FCC 47 CFR § 2.1093
IEEE Std 1528-2013

SAR EVALUATION REPORT

FOR

GSM/WCDMA/LTE/5G NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac and NFC

MODEL NUMBER: SM-A166M/DS, SM-A166M

FCC ID: A3LSMA166M

REPORT NUMBER: 4791377016-S1V2

ISSUE DATE: 9/12/2024

Prepared for
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IAS ACCREDITED

Testing Laboratory

TL-637

Revision History

Rev.	Date	Revisions	Revised By
V1	8/16/2024	Initial Issue	--
V2	9/12/2024	Revised Date Tested in Sec. 1. Added SAR 8 Room data in Sec.8.1. and 8.2. Revised Wi-Fi 5GHz tune-up power in Sec. 9.6. Revised Freq. in Sec. 10.15. & 10.16. Revised UNII-2C data in Sec. 10.19. Added UNII-3 SAR data in Sec. 10.19. Revised Freq. and SAR data in Sec. 11. Revised Typo in Sec. 12.2.1.	Hakchul Lee

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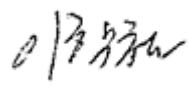
1. Attestation of Test Results

Applicant Name		SAMSUNG ELECTRONICS CO.,LTD.				
FCC ID		A3LSMA166M				
Model Number		SM-A166M/DS, SM-A166M				
Applicable Standards		FCC 47 CFR § 2.1093 IEEE Std 1528-2013 Published RF exposure KDB procedures				
Exposure Category		SAR Limits (W/Kg)				
		Peak spatial-average (1g of tissue)		Product Specific 10g (10g of tissue)		
General population / Uncontrolled exposure		1.6		4.0		
RF Exposure Conditions		Equipment Class - The Highest *Reported* SAR (W/kg)				
		PCE	DTS	NII	DSS	DXX
Head		0.86	0.07	0.59	0.05	N/A
Body-worn		0.63	0.31	0.84	0.04	N/A
Hotspot		0.73	0.31	0.96	0.04	N/A
Product Specific 10g		N/A	N/A	1.41	N/A	0.02
Simultaneous TX	Head	1.58	1.16	1.58	1.58	N/A
	Body-worn	1.53	1.53	1.50	1.26	N/A
	Hotspot	1.32	1.53	1.32	1.32	N/A
	Product Specific 10g	N/A	N/A	1.41	N/A	1.41
Date Tested		6/27/2024 to 9/12/2024				
Test Results		Pass				

UL Korea, Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Korea, Ltd. 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 Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

Approved & Released By:	Prepared By:
	
Justin Park Operations Leader UL Korea, Ltd. Suwon Laboratory	Hakchul Lee Laboratory Engineer UL Korea, Ltd. Suwon Laboratory

1.1. The Highest Reported SAR Results

Equipment Class	Band	Antenna	The Highest Reported SAR (W/kg) of RF exposure conditions			
			1g of tissue			10g of tissue
			Head Exposure	Body-worn Exposure	Hotspot Exposure	Product Specific Exposure
PCE	GSM 850	Ant.A	0.391	0.625	0.625	N/A
	GSM 1900	Ant.A	0.127	0.430	0.431	N/A
	WCDMA Band V	Ant.A	0.265	0.508	0.508	N/A
	WCDMA Band IV	Ant.A	0.195	0.451	0.590	N/A
	WCDMA Band II	Ant.A	0.226	0.453	0.453	N/A
	LTE Band 12	Ant.A	0.190	0.293	0.293	N/A
	LTE Band 13	Ant.A	0.291	0.426	0.432	N/A
	LTE Band 26 (5)	Ant.A	0.198	0.311	0.311	N/A
	LTE Band 5	Ant.A	0.280	N/A	N/A	N/A
	LTE Band 66 (4)	Ant.A	0.166	0.422	0.733	N/A
	LTE Band 66	Ant.B	0.338	0.461	0.461	N/A
	LTE Band 4	Ant.A	0.206	N/A	N/A	N/A
	LTE Band 2	Ant.A	0.120	0.484	0.484	N/A
	LTE Band 2	Ant.B	0.492	0.595	0.595	N/A
	LTE Band 41	Ant.A	0.124	0.143	0.219	N/A
	NR Band n5	Ant.A	0.103	0.183	0.207	N/A
	NR Band n66	Ant.A	0.115	0.402	0.734	N/A
	NR Band n41(SRS0)	Ant.A	0.104	0.181	0.280	N/A
	NR Band n41(SRS1)	Ant.C	0.862	0.397	0.397	N/A
	NR Band n41(SRS2)	Ant.B	0.263	0.487	0.487	N/A
	NR Band n41(SRS3)	Ant.F	0.339	0.256	0.256	N/A
DTS	2.4GHz WLAN		0.068	0.313	0.313	N/A
NII	5GHz WLAN		0.586	0.837	0.962	1.408
DSS	Bluetooth		0.049	0.038	0.038	N/A
DXX	NFC		N/A	N/A	N/A	0.018

Note(s):

1. The Highest Reported SAR Results were listed for each RF exposure conditions for each supported bands based on SAR test results of Section.10.
2. LTE Band 5, 4 are covered by LTE Band 26, 66 in case of Body-worn & Hotspot exposure.

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, ANSI C63.26-2015 the following FCC Published RF exposure KDB procedures:

- 248227 D01 802.11 Wi-Fi SAR v02r02
- 447498 D04 Interim General RF Exposure Guidance v01
- 648474 D04 Handset SAR v01r03
- 690783 D01 SAR Listings on Grants 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
- 941225 D07 UMPC Mini Tablet v01r02
- 971168 D01 Power Meas License Digital System v03r01

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

- TCB workshop October, 2014; RF Exposure Procedures Update (Overlapping LTE Bands)
- TCB workshop October, 2014; RF Exposure Procedures Update (Other LTE Considerations)
- TCB workshop October, 2016; RF Exposure Procedures (Bluetooth Duty Factor)
- TCB workshop October, 2016; RF Exposure Procedures (DUT Holder Perturbations)
- TCB workshop May, 2017; RF Exposure Procedures (LTE Test Conditions)
- 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 Update)
- TCB workshop October, 2020; 5G RFX Policies (Intra-band and Inter-band NSA-EN-DC evaluation)
- TCB workshop April, 2022; RF Exposure Procedures (5G NR FR1 Measurement)
- TCB workshop April, 2022; RF Exposure Procedures (SUM-Peak Location Separation Ratio)

3. Facilities and Accreditation

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

Suwon	
SAR 4 Room	SAR 8Room
SAR 7 Room	SAR 9Room

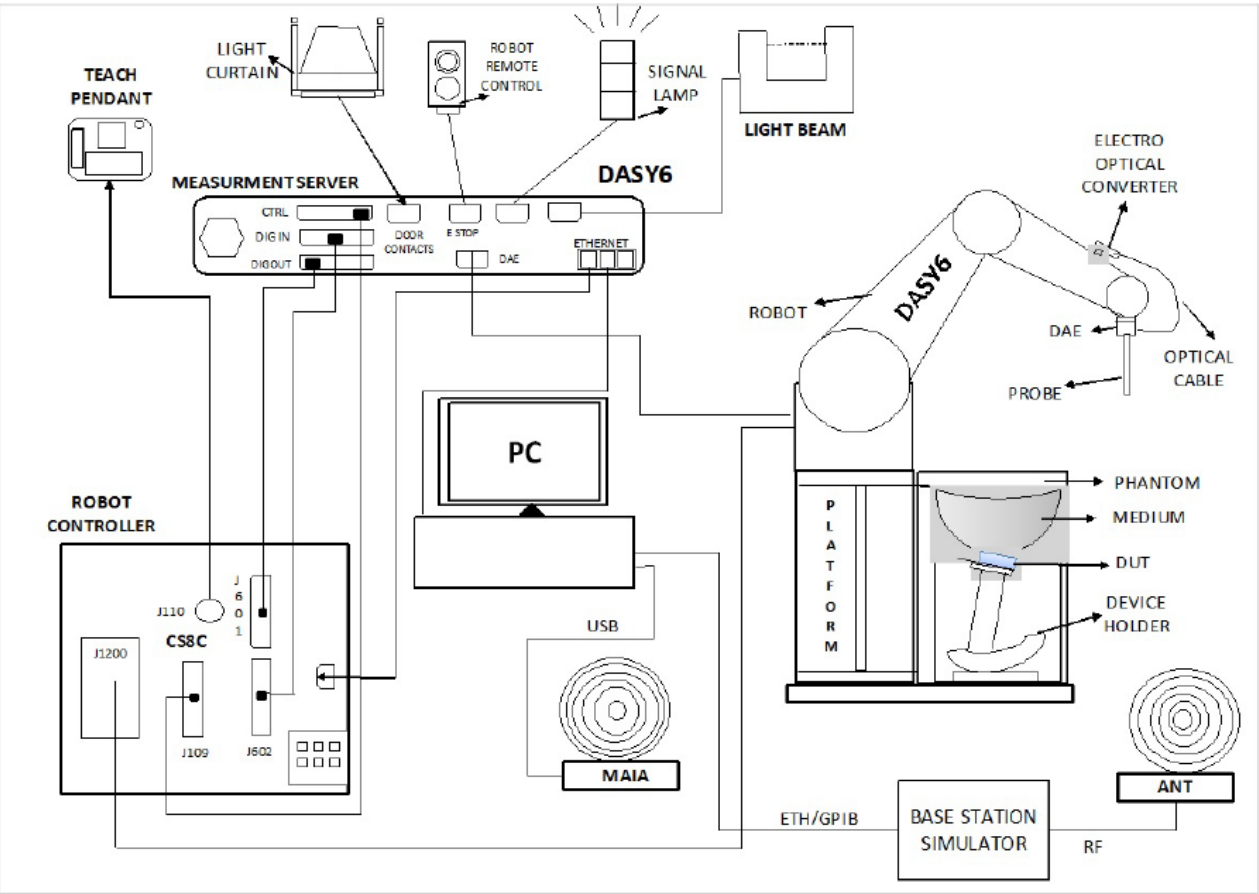
UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637.
The full scope of accreditation can be viewed at;

https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf.

4. SAR Measurement System & Test Equipment

4.1. SAR Measurement System

The DASY6 & 8 system used for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win10 and the DASY6 or 8 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

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

Step 3: Zoom Scan

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

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

<table>
<tr><td colspan="3"></td><td>≤ 3 GHz</td><td>> 3 GHz</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}</td><td>≤ 2 GHz: ≤ 8 mm
2 – 3 GHz: ≤ 5 mm*</td><td>3 – 4 GHz: ≤ 5 mm*
4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{Zoom}(n)$</td><td>≤ 5 mm</td><td>3 – 4 GHz: ≤ 4 mm
4 – 5 GHz: ≤ 3 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface</td><td>≤ 4 mm</td><td>3 – 4 GHz: ≤ 3 mm
4 – 5 GHz: ≤ 2.5 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td>$\Delta z_{Zoom}(n>1)$: between subsequent points</td><td colspan="2">≤ 1.5·$\Delta z_{Zoom}(n-1)$</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3 – 4 GHz: ≥ 28 mm
4 – 5 GHz: ≥ 25 mm
5 – 6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">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 area scan based 1-g SAR estimation procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

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	E5071C	MY46522054	7-24-2024
Network Analyzer	Agilent	E5071C	MY46522054	7-24-2025
Dielectric Assessment Kit	SPEAG	DAK-12	1158	9-20-2024
Dielectric Assessment Kit	SPEAG	DAK-3.5	1196	6-10-2025
Shorting block	SPEAG	DAK-3.5 Short	SMDAK 200 BA	N/A
Shorting block	SPEAG	DAK-12 Short	SMDAK 220 AD	N/A
Thermometer	LKM	DTM3000	3851	7-23-2025
Thermometer	LKM	DTM3000	3862	7-23-2025

System Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
MXG Analog Signal Generator	Aglient	N5181A	MY50145882	7-26-2024
MXG Analog Signal Generator	Aglient	N5181A	MY50145882	7-22-2025
MXG Analog Signal Generator	Keysight	N5173B	MY59101083	7-27-2024
MXG Analog Signal Generator	Keysight	N5173B	MY59101083	7-23-2025
Power Sensor	KEYSIGHT	U2000A	MY60180020	7-26-2024
Power Sensor	KEYSIGHT	U2000A	MY60180020	7-25-2025
Power Sensor	KEYSIGHT	U2000A	MY61010006	7-25-2024
Power Sensor	KEYSIGHT	U2000A	MY61010006	7-23-2025
Power Sensor	KEYSIGHT	U2000A	MY54260007	7-26-2024
Power Sensor	KEYSIGHT	U2000A	MY54260007	7-25-2025
Power Sensor	KEYSIGHT	U2004A USB Sensor	MY61200006	1-3-2025
Power Sensor	KEYSIGHT	U2004A USB Sensor	MY61280010	1-3-2025
Power Amplifier	EXODUS	AMP2027	1410025-AMP2027-10003	2-14-2025
Power Amplifier	MINI-CIRCUITS	TVA-R5-13A+	2111006	1-3-2025
Power Amplifier	EXODUS	AMP2027ADB	10002	1-5-2025
Directional Coupler	H.P	778D	16133	7-25-2024
Directional Coupler	H.P	778D	16133	7-25-2025
Directional Coupler	MINI-CIRCUITS	ZMDC-30-1+	SF569102123	7-25-2024
Directional Coupler	MINI-CIRCUITS	ZMDC-30-1+	SF569102123	7-24-2025
Directional Coupler	KRYTAR	100318010	215541	1-4-2025
Low Pass Filter	MICROLAB	LA-60N	3942	7-25-2024
Low Pass Filter	MICROLAB	LA-60N	3942	7-24-2025
Low Pass Filter	MINI-CIRCUITS	VLF-3000+	S0143	7-25-2024
Low Pass Filter	MINI-CIRCUITS	VLF-3000+	S0143	7-24-2025
Low Pass Filter	MINI-CIRCUITS	VLF-1500+	32241	2-28-2025
Attenuator	KEYSIGHT	8491B/003	VE2017A0283	7-25-2024
Attenuator	KEYSIGHT	8491B/003	VE2017A0283	7-24-2025
Attenuator	KEYSIGHT	8491B/010	MY39271981	7-24-2024
Attenuator	KEYSIGHT	8491B/010	MY39271981	7-24-2025
Attenuator	KEYSIGHT	8491B/010	MY39272011	7-25-2024
Attenuator	KEYSIGHT	8491B/010	MY39272011	7-24-2025
Attenuator	KEYSIGHT	8491B/020	MY39272302	7-24-2024
Attenuator	KEYSIGHT	8491B/020	MY39272302	7-24-2025
Attenuator	KEYSIGHT	8491B/020	MY39271973	7-25-2024
Attenuator	KEYSIGHT	8491B/020	MY39271973	7-24-2025

Note(s):

1. For System Validation Dipole, Calibration interval applied every 2 years according to referencing KDB 865664 guidance.
2. Refer to Appendix F that mentioned about justification for Extended SAR Dipole Calibrations. (for blue box items)
3. All equipments were used until Cal.Due data.

Test Equipment (Continued)

System Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
E-Field Probe	SPEAG	EX3DV4	7313	2-21-2025
E-Field Probe	SPEAG	EX3DV4	7314	5-23-2025
E-Field Probe	SPEAG	EX3DV4	7645	9-20-2024
E-Field Probe	SPEAG	EX3DV4	7646	3-15-2025
Data Acquisition Electronics	SPEAG	DAE4	1447	3-13-2025
Data Acquisition Electronics	SPEAG	DAE4	1670	5-15-2025
Data Acquisition Electronics	SPEAG	DAE4	1671	4-18-2025
Data Acquisition Electronics	SPEAG	DAE4	1668	4-18-2025
System Validation Dipole	SPEAG	D750V3	1205	4-18-2025
System Validation Dipole	SPEAG	D835V2	4d174	9-21-2024
System Validation Dipole	SPEAG	D1750V2	1125	11-30-2024
System Validation Dipole	SPEAG	D1900V2	5d190	11-16-2024
System Validation Dipole	SPEAG	D1900V2	5d199	3-13-2025
System Validation Dipole	SPEAG	D2450V2	960	3-14-2025
System Validation Dipole	SPEAG	D5GHzV2	1209	2-28-2025
System Validation Dipole	SPEAG	D1750V2	1180	9-21-2024
System Validation Dipole	SPEAG	D2600V2	1178	4-25-2025
System Validation Dipole	SPEAG	CLA-13	1015	8-22-2024
Resistive Power Splitter	Weinschel	1534	S0244	7-24-2025
Resistive Power Splitter	Weinschel	1534	S0245	7-24-2025
Thermometer	Lutron	MHB-382SD	AJ.42446	7-31-2024
Thermometer	Lutron	MHB-382SD	AJ.42446	7-26-2025
Thermometer	Lutron	MHB-382SD	AK.12102	7-26-2024
Thermometer	Lutron	MHB-382SD	AK.12102	7-24-2025
Thermometer	Lutron	MHB-382SD	AK.12103	7-27-2024
Thermometer	Lutron	MHB-382SD	AK.12103	7-24-2025
Thermometer	Lutron	MHB-382SD	AK.18789	7-27-2024
Thermometer	Lutron	MHB-382SD	AK.18789	7-24-2025
Thermometer	Lutron	MHB-382SD	AJ.45903	1-4-2025

Others

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Base Station Simulator	R & S	CMW500	150313	7-27-2024
Base Station Simulator	R & S	CMW500	150313	7-24-2025
Base Station Simulator	R & S	CMW500	150314	7-26-2024
Base Station Simulator	R & S	CMW500	150314	7-24-2025
Base Station Simulator	R & S	CMW500	169803	3-25-2025
Base Station Simulator	R & S	CMW500	169801	1-3-2025
Base Station Simulator	R & S	CMW500	169796	1-3-2025
Base Station Simulator	R & S	CMW500	169800	7-27-2024
Base Station Simulator	R & S	CMW500	169800	7-24-2025
UXM 5G Wireless Test Platform	KEYSIGHT	E751B	MY59150850	1-3-2025
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY58120110	1-3-2025
Radio Communication Test Station	Anritsu	MT8000A	6272466165	10-18-2024
Radio Communication Analyzer	Anritsu	MT8821C	6161094351	11-30-2024

Note(s):

1. For System Validation Dipole, Calibration interval applied every 2 years according to referencing KDB 865664 guidance.
2. Refer to Appendix F that mentioned about justification for Extended SAR Dipole Calibrations. (for blue box items)
3. All equipments were used until Cal.Due data.

5. Measurement Uncertainty

Measurement Uncertainty of 100MHz to 6GHz

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 ≤ 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.

Measurement Uncertainty of 9MHz to 19MHz

Measurement uncertainty for 9 MHz to 19 MHz
(According to IEEE 62209-1528)

a	b	c		d	e	f	g	h =	l =	k
Uncertainty component	Reference	Tol. 1 g (±%)	Tol. 10 g (±%)	Prob. Dist.	Div.	*ci* (1 g)	*ci* (10 g)	1 g *ui* (± %)	10 g *ui* (± %)	vi
Measurement System Errors										
Probe Calibration	8.4.1.1	13.3		Normal	2	1	1	6.7	6.7	∞
Probe Calibration Drift	8.4.1.2	1.7		Rectangular	1.732	1	1	1.0	1.0	∞
Probe Linearity	8.4.1.3	4.7		Rectangular	1.732	1	1	2.7	2.7	∞
Broadband Signal	8.4.1.4	0.8		Rectangular	1.732	1	1	0.5	0.5	∞
Probe Isotropy	8.4.1.5	7.6		Rectangular	1.732	1	1	4.4	4.4	∞
Data Acquisition	8.4.1.6	0.3		Normal	1	1	1	0.3	0.3	∞
RF Ambient	8.4.1.7	1.8		Normal	1	1	1	1.8	1.8	∞
Probe Positioning	8.4.1.8	0.006		Normal	1	0.14	0.14	0.10	0.10	∞
Data Processing	8.4.1.9	1.2		Normal	1	1	1	1.2	1.2	∞
Phantom and Device Errors										
Conductivity (meas.)DAK	8.4.2.1	2.5		Normal	1	0.78	0.71	2.0	1.8	∞
Conductivity (temp.)BB	8.4.2.2	5.4		Rectangular	1.732	0.78	0.71	2.4	2.2	∞
Phantom Permittivity	8.4.2.3	14.0		Rectangular	1.732	0	0	0.0	0.0	∞
Distance DUT -TSL	8.4.2.4	2.0		Normal	1	2	2	4.0	4.0	∞
Device Positioning	8.4.2.5	**1.0**	**2.3**	Normal	1	1	1	1.0	2.3	**40**
Device Holder	8.4.2.6	3.6		Normal	1	1	1	3.6	3.6	∞
DUT Modulation	8.4.2.7	2.4		Rectangular	1.732	1	1	1.4	1.4	∞
Time-average SAR	8.4.2.8	1.7		Rectangular	1.732	1	1	1.0	1.0	∞
DUT drift	8.4.2.9	5.0		Normal	1	1	1	5.0	5.0	∞
Correction to the SAR results										
Deviation to Target	8.4.3.1	1.9		Normal	1	1	0.84	1.9	1.6	∞
Combined Standard Uncertainty Uc(y) =				RSS				12.16	12.23	
Expanded Uncertainty U, Coverage Factor = 2, > 95 % Confidence =								**24.33**	**24.47**	

5.1. DECISION RULE

Measurement Uncertainty is not applied when providing statements of conformity in accordance with IEC Guide 115:2023, 4.3.3.

6. Device Under Test (DUT) Information

6.1. DUT Description

Device Dimension	Refer to Appendix A.
Back Cover	☒ The Back Cover is not removable.
Battery Options	☒ The rechargeable battery is not user accessible
Wireless Router (Hotspot)	Wi-Fi Hotspot mode permits the device to share its cellular data connection with other Wi-Fi-enabled devices. ☒ Mobile Hotspot (Wi-Fi 2.4 GHz) ☒ Mobile Hotspot (Wi-Fi 5.8 GHz)
Wi-Fi Direct	Wi-Fi Direct enabled devices transfer data directly between each other ☒ Wi-Fi Direct (Wi-Fi 2.4 GHz) ☒ Wi-Fi Direct (Wi-Fi 5.2 GHz_UNII-1, Wi-Fi 5.8 GHz_UNII-3)

Test Sample Information

No.	S/N	Notes	No.	S/N	Notes
1	R93X70002DD	Main Conduction	8	R93X70002JX	SAR
2	R93X70005LL	Main Conduction	9	R93X700029E	SAR
3	R93X70003CE	Main Conduction	10	R93X7000EZM	SAR
4	R93X700020R	Main Conduction	11	R93X7000DLV	SAR
5	R93X70006NJ	WLAN Conduction			
6	R93X70003HF	SAR			
7	R93X700050J	SAR			

6.2. Wireless Technologies

Wireless technologies	Frequency bands	Operating mode		Duty Cycle used for SAR testing
GSM	850 1900	Voice (GMSK) GPRS (GMSK) EGPRS (8PSK)	GPRS Multi-Slot Class: ☐ Class 8 - 1 Up, 4 Down ☐ Class 10 - 2 Up, 4 Down ☐ Class 12 - 4 Up, 4 Down ☒ Class 33 - 4 Up, 5 Down	GSM Voice: 12.5% (E)GPRS: 1 Slot: 12.5% 2 Slots: 25% 3 Slots: 37.5% 4 Slots: 50%
	Does this device support DTM (Dual Transfer Mode)? ☐ Yes ☒ No			
W-CDMA (UMTS)	Band V Band IV Band II	UMTS Rel. 99 (Voice & Data) HSDPA (Category 24) HSUPA (Category 6) DC-HSDPA (Category 24) HSPA+ (DL only)		100%
LTE	FDD Band 12 FDD Band 13 FDD Band 26 FDD Band 5 FDD Band 66 FDD Band 4 FDD Band 2 TDD Band 41 Power Class 3	QPSK 16QAM 64QAM 256QAM Rel. 16 Carrier Aggregation (1 Uplink and 2 Downlinks)		100% (FDD) 63.3% (TDD) – PC3
	Does this device support SV-LTE (1xRTT-LTE)? ☐ Yes ☒ No			
5G NR (Sub 6)	FDD Band n5 FDD Band n66 TDD Band n41	DFT-s-ODFM: ■ π/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-ODFM: ■QPSK, 16QAM, 64QAM, 256QAM		100%
Wi-Fi	2.4 GHz	802.11b, 802.11g, 802.11n (HT20)		98.9% (802.11b-SISO)
	5 GHz	802.11a / 802.11n (HT20/40) 802.11ac (VHT20/40/80)		96.9% (802.11a SISO) 95.4% (802.11ac (VHT80-SISO)
	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 5.3 LE		76.7%(BT)
NFC	13.56 MHz	Type A/B/F/V		100%

Notes:

1. Wi-Fi & Bluetooth were tested SAR using highest duty cycle. Measured duty cycle plots are in Section.9.
2. NR TDD Band n41 has support SRS (0,1,2,3) modes.

6.3. Time-Averaging feature

The equipment under test (EUT) contains S.LSI TAS supporting WWAN technologies (2G/3G/4G/5G-Sub6). TAS chipset is enabled with TAS (Time Average SAR) algorithm has been designed to meet the compliance limits over the required duration, while still allowing dynamic control of transmit power for meeting system performance. And The EUT has also supports to WLAN/BT/NFC technologies, but There are not support to TAS algorithm.

The TAS (Time Average SAR) algorithm maintains the time-averaged transmit power, in turn, time-averaged RF exposure of *SAR_design_target*, below the predefined time-average power limit, for each characterized technology and band.

TAS (Time Average SAR) algorithm allows the device to transmit at higher power instantaneously as high as P_{max}, when needed, but enforces power limiting to maintain time-averaged transmit power to P_{Limit}. Below table shows P_{Limit} NV settings and maximum tune up output power P_{max} configured for this EUT for various transmit conditions (RSI=Radio SAR Index).

The purpose of this SAR report is to demonstrate that the EUT meets FCC SAR limits when transmitting in static transmission scenario at maximum allowable time-averaged power levels.

Exposure condition			Head	Body-worn & Hotspot	Extremity	Pmax (Maximum tune-up Power) (dBm)
Spatial-average			1g	1g	10g	
Test distance (mm)			0	10	0	
RSI			4	0 & 3	0	
RF Air Interface	Antenna	Antenna Group	Plimit corresponding to 1.0 W/kg (SAR_design_target) (1g) / 2.5 W/kg (SAR_design_target) (10g)			
GSM 850	A	0	24.60	24.60	24.60	24.6
GSM 1900	A	0	21.30	21.30	21.30	21.3
WCDMA 5	A	0	24.00	24.00	24.00	24.0
WCDMA 4	A	0	23.00	21.00	21.00	23.0
WCDMA 2	A	0	23.00	21.00	21.00	23.0
LTE Band 12	A	0	23.00	23.00	23.00	23.0
LTE Band 13	A	0	22.00	22.00	22.00	22.0
LTE Band 26	A	0	23.00	23.00	23.00	23.0
LTE Band 5	A	0	24.50			24.5
LTE Band 66	A	0	21.00	21.00	21.00	23.5
LTE Band 66	B	1	21.00	21.00	21.00	23.5
LTE Band 4	A	0	23.00			23.0
LTE Band 2	A	0	21.00	21.00	21.00	23.0
LTE Band 2	B	1	21.00	21.00	21.00	23.0
LTE Band 41	A	0	19.00	19.00	19.00	21.0
NR Band n5	A	0	24.50	24.50	24.50	24.5
NR Band n66	A	0	21.00	21.00	21.00	23.5
NR Band n41	A	0	17.00	17.00	17.00	23.0
NR Band n41 SRS1	C	1	17.00	17.00	17.00	17.0
NR Band n41 SRS2	B	1	17.00	17.00	17.00	17.0
NR Band n41 SRS3	F	1	17.00	17.00	17.00	17.0

Notes:

1. All *PLimit* and maximum tune up output *Pmax* levels entered in above Table correspond to average power levels after accounting for duty cycle in the case of TDD modulation schemes (for e.g., GSM/LTE TDD). NR TDD's *Pmax* was listed as burst power.
2. Maximum tune up output power *Pmax* is used to configure EUT during RF tune up procedures. The maximum allowed output power is equal to maximum tune up output power + 1dB device design uncertainty.
3. Measurement Condition : All conducted power and SAR measurements in this SAR report were performed by setting static Power condition.
4. If *PLimit* is higher than *Pmax* for some modes / bands, The modes/bands will operate at a power level up to *Pmax*.
5. LTE Band 5, 4 are covered by LTE Band 26, 66 in case of Body-worn, Hotspot and Extremity exposure conditions.

6.4. Maximum Allowed Output power

WWAN Bands maximum allowed output power

Maximum allowed output power means that Pmax or PLimit + 1dB device uncertainty for each RSI.

GSM Bands

RF Air interface	Antenna	Mode	Time Slots	Maximum allowed output power (dBm)							
				Pmax		Plimit					
						RSI = 0 (Free)		RSI = 3 (Hotspot)		RSI = 4 (RCV)	
				Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GSM850	Ant.A	Voice	1	**34.00**	**24.81**	**34.00**	**24.81**	**34.00**	**24.81**	**34.00**	**24.81**
		GPRS	1	**34.00**	**24.81**	**34.00**	**24.81**	**34.00**	**24.81**	**34.00**	**24.81**
		GPRS	2	**31.50**	**25.32**	**31.50**	**25.32**	**31.50**	**25.32**	**31.50**	**25.32**
		GPRS	3	**30.00**	**25.58**	**30.00**	**25.58**	**30.00**	**25.58**	**30.00**	**25.58**
		GPRS	4	**28.50**	**25.33**	**28.50**	**25.33**	**28.50**	**25.33**	**28.50**	**25.33**
		EGPRS	1	**27.50**	**18.31**	**27.50**	**18.31**	**27.50**	**18.31**	**27.50**	**18.31**
		EGPRS	2	**25.50**	**19.32**	**25.50**	**19.32**	**25.50**	**19.32**	**25.50**	**19.32**
		EGPRS	3	**23.50**	**19.08**	**23.50**	**19.08**	**23.50**	**19.08**	**23.50**	**19.08**
		EGPRS	4	**22.00**	**18.83**	**22.00**	**18.83**	**22.00**	**18.83**	**22.00**	**18.83**
GSM1900	Ant.A	Voice	1	**31.50**	**22.31**	**31.50**	**22.31**	**31.50**	**22.31**	**31.50**	**22.31**
		GPRS	1	**31.50**	**22.31**	**31.50**	**22.31**	**31.50**	**22.31**	**31.50**	**22.31**
		GPRS	2	**28.00**	**21.82**	**28.00**	**21.82**	**28.00**	**21.82**	**28.00**	**21.82**
		GPRS	3	**26.50**	**22.08**	**26.50**	**22.08**	**26.50**	**22.08**	**26.50**	**22.08**
		GPRS	4	**25.50**	**22.33**	**25.50**	**22.33**	**25.50**	**22.33**	**25.50**	**22.33**
		EGPRS	1	**26.50**	**17.31**	**26.50**	**17.31**	**26.50**	**17.31**	**26.50**	**17.31**
		EGPRS	2	**24.00**	**17.82**	**24.00**	**17.82**	**24.00**	**17.82**	**24.00**	**17.82**
		EGPRS	3	**22.50**	**18.08**	**22.50**	**18.08**	**22.50**	**18.08**	**22.50**	**18.08**
		EGPRS	4	**21.00**	**17.83**	**21.00**	**17.83**	**21.00**	**17.83**	**21.00**	**17.83**

Note(s):

1. Detail of RSI (Radio SAR Index) conditions, please refer to Sec.6.5.

WWAN Bands maximum allowed output power (Continued)

Maximum allowed output power means that Pmax or PLimit + 1dB device uncertainty for each RSI.

WCDMA Bands

RF Air interface	Antenna	Mode	Maximum allowed output power (dBm)			
			Pmax	Plimit		
				RSI = 0 (Free)	RSI = 3 (Hotspot)	RSI = 4 (RCV)
W-CDMA Band V	Ant.A	R99	**25.00**	**25.00**	**25.00**	**25.00**
		HSDPA	**24.00**	**24.00**	**24.00**	**24.00**
		HSUPA	**24.00**	**24.00**	**24.00**	**24.00**
		DC-HSDPA	**24.00**	**24.00**	**24.00**	**24.00**
W-CDMA Band VI	Ant.A	R99	**24.00**	**22.00**	**22.00**	**24.00**
		HSDPA	**23.50**	**21.00**	**21.00**	**23.50**
		HSUPA	**23.50**	**20.50**	**20.50**	**23.50**
		DC-HSDPA	**23.50**	**21.00**	**21.00**	**23.50**
W-CDMA Band II	Ant.A	R99	**24.00**	**22.00**	**22.00**	**24.00**
		HSDPA	**23.00**	**21.50**	**21.50**	**23.00**
		HSUPA	**23.00**	**20.50**	**20.50**	**23.00**
		DC-HSDPA	**23.00**	**20.50**	**20.50**	**23.00**

LTE Bands

RF Air interface	Antenna	Mode	Maximum allowed output power (dBm)			
			Pmax	Plimit		
				RSI = 0 (Free)	RSI = 3 (Hotspot)	RSI = 4 (RCV)
LTE FDD Band 12	Ant.A	QPSK	**24.00**	**24.00**	**24.00**	**24.00**
LTE FDD Band 13	Ant.A	QPSK	**23.00**	**23.00**	**23.00**	**23.00**
LTE TDD Band 26	Ant.A	QPSK	**24.00**	**24.00**	**24.00**	**24.00**
LTE FDD Band 5	Ant.A	QPSK	**25.50**	**23.50**	**23.50**	**25.50**
LTE TDD Band 66	Ant.A	QPSK	**24.50**	**22.00**	**22.00**	**22.00**
LTE TDD Band 66	Ant.B	QPSK	**24.50**	**22.00**	**22.00**	**22.00**
LTE FDD Band 4	Ant.A	QPSK	**24.00**	**21.00**	**21.00**	**24.00**
LTE FDD Band 2	Ant.A	QPSK	**24.00**	**22.00**	**22.00**	**22.00**
LTE FDD Band 2	Ant.B	QPSK	**24.00**	**22.00**	**22.00**	**22.00**
LTE TDD Band 41 (PC3)	Ant.A	QPSK	**24.00**	**20.00**	**20.00**	**20.00**

Note(s):

1. Detail of RSI (Radio SAR Index) conditions, please refer to Sec.6.5.

WWAN Bands maximum allowed output power (Continued)

Maximum allowed output power means that Pmax or PLimit + 1dB device uncertainty for each RSI.

NR Bands

RF Air interface	Antenna	Mode	Maximum allowed output power (dBm)			
			Pmax	Plimit		
				RSI = 0 (Free)	RSI = 3 (Hotspot)	RSI = 4 (RCV)
NR Band n5	Ant.A	DFT-s-OFDM QPSK	**25.50**	**25.50**	**25.50**	**25.50**
NR Band n66	Ant.A	DFT-s-OFDM QPSK	**24.50**	**22.00**	**22.00**	**22.00**
NR Band n41	Ant.A	DFT-s-OFDM QPSK	**24.00**	**18.00**	**18.00**	**18.00**
NR Band n41 SRS 1	Ant.C	CW	**18.00**	**18.00**	**18.00**	**18.00**
NR Band n41 SRS 2	Ant.B	CW	**18.00**	**18.00**	**18.00**	**18.00**
NR Band n41 SRS 3	Ant. F	CW	**18.00**	**18.00**	**18.00**	**18.00**

Note(s):

1. Detail of RSI (Radio SAR Index) conditions, please refer to Sec.6.5.
2. NR Bands support SA and NSA mode as same target power.

WLAN Bands maximum allowed output power

Maximum allowed output power means that Target Power+ 1dB device uncertainty.

Maximum Power

RF Air interface	Band		Maximum allowed output power (dBm)				
			802.11 mode				
			2.4GHz SISO (Ant.D) / 5GHz SISO (Ant.D)				
			a	b	g	n	ac
WiFi 2.4 GHz	DTS	Ch 1 - 11		19.0	18.0	17.0	
		Ch12		8.0	8.0	8.0	
		Ch 13		6.0	6.0	6.0	
WiFi 5 GHz (BW : 20MHz)	UNII-1		16.0			15.0	15.0
	UNII-2A		16.0			15.0	15.0
	UNII-2C		15.0			14.0	14.0
	UNII-3		17.0			16.0	16.0
WiFi 5 GHz (BW : 40MHz)	UNII-1					14.0	14.0
	UNII-2A					14.0	14.0
	UNII-2C					14.0	14.0
	UNII-2C (Ch.102)					12.0	12.0
	UNII-3					14.0	14.0
WiFi 5 GHz (BW : 80MHz)	UNII-1						11.0
	UNII-2A						12.0
	UNII-2C						12.0
	UNII-2C (Ch.106)						10.0
	UNII-3						12.0

Reduced Power

RF Air interface	Band		Maximum allowed output power (dBm)				
			802.11 mode				
			2.4GHz SISO (Ant.D) / 5GHz SISO (Ant.D)				
			a	b	g	n	ac
WiFi 2.4 GHz	DTS	Ch 1 - 11		12.0	12.0	12.0	
		Ch 12		8.0	8.0	8.0	
		Ch 13		6.0	6.0	6.0	
WiFi 5 GHz (BW : 20MHz)	UNII-1		11.0			11.0	11.0
	UNII-2A		11.0			11.0	11.0
	UNII-2C		11.0			11.0	11.0
	UNII-3		11.0			11.0	11.0
WiFi 5 GHz (BW : 40MHz)	UNII-1					11.0	11.0
	UNII-2A					11.0	11.0
	UNII-2C					11.0	11.0
	UNII-3					11.0	11.0
WiFi 5 GHz (BW : 80MHz)	UNII-1						11.0
	UNII-2A						11.0
	UNII-2C						11.0
	UNII-2C (Ch.106)						10.0
	UNII-3						11.0

Note(s):

WLAN has supported to reduced power during RCV active.

BT(Bluetooth) Max power

RF Air interface	Max. Output Power (dBm)
	Ant.D
Bluetooth (BDR) (1Mbps)	11.0
Bluetooth (EDR)	8.0
Bluetooth LE	8.0
Bluetooth LE (2M)	11.0

6.5. RSI (Radio SAR Index) Scenarios

RSI (Radio SAR Index) Scenarios in WWAN Bands

RF exposure Conditions	Technologies Supported	RSI conditions	Description
Head	All WWAN bands	4 (RCV)	1. Device positioned next to head. 2. Receiver Active.
Body-worn	All WWAN bands	0 (Free)	1. Device being used with a body-worn accessory.
Hotspot	All WWAN bands	3 (Hotspot)	1. Device transmits in hotspot mode near body. 2. Hotspot Mode Active.
Phablet-10g	All WWAN bands	0 (Free)	1. Device is held with hand.

Note(s):

RSI Scenarios priority: RCV → Hotspot → Free

6.6. General LTE SAR Test and Reporting Considerations

Item	Description						
Frequency range, Channel Bandwidth, Numbers and Frequencues	Band 12	Frequency range: 699 - 716 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			23060/ 704	23035/ 701.5	23025/ 700.5	23017/ 699.7
	Mid			23095/ 707.5	23095/ 707.5	23095/ 707.5	23095/ 707.5
	High			23130/ 711	23155/ 713.5	23165/ 714.5	23173/ 715.3
	Band 13	Frequency range: 777 - 787 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low				23205/ 779.5		
	Mid			23230/ 782	23230/ 782		
	High				23255/ 784.5		
	Band 26	Frequency range: 814 - 849 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low		26765/ 821.5	26740/ 819	26715/ 816.5	26705/ 815.5	26697/ 814.7
	Mid		26865/ 831.5	26865/ 831.5	26865/ 831.5	26865/ 831.5	26865/ 831.5
	High		26965/ 841.5	26990/ 844	27015/ 846.5	27025/ 847.5	27033/ 848.3
	Band 5	Frequency range: 824 - 849 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			20450/ 829	20425/ 826.5	20415/ 825.5	20407/ 824.7
	Mid			20525/ 836.5	20525/ 836.5	20525/ 836.5	20525/ 836.5
	High			20600/ 844	20625/ 846.5	20635/ 847.5	20643/ 848.3
	Band 66	Frequency range: 1710 - 1780 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
	Band 4	Frequency range: 1710 - 1755 MHz					
		Channel Bandwidth					
		20 MHz	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

General LTE SAR Test and Reporting Considerations (Continued)

Frequency range, Channel Bandwidth, Numbers and Frequencues

Band 2	Frequency range: 1850 - 1910 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 41	Frequency range: 2496 - 2690 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					

LTE transmitter and antenna implementation

Refer to Appendix A.

Maximum power reduction (MPR)

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
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3
256 QAM	≥ 1						≤ 5

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

Power reduction

Yes.

pectrum plots for RB configuratior

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.

Notes:

1. 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.
2. LTE Band 41 test channels in accordance with October 2014 TCB workshop for all channels bandwidths.
3. SAR Testing for LTE was performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

6.7. 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	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
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	$26336 \cdot T_s$			$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-	-	-
9	$13168 \cdot T_s$			-	-	-

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	63.33
1	5 ms	D	S	U	U	D	D	S	U	U	D	43.33
2	5 ms	D	S	U	D	D	D	S	U	D	D	23.33
3	10 ms	D	S	U	U	U	D	D	D	D	D	31.67
4	10 ms	D	S	U	U	D	D	D	D	D	D	21.67
5	10 ms	D	S	U	D	D	D	D	D	D	D	11.67
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.33

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

Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:
Calculated Duty Cycle = 5120 x [1/(15000 x 2048)] x 2 + 6 ms = 63.33%
where
T_s = 1/(15000 x 2048) seconds

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% duty cycle in power class 3.

6.8. NR (Sub 6GHz) SAR Test and Reporting Considerations

Item	Description													
Frequency range, Channel Bandwidth, Numbers and Frequencues	Band n5	Frequency range: 824 - 849 MHz												
		Channel Bandwidth												
		100 MHz	90 MHz	80 MHz	70 MHz	60 MHz	50 MHz	40 MHz	35 MHz	30 MHz	25 MHz	20 MHz	15 MHz	10 MHz	5 MHz
	Low											166800/ 834	166300/ 831.5	165800/ 829	165300/ 826.5
	Mid											167300/ 836.5	167300/ 836.5	167300/ 836.5	167300/ 836.5
	High											167800/ 839	168300/ 841.5	168800/ 844	169300/ 846.5
	Band n66	Frequency range: 1710 - 1780 MHz													
		Channel Bandwidth													
		100 MHz	90 MHz	80 MHz	70 MHz	60 MHz	50 MHz	40 MHz	35 MHz	30 MHz	25 MHz	20 MHz	15 MHz	10 MHz	5 MHz
	Low							346000/ 1730	345500/ 1727.5	345000/ 1725	344500/ 1722.5	344000 /1720	343500 /1717.5	343000 /1715	342500 /1712.5
	Mid							349000/ 1745	349000/ 1745	349000/ 1745	349000/ 1745	349000/ 1745	349000/ 1745	349000/ 1745	349000/ 1745
	High							352000/ 1760	352500/ 1762.5	353000/ 1765	353500/ 1767.5	354000 /1770	354500 /1772.5	355000 /1775	355500 /1777.5
	Band n41	Frequency range: 2496 - 2690 MHz													
		Channel Bandwidth													
		100 MHz	90 MHz	80 MHz	70 MHz	60 MHz	50 MHz	40 MHz	35 MHz	30 MHz	25 MHz	20 MHz	15 MHz	10 MHz	5 MHz
	Low	509202/ 2546.01	508200/ 2541	507204/ 2536.02	506202/ 2531.01	505200/ 2526	504204/ 2512.02	503202/ 2516.01		552200/ 2511	501696/ 2508.48	501204/ 2506.02	500700/ 2503.5	500202/ 2501.01	
	Low-Mid							516468/ 2567.34		510402/ 2552.01	510150/ 2550.75	509898/ 2549.49	509652/ 2548.26	509400/ 2547	
	Mid	518598/ 2592.99				518598/ 2592.99	518598/ 2592.99			518598/ 2592.99	518598/ 2592.99	518598/ 2592.99	518598/ 2592.99	518598/ 2592.99	
	Mid-High	528000/ 2640	528996/ 2644.98	529998/ 2649.99	531000/ 2655	529998/ 2649.99	523734/ 2618.67	523734/ 2618.67		526800/ 2634	527046/ 2635.23	527298/ 2636.49	527550/ 2637.75	527802/ 2639.01	
	High							534000/ 2670		534996/ 2674.98	535500/ 2677.5	535998/ 2679.99	536496/ 2682.48	537000/ 2685	
SCS	NR FDD Bands : 15 kHz, NR TDD Bands : 30kHz														
Modulations Supported in UL	DFT-s-OFDM: π/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM & CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM														
A-MPR (Additional MPR) disabled for SAR Testing?	Yes														
EN-DC Carrier Aggregation Possible Combinations															
LTE Anchor Bands for NR Band n5	LTE Band 2														
LTE Anchor Bands for NR Band n66	LTE Band 2/5														
LTE Anchor Bands for NR Band n41	LTE Band 5/26/66														

Notes:

1. SAR test for NR bands and LTE anchor Bands were performed separately due to limitations in SAR probe calibration factors. And, Due to test setup limitations, SAR testing for NR was performed using test mode software to establish the connection.
2. NR configurations of SAR test were determined according to Section 5.2 of KDB 941225 D05.

7. RF Exposure Conditions (Test Configurations)

Refer to Appendix A for the specific details of the antenna-to-antenna and antenna-to-edge(s) distances.

Wireless technologies	RF Exposure Conditions	Antenaa	DUT-to-User Separation	Test Positions			
				Right Touch	Right Tilt	Left Touch	Left Tilt
WWAN & WLAN/BT	Head	All WWAN/WLAN/BT Antennas (Ant.A/B/C/D/F)	0 mm	**Yes**	**Yes**	**Yes**	**Yes**

Wireless technologies	RF Exposure Conditions	Antenaa	DUT-to-User Separation	Test Positions					
				Rear	Front	Top	Left	Bottom	Right
WWAN	Body-worn & Hotspot	Ant.A	10 mm	**Yes**	**Yes**	**No**	**Yes**	**Yes**	**Yes**
		Ant.B	10 mm	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**No**
		Ant.C	10 mm	**Yes**	**Yes**	**Yes**	**No**	**No**	**Yes**
		Ant.F	10 mm	**Yes**	**Yes**	**Yes**	**No**	**No**	**Yes**
	Product Specific 10-g	All WWAN Antennas (Ant.A/B/C/F)	0 mm	**Refer to note 2 & 3.**					
WLAN/BT	Body-worn & Hotspot	Ant.D	10 mm	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**No**
	Product Specific 10-g	All WLAN/BT Antennas (Ant.D)	0 mm	**Refer to note 2 and 4.**					
NFC	Product Specific 10-g	NFC Ant.	0 mm	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**No**

Notes:

1. For Hotspot exposure condition, 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. For Phablet devices: When hotspot mode applies, Product specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.
3. For Phablet devices: When hotspot mode applies and power reduction applies to hotspot mode, Product specific 10-g SAR is required for each test position that has and adjusted SAR to maximum power that is > 1.2 W/kg.
4. For Phablet devices: When hotspot mode is not supported, Product specific 10-g SAR is required for all surfaces and edges with an antenna located at ≤ 25mm from that surface or edge in direct contact with a flat phantom, to address interactive hand use exposure conditions.
5. Per manufacturer guide, NFC SAR was considered about only hand held condition (Product Specific 10-g).
6. For Body-worn exposure condition, SAR test is considered for Rear and Front test positions.
7. For Head exposure condition, All WWAN/WLAN/BT Antennas are required Head SAR test.

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 ± 2°C of the temperature when the tissue parameters are characterized.
The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The Tissue Dielectric parameters (100MHz to 6GHz) 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.
For The Tissue Dielectric parameters (9MHz to 19MHz). The parameters must be measured before 24 hours.

1. Tissue Dielectric Parameters (100MHz to 6GHz)
FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

Target Frequency (MHz)	Head	
	ε_r	σ (S/m)
150	52.3	0.76
300	45.3	0.87
450	43.5	0.87
835	41.5	0.90
900	41.5	0.97
915	41.5	0.98
1450	40.5	1.20
1610	40.3	1.29
1800 – 2000	40.0	1.40
2450	39.2	1.80
3000	38.5	2.40
5000	36.2	4.45
5100	36.1	4.55
5200	36.0	4.66
5300	35.9	4.76
5400	35.8	4.86
5500	35.6	4.96
5600	35.5	5.07
5700	35.4	5.17
5800	35.3	5.27
6000	35.1	5.48

SAR test were performed in All RF exposure conditions using Head tissue according to TCB workshop note of April. 2019.

IEEE Std 1528-2013
Refer to Table 3 within the IEEE Std 1528-2013

2. Tissue Dielectric Parameters (9MHz to 19MHz)

Target Frequency (MHz)	Head	
	ε_r	σ (S/m)
9	55.0	0.75
13	55.0	0.75
19	55.0	0.75

IEC_IEEE Std 62209-1528 : 2020
Refer to Table 2 within the IEC_IEEE Std 62209-1528 : 2020.

Dielectric Property Measurements Results:

SAR 4 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
2024-07-30	Head 1750	e'	40.1100	Relative Permittivity (ε_r):	40.11	40.08	0.06	5
		e''	13.7100	Conductivity (σ):	1.33	1.37	-2.55	5
	Head 1695	e'	40.1600	Relative Permittivity (ε_r):	40.16	40.17	-0.02	5
		e''	13.7700	Conductivity (σ):	1.30	1.34	-3.00	5
	Head 1780	e'	40.0600	Relative Permittivity (ε_r):	40.06	40.04	0.05	5
		e''	13.6500	Conductivity (σ):	1.35	1.39	-2.52	5
2024-07-30	Head 1900	e'	39.8500	Relative Permittivity (ε_r):	39.85	40.00	-0.37	5
		e''	13.3700	Conductivity (σ):	1.41	1.40	0.89	5
	Head 1850	e'	39.9100	Relative Permittivity (ε_r):	39.91	40.00	-0.23	5
		e''	13.5000	Conductivity (σ):	1.39	1.40	-0.81	5
	Head 1915	e'	39.8400	Relative Permittivity (ε_r):	39.84	40.00	-0.40	5
		e''	13.3400	Conductivity (σ):	1.42	1.40	1.46	5

SAR 7 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
2024-07-15	Head 13	e'	53.6300	Relative Permittivity (ε_r):	53.63	55.00	-2.49	5
		e''	1005.5000	Conductivity (σ):	0.73	0.75	-3.09	5
	Head 12	e'	53.5900	Relative Permittivity (ε_r):	53.59	55.00	-2.56	5
		e''	1097.2700	Conductivity (σ):	0.73	0.75	-2.38	5
	Head 14	e'	53.6340	Relative Permittivity (ε_r):	53.63	55.00	-2.48	5
		e''	961.8600	Conductivity (σ):	0.75	0.75	-0.17	5
2024-07-17	Head 1750	e'	39.8700	Relative Permittivity (ε_r):	39.87	40.08	-0.54	5
		e''	13.6100	Conductivity (σ):	1.32	1.37	-3.26	5
	Head 1710	e'	39.9400	Relative Permittivity (ε_r):	39.94	40.15	-0.51	5
		e''	13.6400	Conductivity (σ):	1.30	1.35	-3.68	5
	Head 1780	e'	39.7900	Relative Permittivity (ε_r):	39.79	40.04	-0.62	5
		e''	13.5500	Conductivity (σ):	1.34	1.39	-3.23	5
2024-07-17	Head 1900	e'	39.5500	Relative Permittivity (ε_r):	39.55	40.00	-1.13	5
		e''	13.1800	Conductivity (σ):	1.39	1.40	-0.54	5
	Head 1850	e'	39.6000	Relative Permittivity (ε_r):	39.60	40.00	-1.00	5
		e''	13.3500	Conductivity (σ):	1.37	1.40	-1.91	5
	Head 1915	e'	39.5500	Relative Permittivity (ε_r):	39.55	40.00	-1.13	5
		e''	13.1400	Conductivity (σ):	1.40	1.40	-0.06	5
2024-07-22	Head 1900	e'	40.5500	Relative Permittivity (ε_r):	40.55	40.00	1.37	5
		e''	13.2800	Conductivity (σ):	1.40	1.40	0.21	5
	Head 1850	e'	40.5800	Relative Permittivity (ε_r):	40.58	40.00	1.45	5
		e''	13.3500	Conductivity (σ):	1.37	1.40	-1.91	5
	Head 1915	e'	40.5300	Relative Permittivity (ε_r):	40.53	40.00	1.33	5
		e''	13.2800	Conductivity (σ):	1.41	1.40	1.00	5
2024-07-22	Head 1750	e'	40.8000	Relative Permittivity (ε_r):	40.80	40.08	1.78	5
		e''	13.5700	Conductivity (σ):	1.32	1.37	-3.55	5
	Head 1710	e'	40.8400	Relative Permittivity (ε_r):	40.84	40.15	1.73	5
		e''	13.6000	Conductivity (σ):	1.29	1.35	-3.96	5
	Head 1780	e'	40.7200	Relative Permittivity (ε_r):	40.72	40.04	1.70	5
		e''	13.5300	Conductivity (σ):	1.34	1.39	-3.38	5
2024-07-26	Head 1900	e'	39.2700	Relative Permittivity (ε_r):	39.27	40.00	-1.82	5
		e''	12.9600	Conductivity (σ):	1.37	1.40	-2.20	5
	Head 1850	e'	39.2100	Relative Permittivity (ε_r):	39.21	40.00	-1.98	5
		e''	13.1400	Conductivity (σ):	1.35	1.40	-3.45	5
	Head 1915	e'	39.2300	Relative Permittivity (ε_r):	39.23	40.00	-1.93	5
		e''	12.8800	Conductivity (σ):	1.37	1.40	-2.04	5
2024-07-26	Head 1750	e'	39.4400	Relative Permittivity (ε_r):	39.44	40.08	-1.61	5
		e''	13.6200	Conductivity (σ):	1.33	1.37	-3.19	5
	Head 1710	e'	39.5600	Relative Permittivity (ε_r):	39.56	40.15	-1.46	5
		e''	13.6500	Conductivity (σ):	1.30	1.35	-3.61	5
	Head 1780	e'	39.4800	Relative Permittivity (ε_r):	39.48	40.04	-1.39	5
		e''	13.5200	Conductivity (σ):	1.34	1.39	-3.45	5

SAR 7 Room (Continued)

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
07-31-2024	Head 1750	e'	40.6600	Relative Permittivity (ε_r):	40.66	40.08	1.44	5
		e"	13.5200	Conductivity (σ):	1.32	1.37	-3.90	5
	Head 1710	e'	40.3000	Relative Permittivity (ε_r):	40.30	40.15	0.38	5
		e"	13.6100	Conductivity (σ):	1.29	1.35	-3.89	5
	Head 1780	e'	40.6200	Relative Permittivity (ε_r):	40.62	40.04	1.45	5
		e"	13.4600	Conductivity (σ):	1.33	1.39	-3.88	5
07-31-2024	Head 1900	e'	40.4600	Relative Permittivity (ε_r):	40.46	40.00	1.15	5
		e"	13.3000	Conductivity (σ):	1.41	1.40	0.36	5
	Head 1850	e'	40.5200	Relative Permittivity (ε_r):	40.52	40.00	1.30	5
		e"	13.3600	Conductivity (σ):	1.37	1.40	-1.84	5
	Head 1915	e'	40.4400	Relative Permittivity (ε_r):	40.44	40.00	1.10	5
		e"	13.2900	Conductivity (σ):	1.42	1.40	1.08	5
08-06-2024	Head 1750	e'	40.1500	Relative Permittivity (ε_r):	40.15	40.08	0.16	5
		e"	13.5700	Conductivity (σ):	1.32	1.37	-3.55	5
	Head 1710	e'	40.2400	Relative Permittivity (ε_r):	40.24	40.15	0.23	5
		e"	13.7200	Conductivity (σ):	1.30	1.35	-3.11	5
	Head 1780	e'	40.1000	Relative Permittivity (ε_r):	40.10	40.04	0.15	5
		e"	13.4400	Conductivity (σ):	1.33	1.39	-4.02	5
08-12-2024	Head 1750	e'	40.7000	Relative Permittivity (ε_r):	40.70	40.08	1.54	5
		e"	14.1300	Conductivity (σ):	1.37	1.37	0.43	5
	Head 1710	e'	40.7700	Relative Permittivity (ε_r):	40.77	40.15	1.55	5
		e"	14.2300	Conductivity (σ):	1.35	1.35	0.49	5
	Head 1780	e'	40.6600	Relative Permittivity (ε_r):	40.66	40.04	1.55	5
		e"	14.0600	Conductivity (σ):	1.39	1.39	0.41	5

SAR 8 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
07-03-2024	Head 5200	e'	37.1100	Relative Permittivity (ε_r):	37.11	35.99	3.11	5
		e"	15.6000	Conductivity (σ):	4.51	4.65	-3.02	5
	Head 5250	e'	37.0300	Relative Permittivity (ε_r):	37.03	35.93	3.05	5
		e"	15.6300	Conductivity (σ):	4.56	4.70	-2.97	5
	Head 5600	e'	36.4200	Relative Permittivity (ε_r):	36.42	35.53	2.49	5
		e"	15.8400	Conductivity (σ):	4.93	5.06	-2.53	5
	Head 5800	e'	36.0700	Relative Permittivity (ε_r):	36.07	35.30	2.18	5
		e"	15.9700	Conductivity (σ):	5.15	5.27	-2.27	5
	Head 5925	e'	35.8500	Relative Permittivity (ε_r):	35.85	35.20	1.85	5
		e"	16.0400	Conductivity (σ):	5.28	5.40	-2.14	5
07-09-2024	Head 5200	e'	35.4000	Relative Permittivity (ε_r):	35.40	35.99	-1.64	5
		e"	15.6100	Conductivity (σ):	4.51	4.65	-2.96	5
	Head 5250	e'	35.3100	Relative Permittivity (ε_r):	35.31	35.93	-1.73	5
		e"	15.6600	Conductivity (σ):	4.57	4.70	-2.78	5
	Head 5600	e'	34.6900	Relative Permittivity (ε_r):	34.69	35.53	-2.37	5
		e"	15.9000	Conductivity (σ):	4.95	5.06	-2.16	5
	Head 5800	e'	34.3400	Relative Permittivity (ε_r):	34.34	35.30	-2.72	5
		e"	16.0400	Conductivity (σ):	5.17	5.27	-1.84	5
	Head 5925	e'	34.1400	Relative Permittivity (ε_r):	34.14	35.20	-3.01	5
		e"	16.1300	Conductivity (σ):	5.31	5.40	-1.59	5
07-16-2024	Head 750	e'	42.0700	Relative Permittivity (ε_r):	42.07	41.96	0.26	5
		e"	21.3500	Conductivity (σ):	0.89	0.89	-0.31	5
	Head 660	e'	42.3500	Relative Permittivity (ε_r):	42.35	42.42	-0.17	5
		e"	23.4600	Conductivity (σ):	0.86	0.89	-2.85	5
	Head 800	e'	41.9200	Relative Permittivity (ε_r):	41.92	41.71	0.52	5
		e"	20.3900	Conductivity (σ):	0.91	0.90	1.12	5
07-16-2024	Head 835	e'	41.8500	Relative Permittivity (ε_r):	41.85	41.50	0.84	5
		e"	19.7600	Conductivity (σ):	0.92	0.90	1.94	5
	Head 820	e'	41.8800	Relative Permittivity (ε_r):	41.88	41.60	0.67	5
		e"	20.0200	Conductivity (σ):	0.91	0.90	1.60	5
	Head 850	e'	41.8200	Relative Permittivity (ε_r):	41.82	41.50	0.77	5
		e"	19.5100	Conductivity (σ):	0.92	0.92	0.78	5
07-17-2024	Head 5200	e'	35.4400	Relative Permittivity (ε_r):	35.44	35.99	-1.53	5
		e"	15.5600	Conductivity (σ):	4.50	4.65	-3.27	5
	Head 5250	e'	35.4000	Relative Permittivity (ε_r):	35.40	35.93	-1.48	5
		e"	15.6600	Conductivity (σ):	4.57	4.70	-2.78	5
	Head 5600	e'	34.7700	Relative Permittivity (ε_r):	34.77	35.53	-2.15	5
		e"	15.8000	Conductivity (σ):	4.92	5.06	-2.78	5
	Head 5800	e'	34.3800	Relative Permittivity (ε_r):	34.38	35.30	-2.61	5
		e"	15.8400	Conductivity (σ):	5.11	5.27	-3.07	5
	Head 5925	e'	34.1600	Relative Permittivity (ε_r):	34.16	35.20	-2.95	5
		e"	15.8700	Conductivity (σ):	5.23	5.40	-3.18	5

SAR 8 Room (Continued)

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
07-22-2024	Head 750	e'	42.8000	Relative Permittivity (ε_r):	42.80	41.96	2.00	5
		e"	21.4000	Conductivity (σ):	0.89	0.89	-0.07	5
	Head 660	e'	43.2800	Relative Permittivity (ε_r):	43.28	42.42	2.02	5
		e"	23.5100	Conductivity (σ):	0.86	0.89	-2.64	5
	Head 800	e'	42.5800	Relative Permittivity (ε_r):	42.58	41.71	2.10	5
		e"	20.4300	Conductivity (σ):	0.91	0.90	1.32	5
07-22-2024	Head 835	e'	42.4700	Relative Permittivity (ε_r):	42.47	41.50	2.34	5
		e"	19.7800	Conductivity (σ):	0.92	0.90	2.04	5
	Head 820	e'	42.5100	Relative Permittivity (ε_r):	42.51	41.60	2.18	5
		e"	20.0500	Conductivity (σ):	0.91	0.90	1.75	5
	Head 850	e'	42.4500	Relative Permittivity (ε_r):	42.45	41.50	2.29	5
		e"	19.5200	Conductivity (σ):	0.92	0.92	0.83	5
07-26-2024	Head 750	e'	40.8400	Relative Permittivity (ε_r):	40.84	41.96	-2.67	5
		e"	21.4600	Conductivity (σ):	0.89	0.89	0.21	5
	Head 660	e'	41.0400	Relative Permittivity (ε_r):	41.04	42.42	-3.26	5
		e"	23.6600	Conductivity (σ):	0.87	0.89	-2.02	5
	Head 800	e'	40.6800	Relative Permittivity (ε_r):	40.68	41.71	-2.46	5
		e"	20.5200	Conductivity (σ):	0.91	0.90	1.77	5
07-26-2024	Head 835	e'	40.6900	Relative Permittivity (ε_r):	40.69	41.50	-1.95	5
		e"	19.9100	Conductivity (σ):	0.92	0.90	2.71	5
	Head 820	e'	40.6900	Relative Permittivity (ε_r):	40.69	41.60	-2.19	5
		e"	20.1900	Conductivity (σ):	0.92	0.90	2.46	5
	Head 850	e'	40.6600	Relative Permittivity (ε_r):	40.66	41.50	-2.02	5
		e"	19.6300	Conductivity (σ):	0.93	0.92	1.40	5
07-30-2024	Head 750	e'	41.8500	Relative Permittivity (ε_r):	41.85	41.96	-0.27	5
		e"	21.3400	Conductivity (σ):	0.89	0.89	-0.35	5
	Head 660	e'	42.0400	Relative Permittivity (ε_r):	42.04	42.42	-0.90	5
		e"	23.5400	Conductivity (σ):	0.86	0.89	-2.51	5
	Head 800	e'	41.8400	Relative Permittivity (ε_r):	41.84	41.71	0.32	5
		e"	20.4300	Conductivity (σ):	0.91	0.90	1.32	5
07-30-2024	Head 835	e'	41.7700	Relative Permittivity (ε_r):	41.77	41.50	0.65	5
		e"	19.8000	Conductivity (σ):	0.92	0.90	2.14	5
	Head 820	e'	41.8100	Relative Permittivity (ε_r):	41.81	41.60	0.50	5
		e"	20.0700	Conductivity (σ):	0.92	0.90	1.85	5
	Head 850	e'	41.7100	Relative Permittivity (ε_r):	41.71	41.50	0.51	5
		e"	19.5400	Conductivity (σ):	0.92	0.92	0.93	5
08-05-2024	Head 835	e'	40.1800	Relative Permittivity (ε_r):	40.18	41.50	-3.18	5
		e"	19.8700	Conductivity (σ):	0.92	0.90	2.50	5
	Head 820	e'	40.2000	Relative Permittivity (ε_r):	40.20	41.60	-3.37	5
		e"	20.1300	Conductivity (σ):	0.92	0.90	2.15	5
	Head 850	e'	40.1600	Relative Permittivity (ε_r):	40.16	41.50	-3.23	5
		e"	19.6300	Conductivity (σ):	0.93	0.92	1.40	5
08-12-2024	Head 835	e'	40.3300	Relative Permittivity (ε_r):	40.33	41.50	-2.82	5
		e"	20.1200	Conductivity (σ):	0.93	0.90	3.79	5
	Head 820	e'	40.3500	Relative Permittivity (ε_r):	40.35	41.60	-3.01	5
		e"	20.4000	Conductivity (σ):	0.93	0.90	3.52	5
	Head 850	e'	40.3300	Relative Permittivity (ε_r):	40.33	41.50	-2.82	5
		e"	19.8800	Conductivity (σ):	0.94	0.92	2.69	5
09-10-2024	Head 5200	e'	35.5100	Relative Permittivity (ε_r):	35.51	35.99	-1.33	5
		e"	16.1300	Conductivity (σ):	4.66	4.65	0.27	5
	Head 5250	e'	35.3300	Relative Permittivity (ε_r):	35.33	35.93	-1.68	5
		e"	16.2500	Conductivity (σ):	4.74	4.70	0.88	5
	Head 5600	e'	34.8500	Relative Permittivity (ε_r):	34.85	35.53	-1.92	5
		e"	16.3900	Conductivity (σ):	5.10	5.06	0.85	5
	Head 5800	e'	34.4000	Relative Permittivity (ε_r):	34.40	35.30	-2.55	5
		e"	16.6200	Conductivity (σ):	5.36	5.27	1.71	5
	Head 5925	e'	34.1100	Relative Permittivity (ε_r):	34.11	35.20	-3.10	5
		e"	16.3600	Conductivity (σ):	5.39	5.40	-0.19	5

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Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
07-03-2024	Head 2450	e'	38.8900	Relative Permittivity (ε_r):	38.89	39.20	-0.79	5
		e"	12.8900	Conductivity (σ):	1.76	1.80	-2.45	5
	Head 2400	e'	39.0200	Relative Permittivity (ε_r):	39.02	39.30	-0.70	5
		e"	12.8500	Conductivity (σ):	1.71	1.75	-2.10	5
	Head 2500	e'	38.7900	Relative Permittivity (ε_r):	38.79	39.14	-0.89	5
		e"	12.8900	Conductivity (σ):	1.79	1.85	-3.36	5
07-08-2024	Head 2450	e'	38.4200	Relative Permittivity (ε_r):	38.42	39.20	-1.99	5
		e"	12.7000	Conductivity (σ):	1.73	1.80	-3.88	5
	Head 2400	e'	38.4700	Relative Permittivity (ε_r):	38.47	39.30	-2.10	5
		e"	12.6700	Conductivity (σ):	1.69	1.75	-3.47	5
	Head 2500	e'	38.3400	Relative Permittivity (ε_r):	38.34	39.14	-2.04	5
		e"	12.7300	Conductivity (σ):	1.77	1.85	-4.56	5
07-16-2024	Head 2450	e'	40.5200	Relative Permittivity (ε_r):	40.52	39.20	3.37	5
		e"	12.9600	Conductivity (σ):	1.77	1.80	-1.92	5
	Head 2400	e'	40.5400	Relative Permittivity (ε_r):	40.54	39.30	3.16	5
		e"	12.8800	Conductivity (σ):	1.72	1.75	-1.88	5
	Head 2500	e'	40.4300	Relative Permittivity (ε_r):	40.43	39.14	3.30	5
		e"	12.9500	Conductivity (σ):	1.80	1.85	-2.91	5
07-16-2024	Head 2600	e'	40.2900	Relative Permittivity (ε_r):	40.29	39.01	3.28	5
		e"	13.0800	Conductivity (σ):	1.89	1.96	-3.63	5
	Head 2495	e'	40.4400	Relative Permittivity (ε_r):	40.44	39.14	3.31	5
		e"	12.9500	Conductivity (σ):	1.80	1.85	-2.82	5
	Head 2700	e'	40.1000	Relative Permittivity (ε_r):	40.10	38.88	3.13	5
		e"	13.2300	Conductivity (σ):	1.99	2.07	-4.06	5
07-22-2024	Head 2600	e'	38.7600	Relative Permittivity (ε_r):	38.76	39.01	-0.64	5
		e"	13.1600	Conductivity (σ):	1.90	1.96	-3.04	5
	Head 2495	e'	38.9300	Relative Permittivity (ε_r):	38.93	39.14	-0.54	5
		e"	13.0000	Conductivity (σ):	1.80	1.85	-2.44	5
	Head 2700	e'	38.5000	Relative Permittivity (ε_r):	38.50	38.88	-0.99	5
		e"	13.2700	Conductivity (σ):	1.99	2.07	-3.77	5
07-25-2024	Head 1750	e'	41.3700	Relative Permittivity (ε_r):	41.37	40.08	3.21	5
		e"	13.5800	Conductivity (σ):	1.32	1.37	-3.47	5
	Head 1695	e'	41.4600	Relative Permittivity (ε_r):	41.46	40.17	3.21	5
		e"	13.7100	Conductivity (σ):	1.29	1.34	-3.42	5
	Head 1780	e'	41.3200	Relative Permittivity (ε_r):	41.32	40.04	3.20	5
		e"	13.5000	Conductivity (σ):	1.34	1.39	-3.59	5
07-25-2024	Head 1900	e'	41.2900	Relative Permittivity (ε_r):	41.29	40.00	3.23	5
		e"	13.1800	Conductivity (σ):	1.39	1.40	-0.54	5
	Head 1850	e'	41.2500	Relative Permittivity (ε_r):	41.25	40.00	3.13	5
		e"	13.2900	Conductivity (σ):	1.37	1.40	-2.35	5
	Head 1915	e'	41.3000	Relative Permittivity (ε_r):	41.30	40.00	3.25	5
		e"	13.1700	Conductivity (σ):	1.40	1.40	0.17	5
07-26-2024	Head 2600	e'	39.1500	Relative Permittivity (ε_r):	39.15	39.01	0.36	5
		e"	13.0800	Conductivity (σ):	1.89	1.96	-3.63	5
	Head 2495	e'	39.3100	Relative Permittivity (ε_r):	39.31	39.14	0.43	5
		e"	12.9100	Conductivity (σ):	1.79	1.85	-3.12	5
	Head 2700	e'	38.9700	Relative Permittivity (ε_r):	38.97	38.88	0.22	5
		e"	13.2400	Conductivity (σ):	1.99	2.07	-3.99	5
07-30-2024	Head 2600	e'	39.7700	Relative Permittivity (ε_r):	39.77	39.01	1.95	5
		e"	13.2400	Conductivity (σ):	1.91	1.96	-2.45	5
	Head 2495	e'	39.9500	Relative Permittivity (ε_r):	39.95	39.14	2.06	5
		e"	13.3000	Conductivity (σ):	1.85	1.85	-0.19	5
	Head 2700	e'	39.5800	Relative Permittivity (ε_r):	39.58	38.88	1.79	5
		e"	13.2200	Conductivity (σ):	1.98	2.07	-4.13	5
08-05-2024	Head 2600	e'	39.8700	Relative Permittivity (ε_r):	39.87	39.01	2.20	5
		e"	13.3900	Conductivity (σ):	1.94	1.96	-1.35	5
	Head 2495	e'	39.9500	Relative Permittivity (ε_r):	39.95	39.14	2.06	5
		e"	13.4500	Conductivity (σ):	1.87	1.85	0.93	5
	Head 2700	e'	39.7200	Relative Permittivity (ε_r):	39.72	38.88	2.15	5
		e"	13.3400	Conductivity (σ):	2.00	2.07	-3.26	5

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 of 100MHZ to 6GHz frequency range 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. For The System verification of 9MHz to 19MHz frequency range, The System verification must be performed before 24 hours.

System Performance Check Measurement Conditions (100MHz to 6GHz):

- The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 ±0.2 mm (bottom plate) filled with Body or Head simulating liquid of the following parameters.
- The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm for SAR measurements ≤ 3 GHz and ≥ 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 2.5 mm.
  For 5 GHz band - Distance between probe sensors and phantom surface was set to 1.4 mm
- The dipole input power (forward power) was 100 mW.
- The results are normalized to 1 W input power.

System Performance Check Measurement Conditions (13MHz):

- The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 ±0.2 mm (bottom plate) filled with Body or Head simulating liquid of the following parameters.
- The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm for SAR measurements
- The DASY system with an E-Field Probe was used for the measurements.
- The CLA(Confined Loop Antennas) was mounted on the small tripod so that the CLA feed point was positioned below the center marking of the flat phantom section and the CLA was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 0 mm separation distance from CLA center to the Phantom surface.
- The CLA input power (forward power) was 100 mW.
- The results are normalized to 1 W input power.

Reference Target SAR Values

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

System Dipole	Serial No.	Cal. Date	Cal. Due Date	Target SAR Values (W/kg)	
				1g/10g	Head
D750V3	1205	04-18-2023	04-18-2025	1g	8.55
				10g	5.59
D835V2	4d174	09-21-2022	09-21-2024	1g	9.63
				10g	6.29
D1750V2	1125	11-30-2022	11-30-2024	1g	37.40
				10g	19.70
D1750V2	1180	09-21-2022	09-21-2024	1g	35.60
				10g	18.90
D1900V2	5d199	03-13-2024	03-13-2025	1g	39.70
				10g	20.70
D1900V2	5d190	11-16-2022	11-16-2024	1g	39.70
				10g	20.70
D2450V2	960	03-14-2024	03-14-2025	1g	51.80
				10g	24.10
D2600V2	1178	04-25-2023	04-25-2025	1g	57.40
				10g	25.70
D5GHzV2 (5.25GHz)	1209	02-28-2023	02-28-2025	1g	80.40
				10g	22.90
D5GHzV2 (5.6GHz)	1209	02-28-2023	02-28-2025	1g	83.10
				10g	23.60
D5GHzV2 (5.75GHz)	1209	02-28-2023	02-28-2025	1g	78.90
				10g	22.20
D5GHzV2 (5.8GHz)	1209	02-28-2023	02-28-2025	1g	81.20
				10g	22.90
CLA-13	1015	08-22-2023	08-22-2024	1g	0.533
				10g	0.333

Note(s):

1. For System Validation Dipole, Calibration interval applied every 2 years according to referencing KDB 865664 guidance.
2. For CLA, Calibration interval applied every year.
3. Refer to Appendix F that mentioned about justification

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 10% of the manufacturer calibrated dipole SAR target.

SAR 4 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
07-30-2024	D1750V2	1125	Head	1g	3.44	34.4	37.40	-8.02	1
				10g	1.85	18.5	19.70	-6.09	
07-30-2024	D1900V2	5d190	Head	1g	3.98	39.8	39.70	0.25	
				10g	2.08	20.8	20.70	0.48	

SAR 7 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
06-10-2024	D1750V2	1180	Head	1g	3.52	35.2	35.60	-1.12	
				10g	1.98	19.8	18.90	4.76	
07-09-2024	D1750V2	1180	Head	1g	3.36	33.6	35.60	-5.62	2
				10g	1.90	19.0	18.90	0.53	
07-09-2024	D1900V2	5d199	Head	1g	4.12	41.2	39.70	3.78	3
				10g	2.20	22.0	20.70	6.28	
07-15-2024	CLA-13	1015	Head	1g	0.06	0.6	0.53	3.19	4
				10g	0.03	0.3	0.33	2.10	
07-17-2024	D1750V2	1180	Head	1g	3.41	34.1	35.60	-4.21	
				10g	1.91	19.1	18.90	1.06	
07-17-2024	D1900V2	5d199	Head	1g	3.99	39.9	39.70	0.50	
				10g	2.12	21.2	20.70	2.42	
07-22-2024	D1750V2	1180	Head	1g	3.54	35.4	35.60	-0.56	
				10g	1.97	19.7	18.90	4.23	
07-22-2024	D1900V2	5d199	Head	1g	4.10	41.0	39.70	3.27	
				10g	2.18	21.8	20.70	5.31	
07-26-2024	D1750V2	1180	Head	1g	3.47	34.7	35.60	-2.53	
				10g	1.93	19.3	18.90	2.12	
07-26-2024	D1900V2	5d199	Head	1g	4.09	40.9	39.70	3.02	
				10g	2.17	21.7	20.70	4.83	
07-31-2024	D1750V2	1125	Head	1g	3.66	36.6	37.40	-2.14	
				10g	2.00	20.0	19.70	1.52	
07-31-2024	D1900V2	5d190	Head	1g	4.01	40.1	39.70	1.01	5
				10g	2.14	21.4	20.70	3.38	
08-06-2024	D1750V2	1125	Head	1g	3.78	37.8	37.40	1.07	
				10g	2.12	21.2	19.70	7.61	
08-12-2024	D1750V2	1180	Head	1g	3.52	35.2	35.60	-1.12	
				10g	1.93	19.3	18.90	2.12	

SAR 8 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
07-03-2024	D5GHzV2 (5250)	1209	Head	1g	8.28	82.8	80.40	2.99	
				10g	2.41	24.1	22.90	5.24	
07-03-2024	D5GHzV2 (5600)	1209	Head	1g	8.59	85.9	83.10	3.37	
				10g	2.49	24.9	23.60	5.51	
07-03-2024	D5GHzV2 (5800)	1209	Head	1g	8.64	86.4	81.20	6.40	
				10g	2.49	24.9	22.90	8.73	
07-09-2024	D5GHzV2 (5250)	1209	Head	1g	7.77	77.7	80.40	-3.36	
				10g	2.26	22.6	22.90	-1.31	
07-09-2024	D5GHzV2 (5600)	1209	Head	1g	8.81	88.1	83.10	6.02	6
				10g	2.56	25.6	23.60	8.47	
07-09-2024	D5GHzV2 (5750)	1209	Head	1g	7.88	78.8	78.90	-0.13	
				10g	2.29	22.9	22.20	3.15	
07-09-2024	D5GHzV2 (5800)	1209	Head	1g	7.75	77.5	81.20	-4.56	
				10g	2.24	22.4	22.90	-2.18	
07-16-2024	D750V3	1205	Head	1g	0.91	9.1	8.55	6.32	7
				10g	0.61	6.1	5.59	8.41	
07-16-2024	D835V2	4d174	Head	1g	0.90	9.0	9.63	-6.13	
				10g	0.61	6.1	6.29	-3.66	
07-17-2024	D5GHzV2 (5250)	1209	Head	1g	8.42	84.2	80.40	4.73	
				10g	2.45	24.5	22.90	6.99	
07-17-2024	D5GHzV2 (5600)	1209	Head	1g	8.42	84.2	83.10	1.32	
				10g	2.45	24.5	23.60	3.81	
07-17-2024	D5GHzV2 (5750)	1209	Head	1g	8.16	81.6	78.90	3.42	
				10g	2.36	23.6	22.20	6.31	
07-17-2024	D5GHzV2 (5800)	1209	Head	1g	8.28	82.8	81.20	1.97	
				10g	2.39	23.9	22.90	4.37	
07-22-2024	D750V3	1205	Head	1g	0.90	9.0	8.55	5.61	
				10g	0.61	6.1	5.59	8.94	
07-22-2024	D835V2	4d174	Head	1g	0.89	8.9	9.63	-7.68	8
				10g	0.60	6.0	6.29	-5.41	
07-26-2024	D750V3	1205	Head	1g	0.90	9.0	8.55	5.26	
				10g	0.60	6.0	5.59	6.98	
07-26-2024	D835V2	4d174	Head	1g	0.95	9.5	9.63	-1.77	
				10g	0.62	6.2	6.29	-1.11	
07-30-2024	D750V3	1205	Head	1g	0.90	9.0	8.55	5.26	
				10g	0.60	6.0	5.59	7.51	
07-30-2024	D835V2	4d174	Head	1g	0.97	9.7	9.63	0.21	
				10g	0.64	6.4	6.29	1.75	
08-05-2024	D835V2	4d174	Head	1g	0.99	9.9	9.63	2.80	
				10g	0.66	6.6	6.29	5.41	
08-12-2024	D835V2	4d174	Head	1g	0.96	9.6	9.63	-0.83	
				10g	0.64	6.4	6.29	0.95	
09-10-2024	D5GHzV2 (5750)	1209	Head	1g	7.74	77.4	78.90	-1.90	
				10g	2.28	22.8	22.20	2.70	
09-10-2024	D5GHzV2 (5800)	1209	Head	1g	7.88	78.8	81.20	-2.96	
				10g	2.31	23.1	22.90	0.87	

SAR 9 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
07-03-2024	D2450V2	960	Head	1g	4.74	47.4	51.80	-8.49	9
				10g	2.26	22.6	24.10	-6.22	
07-08-2024	D2450V2	960	Head	1g	4.78	47.8	51.80	-7.72	
				10g	2.29	22.9	24.10	-4.98	
07-16-2024	D2450V2	960	Head	1g	5.09	50.9	51.80	-1.74	
				10g	2.44	24.4	24.10	1.24	
07-16-2024	D2600V2	1178	Head	1g	5.38	53.8	57.40	-6.27	
				10g	2.50	25.0	25.70	-2.72	
07-22-2024	D2600V2	1178	Head	1g	5.29	52.9	57.40	-7.84	10
				10g	2.46	24.6	25.70	-4.28	
07-25-2024	D1750V2	1180	Head	1g	3.40	34.0	35.60	-4.49	
				10g	1.88	18.8	18.90	-0.53	
07-25-2024	D1900V2	5d199	Head	1g	3.99	39.9	39.70	0.50	
				10g	2.12	21.2	20.70	2.42	
07-26-2024	D2600V2	1178	Head	1g	5.35	53.5	57.40	-6.79	
				10g	2.49	24.9	25.70	-3.11	
07-30-2024	D2600V2	1178	Head	1g	5.44	54.4	57.40	-5.23	
				10g	2.54	25.4	25.70	-1.17	
08-05-2024	D2600V2	1178	Head	1g	5.66	56.6	57.40	-1.39	
				10g	2.64	26.4	25.70	2.72	

9. Conducted Output Power Measurements

9.1. GSM

Per KDB 941225 D01 3G SAR Procedures:

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.

GSM850 Measured Results

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)			
					Pmax, RSI = 0, 3, 4			
					Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GSM (Voice)	CS1	1	128	824.2	33.96	24.77	34.0	24.8
			190	836.6	33.94	24.75		
			251	848.8	33.87	24.68		
GPRS (GMSK)	CS1	1	128	824.2	33.45	24.26	34.0	24.8
			190	836.6	32.74	23.55		
			251	848.8	32.76	23.57		
		2	128	824.2	30.64	24.46	31.5	25.3
			190	836.6	30.64	24.46		
			251	848.8	30.63	24.45		
		3	128	824.2	28.97	24.55	30.0	25.6
			190	836.6	28.79	24.37		
			251	848.8	28.96	24.54		
		4	128	824.2	27.71	24.54	28.5	25.3
			190	836.6	27.61	24.44		
			251	848.8	27.56	24.39		
EGPRS (8PSK)	MCS5	1	128	824.2	27.42	18.23	27.5	18.3
			190	836.6	27.38	18.19		
			251	848.8	27.40	18.21		
		2	128	824.2	25.37	19.19	25.5	19.3
			190	836.6	25.44	19.26		
			251	848.8	25.41	19.23		
		3	128	824.2	23.20	18.78	23.5	19.1
			190	836.6	23.01	18.59		
			251	848.8	23.27	18.85		
		4	128	824.2	21.74	18.57	22.0	18.8
			190	836.6	21.62	18.45		
			251	848.8	21.81	18.64		

Notes:

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

- GMSK (GPRS) mode with 3 time slots for RSI Free, RCV, Hotspot, based on the Tune-up Procedure. Refer to §6.3.
- SAR is not required for EGPRS (8PSK) mode because the maximum output power and tune-up limit is ≤ 1/4dB higher than GMSK GPRS or the adjusted SAR of the highest reported SAR of GMSK GPRS is ≤ 1.2W/kg.

GSM1900 Measured Results

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)			
					Pmax, RSI = 0, 3, 4			
					Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GSM (Voice)	CS1	1	512	1850.2	29.20	20.01	31.5	22.3
			661	1880.0	29.34	20.15		
			810	1909.8	29.21	20.02		
GPRS (GMSK)	CS1	1	512	1850.2	29.18	19.99	31.5	22.3
			661	1880.0	29.25	20.06		
			810	1909.8	29.09	19.90		
		2	512	1850.2	26.59	20.41	28.0	21.8
			661	1880.0	26.96	20.78		
			810	1909.8	26.88	20.70		
		3	512	1850.2	25.09	20.67	26.5	22.1
			661	1880.0	25.54	21.12		
			810	1909.8	25.49	21.07		
		4	512	1850.2	23.97	20.80	25.5	22.3
			661	1880.0	24.43	21.26		
			810	1909.8	24.39	21.22		
EGPRS (8PSK)	MCS5	1	512	1850.2	25.10	15.91	26.5	17.3
			661	1880.0	25.29	16.10		
			810	1909.8	25.75	16.56		
		2	512	1850.2	22.71	16.53	24.0	17.8
			661	1880.0	22.99	16.81		
			810	1909.8	23.19	17.01		
		3	512	1850.2	21.87	17.45	22.5	18.1
			661	1880.0	22.01	17.59		
			810	1909.8	22.26	17.84		
		4	512	1850.2	20.55	17.38	21.0	17.8
			661	1880.0	20.82	17.65		
			810	1909.8	20.67	17.50		

Notes:

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

- GMSK (GPRS) mode with 4 time slots for RSI Free, Hotspot, GMSK (GPRS) mode with 1 time slot for RSI RCV based on the Tune-up Procedure. Refer to §6.3.
- SAR is not required for EGPRS (8PSK) mode because the maximum output power and tune-up limit is ≤ 1/4dB higher than GMSK GPRS or the adjusted SAR of the highest reported SAR of GMSK GPRS is ≤ 1.2W/kg.

9.2. W-CDMA

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 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

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

HSDPA Setup Procedures used to establish the test signals

The following 4 Sub-tests were completed according to Release 5 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
W-CDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set 1			
	Power Control Algorithm	Algorithm 2			
	βc	2/15	11/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	βc/βd	2/15	11/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR (dB)	0	0	0.5	0.5
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	Ahs=βhs/βc	30/15			

HSPA (HSDPA & 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 v13.
A summary of these settings are illustrated below:

	Mode	HSPA				
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2 kbps RMC				
	HSDPA FRC	H-Set 1				
	HSUPA Test	HSPA				
	Power Control Algorithm	Algorithm 2				Algorithm 1
	βc	11/15	6/15	15/15	2/15	15/15
	βd	15/15	15/15	9/15	15/15	0
	βec	209/225	12/15	30/15	2/15	5/15
	βc/βd	11/15	6/15	15/9	2/15	-
	βhs	22/15	12/15	30/15	4/15	5/15
	βed	1309/225	94/75	47/15	56/75	47/15
	CM (dB)	1	3	2	3	1
	MPR (dB)	0	2	1	2	0
HSDPA Specific Settings	DACK	8				0
	DNAK	8				0
	DCQI	8				0
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	Ahs = βhs/βc	30/15				
HSUPA Specific Settings	E-DPDCH	6	8	8	5	0
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	12
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	67
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E-TFCIs	5	5	2	5	1
	Reference E-TFCI	11	11	11	11	67
	Reference E-TFCI PO	4	4	4	4	18
	Reference E-TFCI	67	67	92	67	67
	Reference E-TFCI PO	18	18	18	18	18
	Reference E-TFCI	71	71	71	71	71
	Reference E-TFCI PO	23	23	23	23	23
	Reference E-TFCI	75	75	75	75	75
	Reference E-TFCI PO	26	26	26	26	26
	Reference E-TFCI	81	81	81	81	81
	Reference E-TFCI PO	27	27	27	27	27
	Maximum Channelization Codes	2xSF2				SF4

DC-HSDPA Setup Procedures used to establish the test signals

The following tests were completed according to procedures in section 7.3.13 of 3GPP TS34.108 v9.5.0. A summary of these settings are illustrated below:

Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0

Table E.5.0: Levels for HSDPA connection setup

Parameter During Connection setup	Unit	Value
P-CPICH_Ec/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH _Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13

The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.

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.		

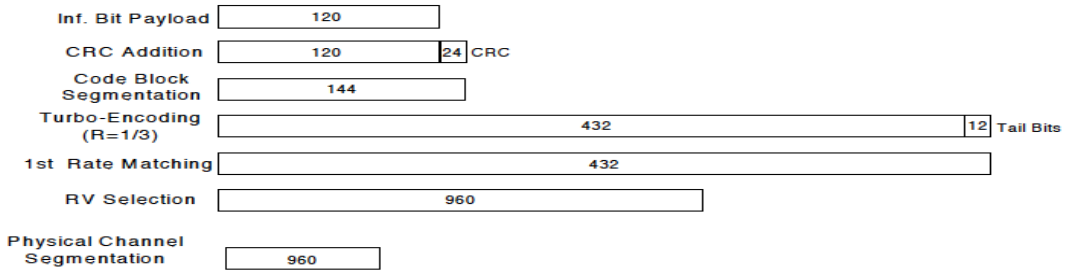


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

The following 4 Sub-tests for HSDPA were completed according to Release 8 procedures in section 5.2 of 3GPP TS34.121. A summary of subtest settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set 12			
	Power Control Algorithm	Algorithm2			
	βc	2/15	11/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	βd (SF)	64			
	βc/βd	2/15	11/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR (dB)	0	0	0.5	0.5
HSDPA Specific Settings	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack Repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	Ahs = βhs/ βc	30/15			

HSPA+

HSPA+ is only supported to down link. Therefore, the RF conducted power is not measured.

W-CDMA Band V Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)		
				Pmax, RSI = 0, 3, 4		
				Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	4132	826.4	23.48	N/A	25.0
		4183	836.6	23.74		
		4233	846.6	23.63		
HSDPA	Subtest 1	4132	826.4	22.83	0	24.0
		4183	836.6	23.03		
		4233	846.6	23.08		
	Subtest 2	4132	826.4	22.35	0	24.0
		4183	836.6	22.59		
		4233	846.6	22.65		
	Subtest 3	4132	826.4	21.87	0.5	23.5
		4183	836.6	22.08		
		4233	846.6	22.20		
	Subtest 4	4132	826.4	21.42	0.5	23.5
		4183	836.6	21.64		
		4233	846.6	21.67		
HSUPA	Subtest 1	4132	826.4	22.03	0	24.0
		4183	836.6	22.87		
		4233	846.6	22.29		
	Subtest 2	4132	826.4	20.02	2	22.0
		4183	836.6	20.20		
		4233	846.6	20.25		
	Subtest 3	4132	826.4	21.07	1	23.0
		4183	836.6	21.22		
		4233	846.6	21.36		
	Subtest 4	4132	826.4	20.04	2	22.0
		4183	836.6	20.27		
		4233	846.6	20.25		
	Subtest 5	4132	826.4	23.31	0	24.0
		4183	836.6	23.45		
		4233	846.6	23.46		
DC-HSDPA	Subtest 1	4132	826.4	22.94	0	24.0
		4183	836.6	23.13		
		4233	846.6	23.15		
	Subtest 2	4132	826.4	22.43	0	24.0
		4183	836.6	22.67		
		4233	846.6	22.74		
	Subtest 3	4132	826.4	21.95	0.5	23.5
		4183	836.6	21.15		
		4233	846.6	22.27		
	Subtest 4	4132	826.4	21.51	0.5	23.5
		4183	836.6	21.70		
		4233	846.6	21.75		

W-CDMA Band IV Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)			Maximum Allowed Average Power (dBm)		
				Pmax, RSI = 4			RSI = 0, 3		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	1312	1712.4	22.39	N/A	24.0	19.95	N/A	22.0
		1413	1732.6	22.39			19.95		
		1513	1752.6	23.36			20.87		
HSDPA	Subtest 1	1312	1712.4	22.40	0	23.5	19.04	0	21.0
		1413	1732.6	22.42			19.08		
		1513	1752.6	23.38			19.97		
	Subtest 2	1312	1712.4	21.95	0	23.5	19.51	0	21.0
		1413	1732.6	22.00			19.53		
		1513	1752.6	22.89			20.48		
	Subtest 3	1312	1712.4	21.47	0.5	23.0	20.02	0.0	21.0
		1413	1732.6	21.49			20.03		
		1513	1752.6	22.37			20.92		
	Subtest 4	1312	1712.4	21.49	0.5	23.0	20.03	0.0	21.0
		1413	1732.6	22.47			20.06		
		1513	1752.6	22.40			20.96		
HSUPA	Subtest 1	1312	1712.4	21.52	0	23.5	18.03	0	20.5
		1413	1732.6	21.52			18.02		
		1513	1752.6	21.96			18.52		
	Subtest 2	1312	1712.4	19.05	2	21.5	17.52	2	18.5
		1413	1732.6	19.04			17.51		
		1513	1752.6	19.94			18.47		
	Subtest 3	1312	1712.4	21.54	1	22.5	19.08	0.5	20.0
		1413	1732.6	21.52			19.03		
		1513	1752.6	22.44			19.94		
	Subtest 4	1312	1712.4	19.33	2	21.5	17.82	2	18.5
		1413	1732.6	19.36			17.80		
		1513	1752.6	19.54			18.05		
	Subtest 5	1312	1712.4	22.51	0	23.5	19.18	0	20.5
		1413	1732.6	22.66			19.28		
		1513	1752.6	23.47			20.14		
DC-HSDPA	Subtest 1	1312	1712.4	22.60	0	23.5	19.15	0	21.0
		1413	1732.6	22.52			19.13		
		1513	1752.6	23.28			19.76		
	Subtest 2	1312	1712.4	21.97	0	23.5	19.49	0	21.0
		1413	1732.6	22.09			19.57		
		1513	1752.6	22.78			20.32		
	Subtest 3	1312	1712.4	20.92	0.5	23.0	19.49	0.0	21.0
		1413	1732.6	21.06			19.58		
		1513	1752.6	21.83			20.34		
	Subtest 4	1312	1712.4	21.58	0.5	23.0	20.11	0.0	21.0
		1413	1732.6	21.61			20.12		
		1513	1752.6	22.03			20.81		

W-CDMA Band II Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)			Maximum Allowed Average Power (dBm)		
				Pmax, RSI = 4			RSI = 0, 3		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	9262	1852.4	22.31	N/A	24.0	20.06	N/A	22.0
		9400	1880.0	22.53			20.39		
		9538	1907.6	22.78			20.55		
HSDPA	Subtest 1	9262	1852.4	22.32	0	23.0	19.08	0	21.5
		9400	1880.0	22.57			19.40		
		9538	1907.6	22.78			19.55		
	Subtest 2	9262	1852.4	22.02	0	23.0	19.61	0	21.5
		9400	1880.0	22.34			19.89		
		9538	1907.6	22.52			20.04		
	Subtest 3	9262	1852.4	21.58	0.5	22.5	20.18	0.5	21.0
		9400	1880.0	21.83			20.41		
		9538	1907.6	22.01			20.62		
	Subtest 4	9262	1852.4	21.12	0.5	22.5	19.60	0.5	21.0
		9400	1880.0	21.40			19.89		
		9538	1907.6	21.55			20.03		
HSUPA	Subtest 1	9262	1852.4	21.52	0	23.0	18.26	0	20.5
		9400	1880.0	21.65			18.52		
		9538	1907.6	21.89			18.61		
	Subtest 2	9262	1852.4	19.11	2	21.0	17.75	1	19.5
		9400	1880.0	19.49			18.03		
		9538	1907.6	19.63			18.15		
	Subtest 3	9262	1852.4	21.46	1	22.0	19.15	0.5	20.0
		9400	1880.0	21.67			19.45		
		9538	1907.6	21.88			19.66		
	Subtest 4	9262	1852.4	19.64	2	21.0	18.16	1.0	19.5
		9400	1880.0	19.91			18.41		
		9538	1907.6	20.07			18.61		
	Subtest 5	9262	1852.4	22.54	0	23.0	19.21	0	20.5
		9400	1880.0	22.71			19.52		
		9538	1907.6	22.94			19.67		
DC-HSDPA	Subtest 1	9262	1852.4	22.33	0	23.0	19.08	0	20.5
		9400	1880.0	22.64			19.49		
		9538	1907.6	22.54			19.24		
	Subtest 2	9262	1852.4	22.05	0	23.0	19.63	0	20.5
		9400	1880.0	22.49			19.99		
		9538	1907.6	22.23			19.76		
	Subtest 3	9262	1852.4	21.15	0.5	22.5	19.63	0.0	20.5
		9400	1880.0	21.54			20.00		
		9538	1907.6	21.29			19.78		
	Subtest 4	9262	1852.4	21.15	0.5	22.5	19.63	0.0	20.5
		9400	1880.0	21.54			20.01		
		9538	1907.6	21.30			19.78		

9.3. 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
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 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 ≤ 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 5 (824 – 849 MHz) is covered by LTE Band 26 (814 – 849MHz) in case of RSI=Free, Hotspot.
- LTE Band 4 (1710 – 1755 MHz) is covered by LTE Band 66 (1710 – 1780 MHz) in case of RSI=Free, Hotspot.

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.

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

SAR measurement is not required for Higher order modulations. When the highest maximum output power for Higher order modulations are ≤ 0.5 dB higher than the QPSK or when the reported SAR for QPSK configuration is ≤ 1.45 W/kg.

LTE Band 12 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				Pmax, RSI = 0, 3, 4				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				23060	23095	23130		
				704 MHz	707.5 MHz	711 MHz		
10 MHz	QPSK	1	0	23.10	23.31	23.44	0.0	24.0
		1	25	22.91	23.23	23.42	0.0	24.0
		1	49	22.95	23.28	**23.45**	0.0	24.0
		25	0	22.02	22.32	22.52	1.0	23.0
		25	12	22.03	22.34	**22.60**	1.0	23.0
		25	25	22.14	22.35	22.40	1.0	23.0
		50	0	22.04	22.36	22.58	1.0	23.0
	16QAM	1	0	22.60	22.33	22.62	1.0	23.0
		1	25	22.19	22.51	22.69	1.0	23.0
		1	49	22.58	22.69	22.31	1.0	23.0
		25	0	21.16	21.40	21.57	2.0	22.0
		25	12	21.08	21.30	21.61	2.0	22.0
		25	25	21.13	21.30	21.52	2.0	22.0
		50	0	21.12	21.24	21.55	2.0	22.0
	64QAM	1	0	21.56	21.46	21.51	2.0	22.0
		1	25	21.39	20.87	21.65	2.0	22.0
		1	49	21.21	21.39	21.80	2.0	22.0
		25	0	20.28	20.37	20.54	3.0	21.0
		25	12	20.19	20.41	20.54	3.0	21.0
		25	25	20.15	20.22	20.48	3.0	21.0
		50	0	20.21	20.34	20.57	3.0	21.0
	256QAM	1	0	18.13	18.49	18.33	5.0	19.0
		1	25	18.04	18.68	18.25	5.0	19.0
		1	49	18.02	17.72	18.64	5.0	19.0
		25	0	18.04	18.32	18.54	5.0	19.0
		25	12	17.99	18.31	18.58	5.0	19.0
		25	25	18.11	18.27	18.55	5.0	19.0
		50	0	18.06	18.26	18.58	5.0	19.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23035	23095	23155		
				701.5 MHz	707.5 MHz	713.5 MHz		
5 MHz	QPSK	1	0	23.07	23.33	23.53	0.0	24.0
		1	12	23.10	23.34	23.73	0.0	24.0
		1	24	22.97	23.22	23.50	0.0	24.0
		12	0	22.04	22.36	22.70	1.0	23.0
		12	7	22.05	22.30	22.62	1.0	23.0
		12	13	22.06	22.32	22.60	1.0	23.0
		25	0	22.14	22.34	22.68	1.0	23.0
	16QAM	1	0	22.28	22.39	22.29	1.0	23.0
		1	12	22.64	22.61	22.78	1.0	23.0
		1	24	21.83	22.71	22.86	1.0	23.0
		12	0	21.02	21.25	21.68	2.0	22.0
		12	7	21.17	21.44	21.73	2.0	22.0
		12	13	21.12	21.33	21.69	2.0	22.0
		25	0	21.08	21.42	21.73	2.0	22.0
	64QAM	1	0	21.25	21.47	21.56	2.0	22.0
		1	12	21.01	21.23	21.57	2.0	22.0
		1	24	21.24	21.08	21.90	2.0	22.0
		12	0	20.23	20.47	20.62	3.0	21.0
		12	7	20.08	20.30	20.62	3.0	21.0
		12	13	20.21	20.30	20.65	3.0	21.0
		25	0	20.07	20.43	20.45	3.0	21.0
	256QAM	1	0	18.16	18.57	18.99	5.0	19.0
		1	12	17.99	18.83	18.90	5.0	19.0
		1	24	18.08	18.59	18.53	5.0	19.0
		12	0	18.14	18.36	18.69	5.0	19.0
		12	7	18.04	18.34	18.61	5.0	19.0
		12	13	18.03	18.37	18.69	5.0	19.0
		25	0	18.07	18.44	18.61	5.0	19.0

LTE Band 12 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23025	23095	23165		
				700.5 MHz	707.5 MHz	714.5 MHz		
3 MHz	QPSK	1	0	23.04	23.35	23.60	0.0	24.0
		1	8	23.09	23.21	23.55	0.0	24.0
		1	14	22.98	23.27	23.55	0.0	24.0
		8	0	21.99	22.25	22.51	1.0	23.0
		8	4	22.09	22.36	22.61	1.0	23.0
		8	7	22.07	22.30	22.64	1.0	23.0
		15	0	22.07	22.35	22.55	1.0	23.0
	16QAM	1	0	22.25	22.56	22.49	1.0	23.0
		1	8	22.26	22.32	22.44	1.0	23.0
		1	14	22.01	22.57	22.80	1.0	23.0
		8	0	21.11	21.43	21.69	2.0	22.0
		8	4	21.27	21.31	21.68	2.0	22.0
		8	7	21.14	21.35	21.67	2.0	22.0
		15	0	21.14	21.38	21.49	2.0	22.0
	64QAM	1	0	21.53	21.36	21.54	2.0	22.0
		1	8	20.66	21.78	21.70	2.0	22.0
		1	14	21.60	21.55	21.80	2.0	22.0
		8	0	20.36	20.24	20.65	3.0	21.0
		8	4	20.00	20.29	20.56	3.0	21.0
		8	7	20.27	20.31	20.74	3.0	21.0
		15	0	20.13	20.28	20.67	3.0	21.0
	256QAM	1	0	18.34	18.03	18.94	5.0	19.0
		1	8	17.87	18.10	18.59	5.0	19.0
		1	14	18.05	18.59	18.44	5.0	19.0
		8	0	17.89	18.22	18.52	5.0	19.0
		8	4	17.97	18.41	18.57	5.0	19.0
		8	7	18.09	18.44	18.41	5.0	19.0
		15	0	18.10	18.28	18.81	5.0	19.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23017	23095	23173		
				699.7 MHz	707.5 MHz	715.3 MHz		
1.4 MHz	QPSK	1	0	23.06	23.26	23.57	0.0	24.0
		1	3	22.93	23.20	23.46	0.0	24.0
		1	5	23.01	23.20	23.57	0.0	24.0
		3	0	23.10	23.31	23.54	0.0	24.0
		3	1	23.06	23.21	23.45	0.0	24.0
		3	3	23.04	23.26	23.52	0.0	24.0
		6	0	22.08	22.23	22.46	1.0	23.0
	16QAM	1	0	22.19	22.16	22.79	1.0	23.0
		1	3	22.74	22.67	22.73	1.0	23.0
		1	5	22.51	22.56	22.54	1.0	23.0
		3	0	22.22	22.54	22.53	1.0	23.0
		3	1	22.30	22.39	22.62	1.0	23.0
		3	3	22.32	22.41	22.57	1.0	23.0
		6	0	21.04	21.35	21.55	2.0	22.0
	64QAM	1	0	21.15	21.17	21.56	2.0	22.0
		1	3	21.45	21.32	21.62	2.0	22.0
		1	5	21.09	21.83	21.75	2.0	22.0
		3	0	20.94	21.41	21.68	2.0	22.0
		3	1	21.13	21.26	21.55	2.0	22.0
		3	3	21.37	21.52	21.18	2.0	22.0
		6	0	20.25	20.44	20.62	3.0	21.0
	256QAM	1	0	18.12	18.17	18.57	5.0	19.0
		1	3	18.18	18.53	18.63	5.0	19.0
		1	5	17.89	18.35	18.30	5.0	19.0
		3	0	18.37	18.41	18.67	5.0	19.0
		3	1	18.04	18.11	18.57	5.0	19.0
		3	3	18.32	18.47	18.47	5.0	19.0
		6	0	18.19	18.28	18.51	5.0	19.0

LTE Band 13 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				Pmax, RSI = 0, 3, 4				
				Measured Pwr (dBm)			MPR	Tune-up Limit
					23230			
					782 MHz			
10 MHz	QPSK	1	0		21.82		0.0	23.0
		1	25		**21.86**		0.0	23.0
		1	49		21.74		0.0	23.0
		25	0		**20.85**		1.0	22.0
		25	12		20.84		1.0	22.0
		25	25		20.66		1.0	22.0
		50	0		20.75		1.0	22.0
	16QAM	1	0		21.27		1.0	22.0
		1	25		21.02		1.0	22.0
		1	49		20.72		1.0	22.0
		25	0		19.92		2.0	21.0
		25	12		19.83		2.0	21.0
		25	25		19.76		2.0	21.0
		50	0		19.86		2.0	21.0
	64QAM	1	0		19.84		2.0	21.0
		1	25		20.16		2.0	21.0
		1	49		20.07		2.0	21.0
		25	0		18.89		3.0	20.0
		25	12		18.92		3.0	20.0
		25	25		18.70		3.0	20.0
		50	0		18.81		3.0	20.0
	256QAM	1	0		16.98		5.0	18.0
		1	25		16.91		5.0	18.0
		1	49		16.64		5.0	18.0
		25	0		17.08		5.0	18.0
		25	12		17.04		5.0	18.0
		25	25		16.94		5.0	18.0
		50	0		17.00		5.0	18.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23205	23230	23255		
				779.5 MHz	782 MHz	784.5 MHz		
5 MHz	QPSK	1	0	22.10	21.88	21.66	0.0	23.0
		1	12	22.05	22.02	21.50	0.0	23.0
		1	24	21.87	21.84	21.79	0.0	23.0
		12	0	20.99	20.91	20.64	1.0	22.0
		12	7	20.93	20.94	20.64	1.0	22.0
		12	13	20.87	20.90	20.96	1.0	22.0
		25	0	20.89	20.90	20.56	1.0	22.0
	16QAM	1	0	20.95	21.23	20.58	1.0	22.0
		1	12	20.63	21.55	20.85	1.0	22.0
		1	24	20.93	20.62	20.89	1.0	22.0
		12	0	20.10	20.08	19.75	2.0	21.0
		12	7	19.99	20.06	19.53	2.0	21.0
		12	13	19.97	20.05	19.54	2.0	21.0
		25	0	19.93	19.98	19.59	2.0	21.0
	64QAM	1	0	20.03	20.04	19.69	2.0	21.0
		1	12	20.22	20.17	19.61	2.0	21.0
		1	24	20.00	20.13	20.27	2.0	21.0
		12	0	18.97	19.05	18.64	3.0	20.0
		12	7	18.88	18.99	18.61	3.0	20.0
		12	13	18.89	19.01	19.12	3.0	20.0
		25	0	18.88	18.90	18.55	3.0	20.0
	256QAM	1	0	17.51	17.02	17.07	5.0	18.0
		1	12	17.28	16.86	16.53	5.0	18.0
		1	24	17.54	17.01	16.67	5.0	18.0
		12	0	17.03	17.13	16.85	5.0	18.0
		12	7	17.00	17.16	16.77	5.0	18.0
		12	13	17.06	17.30	16.54	5.0	18.0
		25	0	17.09	17.15	16.76	5.0	18.0

LTE Band 26 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				Pmax, RSI = 0, 3, 4				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				26765	26865	26965		
				821.5 MHz	831.5 MHz	841.5 MHz		
15 MHz	QPSK	1	0	23.01	23.25	**23.28**	0.0	24.0
		1	37	22.90	23.24	23.24	0.0	24.0
		1	74	22.91	23.03	23.06	0.0	24.0
		36	0	22.06	22.26	**22.46**	1.0	23.0
		36	20	21.94	22.18	22.29	1.0	23.0
		36	39	21.85	22.19	22.20	1.0	23.0
		75	0	21.96	22.18	22.31	1.0	23.0
	16QAM	1	0	22.54	22.17	22.59	1.0	23.0
		1	37	22.01	22.62	22.90	1.0	23.0
		1	74	22.16	22.48	22.51	1.0	23.0
		36	0	21.06	21.18	21.38	2.0	22.0
		36	20	20.98	21.10	21.27	2.0	22.0
		36	39	20.99	21.19	21.20	2.0	22.0
		75	0	20.93	21.14	21.29	2.0	22.0
	64QAM	1	0	21.27	21.68	21.35	2.0	22.0
		1	37	21.43	21.56	21.84	2.0	22.0
		1	74	21.70	20.85	21.05	2.0	22.0
		36	0	20.13	20.35	20.33	3.0	21.0
		36	20	20.88	20.15	20.31	3.0	21.0
		36	39	20.84	20.19	20.27	3.0	21.0
		75	0	20.10	20.18	20.40	3.0	21.0
	256QAM	1	0	18.34	18.33	18.74	5.0	19.0
		1	37	17.88	18.51	18.53	5.0	19.0
		1	74	17.83	17.99	18.12	5.0	19.0
		36	0	18.12	18.20	18.37	5.0	19.0
		36	20	17.94	18.21	18.31	5.0	19.0
		36	39	17.89	18.06	18.33	5.0	19.0
		75	0	17.99	18.22	18.32	5.0	19.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26740	26865	26990		
				819 MHz	831.5 MHz	844 MHz		
10 MHz	QPSK	1	0	22.90	23.17	23.29	0.0	24.0
		1	25	22.73	23.06	23.18	0.0	24.0
		1	49	22.78	23.06	23.12	0.0	24.0
		25	0	22.00	22.16	22.33	1.0	23.0
		25	12	21.98	22.20	22.35	1.0	23.0
		25	25	21.89	22.21	22.31	1.0	23.0
		50	0	22.02	22.23	22.43	1.0	23.0
	16QAM	1	0	22.40	22.15	22.33	1.0	23.0
		1	25	22.01	22.06	22.40	1.0	23.0
		1	49	22.26	22.59	22.13	1.0	23.0
		25	0	21.00	21.23	21.29	2.0	22.0
		25	12	20.94	21.03	21.34	2.0	22.0
		25	25	21.02	21.15	21.30	2.0	22.0
		50	0	20.99	21.22	21.36	2.0	22.0
	64QAM	1	0	20.80	21.16	21.63	2.0	22.0
		1	25	21.06	21.09	21.28	2.0	22.0
		1	49	21.15	21.42	21.51	2.0	22.0
		25	0	20.03	20.19	20.31	3.0	21.0
		25	12	20.03	20.18	20.37	3.0	21.0
		25	25	19.98	20.19	20.27	3.0	21.0
		50	0	19.97	20.15	20.33	3.0	21.0
	256QAM	1	0	18.30	18.95	18.44	5.0	19.0
		1	25	18.06	18.43	18.69	5.0	19.0
		1	49	17.86	18.01	18.29	5.0	19.0
		25	0	18.08	18.24	18.28	5.0	19.0
		25	12	18.00	18.19	18.26	5.0	19.0
		25	25	17.99	18.03	18.29	5.0	19.0
		50	0	17.93	18.22	18.33	5.0	19.0

LTE Band 26 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26715	26865	27015		
				816.5 MHz	831.5 MHz	846.5 MHz		
5 MHz	QPSK	1	0	22.95	23.11	23.16	0.0	24.0
		1	12	22.98	23.29	23.29	0.0	24.0
		1	24	22.86	22.99	23.12	0.0	24.0
		12	0	21.88	22.10	22.23	1.0	23.0
		12	7	21.87	22.19	22.23	1.0	23.0
		12	13	21.91	22.15	22.16	1.0	23.0
		25	0	21.96	22.20	22.26	1.0	23.0
	16QAM	1	0	21.69	22.55	21.94	1.0	23.0
		1	12	21.89	22.11	22.66	1.0	23.0
		1	24	21.97	22.09	22.13	1.0	23.0
		12	0	20.86	21.18	21.22	2.0	22.0
		12	7	20.98	21.06	21.19	2.0	22.0
		12	13	20.92	21.08	21.24	2.0	22.0
		25	0	20.86	21.09	21.29	2.0	22.0
	64QAM	1	0	20.76	21.41	21.34	2.0	22.0
		1	12	21.29	21.55	21.42	2.0	22.0
		1	24	20.74	21.13	21.29	2.0	22.0
		12	0	19.91	20.17	20.37	3.0	21.0
		12	7	19.96	20.27	20.27	3.0	21.0
		12	13	19.95	20.18	20.19	3.0	21.0
		25	0	20.02	20.01	20.30	3.0	21.0
	256QAM	1	0	17.89	18.48	18.55	5.0	19.0
		1	12	17.98	18.08	18.48	5.0	19.0
		1	24	17.84	18.59	17.97	5.0	19.0
		12	0	17.91	18.11	18.34	5.0	19.0
		12	7	17.80	18.22	18.32	5.0	19.0
		12	13	17.86	18.14	18.25	5.0	19.0
		25	0	17.95	18.23	18.21	5.0	19.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26705	26865	27025		
				815.5 MHz	831.5 MHz	847.5 MHz		
3 MHz	QPSK	1	0	22.72	22.94	23.16	0.0	24.0
		1	8	22.83	23.05	23.10	0.0	24.0
		1	14	22.84	22.89	23.06	0.0	24.0
		8	0	21.77	22.05	22.14	1.0	23.0
		8	4	21.84	22.06	22.10	1.0	23.0
		8	7	21.83	22.08	22.13	1.0	23.0
		15	0	21.85	22.05	22.17	1.0	23.0
	16QAM	1	0	21.87	22.36	22.57	1.0	23.0
		1	8	22.08	22.02	21.88	1.0	23.0
		1	14	21.87	22.38	22.00	1.0	23.0
		8	0	20.83	21.02	21.16	2.0	22.0
		8	4	20.92	21.12	21.13	2.0	22.0
		8	7	20.92	21.03	21.21	2.0	22.0
		15	0	20.78	21.05	21.20	2.0	22.0
	64QAM	1	0	20.76	21.62	20.97	2.0	22.0
		1	8	20.49	21.39	21.46	2.0	22.0
		1	14	20.96	21.18	21.05	2.0	22.0
		8	0	19.96	20.08	20.12	3.0	21.0
		8	4	19.77	20.30	20.12	3.0	21.0
		8	7	20.03	20.06	20.20	3.0	21.0
		15	0	19.74	20.11	20.34	3.0	21.0
	256QAM	1	0	17.91	18.21	18.17	5.0	19.0
		1	8	18.10	18.26	18.02	5.0	19.0
		1	14	18.06	18.40	18.07	5.0	19.0
		8	0	17.81	18.14	18.22	5.0	19.0
		8	4	17.91	17.99	18.08	5.0	19.0
		8	7	17.68	18.02	18.13	5.0	19.0
		15	0	17.95	18.06	18.25	5.0	19.0

LTE Band 26 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26697	26865	27033		
				814.7 MHz	831.5 MHz	848.3 MHz		
1.4 MHz	QPSK	1	0	22.85	23.07	23.15	0.0	24.0
		1	3	22.69	22.93	23.01	0.0	24.0
		1	5	22.88	23.07	23.17	0.0	24.0
		3	0	22.80	23.11	23.17	0.0	24.0
		3	1	22.71	22.86	23.06	0.0	24.0
		3	3	22.79	23.01	23.15	0.0	24.0
		6	0	21.82	22.03	22.15	1.0	23.0
	16QAM	1	0	21.70	22.39	22.19	1.0	23.0
		1	3	21.97	22.21	22.13	1.0	23.0
		1	5	21.94	22.39	22.06	1.0	23.0
		3	0	21.79	22.01	22.23	1.0	23.0
		3	1	21.90	21.90	22.20	1.0	23.0
		3	3	21.96	21.99	22.25	1.0	23.0
		6	0	20.96	21.06	21.15	2.0	22.0
	64QAM	1	0	20.92	21.24	21.12	2.0	22.0
		1	3	20.80	20.85	21.36	2.0	22.0
		1	5	20.98	21.39	21.16	2.0	22.0
		3	0	20.89	21.07	20.89	2.0	22.0
		3	1	21.02	21.14	21.04	2.0	22.0
		3	3	20.64	21.14	21.25	2.0	22.0
		6	0	19.90	20.09	20.08	3.0	21.0
	256QAM	1	0	18.02	18.26	18.07	5.0	19.0
		1	3	18.10	18.41	17.93	5.0	19.0
		1	5	18.00	18.59	18.09	5.0	19.0
		3	0	17.88	18.19	18.37	5.0	19.0
		3	1	17.98	17.98	18.32	5.0	19.0
		3	3	17.94	18.36	17.94	5.0	19.0
		6	0	17.83	18.21	18.24	5.0	19.0

LTE Band 5 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				Pmax,RSI= 4				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				20450	20525	20600		
				829 MHz	836.5 MHz	844 MHz		
10 MHz	QPSK	1	0	24.36	24.47	**24.58**	0.0	25.5
		1	25	24.25	24.43	24.39	0.0	25.5
		1	49	24.21	24.34	24.47	0.0	25.5
		25	0	23.52	23.67	**23.75**	1.0	24.5
		25	12	23.43	23.58	23.67	1.0	24.5
		25	25	23.49	23.55	23.55	1.0	24.5
		50	0	23.43	23.73	23.72	1.0	24.5
	16QAM	1	0	23.54	23.53	23.81	1.0	24.5
		1	25	23.54	23.24	23.72	1.0	24.5
		1	49	23.28	23.80	23.33	1.0	24.5
		25	0	22.50	22.54	22.60	2.0	23.5
		25	12	22.33	22.51	22.60	2.0	23.5
		25	25	22.36	22.57	22.45	2.0	23.5
		50	0	22.47	22.53	22.64	2.0	23.5
	64QAM	1	0	23.39	22.98	23.07	2.0	23.5
		1	25	23.08	22.24	22.47	2.0	23.5
		1	49	23.25	22.43	22.17	2.0	23.5
		25	0	22.46	21.62	21.54	3.0	22.5
		25	12	22.42	21.62	21.51	3.0	22.5
		25	25	22.43	21.50	21.52	3.0	22.5
		50	0	22.43	21.57	21.67	3.0	22.5
	256QAM	1	0	19.57	19.64	19.93	5.0	20.5
		1	25	19.56	19.16	19.62	5.0	20.5
		1	49	19.48	19.60	19.50	5.0	20.5
		25	0	19.48	19.62	19.67	5.0	20.5
		25	12	19.39	19.62	19.57	5.0	20.5
		25	25	19.50	19.52	19.56	5.0	20.5
		50	0	19.53	19.52	19.61	5.0	20.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20425	20525	20625		
				826.5 MHz	836.5 MHz	846.5 MHz		
5 MHz	QPSK	1	0	24.38	24.52	24.50	0.0	25.5
		1	12	24.29	24.61	24.53	0.0	25.5
		1	24	24.16	24.40	24.35	0.0	25.5
		12	0	23.31	23.53	23.48	1.0	24.5
		12	7	23.18	23.55	23.51	1.0	24.5
		12	13	23.27	23.57	23.44	1.0	24.5
		25	0	23.36	23.61	23.52	1.0	24.5
	16QAM	1	0	23.08	23.80	23.80	1.0	24.5
		1	12	23.52	23.35	23.42	1.0	24.5
		1	24	23.44	23.89	23.41	1.0	24.5
		12	0	22.32	22.45	22.38	2.0	23.5
		12	7	22.34	22.62	22.44	2.0	23.5
		12	13	22.34	22.52	22.42	2.0	23.5
		25	0	22.27	22.47	22.50	2.0	23.5
	64QAM	1	0	22.66	22.61	22.71	2.0	23.5
		1	12	22.66	22.60	22.16	2.0	23.5
		1	24	22.63	22.52	22.77	2.0	23.5
		12	0	21.25	21.56	21.56	3.0	22.5
		12	7	21.41	21.60	21.37	3.0	22.5
		12	13	21.36	21.61	21.43	3.0	22.5
		25	0	21.20	21.58	21.54	3.0	22.5
	256QAM	1	0	19.30	19.93	19.23	5.0	20.5
		1	12	19.44	20.09	19.78	5.0	20.5
		1	24	18.98	19.57	19.90	5.0	20.5
		12	0	19.40	19.62	19.66	5.0	20.5
		12	7	19.33	19.57	19.54	5.0	20.5
		12	13	19.27	19.61	19.53	5.0	20.5
		25	0	19.36	19.59	19.57	5.0	20.5

LTE Band 5 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20415	20525	20635		
				825.5 MHz	836.5 MHz	847.5 MHz		
3 MHz	QPSK	1	0	24.20	24.52	24.36	0.0	25.5
		1	8	24.17	24.45	24.34	0.0	25.5
		1	14	24.25	24.48	24.28	0.0	25.5
		8	0	23.27	23.61	23.57	1.0	24.5
		8	4	23.25	23.55	23.20	1.0	24.5
		8	7	23.26	23.43	23.38	1.0	24.5
		15	0	23.26	23.44	23.40	1.0	24.5
	16QAM	1	0	23.15	23.85	23.80	1.0	24.5
		1	8	23.55	23.58	23.46	1.0	24.5
		1	14	23.43	23.49	23.00	1.0	24.5
		8	0	22.34	22.40	22.52	2.0	23.5
		8	4	22.23	22.54	22.32	2.0	23.5
		8	7	22.29	22.51	22.33	2.0	23.5
		15	0	22.30	22.53	22.45	2.0	23.5
	64QAM	1	0	22.13	22.61	22.43	2.0	23.5
		1	8	21.84	22.64	22.84	2.0	23.5
		1	14	22.25	22.79	22.67	2.0	23.5
		8	0	21.35	21.48	21.44	3.0	22.5
		8	4	21.28	21.44	21.50	3.0	22.5
		8	7	21.45	21.54	21.46	3.0	22.5
		15	0	21.32	21.54	21.47	3.0	22.5
	256QAM	1	0	19.28	19.27	19.56	5.0	20.5
		1	8	19.15	19.93	19.72	5.0	20.5
		1	14	19.45	19.97	19.79	5.0	20.5
		8	0	19.35	19.52	19.53	5.0	20.5
		8	4	19.34	19.65	19.49	5.0	20.5
		8	7	19.46	19.40	19.40	5.0	20.5
		15	0	19.41	19.41	19.49	5.0	20.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20407	20525	20643		
				824.7 MHz	836.5 MHz	848.3 MHz		
1.4 MHz	QPSK	1	0	24.16	24.48	24.33	0.0	25.5
		1	3	24.20	24.38	24.13	0.0	25.5
		1	5	24.20	24.52	24.33	0.0	25.5
		3	0	24.22	24.55	24.47	0.0	25.5
		3	1	24.20	24.41	24.33	0.0	25.5
		3	3	24.21	24.47	24.37	0.0	25.5
		6	0	23.26	23.41	23.35	1.0	24.5
	16QAM	1	0	23.34	23.21	23.55	1.0	24.5
		1	3	23.50	23.45	23.53	1.0	24.5
		1	5	23.27	23.82	23.52	1.0	24.5
		3	0	23.17	23.44	23.45	1.0	24.5
		3	1	23.30	23.53	23.31	1.0	24.5
		3	3	23.21	23.53	23.11	1.0	24.5
		6	0	22.33	22.51	22.31	2.0	23.5
	64QAM	1	0	22.42	22.50	22.14	2.0	23.5
		1	3	22.28	22.49	22.56	2.0	23.5
		1	5	22.61	22.62	22.33	2.0	23.5
		3	0	22.19	22.42	22.44	2.0	23.5
		3	1	22.39	22.33	22.33	2.0	23.5
		3	3	22.02	22.38	22.43	2.0	23.5
		6	0	21.24	21.52	21.43	3.0	22.5
	256QAM	1	0	19.50	19.53	19.19	5.0	20.5
		1	3	19.19	19.54	19.69	5.0	20.5
		1	5	19.55	19.66	19.65	5.0	20.5
		3	0	19.16	19.67	19.69	5.0	20.5
		3	1	19.23	19.36	19.54	5.0	20.5
		3	3	19.36	19.40	19.43	5.0	20.5
		6	0	19.34	19.41	19.52	5.0	20.5

LTE Band 66 (Ant.A) Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				RSI = 0, 3, 4				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				132072	132322	132572		
				1720 MHz	1745 MHz	1770 MHz		
20 MHz	QPSK	1	0	20.43	**20.47**	20.30	0.0	22.0
		1	49	20.30	20.43	20.31	0.0	22.0
		1	99	20.37	20.34	20.25	0.0	22.0
		50	0	20.44	**20.45**	20.26	0.0	22.0
		50	24	20.43	20.41	20.25	0.0	22.0
		50	50	20.39	20.40	20.26	0.0	22.0
		100	0	20.42	20.42	20.26	0.0	22.0
	16QAM	1	0	20.71	20.66	20.65	0.0	22.0
		1	49	20.64	20.60	20.53	0.0	22.0
		1	99	20.60	20.60	20.57	0.0	22.0
		50	0	20.46	20.44	20.26	0.0	22.0
		50	24	20.43	20.43	20.24	0.0	22.0
		50	50	20.41	20.40	20.26	0.0	22.0
		100	0	20.45	20.43	20.27	0.0	22.0
	64QAM	1	0	20.49	20.67	20.45	0.0	22.0
		1	49	20.30	20.63	20.42	0.0	22.0
		1	99	20.42	20.60	20.38	0.0	22.0
		50	0	20.42	20.46	20.25	1.0	21.0
		50	24	20.42	20.46	20.26	1.0	21.0
		50	50	20.40	20.44	20.25	1.0	21.0
		100	0	20.39	20.42	20.22	1.0	21.0
	256QAM	1	0	18.58	18.71	18.45	3.0	19.0
		1	49	18.67	18.54	18.59	3.0	19.0
		1	99	18.51	18.67	18.42	3.0	19.0
		50	0	18.41	18.44	18.25	3.0	19.0
		50	24	18.39	18.42	18.25	3.0	19.0
		50	50	18.40	18.40	18.22	3.0	19.0
		100	0	18.41	18.42	18.27	3.0	19.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				132047	132322	132597		
				1717.5 MHz	1745 MHz	1772.5 MHz		
15 MHz	QPSK	1	0	20.26	20.31	20.26	0.0	22.0
		1	37	20.40	20.40	20.38	0.0	22.0
		1	74	20.24	20.27	20.26	0.0	22.0
		36	0	20.29	20.34	20.27	0.0	22.0
		36	20	20.27	20.32	20.26	0.0	22.0
		36	39	20.25	20.31	20.25	0.0	22.0
		75	0	20.26	20.32	20.27	0.0	22.0
	16QAM	1	0	20.43	20.38	20.44	0.0	22.0
		1	37	20.52	20.50	20.57	0.0	22.0
		1	74	20.41	20.31	20.39	0.0	22.0
		36	0	20.32	20.33	20.27	0.0	22.0
		36	20	20.32	20.31	20.25	0.0	22.0
		36	39	20.31	20.30	20.25	0.0	22.0
		75	0	20.30	20.32	20.28	0.0	22.0
	64QAM	1	0	20.30	20.59	20.40	0.0	22.0
		1	37	20.51	20.64	20.41	0.0	22.0
		1	74	20.26	20.52	20.42	0.0	22.0
		36	0	20.42	20.45	20.29	1.0	21.0
		36	20	20.40	20.41	20.27	1.0	21.0
		36	39	20.38	20.39	20.24	1.0	21.0
		75	0	20.37	20.41	20.33	1.0	21.0
	256QAM	1	0	18.38	18.66	18.50	3.0	19.0
		1	37	18.51	18.63	18.56	3.0	19.0
		1	74	18.29	18.61	18.52	3.0	19.0
		36	0	18.38	18.45	18.32	3.0	19.0
		36	20	18.35	18.42	18.30	3.0	19.0
		36	39	18.33	18.40	18.29	3.0	19.0
		75	0	18.33	18.41	18.32	3.0	19.0

LTE Band 66 (Ant.A) Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				132022	132322	132622		
				1715 MHz	1745 MHz	1775 MHz		
10 MHz	QPSK	1	0	20.21	20.30	20.41	0.0	22.0
		1	25	20.28	20.17	20.44	0.0	22.0
		1	49	20.19	20.25	20.43	0.0	22.0
		25	0	20.21	20.32	20.38	0.0	22.0
		25	12	20.19	20.29	20.37	0.0	22.0
		25	25	20.18	20.28	20.38	0.0	22.0
		50	0	20.22	20.31	20.38	0.0	22.0
	16QAM	1	0	20.15	20.52	20.52	0.0	22.0
		1	25	20.16	20.60	20.52	0.0	22.0
		1	49	20.10	20.49	20.47	0.0	22.0
		25	0	20.23	20.32	20.40	0.0	22.0
		25	12	20.22	20.32	20.39	0.0	22.0
		25	25	20.21	20.29	20.40	0.0	22.0
		50	0	20.25	20.33	20.40	0.0	22.0
	64QAM	1	0	20.48	20.29	20.43	0.0	22.0
		1	25	20.47	20.36	20.27	0.0	22.0
		1	49	20.48	20.19	20.44	0.0	22.0
		25	0	20.30	20.46	20.53	1.0	21.0
		25	12	20.28	20.45	20.53	1.0	21.0
		25	25	20.28	20.43	20.50	1.0	21.0
		50	0	20.26	20.41	20.47	1.0	21.0
	256QAM	1	0	18.51	18.54	18.38	3.0	19.0
		1	25	18.70	18.49	18.28	3.0	19.0
		1	49	18.51	18.50	18.35	3.0	19.0
		25	0	18.34	18.52	18.51	3.0	19.0
		25	12	18.33	18.49	18.49	3.0	19.0
		25	25	18.34	18.48	18.47	3.0	19.0
		50	0	18.29	18.45	18.45	3.0	19.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				131997	132322	132647		
				1712.5 MHz	1745 MHz	1777.5 MHz		
5 MHz	QPSK	1	0	19.58	20.26	19.85	0.0	22.0
		1	12	19.71	20.48	19.87	0.0	22.0
		1	24	19.52	20.27	19.85	0.0	22.0
		12	0	19.52	20.30	19.89	0.0	22.0
		12	7	19.52	20.30	19.88	0.0	22.0
		12	13	19.52	20.29	19.87	0.0	22.0
		25	0	19.53	20.28	19.87	0.0	22.0
	16QAM	1	0	19.71	20.49	20.10	0.0	22.0
		1	12	19.85	20.62	20.22	0.0	22.0
		1	24	19.67	20.46	20.10	0.0	22.0
		12	0	19.52	20.29	19.90	0.0	22.0
		12	7	19.52	20.33	19.87	0.0	22.0
		12	13	19.53	20.31	19.87	0.0	22.0
		25	0	19.56	20.32	19.88	0.0	22.0
	64QAM	1	0	19.79	20.51	20.21	0.0	22.0
		1	12	20.02	20.60	20.10	0.0	22.0
		1	24	19.84	20.44	20.15	0.0	22.0
		12	0	19.61	20.42	19.94	1.0	21.0
		12	7	19.62	20.42	19.91	1.0	21.0
		12	13	19.59	20.43	19.94	1.0	21.0
		25	0	19.59	20.40	19.94	1.0	21.0
	256QAM	1	0	17.67	18.46	18.22	3.0	19.0
		1	12	17.73	18.57	18.40	3.0	19.0
		1	24	17.70	18.46	18.18	3.0	19.0
		12	0	17.60	18.41	18.07	3.0	19.0
		12	7	17.63	18.41	17.99	3.0	19.0
		12	13	17.63	18.40	18.05	3.0	19.0
		25	0	17.66	18.37	18.01	3.0	19.0

LTE Band 66 (Ant.A) Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				131987	132322	132657		
				1711.5 MHz	1745 MHz	1778.5 MHz		
3 MHz	QPSK	1	0	19.62	20.30	19.93	0.0	22.0
		1	8	19.58	20.43	19.99	0.0	22.0
		1	14	19.60	20.31	19.96	0.0	22.0
		8	0	19.50	20.26	19.88	0.0	22.0
		8	4	19.52	20.24	19.85	0.0	22.0
		8	7	19.51	20.22	19.89	0.0	22.0
		15	0	19.57	20.24	19.87	0.0	22.0
	16QAM	1	0	19.83	20.37	19.90	0.0	22.0
		1	8	19.99	20.51	20.08	0.0	22.0
		1	14	19.85	20.30	19.85	0.0	22.0
		8	0	19.54	20.24	19.88	0.0	22.0
		8	4	19.54	20.19	19.85	0.0	22.0
		8	7	19.52	20.21	19.85	0.0	22.0
		15	0	19.63	20.29	19.90	0.0	22.0
	64QAM	1	0	19.68	20.42	20.32	0.0	22.0
		1	8	19.50	20.54	20.36	0.0	22.0
		1	14	19.72	20.44	20.32	0.0	22.0
		8	0	19.57	20.36	20.07	1.0	21.0
		8	4	19.53	20.36	20.04	1.0	21.0
		8	7	19.54	20.36	20.05	1.0	21.0
		15	0	19.60	20.45	19.97	1.0	21.0
	256QAM	1	0	17.71	18.47	18.47	3.0	19.0
		1	8	17.84	18.59	18.54	3.0	19.0
		1	14	17.74	18.44	18.42	3.0	19.0
		8	0	17.70	18.43	18.06	3.0	19.0
		8	4	17.63	18.34	18.00	3.0	19.0
		8	7	17.69	18.41	18.04	3.0	19.0
		15	0	17.62	18.44	17.99	3.0	19.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				131979	132322	132665		
				1710.7 MHz	1745 MHz	1779.3 MHz		
1.4 MHz	QPSK	1	0	19.58	20.21	19.87	0.0	22.0
		1	3	19.51	20.19	19.93	0.0	22.0
		1	5	19.63	20.17	19.85	0.0	22.0
		3	0	19.51	20.25	19.81	0.0	22.0
		3	1	19.54	20.16	19.79	0.0	22.0
		3	3	19.52	20.15	19.82	0.0	22.0
		6	0	19.53	20.14	19.79	0.0	22.0
	16QAM	1	0	19.57	20.30	19.77	0.0	22.0
		1	3	19.54	20.41	20.03	0.0	22.0
		1	5	19.51	20.35	19.80	0.0	22.0
		3	0	19.66	20.26	19.92	0.0	22.0
		3	1	19.64	20.25	19.92	0.0	22.0
		3	3	19.65	20.19	19.92	0.0	22.0
		6	0	19.52	20.15	19.93	0.0	22.0
	64QAM	1	0	19.51	20.36	20.06	0.0	22.0
		1	3	19.62	20.10	20.26	0.0	22.0
		1	5	19.50	20.34	20.04	0.0	22.0
		3	0	19.59	20.41	19.98	1.0	21.0
		3	1	19.57	20.27	19.92	1.0	21.0
		3	3	19.50	20.31	19.86	1.0	21.0
		6	0	19.58	20.24	19.87	1.0	21.0
	256QAM	1	0	17.50	18.40	17.96	3.0	19.0
		1	3	17.49	18.61	18.12	3.0	19.0
		1	5	17.49	18.41	17.91	3.0	19.0
		3	0	17.47	18.14	17.92	3.0	19.0
		3	1	17.46	18.07	17.90	3.0	19.0
		3	3	17.45	18.07	17.83	3.0	19.0
		6	0	17.48	18.19	17.86	3.0	19.0

LTE Band 66 (Ant.B) Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				RSI = 0, 3, 4				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				132072	132322	132572		
				1720 MHz	1745 MHz	1770 MHz		
20 MHz	QPSK	1	0	20.46	20.51	20.19	0.0	22.0
		1	49	20.52	20.53	20.16	0.0	22.0
		1	99	20.53	**20.55**	20.12	0.0	22.0
		50	0	20.53	20.54	20.20	0.0	22.0
		50	24	20.57	20.59	20.19	0.0	22.0
		50	50	20.60	**20.65**	20.12	0.0	22.0
		100	0	20.61	20.47	20.17	0.0	22.0
	16QAM	1	0	20.63	20.62	20.32	0.0	22.0
		1	49	20.72	20.72	20.23	0.0	22.0
		1	99	20.82	20.78	20.38	0.0	22.0
		50	0	20.68	20.62	20.21	0.0	22.0
		50	24	20.69	20.52	20.11	0.0	22.0
		50	50	20.72	20.52	20.11	0.0	22.0
		100	0	20.68	20.56	20.17	0.0	22.0
	64QAM	1	0	20.83	20.80	20.34	0.0	22.0
		1	49	20.87	20.68	20.42	0.0	22.0
		1	99	20.78	20.71	20.38	0.0	22.0
		50	0	20.72	20.56	20.23	0.5	21.5
		50	24	20.62	20.56	20.18	0.5	21.5
		50	50	20.64	20.48	20.18	0.5	21.5
		100	0	20.65	20.53	20.14	0.5	21.5
	256QAM	1	0	18.77	18.72	18.23	2.5	19.5
		1	49	18.72	18.69	18.30	2.5	19.5
		1	99	18.56	18.68	18.21	2.5	19.5
		50	0	18.67	18.54	18.12	2.5	19.5
		50	24	18.62	18.51	18.16	2.5	19.5
		50	50	18.61	18.56	18.16	2.5	19.5
		100	0	18.66	18.53	18.21	2.5	19.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				132047	132322	132597		
				1717.5 MHz	1745 MHz	1772.5 MHz		
15 MHz	QPSK	1	0	20.47	19.95	20.29	0.0	22.0
		1	37	20.58	20.14	20.25	0.0	22.0
		1	74	20.44	20.52	20.16	0.0	22.0
		36	0	20.57	20.08	20.28	0.0	22.0
		36	20	20.59	20.17	20.23	0.0	22.0
		36	39	20.65	20.28	20.20	0.0	22.0
		75	0	20.62	20.20	20.24	0.0	22.0
	16QAM	1	0	20.27	19.93	20.08	0.0	22.0
		1	37	20.55	20.28	20.11	0.0	22.0
		1	74	20.40	20.68	20.21	0.0	22.0
		36	0	20.67	20.10	20.32	0.0	22.0
		36	20	20.68	20.11	20.21	0.0	22.0
		36	39	20.67	20.30	20.21	0.0	22.0
		75	0	20.62	20.20	20.25	0.0	22.0
	64QAM	1	0	20.91	20.42	20.75	0.0	22.0
		1	37	21.23	20.99	21.05	0.0	22.0
		1	74	20.98	21.11	20.78	0.0	22.0
		36	0	20.71	20.36	20.20	0.5	21.5
		36	20	20.52	20.42	20.21	0.5	21.5
		36	39	20.52	20.48	20.21	0.5	21.5
		75	0	20.64	20.43	20.14	0.5	21.5
	256QAM	1	0	18.49	18.16	17.90	2.5	19.5
		1	37	18.45	18.76	18.57	2.5	19.5
		1	74	18.92	18.49	18.22	2.5	19.5
		36	0	18.70	18.23	17.82	2.5	19.5
		36	20	18.62	18.39	17.88	2.5	19.5
		36	39	18.58	18.24	17.87	2.5	19.5
		75	0	18.65	18.46	17.93	2.5	19.5

LTE Band 66 (Ant.B) Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				132022	132322	132622		
				1715 MHz	1745 MHz	1775 MHz		
10 MHz	QPSK	1	0	20.59	20.04	20.33	0.0	22.0
		1	25	20.38	19.97	20.32	0.0	22.0
		1	49	20.37	20.47	20.24	0.0	22.0
		25	0	20.50	20.08	20.28	0.0	22.0
		25	12	20.51	20.15	20.23	0.0	22.0
		25	25	20.54	20.23	20.17	0.0	22.0
		50	0	20.56	20.16	20.26	0.0	22.0
	16QAM	1	0	20.36	20.09	20.30	0.0	22.0
		1	25	20.49	20.42	20.23	0.0	22.0
		1	49	20.39	20.71	20.35	0.0	22.0
		25	0	20.67	20.10	20.36	0.0	22.0
		25	12	20.65	20.12	20.23	0.0	22.0
		25	25	20.63	20.25	20.22	0.0	22.0
		50	0	20.61	20.20	20.24	0.0	22.0
	64QAM	1	0	20.77	20.50	20.61	0.0	22.0
		1	25	21.35	20.69	20.41	0.0	22.0
		1	49	20.77	21.08	20.69	0.0	22.0
		25	0	20.75	20.38	20.30	0.5	21.5
		25	12	20.55	20.41	20.19	0.5	21.5
		25	25	20.54	20.50	20.19	0.5	21.5
		50	0	20.58	20.44	20.24	0.5	21.5
	256QAM	1	0	18.49	18.05	17.82	2.5	19.5
		1	25	18.50	18.68	18.29	2.5	19.5
		1	49	18.92	18.45	17.85	2.5	19.5
		25	0	18.76	18.32	17.88	2.5	19.5
		25	12	18.67	18.43	18.00	2.5	19.5
		25	25	18.61	18.25	17.99	2.5	19.5
		50	0	18.65	18.48	17.99	2.5	19.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				131997	132322	132647		
				1712.5 MHz	1745 MHz	1777.5 MHz		
5 MHz	QPSK	1	0	19.82	19.96	19.66	0.0	22.0
		1	12	19.97	19.97	19.62	0.0	22.0
		1	24	19.73	20.28	19.67	0.0	22.0
		12	0	19.87	20.06	19.65	0.0	22.0
		12	7	19.88	20.11	19.64	0.0	22.0
		12	13	19.93	20.15	19.58	0.0	22.0
		25	0	19.94	20.13	19.63	0.0	22.0
	16QAM	1	0	20.02	20.06	19.83	0.0	22.0
		1	12	20.09	20.30	19.85	0.0	22.0
		1	24	20.04	20.55	19.92	0.0	22.0
		12	0	20.05	20.08	19.71	0.0	22.0
		12	7	20.04	20.04	19.60	0.0	22.0
		12	13	20.01	20.12	19.63	0.0	22.0
		25	0	19.95	20.14	19.66	0.0	22.0
	64QAM	1	0	20.17	20.62	19.75	0.0	22.0
		1	12	20.64	20.79	19.85	0.0	22.0
		1	24	20.20	20.99	19.93	0.0	22.0
		12	0	20.05	20.31	19.73	0.5	21.5
		12	7	19.86	20.30	19.67	0.5	21.5
		12	13	19.82	20.42	19.75	0.5	21.5
		25	0	19.96	20.36	19.66	0.5	21.5
	256QAM	1	0	18.30	18.00	17.60	2.5	19.5
		1	12	18.25	18.58	18.24	2.5	19.5
		1	24	18.68	18.15	17.67	2.5	19.5
		12	0	18.47	18.29	17.69	2.5	19.5
		12	7	18.42	18.36	17.74	2.5	19.5
		12	13	18.41	18.42	17.76	2.5	19.5
		25	0	18.39	18.43	17.76	2.5	19.5

LTE Band 66 (Ant.B) Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				131987	132322	132657		
				1711.5 MHz	1745 MHz	1778.5 MHz		
3 MHz	QPSK	1	0	19.85	20.03	19.66	0.0	22.0
		1	8	19.89	20.09	19.63	0.0	22.0
		1	14	19.74	20.23	19.72	0.0	22.0
		8	0	19.88	20.12	19.61	0.0	22.0
		8	4	19.85	20.10	19.55	0.0	22.0
		8	7	19.87	20.11	19.54	0.0	22.0
		15	0	19.91	20.13	19.58	0.0	22.0
	16QAM	1	0	19.80	20.15	19.69	0.0	22.0
		1	8	20.00	20.33	19.78	0.0	22.0
		1	14	19.76	20.55	19.84	0.0	22.0
		8	0	20.04	20.24	19.66	0.0	22.0
		8	4	20.00	20.17	19.53	0.0	22.0
		8	7	19.95	20.25	19.62	0.0	22.0
		15	0	19.88	20.12	19.61	0.0	22.0
	64QAM	1	0	20.41	20.40	19.85	0.0	22.0
		1	8	20.83	20.77	19.99	0.0	22.0
		1	14	20.37	20.82	19.99	0.0	22.0
		8	0	20.19	20.38	19.96	0.5	21.5
		8	4	19.94	20.39	19.88	0.5	21.5
		8	7	19.93	20.46	19.91	0.5	21.5
		15	0	19.88	20.44	19.87	0.5	21.5
	256QAM	1	0	18.04	18.25	18.00	2.5	19.5
		1	8	17.91	18.89	18.66	2.5	19.5
		1	14	18.39	18.50	18.08	2.5	19.5
		8	0	18.43	18.30	17.87	2.5	19.5
		8	4	18.33	18.38	17.91	2.5	19.5
		8	7	18.28	18.44	17.98	2.5	19.5
		15	0	18.37	18.48	17.99	2.5	19.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				131979	132322	132665		
				1710.7 MHz	1745 MHz	1779.3 MHz		
1.4 MHz	QPSK	1	0	19.75	20.05	19.99	0.0	22.0
		1	3	19.79	20.02	19.82	0.0	22.0
		1	5	19.61	20.24	20.06	0.0	22.0
		3	0	19.87	20.12	19.92	0.0	22.0
		3	1	19.74	20.04	19.93	0.0	22.0
		3	3	19.77	20.01	19.93	0.0	22.0
		6	0	19.80	20.00	19.91	0.0	22.0
	16QAM	1	0	19.66	19.99	19.78	0.0	22.0
		1	3	19.82	20.13	19.95	0.0	22.0
		1	5	19.70	20.38	19.97	0.0	22.0
		3	0	19.96	20.09	20.08	0.0	22.0
		3	1	19.98	19.95	20.02	0.0	22.0
		3	3	19.92	20.02	20.08	0.0	22.0
		6	0	19.87	20.04	19.95	0.0	22.0
	64QAM	1	0	20.33	20.37	20.29	0.0	22.0
		1	3	20.65	20.33	20.67	0.0	22.0
		1	5	20.24	20.64	20.45	0.0	22.0
		3	0	19.97	20.41	20.31	0.5	21.5
		3	1	19.70	20.42	20.24	0.5	21.5
		3	3	19.70	20.52	20.22	0.5	21.5
		6	0	19.75	20.36	20.31	0.5	21.5
	256QAM	1	0	18.15	18.35	18.31	2.5	19.5
		1	3	17.92	18.63	18.65	2.5	19.5
		1	5	18.50	17.85	18.34	2.5	19.5
		3	0	18.14	18.16	18.48	2.5	19.5
		3	1	18.11	18.24	18.45	2.5	19.5
		3	3	18.13	18.23	18.38	2.5	19.5
		6	0	18.27	18.34	18.32	2.5	19.5

LTE Band 4 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				Pmax, RSI = 4				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				20050	20175	20300		
				1720 MHz	1732.5 MHz	1745 MHz		
20 MHz	QPSK	1	0	22.50	22.11	22.56	0.0	24.0
		1	49	22.47	22.17	**22.70**	0.0	24.0
		1	99	22.67	22.23	22.62	0.0	24.0
		50	0	21.73	21.33	21.78	1.0	23.0
		50	24	21.71	21.30	21.70	1.0	23.0
		50	50	21.70	21.34	**21.80**	1.0	23.0
		100	0	21.70	21.25	21.63	1.0	23.0
	16QAM	1	0	22.00	20.93	22.02	1.0	23.0
		1	49	22.12	21.48	22.12	1.0	23.0
		1	99	21.63	21.46	22.13	1.0	23.0
		50	0	20.73	20.26	20.71	2.0	22.0
		50	24	20.68	20.21	20.71	2.0	22.0
		50	50	20.78	20.35	20.73	2.0	22.0
		100	0	20.66	20.26	20.65	2.0	22.0
	64QAM	1	0	21.66	20.37	21.01	2.0	22.0
		1	49	21.64	20.05	20.62	2.0	22.0
		1	99	21.74	20.46	20.99	2.0	22.0
		50	0	20.78	19.25	19.74	3.0	21.0
		50	24	20.76	19.22	19.81	3.0	21.0
		50	50	20.72	19.28	19.78	3.0	21.0
		100	0	20.71	19.22	19.66	3.0	21.0
	256QAM	1	0	17.79	17.76	17.95	5.0	19.0
		1	49	17.84	16.93	17.80	5.0	19.0
		1	99	17.76	17.43	17.77	5.0	19.0
		50	0	17.66	17.28	17.70	5.0	19.0
		50	24	17.70	17.35	17.73	5.0	19.0
		50	50	17.64	17.21	17.66	5.0	19.0
		100	0	17.75	17.29	17.62	5.0	19.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20025	20175	20325		
				1717.5 MHz	1732.5 MHz	1747.5 MHz		
15 MHz	QPSK	1	0	22.52	22.24	22.79	0.0	24.0
		1	37	22.42	22.31	22.76	0.0	24.0
		1	74	22.67	22.21	22.66	0.0	24.0
		36	0	21.60	21.27	21.83	1.0	23.0
		36	20	21.59	21.24	21.85	1.0	23.0
		36	39	21.62	21.22	21.82	1.0	23.0
		75	0	21.59	21.29	21.84	1.0	23.0
	16QAM	1	0	21.55	21.03	21.84	1.0	23.0
		1	37	21.71	21.58	21.57	1.0	23.0
		1	74	22.07	21.44	21.86	1.0	23.0
		36	0	20.68	20.24	20.74	2.0	22.0
		36	20	20.63	20.30	20.73	2.0	22.0
		36	39	20.76	20.27	20.82	2.0	22.0
		75	0	20.62	20.21	20.89	2.0	22.0
	64QAM	1	0	20.94	20.01	20.58	2.0	22.0
		1	37	21.06	20.75	20.97	2.0	22.0
		1	74	20.41	20.37	20.85	2.0	22.0
		36	0	19.68	19.23	19.87	3.0	21.0
		36	20	19.68	19.32	19.73	3.0	21.0
		36	39	19.59	19.25	19.80	3.0	21.0
		75	0	19.63	19.24	19.87	3.0	21.0
	256QAM	1	0	17.07	17.37	18.11	5.0	19.0
		1	37	17.42	17.30	17.33	5.0	19.0
		1	74	17.96	17.12	17.52	5.0	19.0
		36	0	17.70	17.21	17.84	5.0	19.0
		36	20	17.68	17.20	17.80	5.0	19.0
		36	39	17.74	17.28	17.87	5.0	19.0
		75	0	17.61	17.26	17.84	5.0	19.0

LTE Band 4 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20000	20175	20350		
				1715 MHz	1732.5 MHz	1750 MHz		
10 MHz	QPSK	1	0	22.50	22.15	22.73	0.0	24.0
		1	25	22.33	22.19	22.80	0.0	24.0
		1	49	22.49	22.26	22.74	0.0	24.0
		25	0	21.56	21.26	21.84	1.0	23.0
		25	12	21.66	21.22	21.87	1.0	23.0
		25	25	21.64	21.32	21.93	1.0	23.0
		50	0	21.63	21.32	21.93	1.0	23.0
	16QAM	1	0	21.85	21.36	22.11	1.0	23.0
		1	25	21.50	21.18	22.04	1.0	23.0
		1	49	21.85	21.49	21.50	1.0	23.0
		25	0	20.54	20.27	20.81	2.0	22.0
		25	12	20.54	20.19	20.95	2.0	22.0
		25	25	20.54	20.23	20.86	2.0	22.0
		50	0	20.66	20.32	20.84	2.0	22.0
	64QAM	1	0	20.42	20.50	20.70	2.0	22.0
		1	25	20.59	20.46	20.66	2.0	22.0
		1	49	20.75	20.14	20.90	2.0	22.0
		25	0	19.64	19.25	19.98	3.0	21.0
		25	12	19.62	19.28	19.93	3.0	21.0
		25	25	19.68	19.32	19.80	3.0	21.0
		50	0	19.66	19.30	19.84	3.0	21.0
	256QAM	1	0	17.39	17.17	17.93	5.0	19.0
		1	25	17.38	17.04	17.66	5.0	19.0
		1	49	17.47	17.03	18.23	5.0	19.0
		25	0	17.59	17.28	17.84	5.0	19.0
		25	12	17.61	17.20	17.91	5.0	19.0
		25	25	17.61	17.19	17.90	5.0	19.0
		50	0	17.61	17.21	17.93	5.0	19.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				19975	20175	20375		
				1712.5 MHz	1732.5 MHz	1752.5 MHz		
5 MHz	QPSK	1	0	22.42	22.31	22.56	0.0	24.0
		1	12	22.23	22.16	22.68	0.0	24.0
		1	24	22.31	22.17	22.72	0.0	24.0
		12	0	21.41	21.18	21.85	1.0	23.0
		12	7	21.35	21.23	21.78	1.0	23.0
		12	13	21.44	21.23	21.79	1.0	23.0
		25	0	21.41	21.19	21.78	1.0	23.0
	16QAM	1	0	21.60	21.50	21.63	1.0	23.0
		1	12	21.66	21.63	22.17	1.0	23.0
		1	24	21.14	21.19	22.04	1.0	23.0
		12	0	20.47	20.18	20.79	2.0	22.0
		12	7	20.44	20.06	20.67	2.0	22.0
		12	13	20.32	20.29	20.75	2.0	22.0
		25	0	20.46	20.20	20.72	2.0	22.0
	64QAM	1	0	20.60	20.48	20.63	2.0	22.0
		1	12	20.84	20.33	20.79	2.0	22.0
		1	24	20.55	20.11	20.66	2.0	22.0
		12	0	19.43	19.36	19.77	3.0	21.0
		12	7	19.49	19.24	19.84	3.0	21.0
		12	13	19.50	19.33	19.73	3.0	21.0
		25	0	19.44	19.24	19.72	3.0	21.0
	256QAM	1	0	17.86	17.54	18.10	5.0	19.0
		1	12	17.71	16.87	17.74	5.0	19.0
		1	24	17.61	17.43	17.45	5.0	19.0
		12	0	17.49	17.26	17.91	5.0	19.0
		12	7	17.52	17.22	17.68	5.0	19.0
		12	13	17.58	17.33	17.77	5.0	19.0
		25	0	17.49	17.19	17.85	5.0	19.0

LTE Band 4 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				19965	20175	20385		
				1711.5 MHz	1732.5 MHz	1753.5 MHz		
3 MHz	QPSK	1	0	22.37	22.23	22.73	0.0	24.0
		1	8	22.23	22.14	22.70	0.0	24.0
		1	14	22.35	22.16	22.71	0.0	24.0
		8	0	21.35	21.20	21.76	1.0	23.0
		8	4	21.44	21.23	21.78	1.0	23.0
		8	7	21.42	21.23	21.69	1.0	23.0
		15	0	21.31	21.20	21.78	1.0	23.0
	16QAM	1	0	20.93	21.31	21.91	1.0	23.0
		1	8	21.04	21.31	21.56	1.0	23.0
		1	14	21.50	21.27	21.74	1.0	23.0
		8	0	20.45	20.21	20.84	2.0	22.0
		8	4	20.41	20.12	20.76	2.0	22.0
		8	7	20.43	20.29	20.92	2.0	22.0
		15	0	20.33	20.30	20.84	2.0	22.0
	64QAM	1	0	19.92	20.24	20.64	2.0	22.0
		1	8	20.33	19.90	20.87	2.0	22.0
		1	14	20.59	20.15	20.75	2.0	22.0
		8	0	19.48	19.09	19.83	3.0	21.0
		8	4	19.42	19.18	19.67	3.0	21.0
		8	7	19.40	19.32	19.86	3.0	21.0
		15	0	19.42	19.22	19.87	3.0	21.0
	256QAM	1	0	17.64	17.36	17.83	5.0	19.0
		1	8	17.41	17.44	18.11	5.0	19.0
		1	14	17.71	17.15	17.38	5.0	19.0
		8	0	17.45	17.21	17.90	5.0	19.0
		8	4	17.33	17.24	17.74	5.0	19.0
		8	7	17.54	17.15	17.80	5.0	19.0
		15	0	17.5	17.4	17.9	5.0	19.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				19957	20175	20393		
				1710.7 MHz	1732.5 MHz	1754.3 MHz		
1.4 MHz	QPSK	1	0	22.25	22.10	22.67	0.0	24.0
		1	3	22.25	22.10	22.61	0.0	24.0
		1	5	22.17	22.05	22.76	0.0	24.0
		3	0	22.26	22.26	22.73	0.0	24.0
		3	1	22.27	22.10	22.80	0.0	24.0
		3	3	22.25	22.06	22.61	0.0	24.0
		6	0	21.26	21.16	21.76	1.0	23.0
	16QAM	1	0	21.66	21.13	21.55	1.0	23.0
		1	3	21.29	21.37	21.68	1.0	23.0
		1	5	21.43	21.35	22.19	1.0	23.0
		3	0	21.23	21.28	21.69	1.0	23.0
		3	1	21.33	21.32	21.53	1.0	23.0
		3	3	21.23	21.03	21.79	1.0	23.0
		6	0	20.24	20.24	20.75	2.0	22.0
	64QAM	1	0	20.85	20.29	20.98	2.0	22.0
		1	3	20.25	20.43	20.70	2.0	22.0
		1	5	20.30	20.00	20.61	2.0	22.0
		3	0	20.48	20.44	20.96	2.0	22.0
		3	1	20.41	20.13	21.01	2.0	22.0
		3	3	20.42	20.21	20.58	2.0	22.0
		6	0	19.29	19.16	19.68	3.0	21.0
	256QAM	1	0	17.68	16.89	17.98	5.0	19.0
		1	3	17.16	17.23	17.66	5.0	19.0
		1	5	17.26	16.84	17.92	5.0	19.0
		3	0	17.71	17.36	17.86	5.0	19.0
		3	1	17.45	17.38	17.79	5.0	19.0
		3	3	17.37	17.39	17.92	5.0	19.0
		6	0	17.25	17.19	17.70	5.0	19.0

LTE Band 2 (Ant.A) Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				RSI = 0, 3, 4				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				18700	18900	19100		
				1860 MHz	1880 MHz	1900 MHz		
20 MHz	QPSK	1	0	20.43	**20.46**	20.37	0.0	22.0
		1	49	20.41	20.26	20.29	0.0	22.0
		1	99	20.32	20.35	20.39	0.0	22.0
		50	0	20.34	**20.44**	20.38	0.0	22.0
		50	24	20.28	20.37	20.42	0.0	22.0
		50	50	20.39	20.43	20.37	0.0	22.0
		100	0	20.34	20.46	20.46	0.0	22.0
	16QAM	1	0	20.39	20.98	20.50	0.0	22.0
		1	49	20.70	20.71	20.65	0.0	22.0
		1	99	19.80	20.53	20.47	0.0	22.0
		50	0	20.41	20.47	20.51	0.0	22.0
		50	24	20.35	20.42	20.44	0.0	22.0
		50	50	20.31	20.48	20.46	0.0	22.0
		100	0	20.34	20.41	20.40	0.0	22.0
	64QAM	1	0	20.65	20.40	20.25	0.0	22.0
		1	49	20.59	20.30	20.32	0.0	22.0
		1	99	20.47	20.55	20.34	0.0	22.0
		50	0	20.38	19.97	20.02	1.0	21.0
		50	24	20.33	19.98	19.98	1.0	21.0
		50	50	20.29	19.92	20.00	1.0	21.0
		100	0	20.42	19.86	19.84	1.0	21.0
	256QAM	1	0	18.15	18.20	17.91	3.0	19.0
		1	49	17.85	17.84	17.83	3.0	19.0
		1	99	17.68	18.33	18.03	3.0	19.0
		50	0	17.89	17.88	17.92	3.0	19.0
		50	24	17.80	17.85	17.97	3.0	19.0
		50	50	17.80	17.90	17.90	3.0	19.0
		100	0	17.85	18.00	17.87	3.0	19.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18675	18900	19125		
				1857.5 MHz	1880 MHz	1902.5 MHz		
15 MHz	QPSK	1	0	20.28	20.40	20.30	0.0	22.0
		1	37	19.97	20.31	20.10	0.0	22.0
		1	74	20.12	20.40	20.32	0.0	22.0
		36	0	20.25	20.48	20.31	0.0	22.0
		36	20	20.27	20.36	20.32	0.0	22.0
		36	39	20.18	20.34	20.32	0.0	22.0
		75	0	20.25	20.34	20.27	0.0	22.0
	16QAM	1	0	20.43	20.50	20.03	0.0	22.0
		1	37	20.27	20.24	20.55	0.0	22.0
		1	74	20.20	20.65	19.84	0.0	22.0
		36	0	20.26	20.41	20.35	0.0	22.0
		36	20	20.18	20.31	20.29	0.0	22.0
		36	39	20.30	20.43	20.27	0.0	22.0
		75	0	20.22	20.41	20.25	0.0	22.0
	64QAM	1	0	20.36	20.69	20.27	0.0	22.0
		1	37	20.44	20.86	20.70	0.0	22.0
		1	74	20.45	20.52	20.23	0.0	22.0
		36	0	19.71	19.86	19.81	1.0	21.0
		36	20	19.69	19.89	19.82	1.0	21.0
		36	39	19.66	19.92	19.74	1.0	21.0
		75	0	19.76	19.83	19.83	1.0	21.0
	256QAM	1	0	17.89	18.36	17.75	3.0	19.0
		1	37	17.89	17.57	17.64	3.0	19.0
		1	74	18.05	17.96	18.02	3.0	19.0
		36	0	17.68	17.94	17.86	3.0	19.0
		36	20	17.78	17.96	17.77	3.0	19.0
		36	39	17.78	17.91	17.76	3.0	19.0
		75	0	17.75	17.84	17.83	3.0	19.0

LTE Band 2 (Ant.A) Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18650	18900	19150		
				1855 MHz	1880 MHz	1905 MHz		
10 MHz	QPSK	1	0	20.24	20.47	20.37	0.0	22.0
		1	25	20.06	20.25	20.49	0.0	22.0
		1	49	20.15	20.38	20.41	0.0	22.0
		25	0	20.34	20.43	20.51	0.0	22.0
		25	12	20.25	20.38	20.46	0.0	22.0
		25	25	20.17	20.40	20.51	0.0	22.0
		50	0	20.19	20.41	20.46	0.0	22.0
	16QAM	1	0	20.09	20.28	20.55	0.0	22.0
		1	25	19.99	20.56	20.59	0.0	22.0
		1	49	20.35	20.14	20.25	0.0	22.0
		25	0	20.32	20.43	20.48	0.0	22.0
		25	12	20.25	20.33	20.50	0.0	22.0
		25	25	20.21	20.31	20.52	0.0	22.0
		50	0	20.36	20.38	20.53	0.0	22.0
	64QAM	1	0	20.51	20.56	20.40	0.0	22.0
		1	25	20.31	20.42	20.30	0.0	22.0
		1	49	20.15	20.30	20.50	0.0	22.0
		25	0	19.66	19.93	20.00	1.0	21.0
		25	12	19.76	19.97	19.96	1.0	21.0
		25	25	19.62	19.95	19.87	1.0	21.0
		50	0	19.72	19.88	20.05	1.0	21.0
	256QAM	1	0	17.74	18.20	18.26	3.0	19.0
		1	25	17.52	17.84	17.83	3.0	19.0
		1	49	17.68	18.10	18.26	3.0	19.0
		25	0	17.81	17.94	17.93	3.0	19.0
		25	12	17.79	17.81	17.88	3.0	19.0
		25	25	17.80	17.85	18.05	3.0	19.0
		50	0	17.73	17.89	18.01	3.0	19.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18625	18900	19175		
				1852.5 MHz	1880 MHz	1907.5 MHz		
5 MHz	QPSK	1	0	20.13	20.24	20.63	0.0	22.0
		1	12	20.29	20.52	20.50	0.0	22.0
		1	24	20.05	20.33	20.44	0.0	22.0
		12	0	20.28	20.36	20.56	0.0	22.0
		12	7	20.16	20.35	20.49	0.0	22.0
		12	13	20.19	20.35	20.52	0.0	22.0
		25	0	20.23	20.41	20.64	0.0	22.0
	16QAM	1	0	20.08	20.12	20.63	0.0	22.0
		1	12	20.04	20.78	20.78	0.0	22.0
		1	24	20.35	20.56	20.60	0.0	22.0
		12	0	20.23	20.37	20.64	0.0	22.0
		12	7	20.26	20.31	20.44	0.0	22.0
		12	13	20.32	20.33	20.65	0.0	22.0
		25	0	20.12	20.35	20.58	0.0	22.0
	64QAM	1	0	20.51	20.25	20.81	0.0	22.0
		1	12	20.48	20.63	20.65	0.0	22.0
		1	24	20.44	20.33	20.76	0.0	22.0
		12	0	19.62	19.89	20.06	1.0	21.0
		12	7	19.68	19.88	20.19	1.0	21.0
		12	13	19.72	19.95	20.05	1.0	21.0
		25	0	19.73	19.95	20.14	1.0	21.0
	256QAM	1	0	17.62	17.90	18.56	3.0	19.0
		1	12	17.56	17.88	17.90	3.0	19.0
		1	24	17.83	17.61	18.24	3.0	19.0
		12	0	17.72	17.84	18.13	3.0	19.0
		12	7	17.70	18.03	18.17	3.0	19.0
		12	13	17.71	17.78	17.93	3.0	19.0
		25	0	17.68	17.88	18.17	3.0	19.0

LTE Band 2 (Ant.A) Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18615	18900	19185		
				1851.5 MHz	1880 MHz	1908.5 MHz		
3 MHz	QPSK	1	0	20.27	20.18	20.56	0.0	22.0
		1	8	20.15	20.27	20.48	0.0	22.0
		1	14	20.27	20.24	20.52	0.0	22.0
		8	0	20.30	20.34	20.53	0.0	22.0
		8	4	20.14	20.30	20.56	0.0	22.0
		8	7	20.17	20.41	20.63	0.0	22.0
		15	0	20.21	20.36	20.56	0.0	22.0
	16QAM	1	0	20.85	20.38	20.53	0.0	22.0
		1	8	20.51	20.49	20.21	0.0	22.0
		1	14	20.31	20.34	20.74	0.0	22.0
		8	0	20.20	20.34	20.50	0.0	22.0
		8	4	20.18	20.27	20.63	0.0	22.0
		8	7	20.30	20.41	20.48	0.0	22.0
		15	0	20.32	20.31	20.53	0.0	22.0
	64QAM	1	0	19.97	20.47	20.62	0.0	22.0
		1	8	20.50	20.60	20.67	0.0	22.0
		1	14	20.25	20.07	20.73	0.0	22.0
		8	0	19.72	19.79	20.11	1.0	21.0
		8	4	19.70	19.88	20.12	1.0	21.0
		8	7	19.66	19.92	20.11	1.0	21.0
		15	0	19.66	19.88	20.07	1.0	21.0
	256QAM	1	0	17.85	17.74	18.29	3.0	19.0
		1	8	17.81	18.08	17.75	3.0	19.0
		1	14	17.62	18.21	17.99	3.0	19.0
		8	0	17.86	17.86	18.00	3.0	19.0
		8	4	17.63	17.89	18.07	3.0	19.0
		8	7	17.65	18.01	18.01	3.0	19.0
		15	0	17.65	17.89	18.07	3.0	19.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18607	18900	19193		
				1850.7 MHz	1880 MHz	1909.3 MHz		
1.4 MHz	QPSK	1	0	20.11	20.92	20.48	0.0	22.0
		1	3	20.11	21.90	20.37	0.0	22.0
		1	5	20.20	20.51	20.42	0.0	22.0
		3	0	20.23	20.55	20.56	0.0	22.0
		3	1	20.16	20.56	20.59	0.0	22.0
		3	3	20.20	20.27	20.52	0.0	22.0
		6	0	20.16	20.27	20.47	0.0	22.0
	16QAM	1	0	20.36	20.65	20.73	0.0	22.0
		1	3	20.24	20.52	20.28	0.0	22.0
		1	5	20.45	20.14	20.50	0.0	22.0
		3	0	20.26	20.32	20.59	0.0	22.0
		3	1	20.26	20.53	20.64	0.0	22.0
		3	3	20.40	20.16	20.50	0.0	22.0
		6	0	20.19	20.39	20.49	0.0	22.0
	64QAM	1	0	19.99	20.64	20.42	0.0	22.0
		1	3	20.18	20.38	20.47	0.0	22.0
		1	5	20.03	20.54	20.46	0.0	22.0
		3	0	20.33	20.59	20.61	0.0	22.0
		3	1	20.33	20.50	20.52	0.0	22.0
		3	3	20.33	20.22	20.61	0.0	22.0
		6	0	19.80	19.84	20.01	1.0	21.0
	256QAM	1	0	17.53	18.21	18.15	3.0	19.0
		1	3	17.51	17.92	17.65	3.0	19.0
		1	5	17.70	17.84	18.61	3.0	19.0
		3	0	17.97	18.02	18.13	3.0	19.0
		3	1	17.95	17.83	18.14	3.0	19.0
		3	3	18.00	17.80	18.15	3.0	19.0
		6	0	17.79	17.98	18.14	3.0	19.0

LTE Band 2 (Ant.B) Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				RSI = 0, 3, 4				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				18700	18900	19100		
				1860 MHz	1880 MHz	1900 MHz		
20 MHz	QPSK	1	0	**20.19**	19.85	19.78	0.0	22.0
		1	49	19.86	19.66	19.61	0.0	22.0
		1	99	19.93	19.75	19.62	0.0	22.0
		50	0	**20.13**	19.82	19.87	0.0	22.0
		50	24	20.00	19.90	19.71	0.0	22.0
		50	50	19.96	19.79	19.73	0.0	22.0
		100	0	19.97	19.89	19.82	0.0	22.0
	16QAM	1	0	20.14	19.93	20.06	0.0	22.0
		1	49	20.05	19.95	19.52	0.0	22.0
		1	99	20.19	20.02	19.87	0.0	22.0
		50	0	19.98	19.87	19.85	0.0	22.0
		50	24	20.03	19.83	19.78	0.0	22.0
		50	50	19.88	19.83	19.74	0.0	22.0
		100	0	19.96	19.88	19.83	0.0	22.0
	64QAM	1	0	20.13	19.70	20.12	1.0	21.0
		1	49	19.97	20.04	19.67	1.0	21.0
		1	99	19.90	19.85	20.22	1.0	21.0
		50	0	20.01	19.39	19.38	1.0	21.0
		50	24	19.87	19.41	19.36	1.0	21.0
		50	50	19.87	19.24	19.27	1.0	21.0
		100	0	19.96	19.34	19.38	1.0	21.0
	256QAM	1	0	17.80	17.84	17.46	3.0	19.0
		1	49	17.44	17.20	17.29	3.0	19.0
		1	99	17.81	17.14	17.69	3.0	19.0
		50	0	17.43	17.34	17.46	3.0	19.0
		50	24	17.42	17.37	17.18	3.0	19.0
		50	50	17.38	17.18	17.25	3.0	19.0
		100	0	17.48	17.35	17.25	3.0	19.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18675	18900	19125		
				1857.5 MHz	1880 MHz	1902.5 MHz		
15 MHz	QPSK	1	0	19.90	19.87	19.95	0.0	22.0
		1	37	19.85	19.81	19.78	0.0	22.0
		1	74	19.82	19.91	19.86	0.0	22.0
		36	0	19.95	19.99	19.99	0.0	22.0
		36	20	19.92	20.04	19.98	0.0	22.0
		36	39	19.85	20.00	19.92	0.0	22.0
		75	0	19.95	19.89	19.88	0.0	22.0
	16QAM	1	0	20.44	20.09	20.16	0.0	22.0
		1	37	19.80	19.90	19.80	0.0	22.0
		1	74	19.95	20.13	19.83	0.0	22.0
		36	0	20.06	19.95	19.94	0.0	22.0
		36	20	19.85	20.02	19.98	0.0	22.0
		36	39	19.88	19.96	19.95	0.0	22.0
		75	0	19.98	19.97	19.87	0.0	22.0
	64QAM	1	0	20.07	20.32	19.93	1.0	21.0
		1	37	19.99	20.17	19.93	1.0	21.0
		1	74	19.91	20.18	20.37	1.0	21.0
		36	0	19.38	19.59	20.11	1.0	21.0
		36	20	19.50	19.49	19.81	1.0	21.0
		36	39	19.40	19.47	19.89	1.0	21.0
		75	0	19.45	19.47	19.84	1.0	21.0
	256QAM	1	0	17.50	17.68	17.44	3.0	19.0
		1	37	17.27	17.76	17.36	3.0	19.0
		1	74	17.31	17.73	17.60	3.0	19.0
		36	0	17.50	17.53	17.53	3.0	19.0
		36	20	17.52	17.45	17.50	3.0	19.0
		36	39	17.44	17.44	17.46	3.0	19.0
		75	0	17.44	17.61	17.36	3.0	19.0

LTE Band 2 (Ant.B) Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18650	18900	19150		
				1855 MHz	1880 MHz	1905 MHz		
10 MHz	QPSK	1	0	20.11	19.96	19.95	0.0	22.0
		1	25	19.97	19.97	19.97	0.0	22.0
		1	49	19.98	19.94	19.85	0.0	22.0
		25	0	20.09	20.10	19.99	0.0	22.0
		25	12	20.04	20.18	19.94	0.0	22.0
		25	25	19.97	20.10	20.05	0.0	22.0
		50	0	20.02	20.19	19.99	0.0	22.0
	16QAM	1	0	20.66	20.25	20.21	0.0	22.0
		1	25	20.02	20.22	20.05	0.0	22.0
		1	49	20.17	20.24	20.16	0.0	22.0
		25	0	20.02	20.00	20.12	0.0	22.0
		25	12	19.97	19.99	20.03	0.0	22.0
		25	25	19.86	19.93	19.82	0.0	22.0
		50	0	20.02	19.94	20.07	0.0	22.0
	64QAM	1	0	20.24	20.38	20.27	1.0	21.0
		1	25	19.94	19.67	19.97	1.0	21.0
		1	49	20.11	20.22	19.79	1.0	21.0
		25	0	19.56	19.42	19.54	1.0	21.0
		25	12	19.46	19.48	19.53	1.0	21.0
		25	5M	19.48	19.42	19.49	1.0	21.0
		50	0	19.54	19.52	19.50	1.0	21.0
	256QAM	1	0	17.34	17.89	18.19	3.0	19.0
		1	25	17.61	17.32	17.68	3.0	19.0
		1	49	17.53	17.31	17.70	3.0	19.0
		25	0	17.62	17.45	17.55	3.0	19.0
		25	12	17.46	17.45	17.49	3.0	19.0
		25	25	17.52	17.43	17.53	3.0	19.0
		50	0	17.51	17.55	17.53	3.0	19.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18625	18900	19175		
				1852.5 MHz	1880 MHz	1907.5 MHz		
5 MHz	QPSK	1	0	19.84	19.71	19.91	0.0	22.0
		1	12	19.79	19.75	19.74	0.0	22.0
		1	24	19.76	19.74	19.94	0.0	22.0
		12	0	19.84	19.82	19.92	0.0	22.0
		12	7	19.80	19.76	20.00	0.0	22.0
		12	13	19.86	19.82	19.86	0.0	22.0
		25	0	19.83	19.76	19.67	0.0	22.0
	16QAM	1	0	20.07	19.86	19.97	0.0	22.0
		1	12	19.84	20.08	19.86	0.0	22.0
		1	24	20.33	20.29	19.97	0.0	22.0
		12	0	20.02	19.84	19.81	0.0	22.0
		12	7	20.10	19.76	19.82	0.0	22.0
		12	13	19.84	19.94	19.92	0.0	22.0
		25	0	19.82	19.83	19.65	0.0	22.0
	64QAM	1	0	20.06	19.53	19.96	1.0	21.0
		1	12	19.84	19.85	19.85	1.0	21.0
		1	24	19.78	19.91	20.03	1.0	21.0
		12	0	19.82	19.35	19.22	1.0	21.0
		12	7	19.85	19.39	19.39	1.0	21.0
		12	13	19.74	19.73	19.90	1.0	21.0
		25	0	19.84	19.79	20.03	1.0	21.0
	256QAM	1	0	17.40	17.65	17.15	3.0	19.0
		1	12	16.88	16.84	17.50	3.0	19.0
		1	24	17.43	17.41	17.80	3.0	19.0
		12	0	17.38	17.32	17.53	3.0	19.0
		12	7	17.35	17.30	17.49	3.0	19.0
		12	13	17.31	17.27	17.37	3.0	19.0
		25	0	17.32	17.25	17.54	3.0	19.0

LTE Band 2 (Ant.B) Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18615	18900	19185		
				1851.5 MHz	1880 MHz	1908.5 MHz		
3 MHz	QPSK	1	0	19.84	19.76	19.90	0.0	22.0
		1	8	19.77	19.68	19.87	0.0	22.0
		1	14	19.80	19.81	19.87	0.0	22.0
		8	0	19.90	19.79	19.89	0.0	22.0
		8	4	19.80	19.78	19.90	0.0	22.0
		8	7	19.86	19.81	19.96	0.0	22.0
		15	0	19.87	19.81	19.95	0.0	22.0
	16QAM	1	0	19.88	19.84	20.27	0.0	22.0
		1	8	20.17	19.94	19.58	0.0	22.0
		1	14	20.10	19.77	19.83	0.0	22.0
		8	0	20.09	19.83	19.81	0.0	22.0
		8	4	20.14	19.91	19.73	0.0	22.0
		8	7	20.05	19.75	19.80	0.0	22.0
		15	0	19.92	19.83	19.82	0.0	22.0
	64QAM	1	0	20.05	19.83	19.92	1.0	21.0
		1	8	19.53	19.99	19.97	1.0	21.0
		1	14	19.53	19.64	20.00	1.0	21.0
		8	0	19.34	19.23	19.35	1.0	21.0
		8	4	19.30	19.29	19.39	1.0	21.0
		8	7	19.35	19.32	19.36	1.0	21.0
		15	0	19.26	19.32	19.48	1.0	21.0
	256QAM	1	0	17.56	17.65	17.63	3.0	19.0
		1	8	17.30	17.53	17.38	3.0	19.0
		1	14	17.06	17.29	17.40	3.0	19.0
		8	0	17.39	17.37	17.52	3.0	19.0
		8	4	17.23	17.35	17.43	3.0	19.0
		8	7	17.30	17.29	17.64	3.0	19.0
		15	0	17.30	17.29	17.40	3.0	19.0

BW (MHz)	Mode	RB Allocation	, mid	Measured Pwr (dBm)			MPR	Tune-up Limit
				18607	18900	19193		
				1850.7 MHz	1880 MHz	1909.3 MHz		
1.4 MHz	QPSK	1	0	20.22	19.68	19.99	0.0	22.0
		1	3	19.97	19.53	19.68	0.0	22.0
		1	5	20.12	19.70	19.91	0.0	22.0
		3	0	19.97	19.81	19.67	0.0	22.0
		3	1	20.10	19.74	19.69	0.0	22.0
		3	3	20.10	19.72	19.61	0.0	22.0
		6	0	20.09	19.76	19.76	0.0	22.0
	16QAM	1	0	20.08	20.03	20.25	0.0	22.0
		1	3	20.05	19.94	19.84	0.0	22.0
		1	5	20.09	20.02	20.01	0.0	22.0
		3	0	20.13	20.05	19.90	0.0	22.0
		3	1	20.09	19.78	19.96	0.0	22.0
		3	3	20.05	19.75	19.89	0.0	22.0
		6	0	19.93	19.87	19.89	0.0	22.0
	64QAM	1	0	20.37	19.76	19.43	1.0	21.0
		1	3	19.66	19.98	19.71	1.0	21.0
		1	5	20.11	20.03	19.50	1.0	21.0
		3	0	20.00	19.67	19.82	1.0	21.0
		3	1	20.29	19.82	19.67	1.0	21.0
		3	3	20.01	19.79	19.90	1.0	21.0
		6	0	19.57	19.24	19.50	1.0	21.0
	256QAM	1	0	17.91	17.23	17.85	3.0	19.0
		1	3	17.61	17.48	17.93	3.0	19.0
		1	5	17.92	17.33	17.58	3.0	19.0
		3	0	17.74	17.10	17.53	3.0	19.0
		3	1	17.53	17.28	17.37	3.0	19.0
		3	3	17.80	17.03	17.45	3.0	19.0
		6	0	17.63	17.29	17.48	3.0	19.0

LTE Band 41 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)					MPR	Tune-up Limit
				RSI = 0, 3, 4						
				Measured Pwr (dBm)						
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
20 MHz	QPSK	1	0	18.74	18.73	18.85	18.78	18.92	0.0	20.0
		1	49	18.73	18.91	18.82	18.68	19.01	0.0	20.0
		1	99	18.78	18.80	18.79	18.76	18.92	0.0	20.0
		50	0	18.77	18.81	18.86	18.75	18.98	0.0	20.0
		50	24	18.81	18.82	18.87	18.75	18.99	0.0	20.0
		50	50	18.80	18.81	18.87	18.75	18.98	0.0	20.0
		100	0	18.80	18.81	18.89	18.96	18.97	0.0	20.0
	16QAM	1	0	18.57	18.98	19.11	19.01	19.00	0.0	20.0
		1	49	18.77	19.02	18.80	18.96	18.84	0.0	20.0
		1	99	18.68	18.55	18.70	19.44	18.89	0.0	20.0
		50	0	18.80	18.83	18.86	19.01	19.02	0.0	20.0
		50	24	18.83	18.88	18.90	19.05	19.03	0.0	20.0
		50	50	18.85	18.88	18.89	19.03	19.05	0.0	20.0
		100	0	18.80	18.81	18.85	18.99	18.98	0.0	20.0
	64QAM	1	0	18.43	18.93	19.14	18.28	19.11	0.0	20.0
		1	49	18.44	19.04	19.05	18.01	19.05	0.0	20.0
		1	99	18.65	18.91	19.13	18.50	18.89	0.0	20.0
		50	0	18.76	18.79	18.91	18.74	18.94	0.0	20.0
		50	24	18.77	18.84	18.85	18.75	18.93	0.0	20.0
		50	50	18.78	18.82	18.86	18.72	18.94	0.0	20.0
		100	0	18.77	18.80	18.87	18.75	18.93	0.0	20.0
	256QAM	1	0	18.22	18.38	18.28	18.17	18.48	0.0	20.0
		1	49	18.44	18.29	18.28	18.30	18.38	0.0	20.0
		1	99	18.10	18.16	18.12	18.22	17.91	0.0	20.0
		50	0	18.18	18.19	18.25	18.17	18.40	0.0	20.0
		50	24	18.19	18.17	18.25	18.15	18.36	0.0	20.0
		50	50	18.18	18.22	18.25	18.18	18.36	0.0	20.0
		100	0	18.17	18.20	18.24	18.17	18.37	0.0	20.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
15 MHz	QPSK	1	0	18.76	18.84	18.89	18.83	19.18	0.0	20.0
		1	37	19.13	19.20	19.16	19.05	19.51	0.0	20.0
		1	74	18.74	18.85	18.88	18.93	19.22	0.0	20.0
		36	0	18.78	18.89	18.96	18.94	19.23	0.0	20.0
		36	20	18.79	18.91	18.97	18.95	19.23	0.0	20.0
		36	39	18.81	18.91	18.97	18.93	19.24	0.0	20.0
		75	0	18.81	18.90	18.97	18.94	19.24	0.0	20.0
	16QAM	1	0	18.73	18.92	18.60	18.70	19.14	0.0	20.0
		1	37	18.89	19.21	18.94	19.05	19.38	0.0	20.0
		1	74	18.82	19.24	18.95	18.96	19.51	0.0	20.0
		36	0	18.86	18.93	18.89	19.00	19.22	0.0	20.0
		36	20	18.85	18.91	18.87	18.95	19.24	0.0	20.0
		36	39	18.86	18.91	18.90	18.99	19.24	0.0	20.0
		75	0	18.80	18.88	18.95	18.92	19.19	0.0	20.0
	64QAM	1	0	18.87	18.83	19.13	18.77	19.46	0.0	20.0
		1	37	18.86	19.28	18.93	18.86	19.37	0.0	20.0
		1	74	18.82	18.56	19.17	18.68	19.42	0.0	20.0
		36	0	18.79	18.90	18.97	18.90	19.21	0.0	20.0
		36	20	18.80	18.90	18.99	18.91	19.22	0.0	20.0
		36	39	18.79	18.90	19.00	18.90	19.19	0.0	20.0
		75	0	18.82	18.90	18.95	18.93	19.23	0.0	20.0
	256QAM	1	0	18.18	17.83	18.55	18.50	18.48	0.0	20.0
		1	37	18.46	18.33	18.18	18.17	18.52	0.0	20.0
		1	74	18.22	18.22	18.24	18.29	18.54	0.0	20.0
		36	0	18.15	18.24	18.41	18.29	18.62	0.0	20.0
		36	20	18.18	18.27	18.38	18.27	18.63	0.0	20.0
		36	39	18.17	18.25	18.41	18.29	18.58	0.0	20.0
		75	0	18.21	18.25	18.37	18.32	18.61	0.0	20.0

LTE Band 41 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
10 MHz	QPSK	1	0	18.75	18.86	18.89	18.91	19.21	0.0	20.0
		1	25	18.92	18.95	18.83	18.86	19.31	0.0	20.0
		1	49	18.77	18.84	18.92	18.89	19.18	0.0	20.0
		25	0	18.79	18.89	18.93	18.89	19.21	0.0	20.0
		25	12	18.81	18.89	18.92	18.88	19.19	0.0	20.0
		25	25	18.80	18.89	18.94	18.87	19.20	0.0	20.0
		50	0	18.83	18.89	18.93	18.88	19.19	0.0	20.0
	16QAM	1	0	18.69	18.80	19.00	18.74	19.15	0.0	20.0
		1	25	18.92	19.02	19.14	18.75	19.30	0.0	20.0
		1	49	18.73	18.83	19.00	18.77	19.14	0.0	20.0
		25	0	18.82	18.91	18.92	18.86	19.21	0.0	20.0
		25	12	18.82	18.90	18.92	18.86	19.19	0.0	20.0
		25	25	18.85	18.91	18.92	18.85	19.20	0.0	20.0
		50	0	18.83	18.93	18.93	18.86	19.24	0.0	20.0
	64QAM	1	0	18.86	18.99	18.80	18.84	19.30	0.0	20.0
		1	25	19.02	19.02	18.62	18.94	19.37	0.0	20.0
		1	49	18.90	18.98	18.81	18.87	19.28	0.0	20.0
		25	0	18.81	18.87	18.95	18.84	19.16	0.0	20.0
		25	12	18.83	18.88	18.95	18.86	19.17	0.0	20.0
		25	25	18.79	18.88	18.94	18.85	19.16	0.0	20.0
		50	0	18.83	18.90	18.94	18.88	19.21	0.0	20.0
	256QAM	1	0	18.07	18.10	18.42	18.15	18.36	0.0	20.0
		1	25	17.96	18.17	18.64	18.04	18.39	0.0	20.0
		1	49	18.11	18.10	18.42	18.16	18.36	0.0	20.0
		25	0	18.22	18.32	18.35	18.28	18.63	0.0	20.0
		25	12	18.24	18.33	18.37	18.29	18.63	0.0	20.0
		25	25	18.23	18.31	18.34	18.28	18.62	0.0	20.0
		50	0	18.23	18.29	18.38	18.28	18.60	0.0	20.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
5 MHz	QPSK	1	0	18.85	18.88	18.89	18.72	19.00	0.0	20.0
		1	12	18.98	19.00	19.10	18.86	19.19	0.0	20.0
		1	24	18.85	18.86	18.88	18.70	18.96	0.0	20.0
		12	0	18.83	18.87	18.89	18.72	19.00	0.0	20.0
		12	7	18.84	18.86	18.89	18.72	19.00	0.0	20.0
		12	13	18.87	18.86	18.88	18.72	18.98	0.0	20.0
		25	0	18.85	18.87	18.88	18.74	18.99	0.0	20.0
	16QAM	1	0	18.86	18.91	19.09	18.75	18.95	0.0	20.0
		1	12	19.16	19.02	19.25	18.98	19.09	0.0	20.0
		1	24	18.90	18.92	19.05	18.77	18.91	0.0	20.0
		12	0	18.83	18.83	18.92	18.73	18.99	0.0	20.0
		12	7	18.84	18.82	18.90	18.73	18.98	0.0	20.0
		12	13	18.85	18.84	18.91	18.74	18.98	0.0	20.0
		25	0	18.80	18.86	18.91	18.72	19.00	0.0	20.0
	64QAM	1	0	18.67	19.06	18.98	18.76	19.23	0.0	20.0
		1	12	18.90	19.16	18.89	18.94	19.45	0.0	20.0
		1	24	18.68	19.03	19.03	18.77	19.22	0.0	20.0
		12	0	18.80	18.86	18.92	18.89	19.18	0.0	20.0
		12	7	18.79	18.85	18.90	18.90	19.17	0.0	20.0
		12	13	18.80	18.85	18.93	18.89	19.17	0.0	20.0
		25	0	18.78	18.83	18.91	18.84	19.15	0.0	20.0
	256QAM	1	0	18.26	18.33	18.38	18.35	18.64	0.0	20.0
		1	12	18.39	18.61	18.65	18.47	18.88	0.0	20.0
		1	24	18.29	18.34	18.45	18.38	18.63	0.0	20.0
		12	0	18.16	18.28	18.29	18.25	18.56	0.0	20.0
		12	7	18.18	18.29	18.28	18.25	18.58	0.0	20.0
		12	13	18.19	18.27	18.29	18.26	18.56	0.0	20.0
		25	0	18.18	18.22	18.27	18.25	18.56	0.0	20.0

9.4. NR (Sub 6GHz)

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS 138.521-1 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 TS138.521-1.

Table 6.2.2.3-1: Maximum Power Reduction (MPR) for Power 3

Modulation	MPR (dB)		
	Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM PI/2 BPSK	≤ 3.5[1]	≤ 1.2[1]	≤ 0.2[1]
	≤ 0.5[2]		0[2]
DFT-s-OFDM QPSK	≤ 1		0
DFT-s-OFDM 16 QAM	≤ 2		≤ 1
DFT-s-OFDM 64 QAM	≤ 2.5		
DFT-s-OFDM 256 QAM	≤ 4.5		
CP-OFDM QPSK	≤ 3		≤ 1.5
CP-OFDM 16 QAM	≤ 3		≤ 2
CP-OFDM 64 QAM	≤ 3.5		
CP-OFDM 256 QAM	≤ 6.5		

NOTE 1: Applicable for UE operating in TDD mode with PI/2 BPSK modulation and UE indicates support for UE capability *powerBoosting-pi2BPSK* and if the IE *powerBoostPi2BPSK* is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0dB MPR is 26dBm.

NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 and if the IE *powerBoostPi2BPSK* is set to 0 and if more than 40% of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.

The allowed A-MPR values specified below in Table 6.2.3.3.1-1 of 3GPP TS138.521-1 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 6.2.3.3.1-1: Additional maximum power reduction (A-MPR)

Network Signalling label	Requirements (subclause)	NR Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01		Table 5.2-1	5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 90, 100	Table 5.3.2-1	N/A

Uplink RB allocations were used to Table 6.1-1 of the 3GPP TS 138.521-1.

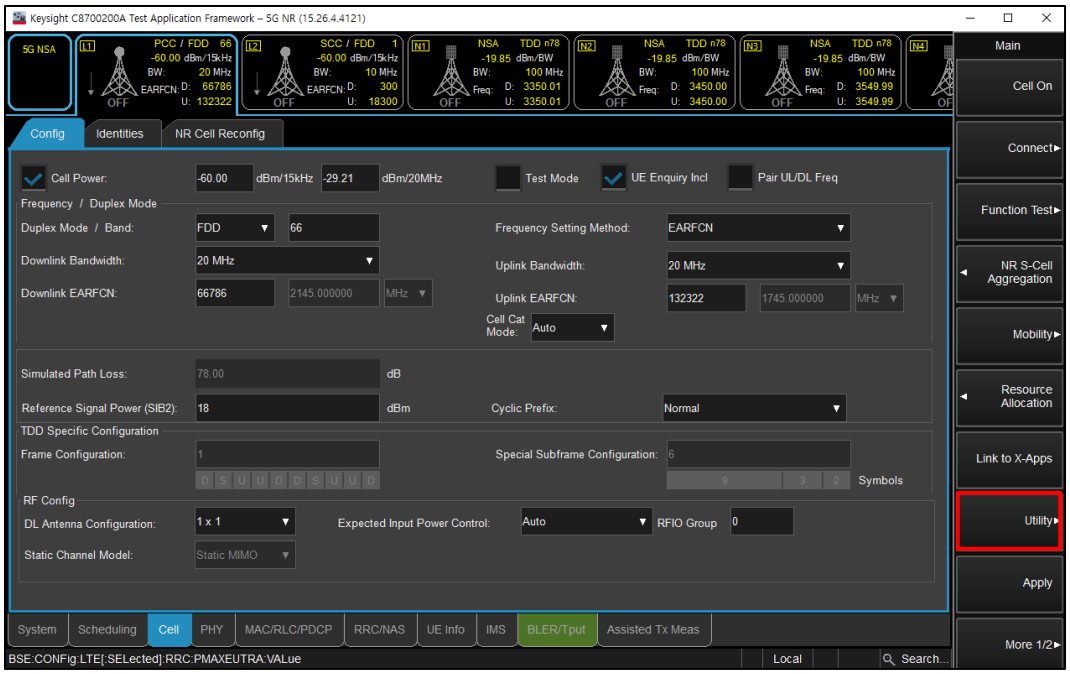
Channel Bandwidth	SCS(kHz)	OFDM	RB allocation							
			Edge_Full_Left	Edge_Full_Right	Edge_1RB_Left	Edge_1RB_Right	Outer_Full	Inner_Full	Inner_1RB_Left	Inner_1RB_Right
5MHz	15	DFT-s	2@0	2@23	1@0	1@24	25@0	12@6	1@1	1@23
		CP	2@0	2@23	1@0	1@24	25@0	13@6	1@1	1@23
	30	DFT-s	2@0	2@9	1@0	1@10	10@0	5@2[1]	1@1	1@9
		CP	2@0	2@9	1@0	1@10	11@0	5@2[1]	1@1	1@9
	60	DFT-s	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10MHz	15	DFT-s	2@0	2@50	1@0	1@51	50@0	25@12	1@1	1@50
		CP	2@0	2@50	1@0	1@51	52@0	26@13	1@1	1@50
	30	DFT-s	2@0	2@22	1@0	1@23	24@0	12@6	1@1	1@22
		CP	2@0	2@22	1@0	1@23	24@0	12@6	1@1	1@22
	60	DFT-s	2@0	2@9	1@0	1@10	10@0	5@2[1]	1@1	1@9
		CP	2@0	2@9	1@0	1@10	11@0	5@2[1]	1@1	1@9
15MHz	15	DFT-s	2@0	2@77	1@0	1@78	75@0	36@18	1@1	1@77
		CP	2@0	2@77	1@0	1@78	79@0	39@19[1]	1@1	1@77
	30	DFT-s	2@0	2@36	1@0	1@37	36@0	18@9	1@1	1@36
		CP	2@0	2@36	1@0	1@37	38@0	19@9	1@1	1@36
	60	DFT-s	2@0	2@16	1@0	1@17	18@0	9@4	1@1	1@16
		CP	2@0	2@16	1@0	1@17	18@0	9@4	1@1	1@16
20MHz	15	DFT-s	2@0	2@104	1@0	1@105	100@0	50@25	1@1	1@104
		CP	2@0	2@104	1@0	1@105	106@0	53@26	1@1	1@104
	30	DFT-s	2@0	2@49	1@0	1@50	50@0	25@12	1@1	1@49
		CP	2@0	2@49	1@0	1@50	51@0	25@12[1]	1@1	1@49
	60	DFT-s	2@0	2@22	1@0	1@23	24@0	12@6	1@1	1@22
		CP	2@0	2@22	1@0	1@23	24@0	12@6	1@1	1@22
25MHz	15	DFT-s	2@0	2@131	1@0	1@132	128@0	64@32	1@1	1@131
		CP	2@0	2@131	1@0	1@132	133@0	67@33	1@1	1@131
	30	DFT-s	2@0	2@63	1@0	1@64	64@0	32@16	1@1	1@63
		CP	2@0	2@63	1@0	1@64	65@0	33@16	1@1	1@63
	60	DFT-s	2@0	2@29	1@0	1@30	30@0	15@7[1]	1@1	1@29
		CP	2@0	2@29	1@0	1@30	31@0	15@7[1]	1@1	1@29
30MHz	15	DFT-s	2@0	2@158	1@0	1@159	160@0	80@40	1@1	1@158
		CP	2@0	2@158	1@0	1@159	160@0	80@40	1@1	1@158
	30	DFT-s	2@0	2@76	1@0	1@77	75@0	36@18	1@1	1@76
		CP	2@0	2@76	1@0	1@77	78@0	39@19	1@1	1@76
	60	DFT-s	2@0	2@36	1@0	1@37	36@0	18@9	1@1	1@36
		CP	2@0	2@36	1@0	1@37	38@0	19@9	1@1	1@36
40MHz	15	DFT-s	2@0	2@214	1@0	1@215	216@0	108@54	1@1	1@214
		CP	2@0	2@214	1@0	1@215	216@0	108@54	1@1	1@214
	30	DFT-s	2@0	2@104	1@0	1@105	100@0	50@25	1@1	1@104
		CP	2@0	2@104	1@0	1@105	106@0	53@26	1@1	1@104
	60	DFT-s	2@0	2@49	1@0	1@50	50@0	25@12	1@1	1@49
		CP	2@0	2@49	1@0	1@50	51@0	25@12[1]	1@1	1@49
50MHz	15	DFT-s	2@0	2@268	1@0	1@269	270@0	135@67	1@1	1@268
		CP	2@0	2@268	1@0	1@269	270@0	135@67	1@1	1@268
	30	DFT-s	2@0	2@131	1@0	1@132	128@0	64@32	1@1	1@131
		CP	2@0	2@131	1@0	1@132	133@0	67@33	1@1	1@131
	60	DFT-s	2@0	2@63	1@0	1@64	64@0	32@16	1@1	1@63
		CP	2@0	2@63	1@0	1@64	65@0	33@16	1@1	1@63
60MHz	15	DFT-s	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30	DFT-s	2@0	2@160	1@0	1@161	162@0	81@40	1@1	1@160
		CP	2@0	2@160	1@0	1@161	162@0	81@40	1@1	1@160
	60	DFT-s	2@0	2@77	1@0	1@78	75@0	36@18	1@1	1@77
		CP	2@0	2@77	1@0	1@78	79@0	39@19[1]	1@1	1@77
80MHz	15	DFT-s	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30	DFT-s	2@0	2@215	1@0	1@216	216@0	108@54	1@1	1@215
		CP	2@0	2@215	1@0	1@216	217@0	109@54	1@1	1@215
	60	DFT-s	2@0	2@105	1@0	1@106	100@0	50@25	1@1	1@105
		CP	2@0	2@105	1@0	1@106	107@0	53@26[1]	1@1	1@105
90MHz	15	DFT-s	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30	DFT-s	2@0	2@243	1@0	1@244	240@0	120@60	1@1	1@243
		CP	2@0	2@243	1@0	1@244	245@0	123@61	1@1	1@243
	60	DFT-s	2@0	2@119	1@0	1@120	120@0	60@30	1@1	1@119
		CP	2@0	2@119	1@0	1@120	121@0	61@30	1@1	1@119
100MHz	15	DFT-s	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30	DFT-s	2@0	2@271	1@0	1@272	270@0	135@67	1@1	1@271
		CP	2@0	2@271	1@0	1@272	273@0	137@68	1@1	1@271
	60	DFT-s	2@0	2@133	1@0	1@134	135@0	64@32	1@1	1@133
		CP	2@0	2@133	1@0	1@134	135@0	67@33[1]	1@1	1@133

Note 1: The allocated RB number L_{CRB} is ceil(N_{RB}/2) -1 in order to meet Inner RB allocation definition ($RB_{Start,Low} \leq RB_{Start} \leq RB_{Start,High}$) described in subclause 6.2.2 of TS 38.101-1 [2].

Procedures used to establish power measurement for NR Bands

Switching to NSA mode or SA mode

- Click the “Utility” button in the right of Test application screen
- Select “5G NR NSA” in the “TA Mode Switch” for NSA mode
- Select “5G NR Standalone” in the “TA Mode Switch” for SA mode

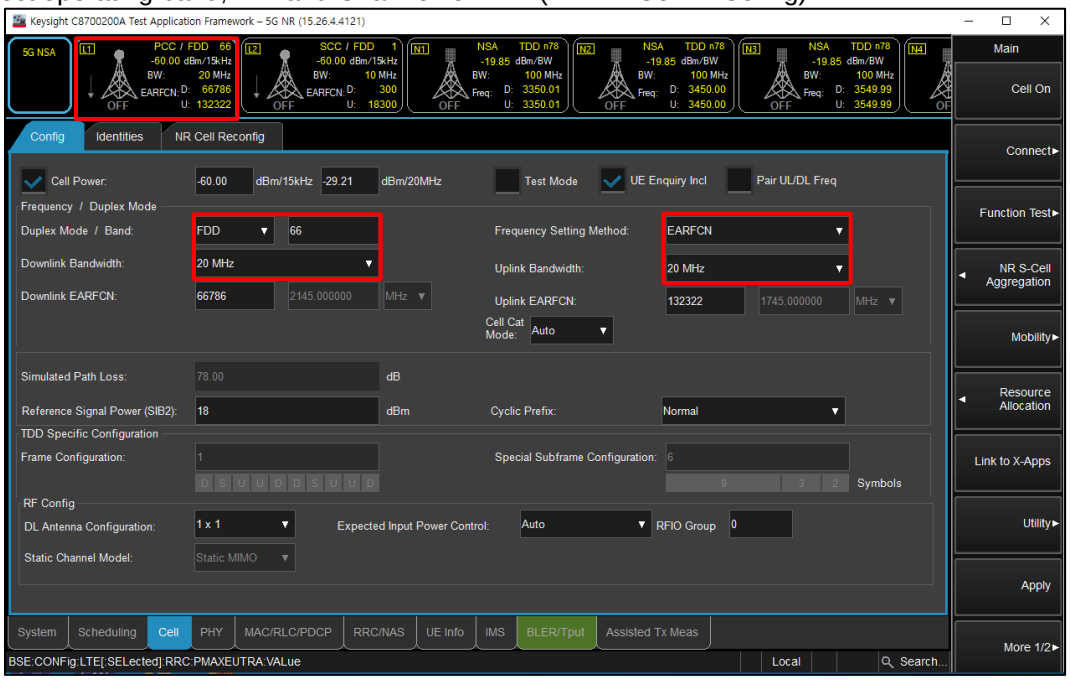


(Figure 1-1)

(Figure 1-2)

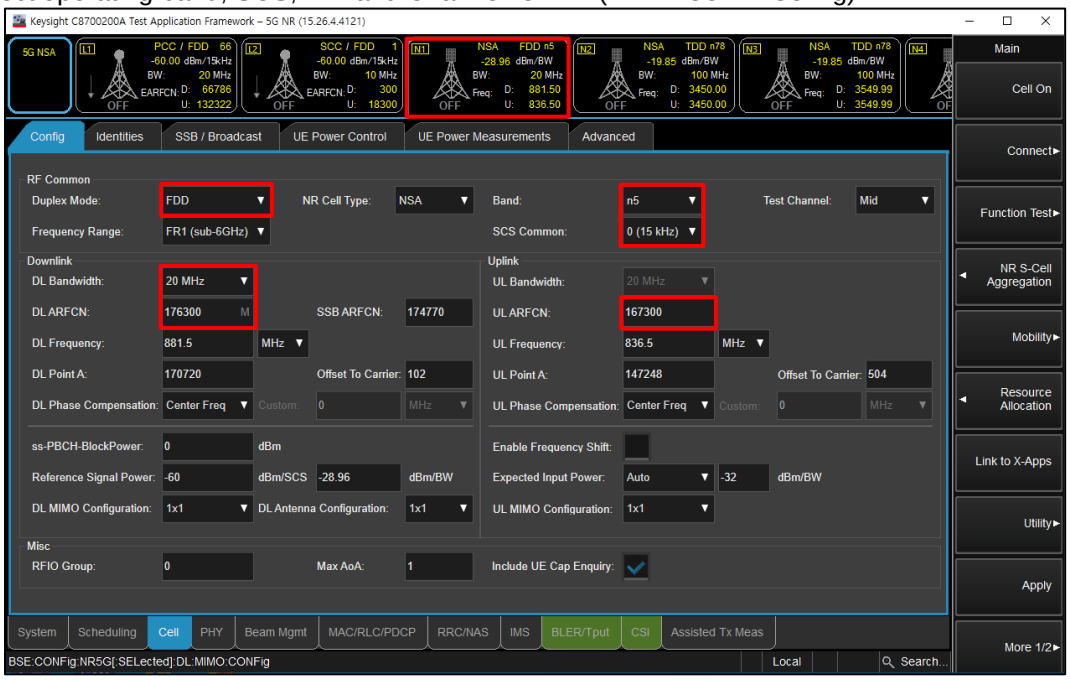
NSA Mode

- Select operating band, BW and Channel for LTE (LTE -> Cell -> Config)



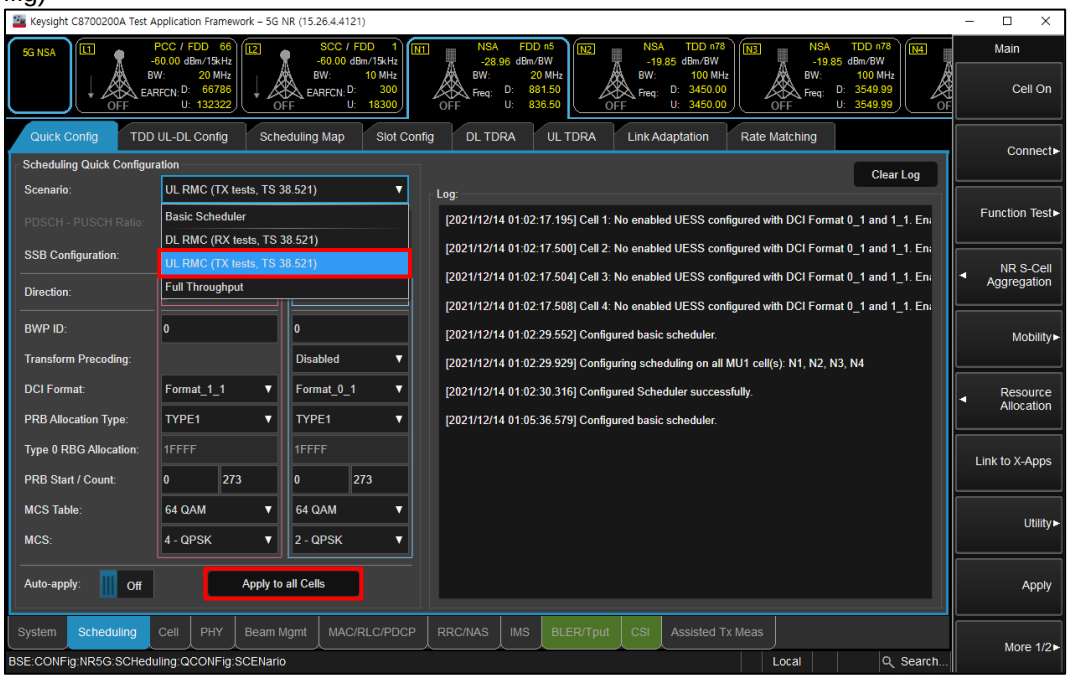
(Figure 2-1)

- Select operating band, SCS, BW and Channel for NR (NR -> Cell -> Config)



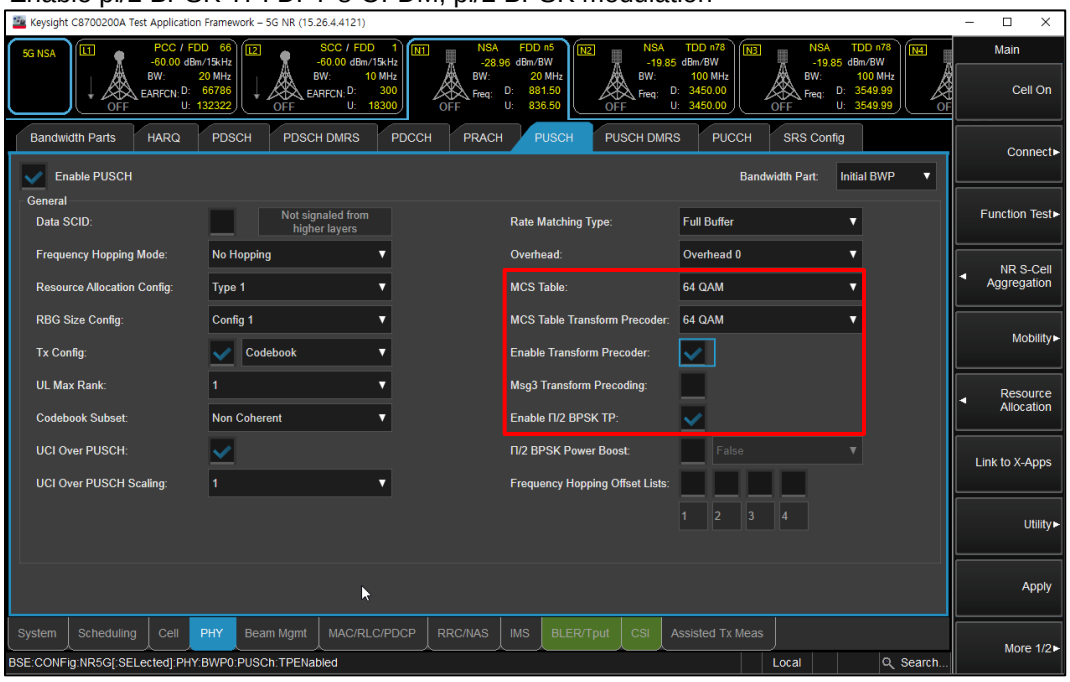
(Figure 2-2)

- Select “UL RMC (TX tests, TS 38.521)” for maximum power RB scheduling (NR -> Scheduling -> Quick Config)



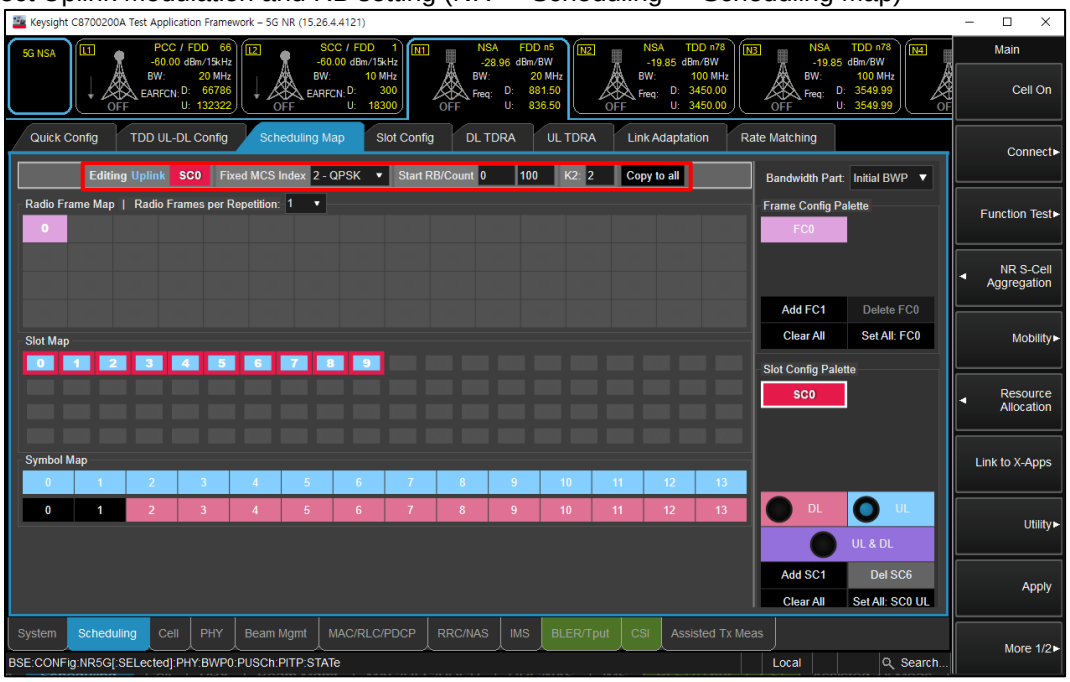
(Figure 2-3)

- To set waveform for NR Band (NR -> PHY -> PUSCH)
  - Select highest modulation in the MCS Table and MCS Table Transform Precoder
  - Enable Transform Precoder: DFT-s-OFDM / disable for CP-OFDM
  - Enable pi/2 BPSK TP: DFT-s-OFDM, pi/2 BPSK modulation



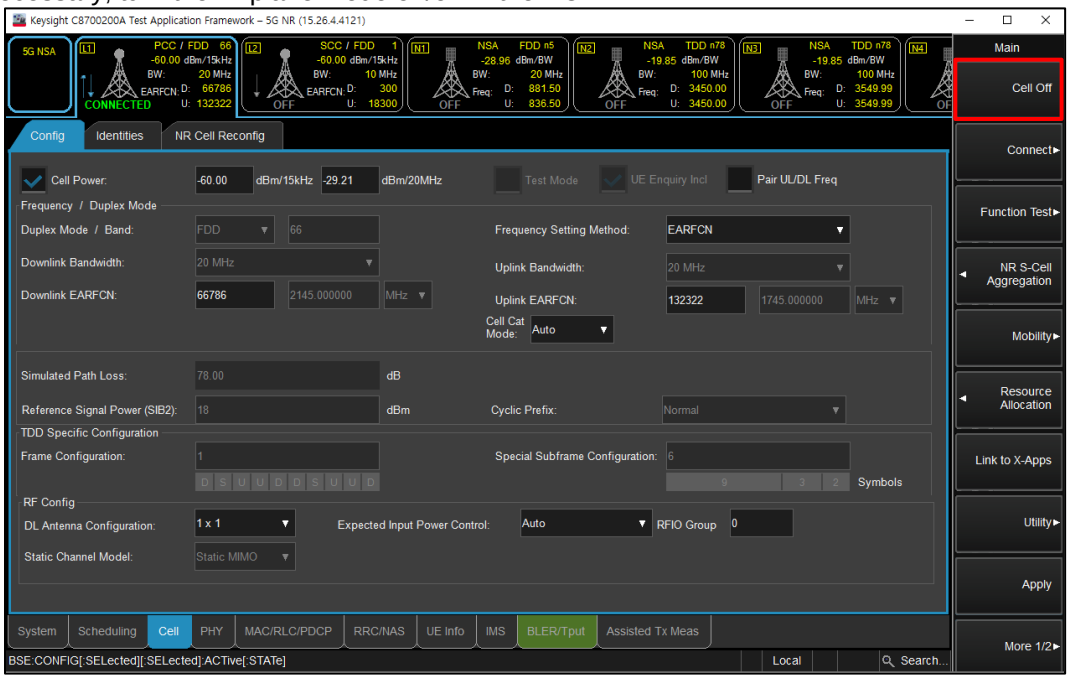
(Figure 2-4)

- Select Uplink Modulation and RB setting (NR -> Scheduling -> Scheduling Map)



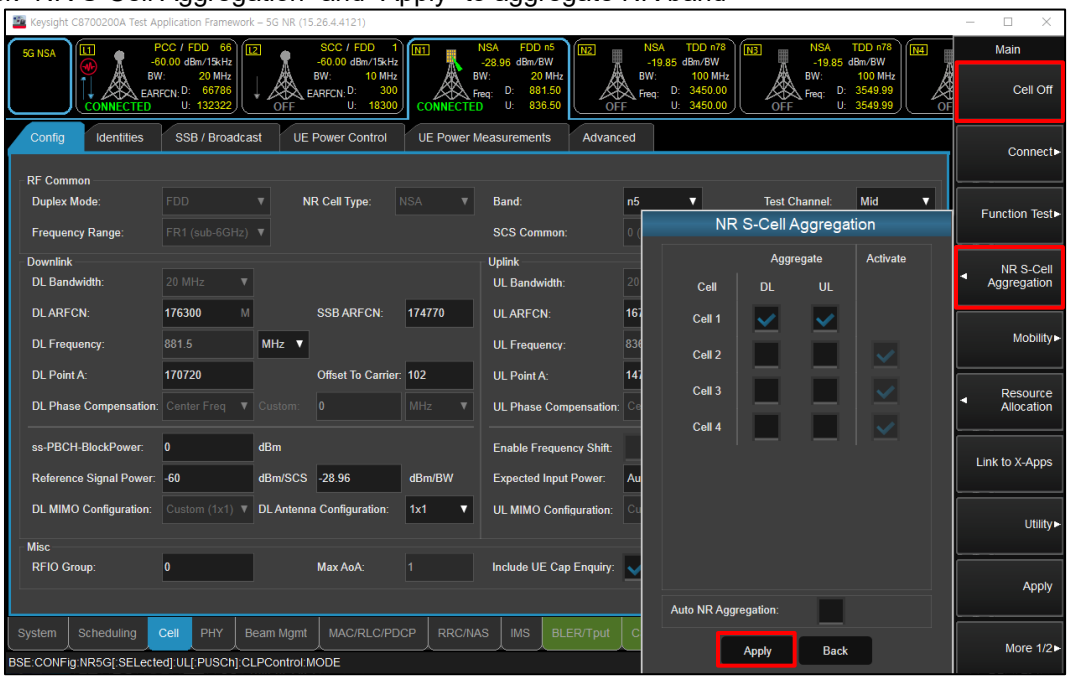
(Figure 2-5)

- Click “Cell On” button in the right of Test application screen in the LTE tab
- If necessary, turn the Airplane Mode on/off in the DUT



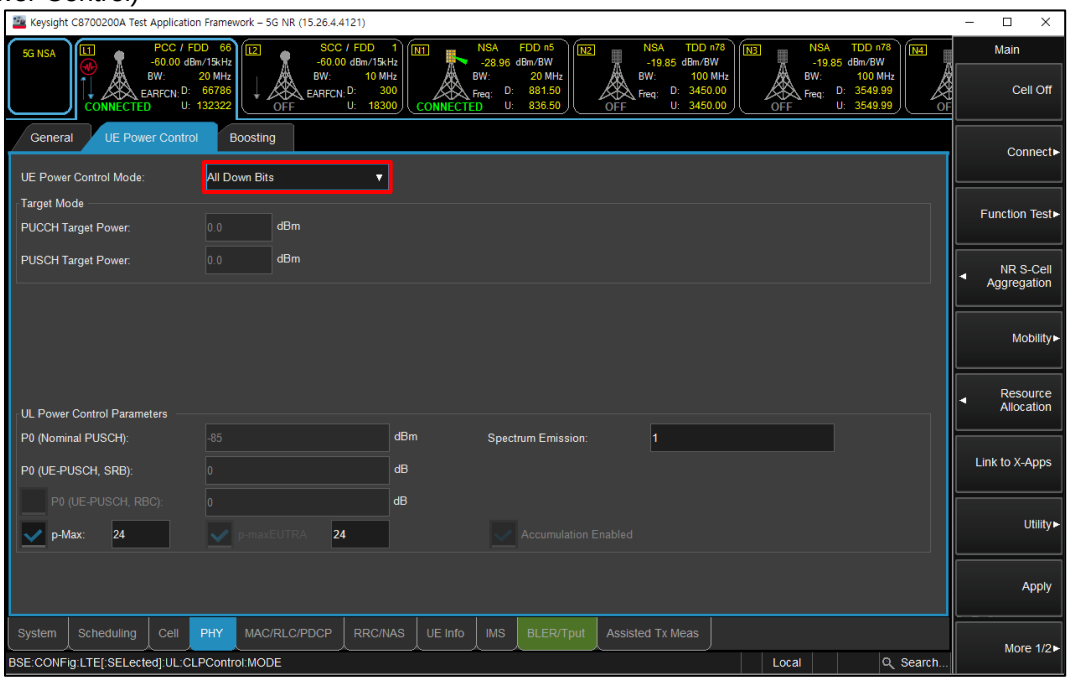
(Figure 2-6)

- Click “Cell On” button in the right of Test application screen in the NR tab
- Click “NR S-Cell Aggregation” and “Apply” to aggregate NR band



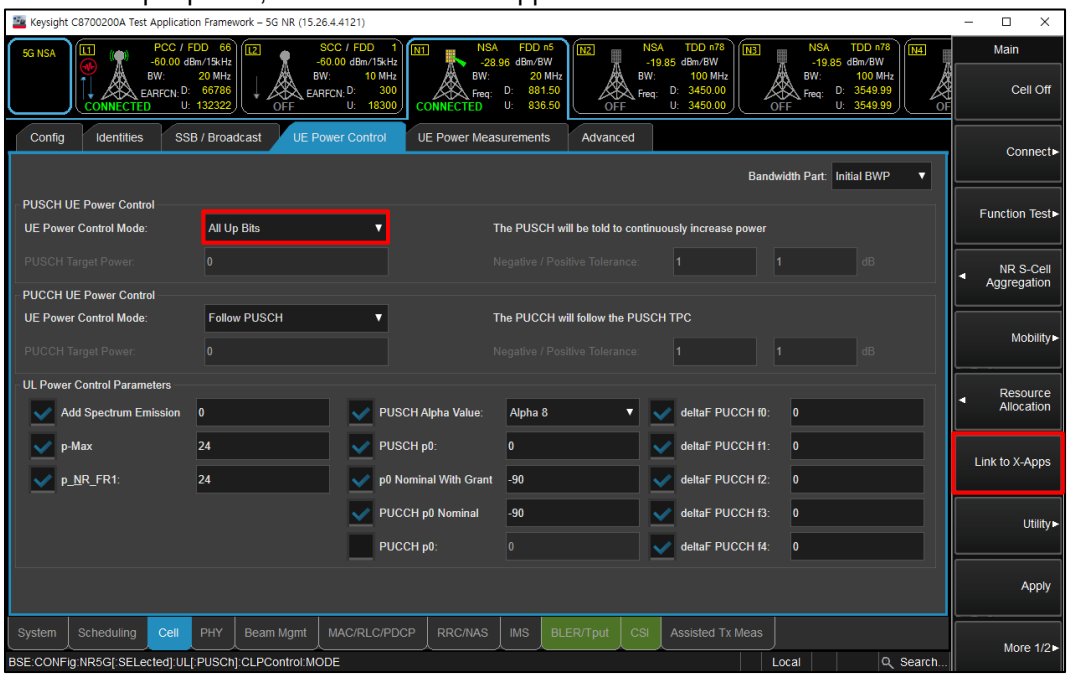
(Figure 2-7)

- Select “All Down Bits” of UL Power control Mode in LTE tab for NR maximum power (LTE -> PHY -> UE Power Control)



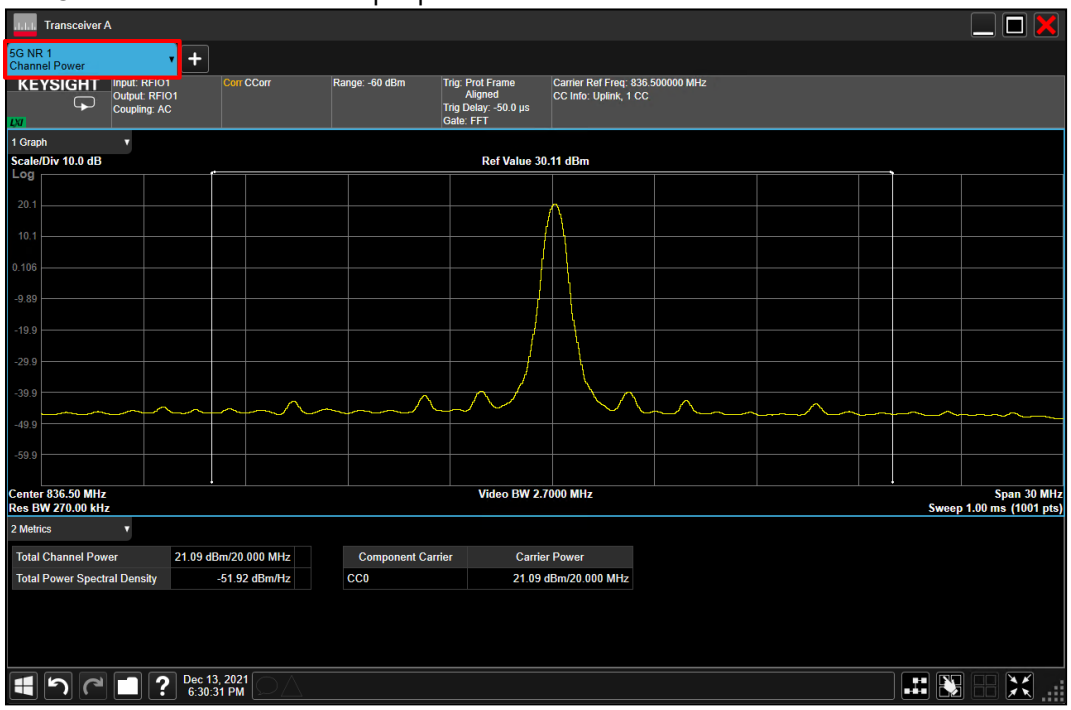
(Figure 2-8)

- Select “All Up Bits” of UL Power control Mode in NR tab for NR maximum power (NR -> Cell -> UE Power Control)
- To read the output power, click the “Link to X-Apps”



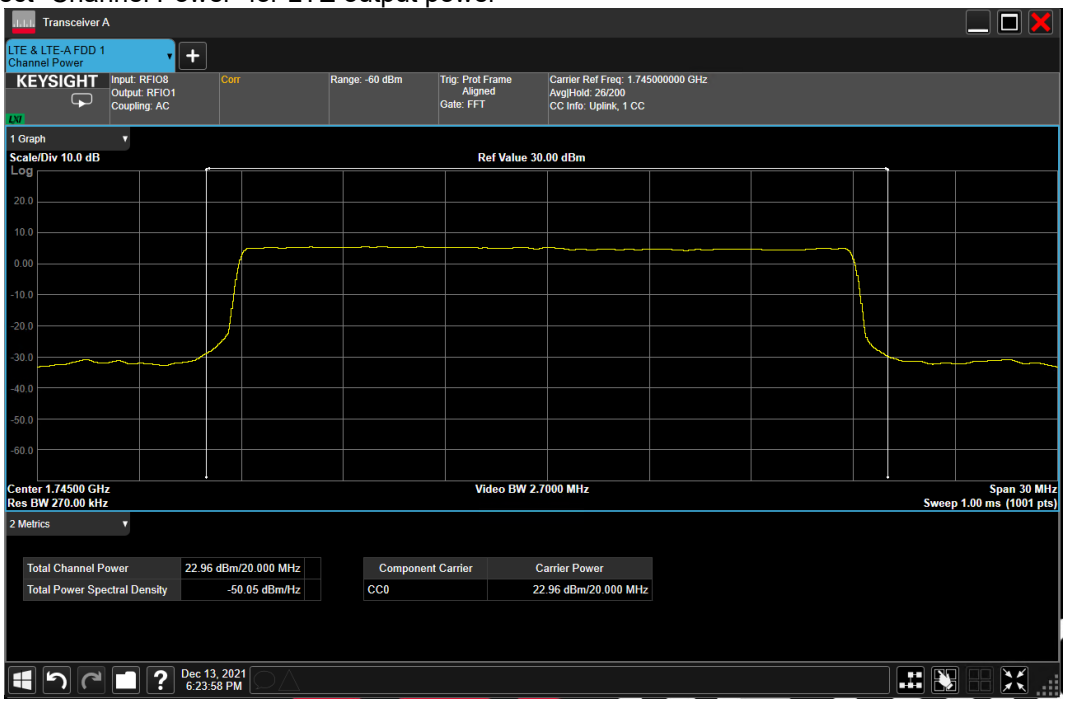
(Figure 2-9)

- Select “Channel Power” for NR output power



(Figure 2-10)

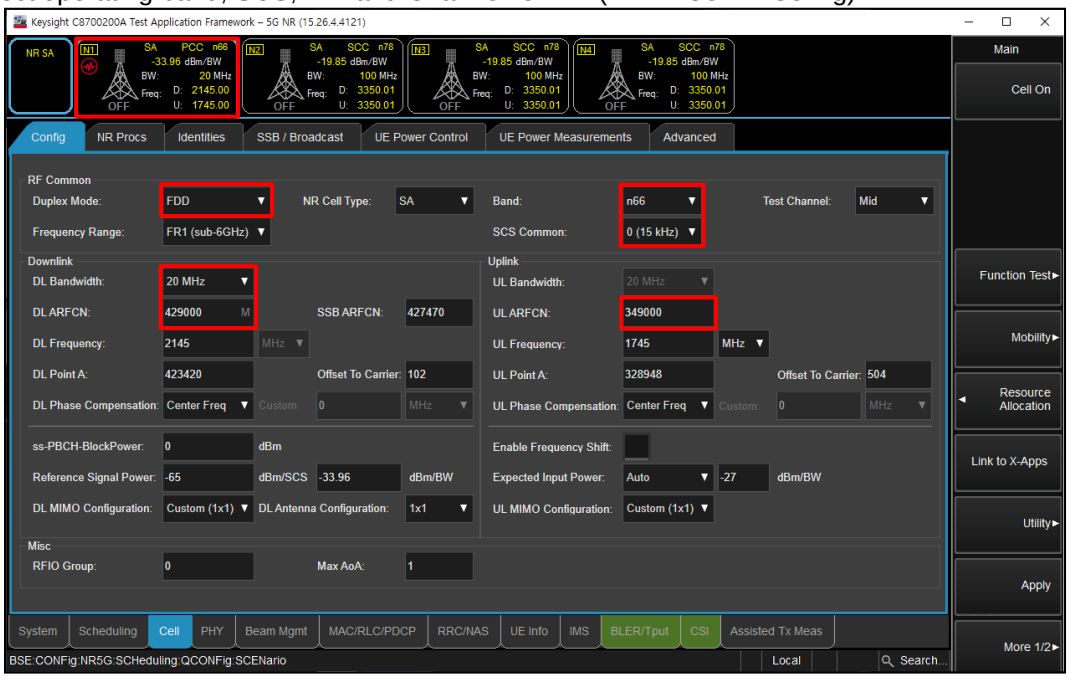
- Select “Channel Power” for LTE output power



(Figure 2-11)

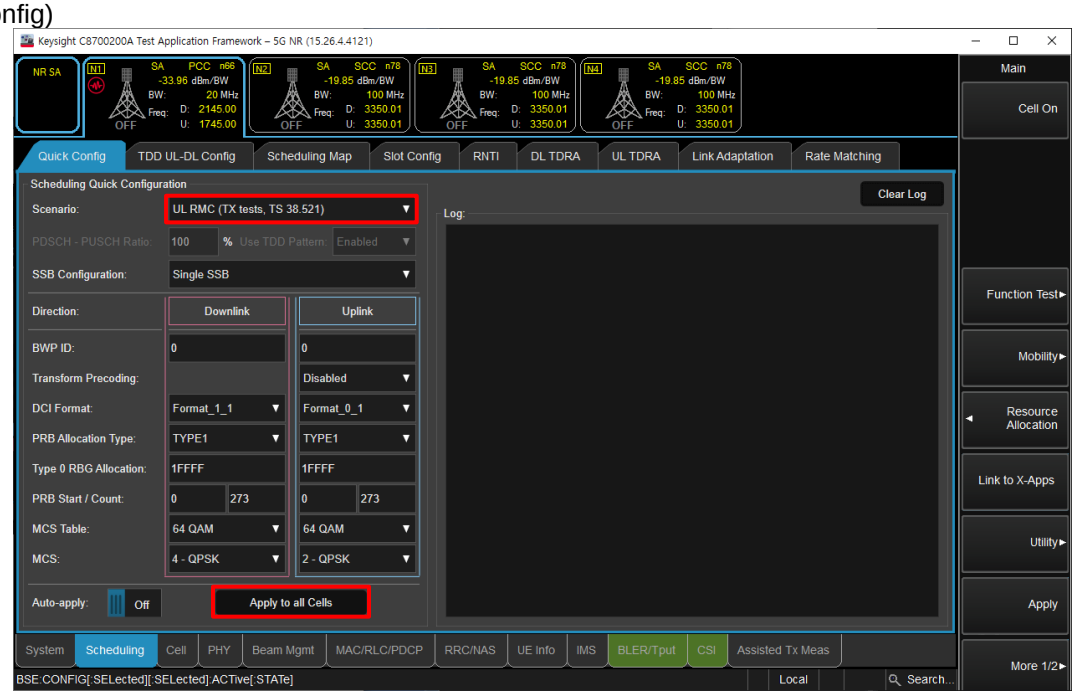
SA Mode

- Select operating band, SCS, BW and Channel for NR (NR -> Cell -> Config)



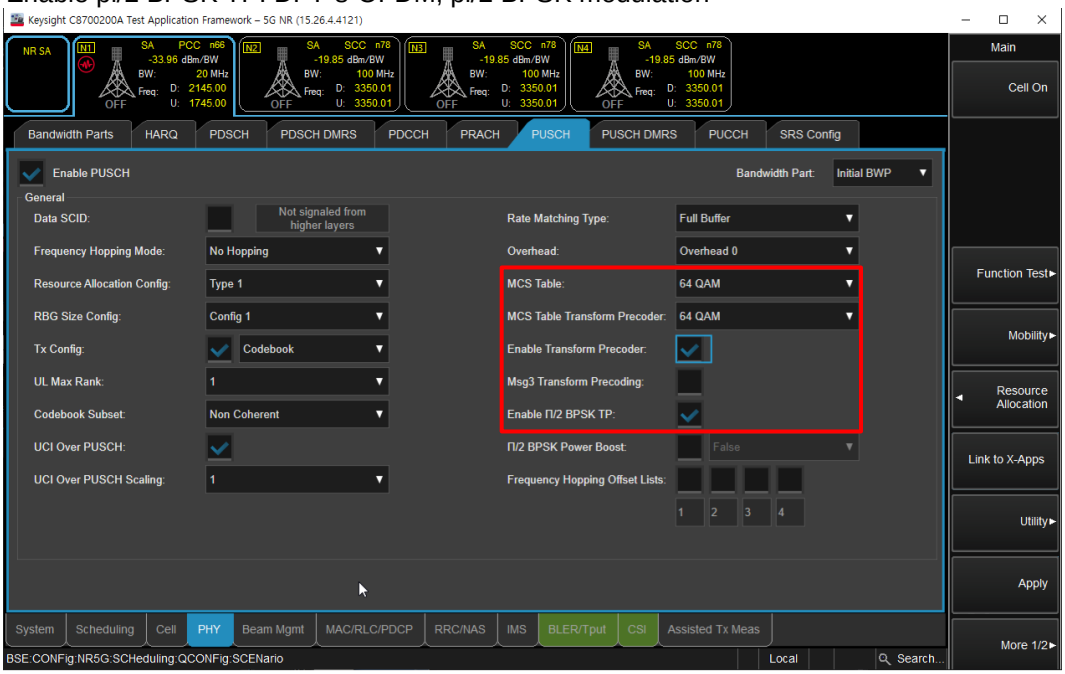
(Figure 3-1)

- Select “UL RMC (TX tests, TS 38.521)” for maximum power RB scheduling (NR -> Scheduling -> Quick Config)



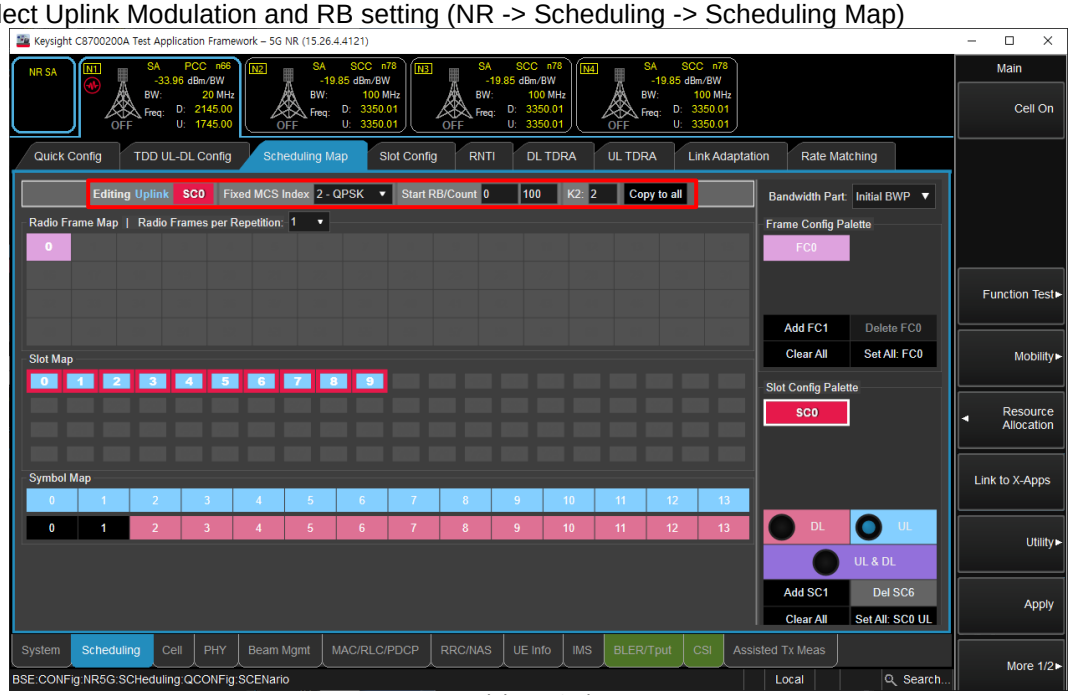
(Figure 3-2)

- To set waveform for NR Band (NR -> PHY -> PUSCH)
  - Select highest modulation in the MCS Table and MCS Table Transform Precoder
  - Enable Transform Precoder: DFT-s-OFDM / disable for CP-OFDM
  - Enable pi/2 BPSK TP: DFT-s-OFDM, pi/2 BPSK modulation



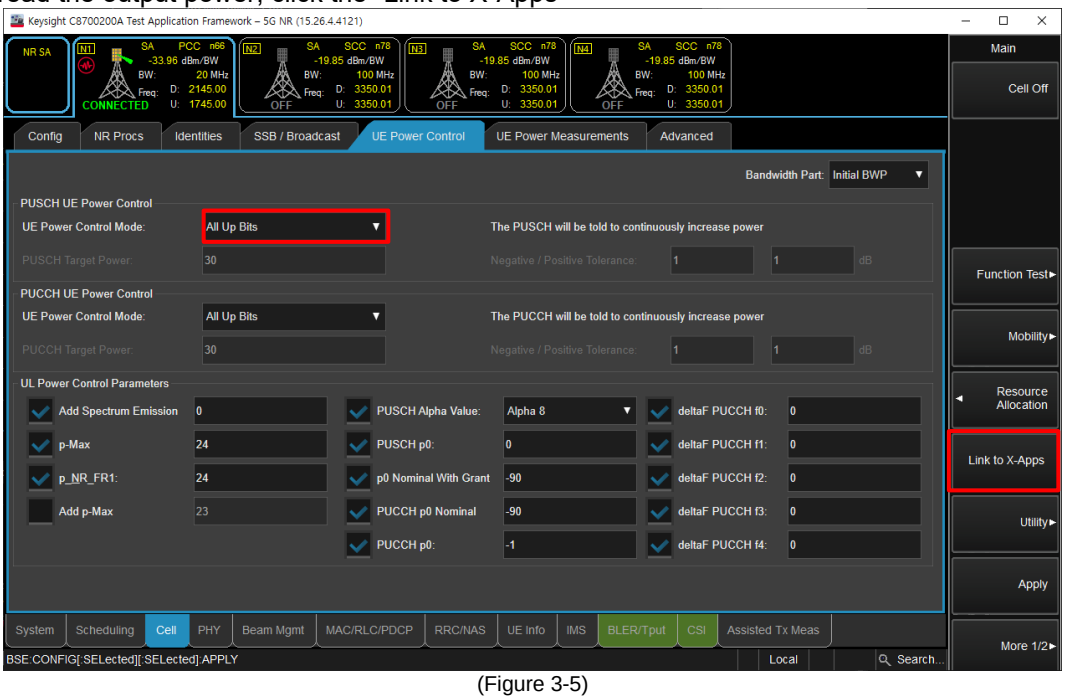
(Figure 3-3)

- Select Uplink Modulation and RB setting (NR -> Scheduling -> Scheduling Map)



(Figure 3-4)

- Click “Cell On” button in the right of Test application screen
- If necessary, turn the Airplane Mode on/off in the DUT
- Select “All Up Bits” of UL Power control Mode (Cell -> UE Power Control)
- To read the output power, click the “Link to X-Apps”



(Figure 3-5)

- Select “Channel Power”

(Figure 3-6)

NR Band n5 Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
					Pmax, RSI = 0, 3, 4				
					Measured Pwr (dBm)			MPR	Tune-up Limit
					166800	167300	167800		
					834.00 MHz	836.50 MHz	839.00 MHz		
20 MHz	DFT-s-OFDM	π/2 BPSK	1	1	24.63	24.67	24.71	0.0	25.5
			1	52	24.84	24.85	24.89	0.0	25.5
			1	104	24.84	24.75	24.55	0.0	25.5
			50	0	23.73	23.79	23.82	0.5	25.0
			50	28	24.83	24.85	24.85	0.0	25.5
			50	56	23.86	23.88	23.84	0.5	25.0
			100	0	23.81	23.86	23.86	0.5	25.0
		QPSK	1	1	24.60	24.64	24.67	0.0	25.5
			1	52	24.81	24.80	**24.83**	0.0	25.5
			1	104	24.82	24.71	24.45	0.0	25.5
			50	0	23.71	23.79	23.83	1.0	24.5
			50	28	24.82	**24.87**	24.86	0.0	25.5
			50	56	23.85	23.86	23.84	1.0	24.5
			100	0	23.80	23.87	23.87	1.0	24.5
		16QAM	1	1	23.62	23.62	23.80	1.0	24.5
			1	52	23.85	23.90	23.99	1.0	24.5
			1	104	23.81	23.74	23.57	1.0	24.5
		64QAM	1	1	22.28	22.08	22.19	2.5	23.0
		256QAM	1	1	20.04	20.18	20.16	4.5	21.0
	CP-OFDM	QPSK	1	1	23.05	23.14	23.26	1.5	24.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
					166300	167300	168300		
					831.50 MHz	836.50 MHz	841.50 MHz		
15 MHz	DFT-s-OFDM	π/2 BPSK	1	1	24.69	24.80	24.80	0.0	25.5
			1	39	24.75	24.74	24.75	0.0	25.5
			1	77	24.88	24.83	24.69	0.0	25.5
			36	0	23.75	23.84	23.86	0.5	25.0
			36	21	24.82	24.88	24.87	0.0	25.5
			36	43	23.90	23.91	23.81	0.5	25.0
			75	0	23.82	23.90	23.89	0.5	25.0
		QPSK	1	1	24.67	24.77	24.80	0.0	25.5
			1	39	24.72	24.83	24.76	0.0	25.5
			1	77	24.88	24.85	24.69	0.0	25.5
			36	0	23.74	23.85	23.88	1.0	24.5
			36	21	24.81	24.87	24.88	0.0	25.5
			36	43	23.88	23.92	23.82	1.0	24.5
			75	0	23.82	23.91	23.90	1.0	24.5
		16QAM	1	1	23.71	23.84	23.83	1.0	24.5
			1	39	23.73	23.83	23.79	1.0	24.5
			1	77	23.88	23.95	23.73	1.0	24.5
		64QAM	1	1	22.22	22.36	22.47	2.5	23.0
		256QAM	1	1	20.10	20.29	20.25	4.5	21.0
	CP-OFDM	QPSK	1	1	23.17	23.25	23.27	1.5	24.0

NR Band n5 Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
					165800	167300	168800		
					829.00 MHz	836.50 MHz	844.00 MHz		
10 MHz	DFT-s-OFDM	π/2 BPSK	1	1	24.67	24.82	24.86	0.0	25.5
			1	25	24.74	24.83	24.77	0.0	25.5
			1	50	24.80	24.87	24.68	0.0	25.5
			25	0	23.69	23.86	23.88	0.5	25.0
			25	13	24.74	24.86	24.84	0.0	25.5
			25	27	23.80	23.89	23.79	0.5	25.0
			50	0	23.76	23.90	23.86	0.5	25.0
		QPSK	1	1	24.64	24.83	24.83	0.0	25.5
			1	25	24.76	24.85	24.76	0.0	25.5
			1	50	24.82	24.86	24.71	0.0	25.5
			25	0	23.71	23.88	23.90	1.0	24.5
			25	13	24.74	24.87	24.84	0.0	25.5
			25	27	23.80	23.89	23.80	1.0	24.5
			50	0	23.76	23.90	23.86	1.0	24.5
		16QAM	1	1	23.71	23.90	23.97	1.0	24.5
			1	25	23.84	24.07	23.96	1.0	24.5
			1	50	23.89	24.04	23.80	1.0	24.5
		64QAM	1	1	22.33	22.46	22.31	2.5	23.0
		256QAM	1	1	20.02	20.20	20.32	4.5	21.0
	CP-OFDM	QPSK	1	1	23.21	23.33	23.34	1.5	24.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
					165300	167300	169300		
					826.50 MHz	836.50 MHz	846.50 MHz		
5 MHz	DFT-s-OFDM	π/2 BPSK	1	1	24.72	24.90	24.88	0.0	25.5
			1	12	24.66	24.75	24.73	0.0	25.5
			1	23	24.77	24.85	24.71	0.0	25.5
			12	0	23.70	23.87	23.84	0.5	25.0
			12	6	24.68	24.87	24.79	0.0	25.5
			12	13	23.73	23.89	23.78	0.5	25.0
			25	0	23.73	23.88	23.80	0.5	25.0
		QPSK	1	1	24.68	24.92	24.88	0.0	25.5
			1	12	24.60	24.79	24.68	0.0	25.5
			1	23	24.71	24.89	24.75	0.0	25.5
			12	0	23.71	23.89	23.85	1.0	24.5
			12	6	24.70	24.88	24.81	0.0	25.5
			12	13	23.73	23.89	23.79	1.0	24.5
			25	0	23.71	23.88	23.82	1.0	24.5
		16QAM	1	1	23.81	23.97	23.96	1.0	24.5
			1	12	23.73	23.92	23.85	1.0	24.5
			1	23	23.88	24.00	23.90	1.0	24.5
		64QAM	1	1	22.24	22.39	22.50	2.5	23.0
		256QAM	1	1	20.11	20.37	20.35	4.5	21.0
	CP-OFDM	QPSK	1	1	23.18	23.35	23.36	1.5	24.0

NR Band n66 Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)			MPR	Tune-up Limit
					RSI = 0, 3, 4				
					Measured Pwr (dBm)				
					346000	349000	352000		
					1730.00 MHz	1745.00 MHz	1760.00 MHz		
40 MHz	DFT-s-OFDM	π/2 BPSK	1	1		19.89		0.0	22.0
			1	107		20.18		0.0	22.0
			1	214		20.01		0.0	22.0
			108	0		19.63		0.0	22.0
			108	54		20.16		0.0	22.0
			108	108		20.32		0.0	22.0
			216	0		20.16		0.0	22.0
		QPSK	1	1		19.91		0.0	22.0
			1	107		**20.21**		0.0	22.0
			1	214		20.01		0.0	22.0
			108	0		19.64		0.0	22.0
			108	54		**20.27**		0.0	22.0
			108	108		20.25		0.0	22.0
			216	0		20.17		0.0	22.0
		16QAM	1	1		19.98		0.0	22.0
			1	107		20.22		0.0	22.0
			1	214		20.19		0.0	22.0
		64QAM	1	1		20.03		0.0	22.0
		256QAM	1	1		18.26		2.0	20.0
	CP-OFDM	QPSK	1	1		19.90		0.0	22.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
					345000	349000	353000		
					1725.00 MHz	1745.00 MHz	1765.00 MHz		
30 MHz	DFT-s-OFDM	π/2 BPSK	1	1		19.90		0.0	22.0
			1	79		20.34		0.0	22.0
			1	158		20.37		0.0	22.0
			80	0		19.83		0.0	22.0
			80	40		20.33		0.0	22.0
			80	80		20.51		0.0	22.0
			160	0		20.31		0.0	22.0
		QPSK	1	1		19.89		0.0	22.0
			1	79		20.32		0.0	22.0
			1	158		20.39		0.0	22.0
			80	0		19.83		0.0	22.0
			80	40		20.33		0.0	22.0
			80	80		20.50		0.0	22.0
			160	0		20.32		0.0	22.0
		16QAM	1	1		19.94		0.0	22.0
			1	79		20.37		0.0	22.0
			1	158		20.39		0.0	22.0
		64QAM	1	1		19.87		0.0	22.0
		256QAM	1	1		18.15		2.0	20.0
	CP-OFDM	QPSK	1	1		19.95		0.0	22.0

NR Band n66 Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
					344500	349000	353500		
					1722.50 MHz	1745.00 MHz	1767.50 MHz		
25 MHz	DFT-s-OFDM	π/2 BPSK	1	1		19.79		0.0	22.0
			1	66		20.20		0.0	22.0
			1	131		20.42		0.0	22.0
			64	0		19.86		0.0	22.0
			64	34		20.29		0.0	22.0
			64	69		20.49		0.0	22.0
			128	0		20.25		0.0	22.0
		QPSK	1	1		19.78		0.0	22.0
			1	66		20.23		0.0	22.0
			1	131		20.41		0.0	22.0
			64	0		19.86		0.0	22.0
			64	34		20.30		0.0	22.0
			64	69		20.48		0.0	22.0
			128	0		20.25		0.0	22.0
		16QAM	1	1		19.89		0.0	22.0
			1	66		20.32		0.0	22.0
			1	131		20.51		0.0	22.0
		64QAM	1	1		19.79		0.0	22.0
		256QAM	1	1		17.97		2.0	20.0
	CP-OFDM	QPSK	1	1		19.81		0.0	22.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
					344000	349000	354000		
					1720.00 MHz	1745.00 MHz	1770.00 MHz		
20 MHz	DFT-s-OFDM	π/2 BPSK	1	1	19.94	19.80	20.20	0.0	22.0
			1	52	20.24	20.28	20.15	0.0	22.0
			1	104	20.00	20.48	20.40	0.0	22.0
			50	0	20.16	19.97	20.10	0.0	22.0
			50	28	20.26	20.31	20.16	0.0	22.0
			50	56	20.16	20.51	20.39	0.0	22.0
			100	0	20.25	20.25	20.14	0.0	22.0
		QPSK	1	1	19.94	19.77	20.24	0.0	22.0
			1	52	20.24	20.28	20.18	0.0	22.0
			1	104	20.00	20.47	20.46	0.0	22.0
			50	0	20.16	19.97	20.11	0.0	22.0
			50	28	20.26	20.30	20.17	0.0	22.0
			50	56	20.17	20.50	20.41	0.0	22.0
			100	0	20.25	20.26	20.15	0.0	22.0
		16QAM	1	1	20.00	19.80	20.27	0.0	22.0
			1	52	20.26	20.36	20.33	0.0	22.0
			1	104	19.97	20.49	20.51	0.0	22.0
		64QAM	1	1	19.92	19.84	20.19	0.0	22.0
		256QAM	1	1	18.28	17.95	18.48	2.0	20.0
	CP-OFDM	QPSK	1	1	19.94	19.73	20.25	0.0	22.0

NR Band n66 Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
					343500	349000	354500		
					1717.50 MHz	1745.00 MHz	1772.50 MHz		
15 MHz	DFT-s-OFDM	π/2 BPSK	1	1	19.97	19.83	20.04	0.0	22.0
			1	39	20.15	20.20	20.19	0.0	22.0
			1	77	20.21	20.47	20.48	0.0	22.0
			36	0	20.14	20.03	20.10	0.0	22.0
			36	21	20.24	20.28	20.28	0.0	22.0
			36	43	20.27	20.47	20.45	0.0	22.0
			75	0	20.24	20.26	20.26	0.0	22.0
		QPSK	1	1	19.98	19.84	20.07	0.0	22.0
			1	39	20.17	20.17	20.19	0.0	22.0
			1	77	20.21	20.45	20.47	0.0	22.0
			36	0	20.13	20.02	20.11	0.0	22.0
			36	21	20.23	20.28	20.27	0.0	22.0
			36	43	20.26	20.46	20.45	0.0	22.0
			75	0	20.26	20.27	20.26	0.0	22.0
		16QAM	1	1	20.02	19.80	20.07	0.0	22.0
			1	39	20.19	20.22	20.17	0.0	22.0
			1	77	20.22	20.45	20.44	0.0	22.0
		64QAM	1	1	20.10	19.96	20.08	0.0	22.0
		256QAM	1	1	18.15	18.04	18.34	2.0	20.0
	CP-OFDM	QPSK	1	1	19.93	19.79	20.11	0.0	22.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
					343000	349000	355000		
					1715.00 MHz	1745.00 MHz	1775.00 MHz		
10 MHz	DFT-s-OFDM	π/2 BPSK	1	1	19.99	19.97	20.23	0.0	22.0
			1	25	20.23	20.31	20.41	0.0	22.0
			1	50	20.31	20.45	20.52	0.0	22.0
			25	0	20.08	20.11	20.31	0.0	22.0
			25	13	20.18	20.28	20.43	0.0	22.0
			25	27	20.25	20.42	20.51	0.0	22.0
			50	0	20.18	20.27	20.44	0.0	22.0
		QPSK	1	1	19.96	19.99	20.22	0.0	22.0
			1	25	20.20	20.31	20.43	0.0	22.0
			1	50	20.30	20.47	20.52	0.0	22.0
			25	0	20.10	20.10	20.32	0.0	22.0
			25	13	20.18	20.27	20.43	0.0	22.0
			25	27	20.25	20.43	20.50	0.0	22.0
			50	0	20.19	20.27	20.42	0.0	22.0
		16QAM	1	1	20.01	19.99	20.14	0.0	22.0
			1	25	20.27	20.33	20.39	0.0	22.0
			1	50	20.40	20.45	20.49	0.0	22.0
		64QAM	1	1	20.07	20.02	20.25	0.0	22.0
		256QAM	1	1	18.19	18.21	18.39	2.0	20.0
	CP-OFDM	QPSK	1	1	19.93	20.02	20.25	0.0	22.0

NR Band n66 Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
					342500	349000	355500		
					1712.50 MHz	1745.00 MHz	1777.50 MHz		
5 MHz	DFT-s-OFDM	π/2 BPSK	1	1	19.88	20.15	20.43	0.0	22.0
			1	12	19.90	20.19	20.42	0.0	22.0
			1	23	20.08	20.39	20.51	0.0	22.0
			12	0	19.90	20.19	20.44	0.0	22.0
			12	6	19.96	20.27	20.46	0.0	22.0
			12	13	20.03	20.35	20.47	0.0	22.0
			25	0	19.98	20.27	20.46	0.0	22.0
		QPSK	1	1	19.89	20.14	20.39	0.0	22.0
			1	12	19.91	20.20	20.37	0.0	22.0
			1	23	20.09	20.38	20.45	0.0	22.0
			12	0	19.92	20.19	20.44	0.0	22.0
			12	6	19.99	20.26	20.46	0.0	22.0
			12	13	20.05	20.35	20.48	0.0	22.0
			25	0	19.99	20.28	20.47	0.0	22.0
		16QAM	1	1	19.92	20.15	20.47	0.0	22.0
			1	12	19.93	20.16	20.38	0.0	22.0
			1	23	20.13	20.32	20.53	0.0	22.0
		64QAM	1	1	19.98	20.09	20.47	0.0	22.0
		256QAM	1	1	18.15	18.39	18.72	2.0	20.0
	CP-OFDM	QPSK	1	1	19.93	20.11	20.39	0.0	22.0

NR Band n41(Voice/data/SRS0) (Ant.A) Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)					MPR	Tune-up Limit
					RSI = 0, 3, 4						
					Measured Pwr (dBm)						
							518598				
							2592.99 MHz				
100 MHz	DFT-s-OFDM	π/2 BPSK	1	1			17.29			0.0	18.0
			1	136			17.34			0.0	18.0
			1	271			17.22			0.0	18.0
			135	0			17.31			0.0	18.0
			135	69			17.32			0.0	18.0
			135	138			17.21			0.0	18.0
			270	0			17.32			0.0	18.0
		QPSK	1	1			17.29			0.0	18.0
			1	136			**17.32**			0.0	18.0
			1	271			17.25			0.0	18.0
			135	0			17.06			0.0	18.0
			135	69			**17.32**			0.0	18.0
			135	138			17.18			0.0	18.0
			270	0			17.31			0.0	18.0
		16QAM	1	1			17.29			0.0	18.0
			1	136			17.39			0.0	18.0
			1	271			17.21			0.0	18.0
		64QAM	1	1			17.22			0.0	18.0
		256QAM	1	1			17.22			0.0	18.0
	CP-OFDM	QPSK	1	1			17.19			0.0	18.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					508200				528996		
					2541.00 MHz				2644.98 MHz		
90 MHz	DFT-s-OFDM	π/2 BPSK	1	1	17.38				17.25	0.0	18.0
			1	122	17.61				17.24	0.0	18.0
			1	243	17.54				17.48	0.0	18.0
			120	0	17.35				17.25	0.0	18.0
			120	62	17.59				17.28	0.0	18.0
			120	125	17.51				17.48	0.0	18.0
			243	0	17.56				17.24	0.0	18.0
		QPSK	1	1	17.36				17.30	0.0	18.0
			1	122	17.56				17.49	0.0	18.0
			1	243	17.51				17.27	0.0	18.0
			120	0	17.35				17.29	0.0	18.0
			120	62	17.57				17.48	0.0	18.0
			120	125	17.49				17.26	0.0	18.0
			243	0	17.55				17.22	0.0	18.0
		16QAM	1	1	17.32				17.29	0.0	18.0
			1	122	17.62				17.35	0.0	18.0
			1	243	17.50				17.49	0.0	18.0
		64QAM	1	1	17.27				17.22	0.0	18.0
		256QAM	1	1	17.29				17.24	0.0	18.0
	CP-OFDM	QPSK	1	1	17.26				17.20	0.0	18.0

Notes:

NR TDD Bands were measured output power through FTM mode provided by manufacturer.

NR Band n41(Voice/data/SRS0) (Ant.A) Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					507204				529998		
					2536.02 MHz				2649.99 MHz		
80 MHz	DFT-s-OFDM	π/2 BPSK	1	1	17.29				17.42	0.0	18.0
			1	108	17.34				17.49	0.0	18.0
			1	215	17.22				17.32	0.0	18.0
			108	0	17.31				17.46	0.0	18.0
			108	54	17.32				17.45	0.0	18.0
			108	109	17.21				17.37	0.0	18.0
			216	0	17.32				17.46	0.0	18.0
		QPSK	1	1	17.29				17.45	0.0	18.0
			1	108	17.32				17.49	0.0	18.0
			1	215	17.25				17.34	0.0	18.0
			108	0	17.06				17.46	0.0	18.0
			108	54	17.32				17.46	0.0	18.0
			108	109	17.18				17.38	0.0	18.0
			216	0	17.31				17.46	0.0	18.0
		16QAM	1	1	17.29				17.47	0.0	18.0
			1	108	17.39				17.51	0.0	18.0
			1	215	17.21				17.31	0.0	18.0
		64QAM	1	1	17.22				17.38	0.0	18.0
		256QAM	1	1	17.22				17.35	0.0	18.0
	CP-OFDM	QPSK	1	1	17.19				17.30	0.0	18.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					506202				531000		
					2531.01 MHz				2655.00 MHz		
70 MHz	DFT-s-OFDM	π/2 BPSK	1	1	17.25				17.23	0.0	18.0
			1	94	17.42				17.34	0.0	18.0
			1	187	17.44				17.49	0.0	18.0
			90	0	17.31				17.34	0.0	18.0
			90	49	17.45				17.35	0.0	18.0
			90	99	17.44				17.55	0.0	18.0
			180	0	17.41				17.34	0.0	18.0
		QPSK	1	1	17.18				17.21	0.0	18.0
			1	94	17.26				17.32	0.0	18.0
			1	187	17.45				17.47	0.0	18.0
			90	0	17.24				17.32	0.0	18.0
			90	49	17.28				17.32	0.0	18.0
			90	99	17.41				17.55	0.0	18.0
			180	0	17.24				17.28	0.0	18.0
		16QAM	1	1	17.22				17.25	0.0	18.0
			1	94	17.35				17.44	0.0	18.0
			1	187	17.48				17.45	0.0	18.0
		64QAM	1	1	17.15				17.16	0.0	18.0
		256QAM	1	1	17.15				17.15	0.0	18.0
	CP-OFDM	QPSK	1	1	17.12				17.08	0.0	18.0

Notes:

NR TDD Bands were measured output power through FTM mode provided by manufacturer.

NR Band n41(Voice/data/SRS0) (Ant.A) Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					505200		518598		531996		
					2526.00 MHz		2592.99 MHz		2659.98 MHz		
60 MHz	DFT-s-OFDM	π/2 BPSK	1	1	17.22		17.25		17.22	0.0	18.0
			1	80	17.31		17.31		17.38	0.0	18.0
			1	160	17.34		17.22		17.48	0.0	18.0
			81	0	17.31		17.31		17.32	0.0	18.0
			81	40	17.37		17.32		17.45	0.0	18.0
			81	81	17.50		17.22		17.57	0.0	18.0
			162	0	17.37		17.32		17.44	0.0	18.0
		QPSK	1	1	17.28		17.29		17.27	0.0	18.0
			1	80	17.32		17.32		17.41	0.0	18.0
			1	160	17.39		17.25		17.52	0.0	18.0
			81	0	17.34		17.17		17.33	0.0	18.0
			81	40	17.39		17.32		17.44	0.0	18.0
			81	81	17.52		17.18		17.57	0.0	18.0
			162	0	17.37		17.31		17.44	0.0	18.0
		16QAM	1	1	17.28		17.30		17.17	0.0	18.0
			1	80	17.32		17.34		17.31	0.0	18.0
			1	160	17.41		17.21		17.42	0.0	18.0
		64QAM	1	1	17.21		17.25		17.18	0.0	18.0
		256QAM	1	1	17.22		17.22		17.19	0.0	18.0
	CP-OFDM	QPSK	1	1	17.19		17.11		17.14	0.0	18.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					504204		518598		532998		
					2521.02 MHz		2592.99 MHz		2664.99 MHz		
50 MHz	DFT-s-OFDM	π/2 BPSK	1	1	17.26		17.42		17.42	0.0	18.0
			1	66	17.30		17.49		17.43	0.0	18.0
			1	131	17.41		17.32		17.44	0.0	18.0
			64	0	17.32		17.46		17.25	0.0	18.0
			64	34	17.31		17.45		17.45	0.0	18.0
			64	69	17.43		17.37		17.49	0.0	18.0
			128	0	17.30		17.46		17.42	0.0	18.0
		QPSK	1	1	17.25		17.45		17.39	0.0	18.0
			1	66	17.27		17.49		17.41	0.0	18.0
			1	131	17.42		17.34		17.42	0.0	18.0
			64	0	17.33		17.46		17.24	0.0	18.0
			64	34	17.31		17.46		17.42	0.0	18.0
			64	69	17.46		17.38		17.48	0.0	18.0
			128	0	17.28		17.46		17.40	0.0	18.0
		16QAM	1	1	17.28		17.47		17.39	0.0	18.0
			1	66	17.37		17.51		17.50	0.0	18.0
			1	131	17.42		17.31		17.42	0.0	18.0
		64QAM	1	1	17.18		17.38		17.31	0.0	18.0
		256QAM	1	1	17.21		17.35		17.31	0.0	18.0
	CP-OFDM	QPSK	1	1	17.19		17.30		17.21	0.0	18.0

Notes:

NR TDD Bands were measured output power through FTM mode provided by manufacturer.

NR Band n41(Voice/data/SRS0) (Ant.A) Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					503202	513468		523734	534000		
					2516.01 MHz	2567.34 MHz		2618.67 MHz	2670.00 MHz		
40 MHz	DFT-s-OFDM	π/2 BPSK	1	1	17.27	17.31		17.47	17.69	0.0	18.0
			1	52	17.37	17.37		17.50	17.64	0.0	18.0
			1	104	17.33	17.38		17.45	17.77	0.0	18.0
			50	0	17.33	17.49		17.48	17.67	0.0	18.0
			50	28	17.32	17.39		17.49	17.66	0.0	18.0
			50	56	17.39	17.48		17.55	17.71	0.0	18.0
			100	0	17.32	17.36		17.46	17.76	0.0	18.0
		QPSK	1	1	17.26	17.43		17.43	17.62	0.0	18.0
			1	52	17.37	17.45		17.45	17.73	0.0	18.0
			1	104	17.34	17.51		17.47	17.68	0.0	18.0
			50	0	17.35	17.55		17.54	17.70	0.0	18.0
			50	28	17.31	17.48		17.48	17.63	0.0	18.0
			50	56	17.38	17.61		17.45	17.64	0.0	18.0
			100	0	17.39	17.57		17.47	17.65	0.0	18.0
		16QAM	1	1	17.21	17.45		17.42	17.65	0.0	18.0
			1	52	17.39	17.51		17.58	17.68	0.0	18.0
			1	104	17.31	17.52		17.45	17.72	0.0	18.0
		64QAM	1	1	17.23	17.42		17.30	17.54	0.0	18.0
		256QAM	1	1	17.21	17.39		17.40	17.66	0.0	18.0
	CP-OFDM	QPSK	1	1	17.19	17.46		17.41	17.50	0.0	18.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					502200	510402	518598	526800	534996		
					2511.00 MHz	2552.01 MHz	2592.99 MHz	2634.00 MHz	2674.98 MHz		
30 MHz	DFT-s-OFDM	π/2 BPSK	1	1	17.23	17.42	17.42	17.28	17.47	0.0	18.0
			1	39	17.34	17.44	17.49	17.36	17.50	0.0	18.0
			1	76	17.28	17.42	17.32	17.27	17.33	0.0	18.0
			36	0	17.32	17.44	17.46	17.31	17.45	0.0	18.0
			36	21	17.31	17.41	17.45	17.33	17.46	0.0	18.0
			36	42	17.28	17.42	17.37	17.31	17.38	0.0	18.0
			75	0	17.32	17.41	17.46	17.31	17.47	0.0	18.0
		QPSK	1	1	17.31	17.45	17.45	17.26	17.48	0.0	18.0
			1	39	17.40	17.46	17.49	17.38	17.52	0.0	18.0
			1	76	17.34	17.44	17.34	17.27	17.38	0.0	18.0
			36	0	17.31	17.42	17.46	17.29	17.43	0.0	18.0
			36	21	17.32	17.39	17.46	17.31	17.44	0.0	18.0
			36	42	17.27	17.41	17.38	17.32	17.38	0.0	18.0
			75	0	17.33	17.41	17.46	17.31	17.48	0.0	18.0
		16QAM	1	1	17.30	17.42	17.47	17.23	17.44	0.0	18.0
			1	39	17.42	17.45	17.51	17.34	17.51	0.0	18.0
			1	76	17.32	17.42	17.31	17.26	17.31	0.0	18.0
		64QAM	1	1	17.21	17.34	17.38	17.16	17.36	0.0	18.0
		256QAM	1	1	17.22	17.36	17.35	17.15	17.39	0.0	18.0
	CP-OFDM	QPSK	1	1	17.20	17.33	17.30	17.14	17.32	0.0	18.0

Notes:

NR TDD Bands were measured output power through FTM mode provided by manufacturer.

NR Band n41(Voice/data/SRS0) (Ant.A) Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					501204	509904	518598	527298	535998		
					2506.02 MHz	2549.52 MHz	2592.99 MHz	2636.49 MHz	2679.99 MHz		
20 MHz	DFT-s-OFDM	π/2 BPSK	1	1	17.27	17.40	17.50	17.56	17.59	0.0	18.0
			1	25	17.37	17.44	17.53	17.50	17.78	0.0	18.0
			1	49	17.32	17.33	17.49	17.48	17.65	0.0	18.0
			25	0	17.26	17.37	17.54	17.51	17.66	0.0	18.0
			25	13	17.42	17.39	17.47	17.42	17.60	0.0	18.0
			25	26	17.39	17.49	17.55	17.44	17.65	0.0	18.0
			50	0	17.31	17.49	17.52	17.54	17.70	0.0	18.0
		QPSK	1	1	17.24	17.43	17.44	17.38	17.57	0.0	18.0
			1	25	17.39	17.59	17.55	17.53	17.73	0.0	18.0
			1	49	17.26	17.54	17.44	17.48	17.68	0.0	18.0
			25	0	17.23	17.59	17.49	17.44	17.72	0.0	18.0
			25	13	17.26	17.53	17.49	17.47	17.72	0.0	18.0
			25	26	17.29	17.47	17.45	17.49	17.69	0.0	18.0
			50	0	17.30	17.47	17.58	17.51	17.75	0.0	18.0
		16QAM	1	1	17.29	17.47	17.42	17.48	17.59	0.0	18.0
			1	25	17.28	17.56	17.57	17.47	17.77	0.0	18.0
			1	49	17.31	17.56	17.47	17.46	17.61	0.0	18.0
		64QAM	1	1	17.17	17.39	17.40	17.28	17.57	0.0	18.0
		256QAM	1	1	17.15	17.49	17.38	17.40	17.58	0.0	18.0
	CP-OFDM	QPSK	1	1	17.08	17.42	17.42	17.42	17.56	0.0	18.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					500700	509652	518598	527550	536496		
					2503.50 MHz	2548.26 MHz	2592.99 MHz	2637.75 MHz	2682.48 MHz		
15 MHz	DFT-s-OFDM	π/2 BPSK	1	1	17.25	17.37	17.46	17.37	17.66	0.0	18.0
			1	18	17.34	17.42	17.52	17.44	17.71	0.0	18.0
			1	36	17.39	17.37	17.47	17.50	17.69	0.0	18.0
			18	0	17.33	17.33	17.49	17.35	17.68	0.0	18.0
			18	10	17.32	17.37	17.51	17.28	17.65	0.0	18.0
			18	20	17.38	17.42	17.52	17.39	17.70	0.0	18.0
			36	0	17.31	17.39	17.50	17.37	17.71	0.0	18.0
		QPSK	1	1	17.34	17.41	17.41	17.44	17.63	0.0	18.0
			1	18	17.33	17.52	17.51	17.45	17.67	0.0	18.0
			1	36	17.32	17.51	17.49	17.36	17.66	0.0	18.0
			18	0	17.29	17.54	17.53	17.27	17.64	0.0	18.0
			18	10	17.30	17.52	17.54	17.34	17.68	0.0	18.0
			18	20	17.32	17.53	17.31	17.33	17.67	0.0	18.0
			36	0	17.35	17.52	17.35	17.23	17.68	0.0	18.0
		16QAM	1	1	17.28	17.52	17.46	17.47	17.64	0.0	18.0
			1	18	17.35	17.54	17.41	17.50	17.72	0.0	18.0
			1	36	17.31	17.49	17.39	17.49	17.67	0.0	18.0
		64QAM	1	1	17.18	17.41	17.42	17.35	17.59	0.0	18.0
		256QAM	1	1	17.17	17.44	17.41	17.36	17.58	0.0	18.0
	CP-OFDM	QPSK	1	1	17.13	17.30	17.27	17.19	17.57	0.0	18.0

Notes:

NR TDD Bands were measured output power through FTM mode provided by manufacturer.

NR Band n41(Voice/data/SRS0) (Ant.A) Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
					500202	509400	518598	527802	537000		
					2501.01 MHz	2547.00 MHz	2592.99 MHz	2639.01 MHz	2685.00 MHz		
10 MHz	DFT-s-OFDM	π/2 BPSK	1	1	17.26	17.37	17.46	17.48	17.66	0.0	18.0
			1	12	17.36	17.42	17.52	17.52	17.71	0.0	18.0
			1	22	17.39	17.37	17.47	17.50	17.69	0.0	18.0
			12	0	17.33	17.41	17.51	17.48	17.68	0.0	18.0
			12	6	17.34	17.40	17.51	17.49	17.65	0.0	18.0
			12	12	17.38	17.42	17.52	17.51	17.70	0.0	18.0
			24	0	17.31	17.41	17.55	17.50	17.71	0.0	18.0
		QPSK	1	1	17.27	17.44	17.48	17.44	17.63	0.0	18.0
			1	12	17.33	17.52	17.51	17.46	17.67	0.0	18.0
			1	22	17.32	17.51	17.49	17.48	17.66	0.0	18.0
			12	0	17.29	17.54	17.53	17.47	17.64	0.0	18.0
			12	6	17.30	17.52	17.54	17.48	17.68	0.0	18.0
			12	12	17.32	17.53	17.49	17.47	17.67	0.0	18.0
			24	0	17.31	17.52	17.53	17.50	17.68	0.0	18.0
		16QAM	1	1	17.28	17.52	17.46	17.47	17.64	0.0	18.0
			1	12	17.35	17.54	17.59	17.50	17.72	0.0	18.0
			1	22	17.31	17.49	17.49	17.49	17.67	0.0	18.0
		64QAM	1	1	17.18	17.41	17.42	17.35	17.59	0.0	18.0
		256QAM	1	1	17.17	17.44	17.41	17.36	17.58	0.0	18.0
	CP-OFDM	QPSK	1	1	17.13	17.39	17.39	17.35	17.57	0.0	18.0

Notes:

NR TDD Bands were measured output power through FTM mode provided by manufacturer.

NR Band n41(SRS1) (Ant.C) Measured Results

BW (MHz)	Mode	Maximum Allowed Average Power (dBm)					Tune-up Limit
		RSI = 0, 3, 4					
		Measured Pwr (dBm)					
				518598			
				2592.99 MHz			
100 MHz	SRS CW			16.97			18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		508200				528996	
		2541.00 MHz				2644.98 MHz	
90 MHz	SRS CW	16.85				16.59	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		507204				529998	
		2536.02 MHz				2649.99 MHz	
80 MHz	SRS CW	16.77				16.49	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		506202				531000	
		2531.01 MHz				2655.00 MHz	
70 MHz	SRS CW	16.81				16.44	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		505200		518598		531996	
		2526.00 MHz		2592.99 MHz		2659.98 MHz	
60 MHz	SRS CW	16.78		16.78		16.46	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		504204		518598		532998	
		2521.02 MHz		2592.99 MHz		2664.99 MHz	
50 MHz	SRS CW	16.78		16.72		16.66	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		503202	513468		523734	534000	
		2516.01 MHz	2567.34 MHz		2618.67 MHz	2670.00 MHz	
40 MHz	SRS CW	16.77	16.73		16.55	16.44	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		502200	510402	518598	526800	534996	
		2511.00 MHz	2552.01 MHz	2592.99 MHz	2634.00 MHz	2674.98 MHz	
30 MHz	SRS CW	16.81	16.87	16.73	16.49	16.62	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		501204	509904	518598	527298	535998	
		2506.02 MHz	2549.52 MHz	2592.99 MHz	2636.49 MHz	2679.99 MHz	
20 MHz	SRS CW	16.86	16.89	16.77	16.52	16.75	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		500700	509652	518598	527550	536496	
		2503.50 MHz	2548.26 MHz	2592.99 MHz	2637.75 MHz	2682.48 MHz	
15 MHz	SRS CW	16.84	16.89	16.71	16.52	16.73	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		500202	509400	518598	527802	537000	
		2501.01 MHz	2547.00 MHz	2592.99 MHz	2639.01 MHz	2685.00 MHz	
10 MHz	SRS CW	17.02	17.07	16.95	16.83	17.10	18.0

Notes:

NR TDD Bands were measured output power through FTM mode provided by manufacturer.

NR Band n41(SRS2) (Ant.B) Measured Results

BW (MHz)	Mode	Maximum Allowed Average Power (dBm)					Tune-up Limit
		RSI = 0, 3, 4					
		Measured Pwr (dBm)					
				518598			
				2592.99 MHz			
100 MHz	SRS CW			17.94			18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		508200				528996	
		2541.00 MHz				2644.98 MHz	
90 MHz	SRS CW	16.51				17.29	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		507204				529998	
		2536.02 MHz				2649.99 MHz	
80 MHz	SRS CW	16.58				17.22	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		506202				531000	
		2531.01 MHz				2655.00 MHz	
70 MHz	SRS CW	16.63				17.20	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		505200		518598		531996	
		2526.00 MHz		2592.99 MHz		2659.98 MHz	
60 MHz	SRS CW	16.74		17.58		17.23	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		504204		518598		532998	
		2521.02 MHz		2592.99 MHz		2664.99 MHz	
50 MHz	SRS CW	16.74		17.62		17.49	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		503202	513468		523734	534000	
		2516.01 MHz	2567.34 MHz		2618.67 MHz	2670.00 MHz	
40 MHz	SRS CW	16.94	17.02		17.27	17.34	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		502200	510402	518598	526800	534996	
		2511.00 MHz	2552.01 MHz	2592.99 MHz	2634.00 MHz	2674.98 MHz	
30 MHz	SRS CW	17.02	16.44	17.62	17.26	17.47	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		501204	509904	518598	527298	535998	
		2506.02 MHz	2549.52 MHz	2592.99 MHz	2636.49 MHz	2679.99 MHz	
20 MHz	SRS CW	17.25	16.45	17.66	17.39	17.56	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		500700	509652	518598	527550	536496	
		2503.50 MHz	2548.26 MHz	2592.99 MHz	2637.75 MHz	2682.48 MHz	
15 MHz	SRS CW	17.32	16.38	17.56	17.36	17.53	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		500202	509400	518598	527802	537000	
		2501.01 MHz	2547.00 MHz	2592.99 MHz	2639.01 MHz	2685.00 MHz	
10 MHz	SRS CW	17.81	16.67	17.77	17.56	17.76	18.0

Notes:

NR TDD Bands were measured output power through FTM mode provided by manufacturer.

NR Band n41(SRS3) (Ant.F) Measured Results

BW (MHz)	Mode	Maximum Allowed Average Power (dBm)					Tune-up Limit
		RSI = 0, 3, 4					
		Measured Pwr (dBm)					
				518598			
				2592.99 MHz			
100 MHz	SRS CW			17.56			18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		508200				528996	
		2541.00 MHz				2644.98 MHz	
90 MHz	SRS CW	15.58				16.61	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		507204				529998	
		2536.02 MHz				2649.99 MHz	
80 MHz	SRS CW	15.61				16.38	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		506202				531000	
		2531.01 MHz				2655.00 MHz	
70 MHz	SRS CW	15.84				16.28	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		505200		518598		531996	
		2526.00 MHz		2592.99 MHz		2659.98 MHz	
60 MHz	SRS CW	16.14		17.52		16.27	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		504204		518598		532998	
		2521.02 MHz		2592.99 MHz		2664.99 MHz	
50 MHz	SRS CW	16.41		17.49		16.63	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		503202	513468		523734	534000	
		2516.01 MHz	2567.34 MHz		2618.67 MHz	2670.00 MHz	
40 MHz	SRS CW	16.71	16.32		16.48	16.91	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		502200	510402	518598	526800	534996	
		2511.00 MHz	2552.01 MHz	2592.99 MHz	2634.00 MHz	2674.98 MHz	
30 MHz	SRS CW	17.01	16.34	17.53	16.61	17.31	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		501204	509904	518598	527298	535998	
		2506.02 MHz	2549.52 MHz	2592.99 MHz	2636.49 MHz	2679.99 MHz	
20 MHz	SRS CW	17.20	16.49	17.52	16.64	17.34	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		500700	509652	518598	527550	536496	
		2503.50 MHz	2548.26 MHz	2592.99 MHz	2637.75 MHz	2682.48 MHz	
15 MHz	SRS CW	17.28	16.24	17.49	16.67	17.52	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		500202	509400	518598	527802	537000	
		2501.01 MHz	2547.00 MHz	2592.99 MHz	2639.01 MHz	2685.00 MHz	
10 MHz	SRS CW	17.33	16.19	17.52	16.31	17.70	18.0

Notes:

NR TDD Bands were measured output power through FTM mode provided by manufacturer.

9.5. Wi-Fi 2.4 GHz (DTS Band)

WLAN SISO Ant.D output power results (Maximum Power)

Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
WiFi 2.4G Ant.D	802.11b	1 Mbps	1	2412	17.72	19	Yes
			6	2437	18.31		
			11	2462	17.82		
			12	2467	Not Required	8	No
			13	2472		6	
	802.11g	6 Mbps	Not Required			18	No
						8	
						6	
	802.11n (HT20)	MCS 0	Not Required			17	No
						8	
						6	

WLAN SISO Ant.D output power Results (Reduced Power)

Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
WiFi 2.4G Ant.D	802.11b	1 Mbps	1	2412	11.84	12	Yes
			6	2437	11.42		
			11	2462	11.56		
			12	2467	Not required	8	No
			13	2472		6	
	802.11g	6 Mbps	Not required			12	No
	802.11n (HT20)	MCS 0	Not required			12	No

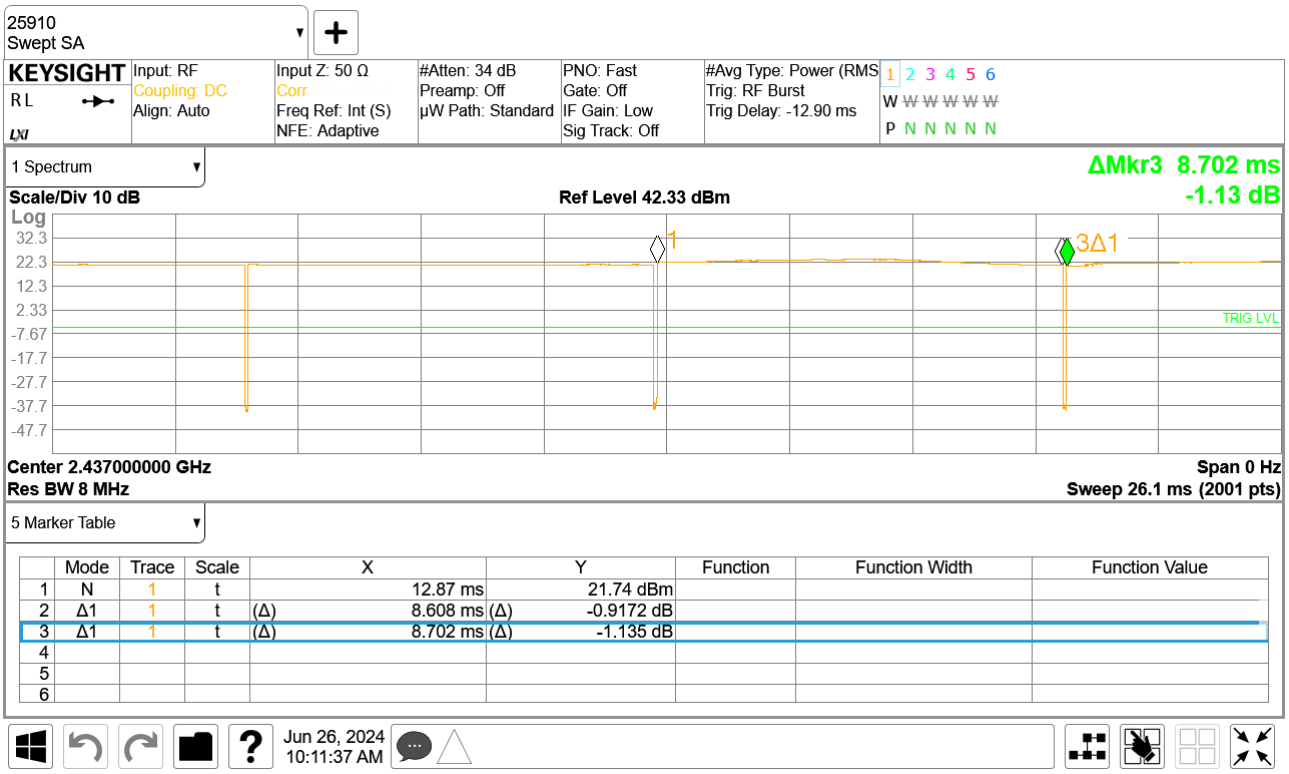
Note(s):

1. SAR is not required for 802.11g/n modes when the adjusted SAR for 802.11b is < 1.2 W/kg.
2. For "Not required", 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 802.11n/g/ax 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.
3. Additionally, SAR is not required for Channels 12 and 13 because the tune-up limit and the measured output power for these two channels are no greater than those for the default test channels. Refer to §6.3.

Duty Factor Measured Result

Mode	T on (ms)	Period (ms)	Maximum Duty Cyle	Measured Duty Cycle	Crest Factor (maximum duty/ measured duty cycle)
802.11b	8.608	8.702	100.00%	98.92%	1.01

Duty Cycle plot (802.11b)



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

WLAN SISO Ant.D output power Results (Maximum Power)

Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
UNII-2A	802.11a	6 Mbps	52	5260	15.33	16	Yes
			56	5280	15.30		
			60	5300	15.55		
			64	5320	15.20		
	802.11n (HT20)	MCS0	Not Required			15	No
	802.11n (HT40)	MCS0	Not Required			14	No
	802.11ac (VHT20)	MCS0	Not Required			15	No
	802.11ac (VHT40)	MCS0	Not Required			14	No
	802.11ac (VHT80)	MCS0	Not Required			12	No
UNII-2C	802.11a	6 Mbps	100	5500	14.55	15	Yes
			120	5600	14.65		
			124	5620	14.80		
			144	5720	14.46		
	802.11n (HT20)	MCS0	Not Required			14	No
	802.11n (HT40)	MCS0	Not Required			14	No
	802.11ac (VHT20)	MCS0	Not Required			14	No
	802.11ac (VHT40)	MCS0	Not Required			14	No
	802.11ac (VHT80)	MCS0	Not Required			12	No
UNII-3 or §15.247	802.11a	6 Mbps	149	5745	15.81	17	Yes
			157	5785	15.93		
			165	5825	16.31		
	802.11n (HT20)	MCS0	Not Required			16	No
	802.11n (HT40)	MCS0	Not Required			14	No
	802.11ac (VHT20)	MCS0	Not Required			16	No
	802.11ac (VHT40)	MCS0	Not Required			14	No
	802.11ac (VHT80)	MCS0	Not Required			12	No

Note(s):

1. For "Not required", 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.
2. 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 theb ac) is selected.
3. When the specified maximum output power is the same for both UNII band I and UNII band 2A, begin SAR measurement in UNII band 2A; and if the highest *reported* SAR for UNII band 2A is
   - ≤ 1.2 W/kg, SAR is not required for UNII band I
   - > 1.2 W/kg, both bands should be tested independently for SAR.

WLAN SISO Ant.D output power Results (Reduced Power)

Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
UNII-2A	802.11a	6 Mbps	Not Required			11	No
	802.11n (HT20)	MCS0	Not Required			11	No
	802.11n (HT40)	MCS0	Not Required			11	No
	802.11ac (VHT20)	MCS0	Not Required			11	No
	802.11ac (VHT40)	MCS0	Not Required			11	No
	802.11ac (VHT80)	MCS0	58	5290	9.91	11	Yes
UNII-2C	802.11a	6 Mbps	Not Required			11	No
	802.11n (HT20)	MCS0	Not Required			11	No
	802.11n (HT40)	MCS0	Not Required			11	No
	802.11ac (VHT20)	MCS0	Not Required			11	No
	802.11ac (VHT40)	MCS0	Not Required			11	No
	802.11ac (VHT80)	MCS0	106	5530	9.10	10	Yes
			122	5610	10.50	11	
			138	5690	10.04		
UNII-3 or §15.247	802.11a	6 Mbps	Not Required			11	No
	802.11n (HT20)	MCS0	Not Required			11	No
	802.11n (HT40)	MCS0	Not Required			11	No
	802.11ac (VHT20)	MCS0	Not Required			11	No
	802.11ac (VHT40)	MCS0	Not Required			11	No
	802.11ac (VHT80)	MCS0	155	5775	9.50	11	Yes

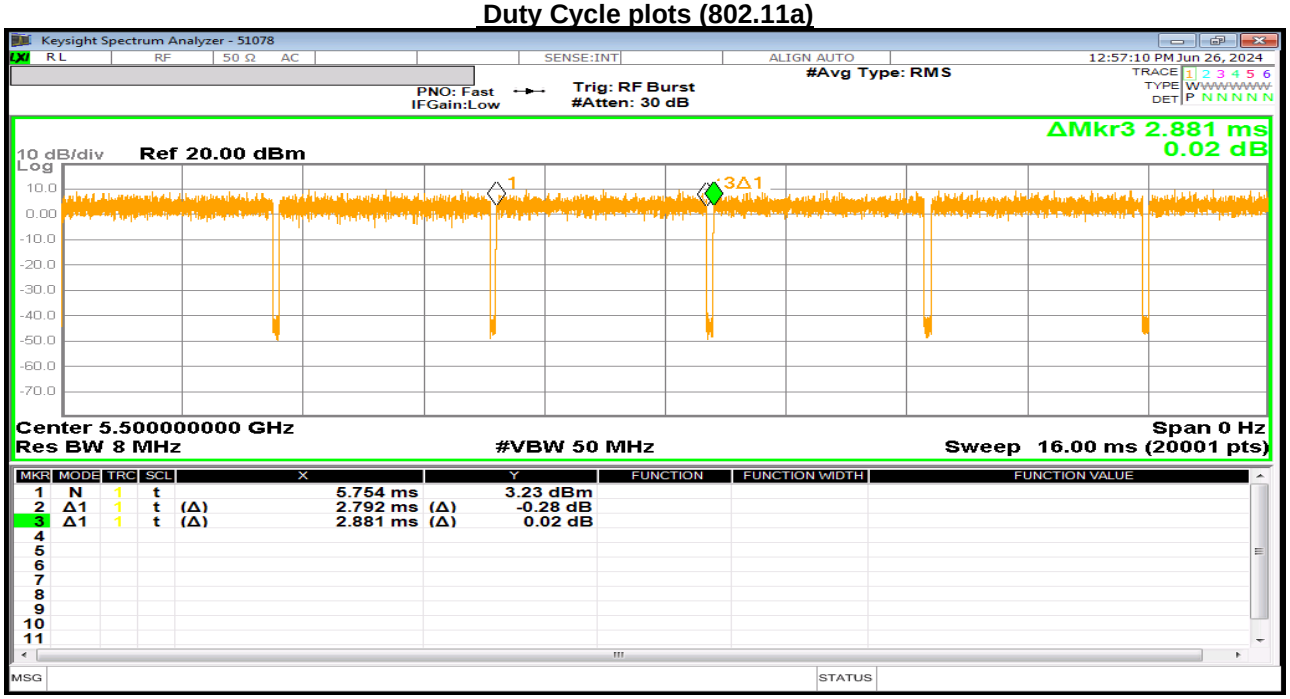
Note(s):

1. For "Not required", 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.
2. 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 theb ac) is selected.
3. When the specified maximum output power is the same for both UNII band I and UNII band 2A, begin SAR measurement in UNII band 2A; and if the highest *reported* SAR for UNII band 2A is
   - ≤ 1.2 W/kg, SAR is not required for UNII band I
   - > 1.2 W/kg, both bands should be tested independently for SAR.

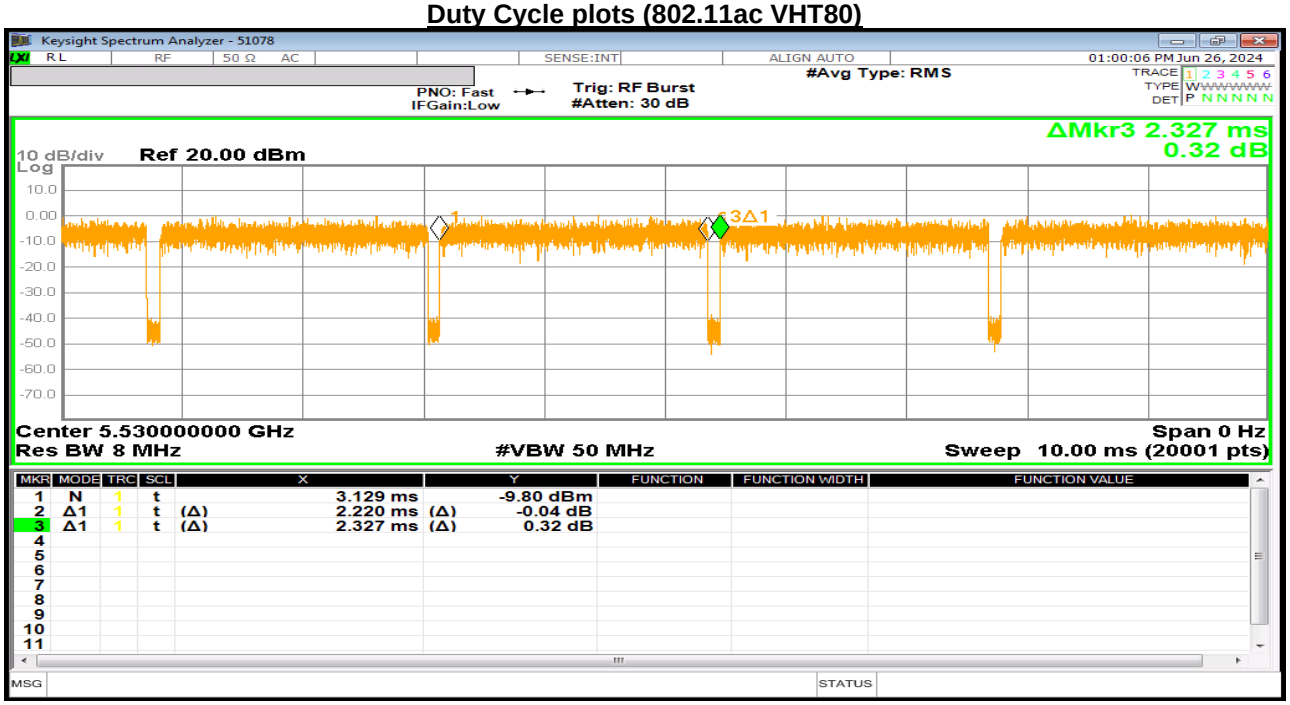
Duty Factor Measured Results

Mode	T on (ms)	Period (ms)	Maximum Duty Cycle	Measured Duty Cycle	Crest Factor (1/duty cycle)
802.11a	2.792	2.881	100.00%	96.91%	1.03
802.11ac VHT 80	2.220	2.327	100.00%	95.40%	1.05

Duty Cycle plots (802.11a)



Duty Cycle plots (802.11ac VHT80)



9.7. Bluetooth

Bluetooth SISO Ant.D output power Results

Band (GHz)	Antenna	Mode	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
Bluetooth 2.4G	Bluetooth Ant.D	Bluetooth (BDR)	0	2402	10.14	11	Yes
			39	2441	10.60		
			78	2480	8.10		
		Bluetooth (EDR)	0	2402	Not Required	8	No
			39	2441			
			78	2480			
		Bluetooth (LE)	0	2402	Not Required	8	No
			19	2440			
			39	2480			
		Bluetooth (LE 2M)	0	2402	Not Required	11	No
			19	2440			
			39	2480			

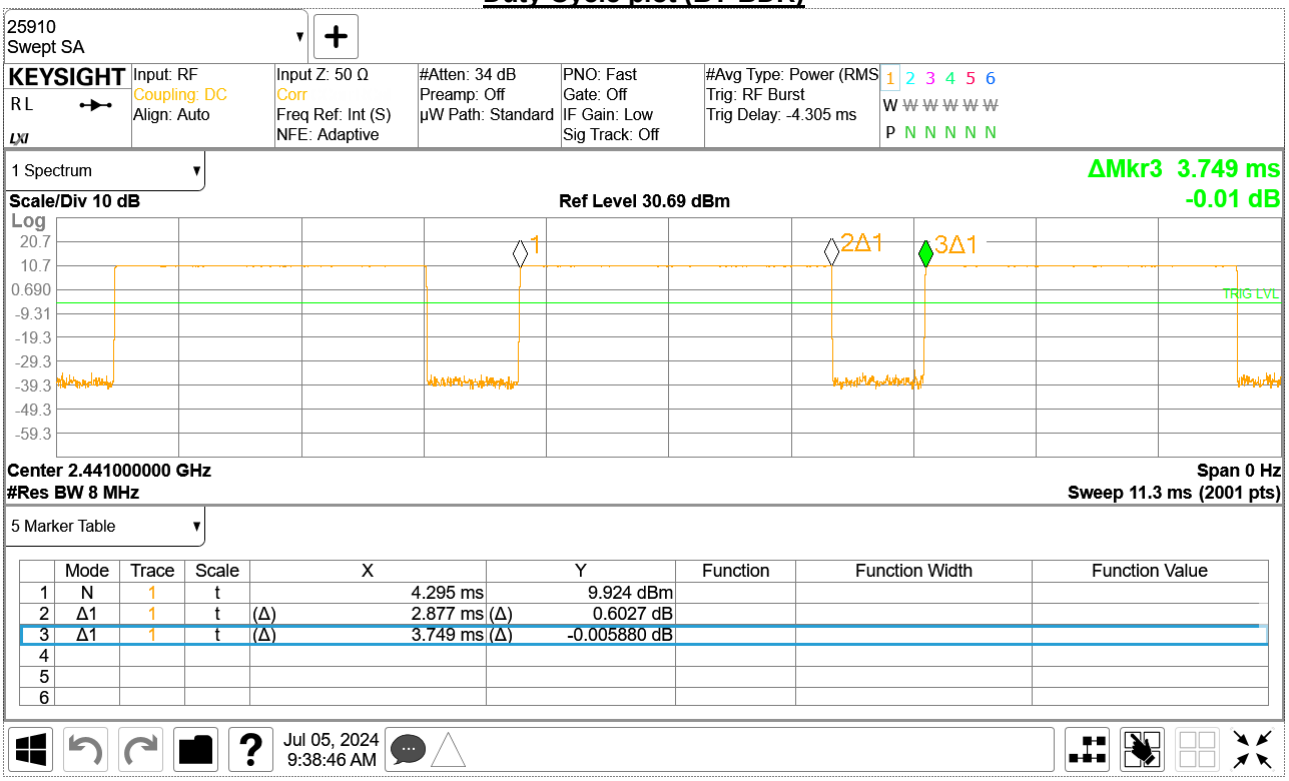
Note(s):

For BT/BLE SISO SAR test, BT(BDR-1Mbps) has highest time-based averaged power in all modes. So SAR test performed at BT(BDR-1Mbps).

Duty Factor Measured Results

Mode	T on (ms)	Period (ms)	Maximum Duty Cyle	Measured Duty Cycle	Crest Factor (maximum duty/ measured duty cycle)
BT-BDR	2.877	3.749	79.00%	76.74%	1.03

Duty Cycle plot (BT-BDR)



	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	t	4.295 ms	9.924 dBm			
2	Δ1	1	t	(Δ) 2.877 ms	(Δ) 0.6027 dB			
3	Δ1	1	t	(Δ) 3.749 ms	(Δ) -0.005880 dB			
4								
5								
6								

Note(s):

Maximum Duty Cycle is mentioned in Operational description. Detail of BT Duty Cycle refer to Operational description.

10. Measured and Reported (Scaled) SAR Results

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
- Wi-Fi Duty Cycle scaling factor = 1 / Duty cycle (%)
- BT Duty Cycle scaling factor = Maximum Duty cycle / Duty cycle (%)

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.

KDB 648474 D04 Handset SAR (Phablet Only):

For smart phones, with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm.
When hotspot mode does not apply, 10-g extremity SAR is required for all surfaces and edges with an antenna located at ≤ 25mm
From that surface or edge in direct contact with a flat phantom, to address interactive hand use exposure conditions. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg;
However, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, Including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

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 devices:

When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ 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.

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 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.

KDB 248227 D01 SAR meas for 802.11:

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.
- When the specified maximum output power is different between UNII 1 and UNII 2A, begin SAR with the band that has the higher specified maximum output. If the highest reported SAR for the band with the highest specified power is ≤ 1.2 W/kg, testing for the band with the lower specified output power is not required; otherwise test the remaining bands 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. GSM 850

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.0	Ant.A	Head	GPRS 3 Slots	4	0	Left Touch	190	836.6	30.00	28.79	0.205	0.271	
AG.0	Ant.A	Head	GPRS 3 Slots	4	0	Left Tilt	190	836.6	30.00	28.79	0.129	0.170	
AG.0	Ant.A	Head	GPRS 3 Slots	4	0	Right Touch	190	836.6	30.00	28.79	0.296	0.391	1
AG.0	Ant.A	Head	GPRS 3 Slots	4	0	Right Tilt	190	836.6	30.00	28.79	0.141	0.186	
AG.0	Ant.A	Body worn & Hotspot	GPRS 3 Slots	3	10	Rear	190	836.6	30.00	28.79	0.473	0.625	2
AG.0	Ant.A	Body worn & Hotspot	GPRS 3 Slots	3	10	Front	190	836.6	30.00	28.79	0.223	0.295	
AG.0	Ant.A	Hotspot	GPRS 3 Slots	3	10	Left	190	836.6	30.00	28.79	0.178	0.235	
AG.0	Ant.A	Hotspot	GPRS 3 Slots	3	10	Bottom	190	836.6	30.00	28.79	0.221	0.292	
AG.0	Ant.A	Hotspot	GPRS 3 Slots	3	10	Right	190	836.6	30.00	28.79	0.279	0.369	

Note(s):
Body worn (RSI=0)'s power and distance are the same as Hotspot (RSI=3). So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.2. GSM 1900

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.0	Ant.A	Head	GPRS 4 Slots	4	0	Left Touch	661	1880.0	25.50	24.43	0.099	0.127	3
AG.0	Ant.A	Head	GPRS 4 Slots	4	0	Left Tilt	661	1880.0	25.50	24.43	0.087	0.111	
AG.0	Ant.A	Head	GPRS 4 Slots	4	0	Right Touch	661	1880.0	25.50	24.43	0.096	0.123	
AG.0	Ant.A	Head	GPRS 4 Slots	4	0	Right Tilt	661	1880.0	25.50	24.43	0.050	0.064	
AG.0	Ant.A	Body worn & Hotspot	GPRS 4 Slots	3	10	Rear	661	1880.0	25.50	24.43	0.336	0.430	
AG.0	Ant.A	Body worn & Hotspot	GPRS 4 Slots	3	10	Front	661	1880.0	25.50	24.43	0.214	0.274	
AG.0	Ant.A	Hotspot	GPRS 4 Slots	3	10	Left	661	1880.0	25.50	24.43	0.134	0.171	
AG.0	Ant.A	Hotspot	GPRS 4 Slots	3	10	Bottom	661	1880.0	25.50	24.43	0.337	0.431	4
AG.0	Ant.A	Hotspot	GPRS 4 Slots	3	10	Right	661	1880.0	25.50	24.43	0.056	0.072	

Note(s):
Body worn (RSI=0)'s power and distance are the same as Hotspot (RSI=3). So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.3. WCDMA Band V

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.0	Ant.A	Head	Rel 99RMC 12.2 kbps	4	0	Left Touch	4183	836.6	25.00	23.74	0.166	0.222	
AG.0	Ant.A	Head	Rel 99RMC 12.2 kbps	4	0	Left Tilt	4183	836.6	25.00	23.74	0.104	0.139	
AG.0	Ant.A	Head	Rel 99RMC 12.2 kbps	4	0	Right Touch	4183	836.6	25.00	23.74	0.198	0.265	5
AG.0	Ant.A	Head	Rel 99RMC 12.2 kbps	4	0	Right Tilt	4183	836.6	25.00	23.74	0.106	0.142	
AG.0	Ant.A	Body worn & Hotspot	Rel 99RMC 12.2 kbps	3	10	Rear	4183	836.6	25.00	23.74	0.380	0.508	6
AG.0	Ant.A	Body worn & Hotspot	Rel 99RMC 12.2 kbps	3	10	Front	4183	836.6	25.00	23.74	0.206	0.275	
AG.0	Ant.A	Hotspot	Rel 99RMC 12.2 kbps	3	10	Left	4183	836.6	25.00	23.74	0.117	0.156	
AG.0	Ant.A	Hotspot	Rel 99RMC 12.2 kbps	3	10	Bottom	4183	836.6	25.00	23.74	0.277	0.370	
AG.0	Ant.A	Hotspot	Rel 99RMC 12.2 kbps	3	10	Right	4183	836.6	25.00	23.74	0.238	0.318	

Note(s):
Body worn (RSI=0)'s power and distance are the same as Hotspot (RSI=3). So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.4. WCDMA Band IV

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.0	Ant.A	Head	Rel 99RMC 12.2 kbps	4	0	Left Touch	1513	1752.6	24.00	23.36	0.168	0.195	7
AG.0	Ant.A	Head	Rel 99RMC 12.2 kbps	4	0	Left Tilt	1513	1752.6	24.00	23.36	0.087	0.101	
AG.0	Ant.A	Head	Rel 99RMC 12.2 kbps	4	0	Right Touch	1513	1752.6	24.00	23.36	0.059	0.068	
AG.0	Ant.A	Head	Rel 99RMC 12.2 kbps	4	0	Right Tilt	1513	1752.6	24.00	23.36	0.064	0.074	
AG.0	Ant.A	Body worn & Hotspot	Rel 99RMC 12.2 kbps	3	10	Rear	1513	1752.6	22.00	20.87	0.348	0.451	
AG.0	Ant.A	Body worn & Hotspot	Rel 99RMC 12.2 kbps	3	10	Front	1513	1752.6	22.00	20.87	0.169	0.219	
AG.0	Ant.A	Hotspot	Rel 99RMC 12.2 kbps	3	10	Left	1513	1752.6	22.00	20.87	0.085	0.110	
AG.0	Ant.A	Hotspot	Rel 99RMC 12.2 kbps	3	10	Bottom	1513	1752.6	22.00	20.87	0.455	0.590	8
AG.0	Ant.A	Hotspot	Rel 99RMC 12.2 kbps	3	10	Right	1513	1752.6	22.00	20.87	0.040	0.052	

Note(s):

Body worn (RSI=0)'s power and distance are the same as Hotspot (RSI=3). So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.5. WCDMA Band II

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.0	Ant.A	Head	Rel 99RMC 12.2 kbps	4	0	Left Touch	9400	1880.0	24.00	22.53	0.135	0.189	
AG.0	Ant.A	Head	Rel 99RMC 12.2 kbps	4	0	Left Tilt	9400	1880.0	24.00	22.53	0.161	0.226	9
AG.0	Ant.A	Head	Rel 99RMC 12.2 kbps	4	0	Right Touch	9400	1880.0	24.00	22.53	0.159	0.223	
AG.0	Ant.A	Head	Rel 99RMC 12.2 kbps	4	0	Right Tilt	9400	1880.0	24.00	22.53	0.082	0.115	
AG.0	Ant.A	Body worn & Hotspot	Rel 99RMC 12.2 kbps	3	10	Rear	9400	1880.0	22.00	20.39	0.313	0.453	10
AG.0	Ant.A	Body worn & Hotspot	Rel 99RMC 12.2 kbps	3	10	Front	9400	1880.0	22.00	20.39	0.176	0.255	
AG.0	Ant.A	Hotspot	Rel 99RMC 12.2 kbps	3	10	Left	9400	1880.0	22.00	20.39	0.119	0.172	
AG.0	Ant.A	Hotspot	Rel 99RMC 12.2 kbps	3	10	Bottom	9400	1880.0	22.00	20.39	0.262	0.380	
AG.0	Ant.A	Hotspot	Rel 99RMC 12.2 kbps	3	10	Right	9400	1880.0	22.00	20.39	0.047	0.068	

Note(s):

Body worn (RSI=0)'s power and distance are the same as Hotspot (RSI=3). So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.6. LTE Band 12 (10MHz Bandwidth)

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB Offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.0	Ant.A	Head	QPSK	4	0	Left Touch	23095	707.5	1	0	24.00	23.31	0.149	0.175	
AG.0	Ant.A	Head	QPSK	4	0	Left Touch	23095	707.5	25	25	23.00	22.35	0.131	0.152	
AG.0	Ant.A	Head	QPSK	4	0	Left Tilt	23095	707.5	1	0	24.00	23.31	0.088	0.103	
AG.0	Ant.A	Head	QPSK	4	0	Left Tilt	23095	707.5	25	25	23.00	22.35	0.071	0.082	
AG.0	Ant.A	Head	QPSK	4	0	Right Touch	23095	707.5	1	0	24.00	23.31	0.162	0.190	11
AG.0	Ant.A	Head	QPSK	4	0	Right Touch	23095	707.5	25	25	23.00	22.35	0.123	0.143	
AG.0	Ant.A	Head	QPSK	4	0	Right Tilt	23095	707.5	1	0	24.00	23.31	0.077	0.090	
AG.0	Ant.A	Head	QPSK	4	0	Right Tilt	23095	707.5	25	25	23.00	22.35	0.062	0.072	
AG.0	Ant.A	Body worn & Hotspot	QPSK	3	10	Rear	23095	707.5	1	0	24.00	23.31	0.250	0.293	12
AG.0	Ant.A	Body worn & Hotspot	QPSK	3	10	Rear	23095	707.5	25	25	23.00	22.35	0.210	0.244	
AG.0	Ant.A	Body worn & Hotspot	QPSK	3	10	Front	23095	707.5	1	0	24.00	23.31	0.200	0.234	
AG.0	Ant.A	Body worn & Hotspot	QPSK	3	10	Front	23095	707.5	25	25	23.00	22.35	0.154	0.179	
AG.0	Ant.A	Hotspot	QPSK	3	10	Left	23095	707.5	1	0	24.00	23.31	0.156	0.183	
AG.0	Ant.A	Hotspot	QPSK	3	10	Left	23095	707.5	25	25	23.00	22.35	0.153	0.178	
AG.0	Ant.A	Hotspot	QPSK	3	10	Bottom	23095	707.5	1	0	24.00	23.31	0.101	0.118	
AG.0	Ant.A	Hotspot	QPSK	3	10	Bottom	23095	707.5	25	25	23.00	22.35	0.093	0.108	
AG.0	Ant.A	Hotspot	QPSK	3	10	Right	23095	707.5	1	0	24.00	23.31	0.238	0.279	
AG.0	Ant.A	Hotspot	QPSK	3	10	Right	23095	707.5	25	25	23.00	22.35	0.213	0.247	

Note(s):

Body worn (RSI=0)'s power and distance are the same as Hotspot (RSI=3). So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.7. LTE Band 13 (10MHz Bandwidth)

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB Offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.0	Ant.A	Head	QPSK	4	0	Left Touch	23230	782.0	1	25	23.00	21.86	0.178	0.231	13
AG.0	Ant.A	Head	QPSK	4	0	Left Touch	23230	782.0	25	0	22.00	20.85	0.142	0.185	
AG.0	Ant.A	Head	QPSK	4	0	Left Tilt	23230	782.0	1	25	23.00	21.86	0.092	0.120	
AG.0	Ant.A	Head	QPSK	4	0	Left Tilt	23230	782.0	25	0	22.00	20.85	0.075	0.098	
AG.0	Ant.A	Head	QPSK	4	0	Right Touch	23230	782.0	1	25	23.00	21.86	0.178	0.231	
AG.0	Ant.A	Head	QPSK	4	0	Right Touch	23230	782.0	25	0	22.00	20.85	0.142	0.185	
AG.0	Ant.A	Head	QPSK	4	0	Right Tilt	23230	782.0	1	25	23.00	21.86	0.090	0.117	
AG.0	Ant.A	Head	QPSK	4	0	Right Tilt	23230	782.0	25	0	22.00	20.85	0.074	0.096	
AG.0	Ant.A	Body worn & Hotspot	QPSK	3	10	Rear	23230	782.0	1	25	23.00	21.86	0.260	0.338	
AG.0	Ant.A	Body worn & Hotspot	QPSK	3	10	Rear	23230	782.0	25	0	22.00	20.85	0.202	0.263	
AG.0	Ant.A	Body worn & Hotspot	QPSK	3	10	Front	23230	782.0	1	25	23.00	21.86	0.198	0.257	
AG.0	Ant.A	Body worn & Hotspot	QPSK	3	10	Front	23230	782.0	25	0	22.00	20.85	0.158	0.206	
AG.0	Ant.A	Hotspot	QPSK	3	10	Left	23230	782.0	1	25	23.00	21.86	0.193	0.251	
AG.0	Ant.A	Hotspot	QPSK	3	10	Left	23230	782.0	25	0	22.00	20.85	0.169	0.220	
AG.0	Ant.A	Hotspot	QPSK	3	10	Bottom	23230	782.0	1	25	23.00	21.86	0.181	0.235	
AG.0	Ant.A	Hotspot	QPSK	3	10	Bottom	23230	782.0	25	0	22.00	20.85	0.145	0.189	
AG.0	Ant.A	Hotspot	QPSK	3	10	Right	23230	782.0	1	25	23.00	21.86	0.264	0.343	14
AG.0	Ant.A	Hotspot	QPSK	3	10	Right	23230	782.0	25	0	22.00	20.85	0.235	0.306	

Note(s):

Body worn (RSI=0)'s power and distance are the same as Hotspot (RSI=3). So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.8. LTE Band 26 (15MHz Bandwidth)

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB Offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.0	Ant.A	Head	QPSK	4	0	Left Touch	26865	831.5	1	0	24.00	23.25	0.134	0.159	
AG.0	Ant.A	Head	QPSK	4	0	Left Touch	26865	831.5	36	0	23.00	22.26	0.112	0.133	
AG.0	Ant.A	Head	QPSK	4	0	Left Tilt	26865	831.5	1	0	24.00	23.25	0.078	0.093	
AG.0	Ant.A	Head	QPSK	4	0	Left Tilt	26865	831.5	36	0	23.00	22.26	0.065	0.077	
AG.0	Ant.A	Head	QPSK	4	0	Right Touch	26865	831.5	1	0	24.00	23.25	0.167	0.198	15
AG.0	Ant.A	Head	QPSK	4	0	Right Touch	26865	831.5	36	0	23.00	22.26	0.124	0.147	
AG.0	Ant.A	Head	QPSK	4	0	Right Tilt	26865	831.5	1	0	24.00	23.25	0.082	0.097	
AG.0	Ant.A	Head	QPSK	4	0	Right Tilt	26865	831.5	36	0	23.00	22.26	0.062	0.074	
AG.0	Ant.A	Body worn & Hotspot	QPSK	3	10	Rear	26865	831.5	1	0	24.00	23.25	0.262	0.311	16
AG.0	Ant.A	Body worn & Hotspot	QPSK	3	10	Rear	26865	831.5	36	0	23.00	22.26	0.220	0.261	
AG.0	Ant.A	Body worn & Hotspot	QPSK	3	10	Front	26865	831.5	1	0	24.00	23.25	0.147	0.175	
AG.0	Ant.A	Body worn & Hotspot	QPSK	3	10	Front	26865	831.5	36	0	23.00	22.26	0.125	0.148	
AG.0	Ant.A	Hotspot	QPSK	3	10	Left	26865	831.5	1	0	24.00	23.25	0.116	0.138	
AG.0	Ant.A	Hotspot	QPSK	3	10	Left	26865	831.5	36	0	23.00	22.26	0.099	0.117	
AG.0	Ant.A	Hotspot	QPSK	3	10	Bottom	26865	831.5	1	0	24.00	23.25	0.177	0.210	
AG.0	Ant.A	Hotspot	QPSK	3	10	Bottom	26865	831.5	36	0	23.00	22.26	0.152	0.180	
AG.0	Ant.A	Hotspot	QPSK	3	10	Right	26865	831.5	1	0	24.00	23.25	0.151	0.179	
AG.0	Ant.A	Hotspot	QPSK	3	10	Right	26865	831.5	36	0	23.00	22.26	0.138	0.164	

Note(s):

Body worn (RSI=0)'s power and distance are the same as Hotspot (RSI=3). So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.9. LTE Band 5 (10MHz Bandwidth)

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB Offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.0	Ant.A	Head	QPSK	4	0	Left Touch	20525	836.5	1	0	25.50	24.47	0.160	0.203	
AG.0	Ant.A	Head	QPSK	4	0	Left Touch	20525	836.5	25	0	24.50	23.67	0.138	0.167	
AG.0	Ant.A	Head	QPSK	4	0	Left Tilt	20525	836.5	1	0	25.50	24.47	0.069	0.087	
AG.0	Ant.A	Head	QPSK	4	0	Left Tilt	20525	836.5	25	0	24.50	23.67	0.062	0.075	
AG.0	Ant.A	Head	QPSK	4	0	Right Touch	20525	836.5	1	0	25.50	24.47	0.221	0.280	17
AG.0	Ant.A	Head	QPSK	4	0	Right Touch	20525	836.5	25	0	24.50	23.67	0.179	0.217	
AG.0	Ant.A	Head	QPSK	4	0	Right Tilt	20525	836.5	1	0	25.50	24.47	0.111	0.141	
AG.0	Ant.A	Head	QPSK	4	0	Right Tilt	20525	836.5	25	0	24.50	23.67	0.089	0.108	

Note(s):

Body worn (RSI=0)'s power and distance are the same as Hotspot (RSI=3). So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.10. LTE Band 66 (20MHz Bandwidth)

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB Offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.0	Ant.A	Head	QPSK	4	0	Left Touch	132322	1745.0	1	0	22.00	20.47	0.114	0.162	
AG.0	Ant.A	Head	QPSK	4	0	Left Touch	132322	1745.0	50	0	22.00	20.45	0.116	0.166	18
AG.0	Ant.A	Head	QPSK	4	0	Left Tilt	132322	1745.0	1	0	22.00	20.47	0.069	0.098	
AG.0	Ant.A	Head	QPSK	4	0	Left Tilt	132322	1745.0	50	0	22.00	20.45	0.070	0.100	
AG.0	Ant.A	Head	QPSK	4	0	Right Touch	132322	1745.0	1	0	22.00	20.47	0.060	0.085	
AG.0	Ant.A	Head	QPSK	4	0	Right Touch	132322	1745.0	50	0	22.00	20.45	0.060	0.086	
AG.0	Ant.A	Head	QPSK	4	0	Right Tilt	132322	1745.0	1	0	22.00	20.47	0.043	0.061	
AG.0	Ant.A	Head	QPSK	4	0	Right Tilt	132322	1745.0	50	0	22.00	20.45	0.041	0.059	
AG.0	Ant.A	Body worn& Hotspot	QPSK	3	10	Rear	132322	1745.0	1	0	22.00	20.47	0.263	0.374	
AG.0	Ant.A	Body worn& Hotspot	QPSK	3	10	Rear	132322	1745.0	50	0	22.00	20.45	0.295	0.422	
AG.0	Ant.A	Body worn& Hotspot	QPSK	3	10	Front	132322	1745.0	1	0	22.00	20.47	0.191	0.272	
AG.0	Ant.A	Body worn& Hotspot	QPSK	3	10	Front	132322	1745.0	50	0	22.00	20.45	0.199	0.284	
AG.0	Ant.A	Hotspot	QPSK	3	10	Left	132322	1745.0	1	0	22.00	20.47	0.097	0.138	
AG.0	Ant.A	Hotspot	QPSK	3	10	Left	132322	1745.0	50	0	22.00	20.45	0.097	0.139	
AG.0	Ant.A	Hotspot	QPSK	3	10	Bottom	132322	1745.0	1	0	22.00	20.47	0.474	0.674	
AG.0	Ant.A	Hotspot	QPSK	3	10	Bottom	132322	1745.0	50	0	22.00	20.45	0.513	0.733	19
AG.0	Ant.A	Hotspot	QPSK	3	10	Right	132322	1745.0	1	0	22.00	20.47	0.044	0.063	
AG.0	Ant.A	Hotspot	QPSK	3	10	Right	132322	1745.0	50	0	22.00	20.45	0.044	0.063	

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB Offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.1	Ant.B	Head	QPSK	4	0	Left Touch	132322	1745.0	1	99	22.00	20.55	0.077	0.108	
AG.1	Ant.B	Head	QPSK	4	0	Left Touch	132322	1745.0	50	50	21.00	20.65	0.081	0.088	
AG.1	Ant.B	Head	QPSK	4	0	Left Tilt	132322	1745.0	1	99	22.00	20.55	0.049	0.068	
AG.1	Ant.B	Head	QPSK	4	0	Left Tilt	132322	1745.0	50	50	21.00	20.65	0.055	0.060	
AG.1	Ant.B	Head	QPSK	4	0	Right Touch	132322	1745.0	1	99	22.00	20.55	0.242	0.338	20
AG.1	Ant.B	Head	QPSK	4	0	Right Touch	132322	1745.0	50	50	21.00	20.65	0.233	0.253	
AG.1	Ant.B	Head	QPSK	4	0	Rightt Tilt	132322	1745.0	1	99	22.00	20.55	0.081	0.113	
AG.1	Ant.B	Head	QPSK	4	0	Rightt Tilt	132322	1745.0	50	50	21.00	20.65	0.083	0.090	
AG.1	Ant.B	Body worn & Hotspot	QPSK	3	10	Rear	132322	1745.0	1	99	22.00	20.55	0.330	0.461	21
AG.1	Ant.B	Body worn & Hotspot	QPSK	3	10	Rear	132322	1745.0	50	50	21.00	20.65	0.336	0.364	
AG.1	Ant.B	Body worn & Hotspot	QPSK	3	10	Front	132322	1745.0	1	99	22.00	20.55	0.046	0.064	
AG.1	Ant.B	Body worn & Hotspot	QPSK	3	10	Front	132322	1745.0	50	50	21.00	20.65	0.048	0.052	
AG.1	Ant.B	Hotspot	QPSK	3	10	Top	132322	1745.0	1	99	22.00	20.55	0.020	0.028	
AG.1	Ant.B	Hotspot	QPSK	3	10	Top	132322	1745.0	50	50	22.00	20.65	0.023	0.031	
AG.1	Ant.B	Hotspot	QPSK	3	10	Left	132322	1745.0	1	99	22.00	20.55	0.167	0.233	
AG.1	Ant.B	Hotspot	QPSK	3	10	Left	132322	1745.0	50	50	22.00	20.65	0.159	0.217	

Note(s):

Body worn (RSI=0)'s power and distance are the same as Hotspot (RSI=3). So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.11. LTE Band 4 (20MHz Bandwidth)

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB Offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.0	Ant.A	Head	QPSK	4	0	Left Touch	20175	1732.5	1	99	24.00	22.23	0.137	0.206	22
AG.0	Ant.A	Head	QPSK	4	0	Left Touch	20175	1732.5	50	50	23.00	21.34	0.114	0.167	
AG.0	Ant.A	Head	QPSK	4	0	Left Tilt	20175	1732.5	1	99	24.00	22.23	0.072	0.108	
AG.0	Ant.A	Head	QPSK	4	0	Left Tilt	20175	1732.5	50	50	23.00	21.34	0.057	0.084	
AG.0	Ant.A	Head	QPSK	4	0	Right Touch	20175	1732.5	1	99	24.00	22.23	0.037	0.056	
AG.0	Ant.A	Head	QPSK	4	0	Right Touch	20175	1732.5	50	50	23.00	21.34	0.060	0.088	
AG.0	Ant.A	Head	QPSK	4	0	Rightt Tilt	20175	1732.5	1	99	24.00	22.23	0.067	0.101	
AG.0	Ant.A	Head	QPSK	4	0	Rightt Tilt	20175	1732.5	50	50	23.00	21.34	0.055	0.081	

Note(s):

Body worn (RSI=0)'s power and distance are the same as Hotspot (RSI=3). So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.12. LTE Band 2 (20MHz Bandwidth)

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB Offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.0	Ant.A	Head	QPSK	4	0	Left Touch	18900	1880.0	1	0	22.00	20.46	0.072	0.103	
AG.0	Ant.A	Head	QPSK	4	0	Left Touch	18900	1880.0	50	0	22.00	20.44	0.072	0.103	
AG.0	Ant.A	Head	QPSK	4	0	Left Tilt	18900	1880.0	1	0	22.00	20.46	0.084	0.120	23
AG.0	Ant.A	Head	QPSK	4	0	Left Tilt	18900	1880.0	50	0	22.00	20.44	0.079	0.113	
AG.0	Ant.A	Head	QPSK	4	0	Right Touch	18900	1880.0	1	0	22.00	20.46	0.077	0.110	
AG.0	Ant.A	Head	QPSK	4	0	Right Touch	18900	1880.0	50	0	22.00	20.44	0.077	0.110	
AG.0	Ant.A	Head	QPSK	4	0	Rightt Tilt	18900	1880.0	1	0	22.00	20.46	0.052	0.074	
AG.0	Ant.A	Head	QPSK	4	0	Rightt Tilt	18900	1880.0	50	0	22.00	20.44	0.050	0.072	
AG.0	Ant.A	Body worn & Hotspot	QPSK	3	10	Rear	18900	1880.0	1	0	22.00	20.46	0.332	0.473	
AG.0	Ant.A	Body worn & Hotspot	QPSK	3	10	Rear	18900	1880.0	50	0	22.00	20.44	0.338	0.484	24
AG.0	Ant.A	Body worn & Hotspot	QPSK	3	10	Front	18900	1880.0	1	0	22.00	20.46	0.136	0.194	
AG.0	Ant.A	Body worn & Hotspot	QPSK	3	10	Front	18900	1880.0	50	0	22.00	20.44	0.138	0.198	
AG.0	Ant.A	Hotspot	QPSK	3	10	Left	18900	1880.0	1	0	22.00	20.46	0.125	0.178	
AG.0	Ant.A	Hotspot	QPSK	3	10	Left	18900	1880.0	50	0	22.00	20.44	0.128	0.183	
AG.0	Ant.A	Hotspot	QPSK	3	10	Bottom	18900	1880.0	1	0	22.00	20.46	0.231	0.329	
AG.0	Ant.A	Hotspot	QPSK	3	10	Bottom	18900	1880.0	50	0	22.00	20.44	0.214	0.306	
AG.0	Ant.A	Hotspot	QPSK	3	10	Right	18900	1880.0	1	0	22.00	20.46	0.047	0.067	
AG.0	Ant.A	Hotspot	QPSK	3	10	Right	18900	1880.0	50	0	22.00	20.44	0.044	0.063	

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB Offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.1	Ant.B	Head	QPSK	4	0	Left Touch	18700	1860.0	1	0	22.00	20.19	0.149	0.226	
AG.1	Ant.B	Head	QPSK	4	0	Left Touch	18700	1860.0	50	0	22.00	20.13	0.136	0.209	
AG.1	Ant.B	Head	QPSK	4	0	Left Tilt	18700	1860.0	1	0	22.00	20.19	0.154	0.234	
AG.1	Ant.B	Head	QPSK	4	0	Left Tilt	18700	1860.0	50	0	22.00	20.13	0.157	0.241	
AG.1	Ant.B	Head	QPSK	4	0	Right Touch	18700	1860.0	1	0	22.00	20.19	0.324	0.492	25
AG.1	Ant.B	Head	QPSK	4	0	Right Touch	18700	1860.0	50	0	22.00	20.13	0.310	0.477	
AG.1	Ant.B	Head	QPSK	4	0	Rightt Tilt	18700	1860.0	1	0	22.00	20.19	0.133	0.202	
AG.1	Ant.B	Head	QPSK	4	0	Rightt Tilt	18700	1860.0	50	0	22.00	20.13	0.139	0.214	
AG.1	Ant.B	Body worn & Hotsopt	QPSK	3	10	Rear	18700	1860.0	1	0	22.00	20.19	0.371	0.563	
AG.1	Ant.B	Body worn & Hotsopt	QPSK	3	10	Rear	18700	1860.0	50	0	22.00	20.13	0.387	0.595	26
AG.1	Ant.B	Body worn & Hotsopt	QPSK	3	10	Front	18700	1860.0	1	0	22.00	20.19	0.083	0.126	
AG.1	Ant.B	Body worn & Hotsopt	QPSK	3	10	Front	18700	1860.0	50	0	22.00	20.13	0.060	0.092	
AG.1	Ant.B	Hotspot	QPSK	3	10	Top	18700	1860.0	1	0	22.00	20.19	0.035	0.053	
AG.1	Ant.B	Hotspot	QPSK	3	10	Top	18700	1860.0	50	0	22.00	20.13	0.024	0.037	
AG.1	Ant.B	Hotspot	QPSK	3	10	Left	18700	1860.0	1	0	22.00	20.19	0.276	0.419	
AG.1	Ant.B	Hotspot	QPSK	3	10	Left	18700	1860.0	50	0	22.00	20.13	0.279	0.429	

Note(s):

Body worn (RSI=0)'s power and distance are the same as Hotspot (RSI=3). So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.13. LTE Band 41 (20MHz Bandwidth)

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB Offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.0	Ant.A	Head	QPSK	4	0	Left Touch	41490	2680.0	1	49	20.00	19.01	0.096	0.121	
AG.0	Ant.A	Head	QPSK	4	0	Left Touch	41490	2680.0	50	24	20.00	18.99	0.098	0.124	27
AG.0	Ant.A	Head	QPSK	4	0	Left Tilt	41490	2680.0	1	49	20.00	19.01	0.032	0.040	
AG.0	Ant.A	Head	QPSK	4	0	Left Tilt	41490	2680.0	50	24	20.00	18.99	0.032	0.040	
AG.0	Ant.A	Head	QPSK	4	0	Right Touch	41490	2680.0	1	49	20.00	19.01	0.050	0.063	
AG.0	Ant.A	Head	QPSK	4	0	Right Touch	41490	2680.0	50	24	20.00	18.99	0.051	0.064	
AG.0	Ant.A	Head	QPSK	4	0	Right Tilt	41490	2680.0	1	49	20.00	19.01	0.053	0.067	
AG.0	Ant.A	Head	QPSK	4	0	Right Tilt	41490	2680.0	50	24	20.00	18.99	0.052	0.066	
AG.0	Ant.A	Body worn& Hotspot	QPSK	3	10	Rear	41490	2680.0	1	49	20.00	19.01	0.114	0.143	
AG.0	Ant.A	Body worn& Hotspot	QPSK	3	10	Rear	41490	2680.0	50	24	20.00	18.99	0.104	0.131	
AG.0	Ant.A	Body worn& Hotspot	QPSK	3	10	Front	41490	2680.0	1	49	20.00	19.01	0.092	0.116	
AG.0	Ant.A	Body worn& Hotspot	QPSK	3	10	Front	41490	2680.0	50	24	20.00	18.99	0.092	0.116	
AG.0	Ant.A	Hotspot	QPSK	3	10	Left	41490	2680.0	1	49	20.00	19.01	0.074	0.093	
AG.0	Ant.A	Hotspot	QPSK	3	10	Left	41490	2680.0	50	24	20.00	18.99	0.073	0.092	
AG.0	Ant.A	Hotspot	QPSK	3	10	Bottom	41490	2680.0	1	49	20.00	19.01	0.174	0.219	28
AG.0	Ant.A	Hotspot	QPSK	3	10	Bottom	41490	2680.0	50	24	20.00	18.99	0.146	0.184	
AG.0	Ant.A	Hotspot	QPSK	3	10	Right	41490	2680.0	1	49	20.00	19.01	0.020	0.025	
AG.0	Ant.A	Hotspot	QPSK	3	10	Right	41490	2680.0	50	24	20.00	18.99	0.020	0.025	

Note(s):

Body worn (RSI=0)'s power and distance are the same as Hotspot (RSI=3). So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.14. NR Band n5 (20MHz Bandwidth)

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB Offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Left Touch	167300	836.5	1	52	25.50	24.80	0.070	0.082	
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Left Touch	167300	836.5	50	28	25.50	24.87	0.073	0.084	
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Left Tilt	167300	836.5	1	52	25.50	24.80	0.036	0.042	
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Left Tilt	167300	836.5	50	28	25.50	24.87	0.038	0.044	
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Right Touch	167300	836.5	1	52	25.50	24.80	0.088	0.103	29
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Right Touch	167300	836.5	50	28	25.50	24.87	0.089	0.103	
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Right Tilt	167300	836.5	1	52	25.50	24.80	0.049	0.058	
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Right Tilt	167300	836.5	50	28	25.50	24.87	0.050	0.058	
AG.0	Ant.A	Head	CP-OFDM QPSK	4	0	Right Touch	167300	836.5	1	1	24.00	23.14	0.068	0.083	
AG.0	Ant.A	Body worn & Hotspot	DFT-s-OFDM QPSK	3	10	Rear	167300	836.5	1	52	25.50	24.80	0.153	0.180	
AG.0	Ant.A	Body worn & Hotspot	DFT-s-OFDM QPSK	3	10	Rear	167300	836.5	50	28	25.50	24.87	0.158	0.183	
AG.0	Ant.A	Body worn & Hotspot	DFT-s-OFDM QPSK	3	10	Front	167300	836.5	1	52	25.50	24.80	0.093	0.109	
AG.0	Ant.A	Body worn & Hotspot	DFT-s-OFDM QPSK	3	10	Front	167300	836.5	50	28	25.50	24.87	0.091	0.105	
AG.0	Ant.A	Hotspot	DFT-s-OFDM QPSK	3	10	Left	167300	836.5	1	52	25.50	24.80	0.015	0.018	
AG.0	Ant.A	Hotspot	DFT-s-OFDM QPSK	3	10	Left	167300	836.5	50	28	25.50	24.87	0.013	0.015	
AG.0	Ant.A	Hotspot	DFT-s-OFDM QPSK	3	10	Bottom	167300	836.5	1	52	25.50	24.80	0.164	0.193	
AG.0	Ant.A	Hotspot	DFT-s-OFDM QPSK	3	10	Bottom	167300	836.5	50	28	25.50	24.87	0.179	0.207	30
AG.0	Ant.A	Hotspot	DFT-s-OFDM QPSK	3	10	Right	167300	836.5	1	52	25.50	24.80	0.018	0.021	
AG.0	Ant.A	Hotspot	DFT-s-OFDM QPSK	3	10	Right	167300	836.5	50	28	25.50	24.87	0.019	0.022	
AG.0	Ant.A	Hotspot	CP-OFDM QPSK	3	10	Bottom	167300	836.5	1	1	24.00	23.14	0.164	0.200	

Note(s):

1. CP-OFDM mode were evaluated at worst configuration of DFT-s-OFDM in standalone exposure conditions.
2. Body worn (RSI=0)'s power and distance are the same as Hotspot (RSI=3). So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.15. NR Band n66 (40MHz Bandwidth)

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB Offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Left Touch	349000	1745.0	1	107	22.00	20.21	0.076	0.115	31
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Left Touch	349000	1745.0	108	54	22.00	20.27	0.074	0.110	
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Left Tilt	349000	1745.0	1	107	22.00	20.21	0.044	0.066	
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Left Tilt	349000	1745.0	108	54	22.00	20.27	0.047	0.070	
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Right Touch	349000	1745.0	1	107	22.00	20.21	0.039	0.059	
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Right Touch	349000	1745.0	108	54	22.00	20.27	0.035	0.052	
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Right Tilt	349000	1745.0	1	107	22.00	20.21	0.035	0.053	
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Right Tilt	349000	1745.0	108	54	22.00	20.27	0.034	0.051	
AG.0	Ant.A	Head	CP-OFDM QPSK	4	0	Left Touch	349000	1745.0	1	1	22.00	19.90	0.069	0.112	
AG.0	Ant.A	Body worn & Hotspot	DFT-s-OFDM QPSK	3	10	Rear	349000	1745.0	1	107	22.00	20.21	0.234	0.353	
AG.0	Ant.A	Body worn & Hotspot	DFT-s-OFDM QPSK	3	10	Rear	349000	1745.0	108	54	22.00	20.27	0.270	0.402	
AG.0	Ant.A	Body worn & Hotspot	DFT-s-OFDM QPSK	3	10	Front	349000	1745.0	1	107	22.00	20.21	0.167	0.252	
AG.0	Ant.A	Body worn & Hotspot	DFT-s-OFDM QPSK	3	10	Front	349000	1745.0	108	54	22.00	20.27	0.159	0.237	
AG.0	Ant.A	Hotspot	DFT-s-OFDM QPSK	3	10	Left	349000	1745.0	1	107	22.00	20.21	0.081	0.122	
AG.0	Ant.A	Hotspot	DFT-s-OFDM QPSK	3	10	Left	349000	1745.0	108	54	22.00	20.27	0.081	0.121	
AG.0	Ant.A	Hotspot	DFT-s-OFDM QPSK	3	10	Bottom	349000	1745.0	1	107	22.00	20.21	0.486	0.734	32
AG.0	Ant.A	Hotspot	DFT-s-OFDM QPSK	3	10	Bottom	349000	1745.0	108	54	22.00	20.27	0.403	0.600	
AG.0	Ant.A	Hotspot	DFT-s-OFDM QPSK	3	10	Right	349000	1745.0	1	107	22.00	20.21	0.046	0.069	
AG.0	Ant.A	Hotspot	DFT-s-OFDM QPSK	3	10	Right	349000	1745.0	108	54	22.00	20.27	0.036	0.054	
AG.0	Ant.A	Hotspot	CP-OFDM QPSK	3	10	bottom	349000	1745.0	1	1	22.00	19.90	0.365	0.592	

Note(s):

1. CP-OFDM mode were evaluated at worst configuration of DFT-s-OFDM in standalone exposure conditions.
2. Body worn (RSI=0)'s power and distance are the same as Hotspot (RSI=3). So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.16. NR Band n41 (Voice/data/SRS0) (100MHz Bandwidth)

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	RB Allocation	RB Offset	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Left Touch	518598	2592.99	1	136	18.00	17.32	0.084	0.098	
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Left Touch	518598	2592.99	135	69	18.00	17.32	0.089	0.104	33
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Left Tilt	518598	2592.99	1	136	18.00	17.32	0.026	0.030	
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Left Tilt	518598	2592.99	135	69	18.00	17.32	0.025	0.029	
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Right Touch	518598	2592.99	1	136	18.00	17.32	0.053	0.062	
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Right Touch	518598	2592.99	135	69	18.00	17.32	0.050	0.058	
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Right Tilt	518598	2592.99	1	136	18.00	17.32	0.053	0.062	
AG.0	Ant.A	Head	DFT-s-OFDM QPSK	4	0	Right Tilt	518598	2592.99	135	69	18.00	17.32	0.046	0.054	
AG.0	Ant.A	Head	CP-OFDM QPSK	4	0	LeftTouch	518598	2592.99	1	1	18.00	17.19	0.064	0.077	
AG.0	Ant.A	Body worn & Hotspot	DFT-s-OFDM QPSK	3	10	Rear	518598	2592.99	1	136	18.00	17.32	0.155	0.181	
AG.0	Ant.A	Body worn & Hotspot	DFT-s-OFDM QPSK	3	10	Rear	518598	2592.99	135	69	18.00	17.32	0.135	0.158	
AG.0	Ant.A	Body worn & Hotspot	DFT-s-OFDM QPSK	3	10	Front	518598	2592.99	1	136	18.00	17.32	0.097	0.113	
AG.0	Ant.A	Body worn & Hotspot	DFT-s-OFDM QPSK	3	10	Front	518598	2592.99	135	69	18.00	17.32	0.093	0.109	
AG.0	Ant.A	Hotspot	DFT-s-OFDM QPSK	3	10	Left	518598	2592.99	1	136	18.00	17.32	0.073	0.085	
AG.0	Ant.A	Hotspot	DFT-s-OFDM QPSK	3	10	Left	518598	2592.99	135	69	18.00	17.32	0.072	0.084	
AG.0	Ant.A	Hotspot	DFT-s-OFDM QPSK	3	10	Bottom	518598	2592.99	1	136	18.00	17.32	0.239	0.280	34
AG.0	Ant.A	Hotspot	DFT-s-OFDM QPSK	3	10	Bottom	518598	2592.99	135	69	18.00	17.32	0.228	0.267	
AG.0	Ant.A	Hotspot	DFT-s-OFDM QPSK	3	10	Right	518598	2592.99	1	136	18.00	17.32	0.025	0.029	
AG.0	Ant.A	Hotspot	DFT-s-OFDM QPSK	3	10	Right	518598	2592.99	135	69	18.00	17.32	0.025	0.029	
AG.0	Ant.A	Hotspot	CP-OFDM QPSK	3	10	Bottom	518598	2592.99	1	1	18.00	17.19	0.201	0.242	

Note(s):

1. CP-OFDM mode were evaluated at worst configuration of DFT-s-OFDM in standalone exposure conditions.
2. NR Band n41(Voice/data/SRS0) tested using FTM mode.
3. Body worn (RSI=0)'s power and distance are the same as Hotspot (RSI=3). So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.17. NR Band n41 (SRS1/SRS2/SRS3) (100MHz Bandwidth)

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.1	Ant.C	Head	CW	4	0	Left Touch	518598	2592.99	18.00	16.97	0.656	0.832	
AG.1	Ant.C	Head	CW	4	0	Left Tilt	518598	2592.99	18.00	16.97	0.680	0.862	35
AG.1	Ant.C	Head	CW	4	0	Right Touch	518598	2592.99	18.00	16.97	0.262	0.332	
AG.1	Ant.C	Head	CW	4	0	Right Tilt	518598	2592.99	18.00	16.97	0.261	0.331	
AG.1	Ant.C	Body worn& Hotspot	CW	3	10	Rear	518598	2592.99	18.00	16.97	0.313	0.397	
AG.1	Ant.C	Body worn& Hotspot	CW	3	10	Front	518598	2592.99	18.00	16.97	0.156	0.198	
AG.1	Ant.C	Hotspot	CW	3	10	Top	518598	2592.99	18.00	16.97	0.262	0.332	
AG.1	Ant.C	Hotspot	CW	3	10	Right	518598	2592.99	18.00	16.97	0.048	0.061	

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.1	Ant.B	Head	CW	4	0	Left Touch	518598	2592.99	18.00	17.94	0.070	0.071	
AG.1	Ant.B	Head	CW	4	0	Left Tilt	518598	2592.99	18.00	17.94	0.047	0.048	
AG.1	Ant.B	Head	CW	4	0	Right Touch	518598	2592.99	18.00	17.94	0.259	0.263	
AG.1	Ant.B	Head	CW	4	0	Right Tilt	518598	2592.99	18.00	17.94	0.108	0.110	
AG.1	Ant.B	Body worn& Hotspot	CW	3	10	Rear	518598	2592.99	18.00	17.94	0.480	0.487	36
AG.1	Ant.B	Body worn& Hotspot	CW	3	10	Front	518598	2592.99	18.00	17.94	0.062	0.063	
AG.1	Ant.B	Hotspot	CW	3	10	Top	518598	2592.99	18.00	17.94	0.025	0.025	
AG.1	Ant.B	Hotspot	CW	3	10	Left	518598	2592.99	18.00	17.94	0.229	0.232	

Antenna Group	Antenna	RF Exposure Condition	Mode	RSI	Dist (mm)	Test Position	Channel	Freq. (MHz)	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
AG.1	Ant.F	Head	CW	4	0	Left Touch	518598	2592.99	18.00	17.56	0.306	0.339	
AG.1	Ant.F	Head	CW	4	0	Left Tilt	518598	2592.99	18.00	17.56	0.129	0.143	
AG.1	Ant.F	Head	CW	4	0	Right Touch	518598	2592.99	18.00	17.56	0.100	0.111	
AG.1	Ant.F	Head	CW	4	0	Right Tilt	518598	2592.99	18.00	17.56	0.033	0.037	
AG.1	Ant.F	Body worn & Hotspot	CW	3	10	Rear	518598	2592.99	18.00	17.56	0.231	0.256	
AG.1	Ant.F	Body worn & Hotspot	CW	3	10	Front	518598	2592.99	18.00	17.56	0.054	0.060	
AG.1	Ant.F	Hotspot	CW	3	10	Top	518598	2592.99	18.00	17.56	0.019	0.021	
AG.1	Ant.F	Hotspot	CW	3	10	Right	518598	2592.99	18.00	17.56	0.074	0.082	

Note(s):

1. NR Band n41(SRS1/SRS2/SRS3) tested using FTM mode.
2. Body worn (RSI=0)'s power and distance are the same as Hotspot (RSI=3). So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.18. Wi-Fi (DTS Band)

DTS SISO SAR results

Antenna	RF Exposure Condition	Mode	Back-Off	Dist (mm)	Test Position	Channel	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Note	Plot No.
Ant.D	Head	802.11b 1Mbps	On	0	Left Touch	1	2412.0	0.061	98.9	12.00	11.84				
Ant.D	Head	802.11b 1Mbps	On	0	Left Tilt	1	2412.0	0.070	98.9	12.00	11.84				
Ant.D	Head	802.11b 1Mbps	On	0	Right Touch	1	2412.0	0.072	98.9	12.00	11.84				
Ant.D	Head	802.11b 1Mbps	On	0	Right Tilt	1	2412.0	0.083	98.9	12.00	11.84	0.065	0.068		37
Ant.D	Body worn & Hotspot	802.11b 1Mbps	Off	10	Rear	6	2437.0	0.356	98.9	19.00	18.31	0.264	0.313		38
Ant.D	Body worn & Hotspot	802.11b 1Mbps	Off	10	Front	6	2437.0	0.075	98.9	19.00	18.31				
Ant.D	Hotspot	802.11b 1Mbps	Off	10	Top	6	2437.0	0.204	98.9	19.00	18.31				
Ant.D	Hotspot	802.11b 1Mbps	Off	10	Left	6	2437.0	0.018	98.9	19.00	18.31				

Note(s):

1. When the Highest reported SAR is ≤ 0.4 or 1.0 W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
2. Highest reported SAR is > 0.4 or 1.0 W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR ≤ 0.8 or 2.0 W/kg (1-g or 10-g respectively) was reported.
3. Testing for a second channel was required because the reported SAR for this test position was > 0.8 or 2.0 W/kg (1-g or 10-g respectively).
4. Body worn's power and distance are the same as Hotspot. So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.19. Wi-Fi (U-NII Bands)

U-NII 2A SAR results

Antenna	RF Exposure Condition	Mode	Back-Off	Dist (mm)	Test Position	Channel	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Note	Plot No.
Ant.D	Head	802.11ac MCS0	On	0	Left Touch	58	5290.0	0.360	95.4	11.00	9.91	0.248	0.334			4	
Ant.D	Head	802.11ac MCS0	On	0	Left Tilt	58	5290.0	0.486	95.4	11.00	9.91	0.317	0.427				
Ant.D	Head	802.11ac MCS0	On	0	Right Touch	58	5290.0	0.397	95.4	11.00	9.91						
Ant.D	Head	802.11ac MCS0	On	0	Right Tilt	58	5290.0	0.679	95.4	11.00	9.91	0.435	0.586				39
Ant.D	Body worn	802.11a 6Mbps	Off	10	Rear	52	5260.0	0.944	96.9	16.00	15.33	0.676	0.814				
Ant.D	Body worn	802.11a 6Mbps	Off	10	Rear	60	5300.0	0.968	96.9	16.00	15.55	0.731	0.837				40
Ant.D	Body worn	802.11a 6Mbps	Off	10	Front	60	5300.0	0.174	96.9	16.00	15.55	0.105	0.120				
Ant.D	Product specific 10-g SAR	802.11a 6Mbps	Off	0	Rear	60	5300.0	6.040	96.9	16.00	15.55			1.010	1.156		
Ant.D	Product specific 10-g SAR	802.11a 6Mbps	Off	0	Front	60	5300.0	1.250	96.9	16.00	15.55						
Ant.D	Product specific 10-g SAR	802.11a 6Mbps	Off	0	Top	60	5300.0	6.510	96.9	16.00	15.55			1.230	1.408		41
Ant.D	Product specific 10-g SAR	802.11a 6Mbps	Off	0	Left	60	5300.0	0.364	96.9	16.00	15.55						

Note(s):

1. When the Highest reported SAR is ≤ 0.4 or 1.0 W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
2. Highest reported SAR is > 0.4 or 1.0 W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR ≤ 0.8 or 2.0 W/kg (1-g or 10-g respectively) was reported.
3. Testing for a second channel was required because the reported SAR for this test position was > 0.8 or 2.0 W/kg (1-g or 10-g respectively).
4. Additional testing required in order satisfying FCC simultaneous transmission limit criteria.
5. Body worn's power and distance are the same as Hotspot. So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

U-NII 2C SAR results

Antenna	RF Exposure Condition	Mode	Back-Off	Dist (mm)	Test Position	Channel	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Note	Plot No.
Ant.D	Head	802.11ac MCS0	On	0	Left Touch	122	5610.0	0.422	95.4	11.00	10.50	0.259	0.305			4	
Ant.D	Head	802.11ac MCS0	On	0	Left Tilt	122	5610.0	0.477	95.4	11.00	10.50	0.308	0.362				42
Ant.D	Head	802.11ac MCS0	On	0	Right Touch	122	5610.0	0.364	95.4	11.00	10.50						
Ant.D	Head	802.11ac MCS0	On	0	Right Tilt	122	5610.0	0.451	95.4	11.00	10.50	0.292	0.343				
Ant.D	Body worn	802.11a 6Mbps	Off	10	Rear	124	5620.0	0.634	96.9	15.00	14.80	0.465	0.502				43
Ant.D	Body worn	802.11a 6Mbps	Off	10	Front	124	5620.0	0.313	96.9	15.00	14.80	0.252	0.272				
Ant.D	Product specific 10-g SAR	802.11a 6Mbps	Off	0	Rear	124	5620.0	3.970	96.9	15.00	14.80			0.909	0.982		
Ant.D	Product specific 10-g SAR	802.11a 6Mbps	Off	0	Front	124	5620.0	1.750	96.9	15.00	14.80						
Ant.D	Product specific 10-g SAR	802.11a 6Mbps	Off	0	Top	124	5620.0	7.180	96.9	15.00	14.80			1.190	1.286		44
Ant.D	Product specific 10-g SAR	802.11a 6Mbps	Off	0	Left	124	5620.0	0.996	96.9	15.00	14.80						

Note(s):

1. When the Highest reported SAR is ≤ 0.4 or 1.0 W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
2. Highest reported SAR is > 0.4 or 1.0 W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR ≤ 0.8 or 2.0 W/kg (1-g or 10-g respectively) was reported.
3. Testing for a second channel was required because the reported SAR for this test position was > 0.8 or 2.0 W/kg (1-g or 10-g respectively).
4. Additional testing required in order satisfying FCC simultaneous transmission limit criteria.
5. Body worn's power and distance are the same as Hotspot. So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

U-NII 3 SAR results

Antenna	RF Exposure Condition	Mode	Back-Off	Dist (mm)	Test Position	Channel	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Meas. 10g (W/kg)	Reported. 10g (W/kg)	Note	Plot No.
Ant.D	Head	802.11ac MCS0	On	0	Left Touch	155	5775.0	0.342	95.4	11.00	9.50	0.248	0.367			4	
Ant.D	Head	802.11ac MCS0	On	0	Left Tilt	155	5775.0	0.465	95.4	11.00	9.50	0.309	0.458				45
Ant.D	Head	802.11ac MCS0	On	0	Right Touch	155	5775.0	0.264	95.4	11.00	9.50						
Ant.D	Head	802.11ac MCS0	On	0	Right Tilt	155	5775.0	0.407	95.4	11.00	9.50	0.272	0.403				
Ant.D	Body worn & Hotspot	802.11a 6Mbps	Off	10	Rear	149	5745.0	0.663	96.9	17.00	15.81	0.517	0.702				
Ant.D	Body worn & Hotspot	802.11a 6Mbps	Off	10	Rear	165	5825.0	0.686	96.9	17.00	16.31	0.550	0.665				
Ant.D	Body worn & Hotspot	802.11a 6Mbps	Off	10	Front	149	5745.0	0.307	96.9	17.00	15.81						
Ant.D	Body worn & Hotspot	802.11a 6Mbps	Off	10	Front	165	5825.0	0.416	96.9	17.00	16.31	0.295	0.357				
Ant.D	Hotspot	802.11a 6Mbps	Off	10	Top	149	5745.0	0.933	96.9	17.00	15.81	0.709	0.962				46
Ant.D	Hotspot	802.11a 6Mbps	Off	10	Top	157	5785.0	0.836	96.9	17.00	15.93	0.628	0.829				
Ant.D	Hotspot	802.11a 6Mbps	Off	10	Top	165	5825.0	0.901	96.9	17.00	16.31	0.714	0.864				
Ant.D	Hotspot	802.11a 6Mbps	Off	10	Left	149	5745.0	0.146	96.9	17.00	15.81						
Ant.D	Hotspot	802.11a 6Mbps	Off	10	Left	165	5825.0	0.053	96.9	17.00	16.31						

Note(s):

1. When the Highest reported SAR is ≤ 0.4 or 1.0 W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
2. Highest reported SAR is > 0.4 or 1.0 W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR ≤ 0.8 or 2.0 W/kg (1-g or 10-g respectively) was reported.
3. Testing for a second channel was required because the reported SAR for this test position was > 0.8 or 2.0 W/kg (1-g or 10-g respectively).
4. Additional testing required in order satisfying FCC simultaneous transmission limit criteria.
5. Body worn's power and distance are the same as Hotspot. So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.20. Bluetooth

Antenna	RF Exposure Condition	Mode	Back-Off	Dist (mm)	Test Position	Channel	Freq. (MHz)	Duty Cycle (%)	Tune-up Limit (dBm)	Meas. (dBm)	Meas. 1g (W/kg)	Reported. 1g (W/kg)	Plot No.
Ant.D	Head	GFSK DH5	Off	0	Left Touch	39	2441.0	76.7	11.00	10.60	0.025	0.028	
Ant.D	Head	GFSK DH5	Off	0	Left Tilt	39	2441.0	76.7	11.00	10.60	0.027	0.030	
Ant.D	Head	GFSK DH5	Off	0	Right Touch	39	2441.0	76.7	11.00	10.60	0.041	0.046	
Ant.D	Head	GFSK DH5	Off	0	Right Tilt	39	2441.0	76.7	11.00	10.60	0.043	0.049	47
Ant.D	Body worn & Hotspot	GFSK DH5	Off	10	Rear	39	2441.0	76.7	11.00	10.60	0.034	0.038	48
Ant.D	Body worn & Hotspot	GFSK DH5	Off	10	Front	39	2441.0	76.7	11.00	10.60	0.008	0.009	
Ant.D	Hotspot	GFSK DH5	Off	10	Top	39	2441.0	76.7	11.00	10.60	0.018	0.020	
Ant.D	Hotspot	GFSK DH5	Off	10	Left	39	2441.0	76.7	11.00	10.60	0.002	0.002	

Note(s):

Body worn's power and distance are the same as Hotspot. So used Hotspot data at Body worn exposure. according to referencing KDB 648474 D04 guidance.

10.21. NFC

Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Test setup		Freq. (MHz)	10-g SAR (W/kg)	Plot No.
				Type	Bitrate		Meas.	
PBRS	Product Specific 10-g	0	Rear	A	106	13.56	0.018	49
			Front	A	106	13.56	0.000	
			Top	A	106	13.56	0.000	
			Left	A	106	13.56	0.000	

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.

Peak spatial-average (1g of tissue)

Frequency Band (MHz)	Air Interface	Antenna	RF Exposure Conditions	Test Position	Repeated SAR (Yes/No)	Highest Measured SAR (W/kg)	Repeated Measured SAR (W/kg)	Largest to Smallest SAR Ratio
750	LTE Band 12	Ant.A	Body worn & Hotspot	Rear	No	0.250	N/A	N/A
	LTE Band 13	Ant.A	Hotspot	Right	No	0.264	N/A	N/A
850	GSM 850	Ant.A	Body worn & Hotspot	Rear	No	0.473	N/A	N/A
	LTE Band 26	Ant.A	Body worn & Hotspot	Rear	No	0.262	N/A	N/A
	LTE Band 5	Ant.A	Head	Right Touch	No	0.221	N/A	N/A
	NR Band n5	Ant.A	Hotspot	Bottom	No	0.179	N/A	N/A
1700	WCDMA Band 4	Ant.A	Hotspot	Bottom	No	0.455	N/A	N/A
	LTE Band 4	Ant.A	Head	Left Touch	No	0.137	N/A	N/A
	LTE Band 66	Ant.A	Hotspot	Bottom	No	0.513	N/A	N/A
	LTE Band 66	Ant.B	Body worn & Hotspot	Rear	No	0.336	N/A	N/A
	NR Band 66	Ant.A	Hotspot	Bottom	No	0.486	N/A	N/A
1900	GSM 1900	Ant.A	Hotspot	Bottom	No	0.337	N/A	N/A
	WCDMA Band 2	Ant.A	Body worn & Hotspot	Rear	No	0.313	N/A	N/A
	LTE Band 2	Ant.A	Body worn & Hotspot	Rear	No	0.338	N/A	N/A
	LTE Band 2	Ant.B	Body worn & Hotspot	Rear	No	0.387	N/A	N/A
2450	DTS	Ant.D	Body worn & Hotspot	Rear	No	0.264	N/A	N/A
	Bluetooth	Ant.D	Head	Right Tilt	No	0.043	N/A	N/A
2600	LTE Band 41 (PC3)	Ant.A	Hotspot	Bottom	No	0.174	N/A	N/A
	NR Band n41 (PC3)	Ant.A	Hotspot	Bottom	No	0.239	N/A	N/A
	NR Band n41 SRS1	Ant.C	Head	Left Tilt	No	0.680	N/A	N/A
	NR Band n41 SRS2	Ant.B	Body worn & Hotspot	Rear	No	0.480	N/A	N/A
	NR Band n41 SRS3	Ant.F	Head	Left Touch	No	0.306	N/A	N/A
5300	U-NII 2A	Ant.D	Body worn	Rear	No	0.731	N/A	N/A
5600	U-NII 2C	Ant.D	Body worn	Rear	No	0.465	N/A	N/A
5800	U-NII 3	Ant.D	Hotspot	Top	No	0.714	N/A	N/A

Peak spatial-average (10g of tissue)

Frequency Band (MHz)	Air Interface	Antenna	RF Exposure Conditions	Test Position	Repeated SAR (Yes/No)	Highest Measured SAR (W/kg)	Repeated Measured SAR (W/kg)	Largest to Smallest SAR Ratio
5300	U-NII 2A	Ant.D	Product specific 10-g	Top	No	1.230	N/A	N/A
5500	U-NII 2C	Ant.D	Product specific 10-g	Top	No	1.190	N/A	N/A

Note(s):

1. In above table, Only some bands above 2.0 W/kg (10-g Measured SAR) were listed.
2. Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the original and first repeated measurement is not > 1.20.

12. Simultaneous Transmission SAR Analysis

Simultaneous Transmission Condition

RF Exposure Condition	Item	Simultaneous transmission scenarios
Head & Body-worn & Hotspot & Phablet-10g	1	WWAN (2G/3G/LTE/NR) + (DTS Ant.1)
	2	WWAN (2G/3G/LTE/NR) + (UNII Ant.1)
	3	WWAN (2G/3G/LTE/NR) + (BT Ant.1)
	4	WWAN (2G/3G/LTE/NR) + (UNII Ant.1 + BT Ant.1)
	5	WWAN (ENDC/ULCA) + (DTS Ant.1)
	6	WWAN (ENDC/ULCA) + (UNII Ant.1)
	7	WWAN (ENDC/ULCA) + (BT Ant.1)
	8	WWAN (ENDC/ULCA) + (UNII Ant.1 + BT Ant.1)
Phablet-10g	9	Scenatios item (1-8) + NFC

Notes:

1. DTS supports Wi-Fi Direct, Hotspot and VoIP.
2. U-NII supports Wi-Fi Direct, Hotspot and VoIP.
3. GPRS, W-CDMA, LTE, NR supports Hotspot and VoIP
4. U-NII Radio can transmit simultaneously with Bluetooth Radio.
5. NR Radio support to both SA and NSA(ENDC) Radio.
6. BT tethering is considered about each RF exposure conditions.
7. NFC can transmit simultaneously with other Radios in Phablet-10g condition.

Note(s):

For EN-DC mode, LSI TAS algorithm in WWAN adds directly the time-averaged RF exposure from 4G(LTE) and time-averaged RF exposure from 5G NR. LSI TAS algorithm controls the total RF exposure from both 4G and 5G NR to not exceed the RF exposure from each 4G or 5G individually. Therefore, simultaneous transmission compliance between 4G+5G NR operation is demonstrated in the TAS validation Report during algorithm validation.

In this SAR Report, simultaneous transmission compliance was evaluated individually with WLAN and/or other radios using one of 4G or 5G NR.

12.1. Antenna group consideration

In WWAN TAS algorithm, it was assumed that all antennas are correlated regardless of their direction of transmission in space. Thus, the main concept was to split the SAR/TER on the transmitting RATs even they are transmitting on different antennas. Such approach is considered as a worst case scenario in terms of transmitting power. Thus, to enhance the performance of the transmission power RATs, we should consider the spatial properties of each antenna and the correlations between the antennas transmissions.

For a DUT with N antennas, a spatial correlation matrix (R) can be constructed to map the correlation between each two antennas when they transmit simultaneously. Thus this correlation matrix is given as

$$R = \begin{bmatrix} r_{11} & r_{12} & \cdots & r_{1N} \\ r_{21} & r_{22} & \cdots & r_{2N} \\ \vdots & \vdots & \ddots & \vdots \\ r_{N1} & r_{N2} & \cdots & r_{NN} \end{bmatrix}$$

And it has the following characteristics

a) r_{ij} is the correlation between antenna i and antenna j

b) The value of r_{ij} is either 0 or 1, where 1 means fully correlated and 0 means fully uncorrelated.

c) r_{ii} is the self-correlation of each antenna and it is always 1.

Since the R matrix entries depends on the antenna distribution of each DUT, then our spatial TAS algorithm is implemented to operate with any R matrix (antenna distribution agnostic).
The values of the R matrix entries should be determined by the OEM based on the DUT used. One way to determine the values of the R matrix entries is to use the SPLSR test mentioned in FCC KDB 447498 guide.

The table below shows the antenna groups and R matrix declared by manufacturer:

Antenna Group	Antenna	Band list
AG0	Ant. A	GSM 850, 1900 WCDMA B5, B4, B2 LTE B12, B13, B26, B5, B66 , B4, B2, B41 NR Bn5, Bn66, Bn41
AG1	Ant. B	LTE B66, B2, NR Bn41 SRS2
	Ant. C	NR Bn41 SRS1
	Ant. F	NR Bn41 SRS3

R =

Antenna Group		AG0	AG1		
	Antenna	Ant. A	Ant. B	Ant. C	Ant. F
AG0	Ant. A	1	0	0	0
AG1	Ant. B	0	1	1	1
	Ant. C	0	1	1	1
	Ant. F	0	1	1	1

SPLSR criteria verification according to matrix (R) verifies only RF exposure configurations where AG0+AG1 or AG0+AG1+other radios(WLAN/BT/NFC) exceeds the FCC limit.

12.1.1 Head/ Body-worn & Hotspot/ Product Specific 10-g exposure Antenna group analysis

Antenna Group : AG0's (Ant.A) Highest SAR Result

Main Ant.		AG0																Max
RF exposure	Test position	Reported SAR (W/kg)																AG0 Max
		GSM 850	GSM 1900	WCDMA B2	WCDMA B4	WCDMA B5	LTE B12	LTE B13	LTE B26	LTE B5	LTE B66	LTE B4	LTE B2	LTE B41	NR Bn5	NR Bn66	NR Bn41	
		Ant A	Ant A	Ant A	Ant A	Ant A	Ant A	Ant A	Ant A	Ant. A	Ant A	Ant A	Ant A	Ant A	Ant A	Ant A	Ant. A	
Head	Left Touch	0.271	0.127	0.189	0.195	0.222	0.175	0.231	0.159	0.203	0.166	0.206	0.103	0.124	0.084	0.115	0.104	0.271
	Left Tilt	0.170	0.111	0.226	0.101	0.139	0.103	0.120	0.093	0.087	0.100	0.108	0.120	0.040	0.044	0.066	0.030	0.226
	Right Touch	0.391	0.123	0.223	0.068	0.265	0.190	0.231	0.198	0.280	0.086	0.088	0.110	0.064	0.103	0.059	0.062	0.391
	Right Tilt	0.186	0.064	0.115	0.074	0.142	0.090	0.117	0.097	0.141	0.061	0.101	0.074	0.067	0.058	0.053	0.062	0.186
Body-worn & Hotspot	Rear	0.625	0.430	0.453	0.451	0.508	0.293	0.338	0.311		0.422		0.484	0.143	0.183	0.402	0.181	0.625
	Front	0.295	0.274	0.255	0.219	0.275	0.234	0.257	0.175		0.284		0.198	0.116	0.109	0.252	0.113	0.295
Hotspot	Top																	0.000
	Left	0.235	0.171	0.172	0.110	0.156	0.183	0.251	0.138		0.139		0.183	0.093	0.018	0.122	0.085	0.251
	Bottom	0.292	0.431	0.380	0.590	0.370	0.118	0.235	0.210		0.733		0.329	0.219	0.207	0.734	0.280	0.734
	Right	0.369	0.072	0.068	0.052	0.318	0.279	0.343	0.179		0.063		0.067	0.025	0.022	0.069	0.029	0.369
Product Specific 10-g	Rear																	0.000
	Front																	0.000
	Top																	0.000
	Left																	0.000
	Bottom																	0.000
	Right																	0.000

Antenna Group : AG1's (Ant.B, C, F) Highest SAR Results

Main Ant.		AG1					Max
RF exposure	Test position	Reported SAR (W/kg)					AG1 Max
		LTE B66	LTE B2	NR Bn41 SRS2	NR Bn41 SRS1	NR Bn41 SRS3	
		Ant. B	Ant B	Ant B	Ant C	Ant F	
Head	Left Touch	0.111	0.226	0.071	0.832	0.323	0.832
	Left Tilt	0.075	0.241	0.048	0.862	0.136	0.862
	Right Touch	0.338	0.492	0.263	0.332	0.105	0.492
	Right Tilt	0.113	0.214	0.110	0.331	0.035	0.331
Body-worn & Hotspot	Rear	0.461	0.595	0.487	0.397	0.244	0.595
	Front	0.065	0.126	0.063	0.198	0.057	0.198
Hotspot	Top	0.031	0.053	0.025	0.332	0.020	0.332
	Left	0.233	0.429	0.232			0.429
	Bottom						0.000
	Right				0.061	0.078	0.078
Product Specific 10-g	Rear						0.000
	Front						0.000
	Top						0.000
	Left						0.000
	Bottom						0.000
	Right						0.000

Summation of AG0 and AG1

Main Ant.		AG 0		AG 1				SUM	FCC Limit
RF exposure	Test position	Ant.A	Worst SAR	Ant.B	Ant.C	Ant.F	Worst SAR		
Head	Left Touch	0.271	0.271	0.226	0.832	0.323	0.832	1.102	1.6
	Left Tilt	0.226	0.226	0.241	0.862	0.136	0.862	1.088	
	Right Touch	0.391	0.391	0.492	0.332	0.105	0.492	0.883	
	Right Tilt	0.186	0.186	0.214	0.331	0.035	0.331	0.517	
Body-worn & Hotspot	Rear	0.625	0.625	0.595	0.397	0.244	0.595	1.220	1.6
	Front	0.295	0.295	0.126	0.198	0.057	0.198	0.492	
Hotspot	Top	0.000	0.000	0.053	0.332	0.020	0.332	0.332	1.6
	Left	0.251	0.251	0.429	0.000	0.000	0.429	0.680	
	Bottom	0.734	0.734	0.000	0.000	0.000	0.000	0.734	
	Right	0.369	0.369	0.000	0.061	0.078	0.078	0.447	
Product Specific 10-g	Rear	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.0
	Front	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	Top	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	Left	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	Bottom	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	Right	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

12.2. Simultaneous transmission analysis

Simultaneous transmission SAR test exclusion considerations

KDB 447498 D04 Interim General RF Exposure Guidance provides two procedures for determining simultaneous transmission SAR test exclusion: Sum of SAR

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:

SAR_1 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

SAR_2 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 SAR_1.or SAR_2. 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

The antennas for the unlicensed transmitters are closely situated. As a result, the associated SAR hotspots are also closely situated. Some of the sum of SAR calculations yielded results over 1.6 W/kg. The SPSLR calculations for these situations were performed by treating the unlicensed SAR values as a single transmitter. The most conservative distance between all the unlicensed hotspots to the licensed hotspot was used for the value of *d* in the SPSLR calculation.

12.2.1 All exposure simultaneous transmission analysis

Condition#1

RF exposure	Test position	SAR (W/kg)				
		DTS	UNII	BT	UNII + BT	NFC
		1	2	3	2+3	
Head	Left Touch	0.068	0.367	0.028	0.395	
	Left Tilt	0.068	0.458	0.030	0.488	
	Right Touch	0.068	0.586	0.046	0.632	
	Right Tilt	0.068	0.586	0.048	0.634	
Body-worn & Hotspot	Rear	0.313	0.837	0.038	0.875	
	Front	0.313	0.357	0.009	0.366	
Hotspot	Top	0.313	0.962	0.020	0.982	
	Left	0.313	0.111	0.002	0.113	
	Bottom					
	Right					
Product Specific 10-g	Rear		1.156		1.156	0.018
	Front		1.408		1.408	0.000
	Top		1.408		1.408	0.000
	Left		1.408		1.408	0.000
	Bottom					
	Right					

WWAN(AG0+AG1) + WLAN + BT + NFC summation results

RF exposure	Test position	SUM SAR (W/kg)			
		AG0	AG1	WLAN	AG0 +AG1 +WLAN +NFC
Head	Left Touch	0.271	0.832	0.395	1.498
	Left Tilt	0.226	0.862	0.488	1.576
	Right Touch	0.391	0.492	0.632	1.515
	Right Tilt	0.186	0.331	0.634	1.151
Body-worn & Hotspot	Rear	0.625	0.595	0.875	**2.095**
	Front	0.295	0.198	0.366	0.858
Hotspot	Top	0.000	0.332	0.982	1.315
	Left	0.251	0.429	0.313	0.993
	Bottom	0.734	0.000	0.000	0.734
	Right	0.369	0.078	0.000	0.447
Product Specific 10-g	Rear	0.000	0.000	1.156	1.174
	Front	0.000	0.000	1.408	1.408
	Top	0.000	0.000	1.408	1.408
	Left	0.000	0.000	1.408	1.408
	Bottom	0.000	0.000	0.000	0.000
	Right	0.000	0.000	0.000	0.000

Note(s):

1. Blue value is estimated SAR value.

WWAN(AG0+AG1) + WLAN + BT + NFC summation results (Continued)

RF exposure	Test position	SAR (W/kg)							Note.
		AG0	AG1	DTS	UNII	BT	UNII + BT	SUM	
Body-worn & Hotspot	Rear	0.625	0.595	0.875	0.837	0.038	0.875		
		0.625		0.875				1.500	
		0.625			0.837			1.462	
		0.625				0.038		0.663	
		0.625					0.875	1.500	
			0.595	0.875				1.470	
			0.595		0.837			1.432	
			0.595			0.038		0.633	
			0.595				0.875	1.470	
		0.625	0.595	0.875				**2.095**	1
		0.625	0.595		0.837			**2.057**	1
		0.625	0.595			0.038		1.258	
		0.625	0.595				0.875	**2.095**	1

Note(s):

1. If some simultaneous transmission scenarios are over FCC limit (Red values in table), SPLSR criteria was performed in Condition#2. According to the results of Condition#2, all combination exceeding the FCC limit of above table satisfied the SPLSR criteria. Please refer to Condition#2.

All exposure simultaneous transmission analysis (Continued)

Condition#2 Rear

Calculated Distance (mm)

Rear Peak Position & Calculation Dist. (mm)												
Band		AG1&ER	LTE B66	LTE B2	NR Bn41 SRS1	NR Bn41 SRS2	NR Bn41 SRS3	DTS	UNII 2A	UNII 2C	UNII 3	Bluetooth
	x		-54.3	-62.8	4.5	-61	-31.5	-42.5	-34.2	-33.2	-35.9	-40.5
AG0		y	-47.7	-41.7	-75	-45.5	-207	-79.5	-77.3	-77.3	-75.8	-79
GSM 850	-5.2	83.4	139.99	**137.72**	158.70	140.46	291.59	167.12	163.30	163.12	162.13	166.19
GSM 1900	-44.6	83.3	131.36	**126.32**	165.74	129.84	290.60	162.81	160.94	161.00	159.34	162.35
WCDMA 2	-45.1	78.3	126.34	**121.30**	161.12	124.82	285.62	157.82	155.98	156.05	154.37	157.37
WCDMA 4	-18.9	82.3	134.73	**131.54**	159.03	134.56	289.57	163.51	160.33	160.24	159.01	162.74
WCDMA 5	-7.6	82.6	138.42	**136.01**	158.06	138.78	290.58	165.81	162.10	161.94	160.91	164.92
LTE B12	-27	-2.5	**52.80**	53.09	79.05	54.82	204.55	78.54	75.15	75.06	73.84	77.68
LTE B13	-4.7	83.4	140.17	**137.93**	158.67	140.66	291.63	167.23	163.39	163.21	162.23	166.30
LTE B26	-5.2	82.4	139.06	**136.82**	157.70	139.54	290.59	166.14	162.31	162.14	161.15	165.22
LTE B5												
LTE B66	-7.1	86.6	142.35	**139.87**	162.02	142.67	294.61	169.83	166.13	165.97	164.93	168.93
LTE B4												
LTE B2	-13	83.6	137.64	**134.83**	159.56	137.73	291.19	165.75	162.29	162.16	161.04	164.91
LTE B41	-45.5	73.5	121.52	**116.49**	156.69	120.01	280.85	153.03	151.22	151.30	149.61	152.58
NR Bn5	-16.7	83.9	136.87	**133.79**	160.31	136.77	291.28	165.42	162.15	162.04	160.85	164.63
NR Bn66	-23.3	87.6	138.81	**135.20**	164.96	138.34	294.71	168.20	165.26	165.20	163.89	167.49
NR Bn41	-15	79.5	133.13	**130.29**	155.73	133.20	286.97	161.36	157.97	157.85	156.70	160.54

SUM-SPLSR Results

Band		AG1+ER
AG0	SAR (W/kg)	1.470
GSM 850	0.473	0.02
GSM 1900	0.430	0.02
WCDMA 2	0.453	0.02
WCDMA 4	0.451	0.02
WCDMA 5	0.348	0.02
LTE B12	0.293	0.04
LTE B13	0.426	0.02
LTE B26	0.311	0.02
LTE B5		
LTE B66	0.422	0.02
LTE B4		
LTE B2	0.484	0.02
LTE B41	0.143	0.02
NR Bn5	0.183	0.02
NR Bn66	0.402	0.02
NR Bn41	0.181	0.02

Note(s):

1. If SPLSR criteria is below 0.04 (1-g respectively) in all antenna pair (AG0 & AG1), additional evaluation is not required.
2. Red value is worst peak position. It used in SPLSR.

Conclusion:

Simultaneous Transmission SAR analysis results is satisfied the FCC Limit requirement according to follow procedures with “Sum of SAR” or “SPLSR” or “SUM-SPLSR”.

Appendixes

Refer to separated files for the following appendixes.

4791377016-S1 FCC Report SAR_App A_Photos & Ant. Locations

4791377016-S1 FCC Report SAR_App B_Highest SAR Test Plots

4791377016-S1 FCC Report SAR_App C_System Check Plots

4791377016-S1 FCC Report SAR_App D_SAR Tissue Ingredients

4791377016-S1 FCC Report SAR_App E_Probe Cal. Certificates

4791377016-S1 FCC Report SAR_App F_Dipole Cal. Certificates

4791377016-S1 FCC Report SAR_App G_LTE Carrier Aggregation

END OF REPORT