Test report No:

NIE: 68365RAN.002

Test report
IEEE Std 1528™-2013

(*) Identification of item tested	Telematic Control Unit, used in automotive industry.
(*) Trademark	VOLVO
(*) Model and /or type reference tested	TCAM2
(*) Other identification of the product	FCC ID: T8GTCAM2 IC: 6434A-TCAM2 HW version: D0 SW Version: 04-08-2022-master-TCAM2-A_Homologation
(*) Features	BLE, 2G, 3G, LTE, 5G, GNSS, TMPS, SDARS
Manufacturer	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH BECKER-GOERING-STR. 16; 76307 KARLSBAD GERMANY
Test method requested, standard	1. IEEE Std 1528™-2013: 2. FCC 47 CFR Part 2.1093.
Summary	Considering the results of the performed test, the item under test is IN COMPLIANCE with FCC 47CFR Part 2.1093 exposure limits. The maximum 1g volume averaged SAR found during this test have been 0.318 W/kg, for GPRS 850 MHz mode.
Approved by (name / position & signature)	Miguel Lacave Antennas Lab Manager 2022.12.01 13:49:02 +01'00'
Date of issue	2022-11-30
Report template No	FDT08_24 (*) "Data provided by the client"

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Competences and guarantees

DEKRA Testing and Certification S.A.U. is a testing laboratory accredited by the National Accreditation Body (ENAC -Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147.

DEKRA Testing and Certification is a FCC-recognized accredited testing laboratory with appropriate scope of accreditation that include testing performed in this test report.

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DEKRA Testing and Certification S.A.U. guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Testing and Certification at the time of performance of the test.

DEKRA Testing and Certification S.A.U. is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
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4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Testing and Certification S.A.U. and the Accreditation Bodies.

Uncertainty

Uncertainty (factor k=2) was calculated according to the following documents:

1. DEKRA Testing and Certification S.A.U. internal document PODT000.
2. FCC OET KDB 865664 D01 - SAR Measurement Requirements for 100 MHz to 6 GHz v01r04 (August 2015).

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested", “Other identification of the product”, “Features” and “Test sample description”).

2. Maximum output power and testing distance information.

DEKRA Testing and Certification S.A.U. declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Usage of samples

Samples undergoing test have been selected by: the client

Sample M/01 is composed of the following elements:

Control Nº	Description	Model	Serial Nº	Date of reception
68365/019	Module (ROW/Conducted)	TCAM2	HBL172N62F24SA	2022/05/27

Sample M/02 is composed of the following elements:

Control Nº	Description	Model	Serial Nº	Date of reception
68365/021	Module (ROW / Radiated)	TCAM2	HBL172N62F2S82	2022/05/27
68365/022	Module (ROW /Radiated)	TCAM2	HBL172N62F24S4	2022/05/27

1. Sample M/01 has undergone the test(s) specified in subclause “Test method requested”: Conducted average output power.
2. Sample M/02 has undergone the test(s) specified in subclause “Test method requested”: SAR evaluation for 2G, 3G, LTE and 5G modes.

Test sample description

Description of product ..... :	The device is a Telematics Control Unit with eCall technologies, used in automotive, equipped with eCall modem. The project name TCAM2 has the meaning “Telematic Connectivity Antenna Module” and thus describes the key features of this device as Communication and Data Interface. This unit was designed for automotive usage and contains the following features: GSM/UMTS/LTE/5G, BTLE and TPMS receiver.		
Software version..... :	04-08-2022-master-TCAM2-A_Homologation		
Hardware version ..... :	D0		
Mounting position ..... :	☐	Table top equipment	
	☐	Wall/Ceiling mounted equipment	
	☐	Equipment used next to the ear	
	☐	Hand-held equipment	
	☒	Other: Automotive telematics control unit	
Accessories (not part of the test item)..... :	Description	Type	Manufacturer
	Charging adapter	---	
	USB cable	---	

Identification of the client

HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH

BECKER-GOERING-STR. 16; 76307 KARLSBAD GERMANY

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2022-07-26
Date (finish)	2022-11-02

Document history

Report number	Date	Description
68365RAN.002	2022-11-30	First release

Environmental conditions

Date	Max. Temp. ºC	Min. Temp. ºC	Max. Hum. %	Min. Hum. %	Limit
From 2022-07-26 to 2022-11-02	24.98	20.22	69.69	38.59	18-25 ºC, 30-70%

Remarks and comments

1. Testing of GPRS EDGE mode is not required according to test reductions mentioned in FCC OET KDB 941225 D01 3G SAR Procedures, paragraph “5. GSM, GPRS and EDGE”
2. Testing of HSDPA/HSPA/HSPA+/DC-HSPA modes are not required according to paragraph “2.1 3G SAR test reduction procedure” mentioned in FCC OET KDB 941225 D01 3G SAR Procedures.
3. Testing of Bluetooth mode is not required according to FCC OET KDB D01 General RF Exposure Guidance v06, paragraph “4.3.1. Standalone SAR test exclusion considerations”.
4. References

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093 and the following FCC Published RF exposure KDB procedures:

- FCC OET KDB 447498 D01 General RF Exposure Guidance v06 (October 2015)
- FCC OET KDB 865664 D01 - SAR Measurement Requirements for 100 MHz to 6 GHz v01r04 (August 2015).
- FCC OET KDB 865664 D02 RF Exposure Reporting v01r02 (October 2015)
- FCC OET KDB 941225 D01 3G SAR Procedures v03r01 (October 2015).
- FCC OET KDB 941225 D05 SAR for LTE Devices v02r05 (October 2015).
- FCC OET KDB 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02 (October 2015).
- TCB Workshop Nov. 2017, TCB Workshop October 2018, TCB Workshop October 2020 and TCB Workshop February 2021.

5. LTE Rel.10 and 5G NR FR1 testing method and procedure for the module was consulted and approved through FCC KDB inquiry.
6. Only the plots of the highest reported SAR for each test position and mode/band are included in appendix C.
7. The tests have been performed by the technical personnel: Francisco J. Sánchez and Ismael Gamarro.
8. The instrumentation utilized to perform the tests covered in this test report is listed in the following table:

Equipment	NC
Dosimetric E-field probe SPEAG EX3DV4	6125
Dosimetric E-field probe SPEAG ES3DV3	3431
Data acquisition device SPEAG DAE4	3430
Data acquisition device SPEAG DAE4	8876
SPEAG Mounting Device for Laptop and Body-Worn Transmitters	3526
Oval flat phantom SPEAG ELI 4	3525
Electro-optical converter SPEAG EOCip-60 SE UMS 018 BB	8902
Robot Stäubli TX60L	8867
Robot controller STÄUBLI CS8C	8894
Measurement server SPEAG DASY6 SE UMS 028 CA	8895
SAR measurement software SPEAG cDASY6 16.2.2.1588	8898
Head Tissue Equivalent Liquid for 750 MHz band	3920
Head Tissue Equivalent Liquid for 835 MHz band	3631
Head Tissue Equivalent Liquid for 900 MHz band	3631
Head Tissue Equivalent Liquid for 1700 MHz band	6028
Head Tissue Equivalent Liquid for 1900 MHz band	8844
Head Tissue Equivalent Liquid for 2000 MHz band	4173
Head Tissue Equivalent Liquid for 2300 MHz band	4173
Head Tissue Equivalent Liquid for 2600 MHz band	4173
Head Tissue Equivalent Liquid for 3500 - 5800 MHz band	9450
750 MHz dipole validation kit SPEAG D750V3	3919
900 MHz dipole validation kit SPEAG D900V2	3426
1800 MHz dipole validation kit SPEAG D1800V2	3427
2000 MHz dipole validation kit SPEAG D2000V2	3428
2300 MHz dipole validation kit SPEAG D2300V2	8148
2600 MHz dipole validation kit SPEAG D2600V2	3527
3300 MHz dipole validation kit SPEAG D3300V2	8761
3500 MHz dipole validation kit SPEAG D3500V2	8762
3700 MHz dipole validation kit SPEAG D3700V2	8763
4200 MHz dipole validation kit SPEAG D4200V2	8765
Vector network analyzer Agilent FieldFox N9923A	4482
Dielectric probe kit SPEAG DAK-3.5	4171
SPEAG DAK software V1.10.325.10	4859
RF Generator R&S SMU200	3346
Power amplifier MITEQ AMF-4D-00400600-50-30P	3485
DC Power supply Agilent U8002A	4835
Dual directional coupler HP 778D	1084
Dual directional coupler NARDA 4227-16	3630
Power sensor Agilent E9300A	4391
Power sensor Agilent E9300A	4392
Power meter Agilent E4419B	4393
Power sensor DC 50 MHz to 18 GHz R&S model NRP-Z81	4164
Digital thermometer LKM Electronics model DTM300-Spezial	4170
Temperature and humidity probe HUMIDIPROBE Pico Technology	3453
Universal Radio Communication Tester R&S CMU 200	2827
Wideband Radio Communication Tester R&S CMW 500	3934
Wideband Radio Communication Tester R&S CMW 500	4804
Wideband Radio Communication Tester R&S CMW 500	8849
Wideband Radio Communication Tester Keysight E7515A UXM	8066
Wideband Radio Communication Tester R&S CMW 500	8922
Wideband Radio Communication Tester R&S CMX 500	8923

Testing verdicts

Not applicable :	N/A
Pass :	P
Fail :	F
Not measured :	N/M

Summary

FCC 47CFR Part 2.1093	VERDICT			
	N/A	P	F	NM
GSM 850		P		
GSM 1900		P		
WCDMA II		P		
WCDMA IV		P		
WCDMA V		P		
LTE 2		P		
LTE 4		P		
LTE 5		P		
LTE 7		P		
LTE 10		P		
LTE 12		P		
LTE 13		P		
LTE 17		P		
LTE 25		P		
LTE 26		P		
LTE 41		P		
LTE 42		P		
LTE 66		P		
LTE 71		P		
n2		P		
n5		P		
n7		P		
n25		P		
n38		P		
n41		P		
n66		P		
n71		P		
n77		P		
n78		P		
Bluetooth		P[1]		
1: Technology not subject to testing. Verdict has been determined through RF Exposure assessment (see Appendix B, 2.3 of this document for more details).				

Appendix A: Test configuration

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1. GENERAL INTRODUCTION

1.1. Application Standard

The Federal Communications Commission (FCC) sets the limits for General Population/Uncontrolled exposure to radio frequency electromagnetic fields for transmitting devices designed to be used within 20 centimetres of the body of the user under FCC 47 CFR Part 2.1093 - "Radiofrequency radiation exposure evaluation: portable devices", paragraph (d)(2).

1.2. General requirements

The SAR measurement has been performed continuing the following considerations and environment conditions:

The ambient temperature shall be in the range of 18ºC to 25ºC and the variation shall not exceed +/-2ºC during the test.

The ambient humidity shall be in the range of and 30% - 70%.

The device battery shall be fully charged before each measurement.

1.3. Measurement system requirements

The measurement system used for SAR tests fulfills the procedural and technical requirements described at the reference standards used.

1.4. Phantom requirements

The phantom model for body measurements is an elliptical open-top container with a flat bottom, with the following shape and dimensions:

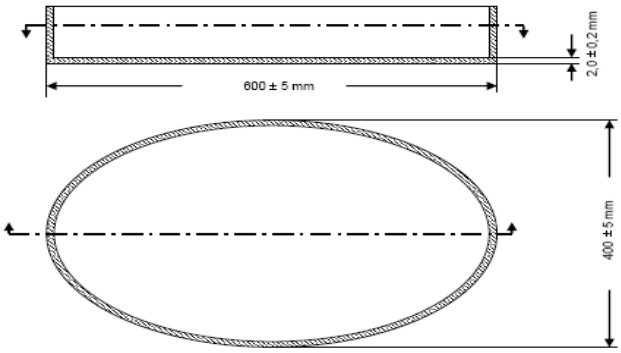


Figure 1: Proportions and shape of Phantom shell

1.5. Measurement Liquids requirements

The liquids used to simulate the human tissues, must fulfill the requirements of the dielectric properties required. These target dielectric properties are indicated into FCC OET KDB 865664 D01 Appendix A.

Frequency (MHz)	Head		Body	
	ε_r	σ (S/m)	ε_r	σ (S/m)
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800-2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5800	35.3	5.27	48.2	6.00

Table 1: Liquid material requirements

To minimize the effect of reflections on peak spatial-average SAR values, from the upper surface of the tissue equivalent liquid, the depth of the liquid should be at least 15 cm.

Dielectric porperties values of the Tissue Simulant Liquids used for SAR measurements are included in Appendix B, Section 3, of this document.

2. MEASUREMENT SYSTEM

2.1. Measurement System

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

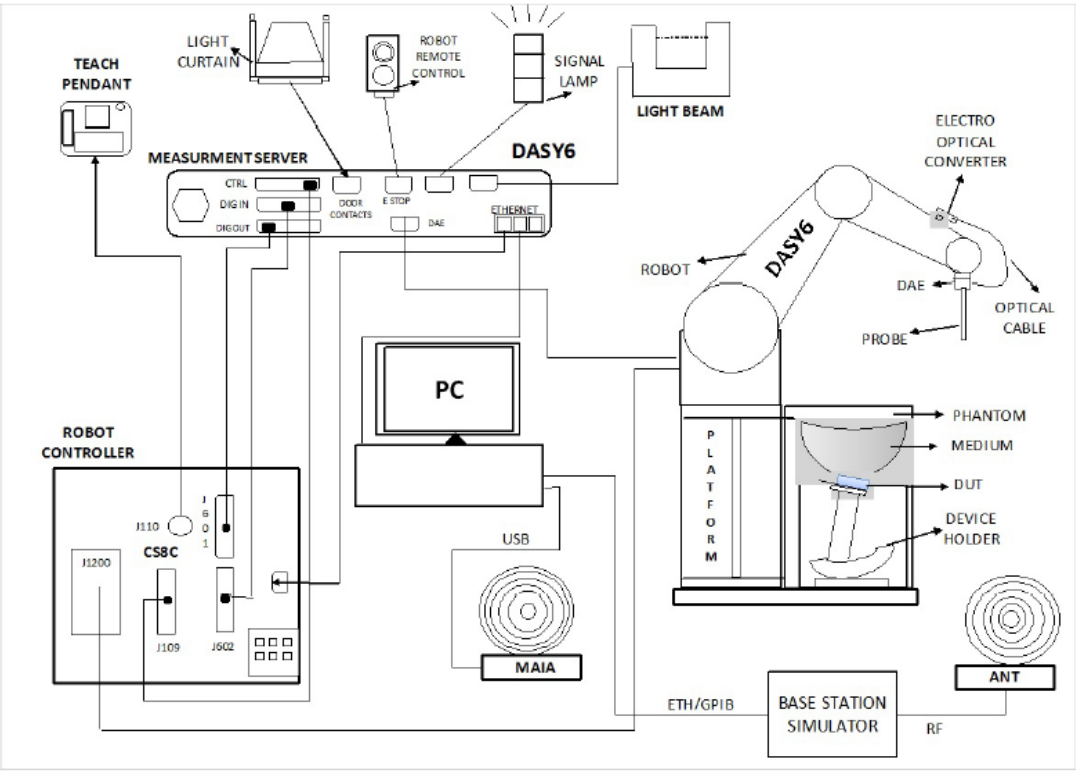
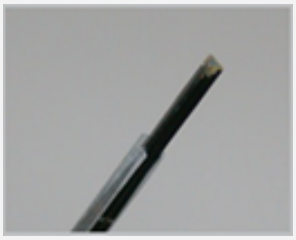


Figure 2: SAR Measurement system

- A standard high precision 6-axis robot (Stäubli TX=RX family) 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 the DASY 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.

	Model	EX3DV4
	**Construction**	Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).
	Frequency	10 MHz to > 6 GHz; Linearity: ± 0.2 dB (30 MHz to 6 GHz)
	Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 dB in TSL (rotation normal to probe axis)
	Dynamic Range	10 µW/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/g)
	Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1.0 mm

	Model	ES3DV3
	Construction	Symmetrical design with triangular core. Interleaved sensors. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).
	Frequency	10 MHz to 4 GHz; Linearity: ± 0.2 dB (30 MHz to 4 GHz)
	Directivity	± 0.2 dB in TSL (rotation around probe axis) ± 0.3 dB in TSL (rotation normal to probe axis)
	Dynamic Range	5 µW/g to > 100 mW/g Linearity: ± 0.2 dB
	Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm

	Model	DAE4
	Construction	Signal amplifier, multiplexer, A/D converter, and control logic. Serial optical link communication with DASY4/5 embedded system (fully remote controlled). Two-step probe touch detector for mechanical surface detection and emergency robot stop.
	Measurement Range	-100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV)
	Input Offset Voltage	< 5 µV (with auto zero)
	Input Resistance	200 MOhm
	Input Blas Current	< 50 fA

	Model	**ELI**
	Construction	Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.
	Material	Vinylester, glass fiber reinforced (VE-GF)
	Liquid Compatibility	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)
	Shell Thickness	2 ± 0.2 mm (bottom plate)
	Dimensions	Major axis: 600 mm, Minor axis: 400 mm
	Filling Volume	Approx. 30 liters
	Wooden Support	SPEAG standard phantom table

	Model	**Mounting Device for Laptop and Body-Worn Transmitters**
	Construction	In combination with the Twin SAM V5.0/V5.0c or ELI Phantoms, the Mounting Device (Body-worn) enables testing of transmitters devices according to IEC 62209-2 specifications. The device holder can be locked for positioning at flat phantom section.
	Material	Polyoxymethylene (POM), PET-G, Foam

Model	**System Validations Kits 450 MHz – 6 GHz**
Construction	Symmetrical dipole with I/4 balun. Enables measurement of feedpoint impedance with NWA. Matched for use near flat phantoms filled with tissue simulating solutions.
Frequency	450 MHz to 5800 MHz
Return Loss	20 dB at specified validation position

Dimensions (length and overall height in mm)

Product	Dipole length	Overall height
D450V3	290.0	330.0
D750V3	179.0	330.0
D900V2	148.5	340.0
D1800V2	72.5	300.0
D2000V2	65.0	300.0
D2300V2	56.3	290.0
D2450V2	52.0	290.0
D2600V2	49.2	290.0
D3300V2	38.0	285.0
D3500V2	37.0	285.0
D3700V2	34.7	285.0
D3900V2	32.0	280.0
D4200V2	30.1	280.0
D4600V2	27.0	280.0
D4900V2	25.0	280.0
D5GHzV2	20.6	300.0

2.2. Device Holder

The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source in 5mm distance, a positioning uncertainty of ±0.5mm would produce a SAR uncertainty of ±20%. An accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions, in which the devices must be measured, are defined by the standards.

The DASY Laptop Holder extension is lightweight and made of POM, PET-G acrylic glass and foam. It fits easily on the upper part of the Mounting Device in place of the phone positioner. The extension is fully compatible with the Twin-SAM and ELI phantoms.

2.3. Test Positions of device relative to body

The device is a Telematics control unit (TCU) with wireless technologies, which will be installed into a car roof in a fixed position, over the rear seat row at the center of the roof close to the rear window. This unit was designed for automotive usage and contains the following features: GSM, UMTS, LTE, 5G, GNSS, TMPS, SDARS and Bluetooth Low Energy (BTLE).

The equipment supports two internal antennas that can be used for transmission. The LTE 1 antenna is used to transmit into GSM, UMTS, LTE and 5G bands below 3GHz, and the LTE 2 antenna is used to transmit into 5G bands above 3 GHz.

Additionally, the device has another two cellulars antennas, LTE 3 and LTE 4 which are only used in reception mode, and also a BTLE antenna.

Once installed, according to the manufacturer, the closer distance between the LTE internal antennas and the head of the closest passenger will be 86.5 mm and the minimum distance between the BTLE internal antenna and the head of the closest passenger will be 118.0 mm.

The device has been tested placed at the centre of the flat phantom with its back side facing the flat phantom surface simulating the normal use conditions at a conservative testing distance of 40 mm according to manufacturer request.

2.4. Test to be performed

Test shall be performed for each test position previously described, using the channel producing the highest rated output power.

Additionally the other applicable test frequency channels must be measured for the test configuration providing the highest SAR for each applicable transmitting band.

2.5. Description of interpolation/extrapolation scheme

The local SAR inside the Phantom is measured using small dipole sensing elements inside a probe element. The probe tip must not be in contact with the Phantoms surface in order to minimise measurement errors, but the highest local SAR is obtained from measurements at a certain distances from the shell trough extrapolation. The accurate assessment of the maximum SAR averaged over 10 gr. requires a very fine resolution in the three dimensional scanned data array. Since the measurements have to be performed over a limited time, the measured data have to be interpolated to provide an array of sufficient resolution.

The interpolation of 2D area scan is used after the initial area scan, at a fixed distance from the Phantom shell wall. The initial scan data is collected with approx. 15 mm spatial resolution and this interpolation is used to find the location of the local maximum for positioning the subsequent 3D scanning within a 1mm resolution.

For the 3D scan, data is collected on a spatially regular 3D grid having 5 mm steps in both directions. After the data collection by the SAR probe, the data are extrapolated in the depth direction to assign values to points in the 3D array closer to the shell wall. A notional extrapolation value is also assigned to the first point outside the shell wall so that subsequent interpolation schemes will be applicable right up to the shell wall boundary.

2.6. Determination of the largest peak spatial-average SAR

To determine the maximum value of the peak spatial-average SAR of a DUT, all device positions, configurations and operational modes should be tested for each frequency band.

The averaging volume shall be chosen as 1gr. of contiguous tissue. The cubic volumes, over which the SAR measurements are averaged after extrapolation and interpolation, are chosen in order to include the highest values of local SAR.

The maximum SAR level for the DUT will be the maximum level obtained of the performed measurements indicated in the previous points.

2.7. System Check

Prior to the SAR measurements, system verification is done to verify the system accuracy. As IEEE 1528-2013, Annex paragraph 8.2.1 “System Check - Purpose” specifies, a complete SAR evaluation is done using a half-wavelength dipole as source with the frequency of the mid-band channel of the operating band, or within 10% of this channel, whichever is greater.

The measured 1 gr. and 10 gr. SAR should be within 10% of the expected target values specified in the calibration certificate of the dipole, for the specific tissue and frequency used.

3. UNCERTAINTY

According to FCC OET KDB 865664 D01, if the highest measured 1-g SAR is < 1.5 W/kg, SAR measurement uncertainty analysis is not required to be included into SAR report, but it has been included for ISO 17025 accreditation.

Uncertainty for 300 MHz – 3 GHz

ERROR SOURCES (source of uncertainty)	Uncertainty value (%)	Prob. Dist.	Div.	*ci (1g)*	*ci (10g)*	*Standard uncertainty (1g) (%)*	*Standard uncertainty (10g) (%)*
Measurement Equipment							
Probe Calibration	13.30%	N	2	1	1	6.65%	6.65%
Probe calibration drift	1.70%	R	√3	1	1	0.98%	0.98%
Axial Isotropy	4.70%	R	√3	0.7	0.7	1.90%	1.90%
Hemisfericall Isotropy	9.60%	R	√3	0.7	0.7	3.88%	3.88%
Boundary effect	1.00%	R	√3	1	1	0.58%	0.58%
Linearity	4.70%	R	√3	1	1	2.71%	2.71%
System Detection limits	0.25%	R	√3	1	1	0.14%	0.14%
Probe modulation response	4.80%	N	1	1	1	4.80%	4.80%
Readout electronics	0.30%	N	1	1	1	0.30%	0.30%
Response time	1.01%	R	√3	1	1	0.58%	0.58%
Integration time	2.60%	R	√3	1	1	1.50%	1.50%
RF Ambient noise	3.00%	R	√3	1	1	1.73%	1.73%
RF Ambient reflections	3.00%	R	√3	1	1	1.73%	1.73%
Probe positioner mech. restrictions	0.40%	R	√3	1	1	0.23%	0.23%
Probe positioning with respect to phantom shell	2.90%	R	√3	1	1	1.67%	1.67%
Max. SAR Eval.	2.00%	R	√3	1	1	1.15%	1.15%
Test Sample Related							
Device holder uncertainty	3.60%	N	1	1	1	3.60%	3.60%
Test sample positioning	2.90%	N	1	1	1	2.90%	2.90%
Drift of output power	2.50%	N	1	1	1	2.50%	2.50%
System Validation source (dipole)							
Deviation of experimental dipole from numerical dipole	0.00%	N	1	0	0	0.00%	0.00%
Input power and SAR drift measurement	2.00%	R	√3	1	1	1.15%	1.15%
Dipole axis to liquid distance	3.40%	R	√3	1	1	1.96%	1.96%
Phantom and Setup							
Phantom uncertainty (shape and thickness tolerances)	6.10%	R	√3	1	1	3.52%	3.52%
Algorithm for correcting SAR for deviations in permittivity and conductivity	1.90%	N	1	1	0.84	1.90%	1.60%
Liquid conductivity (meas.)	3.57%	N	1	0.78	0.71	2.79%	2.54%
Liquid permittivity (meas.)	3.57%	N	1	0.26	0.26	0.93%	0.93%
Liquid conductivity – temperature uncertainty	2.30%	R	√3	0.78	0.71	1.04%	0.94%
Liquid permittivity – temperature uncertainty	0.36%	R	√3	0.23	0.26	0.05%	0.05%
Combined standard uncertainty (Validation antenna)	$u_c = \sqrt{\sum_{1=1}^{m} c_i^2 \cdot u_i^2}$					9.88%	9.75%
Expanded uncertainty (confidence interval of 95%)	*ue =2.00 uc*					**19.77%**	**19.51%**
Combined standard uncertainty (DUT)	$u_c = \sqrt{\sum_{1=1}^{m} c_i^2 \cdot u_i^2}$					12.68%	12.58%
Expanded uncertainty (confidence interval of 95%)	*ue =2.00 uc*					**25.36%**	**25.16%**

Table 2: Uncertainty Assessment for 300 MHz - 3 GHz.

Uncertainty for 3 GHz – 6 GHz

ERROR SOURCES (source of uncertainty)	Uncertainty value (%)	Prob. Dist.	Div.	*ci (1g)*	*ci (10g)*	*Standard uncertainty (1g) (%)*	*Standard uncertainty (10g) (%)*
Measurement Equipment							
Probe Calibration	13.10%	N	2	1	1	6.55%	6.55%
Probe calibration drift	1.70%	R	√3	1	1	0.98%	0.98%
Axial Isotropy	4.70%	R	√3	0.7	0.7	1.90%	1.90%
Hemisfericall Isotropy	9.60%	R	√3	0.7	0.7	3.88%	3.88%
Boundary effect	2.00%	R	√3	1	1	1.15%	1.15%
Linearity	4.70%	R	√3	1	1	2.71%	2.71%
System Detection limits	0.25%	R	√3	1	1	0.14%	0.14%
Probe modulation response	4.80%	N	1	1	1	4.80%	4.80%
Readout electronics	0.30%	N	1	1	1	0.30%	0.30%
Response time	1.01%	R	√3	1	1	0.58%	0.58%
Integration time	2.60%	R	√3	1	1	1.50%	1.50%
RF Ambient noise	3.00%	R	√3	1	1	1.73%	1.73%
RF Ambient reflections	3.00%	R	√3	1	1	1.73%	1.73%
Probe positioner mech. restrictions	0.40%	R	√3	1	1	0.23%	0.23%
Probe positioning with respect to phantom shell	6.70%	R	√3	1	1	3.87%	3.87%
Max. SAR Eval.	4.00%	R	√3	1	1	2.31%	2.31%
Test Sample Related							
Device holder uncertainty	3.60%	N	1	1	1	3.60%	3.60%
Test sample positioning	2.90%	N	1	1	1	2.90%	2.90%
Drift of output power	2.50%	N	1	1	1	2.50%	2.50%
System Validation source (dipole)							
Deviation of experimental dipole from numerical dipole	0.00%	N	1	0	0	0.00%	0.00%
Input power and SAR drift measurement	2.00%	R	√3	1	1	1.15%	1.15%
Dipole axis to liquid distance	3.40%	R	√3	1	1	1.96%	1.96%
Phantom and Setup							
Phantom uncertainty (shape and thickness tolerances)	6.60%	R	√3	1	1	3.81%	3.81%
Algorithm for correcting SAR for deviations in permittivity and conductivity	1.90%	N	1	1	0.84	1.90%	1.60%
Liquid conductivity (meas.)	3.57%	N	1	0.78	0.71	2.79%	2.54%
Liquid permittivity (meas.)	3.57%	N	1	0.26	0.26	0.93%	0.93%
Liquid conductivity – temperature uncertainty	3.36%	R	√3	0.78	0.71	1.51%	1.38%
Liquid permittivity – temperature uncertainty	0.40%	R	√3	0.23	0.26	0.05%	0.06%
Combined standard uncertainty (Validation antenna)	$u_c = \sqrt{\sum_{1=1}^{m} c_i^2 \cdot u_i^2}$					10.81%	10.68%
Expanded uncertainty (confidence interval of 95%)	*ue =2.00 uc*					**21.62%**	**21.36%**
Combined standard uncertainty (DUT)	$u_c = \sqrt{\sum_{1=1}^{m} c_i^2 \cdot u_i^2}$					13.42%	13.31%
Expanded uncertainty (confidence interval of 95%)	*ue =2.00 uc*					**26.83%**	**26.62%**

Table 3: Uncertainty Assessment for 3 GHz – 6GHz.

4. SAR LIMIT

Having a worst-case measurement, the SAR limit is valid for general population/uncontrolled exposure.

The SAR values have to be averaged over a mass of 1 gr. (SAR 1 gr.) with the shape of a cube and averaged over a mass of 10 gr (Extremity SAR 10 gr). These levels could not exceed the values indicated in the application Standard:

Standard	Exposure	SAR	SAR Limit (W/kg)
FCC 47 CFR Part 1.1310, Paragraph (c)	General population/Uncontrolled	SAR 1-g.	1.6
FCC 47 CFR Part 1.1310, Paragraph (c)	General population/Uncontrolled Extremity	SAR 10-g.	4.0

Table 4: SAR limit

5. DEVICE UNDER TEST

5.1. Dimensions

Dimensions	Millimetres
Length x Width x Height	250.0 x 163.0 x 30.0

Table 5: DUT dimensions

5.2. Wireless Technology

Wireless Technology	Frequency Bands	Modes	Duty Cycle used for SAR testing
GSM	850/1900	- Voice (GMSK) - GPRS (GMSK, MS class 33) - EGPRS (8PSK, MS class 33)	- GMSK: 12.5 % - GPRS/EGPRS 1 slot: 12.5 % - GPRS/EGPRS 2 slot: 25.0 % - GPRS/EGPRS 3 slot: 37.5 % - GPRS/EGPRS 4 slot: 50.0 %
WCDMA	II/IV/V	- UMTS Rel. 99 - HSDPA (Rel. 5) - HSPA (Rel. 6) - HSPA+ (Rel. 7) - DC-HSDPA (Rel. 8)	- 100 %
LTE	2/4/5/7/10/12/13/17/25/ 26/41/42/66/71	- FDD and TDD Bands - CA Downlink - CA Uplink Intra-Band - CA Uplink Inter-Band - QPSK and 16-QAM	- FDD: 100 % - TDD: 62.9 %
5G	n2/n5/n7/n25/n38/n41/ n66/n71/n77/n78	- FDD and TDD Bands - SA mode - NSA-EN-DC mode	- FDD: 100 % - TDD: 100 % - TDD: 50 %
Bluetooth	2.4 GHz	- BTLE	- SAR Low-Power Exclusion compliant

Table 6: Supported modes

5.3. Simultaneous Transmission

Simultaneous transmission evaluation was performed according to FCC OET KDB 447498 D01 General RF Exposure Guidance v06 (October 2015). The detailed simultaneous transmission combination is:

RF Exposure Condition	Simultaneous transmission configurations
Head/Body	WWAN (LTE1/LTE2) + BTLE

Table 7: DUT simultaneous transmission

5.4. Antenna Location

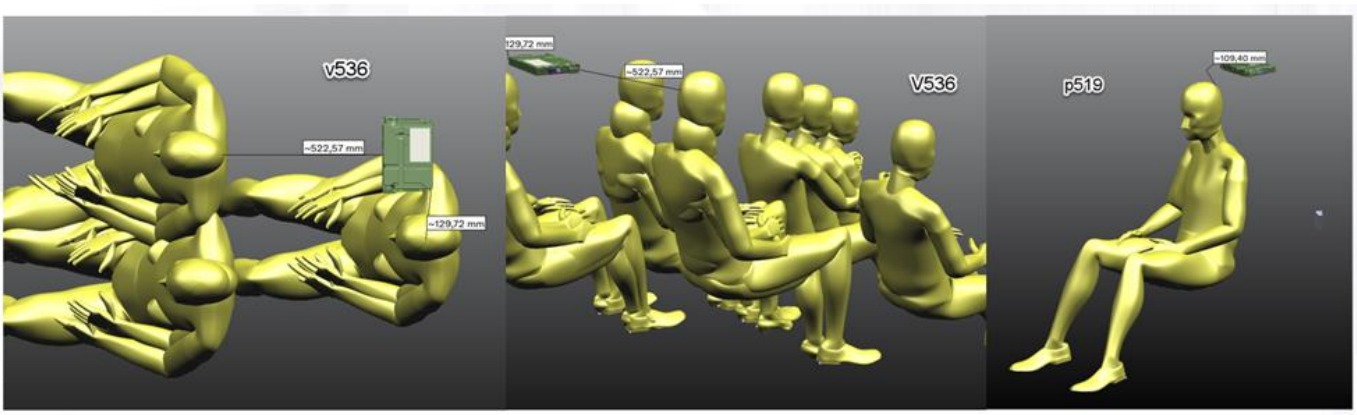


Figure 3: LTE 1, LTE and BTLE antenna location sketch.

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1. TEST CONDITIONS

1.1. Power supply (V):

Vn = 12.0 V
Type of power supply = DC Voltage from power supply.

1.2. Temperature (ºC):

Tn = +20.00 to +25.00
The subscript n indicates normal test conditions.

1.3. DUT information and test-site configurations

For all supported modes, the back face of the DUT was place facing the flat phantom surface using 40 mm test separation distance for all measurements except for 5G TDD bands, where a 0 mm test separation distance was used due to a very low measurements values.

1.4. Test signal, Output Power and Frequencies

The sample was put into operation by using an R&S CMW 500 as base station simulator for 2G, 3G and LTE transmitting technologies and an R&S CMX500 and a Keysight E7515A UXM was used to perform measurements for 5G transmitting technologies. The output power of the device was set to Power Control Level (PCL) maximum for all tests.

In all operating bands and test positions, the measurements were performed using the channel producing the highest rated output power. Additionally for those positions where the maximum averaged SAR was found, measurements were performed on the other applicable test frequency channels.

The maximum conducted time-averaged power of the device for each mode was measured with a power sensor R&S NRP-Z81.

The target power alignments, including tune-up tolerance, for RF components declared by the manufacturer for each supported technology are:

Technology / Mode	Band	Frequency (MHz)	Maximum Burst Averaged Output Power (Incl. Tune-Up) (dBm)	Maximum Frame Averaged Output Power (Incl. Tune-Up) (dBm)
GSM	850	824 - 849	35.0	26.0
GPRS 1TX	850	824 - 849	35.0	26.0
GPRS 2TX	850	824 - 849	35.0	29.0
GPRS 3TX	850	824 - 849	35.0	29.0
GPRS 4TX	850	824 - 849	35.0	29.0
GSM	1900	1850 - 1910	32.0	23.0
GPRS 1TX	1900	1850 - 1910	32.0	23.0
GPRS 2TX	1900	1850 - 1910	32.0	26.0
GPRS 3TX	1900	1850 - 1910	32.0	26.0
GPRS 4TX	1900	1850 - 1910	32.0	26.0

Technology / Mode	Band	Frequency (MHz)	Maximum Output Power (Incl. Tune-Up) (dBm)
UMTS	II	1850 - 1910	25.0
UMTS	IV	1710 - 1755	25.0
UMTS	V	826 - 847	25.0

Technology / Mode	Band	Frequency (MHz)	Maximum Output Power (Incl. Tune-Up) (dBm)
LTE	2	1850 - 1910	25.0
LTE	4	1710 - 1755	25.0
LTE	5	824 - 849	25.0
LTE	7	2500 - 2570	25.0
LTE	10	1710 - 1770	25.0
LTE	12	699 - 716	25.0
LTE	13	777 - 787	25.0
LTE	17	704 - 716	25.0
LTE	25	1850 - 1915	25.0
LTE	26	814 - 849	25.0
LTE	41	2496 - 2690	25.0
LTE	66	1710 - 1780	25.0
LTE	71	663 - 698	25.0

LTE CA Uplink Combination	PCC Band	Maximum Output Power (Incl. Tune-Up) (dBm)
5B	LTE 5	25.0
7C	LTE 7	25.0
41C	LTE 41	25.0
66B	LTE 66	25.0
66C	LTE 66	25.0

Technology / Mode	Band	Frequency (MHz)	Maximum Output Power (Incl. Tune-Up) (dBm)
5G SA	n2	1850 - 1910	25.0
	n5	824 - 849	25.0
	n7	2500 - 2570	25.0
	n25	1850 - 1915	25.0
	n38	2570 - 2620	25.0
	n41	2496 - 2690	25.0
	n66	1710 - 1780	25.0
	n71	663 - 698	25.0
	n77	3450 - 3980	25.0
	n78	3300 - 3800	25.0

Technology / Mode	Band Combination	Maximum Output Power (Incl. Tune-Up) (dBm)
5G NSA	2_n5	25.0-25.0
	2_n71	25.0-25.0
	2_n78	25.0-25.0
	5_n66	25.0-25.0
	5_n78	25.0-25.0
	7_n78	25.0-25.0
	12_n66	25.0-25.0
	26_n41	25.0-25.0
	26_n77	25.0-25.0
	26_n78	25.0-25.0
	41_n77	25.0-25.0
	41_n78	25.0-25.0
	66_n5	25.0-25.0
	66_n71	25.0-25.0
	66_n78	25.0-25.0

Maximum Output Power (dBm)	
Band	**Bluetooth LE**
2.4 GHz	5.0

2. CONDUCTED AVERAGE POWER MEASUREMENTS

2.1. Cellular Antenna LTE1

2.1.1. GSM/GPRS/EGPRS Bands

- GSM 850: For voice mode PCL 5 was set to allow max power transmission.

GSM 850 - Average Output Power					
Channel Number	Frequency (MHz)	Frame Average Output Power (dBm)	Average Burst Output Power (dBm)	PCL	Modulation
128	824.2	23.19	32.2	5	GMSK
190	836.6	23.29	32.3	5	GMSK
251	848.8	23.02	32.1	5	GMSK

- GPRS 850: For data mode, PCL 5, CS1 coding scheme and Gamma 3 were set to allow DUT's max power transmission for each slot.

GPRS 850 - Frame Average Output Power							
Channel Number	Frequency (MHz)	Power (dBm)				PCL	Modulation
		1 Slot	2 Slots	3 Slots	4 Slots		
128	824.2	22.86	23.40	23.01	22.66	5	GMSK-CS1
190	836.6	23.15	23.57	23.15	22.95	5	GMSK-CS1
251	848.8	22.86	23.60	23.17	22.87	5	GMSK-CS1

GPRS 850 - Average Burst Output Power							
Channel Number	Frequency (MHz)	Power (dBm)				PCL	Modulation
		1 Slot	2 Slots	3 Slots	4 Slots		
128	824.2	31.9	29.4	27.3	25.7	5	GMSK-CS1
190	836.6	32.2	29.6	27.4	26.0	5	GMSK-CS1
251	848.8	31.9	29.6	27.4	25.9	5	GMSK-CS1

- EGPRS 850: For data mode, PCL 8, MCS5 coding scheme and Gamma 6 were set to allow DUT's max power transmission for each slot.

EDGE 850 - Frame Average Output Power							
Channel Number	Frequency (MHz)	Power (dBm)				PCL	Modulation
		1 Slot	2 Slots	3 Slots	4 Slots		
128	824.2	17.21	18.57	18.06	17.82	8	8PSK-MCS5
190	836.6	17.60	18.85	18.45	18.21	8	8PSK-MCS5
251	848.8	17.72	18.86	18.24	18.19	8	8PSK-MCS5

EDGE 850 - Average Burst Output Power							
Channel Number	Frequency (MHz)	Power (dBm)				PCL	Modulation
		1 Slot	2 Slots	3 Slots	4 Slots		
128	824.2	26.2	24.6	22.3	20.8	8	8PSK-MCS5
190	836.6	26.6	24.9	22.7	21.2	8	8PSK-MCS5
251	848.8	26.8	24.9	22.5	21.2	8	8PSK-MCS5

- GSM 1900: For voice mode PCL 0 was set to allow max power transmission.

GSM 1800 - Average Output Power					
Channel Number	**Frequency (MHz)**	**Frame Average Output Power (dBm)**	**Average Burst OutputPower (dBm)**	**PCL**	**Modulation**
512	1850.2	20.11	29.1	0	GMSK
661	1880.0	19.77	28.8	0	GMSK
810	1909.8	19.32	28.4	0	GMSK

- GPRS 1900: For data mode, PCL 0, CS1 coding scheme and Gamma 3 were set to allow max power transmission for each slot.

GPRS 1900 - Frame Average Output Power							
Channel Number	**Frequency (MHz)**	**Power (dBm)**				**PCL**	**Modulation**
		1 Slot	**2 Slots**	**3 Slots**	**4 Slots**		
512	1850.2	19.92	18.62	19.25	19.35	0	GMSK-CS1
661	1880.0	19.72	18.15	18.59	18.81	0	GMSK-CS1
810	1909.8	19.07	17.57	18.02	18.12	0	GMSK-CS1

GPRS 1900 - Average Burst Output Power							
Channel Number	**Frequency (MHz)**	**Power (dBm)**				**PCL**	**Modulation**
		1 Slot	**2 Slots**	**3 Slots**	**4 Slots**		
512	1850.2	29.0	24.6	23.5	22.4	0	GMSK-CS1
661	1880.0	28.8	24.2	22.9	21.8	0	GMSK-CS1
810	1909.8	28.1	23.6	22.3	21.1	0	GMSK-CS1

- EGPRS 1900: For data mode, PCL 2, MCS5 coding scheme and Gamma 5 were set to allow max power transmission for each slot.

EDGE 1900 - Frame Average Output Power							
Channel Number	**Frequency (MHz)**	**Power (dBm)**				**PCL**	**Modulation**
		1 Slot	**2 Slots**	**3 Slots**	**4 Slots**		
512	1850.2	15.13	15.63	15.36	15.15	2	8PSK-MCS5
661	1880.0	14.85	15.29	15.14	14.82	2	8PSK-MCS5
810	1909.8	14.28	14.72	14.41	14.23	2	8PSK-MCS5

EDGE 1900 - Average Burst Output Power							
Channel Number	**Frequency (MHz)**	**Power (dBm)**				**PCL**	**Modulation**
		1 Slot	**2 Slots**	**3 Slots**	**4 Slots**		
512	1850.2	24.2	21.7	19.6	18.2	2	8PSK-MCS5
661	1880.0	23.9	21.3	19.4	17.8	2	8PSK-MCS5
810	1909.8	23.3	20.7	18.7	17.2	2	8PSK-MCS5

2.1.2. WCDMA/HSDPA/HSPA/HSPA+ Bands

- WCDMA: The DUT supports power Class 3, with a nominal maximum output power of 24 dBm. Tests were completed according to 3GPP TS34.121, section 5.

Mode	Subtest	Rel99
WCDMA	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2Kbps RMC
	Power Control Algorithm	Algorithm2
	βc/βd	8/15

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)
FDD II 1900	WCDMA	9262	1852.4	23.45
FDD II 1900	WCDMA	9400	1880.0	22.89
FDD II 1900	WCDMA	9538	1907.6	22.82

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)
FDD IV 1700	WCDMA	1312	1712.4	22.83
FDD IV 1700	WCDMA	1412	1732.6	23.12
FDD IV 1700	WCDMA	1512	1752.6	23.31

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)
FDD V 850	WCDMA	4132	826.4	23.15
FDD V 850	WCDMA	4182	836.4	23.11
FDD V 850	WCDMA	4233	846.6	23.00

- HSDPA:

Mode	Subtest	1	2	3	4
HSDPA	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2Kbps RMC			
	HSDPA FRC	H-Set1			
	HSUPA Test	HSUPA Loopback			
	Power Control Algorithm	Algorithm 2			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	Bd (SF)	64	64	64	64
	βc/βd	2/15	12/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR	0	0	0.5	0.5
	Dack	8			
	Dnak	8			
	Ack-Nack repetition factor	3			
	DCQI	8			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	Ahs =βhs/βc	30/15			

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)			
				Subtest			
				1	2	3	4
FDD II 1900	HSDPA	9262	1852.4	23.15	22.53	22.22	21.38
FDD II 1900	HSDPA	9400	1880.0	22.76	22.08	21.78	20.94
FDD II 1900	HSDPA	9538	1907.6	22.59	21.97	21.67	20.86

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)			
				Subtest			
				1	2	3	4
FDD IV 1700	HSDPA	1312	1712.4	22.64	21.90	21.86	20.84
FDD IV 1700	HSDPA	1412	1732.6	23.11	22.13	22.14	21.18
FDD IV 1700	HSDPA	1512	1752.6	23.03	22.35	22.15	21.11

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)			
				Subtest			
				1	2	3	4
FDD V 850	HSDPA	4132	826.4	22.95	22.23	22.15	21.00
FDD V 850	HSDPA	4182	836.4	23.01	22.26	22.02	21.13
FDD V 850	HSDPA	4233	846.6	22.85	22.20	22.00	21.54

- HSPA:

Mode	Subtest	1	2	3	4	5
HSPA	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2Kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm 2				
	βc	11/15	6/15	15/15	2/15	15/15
	βd	15/15	15/15	9/15	15/15	15/15
	βec	209/225	12/15	30/15	2/15	24/15
	βc/βd	11/15	6/15	15/9	2/15	15/15
	βhs	22/15	12/15	30/15	4/15	30/15
	βed	1309/225	94/75	47/15	56/75	134/15
	MPR (dB)	0	2	1	2	0
	Dack	8				
	Dnak	8				
	Ack-Nack repetition factor	3				
	DCQI	8				
	CQI Feedback	4ms				
	CQI Repetition Factor	2				
	Ahs =βhs/βc	30/15				
	AG Index	20	12	15	17	21
	ETFCI	75	67	92	71	81
	Associated Max UL DataRate Kbps	242.1	174.9	482.8	205.8	308.9

Band	Mode	CH	Frequency (MHz)	Average Output Power (dBm)				
				Subtest				
				1	2	3	4	5
FDD II 1900	HSPA	9262	1852.4	23.23	22.18	23.44	22.23	23.45
FDD II 1900	HSPA	9400	1880.0	22.81	21.78	22.95	21.86	22.96
FDD II 1900	HSPA	9538	1907.6	22.78	21.83	22.87	21.85	22.92

Band	Mode	CH	Frequency (MHz)	Average Output Power (dBm)				
				Subtest				
				1	2	3	4	5
FDD IV 1700	HSPA	1312	1712.4	22.86	21.88	22.85	21.90	22.90
FDD IV 1700	HSPA	1412	1732.6	23.05	22.14	23.15	21.94	23.15
FDD IV 1700	HSPA	1512	1752.6	23.14	22.28	23.22	22.30	23.26

Band	Mode	CH	Frequency (MHz)	Average Output Power (dBm)				
				Subtest				
				1	2	3	4	5
FDD V 850	HSPA	4132	826.4	23.22	21.22	23.17	21.24	23.17
FDD V 850	HSPA	4182	836.4	23.18	21.38	23.11	21.33	23.13
FDD V 850	HSPA	4233	846.6	23.13	21.30	23.01	21.27	22.99

- HSPA+

Mode	Subtest	1
HSPA+	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2Kbps RMC
	HSDPA FRC	H-Set1
	HSUPA Test	HSUPA Loopback
	Power Control Algorithm	Algorithm 2
	βc	1
	βd	0
	βec	30/15
	βhs	30/15
	βed (2xSF2)	βed1: 30/15
		βed2: 30/15
	βed (2xSF4)	βed3: 24/15
		βed4: 24/15
	CM (dB)	3.5
	MPR (dB)	2.5
	D E-DPCCH	7
	AG Index	14
	ETFCI	105

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)
FDD II 1900	HSPA+	9262	1852.4	23.30
FDD II 1900	HSPA+	9400	1880.0	22.84
FDD II 1900	HSPA+	9538	1907.6	22.87

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)
FDD IV 1700	HSPA+	1312	1712.4	22.93
FDD IV 1700	HSPA+	1412	1732.6	23.16
FDD IV 1700	HSPA+	1512	1752.6	23.41

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)
FDD V 850	HSPA+	4132	826.4	23.21
FDD V 850	HSPA+	4182	836.4	23.23
FDD V 850	HSPA+	4233	846.6	23.06

2.1.3. LTE Bands

2.1.3.1. LTE Bands

LTE MPR is permanently implemented for the device. A-MPR was disabled for all SAR tests. The following power reductions are used for higher RB allocations and 16-QAM modulation:

Modulation	Channel bandwidth / Transmission bandwidth configuration [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

- <u>LTE B2</u>

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1860.0 MHz	**1880.0 MHz**	**1900.0 MHz**
LTE B2	20 MHz	QPSK	1RB Low	0	21.97	22.05	22.07
			1RB Mid	0	21.72	22.01	22.24
			1RB High	0	22.01	22.04	22.12
			50% Low	1	21.04	21.14	21.19
			50% Mid	1	21.07	21.11	21.17
			50% High	1	21.05	21.12	21.21
			100%	1	21.06	21.12	21.17
		16-QAM	1RB Low	1	21.13	21.26	21.39
			1RB Mid	1	21.33	21.45	21.44
			1RB High	1	21.21	21.38	21.40
			50% Low	2	20.13	20.22	20.31
			50% Mid	2	20.14	20.16	20.28
			50% High	2	20.16	20.13	20.27
			100%	2	20.13	20.15	20.27
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1857.5 MHz	**1880.0 MHz**	**1902.5 MHz**
LTE B2	15 MHz	QPSK	1RB Low	0	21.99	22.11	22.04
			1RB Mid	0	22.02	22.14	21.98
			1RB High	0	22.05	22.03	22.02
			50% Low	1	21.06	21.10	21.08
			50% Mid	1	21.09	21.13	21.12
			50% High	1	21.11	21.10	21.12
			100%	1	21.08	21.13	21.14
		16-QAM	1RB Low	1	21.30	21.38	21.45
			1RB Mid	1	21.18	21.40	21.32
			1RB High	1	21.17	21.24	21.37
			50% Low	2	20.05	20.20	20.17
			50% Mid	2	20.09	20.18	20.14
			50% High	2	20.15	20.15	20.16
			100%	2	20.11	20.15	20.20

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1855.0 MHz	**1880.0MHz**	**1905.0 MHz**
LTE B2	10 MHz	QPSK	1RB Low	0	21.97	22.03	21.97
			1RB Mid	0	21.91	21.94	21.91
			1RB High	0	22.05	21.98	22.01
			50% Low	1	21.08	21.09	21.06
			50% Mid	1	21.08	21.07	21.06
			50% High	1	21.10	21.06	21.03
			100%	1	21.09	21.09	21.08
		16-QAM	1RB Low	1	21.26	21.20	21.22
			1RB Mid	1	21.15	21.17	21.45
			1RB High	1	21.23	21.12	21.30
			50% Low	2	20.08	20.12	20.15
			50% Mid	2	20.15	20.13	20.10
			50% High	2	20.20	20.15	20.12
			100%	2	20.15	20.15	20.16
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1852.5 MHz	**1880.0 MHz**	**1907.5 MHz**
LTE B2	5 MHz	QPSK	1RB Low	0	22.03	21.99	21.92
			1RB Mid	0	22.12	21.87	22.00
			1RB High	0	22.10	21.99	21.94
			50% Low	1	21.12	21.07	21.00
			50% Mid	1	21.09	21.06	21.02
			50% High	1	21.11	21.09	20.99
			100%	1	21.14	21.07	21.01
		16-QAM	1RB Low	1	21.32	21.13	21.15
			1RB Mid	1	21.16	21.43	21.26
			1RB High	1	21.31	21.44	21.17
			50% Low	2	20.12	20.08	20.10
			50% Mid	2	20.19	20.12	20.08
			50% High	2	20.21	20.14	20.07
			100%	2	20.19	20.13	20.08

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1851.5 MHz	**1880.0 MHz**	**1908.5 MHz**
LTE B2	3 MHz	QPSK	1RB Low	0	21.94	21.97	21.97
			1RB Mid	0	22.01	22.07	21.78
			1RB High	0	21.98	22.12	21.99
			50% Low	1	21.12	21.11	21.01
			50% Mid	1	21.13	21.08	20.96
			50% High	1	21.09	21.04	20.97
			100%	1	21.10	21.07	20.99
		16-QAM	1RB Low	1	21.37	21.28	21.05
			1RB Mid	1	21.31	21.14	21.21
			1RB High	1	21.42	21.18	21.20
			50% Low	2	20.20	20.15	20.07
			50% Mid	2	20.19	20.05	20.16
			50% High	2	20.22	20.08	20.10
			100%	2	20.17	20.13	20.12
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1850.7 MHz	**1880.0 MHz**	**1909.3 MHz**
LTE B2	1.4 MHz	QPSK	1RB Low	0	21.89	21.93	21.92
			1RB Mid	0	21.95	21.83	21.88
			1RB High	0	21.98	21.96	21.90
			50% Low	1	22.01	22.00	21.98
			50% Mid	1	22.00	21.99	21.92
			50% High	1	21.94	21.92	21.92
			100%	1	20.94	20.92	20.88
		16-QAM	1RB Low	1	21.02	20.99	20.96
			1RB Mid	1	21.07	21.15	21.14
			1RB High	1	21.20	21.17	20.97
			50% Low	2	21.12	21.03	21.05
			50% Mid	2	21.14	20.92	20.98
			50% High	2	21.15	20.85	20.97
			100%	2	20.00	19.90	19.94

- **LTE B4**

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1720.0 MHz	**1732.5 MHz**	**1745.0 MHz**
LTE B4	20 MHz	QPSK	1RB Low	0	22.23	22.35	22.27
			1RB Mid	0	22.00	22.24	22.43
			1RB High	0	22.25	22.28	22.27
			50% Low	1	21.32	21.43	21.39
			50% Mid	1	21.32	21.41	21.37
			50% High	1	21.33	21.40	21.36
			100%	1	21.30	21.40	21.35
		16-QAM	1RB Low	1	21.53	21.70	21.73
			1RB Mid	1	21.26	21.75	21.95
			1RB High	1	21.32	21.65	21.92
			50% Low	2	20.37	20.51	20.47
			50% Mid	2	20.38	20.47	20.41
			50% High	2	20.43	20.49	20.40
			100%	2	20.35	20.46	20.45
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1717.5 MHz	**1732.5 MHz**	**1747.5 MHz**
LTE B4	15 MHz	QPSK	1RB Low	0	22.22	22.36	22.24
			1RB Mid	0	22.23	22.24	22.24
			1RB High	0	22.20	22.26	22.26
			50% Low	1	21.23	21.40	21.34
			50% Mid	1	21.24	21.36	21.31
			50% High	1	21.26	21.39	21.31
			100%	1	21.28	21.44	21.33
		16-QAM	1RB Low	1	21.39	21.84	21.46
			1RB Mid	1	21.45	21.55	21.66
			1RB High	1	21.54	21.43	21.53
			50% Low	2	20.29	20.41	20.34
			50% Mid	2	20.28	20.41	20.36
			50% High	2	20.27	20.43	20.35
			100%	2	20.30	20.41	20.36

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1715.0 MHz	**1732.5MHz**	**1750.0 MHz**
LTE B4	10 MHz	QPSK	1RB Low	0	22.16	22.42	22.23
			1RB Mid	0	21.99	22.17	22.25
			1RB High	0	22.14	22.36	22.22
			50% Low	1	21.25	21.40	21.31
			50% Mid	1	21.21	21.41	21.28
			50% High	1	21.23	21.36	21.24
			100%	1	21.26	21.40	21.29
		16-QAM	1RB Low	1	21.46	21.50	21.36
			1RB Mid	1	21.58	21.53	21.59
			1RB High	1	21.43	21.58	21.42
			50% Low	2	20.32	20.44	20.37
			50% Mid	2	20.26	20.43	20.37
			50% High	2	20.26	20.40	20.32
			100%	2	20.30	20.40	20.36
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1712.5 MHz	**1732.5MHz**	**1752.5 MHz**
LTE B4	5 MHz	QPSK	1RB Low	0	22.22	22.28	22.26
			1RB Mid	0	22.23	22.17	22.33
			1RB High	0	22.17	22.26	22.32
			50% Low	1	21.20	21.37	21.25
			50% Mid	1	21.23	21.35	21.28
			50% High	1	21.20	21.34	21.27
			100%	1	21.22	21.37	21.27
		16-QAM	1RB Low	1	21.29	21.55	21.31
			1RB Mid	1	21.41	21.55	21.44
			1RB High	1	21.45	21.55	21.40
			50% Low	2	20.23	20.37	20.30
			50% Mid	2	20.31	20.46	20.30
			50% High	2	20.30	20.48	20.29
			100%	2	20.26	20.47	20.35

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1711.5 MHz	**1732.5MHz**	**1753.5 MHz**
LTE B4	3 MHz	QPSK	1RB Low	0	22.10	22.32	22.31
			1RB Mid	0	22.15	22.39	22.07
			1RB High	0	22.09	22.41	22.31
			50% Low	1	21.27	21.41	21.28
			50% Mid	1	21.22	21.37	21.20
			50% High	1	21.23	21.39	21.22
			100%	1	21.27	21.38	21.27
		16-QAM	1RB Low	1	21.31	21.47	21.36
			1RB Mid	1	21.37	21.34	21.33
			1RB High	1	21.45	21.36	21.35
			50% Low	2	20.34	20.49	20.31
			50% Mid	2	20.26	20.41	20.38
			50% High	2	20.26	20.43	20.40
			100%	2	20.30	20.42	20.31
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1710.7 MHz	**1732.5MHz**	**1754.3 MHz**
LTE B4	1.4 MHz	QPSK	1RB Low	0	22.13	22.25	22.17
			1RB Mid	0	22.06	22.26	22.13
			1RB High	0	22.16	22.29	22.22
			50% Low	1	22.18	22.30	22.24
			50% Mid	1	22.13	22.23	22.17
			50% High	1	22.10	22.23	22.13
			100%	1	21.09	21.28	21.16
		16-QAM	1RB Low	1	21.24	21.40	21.28
			1RB Mid	1	21.43	21.42	21.37
			1RB High	1	21.35	21.52	21.33
			50% Low	2	21.23	21.34	21.36
			50% Mid	2	21.12	21.41	21.33
			50% High	2	21.08	21.36	21.24
			100%	2	20.16	20.29	20.14

- **LTE B5**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					829.0 MHz	836.5 MHz	844.0 MHz
LTE B5	10 MHz	QPSK	1RB Low	0	21.75	21.62	21.46
			1RB Mid	0	21.70	21.33	21.53
			1RB High	0	21.68	21.53	21.51
			50% Low	1	20.75	20.57	20.51
			50% Mid	1	20.73	20.55	20.45
			50% High	1	20.73	20.54	20.49
			100%	1	20.72	20.54	20.49
		16-QAM	1RB Low	1	20.96	20.78	20.53
			1RB Mid	1	20.91	20.84	20.65
			1RB High	1	20.91	20.77	20.59
			50% Low	2	19.73	19.56	19.50
			50% Mid	2	19.77	19.59	19.46
			50% High	2	19.74	19.60	19.47
			100%	2	19.74	19.56	19.50
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					826.5 MHz	836.5 MHz	846.5 MHz
LTE B5	5 MHz	QPSK	1RB Low	0	21.84	21.47	21.49
			1RB Mid	0	21.76	21.35	21.49
			1RB High	0	21.80	21.51	21.53
			50% Low	1	20.78	20.54	20.49
			50% Mid	1	20.77	20.54	20.47
			50% High	1	20.78	20.54	20.52
			100%	1	20.76	20.53	20.49
		16-QAM	1RB Low	1	20.97	20.76	20.62
			1RB Mid	1	20.77	20.53	20.61
			1RB High	1	20.92	20.68	20.87
			50% Low	2	19.71	19.55	19.55
			50% Mid	2	19.73	19.56	19.50
			50% High	2	19.75	19.56	19.49
			100%	2	19.74	19.54	19.50

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					825.5 MHz	**836.5 MHz**	**847.4 MHz**
LTE B5	3 MHz	QPSK	1RB Low	0	21.70	21.48	21.55
			1RB Mid	0	21.42	21.50	21.38
			1RB High	0	21.70	21.60	21.63
			50% Low	1	20.80	20.54	20.54
			50% Mid	1	20.73	20.54	20.45
			50% High	1	20.70	20.54	20.45
			100%	1	20.73	20.46	20.47
		16-QAM	1RB Low	1	21.02	20.57	20.54
			1RB Mid	1	20.89	20.50	20.37
			1RB High	1	21.10	20.46	20.34
			50% Low	2	19.80	19.51	19.56
			50% Mid	2	19.76	19.53	19.52
			50% High	2	19.78	19.58	19.56
			100%	2	19.76	19.55	19.49
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					824.7 MHz	**836.5 MHz**	**848.2 MHz**
LTE B5	1.4 MHz	QPSK	1RB Low	0	21.74	21.45	21.44
			1RB Mid	0	21.77	21.34	21.48
			1RB High	0	21.78	21.52	21.47
			50% Low	1	21.70	21.46	21.41
			50% Mid	1	21.70	21.46	21.30
			50% High	1	21.68	21.39	21.36
			100%	1	20.76	20.45	20.44
		16-QAM	1RB Low	1	20.90	20.53	20.52
			1RB Mid	1	20.82	20.65	20.58
			1RB High	1	20.96	20.63	20.55
			50% Low	2	20.71	20.42	20.48
			50% Mid	2	20.75	20.56	20.31
			50% High	2	20.68	20.49	20.34
			100%	2	19.76	19.48	19.30

- **LTE B7**

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					2510.0 MHz	**2535.0 MHz**	**2560.0 MHz**
LTE B7	20 MHz	QPSK	1RB Low	0	22.14	22.00	21.47
			1RB Mid	0	22.03	21.78	21.61
			1RB High	0	22.31	21.74	21.49
			50% Low	1	21.27	21.02	20.52
			50% Mid	1	21.30	20.95	20.48
			50% High	1	21.37	20.88	20.53
			100%	1	21.31	20.99	20.56
		16-QAM	1RB Low	1	21.35	21.35	20.98
			1RB Mid	1	21.36	21.32	20.93
			1RB High	1	21.62	21.17	21.06
			50% Low	2	20.31	20.08	19.57
			50% Mid	2	20.36	19.99	19.50
			50% High	2	20.43	19.97	19.55
			100%	2	20.36	19.98	19.57
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					2507.5 MHz	**2535.0 MHz**	**2562.5 MHz**
LTE B7	15 MHz	QPSK	1RB Low	0	22.06	22.00	21.45
			1RB Mid	0	22.19	21.99	21.44
			1RB High	0	22.21	21.76	21.46
			50% Low	1	21.30	21.02	20.55
			50% Mid	1	21.30	20.96	20.54
			50% High	1	21.35	20.90	20.56
			100%	1	21.39	20.98	20.57
		16-QAM	1RB Low	1	21.42	21.21	20.69
			1RB Mid	1	21.59	21.07	20.78
			1RB High	1	21.63	20.97	20.80
			50% Low	2	20.29	20.10	19.53
			50% Mid	2	20.31	19.98	19.47
			50% High	2	20.37	19.91	19.49
			100%	2	20.34	19.98	19.50

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					2505.0 MHz	**2535.0 MHz**	**2565.0 MHz**
LTE B7	10 MHz	QPSK	1RB Low	0	22.15	21.93	21.36
			1RB Mid	0	22.03	21.75	21.48
			1RB High	0	22.18	21.75	21.47
			50% Low	1	21.23	20.93	20.42
			50% Mid	1	21.25	20.90	20.43
			50% High	1	21.27	20.87	20.44
			100%	1	21.27	20.89	20.48
		16-QAM	1RB Low	1	21.23	21.04	20.49
			1RB Mid	1	21.29	21.02	20.78
			1RB High	1	21.33	21.00	20.71
			50% Low	2	20.31	19.97	19.51
			50% Mid	2	20.32	19.98	19.47
			50% High	2	20.36	19.92	19.51
			100%	2	20.30	19.98	19.52
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					2502.5 MHz	**2535.0 MHz**	**2567.5 MHz**
LTE B7	5 MHz	QPSK	1RB Low	0	22.21	21.75	21.32
			1RB Mid	0	22.24	21.70	21.39
			1RB High	0	22.20	21.71	21.41
			50% Low	1	21.25	20.86	20.43
			50% Mid	1	21.25	20.82	20.41
			50% High	1	21.25	20.83	20.42
			100%	1	21.28	20.85	20.45
		16-QAM	1RB Low	1	21.39	21.03	20.55
			1RB Mid	1	21.55	21.11	20.66
			1RB High	1	21.55	21.06	20.62
			50% Low	2	20.30	19.89	19.46
			50% Mid	2	20.33	19.90	19.44
			50% High	2	20.37	19.90	19.48
			100%	2	20.31	19.88	19.49

- **LTE B10**

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1720.0 MHz	**1740.0 MHz**	**1760.0 MHz**
LTE B10	20 MHz	QPSK	1RB Low	0	22.23	22.20	22.21
			1RB Mid	0	22.06	22.17	22.35
			1RB High	0	22.27	22.39	22.19
			50% Low	1	21.33	21.43	21.27
			50% Mid	1	21.33	21.37	21.28
			50% High	1	21.35	21.35	21.26
			100%	1	21.32	21.42	21.22
		16-QAM	1RB Low	1	21.31	21.59	21.64
			1RB Mid	1	21.47	21.55	21.69
			1RB High	1	21.55	21.57	21.47
			50% Low	2	20.30	20.46	20.32
			50% Mid	2	20.36	20.42	20.31
			50% High	2	20.37	20.43	20.28
			100%	2	20.32	20.45	20.29
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1717.5 MHz	**1740.0 MHz**	**1762.5 MHz**
LTE B10	15 MHz	QPSK	1RB Low	0	22.10	22.34	22.20
			1RB Mid	0	22.09	22.33	22.16
			1RB High	0	22.19	22.37	22.09
			50% Low	1	21.24	21.43	21.26
			50% Mid	1	21.21	21.40	21.23
			50% High	1	21.26	21.40	21.22
			100%	1	21.24	21.46	21.23
		16-QAM	1RB Low	1	21.45	21.33	21.47
			1RB Mid	1	21.39	21.36	21.26
			1RB High	1	21.48	21.37	21.31
			50% Low	2	20.23	20.46	20.24
			50% Mid	2	20.24	20.41	20.23
			50% High	2	20.23	20.41	20.22
			100%	2	20.25	20.47	20.19

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1715.0 MHz	**1740.0 MHz**	**1765.0 MHz**
LTE B10	10 MHz	QPSK	1RB Low	0	22.19	22.32	22.20
			1RB Mid	0	22.06	22.17	22.21
			1RB High	0	22.17	22.33	22.17
			50% Low	1	21.28	21.40	21.21
			50% Mid	1	21.24	21.34	21.18
			50% High	1	21.25	21.36	21.16
			100%	1	21.26	21.41	21.21
		16-QAM	1RB Low	1	21.37	21.57	21.42
			1RB Mid	1	21.33	21.67	21.50
			1RB High	1	21.41	21.62	21.39
			50% Low	2	20.30	20.44	20.28
			50% Mid	2	20.32	20.46	20.24
			50% High	2	20.30	20.44	20.24
			100%	2	20.33	20.43	20.28
Band	**BW**	**Modulation**	**Mode**	**MPR**	Low CH	Mid CH	High CH
					1712.5 MHz	1740.0 MHz	1767.5 MHz
LTE B10	5 MHz	QPSK	1RB Low	0	22.11	22.26	22.13
			1RB Mid	0	22.21	22.28	22.06
			1RB High	0	22.15	22.23	22.12
			50% Low	1	21.18	21.35	21.17
			50% Mid	1	21.18	21.34	21.15
			50% High	1	21.21	21.36	21.16
			100%	1	21.21	21.35	21.16
		16-QAM	1RB Low	1	21.30	21.35	21.35
			1RB Mid	1	21.31	21.44	21.34
			1RB High	1	21.38	21.40	21.30
			50% Low	2	20.25	20.42	20.17
			50% Mid	2	20.26	20.46	20.23
			50% High	2	20.28	20.46	20.22
			100%	2	20.23	20.40	20.24

- **LTE B12**

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					-	**707.5 MHz**	**-**
LTE B12	10 MHz	QPSK	1RB Low	0	-	22.14	-
			1RB Mid	0	-	22.04	-
			1RB High	0	-	22.12	-
			50% Low	1	-	21.13	-
			50% Mid	1	-	21.09	-
			50% High	1	-	21.12	-
			100%	1	-	21.11	-
		16-QAM	1RB Low	1	-	21.28	-
			1RB Mid	1	-	21.28	-
			1RB High	1	-	21.37	-
			50% Low	2	-	20.13	-
			50% Mid	2	-	20.09	-
			50% High	2	-	20.14	-
			100%	2	-	20.13	-
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					701.5 MHz	**707.5 MHz**	**713.5 MHz**
LTE B12	5 MHz	QPSK	1RB Low	0	21.95	22.09	22.23
			1RB Mid	0	21.81	22.11	22.18
			1RB High	0	21.98	22.18	22.18
			50% Low	1	21.01	21.06	21.27
			50% Mid	1	21.00	21.10	21.14
			50% High	1	20.99	21.08	21.16
			100%	1	21.00	21.08	21.20
		16-QAM	1RB Low	1	21.04	21.29	21.48
			1RB Mid	1	21.05	21.11	21.24
			1RB High	1	21.13	21.30	21.39
			50% Low	2	20.00	20.04	20.20
			50% Mid	2	20.02	20.08	20.17
			50% High	2	20.08	20.10	20.19
			100%	2	20.00	20.05	20.19

Note: According to KDB941225 D05 SAR for LTE Devices, 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.

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					700.5 MHz	**707.5 MHz**	**714.5 MHz**
LTE B12	3 MHz	QPSK	1RB Low	0	22.01	22.06	22.05
			1RB Mid	0	22.15	22.27	22.17
			1RB High	0	21.09	21.20	21.33
			50% Low	1	21.05	21.10	21.25
			50% Mid	1	21.03	21.09	21.23
			50% High	1	21.04	21.10	21.26
			100%	1	21.26	21.32	21.45
		16-QAM	1RB Low	1	21.14	21.29	21.43
			1RB Mid	1	21.18	21.27	21.52
			1RB High	1	20.08	20.08	20.41
			50% Low	2	19.99	20.19	20.28
			50% Mid	2	20.03	20.16	20.26
			50% High	2	20.09	20.13	20.25
			100%	2	22.01	22.06	22.05
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					699.7 MHz	**707.5 MHz**	**715.3 MHz**
LTE B12	1.4 MHz	QPSK	1RB Low	0	22.01	22.10	22.18
			1RB Mid	0	21.83	22.14	22.21
			1RB High	0	22.00	22.10	22.22
			50% Low	1	22.02	22.06	22.21
			50% Mid	1	21.99	21.95	22.21
			50% High	1	21.91	21.98	22.14
			100%	1	21.01	21.10	21.25
		16-QAM	1RB Low	1	21.23	21.05	21.30
			1RB Mid	1	21.13	21.21	21.21
			1RB High	1	21.12	21.17	21.38
			50% Low	2	21.01	21.06	21.26
			50% Mid	2	21.03	21.06	21.27
			50% High	2	20.99	21.06	21.22
			100%	2	19.99	20.09	20.16

- **LTE B13**

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					-	**782.0 MHz**	**-**
LTE B13	10 MHz	QPSK	1RB Low	0	-	22.56	-
			1RB Mid	0	-	22.46	-
			1RB High	0	-	22.49	-
			50% Low	1	-	21.53	-
			50% Mid	1	-	21.52	-
			50% High	1	-	21.55	-
			100%	1	-	21.52	-
		16-QAM	1RB Low	1	-	21.62	-
			1RB Mid	1	-	21.72	-
			1RB High	1	-	21.59	-
			50% Low	2	-	20.56	-
			50% Mid	2	-	20.57	-
			50% High	2	-	20.63	-
			100%	2	-	20.54	-
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					779.5 MHz	**782.0 MHz**	**784.5 MHz**
LTE B13	5 MHz	QPSK	1RB Low	0	-	22.53	-
			1RB Mid	0	-	22.56	-
			1RB High	0	-	22.56	-
			50% Low	1	-	21.52	-
			50% Mid	1	-	21.53	-
			50% High	1	-	21.52	-
			100%	1	-	21.52	-
		16-QAM	1RB Low	1	-	21.70	-
			1RB Mid	1	-	21.59	-
			1RB High	1	-	21.64	-
			50% Low	2	-	20.50	-
			50% Mid	2	-	20.59	-
			50% High	2	-	20.59	-
			100%	2	-	20.51	-

Note: According to KDB941225 D05 SAR for LTE Devices, 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.

- **LTE B17**

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					-	**710.0 MHz**	**-**
LTE B17	10 MHz	QPSK	1RB Low	0	-	22.10	-
			1RB Mid	0	-	22.01	-
			1RB High	0	-	21.90	-
			50% Low	1	-	21.10	-
			50% Mid	1	-	21.06	-
			50% High	1	-	21.03	-
			100%	1	-	21.07	-
		16-QAM	1RB Low	1	-	21.20	-
			1RB Mid	1	-	21.25	-
			1RB High	1	-	21.26	-
			50% Low	2	-	20.14	-
			50% Mid	2	-	20.09	-
			50% High	2	-	20.09	-
			100%	2	-	20.08	-
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					-	**710.0 MHz**	**-**
LTE B17	5 MHz	QPSK	1RB Low	0	-	22.14	-
			1RB Mid	0	-	22.07	-
			1RB High	0	-	22.05	-
			50% Low	1	-	21.09	-
			50% Mid	1	-	21.00	-
			50% High	1	-	21.02	-
			100%	1	-	21.04	-
		16-QAM	1RB Low	1	-	21.18	-
			1RB Mid	1	-	21.13	-
			1RB High	1	-	21.25	-
			50% Low	2	-	20.05	-
			50% Mid	2	-	20.07	-
			50% High	2	-	20.06	-
			100%	2	-	20.01	-

Note: According to KDB941225 D05 SAR for LTE Devices, 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.

- **LTE B25**

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1860.0 MHz	**1882.5 MHz**	**1905.0 MHz**
LTE B25	20 MHz	QPSK	1RB Low	0	22.06	22.00	22.15
			1RB Mid	0	21.92	22.09	22.28
			1RB High	0	21.92	22.02	22.16
			50% Low	1	20.91	20.93	21.24
			50% Mid	1	20.95	20.99	21.12
			50% High	1	21.02	20.90	21.05
			100%	1	20.92	20.91	21.07
		16-QAM	1RB Low	1	20.94	21.22	21.36
			1RB Mid	1	21.21	21.10	21.52
			1RB High	1	21.15	21.16	21.45
			50% Low	2	19.93	19.99	20.14
			50% Mid	2	20.02	19.92	20.09
			50% High	2	20.03	19.93	20.15
			100%	2	19.98	19.95	20.13
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1857.5 MHz	**1882.5 MHz**	**1907.5 MHz**
LTE B25	15 MHz	QPSK	1RB Low	0	21.88	21.93	22.01
			1RB Mid	0	21.88	21.85	21.94
			1RB High	0	21.91	21.86	21.94
			50% Low	1	20.98	20.92	21.03
			50% Mid	1	21.01	20.90	20.98
			50% High	1	21.01	20.89	20.99
			100%	1	21.00	20.90	20.98
		16-QAM	1RB Low	1	21.18	21.13	21.12
			1RB Mid	1	21.08	21.28	21.22
			1RB High	1	21.13	21.26	21.33
			50% Low	2	19.93	19.97	20.04
			50% Mid	2	19.96	19.92	20.02
			50% High	2	20.00	19.93	20.04
			100%	2	20.02	19.92	20.01

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1855.0 MHz	**1882.5 MHz**	**1910.0 MHz**
LTE B25	10 MHz	QPSK	1RB Low	0	21.89	21.92	22.03
			1RB Mid	0	21.86	21.77	22.03
			1RB High	0	21.92	21.88	22.03
			50% Low	1	20.94	20.90	21.03
			50% Mid	1	20.95	20.91	21.02
			50% High	1	20.97	20.88	21.00
			100%	1	20.95	20.91	21.01
		16-QAM	1RB Low	1	21.30	21.09	21.00
			1RB Mid	1	21.35	21.03	21.38
			1RB High	1	21.28	21.09	21.26
			50% Low	2	19.96	19.99	20.05
			50% Mid	2	20.03	19.98	20.08
			50% High	2	20.05	19.96	20.05
			100%	2	20.00	19.97	20.05
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1852.5 MHz	**1882.2 MHz**	**1912.5 MHz**
LTE B25	5 MHz	QPSK	1RB Low	0	22.02	21.82	21.92
			1RB Mid	0	22.05	21.74	21.99
			1RB High	0	22.02	21.82	21.93
			50% Low	1	20.96	20.89	20.95
			50% Mid	1	21.00	20.87	20.94
			50% High	1	20.98	20.89	20.95
			100%	1	20.96	20.88	20.95
		16-QAM	1RB Low	1	21.17	21.09	21.03
			1RB Mid	1	21.08	21.10	21.35
			1RB High	1	21.17	21.12	21.38
			50% Low	2	19.97	19.93	20.00
			50% Mid	2	20.06	19.96	19.98
			50% High	2	20.10	19.93	20.00
			100%	2	19.98	19.94	19.96

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1851.5 MHz	**1882.5 MHz**	**1913.5 MHz**
LTE B25	3 MHz	QPSK	1RB Low	0	21.87	21.83	22.01
			1RB Mid	0	21.85	21.96	21.78
			1RB High	0	21.86	21.95	21.97
			50% Low	1	21.02	20.95	21.01
			50% Mid	1	21.02	20.90	20.94
			50% High	1	21.02	20.90	20.95
			100%	1	21.00	20.91	20.94
		16-QAM	1RB Low	1	21.11	21.03	21.15
			1RB Mid	1	21.20	21.01	21.10
			1RB High	1	21.29	21.05	21.05
			50% Low	2	20.04	19.89	20.04
			50% Mid	2	20.07	19.91	20.06
			50% High	2	20.04	19.94	20.06
			100%	2	20.03	19.95	20.00
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1850.7 MHz	**1882.5 MHz**	**1914.3 MHz**
LTE B25	1.4 MHz	QPSK	1RB Low	0	21.91	21.77	21.86
			1RB Mid	0	21.98	21.71	21.88
			1RB High	0	21.97	21.81	21.89
			50% Low	1	21.92	21.83	21.89
			50% Mid	1	21.95	21.79	21.84
			50% High	1	21.88	21.75	21.80
			100%	1	20.96	20.82	20.86
		16-QAM	1RB Low	1	20.93	20.83	20.83
			1RB Mid	1	21.00	20.96	21.11
			1RB High	1	21.12	20.94	21.04
			50% Low	2	21.03	20.88	20.96
			50% Mid	2	21.08	20.87	20.88
			50% High	2	21.03	20.84	20.83
			100%	2	19.98	19.83	19.87

- **LTE B26**

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					-	**831.5 MHz**	**-**
LTE B26	15 MHz	QPSK	1RB Low	0	-	23.09	-
			1RB Mid	0	-	23.12	-
			1RB High	0	-	23.27	-
			50% Low	1	-	22.27	-
			50% Mid	1	-	22.29	-
			50% High	1	-	22.30	-
			100%	1	-	22.35	-
		16-QAM	1RB Low	1	-	22.44	-
			1RB Mid	1	-	22.44	-
			1RB High	1	-	22.44	-
			50% Low	2	-	21.31	-
			50% Mid	2	-	21.29	-
			50% High	2	-	21.31	-
			100%	2	-	21.33	-
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					819.0 MHz	**831.5 MHz**	**844.0 MHz**
LTE B26	10 MHz	QPSK	1RB Low	0	23.01	23.32	23.21
			1RB Mid	0	22.93	23.16	23.15
			1RB High	0	23.01	23.26	23.21
			50% Low	1	22.04	22.24	22.15
			50% Mid	1	22.04	22.24	22.16
			50% High	1	22.05	22.24	22.09
			100%	1	22.03	22.25	22.15
		16-QAM	1RB Low	1	22.23	22.47	22.35
			1RB Mid	1	22.25	22.44	22.29
			1RB High	1	22.28	22.48	22.31
			50% Low	2	21.06	21.27	21.22
			50% Mid	2	21.12	21.26	21.12
			50% High	2	21.11	21.26	21.14
			100%	2	21.03	21.26	21.18

Note: According to KDB941225 D05 SAR for LTE Devices, 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.

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					816.5 MHz	**831.5 MHz**	**846.5 MHz**
LTE B26	5 MHz	QPSK	1RB Low	0	22.95	23.21	23.11
			1RB Mid	0	22.92	23.05	23.11
			1RB High	0	22.98	23.22	23.16
			50% Low	1	21.92	22.23	22.12
			50% Mid	1	21.85	22.22	22.10
			50% High	1	21.90	22.20	22.10
			100%	1	21.89	22.21	22.11
		16-QAM	1RB Low	1	22.01	22.42	22.26
			1RB Mid	1	21.84	22.35	22.31
			1RB High	1	22.05	22.45	22.34
			50% Low	2	20.88	21.20	21.14
			50% Mid	2	20.86	21.27	21.08
			50% High	2	20.86	21.26	21.09
			100%	2	20.85	21.21	21.11
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					815.5 MHz	**831.5 MHz**	**847.5 MHz**
LTE B26	3 MHz	QPSK	1RB Low	0	22.81	23.26	23.16
			1RB Mid	0	22.71	23.29	22.86
			1RB High	0	22.80	23.37	23.17
			50% Low	1	21.95	22.31	22.15
			50% Mid	1	21.89	22.21	22.03
			50% High	1	21.88	22.22	22.04
			100%	1	21.91	22.22	22.11
		16-QAM	1RB Low	1	21.98	22.28	22.15
			1RB Mid	1	21.97	22.28	22.06
			1RB High	1	22.13	22.32	22.17
			50% Low	2	20.94	21.29	21.07
			50% Mid	2	20.88	21.24	21.16
			50% High	2	20.89	21.27	21.15
			100%	2	20.90	21.23	21.06
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					814.5 MHz	**831.5 MHz**	**848.3 MHz**
LTE B26	1.4 MHz	QPSK	1RB Low	0	22.91	23.23	23.09
			1RB Mid	0	22.88	23.35	22.98
			1RB High	0	22.91	23.29	23.10
			50% Low	1	22.87	23.29	23.10
			50% Mid	1	22.81	23.24	23.05
			50% High	1	22.81	23.19	22.98
			100%	1	21.85	22.31	22.11
		16-QAM	1RB Low	1	21.85	22.39	22.11
			1RB Mid	1	22.25	22.39	22.20
			1RB High	1	22.18	22.52	22.25
			50% Low	2	21.91	22.27	22.07
			50% Mid	2	21.87	22.33	22.11
			50% High	2	21.88	22.34	22.06
			100%	2	20.89	21.25	21.06

- **LTE B41**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					2506.0 MHz	2593.0MHz	2680.0 MHz
LTE B41	20 MHz	QPSK	1RB Low	0	22.36	21.61	22.32
			1RB Mid	0	22.36	21.48	22.09
			1RB High	0	22.38	21.58	22.29
			50% Low	1	21.38	20.66	21.29
			50% Mid	1	21.40	20.59	21.28
			50% High	1	21.39	20.60	21.26
			100%	1	21.35	20.63	21.29
		16-QAM	1RB Low	1	21.43	20.81	21.41
			1RB Mid	1	21.55	20.51	21.18
			1RB High	1	21.58	20.59	20.99
			50% Low	2	20.43	19.65	20.42
			50% Mid	2	20.44	19.66	20.34
			50% High	2	20.48	19.67	20.35
			100%	2	20.39	19.67	20.39
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					2503.5.0 MHz	**2593.0MHz**	**2682.5 MHz**
LTE B41	15 MHz	QPSK	1RB Low	0	22.37	21.56	22.44
			1RB Mid	0	22.45	21.39	22.57
			1RB High	0	22.37	21.52	22.33
			50% Low	1	21.39	20.58	21.34
			50% Mid	1	21.41	20.61	21.29
			50% High	1	21.42	20.54	21.30
			100%	1	21.43	20.60	21.40
		16-QAM	1RB Low	1	21.54	20.66	21.38
			1RB Mid	1	21.29	20.25	21.31
			1RB High	1	21.46	20.76	21.32
			50% Low	2	20.40	19.65	20.46
			50% Mid	2	20.47	19.67	20.30
			50% High	2	20.45	19.59	20.38
			100%	2	20.41	19.60	20.38

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					2501.0 MHz	**2593.0MHz**	**2685.0 MHz**
LTE B41	10 MHz	QPSK	1RB Low	0	22.35	21.49	22.35
			1RB Mid	0	22.38	21.63	22.36
			1RB High	0	22.33	21.47	22.31
			50% Low	1	21.33	20.60	21.39
			50% Mid	1	21.32	20.57	21.32
			50% High	1	21.31	20.53	21.33
			100%	1	21.34	20.59	21.42
		16-QAM	1RB Low	1	21.45	20.69	21.30
			1RB Mid	1	21.36	20.74	21.52
			1RB High	1	21.33	20.63	21.42
			50% Low	2	20.37	19.59	20.43
			50% Mid	2	20.39	19.63	20.38
			50% High	2	20.39	19.61	20.37
			100%	2	20.31	19.64	20.47
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					2498.5.0 MHz	**2593.0MHz**	**2687.5 MHz**
LTE B41	5 MHz	QPSK	1RB Low	0	22.34	21.56	22.30
			1RB Mid	0	22.35	21.56	22.23
			1RB High	0	22.32	21.44	22.26
			50% Low	1	21.29	20.55	21.36
			50% Mid	1	21.26	20.45	21.31
			50% High	1	21.31	20.51	21.34
			100%	1	21.22	20.50	21.42
		16-QAM	1RB Low	1	21.37	20.56	21.35
			1RB Mid	1	21.25	20.35	21.27
			1RB High	1	21.44	20.59	21.37
			50% Low	2	20.29	19.58	20.41
			50% Mid	2	20.31	19.48	20.32
			50% High	2	20.31	19.53	20.37
			100%	2	20.22	19.56	20.45

- **LTE B66**

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1720.0 MHz	**1745.0 MHz**	**1770.0 MHz**
LTE B66	20 MHz	QPSK	1RB Low	0	21.74	21.75	21.71
			1RB Mid	0	21.70	21.70	21.72
			1RB High	0	21.71	21.74	21.74
			50% Low	1	20.81	20.83	20.77
			50% Mid	1	20.78	20.82	20.80
			50% High	1	20.79	20.81	20.78
			100%	1	20.82	20.81	20.83
		16-QAM	1RB Low	1	20.94	20.94	20.94
			1RB Mid	1	21.00	20.94	20.94
			1RB High	1	20.94	20.95	21.01
			50% Low	2	19.89	19.87	19.87
			50% Mid	2	19.84	19.86	19.83
			50% High	2	19.84	19.87	19.84
			100%	2	19.86	19.85	19.86
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1717.5 MHz	**1745.0 MHz**	**1772.5 MHz**
LTE B66	15 MHz	QPSK	1RB Low	0	21.75	21.73	21.73
			1RB Mid	0	21.71	21.74	21.72
			1RB High	0	21.69	21.73	21.70
			50% Low	1	20.80	20.80	20.82
			50% Mid	1	20.80	20.83	20.80
			50% High	1	20.81	20.81	20.78
			100%	1	20.83	20.81	20.81
		16-QAM	1RB Low	1	21.01	21.01	21.00
			1RB Mid	1	20.92	20.98	20.95
			1RB High	1	20.97	20.92	20.97
			50% Low	2	19.82	19.81	19.78
			50% Mid	2	19.83	19.81	19.82
			50% High	2	19.83	19.83	19.83
			100%	2	19.80	19.79	19.81

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1715.0 MHz	**1745.0 MHz**	**1775.0 MHz**
LTE B66	10 MHz	QPSK	1RB Low	0	21.73	21.72	21.73
			1RB Mid	0	21.65	21.63	21.60
			1RB High	0	21.69	21.73	21.70
			50% Low	1	20.82	20.82	20.82
			50% Mid	1	20.80	20.82	20.81
			50% High	1	20.80	20.80	20.81
			100%	1	20.82	20.81	20.84
		16-QAM	1RB Low	1	20.93	20.90	20.92
			1RB Mid	1	20.95	20.98	21.04
			1RB High	1	20.95	20.99	20.99
			50% Low	2	19.85	19.84	19.86
			50% Mid	2	19.83	19.87	19.82
			50% High	2	19.83	19.86	19.87
			100%	2	19.88	19.89	19.88
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					1712.5 MHz	**1745.0 MHz**	**1777.5 MHz**
LTE B66	5 MHz	QPSK	1RB Low	0	21.72	21.71	21.73
			1RB Mid	0	21.69	21.70	21.70
			1RB High	0	21.60	21.59	21.63
			50% Low	1	21.74	21.74	21.76
			50% Mid	1	21.73	21.73	21.74
			50% High	1	21.73	21.73	21.71
			100%	1	20.78	20.78	20.82
		16-QAM	1RB Low	1	20.90	21.02	20.97
			1RB Mid	1	20.87	20.86	20.87
			1RB High	1	20.99	20.96	20.93
			50% Low	2	20.79	20.76	20.79
			50% Mid	2	20.80	20.80	20.79
			50% High	2	20.76	20.77	20.77
			100%	2	19.80	19.82	19.84

- **LTE 71**

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					673.0 MHz	**680.5 MHz**	**688.0 MHz**
LTE B71	20 MHz	QPSK	1RB Low	0	22.40	22.76	22.59
			1RB Mid	0	22.35	22.48	22.29
			1RB High	0	22.32	22.74	22.55
			50% Low	1	21.62	21.76	21.58
			50% Mid	1	21.60	21.75	21.55
			50% High	1	21.64	21.75	21.56
			100%	1	21.54	21.74	21.55
		16-QAM	1RB Low	1	21.86	22.02	21.92
			1RB Mid	1	21.91	22.00	21.88
			1RB High	1	22.01	22.08	21.91
			50% Low	2	20.61	20.75	20.59
			50% Mid	2	20.63	20.78	20.57
			50% High	2	20.71	20.77	20.58
			100%	2	20.67	20.74	20.55
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					670.5 MHz	**680.5 MHz**	**690.5 MHz**
LTE B71	15 MHz	QPSK	1RB Low	0	22.78	22.55	22.54
			1RB Mid	0	22.75	22.31	22.57
			1RB High	0	22.76	22.30	22.55
			50% Low	1	21.86	21.24	21.36
			50% Mid	1	21.90	21.35	21.57
			50% High	1	21.92	21.54	21.58
			100%	1	21.94	21.53	21.59
		16-QAM	1RB Low	1	21.97	21.70	21.85
			1RB Mid	1	21.97	21.58	21.62
			1RB High	1	22.01	21.76	21.83
			50% Low	2	20.84	20.54	20.58
			50% Mid	2	20.79	20.51	20.56
			50% High	2	20.87	20.53	20.58
			100%	2	20.87	20.56	20.50

					Average Output Power (dBm)		
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					668.0 MHz	**680.5 MHz**	**693.0 MHz**
LTE B71	10 MHz	QPSK	1RB Low	0	22.65	22.31	22.48
			1RB Mid	0	22.69	22.28	22.44
			1RB High	0	22.80	22.34	22.38
			50% Low	1	21.64	21.25	21.34
			50% Mid	1	21.63	21.24	21.34
			50% High	1	21.65	21.23	21.33
			100%	1	21.59	21.23	21.34
		16-QAM	1RB Low	1	22.00	21.61	21.53
			1RB Mid	1	22.03	21.70	21.65
			1RB High	1	22.03	21.58	21.56
			50% Low	2	20.66	20.25	20.38
			50% Mid	2	20.66	20.23	20.36
			50% High	2	20.67	20.26	20.36
			100%	2	20.64	20.23	20.32
Band	**BW**	**Modulation**	**Mode**	**MPR**	**Low CH**	**Mid CH**	**High CH**
					665.5 MHz	**680.5 MHz**	**695.5 MHz**
LTE B71	5 MHz	QPSK	1RB Low	0	22.79	22.36	22.39
			1RB Mid	0	22.69	22.35	22.40
			1RB High	0	22.83	22.38	22.41
			50% Low	1	21.84	21.38	21.41
			50% Mid	1	21.84	21.37	21.38
			50% High	1	21.83	21.39	21.38
			100%	1	21.83	21.35	21.37
		16-QAM	1RB Low	1	22.15	21.56	21.71
			1RB Mid	1	21.91	21.52	21.56
			1RB High	1	22.11	21.62	21.64
			50% Low	2	20.85	20.37	20.40
			50% Mid	2	20.84	20.38	20.38
			50% High	2	20.84	20.36	20.40
			100%	2	20.81	20.31	20.31

- LTE B2

SAR for LTE Band 2 has not been measured because it is covered by LTE Band 25 due to overlapping frequency range (LTE Band 2 frequency range: 1850 – 1910 MHz, LTE Band 25 frequency range: 1850 – 1915 MHz) and same maximum tune-up and channel bandwidth.

- LTE B17

SAR for LTE Band 17 has not been measured because it is covered by LTE Band 12 due to overlapping frequency range ((LTE Band 17 frequency range: 704 – 716 MHz, LTE Band 12 frequency range: 699 – 716 MHz) and same maximum tune-up and channel bandwidth

2.1.3.2. LTE CA Downlink

Covered by higher CA combination
Measurement needed

DL 2CA	
Combination	**UL Band**
2-2	2
2C	2
2-4	2
4-2	4
2-5	2
5-2	5
2-12	2
12-2	12
2-13	2
13-2	13
2-17	2
17-2	17
2-28	2
2-29	2
2-30	2
2-66	2
2-71	2
71-2	71
4-4	4
4-5	4
5-4	5
4-12	4
12-4	12
4-13	4
13-4	13
4-17	4
17-4	17
4-28	4

DL 3CA	
Combination	**UL Band**
2-2-4	2
2-2-5	2
2C-5	2
2-2-12	2
2C-12	2
2-2-13	2
2-2-29	2
2C-29	2
2-2-30	2
2C-30	2
2-4-4	2
2-4-5	2
2-4-12	2
2-4-13	2
2-4-29	2
2-4-30	2
2-4-71	2
2-5B	2
2-5-30	2
2-5-66	2
2-12-12	2
2-12B	2
2-12-30	2
2-12-66	2
2-13-66	2
2-29-30	2
2-29-66	2
2-30-66	2

DL 4CA	
Combination	**UL Band**
2-2-4-4	2
4-4-2-2	4
2-2-4-5	2
4-2-2-5	4
5-2-2-4	5
2-2-4-12	2
4-2-2-12	4
12-2-2-4	12
2C-5B	2
5B-2C	5
2-2-5-30	2
5-2-2-30	5
2C-5-30	2
5-2C-30	5
2-2-5-66	2
5-2-2-66	5
66-2-2-5	66
2-2-12-12	2
12-12-2-2	12
2-2-12B	2
12B-2-2	12
2-2-12-30	2
12-2-2-30	12
2C-12-30	2
12-2C-30	12
2-2-12-66	2
12-2-2-66	12
66-2-2-12	66

DL 5CA	
Combination	UL Band
2-2-4-4-5	2
2-2-4-4-5	4
2-2-4-4-5	5
2-2-4-5B	2
2-2-4-5B	4
2-2-4-5B	5
2C-5B-30	2
5B-2C-30	5
2-2-5-66-66	2
5-2-2-66-66	5
66-66-2-2-5	66
2-2-5-30-66	2
5-2-2-30-66	5
66-2-2-5-30	66
2-2-5-66B	2
5-2-2-66B	5
66B-2-2-5	66
2-2-5-66C	2
5-2-2-66C	5
66C-2-2-5	66
2-2-12B-66	2
12B-2-2-66	12
66-2-2-12B	66
2-2-12-30-66	2
12-2-2-30-66	12
66-2-2-12-30	66
2-2-12-66-66	2

4-29	4
4-30	4
4-71	4
5-5	5
5B	5
5-7	5
7-5	7
5-25	5
25-5	25
5-30	5
5-41	5
5-66	5
66-5	66
7-7	7
7B	7
7C	7
7-12	7
12-7	12
7-26	7
26-7	26
7-66	7
12-25	12
25-12	25
12-12	12
12B	12
12-30	12
12-66	12
13-66	13
66-13	66
25-25	25
25-26	25
26-25	26
26-41	26
41-41	41
41C	41
66-29	66
66-30	66
66-66	66
66B	66
66C	66
66-71	66
71-66	71

2-66-71	2
2-66-66	2
2-66B	2
2-66C	2
2-2-66	2
2C-66	2
2-2-71	2
4-4-5	4
4-5B	4
4-4-12	4
4-4-13	4
4-4-29	4
4-4-30	4
4-4-71	4
4-5-30	4
4-12-12	4
4-12B	4
4-12-30	4
4-29-30	4
5B-30	5
5-5-66	5
5-7-7	5
5-7C	5
5-30-66	5
5-66-66	5
5-66B	5
5-66C	5
5B-66	5
7-7-26	7
7-7-66	7
7C-66	7
7-12B	7
7-12-66	7
7-66-66	7
12-30-66	12
12-66-66	12
12-66C	12
12B-66	12
13-66-66	13
13-66B	13
13-66C	13
25-25-25	25
25-25-26	25
26-41C	26
41-41C	41

2-2-13-66	2
13-2-2-66	13
66-2-2-13	66
2-2-29-30	2
2C-29-30	2
2-2-30-66	2
66-2-2-30	66
2-2-66-66	2
66-66-2-2	66
2-2-66B	2
66B-2-2	66
2-2-66C	2
66C-2-2	66
2C-66-66	2
66-66-2C	66
2-2-66-71	2
66-2-2-71	66
71-2-2-66	71
2-4-4-5	2
4-4-2-5	4
5-2-4-4	5
2-4-4-12	2
4-4-2-12	4
12-2-4-4	12
2-4-5-30	2
4-2-5-30	4
5-2-4-30	5
2-4-12-30	2
4-2-12-30	4
12-2-4-30	12
2-4-29-30	2
4-2-29-30	4
2-4-5B	2
4-2-5B	4
5B-2-4	5
2-4-12-12	2
4-2-12-12	4
12-12-2-4	12
2-4-12B	2
4-2-12B	4
12B-2-4	12
2-5B-30	2
5B-2-30	5
2-5B-66	2
5B-2-66	5

12-2-2-66-66	12
66-66-2-2-12	66
2-4-4-5B	2
2-4-4-5B	4
2-4-4-5B	5
2-2-66D	2
66D-2-2	66
2-2-66-66B	2
66-66B-2-2	66
66B-66-2-2	66
2-2-66-66C	2
66-66C-2-2	66
66C-66-2-2	66
2-4-5B-30	2
4-2-5B-30	4
5B-2-4-30	5
2-5B-30-66	2
5B-2-30-66	5
66-2-5B-30	66
2-5B-66-66	2
5B-2-66-66	5
66-66-2-5B	66
2-5B-66B	2
5B-2-66B	5
66B-2-5B	66
2-5B-66C	2
5B-2-66C	5
66C-2-5B	66
2-5-30-66-66	2
5-2-30-66-66	5
66-66-2-5-30	66
2-5-66D	2
5-2-66D	5
66D-2-5	66
2-12B-66-66	2
12B-2-66-66	12
66-66-2-12B	66
2-12-30-66-66	2
12-2-30-66-66	12
66-66-2-12-30	66
2-13-66-66B	2
13-2-66-66B	13
66-66B-2-13	66
66B-66-2-13	66

41D	41
41-41-41	41
66-66B	66
66-66C	66
66-66-66	66
66D	66
66-29-30	66
66-66-29	66
66C-29	66
66-66-30	66
66-66-71	66
66C-71	66

2-5-30-66	2
5-2-30-66	5
66-2-5-30	66
2-5-66-66	2
5-2-66-66	5
66-66-2-5	66
2-5-66B	2
5-2-66B	5
66B-2-5	66
2-5-66C	2
5-2-66C	5
66C-2-5	66
2-12B-66	2
12B-2-66	12
66-2-12B	66
2-12-30-66	2
12-2-30-66	12
66-2-12-30	66
2-12-66-66	2
12-2-66-66	12
66-66-2-12	66
2-12-66C	2
12-2-66C	12
66C-2-12	66
2-13-66-66	2
13-2-66-66	13
66-66-2-13	66
2-13-66B	2
13-2-66B	13
66B-2-13	66
2-13-66C	2
13-2-66C	13
66C-2-13	66
2-29-30-66	2
66-2-29-30	66
2-30-66-66	2
66-66-2-30	66
2-66-66-66	2
66-66-66-2	66
2-66-66B	2
66-66B-2	66
66B-66-2	66
2-66-66C	2
66-66C-2	66
66C-66-2	66

2-13-66-66C	2
13-2-66-66C	13
66-66C-2-13	66
66C-66-2-13	66
2-13-66D	2
13-2-66D	13
66D-2-13	66
4-4-5B-30	4
5B-4-4-30	5
5B-30-66-66	5
66-66-5B-30	66
5-5-66-66B	5
66-66B-5-5	66
66B-66-5-5	66
5-5-66-66C	5
66-66C-5-5	66
66C-66-5-5	66
5-5-66D	5
66D-5-5	66
5B-66-66B	5
66-66B-5B	66
66B-66-5B	66
5B-66-66C	5
66-66C-5B	66
66C-66-5B	66
41C-41D	41
41D-41C	41

2-66D	2		
66D-2	66		
2-66-66-71	2		
66-66-2-71	66		
71-2-66-66	71		
2-66C-71	2		
66C-2-71	66		
71-2-66C	71		
4-4-5B	4		
5B-4-4	5		
4-4-5-30	4		
5-4-4-30	5		
4-4-12-12	4		
12-12-4-4	12		
4-4-12B	4		
12B-4-4	12		
4-4-12-30	4		
12-4-4-30	12		
4-4-29-30	4		
4-5B-30	4		
5B-4-30	5		
5B-30-66	5		
66-5B-30	66		
5-5-66-66	5		
66-66-5-5	66		
5-5-66B	5		
66B-5-5	66		
5-5-66C	5		
66C-5-5	66		
5B-66-66	5		
66-66-5B	66		
5B-66B	5		
66B-5B	66		
5B-66C	5		
66C-5B	66		
5-30-66-66	5		
66-66-5-30	66		
5-66-66B	5		
66-66B-5	66		
66B-66-5	66		
5-66-66C	5		
66-66C-5	66		
66C-66-5	66		
5-66D	5		
66D-5	66		

		7-7-66-66	7		
		7C-66-66	7		
		7-12B-66	7		
		12B-7-66	12		
		12B-66-66	12		
		66-66-12B	66		
		12-30-66-66	12		
		66-66-12-30	66		
		13-66-66-66	13		
		13-66-66-66	66		
		13-66-66B	13		
		66-66B-13	66		
		66B-66-13	66		
		13-66-66C	13		
		66-66C-13	66		
		66C-66-13	66		
		13-66D	13		
		66D-13	66		
		66-66-29-30	66		
		41-41D	41		
		41D-41	41		
		41C-41C	41		
		41-41-41C	41		
		41C-41-41	41		
		41E	41		

Following KDB 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02, output power measurements have been performed to qualify for UL SAR test exclusion using the configuration with the larges aggregated BW.

Uplink maximum output power is measured with downlink carrier aggregation active, only for the channel with highest measured maximum output power when downlink carrier aggregation is inactive to check if with the DL CA active the maximum output power remains within the tune-up tolerance limits and/or the maximum output power increases less than 0.25 dB.

All Downlink CA fulfills with this statements, please check the measured combinations:

DL 5CA																					
Combination	UL Band	PCC (dBm)	PCC+SCCs (dBm)	Delta	Aggr. BW	PCC1				SCC1			SCC2			SCC3			SCC4		
						BW	CH	FREQ	RB	BW	CH	FREQ	BW	CH	FREQ	BW	CH	FREQ	BW	CH	FREQ
2-2-4-4-5	2	22.24																			
2-2-4-4-5	4	22.43	22.39	-0.04	90	20	20300	1745	1 Rb Mid	20	2300	2145	20	700	1940	20	1100	1980	10	2450	874
2-2-4-4-5	5	21.75																			
2-2-4-5B	2	22.24																			
2-2-4-5B	4	22.43	22.38	-0.05	80	20	20300	1745	1 Rb Mid	20	700	1940	20	1100	1980	10	2450	874	10	2549	883.9
2-2-4-5B	5	21.75																			
2C-5B-30	2	22.24	22.18	-0.06	70	20	19100	1900	1 Rb Mid	20	1100	1980	10	2450	874	10	2549	883.9	10	9820	2355
5B-2C-30	5	21.75																			
2-2-5-66-66	2	22.24	22.21	-0.03	90	20	19100	1900	1 Rb Mid	20	1100	1980	10	2450	874	20	66536	2120	20	66786	2145
5-2-2-66-66	5	21.75																			
66-66-2-2-5	66	21.75																			
2-2-5-30-66	2	22.24	22.25	0.01	80	20	19100	1900	1 Rb Mid	20	1100	1980	10	2450	874	10	9820	2355	20	66786	2145
5-2-2-30-66	5	21.75																			
66-2-2-5-30	66	21.75																			
2-2-5-66B	2	22.24	22.22	-0.02	70	20	19100	1900	1 Rb Mid	20	1100	1980	10	2450	874	5	66817	2148.1	15	66910	2157.4
5-2-2-66B	5	21.75																			
66B-2-2-5	66	21.75																			
2-2-5-66C	2	22.24	22.17	-0.07	90	20	19100	1900	1 Rb Mid	20	1100	1980	10	2450	874	20	66787	2145.1	20	66985	2164.9
5-2-2-66C	5	21.75																			
66C-2-2-5	66	21.75																			
2-2-12B-66	2	22.24	22.16	-0.08	75	20	19100	1900	1 Rb Mid	20	1100	1980	5	5038	731.8	10	5110	739	20	66786	2145
12B-2-2-66	12	22.14																			
66-2-2-12B	66	21.75																			
2-2-12-30-66	2	22.24	22.18	-0.06	80	20	19100	1900	1 Rb Mid	20	1100	1980	10	5095	737.5	10	9820	2355	20	66786	2145
12-2-2-30-66	12	22.14																			
66-2-2-12-30	66	21.75																			
2-2-12-66-66	2	22.24	22.2	-0.04	90	20	19100	1900	1 Rb Mid	20	1100	1980	10	5095	737.5	20	66536	2120	20	66786	2145
12-2-2-66-66	12	22.14																			
66-66-2-2-12	66	21.75																			
2-4-4-5B	2	22.24																			
2-4-4-5B	4	22.43	22.39	-0.04	80	20	20300	1745	1 Rb Mid	20	2300	2145	20	1100	1980	10	2450	874	10	2549	883.9
2-4-4-5B	5	21.75																			
2-2-66D	2	22.24	22.23	-0.01	100	20	19100	1900	1 Rb Mid	20	1100	1980	20	66536	2120	20	66734	2139.8	20	66932	2159.6
66D-2-2	66	21.75																			
2-2-66-66B	2	22.24	22.21	-0.03	80	20	19100	1900	1 Rb Mid	20	1100	1980	20	66536	2120	10	67187	2185.1	10	67286	2195
66-66B-2-2	66	21.75																			
66B-66-2-2	66	21.75																			
2-2-66-66C	2	22.24	22.26	0.02	100	20	19100	1900	1 Rb Mid	20	1100	1980	20	66536	2120	20	67038	2170.2	20	67236	2190
66-66C-2-2	66	21.75																			
66C-66-2-2	66	21.75																			
2-4-5B-30	2	22.24																			
4-2-5B-30	4	22.43	22.41	-0.02	70	20	20300	1745	1 Rb Mid	20	1100	1980	10	2450	874	10	2549	883.9	10	9820	2355
5B-2-4-30	5	21.75																			
2-5B-30-66	2	22.24	22.22	-0.02	70	20	19100	1900	1 Rb Mid	10	2450	874	10	2549	883.9	10	9820	2355	20	66786	2145
5B-2-30-66	5	21.75																			
66-2-5B-30	66	21.75																			
2-5B-66-66	2	22.24	22.23	-0.01	80	20	19100	1900	1 Rb Mid	10	2450	874	10	2549	883.9	20	66536	2120	20	66786	2145
5B-2-66-66	5	21.75																			
66-66-2-5B	66	21.75																			
2-5B-66B	2	22.24	22.21	-0.03	60	20	19100	1900	1 Rb Mid	10	2450	874	10	2549	883.9	5	66817	2148.1	15	66910	2157.4
5B-2-66B	5	21.75																			
66B-2-5B	66	21.75																			
2-5B-66C	2	22.24	22.2	-0.04	80	20	19100	1900	1 Rb Mid	10	2450	874	10	2549	883.9	20	66787	2145.1	20	66985	2164.9
5B-2-66C	5	21.75																			
66C-2-5B	66	21.75																			
2-5-30-66-66	2	22.24	22.27	0.03	80	20	19100	1900	1 Rb Mid	10	2450	874	10	9820	2355	20	66536	2120	20	66786	2145
5-2-30-66-66	5	21.75																			
66-66-2-5-30	66	21.75																			
2-5-66D	2	22.24	22.26	0.02	90	20	19100	1900	1 Rb Mid	10	2450	874	20	66536	2120	20	66734	2139.8	20	66932	2159.6
5-2-66D	5	21.75																			
66D-2-5	66	21.75																			
2-12B-66-66	2	22.24	22.25	0.01	75	20	19100	1900	1 Rb Mid	5	5038	731.8	10	5110	739	20	66536	2120	20	66786	2145
12B-2-66-66	12	22.14																			
66-66-2-12B	66	21.75																			
2-12-30-66-66	2	22.24	22.21	-0.03	80	20	19100	1900	1 Rb Mid	10	5095	737.5	10	9820	2355	20	66536	2120	20	66786	2145
12-2-30-66-66	12	22.14																			
66-66-2-12-30	66	21.75																			
2-13-66-66B	2	22.24																			
13-2-66-66B	13	22.56	22.53	-0.03	70	10	23230	782	1 Rb Low	20	1100	1980	20	66536	2120	10	67187	2185.1	10	67286	2195
66-66B-2-13	66	21.75																			
66B-66-2-13	66	21.75																			
2-13-66-66C	2	22.24																			
13-2-66-66C	13	22.56	22.51	-0.05	90	10	23230	782	1 Rb Low	20	1100	1980	20	66536	2120	20	67038	2170.2	20	67236	2190

DL 5CA																					
Combination	UL Band	PCC (dBm)	PCC+SCCs (dBm)	Delta	Aggr. BW	PCC1				SCC1			SCC2			SCC3			SCC4		
						BW	CH	FREQ	RB	BW	CH	FREQ	BW	CH	FREQ	BW	CH	FREQ	BW	CH	FREQ
66-66C-2-13	66	21.75																			
66C-66-2-13	66	21.75																			
2-13-66D	2	22.24																			
13-2-66D	13	22.56	22.54	-0.02	90	10	23230	782	1 Rb Low	20	1100	1980	20	66536	2120	20	66734	2139.8	20	66932	2159.6
66D-2-13	66	21.75																			
4-4-5B-30	4	22.43	22.41	-0.02	70	20	20300	1745	1 Rb Mid	20	2300	2145	10	2450	874	10	2549	883.9	10	9820	2355
5B-4-4-30	5	21.75																			
5B-30-66-66	5	21.75	21.72	-0.03	70	10	20450	829	1 Rb Low	10	2549	883.9	10	9820	2355	20	66536	2120	20	66786	2145
66-66-5B-30	66	21.75																			
5-5-66-66B	5	21.75	21.74	-0.01	60	10	20450	829	1 Rb Low	10	20600	889	20	66536	2120	10	67187	2185.1	10	67286	2195
66-66B-5-5	66	21.75																			
66B-66-5-5	66	21.75																			
5-5-66-66C	5	21.75	21.7	-0.05	80	10	20450	829	1 Rb Low	10	20600	889	20	66536	2120	20	67038	2170.2	20	67236	2190
66-66C-5-5	66	21.75																			
66C-66-5-5	66	21.75																			
5-5-66D	5	21.75	21.73	-0.02	80	10	20450	829	1 Rb Low	10	20600	889	20	66536	2120	20	66734	2139.8	20	66932	2159.6
66D-5-5	66	21.75																			
5B-66-66B	5	21.75	21.76	0.01	60	10	20450	829	1 Rb Low	10	2549	883.9	20	66536	2120	10	67187	2185.1	10	67286	2195
66-66B-5B	66	21.75																			
66B-66-5B	66	21.75																			
5B-66-66C	5	21.75	21.77	0.02	80	10	20450	829	1 Rb Low	10	2549	883.9	20	66536	2120	20	67038	2170.2	20	67236	2190
66-66C-5B	66	21.75																			
66C-66-5B	66	21.75																			
41C-41D	41	22.38	22.35	-0.03	100	20	39750	2506	1 Rb High	20	39948	2525.8	20	39750	2506	20	39948	2525.8	20	40146	2545
41D-41C	41	22.38																			

DL 4CA																		
Combination	UL Band	PCC (dBm)	PCC+SCCs (dBm)	Delta	Aggr. BW	PCC1				SCC1			SCC2			SCC3		
						BW	CH	FREQ	RB	BW	CH	FREQ	RB	BW	CH	FREQ	RB	BW
2-2-4-12	2	22.24																
4-2-2-12	4	22.43	22.41	-0.02	70	20	20300	1745	1 Rb Mid	20	700	1940	20	1100	1980	10	5095	737.5
12-2-2-4	12	22.14																
2-2-12-12	2	22.24	22.22	-0.02	50	20	19100	1900	1 Rb Mid	20	1100	1980	5	5035	731.5	5	5155	743.5
12-12-2-2	12	22.14																
2C-12-30	2	22.24	22.27	0.03	60	20	19100	1900	1 Rb Mid	20	1100	1980	10	5095	737.5	10	9820	2355
12-2C-30	12	22.14																
2-2-13-66	2	22.24																
13-2-2-66	13	22.56	22.54	-0.02	70	10	23230	782	1 Rb Low	20	700	1940	20	1100	1980	20	66786	2145
66-2-2-13	66	21.75																
2-2-29-30	2	22.24	22.2	-0.04	60	20	19100	1900	1 Rb Mid	20	1100	1980	10	9715	722.5	10	9820	2355
2C-29-30	2	22.24	22.22	-0.02	60	20	19100	1900	1 Rb Mid	20	1100	1980	10	9715	722.5	10	9820	2355
2C-66-66	2	22.24	22.25	0.01	80	20	19100	1900	1 Rb Mid	20	1100	1980	20	66536	2120	20	66786	2145
66-66-2C	66	21.75																
2-2-66-71	2	22.24																
66-2-2-71	66	21.75																
71-2-2-66	71	22.76	22.78	0.02	80	20	133297	680.5	1 Rb Low	20	700	1940	20	1100	1980	20	66786	2145
2-4-4-12	2	22.24																
4-4-2-12	4	22.43	22.45	0.02	70	20	20300	1745	1 Rb Mid	20	2300	2145	20	1100	1980	10	5095	737.5
12-2-4-4	12	22.14																
2-4-12-30	2	22.24																
4-2-12-30	4	22.43	22.41	-0.02	60	20	20300	1745	1 Rb Mid	20	1100	1980	10	5095	737.5	10	9820	2355
12-2-4-30	12	22.14																
2-4-29-30	2	22.24																
4-2-29-30	4	22.43	22.4	-0.03	60	20	20300	1745	1 Rb Mid	20	1100	1980	10	9715	722.5	10	9820	2355
2-4-12-12	2	22.24																
4-2-12-12	4	22.43	22.44	0.01	50	20	20300	1745	1 Rb Mid	20	1100	1980	5	5035	731.5	5	5155	743.5
12-12-2-4	12	22.14																
2-4-12B	2	22.24																
4-2-12B	4	22.43	22.46	0.03	55	20	20300	1745	1 Rb Mid	20	1100	1980	5	5038	731.8	10	5110	739
12B-2-4	12	22.14																
2-12-66C	2	22.24	22.2	-0.04	70	20	19100	1900	1 Rb Mid	10	5095	737.5	20	66787	2145.1	20	66985	2164.9
12-2-66C	12	22.14																
66C-2-12	66	21.75																
2-29-30-66	2	22.24	22.22	-0.02	60	20	19100	1900	1 Rb Mid	10	9715	722.5	10	9820	2355	20	66786	2145
66-2-29-30	66	21.75																

DL 4CA																		
Combination	UL Band	PCC (dBm)	PCC+SCCs (dBm)	Delta	Aggr. BW	PCC1				SCC1			SCC2			SCC3		
						BW	CH	FREQ	RB	BW	CH	FREQ	RB	BW	CH	FREQ	RB	BW
2-66-66-66	2	22.24	22.27	0.03	80	20	19100	1900	1 Rb Mid	20	66536	2120	20	66886	2155	20	67236	2190
66-66-66-2	66	21.75																
2-66-66-71	2	22.24																
66-66-2-71	66	21.75																
71-2-66-66	71	22.76	22.72	-0.04	80	20	133297	680.5	1 Rb Low	20	1100	1980	20	66536	2120	20	66786	2145
2-66C-71	2	22.24																
66C-2-71	66	21.75																
71-2-66C	71	22.76	22.74	-0.02	80	20	133297	680.5	1 Rb Low	20	1100	1980	20	66787	2145.1	20	66985	2164.9
4-4-12-12	4	22.43	22.41	-0.02	50	20	20300	1745	1 Rb Mid	20	2300	2145	5	5035	731.5	5	5155	743.5
12-12-4-4	12	22.14																
4-4-12B	4	22.43	22.42	-0.01	55	20	20300	1745	1 Rb Mid	20	2300	2145	5	5038	731.8	10	5110	739
12B-4-4	12	22.14																
4-4-12-30	4	22.43	22.4	-0.03	60	20	20300	1745	1 Rb Mid	20	2300	2145	10	5095	737.5	10	9820	2355
12-4-4-30	12	22.14																
4-4-29-30	4	22.43	22.39	-0.04	60	20	20300	1745	1 Rb Mid	20	2300	2145	10	9715	722.5	10	9820	2355
7-7-66-66	7	22.31	22.28	-0.03	80	20	20850	2510	1 Rb High	20	3350	2680	20	66536	2120	20	66786	2145
7C-66-66	7	22.31	22.29	-0.02	80	20	20850	2510	1 Rb High	20	3048	2649.8	20	66536	2120	20	66786	2145
7-12B-66	7	22.31	22.25	-0.06	55	20	20850	2510	1 Rb High	5	5038	731.8	10	5110	739	20	66786	2145
12B-7-66	12	22.14																
13-66-66-66	13	22.56	22.51	-0.05	70	10	23230	782	1 Rb Low	20	66536	2120	20	66886	2155	20	67236	2190
13-66-66-66	66	21.75																
66-66-29-30	66	21.75	21.73	-0.02	60	20	132322	1745	1 Rb Low	20	66786	2145	10	9715	722.5	10	9820	2355
41C-41C	41	22.38	22.35	-0.03	80	20	39750	2506	1 Rb High	20	39948	2525.8	20	41292	2660.2	20	41490	2680
41-41-41C	41	22.38	22.36	-0.02	80	20	39750	2506	1 Rb High	20	41490	2680	20	39750	2506	20	39948	2525.8
41C-41-41	41	22.38	22.34	-0.04	80	20	39750	2506	1 Rb High	20	39948	2525.8	20	39750	2506	20	41490	2680
41E	41	22.38	22.37	-0.01	80	20	39750	2506	1 Rb High	20	39948	2525.8	20	40146	2545.6	20	40344	2565.4

DL 3CA															
Combination	UL Band	PCC (dBm)	PCC+SCCs (dBm)	Delta	Aggr. BW	PCC1				SCC1			SCC2		
						BW	CH	FREQ	RB	BW	CH	FREQ	RB	BW	CH
2-4-13	2	22.24	22.2	-0.04	50	20	19100	1900	1 Rb Mid	20	2300	2145	10	5230	751
2-4-29	2	22.24	22.21	-0.03	50	20	19100	1900	1 Rb Mid	20	2300	2145	10	9715	722.5
2-4-71	2	22.24	22.26	0.02	60	20	19100	1900	1 Rb Mid	20	2300	2145	20	68761	634.5
2-29-66	2	22.24	22.25	0.01	50	20	19100	1900	1 Rb Mid	10	9715	722.5	20	66786	2145
4-4-13	4	22.43	22.4	-0.03	50	20	20300	1745	1 Rb Mid	20	2300	2145	10	5230	751
4-4-29	4	22.43	22.46	0.03	50	20	20300	1745	1 Rb Mid	20	2300	2145	10	9715	722.5
4-4-30	4	22.43	22.42	-0.01	50	20	20300	1745	1 Rb Mid	20	2300	2145	10	9820	2355
4-4-71	4	22.43	22.48	0.05	60	20	20300	1745	1 Rb Mid	20	2300	2145	20	68761	634.5
5-7-7	5	21.75	21.72	-0.03	50	10	20450	829	1 Rb Low	20	2850	2630	20	3350	2680
5-7C	5	21.75	21.71	-0.04	50	10	20450	829	1 Rb Low	20	2850	2630	20	3048	2649.8
7-7-26	7	22.31	22.28	-0.03	55	20	20850	2510	1 Rb High	20	3350	2680	15	8865	876.5
7-7-66	7	22.31	22.32	0.01	60	20	20850	2510	1 Rb High	20	3350	2680	20	66786	2145
7-12-66	7	22.31	22.34	0.03	50	20	20850	2510	1 Rb High	10	5095	737.5	20	66786	2145
25-25-25	25	22.28	22.24	-0.04	60	20	26590	1905	1 Rb Mid	20	8140	1940	20	8590	1985
25-25-26	25	22.28	22.26	-0.02	55	20	26590	1905	1 Rb Mid	20	8590	1985	15	8865	876.5
26-41C	26	23.27	23.24	-0.03	55	15	26865	831.5	1 Rb High	20	39750	2506	20	39948	2525.8
66C-29	66	21.75	21.72	-0.03	50	20	132322	1745	1 Rb Low	20	66985	2164.9	10	9715	722.5

DL 2CA												
Combination	UL Band	PCC (dBm)	PCC+SCCs (dBm)	Delta	Aggr. BW	PCC1				SCC1		
						BW	CH	FREQ	RB	BW	CH	FREQ
2-17	2	22.24	22.27	0.03	30	20	19100	1900	1 Rb Mid	10	5790	740
17-2	17	22.1										
4-17	4	22.43	22.41	-0.02	30	20	20300	1745	1 Rb Mid	10	5790	740
17-4	17	22.1										
5-25	5	21.75										
25-5	25	22.28	22.26	-0.02	30	20	26590	1905	1 Rb Mid	10	2450	874
5-41	5	21.75	21.72	-0.03	30	10	20450	829	1 Rb Low	20	39750	2506
12-25	12	22.14										
25-12	25	22.28	22.25	-0.03	30	20	26590	1905	1 Rb Mid	10	5095	737.5

2.1.3.3. LTE CA Uplink Inter-Band

LTE CA UPLINK	PCC Band
2A-5A	LTE 2
2A-12A	LTE 2
2A-13A	LTE 2
4A-5A	LTE4
4A-12A	LTE4
4A-13A	LTE4
4A-17A	LTE4
5A-7A	LTE 5
5A-66A	LTE 5
7A-26A	LTE 7
12A-66A	LTE 12

Following guidance from TCB Workshop October 2018:

- Provide the single uplink SAR values you have obtained for the SAR configurations and frequency bands that employ inter-band uplink carrier aggregation.
- If the single uplink 1-g SAR values for each band are both less than 0.8 W/kg and the algebraic summation of the 1-g SAR values are less than 1.45 W/kg no additional measurements need to be performed.
- If one of the single uplink 1-g SAR values is greater than 0.8 W/kg, instead of algebraically summing the 1-g SAR values, sum up the SAR distributions, similar to the enlarged zoom scan (volume scan) proceduresfound in FCC KDB Publication 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04.
- If the algebraic sum of the 1-g SAR values is > 1.45 W/kg additional measurements may have to be made. Submit a KDB inquiry for additional guidance.

CA UL maximum output power is reduced by 3 dBm from the single carrier maximum output power value. Reported SAR for the CA UL maximum output power have been calculated using worst-case single carrier SAR values for each CC:

	CC1			CC2			CA				
LTE CA UPLINK	**Band**	**Tune-up limit**	**Reported SAR**	**Band**	**Tune-up limit**	**Reported SAR**	**CC1 Tune-up limit**	**CC2 Tune-up limit**	**CC1 Reported SAR**	**CC2 Reported SAR**	**CA sum**
2A-5A	2A	25.0	0.168	5A	25.0	0.227	22.0	22.0	0.084	0.1135	0.1975
2A-12A	2A	25.0	0.168	12A	25.0	0.116	22.0	22.0	0.084	0.058	0.142
2A-13A	2A	25.0	0.168	13A	25.0	0.189	22.0	22.0	0.084	0.0945	0.1785
4A-5A	4A	25.0	0.147	5A	25.0	0.227	22.0	22.0	0.0735	0.1135	0.187
4A-12A	4A	25.0	0.147	12A	25.0	0.116	22.0	22.0	0.0735	0.058	0.1315
4A-13A	4A	25.0	0.147	13A	25.0	0.189	22.0	22.0	0.0735	0.0945	0.168
4A-17A	4A	25.0	0.147	17A	25.0	0.116	22.0	22.0	0.0735	0.058	0.1315
5A-7A	5A	25.0	0.227	7A	25.0	0.124	22.0	22.0	0.1135	0.062	0.1755
5A-66A	5A	25.0	0.227	66A	25.0	0.165	22.0	22.0	0.1135	0.0825	0.196
7A-26A	7A	25.0	0.124	26A	25.0	0.14	22.0	22.0	0.062	0.07	0.132
12A-66A	12A	25.0	0.116	66A	25.0	0.165	22.0	22.0	0.058	0.0825	0.1405

2.1.3.4. LTE CA Uplink Intra-Band

LTE CA UPLINK	PCC Band
5B	LTE 5
7C	LTE 7
41C	LTE 41
66B	LTE 66
66C	LTE 66

Following KDB 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02 and TCB Workshop Nov. 2017

- SAR for UL CA is required in each exposure condition (highest standalone head test position, body, etc.) and frequency band combination.
- When the maximum output for UL CA is ≤ standalone LTE mode (without CA)
  - PCC is configured according to the highest standalone SAR configuration tested
  - SCC and subsequent CCs are configured according to 3GPP TS 36.508 V17.2.0 Release 17 procedures used for power measurement and parameters (BW, RB etc.).

- Reported SAR for UL CA configuration, described above, is > 1.2 W/kg, UL CA SAR is also required for all required test channels(PCC based)

- UL CA SAR is also required for standalone SAR configurations > 1.2 W/kg when they are scaled to the UL CA power level

All measured SAR values for the bands that supports Uplink CA Intraband are lower than, 1,2 W/kg, therefore all Uplink CA intraband combinations values are also < 1.2 W/kg.

LTE CA UPLINK BAND	Band	BW (MHz)	Channel	Frequency (MHz)	RB Config	Output power W/O CA	Output power with CA	Delta CA off/on
5B	LTE 5	10	20600	844	1Rb Low	21.53	21.48	0.05
7C	LTE 7	20	20850	2510	1RB High	22.31	22.26	0.05
41C	LTE 41	20	40595	2590.5	1RB High	21.61	21.55	0.06
66B	LTE 66	10	132373	1750.1	1RB High	21.75	21.71	0.04
66C	LTE 66	20	132323	1745.1	1RB High	21.75	21.73	0.02

LTE CA UPLINK BAND	PCC				SCC				Reported SAR (W/kg)	Plot
	BW (MHz)	CH	FREQ	RB Config	BW (MHz)	CH	FREQ	RB Config		
5B	10	20600	844	1Rb Low	10	20501	834.1	1Rb High	0.182	19
7C	20	20850	2510	1RB High	20	21048	2529.8	1RB Low	0.081	20
41C	20	40595	2590.5	1RB High	5	40712	2602.2	1RB Low	0.06	21
66B	10	132373	1750.1	1RB High	10	132472	1760	1RB Low	0.107	22
66C	20	132323	1745.1	1RB High	20	132521	1764.9	1RB Low	0.125	23

2.1.4. 5G

2.1.4.1. 5G Stand-Alone Bands

MPR is permanently implemented for the device. A-MPR was disable for SAR measurements.

Maximum Power Reductions are specified in Table 6.2.3-1 of the 3GPP TS138.521-1.

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

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

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

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

- n2

NR Band 2 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		372000	376000	380000
		Frequency (MHz)		1860	1880	1900
20 MHz	pi/2 BPSK	1	0	23.69	23.67	23.65
		1	53	23.79	23.71	23.75
		1	105	23.79	23.78	23.74
		53	0	23.69	23.64	23.64
		53	27	23.67	23.62	23.63
		53	53	23.65	23.68	23.63
		106	0	23.51	23.50	23.50
	QPSK	1	0	20.77	20.80	20.80
		1	53	20.90	20.87	20.85
		1	105	20.87	20.83	20.83
		53	0	20.80	20.71	20.75
		53	27	20.72	20.75	20.71
		53	53	20.74	20.78	20.77
		106	0	20.65	20.64	20.68
	16QAM	1	0	20.61	20.61	20.65
		1	53	20.75	20.79	20.70
		1	105	20.77	20.70	20.77
		53	0	20.61	20.60	20.64
		53	27	20.66	20.60	20.65
		53	53	20.68	20.65	20.60
		106	0	20.60	20.52	20.57
	64QAM	1	0	20.27	20.21	20.27
		1	53	20.35	20.37	20.30
		1	105	20.30	20.40	20.39
		53	0	20.29	20.29	20.29
		53	27	20.22	20.30	20.21
		53	53	20.21	20.28	20.29
		106	0	20.16	20.10	20.18
	256QAM	1	0	17.30	17.26	17.27
		1	53	17.39	17.30	17.40
		1	105	17.31	17.31	17.39
		53	0	17.27	17.26	17.21
		53	27	17.27	17.25	17.29
		53	53	17.27	17.22	17.21
		106	0	17.14	17.18	17.11

NR Band 2 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		371500	376000	380500
		Frequency (MHz)		1857.5	1880	1902.5
15 MHz	pi/2 BPSK	1	0	23.67	23.62	23.65
		1	39	23.70	23.79	23.73
		1	78	23.78	23.71	23.70
		39	0	23.69	23.68	23.62
		39	19	23.69	23.60	23.60
		39	40	23.62	23.63	23.68
		79	0	23.56	23.54	23.55
	QPSK	1	0	20.74	20.74	20.76
		1	39	20.80	20.86	20.81
		1	78	20.85	20.90	20.86
		39	0	20.75	20.76	20.79
		39	19	20.72	20.77	20.70
		39	40	20.72	20.73	20.76
		79	0	20.69	20.70	20.60
	16QAM	1	0	20.67	20.66	20.67
		1	39	20.72	20.71	20.70
		1	78	20.73	20.74	20.77
		39	0	20.63	20.65	20.63
		39	19	20.60	20.68	20.65
		39	40	20.68	20.67	20.68
		79	0	20.52	20.50	20.53
	64QAM	1	0	20.29	20.23	20.29
		1	39	20.33	20.35	20.36
		1	78	20.34	20.37	20.40
		39	0	20.25	20.22	20.30
		39	19	20.25	20.22	20.28
		39	40	20.28	20.22	20.20
		79	0	20.10	20.18	20.18
	256QAM	1	0	17.26	17.22	17.23
		1	39	17.40	17.36	17.37
		1	78	17.38	17.38	17.34
		39	0	17.24	17.28	17.29
		39	19	17.27	17.23	17.22
		39	40	17.25	17.20	17.27
		79	0	17.12	17.20	17.15

NR Band 2 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		371000	376000	381000
		Frequency (MHz)		1855	1880	1905
10 MHz	pi/2 BPSK	1	0	23.65	23.63	23.67
		1	26	23.79	23.79	23.72
		1	51	23.77	23.70	23.77
		26	0	23.63	23.61	23.62
		26	13	23.64	23.63	23.66
		26	26	23.66	23.67	23.64
		52	0	23.58	23.59	23.53
	QPSK	1	0	20.74	20.71	20.79
		1	26	20.90	20.89	20.88
		1	51	20.90	20.88	20.86
		26	0	20.75	20.72	20.75
		26	13	20.75	20.75	20.78
		26	26	20.80	20.77	20.71
		52	0	20.61	20.65	20.69
	16QAM	1	0	20.70	20.60	20.65
		1	26	20.75	20.77	20.80
		1	51	20.74	20.74	20.77
		26	0	20.64	20.68	20.65
		26	13	20.69	20.70	20.64
		26	26	20.69	20.64	20.70
		52	0	20.50	20.60	20.55
	64QAM	1	0	20.30	20.28	20.30
		1	26	20.31	20.36	20.36
		1	51	20.40	20.30	20.39
		26	0	20.28	20.23	20.29
		26	13	20.30	20.29	20.30
		26	26	20.27	20.22	20.28
		52	0	20.18	20.11	20.18
	256QAM	1	0	17.28	17.28	17.28
		1	26	17.36	17.40	17.36
		1	51	17.38	17.30	17.32
		26	0	17.21	17.28	17.21
		26	13	17.21	17.23	17.26
		26	26	17.21	17.25	17.21
		52	0	17.11	17.15	17.16

NR Band 2 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		370500	376000	381500
		Frequency (MHz)		1852.5	1880	1907.5
5 MHz	pi/2 BPSK	1	0	23.63	23.62	23.60
		1	12	23.71	23.71	23.75
		1	24	23.73	23.71	23.75
		12	0	23.64	23.63	23.67
		12	6	23.66	23.61	23.67
		12	13	23.64	23.61	23.66
		25	0	23.55	23.58	23.54
	QPSK	1	0	20.80	20.71	20.73
		1	12	20.84	20.82	20.87
		1	24	20.81	20.86	20.83
		12	0	20.79	20.77	20.78
		12	6	20.71	20.72	20.74
		12	13	20.78	20.80	20.71
		25	0	20.67	20.66	20.70
	16QAM	1	0	20.60	20.67	20.69
		1	12	20.73	20.70	20.74
		1	24	20.72	20.73	20.74
		12	0	20.68	20.66	20.60
		12	6	20.67	20.60	20.69
		12	13	20.70	20.67	20.61
		25	0	20.55	20.52	20.56
	64QAM	1	0	20.20	20.30	20.27
		1	12	20.31	20.35	20.35
		1	24	20.33	20.31	20.33
		12	0	20.21	20.23	20.29
		12	6	20.27	20.28	20.26
		12	13	20.21	20.27	20.29
		25	0	20.18	20.12	20.18
	256QAM	1	0	17.23	17.26	17.29
		1	12	17.37	17.32	17.37
		1	24	17.35	17.34	17.35
		12	0	17.27	17.30	17.28
		12	6	17.20	17.22	17.25
		12	13	17.29	17.20	17.28
		25	0	17.11	17.14	17.10

- n5

NR Band 5 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		166800	167300	167800
		Frequency (MHz)		834	836.5	839
20 MHz	pi/2 BPSK	1	0	24.44	24.50	24.35
		1	53	24.40	24.36	24.21
		1	105	24.40	24.31	24.44
		53	0	24.38	24.32	24.21
		53	27	24.32	24.31	24.24
		53	53	24.23	24.39	24.36
		106	0	24.28	24.27	24.26
	QPSK	1	0	21.45	21.35	21.44
		1	53	21.25	21.37	21.20
		1	105	21.45	21.34	21.31
		53	0	21.38	21.21	21.21
		53	27	21.36	21.36	21.38
		53	53	21.31	21.40	21.23
		106	0	21.22	21.25	21.28
	16QAM	1	0	21.32	21.31	21.48
		1	53	21.30	21.20	21.21
		1	105	21.47	21.34	21.32
		53	0	21.25	21.34	21.30
		53	27	21.25	21.35	21.35
		53	53	21.31	21.36	21.38
		106	0	21.14	21.20	21.30
	64QAM	1	0	20.74	20.87	20.77
		1	53	20.74	20.79	20.79
		1	105	20.86	20.72	20.83
		53	0	20.70	20.69	20.72
		53	27	20.70	20.71	20.60
		53	53	20.65	20.67	20.75
		106	0	20.56	20.52	20.54
	256QAM	1	0	17.76	17.86	17.89
		1	53	17.65	17.74	17.75
		1	105	17.73	17.80	17.90
		53	0	17.78	17.67	17.72
		53	27	17.63	17.72	17.79
		53	53	17.60	17.77	17.73
		106	0	17.58	17.68	17.52

NR Band 5 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		166300	167300	168300
		Frequency (MHz)		831.5	836.5	841.5
15 MHz	pi/2 BPSK	1	0	24.41	24.49	24.35
		1	39	24.39	24.32	24.40
		1	78	24.47	24.43	24.49
		39	0	24.26	24.36	24.22
		39	19	24.38	24.27	24.24
		39	40	24.22	24.38	24.26
		79	0	24.14	24.29	24.12
	QPSK	1	0	21.32	21.35	21.32
		1	39	21.35	21.20	21.30
		1	78	21.34	21.34	21.40
		39	0	21.23	21.28	21.33
		39	19	21.33	21.23	21.23
		39	40	21.24	21.34	21.34
		79	0	21.19	21.11	21.13
	16QAM	1	0	21.30	21.37	21.30
		1	39	21.29	21.40	21.23
		1	78	21.45	21.48	21.31
		39	0	21.20	21.31	21.20
		39	19	21.39	21.29	21.22
		39	40	21.21	21.34	21.33
		79	0	21.11	21.19	21.23
	64QAM	1	0	20.86	20.81	20.78
		1	39	20.72	20.72	20.62
		1	78	20.73	20.90	20.78
		39	0	20.65	20.68	20.66
		39	19	20.70	20.64	20.60
		39	40	20.68	20.68	20.66
		79	0	20.57	20.60	20.66
	256QAM	1	0	17.87	17.81	17.75
		1	39	17.62	17.66	17.69
		1	78	17.89	17.83	17.88
		39	0	17.80	17.74	17.65
		39	19	17.61	17.61	17.66
		39	40	17.75	17.63	17.69
		79	0	17.62	17.57	17.58

NR Band 5 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		165800	167300	168800
		Frequency (MHz)		829	836.5	844
10 MHz	pi/2 BPSK	1	0	24.35	24.50	24.39
		1	26	24.32	24.24	24.20
		1	51	24.40	24.48	24.50
		26	0	24.20	24.32	24.21
		26	13	24.21	24.33	24.40
		26	26	24.21	24.30	24.33
		52	0	24.20	24.11	24.24
	QPSK	1	0	21.40	21.50	21.30
		1	26	21.30	21.31	21.37
		1	51	21.49	21.33	21.36
		26	0	21.33	21.29	21.27
		26	13	21.20	21.24	21.36
		26	26	21.40	21.39	21.37
		52	0	21.17	21.21	21.27
	16QAM	1	0	21.41	21.39	21.30
		1	26	21.30	21.23	21.35
		1	51	21.34	21.38	21.36
		26	0	21.27	21.23	21.30
		26	13	21.32	21.36	21.20
		26	26	21.39	21.40	21.34
		52	0	21.23	21.24	21.23
	64QAM	1	0	20.80	20.78	20.83
		1	26	20.66	20.70	20.77
		1	51	20.82	20.72	20.80
		26	0	20.78	20.80	20.65
		26	13	20.64	20.74	20.73
		26	26	20.60	20.74	20.62
		52	0	20.63	20.52	20.58
	256QAM	1	0	17.90	17.75	17.70
		1	26	17.64	17.74	17.76
		1	51	17.76	17.88	17.87
		26	0	17.68	17.66	17.64
		26	13	17.65	17.75	17.74
		26	26	17.69	17.64	17.70
		52	0	17.66	17.54	17.66

NR Band 5 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		165300	167300	169300
		Frequency (MHz)		826.5	836.5	846.5
5 MHz	pi/2 BPSK	1	0	24.36	24.48	24.30
		1	12	24.39	24.21	24.36
		1	24	24.41	24.47	24.35
		12	0	24.32	24.20	24.27
		12	6	24.23	24.30	24.29
		12	13	24.35	24.39	24.25
		25	0	24.29	24.20	24.10
	QPSK	1	0	21.36	21.50	21.37
		1	12	21.24	21.21	21.21
		1	24	21.32	21.31	21.49
		12	0	21.35	21.31	21.38
		12	6	21.40	21.37	21.24
		12	13	21.34	21.40	21.29
		25	0	21.27	21.17	21.12
	16QAM	1	0	21.39	21.35	21.50
		1	12	21.24	21.20	21.32
		1	24	21.47	21.46	21.30
		12	0	21.28	21.20	21.29
		12	6	21.38	21.33	21.27
		12	13	21.30	21.25	21.38
		25	0	21.26	21.29	21.16
	64QAM	1	0	20.85	20.76	20.79
		1	12	20.64	20.62	20.64
		1	24	20.79	20.83	20.83
		12	0	20.62	20.72	20.74
		12	6	20.73	20.61	20.60
		12	13	20.60	20.79	20.69
		25	0	20.63	20.56	20.65
	256QAM	1	0	17.81	17.81	17.82
		1	12	17.75	17.79	17.79
		1	24	17.81	17.83	17.80
		12	0	17.80	17.67	17.63
		12	6	17.61	17.66	17.61
		12	13	17.77	17.60	17.67
		25	0	17.60	17.61	17.55

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NR Band 7 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		502000	507000	512000
		Frequency (MHz)		2510	2535	2560
20 MHz	pi/2 BPSK	1	0	24.00	24.09	23.91
		1	53	24.05	23.99	23.98
		1	105	23.51	23.50	23.61
		53	0	23.96	23.89	23.94
		53	27	23.98	23.99	23.84
		53	53	23.70	23.74	23.74
		106	0	23.85	23.78	23.89
	QPSK	1	0	20.93	21.07	21.06
		1	53	20.90	21.00	20.96
		1	105	20.63	20.68	20.57
		53	0	20.98	20.94	20.98
		53	27	20.90	20.81	20.90
		53	53	20.71	20.72	20.75
		106	0	20.74	20.71	20.85
	16QAM	1	0	20.90	21.06	20.97
		1	53	20.92	20.96	20.97
		1	105	20.65	20.64	20.60
		53	0	20.99	20.92	20.91
		53	27	20.97	20.84	20.82
		53	53	20.70	20.75	20.82
		106	0	20.76	20.88	20.71
	64QAM	1	0	20.31	20.49	20.49
		1	53	20.49	20.45	20.40
		1	105	20.09	20.00	19.95
		53	0	20.37	20.26	20.39
		53	27	20.24	20.20	20.20
		53	53	20.13	20.14	20.17
		106	0	20.18	20.24	20.26
	256QAM	1	0	17.50	17.30	17.44
		1	53	17.39	17.41	17.49
		1	105	16.95	17.06	17.07
		53	0	17.37	17.27	17.35
		53	27	17.28	17.24	17.21
		53	53	17.14	17.14	17.15
		106	0	17.30	17.28	17.10

NR Band 7 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		501500	507000	512500
		Frequency (MHz)		2507.5	2535	2562.5
15 MHz	pi/2 BPSK	1	0	23.90	23.94	23.90
		1	39	23.99	24.04	23.92
		1	78	23.70	23.52	23.67
		39	0	23.86	23.92	23.99
		39	19	23.96	23.81	23.83
		39	40	23.77	23.83	23.70
		79	0	23.89	23.72	23.89
	QPSK	1	0	21.06	21.03	20.93
		1	39	20.92	20.99	20.93
		1	78	20.68	20.68	20.55
		39	0	20.94	21.00	20.92
		39	19	20.87	20.86	20.97
		39	40	20.82	20.78	20.79
		79	0	20.70	20.70	20.77
	16QAM	1	0	20.90	21.00	21.00
		1	39	20.93	21.03	21.08
		1	78	20.57	20.59	20.66
		39	0	20.82	20.85	20.96
		39	19	20.93	20.92	20.97
		39	40	20.70	20.86	20.70
		79	0	20.71	20.78	20.90
	64QAM	1	0	20.45	20.34	20.48
		1	39	20.31	20.35	20.47
		1	78	20.03	19.90	19.99
		39	0	20.34	20.25	20.20
		39	19	20.35	20.22	20.21
		39	40	20.12	20.13	20.27
		79	0	20.18	20.12	20.12
	256QAM	1	0	17.38	17.32	17.32
		1	39	17.44	17.48	17.44
		1	78	16.96	17.06	16.95
		39	0	17.40	17.39	17.27
		39	19	17.35	17.26	17.30
		39	40	17.23	17.29	17.24
		79	0	17.18	17.26	17.10

NR Band 7 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		501000	507000	513000
		Frequency (MHz)		2505	2535	2565
10 MHz	pi/2 BPSK	1	0	24.00	23.92	24.03
		1	26	24.01	24.01	24.00
		1	51	23.60	23.66	23.55
		26	0	23.80	23.98	23.81
		26	13	23.98	23.94	23.90
		26	26	23.87	23.85	23.86
		52	0	23.89	23.77	23.88
	QPSK	1	0	21.06	21.08	20.92
		1	26	20.95	21.01	20.92
		1	51	20.69	20.58	20.69
		26	0	20.97	20.86	20.91
		26	13	20.83	20.91	20.80
		26	26	20.76	20.77	20.86
		52	0	20.80	20.78	20.84
	16QAM	1	0	20.91	20.92	20.96
		1	26	20.92	20.91	21.05
		1	51	20.51	20.59	20.59
		26	0	20.85	20.96	20.94
		26	13	20.84	20.87	21.00
		26	26	20.80	20.77	20.79
		52	0	20.71	20.89	20.81
	64QAM	1	0	20.39	20.43	20.44
		1	26	20.38	20.34	20.45
		1	51	19.98	19.95	20.06
		26	0	20.33	20.24	20.28
		26	13	20.36	20.20	20.25
		26	26	20.25	20.19	20.10
		52	0	20.12	20.18	20.30
	256QAM	1	0	17.35	17.43	17.41
		1	26	17.47	17.37	17.34
		1	51	16.99	17.09	17.09
		26	0	17.38	17.21	17.30
		26	13	17.28	17.24	17.38
		26	26	17.19	17.20	17.12
		52	0	17.27	17.22	17.23

NR Band 7 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		500500	507000	513500
		Frequency (MHz)		2502.5	2535	2567.5
5 MHz	pi/2 BPSK	1	0	24.07	24.10	24.06
		1	12	23.90	23.93	24.08
		1	24	23.60	23.61	23.65
		12	0	23.82	24.00	23.93
		12	6	23.81	23.87	23.92
		12	13	23.87	23.89	23.73
		25	0	23.84	23.88	23.77
	QPSK	1	0	20.92	20.96	20.96
		1	12	21.00	20.98	21.05
		1	24	20.61	20.60	20.69
		12	0	20.87	20.87	20.85
		12	6	20.95	20.86	20.85
		12	13	20.80	20.73	20.72
		25	0	20.87	20.83	20.80
	16QAM	1	0	20.90	21.01	21.03
		1	12	21.09	20.94	20.91
		1	24	20.61	20.53	20.56
		12	0	20.99	20.85	20.94
		12	6	20.96	20.84	20.83
		12	13	20.73	20.75	20.90
		25	0	20.85	20.72	20.89
	64QAM	1	0	20.35	20.33	20.47
		1	12	20.40	20.32	20.40
		1	24	19.98	20.10	20.04
		12	0	20.29	20.40	20.30
		12	6	20.21	20.20	20.35
		12	13	20.12	20.13	20.13
		25	0	20.21	20.12	20.12
	256QAM	1	0	17.35	17.32	17.46
		1	12	17.40	17.37	17.44
		1	24	17.06	17.10	17.00
		12	0	17.21	17.22	17.35
		12	6	17.27	17.26	17.36
		12	13	17.23	17.17	17.26
		25	0	17.30	17.16	17.30

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NR Band 25 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		374000	376500	379000
		Frequency (MHz)		1860	1882.5	1905
20 MHz	pi/2 BPSK	1	0	23.98	24.09	24.02
		1	53	23.92	23.97	24.10
		1	105	24.00	23.94	23.92
		53	0	24.02	24.06	23.91
		53	27	24.04	23.91	24.05
		53	53	23.98	23.97	23.89
		106	0	23.82	23.82	23.89
	QPSK	1	0	21.00	20.96	21.02
		1	53	21.03	21.02	21.08
		1	105	20.84	20.88	20.93
		53	0	21.05	20.90	20.98
		53	27	20.92	21.07	20.94
		53	53	20.93	20.80	20.95
		106	0	20.87	20.88	20.85
	16QAM	1	0	21.09	20.92	20.97
		1	53	21.10	20.91	20.95
		1	105	20.95	20.96	20.93
		53	0	21.10	20.97	21.03
		53	27	20.91	21.08	21.06
		53	53	20.83	20.90	20.97
		106	0	20.98	20.94	20.83
	64QAM	1	0	20.59	20.49	20.40
		1	53	20.40	20.43	20.45
		1	105	20.43	20.45	20.43
		53	0	20.47	20.52	20.52
		53	27	20.44	20.40	20.52
		53	53	20.39	20.49	20.45
		106	0	20.42	20.46	20.42
	256QAM	1	0	17.54	17.54	17.57
		1	53	17.45	17.48	17.46
		1	105	17.35	17.30	17.41
		53	0	17.48	17.58	17.41
		53	27	17.48	17.53	17.58
		53	53	17.33	17.43	17.44
		106	0	17.38	17.38	17.32

NR Band 25 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		371500	376500	381500
		Frequency (MHz)		1857.5	1882.5	1907.5
15 MHz	pi/2 BPSK	1	0	24.03	23.90	23.94
		1	39	23.94	23.90	24.07
		1	78	23.84	23.97	23.98
		39	0	24.06	24.04	24.08
		39	19	24.07	23.99	23.94
		39	40	23.89	23.87	23.90
		79	0	23.92	23.88	23.81
	QPSK	1	0	21.10	20.97	20.94
		1	39	20.91	21.08	20.94
		1	78	20.84	20.83	20.90
		39	0	20.91	21.03	20.95
		39	19	21.04	21.05	20.96
		39	40	20.86	20.80	20.81
		79	0	20.83	20.84	20.81
	16QAM	1	0	20.92	20.90	21.06
		1	39	21.00	21.01	21.00
		1	78	20.91	20.90	20.97
		39	0	21.10	20.98	21.01
		39	19	21.05	21.03	20.98
		39	40	20.80	20.87	20.88
		79	0	20.89	20.80	20.82
	64QAM	1	0	20.44	20.51	20.50
		1	39	20.57	20.42	20.53
		1	78	20.34	20.47	20.46
		39	0	20.43	20.42	20.57
		39	19	20.60	20.51	20.59
		39	40	20.47	20.35	20.35
		79	0	20.36	20.50	20.45
	256QAM	1	0	17.53	17.58	17.57
		1	39	17.50	17.59	17.40
		1	78	17.47	17.50	17.36
		39	0	17.57	17.47	17.43
		39	19	17.49	17.44	17.43
		39	40	17.32	17.38	17.42
		79	0	17.42	17.34	17.49

NR Band 25 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		371000	376500	382000
		Frequency (MHz)		1855	1882.5	1910
10 MHz	pi/2 BPSK	1	0	24.09	23.95	23.98
		1	26	24.04	24.03	24.09
		1	51	23.84	23.83	23.96
		26	0	23.93	24.00	23.95
		26	13	23.91	24.06	23.91
		26	26	23.85	23.85	23.95
		52	0	23.86	23.87	23.84
	QPSK	1	0	21.02	20.92	21.07
		1	26	20.95	21.03	21.06
		1	51	20.81	20.86	20.81
		26	0	20.90	21.10	21.01
		26	13	20.98	21.08	20.91
		26	26	20.91	20.89	20.86
		52	0	20.82	20.85	20.97
	16QAM	1	0	20.99	20.95	21.01
		1	26	20.93	20.95	20.94
		1	51	21.00	20.91	20.84
		26	0	21.10	20.99	20.91
		26	13	21.04	20.95	20.91
		26	26	20.86	20.95	20.90
		52	0	20.81	20.85	20.91
	64QAM	1	0	20.51	20.43	20.53
		1	26	20.53	20.40	20.44
		1	51	20.46	20.31	20.47
		26	0	20.42	20.45	20.46
		26	13	20.56	20.59	20.43
		26	26	20.43	20.42	20.40
		52	0	20.50	20.41	20.30
	256QAM	1	0	17.58	17.50	17.43
		1	26	17.51	17.55	17.52
		1	51	17.36	17.43	17.47
		26	0	17.55	17.51	17.43
		26	13	17.43	17.51	17.57
		26	26	17.43	17.39	17.38
		52	0	17.44	17.36	17.45

NR Band 25 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		370500	376500	382500
		Frequency (MHz)		1852.5	1882.5	1912.5
5 MHz	pi/2 BPSK	1	0	24.04	23.93	24.04
		1	12	23.93	24.00	24.10
		1	24	23.85	23.83	23.81
		12	0	23.99	23.96	23.96
		12	6	23.95	24.00	24.10
		12	13	23.94	23.93	23.93
		25	0	23.87	23.96	23.94
	QPSK	1	0	21.01	21.09	21.05
		1	12	20.92	21.07	20.91
		1	24	20.89	20.95	20.86
		12	0	20.93	21.05	21.01
		12	6	21.04	21.09	20.97
		12	13	20.81	20.82	20.97
		25	0	20.84	20.87	20.80
	16QAM	1	0	21.01	20.93	21.05
		1	12	21.05	21.09	21.00
		1	24	20.99	20.85	20.82
		12	0	21.10	20.93	20.95
		12	6	20.90	20.99	21.05
		12	13	20.95	20.87	20.89
		25	0	20.92	20.92	20.80
	64QAM	1	0	20.45	20.60	20.42
		1	12	20.47	20.45	20.45
		1	24	20.39	20.50	20.49
		12	0	20.55	20.56	20.46
		12	6	20.52	20.56	20.44
		12	13	20.42	20.46	20.34
		25	0	20.45	20.33	20.46
	256QAM	1	0	17.48	17.53	17.53
		1	12	17.50	17.42	17.42
		1	24	17.36	17.49	17.38
		12	0	17.42	17.51	17.50
		12	6	17.59	17.45	17.53
		12	13	17.34	17.47	17.50
		25	0	17.49	17.46	17.43

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NR Band 38 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		516000	519000	522000
		Frequency (MHz)		2580	2595	2610
20 MHz	pi/2 BPSK	1	0	22.91	22.94	22.89
		1	53	22.74	22.76	22.73
		1	105	22.67	22.69	22.64
		53	0	22.51	22.54	22.49
		53	27	22.45	22.48	22.41
		53	53	22.43	22.46	22.41
		106	0	22.38	22.40	22.35
	QPSK	1	0	22.69	22.46	22.28
		1	53	22.81	22.56	22.59
		1	105	22.37	22.32	22.58
		53	0	22.48	22.45	22.41
		53	27	22.64	22.76	22.75
		53	53	22.17	22.48	22.56
		106	0	22.19	22.80	22.21
	16QAM	1	0	21.59	21.78	21.07
		1	53	21.51	21.70	21.05
		1	105	21.15	21.51	21.39
		53	0	21.75	21.75	21.56
		53	27	21.19	21.38	21.58
		53	53	21.62	21.53	21.27
		106	0	21.19	21.43	21.39
	64QAM	1	0	20.02	20.87	20.78
		1	53	20.32	20.35	20.45
		1	105	20.88	20.88	20.32
		53	0	20.03	20.33	20.41
		53	27	20.34	20.56	20.53
		53	53	20.58	20.76	20.57
		106	0	20.57	20.64	20.29
	256QAM	1	0	19.81	19.84	19.82
		1	53	19.65	19.74	19.70
		1	105	19.58	19.62	19.56
		53	0	19.49	19.55	19.50
		53	27	19.43	19.44	19.40
		53	53	19.38	19.42	19.37
		106	0	19.29	19.31	19.26

NR Band 38 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		515500	519000	522500
		Frequency (MHz)		2577.5	2595	2612.5
15 MHz	pi/2 BPSK	1	0	22.75	22.85	22.72
		1	39	22.64	22.67	22.60
		1	78	22.50	22.52	22.46
		39	0	22.43	22.50	22.40
		39	19	22.39	22.41	22.34
		39	40	22.37	22.39	22.34
		79	0	22.29	22.30	22.26
	QPSK	1	0	22.31	22.47	22.72
		1	39	22.53	22.22	22.56
		1	78	22.25	22.34	22.14
		39	0	22.56	22.80	22.28
		39	19	22.74	22.81	22.34
		39	40	22.55	22.59	22.16
		79	0	22.75	22.48	22.14
	16QAM	1	0	21.46	21.53	21.40
		1	39	21.42	21.33	21.67
		1	78	21.20	21.67	21.46
		39	0	21.52	21.31	21.37
		39	19	21.52	21.54	21.45
		39	40	21.57	21.26	21.08
		79	0	21.23	21.35	21.63
	64QAM	1	0	20.15	20.47	20.31
		1	39	20.13	20.82	20.76
		1	78	20.60	20.85	20.16
		39	0	20.68	20.67	20.19
		39	19	20.03	20.60	20.48
		39	40	20.36	20.38	20.32
		79	0	20.55	20.33	20.60
	256QAM	1	0	19.68	19.73	19.66
		1	39	19.56	19.60	19.53
		1	78	19.48	19.55	19.45
		39	0	19.41	19.43	19.37
		39	19	19.26	19.32	19.25
		39	40	19.29	19.33	19.27
		79	0	19.16	19.17	19.13

NR Band 38 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		515000	523000	515500
		Frequency (MHz)		2575	2595	2615
10 MHz	pi/2 BPSK	1	0	22.63	22.90	22.61
		1	26	22.59	22.60	22.56
		1	51	22.48	22.50	22.44
		26	0	22.36	22.39	22.34
		26	13	22.26	22.29	22.24
		26	26	22.25	22.27	22.21
		52	0	22.15	22.19	22.13
	QPSK	1	0	22.46	22.87	22.81
		1	26	22.23	22.49	22.77
		1	51	22.71	22.13	22.22
		26	0	22.51	22.46	22.68
		26	13	22.72	22.89	22.29
		26	26	22.15	22.28	22.09
		52	0	22.44	22.41	22.12
	16QAM	1	0	21.60	21.53	21.15
		1	26	21.64	21.68	21.07
		1	51	21.76	21.71	21.14
		26	0	21.45	21.25	21.55
		26	13	21.43	21.68	21.03
		26	26	21.70	21.75	21.23
		52	0	21.14	21.59	21.28
	64QAM	1	0	20.08	20.70	20.56
		1	26	20.47	20.37	20.50
		1	51	20.80	20.47	20.58
		26	0	20.58	20.42	20.46
		26	13	20.76	20.26	20.14
		26	26	20.55	20.42	20.25
		52	0	20.11	20.52	20.46
	256QAM	1	0	19.51	19.53	19.50
		1	26	19.40	19.43	19.36
		1	51	19.26	19.28	19.23
		26	0	19.17	19.26	19.21
		26	13	19.09	19.11	19.07
		26	26	19.13	19.15	19.10
		52	0	19.01	19.04	18.97

NR Band 38 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		514500	519000	523500
		Frequency (MHz)		2572.5	2595	2617.5
5 MHz	pi/2 BPSK	1	0	22.53	22.71	22.55
		1	12	22.42	22.47	22.40
		1	24	22.34	22.36	22.33
		12	0	22.20	22.24	22.23
		12	6	22.16	22.18	22.15
		12	13	22.14	22.19	22.16
		25	0	22.09	22.12	22.07
	QPSK	1	0	22.57	22.40	22.08
		1	12	22.60	22.86	22.69
		1	24	22.34	22.17	22.73
		12	0	22.35	22.79	22.11
		12	6	22.61	22.29	22.14
		12	13	22.21	22.72	22.70
		25	0	22.59	22.19	22.25
	16QAM	1	0	21.26	21.47	21.31
		1	12	21.06	21.72	21.62
		1	24	21.68	21.74	21.34
		12	0	21.73	21.25	21.05
		12	6	21.63	21.40	21.18
		12	13	21.73	21.58	21.04
		25	0	21.28	21.43	21.31
	64QAM	1	0	20.70	20.58	20.58
		1	12	20.31	20.62	20.40
		1	24	20.51	20.81	20.69
		12	0	20.71	20.45	20.33
		12	6	20.14	20.56	20.36
		12	13	20.35	20.54	20.70
		25	0	20.07	20.23	20.63
	256QAM	1	0	19.50	19.54	19.52
		1	12	19.37	19.44	19.40
		1	24	19.25	19.28	19.23
		12	0	19.19	19.22	19.16
		12	6	19.08	19.13	19.09
		12	13	19.09	19.10	19.07
		25	0	18.97	19.01	18.99

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NR Band 41 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		509202	518598	528000
		Frequency (MHz)		2546.01	2592.99	2640
100 MHz	pi/2 BPSK	1	0	23.61	23.79	23.75
		1	136	23.37	23.22	23.12
		1	272	23.31	23.45	23.62
		136	0	23.34	23.51	23.49
		136	68	23.13	23.56	23.67
		136	136	23.23	23.24	23.52
		273	0	23.34	23.75	23.28
	QPSK	1	0	22.29	22.83	22.72
		1	136	22.15	22.52	22.65
		1	272	22.64	22.59	22.19
		136	0	22.36	22.39	22.09
		136	68	22.72	22.50	22.47
		136	136	22.56	22.41	22.58
		273	0	22.68	22.60	22.35
	16QAM	1	0	21.38	21.85	21.81
		1	136	21.26	21.76	21.51
		1	272	21.56	21.68	21.60
		136	0	21.64	21.51	21.83
		136	68	21.74	21.45	21.52
		136	136	21.68	21.83	21.03
		273	0	21.17	21.48	21.14
	64QAM	1	0	20.19	20.79	20.28
		1	136	20.73	20.76	20.72
		1	272	20.47	20.58	20.80
		136	0	20.01	20.56	20.18
		136	68	20.31	20.29	20.74
		136	136	20.25	20.41	20.21
		273	0	20.14	20.35	20.82
	256QAM	1	0	19.43	19.64	19.19
		1	136	19.62	19.82	19.54
		1	272	19.74	19.71	19.45
		136	0	19.32	19.31	19.71
		136	68	19.70	19.80	19.52
		136	136	19.41	19.98	19.15
		273	0	19.68	19.87	19.38

NR Band 41 (SCS 30kHz)				Average Output Power (dBm)		
BW	**MCS Index**	**RB Size**	**RB Offset**	**Low**	**Mid**	**High**
		Channel		**508200**	**518598**	**528996**
		Frequency (MHz)		**2541**	**2592.99**	**2644.98**
90 MHz	pi/2 BPSK	1	0	23.69	23.18	23.50
		1	122	23.52	23.16	23.37
		1	244	23.20	23.22	23.28
		122	0	23.43	23.10	23.39
		122	61	23.77	23.63	23.30
		122	122	23.73	23.25	23.22
		245	0	23.47	23.21	23.12
	QPSK	1	0	22.12	22.64	22.60
		1	122	22.44	22.69	22.66
		1	244	22.25	22.53	22.69
		122	0	22.18	22.37	22.13
		122	61	22.57	22.57	22.77
		122	122	22.48	22.59	22.27
		245	0	22.39	22.66	22.12
	16QAM	1	0	21.25	21.52	21.45
		1	122	21.30	21.98	21.46
		1	244	21.31	21.27	21.49
		122	0	21.69	21.49	21.07
		122	61	21.13	21.55	21.16
		122	122	21.64	21.71	21.57
		245	0	21.42	21.76	21.66
	64QAM	1	0	20.07	20.56	20.55
		1	122	20.18	20.53	20.21
		1	244	20.36	20.21	20.24
		122	0	20.36	20.16	20.62
		122	61	20.69	20.58	20.41
		122	122	20.28	20.31	20.24
		245	0	20.45	20.85	20.33
	256QAM	1	0	19.50	19.30	19.28
		1	122	19.39	19.85	19.37
		1	244	19.65	19.30	19.36
		122	0	19.61	19.57	19.57
		122	61	19.67	19.85	19.65
		122	122	19.28	19.74	19.66
		245	0	19.60	19.78	19.38

NR Band 41 (SCS 30kHz)				Average Output Power (dBm)		
BW	**MCS Index**	**RB Size**	**RB Offset**	**Low**	**Mid**	**High**
		Channel		**507204**	**518598**	**529998**
		Frequency (MHz)		**2536.02**	**2592.99**	**2649.99**
80 MHz	pi/2 BPSK	1	0	23.18	23.36	23.21
		1	108	23.40	23.66	23.58
		1	216	23.74	23.76	23.61
		108	0	23.45	23.58	23.76
		108	54	23.28	23.55	23.13
		108	108	23.25	23.65	23.12
		217	0	23.68	23.49	23.53
	QPSK	1	0	22.75	22.58	22.17
		1	108	22.62	22.10	22.50
		1	216	22.14	22.33	22.22
		108	0	22.71	22.80	22.45
		108	54	22.14	22.07	22.51
		108	108	22.38	22.48	22.22
		217	0	22.21	22.69	22.16
	16QAM	1	0	21.35	21.97	21.15
		1	108	21.53	21.19	21.53
		1	216	21.51	21.17	21.21
		108	0	21.42	21.18	21.66
		108	54	21.44	21.72	21.44
		108	108	21.16	21.46	21.24
		217	0	21.62	21.37	21.09
	64QAM	1	0	20.69	20.35	20.11
		1	108	20.36	20.50	20.54
		1	216	20.46	20.81	20.71
		108	0	20.50	20.30	20.19
		108	54	20.48	20.55	20.86
		108	108	20.18	20.56	20.13
		217	0	20.61	20.48	20.94
	256QAM	1	0	19.30	19.44	19.62
		1	108	19.82	19.79	19.33
		1	216	19.39	19.26	19.15
		108	0	19.34	19.80	19.12
		108	54	19.32	19.97	19.21
		108	108	19.62	19.99	19.70
		217	0	19.44	19.70	19.21

NR Band 41 (SCS 30kHz)				Average Output Power (dBm)		
BW	**MCS Index**	**RB Size**	**RB Offset**	**Low**	**Mid**	**High**
		Channel		**505200**	**518598**	**531996**
		Frequency (MHz)		**2526**	**2592.99**	**2659.98**
60 MHz	pi/2 BPSK	1	0	23.60	23.27	23.67
		1	81	23.21	23.27	23.62
		1	161	23.14	23.51	23.24
		81	0	23.29	23.40	23.35
		81	40	23.20	23.20	23.48
		81	81	23.47	23.22	23.74
		162	0	23.40	23.16	23.45
	QPSK	1	0	22.30	22.34	22.28
		1	81	22.55	22.13	22.43
		1	161	22.59	22.79	22.27
		81	0	22.12	22.21	22.34
		81	40	22.40	22.11	22.30
		81	81	22.49	22.13	22.34
		162	0	22.11	22.35	22.07
	16QAM	1	0	21.41	21.34	21.46
		1	81	21.26	21.68	21.21
		1	161	21.61	21.72	21.79
		81	0	21.61	21.44	21.10
		81	40	21.64	21.79	21.12
		81	81	21.53	21.43	21.56
		162	0	21.28	21.66	21.80
	64QAM	1	0	20.55	20.73	20.66
		1	81	20.54	20.79	20.68
		1	161	20.04	20.41	20.98
		81	0	20.31	20.74	20.78
		81	40	20.23	20.17	20.15
		81	81	20.46	20.57	20.70
		162	0	20.13	20.14	20.89
	256QAM	1	0	19.57	19.55	19.14
		1	81	19.36	19.97	19.58
		1	161	19.76	19.92	19.44
		81	0	19.76	19.37	19.46
		81	40	19.56	19.60	19.24
		81	81	19.66	19.75	19.61
		162	0	19.42	19.63	19.71

NR Band 41 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		504204	518598	532998
		Frequency (MHz)		2521.02	2592.99	2664.99
50 MHz	pi/2 BPSK	1	0	23.49	23.26	23.53
		1	66	23.28	23.37	23.27
		1	132	23.24	23.43	23.21
		66	0	23.12	23.49	23.10
		66	33	23.39	23.53	23.35
		66	66	23.37	23.45	23.42
		133	0	23.18	23.25	23.31
	QPSK	1	0	22.54	22.47	22.33
		1	66	22.80	22.68	22.12
		1	132	22.52	22.60	22.40
		66	0	22.27	22.38	22.76
		66	33	22.65	22.46	22.69
		66	66	22.34	22.84	22.22
		133	0	22.24	22.21	22.30
	16QAM	1	0	21.28	21.19	21.45
		1	66	21.51	21.32	21.23
		1	132	21.26	21.81	21.65
		66	0	21.30	21.80	21.05
		66	33	21.54	21.18	21.69
		66	66	21.24	21.53	21.76
		133	0	21.73	21.56	21.84
	64QAM	1	0	20.23	20.75	20.70
		1	66	20.30	20.75	20.27
		1	132	20.36	20.40	20.74
		66	0	20.47	20.67	20.42
		66	33	20.41	20.43	20.15
		66	66	20.64	20.48	20.52
		133	0	20.26	20.73	20.17
	256QAM	1	0	19.65	19.50	19.36
		1	66	19.64	19.49	19.37
		1	132	19.54	19.66	19.14
		66	0	19.28	19.94	19.64
		66	33	19.29	19.50	19.70
		66	66	19.41	19.73	19.58
		133	0	19.24	19.55	19.50

NR Band 41 (SCS 30kHz)				Average Output Power (dBm)		
BW	**MCS Index**	**RB Size**	**RB Offset**	**Low**	**Mid**	**High**
		Channel		**503202**	**518598**	**534000**
		Frequency (MHz)		**2516.01**	**2592.99**	**2670**
40 MHz	pi/2 BPSK	1	0	23.73	23.32	23.55
		1	53	23.61	23.59	23.18
		1	105	23.15	23.15	23.43
		53	0	23.21	23.11	23.55
		53	26	23.53	23.18	23.67
		53	53	23.15	23.19	23.18
		106	0	23.12	23.51	23.15
	QPSK	1	0	22.26	22.40	22.49
		1	53	22.73	22.08	22.21
		1	105	22.53	22.75	22.51
		53	0	22.52	22.20	22.33
		53	26	22.35	22.13	22.24
		53	53	22.47	22.65	22.08
		106	0	22.26	22.22	22.67
	16QAM	1	0	21.28	21.16	21.78
		1	53	21.46	21.36	21.35
		1	105	21.18	21.47	21.59
		53	0	21.51	21.85	21.51
		53	26	21.39	21.39	21.66
		53	53	21.51	21.18	21.33
		106	0	21.49	21.92	21.74
	64QAM	1	0	20.72	20.22	20.34
		1	53	20.20	20.25	20.16
		1	105	20.51	20.22	20.59
		53	0	20.21	20.43	20.45
		53	26	20.62	20.46	20.57
		53	53	20.14	20.52	20.43
		106	0	20.24	20.17	20.77
	256QAM	1	0	19.69	19.48	19.14
		1	53	19.62	19.33	19.35
		1	105	19.64	19.95	19.23
		53	0	19.46	19.95	19.58
		53	26	19.81	19.92	19.34
		53	53	19.37	19.42	19.69
		106	0	19.67	19.30	19.30

NR Band 41 (SCS 30kHz)				Average Output Power (dBm)		
BW	**MCS Index**	**RB Size**	**RB Offset**	**Low**	**Mid**	**High**
		Channel		**501204**	**518598**	**535998**
		Frequency (MHz)		**2506.02**	**2592.99**	**2679.99**
20 MHz	pi/2 BPSK	1	0	23.30	23.13	23.13
		1	25	23.38	23.36	23.59
		1	50	23.54	23.43	23.28
		25	0	23.32	23.46	23.38
		25	12	23.33	23.46	23.57
		25	25	23.42	23.21	23.26
		51	0	23.14	23.49	23.67
	QPSK	1	0	22.34	22.64	22.23
		1	25	22.71	22.09	22.61
		1	50	22.67	22.41	22.50
		25	0	22.72	22.73	22.72
		25	12	22.44	22.25	22.28
		25	25	22.45	22.67	22.60
		51	0	22.22	22.51	22.71
	16QAM	1	0	21.15	21.92	21.55
		1	25	21.66	21.69	21.48
		1	50	21.15	21.63	21.24
		25	0	21.25	21.46	21.53
		25	12	21.43	21.82	21.11
		25	25	21.45	21.93	21.28
		51	0	21.59	21.41	21.30
	64QAM	1	0	20.51	20.57	20.62
		1	25	20.15	20.41	20.78
		1	50	20.57	20.23	20.32
		25	0	20.20	20.37	20.14
		25	12	20.16	20.80	20.34
		25	25	20.43	20.43	20.87
		51	0	20.54	20.45	20.19
	256QAM	1	0	19.66	19.69	19.47
		1	25	19.39	19.81	19.62
		1	50	19.64	19.54	19.32
		25	0	19.47	19.61	19.24
		25	12	19.31	19.30	19.15
		25	25	19.37	19.61	19.56
		51	0	19.47	19.61	19.49

NR Band 41 (SCS 30kHz)				Average Output Power (dBm)		
BW	**MCS Index**	**RB Size**	**RB Offset**	**Low**	**Mid**	**High**
		Channel		**505200**	**518598**	**531996**
		Frequency (MHz)		**2526**	**2592.99**	**2659.98**
15 MHz	pi/2 BPSK	1	0	23.19	23.55	23.21
		1	19	23.23	23.52	23.42
		1	37	23.68	23.21	23.36
		19	0	23.43	23.60	23.58
		19	9	23.64	23.62	23.24
		19	20	23.29	23.76	23.22
		38	0	23.48	23.50	23.61
	QPSK	1	0	22.57	22.47	22.60
		1	19	22.51	22.06	22.18
		1	37	22.16	22.23	22.16
		19	0	22.46	22.28	22.28
		19	9	22.41	22.14	22.61
		19	20	22.66	22.21	22.42
		38	0	22.70	22.39	22.51
	16QAM	1	0	21.14	21.45	21.55
		1	19	21.27	21.20	21.12
		1	37	21.29	21.73	21.12
		19	0	21.75	21.33	21.48
		19	9	21.29	21.92	21.08
		19	20	21.14	21.58	21.32
		38	0	21.70	21.48	21.36
	64QAM	1	0	20.16	20.26	20.48
		1	19	20.50	20.32	20.16
		1	37	20.47	20.83	20.14
		19	0	20.69	20.82	20.56
		19	9	20.33	20.69	20.94
		19	20	20.08	20.14	20.21
		38	0	20.70	20.24	20.90
	256QAM	1	0	19.60	19.26	19.41
		1	19	19.29	19.49	19.64
		1	37	19.83	19.35	19.29
		19	0	19.42	19.28	19.63
		19	9	19.59	19.47	19.22
		19	20	19.32	19.62	19.24
		38	0	19.29	19.34	19.68

NR Band 41 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		500202	518598	537000
		Frequency (MHz)		2501.01	2592.99	2685
10 MHz	pi/2 BPSK	1	0	23.59	23.39	23.59
		1	12	23.67	23.63	23.25
		1	23	23.40	23.71	23.50
		12	0	23.13	23.26	23.38
		12	6	23.54	23.72	23.40
		12	12	23.69	23.33	23.65
		24	0	23.65	23.80	23.40
	QPSK	1	0	22.47	22.74	22.59
		1	12	22.16	22.56	22.66
		1	23	22.17	22.09	22.62
		12	0	22.53	22.32	22.51
		12	6	22.28	22.36	22.13
		12	12	22.51	22.23	22.21
		24	0	22.32	22.45	22.69
	16QAM	1	0	21.49	21.22	21.45
		1	12	21.72	21.68	21.70
		1	23	21.57	21.95	21.33
		12	0	21.28	21.81	21.16
		12	6	21.37	21.87	21.25
		12	12	21.69	21.82	21.66
		24	0	21.74	21.84	21.35
	64QAM	1	0	20.41	20.15	20.14
		1	12	20.07	20.60	20.72
		1	23	20.51	20.24	20.66
		12	0	20.63	20.64	20.93
		12	6	20.72	20.36	20.75
		12	12	20.74	20.83	20.86
		24	0	20.72	20.16	20.60
	256QAM	1	0	19.66	19.34	19.67
		1	12	19.78	19.73	19.35
		1	23	19.39	19.54	19.49
		12	0	19.85	19.72	19.69
		12	6	19.76	19.48	19.51
		12	12	19.40	19.29	19.51
		24	0	19.75	19.58	19.81

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NR Band 66 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		346000	349000	352000
		Frequency (MHz)		1730	1745	1760
40 MHz	pi/2 BPSK	1	0	23.64	23.59	23.65
		1	108	24.08	24.00	23.95
		1	215	24.01	23.93	24.10
		108	0	23.94	23.92	23.95
		108	53	23.87	23.82	23.98
		108	107	23.93	23.81	23.87
		216	0	23.95	23.96	23.89
	QPSK	1	0	20.53	20.66	20.53
		1	108	21.09	20.94	21.04
		1	215	21.00	20.93	21.01
		108	0	21.00	20.98	20.91
		108	53	20.98	20.86	20.87
		108	107	20.98	20.88	20.85
		216	0	20.94	20.90	20.86
	16QAM	1	0	20.65	20.63	20.59
		1	108	21.06	21.08	21.07
		1	215	21.09	20.92	21.01
		108	0	20.91	20.91	20.80
		108	53	20.93	20.93	20.83
		108	107	20.97	21.00	20.92
		216	0	20.97	20.88	20.98
	64QAM	1	0	20.19	20.19	20.07
		1	108	20.41	20.54	20.50
		1	215	20.44	20.59	20.60
		108	0	20.35	20.31	20.32
		108	53	20.46	20.48	20.31
		108	107	20.38	20.50	20.37
		216	0	20.35	20.50	20.43
	256QAM	1	0	17.00	17.16	17.04
		1	108	17.57	17.60	17.60
		1	215	17.56	17.47	17.47
		108	0	17.46	17.35	17.37
		108	53	17.32	17.48	17.30
		108	107	17.44	17.30	17.45
		216	0	17.32	17.41	17.34

NR Band 66 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		344000	349000	354000
		Frequency (MHz)		1720	1745	1770
20 MHz	pi/2 BPSK	1	0	23.69	23.67	23.58
		1	53	24.10	23.92	23.97
		1	105	23.99	24.02	23.90
		53	0	23.89	23.93	23.81
		53	27	23.98	23.81	23.93
		53	53	23.97	23.82	23.92
		106	0	23.80	23.99	23.99
	QPSK	1	0	20.54	20.60	20.64
		1	53	20.95	20.95	21.08
		1	105	21.02	20.92	20.95
		53	0	20.92	20.85	20.81
		53	27	20.84	20.99	20.97
		53	53	20.95	20.97	20.93
		106	0	20.98	20.90	20.98
	16QAM	1	0	20.55	20.53	20.54
		1	53	20.93	20.99	20.93
		1	105	21.07	20.91	20.94
		53	0	20.83	20.80	20.98
		53	27	20.86	21.00	20.82
		53	53	20.81	20.95	20.80
		106	0	20.98	20.97	20.87
	64QAM	1	0	20.17	20.16	20.08
		1	53	20.41	20.44	20.49
		1	105	20.47	20.51	20.53
		53	0	20.33	20.48	20.50
		53	27	20.46	20.48	20.33
		53	53	20.49	20.35	20.47
		106	0	20.37	20.50	20.31
	256QAM	1	0	17.12	17.05	17.13
		1	53	17.45	17.41	17.51
		1	105	17.60	17.40	17.52
		53	0	17.41	17.45	17.37
		53	27	17.44	17.31	17.37
		53	53	17.39	17.48	17.44
		106	0	17.35	17.44	17.42

NR Band 66 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		343500	349000	354500
		Frequency (MHz)		1717.5	1745	1772.5
15 MHz	pi/2 BPSK	1	0	23.57	23.66	23.68
		1	39	24.05	23.96	23.94
		1	78	24.04	23.93	23.96
		39	0	23.97	23.81	23.89
		39	19	23.88	23.87	23.83
		39	40	23.81	23.84	23.94
		79	0	23.81	23.88	23.82
	QPSK	1	0	20.56	20.54	20.68
		1	39	20.95	21.08	21.09
		1	78	21.06	21.03	20.90
		39	0	20.92	20.96	20.89
		39	19	20.93	20.88	20.89
		39	40	20.93	20.91	20.85
		79	0	20.97	20.88	20.85
	16QAM	1	0	20.70	20.64	20.60
		1	39	21.06	20.95	21.08
		1	78	20.91	21.09	20.98
		39	0	20.83	20.98	20.85
		39	19	20.86	20.92	20.81
		39	40	21.00	20.83	20.96
		79	0	20.81	20.85	20.92
	64QAM	1	0	20.17	20.03	20.02
		1	39	20.54	20.48	20.40
		1	78	20.58	20.60	20.41
		39	0	20.40	20.49	20.34
		39	19	20.31	20.48	20.46
		39	40	20.43	20.49	20.41
		79	0	20.49	20.44	20.45
	256QAM	1	0	17.11	17.01	17.01
		1	39	17.57	17.59	17.43
		1	78	17.49	17.52	17.58
		39	0	17.43	17.42	17.35
		39	19	17.31	17.46	17.40
		39	40	17.32	17.46	17.42
		79	0	17.30	17.37	17.46

NR Band 66 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		343000	349000	355000
		Frequency (MHz)		1715	1745	1775
10 MHz	pi/2 BPSK	1	0	23.59	23.56	23.62
		1	26	24.01	23.98	24.06
		1	51	24.06	23.99	23.92
		26	0	23.97	23.88	23.80
		26	13	23.89	23.89	23.92
		26	26	23.89	23.94	23.86
		52	0	23.97	23.85	23.92
	QPSK	1	0	20.70	20.63	20.60
		1	26	21.03	20.90	20.99
		1	51	20.96	20.90	20.98
		26	0	20.89	20.83	20.86
		26	13	20.97	20.94	20.81
		26	26	20.92	20.92	20.96
		52	0	20.81	21.00	20.85
	16QAM	1	0	20.57	20.55	20.59
		1	26	21.05	21.09	20.94
		1	51	20.92	21.10	20.96
		26	0	20.91	20.82	20.90
		26	13	20.92	20.92	20.96
		26	26	20.99	20.93	20.90
		52	0	20.84	20.88	20.90
	64QAM	1	0	20.05	20.11	20.08
		1	26	20.47	20.48	20.49
		1	51	20.43	20.44	20.49
		26	0	20.40	20.42	20.45
		26	13	20.30	20.43	20.32
		26	26	20.35	20.33	20.47
		52	0	20.49	20.38	20.46
	256QAM	1	0	17.08	17.12	17.01
		1	26	17.56	17.54	17.57
		1	51	17.40	17.53	17.50
		26	0	17.41	17.43	17.36
		26	13	17.45	17.42	17.35
		26	26	17.35	17.41	17.50
		52	0	17.41	17.34	17.42

NR Band 66 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		342500	349000	355500
		Frequency (MHz)		1712.5	1745	1777.5
5 MHz	pi/2 BPSK	1	0	23.70	23.59	23.52
		1	12	23.98	23.90	23.97
		1	24	23.93	23.92	24.07
		12	0	23.92	23.87	23.99
		12	6	23.91	23.96	23.87
		12	13	23.85	23.90	23.80
		25	0	23.89	23.80	23.97
	QPSK	1	0	20.61	20.67	20.58
		1	12	20.95	20.99	21.04
		1	24	20.99	21.02	20.92
		12	0	20.82	20.88	20.84
		12	6	20.92	20.90	20.94
		12	13	20.93	20.92	20.84
		25	0	21.00	20.95	20.87
	16QAM	1	0	20.52	20.68	20.62
		1	12	20.93	20.99	20.94
		1	24	20.93	21.10	21.09
		12	0	20.89	20.93	20.82
		12	6	20.80	20.96	20.81
		12	13	20.84	20.92	20.93
		25	0	20.82	20.96	20.83
	64QAM	1	0	20.19	20.19	20.14
		1	12	20.59	20.40	20.43
		1	24	20.55	20.41	20.57
		12	0	20.36	20.35	20.39
		12	6	20.41	20.45	20.35
		12	13	20.37	20.46	20.31
		25	0	20.50	20.36	20.37
	256QAM	1	0	17.20	17.06	17.14
		1	12	17.40	17.43	17.51
		1	24	17.52	17.54	17.59
		12	0	17.39	17.40	17.43
		12	6	17.49	17.33	17.32
		12	13	17.47	17.41	17.46
		25	0	17.48	17.35	17.48

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NR Band 71(SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		134600	136100	137600
		Frequency (MHz)		673	680.5	688
20 MHz	pi/2 BPSK	1	0	24.26	24.24	24.27
		1	53	23.96	23.97	24.06
		1	105	23.92	24.08	23.95
		53	0	24.05	24.09	24.10
		53	27	24.09	23.95	24.09
		53	53	23.91	24.02	24.03
		106	0	24.01	23.92	24.10
	QPSK	1	0	21.19	21.24	21.22
		1	53	20.90	21.05	21.03
		1	105	21.01	21.10	20.95
		53	0	21.01	20.95	20.97
		53	27	20.98	21.10	20.96
		53	53	20.92	21.08	20.95
		106	0	20.90	20.99	21.06
	16QAM	1	0	21.28	21.10	21.16
		1	53	21.09	21.01	21.09
		1	105	20.94	21.04	20.98
		53	0	20.96	21.04	20.97
		53	27	20.99	21.10	20.93
		53	53	20.90	21.10	21.00
		106	0	21.04	21.05	20.91
	64QAM	1	0	20.62	20.62	20.63
		1	53	20.41	20.48	20.45
		1	105	20.44	20.41	20.52
		53	0	20.56	20.50	20.46
		53	27	20.60	20.59	20.51
		53	53	20.40	20.44	20.57
		106	0	20.47	20.40	20.57
	256QAM	1	0	17.75	17.75	17.78
		1	53	17.52	17.52	17.47
		1	105	17.45	17.47	17.49
		53	0	17.48	17.41	17.48
		53	27	17.57	17.54	17.41
		53	53	17.45	17.59	17.56
		106	0	17.45	17.45	17.59

NR Band 71 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		134100	136100	138100
		Frequency (MHz)		670.5	680.5	690.5
15 MHz	pi/2 BPSK	1	0	24.19	24.28	24.14
		1	39	24.08	24.06	24.02
		1	78	24.01	23.95	24.04
		39	0	24.10	24.06	23.97
		39	19	24.09	24.04	24.09
		39	40	24.04	23.92	23.99
		79	0	24.02	23.97	24.06
	QPSK	1	0	21.23	21.28	21.28
		1	39	20.96	21.05	21.07
		1	78	20.99	20.99	20.92
		39	0	20.99	21.09	21.08
		39	19	21.01	20.93	20.96
		39	40	20.91	20.98	21.08
		79	0	21.08	20.90	20.98
	16QAM	1	0	21.10	21.14	21.27
		1	39	21.05	21.08	21.01
		1	78	21.02	21.02	20.93
		39	0	20.91	20.99	20.98
		39	19	21.03	20.97	21.05
		39	40	21.10	21.01	20.94
		79	0	20.93	20.91	20.90
	64QAM	1	0	20.73	20.64	20.70
		1	39	20.50	20.44	20.52
		1	78	20.54	20.54	20.42
		39	0	20.50	20.49	20.54
		39	19	20.46	20.42	20.49
		39	40	20.46	20.55	20.53
		79	0	20.45	20.46	20.53
	256QAM	1	0	17.63	17.73	17.67
		1	39	17.58	17.46	17.41
		1	78	17.51	17.43	17.43
		39	0	17.60	17.47	17.50
		39	19	17.60	17.54	17.48
		39	40	17.46	17.46	17.44
		79	0	17.49	17.58	17.56

NR Band 71 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		133600	136100	138600
		Frequency (MHz)		668	680.5	693
10 MHz	pi/2 BPSK	1	0	24.10	24.24	24.17
		1	26	24.10	24.05	23.97
		1	51	24.08	23.91	23.90
		26	0	24.07	23.99	23.97
		26	13	23.96	24.04	23.96
		26	26	23.93	23.96	24.04
		52	0	24.08	24.05	23.92
	QPSK	1	0	21.18	21.30	21.25
		1	26	21.03	20.92	20.98
		1	51	20.92	20.91	20.92
		26	0	21.07	20.92	20.91
		26	13	21.06	21.00	20.91
		26	26	20.96	21.09	21.09
		52	0	21.07	20.94	20.90
	16QAM	1	0	21.22	21.29	21.10
		1	26	20.92	21.06	20.96
		1	51	20.95	20.95	20.98
		26	0	21.01	20.98	21.09
		26	13	20.92	21.08	20.90
		26	26	20.95	20.95	21.03
		52	0	20.94	21.00	20.92
	64QAM	1	0	20.72	20.60	20.77
		1	26	20.60	20.53	20.53
		1	51	20.41	20.60	20.47
		26	0	20.44	20.54	20.53
		26	13	20.44	20.45	20.42
		26	26	20.44	20.53	20.58
		52	0	20.48	20.43	20.54
	256QAM	1	0	17.65	17.60	17.63
		1	26	17.50	17.60	17.52
		1	51	17.44	17.48	17.40
		26	0	17.40	17.44	17.57
		26	13	17.57	17.50	17.55
		26	26	17.59	17.52	17.54
		52	0	17.57	17.46	17.45

NR Band 71 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		133100	136100	139100
		Frequency (MHz)		665.5	680.5	695.5
5 MHz	pi/2 BPSK	1	0	24.13	24.13	24.21
		1	12	23.98	23.95	23.97
		1	24	24.09	23.92	24.00
		12	0	24.07	24.09	23.93
		12	6	24.10	24.09	24.06
		12	13	23.99	23.91	23.91
		25	0	23.94	23.98	24.08
	QPSK	1	0	21.30	21.21	21.17
		1	12	20.93	20.97	21.07
		1	24	21.04	21.00	21.06
		12	0	21.10	20.93	20.91
		12	6	20.93	20.93	20.93
		12	13	20.96	21.03	20.97
		25	0	21.09	21.10	20.97
	16QAM	1	0	21.18	21.15	21.11
		1	12	20.97	21.06	21.10
		1	24	21.00	21.07	21.07
		12	0	21.01	21.08	20.90
		12	6	21.03	20.93	20.91
		12	13	21.01	20.91	20.93
		25	0	21.08	20.96	21.08
	64QAM	1	0	20.71	20.72	20.62
		1	12	20.55	20.47	20.47
		1	24	20.58	20.54	20.56
		12	0	20.46	20.50	20.48
		12	6	20.42	20.40	20.54
		12	13	20.45	20.45	20.44
		25	0	20.54	20.40	20.52
	256QAM	1	0	17.76	17.64	17.69
		1	12	17.50	17.43	17.43
		1	24	17.51	17.47	17.60
		12	0	17.51	17.51	17.47
		12	6	17.50	17.54	17.58
		12	13	17.60	17.57	17.59
		25	0	17.53	17.47	17.53

- 5G n2 Band

SAR for 5G Band 2 has not been measured because it is covered by 5G Band 25 due to overlapping frequency range (5G Band 2 frequency range: 1850 – 1910 MHz, 5G Band 25 frequency range: 1850 – 1915 MHz) and same maximum tune-up and channel bandwidth.

- 5G n78 Band

SAR for 5G Band 78 has not been measured because it is covered by 5G Band 77 due to overlapping frequency range (5G Band 78 frequency range: 3300 – 3800 MHz, 5G Band 77 frequency range: 3300 – 4200 MHz) and same maximum tune-up and channel bandwidth.

According to February 2021 TCB Workshop:

- For 5G-FR1 SAR evaluations are being generally based on adapting the existing LTE SAR procedures (KDB 941225 D05A)

SAR testing has been performed based on FCC KDB 941225 D05, Paragraph 5.2 guidance, adapting LTE SAR procedure to 5G-FR1:

- 1RB allocation:
  Start with the largest channel bandwidth then measure SAR for PI/2 BPSK with 1 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 of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

- 50% RB allocation
  The procedures required for 1 RB allocation are applied to measure the SAR for PI/2 BPSK with 50% RB allocation.

- 100% RB allocation
  For PI/2 BPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations, and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg.
  Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

- Higher order modulations
  SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

- Other channel bandwidth standalone SAR test requirements
  Measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration, or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

2.1.4.2. 5G NSA Bands

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According to February 2021 TCB Workshop:

- For non-stand-alone configurations, both LTE and 5G-NR are added to derive a total SAR.

Following guidance from TCB Workshop October 2020:

- SAR testing for LTE and NR will be performed separately, and applying FCC KDB 447498 techniques for simultaneous LTE+NR:

  - If the single uplink 1-g SAR values for each band are both less than 0.8 W/kg and the algebraic summation of the 1-g SAR values are less than 1.45 W/kg, additional measurements are not needed.
  - If one of the single uplink 1-g SAR values is greater than 0.8 W/kg, instead of algebraically summing the 1-g SAR values, sum up the SAR distributions, similar to the enlarged zoom scan (volume scan) procedures KDB Pub. 865664 D01; PAG is required.
  - If the algebraic sum of the 1-g SAR values is greater than 1.45 W/kg, additional measurements might be needed; PAG is required and KDB inquiryis needed for additional testing guidance

	CC1			CC2			NSA
NSA	**Band**	**Tune-up limit**	**Reported SAR**	**Band**	**Tune-up limit**	**Reported SAR**	**CA Summation**
2A_n5A	2A	25.0	0.168	n5A	25.0	0.058	0.226
2A_n71A	2A	25.0	0.168	n71A	25.0	0.074	0.242
2A_n78A	2A	25.0	0.168	n78A	25.0	0.156	0.324
5A_n66A	5A	25.0	0.227	n66A	25.0	0.049	0.276
5A_n78A	5A	25.0	0.227	n78A	25.0	0.156	0.383
7A_n78A	7A	25.0	0.124	n78A	25.0	0.156	0.280
2A_n66A	12A	25.0	0.116	n66A	25.0	0.049	0.165
6A_n41A	26A	25.0	0.140	n41A	25.0	0.078	0.218
6A_n77A	26A	25.0	0.140	n77A	25.0	0.156	0.296
6A_n78A	26A	25.0	0.140	n78A	25.0	0.156	0.296
1A_n77A	41A	25.0	0.107	n77A	25.0	0.156	0.263
1A_n78A	41A	25.0	0.107	n78A	25.0	0.156	0.263
66A_n5A	66A	25.0	0.165	n5A	25.0	0.058	0.223
6A_n71A	66A	25.0	0.165	n71A	25.0	0.074	0.239
6A_n78A	66A	25.0	0.165	n78A	25.0	0.156	0.321

2.2. Cellular Antenna LTE2

2.2.1. 5G

2.2.1.1. 5G Stand-Alone Bands

- n77

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	**MCS Index**	**RB Size**	**RB Offset**	**Low**	**Mid**	**High**
		Channel		**623334**	**650000**	**676666**
		Frequency (MHz)		**3350.01**	**3750**	**4149.99**
100 MHz	pi/2 BPSK	1	0	21.91	22.87	22.25
		1	136	22.04	22.66	22.22
		1	272	22.25	22.17	22.21
		136	0	22.25	22.82	22.15
		136	68	22.10	22.02	22.13
		136	136	21.95	22.79	22.33
		273	0	22.17	22.13	22.33
	QPSK	1	0	21.12	21.14	21.01
		1	136	21.45	21.31	21.30
		1	272	21.19	21.10	21.55
		136	0	21.20	21.43	20.98
		136	68	21.37	21.25	21.27
		136	136	21.31	21.39	21.16
		273	0	21.45	21.28	21.34
	16QAM	1	0	20.18	20.15	20.23
		1	136	20.30	20.12	20.70
		1	272	20.54	20.20	20.57
		136	0	20.41	20.02	20.62
		136	68	20.28	20.39	20.64
		136	136	20.55	20.17	20.37
		273	0	20.29	20.56	20.48
	64QAM	1	0	19.43	19.13	19.18
		1	136	19.65	19.14	19.29
		1	272	19.28	19.26	19.55
		136	0	19.35	19.18	19.58
		136	68	19.42	19.18	19.31
		136	136	19.24	19.26	19.30
		273	0	19.43	19.15	19.33
	256QAM	1	0	18.33	18.60	18.60
		1	136	18.39	18.64	18.41
		1	272	18.72	18.64	18.27
		136	0	18.83	18.78	18.37
		136	68	18.26	18.43	18.27
		136	136	18.34	18.27	18.57
		273	0	18.22	18.59	18.33

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		623000	650000	67700
		Frequency (MHz)		3345	3750	4155
90 MHz	pi/2 BPSK	1	0	21.99	22.20	21.98
		1	122	21.94	22.39	22.07
		1	244	22.37	22.08	22.01
		122	0	22.28	22.74	22.28
		122	61	22.37	22.45	22.27
		122	122	22.38	22.31	22.06
		245	0	22.14	22.01	22.27
	QPSK	1	0	21.31	21.56	21.17
		1	122	21.31	21.28	21.11
		1	244	21.44	21.44	21.13
		122	0	21.18	21.26	21.09
		122	61	21.50	21.60	21.23
		122	122	21.17	21.34	21.32
		245	0	21.39	21.21	21.39
	16QAM	1	0	20.54	20.46	20.46
		1	122	20.51	20.12	20.28
		1	244	20.52	20.68	20.58
		122	0	20.51	20.38	20.17
		122	61	20.35	20.44	20.62
		122	122	20.32	20.32	20.43
		245	0	20.14	20.21	20.62
	64QAM	1	0	19.45	19.58	19.69
		1	122	19.36	19.01	19.52
		1	244	19.20	19.33	19.09
		122	0	19.62	19.26	19.65
		122	61	19.62	19.08	19.69
		122	122	19.23	19.55	19.61
		245	0	19.66	19.43	19.56
	256QAM	1	0	18.65	18.36	18.84
		1	122	18.74	18.34	18.26
		1	244	18.80	18.69	18.80
		122	0	18.42	18.72	18.89
		122	61	18.66	18.23	18.51
		122	122	18.86	18.31	18.77
		245	0	18.32	18.65	18.84

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	**MCS Index**	**RB Size**	**RB Offset**	**Low**	**Mid**	**High**
		Channel		**622668**	**650000**	**677332**
		Frequency (MHz)		**3340.02**	**3750**	**4159.98**
80 MHz	pi/2 BPSK	1	0	22.08	22.57	22.07
		1	108	22.14	22.72	22.32
		1	216	22.04	22.09	22.08
		108	0	22.14	21.99	22.38
		108	54	22.37	22.03	22.38
		108	108	22.24	22.30	22.00
		217	0	22.00	22.39	21.99
	QPSK	1	0	21.32	21.60	21.49
		1	108	21.25	21.56	21.00
		1	216	21.52	21.19	21.34
		108	0	21.41	21.32	21.23
		108	54	21.46	21.20	21.34
		108	108	21.51	21.33	20.96
		217	0	21.23	21.37	21.09
	16QAM	1	0	20.37	20.15	20.48
		1	108	20.56	20.05	20.16
		1	216	20.63	20.05	20.54
		108	0	20.39	20.47	20.40
		108	54	20.24	20.44	20.64
		108	108	20.09	20.38	20.10
		217	0	20.07	20.19	20.68
	64QAM	1	0	19.21	19.40	19.33
		1	108	19.37	19.41	19.32
		1	216	19.50	19.07	19.36
		108	0	19.64	19.30	19.42
		108	54	19.46	19.44	19.67
		108	108	19.21	19.02	19.15
		217	0	19.48	19.25	19.12
	256QAM	1	0	18.48	18.83	18.32
		1	108	18.56	18.76	18.67
		1	216	18.55	18.67	18.59
		108	0	18.82	18.55	18.81
		108	54	18.86	18.55	18.87
		108	108	18.59	18.88	18.48
		217	0	18.60	18.82	18.78

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		622000	650000	678000
		Frequency (MHz)		3330	3750	4170
60 MHz	pi/2 BPSK	1	0	22.37	22.48	21.97
		1	81	22.33	22.31	22.03
		1	161	22.29	22.76	22.38
		81	0	22.00	22.03	22.24
		81	40	22.25	22.03	22.32
		81	81	22.27	22.49	22.35
		162	0	22.41	22.32	21.97
	QPSK	1	0	21.21	21.34	21.40
		1	81	21.18	21.35	21.16
		1	161	21.29	21.38	21.25
		81	0	21.50	21.27	21.18
		81	40	21.40	21.07	21.34
		81	81	21.36	21.55	21.33
		162	0	21.54	21.38	21.42
	16QAM	1	0	20.22	20.42	20.68
		1	81	20.16	20.28	20.15
		1	161	20.32	20.45	20.31
		81	0	20.25	20.32	20.51
		81	40	20.55	20.01	20.47
		81	81	20.08	20.55	20.43
		162	0	20.37	20.15	20.53
	64QAM	1	0	19.49	19.45	19.15
		1	81	19.27	19.25	19.34
		1	161	19.56	19.34	19.27
		81	0	19.58	19.10	19.43
		81	40	19.12	19.57	19.06
		81	81	19.33	19.10	19.42
		162	0	19.23	19.56	19.57
	256QAM	1	0	18.45	18.26	18.75
		1	81	18.27	18.47	18.64
		1	161	18.71	18.42	18.41
		81	0	18.36	18.26	18.40
		81	40	18.67	18.42	18.61
		81	81	18.35	18.76	18.23
		162	0	18.21	18.40	18.23

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		621668	650000	678332
		Frequency (MHz)		3325.02	3750	4174.98
50 MHz	pi/2 BPSK	1	0	22.07	22.46	22.37
		1	66	22.04	22.39	22.37
		1	132	22.13	22.06	22.07
		66	0	22.17	22.54	22.27
		66	33	22.37	22.26	21.97
		66	66	22.07	22.70	22.17
		133	0	22.37	22.45	22.24
	QPSK	1	0	21.54	21.27	21.10
		1	66	21.47	21.13	21.07
		1	132	21.13	21.24	21.05
		66	0	21.36	21.31	21.55
		66	33	21.47	21.32	21.56
		66	66	21.22	21.40	21.43
		133	0	21.54	21.32	20.96
	16QAM	1	0	20.56	20.72	20.62
		1	66	20.16	20.68	20.38
		1	132	20.35	20.76	20.12
		66	0	20.50	20.24	20.44
		66	33	20.46	20.68	20.47
		66	66	20.49	20.02	20.22
		133	0	20.31	20.19	20.64
	64QAM	1	0	19.65	19.53	19.69
		1	66	19.51	19.21	19.42
		1	132	19.26	19.03	19.22
		66	0	19.30	19.12	19.35
		66	33	19.53	19.35	19.64
		66	66	19.14	19.05	19.64
		133	0	19.67	19.01	19.41
	256QAM	1	0	18.78	18.50	18.27
		1	66	18.64	18.78	18.75
		1	132	18.78	18.78	18.82
		66	0	18.80	18.70	18.51
		66	33	18.49	18.53	18.67
		66	66	18.47	18.37	18.87
		133	0	18.73	18.72	18.85

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	**MCS Index**	**RB Size**	**RB Offset**	**Low**	**Mid**	**High**
		Channel		**621334**	**650000**	**678666**
		Frequency (MHz)		**3320.01**	**3750**	**4179.99**
40 MHz	pi/2 BPSK	1	0	22.38	22.53	22.29
		1	53	22.27	22.40	22.02
		1	105	22.47	22.54	22.20
		53	0	22.19	22.56	22.12
		53	26	22.01	22.24	22.26
		53	53	21.99	22.21	22.14
		106	0	21.93	22.07	22.31
	QPSK	1	0	21.13	21.15	21.59
		1	53	21.34	21.20	21.17
		1	105	21.39	21.58	21.04
		53	0	21.14	21.43	21.53
		53	26	21.18	21.16	21.48
		53	53	21.25	21.51	21.57
		106	0	21.41	21.53	21.04
	16QAM	1	0	20.22	20.52	20.37
		1	53	20.52	20.19	20.46
		1	105	20.37	20.06	20.49
		53	0	20.11	20.09	20.16
		53	26	20.19	20.59	20.69
		53	53	20.06	20.74	20.32
		106	0	20.43	20.62	20.43
	64QAM	1	0	19.13	19.14	19.11
		1	53	19.35	19.40	19.66
		1	105	19.55	19.24	19.68
		53	0	19.11	19.36	19.54
		53	26	19.60	19.35	19.47
		53	53	19.16	19.54	19.19
		106	0	19.61	19.58	19.19
	256QAM	1	0	18.73	18.76	18.24
		1	53	18.89	18.82	18.34
		1	105	18.33	18.73	18.67
		53	0	18.70	18.83	18.22
		53	26	18.72	18.56	18.61
		53	53	18.48	18.75	18.79
		106	0	18.24	18.33	18.67

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		620668	650000	679332
		Frequency (MHz)		3310.02	3750	4189.98
20 MHz	pi/2 BPSK	1	0	22.39	22.19	22.30
		1	25	22.18	22.39	22.36
		1	50	22.10	22.34	22.04
		25	0	22.15	22.46	21.97
		25	12	21.93	22.03	22.03
		25	25	22.27	22.85	22.29
		51	0	22.25	22.47	22.18
	QPSK	1	0	21.54	21.02	20.98
		1	25	21.49	21.13	21.34
		1	50	21.44	21.03	21.49
		25	0	21.49	21.16	21.49
		25	12	21.17	21.43	21.18
		25	25	21.46	21.10	21.01
		51	0	21.47	21.46	21.37
	16QAM	1	0	20.57	20.17	20.47
		1	25	20.25	20.19	20.48
		1	50	20.06	20.78	20.13
		25	0	20.63	20.58	20.12
		25	12	20.53	20.51	20.47
		25	25	20.08	20.21	20.53
		51	0	20.05	20.23	20.17
	64QAM	1	0	19.18	19.13	19.14
		1	25	19.48	19.54	19.15
		1	50	19.17	19.00	19.05
		25	0	19.53	19.48	19.39
		25	12	19.61	19.43	19.48
		25	25	19.68	19.20	19.29
		51	0	19.13	19.56	19.66
	256QAM	1	0	18.69	18.69	18.89
		1	25	18.36	18.47	18.72
		1	50	18.24	18.58	18.36
		25	0	18.28	18.55	18.23
		25	12	18.60	18.31	18.33
		25	25	18.66	18.36	18.35
		51	0	18.81	18.55	18.73

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		620500	650000	679500
		Frequency (MHz)		3307.5	3750	4192.5
15 MHz	pi/2 BPSK	1	0	21.91	22.49	22.31
		1	19	21.98	22.78	22.01
		1	37	22.24	22.27	22.23
		19	0	21.99	22.73	22.17
		19	9	22.41	22.31	22.26
		19	20	22.46	22.01	22.03
		38	0	22.37	22.53	22.35
	QPSK	1	0	21.53	21.35	21.26
		1	19	21.46	21.42	21.46
		1	37	21.21	21.29	20.99
		19	0	21.47	21.32	21.21
		19	9	21.24	21.07	21.11
		19	20	21.39	21.17	21.02
		38	0	21.25	21.37	21.55
	16QAM	1	0	20.48	20.67	20.55
		1	19	20.57	20.49	20.31
		1	37	20.51	20.77	20.66
		19	0	20.40	20.58	20.25
		19	9	20.62	20.53	20.49
		19	20	20.23	20.69	20.50
		38	0	20.19	20.67	20.63
	64QAM	1	0	19.44	19.06	19.39
		1	19	19.58	19.20	19.12
		1	37	19.45	19.30	19.70
		19	0	19.32	19.14	19.38
		19	9	19.27	19.04	19.17
		19	20	19.17	19.13	19.57
		38	0	19.29	19.27	19.40
	256QAM	1	0	18.74	18.76	18.50
		1	19	18.57	18.35	18.50
		1	37	18.42	18.44	18.23
		19	0	18.81	18.56	18.24
		19	9	18.78	18.83	18.31
		19	20	18.51	18.70	18.22
		38	0	18.34	18.38	18.84

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		620334	650000	679666
		Frequency (MHz)		3305.01	3750	4194.99
10 MHz	pi/2 BPSK	1	0	22.06	22.68	22.35
		1	12	22.20	22.54	22.11
		1	23	22.32	22.63	22.16
		12	0	22.16	22.32	22.15
		12	6	22.38	22.21	22.28
		12	12	21.99	22.59	22.29
		24	0	22.04	22.43	22.17
	QPSK	1	0	21.26	21.43	21.39
		1	12	21.39	21.04	21.28
		1	23	21.35	21.21	21.50
		12	0	21.49	21.05	21.21
		12	6	21.36	21.39	21.46
		12	12	21.27	21.56	21.31
		24	0	21.45	21.46	21.53
	16QAM	1	0	20.39	20.50	20.52
		1	12	20.16	20.36	20.42
		1	23	20.08	20.75	20.52
		12	0	20.35	20.26	20.22
		12	6	20.22	20.07	20.11
		12	12	20.39	20.17	20.47
		24	0	20.06	20.52	20.21
	64QAM	1	0	19.63	19.18	19.26
		1	12	19.17	19.22	19.51
		1	23	19.13	19.38	19.05
		12	0	19.38	19.06	19.28
		12	6	19.57	19.19	19.06
		12	12	19.61	19.27	19.20
		24	0	19.35	19.26	19.09
	256QAM	1	0	18.38	18.36	18.51
		1	12	18.58	18.48	18.24
		1	23	18.74	18.63	18.56
		12	0	18.30	18.33	18.73
		12	6	18.29	18.86	18.69
		12	12	18.25	18.49	18.49
		24	0	18.25	18.77	18.69

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NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		623334	636666	650000
		Frequency (MHz)		3350.01	3549.99	3750
100 MHz	pi/2 BPSK	1	0	22.69	22.90	22.69
		1	136	22.49	22.15	22.81
		1	272	22.25	22.61	22.88
		136	0	22.37	22.54	22.49
		136	68	22.21	22.75	22.62
		136	136	22.26	22.62	22.40
		273	0	22.76	22.65	22.86
	QPSK	1	0	21.33	21.08	21.09
		1	136	21.18	21.21	21.23
		1	272	21.54	21.09	21.56
		136	0	21.11	21.57	21.57
		136	68	21.17	21.49	21.21
		136	136	21.32	21.19	21.12
		273	0	21.11	21.37	21.31
	16QAM	1	0	20.45	20.58	20.27
		1	136	20.06	20.73	20.54
		1	272	20.39	20.26	20.45
		136	0	20.24	20.46	20.29
		136	68	20.33	20.39	20.69
		136	136	20.44	20.75	20.13
		273	0	20.55	20.17	20.54
	64QAM	1	0	19.60	19.58	19.06
		1	136	19.27	19.01	19.38
		1	272	19.16	19.30	19.10
		136	0	19.10	19.35	19.10
		136	68	19.30	19.03	19.11
		136	136	19.11	19.39	19.27
		273	0	19.62	19.29	19.24
	256QAM	1	0	18.39	18.33	18.50
		1	136	18.84	18.25	18.55
		1	272	18.25	18.24	18.41
		136	0	18.77	18.79	18.69
		136	68	18.36	18.35	18.33
		136	136	18.85	18.82	18.51
		273	0	18.63	18.54	18.58

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		623000	636666	650332
		Frequency (MHz)		3345	3549.99	3754.98
90 MHz	pi/2 BPSK	1	0	22.84	22.19	22.69
		1	122	22.09	22.42	22.80
		1	244	22.37	22.41	22.31
		122	0	22.47	22.56	22.62
		122	61	22.54	22.77	22.47
		122	122	22.54	22.60	22.50
		245	0	22.04	22.54	22.83
	QPSK	1	0	21.38	21.11	21.07
		1	122	21.42	21.08	21.30
		1	244	21.41	21.08	21.17
		122	0	21.43	21.40	21.29
		122	61	21.47	21.33	21.47
		122	122	21.27	21.31	21.24
		245	0	21.50	21.46	21.03
	16QAM	1	0	20.50	20.50	20.31
		1	122	20.11	20.25	20.49
		1	244	20.28	20.26	20.61
		122	0	20.16	20.21	20.11
		122	61	20.43	20.32	20.56
		122	122	20.13	20.04	20.70
		245	0	20.66	20.07	20.48
	64QAM	1	0	19.54	19.23	19.24
		1	122	19.55	19.44	19.28
		1	244	19.32	19.04	19.21
		122	0	19.20	19.56	19.53
		122	61	19.30	19.20	19.43
		122	122	19.40	19.54	19.54
		245	0	19.19	19.48	19.46
	256QAM	1	0	18.79	18.33	18.71
		1	122	18.83	18.69	18.53
		1	244	18.56	18.67	18.80
		122	0	18.88	18.69	18.48
		122	61	18.89	18.40	18.62
		122	122	18.62	18.45	18.77
		245	0	18.59	18.71	18.33

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	**MCS Index**	**RB Size**	**RB Offset**	**Low**	**Mid**	**High**
		Channel		**622668**	**636666**	**650666**
		Frequency (MHz)		**3340.02**	**3549.99**	**3759.99**
80 MHz	pi/2 BPSK	1	0	22.31	22.73	22.58
		1	108	22.55	22.47	22.31
		1	216	22.33	22.81	22.22
		108	0	22.75	22.69	22.61
		108	54	22.55	22.39	22.39
		108	108	22.77	22.65	22.75
		217	0	22.81	22.39	22.20
	QPSK	1	0	21.35	21.20	21.44
		1	108	21.30	21.02	21.19
		1	216	21.53	21.24	21.04
		108	0	21.31	21.24	21.20
		108	54	21.27	21.48	20.98
		108	108	21.45	21.11	21.30
		217	0	21.35	21.58	21.01
	16QAM	1	0	20.13	20.28	20.31
		1	108	20.12	20.34	20.59
		1	216	20.59	20.46	20.61
		108	0	20.37	20.07	20.14
		108	54	20.51	20.06	20.14
		108	108	20.44	20.17	20.61
		217	0	20.23	20.41	20.16
	64QAM	1	0	19.25	19.13	19.19
		1	108	19.13	19.31	19.21
		1	216	19.21	19.59	19.58
		108	0	19.34	19.12	19.37
		108	54	19.67	19.31	19.16
		108	108	19.33	19.08	19.63
		217	0	19.42	19.09	19.45
	256QAM	1	0	18.37	18.23	18.40
		1	108	18.22	18.57	18.52
		1	216	18.51	18.87	18.80
		108	0	18.75	18.58	18.67
		108	54	18.25	18.62	18.65
		108	108	18.28	18.46	18.76
		217	0	18.37	18.83	18.69

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		622000	636666	651332
		Frequency (MHz)		3330	3549.99	3769.98
60 MHz	pi/2 BPSK	1	0	22.27	22.22	22.48
		1	81	22.37	22.51	22.29
		1	161	22.50	22.13	22.63
		81	0	22.09	22.15	22.68
		81	40	22.87	22.61	22.87
		81	81	22.56	22.10	22.80
		162	0	22.19	22.82	22.87
	QPSK	1	0	21.23	21.22	21.44
		1	81	21.51	21.58	20.97
		1	161	21.15	21.10	21.44
		81	0	21.21	21.53	21.19
		81	40	21.21	21.13	21.20
		81	81	21.26	21.45	21.53
		162	0	21.35	21.50	21.46
	16QAM	1	0	20.30	20.61	20.69
		1	81	20.15	20.09	20.20
		1	161	20.53	20.13	20.26
		81	0	20.44	20.61	20.45
		81	40	20.09	20.68	20.55
		81	81	20.12	20.22	20.64
		162	0	20.14	20.08	20.29
	64QAM	1	0	19.16	19.38	19.26
		1	81	19.41	19.01	19.67
		1	161	19.11	19.32	19.61
		81	0	19.44	19.41	19.38
		81	40	19.50	19.29	19.05
		81	81	19.13	19.05	19.07
		162	0	19.33	19.38	19.61
	256QAM	1	0	18.61	18.57	18.27
		1	81	18.29	18.77	18.23
		1	161	18.83	18.54	18.35
		81	0	18.67	18.39	18.48
		81	40	18.77	18.55	18.83
		81	81	18.44	18.32	18.67
		162	0	18.72	18.82	18.53

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		621668	636666	651666
		Frequency (MHz)		3325.02	3549.99	3774.99
50 MHz	pi/2 BPSK	1	0	22.78	22.24	22.69
		1	66	22.80	22.42	22.76
		1	132	22.07	22.61	22.47
		66	0	22.79	22.61	22.26
		66	33	22.21	22.77	22.52
		66	66	22.13	22.77	22.80
		133	0	22.06	22.21	22.73
	QPSK	1	0	21.22	21.07	21.06
		1	66	21.14	21.12	21.54
		1	132	21.47	21.32	21.54
		66	0	21.24	21.12	21.22
		66	33	21.42	21.36	21.04
		66	66	21.55	21.59	21.47
		133	0	21.49	21.06	21.40
	16QAM	1	0	20.40	20.60	20.48
		1	66	20.36	20.63	20.22
		1	132	20.21	20.61	20.67
		66	0	20.33	20.76	20.52
		66	33	20.20	20.22	20.65
		66	66	20.19	20.54	20.53
		133	0	20.38	20.02	20.14
	64QAM	1	0	19.67	19.45	19.40
		1	66	19.61	19.60	19.05
		1	132	19.53	19.15	19.31
		66	0	19.15	19.29	19.63
		66	33	19.66	19.01	19.50
		66	66	19.13	19.55	19.21
		133	0	19.20	19.58	19.52
	256QAM	1	0	18.80	18.59	18.25
		1	66	18.72	18.59	18.36
		1	132	18.63	18.76	18.30
		66	0	18.67	18.83	18.67
		66	33	18.44	18.71	18.40
		66	66	18.80	18.34	18.57
		133	0	18.24	18.54	18.79

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	**MCS Index**	**RB Size**	**RB Offset**	**Low**	**Mid**	**High**
		Channel		**621334**	**636666**	**652000**
		Frequency (MHz)		**3320.01**	**3549.99**	**3780**
40 MHz	pi/2 BPSK	1	0	22.37	22.12	22.46
		1	53	22.41	22.29	22.85
		1	105	22.09	22.37	22.63
		53	0	22.31	22.21	22.42
		53	26	22.48	22.23	22.75
		53	53	22.49	22.51	22.55
		106	0	22.13	22.51	22.52
	QPSK	1	0	21.18	21.36	21.13
		1	53	21.25	21.28	21.08
		1	105	21.23	21.11	21.12
		53	0	21.39	21.30	21.28
		53	26	21.49	21.47	21.10
		53	53	21.35	21.00	21.42
		106	0	21.29	21.26	21.42
	16QAM	1	0	20.58	20.41	20.56
		1	53	20.51	20.04	20.55
		1	105	20.60	20.11	20.16
		53	0	20.52	20.29	20.69
		53	26	20.66	20.14	20.22
		53	53	20.32	20.33	20.14
		106	0	20.57	20.48	20.44
	64QAM	1	0	19.60	19.49	19.49
		1	53	19.11	19.04	19.48
		1	105	19.32	19.41	19.55
		53	0	19.14	19.42	19.53
		53	26	19.52	19.54	19.14
		53	53	19.55	19.11	19.65
		106	0	19.18	19.05	19.46
	256QAM	1	0	18.83	18.26	18.83
		1	53	18.69	18.76	18.27
		1	105	18.33	18.25	18.56
		53	0	18.41	18.74	18.62
		53	26	18.67	18.35	18.57
		53	53	18.68	18.28	18.30
		106	0	18.23	18.82	18.74

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		620668	636666	652666
		Frequency (MHz)		3310.02	3549.99	3789.99
20 MHz	pi/2 BPSK	1	0	22.74	22.14	22.33
		1	25	22.86	22.46	22.35
		1	50	22.21	22.35	22.70
		25	0	22.22	22.61	22.89
		25	12	22.22	22.48	22.73
		25	25	22.09	22.61	22.24
		51	0	22.48	22.70	22.67
	QPSK	1	0	21.55	21.08	21.12
		1	25	21.53	21.12	21.39
		1	50	21.20	21.24	21.35
		25	0	21.32	21.35	21.19
		25	12	21.33	21.17	21.03
		25	25	21.39	21.17	21.45
		51	0	21.13	21.52	21.53
	16QAM	1	0	20.18	20.11	20.35
		1	25	20.12	20.30	20.49
		1	50	20.48	20.51	20.25
		25	0	20.06	20.76	20.68
		25	12	20.41	20.54	20.39
		25	25	20.11	20.13	20.32
		51	0	20.50	20.16	20.48
	64QAM	1	0	19.13	19.17	19.40
		1	25	19.39	19.52	19.45
		1	50	19.21	19.54	19.67
		25	0	19.54	19.59	19.60
		25	12	19.13	19.24	19.39
		25	25	19.39	19.10	19.67
		51	0	19.57	19.42	19.42
	256QAM	1	0	18.70	18.65	18.22
		1	25	18.37	18.71	18.45
		1	50	18.42	18.24	18.40
		25	0	18.22	18.37	18.62
		25	12	18.26	18.59	18.66
		25	25	18.86	18.62	18.57
		51	0	18.72	18.50	18.61

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		620500	636666	652832
		Frequency (MHz)		3307.5	3549.99	3792.48
15 MHz	pi/2 BPSK	1	0	22.80	22.19	22.61
		1	19	22.24	22.54	22.46
		1	37	22.74	22.69	22.53
		19	0	22.63	22.35	22.86
		19	9	22.59	22.37	22.54
		19	20	22.61	22.42	22.15
		38	0	22.44	22.38	22.89
	QPSK	1	0	21.31	21.26	21.51
		1	19	21.51	21.43	21.57
		1	37	21.34	21.41	21.56
		19	0	21.50	21.58	21.37
		19	9	21.28	21.01	21.10
		19	20	21.38	21.58	21.12
		38	0	21.26	21.24	20.98
	16QAM	1	0	20.22	20.49	20.17
		1	19	20.10	20.52	20.52
		1	37	20.54	20.37	20.64
		19	0	20.29	20.71	20.36
		19	9	20.06	20.22	20.59
		19	20	20.23	20.42	20.69
		38	0	20.42	20.31	20.56
	64QAM	1	0	19.35	19.55	19.34
		1	19	19.50	19.56	19.12
		1	37	19.49	19.21	19.33
		19	0	19.64	19.35	19.48
		19	9	19.57	19.36	19.37
		19	20	19.11	19.19	19.59
		38	0	19.49	19.17	19.06
	256QAM	1	0	18.73	18.65	18.75
		1	19	18.29	18.79	18.29
		1	37	18.30	18.78	18.38
		19	0	18.54	18.38	18.62
		19	9	18.50	18.53	18.44
		19	20	18.50	18.44	18.81
		38	0	18.25	18.71	18.50

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		620334	636666	653000
		Frequency (MHz)		3305.01	3549.99	3795
10 MHz	pi/2 BPSK	1	0	22.03	22.78	22.36
		1	12	22.06	22.61	22.55
		1	23	22.72	22.41	22.68
		12	0	22.05	22.74	22.22
		12	6	22.01	22.21	22.44
		12	12	22.01	22.35	22.38
		24	0	22.65	22.80	22.23
	QPSK	1	0	21.36	21.31	21.25
		1	12	21.54	21.43	21.05
		1	23	21.35	21.19	21.21
		12	0	21.10	21.13	21.33
		12	6	21.30	21.58	21.50
		12	12	21.49	21.59	21.38
		24	0	21.33	21.58	20.99
	16QAM	1	0	20.52	20.26	20.25
		1	12	20.09	20.72	20.34
		1	23	20.14	20.30	20.34
		12	0	20.17	20.53	20.57
		12	6	20.06	20.29	20.42
		12	12	20.28	20.53	20.26
		24	0	20.65	20.04	20.51
	64QAM	1	0	19.12	19.40	19.16
		1	12	19.59	19.05	19.60
		1	23	19.21	19.48	19.29
		12	0	19.54	19.38	19.22
		12	6	19.38	19.24	19.48
		12	12	19.22	19.37	19.67
		24	0	19.62	19.26	19.15
	256QAM	1	0	18.25	18.55	18.77
		1	12	18.44	18.39	18.57
		1	23	18.38	18.37	18.77
		12	0	18.25	18.49	18.61
		12	6	18.26	18.43	18.73
		12	12	18.29	18.45	18.59
		24	0	18.87	18.40	18.41

2.3. Bluetooth Antenna

Band	Mode	Channel / Freq (MHz)	Average Output Power (dBm)
2.4 GHz	Bluetooth LE	0 / 2402	5.0
		19 / 2440	5.0
		39 / 2480	5.0

Based on paragraph "4.3.1 Standalone SAR test exclusion considerations" of the KDB 447498 D01 - General RF Exposure Guidance:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)]≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR

Protocol	Max. Declared Output Power		Min. Test separation distance (mm)	Frequency (GHz)	Result	Test Exclusion
	(dBm)	(mW)				
Bluetooth LE	5.0	3.162	40.0	2.402 - 2.480	0.125	√

The computed value for Bluetooth is < 3.0, so Bluetooth mode qualifies for Standalone SAR test exclusion for 1-g SAR and 10-g SAR.

When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f(GHz)/x] W/kg for test separation distances ≤ 50 mm; where x = 7.5 for 1-g SAR and x= 18,75 for 10-g extremity SAR

Estimated SAR					
Protocol	Max. Output Power		Min. Test separation distance (mm)	Frequency (GHz)	Estimated 1-g SAR
	(dBm)	(mW)			
Bluetooth LE	5.0	3.162	40.0	2.48	0.017

3. TISSUE PARAMETERS MEASUREMENTS

Frequency (MHz)	Target Head Tissue		Measured Head Tissue		Deviation %		Measured Date
	Permittivity ε	Conductivity σ [S/m]	Permittivity ε	Conductivity σ [S/m]	Permittivity ε	Conductivity σ [S/m]	
750	41.94	0.89	41.08	0.89	-2.06	-0.57	2022-09-13
750	41.94	0.89	41.15	0.89	-1.88	-0.74	2022-10-13
835	41.55	0.91	42.79	0.93	2.97	2.08	2022-07-27
900	41.50	0.97	41.99	1.00	1.17	2.97	2022-07-27
835	41.55	0.91	42.84	0.93	3.10	1.68	2022-10-18
900	41.50	0.97	42.02	1.00	1.24	2.75	2022-10-18
835	41.55	0.91	41.14	0.91	-1.01	0.14	2022-11-02
900	41.50	0.97	40.41	0.98	-2.63	0.80	2022-11-02
1750	40.07	1.37	39.34	1.35	-1.83	-1.89	2022-08-01
1800	40.00	1.40	39.10	1.39	-2.24	-0.54	2022-08-01
1750	40.07	1.37	40.06	1.37	-0.03	-0.18	2022-08-30
1800	40.00	1.40	39.81	1.40	-0.47	-0.01	2022-08-30
1900	40.00	1.40	39.24	1.43	-1.89	2.43	2022-08-30
1750	40.07	1.37	39.31	1.37	-1.89	-0.15	2022-10-19
1800	40.00	1.40	39.10	1.40	-2.24	-0.07	2022-10-19
1900	40.00	1.40	38.59	1.44	-3.53	2.53	2022-10-19
2300	39.47	1.67	38.89	1.63	-1.47	-2.02	2022-08-03
2450	39.20	1.80	38.34	1.82	-2.19	1.15	2022-08-03
2600	39.01	1.96	38.02	1.97	-2.53	0.13	2022-08-03
2300	39.47	1.67	39.32	1.70	-0.36	1.92	2022-09-15
2450	39.20	1.80	38.74	1.84	-1.18	2.21	2022-09-15
2600	39.01	1.96	38.25	1.99	-1.95	1.09	2022-09-15
2300	39.47	1.67	39.23	1.72	-0.59	3.37	2022-09-19
2450	39.20	1.80	38.66	1.87	-1.37	3.86	2022-09-19
2600	39.01	1.96	38.23	2.02	-2.00	3.01	2022-09-19
2300	39.47	1.67	41.05	1.68	4.02	0.71	2022-10-17
2450	39.20	1.80	40.66	1.85	3.73	2.81	2022-10-17
2600	39.01	1.96	40.22	2.02	3.11	2.69	2022-10-17
3330	38.16	2.71	38.92	2.81	2.00	3.63	2022-10-20
3500	37.93	2.91	38.51	2.93	1.53	0.67	2022-10-20
3700	37.70	3.12	38.17	3.08	1.25	-1.33	2022-10-20
3900	37.47	3.32	38.11	3.21	1.71	-3.43	2022-10-20
4200	37.13	3.63	37.96	3.47	2.25	-4.42	2022-10-20

Note: The dielectric properties have been measured by the contact probe method at 22° C.

- Composition / Information on ingredients

Head and Muscle Tissue Simulation Liquids HSL750V2/MSL750V2

Water	Water, 35 – 58%
Sucrose	Sugar, white, refined, 40 – 60%
NaCl	Sodium Chloride, 0 – 6%
Hydroxyethyl-cellulose	Medium Viscosity (CAS# 9004-62-0), <0.3%
Preventol-D7	Preservative: aqueous preparation, (CAS# 55965-84-9), containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyyl-3(2H)-isothiazolone, 0.1 – 0.7%

Head and Muscle Tissue Simulation Liquids HSL900/MSL900

Water	Water, 35 – 58%
Sucrose	Sugar, white, refined, 40 – 60%
NaCl	Sodium Chloride, 0 – 6%
Hydroxyethyl-cellulose	Medium Viscosity (CAS# 9004-62-0), <0.3%
Preventol-D7	Preservative: aqueous preparation, (CAS# 55965-84-9), containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyyl-3(2H)-isothiazolone, 0.1 – 0.7%

Head and Muscle Tissue Simulation Liquids HBBL1550-1900V3/MBBL1550-1900V3

Water	50 – 73 %
Non-ionic detergents	27 – 50 % polyoxyethylenesorbitan monolaurate
NaCl	0 – 2 %
Preservative	0.05 – 0.1% Preventol-D7
Safety relevant ingredients:	
CAS-No. 55965-84-9	< 0.1 % aqueous preparation, containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyyl-3(2H)-isothiazolone
CAS-No. 9005-64-5	<50 % polyoxyethylenesorbitan monolaurate

Head and Muscle Tissue Simulation Liquids HBBL1900-3800V3/MBBL1900-3800V3

Water	50 – 73 %
Non-ionic detergents	27 – 50 % polyoxyethylenesorbitan monolaurate
NaCl	0 – 2 %
Preservative	0.05 – 0.1% Preventol-D7
Safety relevant ingredients:	
CAS-No. 55965-84-9	< 0.1 % aqueous preparation, containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyyl-3(2H)-isothiazolone
CAS-No. 9005-64-5	<50 % polyoxyethylenesorbitan monolaurate

Head and Muscle Tissue Simulation Liquids HBBL3500-5800V5/MBBL3500-5800V5

H_2O	50 – 65 %
Mineral Oil	10 – 30 %
Emulsifiers	8 – 25 %
Additives and Salt	0 – 1.5%