

**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/ax and NFC

MODEL NUMBER: SM-A556E/DS, SM-A556E

FCC ID: A3LSMA556E

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Testing Laboratory

TL-637

Revision History

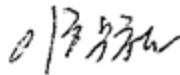
Rev.	Date	Revisions	Revised By
V1	1/11/2024	Initial Issue	--
V2	1/17/2024	Revised DSS highest reported SAR result in Sec. 1.1. Revised Test Equipment Cal. Due Date info. in Sec. 4.3 Revised GSM Target power in Sec. 6.3 Revised WLAN Band target power in Sec. 6.4. Revised Supported Ch.& Freq info. in Sec. 6.8. Revised RF Exposure Condition table in Sec. 7. - Removed Main.3 & Sub.5 Ant. - Modified Antenna info. Revised WLAN Band target power in Sec. 9.6. Revised CLA-13 10-g Target value in Sec. 8.2 Revised note in Sec. 12. Revised Appendix A of Antenna Dimensions & Separation Distances. Added CLA-13 dipole information in Appendix F.	Hakchul Lee
V3	1/18/2024	Revised Sec. 1. & Sec. 1.1 - Divided Body-worn & Hotspot SAR data. Revised WLAN Band target power in Sec. 6.4. Revised WLAN Band target power in Sec. 9.6. Revised UNII-3 test mode in Sec. 10.19 Revised Highest SAR in Sec. 11. Revised Appendix G.	Hakchul Lee
V4	1/19/2024	Revised Simultaneous TX Highest SAR in Sec. 1. Revised Sec. 1.1. Revised Summation results in Sec. 12.2.1. & 12.2.2.	Hakchul Lee

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1. Attestation of Test Results

Applicant Name		SAMSUNG ELECTRONICS CO.,LTD.				
FCC ID		A3LSMA556E				
Model Number		SM-A556E/DS, SM-A556E				
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 <u>Reported</u> SAR (W/kg)				
		PCE	DTS	NII	DSS	DXX
Head		0.91	0.35	0.36	0.19	N/A
Body-worn		0.65	0.32	0.30	0.04	N/A
Hotspot		0.94	0.48	0.23	0.07	N/A
Product Specific 10g		N/A	N/A	1.01	N/A	0.01
Simultaneous TX	Head	1.55	1.39	1.55	1.55	N/A
	Body-worn	1.56	1.56	1.52	1.52	N/A
	Hotspot	1.56	1.56	1.52	1.52	N/A
	Product Specific 10g	1.18	N/A	1.18	1.18	1.18
Date Tested		11/15/2023 to 1/11/2024				
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	Main.1	0.243	0.591	0.591	N/A
	GSM 1900	Main.1	0.071	0.434	0.715	N/A
	WCDMA Band II	Main.1	0.200	0.325	0.689	N/A
	WCDMA Band IV	Main.1	0.172	0.573	0.942	N/A
	WCDMA Band V	Main.1	0.208	0.610	0.610	N/A
	LTE Band 5	Main.1	0.167	0.592	0.592	N/A
	LTE Band 12	Main.1	0.105	0.330	0.330	N/A
	LTE Band 17	Main.1	N/A	N/A	N/A	N/A
	LTE Band 13	Main.1	0.159	0.413	0.413	N/A
	LTE Band 25	Main.1	0.109	0.244	0.603	N/A
	LTE Band 2	Main.1	N/A	N/A	N/A	N/A
	LTE Band 25	Sub.2	0.681	0.122	0.260	N/A
	LTE Band 2	Sub.2	N/A	N/A	N/A	N/A
	LTE Band 26	Main.1	0.167	0.555	0.555	N/A
	LTE Band 41	Main.2	0.095	0.249	0.325	N/A
	LTE Band 41	Sub.2	0.781	0.139	0.227	N/A
	LTE Band 66	Main.1	0.164	0.303	0.579	N/A
	LTE Band 4	Main.1	N/A	N/A	N/A	N/A
	LTE Band 66	Sub.2	0.637	0.142	0.311	N/A
	LTE Band 4	Sub.2	N/A	N/A	N/A	N/A
	NR Band n5	Main.1	0.167	0.639	0.639	N/A
	NR Band n41 SRS0	Main.2	0.058	0.228	0.353	N/A
	NR Band n41 SRS0/SRS1	Sub.2	0.911	0.187	0.246	N/A
	NR Band n41 SRS2	Sub.1	0.842	0.241	0.241	N/A
	NR Band n41 SRS3	Main.4	0.000	0.292	0.292	N/A
	NR Band n66	Main.2	0.124	0.240	0.644	N/A
	NR Band n66	Sub.2	0.845	0.203	0.432	N/A
	NR Band n77(PC2)	Sub.2	0.824	0.647	0.647	N/A
DTS	2.4GHz WLAN	Sub.4 & Sub.6	0.350	0.316	0.482	N/A
NII	5.3/5.2 GHz WLAN	Sub.4 & Sub.1	0.242	0.217	N/A	0.630
	5.5 GHz WLAN		0.292	0.225	N/A	1.006
	5.8 GHz WLAN		0.361	0.185	0.304	N/A
DSS	Bluetooth	Sub.4	0.187	0.038	0.068	N/A
DXX	NFC		N/A	N/A	N/A	0.018

Note(s):

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. 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, 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](#) May, 2017; RF Exposure Procedures (LTE Band 41 Power Class 2)
- [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](#) April, 2019; RF Exposure Procedures (Tissue Simulating Liquids (TSL))
- [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](#) October, 2022; RF Exposure Policies & Procedures (SAR test frequencies in multi-rule)

3. Facilities and Accreditation

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

Suwon	
SAR 1 Room	SAR 6 Room
SAR 2 Room	SAR 7 Room
SAR 3 Room	SAR 8 Room
SAR 4 Room	SAR 9 Room
SAR 5 Room	

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637.

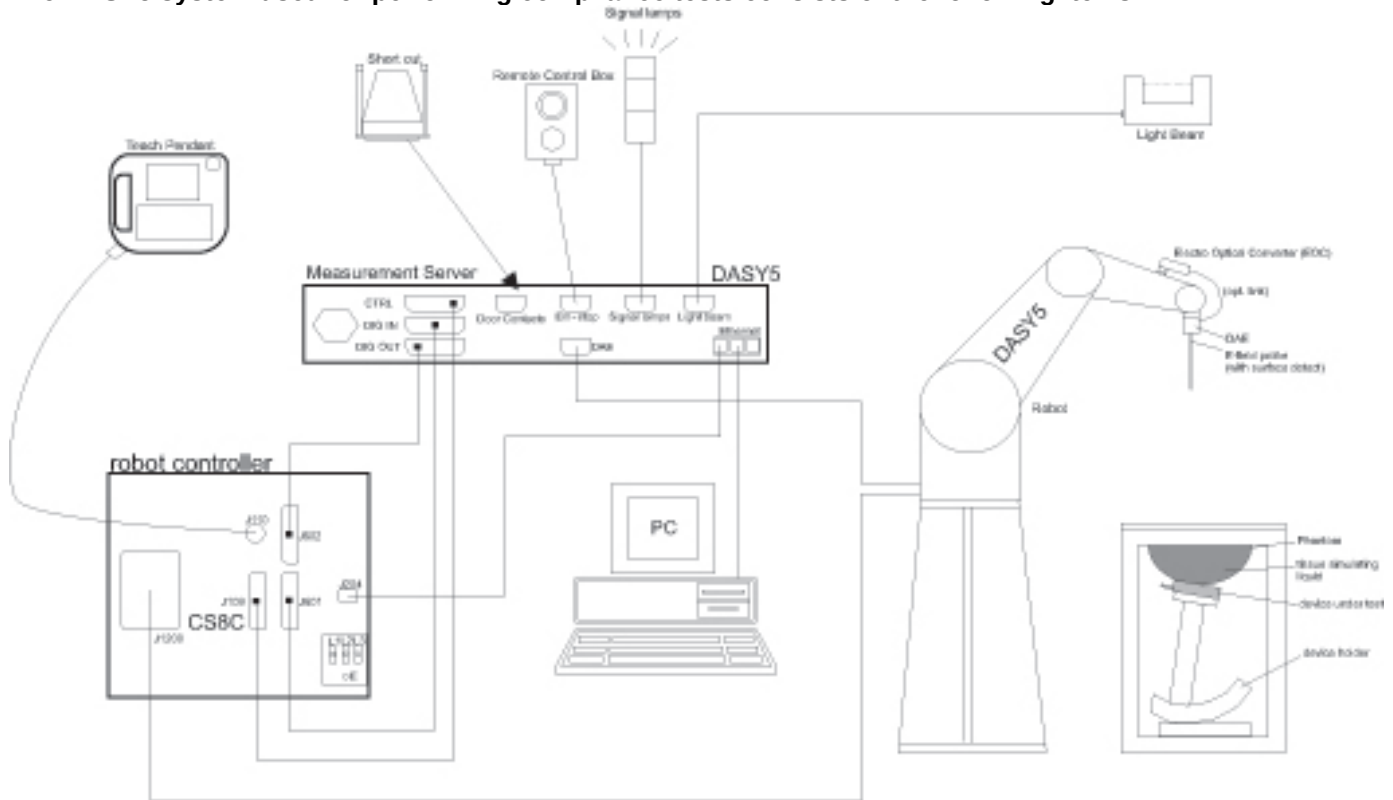
The full scope of accreditation can be viewed at;

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

4. SAR Measurement System & Test Equipment

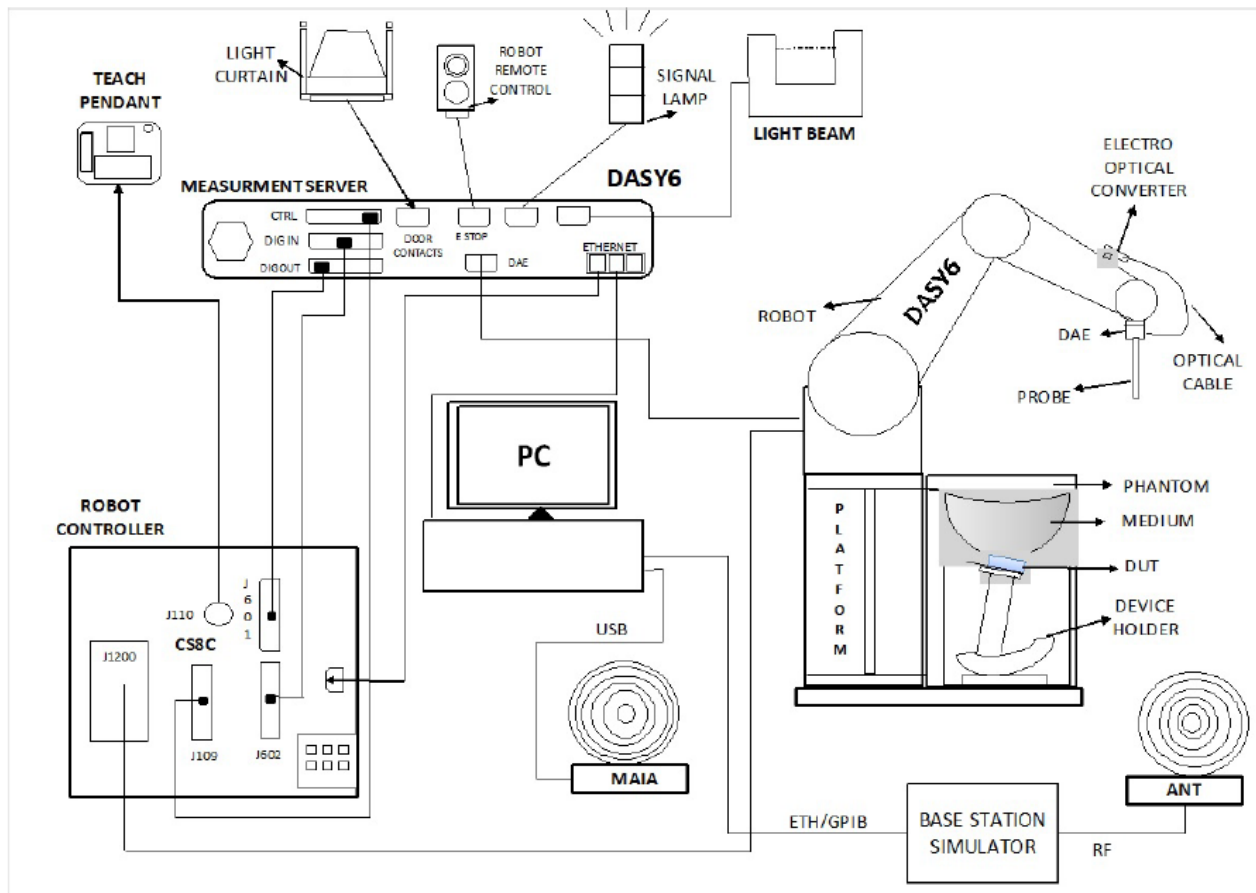
4.1. SAR Measurement System

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



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

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	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$	≤ 2 GHz: ≤ 15 mm $2 - 3$ GHz: ≤ 12 mm	$3 - 4$ GHz: ≤ 12 mm $4 - 6$ GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

Step 3: Zoom Scan

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

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

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{\text{Zoom}}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{\text{Zoom}}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{\text{Zoom}}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.				
* When zoom scan is required and the <u>reported</u> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.				

Step 4: Power drift measurement

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

4.3. Test Equipment

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

Dielectric Property Measurements

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Network Analyzer	Agilent	E5071C	MY46522054	7-24-2024
Network Analyzer	ROHDE & SCHWARZ	ZNB 20	102256	7-24-2024
Dielectric Assessment Kit	SPEAG	DAK-12	1158	9-20-2024
Dielectric Assessment Kit	SPEAG	DAK-3.5	1196	7-17-2024
Shorting block	SPEAG	DAK-3.5 Short	SM DAK 200 BA	N/A
Shorting block	SPEAG	DAK-12 Short	SM DAK 220 AD	N/A
Thermometer	LKM	DTM3000	3851	7-25-2024
Thermometer	LKM	DTM3000	3862	7-25-2024

System Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
MXG Analog Signal Generator	Agilent	N5181A	MY50145882	7-26-2024
MXG Analog Signal Generator	Keysight	N5181B	MY59100587	7-26-2024
MXG Analog Signal Generator	Keysight	N5173B	MY59101083	7-27-2024
Power Sensor	KEYSIGHT	U2000A	MY60180020	7-26-2024
Power Sensor	KEYSIGHT	U2000A	MY60490008	7-25-2024
Power Sensor	KEYSIGHT	U2000A	MY60160004	7-25-2024
Power Sensor	KEYSIGHT	U2000A	MY61010010	7-25-2024
Power Amplifier	RF Test	RF Power Amplifier	1	6-14-2024
Power Amplifier	RF Test	Board Band High Power Amplifier	1030	6-14-2024
Power Amplifier	MINI-CIRCUITS	TVA-R5-13A+	2111006	1-6-2024
Power Amplifier	EXODUS	AMP2027ADB	10002	1-6-2024
Directional Coupler	Agilent	772D	MY52180193	7-25-2024
Directional Coupler	H.P	778D	16133	7-25-2024
Directional Coupler	NARDA	4216-10	2835	7-25-2024
Directional Coupler	MINI-CIRCUITS	ZMDC-30-1+	SF569102123	7-25-2024
Low Pass Filter	FILTRON	L140012FL	1410003S	7-25-2024
Low Pass Filter	MICROLAB	LA-60N	3942	7-25-2024
Low Pass Filter	MINI-CIRCUITS	VLF-6000+	S0142	7-25-2024
Low Pass Filter	MINI-CIRCUITS	VLF-3000+	S0143	7-25-2024
Low Pass Filter	MINI-CIRCUITS	NLP-1200	VUU19301915	1-5-2024
Attenuator	KEYSIGHT	8491B/003	MY39272276	7-25-2024
Attenuator	KEYSIGHT	8491B/010	MY39271981	7-24-2024
Attenuator	KEYSIGHT	8491B/010	MY39272011	7-25-2024
Attenuator	KEYSIGHT	8491B/020	MY39272301	7-25-2024
Attenuator	KEYSIGHT	8491B/020	MY39272302	7-24-2024
Attenuator	KEYSIGHT	8491B/003	MY39272275	7-25-2024
E-Field Probe	SPEAG	EX3DV4	7313	3-24-2024
E-Field Probe	SPEAG	EX3DV4	7545	8-25-2024
E-Field Probe	SPEAG	EX3DV4	7651	5-30-2024
E-Field Probe	SPEAG	EX3DV4	7646	5-23-2024
E-Field Probe	SPEAG	EX3DV4	7376	7-25-2024
E-Field Probe	SPEAG	EX3DV4	7314	5-26-2024
E-Field Probe	SPEAG	EX3DV4	3871	8-25-2024
E-Field Probe	SPEAG	EX3DV4	7645	9-20-2024
Data Acquisition Electronics	SPEAG	DAE4	1447	3-22-2024
Data Acquisition Electronics	SPEAG	DAE4	1468	8-24-2024
Data Acquisition Electronics	SPEAG	DAE4	1494	7-17-2024
Data Acquisition Electronics	SPEAG	DAE4	1591	3-22-2024
Data Acquisition Electronics	SPEAG	DAE4	1667	4-24-2024

Note(s):

1. For System Validation Dipole, Calibration interval applied every 2 years according to referencing KDB 865664 guidance.
2. All equipments were used until Cal.Due date.

Test Equipment (Continued)

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Data Acquisition Electronics	SPEAG	DAE4	1343	6-30-2024
Data Acquisition Electronics	SPEAG	DAE4	1668	4-26-2024
Data Acquisition Electronics	SPEAG	DAE4	1671	5-25-2024
System Validation Dipole	SPEAG	D750V3	1205	4-18-2024
System Validation Dipole	SPEAG	D750V3	1122	2-24-2024
System Validation Dipole	SPEAG	D835V2	4d194	3-24-2024
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	3-25-2024
System Validation Dipole	SPEAG	D2450V2	939	7-19-2024
System Validation Dipole	SPEAG	D2450V2	960	3-24-2024
System Validation Dipole	SPEAG	D2600V2	1097	9-26-2024
System Validation Dipole	SPEAG	D5GHzV2	1325	4-21-2024
System Validation Dipole	SPEAG	D5GHzV2	1209	2-28-2024
System Validation Dipole	SPEAG	D3500V2	1121	4-20-2024
System Validation Dipole	SPEAG	D3700V2	1036	5-19-2024
System Validation Dipole	SPEAG	D3500V2	1075	5-19-2024
System Validation Dipole	SPEAG	D1750V2	1180	9-21-2024
System Validation Dipole	SPEAG	D2600V2	1178	4-25-2024
System Validation Dipole	SPEAG	D3900V2	1069	4-21-2024
Thermometer	Lutron	MHB-382SD	AH.50215	1-9-2024
				1-8-2025
Thermometer	Lutron	MHB-382SD	AH.50213	1-11-2024
				1-4-2025
Thermometer	Lutron	MHB-382SD	AH.91463	1-11-2024
				1-4-2025
Thermometer	Lutron	MHB-382SD	AJ.45903	1-9-2024
				1-4-2025
Thermometer	Lutron	MHB-382SD	AJ.42446	7-26-2024
Thermometer	Lutron	MHB-382SD	AK.12102	7-31-2024
Thermometer	Lutron	MHB-382SD	AK.12103	7-31-2024
Thermometer	Lutron	MHB-382SD	AK.12123	1-9-2024
				1-8-2025
Thermometer	Lutron	MHB-382SD	AK.18789	7-27-2024

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	150314	7-26-2024
Base Station Simulator	R & S	CMW500	162790	7-26-2024
Base Station Simulator	R & S	CMW500	169803	1-5-2024
Base Station Simulator	R & S	CMW500	169801	1-5-2024
Base Station Simulator	R & S	CMW500	169799	7-26-2024
Base Station Simulator	R & S	CMW500	169800	7-27-2024
Base Station Simulator	R & S	CMW500	169798	7-27-2024
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY57510596	7-27-2024
UXM 5G Wireless Test Platform	KEYSIGHT	E751B	MY59150850	1-9-2024
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY58120110	1-10-2024
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 $\leq 30\%$, for a confidence interval of $k = 2$. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval.

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(d,k)	f	g	h = c×f/e	i = c×g/e	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	3.3	5.8	Normal	1	1	1	3.3	5.8	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								12.57	13.33	
Expanded Uncertainty U, Coverage Factor = 2, > 95 % Confidence =								25.13	26.66	

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	R3CWA0H7N2V	Main Conducted	11	R3CWB0A1CRR	SAR
	2	R3CWA0H7NLJ	Main Conducted	12	R3CWB0A1ELX	SAR
	3	R3CWB0FCVGV	Main Conducted	13	R3CWB0A1DZE	SAR
	4	R3CWB0A1AKR	Main Conducted	14	R3CWB0A18RP	SAR
	5	R3CWB0A1BCV	Main Conducted	15	R3CWB0A18NV	SAR
	6	R3CWB0A1BGM	Main Conducted	16	R3CWB0A14NF	SAR
	7	R3CW90HQ52W	Main Conducted	17	R3CWB0A14VX	SAR
	8	R3CWB0A1E6M	SAR	18	R3CWB0A394K	SAR
	9	R3CWB0AD8Z	SAR			
	10	R3CWB0A1CXT	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 II Band IV Band V	UMTS Rel. 99 (Voice & Data) HSDPA (Category 14) HSUPA (Category 6) DC-HSDPA (Category 14) HSPA+ (DL only)		100%
LTE	FDD Band 2 FDD Band 4 FDD Band 5 FDD Band 12 FDD Band 13 FDD Band 17 FDD Band 25 FDD Band 26 TDD Band 41 Power Class 3 FDD Band 66	QPSK 16QAM 64QAM 256QAM Rel. 16 Carrier Aggregation (2 Uplink and 4 Downlinks) <u>Uplink Carrier Aggregation(2CC)</u> CA_2A-4A, CA_4A-5A, CA_4A-12A, CA_5A-66A, CA_12A-66A		100% (FDD) 63.3% (TDD) – PC3
	Does this device support SV-LTE (1xRTT-LTE)? ☐ Yes ☒ No			
5G NR (Sub 6)	FDD Band n5 TDD Band n41 FDD Band n66 TDD Band n77	DFT-s-OFDM: ■ $\pi/2$ BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-OFDM: ■ QPSK, 16QAM, 64QAM, 256QAM		100%
Wi-Fi	2.4 GHz	802.11b, 802.11g, 802.11n (HT20), 802.11ax (HE20)		99.0% (802.11b-SISO) 96.5% (802.11g-SISO)
	5 GHz	802.11a / 802.11n (HT20/40) 802.11ac (VHT20/40/80) 802.11ax (HE20/40/80)		96.2% (802.11a -SISO) 96.8% (802.11n (HT 40 -SISO) 97.1% (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		85.1% _(LE)
NFC	13.56 MHz	Type A/B/F		100%

Notes:

1. The Bluetooth protocol is considered source-based averaging. For duty used in Wi-Fi/BT SAR testing, Please refer to section.9.
2. This device supports Power Class 2(HPUE) and Power Class 3 for NR Band n77.
3. This device supports UL CA inter band
4. NR TDD Band has support SRS (Sounding Reference Signal) 0/1/2/3 operates.

6.3. Time-Averaging feature

The equipment under test (EUT) contains both 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 (RCV)	Bodyworn & Hotspot & Ear jack	Phablet 10-g SAR & Ear jack	Pmax (Maximum tune-up Power) (dBm)
Spatial-average			1g	1g	10g	
Test distance (mm)			0	10	0	
DSI :			1	0	0	
RF Air Interface	Antenna	Antenna Group	P _{limit} corresponding to 1.0 W/kg (SAR _{design_target}) (1g) / 2.5 W/kg (SAR _{design_target}) (10g)			
GSM 850	Main.1	AG0	24.8	24.8	24.8	24.8
GSM 1900	Main.1	AG0	21.3	17.8	17.8	21.3
WCDMA 2	Main.1	AG0	23.5	19.0	19.0	23.5
WCDMA 4	Main.1	AG0	23.0	19.0	19.0	23.0
WCDMA 5	Main.1	AG0	24.0	24.0	24.0	24.0
LTE Band 5	Main.1	AG0	24.0	24.0	24.0	24.0
LTE Band 12	Main.1	AG0	23.0	23.0	23.0	23.0
LTE Band 13	Main.1	AG0	23.0	23.0	23.0	23.0
LTE Band 25(2)	Main.1	AG0	23.0	18.0	18.0	23.0
LTE Band 25(2)	Sub.2	AG1	17.0	17.0	17.0	23.0
LTE Band 26	Main.1	AG0	24.0	24.0	24.0	24.0
LTE Band 66(4)	Main.1	AG0	23.0	18.0	18.0	23.0
LTE Band 66(4)	Sub.2	AG1	16.0	16.0	16.0	23.0
LTE Band 41	Main.2	AG0	22.0	17.0	17.0	22.0
LTE Band 41	Sub.2	AG1	17.0	17.0	17.0	21.0
NR Band n5	Main.1	AG0	24.0	24.0	24.0	24.0
NR Band n66	Main.1	AG0	23.0	18.0	18.0	23.0
NR Band n66	Sub.2	AG1	17.0	17.0	17.0	23.0
NR Band n41 -Main-	Main.2	AG0	17.0	17.0	17.0	23.0
NR Band n41 -Main & SRS1-	Sub.2	AG1	17.0	17.0	17.0	23.0
NR Band n41 -SRS2-	Sub.1	AG1	16.0	17.0	17.0	20.0
NR Band n41 -SRS3-	Main.4	AG0	16.5	16.5	16.5	21.0
NR Band n77 PC2 -Main-	Sub.2	AG1	14.0	19.0	19.0	25.0

Notes:

1. All P_{Limit} EFS and maximum tune up output P_{max} 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 P_{max} was listed as burst power.
2. Maximum tune up output power P_{max} 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 P_{Limit} is higher than P_{max} for some modes / bands, The modes/bands will operate at a power level up to P_{max} .

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.

RF Air interface	Antenna	Mode	Time Slots	Maximum allowed output power (dBm)									
				Pmax		Plimit							
						RSI_Free		RSI_RCV		RSI_Hotspot		RSI_Ear-jack	
				Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GSM850	Main.1	Voice	1	34.00	24.81	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	34.00	24.81
		GPRS	2	32.00	25.82	32.00	25.82	32.00	25.82	32.00	25.82	32.00	25.82
		GPRS	3	29.50	25.08	29.50	25.08	29.50	25.08	29.50	25.08	29.50	25.08
		GPRS	4	28.50	25.33	28.50	25.33	28.50	25.33	28.50	25.33	28.50	25.33
		EGPRS	1	27.00	17.81	27.00	17.81	27.00	17.81	27.00	17.81	27.00	17.81
		EGPRS	2	25.50	19.32	25.50	19.32	25.50	19.32	25.50	19.32	25.50	19.32
		EGPRS	3	24.00	19.58	24.00	19.58	24.00	19.58	24.00	19.58	24.00	19.58
		EGPRS	4	23.00	19.83	23.00	19.83	23.00	19.83	23.00	19.83	23.00	19.83
GSM1900	Main.1	Voice	1	31.00	21.81	28.00	18.81	31.00	21.81	28.00	18.81	28.00	18.81
		GPRS	1	31.00	21.81	28.00	18.81	31.00	21.81	28.00	18.81	28.00	18.81
		GPRS	2	27.00	20.82	24.00	17.82	27.00	20.82	24.00	17.82	24.00	17.82
		GPRS	3	26.00	21.58	21.50	17.08	26.00	21.58	21.50	17.08	21.50	17.08
		GPRS	4	25.50	22.33	20.50	17.33	25.50	22.33	20.50	17.33	20.50	17.33
		EGPRS	1	26.00	16.81	25.00	15.81	26.00	16.81	25.00	15.81	25.00	15.81
		EGPRS	2	23.00	16.82	23.00	16.82	23.00	16.82	23.00	16.82	23.00	16.82
		EGPRS	3	21.00	16.58	20.00	15.58	21.00	16.58	20.00	15.58	20.00	15.58
		EGPRS	4	21.50	18.33	20.00	16.83	21.50	18.33	20.00	16.83	20.00	16.83

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.

RF Air interface	Antenna	Mode	Maximum allowed output power (dBm)				
			Pmax	Plimit			
				RSI_Free	RSI_RCV	RSI_Hotspot	RSI_Earjack
W-CDMA Band II	Main.1	R99	24.50	20.00	24.50	20.00	20.00
		HSDPA	23.50	20.00	23.50	20.00	20.00
		HSUPA	23.50	18.00	23.50	18.00	18.00
		DC-HSDPA	23.50	20.00	23.50	20.00	20.00
W-CDMA Band IV	Main.1	R99	24.00	20.00	24.00	20.00	20.00
		HSDPA	23.50	20.00	23.50	20.00	20.00
		HSUPA	23.50	18.00	23.50	18.00	18.00
		DC-HSDPA	23.50	20.00	23.50	20.00	20.00
W-CDMA Band V	Main.1	R99	25.00	25.00	25.00	25.00	25.00
		HSDPA	23.00	23.00	23.00	23.00	23.00
		HSUPA	24.00	24.00	24.00	24.00	24.00
		DC-HSDPA	23.50	23.50	23.50	23.50	23.50

Note(s):

- 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.

RF Air interface	Antenna	Mode	Maximum allowed output power (dBm)				
			Pmax	Plimit			
				RSI_Free	RSI_RCV	RSI_Hotspot	RSI_Earjack
LTE Band 12	Main.1	QPSK	24.00	24.00	24.00	24.00	24.00
LTE Band 17	Main.1	QPSK	24.00	24.00	24.00	24.00	24.00
LTE Band 13	Main.1	QPSK	24.00	24.00	24.00	24.00	24.00
LTE Band 26	Main.1	QPSK	25.00	25.00	25.00	25.00	25.00
LTE Band 5	Main.1	QPSK	25.00	25.00	25.00	25.00	25.00
LTE Band 66	Main.1	QPSK	24.00	19.00	24.00	19.00	19.00
LTE Band 4	Main.1	QPSK	24.00	19.00	24.00	19.00	19.00
LTE Band 66	Sub.2	QPSK	24.00	17.00	17.00	17.00	17.00
LTE Band 4	Sub.2	QPSK	24.00	17.00	17.00	17.00	17.00
LTE Band 25	Main.1	QPSK	24.00	19.00	24.00	19.00	19.00
LTE Band 2	Main.1	QPSK	24.00	19.00	24.00	19.00	19.00
LTE Band 25	Sub.2	QPSK	24.00	18.00	18.00	18.00	18.00
LTE Band 2	Sub.2	QPSK	24.00	18.00	18.00	18.00	18.00
LTE Band 41	Main.2	QPSK	25.00	20.00	25.00	20.00	20.00
LTE Band 41	Sub.2	QPSK	24.00	20.00	20.00	20.00	20.00

Note(s):

1. Detail of RSI(Radio SAR Index) conditions, please refer to Sec.6.5.
2. LTE Bands has support UL CA operations with same target power in each standalone LTE bands. Details of configuration are refer to Appendix G

WWAN Bands maximum allowed output power (Continued)

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

RF Air interface	Antenna	Mode	Maximum allowed output power (dBm)				
			Pmax	Plimit			
				RSI_Free	RSI_RCV	RSI_Hotspot	RSI_Earjack
NR Band n5	Main.1	DFT-s-OFDM	25.00	25.00	25.00	25.00	25.00
NR Band n66	Main.1	DFT-s-OFDM	24.00	19.00	24.00	19.00	19.00
NR Band n66	Sub.2	DFT-s-OFDM	24.00	18.00	18.00	18.00	18.00
NR Band n41 (Voice/Data/SRS0)	Main.2	DFT-s-OFDM	24.00	18.00	18.00	18.00	18.00
NR Band n41 (Voice/Data/SRS0)	Sub.2	DFT-s-OFDM	24.00	18.00	18.00	18.00	18.00
NR Band n41 (SRS1)	Sub.2	SRS CW	22.50	18.00	18.00	18.00	18.00
NR Band n41 (SRS2)	Sub.1	SRS CW	21.00	18.00	17.00	18.00	18.00
NR Band n41 (SRS3)	Main.4	SRS CW	22.00	17.50	17.50	17.50	17.50
NR Band n77-PC3	Sub.2	DFT-s-OFDM	24.00	18.00	15.00	18.00	18.00
NR Band n77-PC2	Sub.2	DFT-s-OFDM	26.00	20.00	15.00	20.00	20.00

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.
3. NR Band n41(Voice/data/SRS0) has support to both Main.2 Ant and Sub.2 Ant through Tx hopping operation. So Power verification performed to both (Voice/data/SRS0) and SRS1 separately, and SAR performed only in (Voice/data/SRS0) mode in Sub.2 Ant.

WLAN Bands output power.**Max Power**

RF Air interface	Band	Maximum allowed Output Power (dBm)											
		2.4GHz & 5GHz Sub.4 Ant.						2.4GHz Sub.6 Ant. & 5GHz Sub.1 Ant.					
		802.11 mode						802.11 mode					
		a	b	g	n	ac	ax	a	b	g	n	ac	ax
WIFI 2.4 GHz	1ch			16	14					15	13		
	2-9ch		19	18	18		17		17	16	16		15
	10ch			16	16					14	14		
	11ch			13	13		15			11	10		13
	12ch		8	8	6		6		7	7	5		4
	13ch		8	2	1		5		7	2	1		5
WIFI 5 GHz (BW : 20MHz)	5200MHz	14.5 48ch: 6			14.5 48ch: 4.5	14.5 48ch: 4.5	14.5 48ch: 6	10 48ch: 0.5			10 48ch: -1.5	10 48ch: -1.5	10 36ch: 9 48ch: 0
	5300MHz	14.5 64ch: 13			14.5 64ch: 9	14.5 64ch: 9	14.5 64ch: 8	10 64ch: 8.5			10 64ch: 4.5	10 64ch: 4.5	10 64ch: 4
	5500MHz	14.5 100ch: 13.5			14.5 100ch: 10 140ch: 7	14.5 100ch: 10 140ch: 7	14.5 100ch: 5 140ch: 12	10 100ch: 9 140ch: 9			10 100ch: 8 140ch: 3.5	10 100ch: 8 140ch: 3.5	10 100ch: 1 140ch: 6
	5800MHz	14.5 165ch: 11			14.5 165ch: 11	14.5 165ch: 11	14.5 165ch: 11	10 165ch: 6			10 165ch: 6	10 165ch: 6	10 165ch: 6
WIFI 5 GHz (BW : 40MHz)	5200MHz				11 46ch: 3.5	11 46ch: 3.5	13.5 46ch: 6				6 46ch: -3.5	6 46ch: -3.5	8 46ch: 0
	5300MHz				14.5 62ch: 7.5	14.5 62ch: 7.5	14.5 62ch: 9				10 62ch: 2.5	10 62ch: 2.5	9 62ch: 3
	5500MHz				14 102ch: 10 134ch: 13	14 102ch: 10 134ch: 13	14 102ch: 3 134ch: 12				9.5 102ch: 7 134ch: 7.5 142ch: 7.5	9.5 102ch: 7 134ch: 7.5 142ch: 7.5	9 102ch: -2 134ch: 7 142ch: 8
	5800MHz				14.0	14.0	14 159ch: 13				8	8	9 159ch: 8
WIFI 5 GHz (BW : 80MHz)	5200MHz					3.0	2.0					-3	-3
	5300MHz					6.0	5.0					2	0
	5500MHz					12 106ch: 6	12 106ch: 5					10 106ch: 2 138ch: 7	9 106ch: 0 138ch: 6
	5800MHz					12.0	11.0					9	9

Note(s):

1. 2.4GHz Sub.4 Ant is same Ant.1, and 2.4GHz Sub.6 Ant is same Ant.2 in tune up document.
2. 5GHz Sub.4 Ant is same Ant.1, and 5GHz Sub.1 Ant is same Ant.2 in tune up document.
3. MIMO operates as the sum of each antennas.
4. 2.4GHz/5GHz Sub.4 Ant are support to both SISO and MIMO operations.
5. 2.4GHz Sub.6 Ant and 5GHz Sub.1 Ant are support to only MIMO operation.

Reduced Power (Rcv)

RF Air interface	Band	Maximum allowed Output Power (dBm)											
		2.4GHz & 5GHz Sub.4 Ant.						2.4GHz Sub.6 Ant. & 5GHz Sub.1 Ant.					
		802.11 mode						802.11 mode					
		a	b	g	n	ac	ax	a	b	g	n	ac	ax
WiFi 2.4 GHz	1-11ch		12	12	12		12		10.5	11	11		10
	12ch		8	8	6		6		7	7	5		4
	13ch		8	2	1		5		7	2	1		5
WiFi 5 GHz (BW : 20MHz)	5200MHz	11 48ch: 6			11 48ch: 4.5	11 48ch: 4.5	11 48ch: 6	7 48ch: 0.5			7 48ch: -1.5	7 48ch: -1.5	7 48ch: 0
	5300MHz	11.0			11 64ch: 9	11 64ch: 9	11.0	7.0			7 64ch: 4.5	7 64ch: 4.5	7.0
	5500MHz	11.0			11 100ch: 10 140ch: 7	11 100ch: 10 140ch: 7	11 100ch: 5	8.0			8 140ch: 3.5	8 140ch: 3.5	7.5 100ch: 1
	5800MHz	11.0			11.0	11.0	11.0	8 165ch: 6			8 165ch: 6	8 165ch: 6	8 165ch: 6
WiFi 5 GHz (BW : 40MHz)	5200MHz				11 46ch: 3.5	11 46ch: 3.5	11 46ch: 6				6 46ch: -3.5	6 46ch: -3.5	6 46ch: 0
	5300MHz				11 62ch: 7.5	11 62ch: 7.5	11 62ch: 9				6 62ch: 2.5	6 62ch: 2.5	6.5 62ch: 3
	5500MHz				11 102ch: 10	11 102ch: 10	11 102ch: 3				8 102ch: 7 142ch: 7.5	8 102ch: 7 142ch: 7.5	6.5 102ch: -2
	5800MHz				11.0	11.0	11.0				7.0	7.0	7.0
WiFi 5 GHz (BW : 80MHz)	5200MHz					3.0	2.0					-3.0	-3.0
	5300MHz					6.0	5.0					2.0	0.0
	5500MHz					11 106ch: 6	11 106ch: 5					6.5 106ch: 2 138ch: 4	7.5 106ch: 0
	5800MHz					11.0	11.0					4.0	7.5

Note(s):

1. 2.4GHz Sub.4 Ant is same Ant.1, and 2.4GHz Sub.6 Ant is same Ant.2 in tune up document.
2. 5GHz Sub.4 Ant is same Ant.1, and 5GHz Sub.1 Ant is same Ant.2 in tune up document.
3. MIMO operates as the sum of each antennas.
4. 2.4GHz/5GHz Sub.4 Ant are support to both SISO and MIMO operations.
5. 2.4GHz Sub.6 Ant and 5GHz Sub.1 Ant are support to only MIMO operation.

BT(Blue tooth) Max Output power

RF Air interface	Max. Output Power (dBm)
Bluetooth (1Mbps)	15
Bluetooth (EDR)	10
Bluetooth LE legacy (1M/2M)	15
Bluetooth LE Audio(125/500k)	14

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	RCV	1. Device positioned next to head. 2. Receiver Active.
Body-worn	All WWAN bands	Free	1. Device being used with a body-worn accessory.
Hotspot	All WWAN bands	Hotspot	1. Device transmits in hotspot mode near body. 2. Hotspot Mode Active.
Earjack	All WWAN bands	Earjack	1. Insert Earjack
Phablet-10g	All WWAN bands	Free	1. Device is held with hand.

Note(s):

RSI Scenarios priority: Free → RCV → Hotspot → Earjack

6.6. General LTE SAR Test and Reporting Considerations

Item	Description						
Frequency range, Channel Bandwidth, Numbers and Frequencies	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 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
	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 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 17	Frequency range: 788 - 798 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			23780/ 709	23755/ 706.5		
	Mid			23790/ 710	23790/ 710		
	High			23800/ 711	23825/ 713.5		
	Band 25	Frequency range: 1850 - 1915 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	26140/ 1860	26115/ 1857.5	26090/ 1855	26065/ 1852.5	26055/ 1851.5	26047/ 1850.7
	Mid	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5
	High	26590/ 1905	26615/ 1907.5	26640/ 1910	26665/ 1912.5	26675/ 1913.5	26683/ 1914.3

General LTE SAR Test and Reporting Considerations (Continued)

Frequency range, Channel Bandwidth, Numbers and Frequencies	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 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																																																																			
	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																																																														
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 <table> <tr> <th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th><th rowspan="2">MPR (dB)</th></tr> <tr> <th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr> <tr> <td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr> <tr> <td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr> <tr> <td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr> <tr> <td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr> <tr> <td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr> <tr> <td>256 QAM</td><td></td><td></td><td></td><td>≥ 1</td><td></td><td></td><td>≤ 5</td></tr> </table> MPR Built-in by design The manufacturer MPR values are always within the 3GPP maximum MPR allowance but may not follow the default MPR values. A-MPR (additional MPR) was disabled during SAR testing						Modulation	Channel bandwidth / Transmission bandwidth (N _{RB})						MPR (dB)	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1	16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1	64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2	64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2	64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3	256 QAM				≥ 1			≤ 5
Modulation	Channel bandwidth / Transmission bandwidth (N _{RB})						MPR (dB)																																																														
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz																																																															
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1																																																														
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1																																																														
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2																																																														
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2																																																														
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3																																																														
256 QAM				≥ 1			≤ 5																																																														
Power reduction		Yes.																																																																			
Spectrum plots for RB configurations		A properly configured base station simulator was used for the SAR and power measurements; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.																																																																			

Notes:

- 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 Band 41 test channels in accordance with October 2014 TCB workshop for all channels bandwidths.
- 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 $\times (T_s) \times \#$ of S + $\#$ of U

Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:

Calculated Duty Cycle = $5120 \times [1/(15000 \times 2048)] \times 2 + 6 \text{ ms} = 63.33\%$

where

$T_s = 1/(15000 \times 2048)$ 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 Frequencies	Band n5	Frequency range: 824 - 849 MHz												
		Channel Bandwidth												
		100 MHz	90 MHz	80 MHz	70 MHz	60 MHz	50 MHz	40 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	30 MHz	25 MHz	20 MHz	15 MHz	10 MHz	5 MHz
	Low							346000 /1730	345000 /1725		344000 /1720	343500 /1717.5	343000 /1715	342500 /1712.5
	Mid							349000 /1745	349000 /1745		349000/ 1745	349000/ 1745	349000/ 1745	349000/ 1745
	High							352000 /1760	353000 /1765		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	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	502200/ 2511		501204/ 2506.02	500700/ 2503.5	500202/ 2501.01	
	Low-Mid							513468/ 2567.34	510402/ 2552.01		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	
	Mid-High	528000/ 2640	528996/ 2644.98	529998/ 2649.99	531000/ 2655	531996/ 2659.99	523734/ 2618.67	523734/ 2618.67	526800/ 2634		527298/ 2636.49	527550/ 2637.75	527802/ 2639.01	
	High							534000/ 2670	534996/ 2674.98		535998/ 2679.99	536496/ 2682.48	537000/ 2685	
	Band n77 -DoD-	Frequency range: 3450 - 3550 MHz												
		Channel Bandwidth												
		100 MHz	90 MHz	80 MHz	70 MHz	60 MHz	50 MHz	40 MHz	30 MHz	25 MHz	20 MHz	15 MHz	10 MHz	5 MHz
	Low						631668/ 3475.02	631334/ 3470.01	631000/ 3465	630866/ 3462.99	630668/ 3460.02	630500/ 3457.5	630334/ 3455.01	
	Mid	633334 /3500.01	633334 /3500.01	633334 /3500.01	633334 /3500.01	633334 /3500.01			633334 /3500.01	633334 /3500.01	633334 /3500.01	633334 /3500.01	633334 /3500.01	
	High						635000/ 3525	635332/ 3529.98	635666/ 3534.99	635800 3537	636000/ 3540	636166/ 3542.49	636332/ 3544.98	
	Band n77	Frequency range: 3700 - 3980 MHz												
		Channel Bandwidth												
		100 MHz	90 MHz	80 MHz	70 MHz	60 MHz	50 MHz	40 MHz	30 MHz	25 MHz	20 MHz	15 MHz	10 MHz	5 MHz
	Low	650000 /3750	649668 /3745.02	649334 /3740.01	649000/ 3735	648668 /3730.02	648334 /3725.01	648000 /3720	647668/ 3715.02	647500/ 3712.5	647334 /3710.01	647168/ 3707.52	647000/ 3705	
	Low-Mid					653666/ 3804.99	653556 /3803.34	652166 /3782.49	651200 /3768	651000/ 3765	650900/ 3763.5	650800 /3762	650700/ 3760.5	650600/ 3759
	Mid-A							654400 /3816	654334/ 3815.01	654300/ 3814.5	654266 /3813.99	654234/ 3813.51	654200/ 3813	
	Mid-B		656000 /3840	656000 /3840				656000 /3840	657600 /3864	657666/ 3864.99	657700/ 3814.5	657734 /3866.01	657766/ 3866.49	657800/ 3867
	Mid-High	662000 /3930	662332 /3934.98	662666 /3939.99	658334/ 3875.01	658444 /3876.66	659834 /3897.51	660800 /3912	661000/ 3915	661100/ 3916.5	661200 /3918	661300/ 3919.5	661400/ 3921	
	High				663000/ 3945	663332 /3949.98	663666 /3954.99	664000 /3960	664332/ 3964.98	664500/ 3967.5	664666 /3969.99	664832/ 3972.48	665000/ 3975	

NR (Sub 6GHz) SAR Test and Reporting Considerations (Continued)

SCS	NR FDD Bands : 15 kHz, NR TDD Bands : 30kHz
Modulations Supported in UL	DFT-s-OFDM: $\pi/2$ 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 2/66
LTE Anchor Bands for NR Band n41	LTE Band 2/4/12/66
LTE Anchor Bands for NR Band n66	LTE Band 2/5/12/13
LTE Anchor Bands for NR Band n77	LTE Band 2/5/12/13/25/66

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.

WWAN

Wireless technologies	RF Exposure Conditions	Antenna	DUT-to-User Separation	Test Position	Antenna-to-edge/surface	SAR Required	Note
WWAN	Head	All WWAN Antennas	0 mm	Left Touch	N/A	Yes	
				Left Tilt (15°)	N/A	Yes	
				Right Touch	N/A	Yes	
				Right Tilt (15°)	N/A	Yes	
	Body	All WWAN Antennas	10 mm	Rear	N/A	Yes	
				Front	N/A	Yes	
	Hotspot	Main 1 Ant.	10 mm	Rear	< 25 mm	Yes	
				Front	< 25 mm	Yes	
				Top	> 25 mm	No	1
				Right	< 25 mm	Yes	
				Bottom	< 25 mm	Yes	
				Left	< 25 mm	Yes	
	Hotspot	Main 2 Ant.	10 mm	Rear	< 25 mm	Yes	
				Front	< 25 mm	Yes	
				Top	> 25 mm	No	1
				Right	> 25 mm	No	1
				Bottom	< 25 mm	Yes	
				Left	< 25 mm	Yes	
	Hotspot	Main 4 Ant.	10 mm	Rear	< 25 mm	Yes	
				Front	< 25 mm	Yes	
				Top	> 25 mm	No	1
				Right	< 25 mm	Yes	
				Bottom	< 25 mm	Yes	
				Left	> 25 mm	No	1
	Hotspot	Sub.1 Ant.	10 mm	Rear	< 25 mm	Yes	
				Front	< 25 mm	Yes	
				Top	< 25 mm	Yes	
				Right	< 25 mm	Yes	
				Bottom	> 25 mm	No	1
				Left	> 25 mm	No	1
	Hotspot	Sub.2 Ant.	10 mm	Rear	< 25 mm	Yes	
				Front	< 25 mm	Yes	
				Top	< 25 mm	Yes	
				Right	> 25 mm	No	1
				Bottom	> 25 mm	No	1
				Left	< 25 mm	Yes	

Notes:

- SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR.
- 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.
- 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.
- 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.

WWAN (Continued)

Wireless technologies	RF Exposure Conditions	Antenna	DUT-to-User Separation	Test Position	Antenna-to-edge/surface	SAR Required	Note
WWAN	Product Specific 10-g	All WWAN Antennas	0 mm	Rear	Refer to notes 2 & 3		
				Front			
				Top			
				Right			
				Bottom			
				Left			

Notes:

1. SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR.
2. 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 ≤ 25 mm from that surface or edge in direct contact with a flat phantom, to address interactive hand use exposure conditions.

WLAN&BT

Wireless technologies	RF Exposure Conditions	Antenna	DUT-to-User Separation	Test Position	Antenna-to-edge/surface	SAR Required	Note
2.4GHz WLAN & BT & 5GHz WLAN	Head	All WLAN Antennas	0 mm	Left Touch	N/A	Yes	
				Left Tilt (15°)	N/A	Yes	
				Right Touch	N/A	Yes	
				Right Tilt (15°)	N/A	Yes	
	Body		10 mm	Rear	N/A	Yes	
				Front	N/A	Yes	
	Hotspot	WiFi1 2.4G, 5G (Sub.4)	10 mm	Rear	< 25 mm	Yes	
				Front	< 25 mm	Yes	
				Top	< 25 mm	Yes	
				Right	> 25 mm	No	1
				Bottom	> 25 mm	No	1
				Left	< 25 mm	Yes	
	Hotspot	WiFi2 2.4G(Sub.6), 5G (Sub.1)	10 mm	Rear	< 25 mm	Yes	
				Front	< 25 mm	Yes	
				Top	< 25 mm	Yes	
				Right	< 25 mm	Yes	
				Bottom	> 25 mm	No	1
				Left	> 25 mm	No	1
	Product Specific 10-g	All Main Antennas	0 mm	Rear	Refer to notes 2 & 4		
				Front			
				Top			
				Right			
				Bottom			
				Left			

NFC

Wireless technologies	RF Exposure Conditions	Antenna	DUT-to-User Separation	Test Position	Antenna-to-edge/surface	SAR Required	Note
NFC	Product Specific (Hand) 10-g	NFC Ant.	0 mm	Rear	< 25 mm	Yes	
				Front	< 25 mm	Yes	
				Top	< 25 mm	Yes	
				Right	> 25 mm	No	1
				Bottom	> 25 mm	No	1
				Left	< 25 mm	Yes	

Notes:

- SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR.
- 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.
- 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.
- 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.
- Per manufacturer guide, NFC SAR was considered about only hand held condition (Product Specific 10-g).

8. Dielectric Property Measurements & System Check

8.1. Dielectric Property Measurements

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

The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The 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 1 Room**

Date	Freq. (MHz)		Liquid Parameters		Measured	Target	Delta (%)	Limit ±(%)
12-01-2023	Head 1750	e'	42.0300	Relative Permittivity (ϵ_r):	42.03	40.08	4.85	5
		e''	13.4300	Conductivity (σ):	1.31	1.37	-4.54	5
	Head 1710	e'	42.1200	Relative Permittivity (ϵ_r):	42.12	40.15	4.92	5
		e''	13.4900	Conductivity (σ):	1.28	1.35	-4.74	5
	Head 1780	e'	41.9700	Relative Permittivity (ϵ_r):	41.97	40.04	4.82	5
		e''	13.3400	Conductivity (σ):	1.32	1.39	-4.73	5
12-01-2023	Head 1900	e'	41.8700	Relative Permittivity (ϵ_r):	41.87	40.00	4.67	5
		e''	13.1500	Conductivity (σ):	1.39	1.40	-0.77	5
	Head 1850	e'	41.9000	Relative Permittivity (ϵ_r):	41.90	40.00	4.75	5
		e''	13.2200	Conductivity (σ):	1.36	1.40	-2.87	5
	Head 1915	e'	41.8500	Relative Permittivity (ϵ_r):	41.85	40.00	4.63	5
		e''	13.1400	Conductivity (σ):	1.40	1.40	-0.06	5
12-05-2023	Head 1750	e'	39.9900	Relative Permittivity (ϵ_r):	39.99	40.08	-0.24	5
		e''	13.8100	Conductivity (σ):	1.34	1.37	-1.84	5
	Head 1710	e'	40.0800	Relative Permittivity (ϵ_r):	40.08	40.15	-0.16	5
		e''	13.9000	Conductivity (σ):	1.32	1.35	-1.84	5
	Head 1780	e'	39.9100	Relative Permittivity (ϵ_r):	39.91	40.04	-0.32	5
		e''	13.7500	Conductivity (σ):	1.36	1.39	-1.80	5
12-05-2023	Head 2450	e'	38.9300	Relative Permittivity (ϵ_r):	38.93	39.20	-0.69	5
		e''	13.6700	Conductivity (σ):	1.86	1.80	3.46	5
	Head 2400	e'	40.2500	Relative Permittivity (ϵ_r):	40.25	39.30	2.43	5
		e''	13.5100	Conductivity (σ):	1.80	1.75	2.92	5
	Head 2500	e'	39.1000	Relative Permittivity (ϵ_r):	39.10	39.14	-0.09	5
		e''	13.0400	Conductivity (σ):	1.81	1.85	-2.23	5
12-08-2023	Head 1750	e'	39.4600	Relative Permittivity (ϵ_r):	39.46	40.08	-1.56	5
		e''	13.5700	Conductivity (σ):	1.32	1.37	-3.55	5
	Head 1710	e'	39.5800	Relative Permittivity (ϵ_r):	39.58	40.15	-1.41	5
		e''	13.4800	Conductivity (σ):	1.28	1.35	-4.81	5
	Head 1780	e'	39.3400	Relative Permittivity (ϵ_r):	39.34	40.04	-1.74	5
		e''	13.6200	Conductivity (σ):	1.35	1.39	-2.73	5
12-18-2023	Head 3500	e'	37.8300	Relative Permittivity (ϵ_r):	37.83	37.93	-0.26	5
		e''	15.0200	Conductivity (σ):	2.92	2.91	0.39	5
	Head 3600	e'	37.6200	Relative Permittivity (ϵ_r):	37.62	37.82	-0.52	5
		e''	15.1300	Conductivity (σ):	3.03	3.01	0.49	5
	Head 3700	e'	37.4000	Relative Permittivity (ϵ_r):	37.40	37.70	-0.80	5
		e''	15.2300	Conductivity (σ):	3.13	3.12	0.55	5
	Head 3800	e'	37.2000	Relative Permittivity (ϵ_r):	37.20	37.59	-1.03	5
		e''	15.3300	Conductivity (σ):	3.24	3.22	0.64	5
	Head 3900	e'	36.9900	Relative Permittivity (ϵ_r):	36.99	37.47	-1.29	5
		e''	15.4400	Conductivity (σ):	3.35	3.32	0.82	5
	Head 3980	e'	36.8200	Relative Permittivity (ϵ_r):	36.82	37.38	-1.50	5
		e''	15.5300	Conductivity (σ):	3.44	3.40	1.00	5
01-08-2024	Head 5250	e'	35.2800	Relative Permittivity (ϵ_r):	35.28	35.95	-1.86	5
		e''	15.8900	Conductivity (σ):	4.64	4.71	-1.52	5
	Head 5260	e'	35.2600	Relative Permittivity (ϵ_r):	35.26	35.94	-1.89	5
		e''	15.9000	Conductivity (σ):	4.65	4.72	-1.48	5
	Head 5600	e'	34.6600	Relative Permittivity (ϵ_r):	34.66	35.50	-2.37	5
		e''	16.1300	Conductivity (σ):	5.02	5.07	-0.94	5
	Head 5800	e'	34.3000	Relative Permittivity (ϵ_r):	34.30	35.30	-2.83	5
		e''	16.2700	Conductivity (σ):	5.25	5.27	-0.44	5
	Head 5925	e'	34.0800	Relative Permittivity (ϵ_r):	34.08	35.18	-3.11	5
		e''	16.3500	Conductivity (σ):	5.39	5.40	-0.27	5

SAR 2 Room

Date	Freq. (MHz)			Liquid Parameters	Measured	Target	Delta (%)	Limit ±(%)
12-08-2023	Head 2600	e'	40.0300	Relative Permittivity (ϵ_r):	39.25	39.01	0.61	5
		e''	13.7700	Conductivity (σ):	1.91	1.96	-2.86	5
	Head 2495	e'	40.0100	Relative Permittivity (ϵ_r):	39.37	39.14	0.58	5
		e''	13.6300	Conductivity (σ):	1.82	1.85	-1.71	5
	Head 2700	e'	39.9500	Relative Permittivity (ϵ_r):	39.03	38.88	0.37	5
		e''	13.8800	Conductivity (σ):	1.99	2.07	-3.83	5
12-12-2023	Head 2600	e'	40.6700	Relative Permittivity (ϵ_r):	39.25	39.01	0.61	5
		e''	13.8900	Conductivity (σ):	1.91	1.96	-2.86	5
	Head 2495	e'	40.8300	Relative Permittivity (ϵ_r):	39.37	39.14	0.58	5
		e''	13.8100	Conductivity (σ):	1.82	1.85	-1.71	5
	Head 2700	e'	40.4300	Relative Permittivity (ϵ_r):	39.03	38.88	0.37	5
		e''	13.9200	Conductivity (σ):	1.99	2.07	-3.83	5
01-02-2024	Head 2450	e'	39.2798	Relative Permittivity (ϵ_r):	39.28	39.20	0.20	5
		e''	13.3339	Conductivity (σ):	1.82	1.80	0.91	5
	Head 2400	e'	39.3743	Relative Permittivity (ϵ_r):	39.37	39.30	0.20	5
		e''	13.4054	Conductivity (σ):	1.79	1.75	2.13	5
	Head 2500	e'	39.2215	Relative Permittivity (ϵ_r):	39.22	39.14	0.22	5
		e''	13.1744	Conductivity (σ):	1.83	1.85	-1.22	5
01-03-2024	Head 5250	e'	36.3300	Relative Permittivity (ϵ_r):	36.79	35.93	2.38	5
		e''	16.2300	Conductivity (σ):	4.75	4.70	0.98	5
	Head 5260	e'	36.3100	Relative Permittivity (ϵ_r):	36.77	35.92	2.36	5
		e''	16.2400	Conductivity (σ):	4.76	4.71	1.03	5
	Head 5600	e'	35.6900	Relative Permittivity (ϵ_r):	36.11	35.53	1.62	5
		e''	16.4600	Conductivity (σ):	5.18	5.06	2.41	5
	Head 5800	e'	35.3400	Relative Permittivity (ϵ_r):	35.74	35.30	1.25	5
		e''	16.5900	Conductivity (σ):	5.44	5.27	3.17	5
Head 5925	e'	35.1100	Relative Permittivity (ϵ_r):	35.49	35.20	0.82	5	
	e''	16.6600	Conductivity (σ):	5.59	5.40	3.57	5	
01-08-2024	Head 5250	e'	36.2100	Relative Permittivity (ϵ_r):	36.79	35.93	2.38	5
		e''	15.9900	Conductivity (σ):	4.75	4.70	0.98	5
	Head 5260	e'	36.1900	Relative Permittivity (ϵ_r):	36.77	35.92	2.36	5
		e''	16.0000	Conductivity (σ):	4.76	4.71	1.03	5
	Head 5600	e'	35.6200	Relative Permittivity (ϵ_r):	36.11	35.53	1.62	5
		e''	16.2600	Conductivity (σ):	5.18	5.06	2.41	5
	Head 5800	e'	35.2100	Relative Permittivity (ϵ_r):	35.74	35.30	1.25	5
		e''	16.3300	Conductivity (σ):	5.44	5.27	3.17	5
Head 5925	e'	34.9900	Relative Permittivity (ϵ_r):	35.49	35.20	0.82	5	
	e''	16.3900	Conductivity (σ):	5.59	5.40	3.57	5	

SAR 3 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
12-04-2023	Head 1750	e'	40.2800	Relative Permittivity (ϵ_r):	40.28	40.08	0.49	5
		e''	13.9700	Conductivity (σ):	1.36	1.37	-0.70	5
	Head 1710	e'	40.3500	Relative Permittivity (ϵ_r):	40.35	40.15	0.51	5
		e''	14.1200	Conductivity (σ):	1.34	1.35	-0.29	5
	Head 1780	e'	40.2400	Relative Permittivity (ϵ_r):	40.24	40.04	0.50	5
		e''	13.8400	Conductivity (σ):	1.37	1.39	-1.16	5
12-04-2023	Head 1900	e'	40.1300	Relative Permittivity (ϵ_r):	40.13	40.00	0.33	5
		e''	13.3500	Conductivity (σ):	1.41	1.40	0.74	5
	Head 1850	e'	40.1600	Relative Permittivity (ϵ_r):	40.16	40.00	0.40	5
		e''	13.5400	Conductivity (σ):	1.39	1.40	-0.51	5
	Head 1915	e'	40.1200	Relative Permittivity (ϵ_r):	40.12	40.00	0.30	5
		e''	13.3000	Conductivity (σ):	1.42	1.40	1.16	5
12-08-2023	Head 1900	e'	40.5700	Relative Permittivity (ϵ_r):	40.57	40.00	1.43	5
		e''	13.1800	Conductivity (σ):	1.39	1.40	-0.54	5
	Head 1850	e'	40.5900	Relative Permittivity (ϵ_r):	40.59	40.00	1.48	5
		e''	13.2500	Conductivity (σ):	1.36	1.40	-2.64	5
	Head 1915	e'	40.5500	Relative Permittivity (ϵ_r):	40.55	40.00	1.37	5
		e''	13.1600	Conductivity (σ):	1.40	1.40	0.09	5
12-12-2023	Head 1750	e'	38.6000	Relative Permittivity (ϵ_r):	38.60	40.08	-3.70	5
		e''	14.1300	Conductivity (σ):	1.37	1.37	0.43	5
	Head 1710	e'	38.6700	Relative Permittivity (ϵ_r):	38.67	40.15	-3.68	5
		e''	14.2000	Conductivity (σ):	1.35	1.35	0.28	5
	Head 1780	e'	38.5300	Relative Permittivity (ϵ_r):	38.53	40.04	-3.77	5
		e''	14.0300	Conductivity (σ):	1.39	1.39	0.19	5
12-18-2023	Head 2600	e'	39.9900	Relative Permittivity (ϵ_r):	39.99	39.01	2.51	5
		e''	13.0500	Conductivity (σ):	1.89	1.96	-3.85	5
	Head 2495	e'	40.1600	Relative Permittivity (ϵ_r):	40.16	39.14	2.60	5
		e''	12.9900	Conductivity (σ):	1.80	1.85	-2.52	5
	Head 2700	e'	39.8200	Relative Permittivity (ϵ_r):	39.82	38.88	2.41	5
		e''	13.1500	Conductivity (σ):	1.97	2.07	-4.64	5
12-21-2023	Head 2600	e'	40.5900	Relative Permittivity (ϵ_r):	40.59	39.01	4.05	5
		e''	13.3700	Conductivity (σ):	1.93	1.96	-1.49	5
	Head 2495	e'	40.5800	Relative Permittivity (ϵ_r):	40.58	39.14	3.67	5
		e''	13.5200	Conductivity (σ):	1.88	1.85	1.46	5
	Head 2700	e'	40.5000	Relative Permittivity (ϵ_r):	40.50	38.88	4.15	5
		e''	13.2500	Conductivity (σ):	1.99	2.07	-3.92	5
12-26-2023	Head 2600	e'	38.8700	Relative Permittivity (ϵ_r):	38.87	39.01	-0.36	5
		e''	13.1700	Conductivity (σ):	1.90	1.96	-2.97	5
	Head 2495	e'	38.9500	Relative Permittivity (ϵ_r):	38.95	39.14	-0.49	5
		e''	13.2000	Conductivity (σ):	1.83	1.85	-0.94	5
	Head 2700	e'	38.7500	Relative Permittivity (ϵ_r):	38.75	38.88	-0.35	5
		e''	13.1700	Conductivity (σ):	1.98	2.07	-4.50	5
01-09-2024	Head 1900	e'	39.5900	Relative Permittivity (ϵ_r):	39.59	40.00	-1.02	5
		e''	13.1500	Conductivity (σ):	1.39	1.40	-0.77	5
	Head 1850	e'	39.6400	Relative Permittivity (ϵ_r):	39.64	40.00	-0.90	5
		e''	13.2900	Conductivity (σ):	1.37	1.40	-2.35	5
	Head 1915	e'	39.5800	Relative Permittivity (ϵ_r):	39.58	40.00	-1.05	5
		e''	13.1100	Conductivity (σ):	1.40	1.40	-0.29	5

SAR 4 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
12-04-2023	Head 835	e'	42.2300	Relative Permittivity (ϵ_r):	42.23	41.50	1.76	5
		e''	19.5900	Conductivity (σ):	0.91	0.90	1.06	5
	Head 810	e'	42.1700	Relative Permittivity (ϵ_r):	42.17	41.65	1.24	5
		e''	20.0900	Conductivity (σ):	0.90	0.90	0.79	5
	Head 850	e'	42.2200	Relative Permittivity (ϵ_r):	42.22	41.50	1.73	5
		e''	19.3200	Conductivity (σ):	0.91	0.92	-0.21	5
12-11-2023	Head 1750	e'	40.4800	Relative Permittivity (ϵ_r):	40.48	40.08	0.99	5
		e''	13.5200	Conductivity (σ):	1.32	1.37	-3.90	5
	Head 1695	e'	40.6200	Relative Permittivity (ϵ_r):	40.62	40.17	1.12	5
		e''	13.6800	Conductivity (σ):	1.29	1.34	-3.64	5
	Head 1780	e'	40.4400	Relative Permittivity (ϵ_r):	40.44	40.04	1.00	5
		e''	13.4100	Conductivity (σ):	1.33	1.39	-4.23	5
12-11-2023	Head 1900	e'	40.3600	Relative Permittivity (ϵ_r):	40.36	40.00	0.90	5
		e''	13.1400	Conductivity (σ):	1.39	1.40	-0.84	5
	Head 1850	e'	40.3800	Relative Permittivity (ϵ_r):	40.38	40.00	0.95	5
		e''	13.2300	Conductivity (σ):	1.36	1.40	-2.79	5
	Head 1915	e'	40.3600	Relative Permittivity (ϵ_r):	40.36	40.00	0.90	5
		e''	13.1200	Conductivity (σ):	1.40	1.40	-0.21	5
12-22-2023	Head 3500	e'	38.1600	Relative Permittivity (ϵ_r):	38.16	37.93	0.61	5
		e''	14.3700	Conductivity (σ):	2.80	2.91	-3.95	5
	Head 3600	e'	37.9600	Relative Permittivity (ϵ_r):	37.96	37.82	0.38	5
		e''	14.4700	Conductivity (σ):	2.90	3.01	-3.90	5
	Head 3700	e'	37.7600	Relative Permittivity (ϵ_r):	37.76	37.70	0.16	5
		e''	14.5600	Conductivity (σ):	3.00	3.12	-3.88	5
	Head 3800	e'	37.5700	Relative Permittivity (ϵ_r):	37.57	37.59	-0.05	5
		e''	14.6500	Conductivity (σ):	3.10	3.22	-3.83	5
	Head 3900	e'	37.3900	Relative Permittivity (ϵ_r):	37.39	37.47	-0.22	5
		e''	14.7300	Conductivity (σ):	3.19	3.32	-3.81	5
	Head 3980	e'	37.2500	Relative Permittivity (ϵ_r):	37.25	37.38	-0.35	5
		e''	14.8000	Conductivity (σ):	3.28	3.40	-3.75	5
12-26-2023	Head 3500	e'	38.3700	Relative Permittivity (ϵ_r):	38.37	37.93	1.16	5
		e''	14.5900	Conductivity (σ):	2.84	2.91	-2.48	5
	Head 3600	e'	38.5000	Relative Permittivity (ϵ_r):	38.50	37.82	1.81	5
		e''	14.7400	Conductivity (σ):	2.95	3.01	-2.10	5
	Head 3700	e'	37.9400	Relative Permittivity (ϵ_r):	37.94	37.70	0.63	5
		e''	14.9100	Conductivity (σ):	3.07	3.12	-1.56	5
	Head 3800	e'	37.7100	Relative Permittivity (ϵ_r):	37.71	37.59	0.33	5
		e''	15.0700	Conductivity (σ):	3.18	3.22	-1.07	5
	Head 3900	e'	37.5000	Relative Permittivity (ϵ_r):	37.50	37.47	0.07	5
		e''	15.2200	Conductivity (σ):	3.30	3.32	-0.61	5
	Head 3980	e'	37.3300	Relative Permittivity (ϵ_r):	37.33	37.38	-0.14	5
		e''	15.3200	Conductivity (σ):	3.39	3.40	-0.36	5
01-09-2024	Head 3500	e'	37.2300	Relative Permittivity (ϵ_r):	37.23	37.93	-1.84	5
		e''	14.5700	Conductivity (σ):	2.84	2.91	-2.61	5
	Head 3600	e'	37.0100	Relative Permittivity (ϵ_r):	37.01	37.82	-2.13	5
		e''	14.7000	Conductivity (σ):	2.94	3.01	-2.37	5
	Head 3700	e'	36.7900	Relative Permittivity (ϵ_r):	36.79	37.70	-2.42	5
		e''	14.8100	Conductivity (σ):	3.05	3.12	-2.23	5
	Head 3800	e'	36.5600	Relative Permittivity (ϵ_r):	36.56	37.59	-2.73	5
		e''	14.9200	Conductivity (σ):	3.15	3.22	-2.05	5
	Head 3900	e'	36.3400	Relative Permittivity (ϵ_r):	36.34	37.47	-3.02	5
		e''	15.0200	Conductivity (σ):	3.26	3.32	-1.92	5
	Head 3980	e'	36.1700	Relative Permittivity (ϵ_r):	36.17	37.38	-3.24	5
		e''	15.1100	Conductivity (σ):	3.34	3.40	-1.73	5

SAR 5 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
12-05-2023	Head 2600	e'	39.8900	Relative Permittivity (ε _r):	39.89	39.01	2.25	5
		e''	13.5200	Conductivity (σ):	1.95	1.96	-0.39	5
	Head 2495	e'	39.4700	Relative Permittivity (ε _r):	39.47	39.14	0.83	5
		e''	13.4800	Conductivity (σ):	1.87	1.85	1.16	5
	Head 2700	e'	39.0700	Relative Permittivity (ε _r):	39.07	38.88	0.48	5
		e''	13.5900	Conductivity (σ):	2.04	2.07	-1.45	5
12-11-2023	Head 2600	e'	39.5600	Relative Permittivity (ε _r):	39.56	39.01	1.41	5
		e''	13.4100	Conductivity (σ):	1.94	1.96	-1.20	5
	Head 2495	e'	39.6900	Relative Permittivity (ε _r):	39.69	39.14	1.40	5
		e''	13.3200	Conductivity (σ):	1.85	1.85	-0.04	5
	Head 2700	e'	39.3800	Relative Permittivity (ε _r):	39.38	38.88	1.27	5
		e''	13.5000	Conductivity (σ):	2.03	2.07	-2.10	5
12-13-2023	Head 2450	e'	38.0100	Relative Permittivity (ε _r):	38.01	39.20	-3.04	5
		e''	12.9800	Conductivity (σ):	1.77	1.80	-1.76	5
	Head 2400	e'	38.0800	Relative Permittivity (ε _r):	38.08	39.30	-3.10	5
		e''	13.0400	Conductivity (σ):	1.74	1.75	-0.66	5
	Head 2500	e'	37.9800	Relative Permittivity (ε _r):	37.98	39.14	-2.96	5
		e''	12.9400	Conductivity (σ):	1.80	1.85	-2.98	5
12-21-2023	Head 2600	e'	38.7700	Relative Permittivity (ε _r):	38.77	39.01	-0.62	5
		e''	13.2600	Conductivity (σ):	1.92	1.96	-2.30	5
	Head 2495	e'	38.9100	Relative Permittivity (ε _r):	38.91	39.14	-0.60	5
		e''	13.2400	Conductivity (σ):	1.84	1.85	-0.64	5
	Head 2700	e'	38.5900	Relative Permittivity (ε _r):	38.59	38.88	-0.76	5
		e''	13.3000	Conductivity (σ):	2.00	2.07	-3.55	5
12-26-2023	Head 2600	e'	38.9200	Relative Permittivity (ε _r):	38.92	39.01	-0.23	5
		e''	13.4000	Conductivity (σ):	1.94	1.96	-1.27	5
	Head 2495	e'	39.1400	Relative Permittivity (ε _r):	39.14	39.14	-0.01	5
		e''	13.2300	Conductivity (σ):	1.84	1.85	-0.72	5
	Head 2700	e'	38.7000	Relative Permittivity (ε _r):	38.70	38.88	-0.47	5
		e''	13.5200	Conductivity (σ):	2.03	2.07	-1.96	5
01-02-2024	Head 2600	e'	37.7300	Relative Permittivity (ε _r):	37.73	39.01	-3.28	5
		e''	13.2100	Conductivity (σ):	1.91	1.96	-2.67	5
	Head 2495	e'	37.9200	Relative Permittivity (ε _r):	37.92	39.14	-3.13	5
		e''	13.1600	Conductivity (σ):	1.83	1.85	-1.24	5
	Head 2700	e'	37.5400	Relative Permittivity (ε _r):	37.54	38.88	-3.46	5
		e''	13.2500	Conductivity (σ):	1.99	2.07	-3.92	5
01-08-2024	Head 2450	e'	39.5800	Relative Permittivity (ε _r):	39.58	39.20	0.97	5
		e''	13.0600	Conductivity (σ):	1.78	1.80	-1.16	5
	Head 2400	e'	39.6900	Relative Permittivity (ε _r):	39.69	39.30	1.00	5
		e''	13.1700	Conductivity (σ):	1.76	1.75	0.33	5
	Head 2500	e'	39.5800	Relative Permittivity (ε _r):	39.58	39.14	1.13	5
		e''	13.0300	Conductivity (σ):	1.81	1.85	-2.31	5
01-08-2024	Head 2600	e'	39.6100	Relative Permittivity (ε _r):	39.61	39.01	1.54	5
		e''	13.1300	Conductivity (σ):	1.90	1.96	-3.26	5
	Head 2495	e'	39.5700	Relative Permittivity (ε _r):	39.57	39.14	1.09	5
		e''	13.0300	Conductivity (σ):	1.81	1.85	-2.22	5
	Head 2700	e'	39.4000	Relative Permittivity (ε _r):	39.40	38.88	1.33	5
		e''	13.1900	Conductivity (σ):	1.98	2.07	-4.35	5

SAR 6 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
12-04-2023	Head 1750	e'	40.1500	Relative Permittivity (ϵ_r):	40.15	40.08	0.16	5
		e''	13.5900	Conductivity (σ):	1.32	1.37	-3.40	5
	Head 1710	e'	40.2400	Relative Permittivity (ϵ_r):	40.24	40.15	0.23	5
		e''	13.6800	Conductivity (σ):	1.30	1.35	-3.39	5
	Head 1780	e'	40.0600	Relative Permittivity (ϵ_r):	40.06	40.04	0.05	5
		e''	13.5000	Conductivity (σ):	1.34	1.39	-3.59	5
12-04-2023	Head 1900	e'	39.8100	Relative Permittivity (ϵ_r):	39.81	40.00	-0.47	5
		e''	13.1300	Conductivity (σ):	1.39	1.40	-0.92	5
	Head 1850	e'	39.8600	Relative Permittivity (ϵ_r):	39.86	40.00	-0.35	5
		e''	13.2600	Conductivity (σ):	1.36	1.40	-2.57	5
	Head 1915	e'	39.8000	Relative Permittivity (ϵ_r):	39.80	40.00	-0.50	5
		e''	13.0800	Conductivity (σ):	1.39	1.40	-0.52	5
12-07-2023	Head 1750	e'	39.5700	Relative Permittivity (ϵ_r):	39.57	40.08	-1.28	5
		e''	13.9200	Conductivity (σ):	1.35	1.37	-1.06	5
	Head 1710	e'	39.5700	Relative Permittivity (ϵ_r):	39.57	40.15	-1.44	5
		e''	14.0700	Conductivity (σ):	1.34	1.35	-0.64	5
	Head 1780	e'	39.5400	Relative Permittivity (ϵ_r):	39.54	40.04	-1.24	5
		e''	13.8500	Conductivity (σ):	1.37	1.39	-1.09	5
12-11-2023	Head 1750	e'	39.8600	Relative Permittivity (ϵ_r):	39.86	40.08	-0.56	5
		e''	13.4800	Conductivity (σ):	1.31	1.37	-4.19	5
	Head 1710	e'	39.8600	Relative Permittivity (ϵ_r):	39.86	40.15	-0.71	5
		e''	13.6400	Conductivity (σ):	1.30	1.35	-3.68	5
	Head 1780	e'	39.8500	Relative Permittivity (ϵ_r):	39.85	40.04	-0.47	5
		e''	13.3900	Conductivity (σ):	1.33	1.39	-4.38	5

SAR 7 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
12-04-2023	Head 750	e'	42.4600	Relative Permittivity (ϵ_r):	42.46	41.96	1.19	5
		e''	21.7700	Conductivity (σ):	0.91	0.89	1.66	5
	Head 660	e'	42.7900	Relative Permittivity (ϵ_r):	42.79	42.42	0.86	5
		e''	23.9700	Conductivity (σ):	0.88	0.89	-0.73	5
	Head 800	e'	42.2800	Relative Permittivity (ϵ_r):	42.28	41.71	1.38	5
		e''	20.7600	Conductivity (σ):	0.92	0.90	2.96	5
12-04-2023	Head 835	e'	42.1300	Relative Permittivity (ϵ_r):	42.13	41.50	1.52	5
		e''	20.1400	Conductivity (σ):	0.94	0.90	3.90	5
	Head 810	e'	42.2300	Relative Permittivity (ϵ_r):	42.23	41.65	1.38	5
		e''	20.5800	Conductivity (σ):	0.93	0.90	3.25	5
	Head 850	e'	42.0900	Relative Permittivity (ϵ_r):	42.09	41.50	1.42	5
		e''	19.8800	Conductivity (σ):	0.94	0.92	2.69	5
12-12-2023	Head 835	e'	41.5000	Relative Permittivity (ϵ_r):	41.50	41.50	0.00	5
		e''	20.0200	Conductivity (σ):	0.93	0.90	3.28	5
	Head 810	e'	41.5600	Relative Permittivity (ϵ_r):	41.56	41.65	-0.23	5
		e''	20.4500	Conductivity (σ):	0.92	0.90	2.60	5
	Head 850	e'	41.4500	Relative Permittivity (ϵ_r):	41.45	41.50	-0.12	5
		e''	19.7700	Conductivity (σ):	0.93	0.92	2.12	5
12-22-2023	Head 13	e'	53.87	Relative Permittivity (ϵ_r):	53.87	55.00	-2.05	5
		e''	992.30	Conductivity (σ):	0.72	0.75	-4.36	5
	Head 12	e'	54.01	Relative Permittivity (ϵ_r):	54.01	55.00	-1.80	5
		e''	1075.00	Conductivity (σ):	0.72	0.75	-4.36	5
	Head 14	e'	53.64	Relative Permittivity (ϵ_r):	53.64	55.00	-2.47	5
		e''	921.40	Conductivity (σ):	0.72	0.75	-4.37	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	1122	2-24-2022	2-24-2024	1g	8.58
				10g	5.65
D835V2	4d174	9-21-2022	9-21-2024	1g	9.63
				10g	6.29
D835V2	4d194	3-24-2022	3-24-2024	1g	9.77
				10g	6.39
D1750V2	1125	11-30-2022	11-30-2023	1g	35.60
				10g	18.90
D1750V2	1180	9-21-2022	9-21-2024	1g	37.40
				10g	19.70
D1900V2	5d190	11-16-2022	11-16-2023	1g	39.70
				10g	20.70
D1900V2	5d199	3-25-2022	3-25-2024	1g	39.40
				10g	20.50
D2450V2	939	7-19-2023	7-19-2024	1g	52.30
				10g	24.70
D2450V2	960	3-24-2022	3-24-2024	1g	51.90
				10g	24.00
D2600V2	1097	9-26-2023	9-26-2024	1g	57.30
				10g	25.70
D2600V2	1178	4-25-2023	4-25-2024	1g	57.40
				10g	25.70
D3500V2	1075	5-19-2023	5-19-2024	1g	65.50
				10g	24.70
D3700V2	1036	5-19-2023	5-19-2024	1g	67.80
				10g	24.50
D3900V2	1069	4-21-2023	4-21-2024	1g	69.40
				10g	24.00
D5GHzV2 (5250)	1209	2-28-2023	2-28-2024	1g	80.40
				10g	22.90
D5GHzV2 (5600)				1g	83.10
				10g	23.60
D5GHzV2 (5750)				1g	81.20
				10g	22.90
CLA-13	1015	8-23-2022	8-23-2024	10g	0.33

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
4. CLA-13 is not considered 1-g data. because it is not required.

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 1 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			
12-01-2023	D1750V2	1125	Head	1g	3.61	36.1	37.40	-3.48
				10g	1.95	19.5	19.70	-1.02
12-01-2023	D1900V2	5d190	Head	1g	3.83	38.3	39.70	-3.53
				10g	1.99	19.9	20.70	-3.86
12-05-2023	D2450V2	939	Head	1g	4.96	49.6	52.30	-5.16
				10g	2.30	23.0	24.70	-6.88
12-08-2023	D1750V2	1125	Head	1g	3.53	35.3	37.40	-5.61
				10g	1.87	18.7	19.70	-5.08
12-18-2023	D3500V2	1121	Head	1g	6.35	63.5	66.60	-4.65
				10g	2.36	23.6	25.10	-5.98
12-18-2023	D3700V2	1036	Head	1g	6.63	66.3	67.80	-2.21
				10g	2.40	24.0	24.50	-2.04
12-18-2023	D3900V2	1069	Head	1g	6.63	66.3	69.40	-4.47
				10g	2.29	22.9	24.00	-4.58
01-08-2024	D5GHzV2 (5250)	1209	Head	1g	7.41	74.1	80.40	-7.84
				10g	2.13	21.3	22.90	-6.99
01-08-2024	D5GHzV2 (5600)	1209	Head	1g	7.67	76.7	83.10	-7.70
				10g	2.17	21.7	23.60	-8.05

SAR 2 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			
12-08-2023	D2600V2	1178	Head	1g	5.33	53.3	57.40	-7.14
				10g	2.42	24.2	25.70	-5.84
12-12-2023	D2600V2	1097	Head	1g	5.76	57.6	57.30	0.52
				10g	2.62	26.2	25.70	1.95
01-02-2024	D2450V2	939	Head	1g	5.16	51.6	53.00	-2.64
				10g	2.39	23.9	24.70	-3.24
01-03-2024	D5GHzV2(5250)	1209	Head	1g	7.59	75.9	79.00	-3.92
				10g	2.19	21.9	22.90	-4.37
01-03-2024	D5GHzV2(5600)	1209	Head	1g	8.45	84.5	81.60	3.55
				10g	2.44	24.4	23.10	5.63
01-03-2024	D5GHzV2(5800)	1209	Head	1g	8.30	83.0	79.50	4.40
				10g	2.39	23.9	22.60	5.75
01-08-2024	D5GHzV2(5600)	1209	Head	1g	8.33	83.3	81.60	2.08
				10g	2.37	23.7	23.10	2.60
01-08-2024	D5GHzV2(5800)	1209	Head	1g	7.73	77.3	79.50	-2.77
				10g	2.20	22.0	22.60	-2.65

SAR 3 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			
12-04-2023	D1750V2	1125	Head	1g	3.80	38.0	37.40	1.60	5
				10g	2.12	21.2	19.70	7.61	
12-04-2023	D1900V2	5d190	Head	1g	3.81	38.1	39.70	-4.03	
				10g	2.08	20.8	20.70	0.48	
12-08-2023	D1900V2	5d199	Head	1g	4.04	40.4	39.40	2.54	6
				10g	2.17	21.7	20.50	5.85	
12-12-2023	D1750V2	1180	Head	1g	3.24	32.4	35.60	-8.99	
				10g	1.76	17.6	18.90	-6.88	
12-18-2023	D2600V2	1178	Head	1g	5.62	56.2	57.40	-2.09	
				10g	2.69	26.9	25.70	4.67	
12-21-2023	D2600V2	1178	Head	1g	5.63	56.3	57.40	-1.92	
				10g	2.67	26.7	25.70	3.89	
12-26-2023	D2600V2	1178	Head	1g	5.85	58.5	57.40	1.92	
				10g	2.78	27.8	25.70	8.17	
01-09-2024	D1900V2	5d199	Head	1g	3.90	39.0	39.40	-1.02	
				10g	2.13	21.3	20.50	3.90	

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			
12-04-2023	D835V2	4d194	Head	1g	0.97	9.7	9.77	-0.82	7
				10g	0.67	6.7	6.39	4.07	
12-11-2023	D1750V2	1180	Head	1g	3.57	35.7	35.60	0.28	
				10g	1.96	19.6	18.90	3.70	
12-11-2023	D1900V2	5d199	Head	1g	4.09	40.9	39.40	3.81	
				10g	2.18	21.8	20.50	6.34	
12-22-2023	D3500V2	1075	Head	1g	6.33	63.3	65.80	-3.80	8
				10g	2.41	24.1	24.80	-2.82	
12-22-2023	D3700V2	1036	Head	1g	6.98	69.8	65.80	6.08	9
				10g	2.59	25.9	24.80	4.44	
12-22-2023	D3900V2	1069	Head	1g	7.19	71.9	69.10	4.05	
				10g	2.52	25.2	24.00	5.00	
12-26-2023	D3500V2	1075	Head	1g	6.80	68.0	65.80	3.34	
				10g	2.69	26.9	24.80	8.47	
12-26-2023	D3700V2	1036	Head	1g	6.75	67.5	65.80	2.58	
				10g	2.57	25.7	24.80	3.63	
12-26-2023	D3900V2	1069	Head	1g	6.81	68.1	69.10	-1.45	
				10g	2.49	24.9	24.00	3.75	
01-09-2024	D3900V2	1069	Head	1g	6.72	67.2	69.10	-2.75	
				10g	2.48	24.8	24.00	3.33	

SAR 5 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			
12-05-2023	D2600V2	1178	Head	1g	5.64	56.4	57.30	-1.57	
				10g	2.54	25.4	25.70	-1.17	
12-11-2023	D2600V2	1178	Head	1g	5.55	55.5	57.30	-3.14	
				10g	2.51	25.1	25.70	-2.33	
12-13-2023	D2450V2	960	Head	1g	5.09	50.9	51.90	-1.93	10
				10g	2.37	23.7	24.00	-1.25	
12-21-2023	D2600V2	1178	Head	1g	5.48	54.8	57.40	-4.53	
				10g	2.46	24.6	25.70	-4.28	
12-26-2023	D2600V2	1178	Head	1g	5.40	54.0	57.40	-5.92	
				10g	2.42	24.2	25.70	-5.84	
01-02-2024	D2600V2	1178	Head	1g	5.37	53.7	57.40	-6.45	
				10g	2.42	24.2	25.70	-5.84	
01-08-2024	D2450V2	939	Head	1g	4.86	48.6	53.00	-8.30	11
				10g	2.27	22.7	24.70	-8.10	
01-08-2024	D2600V2	1178	Head	1g	5.44	54.4	57.40	-5.23	
				10g	2.47	24.7	25.70	-3.89	

SAR 6 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			
12-04-2023	D1750V2	1125	Head	1g	3.93	39.3	37.40	5.08	
				10g	2.14	21.4	19.70	8.63	
12-04-2023	D1900V2	5d199	Head	1g	4.25	42.5	39.40	7.87	12
				10g	2.23	22.3	20.50	8.78	
12-07-2023	D1750V2	1125	Head	1g	3.53	35.3	37.40	-5.61	
				10g	1.90	19.0	19.70	-3.55	
12-11-2023	D1750V2	1125	Head	1g	3.52	35.2	37.40	-5.88	13
				10g	1.87	18.7	19.70	-5.08	

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			
12-04-2023	D750V2	1122	Head	1g	0.89	8.9	8.55	4.33	14
				10g	0.60	6.0	5.59	6.98	
12-04-2023	D835V2	4d174	Head	1g	1.03	10.3	9.63	6.96	15
				10g	0.68	6.8	6.29	8.43	
12-08-2023	D835V2	4d174	Head	1g	0.97	9.7	9.63	0.42	
				10g	0.64	6.4	6.29	1.27	
12-22-2023	CLA-13	1015	Head	10g	0.04	0.4	0.33	8.11	16

Notes:

Does not considered CLA-13's 1-g data. because NFC evaluates only 10-g SAR data.

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 (Main.1) Measured Results

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)			
					RSI=Pmax, Free, Rcv, Hotspot, Earjack			
					Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GSM (Voice)	CS1	1	128	824.2	32.62	23.43	34.0	24.8
			190	836.6	32.71	23.52		
			251	848.8	32.86	23.67		
GPRS (GMSK)	CS1	1	128	824.2	32.53	23.34	34.0	24.8
			190	836.6	32.72	23.53		
			251	848.8	32.84	23.65		
		2	128	824.2	30.88	24.70	32.0	25.8
			190	836.6	30.90	24.72		
			251	848.8	30.11	23.93		
		3	128	824.2	29.42	25.00	29.5	25.1
			190	836.6	29.46	25.04		
			251	848.8	28.81	24.39		
		4	128	824.2	27.77	24.60	28.5	25.3
			190	836.6	27.61	24.44		
			251	848.8	27.89	24.72		
EGPRS (8PSK)	MCS5	1	128	824.2	26.97	17.78	27.0	17.8
			190	836.6	26.99	17.80		
			251	848.8	26.98	17.79		
		2	128	824.2	25.11	18.93	25.5	19.3
			190	836.6	25.12	18.94		
			251	848.8	25.16	18.98		
		3	128	824.2	23.69	19.27	24.0	19.6
			190	836.6	23.75	19.33		
			251	848.8	23.73	19.31		
		4	128	824.2	22.51	19.34	23.0	19.8
			190	836.6	22.53	19.36		
			251	848.8	22.61	19.44		

Notes:

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

- GMSK (GPRS) mode with 2 time slots for RSI Free, RCV, Hotspot, Earjack 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 $\leq 1/4$ dB higher than GMSK GPRS or the adjusted SAR of the highest reported SAR of GMSK GPRS is ≤ 1.2 W/kg.

GSM1900 (Main.1) Measured Results

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)				Maximum Allowed Average Power (dBm)			
					RSI=Pmax, RCV				RSI=Free, Hotspot, Earjack			
					Measured		Tune-up Limit		Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GSM (Voice)	CS1	1	512	1850.2	28.86	19.67	31.0	21.8	26.37	17.18	28.0	18.8
			661	1880.0	28.99	19.80			26.43	17.24		
			810	1909.8	29.23	20.04			26.34	17.15		
GPRS (GMSK)	CS1	1	512	1850.2	28.75	19.56	31.0	21.8	26.16	16.97	28.0	18.8
			661	1880.0	28.81	19.62			26.15	16.96		
			810	1909.8	29.32	20.13			26.69	17.50		
		2	512	1850.2	26.71	20.53	27.0	20.8	23.47	17.29	24.0	17.8
			661	1880.0	26.11	19.93			23.52	17.34		
			810	1909.8	26.45	20.27			23.46	17.28		
		3	512	1850.2	25.55	21.13	26.0	21.6	20.72	16.30	21.5	17.1
			661	1880.0	25.62	21.20			19.52	15.10		
			810	1909.8	25.83	21.41			20.70	16.28		
		4	512	1850.2	24.10	20.93	25.5	22.3	19.22	16.05	20.5	17.3
			661	1880.0	24.15	20.98			19.35	16.18		
			810	1909.8	24.33	21.16			19.18	16.01		
EGPRS (8PSK)	MCS5	1	512	1850.2	24.21	15.02	26.0	16.8	24.61	15.42	25.0	15.8
			661	1880.0	24.22	15.03			24.57	15.38		
			810	1909.8	24.81	15.62			24.62	15.43		
		2	512	1850.2	22.89	16.71	23.0	16.8	22.58	16.40	23.0	16.8
			661	1880.0	22.59	16.41			22.81	16.63		
			810	1909.8	22.91	16.73			22.82	16.64		
		3	512	1850.2	20.90	16.48	21.0	16.6	19.82	15.40	20.0	15.6
			661	1880.0	20.37	15.95			19.86	15.44		
			810	1909.8	20.92	16.50			19.98	15.56		
		4	512	1850.2	20.72	17.55	21.5	18.3	19.94	16.77	20.0	16.8
			661	1880.0	20.38	17.21			19.88	16.71		
			810	1909.8	20.73	17.56			19.91	16.74		

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 Rcv GMSK (GPRS) mode with 1 time slots for RSI Free, Hotspot, Earjack 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 $\leq 1/4\text{dB}$ higher than GMSK GPRS or the adjusted SAR of the highest reported SAR of GMSK GPRS is $\leq 1.2\text{W/kg}$.

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
	β_c/β_d	8/15

HSDPA Setup Procedures used to establish the test signals

The following 4 Sub-tests were completed according to Release 5 procedures in 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			
	β_c	2/15	11/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	β_c/β_d	2/15	11/15	15/8	15/4
	β_{hs}	4/15	24/15	30/15	30/15
HSDPA Specific Settings	MPR (dB)	0	0	0.5	0.5
	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			
	$A_{hs}=\beta_{hs}/\beta_c$	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
	β_c	11/15	6/15	15/15	2/15	15/15
	β_d	15/15	15/15	9/15	15/15	0
	β_{ec}	209/225	12/15	30/15	2/15	5/15
	β_c/β_d	11/15	6/15	15/9	2/15	-
	β_{hs}	22/15	12/15	30/15	4/15	5/15
	β_{ed}	1309/225	94/75	47/15	56/75	47/15
HSDPA Specific Settings	CM (dB)	1	3	2	3	1
	MPR (dB)	0	2	1	2	0
	DACK	8				0
	DNAK	8				0
	DCQI	8				0
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
HSUPA Specific Settings	CQI Repetition Factor (Table 5.2B.4)	2				
	A _{hs} = β_{hs}/β_c	30/15				
	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

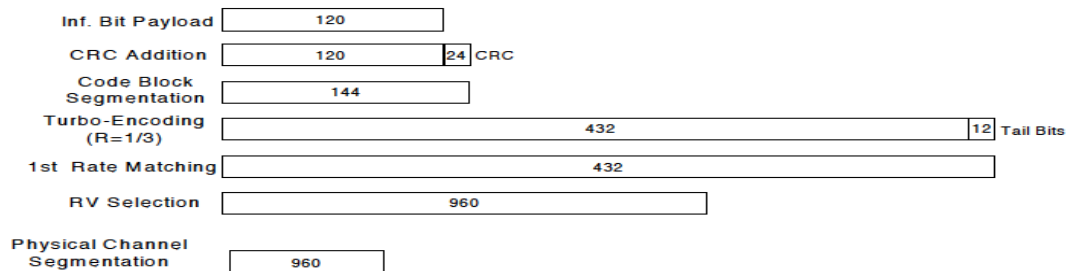
Parameter During Connection setup	Unit	Value
P-CPICH_Ec/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

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	Proces ses	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			
	β_c	2/15	11/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	β_d (SF)	64			
	β_c/β_d	2/15	11/15	15/8	15/4
	β_{hs}	4/15	24/15	30/15	30/15
HSDPA Specific Settings	MPR (dB)	0	0	0.5	0.5
	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack Repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	A _{hs} = β_{hs}/β_c	30/15			

HSPA+

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

W-CDMA Band II Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)			Maximum Allowed Average Power (dBm)		
				RSI=Pmax, Rcv			RSI=Free, Hotspot, Earjack		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	9262	1852.4	22.84	N/A	24.5	19.48	N/A	20.0
		9400	1880.0	22.82			19.11		
		9538	1907.6	23.13			19.32		
HSDPA	Subtest 1	9262	1852.4	22.30	0	23.5	18.46	0	20.0
		9400	1880.0	22.34			18.10		
		9538	1907.6	22.69			18.32		
	Subtest 2	9262	1852.4	21.27	0	23.5	18.49	0	20.0
		9400	1880.0	21.27			18.08		
		9538	1907.6	21.52			18.33		
	Subtest 3	9262	1852.4	20.51	0.5	23.0	18.46	0.5	19.5
		9400	1880.0	20.53			18.08		
		9538	1907.6	20.55			18.34		
	Subtest 4	9262	1852.4	20.51	0.5	23.0	18.48	0.5	19.5
		9400	1880.0	20.57			18.10		
		9538	1907.6	20.53			18.31		
HSUPA	Subtest 1	9262	1852.4	21.10	0	23.5	16.40	0	18.0
		9400	1880.0	21.12			15.99		
		9538	1907.6	21.38			16.16		
	Subtest 2	9262	1852.4	19.09	2	21.5	16.37	1	17.0
		9400	1880.0	19.12			15.97		
		9538	1907.6	19.42			16.15		
	Subtest 3	9262	1852.4	20.11	1	22.5	16.37	1	17.0
		9400	1880.0	20.11			16.00		
		9538	1907.6	20.34			16.17		
	Subtest 4	9262	1852.4	19.09	2	21.5	16.38	1	17.0
		9400	1880.0	19.10			15.97		
		9538	1907.6	19.42			16.16		
	Subtest 5	9262	1852.4	22.45	0	23.5	17.61	0	18.0
		9400	1880.0	22.37			17.20		
		9538	1907.6	22.69			17.38		
DC-HSDPA	Subtest 1	9262	1852.4	22.23	0	23.5	18.24	0	20.0
		9400	1880.0	22.47			18.10		
		9538	1907.6	22.71			18.25		
	Subtest 2	9262	1852.4	21.12	0	23.5	18.34	0	20.0
		9400	1880.0	21.34			18.13		
		9538	1907.6	21.55			18.22		
	Subtest 3	9262	1852.4	20.53	0.5	23.0	18.36	0.5	19.5
		9400	1880.0	20.51			18.13		
		9538	1907.6	20.51			18.24		
	Subtest 4	9262	1852.4	20.57	0.5	23.0	18.37	0.5	19.5
		9400	1880.0	20.56			18.14		
		9538	1907.6	20.51			18.24		

W-CDMA Band IV Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)			Maximum Allowed Average Power (dBm)		
				RSI=Pmax, Rcv			RSI=Free, Hotspot, Earjack		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	1312	1712.4	22.96	N/A	24.0	18.95	N/A	20.0
		1413	1732.6	22.78			18.70		
		1513	1752.6	23.02			19.03		
HSDPA	Subtest 1	1312	1712.4	22.47	0	23.5	18.11	0	20.0
		1413	1732.6	22.30			18.05		
		1513	1752.6	22.62			18.02		
	Subtest 2	1312	1712.4	21.31	0	23.5	18.03	0	20.0
		1413	1732.6	21.21			18.07		
		1513	1752.6	21.50			18.00		
	Subtest 3	1312	1712.4	20.51	0.5	23.0	17.92	0.5	19.5
		1413	1732.6	20.55			17.75		
		1513	1752.6	20.59			18.01		
	Subtest 4	1312	1712.4	20.61	0.5	23.0	17.94	0.5	19.5
		1413	1732.6	20.55			17.71		
		1513	1752.6	20.53			18.00		
HSUPA	Subtest 1	1312	1712.4	21.23	0	23.5	15.91	0	18.0
		1413	1732.6	21.11			15.65		
		1513	1752.6	21.39			15.94		
	Subtest 2	1312	1712.4	19.25	2	21.5	15.88	0	18.0
		1413	1732.6	19.11			15.65		
		1513	1752.6	19.42			15.94		
	Subtest 3	1312	1712.4	20.43	1	22.5	15.88	0	18.0
		1413	1732.6	20.18			15.63		
		1513	1752.6	20.45			15.92		
	Subtest 4	1312	1712.4	19.53	2	21.5	16.01	0	18.0
		1413	1732.6	19.26			16.03		
		1513	1752.6	19.51			16.10		
	Subtest 5	1312	1712.4	22.60	0	23.5	16.51	0	18.0
		1413	1732.6	22.38			16.44		
		1513	1752.6	22.64			16.48		
DC-HSDPA	Subtest 1	1312	1712.4	22.34	0	23.5	18.04	0	20.0
		1413	1732.6	22.54			18.06		
		1513	1752.6	22.54			18.12		
	Subtest 2	1312	1712.4	21.29	0	23.5	18.01	0	20.0
		1413	1732.6	21.45			18.11		
		1513	1752.6	21.43			18.27		
	Subtest 3	1312	1712.4	20.61	0.5	23.0	17.99	0.5	19.5
		1413	1732.6	20.53			17.96		
		1513	1752.6	20.57			17.91		
	Subtest 4	1312	1712.4	20.51	0.5	23.0	17.97	0.5	19.5
		1413	1732.6	20.53			17.72		
		1513	1752.6	20.55			17.89		

W-CDMA Band V Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)		
				RSI=Free, Rcv, Hotspot, Earjack		
				Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	4132	826.4	24.64	N/A	25.0
		4183	836.6	24.45		
		4233	846.6	24.54		
HSDPA	Subtest 1	4132	826.4	22.98	0	23.0
		4183	836.6	23.00		
		4233	846.6	22.99		
	Subtest 2	4132	826.4	22.09	0	23.0
		4183	836.6	21.91		
		4233	846.6	21.96		
	Subtest 3	4132	826.4	21.04	0.5	22.5
		4183	836.6	20.87		
		4233	846.6	20.95		
	Subtest 4	4132	826.4	21.05	0.5	22.5
		4183	836.6	20.86		
		4233	846.6	20.98		
HSUPA	Subtest 1	4132	826.4	22.06	0	24.0
		4183	836.6	21.86		
		4233	846.6	21.93		
	Subtest 2	4132	826.4	20.12	2	22.0
		4183	836.6	19.91		
		4233	846.6	20.00		
	Subtest 3	4132	826.4	21.06	1	23.0
		4183	836.6	20.83		
		4233	846.6	20.93		
	Subtest 4	4132	826.4	20.11	2	22.0
		4183	836.6	19.90		
		4233	846.6	19.98		
	Subtest 5	4132	826.4	23.25	0	24.0
		4183	836.6	23.04		
		4233	846.6	23.08		
DC-HSDPA	Subtest 1	4132	826.4	23.06	0	23.5
		4183	836.6	23.20		
		4233	846.6	23.04		
	Subtest 2	4132	826.4	22.09	0	23.5
		4183	836.6	22.10		
		4233	846.6	21.99		
	Subtest 3	4132	826.4	20.97	0.5	23.0
		4183	836.6	21.09		
		4233	846.6	20.95		
	Subtest 4	4132	826.4	21.10	0.5	23.0
		4183	836.6	21.10		
		4233	846.6	20.99		

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:

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

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 5 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				RSI=Pmax, Free, Rcv, Hotspot, Earjack				
				Measured Pwr (dBm)			MPR	Tune-up Limit
					20525	836.5 MHz		
10 MHz	QPSK	1	0		23.54		0.0	25.0
		1	25		23.48		0.0	25.0
		1	49		23.49		0.0	25.0
		25	0		22.58		1.0	24.0
		25	12		22.55		1.0	24.0
		25	25		22.51		1.0	24.0
	16QAM	50	0		22.56		1.0	24.0
		1	0		22.70		1.0	24.0
		1	25		22.64		1.0	24.0
		1	49		22.53		1.0	24.0
		25	0		21.63		2.0	23.0
		25	12		21.60		2.0	23.0
	64QAM	25	25		21.56		2.0	23.0
		50	0		21.54		2.0	23.0
		1	0		21.29		2.0	23.0
		1	25		21.15		2.0	23.0
		1	49		21.24		2.0	23.0
		25	0		20.63		3.0	22.0
	256QAM	25	12		20.61		3.0	22.0
		25	25		20.57		3.0	22.0
		50	0		20.54		3.0	22.0
		1	0		18.62		5.0	20.0
		1	25		18.72		5.0	20.0
		1	49		18.45		5.0	20.0
5 MHz	QPSK	25	0		18.57		5.0	20.0
		25	12		18.55		5.0	20.0
		25	25		18.51		5.0	20.0
		50	0		18.49		5.0	20.0
	16QAM							
	64QAM							
	256QAM							

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	23.30	23.07	23.11	0.0	25.0
		1	8	23.00	23.01	22.86	0.0	25.0
		1	14	23.32	23.02	23.14	0.0	25.0
		8	0	22.24	22.11	22.15	1.0	24.0
		8	4	22.20	22.15	22.11	1.0	24.0
		8	7	22.20	22.13	22.11	1.0	24.0
	16QAM	15	0	22.23	22.15	22.11	1.0	24.0
		1	0	22.23	22.53	22.19	1.0	24.0
		1	8	22.17	22.49	22.16	1.0	24.0
		1	14	22.09	22.57	22.12	1.0	24.0
		8	0	21.32	21.23	21.20	2.0	23.0
		8	4	21.34	21.22	21.20	2.0	23.0
	64QAM	8	7	21.29	21.18	21.18	2.0	23.0
		15	0	21.16	21.16	21.11	2.0	23.0
		1	0	21.47	21.41	20.98	2.0	23.0
		1	8	21.36	21.18	20.91	2.0	23.0
		1	14	21.49	21.46	20.90	2.0	23.0
		8	0	20.30	20.31	20.11	3.0	22.0
	256QAM	8	4	20.24	20.25	20.08	3.0	22.0
		8	7	20.27	20.29	20.11	3.0	22.0
		15	0	20.10	20.13	20.13	3.0	22.0
		1	0	18.48	18.49	17.91	5.0	20.0
		1	8	18.38	18.31	17.81	5.0	20.0
		1	14	18.38	18.41	17.86	5.0	20.0
1.4 MHz	QPSK	8	0	18.19	18.20	18.14	5.0	20.0
		8	4	18.16	18.19	18.11	5.0	20.0
		8	7	18.13	18.17	18.10	5.0	20.0
		15	0	18.12	18.14	18.08	5.0	20.0
		1	0	23.14	23.16	23.10	0.0	25.0
		1	3	23.11	22.85	23.05	0.0	25.0
	16QAM	1	5	23.11	23.13	23.10	0.0	25.0
		3	0	23.22	23.24	23.19	0.0	25.0
		3	1	23.20	23.21	23.20	0.0	25.0
		3	3	23.12	23.08	23.11	0.0	25.0
		6	0	22.11	22.18	22.12	1.0	24.0
		1	0	22.19	22.33	22.10	1.0	24.0
	64QAM	1	3	22.20	22.49	22.09	1.0	24.0
		1	5	22.24	22.37	22.19	1.0	24.0
		3	0	22.33	22.29	22.25	1.0	24.0
		3	1	22.22	22.32	22.12	1.0	24.0
		3	3	22.30	22.29	22.22	1.0	24.0
		6	0	21.19	21.19	21.15	2.0	23.0
	256QAM	1	0	21.28	21.07	21.31	2.0	23.0
		1	3	20.95	21.33	21.03	2.0	23.0
		1	5	21.17	21.18	21.24	2.0	23.0
		3	0	21.35	21.34	21.38	2.0	23.0
		3	1	21.27	21.29	21.34	2.0	23.0
		3	3	21.28	21.26	21.36	2.0	23.0
	16QAM	6	0	20.06	20.20	20.09	3.0	22.0
		1	0	18.04	18.26	18.16	5.0	20.0
		1	3	17.87	18.41	18.21	5.0	20.0
		1	5	18.02	18.28	18.15	5.0	20.0
		3	0	18.20	18.28	18.09	5.0	20.0
		3	1	18.16	18.27	18.06	5.0	20.0
	256QAM	3	3	18.12	18.19	18.03	5.0	20.0
		6	0	18.03	18.05	18.08	5.0	20.0

LTE Band 12 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				RSI=Pmax, Free, Rcv, Hotspot, Earjack				
				Measured Pwr (dBm)			MPR	Tune-up Limit
					23095			
					707.5 MHz			
10 MHz	QPSK	1	0		22.96		0.0	24.0
		1	25		22.88		0.0	24.0
		1	49		22.85		0.0	24.0
		25	0		22.03		1.0	23.0
		25	12		21.95		1.0	23.0
		25	25		21.89		1.0	23.0
	16QAM	50	0		21.96		1.0	23.0
		1	0		22.12		1.0	23.0
		1	25		22.13		1.0	23.0
		1	49		21.93		1.0	23.0
		25	0		20.96		2.0	22.0
		25	12		20.93		2.0	22.0
	64QAM	25	25		20.88		2.0	22.0
		50	0		20.94		2.0	22.0
		1	0		20.86		2.0	22.0
		1	25		20.83		2.0	22.0
		1	49		20.68		2.0	22.0
		25	0		20.02		3.0	21.0
	256QAM	25	12		19.99		3.0	21.0
		25	25		19.96		3.0	21.0
		50	0		19.95		3.0	21.0
		1	0		18.20		5.0	19.0
		1	25		18.13		5.0	19.0
		1	49		18.10		5.0	19.0
5 MHz	QPSK	25	0		18.02		5.0	19.0
		25	12		17.98		5.0	19.0
		25	25		17.94		5.0	19.0
		50	0		17.94		5.0	19.0
	16QAM							
	64QAM							
	256QAM							
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	22.87	22.90	23.00	0.0	24.0
		1	12	22.85	22.92	23.02	0.0	24.0
		1	24	22.84	22.91	22.99	0.0	24.0
		12	0	21.91	21.96	22.04	1.0	23.0
		12	7	21.90	21.95	22.01	1.0	23.0
		12	13	21.87	21.92	22.00	1.0	23.0
	16QAM	25	0	21.90	21.94	22.03	1.0	23.0
		1	0	22.14	22.22	22.42	1.0	23.0
		1	12	22.10	22.18	22.32	1.0	23.0
		1	24	22.14	22.23	22.28	1.0	23.0
		12	0	20.91	20.95	21.07	2.0	22.0
		12	7	20.88	20.92	21.01	2.0	22.0
	64QAM	12	13	20.87	20.89	21.01	2.0	22.0
		25	0	20.93	20.93	21.01	2.0	22.0
		1	0	20.89	20.93	20.90	2.0	22.0
		1	12	20.81	20.86	20.79	2.0	22.0
		1	24	20.88	20.95	20.88	2.0	22.0
		12	0	19.87	19.95	20.11	3.0	21.0
	256QAM	12	7	19.84	19.92	20.07	3.0	21.0
		12	13	19.84	19.92	20.06	3.0	21.0
		25	0	19.85	19.93	20.06	3.0	21.0
		1	0	18.13	18.20	18.09	5.0	19.0
		1	12	17.97	18.07	17.99	5.0	19.0
		1	24	18.08	18.17	17.99	5.0	19.0
		12	0	17.82	17.87	18.04	5.0	19.0
		12	7	17.80	17.86	18.02	5.0	19.0
		12	13	17.79	17.85	17.99	5.0	19.0
		25	0	17.87	17.94	18.04	5.0	19.0

LTE Band 12 Measured Results

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	22.97	22.92	23.07	0.0	24.0
		1	8	22.92	22.95	23.04	0.0	24.0
		1	14	22.90	22.95	23.03	0.0	24.0
		8	0	23.01	23.03	23.13	0.5	23.5
		8	4	23.01	23.03	23.11	0.5	23.5
		8	7	23.01	23.03	23.11	0.5	23.5
	16QAM	15	0	21.96	22.00	22.10	1.0	23.0
		1	0	22.14	22.16	22.28	1.0	23.0
		1	8	22.13	22.08	22.30	1.0	23.0
		1	14	22.12	22.05	22.29	1.0	23.0
		8	0	22.03	22.05	22.17	1.5	22.5
		8	4	22.04	22.04	22.18	1.5	22.5
	64QAM	8	7	22.03	22.04	22.16	1.5	22.5
		15	0	20.98	21.04	21.11	2.0	22.0
		1	0	20.98	21.06	20.96	2.0	22.0
		1	8	20.92	20.98	20.89	2.0	22.0
		1	14	20.89	20.96	20.87	2.0	22.0
		8	0	21.01	20.94	21.19	2.5	21.5
	256QAM	8	4	21.00	20.93	21.18	2.5	21.5
		8	7	20.99	20.93	21.18	2.5	21.5
		15	0	19.98	20.01	20.15	3.0	21.0
		1	0	18.16	18.10	18.36	5.0	19.0
		1	8	18.15	18.05	18.35	5.0	19.0
		1	14	18.11	18.02	18.34	5.0	19.0
1.4 MHz	QPSK	8	0	18.00	18.04	18.14	5.0	19.0
		8	4	17.97	18.02	18.12	5.0	19.0
		8	7	17.98	18.02	18.12	5.0	19.0
		15	0	18.01	17.96	18.17	5.0	19.0
	16QAM	1	0	22.88	22.88	22.97	0.0	24.0
		1	3	22.75	22.94	23.03	0.0	24.0
		1	5	22.84	22.93	23.02	0.0	24.0
		3	0	22.85	23.04	23.13	0.0	24.0
		3	1	22.87	22.98	23.08	0.0	24.0
		3	3	22.86	22.98	23.08	0.0	24.0
	64QAM	6	0	21.77	22.97	23.05	0.5	23.5
		1	0	21.84	22.22	22.35	1.0	23.0
		1	3	22.09	22.16	22.27	1.0	23.0
		1	5	21.88	22.15	22.28	1.0	23.0
		3	0	21.98	22.14	22.20	1.0	23.0
		3	1	21.88	22.13	22.20	1.0	23.0
	256QAM	3	3	21.87	22.13	22.20	1.0	23.0
		6	0	20.87	22.01	22.14	1.5	22.5
		1	0	21.83	20.96	21.17	2.0	22.0
		1	3	20.95	20.86	21.08	2.0	22.0
		1	5	20.95	20.89	21.10	2.0	22.0
		3	0	20.96	20.98	21.16	2.0	22.0
	16QAM	3	1	20.94	20.97	21.14	2.0	22.0
		3	3	20.93	20.97	21.14	2.0	22.0
		6	0	20.80	20.97	21.06	2.5	21.5
	256QAM	1	0	18.16	18.07	18.23	5.0	19.0
		1	3	18.13	18.04	18.22	5.0	19.0
		1	5	18.11	18.03	18.23	5.0	19.0
	64QAM	3	0	17.94	18.02	18.10	5.0	19.0
		3	1	17.94	17.98	18.09	5.0	19.0
		3	3	17.94	17.97	18.09	5.0	19.0
		6	0	17.85	17.89	17.99	5.0	19.0

LTE Band 13 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				RSI=Pmax, Free, Rcv, Hotspot, Earjack				
				Measured Pwr (dBm)			MPR	Tune-up Limit
					23230	782 MHz		
10 MHz	QPSK	1	0		23.49		0.0	24.0
		1	25		23.25		0.0	24.0
		1	49		23.36		0.0	24.0
		25	0		22.45		1.0	23.0
		25	12		22.40		1.0	23.0
		25	25		22.40		1.0	23.0
	16QAM	50	0		22.44		1.0	23.0
		1	0		22.49		1.0	23.0
		1	25		22.45		1.0	23.0
		1	49		22.50		1.0	23.0
		25	0		21.39		2.0	22.0
		25	12		21.36		2.0	22.0
	64QAM	25	25		21.39		2.0	22.0
		50	0		21.34		2.0	22.0
		1	0		21.14		2.0	22.0
		1	25		21.04		2.0	22.0
		1	49		21.02		2.0	22.0
		25	0		20.37		3.0	21.0
5 MHz	QPSK	25	12		20.35		3.0	21.0
		25	25		20.39		3.0	21.0
		50	0		20.35		3.0	21.0
	16QAM	1	0		18.46		5.0	19.0
		1	25		18.46		5.0	19.0
		1	49		18.45		5.0	19.0
	64QAM	25	0		18.36		5.0	19.0
		25	12		18.34		5.0	19.0
		25	25		18.36		5.0	19.0
	256QAM	50	0		18.33		5.0	19.0
		1	0		23.58		0.0	24.0
		1	12		23.64		0.0	24.0
		1	24		23.51		0.0	24.0
		12	0		22.58		1.0	23.0
		12	7		22.57		1.0	23.0
	16QAM	12	13		22.55		1.0	23.0
		25	0		22.52		1.0	23.0
		1	0		22.56		1.0	23.0
		1	12		22.53		1.0	23.0
		1	24		22.51		1.0	23.0
		12	0		21.40		2.0	22.0
	64QAM	12	7		21.40		2.0	22.0
		12	13		21.37		2.0	22.0
		25	0		21.40		2.0	22.0
		1	0		21.50		2.0	22.0
		1	12		21.41		2.0	22.0
		1	24		21.47		2.0	22.0
	256QAM	12	0		20.21		3.0	21.0
		12	7		20.19		3.0	21.0
		12	13		20.23		3.0	21.0
		25	0		20.23		3.0	21.0
		1	0		18.49		5.0	19.0
		1	12		18.53		5.0	19.0
	256QAM	1	24		18.50		5.0	19.0
		12	0		18.23		5.0	19.0
		12	7		18.22		5.0	19.0
		12	13		18.24		5.0	19.0
		25	0		18.17		5.0	19.0

LTE Band 25 (Main.1) Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)					Maximum Allowed Average Power (dBm)				
				RSI=Pmax, Rcv					RSI=Free, Hotspot, Earjack				
				Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				26140	26365	26590			26140	26365	26590		
				1860 MHz	1882.5 MHz	1905 MHz			1860 MHz	1882.5 MHz	1905 MHz		
20 MHz	QPSK	1	0	23.11	23.06	23.06	0.0	24.0	17.52	17.71	17.94	0.0	19.0
		1	49	23.10	23.09	23.12	0.0	24.0	17.68	17.51	17.95	0.0	19.0
		1	99	23.11	23.03	22.20	0.0	24.0	17.50	17.68	17.87	0.0	19.0
		50	0	22.17	22.11	22.18	1.0	23.0	17.59	17.78	17.98	0.0	19.0
		50	24	22.15	22.08	22.12	1.0	23.0	17.58	17.77	17.96	0.0	19.0
		50	50	22.17	22.07	22.11	1.0	23.0	17.57	17.75	17.94	0.0	19.0
	16QAM	100	0	22.17	22.08	22.10	1.0	23.0	17.58	17.76	17.98	0.0	19.0
		1	0	22.28	22.15	22.29	1.0	23.0	17.94	18.13	18.29	0.0	19.0
		1	49	22.25	22.17	22.29	1.0	23.0	17.88	17.97	18.09	0.0	19.0
		1	99	22.21	22.12	21.97	1.0	23.0	17.86	18.10	18.22	0.0	19.0
		50	0	21.17	21.04	21.05	2.0	22.0	17.60	17.81	18.03	0.0	19.0
		50	24	21.14	21.01	21.03	2.0	22.0	17.59	17.80	18.01	0.0	19.0
	64QAM	50	50	21.13	21.01	21.01	2.0	22.0	17.56	17.78	17.99	0.0	19.0
		100	0	21.15	21.01	21.03	2.0	22.0	17.61	17.81	18.02	0.0	19.0
		1	0	21.08	21.03	21.30	2.0	22.0	17.76	17.82	18.12	0.0	19.0
		1	49	21.11	21.15	21.18	2.0	22.0	17.77	17.99	18.11	0.0	19.0
		1	99	21.02	21.05	21.26	2.0	22.0	17.72	17.82	18.02	0.0	19.0
		50	0	20.05	20.13	20.23	3.0	21.0	17.66	17.84	18.06	0.0	19.0
	256QAM	50	24	20.04	20.12	20.19	3.0	21.0	17.67	17.84	18.06	0.0	19.0
		50	50	20.03	20.10	20.18	3.0	21.0	17.64	17.82	18.02	0.0	19.0
		100	0	20.01	20.06	20.15	3.0	21.0	17.62	17.78	17.99	0.0	19.0
		1	0	18.11	18.24	18.22	5.0	19.0	17.17	17.66	17.61	0.0	19.0
		1	49	18.14	18.18	18.29	5.0	19.0	17.35	17.78	17.79	0.0	19.0
		1	99	18.01	18.17	18.17	5.0	19.0	17.16	17.64	17.54	0.0	19.0
15 MHz	QPSK	50	0	17.97	17.99	18.13	5.0	19.0	17.22	17.39	17.62	0.0	19.0
		50	24	17.95	17.98	18.11	5.0	19.0	17.22	17.38	17.61	0.0	19.0
		50	50	17.94	17.98	18.09	5.0	19.0	17.21	17.36	17.61	0.0	19.0
		100	0	17.96	17.96	18.14	5.0	19.0	17.23	17.35	17.62	0.0	19.0
	16QAM	1	0	23.41	23.24	23.13	0.0	24.0	18.29	18.14	18.17	0.0	19.0
		1	37	23.35	23.14	23.19	0.0	24.0	18.34	18.06	18.17	0.0	19.0
		1	74	23.36	23.27	22.68	0.0	24.0	18.20	18.11	18.09	0.0	19.0
		36	0	22.53	22.37	22.33	1.0	23.0	18.42	18.26	18.23	0.0	19.0
		36	20	22.48	22.34	22.30	1.0	23.0	18.42	18.24	18.21	0.0	19.0
		36	39	22.48	22.35	22.30	1.0	23.0	18.41	18.25	18.20	0.0	19.0
	64QAM	75	0	22.50	22.35	22.32	1.0	23.0	18.40	18.27	18.23	0.0	19.0
		1	0	22.42	22.38	22.24	1.0	23.0	18.51	18.49	18.22	0.0	19.0
		1	37	22.11	22.23	22.29	1.0	23.0	18.54	18.39	18.40	0.0	19.0
		1	74	22.36	22.33	22.20	1.0	23.0	18.45	18.43	18.18	0.0	19.0
		36	0	21.40	21.24	21.27	2.0	22.0	18.40	18.22	18.24	0.0	19.0
		36	20	21.37	21.22	21.25	2.0	22.0	18.36	18.21	18.23	0.0	19.0
	256QAM	36	39	21.35	21.22	21.22	2.0	22.0	18.38	18.20	18.21	0.0	19.0
		75	0	21.36	21.28	21.22	2.0	22.0	18.39	18.28	18.23	0.0	19.0
		1	0	21.50	21.24	21.13	2.0	22.0	18.54	18.63	18.42	0.0	19.0
		1	37	21.75	21.31	21.08	2.0	22.0	18.76	18.53	18.38	0.0	19.0
		1	74	21.51	21.20	21.05	2.0	22.0	18.56	18.56	18.32	0.0	19.0
		36	0	20.31	20.21	20.23	3.0	21.0	18.59	18.51	18.53	0.0	19.0
		36	20	20.29	20.20	20.22	3.0	21.0	18.58	18.47	18.51	0.0	19.0
		36	39	20.26	20.18	20.21	3.0	21.0	18.55	18.48	18.50	0.0	19.0
		75	0	20.34	20.20	20.19	3.0	21.0	18.59	18.49	18.44	0.0	19.0
		1	0	18.38	18.28	18.11	5.0	19.0	18.24	18.25	18.09	0.0	19.0
		1	37	18.36	18.42	18.10	5.0	19.0	18.34	18.44	18.21	0.0	19.0
		1	74	18.31	18.22	18.00	5.0	19.0	18.18	18.24	17.99	0.0	19.0
		36	0	18.29	18.15	18.10	5.0	19.0	18.21	18.10	18.05	0.0	19.0
		36	20	18.27	18.11	18.08	5.0	19.0	18.17	18.09	18.04	0.0	19.0
		36	39	18.25	18.10	18.05	5.0	19.0	18.17	18.08	18.00	0.0	19.0
		75	0	18.27	18.13	18.09	5.0	19.0	18.21	18.09	18.03	0.0	19.0

LTE Band 25 (Main.1) Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				26090	26365	26640			26090	26365	26640		
				1855 MHz	1882.5 MHz	1910 MHz			1855 MHz	1882.5 MHz	1910 MHz		
10 MHz	QPSK	1	0	23.39	23.25	23.08	0.0	24.0	18.42	18.11	18.12	0.0	19.0
		1	25	23.49	23.27	23.15	0.0	24.0	18.44	18.22	18.26	0.0	19.0
		1	49	23.42	23.23	23.15	0.0	24.0	18.36	18.11	18.10	0.0	19.0
		25	0	22.41	22.22	22.17	1.0	23.0	18.41	18.21	18.13	0.0	19.0
		25	12	22.39	22.22	22.14	1.0	23.0	18.40	18.21	18.13	0.0	19.0
		25	25	22.38	22.20	22.12	1.0	23.0	18.37	18.19	18.10	0.0	19.0
	16QAM	50	0	22.40	22.25	22.16	1.0	23.0	18.43	18.20	18.16	0.0	19.0
		1	0	22.44	22.46	22.38	1.0	23.0	18.52	18.27	18.16	0.0	19.0
		1	25	22.40	22.42	22.32	1.0	23.0	18.48	18.31	18.14	0.0	19.0
		1	49	22.37	22.45	22.23	1.0	23.0	18.53	18.16	18.03	0.0	19.0
		25	0	21.29	21.15	21.11	2.0	22.0	18.40	18.22	18.12	0.0	19.0
		25	12	21.28	21.14	21.09	2.0	22.0	18.41	18.21	18.10	0.0	19.0
	64QAM	25	25	21.28	21.13	21.03	2.0	22.0	18.38	18.18	18.09	0.0	19.0
		50	0	21.37	21.17	21.08	2.0	22.0	18.41	18.22	18.18	0.0	19.0
		1	0	21.37	21.28	20.93	2.0	22.0	18.35	18.53	18.37	0.0	19.0
		1	25	21.19	21.29	21.05	2.0	22.0	18.35	18.49	18.41	0.0	19.0
		1	49	21.29	21.33	20.96	2.0	22.0	18.27	18.53	18.35	0.0	19.0
		25	0	20.39	20.15	20.15	3.0	21.0	18.67	18.45	18.41	0.0	19.0
	256QAM	25	12	20.39	20.15	20.14	3.0	21.0	18.65	18.45	18.40	0.0	19.0
		25	25	20.39	20.15	20.11	3.0	21.0	18.65	18.44	18.38	0.0	19.0
		50	0	20.37	20.18	20.10	3.0	21.0	18.63	18.44	18.39	0.0	19.0
		1	0	18.37	18.33	18.15	5.0	19.0	18.26	18.22	18.03	0.0	19.0
		1	25	18.41	18.30	18.00	5.0	19.0	18.14	18.20	18.06	0.0	19.0
		1	49	18.33	18.26	18.04	5.0	19.0	18.18	18.23	17.90	0.0	19.0
		25	0	18.39	18.15	18.06	5.0	19.0	18.26	18.10	18.00	0.0	19.0
		25	12	18.38	18.14	18.04	5.0	19.0	18.25	18.09	17.98	0.0	19.0
5 MHz	QPSK	25	25	18.36	18.13	18.01	5.0	19.0	18.24	18.07	17.95	0.0	19.0
		50	0	18.31	18.10	18.02	5.0	19.0	18.23	18.06	17.98	0.0	19.0
	16QAM	1	0	23.36	23.10	22.46	0.0	24.0	18.38	18.07	17.98	0.0	19.0
		1	12	23.48	23.12	22.25	0.0	24.0	18.50	18.23	18.15	0.0	19.0
		1	24	23.42	23.18	21.92	0.0	24.0	18.40	18.11	18.01	0.0	19.0
		12	0	22.38	22.21	21.81	1.0	23.0	18.36	18.18	18.07	0.0	19.0
	64QAM	12	7	22.35	22.17	21.78	1.0	23.0	18.36	18.17	18.06	0.0	19.0
		12	13	22.37	22.18	21.70	1.0	23.0	18.36	18.17	18.07	0.0	19.0
		25	0	22.36	22.16	21.76	1.0	23.0	18.38	18.15	18.06	0.0	19.0
	256QAM	1	0	22.50	22.25	21.95	1.0	23.0	18.49	18.39	18.14	0.0	19.0
		1	12	22.57	21.99	21.84	1.0	23.0	18.52	18.14	18.24	0.0	19.0
		1	24	22.45	22.18	21.54	1.0	23.0	18.45	18.31	18.15	0.0	19.0
	16QAM	12	0	21.32	21.08	21.04	2.0	22.0	18.35	18.16	18.05	0.0	19.0
		12	7	21.29	21.06	21.01	2.0	22.0	18.36	18.16	18.04	0.0	19.0
		12	13	21.29	21.07	21.02	2.0	22.0	18.36	18.16	18.03	0.0	19.0
	64QAM	25	0	21.28	21.07	20.98	2.0	22.0	18.37	18.14	18.05	0.0	19.0
		1	0	21.54	21.16	21.12	2.0	22.0	18.65	18.68	18.10	0.0	19.0
		1	12	21.63	21.46	21.17	2.0	22.0	18.75	18.77	18.37	0.0	19.0
		1	24	21.50	21.24	21.13	2.0	22.0	18.70	18.62	18.12	0.0	19.0
	256QAM	12	0	20.35	20.17	20.01	3.0	21.0	18.60	18.37	18.32	0.0	19.0
		12	7	20.32	20.15	19.98	3.0	21.0	18.58	18.33	18.28	0.0	19.0
		12	13	20.33	20.15	19.98	3.0	21.0	18.60	18.34	18.27	0.0	19.0
		25	0	20.40	20.20	19.99	3.0	21.0	18.58	18.46	18.27	0.0	19.0
		1	0	18.59	18.19	18.00	5.0	19.0	18.12	18.39	17.87	0.0	19.0
		1	12	18.48	18.24	18.14	5.0	19.0	18.39	18.36	17.87	0.0	19.0
		1	24	18.56	18.20	17.93	5.0	19.0	18.16	18.37	17.84	0.0	19.0
	16QAM	12	0	18.35	18.11	17.97	5.0	19.0	18.20	18.01	17.85	0.0	19.0
		12	7	18.31	18.09	17.95	5.0	19.0	18.20	17.98	17.82	0.0	19.0
		12	13	18.36	18.10	17.95	5.0	19.0	18.20	18.03	17.82	0.0	19.0
		25	0	18.30	18.17	17.96	5.0	19.0	18.22	17.98	17.93	0.0	19.0

LTE Band 25 (Main.1) Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				26055	26365	26675			26055	26365	26675		
				1851.5 MHz	1882.5 MHz	1913.5 MHz			1851.5 MHz	1882.5 MHz	1913.5 MHz		
3 MHz	QPSK	1	0	23.6	23.2	23.2	0.0	24.0	18.5	18.2	18.1	0.0	19.0
		1	8	23.6	23.2	23.3	0.0	24.0	18.6	18.3	18.2	0.0	19.0
		1	14	23.7	23.3	23.2	0.0	24.0	18.5	18.1	18.1	0.0	19.0
		8	0	22.6	22.4	22.3	1.0	23.0	18.5	18.2	18.1	0.0	19.0
		8	4	22.5	22.3	22.2	1.0	23.0	18.4	18.2	18.1	0.0	19.0
		8	7	22.6	22.3	22.3	1.0	23.0	18.4	18.2	18.1	0.0	19.0
		15	0	22.5	22.2	22.1	1.0	23.0	18.4	18.2	18.1	0.0	19.0
	16QAM	1	0	22.4	22.4	22.2	1.0	23.0	18.4	18.5	18.1	0.0	19.0
		1	8	22.4	22.3	22.3	1.0	23.0	18.5	18.3	18.3	0.0	19.0
		1	14	22.3	22.5	22.1	1.0	23.0	18.4	18.5	18.0	0.0	19.0
		8	0	21.5	21.3	21.2	2.0	22.0	18.5	18.3	18.1	0.0	19.0
		8	4	21.5	21.3	21.1	2.0	22.0	18.5	18.3	18.0	0.0	19.0
		8	7	21.5	21.3	21.1	2.0	22.0	18.5	18.3	18.1	0.0	19.0
		15	0	21.4	21.2	21.1	2.0	22.0	18.4	18.2	18.1	0.0	19.0
	64QAM	1	0	21.1	21.3	21.1	2.0	22.0	18.8	18.4	18.0	0.0	19.0
		1	8	21.4	21.4	21.0	2.0	22.0	18.7	18.3	18.1	0.0	19.0
		1	14	21.1	21.4	21.1	2.0	22.0	18.9	18.4	17.9	0.0	19.0
		8	0	20.4	20.2	20.1	3.0	21.0	18.7	18.5	18.3	0.0	19.0
		8	4	20.3	20.2	20.1	3.0	21.0	18.6	18.4	18.3	0.0	19.0
		8	7	20.4	20.2	20.1	3.0	21.0	18.6	18.4	18.3	0.0	19.0
		15	0	20.4	20.1	20.1	3.0	21.0	18.6	18.5	18.3	0.0	19.0
	256QAM	1	0	18.4	18.4	18.0	5.0	19.0	18.4	18.1	18.0	0.0	19.0
		1	8	18.5	18.5	18.0	5.0	19.0	18.6	18.2	18.0	0.0	19.0
		1	14	18.4	18.3	17.9	5.0	19.0	18.4	18.1	18.0	0.0	19.0
		8	0	18.4	18.2	18.1	5.0	19.0	18.2	18.0	17.9	0.0	19.0
		8	4	18.4	18.2	18.0	5.0	19.0	18.2	18.0	17.9	0.0	19.0
		8	7	18.4	18.2	18.0	5.0	19.0	18.2	18.0	17.9	0.0	19.0
		15	0	18.4	18.1	18.0	5.0	19.0	18.2	18.1	17.9	0.0	19.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				26047	26365	26683			26047	26365	26683		
				1850.7 MHz	1882.5 MHz	1914.3 MHz			1850.7 MHz	1882.5 MHz	1914.3 MHz		
1.4 MHz	QPSK	1	0	23.6	23.3	22.6	0.0	24.0	18.5	18.2	18.2	0.0	19.0
		1	3	23.6	23.3	22.4	0.0	24.0	18.4	18.1	18.2	0.0	19.0
		1	5	23.6	23.4	22.3	0.0	24.0	18.4	18.2	18.1	0.0	19.0
		3	0	23.6	23.2	22.3	0.0	24.0	18.4	18.3	18.2	0.0	19.0
		3	1	23.6	23.3	22.3	0.0	24.0	18.4	18.2	18.1	0.0	19.0
		3	3	23.5	23.4	22.3	0.0	24.0	18.6	18.1	18.1	0.0	19.0
		6	0	22.6	22.3	21.8	1.0	23.0	18.5	18.2	18.1	0.0	19.0
	16QAM	1	0	22.6	22.1	21.9	1.0	23.0	18.2	18.2	18.0	0.0	19.0
		1	3	22.8	22.1	21.9	1.0	23.0	18.5	18.2	18.2	0.0	19.0
		1	5	22.7	22.2	21.8	1.0	23.0	18.3	18.3	18.1	0.0	19.0
		3	0	22.4	22.2	21.9	1.0	23.0	18.5	18.3	18.1	0.0	19.0
		3	1	22.4	22.2	21.9	1.0	23.0	18.5	18.3	18.1	0.0	19.0
		3	3	22.4	22.3	21.8	1.0	23.0	18.6	18.3	18.1	0.0	19.0
		6	0	21.5	21.2	21.0	2.0	22.0	18.4	18.2	18.1	0.0	19.0
	64QAM	1	0	21.5	21.2	20.6	2.0	22.0	18.8	18.4	17.9	0.0	19.0
		1	3	21.6	21.2	20.7	2.0	22.0	18.8	18.2	18.0	0.0	19.0
		1	5	21.5	21.1	20.7	2.0	22.0	18.7	18.3	18.0	0.0	19.0
		3	0	21.3	21.1	20.9	2.0	22.0	18.9	18.5	18.2	0.0	19.0
		3	1	21.3	21.2	20.8	2.0	22.0	18.8	18.5	18.2	0.0	19.0
		3	3	21.4	21.2	20.9	2.0	22.0	18.8	18.5	18.3	0.0	19.0
		6	0	20.4	20.2	20.0	3.0	21.0	18.6	18.4	18.2	0.0	19.0
	256QAM	1	0	18.4	18.2	18.0	5.0	19.0	18.2	18.0	17.9	0.0	19.0
		1	3	18.3	18.1	18.0	5.0	19.0	18.4	18.0	17.8	0.0	19.0
		1	5	18.3	18.1	17.9	5.0	19.0	18.2	18.1	17.9	0.0	19.0
		3	0	18.2	18.1	18.0	5.0	19.0	18.2	18.1	18.0	0.0	19.0
		3	1	18.2	18.1	18.0	5.0	19.0	18.2	18.0	17.9	0.0	19.0
		3	3	18.3	18.1	18.0	5.0	19.0	18.2	18.0	17.8	0.0	19.0
		6	0	18.3	18.1	18.0	5.0	19.0	18.1	18.0	17.8	0.0	19.0

LTE Band 25 (Sub.2) Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				RSI=Free, Rcv, Hotspot, Earjack				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				26140	26365	26590		
				1860 MHz	1882.5 MHz	1905 MHz		
20 MHz	QPSK	1	0	16.79	16.92	16.85	0.0	18.0
		1	49	16.91	16.67	16.57	0.0	18.0
		1	99	16.70	16.69	16.60	0.0	18.0
		50	0	16.70	16.78	16.75	0.0	18.0
		50	24	16.64	16.76	16.73	0.0	18.0
		50	50	16.61	16.72	16.69	0.0	18.0
		100	0	16.66	16.75	16.74	0.0	18.0
	16QAM	1	0	16.92	16.95	16.87	0.0	18.0
		1	49	16.83	16.96	16.81	0.0	18.0
		1	99	16.69	16.80	16.70	0.0	18.0
		50	0	16.62	16.67	16.61	0.0	18.0
		50	24	16.53	16.64	16.61	0.0	18.0
		50	50	16.55	16.60	16.60	0.0	18.0
		100	0	16.58	16.66	16.63	0.0	18.0
	64QAM	1	0	16.79	16.87	17.08	0.0	18.0
		1	49	16.63	16.81	17.20	0.0	18.0
		1	99	16.60	16.78	16.89	0.0	18.0
		50	0	16.60	16.70	16.60	0.0	18.0
		50	24	16.53	16.70	16.60	0.0	18.0
		50	50	16.55	16.65	16.60	0.0	18.0
		100	0	16.50	16.66	16.58	0.0	18.0
	256QAM	1	0	16.73	16.96	16.87	0.0	18.0
		1	49	16.61	17.04	16.77	0.0	18.0
		1	99	16.54	16.85	16.69	0.0	18.0
		50	0	16.56	16.67	16.60	0.0	18.0
		50	24	16.61	16.66	16.59	0.0	18.0
		50	50	16.55	16.60	16.58	0.0	18.0
		100	0	16.52	16.62	16.61	0.0	18.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26115	26365	26615		
				1857.5 MHz	1882.5 MHz	1907.5 MHz		
15 MHz	QPSK	1	0	16.80	16.81	16.53	0.0	18.0
		1	37	16.67	16.68	16.26	0.0	18.0
		1	74	16.82	16.75	16.32	0.0	18.0
		36	0	16.94	16.94	16.67	0.0	18.0
		36	20	16.95	16.92	16.61	0.0	18.0
		36	39	16.96	16.93	16.55	0.0	18.0
		75	0	16.95	16.94	16.61	0.0	18.0
	16QAM	1	0	17.10	16.86	16.56	0.0	18.0
		1	37	16.97	16.70	16.44	0.0	18.0
		1	74	16.97	16.74	16.40	0.0	18.0
		36	0	16.79	16.81	16.44	0.0	18.0
		36	20	16.76	16.78	16.41	0.0	18.0
		36	39	16.73	16.77	16.37	0.0	18.0
		75	0	16.75	16.78	16.46	0.0	18.0
	64QAM	1	0	16.69	16.68	16.27	0.0	18.0
		1	37	16.60	16.52	15.95	0.0	18.0
		1	74	16.61	16.56	16.09	0.0	18.0
		36	0	16.72	16.80	16.47	0.0	18.0
		36	20	16.68	16.79	16.46	0.0	18.0
		36	39	16.65	16.75	16.41	0.0	18.0
		75	0	16.69	16.74	16.39	0.0	18.0
	256QAM	1	0	16.74	16.61	16.35	0.0	18.0
		1	37	16.63	16.46	16.28	0.0	18.0
		1	74	16.61	16.52	16.21	0.0	18.0
		36	0	16.71	16.73	16.39	0.0	18.0
		36	20	16.66	16.70	16.36	0.0	18.0
		36	39	16.64	16.68	16.33	0.0	18.0
		75	0	16.64	16.71	16.36	0.0	18.0

LTE Band 25 (Sub.2) Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pw r (dBm)			MPR	Tune-up Limit
				26090	26365	26640		
				1855 MHz	1882.5 MHz	1910 MHz		
10 MHz	QPSK	1	0	16.85	16.83	16.49	0.0	18.0
		1	25	16.76	16.71	16.31	0.0	18.0
		1	49	16.91	16.72	16.46	0.0	18.0
		25	0	16.78	16.72	16.45	0.0	18.0
		25	12	16.76	16.69	16.42	0.0	18.0
		25	25	16.75	16.69	16.40	0.0	18.0
	16QAM	50	0	16.73	16.72	16.41	0.0	18.0
		1	0	16.78	16.83	16.86	0.0	18.0
		1	25	16.65	16.80	16.76	0.0	18.0
		1	49	16.63	16.79	16.70	0.0	18.0
		25	0	16.63	16.59	16.34	0.0	18.0
		25	12	16.59	16.57	16.31	0.0	18.0
	64QAM	25	25	16.56	16.56	16.26	0.0	18.0
		50	0	16.56	16.57	16.28	0.0	18.0
		1	0	16.70	16.78	16.40	0.0	18.0
		1	25	16.39	16.69	16.35	0.0	18.0
		1	49	16.43	16.76	16.26	0.0	18.0
		25	0	16.61	16.60	16.36	0.0	18.0
	256QAM	25	12	16.57	16.60	16.34	0.0	18.0
		25	25	16.54	16.58	16.28	0.0	18.0
		50	0	16.52	16.58	16.27	0.0	18.0
		1	0	16.66	16.62	16.61	0.0	18.0
		1	25	16.49	16.56	16.46	0.0	18.0
		1	49	16.65	16.61	16.48	0.0	18.0
		25	0	16.59	16.61	16.28	0.0	18.0
		25	12	16.58	16.62	16.27	0.0	18.0
		25	25	16.57	16.79	16.45	0.0	18.0
		50	0	16.67	16.53	16.21	0.0	18.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pw r (dBm)			MPR	Tune-up Limit
				26065	26365	26665		
				1852.5 MHz	1882.5 MHz	1912.5 MHz		
5 MHz	QPSK	1	0	16.80	16.77	16.51	0.0	18.0
		1	12	16.71	16.70	16.48	0.0	18.0
		1	24	16.85	16.78	16.55	0.0	18.0
		12	0	16.82	16.72	16.51	0.0	18.0
		12	7	16.80	16.71	16.48	0.0	18.0
		12	13	16.79	16.72	16.47	0.0	18.0
	16QAM	25	0	16.77	16.70	16.46	0.0	18.0
		1	0	16.93	16.89	16.72	0.0	18.0
		1	12	16.68	16.73	16.50	0.0	18.0
		1	24	16.92	16.82	16.71	0.0	18.0
		12	0	16.71	16.64	16.47	0.0	18.0
		12	7	16.67	16.63	16.43	0.0	18.0
	64QAM	12	13	16.68	16.62	16.39	0.0	18.0
		25	0	16.64	16.56	16.31	0.0	18.0
		1	0	16.72	16.82	16.36	0.0	18.0
		1	12	16.60	16.66	16.26	0.0	18.0
		1	24	16.71	16.71	16.33	0.0	18.0
		12	0	16.64	16.58	16.33	0.0	18.0
	256QAM	12	7	16.62	16.56	16.30	0.0	18.0
		12	13	16.61	16.55	16.27	0.0	18.0
		25	0	16.59	16.56	16.27	0.0	18.0
		1	0	16.80	16.61	16.87	0.0	18.0
		1	12	16.80	16.60	16.55	0.0	18.0
		1	24	16.79	16.61	16.57	0.0	18.0
		12	0	16.67	16.48	16.54	0.0	18.0
		12	7	16.58	16.31	16.24	0.0	18.0
		12	13	16.53	16.13	16.57	0.0	18.0
		25	0	16.79	16.21	16.51	0.0	18.0

LTE Band 25 (Sub.2) Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pw r (dBm)			MPR	Tune-up Limit
				26055	26365	26675		
				1851.5 MHz	1882.5 MHz	1913.5 MHz		
3 MHz	QPSK	1	0	16.96	16.76	16.58	0.0	18.0
		1	8	16.87	16.70	16.39	0.0	18.0
		1	14	17.01	16.69	16.64	0.0	18.0
		8	0	17.00	16.86	16.61	0.0	18.0
		8	4	16.97	16.87	16.60	0.0	18.0
		8	7	16.99	16.87	16.61	0.0	18.0
	16QAM	15	0	16.87	16.75	16.48	0.0	18.0
		1	0	17.16	16.92	16.31	0.0	18.0
		1	8	17.05	16.76	16.13	0.0	18.0
		1	14	17.08	16.95	16.22	0.0	18.0
		8	0	16.84	16.79	16.48	0.0	18.0
		8	4	16.80	16.82	16.45	0.0	18.0
	64QAM	8	7	16.80	16.81	16.44	0.0	18.0
		15	0	16.79	16.63	16.32	0.0	18.0
		1	0	16.67	16.75	16.42	0.0	18.0
		1	8	16.58	16.58	16.29	0.0	18.0
		1	14	16.53	16.80	16.48	0.0	18.0
		8	0	16.79	16.73	16.43	0.0	18.0
	256QAM	8	4	16.76	16.71	16.38	0.0	18.0
		8	7	16.79	16.72	16.37	0.0	18.0
		15	0	16.66	16.55	16.33	0.0	18.0
		1	0	16.51	16.65	16.57	0.0	18.0
		1	8	16.45	16.61	16.52	0.0	18.0
		1	14	16.44	16.61	16.53	0.0	18.0
1.4 MHz	QPSK	8	0	16.46	16.57	16.67	0.0	18.0
		8	4	16.51	16.57	16.66	0.0	18.0
		8	7	16.54	16.40	16.52	0.0	18.0
		15	0	16.55	16.37	16.55	0.0	18.0
		1	0	16.92	16.85	16.64	0.0	18.0
		1	3	16.67	16.62	16.38	0.0	18.0
	16QAM	1	5	16.88	16.84	16.60	0.0	18.0
		3	0	16.82	16.76	16.33	0.0	18.0
		3	1	16.78	16.71	16.35	0.0	18.0
		3	3	16.79	16.70	16.34	0.0	18.0
		6	0	16.95	16.91	16.69	0.0	18.0
		1	0	16.65	16.82	16.40	0.0	18.0
	64QAM	1	3	16.71	16.94	16.46	0.0	18.0
		1	5	16.69	16.88	16.43	0.0	18.0
		3	0	16.66	16.64	16.28	0.0	18.0
		3	1	16.66	16.64	16.30	0.0	18.0
		3	3	16.68	16.70	16.27	0.0	18.0
		6	0	16.90	16.76	16.57	0.0	18.0
	256QAM	1	0	16.91	16.71	16.13	0.0	18.0
		1	3	16.66	16.52	16.14	0.0	18.0
		1	5	16.83	16.63	16.20	0.0	18.0
		3	0	16.67	16.65	16.08	0.0	18.0
		3	1	16.63	16.65	16.08	0.0	18.0
		3	3	16.67	16.64	16.16	0.0	18.0
		6	0	16.75	16.76	16.44	0.0	18.0
		1	0	16.55	16.53	16.62	0.0	18.0
		1	3	16.56	16.57	16.66	0.0	18.0
		1	5	16.64	16.53	16.67	0.0	18.0
		3	0	16.67	16.57	16.45	0.0	18.0
		3	1	16.37	16.48	16.55	0.0	18.0
		3	3	16.64	16.49	16.37	0.0	18.0
		6	0	16.66	16.52	16.57	0.0	18.0

LTE Band 26 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				RSI=Pmax, Free, Rcv, Hotspot, Earjack				
				Measured Pwr (dBm)			MPR	Tune-up Limit
					26865			
				819 MHz	831.5 MHz	844 MHz		
15 MHz	QPSK	1	0		23.77		0.0	25.0
		1	37		23.76		0.0	25.0
		1	74		23.63		0.0	25.0
		36	0		22.89		1.0	24.0
		36	20		22.83		1.0	24.0
		36	39		22.77		1.0	24.0
		75	0		22.82		1.0	24.0
	16QAM	1	0		23.10		1.0	24.0
		1	37		23.09		1.0	24.0
		1	74		22.94		1.0	24.0
		36	0		21.82		2.0	23.0
		36	20		21.76		2.0	23.0
		36	39		21.73		2.0	23.0
		75	0		21.81		2.0	23.0
	64QAM	1	0		21.74		2.0	23.0
		1	37		21.73		2.0	23.0
		1	74		21.57		2.0	23.0
		36	0		20.83		3.0	22.0
		36	20		20.79		3.0	22.0
		36	39		20.74		3.0	22.0
		75	0		20.74		3.0	22.0
	256QAM	1	0		18.80		5.0	20.0
		1	37		18.68		5.0	20.0
		1	74		18.66		5.0	20.0
		36	0		18.73		5.0	20.0
		36	20		18.67		5.0	20.0
		36	39		18.63		5.0	20.0
		75	0		18.71		5.0	20.0
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	23.78	23.64	23.66	0.0	25.0
		1	25	23.79	23.57	23.52	0.0	25.0
		1	49	23.60	23.57	23.60	0.0	25.0
		25	0	22.72	22.66	22.71	1.0	24.0
		25	12	22.69	22.65	22.68	1.0	24.0
		25	25	22.65	22.59	22.64	1.0	24.0
		50	0	22.71	22.66	22.69	1.0	24.0
	16QAM	1	0	22.98	22.85	22.93	1.0	24.0
		1	25	23.07	22.92	22.84	1.0	24.0
		1	49	22.91	22.70	22.74	1.0	24.0
		25	0	21.80	21.67	21.72	2.0	23.0
		25	12	21.76	21.65	21.66	2.0	23.0
		25	25	21.71	21.60	21.63	2.0	23.0
		50	0	21.68	21.64	21.71	2.0	23.0
	64QAM	1	0	21.91	21.69	21.79	2.0	23.0
		1	25	22.00	21.67	21.72	2.0	23.0
		1	49	21.85	21.54	21.72	2.0	23.0
		25	0	20.77	20.69	20.77	3.0	22.0
		25	12	20.74	20.68	20.72	3.0	22.0
		25	25	20.71	20.64	20.69	3.0	22.0
		50	0	20.73	20.65	20.70	3.0	22.0
	256QAM	1	0	18.88	18.72	19.02	5.0	20.0
		1	25	18.92	18.65	18.96	5.0	20.0
		1	49	18.77	18.63	18.84	5.0	20.0
		25	0	18.77	18.70	18.77	5.0	20.0
		25	12	18.73	18.67	18.71	5.0	20.0
		25	25	18.69	18.63	18.68	5.0	20.0
		50	0	18.68	18.61	18.67	5.0	20.0

LTE Band 26 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pw r (dBm)			MPR	Tune-up Limit
				26715	26865	27015		
				816.5 MHz	831.5 MHz	846.5 MHz		
5 MHz	QPSK	1	0	23.58	23.61	23.55	0.0	25.0
		1	12	23.60	23.59	23.58	0.0	25.0
		1	24	23.58	23.60	23.58	0.0	25.0
		12	0	22.67	22.67	22.69	1.0	24.0
		12	7	22.65	22.66	22.68	1.0	24.0
		12	13	22.66	22.66	22.67	1.0	24.0
	16QAM	25	0	22.64	22.65	22.66	1.0	24.0
		1	0	22.99	22.97	22.90	1.0	24.0
		1	12	22.97	22.97	22.90	1.0	24.0
		1	24	23.02	23.00	22.95	1.0	24.0
		12	0	21.76	21.70	21.70	2.0	23.0
		12	7	21.74	21.67	21.66	2.0	23.0
	64QAM	12	13	21.72	21.66	21.68	2.0	23.0
		25	0	21.65	21.65	21.65	2.0	23.0
		1	0	21.65	21.64	21.55	2.0	23.0
		1	12	21.57	21.65	21.48	2.0	23.0
		1	24	21.68	21.68	21.59	2.0	23.0
		12	0	20.72	20.66	20.69	3.0	22.0
	256QAM	12	7	20.70	20.65	20.67	3.0	22.0
		12	13	20.67	20.63	20.67	3.0	22.0
		25	0	20.64	20.61	20.66	3.0	22.0
		1	0	18.67	18.59	18.81	5.0	20.0
		1	12	18.52	18.39	18.73	5.0	20.0
		1	24	18.58	18.49	18.80	5.0	20.0
3 MHz	QPSK	12	0	18.64	18.59	18.62	5.0	20.0
		12	7	18.64	18.59	18.61	5.0	20.0
		12	13	18.62	18.57	18.62	5.0	20.0
		25	0	18.65	18.61	18.66	5.0	20.0
	16QAM	1	0	23.66	23.61	23.62	0.0	25.0
		1	8	23.41	23.61	23.62	0.0	25.0
		1	14	23.68	23.61	23.61	0.0	25.0
		8	0	22.67	23.71	23.70	1.0	24.0
		8	4	22.62	23.71	23.72	1.0	24.0
		8	7	22.64	23.72	23.71	1.0	24.0
	64QAM	15	0	22.63	23.71	23.72	1.0	24.0
		1	0	22.74	22.91	22.84	1.0	24.0
		1	8	22.67	22.88	22.79	1.0	24.0
		1	14	22.62	22.87	22.77	1.0	24.0
		8	0	21.71	22.73	22.76	2.0	23.0
		8	4	21.71	22.76	22.78	2.0	23.0
	256QAM	8	7	21.69	22.75	22.77	2.0	23.0
		15	0	21.68	22.74	22.74	2.0	23.0
		1	0	22.02	21.88	21.94	2.0	23.0
		1	8	21.71	21.85	21.89	2.0	23.0
		1	14	21.70	21.85	21.88	2.0	23.0
		8	0	21.67	21.75	21.75	3.0	22.0
	16QAM	8	4	21.65	21.74	21.75	3.0	22.0
		8	7	21.67	21.75	21.73	3.0	22.0
		15	0	21.66	21.70	21.66	3.0	22.0
	256QAM	1	0	18.82	18.99	19.01	5.0	20.0
		1	8	18.80	18.95	18.98	5.0	20.0
		1	14	18.76	18.95	18.96	5.0	20.0
	64QAM	8	0	18.70	18.73	18.76	5.0	20.0
		8	4	18.70	18.73	18.74	5.0	20.0
		8	7	18.71	18.72	18.75	5.0	20.0
		15	0	18.66	18.73	18.72	5.0	20.0

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	23.6	23.5	23.6	0.0	25.0
		1	3	23.5	23.6	23.6	0.0	25.0
		1	5	23.6	23.6	23.6	0.0	25.0
		3	0	23.7	23.7	23.7	0.0	25.0
		3	1	23.7	23.7	23.7	0.0	25.0
		3	3	23.6	23.7	23.7	0.0	25.0
	16QAM	6	0	22.6	23.7	23.6	1.0	24.0
		1	0	22.6	22.8	23.0	1.0	24.0
		1	3	22.6	22.8	23.0	1.0	24.0
		1	5	22.7	22.8	23.0	1.0	24.0
		3	0	22.8	22.9	22.8	1.0	24.0
		3	1	22.7	22.9	22.8	1.0	24.0
	64QAM	3	3	22.8	22.9	22.8	1.0	24.0
		6	0	21.7	22.8	22.6	2.0	23.0
		1	0	21.8	21.7	21.7	2.0	23.0
		1	3	21.6	21.8	21.7	2.0	23.0
		1	5	21.7	21.8	21.7	2.0	23.0
		3	0	21.8	21.9	21.7	2.0	23.0
	256QAM	3	1	21.8	21.8	21.7	2.0	23.0
		3	3	21.8	21.8	21.7	2.0	23.0
		6	0	20.6	21.7	21.6	3.0	22.0
		1	0	18.7	19.1	18.8	5.0	20.0
		1	3	18.7	19.1	18.8	5.0	20.0
		1	5	18.8	19.1	18.8	5.0	20.0
		3	0	18.7	18.8	18.7	5.0	20.0
		3	1	18.6	18.8	18.7	5.0	20.0
		3	3	18.7	18.8	18.7	5.0	20.0
		6	0	18.7	18.6	18.6	5.0	20.0

LTE Band 41 (Power Class 3) (Main.2) Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)							Maximum Allowed Average Power (dBm)						
				RSI=Pmax, Rcv							RSI=Free, Hotspot, Earjack						
				Measured Pwr (dBm)					MFR	Tune-up Limit	Measured Pwr (dBm)					MFR	Tune-up Limit
				39750	40185	40620	41055	41490			39750	40185	40620	41055	41490		
20 MHz	QPSK	1	0	23.60	23.45	23.68	24.18	24.58	0.0	25.0	19.20	19.08	18.72	19.47	19.21	0.0	20.0
		1	49	23.59	23.44	23.58	24.30	24.51	0.0	25.0	19.07	18.92	18.77	19.34	19.11	0.0	20.0
		1	99	23.62	23.41	23.69	24.67	24.68	0.0	25.0	19.09	18.92	18.54	19.16	19.49	0.0	20.0
		50	0	22.64	22.46	22.68	23.27	23.64	1.0	24.0	19.17	18.99	18.68	19.47	19.16	0.0	20.0
		50	24	22.64	22.43	22.69	23.26	23.63	1.0	24.0	19.14	18.97	18.67	19.49	19.14	0.0	20.0
		50	50	22.60	22.41	22.68	23.66	23.72	1.0	24.0	19.14	18.96	18.66	19.14	19.50	0.0	20.0
	16QAM	1	0	22.62	22.41	22.71	23.27	23.63	1.0	24.0	19.14	19.01	18.66	19.48	19.16	0.0	20.0
		1	0	22.52	22.34	22.68	23.11	23.61	1.0	24.0	19.49	18.89	18.70	19.55	19.33	0.0	20.0
		1	49	22.57	22.48	22.87	22.96	23.91	1.0	24.0	19.65	19.20	19.09	19.62	19.42	0.0	20.0
		1	99	22.83	22.07	22.85	23.01	23.77	1.0	24.0	19.18	18.94	18.84	19.58	19.60	0.0	20.0
		50	0	21.62	21.40	21.60	22.23	22.56	2.0	23.0	19.20	19.03	18.69	19.51	19.19	0.0	20.0
		50	24	21.58	21.38	21.65	22.19	22.53	2.0	23.0	19.19	19.02	18.69	19.52	19.20	0.0	20.0
	64QAM	50	50	21.50	21.35	21.61	22.20	22.52	2.0	23.0	19.15	18.99	18.67	19.55	19.19	0.0	20.0
		100	0	21.54	21.34	21.63	22.19	22.54	2.0	23.0	19.16	18.99	18.68	19.50	19.18	0.0	20.0
		1	0	21.21	21.54	21.35	22.36	22.53	2.0	23.0	19.08	18.92	18.95	19.56	18.93	0.0	20.0
		1	49	21.24	21.54	21.40	22.11	22.62	2.0	23.0	18.97	18.80	18.66	19.30	18.90	0.0	20.0
		1	99	21.29	21.46	21.30	22.25	22.59	2.0	23.0	18.95	18.78	18.87	19.10	18.97	0.0	20.0
		50	0	20.48	20.39	20.55	21.19	21.52	3.0	22.0	19.17	19.01	18.71	19.49	19.15	0.0	20.0
	256QAM	50	24	20.48	20.33	20.58	21.16	21.54	3.0	22.0	19.17	18.99	18.72	19.51	19.16	0.0	20.0
		50	50	20.47	20.32	20.57	21.16	21.56	3.0	22.0	19.16	18.97	18.71	19.50	19.13	0.0	20.0
		100	0	20.52	20.29	20.60	21.12	21.43	3.0	22.0	19.16	18.94	18.69	19.51	19.10	0.0	20.0
		1	0	18.66	18.69	18.60	18.63	19.40	5.0	20.0	18.47	18.19	18.25	18.91	18.47	1.0	19.0
		1	49	18.68	18.13	18.80	18.52	19.63	5.0	20.0	18.27	18.34	18.22	18.61	18.71	1.0	19.0
		1	99	18.58	17.87	18.70	19.05	19.45	5.0	20.0	18.26	18.44	18.21	18.66	18.68	1.0	19.0
15 MHz	QPSK	50	0	18.48	18.29	18.57	19.09	19.45	5.0	20.0	18.57	18.42	18.09	18.91	18.57	1.0	19.0
		50	24	18.49	18.25	18.57	19.09	19.47	5.0	20.0	18.54	18.42	18.05	18.91	18.55	1.0	19.0
		50	50	18.44	18.21	18.55	19.06	19.44	5.0	20.0	18.52	18.36	18.09	18.86	18.53	1.0	19.0
		100	0	18.47	18.23	18.58	19.05	19.41	5.0	20.0	18.57	18.37	18.07	18.82	18.54	1.0	19.0
	16QAM	1	0	23.84	23.77	23.64	24.02	23.82	0.0	25.0	19.14	19.11	19.28	19.40	19.10	0.0	20.0
		1	37	23.70	23.88	23.85	24.00	23.82	0.0	25.0	19.10	18.77	19.26	19.27	19.01	0.0	20.0
		1	74	23.82	23.71	23.69	24.14	23.85	0.0	25.0	19.12	19.10	19.10	19.38	19.14	0.0	20.0
		36	0	22.90	22.83	22.74	23.17	22.85	1.0	24.0	19.16	19.13	19.24	19.43	19.13	0.0	20.0
		36	20	22.88	22.82	22.73	23.14	22.84	1.0	24.0	19.13	19.10	19.23	19.40	19.11	0.0	20.0
		36	39	22.85	22.81	22.68	23.15	22.83	1.0	24.0	19.15	19.13	19.24	19.42	19.12	0.0	20.0
	64QAM	75	0	22.86	22.82	22.75	23.16	22.84	1.0	24.0	19.16	19.12	19.25	19.39	19.12	0.0	20.0
		1	0	22.86	22.68	22.44	23.01	22.81	1.0	24.0	19.43	18.94	19.01	19.22	19.25	0.0	20.0
		1	37	22.84	22.66	22.43	22.82	22.67	1.0	24.0	19.32	19.07	19.17	19.28	19.01	0.0	20.0
		1	74	22.84	22.75	22.61	22.99	22.73	1.0	24.0	19.13	19.20	18.93	19.34	19.24	0.0	20.0
		36	0	21.89	21.82	21.69	22.14	21.82	2.0	23.0	19.21	19.09	19.16	19.47	19.07	0.0	20.0
		36	20	21.83	21.79	21.66	22.13	21.80	2.0	23.0	19.18	19.09	19.19	19.46	19.08	0.0	20.0
	256QAM	36	39	21.85	21.78	21.63	22.11	21.79	2.0	23.0	19.23	19.08	19.18	19.46	19.06	0.0	20.0
		75	0	21.76	21.71	21.64	22.05	21.77	2.0	23.0	19.16	19.11	19.23	19.40	19.09	0.0	20.0
		1	0	21.42	21.47	21.31	21.44	21.48	2.0	23.0	18.94	19.06	19.34	19.18	18.87	0.0	20.0
		1	37	21.25	21.47	21.22	21.50	21.49	2.0	23.0	19.08	18.91	19.53	19.22	18.70	0.0	20.0
		1	74	21.39	21.55	21.33	21.23	21.55	2.0	23.0	19.05	18.95	19.08	19.37	18.78	0.0	20.0
		36	0	20.70	20.61	20.55	20.58	20.51	3.0	22.0	19.22	19.16	19.27	19.46	19.14	0.0	20.0
	16QAM	36	20	20.64	20.45	20.55	20.45	20.45	3.0	22.0	19.18	19.15	19.28	19.48	19.12	0.0	20.0
		36	39	20.63	20.57	20.54	20.58	20.46	3.0	22.0	19.18	19.12	19.25	19.42	19.13	0.0	20.0
		75	0	20.67	20.46	20.55	20.52	20.44	3.0	22.0	19.14	19.17	19.27	19.38	19.11	0.0	20.0
		1	0	18.91	18.48	18.40	18.51	18.54	5.0	20.0	18.61	18.58	18.58	18.87	18.68	1.0	19.0
		1	37	18.81	18.39	18.03	18.55	18.44	5.0	20.0	18.54	18.67	18.61	18.82	18.73	1.0	19.0
		1	74	18.80	18.40	18.50	18.51	18.41	5.0	20.0	18.27	18.11	18.44	18.64	18.69	1.0	19.0
	256QAM	36	0	18.57	18.55	18.43	18.56	18.46	5.0	20.0	18.58	18.54	18.65	18.83	18.49	1.0	19.0
		36	20	18.57	18.56	18.43	18.43	18.49	5.0	20.0	18.55	18.53	18.62	18.87	18.53	1.0	19.0
		36	39	18.55	18.53	18.41	18.42	18.49	5.0	20.0	18.54	18.50	18.65	18.85	18.51	1.0	19.0
		75	0	18.57	18.51	18.44	18.39	18.34	5.0	20.0	18.55	18.54	18.65	18.81	18.52	1.0	19.0

LTE Band 41 (Power Class 3) (Main.2) Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MFR	Tune-up Limit	Measured Pwr (dBm)					MFR	Tune-up Limit
				39750	40185	40620	41055	41490			39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz			2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
10 MHz	QPSK	1	0	23.80	23.76	23.69	24.13	23.76	0.0	25.0	19.12	19.19	19.22	19.41	19.14	0.0	20.0
		1	25	23.74	23.71	23.70	24.10	23.70	0.0	25.0	19.12	19.09	19.21	19.35	19.05	0.0	20.0
		1	49	23.73	23.69	23.66	24.21	23.74	0.0	25.0	19.12	19.10	19.15	19.43	19.07	0.0	20.0
		25	0	22.78	22.74	22.66	23.13	22.75	1.0	24.0	19.09	19.09	19.21	19.38	19.07	0.0	20.0
		25	12	22.77	22.74	22.64	23.11	22.73	1.0	24.0	19.08	19.09	19.22	19.38	19.07	0.0	20.0
		25	25	22.76	22.74	22.64	23.09	22.74	1.0	24.0	19.08	19.05	19.21	19.37	19.04	0.0	20.0
		50	0	22.76	22.74	22.64	23.12	22.75	1.0	24.0	19.10	19.09	19.20	19.39	19.07	0.0	20.0
		1	0	22.80	22.79	22.82	23.22	22.56	1.0	24.0	19.12	19.00	19.01	19.36	18.98	0.0	20.0
		1	25	22.72	22.76	22.95	23.06	22.53	1.0	24.0	19.05	18.99	19.01	19.29	18.96	0.0	20.0
		1	49	22.83	22.84	22.80	23.15	22.62	1.0	24.0	19.05	19.01	19.08	19.30	19.03	0.0	20.0
	16QAM	25	0	21.74	21.71	21.61	22.06	21.71	2.0	23.0	19.10	19.07	19.18	19.40	19.03	0.0	20.0
		25	12	21.72	21.67	21.61	22.04	21.68	2.0	23.0	19.07	19.07	19.19	19.38	19.03	0.0	20.0
		25	25	21.69	21.65	21.58	22.05	21.65	2.0	23.0	19.09	19.04	19.17	19.40	19.01	0.0	20.0
		50	0	21.72	21.69	21.63	21.98	21.71	2.0	23.0	19.05	19.07	19.21	19.36	19.04	0.0	20.0
		1	0	21.55	21.47	21.34	21.79	21.48	2.0	23.0	19.19	18.94	19.05	19.57	19.12	0.0	20.0
		1	25	21.55	21.47	21.27	21.80	21.49	2.0	23.0	19.02	18.96	19.05	19.46	18.95	0.0	20.0
		1	49	21.58	21.51	21.41	21.87	21.55	2.0	23.0	19.12	18.97	19.11	19.50	19.08	0.0	20.0
		25	0	20.60	20.60	20.53	20.89	20.55	3.0	22.0	19.12	19.09	19.20	19.33	19.06	0.0	20.0
		25	12	20.58	20.56	20.51	20.87	20.53	3.0	22.0	19.14	19.09	19.20	19.33	19.05	0.0	20.0
		25	25	20.59	20.57	20.50	20.88	20.54	3.0	22.0	19.11	19.07	19.21	19.33	19.05	0.0	20.0
		50	0	20.57	20.58	20.55	20.86	20.54	3.0	22.0	19.11	19.08	19.20	19.37	19.04	0.0	20.0
	256QAM	1	0	18.49	18.48	18.44	18.87	18.50	5.0	20.0	18.56	18.45	18.58	18.59	18.44	1.0	19.0
		1	25	18.43	18.38	18.37	18.84	18.43	5.0	20.0	18.54	18.33	18.52	18.57	18.41	1.0	19.0
		1	49	18.41	18.40	18.34	18.84	18.41	5.0	20.0	18.50	18.43	18.57	18.59	18.40	1.0	19.0
		25	0	18.52	18.55	18.48	18.79	18.47	5.0	20.0	18.54	18.49	18.61	18.85	18.48	1.0	19.0
		25	12	18.51	18.53	18.47	18.81	18.49	5.0	20.0	18.54	18.50	18.60	18.84	18.46	1.0	19.0
		25	25	18.53	18.53	18.47	18.79	18.49	5.0	20.0	18.50	18.48	18.62	18.84	18.45	1.0	19.0
		50	0	18.51	18.52	18.46	18.81	18.47	5.0	20.0	18.52	18.48	18.61	18.78	18.46	1.0	19.0
5 MHz	QPSK	1	0	23.87	22.70	23.63	24.06	23.76	0.0	25.0	19.09	19.10	19.24	19.36	19.08	0.0	20.0
		1	12	23.72	23.48	23.75	23.95	23.64	0.0	25.0	19.01	19.18	19.08	19.29	18.97	0.0	20.0
		1	24	23.84	23.78	23.63	24.09	23.76	0.0	25.0	19.01	19.06	19.17	19.27	19.03	0.0	20.0
5 MHz	QPSK	12	0	22.82	22.74	22.65	23.05	22.70	1.0	24.0	19.03	19.06	19.18	19.37	19.04	0.0	20.0
		12	7	22.79	22.75	22.61	23.04	22.67	1.0	24.0	19.03	19.05	19.16	19.34	19.05	0.0	20.0
		12	13	22.79	22.74	22.61	23.03	22.69	1.0	24.0	19.02	19.05	19.16	19.36	19.05	0.0	20.0
		25	0	22.80	22.75	22.61	23.05	22.69	1.0	24.0	19.04	19.06	19.19	19.38	19.05	0.0	20.0
	16QAM	1	0	22.78	22.78	22.65	23.12	22.72	1.0	24.0	18.94	19.08	19.03	19.20	19.09	0.0	20.0
		1	12	22.58	22.64	22.66	22.80	22.51	1.0	24.0	19.06	19.11	19.12	19.38	18.92	0.0	20.0
		1	24	22.85	22.71	22.70	23.05	22.67	1.0	24.0	19.01	19.01	19.10	19.25	19.04	0.0	20.0
		12	0	21.74	21.72	21.53	22.02	21.69	2.0	23.0	19.03	19.07	19.15	19.36	19.05	0.0	20.0
		12	7	21.73	21.68	21.54	21.99	21.64	2.0	23.0	19.01	19.06	19.13	19.35	19.02	0.0	20.0
		12	13	21.70	21.70	21.53	22.00	21.67	2.0	23.0	19.03	19.05	19.15	19.35	19.05	0.0	20.0
		25	0	21.68	21.69	21.58	22.01	21.63	2.0	23.0	18.99	19.08	19.14	19.37	19.08	0.0	20.0
	64QAM	1	0	21.45	21.56	21.42	21.69	21.79	2.0	23.0	19.30	19.19	19.00	19.48	19.17	0.0	20.0
		1	12	21.50	21.53	21.51	21.67	21.56	2.0	23.0	19.22	19.36	18.74	19.42	19.09	0.0	20.0
		1	24	21.37	21.67	21.57	21.65	21.70	2.0	23.0	19.20	19.26	18.90	19.38	19.09	0.0	20.0
		12	0	20.58	20.53	20.55	20.88	20.52	3.0	22.0	19.08	19.07	19.24	19.32	18.98	0.0	20.0
		12	7	20.55	20.50	20.58	20.85	20.51	3.0	22.0	19.06	19.05	19.22	19.30	18.95	0.0	20.0
		12	13	20.58	20.52	20.53	20.90	20.53	3.0	22.0	19.07	19.05	19.24	19.32	18.99	0.0	20.0
		25	0	20.52	20.53	20.53	20.87	20.44	3.0	22.0	19.04	19.10	19.20	19.29	18.94	0.0	20.0
	256QAM	1	0	18.51	18.27	18.43	18.95	18.46	5.0	20.0	18.49	18.48	18.61	18.62	18.41	1.0	19.0
		1	12	18.54	18.12	18.52	18.79	18.43	5.0	20.0	18.46	18.53	18.36	18.58	18.30	1.0	19.0
		1	24	18.52	18.22	18.37	18.91	18.44	5.0	20.0	18.51	18.50	18.59	18.65	18.38	1.0	19.0
		12	0	18.44	18.45	18.40	18.76	18.42	5.0	20.0	18.41	18.47	18.58	18.69	18.33	1.0	19.0
		12	7	18.43	18.40	18.39	18.75	18.41	5.0	20.0	18.41	18.42	18.58	18.69	18.32	1.0	19.0
		12	13	18.45	18.44	18.39	18.77	18.40	5.0	20.0	18.42	18.46	18.57	18.68	18.34	1.0	19.0
		25	0	18.39	18.38	18.38	18.71	18.40	5.0	20.0	18.46	18.43	18.53	18.71	18.39	1.0	19.0

LTE Band 41 (Power Class 3) (Sub.2) Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)										
				RSI=Free, Rcv, Hotspot, Earjack										
				Measured Pwr (dBm)					MPR	Tune-up Limit				
				39750	40185	40620	41055	41490						
2506 MHz					2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz						
20 MHz	QPSK	1	0	19.45	19.59	18.99	19.30	19.26	0.0	20.0				
		1	49	19.43	19.61	19.04	19.53	19.29	0.0	20.0				
		1	99	19.47	19.82	19.14	19.57	19.41	0.0	20.0				
		50	0	19.42	19.30	19.10	19.40	19.38	0.0	20.0				
		50	24	19.45	19.33	19.13	19.41	19.39	0.0	20.0				
		50	50	19.46	19.49	19.18	19.42	19.39	0.0	20.0				
		100	0	19.48	19.37	19.13	19.41	19.40	0.0	20.0				
	16QAM	1	0	19.53	19.36	18.85	19.57	19.18	0.0	20.0				
		1	49	19.49	19.42	19.02	19.22	19.35	0.0	20.0				
		1	99	19.74	19.45	19.12	19.58	19.47	0.0	20.0				
		50	0	19.37	19.05	19.08	19.30	19.34	0.0	20.0				
		50	24	19.46	19.09	19.12	19.27	19.36	0.0	20.0				
		50	50	19.48	19.11	19.17	19.29	19.39	0.0	20.0				
		100	0	19.42	19.11	19.08	19.31	19.40	0.0	20.0				
	64QAM	1	0	19.26	18.90	18.99	19.25	19.44	0.0	20.0				
		1	49	19.31	19.10	19.09	19.19	19.51	0.0	20.0				
		1	99	19.64	19.17	19.23	19.31	19.41	0.0	20.0				
		50	0	19.25	18.92	18.90	19.20	19.35	0.0	20.0				
		50	24	19.33	18.95	18.98	19.23	19.36	0.0	20.0				
		50	50	19.39	18.96	19.03	19.24	19.36	0.0	20.0				
		100	0	19.29	18.97	18.94	19.17	19.31	0.0	20.0				
	256QAM	1	0	18.64	18.31	18.47	18.73	18.62	1.0	19.0				
		1	49	18.56	18.78	18.54	18.34	18.59	1.0	19.0				
		1	99	18.74	18.72	18.58	18.53	18.66	1.0	19.0				
		50	0	18.66	18.34	18.37	18.58	18.76	1.0	19.0				
		50	24	18.76	18.34	18.42	18.62	18.78	1.0	19.0				
		50	50	18.80	18.38	18.45	18.62	18.79	1.0	19.0				
		100	0	18.74	18.39	18.40	18.62	18.78	1.0	19.0				
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	19.26	19.39	18.83	19.34	19.44	0.0	20.0				
		1	37	19.39	19.51	19.10	19.47	19.51	0.0	20.0				
		1	74	19.38	19.50	19.11	19.34	19.42	0.0	20.0				
		36	0	19.46	19.45	19.08	19.46	19.47	0.0	20.0				
		36	20	19.45	19.47	19.10	19.48	19.49	0.0	20.0				
		36	39	19.47	19.52	19.13	19.51	19.52	0.0	20.0				
		75	0	19.47	19.46	19.13	19.48	19.51	0.0	20.0				
	16QAM	1	0	19.30	18.99	18.64	18.97	19.32	0.0	20.0				
		1	37	19.27	19.18	18.77	19.02	18.94	0.0	20.0				
		1	74	19.11	19.25	18.92	19.06	19.19	0.0	20.0				
		36	0	19.40	19.19	19.01	19.40	19.39	0.0	20.0				
		36	20	19.41	19.25	19.03	19.42	19.40	0.0	20.0				
		36	39	19.43	19.26	19.05	19.46	19.43	0.0	20.0				
		75	0	19.38	19.19	19.05	19.36	19.41	0.0	20.0				
	64QAM	1	0	19.13	19.00	18.80	19.00	19.24	0.0	20.0				
		1	37	18.91	19.13	18.93	19.13	19.29	0.0	20.0				
		1	74	19.12	19.06	19.08	18.94	19.14	0.0	20.0				
		36	0	19.31	19.12	18.95	19.33	19.38	0.0	20.0				
		36	20	19.34	19.14	19.00	19.34	19.38	0.0	20.0				
		36	39	19.36	19.17	19.02	19.36	19.41	0.0	20.0				
		75	0	19.30	19.13	19.01	19.31	19.41	0.0	20.0				
	256QAM	1	0	18.79	18.43	17.81	18.64	18.82	1.0	19.0				
		1	37	18.78	18.79	18.27	18.64	18.88	1.0	19.0				
		1	74	18.84	18.74	18.61	18.60	18.88	1.0	19.0				
		36	0	18.69	18.54	18.33	18.70	18.79	1.0	19.0				
		36	20	18.75	18.55	18.35	18.77	18.81	1.0	19.0				
		36	39	18.76	18.56	18.41	18.75	18.81	1.0	19.0				
		75	0	18.73	18.55	18.38	18.70	18.80	1.0	19.0				

LTE Band 41 (Power Class 3) (Sub.2) 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	19.35	19.40	19.02	19.27	19.34	0.0	20.0
		1	25	19.26	19.35	18.93	19.16	19.28	0.0	20.0
		1	49	19.36	19.50	19.02	19.27	19.40	0.0	20.0
		25	0	19.32	19.19	18.93	19.23	19.33	0.0	20.0
		25	12	19.32	19.19	18.94	19.25	19.31	0.0	20.0
		25	25	19.36	19.23	18.98	19.26	19.34	0.0	20.0
		50	0	19.34	19.15	18.97	19.24	19.35	0.0	20.0
		1	0	19.06	19.16	18.77	19.08	19.19	0.0	20.0
	16QAM	1	25	19.03	19.06	18.78	19.02	19.04	0.0	20.0
		1	49	19.22	19.17	18.93	19.18	19.15	0.0	20.0
		25	0	19.21	18.98	18.88	19.13	19.29	0.0	20.0
		25	12	19.22	18.97	18.90	19.13	19.27	0.0	20.0
		25	25	19.27	18.99	18.92	19.15	19.29	0.0	20.0
		50	0	19.28	18.90	18.91	19.16	19.26	0.0	20.0
		1	0	19.26	18.89	18.98	19.15	19.09	0.0	20.0
		1	25	19.17	18.85	18.88	19.01	19.03	0.0	20.0
	64QAM	1	49	19.31	19.04	18.99	19.14	19.21	0.0	20.0
		25	0	19.20	18.88	18.85	19.20	19.28	0.0	20.0
		25	12	19.22	19.18	18.86	19.19	19.28	0.0	20.0
		25	25	19.28	19.21	18.90	19.22	19.30	0.0	20.0
		50	0	19.23	19.15	18.87	19.20	19.31	0.0	20.0
		1	0	18.71	18.47	18.20	18.73	18.77	1.0	19.0
		1	25	18.62	18.38	18.13	18.64	18.67	1.0	19.0
		1	49	18.81	18.49	18.23	18.80	18.77	1.0	19.0
	256QAM	25	0	18.68	18.36	18.34	18.65	18.73	1.0	19.0
		25	12	18.71	18.91	18.36	18.66	18.72	1.0	19.0
		25	25	18.74	18.88	18.38	18.67	18.70	1.0	19.0
		50	0	18.69	18.75	18.30	18.66	18.75	1.0	19.0
5 MHz	QPSK	1	0	19.27	19.43	18.96	19.32	19.37	0.0	20.0
		1	12	19.31	19.44	18.98	19.30	19.33	0.0	20.0
		1	24	19.30	19.41	18.91	19.29	19.34	0.0	20.0
		12	0	19.26	19.22	18.94	19.24	19.34	0.0	20.0
		12	7	19.26	19.21	18.94	19.25	19.32	0.0	20.0
		12	13	19.27	19.22	18.95	19.23	19.35	0.0	20.0
		25	0	19.27	19.19	18.95	19.25	19.36	0.0	20.0
		1	0	19.40	19.09	18.79	19.34	19.24	0.0	20.0
	16QAM	1	12	19.38	19.17	18.87	19.34	19.29	0.0	20.0
		1	24	19.40	19.21	18.89	19.30	19.33	0.0	20.0
		12	0	19.21	18.96	18.88	19.16	19.27	0.0	20.0
		12	7	19.20	18.96	18.89	19.16	19.25	0.0	20.0
		12	13	19.22	18.98	18.90	19.15	19.28	0.0	20.0
		25	0	19.21	18.93	18.94	19.14	19.25	0.0	20.0
		1	0	19.37	19.18	18.77	19.24	19.43	0.0	20.0
		1	12	19.23	19.26	18.77	19.25	19.47	0.0	20.0
	64QAM	1	24	19.29	19.30	18.72	19.18	19.40	0.0	20.0
		12	0	19.15	19.25	18.93	19.13	19.34	0.0	20.0
		12	7	19.14	19.19	18.94	19.13	19.35	0.0	20.0
		12	13	19.15	18.69	18.92	19.13	19.34	0.0	20.0
		25	0	19.15	19.20	18.93	19.09	19.31	0.0	20.0
		1	0	18.60	18.56	18.44	18.69	18.83	1.0	19.0
		1	12	18.77	18.62	18.51	18.77	18.91	1.0	19.0
		1	24	18.83	18.55	18.44	18.74	18.85	1.0	19.0
	256QAM	12	0	18.50	18.56	18.35	18.51	18.75	1.0	19.0
		12	7	18.49	18.64	18.36	18.52	18.75	1.0	19.0
		12	13	18.51	18.97	18.35	18.51	18.74	1.0	19.0
		25	0	18.58	18.59	18.30	18.51	18.73	1.0	19.0

LTE Band 66(Main.1) Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)					Maximum Allowed Average Power (dBm)				
				RSI=Pmax, Rcv					RSI=Free, Hotspot, Earjack				
				Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				132072	132322	132572			132072	132322	132572		
				1720 MHz	1745 MHz	1770 MHz			1720 MHz	1745 MHz	1770 MHz		
20 MHz	QPSK	1	0	23.22	23.13	23.21	0.0	24.0	18.50	18.45	18.53	0.0	19.0
		1	49	23.13	23.23	23.02	0.0	24.0	18.38	18.55	18.51	0.0	19.0
		1	99	23.16	23.07	23.17	0.0	24.0	18.51	18.35	18.40	0.0	19.0
		50	0	22.25	22.27	22.22	1.0	23.0	18.62	18.67	18.55	0.0	19.0
		50	24	22.26	22.13	22.20	1.0	23.0	18.60	18.46	18.50	0.0	19.0
		50	50	22.25	22.11	22.15	1.0	23.0	18.59	18.45	18.46	0.0	19.0
		100	0	22.25	22.15	22.17	1.0	23.0	18.59	18.45	18.49	0.0	19.0
	16QAM	1	0	22.48	22.43	22.55	1.0	23.0	18.59	18.45	18.85	0.0	19.0
		1	49	22.37	22.36	22.44	1.0	23.0	18.99	18.32	18.78	0.0	19.0
		1	99	22.45	22.35	22.37	1.0	23.0	18.95	18.49	18.68	0.0	19.0
		50	0	21.27	21.09	21.19	2.0	22.0	18.66	18.50	18.51	0.0	19.0
		50	24	21.25	21.08	21.12	2.0	22.0	18.63	18.49	18.48	0.0	19.0
		50	50	21.23	21.05	21.08	2.0	22.0	18.62	18.48	18.45	0.0	19.0
		100	0	21.23	21.09	21.15	2.0	22.0	18.66	18.49	18.48	0.0	19.0
	64QAM	1	0	21.46	21.25	21.33	2.0	22.0	18.92	18.62	18.82	0.0	19.0
		1	49	21.17	21.34	21.31	2.0	22.0	18.49	18.61	18.78	0.0	19.0
		1	99	21.36	21.25	21.16	2.0	22.0	18.81	18.57	18.67	0.0	19.0
		50	0	20.32	20.18	20.24	3.0	21.0	18.68	18.54	18.60	0.0	19.0
		50	24	20.29	20.17	20.19	3.0	21.0	18.65	18.52	18.55	0.0	19.0
		50	50	20.28	20.15	20.17	3.0	21.0	18.62	18.51	18.52	0.0	19.0
		100	0	20.24	20.13	20.14	3.0	21.0	18.59	18.49	18.51	0.0	19.0
	256QAM	1	0	18.48	18.28	18.31	5.0	19.0	18.39	18.30	18.24	0.0	19.0
		1	49	18.47	18.35	18.28	5.0	19.0	18.45	18.43	18.27	0.0	19.0
		1	99	18.43	18.17	18.19	5.0	19.0	18.34	18.24	18.12	0.0	19.0
		50	0	18.27	18.11	18.17	5.0	19.0	18.26	18.09	18.15	0.0	19.0
		50	24	18.26	18.07	18.09	5.0	19.0	18.25	18.08	18.12	0.0	19.0
		50	50	18.22	18.08	18.08	5.0	19.0	18.21	18.07	18.08	0.0	19.0
		100	0	18.26	18.06	18.11	5.0	19.0	18.24	18.04	18.13	0.0	19.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					Measured Pwr (dBm)				
				132047	132322	132597	MPR	Tune-up Limit	132047	132322	132597	MPR	Tune-up Limit
				1717.5 MHz	1745 MHz	1772.5 MHz			1717.5 MHz	1745 MHz	1772.5 MHz		
15 MHz	QPSK	1	0	22.57	23.23	23.29	0.0	24.0	18.63	18.53	18.61	0.0	19.0
		1	37	23.33	23.23	23.30	0.0	24.0	18.73	18.60	18.67	0.0	19.0
		1	74	23.32	23.23	23.21	0.0	24.0	18.57	18.51	18.53	0.0	19.0
		36	0	22.26	22.34	22.43	1.0	23.0	18.76	18.61	18.69	0.0	19.0
		36	20	22.44	22.31	22.40	1.0	23.0	18.74	18.60	18.68	0.0	19.0
		36	39	22.45	22.30	22.40	1.0	23.0	18.73	18.59	18.68	0.0	19.0
		75	0	22.46	22.32	22.42	1.0	23.0	18.74	18.61	18.69	0.0	19.0
	16QAM	1	0	21.92	22.39	22.41	1.0	23.0	18.79	18.73	18.66	0.0	19.0
		1	37	22.37	22.12	22.43	1.0	23.0	18.78	18.58	18.74	0.0	19.0
		1	74	22.40	22.33	22.36	1.0	23.0	18.71	18.66	18.61	0.0	19.0
		36	0	21.37	21.25	21.38	2.0	22.0	18.76	18.60	18.72	0.0	19.0
		36	20	21.34	21.22	21.35	2.0	22.0	18.74	18.58	18.70	0.0	19.0
		36	39	21.33	21.21	21.33	2.0	22.0	18.73	18.59	18.67	0.0	19.0
		75	0	21.34	21.27	21.35	2.0	22.0	18.70	18.62	18.69	0.0	19.0
	64QAM	1	0	21.36	21.26	21.30	2.0	22.0	18.76	18.94	18.72	0.0	19.0
		1	37	21.32	21.11	21.50	2.0	22.0	18.73	18.82	18.98	0.0	19.0
		1	74	21.30	21.24	21.23	2.0	22.0	18.69	18.88	18.66	0.0	19.0
		36	0	20.44	20.23	20.25	3.0	21.0	18.86	18.64	18.65	0.0	19.0
		36	20	20.44	20.20	20.24	3.0	21.0	18.87	18.60	18.64	0.0	19.0
		36	39	20.41	20.19	20.20	3.0	21.0	18.85	18.58	18.60	0.0	19.0
		75	0	20.36	20.20	20.28	3.0	21.0	18.81	18.61	18.66	0.0	19.0
	256QAM	1	0	18.43	18.60	18.17	5.0	19.0	18.34	18.49	18.16	0.0	19.0
		1	37	18.59	18.82	18.20	5.0	19.0	18.49	18.66	18.17	0.0	19.0
		1	74	18.36	18.55	18.06	5.0	19.0	18.28	18.47	18.08	0.0	19.0
		36	0	18.32	18.17	18.24	5.0	19.0	18.38	18.24	18.27	0.0	19.0
		36	20	18.29	18.16	18.20	5.0	19.0	18.36	18.24	18.23	0.0	19.0
		36	39	18.27	18.12	18.18	5.0	19.0	18.32	18.19	18.22	0.0	19.0
		75	0	18.29	18.17	18.22	5.0	19.0	18.35	18.22	18.26	0.0	19.0

LTE Band 66(Main.1) Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pw r (dBm)			MPR	Tune-up Limit	Measured Pw r (dBm)			MPR	Tune-up Limit
				132022	132322	132622			132022	132322	132622		
				1715 MHz	1745 MHz	1775 MHz			1715 MHz	1745 MHz	1775 MHz		
10 MHz	QPSK	1	0	22.62	23.27	23.34	0.0	24.0	18.73	18.65	18.65	0.0	19.0
		1	25	22.95	23.25	23.47	0.0	24.0	18.84	18.68	18.76	0.0	19.0
		1	49	23.16	23.22	23.36	0.0	24.0	18.73	18.56	18.65	0.0	19.0
		25	0	22.07	22.25	22.38	1.0	23.0	18.77	18.61	18.72	0.0	19.0
		25	12	22.28	22.23	22.35	1.0	23.0	18.74	18.58	18.70	0.0	19.0
		25	25	22.43	22.22	22.33	1.0	23.0	18.75	18.57	18.69	0.0	19.0
	16QAM	50	0	22.28	22.27	22.37	1.0	23.0	18.78	18.60	18.72	0.0	19.0
		1	0	21.82	22.28	22.58	1.0	23.0	18.89	18.78	18.84	0.0	19.0
		1	25	22.20	22.23	22.59	1.0	23.0	18.79	18.72	18.81	0.0	19.0
		1	49	22.32	22.30	22.46	1.0	23.0	18.78	18.77	18.70	0.0	19.0
		25	0	21.40	21.19	21.31	2.0	22.0	18.82	18.63	18.73	0.0	19.0
		25	12	21.38	21.19	21.28	2.0	22.0	18.78	18.60	18.70	0.0	19.0
	64QAM	25	25	21.39	21.16	21.25	2.0	22.0	18.79	18.59	18.67	0.0	19.0
		50	0	21.43	21.22	21.30	2.0	22.0	18.84	18.61	18.71	0.0	19.0
		1	0	21.29	21.29	21.26	2.0	22.0	18.80	18.87	18.71	0.0	19.0
		1	25	21.34	21.23	21.17	2.0	22.0	18.85	18.88	18.59	0.0	19.0
		1	49	21.35	21.34	21.15	2.0	22.0	18.84	18.89	18.61	0.0	19.0
		25	0	20.47	20.23	20.35	3.0	21.0	18.87	18.67	18.77	0.0	19.0
	256QAM	25	12	20.46	20.21	20.31	3.0	21.0	18.85	18.65	18.74	0.0	19.0
		25	25	20.44	20.22	20.32	3.0	21.0	18.84	18.66	18.75	0.0	19.0
		50	0	20.44	20.22	20.33	3.0	21.0	18.85	18.63	18.74	0.0	19.0
		1	0	18.23	18.37	18.44	5.0	19.0	18.37	18.51	18.51	0.0	19.0
		1	25	18.30	18.38	18.40	5.0	19.0	18.35	18.49	18.55	0.0	19.0
		1	49	18.16	18.32	18.35	5.0	19.0	18.33	18.43	18.50	0.0	19.0
		25	0	18.42	18.23	18.37	5.0	19.0	18.46	18.32	18.40	0.0	19.0
		25	12	18.40	18.23	18.33	5.0	19.0	18.43	18.31	18.37	0.0	19.0
		25	25	18.38	18.22	18.34	5.0	19.0	18.42	18.30	18.38	0.0	19.0
		50	0	18.36	18.17	18.30	5.0	19.0	18.41	18.23	18.34	0.0	19.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pw r (dBm)			MPR	Tune-up Limit	Measured Pw r (dBm)			MPR	Tune-up Limit
				131997	132322	132647			131997	132322	132647		
				1712.5 MHz	1745 MHz	1777.5 MHz			1712.5 MHz	1745 MHz	1777.5 MHz		
5 MHz	QPSK	1	0	23.52	23.18	23.37	0.0	24.0	18.83	18.47	18.72	0.0	19.0
		1	12	23.51	23.25	23.55	0.0	24.0	18.86	18.51	18.73	0.0	19.0
		1	24	23.54	23.22	23.42	0.0	24.0	18.86	18.48	18.72	0.0	19.0
		12	0	22.51	22.26	22.45	1.0	23.0	18.88	18.59	18.77	0.0	19.0
		12	7	22.48	22.21	22.42	1.0	23.0	18.87	18.56	18.75	0.0	19.0
		12	13	22.49	22.23	22.44	1.0	23.0	18.89	18.58	18.78	0.0	19.0
	16QAM	25	0	22.49	22.22	22.41	1.0	23.0	18.89	18.57	18.75	0.0	19.0
		1	0	22.62	22.38	22.50	1.0	23.0	18.96	18.74	18.85	0.0	19.0
		1	12	22.60	21.92	22.54	1.0	23.0	18.99	18.44	18.85	0.0	19.0
		1	24	22.59	22.31	22.57	1.0	23.0	18.90	18.66	18.89	0.0	19.0
		12	0	21.41	21.19	21.30	2.0	22.0	18.84	18.62	18.75	0.0	19.0
		12	7	21.39	21.18	21.28	2.0	22.0	18.84	18.61	18.74	0.0	19.0
	64QAM	12	13	21.40	21.17	21.30	2.0	22.0	18.85	18.62	18.74	0.0	19.0
		25	0	21.40	21.15	21.32	2.0	22.0	18.84	18.58	18.76	0.0	19.0
		1	0	21.29	21.13	21.52	2.0	22.0	18.75	18.89	18.68	0.0	19.0
		1	12	21.36	21.44	21.58	2.0	22.0	18.77	18.95	18.76	0.0	19.0
		1	24	21.38	21.19	21.49	2.0	22.0	18.79	18.81	18.78	0.0	19.0
		12	0	20.42	20.20	20.35	3.0	21.0	18.88	18.59	18.77	0.0	19.0
	256QAM	12	7	20.42	20.18	20.32	3.0	21.0	18.86	18.57	18.76	0.0	19.0
		12	13	20.43	20.18	20.32	3.0	21.0	18.87	18.58	18.76	0.0	19.0
		25	0	20.40	20.24	20.40	3.0	21.0	18.86	18.65	18.72	0.0	19.0
		1	0	18.37	18.12	18.65	5.0	19.0	18.33	18.47	18.23	0.0	19.0
		1	12	18.57	18.04	18.51	5.0	19.0	18.35	18.24	18.46	0.0	19.0
		1	24	18.35	18.07	18.60	5.0	19.0	18.30	18.49	18.20	0.0	19.0
		12	0	18.41	18.15	18.40	5.0	19.0	18.51	18.24	18.42	0.0	19.0
		12	7	18.40	18.14	18.35	5.0	19.0	18.50	18.20	18.41	0.0	19.0
		12	13	18.40	18.13	18.40	5.0	19.0	18.49	18.25	18.41	0.0	19.0
		25	0	18.40	18.21	18.31	5.0	19.0	18.50	18.20	18.40	0.0	19.0

LTE Band 66(Main.1) Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pw r (dBm)			MPR	Tune-up Limit	Measured Pw r (dBm)			MPR	Tune-up Limit
				131987	132322	132657			131987	132322	132657		
				1711.5 MHz	1745 MHz	1778.5 MHz			1711.5 MHz	1745 MHz	1778.5 MHz		
3 MHz	QPSK	1	0	23.11	23.24	23.48	0.0	24.0	18.87	18.50	18.80	0.0	19.0
		1	8	23.20	23.30	23.54	0.0	24.0	18.85	18.60	18.84	0.0	19.0
		1	14	23.23	23.23	23.55	0.0	24.0	18.92	18.44	18.82	0.0	19.0
		8	0	22.40	22.29	22.53	1.0	23.0	18.88	18.58	18.80	0.0	19.0
		8	4	22.47	22.25	22.49	1.0	23.0	18.82	18.54	18.77	0.0	19.0
		8	7	22.51	22.28	22.52	1.0	23.0	18.85	18.57	18.79	0.0	19.0
	16QAM	15	0	22.49	22.26	22.44	1.0	23.0	18.88	18.56	18.77	0.0	19.0
		1	0	22.31	22.50	22.56	1.0	23.0	18.66	18.70	18.85	0.0	19.0
		1	8	22.40	22.25	22.57	1.0	23.0	18.71	18.55	18.96	0.0	19.0
		1	14	22.35	22.53	22.48	1.0	23.0	18.86	18.73	18.76	0.0	19.0
		8	0	21.54	21.38	21.44	2.0	22.0	18.92	18.67	18.77	0.0	19.0
		8	4	21.50	21.33	21.36	2.0	22.0	18.88	18.64	18.73	0.0	19.0
	64QAM	8	7	21.55	21.35	21.40	2.0	22.0	18.91	18.65	18.76	0.0	19.0
		15	0	21.42	21.18	21.42	2.0	22.0	18.86	18.59	18.81	0.0	19.0
		1	0	21.51	21.33	21.25	2.0	22.0	18.99	18.84	18.55	0.0	19.0
		1	8	21.53	21.18	21.45	2.0	22.0	18.98	18.72	18.80	0.0	19.0
		1	14	21.61	21.41	21.19	2.0	22.0	18.95	18.89	18.49	0.0	19.0
		8	0	20.46	20.35	20.41	3.0	21.0	18.87	18.73	18.85	0.0	19.0
	256QAM	8	4	20.44	20.29	20.38	3.0	21.0	18.86	18.69	18.81	0.0	19.0
		8	7	20.45	20.32	20.40	3.0	21.0	18.87	18.73	18.85	0.0	19.0
		15	0	20.57	20.18	20.42	3.0	21.0	18.96	18.60	18.84	0.0	19.0
		1	0	18.48	18.50	18.32	5.0	19.0	18.62	18.47	18.58	0.0	19.0
		1	8	18.67	18.66	18.37	5.0	19.0	18.62	18.72	18.60	0.0	19.0
		1	14	18.54	18.40	18.37	5.0	19.0	18.52	18.51	18.51	0.0	19.0
		8	0	18.41	18.24	18.38	5.0	19.0	18.49	18.31	18.45	0.0	19.0
		8	4	18.38	18.17	18.40	5.0	19.0	18.46	18.26	18.49	0.0	19.0
		8	7	18.42	18.20	18.42	5.0	19.0	18.50	18.29	18.48	0.0	19.0
		15	0	18.53	18.18	18.45	5.0	19.0	18.56	18.24	18.51	0.0	19.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pw r (dBm)			MPR	Tune-up Limit	Measured Pw r (dBm)			MPR	Tune-up Limit
				131979	132322	132665			131979	132322	132665		
				1710.7 MHz	1745 MHz	1779.3 MHz			1710.7 MHz	1745 MHz	1779.3 MHz		
1.4 MHz	QPSK	1	0	23.62	23.27	23.54	0.0	24.0	18.82	18.61	18.84	0.0	19.0
		1	3	23.53	23.23	23.53	0.0	24.0	18.84	18.62	18.78	0.0	19.0
		1	5	23.58	23.25	23.52	0.0	24.0	18.77	18.55	18.79	0.0	19.0
		3	0	23.61	23.34	23.45	0.0	24.0	18.75	18.48	18.83	0.0	19.0
		3	1	23.64	23.30	23.51	0.0	24.0	18.91	18.54	18.86	0.0	19.0
		3	3	23.57	23.25	23.52	0.0	24.0	18.89	18.65	18.80	0.0	19.0
	16QAM	6	0	22.58	22.26	22.52	1.0	23.0	18.91	18.52	18.80	0.0	19.0
		1	0	22.56	22.13	22.26	1.0	23.0	18.90	18.44	18.63	0.0	19.0
		1	3	22.52	22.34	22.41	1.0	23.0	18.92	18.61	18.67	0.0	19.0
		1	5	22.64	22.24	22.35	1.0	23.0	18.99	18.54	18.75	0.0	19.0
		3	0	22.52	22.19	22.38	1.0	23.0	18.93	18.58	18.92	0.0	19.0
		3	1	22.55	22.23	22.41	1.0	23.0	18.86	18.66	18.90	0.0	19.0
	64QAM	3	3	22.48	22.18	22.50	1.0	23.0	18.83	18.75	18.72	0.0	19.0
		6	0	21.56	21.21	21.38	2.0	22.0	18.86	18.52	18.80	0.0	19.0
		1	0	21.19	21.33	21.55	2.0	22.0	18.99	18.89	18.56	0.0	19.0
		1	3	21.31	21.24	21.50	2.0	22.0	18.83	18.82	18.73	0.0	19.0
		1	5	21.30	21.26	21.51	2.0	22.0	18.88	18.80	18.68	0.0	19.0
		3	0	21.42	21.16	21.36	2.0	22.0	18.73	18.68	18.74	0.0	19.0
	256QAM	3	1	21.35	21.19	21.36	2.0	22.0	19.00	18.70	18.61	0.0	19.0
		3	3	21.46	21.14	21.40	2.0	22.0	18.99	18.73	18.76	0.0	19.0
		6	0	20.44	20.31	20.41	3.0	21.0	18.92	18.64	18.72	0.0	19.0
		1	0	18.64	18.25	18.25	5.0	19.0	18.67	18.11	18.54	0.0	19.0
		1	3	18.61	18.32	18.11	5.0	19.0	18.71	18.04	18.59	0.0	19.0
		1	5	18.49	18.12	18.25	5.0	19.0	18.69	18.18	18.53	0.0	19.0
		3	0	18.64	18.19	18.31	5.0	19.0	18.42	18.20	18.55	0.0	19.0
		3	1	18.60	18.16	18.26	5.0	19.0	18.42	18.18	18.50	0.0	19.0
		3	3	18.43	18.18	18.38	5.0	19.0	18.42	18.24	18.43	0.0	19.0
		6	0	18.4	18.1	18.3	5.0	19.0	18.41	18.17	18.42	0.0	19.0

LTE Band 66(Sub.2) Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
				RSI=Free, Rcv, Hotspot, Earjack				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				132072	132322	132572		
				1720 MHz	1745 MHz	1770 MHz		
20 MHz	QPSK	1	0	15.62	15.86	15.85	0.0	17.0
		1	49	15.67	15.84	15.57	0.0	17.0
		1	99	15.67	15.83	15.77	0.0	17.0
		50	0	15.68	15.77	15.87	0.0	17.0
		50	24	15.69	15.88	15.85	0.0	17.0
		50	50	15.69	15.79	15.81	0.0	17.0
		100	0	15.68	15.78	15.84	0.0	17.0
	16QAM	1	0	15.83	15.95	15.89	0.0	17.0
		1	49	16.00	15.91	15.79	0.0	17.0
		1	99	15.88	15.97	15.84	0.0	17.0
		50	0	15.65	15.70	15.81	0.0	17.0
		50	24	15.65	15.72	15.78	0.0	17.0
		50	50	15.68	15.74	15.75	0.0	17.0
		100	0	15.67	15.75	15.78	0.0	17.0
	64QAM	1	0	15.85	15.92	16.16	0.0	17.0
		1	49	15.98	16.13	16.17	0.0	17.0
		1	99	15.90	15.96	16.07	0.0	17.0
		50	0	15.70	15.72	15.85	0.0	17.0
		50	24	15.73	15.73	15.83	0.0	17.0
		50	50	15.74	15.75	15.80	0.0	17.0
		100	0	15.69	15.69	15.78	0.0	17.0
	256QAM	1	0	15.70	15.85	16.16	0.0	17.0
		1	49	15.80	15.89	16.06	0.0	17.0
		1	99	15.79	15.91	16.02	0.0	17.0
		50	0	15.67	15.68	15.81	0.0	17.0
		50	24	15.69	15.69	15.77	0.0	17.0
		50	50	15.69	15.71	15.73	0.0	17.0
		100	0	15.67	15.72	15.75	0.0	17.0
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	15.36	15.92	16.02	0.0	17.0
		1	37	16.21	16.12	16.06	0.0	17.0
		1	74	16.04	15.96	15.99	0.0	17.0
		36	0	16.07	16.10	16.17	0.0	17.0
		36	20	16.13	16.09	16.17	0.0	17.0
		36	39	16.16	16.10	16.16	0.0	17.0
		75	0	16.14	16.11	16.19	0.0	17.0
	16QAM	1	0	15.34	15.97	15.91	0.0	17.0
		1	37	16.04	16.03	16.05	0.0	17.0
		1	74	16.03	16.05	15.88	0.0	17.0
		36	0	15.98	15.98	16.11	0.0	17.0
		36	20	16.05	15.99	16.08	0.0	17.0
		36	39	16.07	15.99	16.09	0.0	17.0
		75	0	16.05	16.04	16.06	0.0	17.0
	64QAM	1	0	16.00	16.23	16.02	0.0	17.0
		1	37	16.11	16.20	16.06	0.0	17.0
		1	74	16.05	16.33	15.99	0.0	17.0
		36	0	16.13	16.03	16.04	0.0	17.0
		36	20	16.16	16.04	16.04	0.0	17.0
		36	39	16.17	16.06	16.00	0.0	17.0
		75	0	16.13	16.04	16.07	0.0	17.0
	256QAM	1	0	15.98	15.93	16.21	0.0	17.0
		1	37	16.20	16.10	16.32	0.0	17.0
		1	74	16.07	16.01	16.17	0.0	17.0
		36	0	16.06	16.02	16.05	0.0	17.0
		36	20	16.09	16.03	16.05	0.0	17.0
		36	39	16.08	16.03	16.04	0.0	17.0
		75	0	16.09	16.02	16.07	0.0	17.0

LTE Band 66(Sub.2) Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pw r (dBm)			MPR	Tune-up Limit
				132022	132322	132622		
				1715 MHz	1745 MHz	1775 MHz		
10 MHz	QPSK	1	0	15.91	16.03	16.06	0.0	17.0
		1	25	16.15	16.00	16.20	0.0	17.0
		1	49	16.07	15.99	16.07	0.0	17.0
		25	0	16.05	15.96	16.09	0.0	17.0
		25	12	16.06	15.95	16.08	0.0	17.0
		25	25	16.08	15.97	16.06	0.0	17.0
		50	0	16.08	15.98	16.08	0.0	17.0
	16QAM	1	0	16.00	16.02	16.14	0.0	17.0
		1	25	16.22	16.02	16.14	0.0	17.0
		1	49	16.17	16.10	16.02	0.0	17.0
		25	0	15.99	15.86	16.02	0.0	17.0
		25	12	16.00	15.89	16.00	0.0	17.0
		25	25	16.03	15.90	15.99	0.0	17.0
	64QAM	50	0	16.10	15.91	15.98	0.0	17.0
		1	0	16.08	16.21	15.89	0.0	17.0
		1	25	16.12	16.26	15.88	0.0	17.0
		1	49	16.20	16.35	15.78	0.0	17.0
		25	0	16.09	15.98	16.10	0.0	17.0
		25	12	16.14	16.01	16.08	0.0	17.0
	256QAM	25	25	16.13	16.03	16.06	0.0	17.0
		50	0	16.10	15.99	16.06	0.0	17.0
		1	0	15.88	16.15	16.11	0.0	17.0
		1	25	16.05	16.27	15.97	0.0	17.0
		1	49	15.93	16.20	16.04	0.0	17.0
		25	0	16.06	15.97	16.11	0.0	17.0
		25	12	16.07	16.00	16.10	0.0	17.0
		25	25	16.09	16.01	16.07	0.0	17.0
	50	0	16.07	15.96	16.05	0.0	17.0	
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pw r (dBm)			MPR	Tune-up Limit
				131997	132322	132647		
				1712.5 MHz	1745 MHz	1777.5 MHz		
5 MHz	QPSK	1	0	16.00	15.95	16.13	0.0	17.0
		1	12	16.09	16.12	16.20	0.0	17.0
		1	24	16.08	16.00	16.14	0.0	17.0
		12	0	16.07	15.99	16.17	0.0	17.0
		12	7	16.08	15.96	16.15	0.0	17.0
		12	13	16.08	15.98	16.19	0.0	17.0
	16QAM	25	0	16.05	15.96	16.16	0.0	17.0
		1	0	16.06	15.99	16.21	0.0	17.0
		1	12	16.00	15.82	16.29	0.0	17.0
		1	24	16.06	15.97	16.25	0.0	17.0
		12	0	16.00	15.95	16.11	0.0	17.0
		12	7	16.01	15.94	16.10	0.0	17.0
		12	13	16.02	15.91	16.12	0.0	17.0
		25	0	16.02	15.92	16.08	0.0	17.0
	64QAM	1	0	15.86	16.21	16.31	0.0	17.0
		1	12	16.03	16.33	16.39	0.0	17.0
		1	24	15.97	16.17	16.21	0.0	17.0
		12	0	16.02	15.88	16.00	0.0	17.0
		12	7	16.03	15.87	15.97	0.0	17.0
		12	13	16.04	15.89	15.99	0.0	17.0
		25	0	16.00	15.94	16.08	0.0	17.0
	256QAM	1	0	15.94	16.03	16.18	0.0	17.0
		1	12	16.05	16.14	16.24	0.0	17.0
		1	24	16.00	16.03	16.19	0.0	17.0
		12	0	15.96	15.93	16.06	0.0	17.0
		12	7	15.98	15.91	16.05	0.0	17.0
		12	13	15.99	15.96	16.06	0.0	17.0
	25	0	15.99	15.86	16.01	0.0	17.0	

LTE Band 66(Sub.2) 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	16.11	16.00	16.26	0.0	17.0
		1	8	16.30	16.10	16.33	0.0	17.0
		1	14	16.16	15.96	16.31	0.0	17.0
		8	0	16.13	16.05	16.31	0.0	17.0
		8	4	16.04	16.06	16.28	0.0	17.0
		8	7	16.12	16.07	16.31	0.0	17.0
		15	0	16.06	15.99	16.20	0.0	17.0
	16QAM	1	0	16.09	16.18	16.03	0.0	17.0
		1	8	16.21	16.22	16.27	0.0	17.0
		1	14	16.04	16.24	15.94	0.0	17.0
		8	0	16.15	16.05	16.16	0.0	17.0
		8	4	16.10	16.00	16.16	0.0	17.0
		8	7	16.13	16.02	16.17	0.0	17.0
		15	0	16.00	15.95	16.10	0.0	17.0
	64QAM	1	0	16.08	16.22	16.03	0.0	17.0
		1	8	16.17	16.19	16.26	0.0	17.0
		1	14	16.17	16.32	15.93	0.0	17.0
		8	0	16.04	16.05	16.20	0.0	17.0
		8	4	16.02	16.04	16.16	0.0	17.0
		8	7	16.02	16.02	16.17	0.0	17.0
		15	0	16.09	15.93	16.14	0.0	17.0
	256QAM	1	0	16.05	16.11	16.22	0.0	17.0
		1	8	16.21	16.33	16.38	0.0	17.0
		1	14	16.02	16.18	16.15	0.0	17.0
		8	0	16.04	16.03	16.20	0.0	17.0
		8	4	16.04	16.00	16.22	0.0	17.0
		8	7	16.08	16.01	16.22	0.0	17.0
		15	0	16.09	15.97	16.18	0.0	17.0
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	16.12	16.11	16.23	0.0	17.0
		1	3	16.12	16.07	16.16	0.0	17.0
		1	5	16.07	16.08	16.17	0.0	17.0
		3	0	16.03	16.07	16.28	0.0	17.0
		3	1	16.04	16.07	16.26	0.0	17.0
		3	3	16.12	15.98	16.12	0.0	17.0
		6	0	16.07	16.05	16.26	0.0	17.0
	16QAM	1	0	16.01	16.00	15.99	0.0	17.0
		1	3	16.15	16.13	16.16	0.0	17.0
		1	5	16.12	16.11	16.05	0.0	17.0
		3	0	15.97	16.00	16.15	0.0	17.0
		3	1	15.95	15.93	16.15	0.0	17.0
		3	3	16.01	15.94	16.03	0.0	17.0
		6	0	16.07	15.95	16.14	0.0	17.0
	64QAM	1	0	16.12	16.20	15.95	0.0	17.0
		1	3	16.04	16.29	16.04	0.0	17.0
		1	5	16.02	16.13	16.00	0.0	17.0
		3	0	15.93	16.02	16.07	0.0	17.0
		3	1	15.91	15.98	16.01	0.0	17.0
		3	3	15.96	16.05	16.14	0.0	17.0
		6	0	16.08	15.94	16.08	0.0	17.0
	256QAM	1	0	15.96	15.88	16.17	0.0	17.0
		1	3	16.07	15.81	16.03	0.0	17.0
		1	5	16.02	15.83	16.17	0.0	17.0
		3	0	16.02	15.86	16.15	0.0	17.0
		3	1	16.00	15.80	16.07	0.0	17.0
		3	3	16.01	15.86	16.03	0.0	17.0
		6	0	15.93	15.95	16.15	0.0	17.0

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 6.2.3-1: 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	$\leq 3.5^1$	$\leq 1.2^1$	$\leq 0.2^1$
	$\leq 0.5^2$		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 <i>powerBoosting-pi2BPSK</i> and if the IE <i>powerBoostPi2BPSK</i> 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 <i>powerBoostPi2BPSK</i> 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

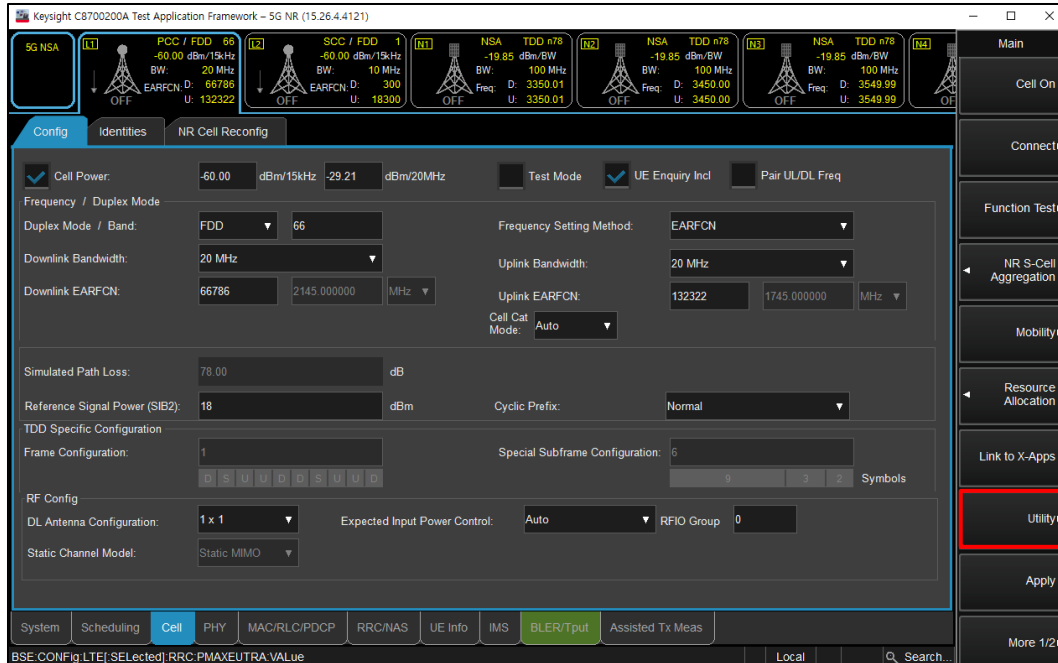
Uplink RB allocations were used to Table 6.1-1 of the 3GPP TS 138.521-1.

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	38@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

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



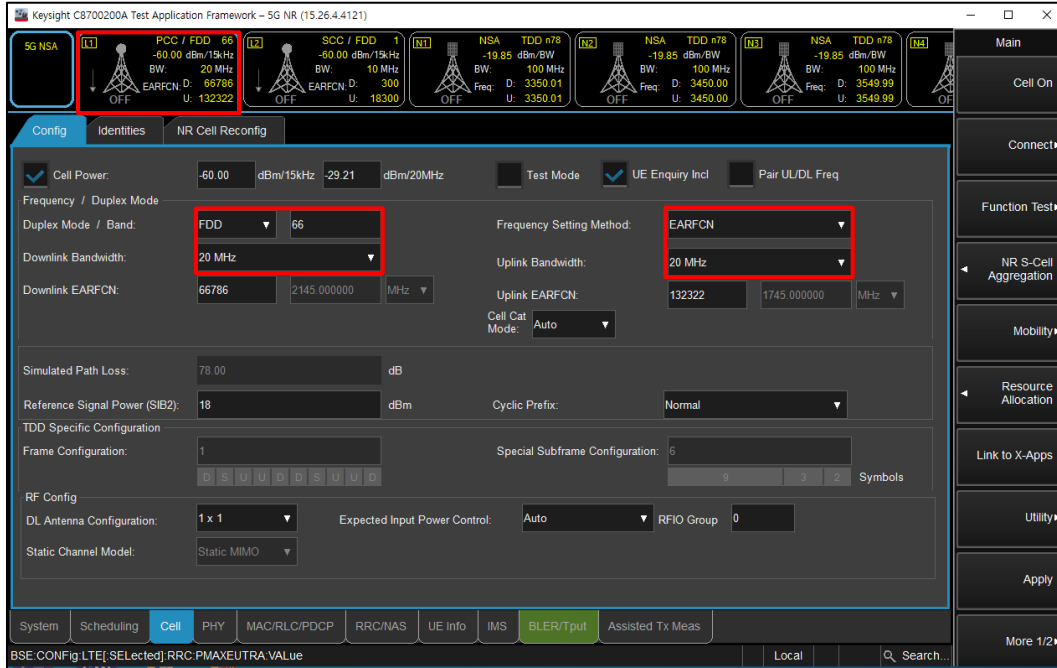
(Figure 1-1)



(Figure 1-2)

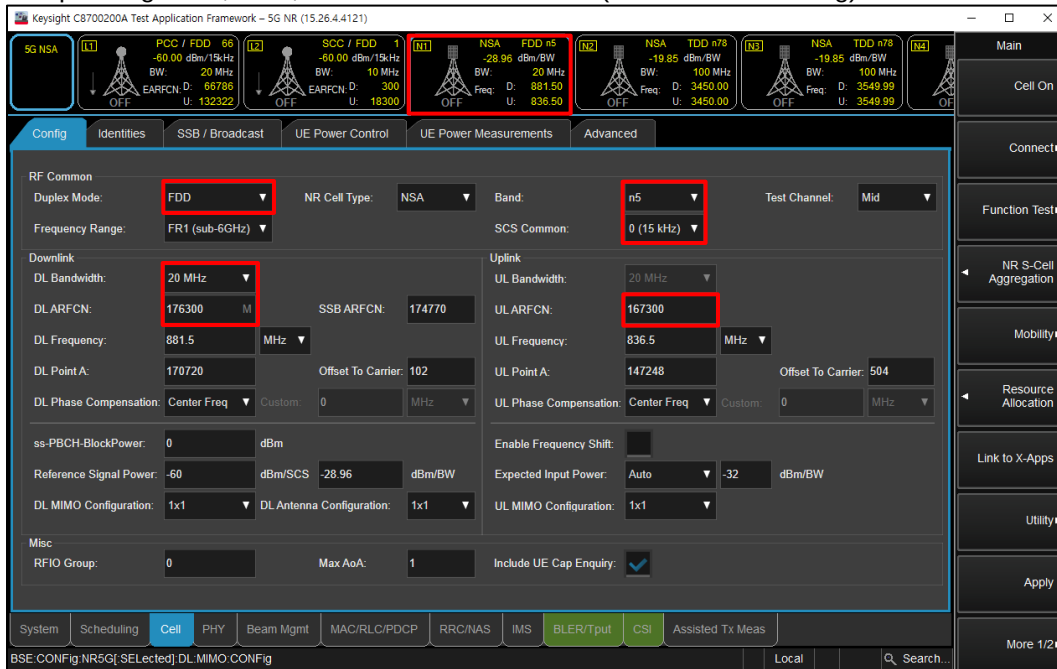
NSA Mode

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



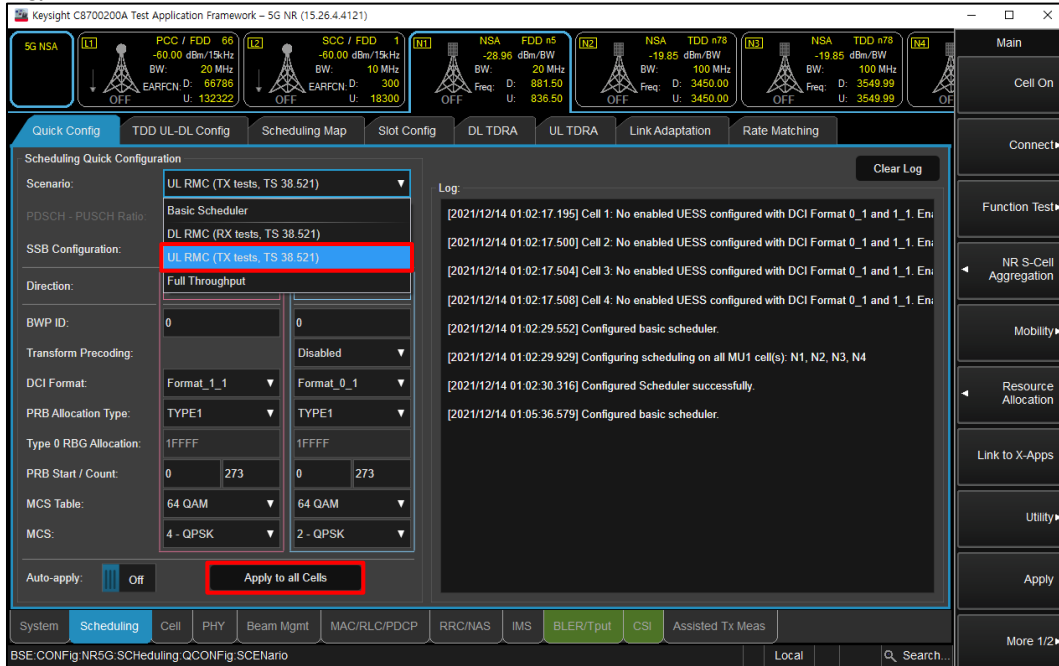
(Figure 2-1)

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



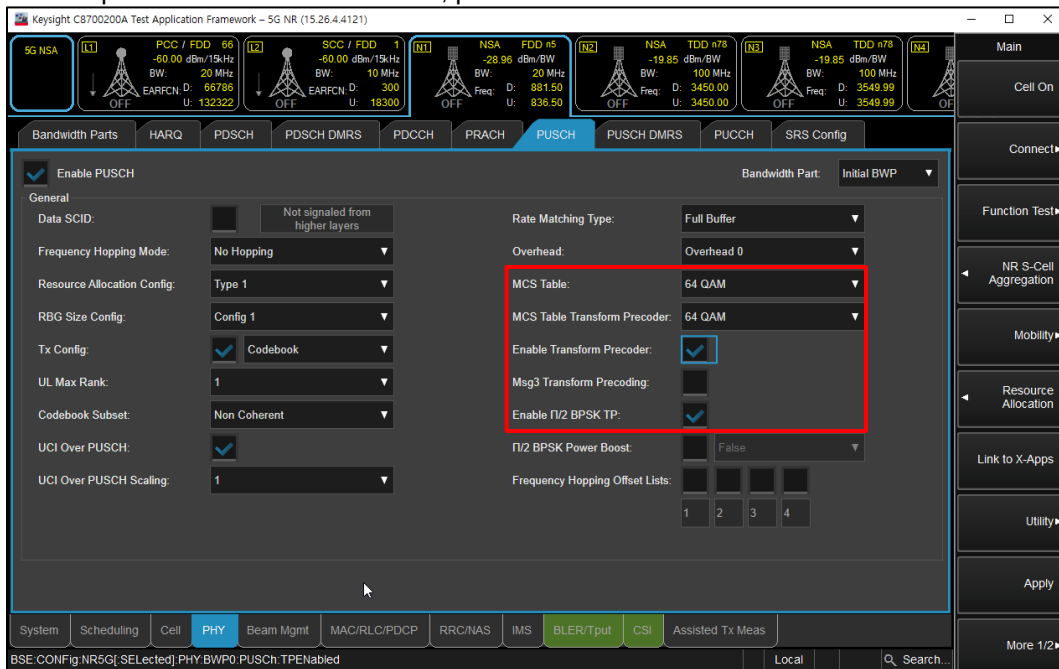
(Figure 2-2)

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



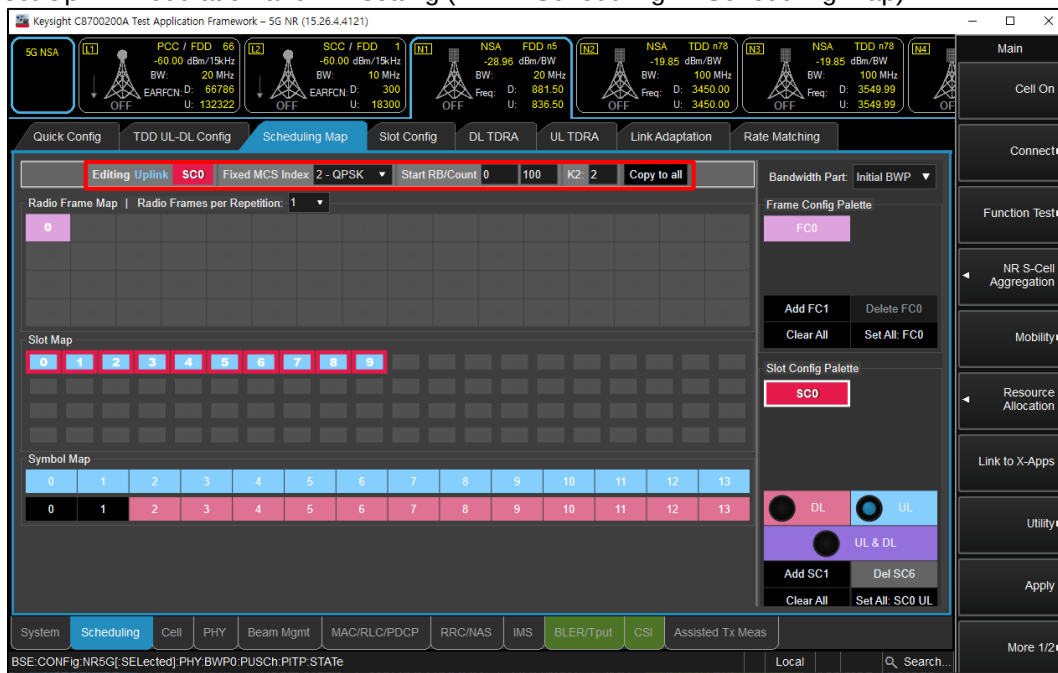
(Figure 2-3)

- 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



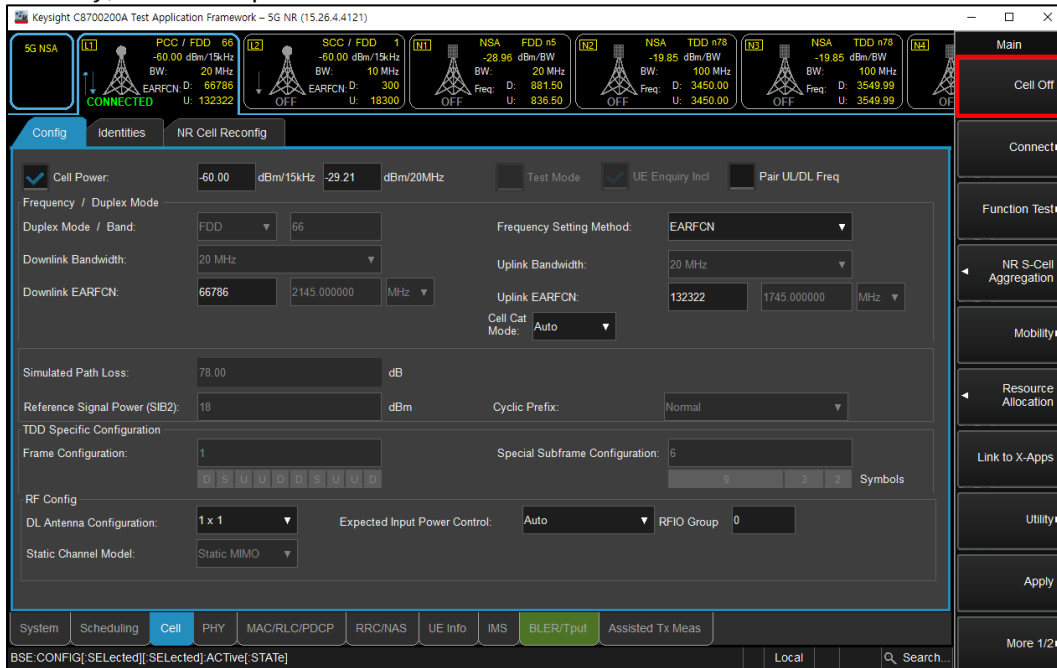
(Figure 2-4)

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



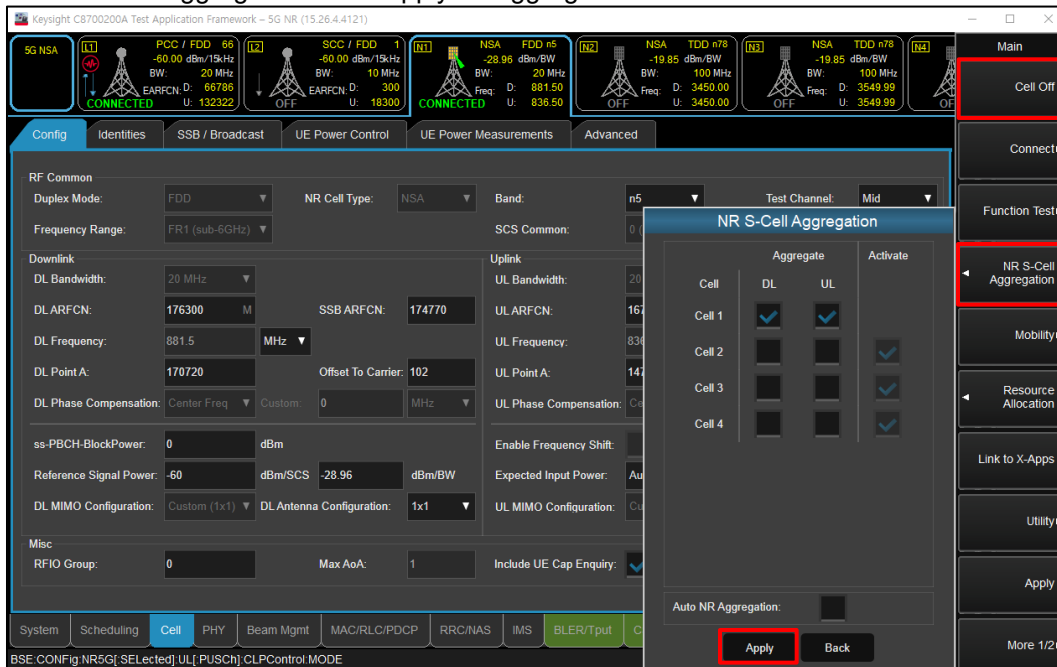
(Figure 2-5)

- 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



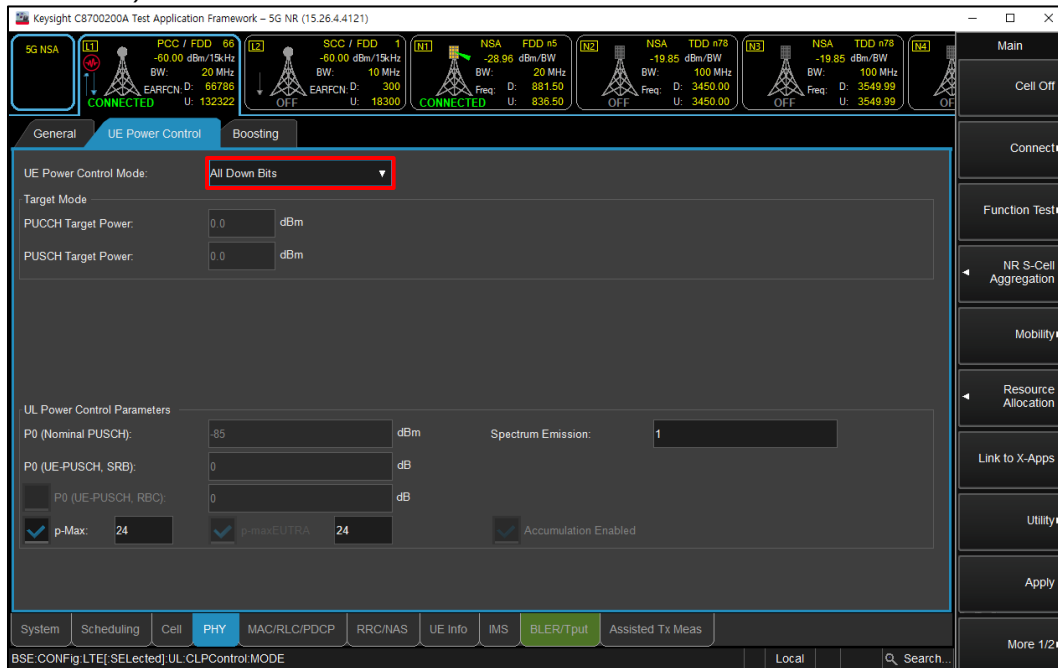
(Figure 2-6)

- 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



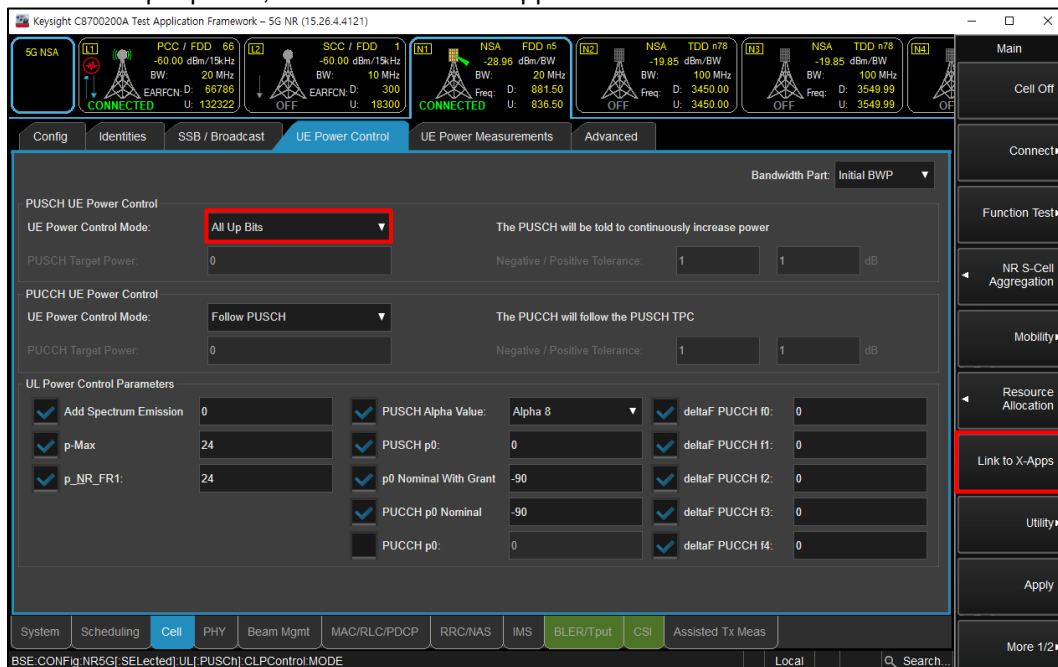
(Figure 2-7)

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



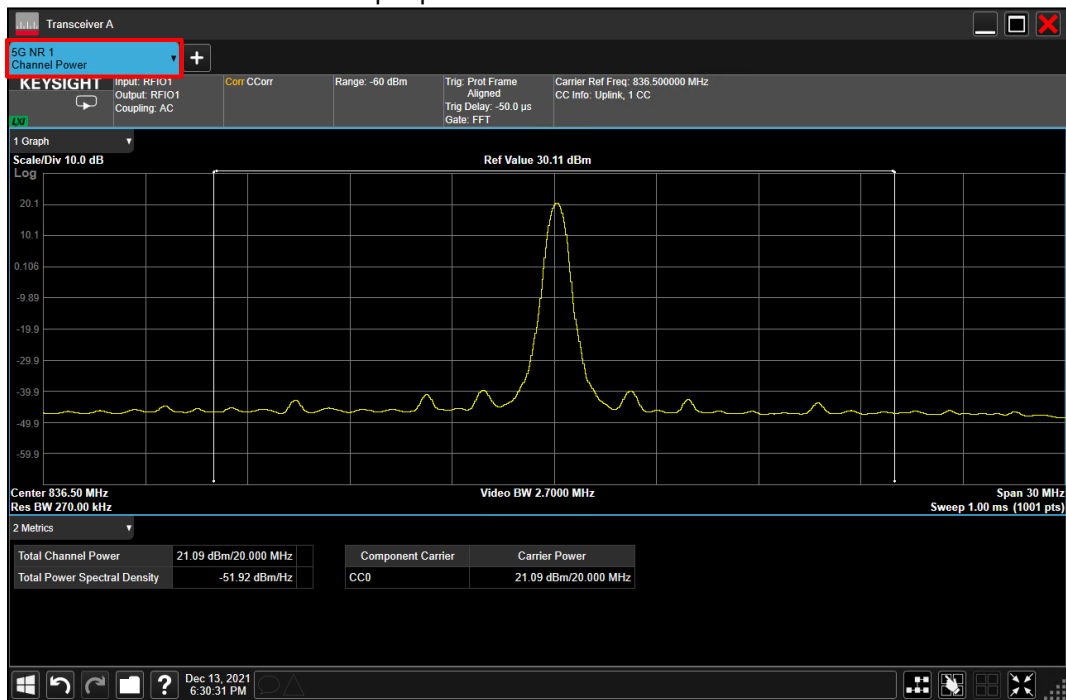
(Figure 2-8)

- 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”



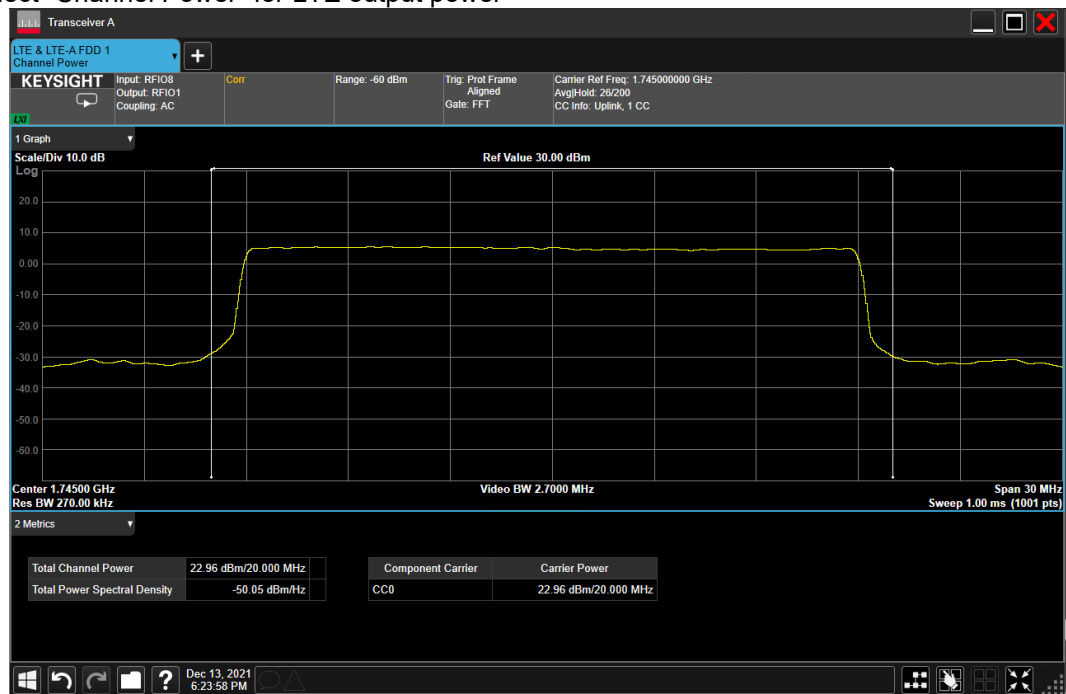
(Figure 2-9)

- Select “Channel Power” for NR output power



(Figure 2-10)

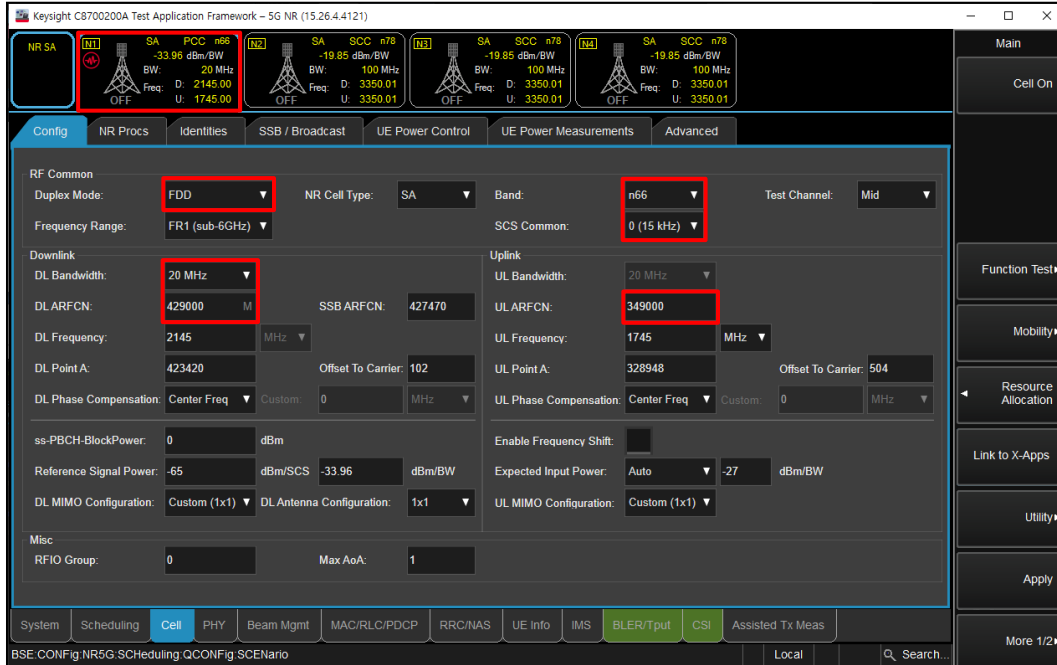
- Select “Channel Power” for LTE output power



(Figure 2-11)

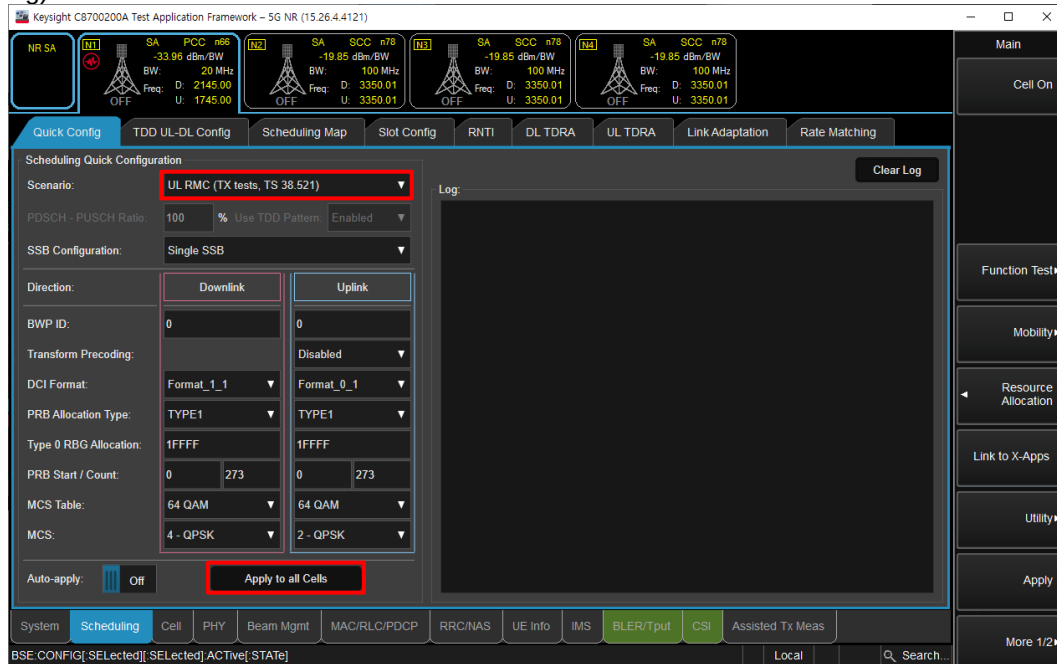
SA Mode

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



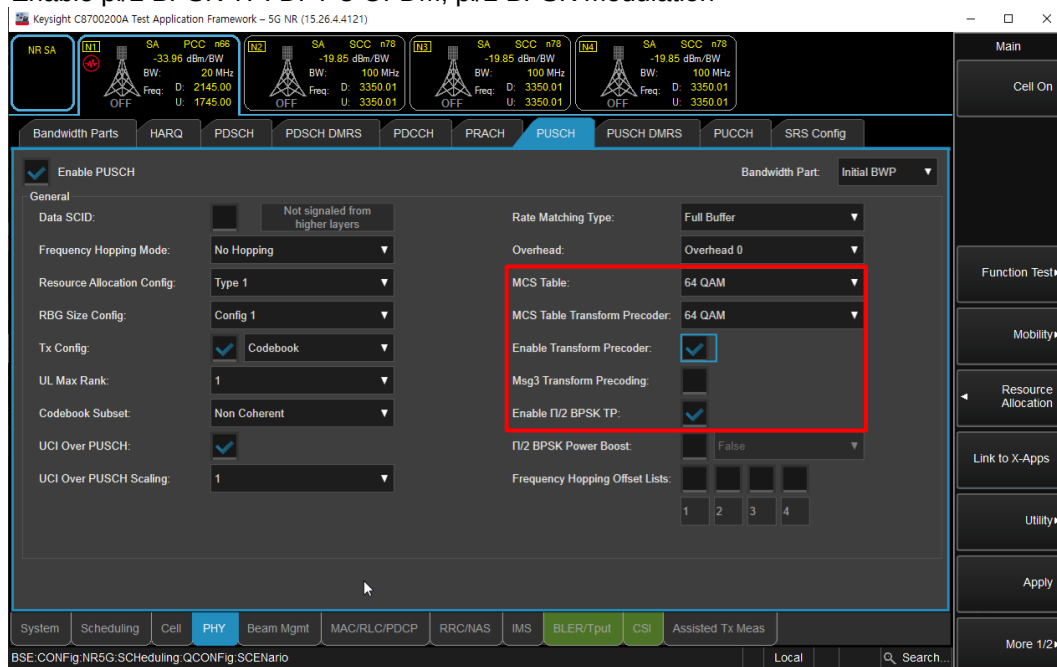
(Figure 3-1)

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



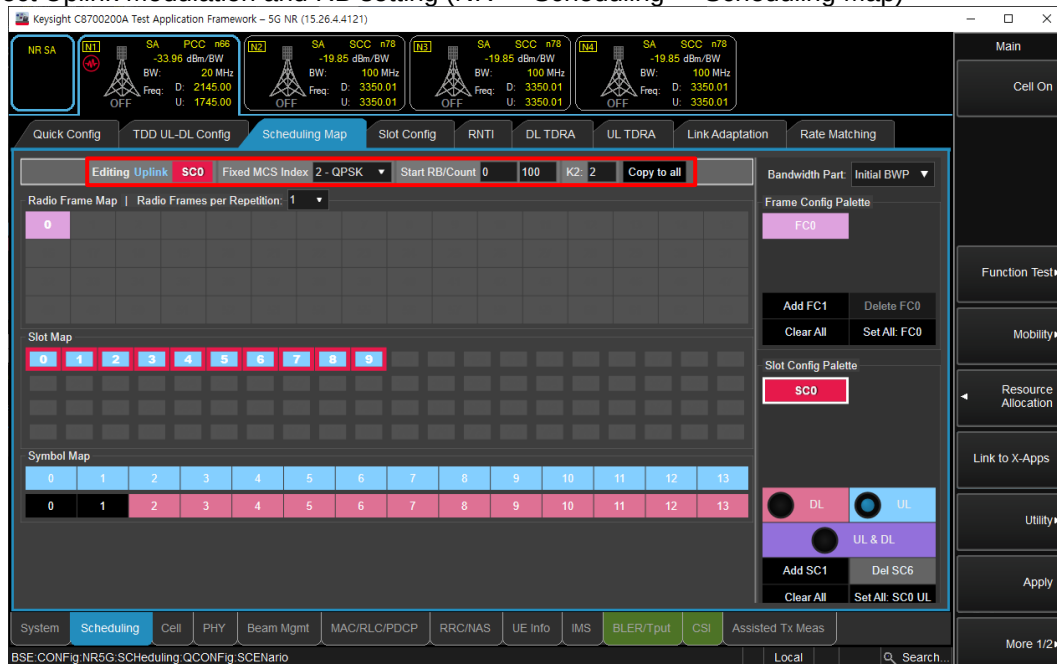
(Figure 3-2)

- 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



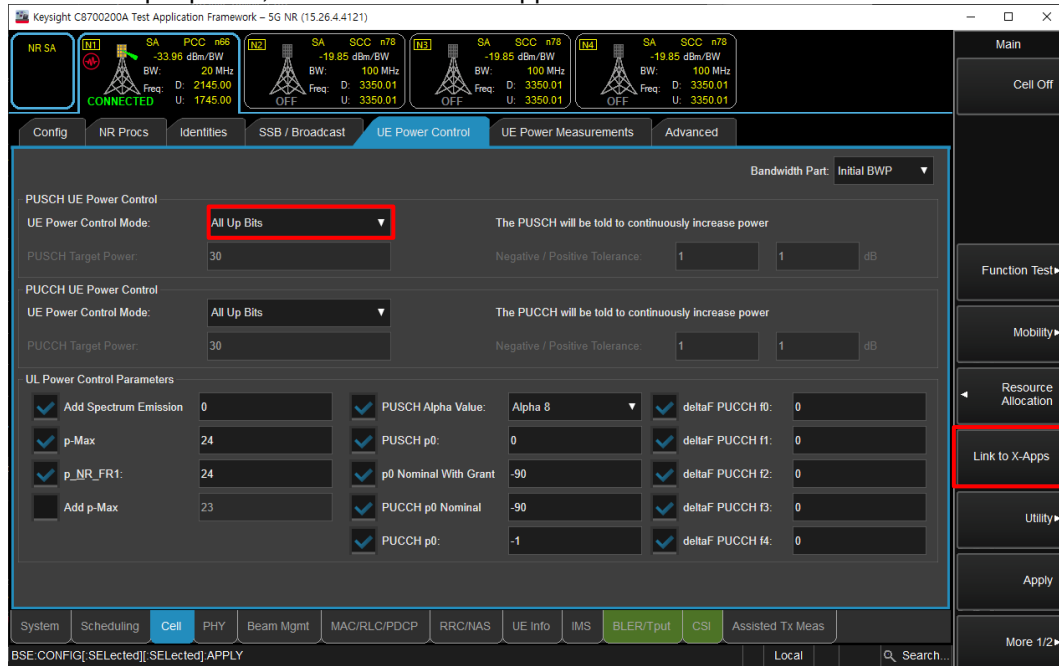
(Figure 3-3)

- 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)				
					RSI=Pmax, Free, Rcv, Hotspot, Earjack				
					Measured Pwr (dBm)			MPR	Tune-up Limit
						167300	836.50 MHz		
20 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1		24.10		0.0	25.0
			1	52		24.16		0.0	25.0
			1	104		24.04		0.0	25.0
			50	0		23.15		0.5	24.5
			50	28		24.11		0.0	25.0
			50	56		23.09		0.5	24.5
		QPSK	100	0		23.13		0.5	24.5
			1	1		24.11		0.0	25.0
			1	52		24.18		0.0	25.0
			1	104		24.03		0.0	25.0
			50	0		23.14		1.0	24.0
			50	28		24.12		0.0	25.0
			50	56		23.09		1.0	24.0
			100	0		23.13		1.0	24.0
		16QAM	1	1		23.21		1.0	24.0
			1	52		23.25		1.0	24.0
			1	104		23.06		1.0	24.0
		64QAM	1	1		21.59		2.5	22.5
		256QAM	1	1		19.51		4.5	20.5
	CP-OFDM	QPSK	1	1		22.60		1.5	23.5
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
						167300	836.50 MHz		
15 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1		24.11		0.0	25.0
			1	39		24.01		0.0	25.0
			1	77		24.08		0.0	25.0
			36	0		23.12		0.5	24.5
			36	21		24.11		0.0	25.0
			36	43		23.10		0.5	24.5
		QPSK	75	0		23.13		0.5	24.5
			1	1		24.13		0.0	25.0
			1	39		24.04		0.0	25.0
			1	77		24.06		0.0	25.0
			36	0		23.14		1.0	24.0
			36	21		24.10		0.0	25.0
			36	43		23.11		1.0	24.0
			75	0		23.12		1.0	24.0
		16QAM	1	1		23.17		1.0	24.0
			1	39		23.12		1.0	24.0
			1	77		23.18		1.0	24.0
		64QAM	1	1		21.62		2.5	22.5
		256QAM	1	1		19.55		4.5	20.5
	CP-OFDM	QPSK	1	1		22.66		1.5	23.5

NR Band n5 Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
					165800		168800		
					829.00 MHz		844.00 MHz		
10 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	24.08		24.06	0.0	25.0
			1	25	24.10		24.10	0.0	25.0
			1	50	24.07		24.02	0.0	25.0
			25	0	23.09		23.08	0.5	24.5
			25	13	24.09		24.06	0.0	25.0
			25	27	23.10		23.03	0.5	24.5
			50	0	23.11		23.07	0.5	24.5
		QPSK	1	1	24.09		24.06	0.0	25.0
			1	25	24.13		24.09	0.0	25.0
			1	50	24.07		24.03	0.0	25.0
			25	0	23.10		23.08	1.0	24.0
			25	13	24.10		24.06	0.0	25.0
			25	27	23.09		23.05	1.0	24.0
			50	0	23.10		23.06	1.0	24.0
		16QAM	1	1	23.11		23.14	1.0	24.0
			1	25	23.22		23.18	1.0	24.0
			1	50	23.11		23.02	1.0	24.0
		64QAM	1	1	21.58		21.59	2.5	22.5
		256QAM	1	1	19.57		19.50	4.5	20.5
	CP-OFDM	QPSK	1	1	22.60		22.55	1.5	23.5
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	$\pi/2$ BPSK	1	1	24.05	24.06	24.08	0.0	25.0
			1	12	23.97	23.99	23.97	0.0	25.0
			1	23	24.06	24.05	23.99	0.0	25.0
			12	0	23.07	23.08	23.08	0.5	24.5
			12	6	24.05	24.07	24.05	0.0	25.0
			12	13	23.08	23.08	23.04	0.5	24.5
			25	0	23.09	23.10	23.07	0.5	24.5
		QPSK	1	1	24.10	24.07	24.09	0.0	25.0
			1	12	23.99	24.01	23.97	0.0	25.0
			1	23	24.08	24.06	24.00	0.0	25.0
			12	0	23.11	23.10	23.10	1.0	24.0
			12	6	24.07	24.08	24.04	0.0	25.0
			12	13	23.08	23.08	23.04	1.0	24.0
			25	0	23.10	23.10	23.08	1.0	24.0
		16QAM	1	1	23.08	23.19	23.08	1.0	24.0
			1	12	23.04	23.06	22.95	1.0	24.0
			1	23	23.10	23.12	22.90	1.0	24.0
		64QAM	1	1	21.70	21.51	21.53	2.5	22.5
		256QAM	1	1	19.56	19.55	19.61	4.5	20.5
	CP-OFDM	QPSK	1	1	22.61	22.60	22.62	1.5	23.5

NR Band n41(Voice/data/SRS0) (Main.2) Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)					
					RSI=Free, Rcv, Hotspot, Earjack					
					Measured Pwr (dBm)				MPR	Tune-up Limit
							518598			
							2592.99 MHz			
100 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1			16.54		0.0	18.0
			1	136			16.67		0.0	18.0
			1	271			17.33		0.0	18.0
			135	0			16.29		0.0	18.0
			135	69			16.64		0.0	18.0
			135	138			16.97		0.0	18.0
		QPSK	270	0			16.62		0.0	18.0
			1	1			16.47		0.0	18.0
			1	136			16.62		0.0	18.0
			1	271			17.32		0.0	18.0
			135	0			16.29		0.0	18.0
			135	69			16.63		0.0	18.0
			135	138			16.83		0.0	18.0
			270	0			16.61		0.0	18.0
		16QAM	1	1			16.49		0.0	18.0
			1	136			16.64		0.0	18.0
			1	271			17.32		0.0	18.0
		64QAM	1	1			16.45		0.0	18.0
		256QAM	1	1			16.44		0.0	18.0
	CP-OFDM	QPSK	1	1			16.63		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	$\pi/2$ BPSK	1	1	16.37			17.22	0.0	18.0
			1	122	16.57			17.37	0.0	18.0
			1	243	16.47			16.94	0.0	18.0
			120	0	16.34			17.07	0.0	18.0
			120	62	16.54			17.37	0.0	18.0
			120	125	16.41			17.01	0.0	18.0
		QPSK	243	0	16.51			17.33	0.0	18.0
			1	1	16.42			17.01	0.0	18.0
			1	122	16.57			17.34	0.0	18.0
			1	243	16.49			16.95	0.0	18.0
			120	0	16.36			17.08	0.0	18.0
			120	62	16.56			17.33	0.0	18.0
			120	125	16.40			16.98	0.0	18.0
			243	0	16.50			17.33	0.0	18.0
		16QAM	1	1	16.38			17.47	0.0	18.0
			1	122	16.52			17.29	0.0	18.0
			1	243	16.47			16.91	0.0	18.0
		64QAM	1	1	16.32			17.07	0.0	18.0
		256QAM	1	1	16.33			17.17	0.0	18.0
	CP-OFDM	QPSK	1	1	16.37			17.12	0.0	18.0

Notes:

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

NR Band n41(Voice/data/SRS0) (Main.2) 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	$\pi/2$ BPSK	1	1	16.36			16.82	0.0	18.0
			1	108	16.56			17.32	0.0	18.0
			1	215	16.36			16.94	0.0	18.0
			108	0	16.38			17.22	0.0	18.0
			108	54	16.53			17.29	0.0	18.0
			108	109	16.53			17.00	0.0	18.0
			216	0	16.49			17.26	0.0	18.0
		QPSK	1	1	16.38			16.78	0.0	18.0
			1	108	16.54			17.27	0.0	18.0
			1	215	16.35			16.95	0.0	18.0
			108	0	16.37			17.22	0.0	18.0
			108	54	16.55			17.29	0.0	18.0
			108	109	16.53			17.02	0.0	18.0
			216	0	16.47			17.25	0.0	18.0
		16QAM	1	1	16.35			16.81	0.0	18.0
			1	108	16.54			17.26	0.0	18.0
			1	215	16.36			16.95	0.0	18.0
		64QAM	1	1	16.32			16.75	0.0	18.0
		256QAM	1	1	16.33			16.74	0.0	18.0
	CP-OFDM	QPSK	1	1	16.34			16.73	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	$\pi/2$ BPSK	1	1	16.43			17.01	0.0	18.0
			1	94	16.54			17.29	0.0	18.0
			1	187	16.41			16.97	0.0	18.0
			90	0	16.39			17.31	0.0	18.0
			90	49	16.48			17.21	0.0	18.0
			90	99	16.62			17.01	0.0	18.0
			180	0	16.45			17.23	0.0	18.0
		QPSK	1	1	16.42			16.99	0.0	18.0
			1	94	16.48			17.21	0.0	18.0
			1	187	16.42			16.94	0.0	18.0
			90	0	16.40			17.35	0.0	18.0
			90	49	16.47			17.24	0.0	18.0
			90	99	16.62			17.02	0.0	18.0
			180	0	16.45			17.21	0.0	18.0
		16QAM	1	1	16.44			17.03	0.0	18.0
			1	94	16.47			17.19	0.0	18.0
			1	187	16.39			16.94	0.0	18.0
		64QAM	1	1	16.33			16.96	0.0	18.0
		256QAM	1	1	16.35			16.97	0.0	18.0
	CP-OFDM	QPSK	1	1	16.42			16.98	0.0	18.0

Notes:

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

NR Band n41(Voice/data/SRS0) (Main.2) Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pw r (dBm)				MPR	Tune-up Limit	
					505200		518598				531996
					2526.00 MHz		2592.99 MHz				2659.98 MHz
60 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	16.39		16.35		17.17	0.0	18.0
			1	80	16.45		16.64		17.09	0.0	18.0
			1	160	16.56		17.06		16.93	0.0	18.0
			81	0	16.41		16.42		17.31	0.0	18.0
			81	40	16.45		16.67		17.12	0.0	18.0
			81	81	16.59		16.87		17.01	0.0	18.0
			162	0	16.44		16.68		17.10	0.0	18.0
		QPSK	1	1	16.43		16.36		17.16	0.0	18.0
			1	80	16.42		16.64		17.07	0.0	18.0
			1	160	16.57		17.06		16.92	0.0	18.0
			81	0	16.41		16.43		17.32	0.0	18.0
			81	40	16.47		16.68		17.13	0.0	18.0
			81	81	16.57		16.87		17.01	0.0	18.0
			162	0	16.43		16.67		17.11	0.0	18.0
		16QAM	1	1	16.43		16.34		17.17	0.0	18.0
			1	80	16.45		16.64		17.11	0.0	18.0
			1	160	16.54		17.05		16.96	0.0	18.0
		64QAM	1	1	16.36		16.28		17.12	0.0	18.0
		256QAM	1	1	16.37		16.31		17.11	0.0	18.0
		CP-OFDM	QPSK	1	1	16.39		16.28		17.12	0.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pw r (dBm)				MPR	Tune-up Limit	
					504204		518598				532998
					2521.02 MHz		2592.99 MHz				2664.99 MHz
50 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	16.41		16.31		17.31	0.0	18.0
			1	66	16.49		16.72		17.11	0.0	18.0
			1	131	16.59		16.95		16.96	0.0	18.0
			64	0	16.42		16.47		17.25	0.0	18.0
			64	34	16.46		16.68		17.09	0.0	18.0
			64	69	16.51		16.85		17.04	0.0	18.0
			128	0	16.46		16.67		17.07	0.0	18.0
		QPSK	1	1	16.43		16.32		17.32	0.0	18.0
			1	66	16.45		16.67		17.06	0.0	18.0
			1	131	16.57		16.96		16.97	0.0	18.0
			64	0	16.43		16.47		17.24	0.0	18.0
			64	34	16.47		16.69		17.06	0.0	18.0
			64	69	16.51		16.86		17.03	0.0	18.0
			128	0	16.42		16.65		17.06	0.0	18.0
		16QAM	1	1	16.45		16.34		17.32	0.0	18.0
			1	66	16.44		16.68		17.04	0.0	18.0
			1	131	16.57		16.96		16.97	0.0	18.0
		64QAM	1	1	16.46		16.24		17.26	0.0	18.0
		256QAM	1	1	16.37		16.24		17.27	0.0	18.0
		CP-OFDM	QPSK	1	1	16.39		16.23		17.29	0.0

Notes:

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

NR Band n41(Voice/data/SRS0) (Main.2) 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	$\pi/2$ BPSK	1	1	16.47	16.48		16.63	17.11	0.0	18.0
			1	52	16.41	16.31		16.93	16.92	0.0	18.0
			1	104	16.51	16.49		17.26	16.91	0.0	18.0
			50	0	16.46	16.48		16.82	17.04	0.0	18.0
			50	28	16.47	16.37		16.99	16.96	0.0	18.0
			50	56	16.49	16.39		17.14	16.95	0.0	18.0
			100	0	16.46	16.36		16.97	16.96	0.0	18.0
		QPSK	1	1	16.39	16.48		16.55	17.14	0.0	18.0
			1	52	16.35	16.28		16.94	16.92	0.0	18.0
			1	104	16.49	16.49		17.27	16.92	0.0	18.0
			50	0	16.43	16.47		16.83	17.04	0.0	18.0
			50	28	16.41	16.34		16.98	16.98	0.0	18.0
			50	56	16.44	16.39		17.14	16.93	0.0	18.0
			100	0	16.39	16.37		16.96	16.95	0.0	18.0
		16QAM	1	1	16.39	16.47		16.68	17.16	0.0	18.0
			1	52	16.34	16.31		16.95	16.94	0.0	18.0
			1	104	16.47	16.50		17.28	16.93	0.0	18.0
		64QAM	1	1	16.31	16.44		16.59	17.06	0.0	18.0
		256QAM	1	1	16.32	16.45		16.57	17.07	0.0	18.0
	CP-OFDM	QPSK	1	1	16.32	16.43		16.58	17.07	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	$\pi/2$ BPSK	1	1	16.33	16.46	16.38	17.05	17.03	0.0	18.0
			1	39	16.41	16.64	16.68	17.32	17.01	0.0	18.0
			1	76	16.34	16.39	16.81	17.28	16.94	0.0	18.0
			36	0	16.37	16.55	16.49	17.14	16.97	0.0	18.0
			36	21	16.34	16.59	16.63	17.29	16.95	0.0	18.0
			36	42	16.37	16.46	16.73	17.35	16.95	0.0	18.0
			75	0	16.35	16.59	16.62	16.99	16.96	0.0	18.0
		QPSK	1	1	16.37	16.46	16.37	17.20	16.98	0.0	18.0
			1	39	16.32	16.52	16.57	17.22	16.93	0.0	18.0
			1	76	16.36	16.37	16.79	17.11	16.91	0.0	18.0
			36	0	16.37	16.54	16.48	17.25	16.95	0.0	18.0
			36	21	16.34	16.58	16.63	17.28	16.97	0.0	18.0
			36	42	16.35	16.45	16.72	17.33	16.95	0.0	18.0
			75	0	16.34	16.57	16.61	17.26	16.94	0.0	18.0
		16QAM	1	1	16.38	16.48	16.38	16.99	16.98	0.0	18.0
			1	39	16.35	16.57	16.62	17.21	16.94	0.0	18.0
			1	76	16.38	16.36	16.78	17.22	16.91	0.0	18.0
		64QAM	1	1	16.31	16.39	16.29	16.92	16.91	0.0	18.0
		256QAM	1	1	16.33	16.37	16.32	16.92	16.92	0.0	18.0
	CP-OFDM	QPSK	1	1	16.34	16.41	16.28	16.89	16.85	0.0	18.0

Notes:

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

NR Band n41(Voice/data/SRS0) (Main.2) 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	$\pi/2$ BPSK	1	1	16.41	16.47	16.41	17.11	16.93	0.0	18.0
			1	25	16.37	16.61	16.62	17.29	16.96	0.0	18.0
			1	49	16.38	16.51	16.75	17.31	16.95	0.0	18.0
			25	0	16.41	16.58	16.54	17.21	16.97	0.0	18.0
			25	13	16.38	16.57	16.62	17.31	16.97	0.0	18.0
			25	26	16.37	16.55	16.68	17.34	16.95	0.0	18.0
			50	0	16.40	16.59	16.61	17.29	16.96	0.0	18.0
		QPSK	1	1	16.42	16.50	16.45	17.13	16.95	0.0	18.0
			1	25	16.38	16.58	16.61	17.27	16.94	0.0	18.0
			1	49	16.36	16.49	16.74	17.28	16.95	0.0	18.0
			25	0	16.42	16.56	16.54	17.22	16.92	0.0	18.0
			25	13	16.39	16.59	16.62	17.30	16.97	0.0	18.0
			25	26	16.37	16.54	16.68	17.31	16.94	0.0	18.0
			50	0	16.39	16.56	16.61	17.29	16.94	0.0	18.0
		16QAM	1	1	16.42	16.48	16.44	17.11	16.92	0.0	18.0
			1	25	16.33	16.56	16.57	17.25	16.92	0.0	18.0
			1	49	16.37	16.48	16.72	17.29	16.93	0.0	18.0
		64QAM	1	1	16.31	16.42	16.38	17.04	16.83	0.0	18.0
		256QAM	1	1	16.34	16.44	16.36	17.07	16.86	0.0	18.0
	CP-OFDM	QPSK	1	1	16.34	16.41	16.39	17.07	16.84	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	$\pi/2$ BPSK	1	1	16.43	16.51	16.49	17.25	16.92	0.0	18.0
			1	18	16.37	16.52	16.57	17.32	16.88	0.0	18.0
			1	36	16.37	16.55	16.71	17.33	16.92	0.0	18.0
			18	0	16.44	16.54	16.57	17.29	16.94	0.0	18.0
			18	10	16.42	16.57	16.61	17.34	16.93	0.0	18.0
			18	20	16.41	16.58	16.68	17.35	16.94	0.0	18.0
			36	0	16.42	16.58	16.62	17.33	16.94	0.0	18.0
		QPSK	1	1	16.42	16.51	16.48	17.18	16.91	0.0	18.0
			1	18	16.35	16.52	16.57	17.29	16.87	0.0	18.0
			1	36	16.37	16.57	16.70	17.33	16.93	0.0	18.0
			18	0	16.42	16.56	16.56	17.27	16.94	0.0	18.0
			18	10	16.41	16.58	16.61	17.31	16.92	0.0	18.0
			18	20	16.36	16.60	16.67	17.33	16.93	0.0	18.0
			36	0	16.42	16.58	16.62	17.32	16.95	0.0	18.0
		16QAM	1	1	16.42	16.49	16.48	17.19	16.93	0.0	18.0
			1	18	16.37	16.52	16.55	17.28	16.87	0.0	18.0
			1	36	16.39	16.56	16.70	17.32	16.92	0.0	18.0
		64QAM	1	1	16.38	16.48	16.41	17.09	16.84	0.0	18.0
		256QAM	1	1	16.35	16.44	16.43	17.14	16.84	0.0	18.0
	CP-OFDM	QPSK	1	1	16.39	16.45	16.42	17.11	16.84	0.0	18.0

Notes:

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

NR Band n41(Voice/data/SRS0) (Main.2) 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	$\pi/2$ BPSK	1	1	16.43	16.55	16.56	17.21	16.93	0.0	18.0
			1	12	16.46	16.63	16.68	17.38	16.97	0.0	18.0
			1	22	16.41	16.58	16.68	17.32	16.95	0.0	18.0
			12	0	16.45	16.55	16.56	17.29	16.91	0.0	18.0
			12	6	16.43	16.57	16.61	17.31	16.92	0.0	18.0
			12	12	16.44	16.59	16.65	17.33	16.93	0.0	18.0
			24	0	16.45	16.56	16.63	17.32	16.94	0.0	18.0
		QPSK	1	1	16.46	16.51	16.52	17.25	16.87	0.0	18.0
			1	12	16.39	16.52	16.58	17.26	16.82	0.0	18.0
			1	22	16.41	16.58	16.66	17.32	16.89	0.0	18.0
			12	0	16.44	16.54	16.61	17.28	16.91	0.0	18.0
			12	6	16.43	16.57	16.63	17.32	16.92	0.0	18.0
			12	12	16.42	16.57	16.67	17.33	16.91	0.0	18.0
			24	0	16.43	16.56	16.63	17.32	16.94	0.0	18.0
		16QAM	1	1	16.46	16.52	16.56	17.28	16.92	0.0	18.0
			1	12	16.44	16.57	16.61	17.31	16.91	0.0	18.0
			1	22	16.43	16.58	16.67	17.33	16.92	0.0	18.0
		64QAM	1	1	16.42	16.44	16.47	17.19	16.81	0.0	18.0
		256QAM	1	1	16.38	16.47	16.49	17.17	16.86	0.0	18.0
	CP-OFDM	QPSK	1	1	16.37	16.46	16.46	17.16	16.87	0.0	18.0

Notes:

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

NR Band n41(Voice/data/SRS0) (Sub.2) Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)					
					RSI=Free, Rcv, Hotspot, Earjack					
					Measured Pwr (dBm)				MPR	Tune-up Limit
							518598			
							2592.99 MHz			
100 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1			17.20		0.0	18.0
			1	136			16.72		0.0	18.0
			1	271			16.76		0.0	18.0
			135	0			16.88		0.0	18.0
			135	69			16.67		0.0	18.0
			135	138			16.38		0.0	18.0
		QPSK	270	0			16.61		0.0	18.0
			1	1			17.13		0.0	18.0
			1	136			16.86		0.0	18.0
			1	271			16.81		0.0	18.0
			135	0			16.89		0.0	18.0
			135	69			16.98		0.0	18.0
			135	138			16.49		0.0	18.0
			270	0			16.75		0.0	18.0
		16QAM	1	1			17.19		0.0	18.0
			1	136			16.68		0.0	18.0
			1	271			16.75		0.0	18.0
		64QAM	1	1			17.17		0.0	18.0
		256QAM	1	1			17.18		0.0	18.0
	CP-OFDM	QPSK	1	1			17.16		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	$\pi/2$ BPSK	1	1	16.60			16.60	0.0	18.0
			1	122	17.25			16.95	0.0	18.0
			1	243	16.88			16.99	0.0	18.0
			120	0	16.85			16.42	0.0	18.0
			120	62	17.20			16.90	0.0	18.0
			120	125	17.14			16.80	0.0	18.0
		QPSK	243	0	17.15			16.85	0.0	18.0
			1	1	16.51			16.60	0.0	18.0
			1	122	17.22			16.95	0.0	18.0
			1	243	16.86			16.99	0.0	18.0
			120	0	16.83			16.44	0.0	18.0
			120	62	17.20			16.90	0.0	18.0
			120	125	17.12			16.80	0.0	18.0
			243	0	17.15			16.85	0.0	18.0
		16QAM	1	1	16.51			16.60	0.0	18.0
			1	122	17.23			16.93	0.0	18.0
			1	243	16.89			16.99	0.0	18.0
		64QAM	1	1	16.54			16.54	0.0	18.0
		256QAM	1	1	16.48			16.56	0.0	18.0
	CP-OFDM	QPSK	1	1	16.50			16.58	0.0	18.0

Notes:

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

NR Band n41(Voice/data/SRS0) (Sub.2) 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	$\pi/2$ BPSK	1	1	16.50			16.63	0.0	18.0
			1	108	17.05			16.98	0.0	18.0
			1	215	17.05			17.01	0.0	18.0
			108	0	16.84			16.49	0.0	18.0
			108	54	17.02			16.94	0.0	18.0
			108	109	17.40			16.88	0.0	18.0
			216	0	17.00			16.87	0.0	18.0
		QPSK	1	1	16.46			16.59	0.0	18.0
			1	108	17.05			16.97	0.0	18.0
			1	215	17.02			17.01	0.0	18.0
			108	0	16.83			16.47	0.0	18.0
			108	54	17.03			16.94	0.0	18.0
			108	109	17.37			16.87	0.0	18.0
			216	0	17.02			16.87	0.0	18.0
		16QAM	1	1	16.48			16.59	0.0	18.0
			1	108	17.06			16.95	0.0	18.0
			1	215	17.03			16.98	0.0	18.0
		64QAM	1	1	16.37			16.51	0.0	18.0
		256QAM	1	1	16.42			16.49	0.0	18.0
	CP-OFDM	QPSK	1	1	16.41			16.48	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	$\pi/2$ BPSK	1	1	16.45			16.56	0.0	18.0
			1	94	17.06			17.01	0.0	18.0
			1	187	17.38			17.02	0.0	18.0
			90	0	16.75			16.53	0.0	18.0
			90	49	16.93			16.94	0.0	18.0
			90	99	17.24			16.91	0.0	18.0
			180	0	16.97			16.89	0.0	18.0
		QPSK	1	1	16.37			16.53	0.0	18.0
			1	94	17.00			16.97	0.0	18.0
			1	187	17.37			17.00	0.0	18.0
			90	0	16.73			16.51	0.0	18.0
			90	49	16.96			16.93	0.0	18.0
			90	99	17.24			16.89	0.0	18.0
			180	0	16.98			16.89	0.0	18.0
		16QAM	1	1	16.37			16.53	0.0	18.0
			1	94	16.98			16.95	0.0	18.0
			1	187	17.34			16.96	0.0	18.0
		64QAM	1	1	16.32			16.47	0.0	18.0
		256QAM	1	1	16.36			16.48	0.0	18.0
	CP-OFDM	QPSK	1	1	16.34			16.45	0.0	18.0

Notes:

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

NR Band n41(Voice/data/SRS0) (Sub.2) Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr r (dBm)				MPR	Tune-up Limit	
					505200		518598				531996
					2526.00 MHz		2592.99 MHz				2659.98 MHz
60 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	16.75		17.07		16.67	0.0	18.0
			1	80	17.08		16.84		16.91	0.0	18.0
			1	160	17.30		16.54		17.10	0.0	18.0
			81	0	17.01		17.05		16.92	0.0	18.0
			81	40	17.12		16.86		16.95	0.0	18.0
			81	81	17.42		16.61		17.01	0.0	18.0
			162	0	17.10		16.81		16.90	0.0	18.0
		QPSK	1	1	16.75		17.06		16.68	0.0	18.0
			1	80	17.08		16.85		16.89	0.0	18.0
			1	160	17.28		16.53		17.09	0.0	18.0
			81	0	16.97		17.07		16.92	0.0	18.0
			81	40	17.12		16.85		16.90	0.0	18.0
			81	81	17.42		16.63		17.00	0.0	18.0
			162	0	17.08		16.80		16.89	0.0	18.0
		16QAM	1	1	16.74		17.07		16.68	0.0	18.0
			1	80	17.07		16.85		16.91	0.0	18.0
			1	160	17.28		16.53		17.08	0.0	18.0
		64QAM	1	1	16.70		17.04		16.62	0.0	18.0
		256QAM	1	1	16.71		17.05		16.64	0.0	18.0
		CP-OFDM	QPSK	1	1	16.70		17.02		16.61	0.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr r (dBm)				MPR	Tune-up Limit	
					504204		518598				532998
					2521.02 MHz		2592.99 MHz				2664.99 MHz
50 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	16.66		17.12		16.83	0.0	18.0
			1	66	17.07		17.01		16.96	0.0	18.0
			1	131	17.40		16.59		17.15	0.0	18.0
			64	0	16.91		17.10		16.93	0.0	18.0
			64	34	17.03		16.99		16.95	0.0	18.0
			64	69	17.17		16.77		17.01	0.0	18.0
			128	0	17.01		16.96		16.91	0.0	18.0
		QPSK	1	1	16.66		17.08		16.82	0.0	18.0
			1	66	17.05		16.99		16.95	0.0	18.0
			1	131	17.39		16.57		17.13	0.0	18.0
			64	0	16.90		17.07		16.92	0.0	18.0
			64	34	17.03		16.98		16.93	0.0	18.0
			64	69	17.17		16.75		17.02	0.0	18.0
			128	0	17.01		16.97		16.91	0.0	18.0
		16QAM	1	1	16.65		17.07		16.83	0.0	18.0
			1	66	17.05		17.02		16.97	0.0	18.0
			1	131	17.38		16.58		17.14	0.0	18.0
		64QAM	1	1	16.61		17.05		16.77	0.0	18.0
		256QAM	1	1	16.62		17.07		16.78	0.0	18.0
		CP-OFDM	QPSK	1	1	16.62		17.04		16.75	0.0

Notes:

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

NR Band n41(Voice/data/SRS0) (Sub.2) 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	$\pi/2$ BPSK	1	1	16.79	17.43		16.72	16.86	0.0	18.0
			1	52	16.97	17.10		16.56	16.93	0.0	18.0
			1	104	17.23	16.96		16.89	17.11	0.0	18.0
			50	0	16.98	17.30		16.60	16.89	0.0	18.0
			50	28	17.02	17.14		16.59	16.99	0.0	18.0
			50	56	17.10	17.09		16.71	17.12	0.0	18.0
			100	0	17.02	17.12		16.56	16.94	0.0	18.0
		QPSK	1	1	16.78	17.38		16.70	16.85	0.0	18.0
			1	52	16.99	17.10		16.55	16.93	0.0	18.0
			1	104	17.24	16.95		16.89	17.12	0.0	18.0
			50	0	16.98	17.30		16.60	16.91	0.0	18.0
			50	28	17.01	17.14		16.58	16.96	0.0	18.0
			50	56	17.08	17.08		16.71	17.11	0.0	18.0
			100	0	16.99	17.12		16.57	16.95	0.0	18.0
		16QAM	1	1	16.78	17.40		16.71	16.85	0.0	18.0
			1	52	16.99	17.10		16.54	16.96	0.0	18.0
			1	104	17.23	16.95		16.88	17.12	0.0	18.0
		64QAM	1	1	16.74	17.36		16.64	16.82	0.0	18.0
		256QAM	1	1	16.76	17.37		16.67	16.83	0.0	18.0
	CP-OFDM	QPSK	1	1	16.75	17.35		16.66	16.81	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	$\pi/2$ BPSK	1	1	16.83	17.33	17.07	16.58	16.90	0.0	18.0
			1	39	17.04	17.42	16.88	16.85	17.07	0.0	18.0
			1	76	17.08	17.15	16.64	16.96	17.15	0.0	18.0
			36	0	16.95	17.45	17.01	16.67	16.95	0.0	18.0
			36	21	17.02	17.40	16.84	16.85	17.08	0.0	18.0
			36	42	17.05	17.25	16.76	16.99	17.15	0.0	18.0
			75	0	17.03	17.40	16.85	16.82	17.04	0.0	18.0
		QPSK	1	1	16.83	17.35	17.07	16.59	16.90	0.0	18.0
			1	39	16.99	17.35	16.82	16.81	17.02	0.0	18.0
			1	76	17.06	17.12	16.62	16.93	17.15	0.0	18.0
			36	0	16.95	17.44	16.99	16.66	16.95	0.0	18.0
			36	21	17.05	17.40	16.87	16.84	17.05	0.0	18.0
			36	42	17.01	17.25	16.75	16.95	17.15	0.0	18.0
			75	0	17.03	17.40	16.86	16.81	17.04	0.0	18.0
		16QAM	1	1	16.82	17.35	17.07	16.57	16.91	0.0	18.0
			1	39	17.01	17.37	16.84	16.80	17.03	0.0	18.0
			1	76	17.05	17.12	16.67	16.94	17.13	0.0	18.0
		64QAM	1	1	16.78	17.30	17.04	16.50	16.85	0.0	18.0
		256QAM	1	1	16.77	17.32	17.03	16.51	16.84	0.0	18.0
	CP-OFDM	QPSK	1	1	16.77	17.31	17.02	16.53	16.84	0.0	18.0

Notes:

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

NR Band n41(Voice/data/SRS0) (Sub.2) 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	$\pi/2$ BPSK	1	1	16.80	17.43	17.01	16.71	16.98	0.0	18.0
			1	25	17.02	17.46	16.88	16.92	17.16	0.0	18.0
			1	49	17.03	17.32	16.72	16.96	17.17	0.0	18.0
			25	0	16.93	17.46	16.94	16.77	17.04	0.0	18.0
			25	13	17.01	17.44	16.85	16.91	17.15	0.0	18.0
			25	26	17.02	17.37	16.77	16.97	17.16	0.0	18.0
			50	0	16.98	17.45	16.84	16.90	17.13	0.0	18.0
		QPSK	1	1	16.84	17.35	17.02	16.69	16.99	0.0	18.0
			1	25	16.98	17.36	16.83	16.88	17.12	0.0	18.0
			1	49	17.01	17.25	16.72	16.94	17.17	0.0	18.0
			25	0	16.92	17.42	16.94	16.75	17.06	0.0	18.0
			25	13	16.99	17.41	16.84	16.90	17.16	0.0	18.0
			25	26	17.02	17.34	16.76	16.97	17.15	0.0	18.0
			50	0	16.98	17.40	16.85	16.89	17.12	0.0	18.0
		16QAM	1	1	16.83	17.37	17.01	16.69	16.99	0.0	18.0
			1	25	16.96	17.36	16.83	16.87	17.14	0.0	18.0
			1	49	17.01	17.24	16.72	16.94	17.15	0.0	18.0
		64QAM	1	1	16.80	17.35	16.96	16.61	16.95	0.0	18.0
		256QAM	1	1	16.81	17.38	16.98	16.65	16.96	0.0	18.0
	CP-OFDM	QPSK	1	1	16.79	17.37	16.97	16.63	16.94	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	$\pi/2$ BPSK	1	1	16.82	17.47	17.02	16.80	17.08	0.0	18.0
			1	18	16.98	17.46	16.85	16.93	17.12	0.0	18.0
			1	36	17.05	17.40	16.81	16.99	17.19	0.0	18.0
			18	0	16.86	17.48	16.96	16.84	17.15	0.0	18.0
			18	10	16.93	17.48	16.87	16.95	17.18	0.0	18.0
			18	20	16.99	17.44	16.81	17.00	17.19	0.0	18.0
			36	0	16.93	17.49	16.89	16.96	17.16	0.0	18.0
		QPSK	1	1	16.81	17.45	17.01	16.78	17.11	0.0	18.0
			1	18	16.93	17.43	16.86	16.91	17.13	0.0	18.0
			1	36	17.05	17.38	16.81	16.98	17.21	0.0	18.0
			18	0	16.86	17.48	16.98	16.85	17.14	0.0	18.0
			18	10	16.93	17.46	16.86	16.94	17.17	0.0	18.0
			18	20	16.99	17.40	16.80	16.99	17.19	0.0	18.0
			36	0	16.92	17.47	16.89	16.93	17.16	0.0	18.0
		16QAM	1	1	16.86	17.45	17.01	16.78	17.10	0.0	18.0
			1	18	16.93	17.42	16.85	16.91	17.13	0.0	18.0
			1	36	17.04	17.38	16.80	16.95	17.20	0.0	18.0
		64QAM	1	1	16.80	17.42	16.95	16.70	17.03	0.0	18.0
		256QAM	1	1	16.82	17.43	16.99	16.72	17.04	0.0	18.0
	CP-OFDM	QPSK	1	1	16.81	17.43	16.97	16.73	17.04	0.0	18.0

Notes:

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

NR Band n41(Voice/data/SRS0) (Sub.2) 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	$\pi/2$ BPSK	1	1	16.88	17.49	16.98	16.90	17.16	0.0	18.0
			1	12	16.94	17.48	16.89	16.98	17.15	0.0	18.0
			1	22	17.02	17.46	16.84	17.02	17.21	0.0	18.0
			12	0	16.90	17.47	16.93	16.94	17.15	0.0	18.0
			12	6	16.92	17.48	16.87	16.97	17.17	0.0	18.0
			12	12	16.98	17.49	16.85	17.01	17.20	0.0	18.0
			24	0	16.93	17.48	16.87	16.98	17.17	0.0	18.0
		QPSK	1	1	16.87	17.47	16.98	16.90	16.97	0.0	18.0
			1	12	16.90	17.44	16.84	16.95	17.04	0.0	18.0
			1	22	17.00	17.44	16.83	16.99	17.06	0.0	18.0
			12	0	16.87	17.46	16.92	16.93	17.05	0.0	18.0
			12	6	16.94	17.47	16.89	16.97	17.05	0.0	18.0
			12	12	16.97	17.46	16.83	16.99	17.08	0.0	18.0
			24	0	16.94	17.48	16.88	16.98	17.07	0.0	18.0
		16QAM	1	1	16.87	17.47	16.98	16.91	17.18	0.0	18.0
			1	12	16.91	17.43	16.86	16.95	17.14	0.0	18.0
			1	22	17.00	17.44	16.82	16.99	17.20	0.0	18.0
		64QAM	1	1	16.80	17.44	16.91	16.83	17.10	0.0	18.0
		256QAM	1	1	16.82	17.46	16.93	16.86	17.12	0.0	18.0
	CP-OFDM	QPSK	1	1	16.82	17.44	16.91	16.85	17.13	0.0	18.0

Notes:

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

NR Band n41(SRS1) (Sub.2) Measured Results (Continued)

BW (MHz)	Mode	Maximum Allowed Average Power (dBm)					
		RSI-Free, Rcv, Hotspot, Earjack					
		Measured Pwr (dBm)					Tune-up Limit
				518598			
				2592.99 MHz			
100 MHz	SRS CW			16.62			18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		508200				528996	
		2541.00 MHz				2644.98 MHz	
90 MHz	SRS CW	17.23				17.47	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		507204				529998	
		2536.02 MHz				2649.99 MHz	
80 MHz	SRS CW	17.59				17.37	18.0
BW (MHz)	Mode	Measured Pwr (dBm)					Tune-up Limit
		506202				531000	
		2531.01 MHz				2655.00 MHz	
70 MHz	SRS CW	17.57				17.82	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	17.95		16.74		17.53	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	17.97		16.93		17.40	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	16.24	16.51		15.67	15.93	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	16.64	15.98	15.80	16.35	16.55	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	15.51	16.30	15.91	16.81	16.43	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	15.51	16.54	16.27	17.05	16.65	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	16.71	15.64	15.50	16.38	15.81	18.0

Notes:

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

NR Band n41(SRS2) (Sub.1) Measured Results

BW (MHz)	Mode	Maximum Allowed Average Power (dBm)					Maximum Allowed Average Power (dBm)				
		RSI-Free, Hotspot, Earjack					RSI-Rcv				
		Measured Pwr (dBm)					Measured Pwr (dBm)				
				518598		Tune-up Limit			518598		Tune-up Limit
				2592.99 MHz					2592.99 MHz		
100 MHz	SRS CW			16.80		18.0			15.70		17.0
BW (MHz)	Mode	Measured Pwr (dBm)					Measured Pwr (dBm)				
		508200			528996	Tune-up Limit	508200			528996	Tune-up Limit
		2541.00 MHz			2644.98 MHz		2541.00 MHz			2644.98 MHz	
90 MHz	SRS CW	17.27			17.54	18.0	15.59			16.16	17.0
BW (MHz)	Mode	Measured Pwr (dBm)					Measured Pwr (dBm)				
		507204			529998	Tune-up Limit	507204			529998	Tune-up Limit
		2536.02 MHz			2649.99 MHz		2536.02 MHz			2649.99 MHz	
80 MHz	SRS CW	17.80			17.82	18.0	16.12			16.37	17.0
BW (MHz)	Mode	Measured Pwr (dBm)					Measured Pwr (dBm)				
		506202			531000	Tune-up Limit	506202			531000	Tune-up Limit
		2531.01 MHz			2655.00 MHz		2531.01 MHz			2655.00 MHz	
70 MHz	SRS CW	17.90			17.96	18.0	16.34			16.50	17.0
BW (MHz)	Mode	Measured Pwr (dBm)					Measured Pwr (dBm)				
		505200		518598	531996	Tune-up Limit	505200		518598	531996	Tune-up Limit
		2526.00 MHz		2592.99 MHz	2659.98 MHz		2526.00 MHz		2592.99 MHz	2659.98 MHz	
60 MHz	SRS CW	18.00		16.18	18.00	18.0	16.80		15.66	16.80	17.0
BW (MHz)	Mode	Measured Pwr (dBm)					Measured Pwr (dBm)				
		504204		518598	532998	Tune-up Limit	504204		518598	532998	Tune-up Limit
		2521.02 MHz		2592.99 MHz	2664.99 MHz		2521.02 MHz		2592.99 MHz	2664.99 MHz	
50 MHz	SRS CW	17.90		16.31	17.96	18.0	16.52		15.00	16.70	17.0
BW (MHz)	Mode	Measured Pwr (dBm)					Measured Pwr (dBm)				
		503202	513468		523734	Tune-up Limit	503202	513468		523734	Tune-up Limit
		2516.01 MHz	2567.34 MHz		2618.67 MHz		2516.01 MHz	2567.34 MHz		2618.67 MHz	
40 MHz	SRS CW	16.61	16.01		15.52	18.0	15.37	14.54		14.50	17.0
BW (MHz)	Mode	Measured Pwr (dBm)					Measured Pwr (dBm)				
		502200	510402	518598	526800	Tune-up Limit	502200	510402	518598	526800	Tune-up Limit
		2511.00 MHz	2552.01 MHz	2592.99 MHz	2634.00 MHz		2511.00 MHz	2552.01 MHz	2592.99 MHz	2634.00 MHz	
30 MHz	SRS CW	16.42	15.84	15.63	16.17	18.0	15.22	14.86	14.50	15.50	17.0
BW (MHz)	Mode	Measured Pwr (dBm)					Measured Pwr (dBm)				
		501204	509904	518598	527298	Tune-up Limit	501204	509904	518598	527298	Tune-up Limit
		2506.02 MHz	2549.52 MHz	2592.99 MHz	2636.49 MHz		2506.02 MHz	2549.52 MHz	2592.99 MHz	2636.49 MHz	
20 MHz	SRS CW	16.11	16.70	15.51	16.84	18.0	14.74	14.95	14.84	15.58	17.0
BW (MHz)	Mode	Measured Pwr (dBm)					Measured Pwr (dBm)				
		500700	509652	518598	527550	Tune-up Limit	500700	509652	518598	527550	Tune-up Limit
		2503.50 MHz	2548.26 MHz	2592.99 MHz	2637.75 MHz		2503.50 MHz	2548.26 MHz	2592.99 MHz	2637.75 MHz	
15 MHz	SRS CW	16.13	16.81	15.51	16.53	18.0	15.29	15.02	14.56	15.33	17.0
BW (MHz)	Mode	Measured Pwr (dBm)					Measured Pwr (dBm)				
		500202	509400	518598	527802	Tune-up Limit	500202	509400	518598	527802	Tune-up Limit
		2501.01 MHz	2547.00 MHz	2592.99 MHz	2639.01 MHz		2501.01 MHz	2547.00 MHz	2592.99 MHz	2639.01 MHz	
10 MHz	SRS CW	16.12	16.30	15.71	16.00	18.0	15.14	15.78	14.58	16.15	17.0

Notes:

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

NR Band n41(SRS3) (Main.4) Measured Results

BW (MHz)	Mode	Maximum Allowed Average Power (dBm)					Tune-up Limit
		RSI=Free, Rcv, Hotspot, Earjack					
		Measured Pwr (dBm)					
				518598			
				2592.99 MHz			
100 MHz	SRS CW			17.06			17.5
		Measured Pwr (dBm)					Tune-up Limit
		508200				528996	
		2541.00 MHz				2644.98 MHz	
90 MHz	SRS CW	16.47				16.64	17.5
		Measured Pwr (dBm)					Tune-up Limit
		507204				529998	
		2536.02 MHz				2649.99 MHz	
80 MHz	SRS CW	16.91				16.87	17.5
		Measured Pwr (dBm)					Tune-up Limit
		506202				531000	
		2531.01 MHz				2655.00 MHz	
70 MHz	SRS CW	16.93				16.96	17.5
		Measured Pwr (dBm)					Tune-up Limit
		505200		518598		531996	
		2526.00 MHz		2592.99 MHz		2659.98 MHz	
60 MHz	SRS CW	17.46		17.13		17.47	17.5
		Measured Pwr (dBm)					Tune-up Limit
		504204		518598		532998	
		2521.02 MHz		2592.99 MHz		2664.99 MHz	
50 MHz	SRS CW	17.49		16.75		17.01	17.5
		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	17.22	16.50		15.61	16.90	17.5
		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	17.09	15.97	16.12	15.60	16.72	17.5
		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	15.56	15.65	15.80	15.67	16.50	17.5
		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	15.52	15.57	15.65	15.38	16.16	17.5
		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	15.31	15.27	15.39	15.31	15.91	17.5

Notes:

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

NR Band n66 (Main.1) Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)					Maximum Allowed Average Power (dBm)						
					RSI=Pmax, Rcv					RSI=Free, Hotspot, Earjack						
					Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit		
						349000					349000					
			1	1		22.44		0.0	24.0		17.78		0.0	19.0		
40 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	107		22.70		0.0	24.0		18.07		0.0	19.0		
			1	214		22.68		0.0	24.0		17.99		0.0	19.0		
			108	0		21.67		0.5	23.5		17.98		0.0	19.0		
			108	54		22.70		0.0	24.0		18.03		0.0	19.0		
			108	108		21.80		0.5	23.5		18.11		0.0	19.0		
			216	0		21.67		0.5	23.5		18.00		0.0	19.0		
		QPSK	1	1		22.44		0.0	24.0		17.74		0.0	19.0		
			1	107		22.69		0.0	24.0		18.05		0.0	19.0		
			1	214		22.67		0.0	24.0		17.99		0.0	19.0		
			108	0		21.65		1.0	23.0		17.97		0.0	19.0		
			108	54		22.70		0.0	24.0		18.09		0.0	19.0		
			108	108		21.78		1.0	23.0		18.08		0.0	19.0		
		16QAM	216	0		21.67		1.0	23.0		18.00		0.0	19.0		
			1	1		21.44		1.0	23.0		17.76		0.0	19.0		
			1	107		21.77		1.0	23.0		18.05		0.0	19.0		
		64QAM	1	214		21.69		1.0	23.0		17.99		0.0	19.0		
			1	1		19.93		2.5	21.5		17.74		0.0	19.0		
		256QAM	1	1		17.81		4.5	19.5		17.67		0.0	19.0		
	CP-OFDM		QPSK	1	1		20.83		1.5	22.5		18.03		0.0	19.0	
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)				MPR	Tune-up Limit	Measured Pwr (dBm)				MPR	Tune-up Limit
					345000		353000				345000		353000			
					1725.00 MHz		1765.00 MHz				1725.00 MHz		1765.00 MHz			
30 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1		22.48		22.61	0.0	24.0		17.84		17.96	0.0	19.0
			1	79		22.46		22.82	0.0	24.0		17.79		18.09	0.0	19.0
			1	158		22.56		22.63	0.0	24.0		17.90		17.99	0.0	19.0
			80	0		21.45		21.79	0.5	23.5		17.76		18.09	0.0	19.0
			80	40		22.45		22.71	0.0	24.0		17.77		18.04	0.0	19.0
			80	80		21.52		21.66	0.5	23.5		17.82		17.96	0.0	19.0
		QPSK	160	0		21.44		21.68	0.5	23.5		17.75		18.00	0.0	19.0
			1	1		22.45		22.55	0.0	24.0		17.79		17.90	0.0	19.0
			1	79		22.49		22.82	0.0	24.0		17.77		18.08	0.0	19.0
			1	158		22.63		22.63	0.0	24.0		17.91		17.97	0.0	19.0
			80	0		21.50		21.77	1.0	23.0		17.75		18.07	0.0	19.0
			80	40		22.49		22.69	0.0	24.0		17.77		18.02	0.0	19.0
		16QAM	80	80		21.54		21.63	1.0	23.0		17.82		17.95	0.0	19.0
			160	0		21.47		21.66	1.0	23.0		17.74		17.99	0.0	19.0
			1	1		21.51		21.65	1.0	23.0		17.78		17.91	0.0	19.0
		64QAM	1	79		21.53		21.80	1.0	23.0		17.85		18.08	0.0	19.0
			1	158		21.58		21.71	1.0	23.0		17.89		17.96	0.0	19.0
	256QAM	1	1		20.05		20.21	2.5	21.5		17.73		17.95	0.0	19.0	
		1	1		17.94		17.91	4.5	19.5		17.69		17.92	0.0	19.0	
CP-OFDM	QPSK	1	1		20.95		21.10	1.5	22.5		17.79		17.95	0.0	19.0	

NR Band n66 (Main.1) Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					344500		353500			344500		353500		
					1722.50 MHz		1767.50 MHz			1722.50 MHz		1767.50 MHz		
25 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	22.46		22.72	0.0	24.0	17.75		18.09	0.0	19.0
			1	66	22.33		22.60	0.0	24.0	17.64		17.95	0.0	19.0
			1	131	22.49		22.65	0.0	24.0	17.80		17.98	0.0	19.0
			64	0	21.45		21.76	0.5	23.5	17.81		18.07	0.0	19.0
			64	34	22.41		22.69	0.0	24.0	17.78		17.99	0.0	19.0
			64	69	21.45		21.67	0.5	23.5	17.82		17.97	0.0	19.0
		QPSK	128	0	21.41		21.68	0.5	23.5	17.78		17.98	0.0	19.0
			1	1	22.45		22.70	0.0	24.0	17.82		18.02	0.0	19.0
			1	66	22.34		22.58	0.0	24.0	17.69		17.92	0.0	19.0
			1	131	22.49		22.66	0.0	24.0	17.86		17.96	0.0	19.0
			64	0	21.45		21.75	1.0	23.0	17.82		18.04	0.0	19.0
			64	34	22.41		22.69	0.0	24.0	17.81		17.98	0.0	19.0
			64	69	21.45		21.68	1.0	23.0	17.84		17.95	0.0	19.0
			128	0	21.41		21.67	1.0	23.0	17.80		17.97	0.0	19.0
		16QAM	1	1	21.46		21.65	1.0	23.0	17.76		18.07	0.0	19.0
			1	66	21.39		21.45	1.0	23.0	17.65		17.97	0.0	19.0
			1	131	21.52		21.55	1.0	23.0	17.85		18.02	0.0	19.0
		64QAM	1	1	19.90		20.14	2.5	21.5	17.91		18.09	0.0	19.0
		256QAM	1	1	17.79		18.04	4.5	19.5	17.68		18.01	0.0	19.0
	CP-OFDM	QPSK	1	1	20.88		21.17	1.5	22.5	17.79		18.05	0.0	19.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					344000	349000	354000			344000	349000	354000		
					1720.00 MHz	1745.00 MHz	1770.00 MHz			1720.00 MHz	1745.00 MHz	1770.00 MHz		
20 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	22.46	22.64	22.72	0.0	24.0	17.81	18.01	18.11	0.0	19.0
			1	52	22.37	22.68	22.64	0.0	24.0	17.77	18.07	18.04	0.0	19.0
			1	104	22.43	22.76	22.67	0.0	24.0	17.77	18.09	18.01	0.0	19.0
			50	0	21.44	21.71	21.71	0.5	23.5	17.81	18.07	18.04	0.0	19.0
			50	28	22.37	22.66	22.68	0.0	24.0	17.75	18.02	18.01	0.0	19.0
			50	56	21.39	21.67	21.71	0.5	23.5	17.77	18.02	18.02	0.0	19.0
		QPSK	100	0	21.39	21.67	21.67	0.5	23.5	17.76	18.01	18.00	0.0	19.0
			1	1	22.49	22.63	22.71	0.0	24.0	17.85	17.97	18.05	0.0	19.0
			1	52	22.41	22.7	22.64	0.0	24.0	17.79	18.06	18.01	0.0	19.0
			1	104	22.47	22.75	22.67	0.0	24.0	17.78	18.08	18.00	0.0	19.0
			50	0	21.46	21.71	21.7	1.0	23.0	17.83	18.04	18.05	0.0	19.0
			50	28	22.4	22.67	22.67	0.0	24.0	17.78	18.01	18.00	0.0	19.0
			50	56	21.42	21.68	21.69	1.0	23.0	17.78	18.01	18.03	0.0	19.0
			100	0	21.42	21.67	21.66	1.0	23.0	17.77	18.00	18.01	0.0	19.0
		16QAM	1	1	21.47	21.6	21.75	1.0	23.0	17.88	17.98	18.17	0.0	19.0
			1	52	21.45	21.61	21.71	1.0	23.0	17.80	17.98	18.14	0.0	19.0
			1	104	21.45	21.65	21.65	1.0	23.0	17.81	18.06	18.13	0.0	19.0
		64QAM	1	1	19.85	20.13	20.35	2.5	21.5	17.91	17.95	18.11	0.0	19.0
		256QAM	1	1	17.99	17.92	18.08	4.5	19.5	17.70	17.85	18.10	0.0	19.0
	CP-OFDM	QPSK	1	1	20.97	21.08	21.25	1.5	22.5	17.88	17.99	18.03	0.0	19.0

NR Band n66 (Main.1) Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					343500	349000	354500			343500	349000	354500		
					1717.50 MHz	1745.00 MHz	1772.50 MHz			1717.50 MHz	1745.00 MHz	1772.50 MHz		
15 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	22.50	22.65	22.63	0.0	24.0	17.79	17.99	17.99	0.0	19.0
			1	39	22.37	22.57	22.54	0.0	24.0	17.64	17.89	17.83	0.0	19.0
			1	77	22.43	22.70	22.67	0.0	24.0	17.70	17.97	17.95	0.0	19.0
			36	0	21.51	21.71	21.64	0.5	23.5	17.77	17.99	17.91	0.0	19.0
			36	21	22.44	22.66	22.63	0.0	24.0	17.73	17.92	17.91	0.0	19.0
			36	43	21.44	21.67	21.68	0.5	23.5	17.72	17.92	17.95	0.0	19.0
			75	0	21.46	21.65	21.61	0.5	23.5	17.76	17.92	17.89	0.0	19.0
		QPSK	1	1	22.52	22.63	22.60	0.0	24.0	17.82	17.91	17.90	0.0	19.0
			1	39	22.36	22.56	22.51	0.0	24.0	17.67	17.85	17.81	0.0	19.0
			1	77	22.42	22.66	22.62	0.0	24.0	17.72	17.94	17.91	0.0	19.0
			36	0	21.50	21.69	21.64	1.0	23.0	17.79	17.95	17.89	0.0	19.0
			36	21	22.46	22.63	22.61	0.0	24.0	17.75	17.90	17.88	0.0	19.0
			36	43	21.44	21.64	21.66	1.0	23.0	17.73	17.92	17.93	0.0	19.0
			75	0	21.45	21.65	21.60	1.0	23.0	17.75	17.92	17.88	0.0	19.0
		16QAM	1	1	21.56	21.58	21.64	1.0	23.0	17.83	17.92	17.89	0.0	19.0
			1	39	21.37	21.57	21.51	1.0	23.0	17.69	17.82	17.82	0.0	19.0
			1	77	21.40	21.62	21.67	1.0	23.0	17.75	17.92	17.94	0.0	19.0
		64QAM	1	1	20.08	20.28	20.06	2.5	21.5	17.83	17.96	17.89	0.0	19.0
		256QAM	1	1	17.87	18.02	18.04	4.5	19.5	17.73	17.88	17.83	0.0	19.0
	CP-OFDM	QPSK	1	1	21.03	21.12	21.07	1.5	22.5	17.78	17.92	17.91	0.0	19.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					343000	349000	355000			343000	349000	355000		
					1715.00 MHz	1745.00 MHz	1775.00 MHz			1715.00 MHz	1745.00 MHz	1775.00 MHz		
10 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	22.53	22.66	22.64	0.0	24.0	17.88	18.06	18.01	0.0	19.0
			1	25	22.52	22.66	22.66	0.0	24.0	17.87	18.01	18.08	0.0	19.0
			1	50	22.44	22.62	22.68	0.0	24.0	17.75	17.98	18.00	0.0	19.0
			25	0	21.53	21.67	21.65	0.5	23.5	17.85	17.99	17.96	0.0	19.0
			25	13	22.51	22.61	22.68	0.0	24.0	17.80	17.95	17.98	0.0	19.0
			25	27	21.48	21.62	21.71	0.5	23.5	17.78	17.95	18.00	0.0	19.0
			50	0	21.51	21.63	21.68	0.5	23.5	17.82	17.94	17.97	0.0	19.0
		QPSK	1	1	22.56	22.64	22.63	0.0	24.0	17.87	18.01	17.93	0.0	19.0
			1	25	22.54	22.65	22.71	0.0	24.0	17.86	18.00	18.04	0.0	19.0
			1	50	22.44	22.61	22.69	0.0	24.0	17.73	17.97	17.98	0.0	19.0
			25	0	21.54	21.65	21.66	1.0	23.0	17.82	17.98	17.95	0.0	19.0
			25	13	22.51	22.61	22.67	0.0	24.0	17.81	17.92	17.96	0.0	19.0
			25	27	21.48	21.61	21.71	1.0	23.0	17.77	17.92	17.99	0.0	19.0
			50	0	21.51	21.61	21.66	1.0	23.0	17.80	17.94	17.97	0.0	19.0
		16QAM	1	1	21.57	21.65	21.63	1.0	23.0	17.80	18.00	17.94	0.0	19.0
			1	25	21.61	21.72	21.74	1.0	23.0	17.86	18.03	18.07	0.0	19.0
			1	50	21.44	21.68	21.67	1.0	23.0	17.71	18.02	17.99	0.0	19.0
		64QAM	1	1	20.10	20.22	20.07	2.5	21.5	17.78	18.08	17.88	0.0	19.0
		256QAM	1	1	17.97	18.04	18.07	4.5	19.5	17.77	17.89	17.89	0.0	19.0
	CP-OFDM	QPSK	1	1	21.07	21.09	21.15	1.5	22.5	17.84	17.95	17.98	0.0	19.0

NR Band n66 (Main.1) Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					342500	349000	355500			342500	349000	355500		
					1712.50 MHz	1745.00 MHz	1777.50 MHz			1712.50 MHz	1745.00 MHz	1777.50 MHz		
5 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	22.43	22.65	22.63	0.0	24.0	17.73	18.02	18.01	0.0	19.0
			1	12	22.32	22.52	22.56	0.0	24.0	17.64	17.91	17.91	0.0	19.0
			1	23	22.36	22.61	22.62	0.0	24.0	17.69	17.97	17.98	0.0	19.0
			12	0	21.44	21.63	21.65	0.5	23.5	17.73	17.95	17.97	0.0	19.0
			12	6	22.41	22.61	22.64	0.0	24.0	17.74	17.92	17.96	0.0	19.0
			12	13	21.41	21.61	21.64	0.5	23.5	17.72	17.91	17.96	0.0	19.0
		QPSK	25	0	21.43	21.62	21.65	0.5	23.5	17.74	17.93	17.97	0.0	19.0
			1	1	22.44	22.62	22.59	0.0	24.0	17.77	17.95	17.94	0.0	19.0
			1	12	22.34	22.49	22.55	0.0	24.0	17.66	17.85	17.86	0.0	19.0
			1	23	22.39	22.60	22.61	0.0	24.0	17.72	17.93	17.96	0.0	19.0
			12	0	21.45	21.62	21.64	1.0	23.0	17.75	17.92	17.95	0.0	19.0
			12	6	22.43	22.60	22.63	0.0	24.0	17.75	17.90	17.93	0.0	19.0
			12	13	21.42	21.60	21.64	1.0	23.0	17.74	17.90	17.95	0.0	19.0
		16QAM	25	0	21.44	21.61	21.64	1.0	23.0	17.76	17.91	17.94	0.0	19.0
			1	1	21.52	21.63	21.59	1.0	23.0	17.81	17.96	17.94	0.0	19.0
			1	12	21.39	21.49	21.52	1.0	23.0	17.66	17.90	17.89	0.0	19.0
		64QAM	1	23	21.46	21.59	21.60	1.0	23.0	17.67	17.90	17.93	0.0	19.0
			1	1	19.95	20.18	20.06	2.5	21.5	17.88	17.99	17.96	0.0	19.0
		256QAM	1	1	17.88	18.03	18.01	4.5	19.5	17.69	17.85	17.84	0.0	19.0
	CP-OFDM	QPSK	1	1	20.93	21.13	21.11	1.5	22.5	17.84	18.00	17.98	0.0	19.0

NR Band n66 (Sub.2) Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)				
					RSI = Free, Rcv, Hotspot, Earjack				
					Measured Pwr (dBm)			MPR	Tune-up Limit
						349000			
					1745.00 MHz				
40 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1		16.53		0.0	18.0
			1	107		16.75		0.0	18.0
			1	214		16.68		0.0	18.0
			108	0		16.65		0.0	18.0
			108	54		16.67		0.0	18.0
			108	108		16.84		0.0	18.0
		QPSK	216	0		16.63		0.0	18.0
			1	1		16.52		0.0	18.0
			1	107		16.85		0.0	18.0
			1	214		16.67		0.0	18.0
			108	0		16.65		0.0	18.0
			108	54		16.71		0.0	18.0
			108	108		16.62		0.0	18.0
			216	0		16.63		0.0	18.0
		16QAM	1	1		16.56		0.0	18.0
			1	107		16.72		0.0	18.0
			1	214		16.69		0.0	18.0
		64QAM	1	1		16.54		0.0	18.0
		256QAM	1	1		16.49		0.0	18.0
	CP-OFDM	QPSK	1	1		16.66		0.0	18.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
					345000		353000		
					1725.00 MHz		1765.00 MHz		
30 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	16.39		16.74	0.0	18.0
			1	79	16.58		16.74	0.0	18.0
			1	158	16.56		16.73	0.0	18.0
			80	0	16.49		16.79	0.0	18.0
			80	40	16.61		16.70	0.0	18.0
			80	80	16.62		16.70	0.0	18.0
		QPSK	160	0	16.55		16.68	0.0	18.0
			1	1	16.37		16.72	0.0	18.0
			1	79	16.57		16.71	0.0	18.0
			1	158	16.54		16.73	0.0	18.0
			80	0	16.46		16.79	0.0	18.0
			80	40	16.58		16.71	0.0	18.0
			80	80	16.62		16.68	0.0	18.0
			160	0	16.57		16.67	0.0	18.0
		16QAM	1	1	16.36		16.77	0.0	18.0
			1	79	16.67		16.77	0.0	18.0
			1	158	16.58		16.76	0.0	18.0
		64QAM	1	1	16.39		16.73	0.0	18.0
		256QAM	1	1	16.33		16.64	0.0	18.0
	CP-OFDM	QPSK	1	1	16.51		16.77	0.0	18.0

NR Band n66 (Sub.2) Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MFR	Tune-up Limit
					344500		353500		
					1722.50 MHz		1767.50 MHz		
25 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	16.35		16.78	0.0	18.0
			1	66	16.38		16.59	0.0	18.0
			1	131	16.52		16.75	0.0	18.0
			64	0	16.40		16.74	0.0	18.0
			64	34	16.48		16.69	0.0	18.0
			64	69	16.57		16.70	0.0	18.0
			128	0	16.47		16.67	0.0	18.0
		QPSK	1	1	16.33		16.76	0.0	18.0
			1	66	16.37		16.60	0.0	18.0
			1	131	16.51		16.74	0.0	18.0
			64	0	16.39		16.74	0.0	18.0
			64	34	16.47		16.69	0.0	18.0
			64	69	16.58		16.70	0.0	18.0
			128	0	16.47		16.67	0.0	18.0
		16QAM	1	1	16.35		16.73	0.0	18.0
			1	66	16.41		16.53	0.0	18.0
			1	131	16.58		16.73	0.0	18.0
		64QAM	1	1	16.33		16.80	0.0	18.0
		256QAM	1	1	16.18		16.69	0.0	18.0
	CP-OFDM	QPSK	1	1	16.41		16.76	0.0	18.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MFR	Tune-up Limit
					344000	349000	354000		
					1720.00 MHz	1745.00 MHz	1770.00 MHz		
20 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	16.38	16.62	16.73	0.0	18.0
			1	52	16.46	16.68	16.70	0.0	18.0
			1	104	16.61	16.78	16.75	0.0	18.0
			50	0	16.42	16.62	16.67	0.0	18.0
			50	28	16.46	16.64	16.66	0.0	18.0
			50	56	16.54	16.75	16.70	0.0	18.0
			100	0	16.46	16.62	16.67	0.0	18.0
		QPSK	1	1	16.36	16.58	16.70	0.0	18.0
			1	52	16.47	16.64	16.67	0.0	18.0
			1	104	16.58	16.77	16.72	0.0	18.0
			50	0	16.40	16.59	16.66	0.0	18.0
			50	28	16.46	16.62	16.68	0.0	18.0
			50	56	16.54	16.73	16.69	0.0	18.0
			100	0	16.45	16.60	16.64	0.0	18.0
		16QAM	1	1	16.42	16.76	16.67	0.0	18.0
			1	52	16.55	16.72	16.77	0.0	18.0
			1	104	16.67	16.81	16.69	0.0	18.0
		64QAM	1	1	16.39	16.56	16.67	0.0	18.0
		256QAM	1	1	16.29	16.55	16.60	0.0	18.0
	CP-OFDM	QPSK	1	1	16.40	16.68	16.74	0.0	18.0

NR Band n66 (Sub.2) Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MFR	Tune-up Limit
					343500	349000	354500		
					1717.50 MHz	1745.00 MHz	1772.50 MHz		
15 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	16.42	16.66	16.72	0.0	18.0
			1	39	16.38	16.60	16.64	0.0	18.0
			1	77	16.60	16.86	16.78	0.0	18.0
			36	0	16.44	16.67	16.67	0.0	18.0
			36	21	16.49	16.68	16.69	0.0	18.0
			36	43	16.52	16.78	16.74	0.0	18.0
			75	0	16.48	16.68	16.68	0.0	18.0
		QPSK	1	1	16.41	16.69	16.70	0.0	18.0
			1	39	16.40	16.61	16.65	0.0	18.0
			1	77	16.61	16.85	16.78	0.0	18.0
			36	0	16.44	16.68	16.66	0.0	18.0
			36	21	16.49	16.69	16.68	0.0	18.0
			36	43	16.53	16.79	16.71	0.0	18.0
			75	0	16.49	16.69	16.67	0.0	18.0
		16QAM	1	1	16.46	16.69	16.66	0.0	18.0
			1	39	16.44	16.61	16.65	0.0	18.0
			1	77	16.52	16.85	16.79	0.0	18.0
		64QAM	1	1	16.37	16.73	16.62	0.0	18.0
		256QAM	1	1	16.35	16.47	16.54	0.0	18.0
	CP-OFDM	QPSK	1	1	16.45	16.65	16.65	0.0	18.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MFR	Tune-up Limit
					343000	349000	355000		
					1715.00 MHz	1745.00 MHz	1775.00 MHz		
10 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	16.48	16.64	16.71	0.0	18.0
			1	25	16.58	16.67	16.80	0.0	18.0
			1	50	16.53	16.77	16.79	0.0	18.0
			25	0	16.47	16.64	16.71	0.0	18.0
			25	13	16.48	16.65	16.74	0.0	18.0
			25	27	16.53	16.73	16.77	0.0	18.0
			50	0	16.49	16.65	16.73	0.0	18.0
		QPSK	1	1	16.46	16.64	16.68	0.0	18.0
			1	25	16.55	16.66	16.76	0.0	18.0
			1	50	16.49	16.75	16.78	0.0	18.0
			25	0	16.46	16.64	16.72	0.0	18.0
			25	13	16.48	16.65	16.73	0.0	18.0
			25	27	16.50	16.71	16.78	0.0	18.0
			50	0	16.49	16.63	16.72	0.0	18.0
		16QAM	1	1	16.51	16.65	16.73	0.0	18.0
			1	25	16.57	16.80	16.83	0.0	18.0
			1	50	16.53	16.82	16.83	0.0	18.0
		64QAM	1	1	16.45	16.76	16.65	0.0	18.0
		256QAM	1	1	16.35	16.59	16.61	0.0	18.0
	CP-OFDM	QPSK	1	1	16.43	16.70	16.77	0.0	18.0

NR Band n66 (Sub.2) 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	$\pi/2$ BPSK	1	1	16.42	16.66	16.74	0.0	18.0
			1	12	16.35	16.57	16.67	0.0	18.0
			1	23	16.42	16.68	16.74	0.0	18.0
			12	0	16.40	16.64	16.72	0.0	18.0
			12	6	16.40	16.64	16.73	0.0	18.0
			12	13	16.41	16.67	16.74	0.0	18.0
			25	0	16.40	16.64	16.73	0.0	18.0
		QPSK	1	1	16.38	16.62	16.70	0.0	18.0
			1	12	16.30	16.56	16.64	0.0	18.0
			1	23	16.39	16.66	16.72	0.0	18.0
			12	0	16.39	16.62	16.70	0.0	18.0
			12	6	16.38	16.62	16.72	0.0	18.0
			12	13	16.39	16.65	16.74	0.0	18.0
			25	0	16.40	16.63	16.73	0.0	18.0
		16QAM	1	1	16.41	16.64	16.65	0.0	18.0
			1	12	16.35	16.49	16.58	0.0	18.0
			1	23	16.38	16.65	16.72	0.0	18.0
		64QAM	1	1	16.49	16.61	16.71	0.0	18.0
		256QAM	1	1	16.33	16.55	16.62	0.0	18.0
	CP-OFDM	QPSK	1	1	16.36	16.69	16.83	0.0	18.0

NR Band n77 - DoD Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)					Maximum Allowed Average Power (dBm)				
					RSI=Free, Hotspot, Earjack					RSI=Rcv				
					Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
						633334					633332			
100 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1		19.26		0.0	20.0		14.16		0.0	15.0
			1	136		19.54		0.0	20.0		14.42		0.0	15.0
			1	271		18.94		0.0	20.0		13.80		0.0	15.0
			135	0		19.32		0.0	20.0		14.20		0.0	15.0
			135	69		19.55		0.0	20.0		14.24		0.0	15.0
			135	138		19.33		0.0	20.0		14.28		0.0	15.0
			270	0		19.55		0.0	20.0		14.50		0.0	15.0
		QPSK	1	1		19.30		0.0	20.0		14.03		0.0	15.0
			1	136		19.38		0.0	20.0		14.20		0.0	15.0
			1	271		18.84		0.0	20.0		13.65		0.0	15.0
			135	0		19.28		0.0	20.0		14.21		0.0	15.0
			135	69		19.31		0.0	20.0		14.47		0.0	15.0
			135	138		19.28		0.0	20.0		14.28		0.0	15.0
			270	0		19.60		0.0	20.0		14.50		0.0	15.0
		16QAM	1	1		19.34		0.0	20.0		14.24		0.0	15.0
			1	136		19.66		0.0	20.0		14.55		0.0	15.0
			1	271		18.96		0.0	20.0		13.85		0.0	15.0
		64QAM	1	1		19.28		0.0	20.0		14.21		0.0	15.0
		256QAM	1	1		19.28		0.0	20.0		14.20		0.0	15.0
	CP-OFDM	QPSK	1	1		19.28		0.0	20.0		14.21		0.0	15.0
90 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1		19.25		0.0	20.0		14.17		0.0	15.0
			1	122		19.58		0.0	20.0		14.50		0.0	15.0
			1	243		19.10		0.0	20.0		13.98		0.0	15.0
			120	0		19.42		0.0	20.0		14.31		0.0	15.0
			120	62		19.63		0.0	20.0		14.52		0.0	15.0
			120	125		19.43		0.0	20.0		14.30		0.0	15.0
			243	0		19.65		0.0	20.0		14.52		0.0	15.0
		QPSK	1	1		19.31		0.0	20.0		14.11		0.0	15.0
			1	122		19.61		0.0	20.0		14.44		0.0	15.0
			1	243		19.11		0.0	20.0		13.90		0.0	15.0
			120	0		19.40		0.0	20.0		14.24		0.0	15.0
			120	62		19.62		0.0	20.0		14.46		0.0	15.0
			120	125		19.41		0.0	20.0		14.24		0.0	15.0
			243	0		19.65		0.0	20.0		14.46		0.0	15.0
		16QAM	1	1		19.31		0.0	20.0		14.12		0.0	15.0
			1	122		19.71		0.0	20.0		14.51		0.0	15.0
			1	243		19.11		0.0	20.0		13.89		0.0	15.0
		64QAM	1	1		19.25		0.0	20.0		14.05		0.0	15.0
		256QAM	1	1		19.24		0.0	20.0		14.06		0.0	15.0
	CP-OFDM	QPSK	1	1		19.24		0.0	20.0		14.06		0.0	15.0

Notes:

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

NR Band n77 - DoD Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
						633334					633332			
						3500.01 MHz					3499.98 MHz			
80 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1		19.11		0.0	20.0		14.06		0.0	15.0
			1	108		19.53		0.0	20.0		14.44		0.0	15.0
			1	215		19.19		0.0	20.0		14.01		0.0	15.0
			108	0		19.44		0.0	20.0		14.25		0.0	15.0
			108	54		19.62		0.0	20.0		14.43		0.0	15.0
			108	109		19.41		0.0	20.0		14.18		0.0	15.0
			216	0		19.64		0.0	20.0		14.42		0.0	15.0
		QPSK	1	1		19.30		0.0	20.0		14.01		0.0	15.0
			1	108		19.60		0.0	20.0		14.37		0.0	15.0
			1	215		19.22		0.0	20.0		13.97		0.0	15.0
			108	0		19.48		0.0	20.0		14.25		0.0	15.0
			108	54		19.62		0.0	20.0		14.40		0.0	15.0
			108	109		19.42		0.0	20.0		14.18		0.0	15.0
			216	0		19.65		0.0	20.0		14.39		0.0	15.0
		16QAM	1	1		19.27		0.0	20.0		13.99		0.0	15.0
			1	108		19.72		0.0	20.0		14.45		0.0	15.0
			1	215		19.22		0.0	20.0		13.97		0.0	15.0
		64QAM	1	1		19.19		0.0	20.0		13.89		0.0	15.0
		256QAM	1	1		19.20		0.0	20.0		13.92		0.0	15.0
	CP-OFDM	QPSK	1	1		19.21		0.0	20.0		13.94		0.0	15.0
70 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1		19.26		0.0	20.0		13.99		0.0	15.0
			1	94		19.30		0.0	20.0		14.39		0.0	15.0
			1	187		19.36		0.0	20.0		14.08		0.0	15.0
			90	0		19.56		0.0	20.0		14.29		0.0	15.0
			90	49		19.67		0.0	20.0		14.39		0.0	15.0
			90	99		19.45		0.0	20.0		14.17		0.0	15.0
			180	0		19.67		0.0	20.0		14.41		0.0	15.0
		QPSK	1	1		19.28		0.0	20.0		13.98		0.0	15.0
			1	94		19.63		0.0	20.0		14.37		0.0	15.0
			1	187		19.54		0.0	20.0		14.05		0.0	15.0
			90	0		19.66		0.0	20.0		14.26		0.0	15.0
			90	49		19.66		0.0	20.0		14.39		0.0	15.0
			90	99		19.44		0.0	20.0		14.18		0.0	15.0
			180	0		19.66		0.0	20.0		14.39		0.0	15.0
		16QAM	1	1		19.26		0.0	20.0		13.97		0.0	15.0
			1	94		19.71		0.0	20.0		14.46		0.0	15.0
			1	187		19.31		0.0	20.0		14.06		0.0	15.0
		64QAM	1	1		19.21		0.0	20.0		13.92		0.0	15.0
		256QAM	1	1		19.22		0.0	20.0		13.93		0.0	15.0
	CP-OFDM	QPSK	1	1		19.24		0.0	20.0		13.94		0.0	15.0

Notes:

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

NR Band n77 - DoD Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
						633334					633332			
						3500.01 MHz					3499.98 MHz			
60 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1		19.21		0.0	20.0		14.01		0.0	15.0
			1	80		19.55		0.0	20.0		14.32		0.0	15.0
			1	160		19.35		0.0	20.0		14.13		0.0	15.0
			81	0		19.56		0.0	20.0		14.31		0.0	15.0
			81	40		19.62		0.0	20.0		14.37		0.0	15.0
			81	81		19.41		0.0	20.0		14.17		0.0	15.0
		QPSK	162	0		19.61		0.0	20.0		14.39		0.0	15.0
			1	1		19.25		0.0	20.0		14.01		0.0	15.0
			1	80		19.56		0.0	20.0		14.34		0.0	15.0
			1	160		19.33		0.0	20.0		14.10		0.0	15.0
			81	0		19.58		0.0	20.0		14.34		0.0	15.0
			81	40		19.63		0.0	20.0		14.39		0.0	15.0
			81	81		19.42		0.0	20.0		14.17		0.0	15.0
			162	0		19.63		0.0	20.0		14.37		0.0	15.0
		16QAM	1	1		19.31		0.0	20.0		13.97		0.0	15.0
			1	80		19.61		0.0	20.0		14.31		0.0	15.0
			1	160		19.39		0.0	20.0		14.11		0.0	15.0
		64QAM	1	1		19.23		0.0	20.0		13.95		0.0	15.0
		256QAM	1	1		19.24		0.0	20.0		13.96		0.0	15.0
	CP-OFDM	QPSK	1	1		19.26		0.0	20.0		13.95		0.0	15.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					631668		635000			631668		635000		
					3475.02 MHz		3525.00 MHz			3475.02 MHz		3525.00 MHz		
50 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	19.28		19.62	0.0	20.0	13.89		14.28	0.0	15.0
			1	66	19.41		19.40	0.0	20.0	14.07		14.08	0.0	15.0
			1	131	19.73		18.86	0.0	20.0	14.41		13.52	0.0	15.0
			64	0	19.25		19.48	0.0	20.0	13.91		14.13	0.0	15.0
			64	34	19.41		19.43	0.0	20.0	14.08		14.10	0.0	15.0
			64	69	19.71		19.21	0.0	20.0	14.38		13.87	0.0	15.0
		QPSK	128	0	19.41		19.44	0.0	20.0	14.08		14.11	0.0	15.0
			1	1	19.23		19.67	0.0	20.0	13.91		14.31	0.0	15.0
			1	66	19.38		19.40	0.0	20.0	14.07		14.03	0.0	15.0
			1	131	19.71		18.85	0.0	20.0	14.40		13.51	0.0	15.0
			64	0	19.25		19.48	0.0	20.0	13.92		14.12	0.0	15.0
			64	34	19.40		19.42	0.0	20.0	14.07		14.06	0.0	15.0
		16QAM	64	69	19.68		19.21	0.0	20.0	14.37		13.86	0.0	15.0
			128	0	19.38		19.42	0.0	20.0	14.07		14.08	0.0	15.0
			1	1	19.23		19.66	0.0	20.0	13.92		14.29	0.0	15.0
			1	66	19.45		19.47	0.0	20.0	14.15		14.13	0.0	15.0
			1	131	19.67		18.85	0.0	20.0	14.37		13.52	0.0	15.0
		64QAM	1	1	19.15		19.58	0.0	20.0	13.85		14.25	0.0	15.0
		256QAM	1	1	19.17		19.59	0.0	20.0	13.86		14.27	0.0	15.0
	CP-OFDM	QPSK	1	1	19.22		19.60	0.0	20.0	13.87		14.25	0.0	15.0

Notes:

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

NR Band n77 - DoD Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					631334		635332			631334		635332		
					3470.01 MHz		3529.98 MHz			3470.01 MHz		3529.98 MHz		
40 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	19.24		19.27	0.0	20.0	13.89		13.86	0.0	15.0
			1	52	19.24		19.19	0.0	20.0	13.88		13.71	0.0	15.0
			1	104	19.28		18.73	0.0	20.0	14.41		13.18	0.0	15.0
			50	0	19.20		19.34	0.0	20.0	13.87		13.81	0.0	15.0
			50	28	19.24		19.33	0.0	20.0	13.94		13.73	0.0	15.0
			50	56	19.28		19.07	0.0	20.0	14.17		13.48	0.0	15.0
			100	0	19.25		19.34	0.0	20.0	13.95		13.76	0.0	15.0
		QPSK	1	1	19.23		19.43	0.0	20.0	13.89		13.89	0.0	15.0
			1	52	19.24		19.28	0.0	20.0	13.92		13.76	0.0	15.0
			1	104	19.25		18.80	0.0	20.0	14.39		13.24	0.0	15.0
			50	0	19.18		19.39	0.0	20.0	13.89		13.84	0.0	15.0
			50	28	19.22		19.35	0.0	20.0	13.96		13.78	0.0	15.0
			50	56	19.27		19.09	0.0	20.0	14.21		13.53	0.0	15.0
			100	0	19.23		19.27	0.0	20.0	13.96		13.79	0.0	15.0
		16QAM	1	1	19.24		19.37	0.0	20.0	13.90		13.86	0.0	15.0
			1	52	19.22		19.30	0.0	20.0	13.89		13.71	0.0	15.0
			1	104	19.27		18.81	0.0	20.0	14.39		13.21	0.0	15.0
		64QAM	1	1	19.23		19.32	0.0	20.0	14.64		13.79	0.0	15.0
		256QAM	1	1	19.15		19.31	0.0	20.0	14.32		13.81	0.0	15.0
	CP-OFDM	QPSK	1	1	19.17		19.33	0.0	20.0	13.84		13.79	0.0	15.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					631000	633334	635666			631000	633332	635666		
					3465.00 MHz	3500.01 MHz	3534.99 MHz			3465.00 MHz	3499.98 MHz	3534.99 MHz		
30 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	19.10	19.48	19.31	0.0	20.0	13.62	14.02	14.11	0.0	15.0
			1	39	19.16	19.58	19.05	0.0	20.0	13.69	14.09	13.99	0.0	15.0
			1	76	19.35	19.35	18.57	0.0	20.0	13.87	13.86	13.54	0.0	15.0
			36	0	19.08	19.57	19.13	0.0	20.0	13.62	14.09	14.09	0.0	15.0
			36	21	19.11	19.52	19.00	0.0	20.0	13.64	14.03	13.94	0.0	15.0
			36	42	19.21	19.39	18.76	0.0	20.0	13.74	13.89	13.72	0.0	15.0
			75	0	19.09	19.53	19.02	0.0	20.0	13.65	14.06	13.96	0.0	15.0
		QPSK	1	1	19.07	19.51	19.15	0.0	20.0	13.61	14.00	14.10	0.0	15.0
			1	39	19.14	19.55	19.00	0.0	20.0	13.68	14.08	13.97	0.0	15.0
			1	76	19.35	19.31	18.56	0.0	20.0	13.86	13.84	13.52	0.0	15.0
			36	0	19.08	19.57	19.12	0.0	20.0	13.61	14.07	14.08	0.0	15.0
			36	21	19.11	19.51	18.98	0.0	20.0	13.62	14.03	13.92	0.0	15.0
			36	42	19.20	19.38	18.76	0.0	20.0	13.73	13.89	13.72	0.0	15.0
			75	0	19.10	19.38	19.01	0.0	20.0	13.62	14.03	13.96	0.0	15.0
		16QAM	1	1	19.08	19.50	19.18	0.0	20.0	13.61	14.01	14.09	0.0	15.0
			1	39	19.13	19.53	19.01	0.0	20.0	13.64	14.04	13.94	0.0	15.0
			1	76	19.34	19.34	18.57	0.0	20.0	13.83	13.82	13.51	0.0	15.0
		64QAM	1	1	19.02	19.42	19.08	0.0	20.0	13.56	13.97	14.06	0.0	15.0
		256QAM	1	1	19.01	19.47	19.09	0.0	20.0	13.57	13.96	14.08	0.0	15.0
	CP-OFDM	QPSK	1	1	19.05	19.45	19.11	0.0	20.0	13.56	13.96	14.07	0.0	15.0

Notes:

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

NR Band n77 - DoD Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					630834	633334	635832			630834	633332	635832		
					3462.51 MHz	3500.01 MHz	3537.48 MHz			3462.51 MHz	3499.98 MHz	3537.48 MHz		
25 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	19.01	19.39	19.32	0.0	20.0	13.87	14.97	14.09	0.0	15.0
			1	32	18.99	19.40	19.12	0.0	20.0	13.88	14.35	13.87	0.0	15.0
			1	63	19.14	19.23	18.79	0.0	20.0	14.03	14.17	13.58	0.0	15.0
			32	0	18.87	19.45	19.28	0.0	20.0	13.89	14.37	14.10	0.0	15.0
			32	16	19.01	19.42	19.13	0.0	20.0	13.91	14.35	13.95	0.0	15.0
			32	33	19.06	19.32	18.96	0.0	20.0	13.96	14.26	13.77	0.0	15.0
		QPSK	64	0	19.01	19.43	19.14	0.0	20.0	13.91	14.37	13.95	0.0	15.0
			1	1	18.99	19.46	19.36	0.0	20.0	13.92	14.37	14.16	0.0	15.0
			1	32	18.97	19.38	19.12	0.0	20.0	13.89	14.32	13.91	0.0	15.0
			1	63	19.14	19.27	18.76	0.0	20.0	14.05	14.17	13.57	0.0	15.0
			32	0	18.98	19.46	19.27	0.0	20.0	13.88	14.38	14.08	0.0	15.0
			32	16	19.02	19.43	19.13	0.0	20.0	13.92	14.37	13.94	0.0	15.0
		16QAM	32	33	19.05	19.32	18.92	0.0	20.0	13.96	14.25	13.74	0.0	15.0
			64	0	19.01	19.44	19.14	0.0	20.0	13.92	14.35	13.93	0.0	15.0
			1	1	18.96	19.48	19.35	0.0	20.0	13.92	14.39	14.16	0.0	15.0
		64QAM	1	32	19.05	19.53	19.20	0.0	20.0	13.99	14.41	14.02	0.0	15.0
			1	63	19.12	19.27	18.80	0.0	20.0	14.06	14.19	13.58	0.0	15.0
			1	1	18.92	19.41	19.28	0.0	20.0	13.86	14.32	14.12	0.0	15.0
		256QAM	1	1	18.93	19.40	19.30	0.0	20.0	13.87	14.36	14.11	0.0	15.0
	CP-OFDM	QPSK	1	1	18.93	19.41	19.30	0.0	20.0	13.86	14.32	14.08	0.0	15.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					630668	633334	636000			630668	633332	636000		
					3460.02 MHz	3500.01 MHz	3540.00 MHz			3460.02 MHz	3499.98 MHz	3540.00 MHz		
20 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	18.96	19.49	18.52	0.0	20.0	13.98	14.46	14.11	0.0	15.0
			1	25	18.99	19.44	18.26	0.0	20.0	13.96	14.41	13.87	0.0	15.0
			1	49	19.08	19.30	17.91	0.0	20.0	14.05	14.27	13.59	0.0	15.0
			25	0	19.02	19.48	18.40	0.0	20.0	13.98	14.45	14.01	0.0	15.0
			25	13	19.02	19.46	18.26	0.0	20.0	13.98	14.41	13.87	0.0	15.0
			25	26	19.04	19.37	18.83	0.0	20.0	14.01	14.32	13.72	0.0	15.0
		QPSK	50	0	19.01	19.46	18.24	0.0	20.0	13.98	14.42	13.90	0.0	15.0
			1	1	19.02	19.18	18.53	0.0	20.0	14.00	14.47	14.11	0.0	15.0
			1	25	18.99	19.02	18.20	0.0	20.0	13.93	14.38	13.85	0.0	15.0
			1	49	19.10	18.85	17.89	0.0	20.0	14.02	14.26	13.58	0.0	15.0
			25	0	19.03	19.09	18.40	0.0	20.0	13.98	14.45	13.99	0.0	15.0
			25	13	19.04	19.07	18.25	0.0	20.0	13.96	14.41	13.85	0.0	15.0
		16QAM	25	26	19.05	18.95	18.03	0.0	20.0	14.01	14.34	13.72	0.0	15.0
			50	0	19.03	19.05	18.27	0.0	20.0	13.98	14.42	13.88	0.0	15.0
			1	1	19.17	19.15	18.53	0.0	20.0	13.97	14.46	14.12	0.0	15.0
		64QAM	1	25	19.16	19.13	18.31	0.0	20.0	14.06	14.47	13.96	0.0	15.0
			1	49	19.17	18.85	17.89	0.0	20.0	14.03	14.26	13.54	0.0	15.0
		256QAM	1	1	19.07	18.76	18.46	0.0	20.0	13.98	14.42	14.01	0.0	15.0
	CP-OFDM	QPSK	1	1	19.05	18.75	18.46	0.0	20.0	13.99	14.43	14.03	0.0	15.0
			1	1	19.08	19.12	18.47	0.0	20.0	14.01	14.43	14.02	0.0	15.0

Notes:

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

NR Band n77 - DoD Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					630500	633334	636166			630500	633332	636166		
					3457.50 MHz	3500.01 MHz	3542.49 MHz			3457.50 MHz	3499.98 MHz	3542.49 MHz		
15 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	18.73	18.98	19.18	0.0	20.0	13.95	14.42	13.65	0.0	15.0
			1	18	18.69	18.89	18.95	0.0	20.0	13.99	14.33	13.42	0.0	15.0
			1	36	18.76	18.86	18.78	0.0	20.0	14.00	14.26	13.25	0.0	15.0
			18	0	18.79	19.00	19.11	0.0	20.0	13.96	14.41	13.59	0.0	15.0
			18	10	18.77	18.95	18.99	0.0	20.0	13.98	14.38	13.46	0.0	15.0
			18	20	18.76	18.87	18.87	0.0	20.0	13.97	14.32	13.31	0.0	15.0
		QPSK	36	0	18.78	18.95	19.00	0.0	20.0	13.95	14.39	13.48	0.0	15.0
			1	1	18.81	19.04	19.18	0.0	20.0	13.95	14.48	13.61	0.0	15.0
			1	18	18.73	18.90	18.93	0.0	20.0	13.96	14.37	13.69	0.0	15.0
			1	36	18.80	18.85	18.80	0.0	20.0	13.98	14.32	13.51	0.0	15.0
			18	0	18.79	19.00	19.10	0.0	20.0	13.97	14.46	13.86	0.0	15.0
			18	10	18.76	18.96	18.97	0.0	20.0	13.98	14.41	13.72	0.0	15.0
		16QAM	18	20	18.78	18.91	18.85	0.0	20.0	13.99	14.35	13.61	0.0	15.0
			36	0	18.79	19.01	18.99	0.0	20.0	13.99	14.42	13.75	0.0	15.0
			1	1	18.83	19.67	19.18	0.0	20.0	14.00	14.13	13.93	0.0	15.0
			1	18	18.73	19.56	18.94	0.0	20.0	13.99	14.03	13.67	0.0	15.0
			1	36	18.80	19.52	18.78	0.0	20.0	14.01	14.00	13.52	0.0	15.0
			1	1	18.73	19.60	19.07	0.0	20.0	13.94	14.12	13.88	0.0	15.0
		256QAM	1	1	18.73	19.58	19.08	0.0	20.0	13.95	14.13	13.90	0.0	15.0
	CP-OFDM	QPSK	1	1	18.72	19.58	19.10	0.0	20.0	13.93	14.14	13.87	0.0	15.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					630334	633334	636332			630334	633332	636332		
					3455.01 MHz	3500.01 MHz	3544.98 MHz			3455.01 MHz	3499.98 MHz	3544.98 MHz		
10 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	19.09	19.63	18.97	0.0	20.0	13.61	14.16	13.59	0.0	15.0
			1	12	19.15	19.67	18.88	0.0	20.0	13.64	14.19	13.48	0.0	15.0
			1	22	19.15	19.57	18.75	0.0	20.0	13.62	14.11	13.32	0.0	15.0
			12	0	19.13	19.55	18.94	0.0	20.0	13.63	14.15	13.51	0.0	15.0
			12	6	19.11	19.61	18.87	0.0	20.0	13.65	14.15	13.46	0.0	15.0
			12	12	19.13	19.58	18.80	0.0	20.0	13.65	14.11	13.37	0.0	15.0
		QPSK	24	0	19.15	19.60	18.87	0.0	20.0	13.66	14.16	13.46	0.0	15.0
			1	1	19.15	19.62	18.94	0.0	20.0	13.65	14.18	13.60	0.0	15.0
			1	12	19.20	19.65	18.88	0.0	20.0	13.68	14.19	13.48	0.0	15.0
			1	22	19.14	19.53	18.72	0.0	20.0	13.66	14.09	13.32	0.0	15.0
			12	0	19.10	19.61	18.92	0.0	20.0	13.67	14.16	13.52	0.0	15.0
			12	6	19.13	19.60	18.88	0.0	20.0	13.66	14.17	13.46	0.0	15.0
		16QAM	12	12	19.15	19.55	18.79	0.0	20.0	13.69	14.12	13.38	0.0	15.0
			24	0	19.13	19.60	18.89	0.0	20.0	13.69	14.16	13.44	0.0	15.0
			1	1	19.17	19.63	19.02	0.0	20.0	13.71	14.20	13.60	0.0	15.0
			1	12	19.22	19.67	18.92	0.0	20.0	13.73	14.21	13.47	0.0	15.0
			1	22	19.16	19.55	18.76	0.0	20.0	13.71	14.12	13.34	0.0	15.0
			1	1	19.13	19.57	18.95	0.0	20.0	13.66	14.16	13.53	0.0	15.0
		256QAM	1	1	19.13	19.59	18.98	0.0	20.0	13.68	14.14	13.52	0.0	15.0
	CP-OFDM	QPSK	1	1	19.11	19.57	18.97	0.0	20.0	13.67	14.15	13.54	0.0	15.0

Notes:

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

NR Band n77 Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)							Maximum Average Power (dBm)														
					RSI-Free, Hotspot, Earjack							RSI-Rcv														
					Measured Pwr (dBm)							Measured Pwr (dBm)														
					650000 3750.00 MHz					662000 3930.00 MHz	MFR	Tune-up Limit	650000 3750.00 MHz					662000 3930.00 MHz	MFR	Tune-up Limit						
100 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	18.58					18.80	0.0	20.0	13.58					13.67	0.0	15.0						
			1	136	18.59					18.98	0.0	20.0	13.44					13.85	0.0	15.0						
			1	271	19.43					19.37	0.0	20.0	14.30					14.25	0.0	15.0						
			135	0	18.41					18.86	0.0	20.0	13.29					13.80	0.0	15.0						
			135	69	18.61					18.97	0.0	20.0	13.47					13.87	0.0	15.0						
			135	138	18.97					19.35	0.0	20.0	13.83					14.24	0.0	15.0						
		270	0	18.63					19.01	0.0	20.0	13.49					13.91	0.0	15.0							
		QPSK	1	1	18.74					18.80	0.0	20.0	13.62					13.72	0.0	15.0						
			1	136	18.50					18.97	0.0	20.0	13.45					13.84	0.0	15.0						
			1	271	19.40					19.42	0.0	20.0	14.30					14.31	0.0	15.0						
			135	0	18.38					18.92	0.0	20.0	13.29					13.79	0.0	15.0						
			135	69	18.60					18.99	0.0	20.0	13.48					13.87	0.0	15.0						
			135	138	18.94					19.36	0.0	20.0	13.85					14.23	0.0	15.0						
		270	0	18.61					19.01	0.0	20.0	13.48					13.91	0.0	15.0							
		16QAM	1	1	18.72					18.82	0.0	20.0	13.63					13.73	0.0	15.0						
			1	136	18.67					19.08	0.0	20.0	13.54					13.94	0.0	15.0						
		64QAM	1	271	19.45					19.38	0.0	20.0	14.31					14.28	0.0	15.0						
			1	1	18.68					18.73	0.0	20.0	13.58					14.19	0.0	15.0						
	CP-OFDM	256QAM	1	1	18.66					18.72	0.0	20.0	13.58					14.21	0.0	15.0						
			1	1	18.66					18.76	0.0	20.0	13.59					13.68	0.0	15.0						
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)							Measured Pwr (dBm)														
					649668 3745.02 MHz					656000 3840.00 MHz			662332 3934.98 MHz	MFR <td>Tune-up Limit</td> <td>649668 3745.02 MHz</td> <td></td> <td></td> <td></td> <td></td> <td>656000 3840.00 MHz</td> <td></td> <td></td> <td>662332 3934.98 MHz</td> <td>MFR<td>Tune-up Limit</td></td>	Tune-up Limit	649668 3745.02 MHz					656000 3840.00 MHz			662332 3934.98 MHz	MFR <td>Tune-up Limit</td>	Tune-up Limit
					90 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	18.75					18.87	0.0	20.0	13.64					14.25	0.0	15.0	
								1	122	18.53					18.62	0.0	20.0	13.46					13.59	0.0	15.0	
1	243	19.18								18.87	0.0	20.0	14.09					13.80	0.0	15.0						
120	0	18.48								19.23	0.0	20.0	13.38					14.15	0.0	15.0						
120	62	18.54								18.65	0.0	20.0	13.44					13.58	0.0	15.0						
120	125	19.02								18.69	0.0	20.0	13.91					13.61	0.0	15.0						
QPSK	243	0	18.55							18.68	0.0	20.0	13.46					13.59	0.0	15.0						
	1	1	18.59							19.34	0.0	20.0	13.62					14.22	0.0	15.0						
	1	122	18.39							18.63	0.0	20.0	13.39					13.53	0.0	15.0						
	1	243	19.06							18.88	0.0	20.0	14.06					13.76	0.0	15.0						
	120	0	18.45							19.25	0.0	20.0	13.36					14.15	0.0	15.0						
	120	62	18.53							18.64	0.0	20.0	13.41					13.58	0.0	15.0						
16QAM	120	125	18.99							18.71	0.0	20.0	13.91					13.61	0.0	15.0						
	243	0	18.53							18.70	0.0	20.0	13.41					13.60	0.0	15.0						
	1	1	18.74							19.31	0.0	20.0	13.61					14.23	0.0	15.0						
	1	122	18.61							18.71	0.0	20.0	13.49					13.67	0.0	15.0						
	1	243	19.16							18.86	0.0	20.0	14.03					13.78	0.0	15.0						
	64QAM	1	1	18.66							19.27	0.0	20.0	13.55					14.18	0.0	15.0					
CP-OFDM	256QAM	1	1	18.64					19.29	0.0	20.0	13.54					14.21	0.0	15.0							
		1	1	18.66					19.25	0.0	20.0	13.57					14.21	0.0	15.0							
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)							Measured Pwr (dBm)														
					649334 3740.01 MHz					656000 3840.00 MHz			662666 3939.99 MHz	MFR <td>Tune-up Limit</td> <td>649334 3740.01 MHz</td> <td></td> <td></td> <td></td> <td></td> <td>656000 3840.00 MHz</td> <td></td> <td></td> <td>662666 3939.99 MHz</td> <td>MFR<td>Tune-up Limit</td></td>	Tune-up Limit	649334 3740.01 MHz					656000 3840.00 MHz			662666 3939.99 MHz	MFR <td>Tune-up Limit</td>	Tune-up Limit
					80 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	18.60					19.20	0.0	20.0	13.38					14.12	0.0	15.0	
								1	108	18.34					18.49	0.0	20.0	13.12					13.40	0.0	15.0	
1	215	19.00								18.58	0.0	20.0	13.75					13.45	0.0	15.0						
108	0	18.44								19.03	0.0	20.0	13.20					13.94	0.0	15.0						
108	54	18.41								18.52	0.0	20.0	13.15					13.41	0.0	15.0						
108	109	18.92								18.53	0.0	20.0	13.65					13.45	0.0	15.0						
QPSK	216	0	18.42							18.47	0.0	20.0	13.16					13.43	0.0	15.0						
	1	1	18.64							19.08	0.0	20.0	13.39					14.13	0.0	15.0						
	1	108	18.38							18.39	0.0	20.0	13.12					13.38	0.0	15.0						
	1	215	19.03							18.41	0.0	20.0	13.75					13.46	0.0	15.0						
	108	0	18.49							18.85	0.0	20.0	13.22					13.94	0.0	15.0						
	108	54	18.42							18.43	0.0	20.0	13.16					13.42	0.0	15.0						
16QAM	108	109	18.97							18.51	0.0	20.0	13.66					13.46	0.0	15.0						
	216	0	18.46							18.46	0.0	20.0	13.17					13.43	0.0	15.0						
	1	1	18.69							19.21	0.0	20.0	13.38					14.13	0.0	15.0						
	1	108	18.51							18.58	0.0	20.0	13.23					13.50	0.0	15.0						
	1	215	19.08							18.59	0.0	20.0	13.77					13.47	0.0	15.0						
	64QAM	1	1	18.63							18.79	0.0	20.0	13.34					14.08	0.0	15.0					
CP-OFDM	256QAM	1	1	18.62					19.13	0.0	20.0	13.32					14.08	0.0	15.0							
		1	1	18.63					19.16	0.0	20.0	13.34					14.09	0.0	15.0							

Notes:

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

NR Band n77 Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)				MFR	Tune-up Limit	Measured Pwr (dBm)				MFR	Tune-up Limit					
					649334			656000				662666	649334					656000		662666	
					3740.01 MHz			3840.00 MHz				3939.99 MHz	3740.01 MHz					3840.00 MHz		3939.99 MHz	
80 MHz	DFT-s-OFDM	π/2 BPSK	1	1	18.60			19.20		18.91	0.0	20.0	13.38			14.12		13.79	0.0	15.0	
			1	108	18.34			18.49		19.24	0.0	20.0	13.12			13.40		14.06	0.0	15.0	
			1	215	19.00			18.58		19.17	0.0	20.0	13.75			13.45		13.95	0.0	15.0	
			108	0	18.44			19.03		18.75	0.0	20.0	13.20			13.94		13.58	0.0	15.0	
			108	54	18.41			18.52		19.27	0.0	20.0	13.15			13.41		14.06	0.0	15.0	
			108	109	18.92			18.53		19.20	0.0	20.0	13.65			13.45		13.96	0.0	15.0	
			216	0	18.42			18.47		19.22	0.0	20.0	13.16			13.43		14.08	0.0	15.0	
			1	1	18.64			19.08		18.83	0.0	20.0	13.39			14.13		13.77	0.0	15.0	
		QPSK	1	108	18.38			18.39		19.21	0.0	20.0	13.12			13.38		14.02	0.0	15.0	
			1	215	19.03			18.41		19.16	0.0	20.0	13.75			13.46		13.92	0.0	15.0	
			108	0	18.49			18.85		18.71	0.0	20.0	13.22			13.94		13.54	0.0	15.0	
			108	54	18.42			18.43		19.18	0.0	20.0	13.16			13.42		14.03	0.0	15.0	
			108	109	18.97			18.51		19.14	0.0	20.0	13.66			13.46		13.94	0.0	15.0	
			216	0	18.46			18.46		19.24	0.0	20.0	13.17			13.43		14.05	0.0	15.0	
			1	1	18.69			19.21		18.86	0.0	20.0	13.38			14.13		13.71	0.0	15.0	
			1	108	18.51			18.58		19.29	0.0	20.0	13.23			13.50		14.09	0.0	15.0	
		16QAM	1	215	19.08			18.59		19.17	0.0	20.0	13.77			13.47		13.90	0.0	15.0	
			64QAM	1	1	18.63			19.11		18.79	0.0	20.0	13.34			14.08		13.67	0.0	15.0
			256QAM	1	1	18.62			19.13		18.76	0.0	20.0	13.32			14.08		13.66	0.0	15.0
				QPSK	1	1	18.63			19.16		18.81	0.0	20.0	13.34			14.09		13.66	0.0
CP-OFDM																					
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)				MFR	Tune-up Limit	Measured Pwr (dBm)				MFR	Tune-up Limit					
					649000	653666		658334	663000			649000	653666		658334	663000					
					3735.00 MHz	3804.99 MHz		3875.01 MHz	3945.00 MHz			3735.00 MHz	3804.99 MHz		3875.01 MHz	3945.00 MHz					
70 MHz	DFT-s-OFDM	π/2 BPSK	1	1	18.68			18.71	18.90	0.0	20.0	13.56	13.93			13.78	13.59	0.0	15.0		
			1	94	18.45	19.36		18.63	19.36	0.0	20.0	13.33	14.23			14.10	14.08	0.0	15.0		
			1	187	19.11	18.79		18.96	19.20	0.0	20.0	14.00	13.67			13.52	13.87	0.0	15.0		
			90	0	18.51	19.01		18.76	18.99	0.0	20.0	13.40	13.88			13.73	13.67	0.0	15.0		
			90	49	18.72	19.37		18.62	19.38	0.0	20.0	13.31	14.25			14.10	14.09	0.0	15.0		
			90	99	18.76	19.14		18.92	19.22	0.0	20.0	13.65	14.03			13.87	13.91	0.0	15.0		
			180	0	18.44	19.33		18.63	19.40	0.0	20.0	13.31	14.23			14.09	14.07	0.0	15.0		
			1	1	18.62	19.02		18.76	18.92	0.0	20.0	13.48	13.92			13.78	13.61	0.0	15.0		
		QPSK	1	94	18.39	19.32		18.62	19.37	0.0	20.0	13.27	14.20			14.09	14.04	0.0	15.0		
			1	187	19.09	18.79		18.95	19.21	0.0	20.0	13.95	13.68			13.53	13.86	0.0	15.0		
			90	0	18.49	18.99		18.74	18.98	0.0	20.0	13.37	13.89			13.76	13.70	0.0	15.0		
			90	49	18.42	19.36		18.60	19.38	0.0	20.0	13.28	14.24			13.74	14.12	0.0	15.0		
			90	99	18.75	19.13		18.90	19.21	0.0	20.0	13.29	14.01			13.88	13.95	0.0	15.0		
			180	0	18.41	19.35		18.62	19.38	0.0	20.0	13.62	14.23			14.11	14.12	0.0	15.0		
			1	1	18.62	19.05		18.76	18.92	0.0	20.0	13.49	13.92			13.76	13.65	0.0	15.0		
			1	94	18.48	19.43		18.70	19.46	0.0	20.0	13.37	14.31			14.13	14.21	0.0	15.0		
		16QAM	1	187	19.06	18.79		18.94	19.21	0.0	20.0	13.94	13.68			13.51	13.95	0.0	15.0		
			64QAM	1	1	18.51	18.98		18.70	18.86	0.0	20.0	13.44	13.87			13.72	13.60	0.0	15.0	
			256QAM	1	1	18.52	19.00		18.72	18.86	0.0	20.0	13.45	13.88			13.74	13.63	0.0	15.0	
				QPSK	1	1	18.52	19.00		18.71	18.83	0.0	20.0	13.43	13.88			13.71	13.62	0.0	15.0
CP-OFDM																					
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)				MFR	Tune-up Limit	Measured Pwr (dBm)				MFR	Tune-up Limit					
					648668	653556		658444	663332			648668	653556		658444	663332					
					3730.02 MHz	3803.34 MHz		3876.66 MHz	3949.98 MHz			3730.02 MHz	3803.34 MHz		3876.66 MHz	3949.98 MHz					
60 MHz	DFT-s-OFDM	π/2 BPSK	1	1	18.42	18.92			18.60	18.71	0.0	20.0	13.35	13.71			13.58	13.77	0.0	15.0	
			1	80	18.21	19.23			18.43	19.16	0.0	20.0	13.07	14.01			13.41	14.23	0.0	15.0	
			1	160	18.81	18.87			18.83	18.98	0.0	20.0	13.61	13.65			13.83	14.05	0.0	15.0	
			81	0	18.38	18.95			18.56	19.02	0.0	20.0	13.15	13.78			13.57	14.10	0.0	15.0	
			81	40	18.26	19.28			18.53	19.21	0.0	20.0	13.09	14.09			13.49	14.28	0.0	15.0	
			81	81	18.42	19.19			18.77	19.00	0.0	20.0	13.21	14.02			13.76	14.06	0.0	15.0	
			162	0	18.31	19.28			18.58	19.21	0.0	20.0	13.07	14.10			13.50	14.28	0.0	15.0	
			1	1	18.51	18.92			18.78	18.69	0.0	20.0	13.26	13.74			13.66	13.78	0.0	15.0	
		QPSK	1	80	18.27	19.23			18.51	19.13	0.0	20.0	13.08	14.06			13.43	14.23	0.0	15.0	
			1	160	18.85	18.85			18.90	18.98	0.0	20.0	13.62	13.64			13.83	14.03	0.0	15.0	
			81	0	18.40	18.96			18.62	19.00	0.0	20.0	13.19	13.78			13.56	14.08	0.0	15.0	
			81	40	18.32	19.27			18.57	19.17	0.0	20.0	13.12	14.11			13.49	14.28	0.0	15.0	
			81	81	18.46	19.20			18.82	18.95	0.0	20.0	13.25	14.02			13.76	14.06	0.0	15.0	
			162	0	18.34	19.29			18.55	19.16	0.0	20.0	13.11	14.10			13.49	14.29	0.0	15.0	
			1	1	18.52	18.94			18.76	18.66	0.0	20.0	13.32	13.75			13.68	13.77	0.0	15.0	
			1	80	18.27	19.22			18.48	19.12	0.0	20.0	13.06	14.03			13.42	14.21	0.0	15.0	
		16QAM	1	160	18.85	18.83			18.91	18.94	0.0	20.0	13.62	13.67			13.83	14.04	0.0	15.0	
			64QAM	1	1	18.47	18.87			18.68	18.59	0.0	20.0	13.26	13.68			13.63	13.72	0.0	15.0
			256QAM	1	1	18.47	18.77			18.69	18.60	0.0	20.0	13.27	13.72			13.66	13.73	0.0	15.0
				QPSK	1	1	18.46	18.86			18.70	18.58	0.0	20.0	13.26	13.70			13.64	13.72	0.0
CP-OFDM																					

Notes:

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

NR Band n77 Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MFR	Tune-up Limit	Measured Pwr (dBm)						MFR	Tune-up Limit	
					648334	652168		656000	659834	663666			648334	652168		656000	659834	663666			
					3725.01 MHz	3782.52 MHz		3840.00 MHz	3897.51 MHz	3954.99 MHz			3725.01 MHz	3782.52 MHz		3840.00 MHz	3897.51 MHz	3954.99 MHz			
50 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	18.48	18.98		19.35	18.57	19.22	0.0	20.0	13.65	13.86		14.21	13.55	13.99	0.0	15.0	
			1	66	18.35	19.05		18.78	19.02	19.44	0.0	20.0	13.46	13.90		13.61	13.89	14.21	0.0	15.0	
			1	131	18.60	19.49		18.79	18.98	19.29	0.0	20.0	13.66	14.34		13.64	13.81	14.08	0.0	15.0	
			64	0	18.47	19.08		19.06	18.85	19.52	0.0	20.0	13.51	13.95		13.91	13.69	14.29	0.0	15.0	
			64	34	18.38	19.03		18.78	19.05	19.46	0.0	20.0	13.42	14.12		13.62	13.90	14.23	0.0	15.0	
			64	69	18.40	19.26		18.89	18.97	19.30	0.0	20.0	13.43	14.11		13.74	13.81	14.06	0.0	15.0	
			128	0	18.38	19.02		18.76	19.06	19.48	0.0	20.0	13.44	13.89		13.64	13.89	14.26	0.0	15.0	
			1	1	18.57	18.99		19.34	18.69	19.24	0.0	20.0	13.57	13.83		14.19	13.57	14.01	0.0	15.0	
			1	66	18.38	19.02		18.73	19.03	19.45	0.0	20.0	13.41	13.87		13.57	13.87	14.20	0.0	15.0	
			1	131	18.61	19.48		18.74	18.98	19.30	0.0	20.0	13.62	14.33		13.61	13.80	14.05	0.0	15.0	
			64	0	18.44	19.09		18.99	18.83	19.50	0.0	20.0	13.47	13.94		13.90	13.69	14.29	0.0	15.0	
			64	34	18.40	19.03		18.75	19.04	19.46	0.0	20.0	13.39	13.89		13.60	13.90	14.22	0.0	15.0	
		64	69	18.38	19.25		18.86	18.96	19.29	0.0	20.0	13.38	14.11		13.73	13.78	14.06	0.0	15.0		
		128	0	18.41	19.01		18.75	19.03	19.49	0.0	20.0	13.41	13.89		13.62	13.89	14.27	0.0	15.0		
		16QAM	1	1	18.56	18.98		19.36	18.70	19.24	0.0	20.0	13.56	13.83		14.20	13.56	14.02	0.0	15.0	
			1	66	18.53	19.09		18.82	19.11	19.50	0.0	20.0	13.47	13.94		13.67	13.94	14.30	0.0	15.0	
			1	131	18.69	19.48		18.81	18.98	19.32	0.0	20.0	13.61	14.33		13.62	13.78	14.08	0.0	15.0	
			64QAM	1	1	18.58	18.91		19.31	18.65	19.17	0.0	20.0	13.49	13.76		13.54	13.50	13.96	0.0	15.0
			256QAM	1	1	18.60	18.94		19.34	18.67	19.18	0.0	20.0	13.50	13.79		14.11	13.49	13.98	0.0	15.0
			QPSK	1	1	18.59	18.92		19.33	18.65	19.20	0.0	20.0	13.51	13.77		14.45	13.49	14.00	0.0	15.0
40 MHz	DFT-s-OFDM		$\pi/2$ BPSK	1	1	18.50	18.67	19.04	18.50	18.72	19.06	0.0	20.0	13.51	13.53	13.92	13.45	13.75	14.14	0.0	15.0
				1	52	18.32	18.98	19.08	18.39	18.62	18.92	0.0	20.0	13.32	13.82	13.92	13.29	13.64	13.97	0.0	15.0
		1		104	18.41	19.06	18.86	18.38	18.92	18.91	0.0	20.0	13.34	13.90	13.48	13.45	13.91	13.96	0.0	15.0	
		50		0	18.46	18.87	19.41	18.56	18.79	19.21	0.0	20.0	13.41	13.75	14.05	13.52	13.82	14.22	0.0	15.0	
		50		28	18.43	19.01	19.31	18.45	18.70	19.03	0.0	20.0	13.38	13.89	13.96	13.40	13.68	14.05	0.0	15.0	
		50		56	18.37	18.97	19.08	18.41	18.73	18.92	0.0	20.0	13.30	13.87	13.69	13.35	13.72	13.92	0.0	15.0	
		100		0	18.46	19.01	19.36	18.45	18.71	19.09	0.0	20.0	13.36	13.51	13.98	13.41	13.71	14.07	0.0	15.0	
		QPSK		1	1	18.58	18.63	19.25	18.56	18.93	19.22	0.0	20.0	13.46	13.24	13.92	13.49	13.70	14.17	0.0	15.0
				1	52	18.40	18.94	19.28	18.40	18.83	19.02	0.0	20.0	13.28	13.54	13.92	13.32	13.61	13.98	0.0	15.0
				1	104	18.43	19.02	18.86	18.52	19.12	19.01	0.0	20.0	13.33	13.61	13.49	13.44	13.89	13.97	0.0	15.0
				50	0	18.51	18.87	19.36	18.58	19.02	19.31	0.0	20.0	13.39	13.49	14.06	13.51	13.80	14.22	0.0	15.0
				50	28	18.46	19.01	19.28	18.45	18.91	19.13	0.0	20.0	13.35	13.64	13.97	13.39	13.69	14.06	0.0	15.0
			50	56	18.40	18.98	19.01	18.40	18.96	19.01	0.0	20.0	13.29	13.58	13.71	13.34	13.72	13.92	0.0	15.0	
			100	0	18.49	19.01	19.30	18.46	18.92	19.16	0.0	20.0	13.36	13.65	13.99	13.39	13.71	14.08	0.0	15.0	
		16QAM	1	1	18.59	18.60	19.21	18.58	18.97	19.28	0.0	20.0	13.45	13.31	13.93	13.48	13.71	14.16	0.0	15.0	
			1	52	18.43	19.91	19.22	18.40	18.86	19.08	0.0	20.0	13.28	13.60	13.92	13.33	13.62	13.98	0.0	15.0	
			1	104	18.46	19.07	18.80	18.52	19.13	19.06	0.0	20.0	13.31	13.67	13.49	13.44	13.89	13.95	0.0	15.0	
			64QAM	1	1	18.52	18.00	19.14	18.52	18.98	19.25	0.0	20.0	13.39	13.27	13.87	13.43	13.66	14.09	0.0	15.0
		256QAM	1	1	18.53	18.62	19.11	18.51	18.91	19.26	0.0	20.0	13.40	13.28	13.90	13.45	13.68	14.12	0.0	15.0	
		QPSK	1	1	18.55	18.64	19.18	18.48	18.93	19.28	0.0	20.0	13.42	13.28	13.88	13.46	13.66	14.11	0.0	15.0	
30 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	18.62	17.80	19.38	18.61	18.78	19.22	0.0	20.0	13.30	13.53	14.22	13.72	13.90	14.25	0.0	15.0	
			1	39	18.56	17.56	19.40	18.52	18.75	19.07	0.0	20.0	13.34	13.86	14.25	13.61	13.81	14.06	0.0	15.0	
			1	76	18.44	17.63	19.04	18.49	18.89	19.03	0.0	20.0	13.23	13.78	13.86	13.58	13.92	14.01	0.0	15.0	
			36	0	18.56	17.72	19.45	18.54	18.76	19.12	0.0	20.0	13.31	13.68	14.25	13.63	13.79	14.13	0.0	15.0	
			36	21	18.52	17.58	19.38	18.45	18.72	19.03	0.0	20.0	13.27	13.81	14.18	13.56	13.74	14.02	0.0	15.0	
			36	42	18.49	17.58	19.21	18.43	18.76	18.99	0.0	20.0	13.27	13.85	14.02	13.51	13.80	14.01	0.0	15.0	
			75	0	18.53	17.61	19.40	18.48	18.72	19.02	0.0	20.0	13.29	13.80	14.21	13.56	13.74	14.03	0.0	15.0	
			1	1	18.65	17.82	19.39	18.61	18.79	19.25	0.0	20.0	13.37	13.54	14.23	13.69	13.89	14.23	0.0	15.0	
			1	39	18.56	17.58	19.40	18.50	18.73	19.05	0.0	20.0	13.34	13.86	14.24	13.58	13.79	14.07	0.0	15.0	
			1	76	18.46	17.65	19.03	18.43	18.88	19.02	0.0	20.0	13.23	13.80	13.84	13.54	13.91	13.98	0.0	15.0	
			36	0	18.55	17.71	19.45	18.53	18.73	19.12	0.0	20.0	13.34	13.68	14.27	13.62	13.79	14.13	0.0	15.0	
			36	21	18.53	17.58	19.37	18.49	18.69	18.92	0.0	20.0	13.29	13.79	14.20	13.55	13.75	14.02	0.0	15.0	
		36	42	18.52	17.56	19.20	18.43	18.75	18.90	0.0	20.0	13.29	13.84	14.03	13.50	13.78	13.96	0.0	15.0		
		75	0	18.54	17.60	19.38	18.46	18.72	18.99	0.0	20.0	13.32	13.82	14.21	13.56	13.75	14.02	0.0	15.0		
		16QAM	1	1	18.63	17.82	19.41	18.64	18.78	19.23	0.0	20.0	13.41	13.57	14.22	13.71	13.89	14.25	0.0	15.0	
			1	39	18.59	17.58	19.43	18.51	18.74	19.07	0.0	20.0	13.34	13.88	14.23	13.61	13.80	14.07	0.0	15.0	
			1	76	18.47	17.63	19.03	18.49	18.85	18.99	0.0	20.0	13.24	13.82	13.85	13.55	13.92	13.98	0.0	15.0	
			64QAM	1	1	18.56	17.71	19.35	18.58	18.75	19.18	0.0	20.0	13.35	13.52	14.16	13.64	13.83	14.18	0.0	15.0
			256QAM	1	1	18.59	17.77	19.34	18.57	18.76	19.19	0.0	20.0	13.38	13.53	14.16	13.65	13.80	14.20	0.0	15.0
			QPSK	1	1	18.58	17.78	19.36	18.59	18.79	19.21	0.0	20.0	13.37	13.54	14.18	13.67	13.79	14.18	0.0	15.0

Notes:

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

NR Band n77 Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MFR	Tune-up Limit	Measured Pwr (dBm)						MFR	Tune-up Limit	
					647500	650900	654300	657700	661100	664500			647500	650900	654300	657700	661100	664500			
					3712.50 MHz	3763.50 MHz	3814.50 MHz	3865.50 MHz	3916.50 MHz	3967.50 MHz			3712.50 MHz	3763.50 MHz	3814.50 MHz	3865.50 MHz	3916.50 MHz	3967.50 MHz			
25 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	18.48	19.05	19.38	18.65	18.72	19.12	0.0	20.0	13.41	13.71	14.21	13.70	13.63	13.99	0.0	15.0	
			1	32	18.40	18.98	19.43	18.51	18.65	18.95	0.0	20.0	13.28	13.64	14.27	13.58	13.54	13.81	0.0	15.0	
			1	63	18.37	19.06	19.17	18.46	18.76	19.00	0.0	20.0	13.23	13.71	14.02	13.34	13.70	13.86	0.0	15.0	
			32	0	18.56	18.82	19.40	18.56	18.69	19.02	0.0	20.0	13.27	13.51	14.27	13.43	13.54	13.90	0.0	15.0	
			32	16	18.52	18.97	19.39	18.49	18.66	18.98	0.0	20.0	13.22	13.62	14.25	13.35	13.53	13.82	0.0	15.0	
			32	33	18.49	19.02	19.29	18.43	18.67	18.92	0.0	20.0	13.20	13.68	14.15	13.30	13.58	13.82	0.0	15.0	
			64	0	18.52	18.95	19.11	18.49	18.67	18.98	0.0	20.0	13.21	13.62	14.27	13.25	13.53	13.83	0.0	15.0	
			1	1	18.63	19.03	19.10	18.63	18.78	19.15	0.0	20.0	13.32	13.68	14.21	13.47	13.61	13.99	0.0	15.0	
		QPSK	1	32	18.52	18.98	19.15	18.48	18.68	18.99	0.0	20.0	13.21	13.62	14.27	13.30	13.50	13.80	0.0	15.0	
			1	63	18.50	19.06	18.91	18.40	18.78	18.96	0.0	20.0	13.19	13.69	14.01	13.34	13.69	13.86	0.0	15.0	
			32	0	18.56	18.83	19.16	18.53	18.69	19.06	0.0	20.0	13.25	13.47	14.25	13.41	13.54	13.85	0.0	15.0	
			32	16	18.52	18.96	19.13	18.46	18.66	18.98	0.0	20.0	13.21	13.60	14.26	13.32	13.54	13.83	0.0	15.0	
			32	33	18.50	19.01	19.03	18.40	18.67	18.92	0.0	20.0	13.18	13.67	14.14	13.28	13.58	13.82	0.0	15.0	
			64	0	18.52	18.96	19.17	18.46	18.68	18.97	0.0	20.0	13.20	13.62	14.26	13.33	13.52	13.84	0.0	15.0	
			1	1	18.62	19.04	19.13	18.61	18.79	19.15	0.0	20.0	13.32	13.70	14.21	13.47	13.61	13.99	0.0	15.0	
			1	32	18.51	18.98	19.18	18.49	18.70	19.00	0.0	20.0	13.19	13.62	14.25	13.41	13.60	13.89	0.0	15.0	
16QAM	1	63	18.49	19.05	18.93	18.43	18.80	18.98	0.0	20.0	13.15	13.71	14.01	13.32	13.69	13.85	0.0	15.0			
	64QAM	1	1	18.56	18.98	19.08	18.53	18.74	19.11	0.0	20.0	13.26	13.65	14.17	13.41	13.54	13.96	0.0	15.0		
	256QAM	1	1	18.57	19.00	19.08	18.57	18.75	19.12	0.0	20.0	13.28	13.67	14.18	13.43	13.58	13.95	0.0	15.0		
	CP-OFDM	QPSK	1	1	18.59	18.98	19.10	18.59	18.73	19.14	0.0	20.0	13.26	13.67	14.16	13.47	13.55	14.00	0.0	15.0	
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MFR	Tune-up Limit	Measured Pwr (dBm)						MFR	Tune-up Limit	
					647334	650800	654266	657734	661200	664666			647334	650800	654266	657734	661200	664666			
20 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	18.39	18.59	19.19	18.59	18.74	19.12	0.0	20.0	13.38	13.42	13.92	13.31	13.45	13.71	0.0	15.0	
			1	25	18.31	18.79	19.13	18.48	18.73	19.02	0.0	20.0	13.29	13.60	13.89	13.20	13.41	13.63	0.0	15.0	
			1	49	18.32	18.89	18.98	18.47	18.87	19.08	0.0	20.0	13.28	13.70	13.69	13.21	13.58	13.69	0.0	15.0	
			25	0	18.39	18.71	19.22	18.51	18.73	19.08	0.0	20.0	13.30	13.36	13.97	13.27	13.43	13.71	0.0	15.0	
			25	13	18.36	18.78	19.17	18.48	18.71	19.01	0.0	20.0	13.28	13.45	13.88	13.19	13.42	13.64	0.0	15.0	
			25	26	18.31	18.83	19.07	18.43	18.77	19.05	0.0	20.0	13.26	13.53	13.80	13.18	13.47	13.68	0.0	15.0	
			50	0	18.37	18.78	19.14	18.47	18.72	19.00	0.0	20.0	13.26	13.46	13.89	13.21	13.42	13.67	0.0	15.0	
			QPSK	1	1	18.46	18.62	19.21	18.57	18.73	19.13	0.0	20.0	13.36	13.28	13.94	13.32	13.47	13.74	0.0	15.0
		1		25	18.35	18.78	19.14	18.46	18.68	18.99	0.0	20.0	13.24	13.44	13.86	13.18	13.41	13.64	0.0	15.0	
		1		49	18.35	18.89	18.97	18.48	18.85	19.05	0.0	20.0	13.23	13.56	13.69	13.20	13.54	13.69	0.0	15.0	
		25		0	18.43	18.70	19.24	18.51	18.70	19.08	0.0	20.0	13.29	13.39	13.94	13.26	13.42	13.71	0.0	15.0	
		25		13	18.39	18.81	19.13	18.46	18.71	19.00	0.0	20.0	13.25	13.47	13.86	13.21	13.41	13.74	0.0	15.0	
		25		26	18.37	18.85	19.07	18.43	18.78	19.03	0.0	20.0	13.24	13.51	13.78	13.17	13.47	13.67	0.0	15.0	
		50		0	18.39	18.79	19.16	18.46	18.72	19.01	0.0	20.0	13.25	13.48	13.88	13.22	13.42	13.68	0.0	15.0	
		16QAM		1	1	18.48	18.63	19.23	18.58	18.77	19.14	0.0	20.0	13.34	13.30	13.94	13.32	13.42	13.69	0.0	15.0
			1	25	18.46	18.89	19.25	18.53	18.79	19.03	0.0	20.0	13.31	13.54	13.96	13.28	13.48	13.76	0.0	15.0	
			1	49	18.37	18.89	18.97	18.45	18.86	19.10	0.0	20.0	13.22	13.57	13.68	13.20	13.54	13.73	0.0	15.0	
			64QAM	1	1	18.43	18.57	19.14	18.53	18.68	19.06	0.0	20.0	13.28	13.22	13.87	13.26	13.37	13.67	0.0	15.0
		CP-OFDM	256QAM	1	1	18.44	18.59	19.18	18.53	18.69	19.09	0.0	20.0	13.29	13.27	13.89	13.28	13.36	13.72	0.0	15.0
			QPSK	1	1	18.43	18.59	19.15	18.53	18.71	19.08	0.0	20.0	13.28	13.26	13.89	13.29	13.35	13.68	0.0	15.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MFR	Tune-up Limit	Measured Pwr (dBm)						MFR	Tune-up Limit	
					647168	650700	654234	657766	661300	664832			647168	650700	654234	657766	661300	664832			
15 MHz	DFT-s-OFDM	$\pi/2$ BPSK	1	1	18.63	19.12	19.81	18.93	18.89	19.06	0.0	20.0	13.16	13.38	13.96	13.50	13.67	14.01	0.0	15.0	
			1	18	18.56	19.24	19.71	18.78	18.78	18.99	0.0	20.0	13.08	13.48	13.87	13.36	13.60	13.94	0.0	15.0	
			1	36	18.62	19.42	19.65	18.79	18.85	19.09	0.0	20.0	13.13	13.61	13.82	13.40	13.78	14.01	0.0	15.0	
			18	0	18.62	19.17	19.82	18.86	18.83	19.04	0.0	20.0	13.19	13.47	14.02	13.45	13.65	13.96	0.0	15.0	
			18	10	18.59	19.28	19.75	18.83	18.82	19.05	0.0	20.0	13.16	13.56	13.95	13.39	13.67	13.98	0.0	15.0	
			18	20	18.60	19.36	19.69	18.76	18.84	19.09	0.0	20.0	13.16	13.60	13.88	13.38	13.71	13.98	0.0	15.0	
			36	0	18.59	19.28	19.76	18.83	18.82	19.08	0.0	20.0	13.18	13.56	13.95	13.40	13.66	13.96	0.0	15.0	
			1	1	18.63	19.12	19.81	18.92	18.88	19.14	0.0	20.0	13.26	13.40	14.10	13.50	13.68	14.02	0.0	15.0	
		QPSK	1	18	18.55	19.24	19.71	18.85	18.78	19.03	0.0	20.0	13.17	13.49	14.00	13.35	13.58	13.92	0.0	15.0	
			1	36	18.63	19.41	19.63	18.86	18.85	19.13	0.0	20.0	13.17	13.62	13.97	13.39	13.78	14.02	0.0	15.0	
			18	0	18.59	19.19	19.82	18.96	18.83	19.10	0.0	20.0	13.23	13.49	14.12	13.45	13.65	13.95	0.0	15.0	
			18	10	18.57	19.28	19.75	18.88	18.81	19.08	0.0	20.0	13.20	13.56	14.06	13.40	13.64	13.80	0.0	15.0	
			18	20	18.58	19.35	19.67	18.93	18.83	19.11	0.0	20.0	13.17	13.58	14.00	13.36	13.71	14.01	0.0	15.0	
			36	0	18.57	19.28	19.75	18.89	18.84	19.07	0.0	20.0	13.22	13.56	14.08	13.41	13.65	13.99	0.0	15.0	
			1	1	18.61	19.12	19.79	18.99	18.88	19.14	0.0	20.0	13.25	13.39	14.13	13.51	13.69	14.02	0.0	15.0	
			16QAM	1	18	18.52	19.25	19.71	18.84	18.75	19.04	0.0	20.0	13.12	13.51	14.02	13.35	13.62	13.93	0.0	15.0
		1		36	18.63	19.38	19.64	18.86	18.81	19.14	0.0	20.0	13.17	13.64	13.96	13.41	13.79	14.02	0.0	15.0	
		64QAM		1	1	18.52	19.06	19.75	18.92	18.83	19.10	0.0	20.0	13.18	13.34	14.08	13.43	13.64	13.96	0.0	15.0
		256QAM		1	1	18.56	19.08	19.77	18.96	18.74	19.09	0.0	20.0	13.19	13.35	14.08	13.45	13.65	13.98	0.0	15.0
		CP-OFDM	QPSK	1	1	18.57	19.06	19.83	18.96	18.82	19.12	0.0	20.0	13.19	13.32	13.91	13.21	13.32	13.61	0.0	15.0

NR Band n77 Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MPR	Tune-up Limit	Measured Pwr (dBm)						MPR	Tune-up Limit
					647000 3705.00 MHz	650600 3759.00 MHz	654200 3813.00 MHz	657800 3867.00 MHz	661400 3921.00 MHz	665000 3975.00 MHz			647000 3705.00 MHz	650600 3759.00 MHz	654200 3813.00 MHz	657800 3867.00 MHz	661400 3921.00 MHz	665000 3975.00 MHz		
10 MHz	DFT-s- OFDM	$\pi/2$ BPSK	1	1	18.47	18.56	19.08	18.44	18.67	18.96	0.0	20.0	13.46	13.65	14.06	13.56	13.59	13.72	0.0	15.0
			1	12	18.53	18.68	19.11	18.31	18.75	19.05	0.0	20.0	13.45	13.81	14.04	13.57	13.64	13.79	0.0	15.0
			1	22	18.49	18.67	19.01	18.39	18.78	19.08	0.0	20.0	13.39	13.83	13.96	13.52	13.69	13.76	0.0	15.0
			12	0	18.50	18.50	19.13	18.43	18.68	19.02	0.0	20.0	13.42	13.69	14.08	13.53	13.57	13.71	0.0	15.0
			12	6	18.49	18.55	19.09	18.41	18.71	19.03	0.0	20.0	13.41	13.76	14.05	13.55	13.58	13.73	0.0	15.0
			12	12	18.45	18.60	19.07	18.41	18.75	19.06	0.0	20.0	13.38	13.78	14.00	13.52	13.62	13.77	0.0	15.0
			24	0	18.47	18.53	19.12	18.43	18.71	19.03	0.0	20.0	13.41	13.76	14.12	13.54	13.58	13.82	0.0	15.0
		QPSK	1	1	18.52	18.43	19.16	18.48	18.69	19.01	0.0	20.0	13.44	13.66	14.08	13.59	13.55	13.86	0.0	15.0
			1	12	18.49	18.59	19.16	18.50	18.79	19.08	0.0	20.0	13.43	13.78	14.21	13.61	13.62	13.84	0.0	15.0
			1	22	18.43	18.59	19.07	18.41	18.81	19.06	0.0	20.0	13.39	13.81	13.98	13.53	13.65	13.86	0.0	15.0
			12	0	18.47	18.46	19.16	18.47	18.70	19.02	0.0	20.0	13.41	13.68	14.03	13.58	13.53	13.90	0.0	15.0
			12	6	18.45	18.52	19.13	18.45	18.73	19.04	0.0	20.0	13.41	13.74	14.02	13.57	13.58	13.93	0.0	15.0
			12	12	18.46	18.56	19.09	18.41	18.73	19.03	0.0	20.0	13.40	13.79	13.74	13.55	13.62	13.94	0.0	15.0
			24	0	18.49	18.53	19.13	18.45	18.71	19.03	0.0	20.0	13.41	13.75	13.78	13.54	13.58	13.82	0.0	15.0
		16QAM	1	1	18.53	18.41	19.16	18.50	18.71	18.97	0.0	20.0	13.46	13.67	13.85	13.57	13.44	13.87	0.0	15.0
			1	12	18.51	18.53	19.16	18.52	18.79	19.06	0.0	20.0	13.41	13.78	13.77	13.58	13.52	13.92	0.0	15.0
		64QAM	1	22	18.46	18.56	19.04	18.42	18.78	19.03	0.0	20.0	13.38	13.82	13.42	13.52	13.54	13.89	0.0	15.0
			1	1	18.46	18.33	19.09	18.41	18.62	18.92	0.0	20.0	13.40	13.62	13.80	13.51	13.39	13.80	0.0	15.0
		256QAM	1	1	18.48	18.34	19.11	18.43	18.65	18.94	0.0	20.0	13.41	13.63	13.78	13.54	13.44	13.78	0.0	15.0
	CP-OFDM	QPSK	1	1	18.47	18.34	19.12	18.44	18.64	18.93	0.0	20.0	13.43	13.61	13.79	13.51	13.46	13.81	0.0	15.0

Notes:

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

9.5. Wi-Fi 2.4 GHz (DTS Band)

WLAN each antennas(Sub4 and Sub6) output power results

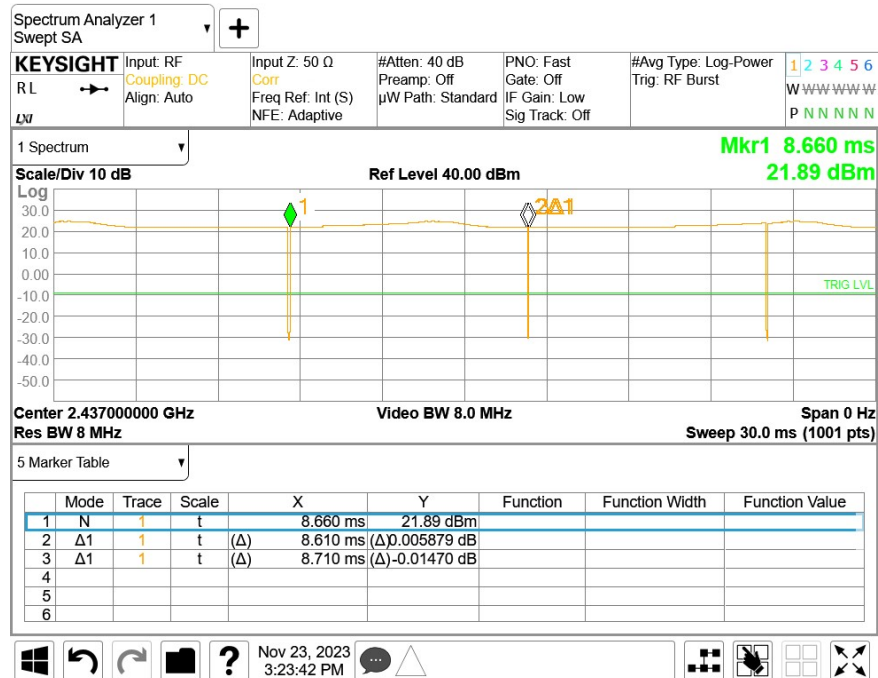
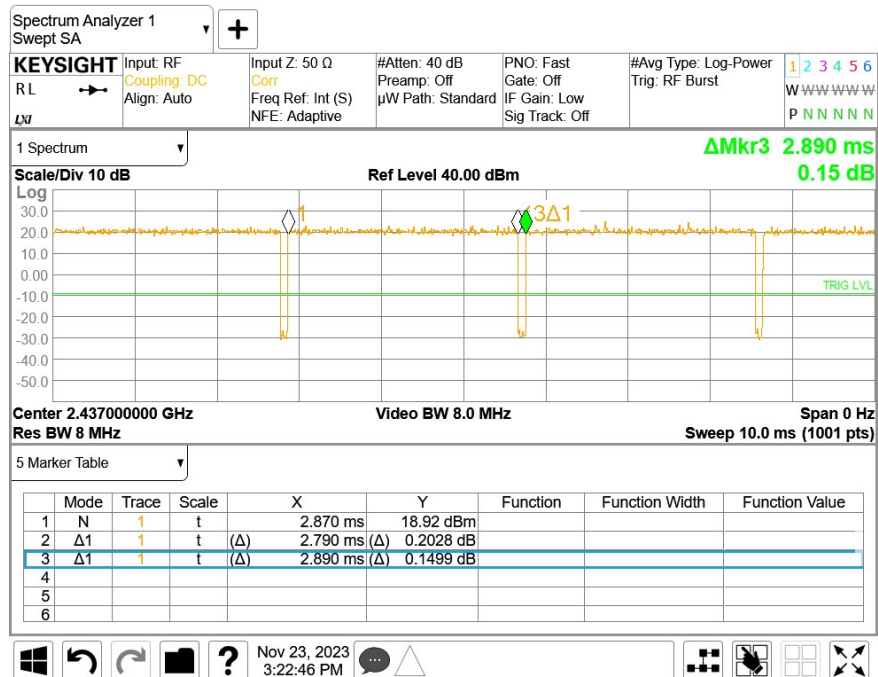
Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Maximum Average Power (dBm)			Reduced Average Power (dBm)		
					Meas. Avg Pwr	Tune-up Limit	SAR Test (Yes/No)	Meas. Avg Pwr	Max. Tune-up Limit	SAR Test (Yes/No)
WiFi 2.4G Sub.4 Ant.	802.11b	1 Mbps	1	2412.0	17.98	19.0	Yes	11.14	12.0	Yes
			6	2437.0	18.07			11.17		
			11	2462.0	18.32			11.36		
			12	2467.0	Not Required	8.0	No	Not Required	8.0	No
			13	2474.0	Not Required	8.0		Not Required	8.0	
	802.11g	6 Mbps	1-13	2412-2474	Not Required	18.0	No	Not Required	12.0	No
	802.11n	6.5 Mbps	1-13	2412-2474	Not Required	18.0	No	Not Required	12.0	No
WiFi 2.4G Sub.6 Ant	802.11ax	7.3 Mbps	1-13	2412-2474	Not Required	17.0	No	Not Required	12.0	No
	802.11b	1 Mbps	1	2412.0	15.88	17.0	Yes	9.68	10.5	Yes
			6	2437.0	15.87			9.63		
			11	2462.0	16.57			9.81		
			12	2467.0	Not Required	7.0	No	Not Required	7.0	No
			13	2474.0	Not Required	7.0		Not Required	7.0	
	802.11g	6 Mbps	1	2412.0	Not Required	14.0	No	9.83	11.0	Yes
			6	2437.0	Not Required	15.0		9.98		
			11	2462.0	Not Required	10.0		10.06		
			12	2467.0	Not Required	6.0		Not Required	7.0	
			13	2472.0	Not Required	1.0		Not Required	2.0	
	802.11n	6.5 Mbps	1-13	2412-2474	Not Required	16.0	No	Not Required	11.0	No
	802.11ax	7.3 Mbps	1-13	2412-2474	Not Required	15.0	No	Not Required	10.0	No

Note(s):

- SAR is not required for 802.11g/n modes when the adjusted SAR for 802.11b is < 1.2 W/kg.
- 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.
- 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 Results (SISO mode)

Mode	Data Rate	T on (ms)	Period (ms)	Duty Cycle	Crest Factor (1/duty cycle)
802.11b	1 Mbps	8.610	8.700	99.0%	1.01
802.11g	6 Mbps	2.790	2.890	96.5%	1.04

Duty Cycle plot (802.11b mode)**Duty Cycle plot (802.11g-mode)**

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

WLAN Sub.4 Ant output power Results

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Maximum Averag power (dBm)			Reduced Averag power (dBm)		
						Avg Pw r (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)	Avg Pw r (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
5GHz Sub.4 Ant	5.3 (UNII 2A)	802.11a	6 Mbps	Not Required			14.5	No	Not Required	11.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			14.5	No	Not Required	11.0	No
		802.11n (HT40)	13.5 Mbps	54	5270.0	13.89	14.5	Yes	10.07	11.0	Yes
				62	5310.0	6.72	7.5		6.72	7.5	
		802.11ac (VHT20)	6.5 Mbps	Not Required			14.5	No	Not Required	11.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			14.5	No	Not Required	11.0	No
		802.11ac (VHT80)	29.3 Mbps	Not Required			6.0	No	Not Required	6.0	No
		802.11ax (HE20)	7.3 Mbps	Not Required			14.5	No	Not Required	11.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			14.5	No	Not Required	11.0	No
	802.11ax (HE80)	36.0 Mbps	Not Required			5.0	No	Not Required	5.0	No	
	5.5 (U-NII 2C)	802.11a	6 Mbps	100	5500.0	12.37	14.5	Yes	Not Required	11.0	No
				120	5600.0	13.26					
				124	5620.0	13.52					
				144	5720.0	13.79					
		802.11n (HT20)	6.5 Mbps	Not Required			14.5	No	Not Required	11.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			14.0	No	Not Required	11.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			14.5	No	Not Required	11.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			14.0	No	Not Required	11.0	No
		802.11ac (VHT80)	29.3 Mbps	106	5530.0	Not Required	12.0	No	5.02	6.0	Yes
				122	5610.0	Not Required			10.23	11.0	
				138	5690.0	Not Required			10.08	11.0	
		802.11ax (HE20)	7.3 Mbps	Not Required			14.5	No	Not Required	11.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			14.0	No	Not Required	11.0	No
	802.11ax (HE80)	36.0 Mbps	Not Required			12.0	No	Not Required	11.0	No	
	5.8 (UNII 3)	802.11a	6 Mbps	149	5745.0	13.86	14.5	Yes	Not Required	11.0	No
				157	5785.0	13.44					
				165	5825.0	10.36					
		802.11n (HT20)	6.5 Mbps	Not Required			14.5	No	Not Required	11.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			14.0	No	Not Required	11.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			14.5	No	Not Required	11.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			14.0	No	Not Required	11.0	No
		802.11ac (VHT80)	29.3 Mbps	155	5775.0	Not Required	12.0	No	9.99	11.0	Yes
		802.11ax (HE20)	7.3 Mbps	Not Required			14.5	No	Not Required	11.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			14.0	No	Not Required	11.0	No
		802.11ax (HE80)	36.0 Mbps	Not Required			11.0	No	Not Required	11.0	No

Note(s):

- 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/ax mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.
- When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac/ax modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n ac then ax) is selected.
- 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 Sub.1 Ant output power Results

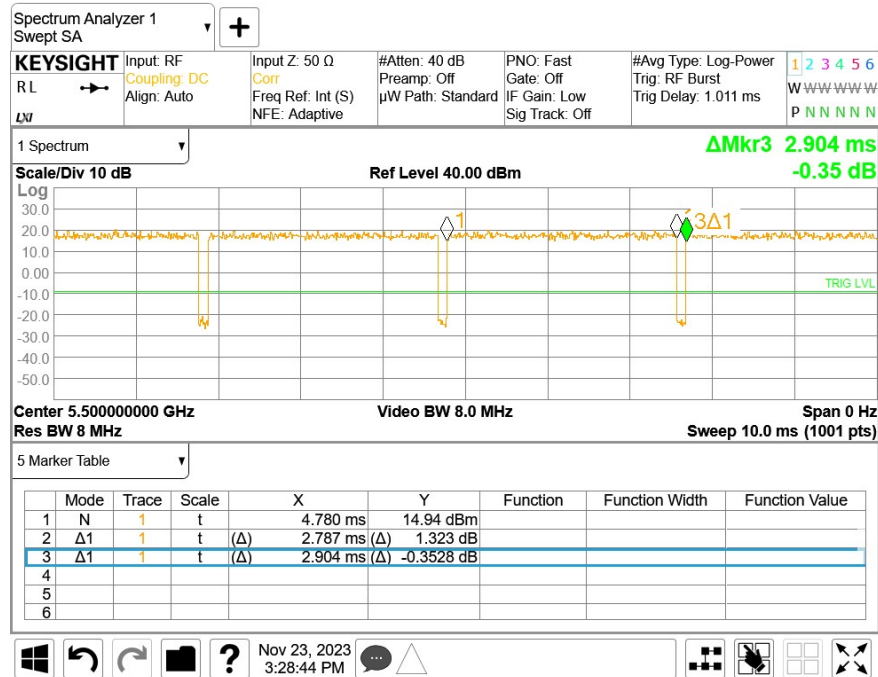
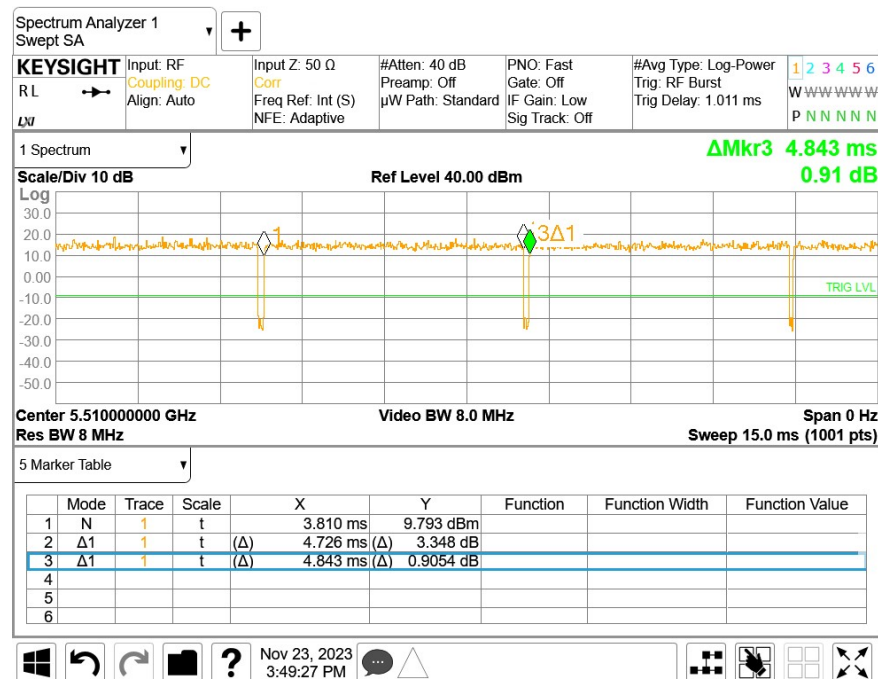
Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Maximum Averag power (dBm)			Reduced Averag power (dBm)		
						Avg Pw r (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)	Avg Pw r (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
5GHz Sub.1 Ant	5.3 (UNII 2A)	802.11a	6 Mbps	52	5260.0	Not Required	10.0	No	6.02	7.0	Yes
				56	5280.0	Not Required			6.48		
				60	5300.0	Not Required			6.50		
				64	5320.0	Not Required			5.74		
		802.11n (HT20)	6.5 Mbps	Not Required			10.0	No	Not Required	7.0	No
		802.11n (HT40)	13.5 Mbps	38	5190.0	10.05	10.0	Yes	Not Required	6.0	No
				46	5230.0	2.46	3.5		Not Required		
		802.11ac (VHT20)	6.5 Mbps	Not Required			10.0	No	Not Required	7.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			10.0	No	Not Required	6.0	No
		802.11ac (VHT80)	29.3 Mbps	Not Required			2.0	No	Not Required	2.0	No
	5.5 (U-NII 2C)	802.11ax (HE20)	7.3 Mbps	Not Required			10.0	No	Not Required	7.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			9.0	No	Not Required	6.5	No
		802.11ax (HE80)	36.0 Mbps	Not Required			0.0	No	Not Required	0.0	No
		802.11a	6 Mbps	Not Required			10.0	No	Not Required	8.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			10.0	No	Not Required	8.0	No
		802.11n (HT40)	13.5 Mbps	102	5510.0	Not Required	9.5	No	5.90	7.0	Yes
				118	5590.0	Not Required			7.02	8.0	
				126	5630.0	Not Required			6.92	8.0	
				142	5710.0	Not Required			5.81	8.0	
		802.11ac (VHT20)	6.5 Mbps	Not Required			10.0	No	Not Required	8.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			9.5	No	Not Required	8.0	No
		802.11ac (VHT80)	29.3 Mbps	106	5530.0	0.73	2.0	Yes	Not Required	6.5	No
				122	5610.0	8.69	10.0		Not Required		
				138	5690.0	6.34	7.0		Not Required		
		802.11ax (HE20)	7.3 Mbps	Not Required			10.0	No	Not Required	7.5	No
		802.11ax (HE40)	14.6 Mbps	Not Required			9.0	No	Not Required	6.5	No
		802.11ax (HE80)	36.0 Mbps	Not Required			9.0	No	Not Required	7.5	No
	5.8 (UNII 3)	802.11a	6 Mbps	149	5745.0	9.19	10.0	Yes	7.02	8.0	Yes
				157	5785.0	9.22			6.76	8.0	
				165	5825.0	5.07			5.07	6.0	
		802.11n (HT20)	6.5 Mbps	Not Required			10.0	No	Not Required	8.0	No
		802.11n (HT40)	13.5 Mbps	Not Required			8.0	No	Not Required	7.0	No
		802.11ac (VHT20)	6.5 Mbps	Not Required			10.0	No	Not Required	8.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			8.0	No	Not Required	7.0	No
		802.11ac (VHT80)	29.3 Mbps	Not Required			9.0	No	Not Required	6.5	No
		802.11ax (HE20)	7.3 Mbps	Not Required			10.0	No	Not Required	8.0	No
		802.11ax (HE40)	14.6 Mbps	Not Required			9.0	No	Not Required	7.0	No
		802.11ax (HE80)	36.0 Mbps	Not Required			9.0	No	Not Required	7.5	No

Note(s):

- 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/ax mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.
- When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac/ax modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n ac then ax) is selected.
- 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 (SISO mode)

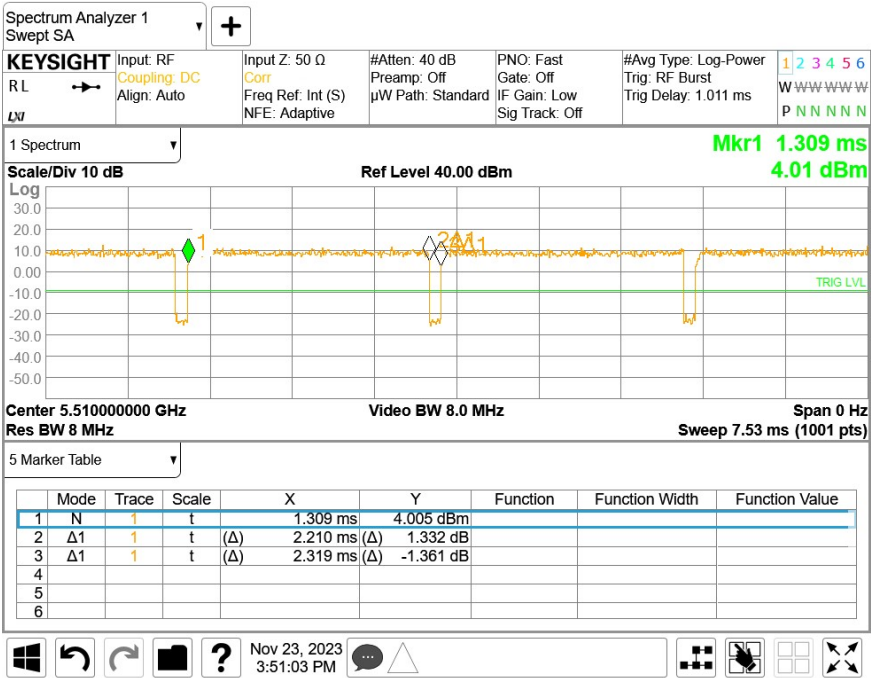
Mode	Data Rate	T on (ms)	Period (ms)	Duty Cycle	Crest Factor (1/duty cycle)
802.11a	6 Mbps	2.790	2.899	96.2%	1.04
802.11n (HT 40)	13.5 Mbps	4.725	4.879	96.8%	1.03

Duty Cycle plot (802.11a-SISO)**Duty Cycle plot (802.11n-SISO)**

Duty Factor Measured Results (SISO mode) (Continued)

Mode	Data Rate	T on (ms)	Period (ms)	Duty Cycle	Crest Factor (1/duty cycle)
802.11ac (VHT 80)	29.3 Mbps	3.310	3.410	97.1%	1.03

Duty Cycle plot (802.11ac-SISO)



9.7. Bluetooth

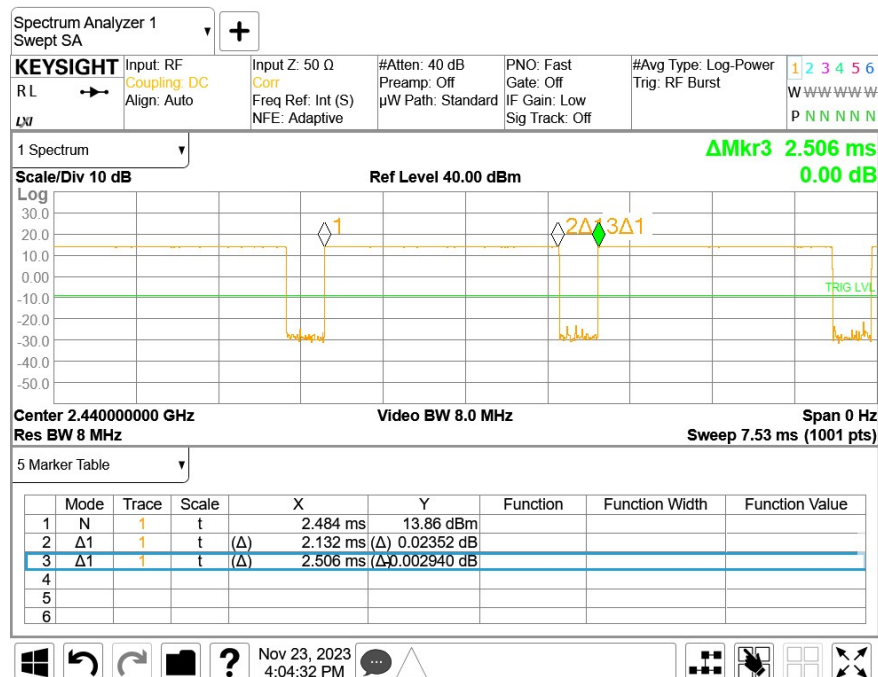
Bluetooth SISO output power Results

Band (GHz)	Antenna		Ch #	Freq. (MHz)	Max. Average Power (dBm)	
					Meas Pwr	Tune-up Limit
2.4	BT SISO Ant.1	GFSK (1Mbps)	0	2402	14.68	15.0
			39	2441	14.92	
			78	2480	13.93	
		EDR	0	2402	9.45	10.0
			39	2441	9.89	
			78	2480	9.00	
		LE (1M/2M)	0	2402	15.00	15.0
			19	2440	14.77	
			39	2480	14.65	
		LE (125/500k)	0	2402	13.17	14.0
			39	2441	11.85	
			78	2480	13.60	

Duty Factor Measured Results (SISO mode)

Mode	Type	T on (ms)	Period (ms)	Maximum Duty Cycle	Measured Duty Cycle	Crest Factor (maximum duty/measured duty cycle)
LE	1M 255pkt	2.132	2.506	88.00%	85.08%	1.03

Duty Cycle plot (LE)



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 ≤ 25 mm 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 $\leq \frac{1}{4}$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

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	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Scaled	
Main.1	Head	GPRS 2 Slots	0	Left Touch	190	836.6	32.00	30.90	0.122	0.157	
				Left Tilt	190	836.6	32.00	30.90	0.085	0.110	
				Right Touch	190	836.6	32.00	30.90	0.189	0.243	1
				Right Tilt	190	836.6	32.00	30.90	0.092	0.119	
	Body-worn & Hotspot	GPRS 2 Slots	10	Rear	190	836.6	32.00	30.90	0.459	0.591	2
				Front	190	836.6	32.00	30.90	0.325	0.419	
	Hotspot	GPRS 2 Slots	10	Left	190	836.6	32.00	30.90	0.051	0.066	
				Bottom	190	836.6	32.00	30.90	0.101	0.130	
				Right	190	836.6	32.00	30.90	0.254	0.327	

10.2. GSM 1900

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Scaled	
Main.1	Head	GPRS 4 Slots	0	Left Touch	661	1880.0	25.50	24.15	0.052	0.071	3
				Left Tilt	661	1880.0	25.50	24.15	0.024	0.032	
				Right Touch	661	1880.0	25.50	24.15	0.040	0.055	
				Right Tilt	661	1880.0	25.50	24.15	0.030	0.041	
	Body-worn & Hotspot	GPRS 1 Slots	10	Rear	661	1880.0	28.00	26.69	0.321	0.434	
				Front	661	1880.0	28.00	26.69	0.262	0.354	
	Hotspot	GPRS 1 Slots	10	Left	661	1880.0	28.00	26.69	0.058	0.079	
				Bottom	661	1880.0	28.00	26.69	0.529	0.715	4
				Right	661	1880.0	28.00	26.69	0.046	0.063	

10.3. WCDMA Band II

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Scaled	
Main.1	Head	Rel 99 RMC	0	Left Touch	9400	1880.0	24.50	22.82	0.136	0.200	5
				Left Tilt	9400	1880.0	24.50	22.82	0.024	0.035	
				Right Touch	9400	1880.0	24.50	22.82	0.080	0.117	
				Right Tilt	9400	1880.0	24.50	22.82	0.063	0.093	
	Body-worn & Hotspot	Rel 99 RMC	10	Rear	9400	1880.0	20.00	19.11	0.265	0.325	
				Front	9400	1880.0	20.00	19.11	0.244	0.299	
	Hotspot	Rel 99 RMC	10	Left	9400	1880.0	20.00	19.11	0.210	0.258	
				Bottom	9400	1880.0	20.00	19.11	0.561	0.689	6
				Right	9400	1880.0	20.00	19.11	0.084	0.103	

10.4. WCDMA Band IV

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Scaled	
Main.1	Head	Rel 99 RMC	0	Left Touch	1413	1732.6	24.00	22.78	0.130	0.172	7
				Left Tilt	1413	1732.6	24.00	22.78	0.060	0.079	
				Right Touch	1413	1732.6	24.00	22.78	0.083	0.109	
				Right Tilt	1413	1732.6	24.00	22.78	0.046	0.061	
	Body-worn & Hotspot	Rel 99 RMC	10	Rear	1413	1732.6	20.00	18.70	0.425	0.573	
				Front	1413	1732.6	20.00	18.70	0.292	0.394	
	Hotspot	Rel 99 RMC	10	Left	1413	1732.6	20.00	18.70	0.226	0.305	
				Bottom	1312	1712.4	20.00	18.95	0.640	0.815	
					1413	1732.6	20.00	18.70	0.698	0.942	8
					1513	1752.6	20.00	19.03	0.630	0.788	
				Right	1413	1732.6	20.00	18.70	0.137	0.185	

10.5. WCDMA Band V

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Scaled	
Main.1	Head	Rel 99 RMC	0	Left Touch	4183	836.6	25.00	24.45	0.129	0.146	
				Left Tilt	4183	836.6	25.00	24.45	0.099	0.112	
				Right Touch	4183	836.6	25.00	24.45	0.183	0.208	9
				Right Tilt	4183	836.6	25.00	24.45	0.100	0.114	
	Body-worn & Hotspot	Rel 99 RMC	10	Rear	4183	836.6	25.00	24.45	0.537	0.610	10
				Front	4183	836.6	25.00	24.45	0.384	0.436	
	Hotspot	Rel 99 RMC	10	Left	4183	836.6	25.00	24.45	0.069	0.078	
				Bottom	4183	836.6	25.00	24.45	0.356	0.404	
				Right	4183	836.6	25.00	24.45	0.169	0.192	

10.6. LTE Band 5 (10MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
Main.1	Head	QPSK	0	Left Touch	20525	836.5	1	0	25.00	23.54	0.061	0.085	
							25	0	24.00	22.58	0.062	0.086	
				Left Tilt	20525	836.5	1	0	25.00	23.54	0.047	0.066	
							25	0	24.00	22.58	0.048	0.067	
				Right Touch	20525	836.5	1	0	25.00	23.54	0.119	0.167	11
							25	0	24.00	22.58	0.098	0.136	
	Body-w orn & Hotspot	QPSK	10	Rear	20525	836.5	1	0	25.00	23.54	0.423	0.592	12
							25	0	24.00	22.58	0.324	0.449	
				Front	20525	836.5	1	0	25.00	23.54	0.287	0.402	
							25	0	24.00	22.58	0.223	0.309	
	Hotspot	QPSK	10	Left	20525	836.5	1	0	25.00	23.54	0.052	0.073	
							25	0	24.00	22.58	0.040	0.055	
				Bottom	20525	836.5	1	0	25.00	23.54	0.246	0.344	
							25	0	24.00	22.58	0.192	0.266	
				Right	20525	836.5	1	0	25.00	23.54	0.143	0.200	
							25	0	24.00	22.58	0.108	0.150	

10.7. LTE Band 12 (10MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
Main.1	Head	QPSK	0	Left Touch	23095	707.5	1	0	24.00	22.96	0.069	0.088	
							25	0	23.00	22.03	0.056	0.070	
				Left Tilt	23095	707.5	1	0	24.00	22.96	0.042	0.053	
							25	0	23.00	22.03	0.034	0.043	
				Right Touch	23095	707.5	1	0	24.00	22.96	0.083	0.105	13
							25	0	23.00	22.03	0.066	0.083	
	Body-w orn & Hotspot	QPSK	10	Right Tilt	23095	707.5	1	0	24.00	22.96	0.046	0.058	
							25	0	23.00	22.03	0.036	0.045	
				Rear	23095	707.5	1	0	24.00	22.96	0.260	0.330	14
							25	0	23.00	22.03	0.208	0.260	
				Front	23095	707.5	1	0	24.00	22.96	0.139	0.177	
							25	0	23.00	22.03	0.143	0.179	
	Hotspot	QPSK	10	Left	23095	707.5	1	0	24.00	22.96	0.060	0.076	
							25	0	23.00	22.03	0.060	0.075	
				Bottom	23095	707.5	1	0	24.00	22.96	0.106	0.135	
							25	0	23.00	22.03	0.108	0.135	
				Right	23095	707.5	1	0	24.00	22.96	0.112	0.142	
							25	0	23.00	22.03	0.117	0.146	

10.8. LTE Band 13 (10MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
Main.1	Head	QPSK	0	Left Touch	23230	782.0	1	0	24.00	23.49	0.089	0.100	
							25	0	23.00	22.45	0.084	0.095	
				Left Tilt	23230	782.0	1	0	24.00	23.49	0.077	0.087	
							25	0	23.00	22.45	0.055	0.062	
				Right Touch	23230	782.0	1	0	24.00	23.49	0.141	0.159	15
							25	0	23.00	22.45	0.104	0.118	
	Body-worn & Hotspot	QPSK	10	Rear	23230	782.0	1	0	24.00	23.49	0.367	0.413	16
							25	0	23.00	22.45	0.285	0.323	
				Front	23230	782.0	1	0	24.00	23.49	0.190	0.214	
							25	0	23.00	22.45	0.177	0.201	
	Hotspot	QPSK	10	Left	23230	782.0	1	0	24.00	23.49	0.068	0.076	
							25	0	23.00	22.45	0.056	0.064	
				Bottom	23230	782.0	1	0	24.00	23.49	0.139	0.156	
							25	0	23.00	22.45	0.126	0.143	
				Right	23230	782.0	1	0	24.00	23.49	0.213	0.240	
							25	0	23.00	22.45	0.185	0.210	

10.9. LTE Band 25 (20MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
Main.1	Head	QPSK	0	Left Touch	26590	1905.0	1	49	24.00	23.12	0.067	0.082	17
							50	0	24.00	22.18	0.072	0.109	
				Left Tilt	26590	1905.0	1	49	24.00	23.12	0.026	0.032	
							50	0	24.00	22.18	0.029	0.044	
				Right Touch	26590	1905.0	1	49	24.00	23.12	0.037	0.045	
							50	0	24.00	22.18	0.039	0.059	
	Body-worn & Hotspot	QPSK	10	Rear	26590	1905.0	1	49	19.00	17.95	0.191	0.243	
							50	0	19.00	17.98	0.193	0.244	
				Front	26590	1905.0	1	49	19.00	17.95	0.174	0.222	
							50	0	19.00	17.98	0.177	0.224	
	Hotspot	QPSK	10	Left	26590	1905.0	1	49	19.00	17.95	0.114	0.145	
							50	0	19.00	17.98	0.126	0.159	
				Bottom	26590	1905.0	1	49	19.00	17.95	0.469	0.597	
							50	0	19.00	17.98	0.477	0.603	
				Right	26590	1905.0	1	49	19.00	17.95	0.058	0.074	18
							50	0	19.00	17.98	0.065	0.082	

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
Sub.2	Head	QPSK	0	Left Touch	26365	1882.5	1	0	18.00	16.92	0.289	0.371	
							50	0	18.00	16.78	0.271	0.359	
				Left Tilt	26365	1882.5	1	0	18.00	16.92	0.362	0.464	
							50	0	18.00	16.78	0.364	0.482	
				Right Touch	26365	1882.5	1	0	18.00	16.92	0.499	0.640	
							50	0	18.00	16.78	0.476	0.630	
	Body-worn & Hotspot	QPSK	10	Right Tilt	26365	1882.5	1	0	18.00	16.92	0.531	0.681	19
							50	0	18.00	16.78	0.513	0.679	
				Rear	26365	1882.5	1	0	18.00	16.92	0.095	0.122	
							50	0	18.00	16.78	0.068	0.090	
				Front	26365	1882.5	1	0	18.00	16.92	0.051	0.065	
							50	0	18.00	16.78	0.064	0.084	
	Hotspot	QPSK	10	Top	26365	1882.5	1	0	18.00	16.92	0.183	0.235	
							50	0	18.00	16.78	0.196	0.260	
				Left	26365	1882.5	1	0	18.00	16.92	0.075	0.096	
							50	0	18.00	16.78	0.070	0.093	

10.10. LTE Band 26 (15MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
Main.1	Head	QPSK	0	Left Touch	26865	831.5	1	0	25.00	23.77	0.092	0.122	
							36	0	24.00	22.89	0.072	0.093	
				Left Tilt	26865	831.5	1	0	25.00	23.77	0.055	0.073	
							36	0	24.00	22.89	0.054	0.070	
				Right Touch	26865	831.5	1	0	25.00	23.77	0.126	0.167	21
							36	0	24.00	22.89	0.096	0.124	
	Body-worn & Hotspot	QPSK	10	Rear	26865	831.5	1	0	25.00	23.77	0.418	0.555	22
							36	0	24.00	22.89	0.320	0.413	
				Front	26865	831.5	1	0	25.00	23.77	0.253	0.336	
							36	0	24.00	22.89	0.202	0.261	
	Hotspot	QPSK	10	Left	26865	831.5	1	0	25.00	23.77	0.047	0.062	
							36	0	24.00	22.89	0.039	0.050	
				Bottom	26865	831.5	1	0	25.00	23.77	0.274	0.364	
							36	0	24.00	22.89	0.223	0.288	
				Right	26865	831.5	1	0	25.00	23.77	0.174	0.231	
							36	0	24.00	22.89	0.135	0.174	

10.11. LTE Band 41 (20MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
Main.2	Head	QPSK	0	Left Touch	41490	2680.0	1	99	25.00	24.68	0.088	0.094	23
							50	50	25.00	23.72	0.071	0.095	
				Left Tilt	41490	2680.0	1	99	25.00	24.68	0.000	0.000	
							50	50	25.00	23.72	0.000	0.000	
				Right Touch	41490	2680.0	1	99	25.00	24.68	0.006	0.006	
							50	50	25.00	23.72	0.006	0.008	
	Body-w orn & Hotspot	QPSK	10	Rear	41490	2680.0	1	99	20.00	19.49	0.221	0.249	
							50	50	20.00	19.50	0.221	0.248	
				Front	41490	2680.0	1	99	20.00	19.49	0.160	0.180	
							50	50	20.00	19.50	0.165	0.185	
	Hotspot	QPSK	10	Left	41490	2680.0	1	99	20.00	19.49	0.090	0.101	
							50	50	20.00	19.50	0.091	0.102	
				Bottom	41490	2680.0	1	99	20.00	19.49	0.289	0.325	24
							50	50	20.00	19.50	0.287	0.322	

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
Sub.2	Head	QPSK	0	Left Touch	40185	2549.5	1	99	20.00	19.82	0.247	0.257	
							50	50	20.00	19.49	0.253	0.285	
				Left Tilt	40185	2549.5	1	99	20.00	19.82	0.241	0.251	
							50	50	20.00	19.49	0.245	0.276	
				Right Touch	40185	2549.5	1	99	20.00	19.82	0.505	0.526	
							50	50	20.00	19.49	0.514	0.578	
				Right Tilt	39750	2506.0	50	50	20.00	19.46	0.690	0.781	25
					40185	2549.5	1	99	20.00	19.82	0.573	0.597	
							50	50	20.00	19.49	0.583	0.656	
					40620	2593.0	50	50	20.00	19.18	0.493	0.595	
	Body-w orn & Hotspot	QPSK	10	Rear	40185	2549.5	1	99	20.00	19.82	0.126	0.131	
							50	50	20.00	19.49	0.124	0.139	
				Front	40185	2549.5	1	99	20.00	19.82	0.098	0.102	
							50	50	20.00	19.49	0.097	0.109	
	Hotspot	QPSK	10	Top	40185	2549.5	1	99	20.00	19.82	0.206	0.215	
							50	50	20.00	19.49	0.202	0.227	
				Left	40185	2549.5	1	99	20.00	19.82	0.010	0.011	
							50	50	20.00	19.49	0.009	0.010	

10.12. LTE Band 66 (20MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
Main.1	Head	QPSK	0	Left Touch	132322	1745.0	1	49	24.00	23.23	0.103	0.123	27
							50	0	24.00	22.27	0.110	0.164	
				Left Tilt	132322	1745.0	1	49	24.00	23.23	0.043	0.051	
							50	0	24.00	22.27	0.040	0.060	
				Right Touch	132322	1745.0	1	49	24.00	23.23	0.061	0.073	
							50	0	24.00	22.27	0.060	0.089	
	Body-w orn & Hotspot	QPSK	10	Rear	132322	1745.0	1	49	19.00	18.55	0.255	0.283	
							50	0	19.00	18.67	0.281	0.303	
				Front	132322	1745.0	1	49	19.00	18.55	0.206	0.228	
							50	0	19.00	18.67	0.228	0.246	
	Hotspot	QPSK	10	Left	132322	1745.0	1	49	19.00	18.55	0.190	0.211	
							50	0	19.00	18.67	0.203	0.219	
				Bottom	132322	1745.0	1	49	19.00	18.55	0.512	0.568	
							50	0	19.00	18.67	0.537	0.579	
				Right	132322	1745.0	1	49	19.00	18.55	0.052	0.058	28
							50	0	19.00	18.67	0.055	0.059	

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
Sub.2	Head	QPSK	0	Left Touch	132322	1745.0	1	0	17.00	15.86	0.293	0.381	
							50	50	17.00	15.88	0.275	0.356	
				Left Tilt	132322	1745.0	1	0	17.00	15.86	0.350	0.455	
							50	50	17.00	15.88	0.325	0.421	
				Right Touch	132322	1745.0	1	0	17.00	15.86	0.490	0.637	29
							50	50	17.00	15.88	0.460	0.595	
	Body-w orn & Hotspot	QPSK	10	Right Tilt	132322	1745.0	1	0	17.00	15.86	0.479	0.623	
							50	50	17.00	15.88	0.454	0.588	
				Rear	132322	1745.0	1	0	17.00	15.86	0.109	0.142	
							50	50	17.00	15.88	0.102	0.132	
				Front	132322	1745.0	1	0	17.00	15.86	0.100	0.130	
							50	50	17.00	15.88	0.093	0.120	
	Hotspot	QPSK	10	Top	132322	1745.0	1	0	17.00	15.86	0.239	0.311	30
							50	50	17.00	15.88	0.204	0.264	
				Left	132322	1745.0	1	0	17.00	15.86	0.170	0.221	
							50	50	17.00	15.88	0.126	0.163	

10.13. NR Band n5 (20MHz Bandwidth)

Antenna	RF Exposure Conditions	Modulation	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main.1	Head	DFT-s-OFDM	QPSK	0	Left Touch	167300	836.5	1	52	25.00	24.18	0.106	0.128	
								50	28	25.00	24.12	0.110	0.135	
					Left Tilt	167300	836.5	1	52	25.00	24.18	0.083	0.100	
								50	28	25.00	24.12	0.082	0.100	
					Right Touch	167300	836.5	1	52	25.00	24.18	0.134	0.162	
								50	28	25.00	24.12	0.136	0.167	31
					Right Tilt	167300	836.5	1	52	25.00	24.18	0.079	0.095	
								50	28	25.00	24.12	0.083	0.102	
		CP-OFDM	QPSK	0	Right Touch	167300	836.5	1	1	23.50	22.60	0.134	0.165	
	Body-worn & Hotspot	DFT-s-OFDM	QPSK	10	Rear	167300	836.5	1	52	25.00	24.18	0.514	0.621	
								50	28	25.00	24.12	0.522	0.639	32
					Front	167300	836.5	1	52	25.00	24.18	0.392	0.473	
								50	28	25.00	24.12	0.399	0.489	
	Hotspot	DFT-s-OFDM	QPSK	10	Left	167300	836.5	1	52	25.00	24.18	0.075	0.091	
								50	28	25.00	24.12	0.074	0.091	
					Bottom	167300	836.5	1	52	25.00	24.18	0.337	0.407	
								50	28	25.00	24.12	0.338	0.414	
					Right	167300	836.5	1	52	25.00	24.18	0.149	0.180	
								50	28	25.00	24.12	0.154	0.189	
		CP-OFDM	QPSK	10	Rear	167300	836.5	1	1	23.50	22.60	0.390	0.480	

Note(s):

1. CP-OFDM mode were evaluated at worst configuration of DFT-s-OFDM in standalone exposure conditions.

10.14. NR Band n41 (100MHz Bandwidth)**Voice/Data/SRS0**

Antenna	RF Exposure Conditions	Modulation	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main.2	Head	DFT-s-OFDM	QPSK	0	Left Touch	518598	2593.0	1	271	18.00	17.32	0.044	0.052	33
								135	138	18.00	16.83	0.044	0.058	
					Left Tilt	518598	2593.0	1	271	18.00	17.32	0.005	0.006	
								135	138	18.00	16.83	0.009	0.012	
					Right Touch	518598	2593.0	1	271	18.00	17.32	0.008	0.010	
								135	138	18.00	16.83	0.010	0.013	
					Right Tilt	518598	2593.0	1	271	18.00	17.32	0.007	0.009	
								135	138	18.00	16.83	0.011	0.014	
	Body-w orn & Hotspot	DFT-s-OFDM	QPSK	10	Rear	518598	2593.0	1	271	18.00	17.32	0.186	0.218	
								135	138	18.00	16.83	0.174	0.228	
					Front	518598	2593.0	1	271	18.00	17.32	0.129	0.151	
								135	138	18.00	16.83	0.138	0.181	
	Hotspot	DFT-s-OFDM	QPSK	10	Left	518598	2593.0	1	271	18.00	17.32	0.120	0.140	
								135	138	18.00	16.83	0.122	0.160	
					Bottom	518598	2593.0	1	271	18.00	17.32	0.302	0.353	34
								135	138	18.00	16.83	0.264	0.346	
		CP-OFDM	QPSK	10	Bottom	518598	2592.99	1	1	18.00	16.63	0.163	0.223	

SRS1 & Voice/Data/SRS0 (Switching mode)

Antenna	RF Exposure Conditions	Modulation	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Sub.2	Head	DFT-s-OFDM	QPSK	0	Left Touch	518598	2593.0	1	1	18.00	17.13	0.392	0.479	
								135	69	18.00	16.98	0.227	0.287	
					Left Tilt	518598	2593.0	1	1	18.00	17.13	0.386	0.472	
								135	69	18.00	16.98	0.309	0.391	
					Right Touch	518598	2593.0	1	1	18.00	17.13	0.676	0.826	
								135	69	18.00	16.98	0.551	0.697	
					Right Tilt	518598	2593.0	1	1	18.00	17.13	0.721	0.881	35
								135	69	18.00	16.98	0.720	0.911	
	Body-w orn & Hotspot	DFT-s-OFDM	QPSK	10	Rear	518598	2593.0	1	1	18.00	17.13	0.153	0.187	
								135	138	18.00	16.98	0.131	0.166	
					Front	518598	2593.0	1	1	18.00	17.13	0.101	0.123	
								135	138	18.00	16.98	0.085	0.108	
	Hotspot	DFT-s-OFDM	QPSK	10	Top	518598	2593.0	1	1	18.00	17.13	0.201	0.246	36
								135	138	18.00	16.98	0.173	0.219	
					Left	518598	2593.0	1	1	18.00	17.13	0.011	0.013	
								135	138	18.00	16.98	0.011	0.014	
		CP-OFDM	QPSK	10	Top	518598	2593	1	1	18.00	17.13	0.190	0.232	

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.

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

Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Scaled	
Sub.1 -SRS2-	Head	SRS CW	0	Left Touch	518598	2593.0	17.00	15.70	0.624	0.842	37
				Left Tilt	518598	2593.0	17.00	15.70	0.536	0.723	
				Right Touch	518598	2593.0	17.00	15.70	0.315	0.425	
				Right Tilt	518598	2593.0	17.00	15.70	0.277	0.374	
	Body-w orn & Hotspot	SRS CW	10	Rear	518598	2593.0	18.00	16.80	0.183	0.241	
				Front	518598	2593.0	18.00	16.80	0.174	0.229	
	Hotspot	SRS CW	10	Top	518598	2593.0	18.00	16.80	0.153	0.202	
				Right	518598	2593.0	18.00	16.80	0.144	0.190	
Main.4 -SRS3-	Head	SRS CW	0	Left Touch	518598	2593.0	17.50	17.06	0.000	0.000	
				Left Tilt	518598	2593.0	17.50	17.06	0.000	0.000	
				Right Touch	518598	2593.0	17.50	17.06	0.000	0.000	
				Right Tilt	518598	2593.0	17.50	17.06	0.000	0.000	
	Body-w orn & Hotspot	SRS CW	10	Rear	518598	2593.0	17.50	17.06	0.264	0.292	38
				Front	518598	2593.0	17.50	17.06	0.006	0.007	
	Hotspot	SRS CW	10	Bottom	518598	2593.0	17.50	17.06	0.027	0.030	
				Right	518598	2593.0	17.50	17.06	0.013	0.014	

Note(s):

1. NR Band n41(SRS2/SRS3) tested using FTM mode.

10.16. NR Band n66 (20MHz Bandwidth)

Antenna	RF Exposure Conditions	Modulation	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main.1	Head	DFT-s-OFDM	QPSK	0	Left Touch	349000	1745.0	1	107	24.00	22.69	0.091	0.123	39
								108	54	24.00	22.70	0.092	0.124	
					Left Tilt	349000	1745.0	1	107	24.00	22.69	0.041	0.055	
								108	54	24.00	22.70	0.042	0.057	
					Right Touch	349000	1745.0	1	107	24.00	22.69	0.019	0.026	
								108	54	24.00	22.70	0.042	0.057	
					Right Tilt	349000	1745.0	1	107	24.00	22.69	0.012	0.016	
								108	54	24.00	22.70	0.012	0.016	
	Body-w orn & Hotspot	DFT-s-OFDM	QPSK	10	Rear	349000	1745.0	1	107	19.00	18.05	0.193	0.240	
								108	54	19.00	18.09	0.195	0.240	
					Front	349000	1745.0	1	107	19.00	18.05	0.220	0.274	
								108	54	19.00	18.09	0.223	0.275	
	Hotspot	DFT-s-OFDM	QPSK	10	Left	349000	1745.0	1	107	19.00	18.05	0.104	0.129	
								108	54	19.00	18.09	0.105	0.129	
					Bottom	349000	1745.0	1	107	19.00	18.05	0.512	0.637	
								108	54	19.00	18.09	0.522	0.644	
					Right	349000	1745.0	1	107	19.00	18.05	0.027	0.034	40
								108	54	19.00	18.09	0.029	0.036	
	CP-OFDM	QPSK	10		Bottom	349000	1745.0	1	1	19.00	18.03	0.491	0.614	
								1	1	19.00	18.03	0.491	0.614	

Antenna	RF Exposure Conditions	Modulation	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Sub.2	Head	DFT-s-OFDM	QPSK	0	Left Touch	349000	1745.0	1	107	18.00	16.85	0.408	0.532	
								108	54	18.00	16.71	0.415	0.559	
					Left Tilt	349000	1745.0	1	107	18.00	16.85	0.432	0.563	
								108	54	18.00	16.71	0.453	0.610	
					Right Touch	349000	1745.0	1	107	18.00	16.85	0.585	0.762	
								108	54	18.00	16.71	0.602	0.810	
					Right Tilt	349000	1745.0	1	107	18.00	16.85	0.603	0.786	
								108	54	18.00	16.71	0.628	0.845	
	Body-w orn & Hotspot	DFT-s-OFDM	QPSK	10	Rear	349000	1745.0	1	107	18.00	16.85	0.145	0.189	
								108	54	18.00	16.71	0.151	0.203	
					Front	349000	1745.0	1	107	18.00	16.85	0.131	0.171	
								108	54	18.00	16.71	0.134	0.180	
	Hotspot	DFT-s-OFDM	QPSK	10	Top	349000	1745.0	1	107	18.00	16.85	0.313	0.408	42
								108	54	18.00	16.71	0.321	0.432	
					Left	349000	1745.0	1	107	18.00	16.85	0.040	0.052	
								108	54	18.00	16.71	0.035	0.047	
	CP-OFDM	QPSK	10		Top	349000	1745.0	1	1	18.00	16.66	0.316	0.430	
								1	1	18.00	16.66	0.316	0.430	

Note(s):

1. CP-OFDM mode were evaluated at worst configuration of DFT-s-OFDM in standalone exposure conditions.

10.17. NR Band n77 (100MHz Bandwidth)

Antenna	RF Exposure Conditions	Modulation	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Sub.2	Head	DFT-s-OFDM	QPSK	0	Left Touch	650000	3750.0	1	271	15.00	14.30	0.244	0.287	
						662000	3930.0	1	271	15.00	14.31	0.356	0.417	
								135	138	15.00	14.23	0.310	0.370	
					Left Tilt	662000	3930.0	1	271	15.00	14.31	0.324	0.380	
								135	138	15.00	14.23	0.272	0.325	
					Right Touch	633334	3500.0	1	136	15.00	14.20	0.484	0.582	
								135	69	15.00	14.47	0.560	0.633	
						650000	3750.0	1	271	15.00	14.30	0.591	0.694	
								135	138	15.00	13.85	0.602	0.785	
						662000	3930.0	1	271	15.00	14.31	0.603	0.707	
								135	138	15.00	14.23	0.638	0.762	
					Right Tilt	650000	3750.0	1	271	15.00	14.30	0.575	0.676	
								135	138	15.00	13.85	0.539	0.702	
						662000	3930.0	1	271	15.00	14.31	0.703	0.824	43
								135	138	15.00	14.23	0.667	0.796	
		CP-OFDM	QPSK	0	Right Touch	662000	3930.0	1	1	15.00	13.68	0.535	0.725	
	Body-w orn & Hotspot	DFT-s-OFDM	QPSK	10	Rear	633334	3500.0	1	136	20.00	19.38	0.561	0.647	44
								135	69	20.00	19.31	0.454	0.532	
						650000	3750.0	1	271	20.00	19.40	0.365	0.419	
								135	138	20.00	18.94	0.442	0.564	
						662000	3930.0	1	271	20.00	19.42	0.374	0.427	
								135	138	20.00	19.36	0.402	0.466	
					Front	662000	3930.0	1	271	20.00	19.42	0.172	0.197	
								135	138	20.00	19.36	0.143	0.166	
	Hotspot	DFT-s-OFDM	QPSK	10	Top	662000	3930.0	1	271	20.00	19.42	0.146	0.167	
								135	138	20.00	19.36	0.170	0.197	
					Left	662000	3930.0	1	271	20.00	19.42	0.029	0.033	
								135	138	20.00	19.36	0.029	0.034	
		CP-OFDM	QPSK	10	Rear	633334	3500.0	1	1	20.00	19.28	0.527	0.622	

Note(s):

1. NR Band n77-DoD are tested at worst configuration of NR Band n77 band.
2. CP-OFDM mode were evaluated at worst configuration of DFT-s-OFDM in standalone exposure conditions.
3. NR Band n77 tested using FTM mode.

10.18. Wi-Fi (DTS Band)

DTS SAR results

Antenna	Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)		Note	Plot No.	
										Tune-up limit	Meas.	Meas.	Scaled			
WLAN Sub.4 Ant.	2.4GHz	802.11b 1 Mbps	Head	0	Left Touch	11	2462.0	0.099	99.0%	12.0	11.36					
					Left Tilt	11	2462.0	0.110	99.0%	12.0	11.36					
					Right Touch	11	2462.0	0.632	99.0%	12.0	11.36	0.299	0.350		45	
					Righttt Tilt	11	2462.0	0.519	99.0%	12.0	11.36					
			Body-w orn & Hotspot	10	Rear	11	2462.0	0.418	99.0%	19.0	18.32	0.267	0.316			
					Front	11	2462.0	0.346	99.0%	19.0	18.32					
			Hotspot	10	Top	11	2462.0	0.275	99.0%	19.0	18.32					
					Left	11	2462.0	0.553	99.0%	19.0	18.32	0.408	0.482		46	
WLAN Sub.6 Ant.	2.4GHz	802.11g 6 Mbps	Head	0	Left Touch	11	2462.0	0.053	96.5%	11.0	10.06					
					Left Tilt	11	2462.0	0.002	96.5%	11.0	10.06					
					Right Touch	11	2462.0	0.094	96.5%	11.0	10.06	0.065	0.083			
					Righttt Tilt	11	2462.0	0.004	96.5%	11.0	10.06					
		802.11b 1 Mbps				Right Touch	11	2462.0	0.094	99.0%	10.5	9.81	0.060	0.071		
		802.11b 1 Mbps	Body-w orn & Hotspot	10	Rear	11	2462.0	0.001	99.0%	17.0	16.57	0.000	0.000			
					Front	11	2462.0	0.000	99.0%	17.0	16.57					
			Hotspot	10	Top	11	2462.0	0.000	99.0%	17.0	16.57					
Right	11	2462.0			0.000	99.0%	17.0	16.57								

Note(s):

- 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).
- SAR testing is not required for OFDM mode(s) when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.
- DSSS mode were evaluated at worst configuration of OFDM in standalone exposure conditions.

10.19. Wi-Fi (U-NII Bands)

U-NII 2A SAR results

Antenna	Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note	Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled		
WLAN Sub.4 Ant	5.3 GHz U-NII 2A	802.11n HT 40 13.5 Mbps	Head	0	Left Touch	54	5270.0	0.037	97.6%	11.0	10.07	0.025	0.032			2	
					Left Tilt	54	5270.0	0.027	97.6%	11.0	10.07	0.002	0.003			2	
					Right Touch	54	5270.0	0.307	97.6%	11.0	10.07	0.191	0.242				47
					Right Tilt	54	5270.0	0.071	97.6%	11.0	10.07	0.043	0.055			2	
			Body-worn	10	Rear	54	5270.0	0.229	97.6%	14.5	13.89	0.184	0.217				
					Front	54	5270.0	0.246	97.6%	14.5	13.89						
			Product Specific 10-g	0	Rear	54	5270.0	0.557	97.6%	14.5	13.89						
					Front	54	5270.0	1.600	97.6%	14.5	13.89						
					Top	54	5270.0	0.620	97.6%	14.5	13.89						
					Left	54	5270.0	2.870	97.6%	14.5	13.89			0.534	0.630		48
WLAN Sub.1 Ant	5.3 GHz U-NII 2A	802.11a 6Mbps	Head	0	Left Touch	60	5300.0	0.009	96.2%	7.0	6.50						
					Left Tilt	60	5300.0	0.006	96.2%	7.0	6.50						
					Right Touch	60	5300.0	0.029	96.2%	7.0	6.50	0.010	0.012				
					Right Tilt	60	5300.0	0.010	96.2%	7.0	6.50						
		802.11n HT 40 13.5 Mbps	Body-worn	10	Rear	54	5270.0	0.032	96.8%	10.0	8.63	0.015	0.021				
					Front	54	5270.0	0.010	96.8%	10.0	8.63						
			Product Specific 10-g	0	Rear	54	5270.0	0.128	96.8%	10.0	8.63						
					Front	54	5270.0	0.165	96.8%	10.0	8.63			0.034	0.048		
					Top	54	5270.0	0.066	96.8%	10.0	8.63						
					Right	54	5270.0	0.075	96.8%	10.0	8.63						

Note(s):

- 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).
- additional measurement due to simultaneous transmission combination

U-NII 2C SAR results

Antenna	Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note	Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled		
WLAN Sub.4 Ant.	5.5 GHz U-NII 2C	802.11ac VHT 80 29.3 Mbps	Head	0	Left Touch	122	5610.0	0.169	95.3%	11.0	10.23	0.062	0.078			2	
					Left Tilt	122	5610.0	0.132	95.3%	11.0	10.23	0.050	0.062			2	
					Right Touch	122	5610.0	0.570	95.3%	11.0	10.23	0.233	0.292				49
					Right Tilt	122	5610.0	0.333	95.3%	11.0	10.23	0.121	0.152			2	
		802.11a 6 Mbps	Body-worn	10	Rear	144	5720.0	0.446	96.0%	14.5	13.79	0.183	0.225				
					Front	144	5720.0	0.156	96.0%	14.5	13.79						
			Product Specific 10-g	0	Rear	144	5720.0	1.914	96.0%	14.5	13.79						
					Front	144	5720.0	3.200	96.0%	14.5	13.79			0.322	0.395		
					Top	144	5720.0	1.447	96.0%	14.5	13.79						
					Left	144	5720.0	10.723	96.0%	14.5	13.79			0.820	1.006		50
WLAN Sub.1 Ant.	5.5 GHz U-NII 2C	802.11n HT 40 13.5 Mbps	Head	0	Left Touch	134	5670.0	0.062	97.6%	8.0	7.43	0.018	0.021				
					Left Tilt	134	5670.0	0.043	97.6%	8.0	7.43						
					Right Touch	134	5670.0	0.050	97.6%	8.0	7.43						
					Right Tilt	134	5670.0	0.036	97.6%	8.0	7.43						
		802.11ac VHT 80 29.3 Mbps	Body-worn	10	Rear	122	5610.0	0.109	95.3%	10.0	8.69	0.044	0.063				
					Front	122	5610.0	0.008	95.3%	10.0	8.69						
			Product Specific 10-g	0	Rear	122	5610.0	0.779	95.3%	10.0	8.69			0.074	0.105		
					Front	122	5610.0	0.540	95.3%	10.0	8.69						
					Top	122	5610.0	0.231	95.3%	10.0	8.69						
					Right	122	5610.0	0.119	95.3%	10.0	8.69						

Note(s):

1. 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).
2. additional measurement due to simultaneous transmission combination

U-NII 3 SAR results

Antenna	Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note	Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled		
WLAN Sub.4 Ant.	5.8 GHz U-NII 3	802.11ac VHT 80 29.3 Mbps	Head	0	Left Touch	155	5775.0	0.060	95.3%	11.0	9.99	0.022	0.029			2	
					Left Tilt	155	5775.0	0.018	95.3%	11.0	9.99	0.006	0.008			2	
					Right Touch	155	5775.0	0.456	95.3%	11.0	9.99	0.273	0.361				51
					Right Tilt	155	5775.0	0.312	95.3%	11.0	9.99	0.142	0.188			2	
		802.11a 6 Mbps	Body-worn & Hotspot	10	Rear	149	5745.0	0.341	96.0%	14.5	13.86	0.153	0.185			2	
					Front	149	5745.0	0.183	96.0%	14.5	13.86						
			Hotspot	10	Top	149	5745.0	0.128	96.0%	14.5	13.86						
					Left	149	5745.0	0.490	96.0%	14.5	13.86	0.252	0.304				52
WLAN Sub.1 Ant.	5.8 GHz U-NII 3	802.11a 6 Mbps	Head	0	Left Touch	149	5745.0	0.002	96.0%	8.0	7.02						
					Left Tilt	149	5745.0	0.003	96.0%	8.0	7.02						
					Right Touch	149	5745.0	0.090	96.0%	8.0	7.02	0.039	0.051				
					Right Tilt	149	5745.0	0.003	96.0%	8.0	7.02						
			Body-worn & Hotspot	10	Rear	157	5785.0	0.013	96.0%	10.0	9.34	0.000	0.000				
					Front	157	5785.0	0.004	96.0%	10.0	9.34						
			Hotspot	10	Top	157	5785.0	0.002	96.0%	10.0	9.34						
					Right	157	5785.0	0.002	96.0%	10.0	9.34						

Note(s):

1. 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).
2. additional measurement due to simultaneous transmission combination

10.20. Bluetooth

Bluetooth SISO SAR results

Antenna	Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Duty Cycle	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
BT SISO Ant.1	2.4GHz	LE, 1M	Head	0	Left Touch	0	2402.0	85.1%	15.00	15.00	0.031	0.032	
					Left Tilt	0	2402.0	85.1%	15.00	15.00	0.053	0.055	
					Right Touch	0	2402.0	85.1%	15.00	15.00	0.181	0.187	53
					Right Tilt	0	2402.0	85.1%	15.00	15.00	0.149	0.154	
			Body-worn & Hotspot	10	Rear	0	2402.0	85.1%	15.00	15.00	0.037	0.038	
					Front	0	2402.0	85.1%	15.00	15.00	0.033	0.034	
			Hotspot	10	Top	0	2402.0	85.1%	15.00	15.00	0.021	0.022	
					Right	0	2402.0	85.1%	15.00	15.00	0.066	0.068	54

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	13.6	0.018	55
				A	212	13.6	0.017	
				A	424	13.6	0.017	
				B	106	13.6	0.016	
				F	106	13.6	0.000	
			Front	A	106	13.6	0.000	
			Top	A	106	13.6	0.000	
			Left	A	106	13.6	0.000	

Note(s):

NFC SAR tested using worst configuration in all test positions.

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 ($\sim 10\%$ 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	Main.1	Hotspot	Rear	No	0.260	N/A	N/A
	LTE Band 13	Main.1	Hotspot	Rear	No	0.367	N/A	N/A
850	GSM 850	Main.1	Hotspot	Rear	No	0.459	N/A	N/A
	WCDMA Band V	Main.1	Hotspot	Rear	No	0.537	N/A	N/A
	LTE Band 5	Main.1	Hotspot	Rear	No	0.423	N/A	N/A
	LTE Band 26	Main.1	Hotspot	Rear	No	0.418	N/A	N/A
	NR Band n5	Main.1	Hotspot	Rear	No	0.522	N/A	N/A
1700	WCDMA Band IV	Main.1	Hotspot	Bottom	No	0.698	N/A	N/A
	LTE Band 66	Main.1	Hotspot	Bottom	No	0.537	N/A	N/A
	NR Band n66	Sub.2	Head	Right Tilt	No	0.628	N/A	N/A
1900	GSM 1900	Main.1	Hotspot	Bottom	No	0.529	N/A	N/A
	WCDMA Band II	Main.1	Hotspot	Bottom	No	0.561	N/A	N/A
	LTE Band 25	Sub.2	Head	Right Tilt	No	0.531	N/A	N/A
2600	LTE Band 41	Sub.2	Head	Right Tilt	No	0.690	N/A	N/A
	NR Band n41	Sub.2	Head	Right Tilt	No	0.767	N/A	N/A
3500	NR Band n77	Sub.2	Head	Right Touch	No	0.703	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
5500	UHF-2C	Sub.2	Product 10-g	Left	No	0.820	N/A	N/A

Note(s):

1. In above table, Only some bands above 0.8 or 2.0 W/kg (1-g or 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 Sub.4 Ant.)	
	2	WWAN (2G/3G/LTE/NR)	+	(DTS Sub.4 Ant.)	and (DTS Sub.6 Ant.)
	3	WWAN (2G/3G/LTE/NR)	+	(UNII Sub.4 Ant.)	
	4	WWAN (2G/3G/LTE/NR)	+	(UNII Sub.4 Ant.)	and (UNII Sub.1 Ant.)
	5	WWAN (2G/3G/LTE/NR)	+	(BT Ant.1)	
	6	WWAN (2G/3G/LTE/NR)	+	(UNII Sub.4 Ant.)	+ (BT Ant.1)
	7	WWAN (2G/3G/LTE/NR)	+	(UNII Sub.4 Ant.)	and (UNII Sub.1 Ant.) + (BT Ant.1)
	8	WWAN (ENDC/ULCA)	+	(DTS Sub.4 Ant.)	
	9	WWAN (ENDC/ULCA)	+	(DTS Sub.4 Ant.)	and (DTS Sub.6 Ant.)
	10	WWAN (ENDC/ULCA)	+	(UNII Sub.4 Ant.)	
	11	WWAN (ENDC/ULCA)	+	(UNII Sub.4 Ant.)	and (UNII Sub.1 Ant.)
	12	WWAN (ENDC/ULCA)	+	(BT Ant.1)	
	13	WWAN (ENDC/ULCA)	+	(UNII Sub.4 Ant.)	+ (BT Ant.1)
	14	WWAN (ENDC/ULCA)	+	(UNII Sub.4 Ant.)	and (UNII Sub.1 Ant.) + (BT Ant.1)
Phablet-10g	15	Scenarios item (1-14) + 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. LTE Radio support to ULCA Radio.
7. BT tethering is considered about each RF exposure conditions.
8. NFC can transmit simultaneously with other Radios in Phablet-10g condition.
9. DTS Sub.6 Ant and UNII Sub.1 Ant works only MIMO operation.

Note(s):

For EN-DC mode in same antenna group, 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.

For ULCA mode in same antenna group, LSI TAS algorithm in WWAN adds directly the time-averaged RF exposure from PCC(LTE) and time-averaged RF exposure from SCC(LTE). LSI TAS algorithm controls the total RF exposure from both PCC and SCC to not exceed the RF exposure from each PCC or SCC individually. Therefore, simultaneous transmission compliance between PCC+SCC 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

- r_{ij} is the correlation between antenna i and antenna j
- The value of r_{ij} is either 0 or 1, where 1 means fully correlated and 0 means fully uncorrelated.
- 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	Main.1	GSM 850, 1900 WCDMA B2, B4, B5 LTE B2, B4, B5, B12, B13, B17, B25, B26, B66 NR Bn5, Bn66
	Main.2	LTE B41, NR Bn 41
	Main.4	NR Bn41 SRS3
AG1	Sub.1	NR Bn41 SRS2
	Sub.2	LTE B2, B4, B25, B41, B66, NR Bn66, Bn41(Switching), Bn41 SRS0, Bn77

R =	Antenna Group		AG0			AG1	
	AG0	Antenna	Main.1	Main.2	Main.4	Sub.1	Sub.2
		Main.1	1	1	1	0	0
		Main.2	1	1	1	0	0
		Main.4	1	1	1	0	0
	AG1	Sub.1	0	0	0	1	1
		Sub.2	0	0	0	1	1

SPLSR criteria verification according to matrix (R) verifies only RF exposure configurations where AG0+AG1 result exceeds the FCC limit.

12.1.1 Head/ Body-worn & Hotspot exposure Antenna group analysis

Antenna Group: AG0 Main.1

Main Ant.		AG0													Worst SAR
RF exposure	Test position	Main.1													
		GSM 850	GSM 1900	WCDMA B2	WCDMA B4	WCDMA B5	LTE B5	LTE B12	LTE B13	LTE B25	LTE B26	LTE B66	NR Bn5	NR Bn66	
Head	Left Touch	0.157	0.071	0.200	0.172	0.146	0.086	0.088	0.100	0.109	0.122	0.164	0.135	0.124	0.200
	Left Tilt	0.110	0.032	0.035	0.079	0.112	0.067	0.053	0.087	0.044	0.073	0.060	0.100	0.057	0.112
	Right Touch	0.243	0.055	0.117	0.109	0.208	0.167	0.105	0.159	0.059	0.167	0.089	0.167	0.057	0.243
	Right Tilt	0.119	0.041	0.093	0.061	0.114	0.094	0.058	0.081	0.038	0.097	0.063	0.102	0.016	0.119
Body-worn & Hotspot	Rear	0.591	0.434	0.325	0.573	0.610	0.592	0.330	0.413	0.244	0.555	0.303	0.639	0.240	0.639
	Front	0.419	0.354	0.299	0.394	0.436	0.402	0.179	0.214	0.224	0.336	0.246	0.489	0.275	0.489
Hotspot	Top														0.000
	Left	0.066	0.079	0.258	0.305	0.078	0.073	0.076	0.076	0.159	0.062	0.219	0.091	0.129	0.305
	Bottom	0.130	0.715	0.689	0.942	0.404	0.344	0.135	0.156	0.603	0.364	0.579	0.414	0.644	0.942
	Right	0.327	0.063	0.103	0.185	0.192	0.200	0.146	0.240	0.082	0.231	0.059	0.189	0.036	0.327

Antenna Group: AG0 Main.2 & Main.4

Main Ant.		AG0		Worst SAR	AG0	Worst SAR
RF exposure	Test position	Main.2			Main.4	
		LTE B41	NR Bn41		NR Bn41SRS3	
Head	Left Touch	0.095	0.058	0.095	0.000	0.000
	Left Tilt	0.000	0.012	0.012	0.000	0.000
	Right Touch	0.006	0.013	0.013	0.000	0.000
	Right Tilt	0.013	0.014	0.014	0.000	0.000
Body-worn & Hotspot	Rear	0.249	0.228	0.249	0.292	0.292
	Front	0.185	0.181	0.185	0.007	0.007
Hotspot	Top			0.000		0.000
	Left	0.102	0.160	0.160		0.000
	Bottom	0.325	0.353	0.353	0.030	0.030
	Right			0.000	0.014	0.014

AG0's Highest SAR Results

Antenna Group		AG 0			Worst SAR
Antenna		Main.1	Main.2	Main.4	
RF exposure	Test position				
Head	Left Touch	0.200	0.095	0.000	0.200
	Left Tilt	0.112	0.012	0.000	0.112
	Right Touch	0.243	0.013	0.000	0.243
	Right Tilt	0.119	0.014	0.000	0.119
Body-worn & Hotspot	Rear	0.639	0.249	0.292	0.639
	Front	0.489	0.185	0.007	0.489
Hotspot	Top	0.000	0.000	0.000	0.000
	Left	0.305	0.160	0.000	0.305
	Bottom	0.942	0.353	0.030	0.942
	Right	0.327	0.000	0.014	0.327

Antenna Group: AG1 Sub.1 & Sub.2

Main Ant.		AG1	Worst SAR	AG1						Worst SAR
RF exposure	Test position	Sub.1		Sub.2						
		NR Bn41SRS2		LTE B25	LTE B41	LTE B66	NR Bn41	NR Bn66	NR Bn77	
Head	Left Touch	0.842	0.842	0.371	0.285	0.381	0.479	0.559	0.417	0.559
	Left Tilt	0.723	0.723	0.482	0.276	0.455	0.472	0.610	0.380	0.610
	Right Touch	0.425	0.425	0.640	0.578	0.637	0.826	0.810	0.785	0.826
	Right Tilt	0.374	0.374	0.681	0.781	0.623	0.911	0.845	0.824	0.911
Body-worn & Hotspot	Rear	0.241	0.241	0.122	0.139	0.142	0.187	0.203	0.647	0.647
	Front	0.229	0.229	0.084	0.109	0.130	0.123	0.180	0.197	0.197
Hotspot	Top	0.202	0.202	0.260	0.227	0.311	0.246	0.432	0.197	0.432
	Left		0.000	0.096	0.011	0.221	0.013	0.052	0.034	0.221
	Bottom		0.000							0.000
	Right	0.190	0.190							0.000

AG1's Highest SAR Results

Antenna Group		AG 1		Worst SAR
Antenna		Sub.1	Sub.2	
RF exposure	Test position			
Head	Left Touch	0.842	0.559	0.842
	Left Tilt	0.723	0.610	0.723
	Right Touch	0.425	0.826	0.826
	Right Tilt	0.374	0.911	0.911
Body-worn & Hotspot	Rear	0.241	0.647	0.647
	Front	0.229	0.197	0.229
Hotspot	Top	0.202	0.432	0.432
	Left		0.221	0.221
	Bottom			0.000
	Right	0.190		0.190

Summation of AG0 / AG1

Antenna Group		AG 0				AG 1			SUM	FCC Limit
Antenna		Main.1	Main.2	Main.4	Worst SAR	Sub.1	Sub.2	Worst SAR		
RF exposure	Test position									
Head	Left Touch	0.200	0.095	0.000	0.200	0.842	0.559	0.842	1.042	1.6
	Left Tilt	0.112	0.012	0.000	0.112	0.723	0.610	0.723	0.835	
	Right Touch	0.243	0.013	0.000	0.243	0.425	0.826	0.826	1.069	
	Right Tilt	0.119	0.014	0.000	0.119	0.374	0.911	0.911	1.030	
Body-worn & Hotspot	Rear	0.639	0.249	0.292	0.639	0.241	0.647	0.647	1.286	1.6
	Front	0.489	0.185	0.007	0.489	0.229	0.197	0.229	0.718	
Hotspot	Top	0.000	0.000	0.000	0.000	0.202	0.432	0.432	0.432	1.6
	Left	0.305	0.160	0.000	0.305		0.221	0.221	0.526	
	Bottom	0.942	0.353	0.030	0.942			0.000	0.942	
	Right	0.327	0.000	0.014	0.327	0.190		0.190	0.517	

Note(s):

Both Antenna group's summation results are below FCC limit. So additional test is not required.

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:

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

SAR₂ is the highest reported or estimated SAR for the second of a pair of simultaneous transmitting antennas, in the same test operating mode and exposure condition as the first

R_i is the separation distance between the pair of simultaneous transmitting antennas. When the SAR is measured, for both antennas in the pair, it is determined by the actual x, y and z coordinates in the 1-g SAR for each SAR peak location, based on the extrapolated and interpolated result in the zoom scan measurement, using the formula of

$$[(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2]$$

In order for a pair of simultaneous transmitting antennas with the sum of 1-g SAR > 1.6 W/kg to qualify for exemption from Simultaneous Transmission SAR measurements, it has to satisfy the condition of:

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

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

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

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 SPLSR 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 SPLSR calculation.

12.2.1 Head exposure simultaneous transmission analysis

SAR (DTS & BT & UNII)

RF Exposure	Test Position	WLANBT's SAR (W/kg)									Worst case Combination
		BT Ant.1	2.4G Sub.4	2.4G Sub.6	2.4G MIMO (Sub.4+Sub.6)	5GHz Sub.4	5GHz Sub.1	5G MIMO (Sub.4+Sub.1)	5GHz Sub.4 + BT Ant.1	5GHz MIMO + BT Ant.1	
		1	2	3	4	5	6	7	1+7	1+9	
Head (1-g SAR)	Left Touch	0.320	0.350	0.083	0.433	0.078	0.021	0.099	0.398	0.419	0.419
	Left Tilt	0.550	0.350	0.083	0.433	0.063	0.051	0.114	0.613	0.664	0.664
	Right Touch	0.187	0.350	0.083	0.433	0.361	0.051	0.412	0.548	0.599	0.599
	Right Tilt	0.154	0.350	0.083	0.433	0.188	0.051	0.239	0.342	0.393	0.393

AG0+AG1 (ENDC/ULCA combination)

RF Exposure	Test position	Main.1					Main.2	Sub.2		
		LTE B5	LTE B12	LTE B13	LTE B25(2)	LTE B66(4)	NR Bn41	LTE B2	LTE B4	NR Bn77
Head	Left Touch	0.086	0.088	0.100	0.109	0.164	0.058	0.371	0.381	0.417
	Left Tilt	0.067	0.053	0.087	0.044	0.060	0.012	0.482	0.455	0.380
	Right Touch	0.167	0.105	0.159	0.059	0.089	0.013	0.640	0.637	0.785
	Right Tilt	0.094	0.058	0.081	0.038	0.063	0.014	0.681	0.623	0.824

RF exposure	Test position	Summation of AG0+AG1 in ENDC and ULCA combinations									Max
		LTE B2	LTE B4	LTE B2	LTE B4	LTE B5	LTE B12	LTE B13	LTE B25	LTE B66	
		+ LTE B4	+LTE B2	+NR Bn41	+NR Bn41	+NR Bn77	+NR Bn77	+NR Bn77	+NR Bn77	+NR Bn77	
		Sub.2(AG1)	Sub.2(AG1)	Sub.2(AG1)	Sub.2(AG1)	Main.1(AG0)	Main.1(AG0)	Main.1(AG0)	Main.1(AG0)	Main.1(AG0)	
		+Main.1(AG0)	+Main.1(AG0)	+Main.2(AG0)	+Main.2(AG0)	+Sub.2(AG1)	+Sub.2(AG1)	+Sub.2(AG1)	+Sub.2(AG1)	+Sub.2(AG1)	
Head	Left Touch	0.535	0.490	0.429	0.439	0.503	0.505	0.517	0.526	0.581	0.581
	Left Tilt	0.542	0.499	0.494	0.467	0.447	0.433	0.467	0.424	0.440	0.542
	Right Touch	0.729	0.696	0.653	0.65	0.952	0.890	0.944	0.844	0.874	0.952
	Right Tilt	0.744	0.661	0.695	0.637	0.918	0.882	0.905	0.862	0.887	0.918

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

RF Exposure	Test Position	Highest SAR (W/kg)				Sum SAR (W/kg)
		AG0	AG1	AG0+AG1 (UL CA or ENDC)	WLAN	
Head (1-g SAR)	Left Touch	0.200			0.419	0.619
			0.842		0.419	1.261
				0.581	0.419	1.000
	Left Tilt	0.112			0.664	0.776
			0.723		0.664	1.387
				0.542	0.664	1.206
	Right Touch	0.243			0.599	0.842
			0.826		0.599	1.425
				0.952	0.599	1.551
	Right Tilt	0.119			0.393	0.512
			0.911		0.393	1.304
				0.918	0.393	1.311

Note(s):

- Green value is estimated SAR value.

12.2.2 Body-worn & Hotspot exposure simultaneous transmission analysis

SAR (DTS & BT & UNII)

RF Exposure	Test Position	WLANBT's SAR (W/kg)									Worst case Combination
		BT Ant.1	2.4G Sub.4	2.4G Sub.6	2.4G MIMO (Sub.4+Sub.6)	5GHz Sub.4	5GHz Sub.1	5G MIMO (Sub.4+Sub.1)	5GHz Sub.4+ BT Ant.1	5GHz MIMO + BT Ant.1	
		1	2	3	4	5	6	7	1+5	1+7	
Body-worn & Hotspot (1-g SAR)	Rear	0.038	0.316	0.000	0.316	0.225	0.021	0.246	0.263	0.284	0.316
	Front	0.034	0.482	0.000	0.482	0.304	0.021	0.325	0.338	0.359	0.482
	Top	0.022	0.482	0.000	0.482	0.304	0.021	0.325	0.326	0.347	0.482
	Left		0.482	0.000	0.482	0.304	0.021	0.325	0.304	0.325	0.482
	Bottom		0.482	0.000	0.482	0.304	0.021	0.325	0.304	0.325	0.482
	Right	0.068	0.482	0.000	0.482	0.304	0.021	0.325	0.372	0.393	0.482

AG0+AG1 (ENDC/ULCA combination)

RF Exposure	Test position	Main.1					Main.2	Sub.2		
		LTE B5	LTE B12	LTE B13	LTE B25(2)	LTE B66(4)	NR Bn41	LTE B2	LTE B4	NR Bn77
Body-worn & Hotspot	Rear	0.592	0.330	0.413	0.244	0.303	0.228	0.122	0.142	0.647
	Front	0.402	0.179	0.214	0.224	0.246	0.181	0.084	0.130	0.197
Hotspot	Top							0.260	0.311	0.197
	Left	0.073	0.076	0.076	0.159	0.219	0.160	0.096	0.221	0.034
	Bottom	0.344	0.135	0.156	0.603	0.579	0.353			
	Right	0.200	0.146	0.240	0.082	0.059				

RF exposure	Test position	Summation of AG0+AG1 in ENDC and ULCA combinations									Max
		LTE B2 + LTE B4	LTE B4 +LTE B2	LTE B2 +NR Bn41	LTE B4 +NR Bn41	LTE B5 +NR Bn77	LTE B12 +NR Bn77	LTE B13 +NR Bn77	LTE B25 +NR Bn77	LTE B66 +NR Bn77	
		Sub.2(AG1)	Sub.2(AG1)	Sub.2(AG1)	Sub.2(AG1)	Main.1(AG0)	Main.1(AG0)	Main.1(AG0)	Main.1(AG0)	Main.1(AG0)	
		+Main.1(AG0)	+Main.1(AG0)	+Main.2(AG0)	+Main.2(AG0)	+Sub.2(AG1)	+Sub.2(AG1)	+Sub.2(AG1)	+Sub.2(AG1)	+Sub.2(AG1)	
Body-worn & Hotspot	Rear	0.425	0.386	0.350	0.370	1.239	0.977	1.060	0.891	0.950	1.239
	Front	0.330	0.354	0.265	0.311	0.599	0.376	0.411	0.421	0.443	0.599
Hotspot	Top	0.260	0.311	0.260	0.311	0.197	0.197	0.197	0.197	0.197	0.311
	Left	0.315	0.380	0.256	0.381	0.107	0.110	0.110	0.193	0.253	0.381
	Bottom	0.579	0.603	0.353	0.353	0.344	0.135	0.156	0.603	0.579	0.603
	Right	0.059	0.082	0.000	0.000	0.200	0.146	0.240	0.082	0.059	0.240

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

RF Exposure	Test Position	Highest SAR (W/kg)				Sum SAR (W/kg)
		AG0	AG1	AG0+AG1 (UL CA or ENDC)	WLAN	
Body-Worn & Hotspot	Rear	0.639			0.316	0.955
			0.647		0.316	0.963
				1.239	0.316	1.555
	Front	0.489			0.482	0.971
			0.229		0.482	0.711
				0.599	0.482	1.081
Hotspot	Top		0.432		0.482	0.914
				0.311	0.482	0.793
	Left	0.305			0.482	0.787
			0.221		0.482	0.703
	Bottom			0.381	0.482	0.863
		0.942			0.482	1.424
	Right			0.603	0.482	1.085
		0.327			0.482	0.809
			0.190		0.482	0.672
				0.240	0.482	0.722

Note(s):

- Green value is estimated SAR value.

12.2.3 Product Specific 10-g exposure simultaneous transmission analysis

SAR (DTS & BT & UNII)

RF Exposure	Test Position	WLAN/BT's SAR (W/kg)									Worst case Combination
		BT Ant.1	2.4G Sub.4	2.4G Sub.6	2.4G MIMO (Sub.4+Sub.6)	5GHz Sub.4	5GHz Sub.1	5G MIMO (Sub.4+Sub.1)	5GHz Sub.4+ BT Ant.1	5GHz MIMO + BT Ant.1	
		1	2	3	4	5	6	7	1+5	1+7	
Product Specific 10-g (10-g SAR)	Rear					1.060	0.105	1.165	1.060	1.165	1.165
	Front					1.060	0.105	1.165	1.060	1.165	1.165
	Top					1.060	0.105	1.165	1.060	1.165	1.165
	Left					1.060	0.105	1.165	1.060	1.165	1.165
	Bottom					1.060	0.105	1.165	1.060	1.165	1.165
	Right					1.060	0.105	1.165	1.060	1.165	1.165

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

RF Exposure	Test Position	Highest SAR (W/kg)				Sum SAR (W/kg)
		AG0	AG1	WLAN	NFC	
Product Specific 10-g (10-g SAR)	Rear			1.165	0.018	1.183
	Front			1.165	0.000	1.165
	Top			1.165	0.000	1.165
	Left			1.165	0.000	1.165
	Bottom			1.165		1.165
	Right			1.165		1.165

Note(s):

- Green value is estimated SAR value.

Conclusion:

Simultaneous Transmission SAR analysis results is satisfied the FCC Limit requirement according to follow procedures with "Sum of SAR"

Appendixes

Refer to separated files for the following appendixes.

4791082054-S1 FCC Report SAR_App A_Photos & Ant. Locations

4791082054-S1 FCC Report SAR_App B_Highest SAR Test Plots

4791082054-S1 FCC Report SAR_App C_System Check Plots

4791082054-S1 FCC Report SAR_App D_SAR Tissue Ingredients

4791082054-S1 FCC Report SAR_App E_Probe Cal. Certificates

4791082054-S1 FCC Report SAR_App F_Dipole Cal. Certificates

4791082054-S1 FCC Report SAR_App G_LTE Carrier Aggregation

END OF REPORT