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S Schweizerischer Kalibrierdienst
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S Swiss Calibration Service

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Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 4.0 mm	Graded Ratio = 1.4 (Z direction)
Frequency	5250 MHz ± 1 MHz 5600 MHz ± 1 MHz 5750 MHz ± 1 MHz	

Head TSL parameters at 5250 MHz

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	35.9	4.71 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.0 ± 6 %	4.51 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.99 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**79.4 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.30 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**22.8 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.5 ± 6 %	4.86 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.34 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**82.7 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.37 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.4 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5750 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.4	5.22 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.3 ± 6 %	5.02 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5750 MHz

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.94 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**78.8 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.25 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**22.3 W/kg ± 19.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5250 MHz

Impedance, transformed to feed point	48.3 Ω - 3.8 jΩ
Return Loss	- 27.5 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	51.1 Ω + 0.7 jΩ
Return Loss	- 38.1 dB

Antenna Parameters with Head TSL at 5750 MHz

Impedance, transformed to feed point	53.1 Ω + 2.8 jΩ
Return Loss	- 27.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.193 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 18.01.2021

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1262

Communication System: UID 0 - CW; Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz
Medium parameters used: f = 5250 MHz; σ = 4.51 S/m; ε_r = 35; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5600 MHz; σ = 4.86 S/m; ε_r = 34.5; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5750 MHz; σ = 5.02 S/m; ε_r = 34.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.5, 5.5, 5.5) @ 5250 MHz, ConvF(5.1, 5.1, 5.1) @ 5600 MHz, ConvF(5.08, 5.08, 5.08) @ 5750 MHz; Calibrated: 30.12.2020
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.11.2020
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

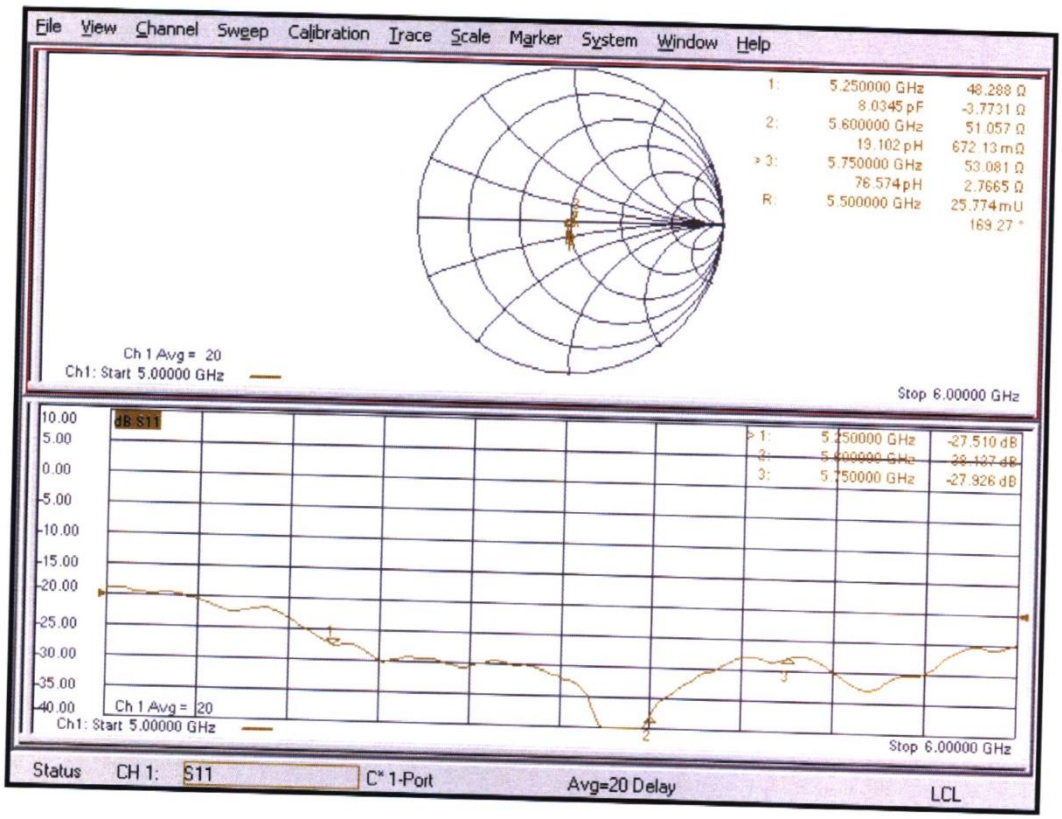
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 72.86 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 27.2 W/kg
SAR(1 g) = 7.99 W/kg; SAR(10 g) = 2.3 W/kg
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 70.7%
Maximum value of SAR (measured) = 18.4 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 73.28 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 30.8 W/kg
SAR(1 g) = 8.34 W/kg; SAR(10 g) = 2.37 W/kg
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 68%
Maximum value of SAR (measured) = 19.8 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 70.45 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 30.8 W/kg
SAR(1 g) = 7.94 W/kg; SAR(10 g) = 2.25 W/kg
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 66.2%
Maximum value of SAR (measured) = 19.3 W/kg

0 dB = 18.4 W/kg = 12.65 dBW/kg

Impedance Measurement Plot for Head TSL



ANNEX I G-Sensor Triggering Data Summary

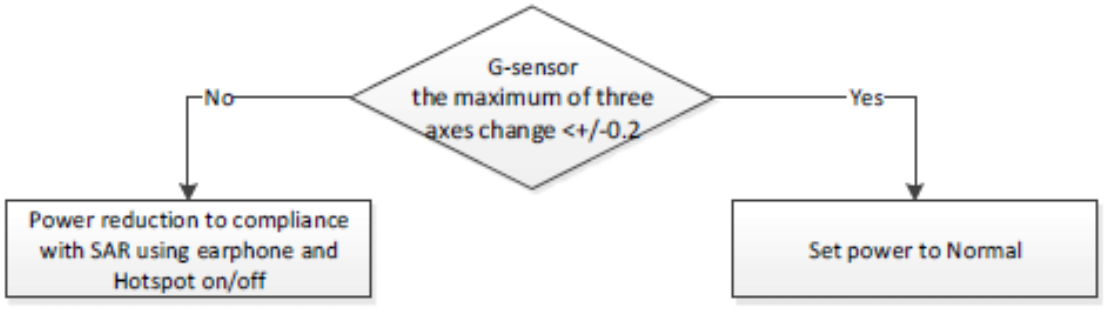
In order to judge whether the mobile phone is on the person's body, the method of using G-sensor is proposed as follows.

First, G-sensor can judge if the phone is "moving" or not by axes x, y, z variation. If we set the judgment conditions to be sensitive enough, then all of user cases which phone proximity to human body are in "moving".

Main user cases of Mobile phone and the maximum of three axes(x, y, z) change from G-sensor is as below table:

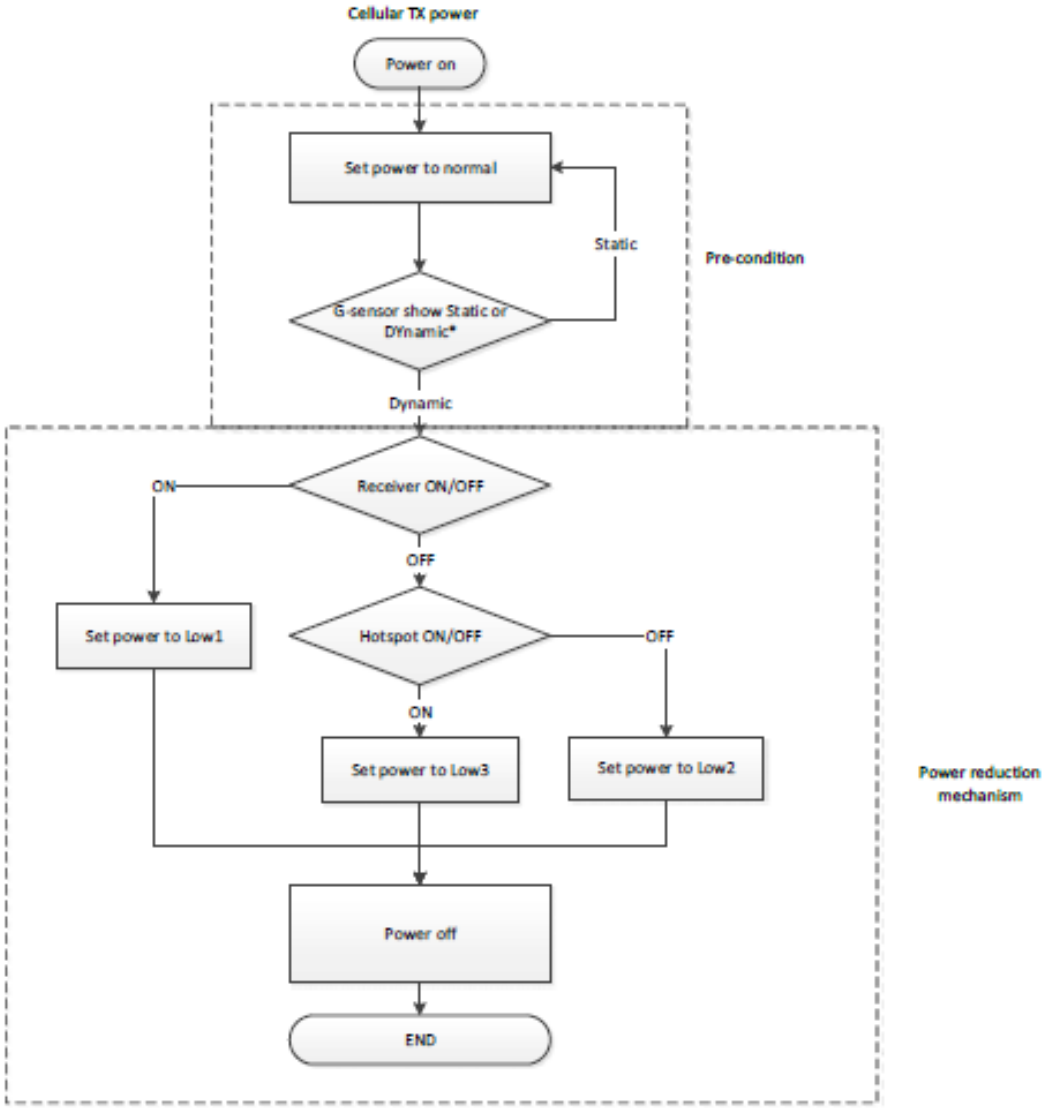
User Case	Making call and beside head and hand	Browsing	In people's pockets(Sit still)	Leaving the body and putting on a stationary table	Leaving the body and putting in a moving place
The maximum of three axes change from G-sensor	>+/-0.5	>+/-0.5	>+/-0.5	+/-0.05~0.1	>+/-0.5
Power reduction is on or off	On	On	On	Off	On

We choose the maximum of three axes change <+/-0.2 as judgment conditions. Detect interval is 200ms.



When the maximum of three axes change <+/-0.2, the user case MUST be mobile phone stay away from the body, but if it is>+/-0.2, it MAY be on the person's body, power reduction is on.

Detail Power reduction mechanism



*When it is in "static" state, the detection frequency is 200ms. When it is In "Dynamic" state, the detection frequency is 30s.

ANNEX J Newly add bands and ENDC

J.1 Dielectric Performance and System Validation

Table J.1-1: Dielectric Performance of Head Tissue Simulating Liquid

Measurement Date (yyyy-mm-dd)	Type	Frequency	Permittivity ε	Drift (%)	Conductivity σ (S/m)	Drift (%)
2022-1-20	Head	835 MHz	45.55	9.76%	0.8797	-2.26%
2022-1-21	Head	1750 MHz	42.48	5.99	1.383	0.95
2022-1-22	Head	1900 MHz	42.79	6.98%	1.527	9.07%
2022-1-23	Head	3500 MHz	38.73	2.11%	2.848	-2.13%
2022-1-23	Head	3800 MHz	38.21	1.65%	3.143	-2.39%

Table J.1-2: System Validation of Head

Measurement Date (yyyy-mm-dd)	Frequency	Target value (W/kg)		Measured value(W/kg)		Deviation	
		10 g Average	1 g Average	10 g Average	1 g Average	10 g Average	1 g Average
2022-1-20	835 MHz	6.24	9.63	6.08	9.52	-2.56%	-1.14%
2022-1-21	1750 MHz	19.4	36.9	19.08	36.32	-1.65%	-1.57%
2022-1-22	1900 MHz	20.9	40.1	20.5	39.2	-2.01%	-2.34%
2022-1-23	3500 MHz	25.2	67.3	24.8	66.2	-1.59%	-1.63%
2022-1-23	3800 MHz	24	65.4	23.6	64.2	-1.67%	-1.83%

J.2 Conductive output power

Maximum Target Power for Production Unit – Power Level A1/B1/C1/D1

Band	Tune up (dBm)			
	Receiver on (head scenario - Standalone)	Receiver on (head scenario – Under ENDC/UL CA)	Receiver off (Body scenario - standalone)	Receiver off (Body scenario- Under ENDC/UL CA)
	Level A1	Level B1	Level C1	Level D1
LTE B5	22.3	20	24.5	22
n2	22	18	23	20.5
n5	23	21	25	23
n70	21.5	/	23	/
n77	/	21	/	22.3

LTE B5-Power Level A1					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**6QAM**
1.4MHz	1RB-High (5)	848.3 (20643)	22.14	22.13	21.40
		836.5 (20525)	22.17	22.24	21.47
		824.7 (20407)	22.07	22.10	21.61
	1RB-Middle (3)	848.3 (20643)	21.98	22.06	21.52
		836.5 (20525)	22.09	22.25	21.53
		824.7 (20407)	22.20	22.29	21.55
	1RB-Low (0)	848.3 (20643)	22.09	22.33	21.65
		836.5 (20525)	21.93	21.94	21.72
		824.7 (20407)	22.23	22.08	21.62
	3RB-High (3)	848.3 (20643)	21.99	21.58	20.32
		836.5 (20525)	22.18	21.52	20.31
		824.7 (20407)	22.15	21.46	20.52
	3RB-Middle (1)	848.3 (20643)	22.03	21.72	20.23
		836.5 (20525)	22.24	21.45	20.30
		824.7 (20407)	22.04	21.39	20.30
	3RB-Low (0)	848.3 (20643)	22.23	21.47	20.37
		836.5 (20525)	21.94	21.67	20.45
		824.7 (20407)	21.91	21.48	20.48
	6RB (0)	848.3 (20643)	22.05	21.48	20.57
		836.5 (20525)	22.05	21.53	20.34
		824.7 (20407)	21.97	21.41	20.37
3MHz	1RB-High (14)	847.5 (20635)	22.20	22.03	21.46
		836.5 (20525)	22.03	21.94	21.77
		825.5 (20415)	22.16	22.22	21.44
	1RB-Middle (7)	847.5 (20635)	22.26	22.27	21.87
		836.5 (20525)	22.31	22.31	21.70
		825.5 (20415)	21.98	22.33	21.40
	1RB-Low (0)	847.5 (20635)	22.20	22.14	21.56
		836.5 (20525)	21.89	22.07	21.60
		825.5 (20415)	22.12	21.95	21.63
	8RB-High (7)	847.5 (20635)	22.12	21.67	20.31
		836.5 (20525)	22.14	21.48	20.54
		825.5 (20415)	22.12	21.69	20.73
	8RB-Middle (4)	847.5 (20635)	22.19	21.45	20.53
		836.5 (20525)	21.88	21.65	20.60
		825.5 (20415)	21.92	21.56	20.53
	8RB-Low (0)	847.5 (20635)	21.88	21.57	20.44
		836.5 (20525)	21.89	21.61	20.42
		825.5 (20415)	21.88	21.46	20.52
	15RB (0)	847.5 (20635)	22.06	21.39	20.55
		836.5 (20525)	22.10	21.39	20.30
		825.5 (20415)	21.89	21.58	20.49

5MHz	1RB-High (24)	846.5 (20625)	22.22	22.37	21.65
		836.5 (20525)	22.32	22.07	21.61
		826.5 (20425)	22.28	22.06	21.47
	1RB-Middle (12)	846.5 (20625)	21.93	22.24	21.66
		836.5 (20525)	22.23	22.41	21.76
		826.5 (20425)	22.28	22.12	21.71
	1RB-Low (0)	846.5 (20625)	22.21	22.22	21.40
		836.5 (20525)	22.09	22.10	21.57
		826.5 (20425)	22.17	22.01	21.65
	12RB-High (13)	846.5 (20625)	22.08	21.33	20.46
		836.5 (20525)	21.93	21.47	20.47
		826.5 (20425)	22.08	21.52	20.65
	12RB-Middle (6)	846.5 (20625)	22.19	21.58	20.56
		836.5 (20525)	22.01	21.47	20.49
		826.5 (20425)	22.05	21.44	20.30
	12RB-Low (0)	846.5 (20625)	22.15	21.44	20.56
		836.5 (20525)	22.10	21.64	20.55
		826.5 (20425)	21.86	21.59	20.59
	25RB (0)	846.5 (20625)	22.25	21.70	20.43
		836.5 (20525)	22.03	21.27	20.58
		826.5 (20425)	22.04	21.36	20.47
10MHz	1RB-High (49)	844 (20600)	22.19	22.29	21.69
		836.5 (20525)	22.24	22.19	21.69
		829 (20450)	22.18	22.30	21.61
	1RB-Middle (24)	844 (20600)	22.22	22.34	21.78
		836.5 (20525)	22.26	22.34	21.71
		829 (20450)	22.22	22.35	21.68
	1RB-Low (0)	844 (20600)	22.21	22.23	21.68
		836.5 (20525)	22.19	22.19	21.64
		829 (20450)	22.18	22.15	21.76
	25RB-High (25)	844 (20600)	22.07	21.59	20.57
		836.5 (20525)	22.13	21.69	20.50
		829 (20450)	22.13	21.60	20.66
	25RB-Middle (12)	844 (20600)	22.17	21.64	20.50
		836.5 (20525)	22.15	21.59	20.51
		829 (20450)	22.09	21.55	20.54
	25RB-Low (0)	844 (20600)	22.18	21.54	20.65
		836.5 (20525)	22.19	21.63	20.60
		829 (20450)	22.16	21.54	20.52
	50RB (0)	844 (20600)	22.15	21.66	20.61
		836.5 (20525)	22.12	21.53	20.49
		829 (20450)	22.14	21.54	20.53

LTE B5-Power Level B1					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	848.3 (20643)	19.77	18.66	18.46
		836.5 (20525)	19.66	18.75	18.70
		824.7 (20407)	19.54	18.89	18.39
	1RB-Middle (3)	848.3 (20643)	19.62	18.63	18.79
		836.5 (20525)	19.93	18.63	18.64
		824.7 (20407)	19.65	18.70	18.60
	1RB-Low (0)	848.3 (20643)	19.74	18.83	18.54
		836.5 (20525)	19.74	18.57	18.73
		824.7 (20407)	19.54	18.61	18.41
	3RB-High (3)	848.3 (20643)	19.69	19.66	19.75
		836.5 (20525)	19.56	19.64	19.79
		824.7 (20407)	19.63	19.65	19.88
	3RB-Middle (1)	848.3 (20643)	19.63	19.77	19.76
		836.5 (20525)	19.82	19.74	19.78
		824.7 (20407)	19.53	19.60	19.89
	3RB-Low (0)	848.3 (20643)	19.93	19.64	19.78
		836.5 (20525)	19.75	19.82	19.74
		824.7 (20407)	19.67	19.52	19.51
	6RB (0)	848.3 (20643)	19.82	19.50	19.82
		836.5 (20525)	19.73	19.68	19.58
		824.7 (20407)	19.76	19.63	19.38
3MHz	1RB-High (14)	847.5 (20635)	19.67	18.70	18.69
		836.5 (20525)	19.72	18.85	18.71
		825.5 (20415)	19.55	18.72	18.43
	1RB-Middle (7)	847.5 (20635)	19.59	18.48	18.69
		836.5 (20525)	19.97	18.79	18.66
		825.5 (20415)	19.60	18.62	18.56
	1RB-Low (0)	847.5 (20635)	19.82	18.97	18.47
		836.5 (20525)	19.89	18.79	18.72
		825.5 (20415)	19.69	18.49	18.45
	8RB-High (7)	847.5 (20635)	19.71	19.51	19.64
		836.5 (20525)	19.48	19.60	19.57
		825.5 (20415)	19.64	19.64	19.86
	8RB-Middle (4)	847.5 (20635)	19.64	19.64	19.84
		836.5 (20525)	19.81	19.92	19.74
		825.5 (20415)	19.55	19.54	19.74
	8RB-Low (0)	847.5 (20635)	19.86	19.61	19.86
		836.5 (20525)	19.66	19.68	19.70
		825.5 (20415)	19.54	19.76	19.62
	15RB (0)	847.5 (20635)	19.62	19.80	19.64
		836.5 (20525)	19.67	19.60	19.77
		825.5 (20415)	19.76	19.68	19.43

5MHz	1RB-High (24)	846.5 (20625)	19.78	18.77	18.67
		836.5 (20525)	19.85	18.90	18.57
		826.5 (20425)	19.58	18.68	18.45
	1RB-Middle (12)	846.5 (20625)	19.68	18.54	18.76
		836.5 (20525)	19.90	18.62	18.75
		826.5 (20425)	19.78	18.52	18.61
	1RB-Low (0)	846.5 (20625)	19.87	18.77	18.68
		836.5 (20525)	19.86	18.78	18.75
		826.5 (20425)	19.75	18.75	18.53
	12RB-High (13)	846.5 (20625)	19.49	19.72	19.63
		836.5 (20525)	19.56	19.74	19.68
		826.5 (20425)	19.81	19.55	19.73
	12RB-Middle (6)	846.5 (20625)	19.80	19.91	19.82
		836.5 (20525)	19.63	19.97	19.81
		826.5 (20425)	19.67	19.51	19.71
	12RB-Low (0)	846.5 (20625)	19.63	19.45	19.90
		836.5 (20525)	19.91	19.60	19.69
		826.5 (20425)	19.70	19.52	19.74
	25RB (0)	846.5 (20625)	19.77	19.75	19.62
		836.5 (20525)	19.55	19.67	19.61
		826.5 (20425)	19.63	19.53	19.63
10MHz	1RB-High (49)	844 (20600)	19.81	18.69	18.65
		836.5 (20525)	19.78	18.90	18.70
		829 (20450)	19.73	18.79	18.55
	1RB-Middle (24)	844 (20600)	19.78	18.59	18.83
		836.5 (20525)	19.87	18.77	18.80
		829 (20450)	19.70	18.71	18.58
	1RB-Low (0)	844 (20600)	19.81	18.93	18.58
		836.5 (20525)	19.83	18.73	18.83
		829 (20450)	19.69	18.69	18.51
	25RB-High (25)	844 (20600)	19.68	19.62	19.73
		836.5 (20525)	19.67	19.66	19.69
		829 (20450)	19.83	19.74	19.85
	25RB-Middle (12)	844 (20600)	19.72	19.82	19.90
		836.5 (20525)	19.79	19.88	19.82
		829 (20450)	19.66	19.61	19.89
	25RB-Low (0)	844 (20600)	19.83	19.65	19.90
		836.5 (20525)	19.84	19.77	19.83
		829 (20450)	19.70	19.67	19.69
	50RB (0)	844 (20600)	19.80	19.70	19.81
		836.5 (20525)	19.72	19.73	19.77
		829 (20450)	19.67	19.66	19.57

LTE B5-Power Level C1					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	848.3 (20643)	24.08	23.21	22.15
		836.5 (20525)	24.08	23.25	22.24
		824.7 (20407)	24.11	23.28	22.17
	1RB-Middle (3)	848.3 (20643)	24.08	23.31	22.14
		836.5 (20525)	24.10	23.20	22.16
		824.7 (20407)	24.09	23.18	22.20
	1RB-Low (0)	848.3 (20643)	24.10	23.22	22.15
		836.5 (20525)	24.12	23.24	22.23
		824.7 (20407)	24.08	23.24	22.22
	3RB-High (3)	848.3 (20643)	24.14	23.04	22.11
		836.5 (20525)	24.09	23.11	22.09
		824.7 (20407)	24.09	23.13	22.12
	3RB-Middle (1)	848.3 (20643)	24.11	23.12	22.09
		836.5 (20525)	24.10	23.14	22.11
		824.7 (20407)	24.09	23.10	22.12
	3RB-Low (0)	848.3 (20643)	24.10	23.07	22.09
		836.5 (20525)	24.10	23.16	22.12
		824.7 (20407)	24.09	23.06	22.08
	6RB (0)	848.3 (20643)	23.07	22.12	20.92
		836.5 (20525)	23.10	22.13	21.01
		824.7 (20407)	23.09	22.13	20.97
3MHz	1RB-High (14)	847.5 (20635)	23.99	23.22	22.08
		836.5 (20525)	24.03	23.16	22.14
		825.5 (20415)	24.01	23.17	22.11
	1RB-Middle (7)	847.5 (20635)	24.04	23.20	22.13
		836.5 (20525)	24.08	23.16	22.18
		825.5 (20415)	24.10	23.23	22.17
	1RB-Low (0)	847.5 (20635)	24.04	23.29	22.15
		836.5 (20525)	24.06	23.32	22.12
		825.5 (20415)	24.04	23.25	22.12
	8RB-High (7)	847.5 (20635)	22.97	22.02	20.98
		836.5 (20525)	23.04	22.06	21.00
		825.5 (20415)	22.99	22.03	21.00
	8RB-Middle (4)	847.5 (20635)	23.00	22.07	21.04
		836.5 (20525)	23.03	22.05	21.02
		825.5 (20415)	23.08	22.10	21.02
	8RB-Low (0)	847.5 (20635)	23.04	22.09	21.00
		836.5 (20525)	22.99	22.07	21.00
		825.5 (20415)	23.03	22.10	21.01
	15RB (0)	847.5 (20635)	23.00	22.02	20.95
		836.5 (20525)	23.02	22.08	20.99
		825.5 (20415)	23.00	22.03	20.98

5MHz	1RB-High (24)	846.5 (20625)	24.01	23.14	22.03
		836.5 (20525)	24.06	23.15	22.17
		826.5 (20425)	24.06	23.16	22.09
	1RB-Middle (12)	846.5 (20625)	24.08	23.33	22.13
		836.5 (20525)	24.13	23.29	22.12
		826.5 (20425)	24.12	23.28	22.18
	1RB-Low (0)	846.5 (20625)	24.04	23.33	22.14
		836.5 (20525)	24.08	23.34	22.17
		826.5 (20425)	24.06	23.27	22.14
	12RB-High (13)	846.5 (20625)	22.97	21.94	20.96
		836.5 (20525)	22.98	21.98	20.98
		826.5 (20425)	22.99	21.97	20.98
	12RB-Middle (6)	846.5 (20625)	22.99	21.99	21.00
		836.5 (20525)	23.03	22.01	21.04
		826.5 (20425)	23.04	21.99	20.99
	12RB-Low (0)	846.5 (20625)	23.08	22.06	21.07
		836.5 (20525)	23.07	22.08	21.08
		826.5 (20425)	23.08	22.07	21.03
	25RB (0)	846.5 (20625)	23.03	22.03	20.98
		836.5 (20525)	23.03	22.04	21.00
		826.5 (20425)	23.04	22.05	21.04
10MHz	1RB-High (49)	844 (20600)	24.01	23.16	22.10
		836.5 (20525)	24.07	23.25	22.10
		829 (20450)	24.03	23.19	22.00
	1RB-Middle (24)	844 (20600)	24.06	23.16	22.15
		836.5 (20525)	24.15	23.25	22.16
		829 (20450)	24.12	23.25	22.17
	1RB-Low (0)	844 (20600)	24.09	23.23	22.08
		836.5 (20525)	24.06	23.26	22.10
		829 (20450)	24.06	23.20	22.10
	25RB-High (25)	844 (20600)	22.96	21.95	20.91
		836.5 (20525)	23.02	22.03	20.95
		829 (20450)	23.02	22.06	21.02
	25RB-Middle (12)	844 (20600)	23.02	22.05	21.04
		836.5 (20525)	23.00	22.05	20.97
		829 (20450)	22.99	22.00	20.97
	25RB-Low (0)	844 (20600)	23.10	22.05	21.08
		836.5 (20525)	23.13	22.03	20.99
		829 (20450)	23.07	22.02	20.98
	50RB (0)	844 (20600)	23.03	22.04	21.03
		836.5 (20525)	22.99	22.02	20.97
		829 (20450)	23.05	22.02	21.03

LTE B5-Power Level D1					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	848.3 (20643)	21.70	21.83	20.81
		836.5 (20525)	21.80	21.49	20.77
		824.7 (20407)	21.80	21.87	20.79
	1RB-Middle (3)	848.3 (20643)	21.79	21.86	20.60
		836.5 (20525)	21.39	21.68	20.51
		824.7 (20407)	21.46	21.75	20.66
	1RB-Low (0)	848.3 (20643)	21.73	21.68	20.87
		836.5 (20525)	21.35	22.02	20.49
		824.7 (20407)	21.45	21.68	20.65
	3RB-High (3)	848.3 (20643)	21.43	20.46	19.83
		836.5 (20525)	21.33	20.70	19.45
		824.7 (20407)	21.64	20.71	19.44
	3RB-Middle (1)	848.3 (20643)	21.57	20.44	19.73
		836.5 (20525)	21.66	20.48	19.77
		824.7 (20407)	21.51	20.49	19.54
	3RB-Low (0)	848.3 (20643)	21.63	20.66	19.38
		836.5 (20525)	21.55	20.54	19.68
		824.7 (20407)	21.59	20.58	19.51
	6RB (0)	848.3 (20643)	21.35	20.65	19.54
		836.5 (20525)	21.50	20.39	19.59
		824.7 (20407)	21.58	20.63	19.71
3MHz	1RB-High (14)	847.5 (20635)	21.56	21.79	20.58
		836.5 (20525)	21.56	21.50	20.81
		825.5 (20415)	21.65	21.84	20.90
	1RB-Middle (7)	847.5 (20635)	21.56	21.71	20.49
		836.5 (20525)	21.61	21.78	20.75
		825.5 (20415)	21.59	21.81	20.70
	1RB-Low (0)	847.5 (20635)	21.55	21.61	20.79
		836.5 (20525)	21.37	21.88	20.60
		825.5 (20415)	21.50	21.94	20.84
	8RB-High (7)	847.5 (20635)	21.62	20.61	19.81
		836.5 (20525)	21.32	20.80	19.54
		825.5 (20415)	21.66	20.73	19.50
	8RB-Middle (4)	847.5 (20635)	21.53	20.62	19.70
		836.5 (20525)	21.44	20.63	19.63
		825.5 (20415)	21.37	20.60	19.75
	8RB-Low (0)	847.5 (20635)	21.61	20.55	19.57
		836.5 (20525)	21.54	20.68	19.61
		825.5 (20415)	21.44	20.58	19.53
	15RB (0)	847.5 (20635)	21.39	20.53	19.66
		836.5 (20525)	21.62	20.56	19.55
		825.5 (20415)	21.58	20.49	19.52

5MHz	1RB-High (24)	846.5 (20625)	21.58	21.92	20.67
		836.5 (20525)	21.67	21.46	20.75
		826.5 (20425)	21.78	21.97	20.77
	1RB-Middle (12)	846.5 (20625)	21.77	21.75	20.61
		836.5 (20525)	21.66	21.86	20.60
		826.5 (20425)	21.51	21.66	20.73
	1RB-Low (0)	846.5 (20625)	21.66	21.69	20.61
		836.5 (20525)	21.61	21.80	20.41
		826.5 (20425)	21.53	21.91	20.63
	12RB-High (13)	846.5 (20625)	21.43	20.48	19.85
		836.5 (20525)	21.52	20.70	19.58
		826.5 (20425)	21.60	20.68	19.66
	12RB-Middle (6)	846.5 (20625)	21.54	20.66	19.58
		836.5 (20525)	21.45	20.62	19.79
		826.5 (20425)	21.56	20.51	19.49
	12RB-Low (0)	846.5 (20625)	21.76	20.43	19.32
		836.5 (20525)	21.58	20.45	19.65
		826.5 (20425)	21.71	20.33	19.39
	25RB (0)	846.5 (20625)	21.40	20.60	19.60
		836.5 (20525)	21.61	20.53	19.79
		826.5 (20425)	21.51	20.66	19.72
10MHz	1RB-High (49)	844 (20600)	21.66	21.84	20.77
		836.5 (20525)	21.75	21.62	20.78
		829 (20450)	21.71	21.98	20.82
	1RB-Middle (24)	844 (20600)	21.70	21.77	20.60
		836.5 (20525)	21.59	21.86	20.67
		829 (20450)	21.65	21.74	20.70
	1RB-Low (0)	844 (20600)	21.72	21.76	20.80
		836.5 (20525)	21.52	21.95	20.60
		829 (20450)	21.64	21.85	20.83
	25RB-High (25)	844 (20600)	21.57	20.54	19.80
		836.5 (20525)	21.51	20.75	19.62
		829 (20450)	21.59	20.64	19.63
	25RB-Middle (12)	844 (20600)	21.54	20.60	19.65
		836.5 (20525)	21.62	20.57	19.77
		829 (20450)	21.52	20.50	19.65
	25RB-Low (0)	844 (20600)	21.67	20.59	19.50
		836.5 (20525)	21.68	20.62	19.62
		829 (20450)	21.62	20.53	19.50
	50RB (0)	844 (20600)	21.50	20.72	19.57
		836.5 (20525)	21.61	20.46	19.72
		829 (20450)	21.66	20.63	19.67

5G n2-Power Level A1							
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.	Power Results (dBm)
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	1907.5	381500	20.92
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	1880	376000	20.95
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	1852.5	370500	20.91
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	1900	380000	20.86
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	1880	376000	20.88
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	1860	372000	20.81
15	5	DFT-s-OFDM PI/2 BPSK1	Inner_Full	12_6	1880	376000	20.83
15	5	DFT-s-OFDM 16QAM	Inner_Full	12_6	1880	376000	20.84
15	5	DFT-s-OFDM 64QAM	Inner_Full	12_6	1880	376000	20.28
15	5	DFT-s-OFDM 256QAM	Inner_Full	12_6	1880	376000	18.25
15	5	CP-OFDM QPSK	Inner_Full	12_6	1880	376000	20.87
15	5	CP-OFDM 16QAM	Inner_Full	12_6	1880	376000	20.91
15	5	CP-OFDM 64QAM	Inner_Full	12_6	1880	376000	19.32
15	5	CP-OFDM 256QAM	Inner_Full	12_6	1880	376000	16.22
15	5	DFT-s-OFDM QPSK	Edge_Full_Right	2_23	1880	376000	20.78
15	5	DFT-s-OFDM QPSK	Edge_Full_Left	2_0	1880	376000	20.64
15	5	DFT-s-OFDM QPSK	Edge_1RB_Right	1_24	1880	376000	20.62
15	5	DFT-s-OFDM QPSK	Edge_1RB_Left	1_0	1880	376000	20.63
15	5	DFT-s-OFDM QPSK	Inner_1RB_Right	1_23	1880	376000	20.64
15	5	DFT-s-OFDM QPSK	Inner_1RB_Left	1_1	1880	376000	20.71
15	5	DFT-s-OFDM QPSK	Outer_Full	25_0	1880	376000	20.75
15	10	DFT-s-OFDM QPSK	Inner_Full	25_12	1880	376000	20.67
15	15	DFT-s-OFDM QPSK	Inner_Full	36_18	1880	376000	20.54

5G n2-Power Level B1							
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.	Power Results (dBm)
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	1907.5	381500	17.45
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	1880	376000	17.56
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	1852.5	370500	17.42
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	1900	380000	17.45
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	1880	376000	17.42
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	1860	372000	17.43
15	5	DFT-s-OFDM PI/2 BPSK1	Inner_Full	12_6	1880	376000	17.51
15	5	DFT-s-OFDM 16QAM	Inner_Full	12_6	1880	376000	17.50
15	5	DFT-s-OFDM 64QAM	Inner_Full	12_6	1880	376000	17.45
15	5	DFT-s-OFDM 256QAM	Inner_Full	12_6	1880	376000	17.48
15	5	CP-OFDM QPSK	Inner_Full	12_6	1880	376000	17.44
15	5	CP-OFDM 16QAM	Inner_Full	12_6	1880	376000	17.54
15	5	CP-OFDM 64QAM	Inner_Full	12_6	1880	376000	17.46
15	5	CP-OFDM 256QAM	Inner_Full	12_6	1880	376000	15.94
15	5	DFT-s-OFDM QPSK	Edge_Full_Right	2_23	1880	376000	17.28
15	5	DFT-s-OFDM QPSK	Edge_Full_Left	2_0	1880	376000	17.35
15	5	DFT-s-OFDM QPSK	Edge_1RB_Right	1_24	1880	376000	17.43
15	5	DFT-s-OFDM QPSK	Edge_1RB_Left	1_0	1880	376000	17.38
15	5	DFT-s-OFDM QPSK	Inner_1RB_Right	1_23	1880	376000	17.42
15	5	DFT-s-OFDM QPSK	Inner_1RB_Left	1_1	1880	376000	17.39
15	5	DFT-s-OFDM QPSK	Outer_Full	25_0	1880	376000	17.45
15	10	DFT-s-OFDM QPSK	Inner_Full	25_12	1880	376000	17.43
15	15	DFT-s-OFDM QPSK	Inner_Full	36_18	1880	376000	17.45

5G n2-Power Level C1							
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.	Power Results (dBm)
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	1907.5	381500	21.84
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	1880	376000	21.93
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	1852.5	370500	21.87
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	1900	380000	21.75
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	1880	376000	21.77
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	1860	372000	21.76
15	5	DFT-s-OFDM PI/2 BPSK1	Inner_Full	12_6	1880	376000	21.86
15	5	DFT-s-OFDM 16QAM	Inner_Full	12_6	1880	376000	21.89
15	5	DFT-s-OFDM 64QAM	Inner_Full	12_6	1880	376000	20.32
15	5	DFT-s-OFDM 256QAM	Inner_Full	12_6	1880	376000	18.28
15	5	CP-OFDM QPSK	Inner_Full	12_6	1880	376000	21.84
15	5	CP-OFDM 16QAM	Inner_Full	12_6	1880	376000	20.93
15	5	CP-OFDM 64QAM	Inner_Full	12_6	1880	376000	19.35
15	5	CP-OFDM 256QAM	Inner_Full	12_6	1880	376000	16.22
15	5	DFT-s-OFDM QPSK	Edge_Full_Right	2_23	1880	376000	21.69
15	5	DFT-s-OFDM QPSK	Edge_Full_Left	2_0	1880	376000	21.82
15	5	DFT-s-OFDM QPSK	Edge_1RB_Right	1_24	1880	376000	21.63
15	5	DFT-s-OFDM QPSK	Edge_1RB_Left	1_0	1880	376000	21.65
15	5	DFT-s-OFDM QPSK	Inner_1RB_Right	1_23	1880	376000	21.72
15	5	DFT-s-OFDM QPSK	Inner_1RB_Left	1_1	1880	376000	21.63
15	5	DFT-s-OFDM QPSK	Outer_Full	25_0	1880	376000	21.86
15	10	DFT-s-OFDM QPSK	Inner_Full	25_12	1880	376000	21.43
15	15	DFT-s-OFDM QPSK	Inner_Full	36_18	1880	376000	21.61

5G n2-Power Level D1							
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.	Power Results (dBm)
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	1907.5	381500	19.57
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	1880	376000	19.78
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	1852.5	370500	19.61
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	1900	380000	19.66
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	1880	376000	19.59
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	1860	372000	19.61
15	5	DFT-s-OFDM PI/2 BPSK1	Inner_Full	12_6	1880	376000	19.73
15	5	DFT-s-OFDM 16QAM	Inner_Full	12_6	1880	376000	19.74
15	5	DFT-s-OFDM 64QAM	Inner_Full	12_6	1880	376000	19.72
15	5	DFT-s-OFDM 256QAM	Inner_Full	12_6	1880	376000	18.22
15	5	CP-OFDM QPSK	Inner_Full	12_6	1880	376000	19.73
15	5	CP-OFDM 16QAM	Inner_Full	12_6	1880	376000	19.72
15	5	CP-OFDM 64QAM	Inner_Full	12_6	1880	376000	19.24
15	5	CP-OFDM 256QAM	Inner_Full	12_6	1880	376000	16.15
15	5	DFT-s-OFDM QPSK	Edge_Full_Right	2_23	1880	376000	19.65
15	5	DFT-s-OFDM QPSK	Edge_Full_Left	2_0	1880	376000	19.67
15	5	DFT-s-OFDM QPSK	Edge_1RB_Right	1_24	1880	376000	19.68
15	5	DFT-s-OFDM QPSK	Edge_1RB_Left	1_0	1880	376000	19.69
15	5	DFT-s-OFDM QPSK	Inner_1RB_Right	1_23	1880	376000	19.64
15	5	DFT-s-OFDM QPSK	Inner_1RB_Left	1_1	1880	376000	19.66
15	5	DFT-s-OFDM QPSK	Outer_Full	25_0	1880	376000	19.72
15	10	DFT-s-OFDM QPSK	Inner_Full	25_12	1880	376000	19.49
15	15	DFT-s-OFDM QPSK	Inner_Full	36_18	1880	376000	19.71

5G n5-Power Level A1/D1							
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.	Power Results (dBm)
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	846.5	169300	22.65
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	836.5	167300	22.69
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	826.5	165300	22.65
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	839	167800	22.56
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	836.5	167300	22.55
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	834	166800	22.54
15	5	DFT-s-OFDM PI/2 BPSK1	Inner_Full	12_6	836.5	167300	22.66
15	5	DFT-s-OFDM 16QAM	Inner_Full	12_6	836.5	167300	22.61
15	5	DFT-s-OFDM 64QAM	Inner_Full	12_6	836.5	167300	21.09
15	5	DFT-s-OFDM 256QAM	Inner_Full	12_6	836.5	167300	19.07
15	5	CP-OFDM QPSK	Inner_Full	12_6	836.5	167300	22.65
15	5	CP-OFDM 16QAM	Inner_Full	12_6	836.5	167300	21.70
15	5	CP-OFDM 64QAM	Inner_Full	12_6	836.5	167300	20.09
15	5	CP-OFDM 256QAM	Inner_Full	12_6	836.5	167300	17.10
15	5	DFT-s-OFDM QPSK	Edge_Full_Right	2_23	836.5	167300	22.58
15	5	DFT-s-OFDM QPSK	Edge_Full_Left	2_0	836.5	167300	22.59
15	5	DFT-s-OFDM QPSK	Edge_1RB_Right	1_24	836.5	167300	22.56
15	5	DFT-s-OFDM QPSK	Edge_1RB_Left	1_0	836.5	167300	22.55
15	5	DFT-s-OFDM QPSK	Inner_1RB_Right	1_23	836.5	167300	22.62
15	5	DFT-s-OFDM QPSK	Inner_1RB_Left	1_1	836.5	167300	22.59
15	5	DFT-s-OFDM QPSK	Outer_Full	25_0	836.5	167300	22.64
15	10	DFT-s-OFDM QPSK	Inner_Full	25_12	836.5	167300	22.44
15	15	DFT-s-OFDM QPSK	Inner_Full	36_18	836.5	167300	22.60

5G n5-Power Level B1							
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.	Power Results (dBm)
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	846.5	169300	20.86
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	836.5	167300	20.88
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	826.5	165300	20.85
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	839	167800	20.82
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	836.5	167300	20.81
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	834	166800	20.80
15	5	DFT-s-OFDM PI/2 BPSK1	Inner_Full	12_6	836.5	167300	20.84
15	5	DFT-s-OFDM 16QAM	Inner_Full	12_6	836.5	167300	20.80
15	5	DFT-s-OFDM 64QAM	Inner_Full	12_6	836.5	167300	20.80
15	5	DFT-s-OFDM 256QAM	Inner_Full	12_6	836.5	167300	20.34
15	5	CP-OFDM QPSK	Inner_Full	12_6	836.5	167300	20.81
15	5	CP-OFDM 16QAM	Inner_Full	12_6	836.5	167300	20.81
15	5	CP-OFDM 64QAM	Inner_Full	12_6	836.5	167300	20.82
15	5	CP-OFDM 256QAM	Inner_Full	12_6	836.5	167300	18.38
15	5	DFT-s-OFDM QPSK	Edge_Full_Right	2_23	836.5	167300	20.87
15	5	DFT-s-OFDM QPSK	Edge_Full_Left	2_0	836.5	167300	20.75
15	5	DFT-s-OFDM QPSK	Edge_1RB_Right	1_24	836.5	167300	20.85
15	5	DFT-s-OFDM QPSK	Edge_1RB_Left	1_0	836.5	167300	20.77
15	5	DFT-s-OFDM QPSK	Inner_1RB_Right	1_23	836.5	167300	20.75
15	5	DFT-s-OFDM QPSK	Inner_1RB_Left	1_1	836.5	167300	20.79
15	5	DFT-s-OFDM QPSK	Outer_Full	25_0	836.5	167300	20.78
15	10	DFT-s-OFDM QPSK	Inner_Full	25_12	836.5	167300	20.62
15	15	DFT-s-OFDM QPSK	Inner_Full	36_18	836.5	167300	20.82

5G n5-Power Level C1							
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.	Power Results (dBm)
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	846.5	169300	24.29
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	836.5	167300	24.32
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	826.5	165300	24.09
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	839	167800	23.99
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	836.5	167300	23.98
15	20	DFT-s-OFDM QPSK	Inner_Full	50_25	834	166800	23.97
15	5	DFT-s-OFDM PI/2 BPSK1	Inner_Full	12_6	836.5	167300	24.13
15	5	DFT-s-OFDM 16QAM	Inner_Full	12_6	836.5	167300	23.50
15	5	DFT-s-OFDM 64QAM	Inner_Full	12_6	836.5	167300	21.50
15	5	DFT-s-OFDM 256QAM	Inner_Full	12_6	836.5	167300	19.47
15	5	CP-OFDM QPSK	Inner_Full	12_6	836.5	167300	23.58
15	5	CP-OFDM 16QAM	Inner_Full	12_6	836.5	167300	22.11
15	5	CP-OFDM 64QAM	Inner_Full	12_6	836.5	167300	20.50
15	5	CP-OFDM 256QAM	Inner_Full	12_6	836.5	167300	17.51
15	5	DFT-s-OFDM QPSK	Edge_Full_Right	2_23	836.5	167300	23.96
15	5	DFT-s-OFDM QPSK	Edge_Full_Left	2_0	836.5	167300	23.97
15	5	DFT-s-OFDM QPSK	Edge_1RB_Right	1_24	836.5	167300	24.03
15	5	DFT-s-OFDM QPSK	Edge_1RB_Left	1_0	836.5	167300	24.01
15	5	DFT-s-OFDM QPSK	Inner_1RB_Right	1_23	836.5	167300	24.03
15	5	DFT-s-OFDM QPSK	Inner_1RB_Left	1_1	836.5	167300	23.99
15	5	DFT-s-OFDM QPSK	Outer_Full	25_0	836.5	167300	24.02
15	10	DFT-s-OFDM QPSK	Inner_Full	25_12	836.5	167300	23.79
15	15	DFT-s-OFDM QPSK	Inner_Full	36_18	836.5	167300	23.98

5G n70-Power Level A1							
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.	Power Results (dBm)
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	1707.5	341500	20.41
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	1702.5	340500	20.66
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	1697.5	339500	20.42
15	10	DFT-s-OFDM QPSK	Inner_Full	25_12	1705	341000	20.26
15	10	DFT-s-OFDM QPSK	Inner_Full	25_12	1702.5	340500	20.23
15	10	DFT-s-OFDM QPSK	Inner_Full	25_12	1700	340000	20.28
15	5	DFT-s-OFDM PI/2 BPSK1	Inner_Full	12_6	1702.5	340500	20.61
15	5	DFT-s-OFDM 16QAM	Inner_Full	12_6	1702.5	340500	20.58
15	5	DFT-s-OFDM 64QAM	Inner_Full	12_6	1702.5	340500	20.07
15	5	DFT-s-OFDM 256QAM	Inner_Full	12_6	1702.5	340500	18.03
15	5	CP-OFDM QPSK	Inner_Full	12_6	1702.5	340500	20.55
15	5	CP-OFDM 16QAM	Inner_Full	12_6	1702.5	340500	20.64
15	5	CP-OFDM 64QAM	Inner_Full	12_6	1702.5	340500	19.05
15	5	CP-OFDM 256QAM	Inner_Full	12_6	1702.5	340500	15.96
15	5	DFT-s-OFDM QPSK	Edge_Full_Right	2_23	1702.5	340500	20.21
15	5	DFT-s-OFDM QPSK	Edge_Full_Left	2_0	1702.5	340500	20.38
15	5	DFT-s-OFDM QPSK	Edge_1RB_Right	1_24	1702.5	340500	20.25
15	5	DFT-s-OFDM QPSK	Edge_1RB_Left	1_0	1702.5	340500	20.35
15	5	DFT-s-OFDM QPSK	Inner_1RB_Right	1_23	1702.5	340500	20.29
15	5	DFT-s-OFDM QPSK	Inner_1RB_Left	1_1	1702.5	340500	20.36
15	5	DFT-s-OFDM QPSK	Outer_Full	25_0	1702.5	340500	20.32
15	15	DFT-s-OFDM QPSK	Inner_Full	36_18	1702.5	340500	20.41

5G n70-Power Level C1							
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.	Power Results (dBm)
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	1707.5	341500	21.52
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	1702.5	340500	21.69
15	5	DFT-s-OFDM QPSK	Inner_Full	12_6	1697.5	339500	21.58
15	10	DFT-s-OFDM QPSK	Inner_Full	25_12	1705	341000	21.36
15	10	DFT-s-OFDM QPSK	Inner_Full	25_12	1702.5	340500	21.26
15	10	DFT-s-OFDM QPSK	Inner_Full	25_12	1700	340000	21.31
15	5	DFT-s-OFDM PI/2 BPSK1	Inner_Full	12_6	1702.5	340500	21.66
15	5	DFT-s-OFDM 16QAM	Inner_Full	12_6	1702.5	340500	21.67
15	5	DFT-s-OFDM 64QAM	Inner_Full	12_6	1702.5	340500	20.13
15	5	DFT-s-OFDM 256QAM	Inner_Full	12_6	1702.5	340500	18.07
15	5	CP-OFDM QPSK	Inner_Full	12_6	1702.5	340500	21.64
15	5	CP-OFDM 16QAM	Inner_Full	12_6	1702.5	340500	20.68
15	5	CP-OFDM 64QAM	Inner_Full	12_6	1702.5	340500	19.10
15	5	CP-OFDM 256QAM	Inner_Full	12_6	1702.5	340500	16.01
15	5	DFT-s-OFDM QPSK	Edge_Full_Right	2_23	1702.5	340500	21.44
15	5	DFT-s-OFDM QPSK	Edge_Full_Left	2_0	1702.5	340500	21.54
15	5	DFT-s-OFDM QPSK	Edge_1RB_Right	1_24	1702.5	340500	21.52
15	5	DFT-s-OFDM QPSK	Edge_1RB_Left	1_0	1702.5	340500	21.50
15	5	DFT-s-OFDM QPSK	Inner_1RB_Right	1_23	1702.5	340500	21.42
15	5	DFT-s-OFDM QPSK	Inner_1RB_Left	1_1	1702.5	340500	21.48
15	5	DFT-s-OFDM QPSK	Outer_Full	25_0	1702.5	340500	21.54
15	15	DFT-s-OFDM QPSK	Inner_Full	36_18	1702.5	340500	21.57

5G n77(3450-3550MHz)-Power Level B1							
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.	Power Results (dBm)
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3540	636000	20.76
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3500.01	633334	20.80
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3460.02	630668	20.75
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3499.98	633332	20.82
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3500.01	633334	20.87
30	100	DFT-s-OFDM PI/2 BPSK1	Inner_Full	135@67	3500.01	633334	20.76
30	100	DFT-s-OFDM 16QAM	Inner_Full	135@67	3500.01	633334	20.73
30	100	DFT-s-OFDM 64QAM	Inner_Full	135@67	3500.01	633334	20.75
30	100	DFT-s-OFDM 256QAM	Inner_Full	135@67	3500.01	633334	20.76
30	100	CP-OFDM QPSK	Inner_Full	135@67	3500.01	633334	20.72
30	100	CP-OFDM 16QAM	Inner_Full	135@67	3500.01	633334	20.69
30	100	CP-OFDM 64QAM	Inner_Full	135@67	3500.01	633334	20.71
30	100	CP-OFDM 256QAM	Inner_Full	135@67	3500.01	633334	19.36
30	100	DFT-s-OFDM QPSK	Edge_1RB_Right	2@271	3500.01	633334	19.91
30	100	DFT-s-OFDM QPSK	Edge_1RB_Left	2@0	3500.01	633334	19.87
30	100	DFT-s-OFDM QPSK	Edge_Full_Right	1@271	3500.01	633334	19.88
30	100	DFT-s-OFDM QPSK	Edge_Full_Left	1@1	3500.01	633334	19.78
30	100	DFT-s-OFDM QPSK	Inner_1RB_Right	270@0	3500.01	633334	20.51
30	100	DFT-s-OFDM QPSK	Inner_1RB_Left	1@0	3500.01	633334	19.74
30	100	DFT-s-OFDM QPSK	Outer_Full	1@272	3500.01	633334	19.86
30	40	DFT-s-OFDM QPSK	Inner_Full	50@25	3500.01	633334	20.71
30	50	DFT-s-OFDM QPSK	Inner_Full	64@32	3500.01	633334	20.72
30	60	DFT-s-OFDM QPSK	Inner_Full	81@40	3500.01	633334	20.71
30	80	DFT-s-OFDM QPSK	Inner_Full	108@54	3500.01	633334	20.66
30	90	DFT-s-OFDM QPSK	Inner_Full	120@60	3500.01	633334	20.64

5G n77(3700-3980MHz)-Power Level B1							
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.	Power Results (dBm)
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3969.990	664666	20.71
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3918.000	661200	20.73
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3866.000	657733	20.74
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3814.000	654267	20.74
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3762.000	650800	20.73
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3710.010	647334	20.74
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3930.000	662000	20.76
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3894.000	659600	20.76
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3858.000	657200	20.72
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3822.000	654800	20.78
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3786.000	652400	20.74
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3750.000	650000	20.70
30	100	DFT-s-OFDM PI/2 BPSK1	Inner_Full	135@67	3822.000	654800	20.80
30	100	DFT-s-OFDM 16QAM	Inner_Full	135@67	3822.000	654800	20.78
30	100	DFT-s-OFDM 64QAM	Inner_Full	135@67	3822.000	654800	20.77
30	100	DFT-s-OFDM 256QAM	Inner_Full	135@67	3822.000	654800	20.77
30	100	CP-OFDM QPSK	Inner_Full	135@67	3822.000	654800	20.80
30	100	CP-OFDM 16QAM	Inner_Full	135@67	3822.000	654800	20.84
30	100	CP-OFDM 64QAM	Inner_Full	135@67	3822.000	654800	20.76
30	100	CP-OFDM 256QAM	Inner_Full	135@67	3822.000	654800	19.38
30	100	CP-OFDM 16QAM	Edge_Full_Right	2@271	3822.000	654800	19.68
30	100	CP-OFDM 16QAM	Edge_Full_Left	2@0	3822.000	654800	19.67
30	100	CP-OFDM 16QAM	Inner_1RB_Right	1@271	3822.000	654800	19.57
30	100	CP-OFDM 16QAM	Inner_1RB_Left	1@1	3822.000	654800	19.41
30	100	CP-OFDM 16QAM	Outer_Full	270@0	3822.000	654800	20.53
30	100	CP-OFDM 16QAM	Edge_1RB_Left	1@0	3822.000	654800	19.41
30	100	CP-OFDM 16QAM	Edge_1RB_Right	1@272	3822.000	654800	19.49
30	40	CP-OFDM 16QAM	Inner_Full	50@25	3822.000	654800	20.82
30	50	CP-OFDM 16QAM	Inner_Full	64@32	3822.000	654800	20.73
30	60	CP-OFDM 16QAM	Inner_Full	81@40	3822.000	654800	20.81
30	80	CP-OFDM 16QAM	Inner_Full	108@54	3822.000	654800	20.83
30	90	CP-OFDM 16QAM	Inner_Full	120@60	3822.000	654800	20.76

5G n77(3450-3550MHz)-Power Level D1							
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.	Power Results (dBm)
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3540	636000	21.51
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3500.01	633334	21.50
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3460.02	630668	21.53
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3499.98	633332	21.55
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3500.01	633334	21.59
30	100	DFT-s-OFDM PI/2 BPSK1	Inner_Full	135@67	3500.01	633334	21.49
30	100	DFT-s-OFDM 16QAM	Inner_Full	135@67	3500.01	633334	21.47
30	100	DFT-s-OFDM 64QAM	Inner_Full	135@67	3500.01	633334	21.48
30	100	DFT-s-OFDM 256QAM	Inner_Full	135@67	3500.01	633334	20.92
30	100	CP-OFDM QPSK	Inner_Full	135@67	3500.01	633334	21.49
30	100	CP-OFDM 16QAM	Inner_Full	135@67	3500.01	633334	21.52
30	100	CP-OFDM 64QAM	Inner_Full	135@67	3500.01	633334	21.46
30	100	CP-OFDM 256QAM	Inner_Full	135@67	3500.01	633334	19.02
30	100	DFT-s-OFDM QPSK	Edge_1RB_Right	2@271	3500.01	633334	20.66
30	100	DFT-s-OFDM QPSK	Edge_1RB_Left	2@0	3500.01	633334	20.61
30	100	DFT-s-OFDM QPSK	Edge_Full_Right	1@271	3500.01	633334	20.63
30	100	DFT-s-OFDM QPSK	Edge_Full_Left	1@1	3500.01	633334	20.50
30	100	DFT-s-OFDM QPSK	Inner_1RB_Right	270@0	3500.01	633334	21.27
30	100	DFT-s-OFDM QPSK	Inner_1RB_Left	1@0	3500.01	633334	20.53
30	100	DFT-s-OFDM QPSK	Outer_Full	1@272	3500.01	633334	20.59
30	40	DFT-s-OFDM QPSK	Inner_Full	50@25	3500.01	633334	21.41
30	50	DFT-s-OFDM QPSK	Inner_Full	64@32	3500.01	633334	21.38
30	60	DFT-s-OFDM QPSK	Inner_Full	81@40	3500.01	633334	21.36
30	80	DFT-s-OFDM QPSK	Inner_Full	108@54	3500.01	633334	21.37
30	90	DFT-s-OFDM QPSK	Inner_Full	120@60	3500.01	633334	21.46

5G n77(3700-3980MHz)-Power Level D1							
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.	Power Results (dBm)
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3969.990	664666	21.65
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3918.000	661200	21.77
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3866.000	657733	21.70
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3814.000	654267	21.76
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3762.000	650800	21.75
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3710.010	647334	21.75
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3930.000	662000	21.83
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3894.000	659600	21.82
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3858.000	657200	21.72
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3822.000	654800	21.95
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3786.000	652400	21.85
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3750.000	650000	21.84
30	100	DFT-s-OFDM PI/2 BPSK1	Inner_Full	135@67	3822.000	654800	21.86
30	100	DFT-s-OFDM 16QAM	Inner_Full	135@67	3822.000	654800	21.84
30	100	DFT-s-OFDM 64QAM	Inner_Full	135@67	3822.000	654800	21.87
30	100	DFT-s-OFDM 256QAM	Inner_Full	135@67	3822.000	654800	21.32
30	100	CP-OFDM QPSK	Inner_Full	135@67	3822.000	654800	21.88
30	100	CP-OFDM 16QAM	Inner_Full	135@67	3822.000	654800	21.93
30	100	CP-OFDM 64QAM	Inner_Full	135@67	3822.000	654800	21.86
30	100	CP-OFDM 256QAM	Inner_Full	135@67	3822.000	654800	19.46
30	100	CP-OFDM 16QAM	Edge_Full_Right	2@271	3822.000	654800	20.76
30	100	CP-OFDM 16QAM	Edge_Full_Left	2@0	3822.000	654800	20.82
30	100	CP-OFDM 16QAM	Inner_1RB_Right	1@271	3822.000	654800	20.70
30	100	CP-OFDM 16QAM	Inner_1RB_Left	1@1	3822.000	654800	20.55
30	100	CP-OFDM 16QAM	Outer_Full	270@0	3822.000	654800	21.65
30	100	CP-OFDM 16QAM	Edge_1RB_Left	1@0	3822.000	654800	20.54
30	100	CP-OFDM 16QAM	Edge_1RB_Right	1@272	3822.000	654800	20.59
30	40	CP-OFDM 16QAM	Inner_Full	50@25	3822.000	654800	21.87
30	50	CP-OFDM 16QAM	Inner_Full	64@32	3822.000	654800	21.71
30	60	CP-OFDM 16QAM	Inner_Full	81@40	3822.000	654800	21.88
30	80	CP-OFDM 16QAM	Inner_Full	108@54	3822.000	654800	21.86
30	90	CP-OFDM 16QAM	Inner_Full	120@60	3822.000	654800	21.82

J.3 SAR Test Results

Table J.3-1: SAR Values (LTE Band5 - Head)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃												
Frequency		Mode	Side	Test Position	Note/ Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
20600	844	1RB_Mid	Left	Touch	/	22.22	22.3	0.476	**0.48**	0.885	**0.90**	0.06
20525	836.5	1RB_Mid	Left	Touch	/	22.26	22.3	0.445	**0.45**	0.798	**0.81**	-0.07
20450	829	1RB_Mid	Left	Touch	/	22.22	22.3	0.388	**0.40**	0.735	**0.75**	-0.07
20600	844	100RB	Left	Touch	/	22.15	22.3	0.455	**0.47**	0.833	**0.86**	0.07
20600	844	1RB_Mid	Left	Tilt	/	22.22	22.3	0.482	**0.49**	0.932	**0.95**	-0.09
20525	836.5	1RB_Mid	Left	Tilt	/	22.26	22.3	0.426	**0.43**	0.839	**0.85**	-0.03
20450	829	1RB_Mid	Left	Tilt	/	22.22	22.3	0.384	**0.39**	0.759	**0.77**	0.10
20600	844	100RB	Left	Tilt	/	22.15	22.3	0.458	**0.47**	0.865	**0.90**	-0.11
20600	844	1RB_Mid	Right	Touch	/	22.22	22.3	0.472	**0.48**	0.798	**0.81**	-0.01
20525	836.5	1RB_Mid	Right	Touch	/	22.26	22.3	0.578	**0.58**	0.976	**0.99**	-0.09
20450	829	1RB_Mid	Right	Touch	/	22.22	22.3	0.436	**0.44**	0.805	**0.82**	0.18
20525	836.5	100RB	Right	Touch	/	22.15	22.3	0.558	**0.58**	1.030	**1.07**	-0.15
20600	844	1RB_Mid	Right	Tilt	/	22.22	22.3	0.546	**0.56**	1.070	**1.09**	-0.09
20525	836.5	1RB_Mid	Right	Tilt	Fig.1	22.26	22.3	0.585	**0.59**	1.170	**1.18**	-0.02
20450	829	1RB_Mid	Right	Tilt	/	22.22	22.3	0.435	**0.44**	0.846	**0.86**	0.06
20525	836.5	100RB	Right	Tilt	/	22.15	22.3	0.558	**0.58**	1.100	**1.14**	0.03
20525	836.5	25RB_Low	Left	Touch	/	22.19	22.3	0.367	**0.38**	0.724	**0.74**	-0.10
20525	836.5	25RB_Low	Left	Tilt	/	22.19	22.3	0.372	**0.38**	0.731	**0.75**	0.07
20600	844	25RB_Low	Right	Touch	/	22.18	22.3	0.548	**0.56**	1.020	**1.05**	-0.07
20525	836.5	25RB_Low	Right	Touch	/	22.19	22.3	0.564	**0.58**	1.050	**1.08**	-0.09
20450	829	25RB_Low	Right	Touch	/	22.16	22.3	0.537	**0.55**	0.988	**1.02**	0.08
20600	844	25RB_Low	Right	Tilt	/	22.18	22.3	0.544	**0.56**	1.040	**1.07**	0.10
20525	836.5	25RB_Low	Right	Tilt	/	22.19	22.3	0.551	**0.57**	1.080	**1.11**	-0.17
20450	829	25RB_Low	Right	Tilt	/	22.16	22.3	0.54	**0.56**	0.989	**1.02**	-0.06
20525	836.5	1RB_Mid	Left	Touch	Note2	19.87	20	0.195	**0.20**	0.350	**0.36**	0.11
20525	836.5	1RB_Mid	Left	Tilt	Note2	19.87	20	0.185	**0.19**	0.352	**0.36**	-0.12
20525	836.5	1RB_Mid	Right	Touch	Note2	19.87	20	0.220	**0.23**	0.384	**0.40**	-0.12
20525	836.5	1RB_Mid	Right	Tilt	Note2	19.87	20	0.239	**0.25**	0.460	**0.47**	-0.03
20525	836.5	25RB_Low	Left	Touch	Note2	19.84	20	0.201	**0.21**	0.351	**0.36**	0.11
20525	836.5	25RB_Low	Left	Tilt	Note2	19.84	20	0.189	**0.20**	0.345	**0.36**	-0.04
20525	836.5	25RB_Low	Right	Touch	Note2	19.84	20	0.221	**0.23**	0.392	**0.41**	-0.05
20525	836.5	25RB_Low	Right	Tilt	Note2	19.84	20	0.219	**0.23**	0.396	**0.41**	0.14

Note1: The LTE mode is QPSK_10MHz.

Note2: The results are for ENDC only.

Table J.3-2: SAR Values (LTE Band5 - Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
20525	836.5	1RB_Mid	Front	/	24.15	24.5	0.338	**0.37**	0.591	**0.64**	0.11
20600	844	1RB_Mid	Rear	/	24.06	24.5	0.466	**0.52**	0.842	**0.93**	-0.05
20525	836.5	1RB_Mid	Rear	Fig.2	24.15	24.5	0.528	**0.57**	0.960	**1.04**	0.06
20450	829	1RB_Mid	Rear	/	24.12	24.5	0.398	**0.43**	0.717	**0.78**	-0.18
20600	844	100RB	Rear	/	23.03	23.5	0.369	**0.41**	0.669	**0.75**	-0.02
20525	836.5	1RB_Mid	Left	/	24.15	24.5	0.228	**0.25**	0.342	**0.37**	-0.09
20600	844	1RB_Mid	Top	/	24.06	24.5	0.346	**0.38**	0.676	**0.75**	0.15
20525	836.5	1RB_Mid	Top	/	24.15	24.5	0.354	**0.38**	0.695	**0.75**	-0.04
20450	829	1RB_Mid	Top	/	24.12	24.5	0.298	**0.33**	0.581	**0.63**	-0.09
20525	836.5	100RB	Top	/	22.99	23.5	0.274	**0.31**	0.537	**0.60**	-0.03
20525	836.5	25RB_Low	Front	/	23.13	23.5	0.261	**0.28**	0.457	**0.50**	-0.05
20525	836.5	25RB_Low	Rear	/	23.13	23.5	0.354	**0.39**	0.641	**0.70**	-0.17
20525	836.5	25RB_Low	Left	/	23.13	23.5	0.174	**0.19**	0.259	**0.28**	0.07
20525	836.5	25RB_Low	Top	/	23.13	23.5	0.259	**0.28**	0.506	**0.55**	-0.04
20525	836.5	1RB_Mid	Front	Note3	21.75	22	0.181	**0.19**	0.306	**0.32**	-0.08
20525	836.5	1RB_Mid	Rear	Note3	21.75	22	0.244	**0.26**	0.431	**0.46**	0.05
20525	836.5	1RB_Mid	Left	Note3	21.75	22	0.123	**0.13**	0.205	**0.22**	0.14
20525	836.5	1RB_Mid	Top	Note3	21.75	22	0.217	**0.23**	0.429	**0.45**	-0.11
20525	836.5	25RB_Low	Front	Note3	21.68	22	0.182	**0.20**	0.305	**0.33**	0.11
20525	836.5	25RB_Low	Rear	Note3	21.68	22	0.232	**0.25**	0.405	**0.44**	0.08
20525	836.5	25RB_Low	Left	Note3	21.68	22	0.150	**0.16**	0.303	**0.33**	0.09
20525	836.5	25RB_Low	Top	Note3	21.68	22	0.200	**0.22**	0.403	**0.43**	-0.16

Note1: The distance between the EUT and the phantom bottom is 10mm

Note2: The LTE mode is QPSK_10MHz.

Note3: The results are for ENDC only.

Table J.3-3: SAR Values (5G NR n2-Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Side	Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
376000	1880	Left	Cheek	/	20.95	22	0.149	**0.19**	0.259	**0.33**	-0.11
376000	1880	Left	Tilt	/	20.95	22	0.101	**0.13**	0.183	**0.23**	-0.10
381500	1907.5	Right	Cheek	/	20.92	22	0.364	**0.47**	0.745	**0.96**	0.06
376000	1880	Right	Cheek	/	20.95	22	0.356	**0.45**	0.723	**0.92**	-0.14
370500	1852.5	Right	Cheek	Fig.3	20.91	22	0.385	**0.49**	0.787	**1.01**	0.05
376000	1880	Right	Tilt	/	20.95	22	0.144	**0.18**	0.279	**0.36**	0.05
376000	1880	Left	Cheek	Note1	17.56	18	0.09	**0.10**	0.154	**0.17**	0.05
376000	1880	Left	Tilt	Note1	17.56	18	0.062	**0.07**	0.105	**0.12**	0.16
376000	1880	Right	Cheek	Note1	17.56	18	0.201	**0.22**	0.417	**0.46**	0.01
376000	1880	Right	Tilt	Note1	17.56	18	0.077	**0.09**	0.14	**0.15**	-0.14

Note1: The results are for ENDC only.

Table J.3-4: SAR Values (5G NR n2-Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
376000	1880	Front	/	21.93	23	0.128	**0.16**	0.229	**0.29**	-0.04
381500	1907.5	Rear	/	21.84	23	0.267	**0.35**	0.508	**0.66**	0.12
376000	1880	Rear	/	21.93	23	0.312	**0.40**	0.582	**0.74**	0.06
370500	1852.5	Rear	/	21.87	23	0.28	**0.36**	0.529	**0.69**	-0.10
381500	1907.5	Left	/	21.84	23	0.319	**0.42**	0.618	**0.81**	0.06
376000	1880	Left	/	21.93	23	0.359	**0.46**	0.678	**0.87**	-0.16
370500	1852.5	Left	Fig.4	21.87	23	0.356	**0.46**	0.686	**0.89**	0.18
376000	1880	Top	/	21.93	23	0.061	**0.08**	0.102	**0.13**	0.13
376000	1880	Front	Note2	19.78	20.5	0.090	**0.11**	0.165	**0.19**	0.03
376000	1880	Rear	Note2	19.78	20.5	0.189	**0.22**	0.379	**0.45**	-0.09
376000	1880	Left	Note2	19.78	20.5	0.233	**0.28**	0.453	**0.53**	0.09
376000	1880	Top	Note2	19.78	20.5	0.042	**0.05**	0.071	**0.08**	-0.02

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: The results are for ENDC only.

Table J.3-5: SAR Values (5G NR n5-Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Side	Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
169300	846.5	Left	Cheek	/	22.65	23	0.427	**0.46**	0.766	**0.83**	-0.15
167300	836.5	Left	Cheek	/	22.69	23	0.449	**0.48**	0.813	**0.87**	-0.01
165300	826.5	Left	Cheek	/	22.65	23	0.389	**0.42**	0.721	**0.78**	0.03
169300	846.5	Left	Tilt	/	22.65	23	0.401	**0.43**	0.742	**0.80**	-0.05
167300	836.5	Left	Tilt	/	22.69	23	0.413	**0.44**	0.774	**0.83**	0.12
165300	826.5	Left	Tilt	/	22.65	23	0.365	**0.40**	0.689	**0.75**	0.06
169300	846.5	Right	Cheek	/	22.65	23	0.567	**0.61**	0.834	**0.90**	-0.12
167300	836.5	Right	Cheek	/	22.69	23	0.612	**0.66**	0.912	**0.98**	0.01
165300	826.5	Right	Cheek	/	22.65	23	0.467	**0.51**	0.694	**0.75**	0.03
169300	846.5	Right	Tilt	Fig.5	22.65	23	0.548	**0.59**	1.060	**1.15**	-0.04
167300	836.5	Right	Tilt	/	22.69	23	0.540	**0.58**	1.050	**1.13**	-0.12
165300	826.5	Right	Tilt	/	22.65	23	0.440	**0.48**	0.854	**0.93**	0.06
167300	836.5	Left	Cheek	Note1	20.88	21	0.307	**0.32**	0.438	**0.45**	0.08
167300	836.5	Left	Tilt	Note1	20.88	21	0.288	**0.30**	0.439	**0.45**	-0.06
167300	836.5	Right	Cheek	Note1	20.88	21	0.381	**0.39**	0.567	**0.58**	-0.02
167300	836.5	Right	Tilt	Note1	20.88	21	0.356	**0.37**	0.562	**0.58**	0.12

Note1: The results are for ENDC only.

Table J.3-6: SAR Values (5G NR n5-Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
167300	836.5	Front	/	24.32	25	0.271	**0.32**	0.472	**0.55**	-0.06
169300	846.5	Rear	/	24.09	25	0.387	**0.48**	0.678	**0.84**	-0.04
167300	836.5	Rear	Fig.6	24.32	25	0.519	**0.61**	0.946	**1.11**	-0.02
165300	826.5	Rear	/	24.09	25	0.325	**0.40**	0.578	**0.71**	0.12
167300	836.5	Left	/	24.32	25	0.223	**0.26**	0.339	**0.40**	0.06
167300	836.5	Right	/	24.32	25	0.078	**0.09**	0.118	**0.14**	0.12
167300	836.5	Top	/	24.32	25	0.343	**0.40**	0.677	**0.79**	0.05
167300	836.5	Front	Note2	22.69	23	0.23	**0.25**	0.388	**0.42**	0.12
167300	836.5	Rear	Note2	22.69	23	0.308	**0.33**	0.547	**0.59**	-0.05
167300	836.5	Left	Note2	22.69	23	0.234	**0.25**	0.354	**0.38**	-0.16

167300	836.5	Right	Note2	22.69	23	0.082	**0.09**	0.124	**0.13**	0.07
167300	836.5	Top	Note2	22.69	23	0.26	**0.28**	0.517	**0.56**	0.11

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: The results are for ENDC only.

Table J.3-7: SAR Values (5G NR n70-Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Side	Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
340500	1702.5	Left	Cheek	/	20.66	21.5	0.173	**0.21**	0.287	**0.35**	-0.01
340500	1702.5	Left	Tilt	/	20.66	21.5	0.091	**0.11**	0.157	**0.19**	-0.18
341500	1707.5	Right	Cheek	Fig.7	20.41	21.5	0.409	**0.53**	0.82	**1.05**	0.05
340500	1702.5	Right	Cheek	/	20.66	21.5	0.394	**0.48**	0.803	**0.97**	-0.17
339500	1697.5	Right	Cheek	/	20.42	21.5	0.385	**0.49**	0.77	**0.99**	0.06
340500	1702.5	Right	Tilt	/	20.66	21.5	0.125	**0.15**	0.231	**0.28**	-0.04

Note: All the results are for SA only.

Table J.3-8: SAR Values (5G NR n70-Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
340500	1702.5	Front	/	21.69	23	0.114	**0.15**	0.196	**0.27**	-0.03
341500	1707.5	Rear	/	21.52	23	0.259	**0.36**	0.484	**0.68**	0.15
340500	1702.5	Rear	/	21.69	23	0.228	**0.31**	0.423	**0.57**	-0.01
339500	1697.5	Rear	/	21.58	23	0.265	**0.37**	0.505	**0.70**	-0.15
341500	1707.5	Left	Fig.8	21.52	23	0.382	**0.54**	0.721	**1.01**	0.14
340500	1702.5	Left	/	21.69	23	0.352	**0.48**	0.671	**0.91**	0.11
339500	1697.5	Left	/	21.58	23	0.365	**0.51**	0.69	**0.96**	0.05
340500	1702.5	Top	/	21.69	23	0.051	**0.07**	0.084	**0.11**	0.05

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: All the results are for SA only.

Table J.3-9: SAR Values (5G NR n77-Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Side	Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
633334	3500.01	Left	Cheek	/	20.87	21	0.127	**0.13**	0.332	**0.34**	0.02
633334	3500.01	Left	Tilt	/	20.87	21	0.045	**0.05**	0.114	**0.12**	-0.17
633334	3500.01	Right	Cheek	/	20.87	21	0.106	**0.11**	0.283	**0.29**	0.07
633334	3500.01	Right	Tilt	/	20.87	21	0.025	**0.03**	0.058	**0.06**	-0.13
654800	3822	Left	Cheek	/	20.84	21	0.131	**0.14**	0.301	**0.31**	-0.14
654800	3822	Left	Tilt	/	20.84	21	0.071	**0.07**	0.179	**0.19**	-0.01
654800	3822	Right	Cheek	Fig.9	20.84	21	0.172	**0.18**	0.410	**0.43**	0.07
654800	3822	Right	Tilt	/	20.84	21	0.034	**0.04**	0.072	**0.07**	-0.18

Note: All the results are for ENDC only.

Table J.3-10: SAR Values (5G NR n77-Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
633334	3500.01	Front	/	21.59	22.3	0.044	**0.05**	0.098	**0.12**	-0.15
633334	3500.01	Rear	/	21.59	22.3	0.098	**0.12**	0.221	**0.26**	0.07
633334	3500.01	Right	/	21.59	22.3	0.142	**0.17**	0.348	**0.41**	0.12
654800	3822	Front	/	21.95	22.3	0.07	**0.08**	0.153	**0.17**	0.01
654800	3822	Rear	/	21.95	22.3	0.176	**0.19**	0.414	**0.45**	0.12
654800	3822	Right	Fig.10	21.95	22.3	0.216	**0.23**	0.526	**0.57**	-0.03

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: All the results are for ENDC only.

J.4 Evaluation of simultaneous for ENDC

Table J.4-1: The SAR values for newly add ENDC

	LTE	NR	Mode	Position	Reported SAR 1g(W/kg)
ENDC	LTE B2-ANT1	n2	Head	Right Cheek	**0.59(0.13+0.46)**
			Body	Rear 10mm	**0.82(0.37+0.45)**
		n5	Head	Right Cheek	**0.71(0.13+0.58)**
			Body	Rear 10mm	**0.96(0.37+0.59)**
		n77	Head	Right Cheek	**0.56(0.13+0.43)**
			Body	Rear 10mm	**0.82(0.37+0.45)**
	LTE B5-ANT0	n2	Head	Right Cheek	**0.87(0.41+0.46)**
			Body	Rear 10mm	**0.91(0.46+0.45)**
		n66	Head	Right Cheek	**1.12(0.41+0.71)**
			Body	Rear 10mm	**0.79(0.46+0.33)**
		n77	Head	Right Cheek	**0.84(0.41+0.43)**
			Body	Rear 10mm	**0.91(0.46+0.45)**
	LTE B12-ANT0	n2	Head	Right Cheek	**0.93(0.47+0.46)**
			Body	Rear 10mm	**1.00(0.55+0.45)**
		n77	Head	Left Cheek	**0.79(0.45+0.34)**
			Body	Rear 10mm	**1.00(0.55+0.45)**
	LTE B66-ANT1	n2	Head	Right Cheek	**0.54(0.08+0.46)**
			Body	Rear 10mm	**0.86(0.41+0.45)**
		n5	Head	Right Cheek	**0.66(0.08+0.58)**
			Body	Rear 10mm	**1.00(0.41+0.59)**
		n66	Head	Right Cheek	**0.79(0.08+0.71)**
			Body	Rear 10mm	**0.74(0.41+0.33)**
		n77	Head	Right Cheek	**0.51(0.08+0.43)**
			Body	Rear 10mm	**0.86(0.41+0.45)**

J.5 Graph results

LTE850-FDD5_CH20525 Right Tilt
Date: 1/20/2022
Electronics: DAE4 Sn1331
Medium: head 835 MHz
Medium parameters used: f = 836.5 MHz; σ = 0.877 S/m; ε_r = 44.851;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE850-FDD5 836.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.65 W/kg

Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 42.35 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 3.47 W/kg
SAR(1 g) = 1.17 W/kg; SAR(10 g) = 0.585 W/kg
Maximum value of SAR (measured) = 2.36 W/kg

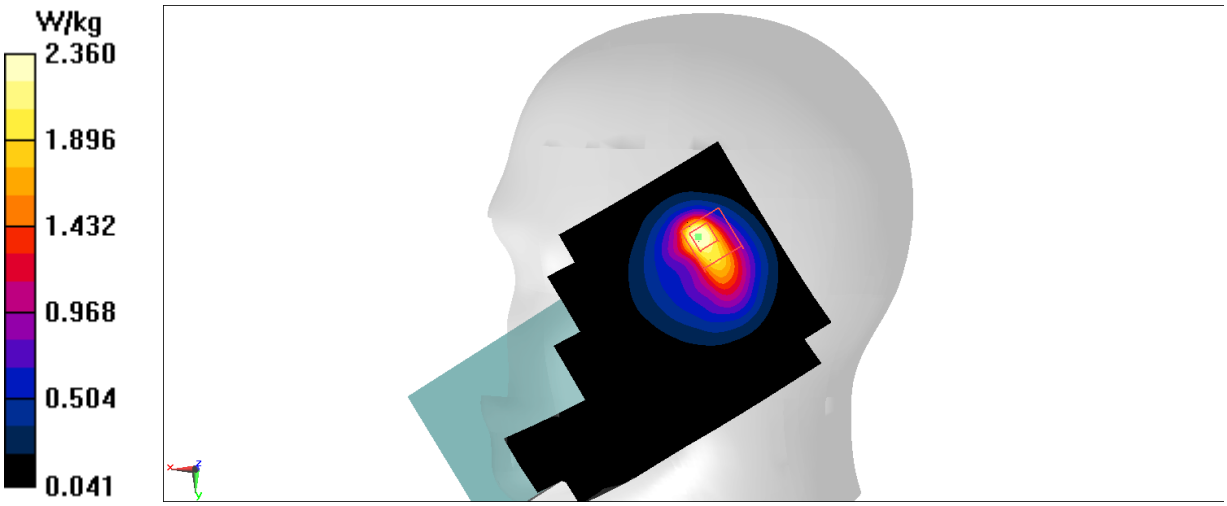


Fig J.5-1

LTE850-FDD5_CH20525 Rear 10mm
Date: 1/20/2022
Electronics: DAE4 Sn1331
Medium: head 835 MHz
Medium parameters used: f = 836.5 MHz; σ = 0.866 S/m; ε_r = 45.398;ρ = 1000 kg/m^3
Ambient Temperature: 22.9°C, Liquid Temperature: 22.5°C
Communication System: LTE850-FDD5 836.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.35 W/kg

Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.11 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.88 W/kg
SAR(1 g) = 0.960 W/kg; SAR(10 g) = 0.528 W/kg
Smallest distance from peaks to all points 3 dB below = 8 mm
Ratio of SAR at M2 to SAR at M1 = 51%
Maximum value of SAR (measured) = 1.46 W/kg

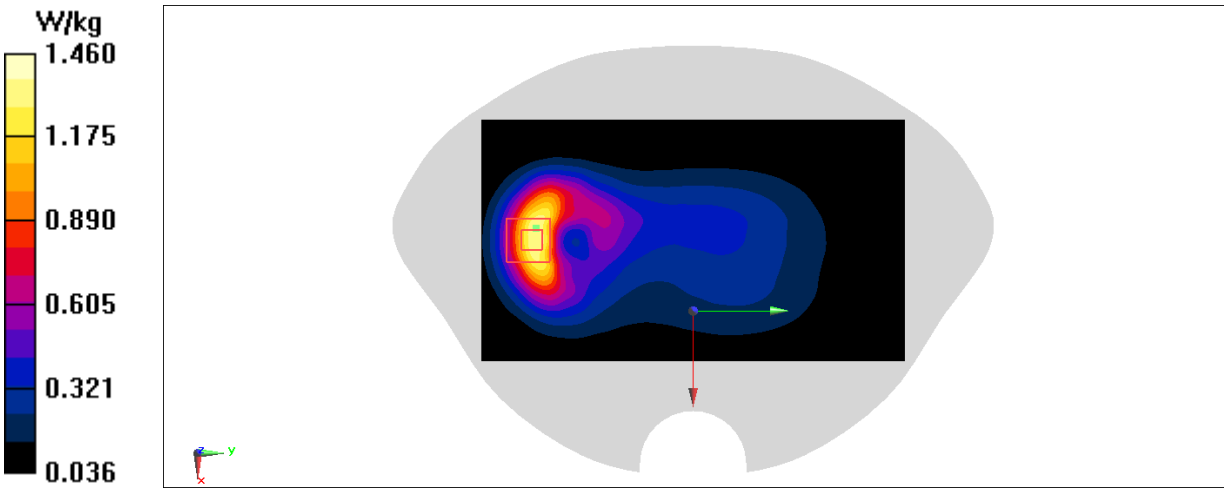


Fig J.5-2

5G n2_CH370500 Right Cheek
Date: 1/22/2022
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1852.5 MHz; σ = 1.375 S/m; ε_r = 41.754;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: 5G n2 1852.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.34 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.922 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.57 W/kg
SAR(1 g) = 0.787 W/kg; SAR(10 g) = 0.385 W/kg
Maximum value of SAR (measured) = 1.31 W/kg

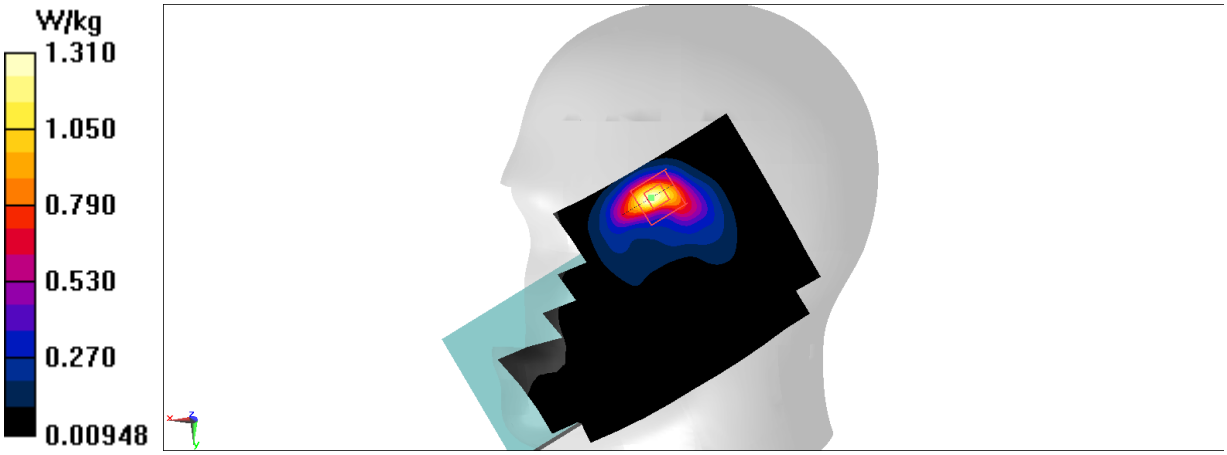


Fig J.5-3

5G n2_CH370500 Left 10mm
Date: 1/22/2022
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1852.5 MHz; σ = 1.375 S/m; ε_r = 41.754;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: 5G n2 1852.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

Area Scan (41x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.07 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.53 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 1.26 W/kg
SAR(1 g) = 0.686 W/kg; SAR(10 g) = 0.356 W/kg
Maximum value of SAR (measured) = 1.07 W/kg

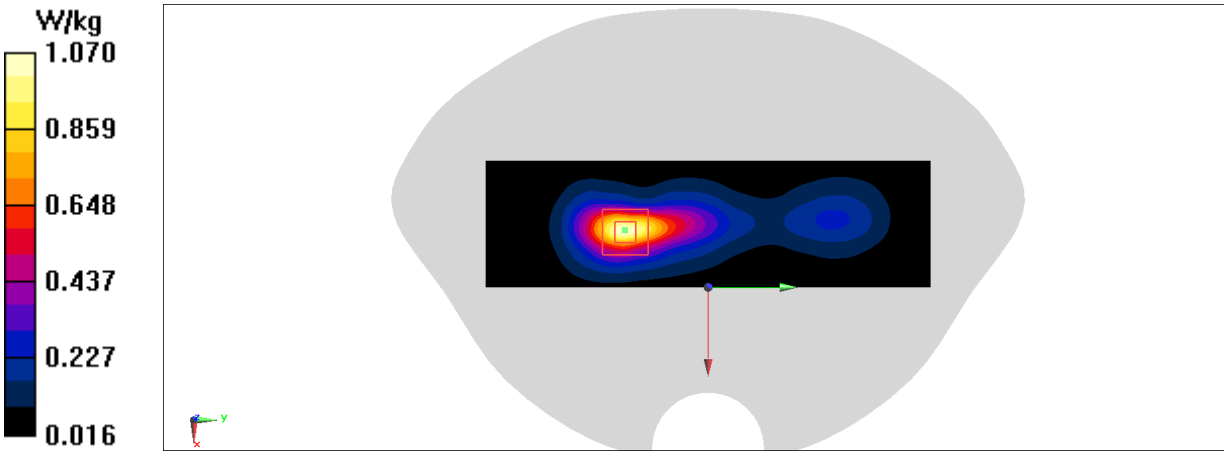


Fig J.5-4

5G n5_CH169300 Right Tilt
Date: 1/20/2022
Electronics: DAE4 Sn1331
Medium: head 835 MHz
Medium parameters used: f = 846.5 MHz; σ = 0.87 S/m; ε_r = 44.906;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: 5G n5 680.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.05 W/kg

Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 35.89 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 2.61 W/kg
SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.548 W/kg
Maximum value of SAR (measured) = 1.91 W/kg

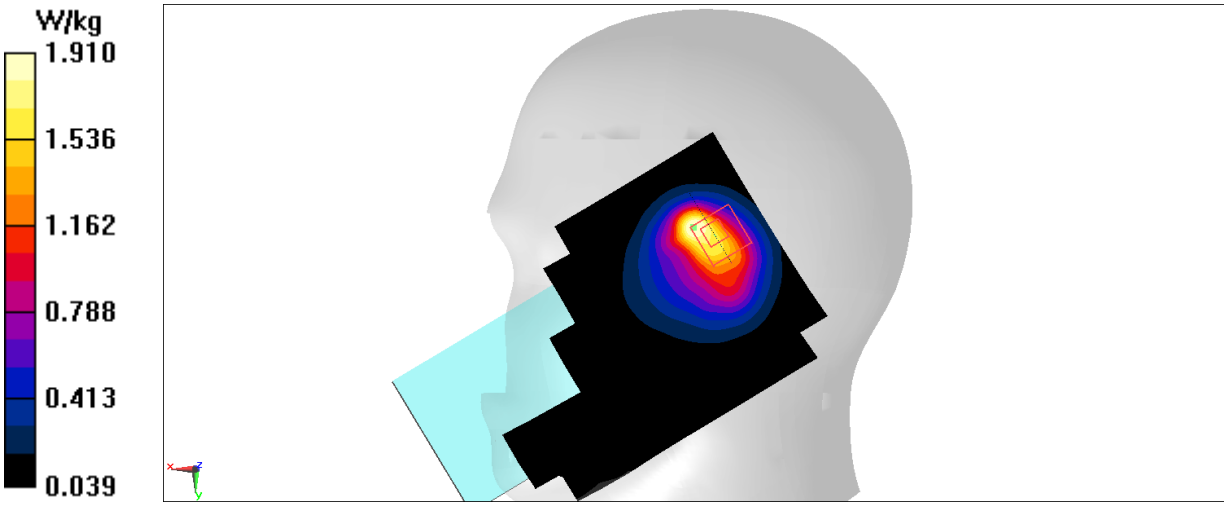


Fig J.5-5

5G n5_CH167300 Rear 10mm
Date: 1/20/2022
Electronics: DAE4 Sn1331
Medium: head 835 MHz
Medium parameters used: f = 836.5 MHz; σ = 0.877 S/m; ε_r = 44.851;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: 5G n5 836.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.28 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.60 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.83 W/kg
SAR(1 g) = 0.946 W/kg; SAR(10 g) = 0.519 W/kg
Maximum value of SAR (measured) = 1.47 W/kg

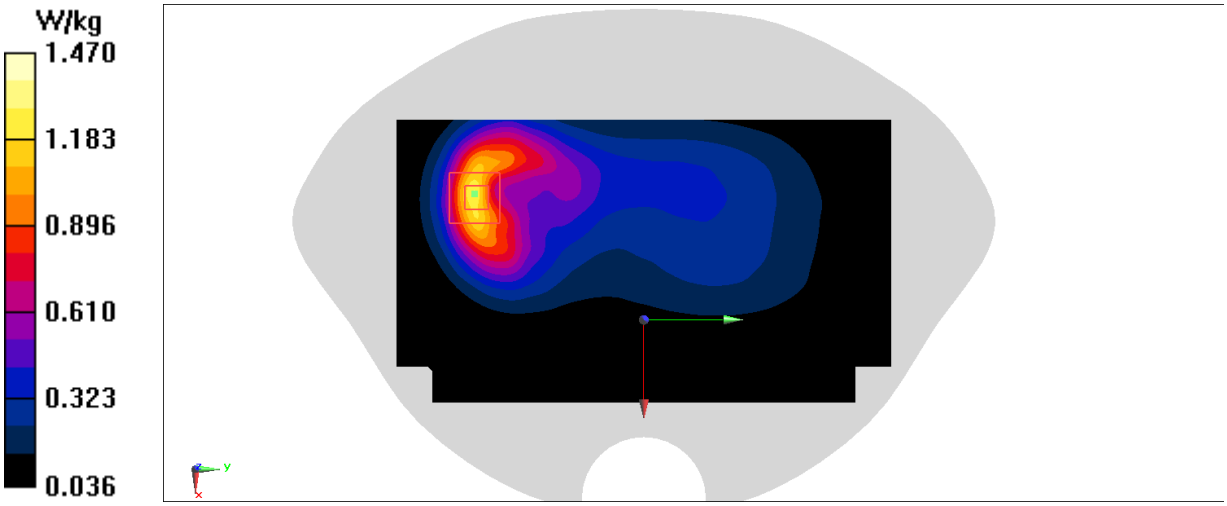


Fig J.5-6

5G n70_CH341500 Right Cheek
Date: 1/21/2022
Electronics: DAE4 Sn1331
Medium: head 1750 MHz
Medium parameters used: f = 1707.5 MHz; σ = 1.292 S/m; ε_r = 42.045;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: 5G n70 1707.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.40 W/kg

Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.720 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.66 W/kg
SAR(1 g) = 0.820 W/kg; SAR(10 g) = 0.409 W/kg
Maximum value of SAR (measured) = 1.34 W/kg

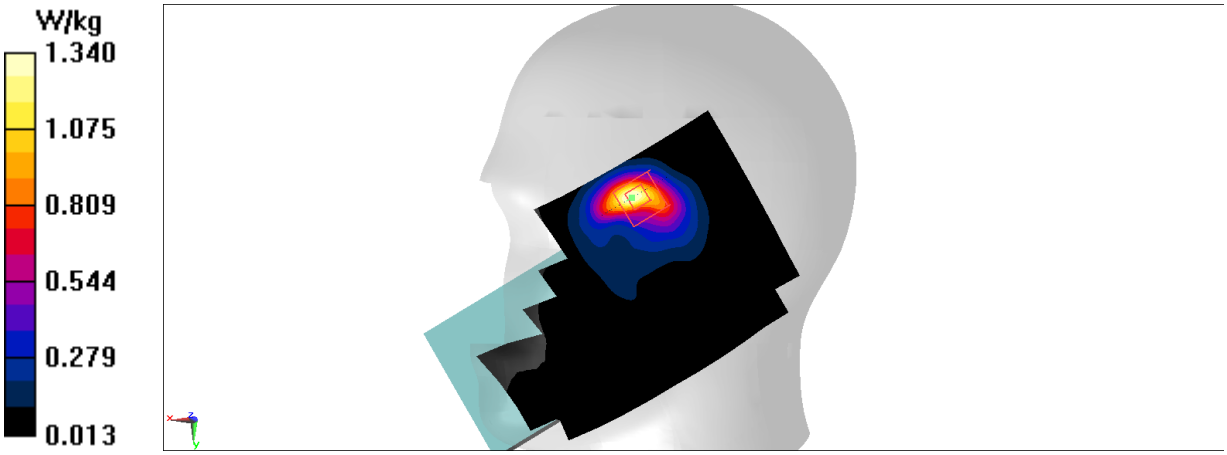


Fig J.5-7

5G n70_CH341500 Left 10mm
Date: 1/21/2022
Electronics: DAE4 Sn1331
Medium: head 1750 MHz
Medium parameters used: f = 1707.5 MHz; σ = 1.292 S/m; ε_r = 42.045;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: 5G n70 1707.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

Area Scan (41x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.10 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.42 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 1.28 W/kg
SAR(1 g) = 0.721 W/kg; SAR(10 g) = 0.382 W/kg
Maximum value of SAR (measured) = 1.09 W/kg

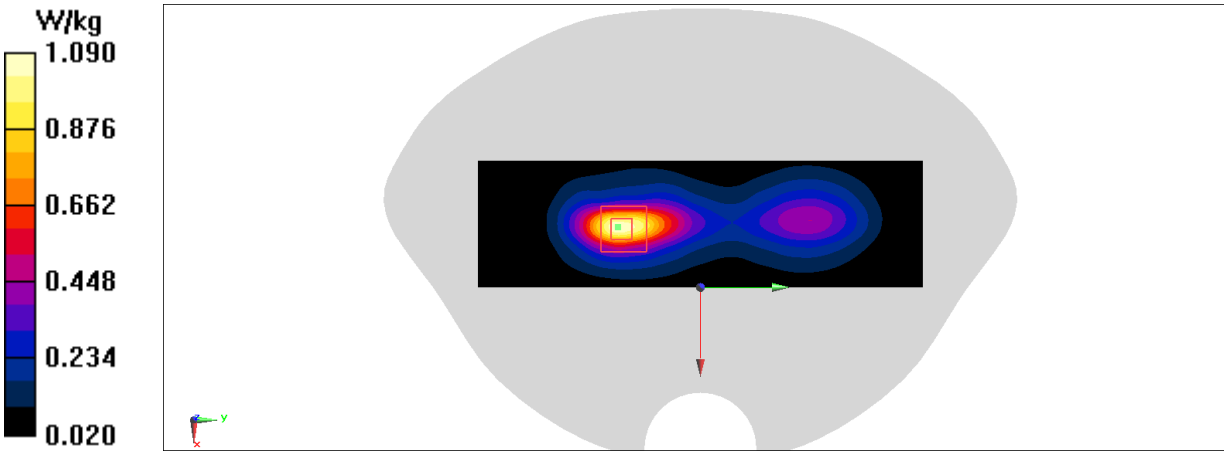


Fig J.5-8

5G n77_CH654800 Right Cheek
Date: 1/23/2022
Electronics: DAE4 Sn1331
Medium: head 3700 MHz
Medium parameters used: f = 3822 MHz; σ = 3.166 S/m; ε_r = 38.169;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: 5G n77 3822 MHz Duty Cycle: 1:2
Probe: EX3DV4 – SN7548 ConvF(6.27,6.27,6.27)

Area Scan (121x211x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.763 W/kg

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 5.054 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.990 W/kg
SAR(1 g) = 0.410 W/kg; SAR(10 g) = 0.172 W/kg
Maximum value of SAR (measured) = 0.742 W/kg

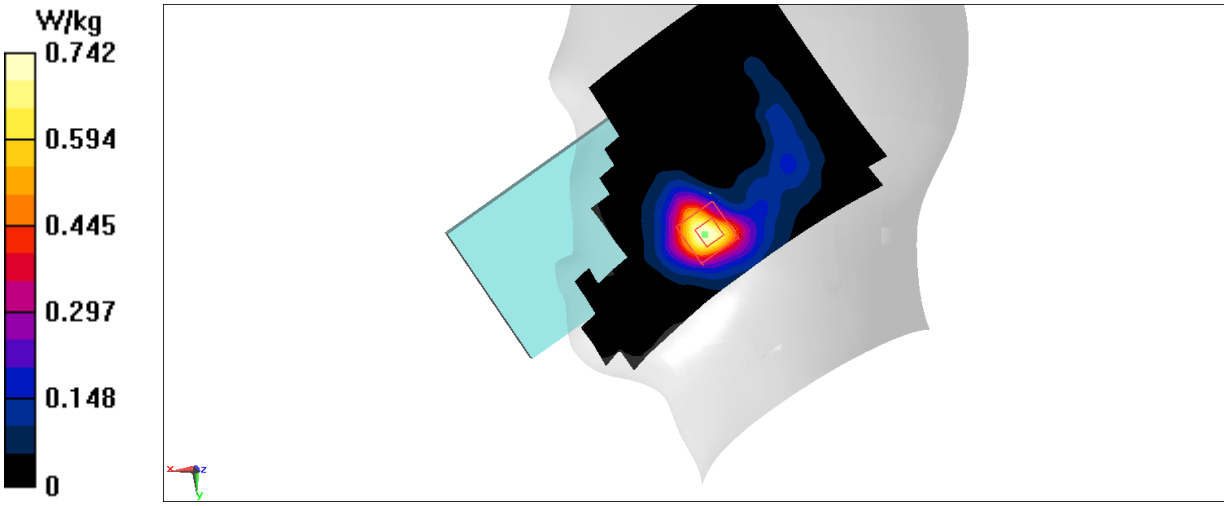


Fig J.5-9

5G n77_CH654800 Rear 10mm
Date: 1/23/2022
Electronics: DAE4 Sn1331
Medium: head 3700 MHz
Medium parameters used: f = 3822 MHz; σ = 3.166 S/m; ε_r = 38.169;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: 5G n77 3822 MHz Duty Cycle: 1:2
Probe: EX3DV4 – SN7548 ConvF(6.27,6.27,6.27)

Area Scan (111x211x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.01 W/kg

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 8.319 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.39 W/kg
SAR(1 g) = 0.526 W/kg; SAR(10 g) = 0.216 W/kg
Maximum value of SAR (measured) = 0.994 W/kg

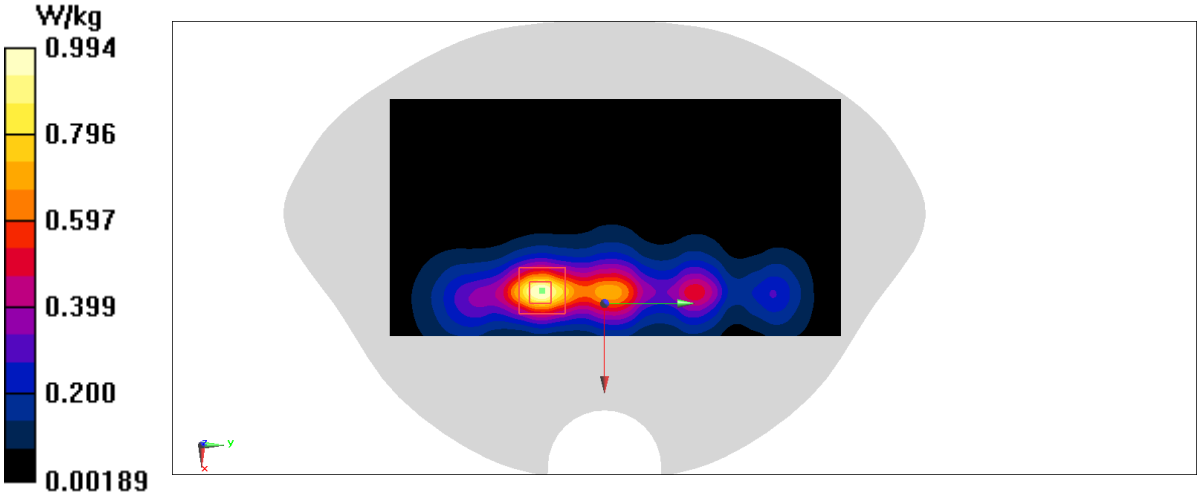
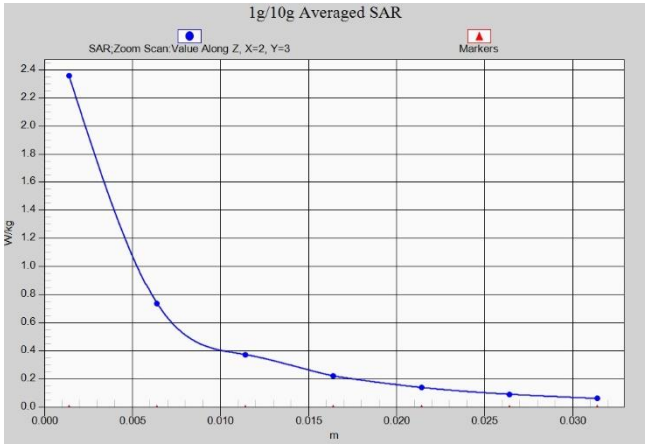
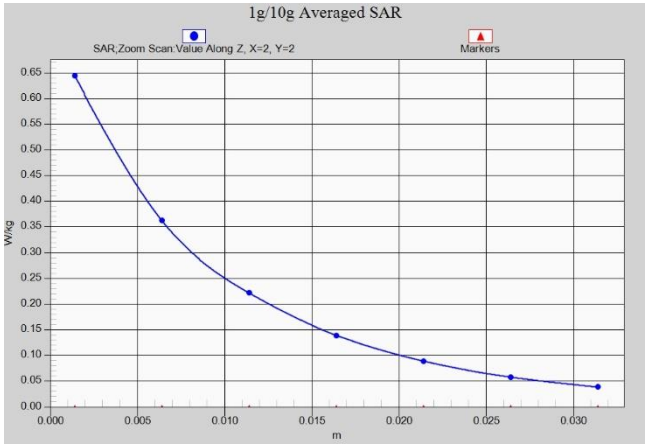


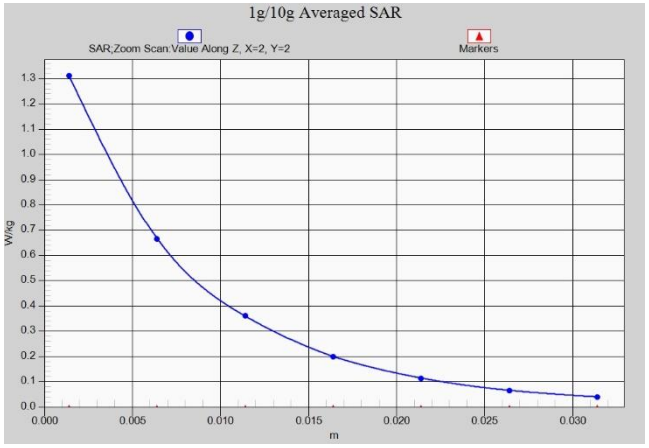
Fig J.5-10



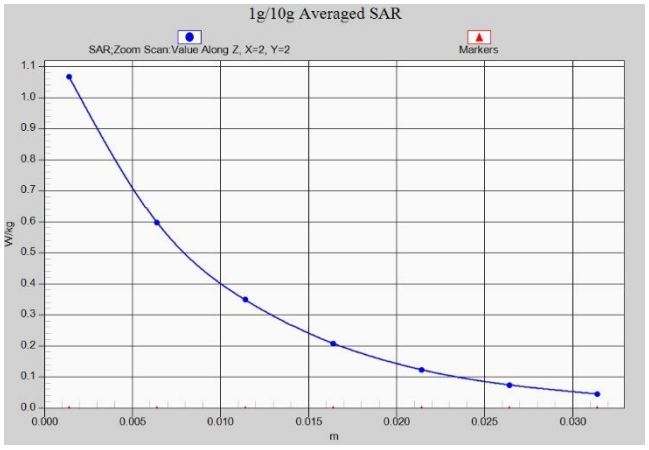
Z-Scan at power reference point (LTE B5)



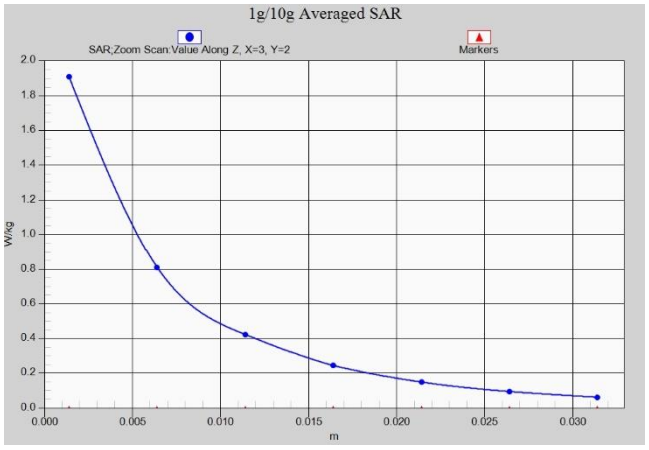
Z-Scan at power reference point (LTE B5)



Z-Scan at power reference point (n2)

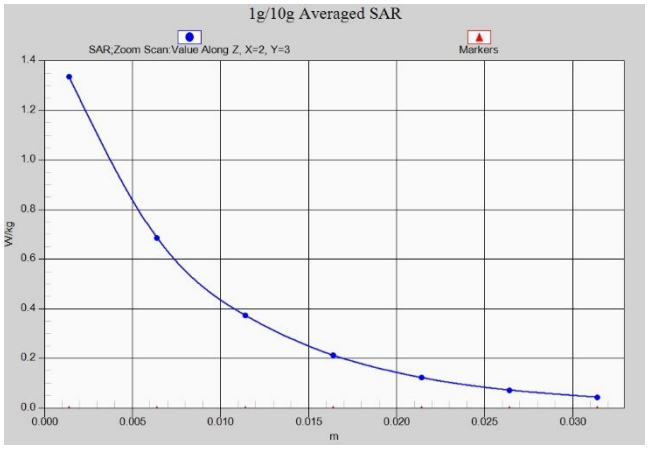


Z-Scan at power reference point (n2)

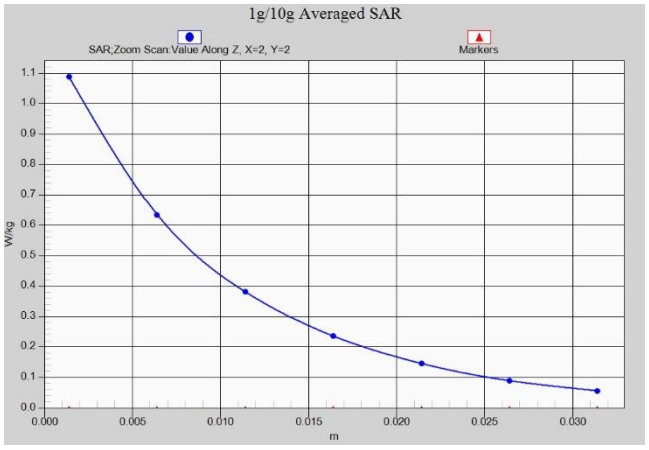


Z-Scan at power reference point (n5)

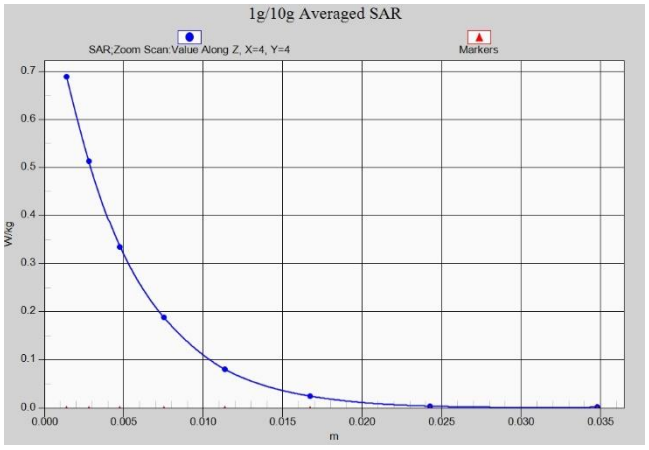
Z-Scan at power reference point (n5)



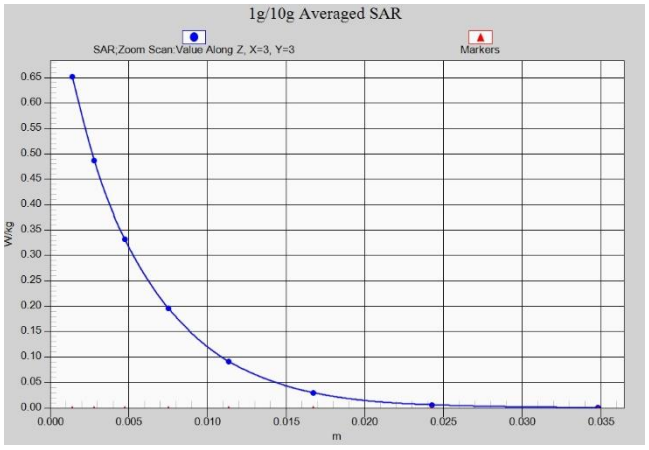
Z-Scan at power reference point (n70)



Z-Scan at power reference point (n70)



Z-Scan at power reference point (n77)



Z-Scan at power reference point (n77)

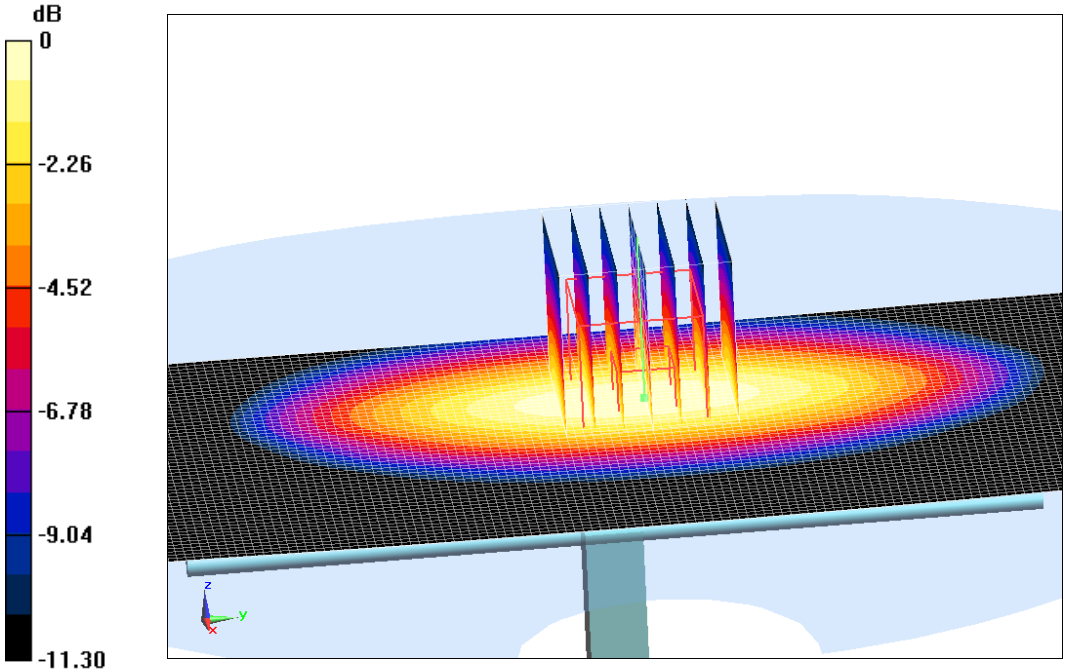
J.6 System Verification results

835MHz

Date: 2022-1-20
Electronics: DAE4 Sn1331
Medium: Head 835MHz
Medium parameters used: f = 835MHz; σ =0.8797 mho/m; ε_r = 45.55; ρ = 1000 kg/m^3
Ambient Temperature: 22.2ºC Liquid Temperature: 22ºC
Communication System: CW Frequency: 835MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36, 10.36, 10.36)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value =64.69 V/m; Power Drift =0.09 dB
Fast SAR: SAR(1 g) = 2.41 W/kg; SAR(10 g) = 1.51 W/kg
Maximum value of SAR (interpolated) = 3.47 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =64.69 V/m; Power Drift =0.09 dB
Peak SAR (extrapolated) = 3.75 W/kg
SAR(1 g) = 2.38 W/kg; SAR(10 g) = 1.52 W/kg
Maximum value of SAR (measured) = 3.63 W/kg



0 dB = 3.63 W/kg = 5.6 dB W/kg

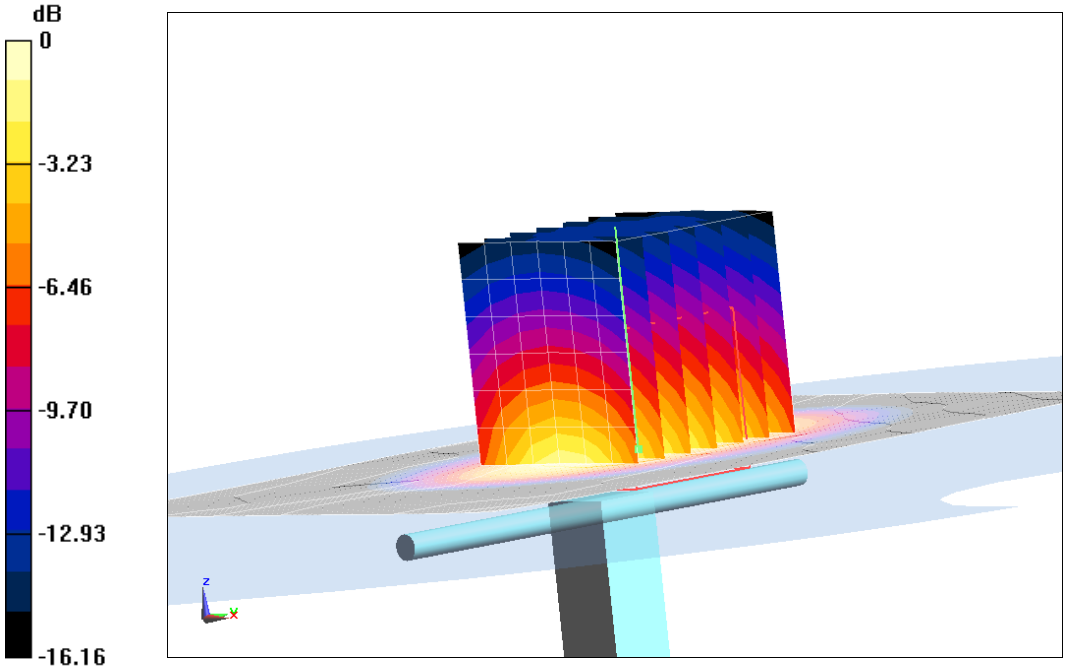
Fig J.6-1 validation 835MHz 250mW

1750 MHz

Date: 1/21/2022
Electronics: DAE4 Sn1331
Medium: Head 1750 MHz
Medium parameters used: f = 1750 MHz; σ =1.383 mho/m; ε_r = 42.48; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC Liquid Temperature: 22.5ºC
Communication System: CW Frequency: 1750 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 106.43 V/m; Power Drift = 0.15
Fast SAR: SAR(1 g) = 9.12 W/kg; SAR(10 g) = 4.79 W/kg
Maximum value of SAR (interpolated) = 14.78 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 106.43 V/m; Power Drift = 0.15
Peak SAR (extrapolated) = 15.75 W/kg
SAR(1 g) = 9.08 W/kg; SAR(10 g) = 4.77 W/kg
Maximum value of SAR (measured) = 14.56 W/kg



0 dB = 14.56 W/kg = 11.63 dB W/kg

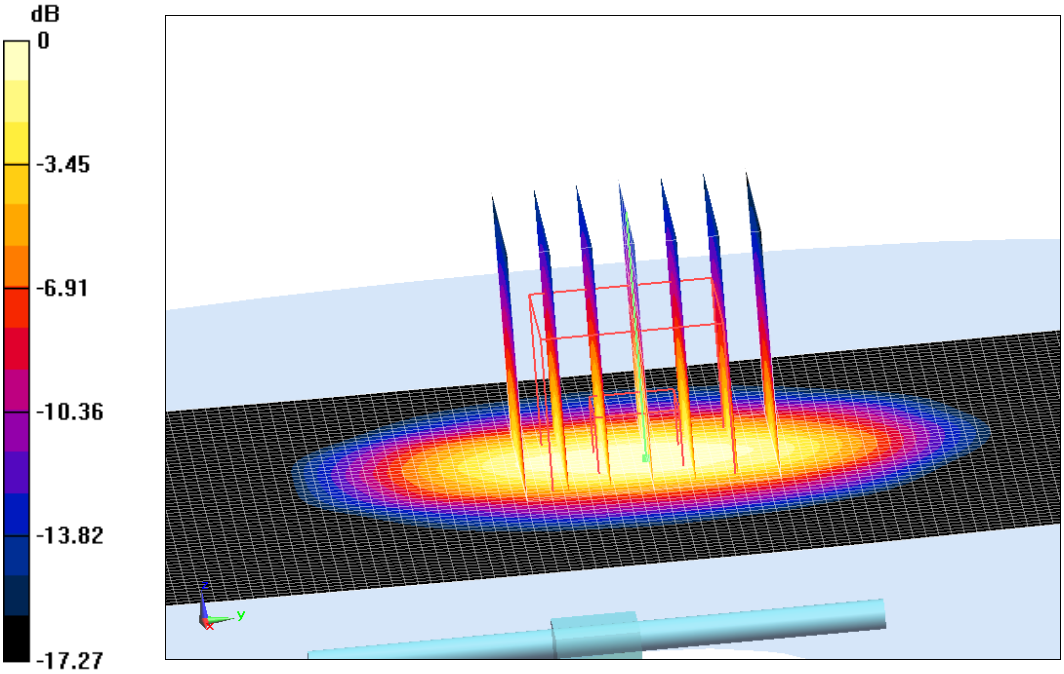
Fig J.6-2 validation 1800MHz 250mW

1900MHz

Date: 2022-1-22
Electronics: DAE4 Sn1331
Medium: Head 1900MHz
Medium parameters used: f = 1900MHz; σ =1.527 mho/m; ε_r = 42.79; ρ = 1000 kg/m^3
Ambient Temperature: 22.2ºC Liquid Temperature: 22ºC
Communication System: CW Frequency: 1900MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value =106.23 V/m; Power Drift = -0.13 dB
Fast SAR: SAR(1 g) = 9.85 W/kg; SAR(10 g) = 5.17 W/kg
Maximum value of SAR (interpolated) = 15.78 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =106.23 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 18.39 W/kg
SAR(1 g) = 9.79 W/kg; SAR(10 g) = 5.12 W/kg
Maximum value of SAR (measured) = 15.41 W/kg



0 dB = 15.41 W/kg = 11.88 dB W/kg

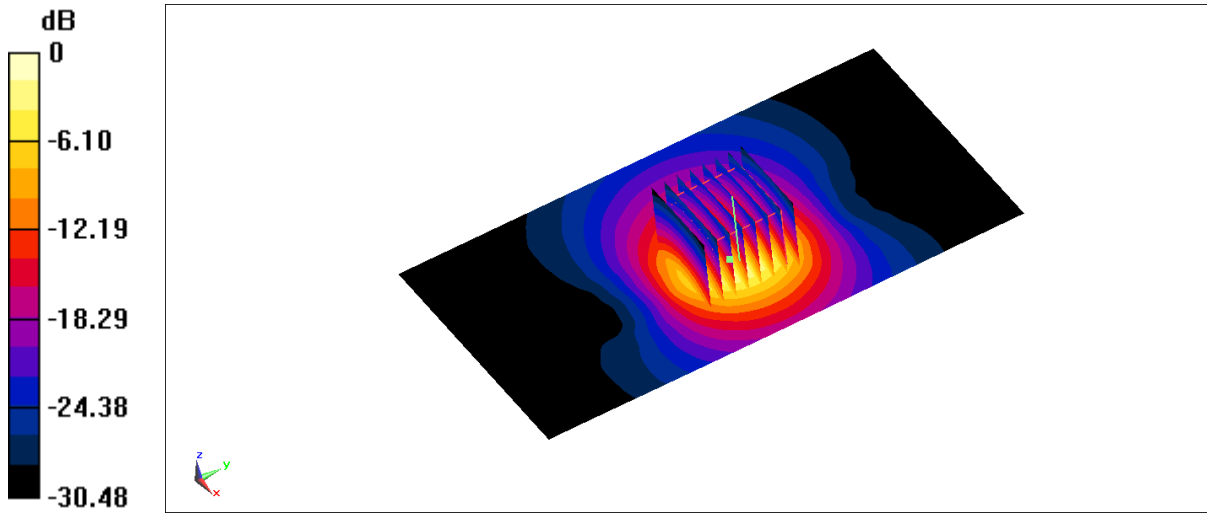
Fig J.6-3 validation 1900MHz 250mW

3500 MHz

Date: 1/23/2022
Electronics: DAE4 Sn1331
Medium: Head 3500 MHz
Medium parameters used: f = 3500 MHz; σ =2.848 mho/m; ε_r = 38.73; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC Liquid Temperature: 22.5ºC
Communication System: CW Frequency: 3500 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(6.64,6.64,6.64)

System Performance Check/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 8.45 W/kg

System Performance Check/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 58.77 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 15.17 W/kg
SAR(1 g) = 6.62 W/kg; SAR(10 g) = 2.48 W/kg
Maximum value of SAR (measured) = 7.85 W/kg



0 dB = 7.85 W/kg =8.95 dBW/kg

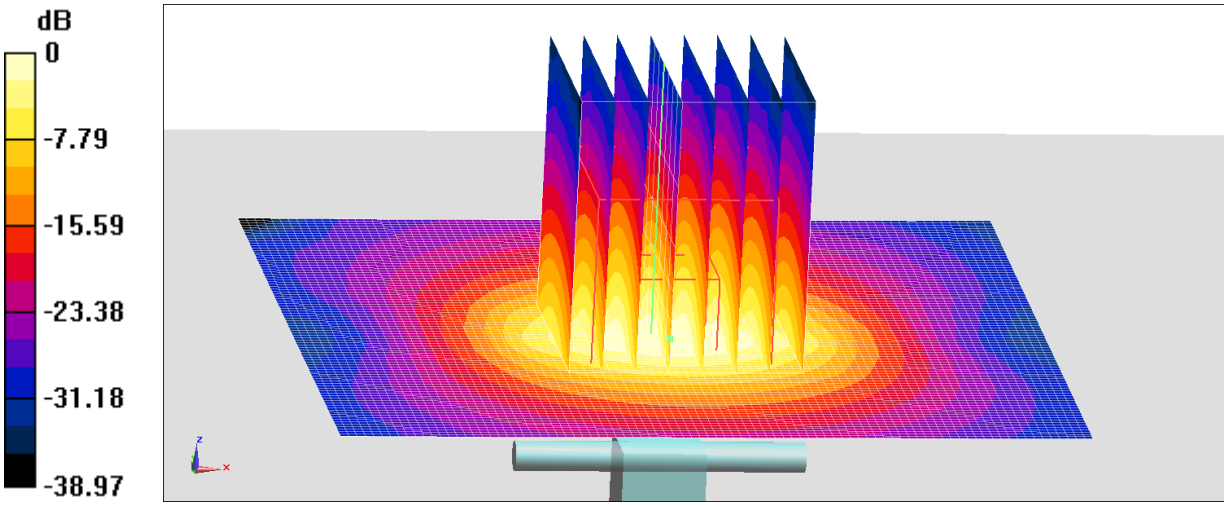
Fig J.6-4 validation 3500 MHz 100mW

3800 MHz

Date: 1/23/2022
Electronics: DAE4 Sn1331
Medium: Head 3800 MHz
Medium parameters used: f = 3800 MHz; σ =3.143 mho/m; ε_r = 38.21; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC Liquid Temperature: 22.5ºC
Communication System: CW Frequency: 3800 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(6.42,6.42,6.42)

System Performance Check/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 7.85 W/kg

System Performance Check/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 64.25 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 13.77 W/kg
SAR(1 g) = 6.42 W/kg; SAR(10 g) = 2.36 W/kg
Maximum value of SAR (measured) = 7.65 W/kg



0 dB = 7.65 W/kg = 8.84 dBW/kg

Fig J.6-5 validation 3800 MHz 100mW

The SAR system verification must be required that the area scan estimated 1-g SAR is within 3% of the zoom scan 1-g SAR.

Table J.6-1 Comparison between area scan and zoom scan for system verification

Date	Band	Position	Area scan (1g)	Zoom scan (1g)	Drift (%)
2022-1-20	835 MHz	Head	2.41	2.38	1.26
2022-1-21	1750 MHz	Head	9.12	9.08	0.44
2022-1-22	1900 MHz	Head	9.85	9.79	0.61

ANNEX K Accreditation Certificate

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

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Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 600118-0

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This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2021-09-29 through 2022-09-30
Effective Dates

DEPARTMENT OF COMMERCE · UNITED STATES OF AMERICA

For the National Voluntary Laboratory Accreditation Program