22.50	Yes				
				157	5785	22.50	22.50					
				165	5825	22.40	22.50					
			802.11ac VHT80	155	5775				17.00	17.00	Yes	
Power Mode	Antenna	Mode	Mode	Ch #	Freq. (MHz)	Power Mode A (dBm)			Power Mode B (dBm)			
						Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)	
Pcell ON	ANT5	U-NII-1	802.11ac VHT80	42	5210				12.75	12.75	Yes	
		U-NII-2A	802.11n HT40	54	5270	22.00	22.00	Yes				
				62	5310	18.00	18.00					
		U-NII-2C	802.11ac VHT80	106	5530	17.50	17.50	Yes	12.25	12.25	Yes	
				122	5610	22.00	22.00		12.25	12.25		
				138	5690	22.00	22.00		12.25	12.25		
		U-NII-3	802.11a HT20	149	5745	21.40	22.50	Yes				
				157	5785	22.50	22.50					
				165	5825	21.40	22.50					
			802.11ac VHT80	155	5775				12.25	12.25	Yes	
	ANT6	U-NII-1	802.11ac VHT80	42	5210	17.50	17.50	Yes	12.00	12.00	Yes	
		U-NII-2C	802.11ac VHT80	106	5530	17.25	17.25	Yes	11.50	11.50	Yes	
				122	5610	17.25	17.25		11.50	11.50		
				138	5690	17.25	17.25		11.50	11.50		
		U-NII-3	802.11ac VHT80	155	5775	20.00	20.00	Yes	12.75	12.75	Yes	

9.8. Bluetooth

From October 2016 TCB workshop, this device power and SAR measured is performed with test software, the duty cycle is 100%.

Bluetooth (P_{low}, P_{high}, and P_{standalone})

For Bluetooth, there are three use cases:

- Bluetooth P_{low} is used with Wi-Fi and WWAN antennas are active.
- Bluetooth P_{high} is used when Wi-Fi antenna is active and WWAN antenna is inactive or with Wi-Fi inactive and WWAN antenna is active.
- Bluetooth P_{standalone} is used with Wi-Fi and WWAN antennas are inactive.

Mode	Maximum Output Power (Tune-up Limit) (dBm)											
	Bluetooth P _{low}				Bluetooth P _{high}				Bluetooth P _{standalone}			
	ANT3		ANT4		ANT3		ANT4		ANT3		ANT4	
	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B
GFSK	11.0	11.0	10.5	11.0	20.0	16.0	14.5	15.5	20.0	18.5	17.0	18.0
EDR	7.5	7.5	7.5	7.5	17.5	16.0	14.5	15.5	17.5	17.5	17.0	17.5
LE	10.0	10.0	10.0	10.0	20.0	16.0	14.5	15.5	20.0	18.5	17.0	18.0
HDR	6.0	6.0	6.0	6.0	15.5	15.5	14.5	15.5	15.5	15.5	15.5	15.5

Bluetooth Measured Results

SAR measurement is not required for the 8PSK, BLE, and HDR. When the secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode.

Power Mode	Antenna	Mode	Ch #	Freq. (MHz)	Power Mode A (dBm)			Power Mode B (dBm)		
					Meas Pwr	Tune-up	SAR Test (Yes/No)	Meas Pwr	Tune-up	SAR Test (Yes/No)
Bluetooth P _{low}	ANT3	GFSK	0	2402	10.90	11.00	Yes	11.00	11.00	Yes
			39	2441	11.00	11.00		11.00	11.00	
			78	2480	10.90	11.00		10.90	11.00	
	ANT4	GFSK	0	2402	10.50	10.50	Yes	10.90	11.00	Yes
			39	2441	10.50	10.50		11.00	11.00	
			78	2480	10.40	10.50		10.90	11.00	
Bluetooth P _{high}	ANT3	GFSK	0	2402	20.00	20.00	Yes	16.00	16.00	Yes
			39	2441	20.00	20.00		16.00	16.00	
			78	2480	19.90	20.00		15.90	16.00	
	ANT4	GFSK	0	2402	14.40	14.50	Yes	15.50	15.50	Yes
			39	2441	14.50	14.50		15.50	15.50	
			78	2480	14.40	14.50		15.40	15.50	
Bluetooth P _{standalone}	ANT3	GFSK	0	2402	20.00	20.00	Yes	18.40	18.50	Yes
			39	2441	20.00	20.00		18.50	18.50	
			78	2480	19.90	20.00		18.40	18.50	
	ANT4	GFSK	0	2402	17.00	17.00	Yes	18.00	18.00	Yes
			39	2441	17.00	17.00		18.00	18.00	
			78	2480	16.90	17.00		17.90	18.00	

Duty Factor Measured Results

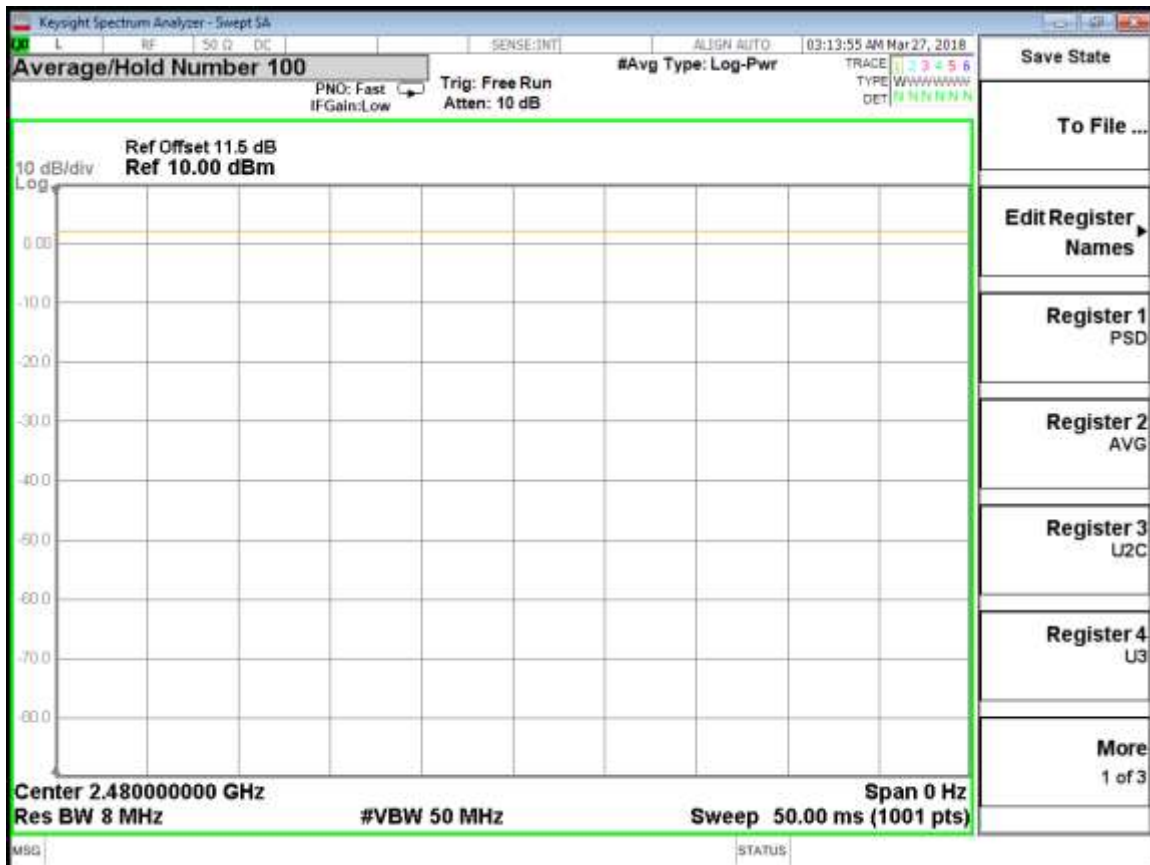
Mode	Type	T on (ms)	Period (ms)	Duty Cycle	Crest Factor (1/duty cycle)
GFSK	DH5	1	1	100.00%	1.00

Note(s):

Duty Cycle = (T on / period) * 100%

Duty Cycle plots

GFSK



10. Measured and Reported (Scaled) SAR Results

SAR Testing was performed based on the power measurement results from Sec. 9. Output power from both power modes: Mode A and Mode B were applied for each respective antenna. Mode A power is used when the device is used against the user's head, or away from the body. Mode B is used when the device is used in a body-worn configuration by the user.

Test Tables were organized and labeled by antenna, ANT1, ANT2, ANT3 and ANT4 for WWAN technologies. And for Wi-Fi/Bluetooth technologies, Test Tables were organized and labeled by power configuration and antenna ANT3 and ANT4 (Wi-Fi/BT 2.4 GHz), ANT5, ANT6 (Wi-Fi 5 GHz), Applicable SAR Test Reductions have been applied accordingly following the SAR KDB Procedure as follows:

SAR Test Reduction criteria are as follows:

- Reported SAR(W/kg) for WWAN = Measured SAR * Tune-up Scaling Factor
- Reported SAR(W/kg) for Wi-Fi and Bluetooth = Measured SAR * Tune-up scaling factor * Duty Cycle scaling factor
- Duty Cycle scaling factor = 1 / Duty cycle (%)

Per October 2016 TCB Workshop for DUT Holder Perturbations:

When the highest reported SAR of an antenna is > 1.2 W/kg for 1-g SAR and 3.0 W/kg for 10-g SAR, holder perturbation verification is required for each antenna, using the highest SAR configuration among all applicable frequency bands.

KDB 447498 D01 General RF Exposure Guidance:

Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

KDB 648474 D04 Handset SAR:

With headset attached, when the reported SAR for body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

Additional 1-g SAR testing at 5 mm is not required when hotspot mode 10-g extremity SAR is not required for the surfaces and edges; since all 1-g reported SAR < 1.2 W/kg.

KDB 941225 D01 SAR test for 3G SAR Test Reduction Procedure:

When the maximum output power and tune-up tolerance specified for production units in a secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

GSM Guidance

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. Please refer to section 9. for GSM power verification.

SAR is not required for EDGE (8PSK) mode because the maximum output power and tune-up limit is $\leq \frac{1}{4}$ dB higher than GPRS/EDGE (GMSK) or the adjusted SAR of the highest reported SAR of GPRS/EDGE (GMSK) is ≤ 1.2 W/kg.

W-CDMA Guidance

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's". The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC (Head) and other spreading codes and multiple DPDCH_n configurations supported by the handset with 12.2 kbps RMC (Body-Worn Accessory) as the primary mode.

SAR measurement is not required for the HSDPA, HSUPA, DC-HSDPA and HSPA*. When primary mode and the adjusted SAR is ≤ 1.2 W/kg and secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode

CDMA 2000 Guidance

SAR for next to the ear head exposure is measured in RC3 with the handset configured to transmit at full rate in SO55. The 3G SAR test reduction procedure is applied to RC1 with RC3 as the primary mode

Body-worn accessory SAR is measured in RC3 with the handset configured in TDSO/SO32 to transmit at full rate on FCH only with all other code channels disabled. The body-worn accessory procedures in KDB Publication 447498 D01 are applied. The 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH+SCH_n), with FCH only as the primary mode.

When VOIP is supported by Ev-Do devices for next to the ear use, head exposure SAR is required.

SAR measurement is not required for the 1xEVDO Rev. A, Rev. B and 1x-Advanced. When primary mode and the adjusted SAR is ≤ 1.2 W/kg and secondary mode is $\leq \frac{1}{4}$ dB higher than the primary mode

KDB 941225 D05 SAR for LTE Devices:

SAR test reduction is applied using the following criteria:

- Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB, and 50% RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel.
- When the reported SAR is > 0.8 W/kg, testing for other Channels 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 and 64-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.

For LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing; therefore, the requirement for H, M and L channels may not fully apply. Please refer to section 6.3. is determiner non-overlapping channels for LTE bands.

KDB 248227 D01 SAR meas for 802.11:

When 802.11 frame gaps are accounted for in the transmission, a maximum transmission duty factor of 92 - 96% is typically achievable in most test mode configurations. A minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

SAR test reduction for 802.11 Wi-Fi transmission mode configurations are considered separately for DSSS and OFDM. An initial test position is determined to reduce the number of tests required for certain exposure configurations with multiple test positions. An initial test configuration is determined for each frequency band and aggregated band according to maximum output power, channel bandwidth, wireless mode configurations and other operating parameters to streamline the measurement requirements. For 2.4 GHz DSSS, either the initial test position or DSSS procedure is applied to reduce the number of SAR tests; these are mutually exclusive. For OFDM, an initial test position is only applicable to next to the ear, UMPC mini-tablet and hotspot mode configurations, which is tested using the initial test configuration to facilitate test reduction. For other exposure conditions with a fixed test position, SAR test reduction is determined using only the initial test configuration.

The multiple test positions require SAR measurements in head, hotspot mode or UMPC mini-tablet configurations may be reduced according to the highest reported SAR determined using the initial test position(s) by applying the DSSS or OFDM SAR measurement procedures in the required wireless mode test configuration(s). The initial test position(s) is measured using the highest measured maximum output power channel in the required wireless mode test configuration(s). When the reported SAR for the initial test position is:

- ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and wireless mode combination within the frequency band or aggregated band. DSSS and OFDM configurations are considered separately according to the required SAR procedures.

- > 0.4 W/kg, SAR is repeated using the same wireless mode test configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions are tested.
 - For subsequent test positions with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested.
 - When it is unclear, all equivalent conditions must be tested.
- For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, measure the SAR for these positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required test channels are considered.
 - The additional power measurements required for this step should be limited to those necessary for identifying subsequent highest output power channels to apply the test reduction.
- When the specified maximum output power is the same for both UNII 1 and UNII 2A, begin SAR measurements in UNII 2A with the channel with the highest measured output power. If the reported SAR for UNII 2A is ≤ 1.2 W/kg, SAR is not required for UNII 1; otherwise treat the remaining bands separately and test them independently for SAR.

To determine the initial test position, Area Scans were performed to determine the position with the *Maximum Value of SAR (measured)*. The position that produced the highest *Maximum Value of SAR* is considered the worst case position; thus used as the initial test position.

10.1. GSM850

Antenna	RF Exposure Conditions	Mode	Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT1	Head	GPRS 2 Slots	Mode A	0	Left Touch	190	836.6	32.00	32.00	0.197	0.197	0.153	0.153	
					Left Tilt	190	836.6	32.00	32.00	0.098	0.098	0.076	0.076	
					Right Touch	190	836.6	32.00	32.00	0.244	0.244	0.192	0.192	1
					Right Tilt	190	836.6	32.00	32.00	0.112	0.112	0.088	0.088	
	Body & Hotspot	GPRS 2 Slots	Mode B	5	Rear	190	836.6	32.00	32.00	0.513	0.513	0.317	0.317	2
					Front	190	836.6	32.00	32.00	0.344	0.344	0.228	0.228	
	Hotspot	GPRS 2 Slots	Mode B	5	Edge 2	190	836.6	32.00	32.00	0.456	0.456	0.298	0.298	
					Edge 3	190	836.6	32.00	32.00	0.287	0.287	0.141	0.141	
ANT2	Head	GPRS 2 Slots	Mode A	0	Edge 4	190	836.6	32.00	32.00	0.199	0.199	0.128	0.128	
					Left Touch	190	836.6	30.00	30.00	0.505	0.505	0.379	0.379	3
					Left Tilt	190	836.6	30.00	30.00	0.360	0.360	0.230	0.230	
					Right Touch	190	836.6	30.00	30.00	0.361	0.361	0.251	0.251	
	Body & Hotspot	GPRS 2 Slots	Mode B	5	Right Tilt	190	836.6	30.00	30.00	0.245	0.245	0.144	0.144	
					Rear	190	836.6	30.00	30.00	0.291	0.291	0.182	0.182	4
					Front	190	836.6	30.00	30.00	0.140	0.140	0.096	0.096	
					Edge 1	190	836.6	30.00	30.00	0.071	0.071	0.042	0.042	
	Hotspot	GPRS 2 Slots	Mode B	5	Edge 2	190	836.6	30.00	30.00	0.085	0.085	0.055	0.055	
					Edge 3	190	836.6	30.00	30.00	0.151	0.151	0.099	0.099	
					Edge 4	190	836.6	30.00	30.00	0.151	0.151	0.099	0.099	
					Edge 1	190	836.6	30.00	30.00	0.071	0.071	0.042	0.042	

10.7. CDMA BC1

Antenna	RF Exposure Conditions	Mode	Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT1	Head	1xRTT RC3 SO55	Mode A	0	Left Touch	600	1880.0	25.50	25.00	0.188	0.211	0.125	0.140	42
					Left Tilt	600	1880.0	25.50	25.00	0.148	0.166	0.093	0.105	
					Right Touch	600	1880.0	25.50	25.00	0.385	0.432	0.239	0.268	
					Right Tilt	600	1880.0	25.50	25.00	0.174	0.195	0.108	0.121	
		1xEVDO Rel. 0	Mode A	0	Left Touch	600	1880.0	25.50	25.00	0.238	0.267	0.157	0.176	
					Left Tilt	600	1880.0	25.50	25.00	0.138	0.155	0.087	0.098	
					Right Touch	600	1880.0	25.50	25.00	0.289	0.324	0.183	0.205	
					Right Tilt	600	1880.0	25.50	25.00	0.172	0.193	0.105	0.118	
	Body & Hotspot	1xRTT RC3 SO32	Mode B	5	Rear	25	1851.3	19.50	19.40	0.757	0.775	0.354	0.362	43
						600	1880.0	19.50	19.10	0.741	0.812	0.344	0.377	
						1175	1908.8	19.50	19.30	0.865	0.906	0.390	0.408	
					Front	600	1880.0	19.50	19.10	0.343	0.376	0.193	0.212	
	Hotspot	1xRTT RC3 SO32	Mode B	5	Edge 2	600	1880.0	19.50	19.10	0.302	0.331	0.141	0.155	44
					Edge 3	25	1851.3	19.50	19.40	0.945	0.967	0.451	0.462	
						600	1880.0	19.50	19.10	0.831	0.911	0.399	0.437	
						1175	1908.8	19.50	19.30	0.616	0.645	0.301	0.315	
					Edge 4	600	1880.0	19.50	19.10	0.060	0.066	0.032	0.035	
Antenna	RF Exposure Conditions	Mode	Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT2	Head	1xRTT RC3 SO55	Mode A	0	Left Touch	600	1880.0	20.50	20.40	0.252	0.258	0.141	0.144	45
					Left Tilt	600	1880.0	20.50	20.40	0.314	0.321	0.163	0.167	
					Right Touch	25	1851.3	20.50	20.40	0.971	0.994	0.537	0.550	
						600	1880.0	20.50	20.40	0.955	0.977	0.531	0.543	
						1175	1908.8	20.50	20.40	0.863	0.883	0.477	0.488	
					Right Tilt	25	1851.3	20.50	20.40	0.890	0.911	0.426	0.436	
						600	1880.0	20.50	20.40	0.855	0.875	0.417	0.427	
						1175	1908.8	20.50	20.40	0.769	0.787	0.370	0.379	
		1xEVDO Rel. 0	Mode A	0	Left Touch	600	1880.0	20.50	20.40	0.230	0.235	0.133	0.136	
					Left Tilt	600	1880.0	20.50	20.40	0.282	0.289	0.148	0.151	
					Right Touch	25	1851.3	20.50	20.40	0.827	0.846	0.453	0.464	
						600	1880.0	20.50	20.40	0.795	0.814	0.439	0.449	
						1175	1908.8	20.50	20.40	0.729	0.746	0.402	0.411	
					Right Tilt	25	1851.3	20.50	20.40	0.807	0.826	0.398	0.407	
						600	1880.0	20.50	20.40	0.786	0.804	0.384	0.393	
						1175	1908.8	20.50	20.40	0.724	0.741	0.340	0.348	
	Body & Hotspot	1xRTT RC3 SO32	Mode B	5	Rear	25	1851.3	18.50	18.30	0.822	0.861	0.364	0.381	46
						600	1880.0	18.50	18.30	0.818	0.857	0.361	0.378	
						1175	1908.8	18.50	18.30	0.740	0.775	0.323	0.338	
					Front	600	1880.0	18.50	18.30	0.349	0.365	0.187	0.196	
	Hotspot	1xRTT RC3 SO32	Mode B	5	Edge 1	600	1880.0	18.50	18.30	0.575	0.602	0.270	0.283	
					Edge 2	600	1880.0	18.50	18.30	0.012	0.012	0.006	0.007	
					Edge 4	600	1880.0	18.50	18.30	0.483	0.506	0.249	0.261	

10.8. CDMA BC10

Antenna	RF Exposure Conditions	Mode	Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT1	Head	1xRTT RC3 SO55	Mode A	0	Left Touch	560	820.0	25.50	25.20	0.205	0.220	0.161	0.173	47
					Left Tilt	560	820.0	25.50	25.20	0.111	0.119	0.088	0.094	
					Right Touch	560	820.0	25.50	25.20	0.236	0.253	0.184	0.197	
					Right Tilt	560	820.0	25.50	25.20	0.130	0.139	0.101	0.108	
		1xEVDO Rel. 0	Mode A	0	Left Touch	560	820.0	25.50	25.20	0.186	0.199	0.146	0.156	
					Left Tilt	560	820.0	25.50	25.20	0.097	0.104	0.076	0.081	
					Right Touch	560	820.0	25.50	25.20	0.214	0.229	0.168	0.180	
					Right Tilt	560	820.0	25.50	25.20	0.110	0.118	0.086	0.092	
	Body & Hotspot	1xRTT RC3 SO32	Mode B	5	Rear	560	820.0	25.50	25.20	0.568	0.609	0.362	0.388	48
					Front	560	820.0	25.50	25.20	0.313	0.335	0.209	0.224	
	Hotspot	1xRTT RC3 SO32	Mode B	5	Edge 2	560	820.0	25.50	25.20	0.537	0.575	0.355	0.380	
					Edge 3	560	820.0	25.50	25.20	0.251	0.269	0.122	0.131	
					Edge 4	560	820.0	25.50	25.20	0.265	0.284	0.175	0.188	
Antenna	RF Exposure Conditions	Mode	Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT2	Head	1xRTT RC3 SO55	Mode A	0	Left Touch	560	820.0	24.50	24.46	0.562	0.567	0.413	0.417	49
					Left Tilt	560	820.0	24.50	24.46	0.387	0.391	0.234	0.236	
					Right Touch	560	820.0	24.50	24.46	0.598	0.604	0.408	0.412	
					Right Tilt	560	820.0	24.50	24.46	0.480	0.484	0.280	0.283	
		1xEVDO Rel. 0	Mode A	0	Left Touch	560	820.0	24.50	24.46	0.389	0.393	0.289	0.292	
					Left Tilt	560	820.0	24.50	24.46	0.251	0.253	0.158	0.159	
					Right Touch	560	820.0	24.50	24.46	0.515	0.520	0.365	0.368	
					Right Tilt	560	820.0	24.50	24.46	0.384	0.388	0.217	0.219	
	Body & Hotspot	1xRTT RC3 SO32	Mode B	5	Rear	560	820.0	24.50	24.46	0.610	0.616	0.382	0.386	50
					Front	560	820.0	24.50	24.46	0.297	0.300	0.200	0.202	
	Hotspot	1xRTT RC3 SO32	Mode B	5	Edge 1	560	820.0	24.50	24.46	0.136	0.137	0.079	0.080	
					Edge 2	560	820.0	24.50	24.46	0.196	0.198	0.129	0.130	
					Edge 4	560	820.0	24.50	24.46	0.317	0.320	0.209	0.211	

10.10. LTE Band 12 (10MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
										Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT1	Head	QPSK	Mode A	0	Left Touch	23095	707.5	1	24	25.50	25.10	0.184	0.202	0.146	0.160	
								25	12	24.50	24.10	0.143	0.157	0.114	0.125	
					Left Tilt	23095	707.5	1	24	25.50	25.10	0.088	0.096	0.071	0.078	
								25	12	24.50	24.10	0.068	0.075	0.055	0.060	
					Right Touch	23095	707.5	1	24	25.50	25.10	0.222	0.243	0.174	0.191	60
								25	12	24.50	24.10	0.179	0.196	0.140	0.154	
					Right Tilt	23095	707.5	1	24	25.50	25.10	0.142	0.156	0.113	0.124	
								25	12	24.50	24.10	0.112	0.123	0.089	0.098	
	Body & Hotspot	QPSK	Mode B	5	Rear	23095	707.5	1	24	25.50	25.10	0.511	0.560	0.333	0.365	61
								25	12	24.50	24.10	0.408	0.447	0.265	0.291	
					Front	23095	707.5	1	24	25.50	25.10	0.254	0.279	0.179	0.196	
								25	12	24.50	24.10	0.202	0.221	0.142	0.156	
	Hotspot	QPSK	Mode B	5	Edge 2	23095	707.5	1	24	25.50	25.10	0.650	0.713	0.440	0.482	62
								25	12	24.50	24.10	0.506	0.555	0.342	0.375	
					Edge 3	23095	707.5	1	24	25.50	25.10	0.126	0.138	0.071	0.078	
								25	12	24.50	24.10	0.098	0.107	0.055	0.060	
					Edge 4	23095	707.5	1	24	25.50	25.10	0.317	0.348	0.213	0.234	
								25	12	24.50	24.10	0.254	0.279	0.171	0.187	

Antenna	RF Exposure Conditions	Mode	Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
										Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT2	Head	QPSK	Mode A	0	Left Touch	23095	707.5	1	24	24.50	24.40	0.328	0.336	0.245	0.251	
								25	12	23.50	23.40	0.270	0.276	0.204	0.209	
					Left Tilt	23095	707.5	1	24	24.50	24.40	0.254	0.260	0.165	0.169	
								25	12	23.50	23.40	0.208	0.213	0.136	0.139	
					Right Touch	23095	707.5	1	24	24.50	24.40	0.530	0.542	0.345	0.353	63
								25	12	23.50	23.40	0.428	0.438	0.294	0.301	
					Right Tilt	23095	707.5	1	24	24.50	24.40	0.443	0.453	0.245	0.251	
								25	12	23.50	23.40	0.355	0.363	0.196	0.201	
	Body & Hotspot	QPSK	Mode B	5	Rear	23095	707.5	1	24	24.50	24.40	0.390	0.399	0.245	0.251	64
								25	12	23.50	23.40	0.306	0.313	0.192	0.196	
					Front	23095	707.5	1	24	24.50	24.40	0.143	0.146	0.105	0.107	
								25	12	23.50	23.40	0.112	0.115	0.083	0.085	
	Hotspot	QPSK	Mode B	5	Edge 1	23095	707.5	1	24	24.50	24.40	0.123	0.126	0.062	0.063	
								25	12	23.50	23.40	0.101	0.103	0.051	0.052	
					Edge 2	23095	707.5	1	24	24.50	24.40	0.206	0.211	0.138	0.141	
								25	12	23.50	23.40	0.176	0.180	0.118	0.121	
					Edge 4	23095	707.5	1	24	24.50	24.40	0.468	0.479	0.317	0.324	65
								25	12	23.50	23.40	0.374	0.383	0.253	0.259	

10.11. LTE Band 13 (10MHz Bandwidth)

Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
							Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Mode A	0	Left Touch	23230	782.0	1	24	25.50	25.20	0.215	0.230	0.167	0.179	
					25	12	24.50	24.00	0.173	0.194	0.135	0.151	
		Left Tilt	23230	782.0	1	24	25.50	25.20	0.101	0.108	0.081	0.087	
					25	12	24.50	24.00	0.080	0.090	0.065	0.073	
		Right Touch	23230	782.0	1	24	25.50	25.20	0.220	0.236	0.174	0.186	66
					25	12	24.50	24.00	0.172	0.193	0.137	0.154	
Mode B	5	Rear	23230	782.0	1	24	25.50	25.20	0.579	0.620	0.372	0.399	67
					25	12	24.50	24.00	0.463	0.519	0.297	0.333	
		Front	23230	782.0	1	24	25.50	25.20	0.330	0.354	0.224	0.240	
					25	12	24.50	24.00	0.258	0.289	0.175	0.196	
Mode B	5	Edge 2	23230	782.0	1	24	25.50	25.20	0.444	0.476	0.296	0.317	
					25	12	24.50	24.00	0.357	0.401	0.237	0.266	
		Edge 3	23230	782.0	1	24	25.50	25.20	0.161	0.173	0.078	0.084	
					25	12	24.50	24.00	0.126	0.141	0.060	0.067	
		Edge 4	23230	782.0	1	24	25.50	25.20	0.244	0.261	0.162	0.174	
					25	12	24.50	24.00	0.200	0.224	0.133	0.149	
Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
							Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Mode A	0	Left Touch	23230	782.0	1	24	24.50	24.50	0.461	0.461	0.341	0.341	
					25	12	23.50	23.40	0.364	0.372	0.270	0.276	
		Left Tilt	23230	782.0	1	24	24.50	24.50	0.285	0.285	0.196	0.196	
					25	12	23.50	23.40	0.230	0.235	0.156	0.160	
		Right Touch	23230	782.0	1	24	24.50	24.50	0.580	0.580	0.412	0.412	68
					25	12	23.50	23.40	0.482	0.493	0.342	0.350	
Mode B	5	Rear	23230	782.0	1	24	24.50	24.50	0.489	0.489	0.307	0.307	69
					25	12	23.50	23.40	0.401	0.410	0.251	0.257	
		Front	23230	782.0	1	24	24.50	24.50	0.267	0.267	0.183	0.183	
					25	12	23.50	23.40	0.217	0.222	0.149	0.152	
Mode B	5	Edge 1	23230	782.0	1	24	24.50	24.50	0.129	0.129	0.069	0.069	
					25	12	23.50	23.40	0.102	0.104	0.055	0.056	
		Edge 2	23230	782.0	1	24	24.50	24.50	0.290	0.290	0.189	0.189	
					25	12	23.50	23.40	0.231	0.236	0.151	0.155	
		Edge 4	23230	782.0	1	24	24.50	24.50	0.492	0.492	0.321	0.321	70
					25	12	23.50	23.40	0.387	0.396	0.252	0.258	

10.12. LTE Band 14 (10MHz Bandwidth)

Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
							Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Mode A	0	Left Touch	23330	793.0	1	24	25.50	25.10	0.238	0.261	0.183	0.201	71
					25	12	24.50	24.00	0.186	0.209	0.145	0.163	
		Left Tilt	23330	793.0	1	24	25.50	25.10	0.119	0.130	0.096	0.105	
					25	12	24.50	24.00	0.097	0.109	0.078	0.088	
		Right Touch	23330	793.0	1	24	25.50	25.10	0.226	0.248	0.180	0.197	
					25	12	24.50	24.00	0.200	0.224	0.157	0.176	
Mode B	5	Rear	23330	793.0	1	24	25.50	25.10	0.565	0.620	0.346	0.379	72
					25	12	24.50	24.00	0.453	0.508	0.277	0.311	
		Front	23330	793.0	1	24	25.50	25.10	0.324	0.355	0.212	0.232	
					25	12	24.50	24.00	0.255	0.286	0.167	0.187	
Mode B	5	Edge 2	23330	793.0	1	24	25.50	25.10	0.510	0.559	0.336	0.368	
					25	12	24.50	24.00	0.402	0.451	0.265	0.297	
		Edge 3	23330	793.0	1	24	25.50	25.10	0.166	0.182	0.078	0.086	
					25	12	24.50	24.00	0.136	0.153	0.061	0.068	
		Edge 4	23330	793.0	1	24	25.50	25.10	0.320	0.351	0.209	0.229	
					25	12	24.50	24.00	0.252	0.283	0.164	0.184	
Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
							Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Mode A	0	Left Touch	23330	793.0	1	24	24.50	24.42	0.361	0.368	0.264	0.269	
					25	12	23.50	23.40	0.300	0.307	0.220	0.225	
		Left Tilt	23330	793.0	1	24	24.50	24.42	0.231	0.235	0.150	0.153	
					25	12	23.50	23.40	0.195	0.199	0.126	0.129	
		Right Touch	23330	793.0	1	24	24.50	24.42	0.471	0.480	0.331	0.337	73
					25	12	23.50	23.40	0.389	0.398	0.273	0.279	
Mode B	5	Rear	23330	793.0	1	24	24.50	24.42	0.453	0.461	0.271	0.276	74
					25	12	23.50	23.40	0.372	0.380	0.223	0.228	
		Front	23330	793.0	1	24	24.50	24.42	0.251	0.256	0.166	0.169	
					25	12	23.50	23.40	0.208	0.213	0.137	0.140	
Mode B	5	Edge 1	23330	793.0	1	24	24.50	24.42	0.206	0.210	0.102	0.104	
					25	12	23.50	23.40	0.167	0.171	0.083	0.084	
		Edge 2	23330	793.0	1	24	24.50	24.42	0.240	0.244	0.155	0.158	
					25	12	23.50	23.40	0.199	0.204	0.129	0.132	
		Edge 4	23330	793.0	1	24	24.50	24.42	0.307	0.313	0.199	0.203	
					25	12	23.50	23.40	0.255	0.261	0.165	0.169	

Antenna	RF Exposure Conditions	Mode	Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
										Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT3	Head	QPSK	Mode A	0	Left Touch	26365	1882.5	1	49	25.00	24.90	0.382	0.391	0.246	0.252	79
								50	24	24.00	23.90	0.377	0.386	0.239	0.245	
					Left Tilt	26365	1882.5	1	49	25.00	24.90	0.285	0.292	0.169	0.173	
								50	24	24.00	23.90	0.281	0.288	0.160	0.164	
					Right Touch	26365	1882.5	1	49	25.00	24.90	0.254	0.260	0.165	0.169	
								50	24	24.00	23.90	0.200	0.205	0.129	0.132	
					Right Tilt	26365	1882.5	1	49	25.00	24.90	0.158	0.162	0.098	0.100	
								50	24	24.00	23.90	0.126	0.129	0.078	0.080	
	Body & Hotspot	QPSK	Mode B	5	Rear	26140	1860.0	1	49	20.00	19.87	0.758	0.781	0.396	0.408	
								50	24	20.00	19.83	0.745	0.775	0.388	0.404	
						26365	1882.5	1	49	20.00	19.80	0.836	0.875	0.433	0.453	
								50	24	20.00	19.70	0.821	0.880	0.427	0.458	
					Front	26590	1905.0	1	49	20.00	19.69	0.835	0.921	0.433	0.478	
								50	24	20.00	19.64	0.835	0.896	0.431	0.463	80
						26365	1882.5	1	49	20.00	19.80	0.451	0.472	0.237	0.248	
								50	24	20.00	19.70	0.442	0.474	0.232	0.249	
	Hotspot	QPSK	Mode B	5	Edge 3	26365	1882.5	1	49	20.00	19.80	0.223	0.234	0.119	0.125	
								50	24	20.00	19.70	0.211	0.226	0.113	0.121	
					Edge 4	26365	1882.5	1	49	20.00	19.80	0.560	0.586	0.276	0.289	
								50	24	20.00	19.70	0.548	0.587	0.270	0.289	
ANT4	Head	QPSK	Mode A	0	Left Touch	26140	1860.0	1	49	21.20	20.95	0.837	0.886	0.435	0.461	
								50	24	21.20	20.87	0.824	0.890	0.428	0.462	
						26365	1882.5	1	49	21.20	21.10	0.853	0.873	0.444	0.454	
								50	24	21.20	20.82	0.822	0.898	0.427	0.467	81
					Left Tilt	26590	1905.0	1	49	21.20	20.86	0.815	0.882	0.423	0.458	
								50	24	21.20	21.00	0.852	0.892	0.442	0.463	
						26365	1882.5	1	49	21.20	21.10	0.675	0.691	0.340	0.348	
								50	24	21.20	20.82	0.541	0.591	0.272	0.297	
					Right Touch	26365	1882.5	1	49	21.20	21.10	0.234	0.239	0.146	0.149	
								50	24	21.20	20.82	0.169	0.185	0.105	0.115	
					Right Tilt	26365	1882.5	1	49	21.20	21.10	0.223	0.228	0.121	0.124	
								50	24	21.20	20.82	0.171	0.187	0.092	0.101	
	Body & Hotspot	QPSK	Mode B	5	Rear	26365	1882.5	1	49	21.00	20.50	0.698	0.783	0.356	0.399	82
								50	24	21.00	20.50	0.682	0.765	0.348	0.390	
					Front	26365	1882.5	1	49	21.00	20.50	0.378	0.424	0.203	0.228	
								50	24	21.00	20.50	0.363	0.407	0.201	0.226	
	Hotspot	QPSK	Mode B	5	Edge 1	26365	1882.5	1	49	21.00	20.50	0.333	0.374	0.173	0.194	
								50	24	21.00	20.50	0.276	0.310	0.140	0.157	
					Edge 2	26140	1860.0	1	49	21.00	20.60	0.731	0.802	0.355	0.389	
								50	24	21.00	20.50	0.720	0.808	0.349	0.392	
						26365	1882.5	1	49	21.00	20.50	0.742	0.833	0.357	0.401	83
								50	24	21.00	20.50	0.718	0.806	0.345	0.387	
						26590	1905.0	1	49	21.00	20.40	0.721	0.828	0.345	0.396	
								50	24	21.00	20.72	0.762	0.789	0.366	0.379	
								50	24	21.00	20.72	0.750	0.800	0.359	0.383	

10.14. LTE Band 26 (10MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
										Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT1	Head	QPSK	Mode A	0	Left Touch	26865	831.5	1	24	25.50	24.90	0.209	0.240	0.162	0.186	84
								25	12	24.50	23.90	0.165	0.189	0.127	0.146	
					Left Tilt	26865	831.5	1	24	25.50	24.90	0.131	0.150	0.101	0.116	
								25	12	24.50	23.90	0.105	0.121	0.081	0.093	
					Right Touch	26865	831.5	1	24	25.50	24.90	0.258	0.296	0.197	0.226	
								25	12	24.50	23.90	0.201	0.231	0.154	0.177	
					Right Tilt	26865	831.5	1	24	25.50	24.90	0.118	0.135	0.093	0.107	
								25	12	24.50	23.90	0.091	0.104	0.072	0.083	
	Body & Hotspot	QPSK	Mode B	5	Rear	26865	831.5	1	24	25.50	24.90	0.593	0.681	0.381	0.437	85
								25	12	24.50	23.90	0.473	0.543	0.302	0.347	
					Front	26865	831.5	1	24	25.50	24.90	0.303	0.348	0.201	0.231	
								25	12	24.50	23.90	0.244	0.280	0.162	0.186	
	Hotspot	QPSK	Mode B	5	Edge 2	26865	831.5	1	24	25.50	24.90	0.502	0.576	0.330	0.379	
								25	12	24.50	23.90	0.411	0.472	0.271	0.311	
					Edge 3	26865	831.5	1	24	25.50	24.90	0.305	0.350	0.144	0.165	
								25	12	24.50	23.90	0.234	0.269	0.110	0.126	
					Edge 4	26865	831.5	1	24	25.50	24.90	0.210	0.241	0.137	0.157	
								25	12	24.50	23.90	0.173	0.199	0.113	0.130	
ANT2	Head	QPSK	Mode A	0	Left Touch	26865	831.5	1	24	24.50	24.30	0.453	0.474	0.334	0.350	86
								25	12	23.50	23.30	0.368	0.385	0.271	0.284	
					Left Tilt	26865	831.5	1	24	24.50	24.30	0.293	0.307	0.192	0.201	
								25	12	23.50	23.30	0.230	0.241	0.150	0.157	
					Right Touch	26865	831.5	1	24	24.50	24.30	0.597	0.625	0.397	0.416	
								25	12	23.50	23.30	0.490	0.513	0.326	0.341	
					Right Tilt	26865	831.5	1	24	24.50	24.30	0.387	0.405	0.224	0.235	
								25	12	23.50	23.30	0.315	0.330	0.182	0.191	
	Body & Hotspot	QPSK	Mode B	5	Rear	26865	831.5	1	24	24.50	24.30	0.603	0.631	0.377	0.395	87
								25	12	23.50	23.30	0.478	0.501	0.299	0.313	
					Front	26865	831.5	1	24	24.50	24.30	0.284	0.297	0.194	0.203	
								25	12	23.50	23.30	0.236	0.247	0.161	0.169	
	Hotspot	QPSK	Mode B	5	Edge 1	26865	831.5	1	24	24.50	24.30	0.150	0.157	0.087	0.091	
								25	12	23.50	23.30	0.118	0.124	0.068	0.071	
					Edge 2	26865	831.5	1	24	24.50	24.30	0.223	0.234	0.146	0.153	
								25	12	23.50	23.30	0.174	0.182	0.114	0.119	
					Edge 4	26865	831.5	1	24	24.50	24.30	0.302	0.316	0.199	0.208	
								25	12	23.50	23.30	0.245	0.257	0.161	0.169	

10.15. LTE Band 30 (10MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
										Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT1	Head	QPSK	Mode A	0	Left Touch	27710	2310.0	1	24	23.50	23.24	0.127	0.135	0.072	0.077	
								25	12	23.50	22.50	0.114	0.144	0.068	0.086	
					Left Tilt	27710	2310.0	1	24	23.50	23.24	0.163	0.173	0.078	0.083	
								25	12	23.50	22.50	0.152	0.191	0.072	0.091	
					Right Touch	27710	2310.0	1	24	23.50	23.24	0.411	0.437	0.231	0.245	88
								25	12	23.50	22.50	0.394	0.496	0.222	0.279	
	Body & Hotspot	QPSK	Mode B	5	Rear	27710	2310.0	1	24	20.20	20.01	0.940	0.982	0.391	0.409	
								25	12	20.20	20.00	0.906	0.949	0.387	0.405	
					Front	27710	2310.0	50	0	20.20	20.20	0.996	0.996	0.414	0.414	89
								1	24	20.20	20.01	0.440	0.460	0.209	0.218	
								25	12	20.20	20.00	0.430	0.450	0.204	0.214	
								1	24	20.20	20.01	0.879	0.919	0.355	0.371	90
	Hotspot	QPSK	Mode B	5	Edge 2	27710	2310.0	25	12	20.20	20.00	0.874	0.915	0.352	0.369	
								50	0	20.20	20.20	0.855	0.855	0.345	0.345	
					Edge 3	27710	2310.0	1	24	20.20	20.01	0.126	0.132	0.055	0.058	
								25	12	20.20	20.00	0.125	0.131	0.054	0.057	
					Edge 4	27710	2310.0	1	24	20.20	20.01	0.022	0.023	0.007	0.007	
								25	12	20.20	20.00	0.019	0.020	0.006	0.006	
Antenna	RF Exposure Conditions	Mode	Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
										Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT2	Head	QPSK	Mode A	0	Left Touch	27710	2310.0	1	24	20.50	20.50	0.284	0.284	0.123	0.123	
								25	12	20.50	20.50	0.282	0.282	0.122	0.122	
					Left Tilt	27710	2310.0	1	24	20.50	20.50	0.397	0.397	0.164	0.164	
								25	12	20.50	20.50	0.393	0.393	0.161	0.161	
					Right Touch	27710	2310.0	1	24	20.50	20.50	0.849	0.849	0.361	0.361	
								25	12	20.50	20.50	0.900	0.900	0.380	0.380	
	Body & Hotspot	QPSK	Mode B	5	Right Tilt	27710	2310.0	50	0	20.50	20.47	0.977	0.984	0.408	0.411	91
								1	24	20.50	20.50	0.888	0.888	0.353	0.353	
								25	12	20.50	20.50	0.876	0.876	0.347	0.347	
								50	0	20.50	20.47	0.901	0.907	0.357	0.359	
					Rear	27710	2310.0	1	24	20.20	20.17	0.811	0.816	0.348	0.350	
								25	12	20.20	20.11	0.817	0.835	0.357	0.365	
	Hotspot	QPSK	Mode B	5	Front	27710	2310.0	50	0	20.20	20.14	0.813	0.825	0.350	0.355	
								1	24	20.20	20.17	0.352	0.354	0.163	0.164	
								25	12	20.20	20.11	0.327	0.334	0.152	0.155	
					Edge 1	27710	2310.0	1	24	20.20	20.17	0.397	0.399	0.163	0.164	
								25	12	20.20	20.11	0.380	0.388	0.157	0.160	
					Edge 2	27710	2310.0	1	24	20.20	20.17	0.025	0.025	0.014	0.014	
								25	12	20.20	20.11	0.023	0.023	0.013	0.013	
					Edge 4	27710	2310.0	1	24	20.20	20.17	0.527	0.530	0.231	0.232	
								25	12	20.20	20.11	0.515	0.526	0.226	0.231	

Antenna	RF Exposure Conditions	Mode	Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
										Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT3	Head	QPSK	Mode A	0	Left Touch	27710	2310.0	1	24	23.50	23.50	0.082	0.082	0.049	0.049	93
								25	12	23.50	22.57	0.068	0.084	0.041	0.051	
					Left Tilt	27710	2310.0	1	24	23.50	23.50	0.152	0.152	0.078	0.078	
								25	12	23.50	22.57	0.126	0.156	0.065	0.080	
					Right Touch	27710	2310.0	1	24	23.50	23.50	0.209	0.209	0.125	0.125	
								25	12	23.50	22.57	0.168	0.208	0.100	0.124	
					Right Tilt	27710	2310.0	1	24	23.50	23.50	0.114	0.114	0.068	0.068	
								25	12	23.50	22.57	0.092	0.114	0.055	0.068	
	Body & Hotspot	QPSK	Mode B	5	Rear	27710	2310.0	1	24	20.20	20.10	0.943	0.965	0.419	0.429	94
								25	12	20.20	20.00	0.934	0.978	0.416	0.436	
								50	0	20.20	20.00	0.952	0.997	0.424	0.444	
					Front	27710	2310.0	1	24	20.20	20.10	0.215	0.220	0.153	0.157	
								25	12	20.20	20.00	0.211	0.221	0.150	0.157	
								25	12	20.20	20.00	0.211	0.221	0.150	0.157	
	Hotspot	QPSK	Mode B	5	Edge 3	27710	2310.0	1	24	20.20	20.10	0.206	0.211	0.100	0.102	
								25	12	20.20	20.00	0.172	0.180	0.087	0.091	
					Edge 4	27710	2310.0	1	24	20.20	20.10	0.149	0.152	0.104	0.106	
								25	12	20.20	20.00	0.148	0.155	0.102	0.107	
								1	24	20.20	20.10	0.149	0.152	0.104	0.106	
								25	12	20.20	20.00	0.148	0.155	0.102	0.107	
ANT4	Head	QPSK	Mode A	0	Left Touch	27710	2310.0	1	24	19.50	19.50	0.989	0.989	0.463	0.463	95
								25	12	19.50	19.26	0.942	0.995	0.439	0.464	
								50	0	19.50	19.20	0.931	0.998	0.434	0.465	
					Left Tilt	27710	2310.0	1	24	19.50	19.50	0.796	0.796	0.379	0.379	
								25	12	19.50	19.26	0.784	0.828	0.373	0.394	
					Right Touch	27710	2310.0	1	24	19.50	19.50	0.273	0.273	0.145	0.145	
								25	12	19.50	19.26	0.265	0.280	0.141	0.149	
					Right Tilt	27710	2310.0	1	24	19.50	19.50	0.268	0.268	0.129	0.129	
								25	12	19.50	19.26	0.262	0.277	0.126	0.133	
	Body & Hotspot	QPSK	Mode B	5	Rear	27710	2310.0	1	24	20.00	19.90	0.798	0.817	0.401	0.410	96
								25	12	20.00	19.75	0.772	0.818	0.376	0.398	
								50	0	20.00	19.70	0.716	0.767	0.351	0.376	
					Front	27710	2310.0	1	24	20.00	19.90	0.439	0.449	0.239	0.245	
								25	12	20.00	19.75	0.405	0.429	0.220	0.233	
								25	12	20.00	19.75	0.405	0.429	0.220	0.233	
	Hotspot	QPSK	Mode B	5	Edge 1	27710	2310.0	1	24	20.00	19.90	0.307	0.314	0.114	0.117	
								25	12	20.00	19.75	0.280	0.297	0.105	0.111	
					Edge 2	27710	2310.0	1	24	20.00	19.90	0.554	0.567	0.281	0.288	
								25	12	20.00	19.75	0.505	0.535	0.255	0.270	

10.16. LTE Band 41 Power Class 3 (20MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
										Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT1	Head	QPSK	Mode A	0	Left Touch	40620	2593.0	1	49	25.50	25.40	0.059	0.060	0.034	0.035	
								50	24	24.50	24.40	0.066	0.068	0.037	0.038	
					Left Tilt	40620	2593.0	1	49	25.50	25.40	0.059	0.060	0.028	0.029	
								50	24	24.50	24.40	0.044	0.045	0.020	0.020	
					Right Touch	40620	2593.0	1	49	25.50	25.40	0.223	0.228	0.122	0.125	97
								50	24	24.50	24.40	0.181	0.185	0.099	0.101	
					Right Tilt	40620	2593.0	1	49	25.50	25.40	0.052	0.053	0.024	0.025	
								50	24	24.50	24.40	0.068	0.070	0.031	0.032	
	Body & Hotspot	QPSK	Mode B	5	Rear	39750	2506.0	1	49	23.50	23.50	0.801	0.801	0.345	0.345	
								50	24	23.50	23.40	0.777	0.795	0.333	0.341	
						40185	2549.5	1	49	23.50	23.50	0.746	0.746	0.319	0.319	
								50	24	23.50	23.40	0.783	0.801	0.329	0.337	
						40620	2593.0	1	49	23.50	23.50	0.757	0.757	0.327	0.327	
								50	24	23.50	23.50	0.751	0.751	0.321	0.321	
								100	0	23.50	23.43	0.682	0.693	0.291	0.296	
						41055	2636.5	1	49	23.50	23.40	0.753	0.771	0.322	0.330	
								50	24	23.50	23.30	0.795	0.832	0.335	0.351	98
					Front	41490	2680.0	1	49	23.50	23.10	0.520	0.570	0.230	0.252	
								50	24	23.50	23.00	0.514	0.577	0.227	0.255	
						40620	2593.0	1	49	23.50	23.50	0.558	0.558	0.243	0.243	
								50	24	23.50	23.50	0.557	0.557	0.243	0.243	
	Hotspot	QPSK	Mode B	5	Edge 2	39750	2506.0	1	49	23.50	23.50	0.955	0.955	0.359	0.359	
								50	24	23.50	23.40	0.963	0.985	0.367	0.376	
						40185	2549.5	1	49	23.50	23.50	0.890	0.890	0.343	0.343	
								50	24	23.50	23.40	0.844	0.864	0.326	0.334	
						40620	2593.0	1	49	23.50	23.50	0.986	0.986	0.370	0.370	99
								50	24	23.50	23.50	0.952	0.952	0.356	0.356	
								100	0	23.50	23.43	0.937	0.953	0.351	0.357	
						41055	2636.5	1	49	23.50	23.40	0.900	0.921	0.343	0.351	
								50	24	23.50	23.30	0.824	0.863	0.318	0.333	
						41490	2680.0	1	49	23.50	23.10	0.825	0.905	0.310	0.340	
								50	24	23.50	23.00	0.817	0.917	0.307	0.344	
					Edge 3	40620	2593.0	1	49	23.50	23.50	0.163	0.163	0.063	0.063	
								50	24	23.50	23.50	0.179	0.179	0.071	0.071	
					Edge 4	40620	2593.0	1	49	23.50	23.50	0.018	0.018	0.006	0.006	
								50	24	23.50	23.50	0.015	0.015	0.004	0.004	

Antenna	RF Exposure Conditions	Mode	Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
										Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT2	Head	QPSK	Mode A	0	Left Touch	40620	2593.0	1	49	22.00	21.90	0.366	0.375	0.152	0.156	
								50	24	22.00	21.80	0.284	0.297	0.118	0.124	
					Left Tilt	39750	2506.0	1	49	22.00	22.00	0.378	0.378	0.151	0.151	
						40185	2549.5	1	49	22.00	22.00	0.662	0.662	0.255	0.255	
						40620	2593.0	1	49	22.00	21.90	0.879	0.899	0.332	0.340	
								50	24	22.00	21.80	0.703	0.736	0.262	0.274	
						41055	2636.5	1	49	22.00	22.00	0.874	0.874	0.324	0.324	
						41490	2680.0	1	49	22.00	22.00	0.984	0.984	0.358	0.358	
					Right Touch	39750	2506.0	1	49	22.00	22.00	0.607	0.607	0.295	0.295	
						40185	2549.5	1	49	22.00	22.00	0.710	0.710	0.334	0.334	
						40620	2593.0	1	49	22.00	21.90	0.878	0.898	0.372	0.381	
								50	24	22.00	21.80	0.612	0.641	0.268	0.281	
						41055	2636.5	1	49	22.00	22.00	0.823	0.823	0.357	0.357	
						41490	2680.0	1	49	22.00	22.00	0.859	0.859	0.368	0.368	
					Right Touch	39750	2506.0	1	49	22.00	22.00	0.774	0.774	0.331	0.331	
								50	24	22.00	21.77	0.534	0.563	0.228	0.240	
						40185	2549.5	1	49	22.00	22.00	0.877	0.877	0.374	0.374	
								50	24	22.00	21.90	0.624	0.639	0.261	0.267	
						40620	2593.0	1	49	22.00	21.90	0.968	0.991	0.384	0.393	100
								50	24	22.00	21.80	0.763	0.799	0.302	0.316	
						41055	2636.5	100	0	22.00	21.73	0.746	0.794	0.296	0.315	
								1	49	22.00	22.00	0.888	0.888	0.364	0.364	
						41490	2680.0	50	24	22.00	21.68	0.685	0.737	0.282	0.303	
								1	49	22.00	22.00	0.782	0.782	0.319	0.319	
	Body & Hotspot	QPSK	Mode B	5	Rear	39750	2506.0	50	24	22.00	21.65	0.495	0.537	0.204	0.221	
								1	49	22.20	22.20	0.651	0.651	0.246	0.246	
						40185	2549.5	1	49	22.20	22.20	0.875	0.875	0.312	0.312	101
								1	49	22.20	21.80	0.773	0.848	0.282	0.309	
						40620	2593.0	50	24	22.20	21.80	0.544	0.596	0.194	0.213	
								1	49	22.20	22.20	0.841	0.841	0.293	0.293	
					Front	40620	2593.0	1	49	22.20	22.20	0.692	0.692	0.242	0.242	
								50	24	22.20	21.80	0.350	0.384	0.155	0.170	
	Hotspot	QPSK	Mode B	5	Edge 1	40620	2593.0	1	49	22.20	21.80	0.580	0.636	0.209	0.229	
								50	24	22.20	21.80	0.452	0.496	0.163	0.179	
					Edge 2	40620	2593.0	1	49	22.20	21.80	0.037	0.041	0.018	0.020	
								50	24	22.20	21.80	0.029	0.032	0.015	0.016	
					Edge 4	40620	2593.0	1	49	22.20	21.80	0.620	0.680	0.254	0.279	
								50	24	22.20	21.80	0.482	0.529	0.196	0.215	

10.17. LTE Band 41 Power Class 2 (20MHz Bandwidth)

From May 2017 TCB Workshop, SAR tested were performed using Power Class 3. SAR test for Power Class 2 is tested using the highest SAR test configuration in Power Class 3 for each LTE configuration and exposure condition combination, according to the highest time averaged power for UL-DL configurations is 1 the duty cycle is 43.3%.

Additional SAR testing for Power Class 2 is not required when:

- The reported SAR vs. output power can be linearly scaled with < 10%
- Discrepancy between power classes and all reported SAR are < 1.4 W/kg

Reported SAR vs. Output Power linearly scaled

Antenna	RF Exposure Conditions	Power Class 2			Power Class 3				PC2 linearly scaled Reported SAR (W/kg)	Linearly scaled (<10%)
		Duty Cycle	Tune-up Power (dBm)	Frame Avg. Power (mW)	Duty Cycle	Tune-up Power (dBm)	Frame Avg. Power (mW)	Reported SAR (W/kg)		
ANT1	Head	43.3%	27.00	217.01	63.3%	25.50	224.60	0.228	0.220	3.38%
ANT3	Head	43.3%	26.50	193.41	63.3%	25.50	224.60	0.140	0.121	13.88%

Conclusion:

ANT3 SAR test for Power Class 2 is required base on the reported SAR vs. output power linearly scaled >10%.

LTE Band 41 Power Class 2 SAR Measured Results

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT3	Head	QPSK	0	Left Touch	40620	2593.0	1	49	26.5	26.5	0.128	0.128	0.068	0.068	155

Antenna	RF Exposure Conditions	Mode	Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
										Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT3	Head	QPSK	Mode A	0	Left Touch	132322	1745.0	1	49	25.00	24.65	0.062	0.067	0.044	0.048	
								50	24	24.00	23.83	0.055	0.057	0.039	0.040	
					Left Tilt	132322	1745.0	1	49	25.00	24.65	0.041	0.044	0.027	0.029	
								50	24	24.00	23.83	0.033	0.034	0.022	0.023	
					Right Touch	132322	1745.0	1	49	25.00	24.65	0.192	0.208	0.133	0.144	111
								50	24	24.00	23.83	0.155	0.161	0.108	0.112	
					Right Tilt	132322	1745.0	1	49	25.00	24.65	0.168	0.182	0.106	0.115	
								50	24	24.00	23.83	0.139	0.145	0.088	0.092	
	Body & Hotspot	QPSK	Mode B	5	Rear	132072	1720.0	1	49	21.50	21.20	0.696	0.746	0.379	0.406	
								50	24	21.50	21.12	0.703	0.767	0.381	0.416	
						132322	1745.0	1	49	21.50	21.20	0.808	0.866	0.433	0.464	112
								50	24	21.50	21.19	0.801	0.861	0.429	0.461	
						132572	1770.0	100	0	21.50	21.21	0.808	0.864	0.432	0.462	
								1	49	21.50	21.20	0.801	0.858	0.425	0.455	
					Front	132322	1745.0	50	24	21.50	21.19	0.795	0.854	0.420	0.451	
								1	49	21.50	21.20	0.537	0.575	0.296	0.317	
						132572	1770.0	50	24	21.50	21.19	0.527	0.567	0.290	0.312	
								1	49	21.50	21.20	0.537	0.575	0.296	0.317	
	Hotspot	QPSK	Mode B	5	Edge 3	132322	1745.0	1	49	21.50	21.20	0.288	0.309	0.141	0.151	
								50	24	21.50	21.19	0.284	0.305	0.139	0.149	
					Edge 4	132072	1720.0	1	49	21.50	21.20	0.738	0.791	0.395	0.423	
								50	24	21.50	21.12	0.737	0.804	0.393	0.429	
						132322	1745.0	1	49	21.50	21.20	0.787	0.843	0.412	0.441	
								50	24	21.50	21.19	0.782	0.841	0.409	0.440	
						132572	1770.0	100	0	21.50	21.21	0.777	0.830	0.405	0.433	
								1	49	21.50	21.20	0.791	0.848	0.404	0.433	
								50	24	21.50	21.19	0.799	0.858	0.408	0.438	
ANT4	Head	QPSK	Mode A	0	Left Touch	132072	1720.0	1	49	21.50	21.50	0.612	0.612	0.331	0.331	
						132322	1745.0	1	49	21.50	21.50	0.719	0.719	0.387	0.387	
						132572	1770.0	50	24	21.50	21.00	0.591	0.663	0.322	0.361	
					Left Tilt	132322	1745.0	1	49	21.50	21.50	0.609	0.609	0.293	0.293	113
								50	24	21.50	21.00	0.478	0.536	0.231	0.259	
					Right Touch	132322	1745.0	1	49	21.50	21.50	0.199	0.199	0.115	0.115	
								50	24	21.50	21.00	0.162	0.182	0.094	0.105	
					Right Tilt	132322	1745.0	1	49	21.50	21.50	0.175	0.175	0.097	0.097	
								50	24	21.50	21.00	0.143	0.160	0.079	0.089	
	Body & Hotspot	QPSK	Mode B	5	Rear	132322	1745.0	1	49	22.00	22.00	0.558	0.558	0.277	0.277	114
								50	24	22.00	21.70	0.453	0.485	0.224	0.240	
					Front	132322	1745.0	1	49	22.00	22.00	0.360	0.360	0.191	0.191	
								50	24	22.00	21.70	0.294	0.315	0.154	0.165	
	Hotspot	QPSK	Mode B	5	Edge 1	132072	1720.0	1	49	22.00	22.00	0.808	0.808	0.400	0.400	
						132322	1745.0	1	49	22.00	22.00	0.864	0.864	0.422	0.422	
						132572	1770.0	50	24	22.00	21.70	0.689	0.738	0.338	0.362	
					Edge 2	132072	1720.0	1	49	22.00	22.00	0.895	0.895	0.437	0.437	
								50	24	22.00	21.70	0.857	0.857	0.410	0.410	
						132322	1745.0	1	49	22.00	22.00	0.896	0.896	0.433	0.433	115
						132572	1770.0	50	24	22.00	21.70	0.688	0.737	0.334	0.358	
						132572	1770.0	1	49	22.00	22.00	0.829	0.829	0.399	0.399	

10.19. LTE-uplink 2CA Band 7 (20MHz + 20MHz BW)

SAR Testing was performed on each antenna – ANT1, ANT2, ANT3, and ANT4 – separately using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition.

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	PCC UL				SCC UL				Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
					Ch #.	Freq. (MHz)	RB Allocation	RB offset	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT 1	Body	QPSK	5	Rear	21152	2540.2	1	99	21350	2560.0	1	0	20.20	20.20	0.931	0.931	0.379	0.379	156
ANT 2	Head	QPSK	0	Right Tilt	21152	2540.2	1	99	21350	2560.0	1	0	19.50	19.00	0.712	0.799	0.290	0.325	
ANT 3	Body	QPSK	5	Rear	21152	2540.2	1	99	21350	2560.0	1	0	21.50	21.00	0.522	0.586	0.208	0.233	
ANT 4	Head	QPSK	0	Left Touch	21001	2525.1	1	99	21199	2544.9	1	0	18.70	18.50	0.852	0.892	0.378	0.396	

10.20. LTE-uplink 2CA Band 41 PC3 (20MHz + 20MHz BW)

SAR Testing was performed on each antenna – ANT1, ANT2, ANT3, and ANT4 – separately using the corresponding power modes: Mode A and Mode B. Mode A power was used when the DUT was tested on Head exposure condition. Mode B power was used when the DUT was tested on Body-worn & Hotspot exposure condition.

From May 2017 TCB Workshop, HPUE Power Class 2 allows 26±2 dBm and does not support uplink-downlink configurations 0 and 6 or inter-band CA

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	PCC UL				SCC UL				Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
					Ch #.	Freq. (MHz)	RB Allocation	RB offset	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT 1	Body	QPSK	5	Edge 2	40521	2583.1	1	99	40719	2602.9	1	0	23.50	23.00	0.683	0.766	0.268	0.301	
ANT 2	Head	QPSK	0	Right Tilt	40521	2583.1	1	99	40719	2602.9	1	0	22.00	21.80	0.868	0.909	0.339	0.355	157
ANT 3	Body	QPSK	5	Rear	40956	2626.6	1	99	41154	2646.4	1	0	23.70	23.40	0.568	0.609	0.229	0.245	
ANT 4	Head	QPSK	0	Left Touch	40086	2539.6	1	99	40284	2559.4	1	0	21.70	21.40	0.770	0.825	0.294	0.315	

10.21. Wi-Fi (DTS Band)

When the 802.11b reported SAR of the highest measured maximum output power channel is ≤ 0.8 W/kg, no further SAR testing is required. If SAR is > 0.8 W/kg and ≤ 1.2 W/kg, SAR is required for the next highest measured output power channel. Finally, if SAR is > 1.2 W/kg, SAR is required for the third channel.

SAR testing is not required for OFDM mode(s) when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

ANT3 Power Mode A the $P_{\text{Cell_ON}}$ is same as $P_{\text{Cell_OFF}}$

Antenna	WWAN Power	RF Exposure Conditions	Mode	Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
											Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT3	Cell OFF	Head	802.11b	Mode A	0	Left Touch	6	2437	0.0715	99.9%	22.00	22.00	0.060	0.060	0.032	0.032	116
						Left Tilt	6	2437	0.046	99.9%	22.00	22.00					
						Right Touch	6	2437	0.050	99.9%	22.00	22.00					
						Right Tilt	6	2437	0.025	99.9%	22.00	22.00					
		Body & Hotspot	802.11b	Mode B	5	Rear	2	2417	1.62	99.9%	21.25	21.25	0.969	0.970	0.426	0.426	117
							6	2437	1.65	99.9%	21.25	21.25	1.020	1.021	0.424	0.424	
							11	2462	1.76	99.9%	21.25	21.25	1.150	1.151	0.454	0.454	
						Front	6	2437	1.58	99.9%	21.20	21.20	0.971	0.972	0.423	0.423	
							11	2462	1.57	99.9%	21.20	21.20	1.120	1.121	0.477	0.477	
							6	2437	0.463	99.9%	21.20	21.20					
		Hotspot	802.11b	Mode B	5	Edge 3	6	2437	0.463	99.9%	21.20	21.20					
						Edge 4	6	2437	0.54	99.9%	21.20	21.20	0.396	0.396	0.140	0.140	
ANT4	Cell OFF	Head	802.11b	Mode A	0	Left Touch	1	2412	1.430	99.9%	19.75	19.75	1.020	1.021	0.460	0.460	118
							6	2437	1.440	99.9%	19.75	19.75	0.969	0.970	0.416	0.416	
							11	2462	1.070	99.9%	19.75	19.75	1.130	1.131	0.406	0.406	
						Left Tilt	6	2437	1.010	99.9%	19.75	19.75	0.694	0.695	0.320	0.320	
							6	2437	0.279	99.9%	19.75	19.75					
							6	2437	0.287	99.9%	19.75	19.75					
		Body & Hotspot	802.11b	Mode B	5	Rear	1	2412	1.220	99.9%	20.75	20.75	0.848	0.849	0.392	0.392	119
							6	2437	1.130	99.9%	20.75	20.75	0.959	0.960	0.450	0.450	
							11	2462	1.590	99.9%	20.75	20.75	1.030	1.031	0.495	0.495	
						Front	6	2437	0.716	99.9%	20.75	20.75	0.552	0.552	0.275	0.275	
		Hotspot	802.11b	Mode B	5	Edge 1	6	2437	0.503	99.9%	20.75	20.75					
						Edge 2	6	2437	0.847	99.9%	20.75	20.75	1.020	1.021	0.448	0.448	
							11	2462	1.460	99.9%	20.75	20.75	1.020	1.021	0.428	0.428	
ANT3	Cell ON	Body & Hotspot	802.11b	Mode B	5	Rear	6	2437	0.627	99.9%	17.00	17.00	0.392	0.392	0.172	0.172	120
						Front	6	2437	0.316	99.9%	17.00	17.00	0.350	0.350	0.154	0.154	
		Hotspot	802.11b	Mode B	5	Edge 3	6	2437	0.257	99.9%	17.00	17.00					
						Edge 4	6	2437	0.25	99.9%	17.00	17.00					
ANT4	Cell ON	Head	802.11b	Mode A	0	Left Touch	6	2437	0.576	99.9%	15.50	15.50	0.379	0.379	0.173	0.173	121
						Left Tilt	6	2437	0.582	99.9%	15.50	15.50	0.393	0.393	0.178	0.178	
						Right Touch	6	2437	0.172	99.9%	15.50	15.50					
						Right Tilt	6	2437	0.167	99.9%	15.50	15.50					
		Body & Hotspot	802.11b	Mode B	5	Rear	6	2437	0.374	99.9%	17.50	17.50	0.279	0.279	0.131	0.131	122
						Front	6	2437	0.225	99.9%	17.50	17.50					
		Hotspot	802.11b	Mode B	5	Edge 1	6	2437	0.177	99.9%	17.50	17.50					
						Edge 2	6	2437	0.212	99.9%	17.50	17.50					

ANT5 Power Mode A the P_{Cell ON} is same as P_{Cell OFF}

Antenna	WWAN Power	Band	RF Exposure Conditions	Mode	Power Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
												Tune-up Limit	Meas.	Meas.	Scaled	Meas.	Scaled	
ANT5	Cell ON	U-NII-1	Body & Airplay	802.11ac (VHT80)	Mode B	5	Rear	42	5210	0.396	95.4%	12.75	12.75	0.265	0.278	0.073	0.076	135
							Front	42	5210	0.0329	95.4%	12.75	12.75					
			Airplay	802.11ac (VHT80)	Mode B	5	Edge 3	42	5210	0.0701	95.4%	12.75	12.75					
							Edge 4	42	5210	0.0216	95.4%	12.75	12.75					
ANT5	Cell ON	U-NII-2C	Body & Airplay	802.11ac (VHT80)	Mode B	5	Rear	138	5690	0.560	95.4%	12.25	12.25	0.303	0.317	0.082	0.086	136
							Front	138	5690	0.034	95.4%	12.25	12.25					
			Airplay	802.11ac (VHT80)	Mode B	5	Edge 3	138	5690	0.111	95.4%	12.25	12.25					
							Edge 4	138	5690	0.036	95.4%	12.25	12.25					
ANT5	Cell ON	U-NII-3	Body & Airplay	802.11ac (VHT80)	Mode B	5	Rear	155	5775	0.508	95.4%	12.25	12.25	0.269	0.282	0.071	0.074	137
							Front	155	5775	0.018	95.4%	12.25	12.25					
			Airplay	802.11ac (VHT80)	Mode B	5	Edge 3	155	5775	0.089	95.4%	12.25	12.25					
							Edge 4	155	5775	0.002	95.4%	12.25	12.25					
ANT6	Cell ON	U-NII-1	Head	802.11ac (VHT80)	Mode A	0	Left Touch	42	5210	0.334	95.4%	17.50	17.50					
							Left Tilt	42	5210	0.322	95.4%	17.50	17.50					
							Right Touch	42	5210	0.665	95.4%	17.50	17.50	0.330	0.346	0.093	0.097	138
							Right Tilt	42	5210	0.496	95.4%	17.50	17.50					
			Body & Airplay	802.11ac (VHT80)	Mode B	5	Rear	42	5210	0.790	95.4%	12.00	12.00	0.403	0.422	0.098	0.103	139
							Front	42	5210	0.077	95.4%	12.00	12.00					
							Edge 1	42	5210	0.054	95.4%	12.00	12.00					
							Edge 4	42	5210	0.180	95.4%	12.00	12.00	0.097	0.102	0.025	0.026	
ANT6	Cell ON	U-NII-2C	Head	802.11ac (VHT80)	Mode A	0	Left Touch	138	5690	0.0554	95.4%	17.25	17.25					
							Left Tilt	138	5690	0.0392	95.4%	17.25	17.25					
							Right Touch	138	5690	0.533	95.4%	17.25	17.25	0.296	0.310	0.094	0.098	140
							Right Tilt	138	5690	0.438	95.4%	17.25	17.25					
			Body & Airplay	802.11ac (VHT80)	Mode B	5	Rear	138	5690	0.788	95.4%	11.50	11.50	0.387	0.405	0.110	0.115	141
							Front	138	5690	0.0562	95.4%	11.50	11.50					
							Edge 1	138	5690	0.0599	95.4%	11.50	11.50					
							Edge 4	138	5690	0.237	95.4%	11.50	11.50	0.124	0.130	0.040	0.041	
ANT6	Cell ON	U-NII-3	Head	802.11ac (VHT80)	Mode A	0	Left Touch	155	5775	0.245	95.4%	20.00	20.00					
							Left Tilt	155	5775	0.240	95.4%	20.00	20.00					
							Right Touch	155	5775	0.536	95.4%	20.00	20.00					
							Right Tilt	155	5775	0.675	95.4%	20.00	20.00	0.291	0.305	0.070	0.073	142
			Body & Airplay	802.11ac (VHT80)	Mode B	5	Rear	155	5775	1.55	95.4%	12.75	12.75	0.384	0.402	0.106	0.111	143
							Front	155	5775	0.036	95.4%	12.75	12.75					
							Edge 1	155	5775	0.0259	95.4%	12.75	12.75					
							Edge 4	155	5775	0.184	95.4%	12.75	12.75	0.086	0.090	0.027	0.028	

11. SAR Measurement Variability

In accordance with published RF Exposure KDB 865664 D01 SAR measurement 100 MHz to 6 GHz. 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 <0.8 or 2 W/kg (1-g or 10-g respectively); steps 2) through 4) do not apply.
- 2) When the original highest measured SAR is ≥ 0.8 or 2 W/kg (1-g or 10-g respectively), 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 or 3.6 W/kg (~ 10% from the 1-g or 10-g respective SAR limit).
- 4) Perform a third repeated measurement only if the original, first, or second repeated measurement is ≥ 1.5 or 3.75 W/kg (1-g or 10-g respectively) and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .

Frequency Band (MHz)	Air Interface	RF Exposure Conditions	Test Position	Repeated SAR (Yes/No)	Highest Measured SAR (W/kg)	First Repeated	
						Measured SAR (W/kg)	Largest to Smallest SAR Ratio
700	LTE Band 12	Hotspot	Edge 2	No	0.650	N/A	N/A
	LTE Band 13	Head	Right Touch	No	0.580	N/A	N/A
	LTE Band 14	Body & Hotspot	Rear	No	0.565	N/A	N/A
850	GSM 850	Body & Hotspot	Rear	No	0.513	N/A	N/A
	WCDMA Band 5	Body & Hotspot	Rear	No	0.492	N/A	N/A
	CDMA BC10	Body & Hotspot	Rear	No	0.610	N/A	N/A
	CDMA BC0	Body & Hotspot	Rear	No	0.645	N/A	N/A
	LTE Band 26	Body & Hotspot	Rear	No	0.603	N/A	N/A
1700	WCDMA Band 4	Body & Hotspot	Rear	Yes	0.976	0.907	1.08
	LTE Band 66	Head	Right Tilt	No	0.929	N/A	N/A
1900	GSM 1900	Body & Hotspot	Rear	No	0.974	N/A	N/A
	WCDMA Band 2	Head	Right Touch	Yes	0.998	0.989	1.01
	CDMA BC1	Head	Right Touch	No	0.971	N/A	N/A
	LTE Band 25	Body & Hotspot	Rear	No	0.994	N/A	N/A
2300	LTE Band 30	Body & Hotspot	Rear	Yes	0.996	0.915	1.09
2400	Wi-Fi 802.11b/g/n	Body & Hotspot	Rear	Yes	1.150	1.130	1.02
	BT	Body	Rear	No	0.427	N/A	N/A
2600	LTE Band 7	Head	Left Touch	No	0.973	N/A	N/A
	LTE Band 41	Hotspot	Edge 2	Yes	0.986	0.961	1.03
5200	Wi-Fi 802.11a/n/ac	Body	Rear	Yes	1.020	0.980	1.04
5300	Wi-Fi 802.11a/n/ac	Head	Right Touch	Yes	1.100	1.100	1.00
5500	Wi-Fi 802.11a/n/ac	Head	Right Touch	Yes	1.140	1.110	1.03
5800	Wi-Fi 802.11a/n/ac	Body	Rear	Yes	0.996	0.973	1.02

Note(s):

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

12. Simultaneous Transmission Conditions

KDB 447498 D01 General RF Exposure Guidance provides two procedures for determining simultaneous transmission SAR test exclusion: Sum of SAR and SAR to Peak Location Ratio (SPLSR)

Sum of SAR

To qualify for simultaneous transmission SAR test exclusion based upon Sum of SAR the sum of the reported standalone SARs for all simultaneously transmitting antennas shall be below the applicable standalone SAR limit. If the sum of the SARs is above the applicable limit then simultaneous transmission SAR test exclusion may still apply if the requirements of the SAR to Peak Location Ratio (SPLSR) evaluation are met.

SAR to Peak Location Ratio (SPLSR)

KDB 447498 D01 General RF Exposure Guidance explains how to calculate the SAR to Peak Location Ratio (SPLSR) between pairs of simultaneously transmitting antennas:

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

Where:

SAR₁ is the highest reported or estimated SAR for the first of a pair of simultaneous transmitting antennas, in a specific test operating mode and exposure condition

SAR₂ is the highest reported 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 $[(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2]$

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:

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

When an individual antenna transmits at on two bands simultaneously, the sum of the highest reported SAR for the frequency bands should be used to determine **SAR₁** or **SAR₂**. When SPLSR is necessary, the smallest distance between the peak SAR locations for the antenna pair with respect to the peaks from each antenna should be used.

The antennas in all antenna pairs that do not qualify for simultaneous transmission SAR test exclusion must be tested for SAR compliance, according to the enlarged zoom scan and volume scan post-processing procedures in KDB Publication 865664 D01

Simultaneous transmission SAR measurement

When simultaneous transmission SAR measurements are required in different frequency bands not covered by a single probe calibration point then separate tests for each frequency band are performed. The tests are performed using enlarged zoom scans which are processed, by means of superposition, using the DASY volume scan post-processing procedures to determine the 1-g SAR for the aggregate SAR distribution.

The spatial resolution used for all enlarged zoom scans is the same as used for the most stringent zoom scans. I.E. the scan parameters required for the highest frequency assessed are used for all enlarged zoom scans. The scans cover the complete area of the device to ensure all transmitting antennas and radiating structures are assessed.

DASY provides the ability to perform Multiband Evaluations according to the latest standards using the Volume Scan job as well as appropriate routines for the Post-processing.

In order to extract and process measurements within different frequency bands, the SEMCAD X Post-processor performs the combination and subsequent superposition of these measurement data via DASY = Combined MultiBand Averaged SAR.

Combined Multi Band Averaged SAR allows - in addition to the data extraction - an evaluation of the 1 g, 10 g and/or arbitrary averaged mass SAR.

Power Scaling Factor is used to allow the volume scans to be scaled by a value other than "1", this is important when the results need to be scaled to different maximum power levels. The Power Scaling Factor is applied to each individual point of the scan. When power scaling is used in multi-band combinations the scaling factor is applied to each individual point of the first scan, the second factor is then applied to each individual point of the second scan and so on. The scans are then combined.

According to KDB publication 248227 D01, simultaneous SAR provisions in KDB Publication 447498 D01 apply to determine simultaneous transmission SAR test exclusion for Wi-Fi MIMO. If the sum of 1-g single transmission chain SAR measurements is $<1.6\text{W/kg}$ and/or the MIMO output power is equal or less than a single chain, then no additional SAR measurements for simultaneously at the specified maximum output power of MIMO operation.

In Airplay mode, the device uses same power and power control mechanism as Wi-Fi. Airplay is not supported in hotspot mode. Airplay utilize the same 802.11 modes, modulation, MIMO, Channel Bandwidth, etc. as Wi-Fi does. Therefore Airplay usage is categorized by the Wi-Fi SAR testing contained in Section 10.

The simultaneous transmission possibilities for this device are listed as below.

RF Exposure Condition	Item	Capable Transmit Configurations	
Head Body Worn Accessory Hotspot (for 2.4 GHz) Airplay (for 2.4/5 GHz)	1	WWAN OFF (CELLULAR ANTENNAS OFF)	+ (ANT5) Wi-Fi 5 GHz SISO + (ANT3) Bluetooth (P_{High})
	2		+ (ANT6) Wi-Fi 5 GHz SISO + (ANT3) Bluetooth (P_{High})
	3		+ Wi-Fi 5 GHz MIMO + (ANT3) Bluetooth (P_{High})
	4		+ (ANT5) Wi-Fi 5 GHz SISO + (ANT4) Bluetooth (P_{High})
	5		+ (ANT6) Wi-Fi 5 GHz SISO + (ANT4) Bluetooth (P_{High})
	6		+ Wi-Fi 5 GHz MIMO + (ANT4) Bluetooth (P_{High})
	7	WWAN ON (CELLULAR ANTENNAS ON)	+ (ANT3) Wi-Fi 2.4 GHz SISO
	8		+ (ANT4) Wi-Fi 2.4 GHz SISO
	9		+ Wi-Fi 2.4 GHz MIMO
	10		+ (ANT3) Bluetooth (P_{High})
	11		+ (ANT4) Bluetooth (P_{High})
	12		+ (ANT5) Wi-Fi 5 GHz SISO
	13		+ (ANT6) Wi-Fi 5 GHz SISO
	14		+ Wi-Fi 5 GHz MIMO
	15		+ (ANT5) Wi-Fi 5 GHz SISO + (ANT3) Bluetooth (P_{Low})
	16		+ (ANT6) Wi-Fi 5 GHz SISO + (ANT3) Bluetooth (P_{Low})
	17		+ Wi-Fi 5 GHz MIMO + (ANT3) Bluetooth (P_{Low})
	18		+ (ANT5) Wi-Fi 5 GHz SISO + (ANT4) Bluetooth (P_{Low})
	19		+ (ANT6) Wi-Fi 5 GHz SISO + (ANT4) Bluetooth (P_{Low})
	20		+ Wi-Fi 5 GHz MIMO + (ANT4) Bluetooth (P_{Low})

Note(s):

1. Wi-Fi 2.4GHz & Bluetooth cannot transmit simultaneously.
2. Wi-Fi 2.4GHz & Wi-Fi 5GHz cannot transmit simultaneously.
3. WWAN ANT1, ANT2, ANT3, and ANT4 cannot transmit simultaneously.
4. Bluetooth P_{Low} is used with Wi-Fi and WWAN antennas are active.
5. Bluetooth P_{High} is used when Wi-Fi antenna is active and WWAN antenna is inactive or with Wi-Fi inactive and WWAN antenna is active.
6. Bluetooth $P_{\text{standalone}}$ is used with Wi-Fi and WWAN antennas are inactive.
7. Condition 3 is covered by conditions 1 and 2.
8. Condition 6 is covered by conditions 4 and 5.
9. Condition 17 is covered by conditions 15 and 16.
10. Condition 20 is covered by conditions 18 and 19.

12.1. Sum of the SAR for WWAN Cell-off & Wi-Fi & BT results

RF Exposure conditions	Test Position	Standalone SAR (W/kg)				Σ 1-g SAR (W/kg)			
		1	2	3	4	1+3	1+4	2+3	2+4
		Wi-Fi 5G ANT5	Wi-Fi 5G ANT6	BT(P _{high}) ANT3	BT(P _{high}) ANT4				
Head	Left Touch	0.107	0.570	0.043	0.094	0.150	0.201	0.613	0.664
	Left Tilt	0.019	0.570	0.019	0.071	0.038	0.090	0.589	0.641
	Right Touch	0.019	1.194	0.019	0.022	0.039	0.041	1.214	1.216
	Right Tilt	0.019	1.104	0.027	0.026	0.046	0.045	1.131	1.130
Body-worn & Hotspot	Rear	1.058	1.153	0.090	0.082	1.148	1.140	1.243	1.235
	Front	0.258	0.180	0.077	0.072	0.335	0.330	0.257	0.252
Hotspot	Edge 1		0.097		0.047		0.047	0.097	0.144
	Edge 2				0.043		0.043		0.043
	Edge 3	0.258		0.041		0.299	0.258	0.041	
	Edge 4	0.258	0.740	0.038		0.296	0.258	0.778	0.740

12.2. Sum of the SAR for WWAN Cell-on(ANT1) & Wi-Fi & BT results

RF Exposure conditions	Test Position	Standalone SAR (W/kg)					Σ 1-g SAR (W/kg)			
		1	2	3	6	7	1+2	1+3	1+6	1+7
		WWAN Cell-on ANT1	Wi-Fi 2.4G ANT3	Wi-Fi 2.4G ANT4	BT(P _{high}) ANT3	BT(P _{high}) ANT4				
Head	Left Touch	0.267	0.060	0.379	0.109	0.228	0.327	0.646	0.376	0.495
	Left Tilt	0.191	0.060	0.393	0.034	0.163	0.251	0.585	0.225	0.354
	Right Touch	0.496	0.060	0.379	0.076	0.060	0.556	0.875	0.572	0.556
	Right Tilt	0.206	0.060	0.379	0.022	0.048	0.266	0.585	0.228	0.254
Body-worn & Hotspot	Rear	0.997	0.392	0.279	0.239	0.241	1.389	1.276	1.236	1.238
	Front	0.750	0.350	0.279	0.219	0.108	1.100	1.029	0.969	0.858
Hotspot	Edge 2	0.986		0.279		0.160	0.986	1.265	0.986	1.146
	Edge 3	0.998	0.350		0.155		1.348	0.998	1.153	0.998
	Edge 4	0.351	0.350		0.182		0.701	0.351	0.533	0.351
RF Exposure conditions	Test Position	Standalone SAR (W/kg)					Σ 1-g SAR (W/kg)			
		1	4	5	8	9	1+4+8	1+4+9	1+5+8	1+5+9
		WWAN Cell-on ANT1	Wi-Fi 5G ANT5	Wi-Fi 5G ANT6	BT(P _{Low}) ANT3	BT(P _{Low}) ANT4				
Head	Left Touch	0.267	0.107	0.305	0.043	0.094	0.417	0.468	0.615	0.666
	Left Tilt	0.191	0.019	0.305	0.019	0.071	0.230	0.282	0.515	0.567
	Right Touch	0.496	0.019	0.346	0.019	0.022	0.535	0.537	0.861	0.864
	Right Tilt	0.206	0.019	0.305	0.027	0.026	0.252	0.251	0.537	0.536
Body-worn & Airplay	Rear	0.997	0.317	0.422	0.090	0.082	1.404	1.396	1.509	1.501
	Front	0.750	0.317	0.130	0.077	0.072	1.144	1.139	0.957	0.952
Airplay	Edge 2	0.986				0.043	0.986	1.029	0.986	1.029
	Edge 3	0.998	0.317		0.041		1.356	1.315	1.039	0.998
	Edge 4	0.351	0.317	0.130	0.038		0.706	0.668	0.519	0.481

12.3. Sum of the SAR for WWAN Cell-on(ANT2) & Wi-Fi & BT results

RF Exposure conditions	Test Position	Standalone SAR (W/kg)					Σ 1-g SAR (W/kg)			
		1	2	3	6	7	1+2	1+3	1+6	1+7
		WWAN Cell-on ANT2	Wi-Fi 2.4G ANT3	Wi-Fi 2.4G ANT4	BT(P _{high}) ANT3	BT(P _{high}) ANT4				
Head	Left Touch	0.574	0.060	0.379	0.109	0.228	0.634	0.953	0.683	0.802
	Left Tilt	0.984	0.060	0.393	0.034	0.163	1.044	1.377	1.018	1.147
	Right Touch	0.998	0.060	0.379	0.076	0.060	1.058	1.377	1.074	1.058
	Right Tilt	0.998	0.060	0.379	0.022	0.048	1.058	1.377	1.020	1.046
Body-worn & Hotspot	Rear	0.983	0.392	0.279	0.239	0.241	1.376	1.262	1.222	1.224
	Front	0.670	0.350	0.279	0.219	0.108	1.020	0.949	0.889	0.778
Hotspot	Edge 1	0.988		0.279		0.065	0.988	1.267	0.988	1.053
	Edge 2	0.290		0.279		0.160	0.290	0.569	0.290	0.450
	Edge 4	0.957	0.350		0.182		1.307	0.957	1.139	0.957
RF Exposure conditions	Test Position	Standalone SAR (W/kg)					Σ 1-g SAR (W/kg)			
		1	4	5	8	9	1+4+8	1+4+9	1+5+8	1+5+9
		WWAN Cell-on ANT2	Wi-Fi 5G ANT5	Wi-Fi 5G ANT6	BT(P _{Low}) ANT3	BT(P _{Low}) ANT4				
Head	Left Touch	0.574	0.107	0.305	0.043	0.094	0.724	0.775	0.922	0.973
	Left Tilt	0.984	0.019	0.305	0.019	0.071	1.022	1.074	1.308	1.360
	Right Touch	0.998	0.019	0.346	0.019	0.022	1.037	1.039	1.363	1.366
	Right Tilt	0.998	0.019	0.305	0.027	0.026	1.044	1.043	1.330	1.329
Body-worn & Airplay	Rear	0.983	0.317	0.422	0.090	0.082	1.390	1.382	1.495	1.487
	Front	0.670	0.317	0.130	0.077	0.072	1.064	1.059	0.877	0.872
Airplay	Edge 1	0.988		0.130		0.047	0.988	1.035	1.118	1.165
	Edge 2	0.290				0.043	0.290	0.333	0.290	0.333
	Edge 4	0.957	0.317	0.130	0.038		1.312	1.274	1.125	1.087

12.4. Sum of the SAR for WWAN Cell-on(ANT3) & Wi-Fi & BT results

RF Exposure conditions	Test Position	Standalone SAR (W/kg)					Σ 1-g SAR (W/kg)			
		1	2	3	6	7	1+2	1+3	1+6	1+7
		WWAN Cell-on ANT3	Wi-Fi 2.4G ANT3	Wi-Fi 2.4G ANT4	BT(P _{high}) ANT3	BT(P _{high}) ANT4				
Head	Left Touch	0.489	0.060	0.379	0.109	0.228	0.549	0.868	0.598	0.717
	Left Tilt	0.292	0.060	0.393	0.034	0.163	0.352	0.685	0.326	0.455
	Right Touch	0.260	0.060	0.379	0.076	0.060	0.320	0.639	0.336	0.320
	Right Tilt	0.189	0.060	0.379	0.022	0.048	0.249	0.568	0.211	0.237
Body-worn & Hotspot	Rear	0.997	0.392	0.279	0.239	0.241	1.389	1.276	1.236	1.238
	Front	0.748	0.350	0.279	0.219	0.108	1.099	1.028	0.967	0.856
Hotspot	Edge 3	0.342	0.350		0.155		0.692	0.342	0.497	0.342
	Edge 4	0.858	0.350		0.182		1.208	0.858	1.040	0.858
RF Exposure conditions	Test Position	Standalone SAR (W/kg)					Σ 1-g SAR (W/kg)			
		1	4	5	8	9	1+4+8	1+4+9	1+5+8	1+5+9
		WWAN Cell-on ANT3	Wi-Fi 5G ANT5	Wi-Fi 5G ANT6	BT(P _{Low}) ANT3	BT(P _{Low}) ANT4				
Head	Left Touch	0.489	0.107	0.305	0.043	0.094	0.639	0.690	0.837	0.888
	Left Tilt	0.292	0.019	0.305	0.019	0.071	0.330	0.382	0.616	0.668
	Right Touch	0.260	0.019	0.346	0.019	0.022	0.299	0.301	0.625	0.628
	Right Tilt	0.189	0.019	0.305	0.027	0.026	0.235	0.234	0.521	0.520
Body-worn & Airplay	Rear	0.997	0.317	0.422	0.090	0.082	1.404	1.396	1.509	1.501
	Front	0.748	0.317	0.130	0.077	0.072	1.142	1.137	0.955	0.950
Airplay	Edge 3	0.342	0.317		0.041		0.700	0.659	0.383	0.342
	Edge 4	0.858	0.317	0.130	0.038		1.213	1.175	1.026	0.988

12.5. Sum of the SAR for WWAN Cell-on(ANT4) & Wi-Fi & BT results

RF Exposure conditions	Test Position	Standalone SAR (W/kg)					Σ 1-g SAR (W/kg)			
		1	2	3	6	7	1+2	1+3	1+6	1+7
		WWAN Cell-on ANT4	Wi-Fi 2.4G ANT3	Wi-Fi 2.4G ANT4	BT(P _{high}) ANT3	BT(P _{high}) ANT4				
Head	Left Touch	0.998	0.060	0.379	0.109	0.228	1.059	1.378	1.107	1.226
	Left Tilt	0.828	0.060	0.393	0.034	0.163	0.888	1.222	0.862	0.991
	Right Touch	0.288	0.060	0.379	0.076	0.060	0.348	0.667	0.364	0.348
	Right Tilt	0.277	0.060	0.379	0.022	0.048	0.337	0.656	0.299	0.325
Body-worn & Hotspot	Rear	0.884	0.392	0.279	0.239	0.241	1.276	1.163	1.123	1.125
	Front	0.608	0.350	0.279	0.219	0.108	0.958	0.887	0.827	0.716
Hotspot	Edge 1	0.895		0.279		0.065	0.895	1.174	0.895	0.960
	Edge 2	0.898		0.279		0.160	0.898	1.177	0.898	1.058
RF Exposure conditions	Test Position	Standalone SAR (W/kg)					Σ 1-g SAR (W/kg)			
		1	4	5	8	9	1+4+8	1+4+9	1+5+8	1+5+9
		WWAN Cell-on ANT4	Wi-Fi 5G ANT5	Wi-Fi 5G ANT6	BT(P _{Low}) ANT3	BT(P _{Low}) ANT4				
Head	Left Touch	0.998	0.107	0.305	0.043	0.094	1.148	1.199	1.346	1.397
	Left Tilt	0.828	0.019	0.305	0.019	0.071	0.867	0.919	1.152	1.204
	Right Touch	0.288	0.019	0.346	0.019	0.022	0.327	0.329	0.653	0.656
	Right Tilt	0.277	0.019	0.305	0.027	0.026	0.323	0.322	0.609	0.608
Body-worn & Airplay	Rear	0.884	0.317	0.422	0.090	0.082	1.291	1.283	1.396	1.388
	Front	0.608	0.317	0.130	0.077	0.072	1.002	0.997	0.815	0.810
Hotspot	Edge 1	0.895		0.130		0.047	0.895	0.942	1.025	1.072
	Edge 2	0.898				0.043	0.898	0.941	0.898	0.941

Appendixes

Refer to separated files for the following appendixes.

12204512-S1V1 Appendix A: SAR Setup Photos

12204512-S1V1 Appendix B: SAR System Check Plots

12204512-S1V1 Appendix C: Highest SAR Test Plots

12204512-S1V1 Appendix D: SAR Liquid Tissue Ingredients

12204512-S1V1 Appendix E: SAR Probe Calibration Certificates

12204512-S1V1 Appendix F: SAR Dipole Calibration Certificates

END OF REPORT