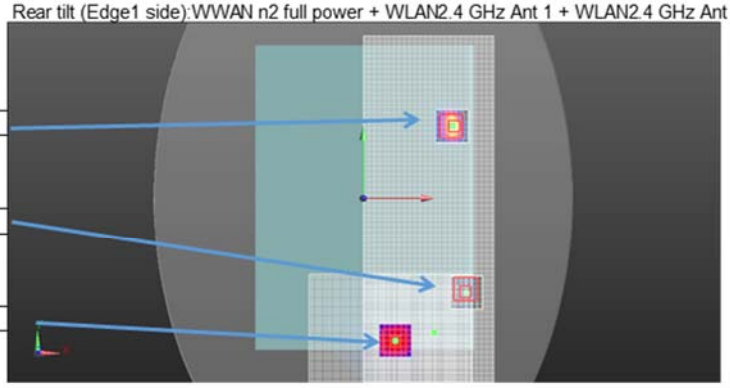
Combination
Rear tilt (Edge1 side)

Rear tilt (Edge1 side):WWAN n2 full power + WLAN2.4 GHz Ant 1 + WLAN2.4 GHz Ant 2

WLAN2.4 GHz Ant 2

WLAN2.4 GHz Ant 1

WWAN n2 full power



Mode	Ant	No	X	Y	Z	Combination	d: Calculated distance (mm)
			mm	mm	mm		
WWAN n2 full power	#1	1	30.50	-132.50	-4.08		
WLAN2.4 GHz	Ant 1	2	93.80	-86.40	-2.72	No1+No2	78.32
WLAN2.4 GHz	Ant 2	3	83.60	65.20	-3.19	No1+No3	204.71

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Test Position	No.1 WWAN #1	No.2 WLAN Ant 1	No.3 WLAN Ant 2	Combination	Σ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)
Rear tilt(Edge 1 side)	0.826	0.151		No.1 + No.2	0.977	78.32	0.012	No
Rear tilt(Edge 1 side)	0.826		0.925	No.1 + No.3	1.751	204.71	0.011	No

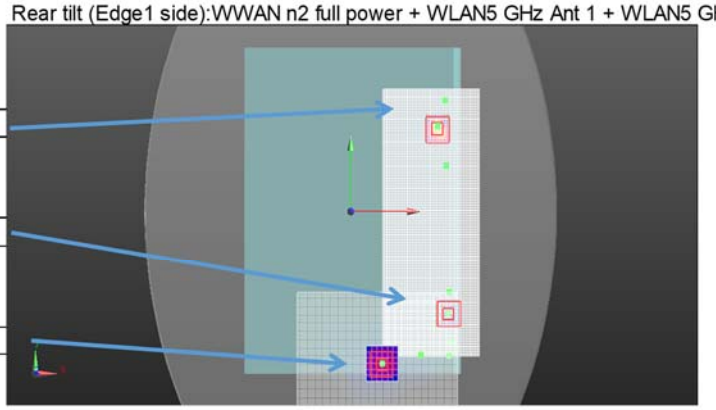
Combination
Rear tilt (Edge1 side)

Rear tilt (Edge1 side):WWAN n2 full power + WLAN5 GHz Ant 1 + WLAN5 GHz Ant 2

WLAN5 GHz Ant 2

WLAN5 GHz Ant 1

WWAN n2 full power



Mode	Ant	No	X	Y	Z	Combination	d: Calculated distance (mm)
			mm	mm	mm		
WWAN n2 full power	#1	1	30.50	-132.50	-4.08		
WLAN5 GHz	Ant 1	2	91.00	-88.80	-4.72	No1+No2	74.63
WLAN5 GHz	Ant 2	3	83.40	67.80	-5.48	No1+No3	207.17

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Test Position	No.1 WWAN #1	No.2 WLAN Ant 1	No.3 WLAN Ant 2	Combination	Σ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)
Rear tilt(Edge 1 side)	0.826	0.355		No.1 + No.2	1.181	74.63	0.017	No
Rear tilt(Edge 1 side)	0.826		0.854	No.1 + No.3	1.680	207.17	0.011	No

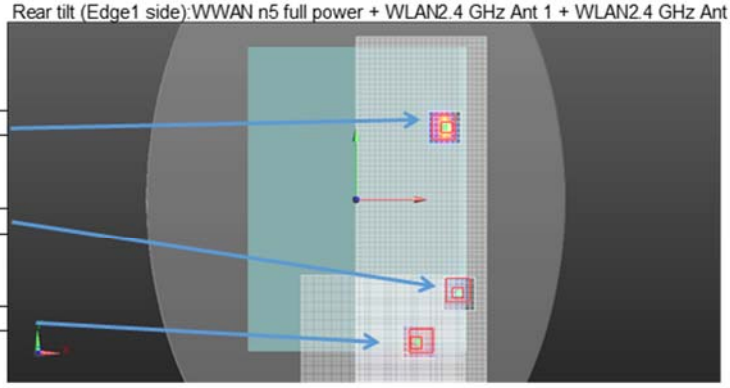
Combination
Rear tilt (Edge1 side)

Rear tilt (Edge1 side):WWAN n5 full power + WLAN2.4 GHz Ant 1 + WLAN2.4 GHz Ant 2

WLAN2.4 GHz Ant 2

WLAN2.4 GHz Ant 1

WWAN n5 full power



Mode	Ant	No	X	Y	Z	Combination	d: Calculated distance (mm)
			mm	mm	mm		
WWAN n5 full power	#1	1	50.00	-134.50	-3.48		
WLAN2.4 GHz	Ant 1	2	93.80	-86.40	-2.72	No1+No2	65.06
WLAN2.4 GHz	Ant 2	3	83.60	65.20	-3.19	No1+No3	202.51

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Test Position	No.1 WWAN #1	No.2 WLAN Ant 1	No.3 WLAN Ant 2	Combination	Σ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)
Rear tilt(Edge 1 side)	0.806	0.151		No.1 + No.2	0.957	65.06	0.014	No
Rear tilt(Edge 1 side)	0.806		0.925	No.1 + No.3	1.731	202.51	0.011	No

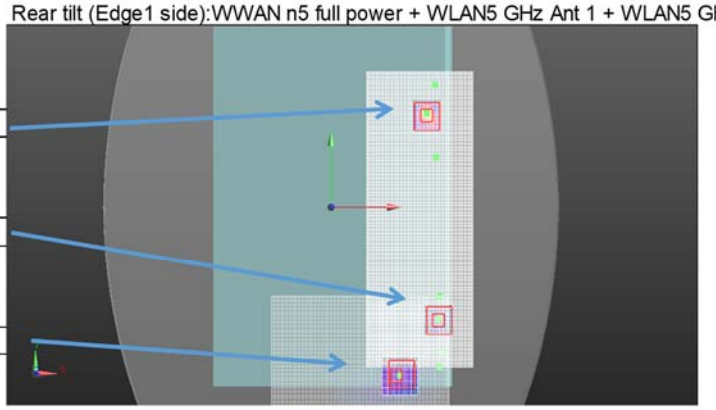
Combination
Rear tilt (Edge1 side)

Rear tilt (Edge1 side):WWAN n5 full power + WLAN5 GHz Ant 1 + WLAN5 GHz Ant 2

WLAN5 GHz Ant 2

WLAN5 GHz Ant 1

WWAN n5 full power



Mode	Ant	No	X	Y	Z	Combination	d: Calculated distance (mm)
			mm	mm	mm		
WWAN n5 full power	#1	1	50.00	-134.50	-3.48		
WLAN5 GHz	Ant 1	2	91.00	-88.80	-4.72	No1+No2	61.41
WLAN5 GHz	Ant 2	3	83.40	67.80	-5.48	No1+No3	205.05

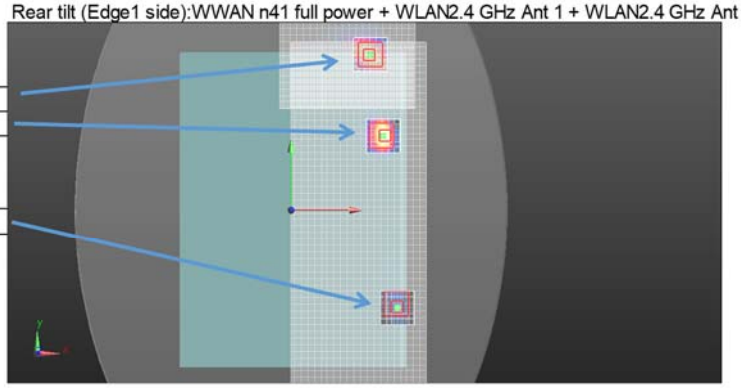
The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Test Position	No.1 WWAN #1	No.2 WLAN Ant 1	No.3 WLAN Ant 2	Combination	Σ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)
Rear tilt(Edge 1 side)	0.806	0.355		No.1 + No.2	1.161	61.41	0.020	No
Rear tilt(Edge 1 side)	0.806		0.854	No.1 + No.3	1.660	205.05	0.010	No

Combination
Rear tilt (Edge1 side)

Rear tilt (Edge1 side):WWAN n41 full power + WLAN2.4 GHz Ant 1 + WLAN2.4 GHz Ant 2

WWAN n41 full power
WLAN2.4 GHz Ant 2
WLAN2.4 GHz Ant 1



Mode	Ant	No	X	Y	Z	Combination	d: Calculated distance (mm)
			mm	mm	mm		
WWAN n41 full power	#1	1	69.40	138.00	-2.74		
WLAN2.4 GHz	Ant 1	2	93.80	-86.40	-2.72	No1+No2	225.72
WLAN2.4 GHz	Ant 2	3	83.60	65.20	-3.19	No1+No3	74.17

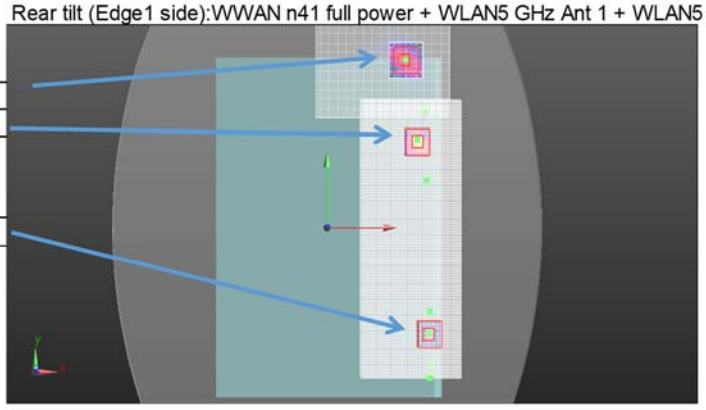
The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Test Position	No.1 WWAN #1	No.2 WLAN Ant 1	No.3 WLAN Ant 2	Combination	Σ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)
Rear tilt(Edge 1 side)	0.824	0.151		No.1 + No.2	0.975	225.72	0.004	No
Rear tilt(Edge 1 side)	0.824		0.925	No.1 + No.3	1.749	74.17	0.031	No

Combination
Rear tilt (Edge1 side)

Rear tilt (Edge1 side):WWAN n41 full power + WLAN5 GHz Ant 1 + WLAN5 GHz Ant 2

WWAN n41 full power
WLAN5 GHz Ant 2
WLAN5 GHz Ant 1



Mode	Ant	No	X	Y	Z	Combination	d: Calculated distance (mm)
			mm	mm	mm		
WWAN n41 full power	#1	1	69.40	138.00	-2.74		
WLAN5 GHz	Ant 1	2	91.00	-88.80	-4.72	No1+No2	227.83
WLAN5 GHz	Ant 2	3	83.40	67.80	-5.48	No1+No3	71.63

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Test Position	No.1 WWAN #1	No.2 WLAN Ant 1	No.3 WLAN Ant 2	Combination	Σ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)
Rear tilt(Edge 1 side)	0.824	0.355		No.1 + No.2	1.179	227.83	0.006	No
Rear tilt(Edge 1 side)	0.824		0.854	No.1 + No.3	1.678	71.63	0.030	No

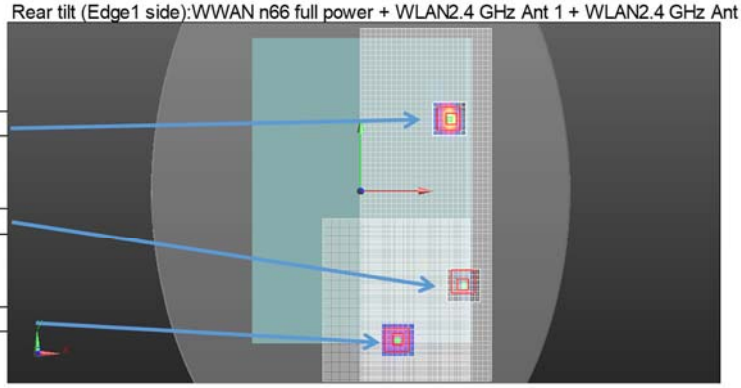
Combination
Rear tilt (Edge1 side)

Rear tilt (Edge1 side):WWAN n66 full power + WLAN2.4 GHz Ant 1 + WLAN2.4 GHz Ant 2

WLAN2.4 GHz Ant 2

WLAN2.4 GHz Ant 1

WWAN n66 full power



Mode	Ant	No	X	Y	Z	Combination	d: Calculated distance (mm)
			mm	mm	mm		
WWAN n66 full power	#1	1	35.00	-136.50	-3.79		
WLAN2.4 GHz	Ant 1	2	93.80	-86.40	-2.72	No1+No2	77.26
WLAN2.4 GHz	Ant 2	3	83.60	65.20	-3.19	No1+No3	207.47

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Test Position	No.1 WWAN #1	No.2 WLAN Ant 1	No.3 WLAN Ant 2	Combination	Σ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)
Rear tilt(Edge 1 side)	0.595	0.151		No.1 + No.2	0.746	77.26	0.008	No
Rear tilt(Edge 1 side)	0.595		0.925	No.1 + No.3	1.520	207.47	0.009	No

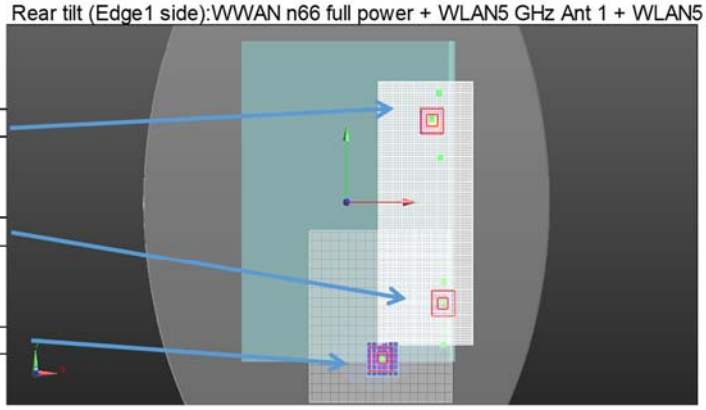
Combination
Rear tilt (Edge1 side)

Rear tilt (Edge1 side):WWAN n66 full power + WLAN5 GHz Ant 1 + WLAN5 GHz Ant 2

WLAN5 GHz Ant 2

WLAN5 GHz Ant 1

WWAN n66 full power



Mode	Ant	No	X	Y	Z	Combination	d: Calculated distance (mm)
			mm	mm	mm		
WWAN n66 full power	#1	1	35.00	-136.50	-3.79		
WLAN5 GHz	Ant 1	2	91.00	-88.80	-4.72	No1+No2	73.57
WLAN5 GHz	Ant 2	3	83.40	67.80	-5.48	No1+No3	209.96

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Test Position	No.1 WWAN #1	No.2 WLAN Ant 1	No.3 WLAN Ant 2	Combination	Σ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)
Rear tilt(Edge 1 side)	0.595	0.355		No.1 + No.2	0.950	73.57	0.013	No
Rear tilt(Edge 1 side)	0.595		0.854	No.1 + No.3	1.449	209.96	0.008	No

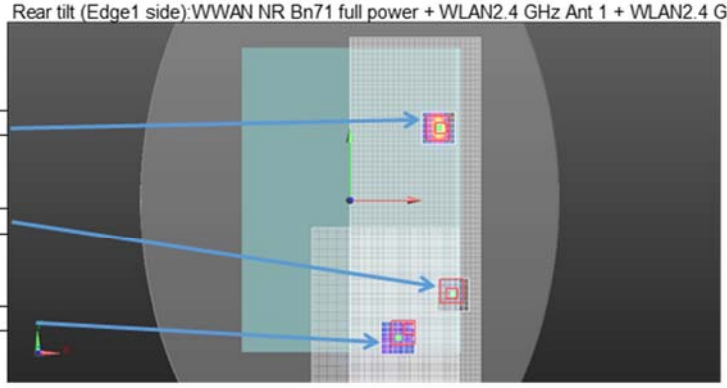
Combination
Rear tilt (Edge1 side)

Rear tilt (Edge1 side):WWAN NR Bn71 full power + WLAN2.4 GHz Ant 1 + WLAN2.4 GHz Ant 2

WLAN2.4 GHz Ant 2

WLAN2.4 GHz Ant 1

WWAN NR Bn71 full power



Mode	Ant	No	X	Y	Z	Combination	d: Calculated distance (mm)
			mm	mm	mm		
WWAN NR Bn71 full power	#1	1	40.50	-129.00	-3.90		
WLAN2.4 GHz	Ant 1	2	93.80	-86.40	-2.72	No1+No2	68.24
WLAN2.4 GHz	Ant 2	3	83.60	65.20	-3.19	No1+No3	198.93

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Test Position	No.1 WWAN #1	No.2 WLAN Ant 1	No.3 WLAN Ant 2	Combination	Σ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)
Rear tilt(Edge 1 side)	0.658	0.151		No.1 + No.2	0.809	68.24	0.011	No
Rear tilt(Edge 1 side)	0.658		0.925	No.1 + No.3	1.583	198.93	0.010	No

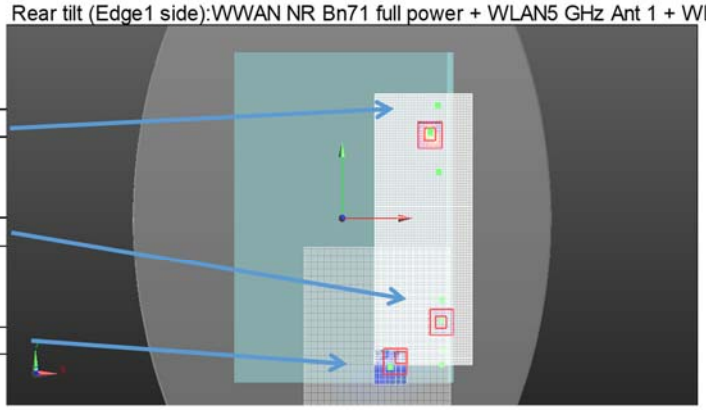
Combination
Rear tilt (Edge1 side)

Rear tilt (Edge1 side):WWAN NR Bn71 full power + WLAN5 GHz Ant 1 + WLAN5 GHz Ant 2

WLAN5 GHz Ant 2

WLAN5 GHz Ant 1

WWAN NR Bn71 full power



Mode	Ant	No	X	Y	Z	Combination	d: Calculated distance (mm)
			mm	mm	mm		
WWAN NR Bn71 full power	#1	1	40.50	-129.00	-3.90		
WLAN5 GHz	Ant 1	2	91.00	-88.80	-4.72	No1+No2	64.55
WLAN5 GHz	Ant 2	3	83.40	67.80	-5.48	No1+No3	201.43

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Test Position	No.1 WWAN #1	No.2 WLAN Ant 1	No.3 WLAN Ant 2	Combination	Σ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)
Rear tilt(Edge 1 side)	0.658	0.355		No.1 + No.2	1.013	64.55	0.016	No
Rear tilt(Edge 1 side)	0.658		0.854	No.1 + No.3	1.512	201.43	0.009	No

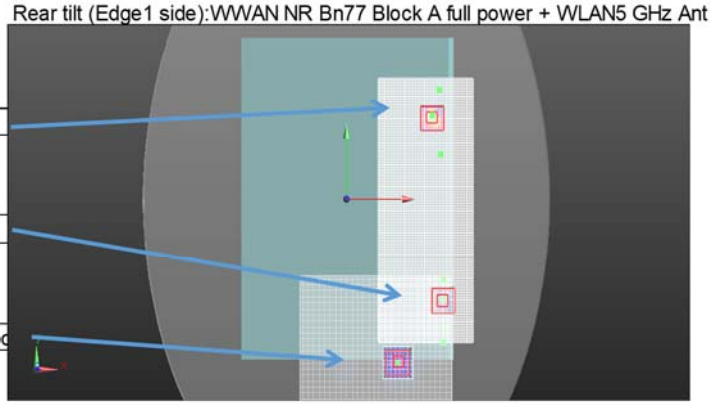
Combination
Rear tilt (Edge1 side)

Rear tilt (Edge1 side):WWAN NR Bn77 Block A full power + WLAN5 GHz Ant 1 + WLAN5 GHz Ant 2

WLAN5 GHz Ant 2

WLAN5 GHz Ant 1

WWAN NR Bn77 Block A full po



Mode	Ant	No	X	Y	Z	Combination	d: Calculated distance (mm)
			mm	mm	mm		
WWAN NR Bn77 Block A full po	#1	1	49.60	-141.40	2.49		
WLAN5 GHz	Ant 1	2	91.00	-88.80	-4.72	No1+No2	67.33
WLAN5 GHz	Ant 2	3	83.40	67.80	-5.48	No1+No3	212.06

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Test Position	No.1 WWAN #1	No.2 WLAN Ant 1	No.3 WLAN Ant 2	Combination	Σ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)
Rear tilt(Edge 1 side)	0.503	0.355		No.1 + No.2	0.858	67.33	0.012	No
Rear tilt(Edge 1 side)	0.503		0.854	No.1 + No.3	1.357	212.06	0.007	No

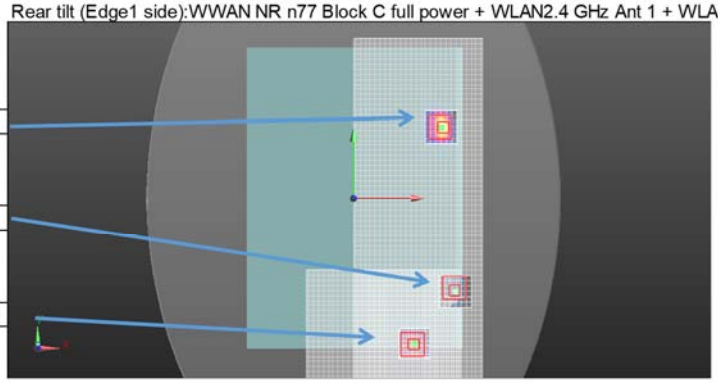
Combination
Rear tilt (Edge1 side)

Rear tilt (Edge1 side):WWAN NR n77 Block C full power + WLAN2.4 GHz Ant 1 + WLAN2.4 GHz Ant 2

WLAN2.4 GHz Ant 2

WLAN2.4 GHz Ant 1

WWAN NR n77 Block C full power



Mode	Ant	No	X	Y	Z	Combination	d: Calculated distance (mm)
			mm	mm	mm		
WWAN NR n77 Block C full power	#1	1	56.40	-135.80	2.17		
WLAN2.4 GHz	Ant 1	2	93.80	-86.40	-2.72	No1+No2	62.15
WLAN2.4 GHz	Ant 2	3	83.60	65.20	-3.19	No1+No3	202.90

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Test Position	No.1 WWAN #1	No.2 WLAN Ant 1	No.3 WLAN Ant 2	Combination	Σ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)
Rear tilt(Edge 1 side)	0.660	0.151		No.1 + No.2	0.811	62.15	0.012	No
Rear tilt(Edge 1 side)	0.660		0.925	No.1 + No.3	1.585	202.90	0.010	No

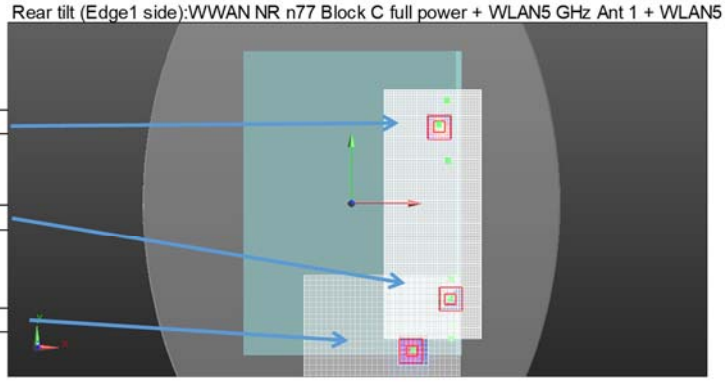
Combination
Rear tilt (Edge1 side)

Rear tilt (Edge1 side):WWAN NR n77 Block C full power + WLAN5 GHz Ant 1 + WLAN5 GHz Ant 2

WLAN5 GHz Ant 2

WLAN5 GHz Ant 1

WWAN NR n77 Block C full power



Mode	Ant	No	X	Y	Z	Combination	d: Calculated distance (mm)
			mm	mm	mm		
WWAN NR n77 Block C full power	#1	1	56.40	-135.80	2.17		
WLAN5 GHz	Ant 1	2	91.00	-88.80	-4.72	No1+No2	58.77
WLAN5 GHz	Ant 2	3	83.40	67.80	-5.48	No1+No3	205.52

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Test Position	No.1 WWAN #1	No.2 WLAN Ant 1	No.3 WLAN Ant 2	Combination	Σ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)
Rear tilt(Edge 1 side)	0.660	0.355		No.1 + No.2	1.015	58.77	0.017	No
Rear tilt(Edge 1 side)	0.660		0.854	No.1 + No.3	1.514	205.52	0.009	No

15.2 Total exposure ratio (TER)

Either SAR-based or MPE-based exemption may be considered for test exemption for fixed, mobile, or portable device exposure conditions; therefore, the contributions from each exemption in conjunction with the measured SAR (Evaluated$_k$ term) shall be used to determine exemption for simultaneous transmission according to Formula [repeated from § 1.1307(b)(3)(ii)(B)].

$$\sum_{i=1}^{a} \frac{Pi}{Pth,i} + \sum_{j=1}^{b} \frac{ERPj}{ERPth,j} + \sum_{k=1}^{c} \frac{Ealuatedk}{Exposure\ Limitk} \leq 1$$

Where:

a: number of fixed, mobile, or portable RF sources claiming exemption using the § 1.1307(b)(3)(i)(B) formula for Pth, including existing exempt transmitters and those being added.

b: number of fixed, mobile, or portable RF sources claiming exemption using the applicable § 1.1307(b)(3)(i)(C) Table 1 formula for Threshold ERP, including existing exempt transmitters and those being added.

c: number of existing fixed, mobile, or portable RF sources with known evaluation for the specified minimum distance.

P_i: the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source i at a distance between 0.5 cm and 40 cm (inclusive).

$P_{th,i}$: the exemption threshold power (Pth) according to the § 1.1307(b)(3)(i)(B) formula for fixed, mobile, or portable RF source i. Also, The Pth is described at section "SAR Exposure Conditions"

ERP_j: the available maximum time-averaged power or the ERP, whichever is greater, of fixed, mobile, or portable RF source j.

$ERP_{th,j}$: exemption threshold ERP for fixed, mobile, or portable RF source j, at a distance of at least $\lambda/2\pi$, according to the applicable § 1.1307(b)(3)(i)(C) Table 1 formula at the location in question.

$Evaluated_k$: the maximum reported SAR or MPE of fixed, mobile, or portable RF source k either in the device or at the transmitter site from an existing evaluation.

$Exposure\ Limit_k$: either the general population/uncontrolled maximum permissible exposure (MPE) or specific absorption rate (SAR) limit for each fixed, mobile, or portable sources, as applicable

Note

- mmW PD result is from original test report (FCC ID: ACJ9TGFZG2 / report num: 13760834H-H-R1 published by UL Japan).
- BT value is from FCCID: ACJ9TGWL22A / report num: R14206457-S1V3 published by UL LLC.
- WLAN Edge1, Rear, Rear tilt edge1 and Rear tilt edge2 results are from original test report (FCCID: ACJ9TGWL22A / report num: R14206457-S1V3 published by UL LLC)
- ER: Exposure ratio

15.3 TER calculation with WiFi 2.4 GHz and 5 GHz + WWAN (mmW)

15.3.1 TER calculation WLAN + WWAN (mmW)

Ratio calculation:

- Sum of ratio $_{(\text{WLAN main + WLAN aux})}$ = (WLAN main ant SAR result + WLAN aux ant SAR result) / (1.6 W / kg)
- Sum of ratio $_{(\text{WLAN main + BT})}$ = (WLAN main ant SAR result + BT(WLAN aux ant) SAR result) / (1.6 W / kg)
- mmW ratio = mmW each module PD result / (1 mW / cm^2)

WLAN + WLAN

	WLAN2.4				WLAN 5G				
	Ant1	Ant2	sum	ratio	Ant1	Ant2	sum	ratio	Maximum ratio
Edge1	0.422	0.268	0.690	0.431	0.553	0.201	0.754	0.471	0.471
Edge2	0.000	0.026	0.026	0.016	0.000	0.006	0.006	0.004	0.016
Edge3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Edge4	0.035	0.010	0.045	0.028	0.034	0.010	0.044	0.028	0.028
Rear	0.075	0.681	0.756	0.473	0.211	0.562	0.773	0.483	0.483
Rear tilt edge1	0.151	0.925	1.076	0.673	0.355	0.854	1.209	0.756	0.756
Rear tilt edge4	0.029	0.011	0.040	0.025	0.155	0.041	0.196	0.123	0.123

WLAN + BT

	WLAN2.4				WLAN 5G				
	Ant1	BT	sum	ratio	Ant1	BT	sum	ratio	Maximum ratio
Edge1	0.422	0.020	0.442	0.276	0.553	0.020	0.573	0.358	0.358
Edge2	0.000	0.138	0.138	0.086	0.000	0.138	0.138	0.086	0.086
Edge3	0.000	0.138	0.138	0.086	0.000	0.138	0.138	0.086	0.086
Edge4	0.035	0.138	0.173	0.108	0.034	0.138	0.172	0.108	0.108
Rear	0.075	0.086	0.161	0.101	0.211	0.086	0.297	0.186	0.186
Rear tilt edge1	0.151	0.138	0.289	0.181	0.355	0.138	0.493	0.308	0.308
Rear tilt edge4	0.029	0.138	0.167	0.104	0.155	0.138	0.293	0.183	0.183

Maximum ER: mmW Module 0/1 and mmW Module 2

PD for ER	mod 0/1	mod2
Edge1	0.02	0.49
Edge2	0.73	0.49
Edge3	0.73	0.49
Edge4	0.73	0.49
Rear	0.24	0.15
Rear tilt edge1	0.24	0.21
Rear tilt edge4	0.73	0.49

Maximum ER: max {WLAN + WLAN, WLAN + BT}

WLAN for ER	
Edge1	0.471
Edge2	0.086
Edge3	0.086
Edge4	0.108
Rear	0.483
Rear tilt edge1	0.756
Rear tilt edge4	0.183

Total ER: max{WLAN+WLAN,WLAN+BT}+mmW Module0/1

	PD	WLAN+WLAN	TER
Edge1	0.02	0.471	0.491
Edge2	0.73	0.086	0.816
Edge3	0.73	0.086	0.816
Edge4	0.73	0.108	0.838
Rear	0.24	0.483	0.723
Rear tilt edge1	0.24	0.756	***0.996***
Rear tilt edge4	0.73	0.183	0.913

Total ER: max{WLAN+WLAN,WLAN+BT}+mmW Module 2

	PD	WLAN+WLAN	TER
Edge1	0.49	0.471	0.961
Edge2	0.49	0.086	0.576
Edge3	0.49	0.086	0.576
Edge4	0.49	0.108	0.598
Rear	0.15	0.483	0.633
Rear tilt edge1	0.21	0.756	***0.966***
Rear tilt edge4	0.49	0.183	0.673

15.4 TER calculation with 6E + WWAN (Sub6) and WWAN (mmW)

Ratio calculation:

- Sum of ratio $_{(WLAN\ main + WLAN\ aux)}$ = (WLAN main ant PD result + WLAN aux ant PD result) / (1 mW / cm^2)
- Sum of ratio $_{(WLAN\ main + BT)}$ = WLAN main ant PD result / (1 mW/cm^2) + BT(WLAN aux ant) SAR result / (1.6 W / kg)
- WWAN ratio to limit = SAR result / (1.6 W / kg)
- The Rear and rear tilt values are quoted from the Edge1 values.

15.4.1 TER calculation 6E + WWAN (Sub6)

WLAN + WLAN

	6E PD				
	Ant1	ratio	Ant2	ratio	sum of ratio
Edge1	0.240	0.240	0.159	0.159	0.399
Edge2	0.061	0.061	0.036	0.036	0.097
Edge2 Reduction	0.061	0.061	0.036	0.036	0.097
Edge3	0.046	0.046	0.078	0.078	0.124
Edge4	0.124	0.124	0.015	0.015	0.139
Edge4 Reduction	0.124	0.124	0.015	0.015	0.139
Rear	0.240	0.240	0.159	0.159	0.399
Rear Reduction	0.240	0.240	0.159	0.159	0.399
Rear tilt (Edge 1 side)	0.240	0.240	0.159	0.159	0.399
Rear tilt (Edge 2 side)	0.240	0.240	0.159	0.159	0.399
Rear tilt (Edge 2 side) Reduction	0.240	0.240	0.159	0.159	0.399
Rear tilt (Edge 4 side)	0.032	0.032	0.027	0.027	0.059
Rear tilt (Edge 4 side) Reduction	0.032	0.032	0.027	0.027	0.059

WLAN + BT

	6E PD		BT		
	Ant1	ratio	Ant2	ratio	sum of ratio
Edge1	0.240	0.240	0.020	0.013	0.253
Edge2	0.061	0.061	0.138	0.086	0.147
Edge2 Reduction	0.061	0.061	0.138	0.086	0.147
Edge3	0.046	0.046	0.138	0.086	0.132
Edge4	0.124	0.124	0.138	0.086	0.210
Edge4 Reduction	0.124	0.124	0.138	0.086	0.210
Rear	0.240	0.240	0.086	0.054	0.294
Rear Reduction	0.240	0.240	0.086	0.054	0.294
Rear tilt (Edge 1 side)	0.240	0.240	0.138	0.086	0.326
Rear tilt (Edge 2 side)	0.240	0.240	0.138	0.086	0.326
Rear tilt (Edge 2 side) Reduction	0.240	0.240	0.138	0.086	0.326
Rear tilt (Edge 4 side)	0.032	0.032	0.138	0.086	0.118
Rear tilt (Edge 4 side) Reduction	0.032	0.032	0.138	0.086	0.118

Select higher combination between "WLAN + WLAN" and "WLAN + BT"

A: Maximum ER: max {WLAN + WLAN, WLAN + BT}

Edge1	0.399
Edge2	0.147
Edge2 Reduction	0.147
Edge3	0.132
Edge4	0.210
Edge4 Reduction	0.210
Rear	0.399
Rear Reduction	0.399
Rear tilt (Edge 1 side)	0.399
Rear tilt (Edge 2 side)	0.399
Rear tilt (Edge 2 side) Reduction	0.399
Rear tilt (Edge 4 side)	0.118
Rear tilt (Edge 4 side) Reduction	0.118

B: Maximum ER: WWAN (Sub6)

	Mod0/1
Edge1	0.256
Edge2	0.321
Edge2 Reduction	0.453
Edge3	0.150
Edge4	0.556
Edge4 Reduction	0.651
Rear	0.388
Rear Reduction	0.394
Rear tilt (Edge 1 side)	0.557
Rear tilt (Edge 2 side)	0.516
Rear tilt (Edge 2 side) Reduction	0.272
Rear tilt (Edge 4 side)	0.642
Rear tilt (Edge 4 side) Reduction	0.671

sum of A and B

Total ER: A + B

	A	B	TER
Edge1	0.399	0.256	0.655
Edge2	0.147	0.321	0.468
Edge2 Reduction	0.147	0.453	0.600
Edge3	0.132	0.150	0.282
Edge4	0.210	0.556	0.766
Edge4 Reduction	0.210	0.651	0.861
Rear	0.399	0.388	0.787
Rear Reduction	0.399	0.394	0.793
Rear tilt (Edge 1 side)	0.399	0.557	***0.956***
Rear tilt (Edge 2 side)	0.399	0.516	0.915
Rear tilt (Edge 2 side) Reduction	0.399	0.272	0.671
Rear tilt (Edge 4 side)	0.118	0.642	0.760
Rear tilt (Edge 4 side) Reduction	0.118	0.671	0.789

15.4.2 TER calculation 6E + WWAN (mmW)

WLAN + WLAN

	6E PD				
	Main ant	ratio	Aux ant	ratio	sum of ratio
Edge1	0.240	0.240	0.159	0.159	0.399
Edge2	0.061	0.061	0.036	0.036	0.097
Edge3	0.046	0.046	0.078	0.078	0.124
Edge4	0.124	0.124	0.015	0.015	0.139
Rear	0.240	0.240	0.159	0.159	0.399
Rear tilt edge1	0.240	0.240	0.159	0.159	0.399
Rear tilt edge4	0.032	0.032	0.027	0.027	0.059

WLAN + BT

	Ant1 6E	ratio	Ant2 BT	ratio	sum of ratio
Edge1	0.240	0.240	0.020	0.013	0.248
Edge2	0.061	0.061	0.138	0.086	0.115
Edge3	0.046	0.046	0.138	0.086	0.100
Edge4	0.124	0.124	0.138	0.086	0.178
Rear	0.240	0.240	0.086	0.054	0.274
Rear tilt edge1	0.240	0.240	0.138	0.086	0.294
Rear tilt edge4	0.032	0.032	0.138	0.086	0.086

Select higher combination between "WLAN + WLAN" and "WLAN + BT"

A: Maximum ER: max {WLAN + WLAN, WLAN + BT}

Edge1	0.399
Edge2	0.115
Edge3	0.124
Edge4	0.178
Rear	0.399
Rear tilt edge1	0.399
Rear tilt edge4	0.086

B: Maximum ER: mmW Module 0/1

	Mod0/1
Edge1	0.02
Edge2	0.73
Edge3	0.73
Edge4	0.73
Rear	0.24
Rear tilt edge1	0.24
Rear tilt edge4	0.73

C: Maximum ER: mmW Module 2

	Mod2
Edge1	0.49
Edge2	0.49
Edge3	0.49
Edge4	0.49
Rear	0.15
Rear tilt edge1	0.21
Rear tilt edge4	0.49

sum of A and B, A and C

Total ER: **A** + **B** (Module 0 and 1)

	A	B	TER
Edge1	0.399	0.02	0.419
Edge2	0.115	0.73	0.845
Edge3	0.124	0.73	0.854
Edge4	0.178	0.73	***0.908***
Rear	0.399	0.24	0.639
Rear tilt edge1	0.399	0.24	0.639
Rear tilt edge4	0.086	0.73	0.816

Total ER: **A** + **C** (Module 2)

	A	C	TER
Edge1	0.399	0.49	***0.889***
Edge2	0.115	0.49	0.605
Edge3	0.124	0.49	0.614
Edge4	0.178	0.49	0.668
Rear	0.399	0.15	0.549
Rear tilt edge1	0.399	0.21	0.609
Rear tilt edge4	0.086	0.49	0.576

15.5 Conclusion

Complied since all TER is less than 1.

16 Test instrument

Local Id	Description	Manufacturer	Model	Serial	Last Cal Date	Interval
Probe						
MPB-07	Dosimetric E-Field Probe	Schmid&Partner Engineering AG	EX3DV4	3825	2022/07/20	12
MPB-08	Dosimetric E-Field Probe	Schmid&Partner Engineering AG	EX3DV4	3917	2022/05/17	12
MRENT-S22	Dosimetric E-Field Probe	Schmid & Partner Engineering AG	EX3DV4	3745	2022/04/19	12
MPBm-01	mmWave probe	Schmid & Partner Engineering AG	EUmmWV4	9450	2021/11/11 *1)	12
DAE						
MDAE-03	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE4	1372	2022/04/11	12
MDAE-01	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE4	509	2022/07/13	12
MDAE-02	Data Acquisition Electronics	Schmid&Partner Engineering AG	DAE4	1369	2022/05/09	12
MRENT-S12	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE4	554	2022/04/14	12
Chamber inst.						
MDH-01	Device holder	Schmid & Partner Engineering AG	Mounting device for transmitter	-	2022/11/28	12
MDH-03	Device holder	Schmid & Partner Engineering AG	Mounting device for transmitter	-	2022/11/28	12
MDH-04	Device holder	Schmid & Partner Engineering AG	Mounting device for transmitter	-	2022/11/28	12
MPF-03	2mm Oval Flat Phantom	Schmid&Partner Engineering AG	QDOVA001BB	1203	2022/05/24	12
MPF-02	2mm Oval Flat Phantom	Schmid & Partner Engineering AG	QDOVA001BB	1045	2022/05/23	12
MPF-04	2mm Oval Flat Phantom	Schmid&Partner Engineering AG	QDOVA001BB	1207	2022/05/24	12
MRBT-02	SAR robot	Schmid & Partner Engineering AG	TX60 Lspeag	F10/5E3LA1/A/01	2022/04/25	12
MRBT-03	SAR robot	Schmid & Partner Engineering AG	TX60 Lspeag	F13/5PP1D1/A/01	2022/04/26	12
MRBT-04	SAR robot	Schmid & Partner Engineering AG	TX60 Lspeag	F13/5PP1A1/A/01	2022/04/26	12
MOS-33	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2022/07/03	12
MOS-31	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2022/07/03	12
MOS-33	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2022/07/03	12

System check system

MSG-10	Signal Generator	Keysight Technologies Inc	N5181A	MY47421098	2022/11/04	12
MSG-23	Signal Generator	Rohde & Schwarz	SMW200A	107688	2022/02/03	12
MPSE-20	Power sensor	Keysight Technologies Inc	N8482H	MY53050001	2022/06/16	12
MPSE-31	Power sensor	Keysight Technologies Inc	E9300H	MY62080002	2022/08/02	12
MPM-15	Power Meter	Keysight Technologies Inc	N1914A	MY53060017	2022/06/16	12
COTS-MPSE-02	Software for MA24106A	Anritsu Corporation	Anritsu PowerXpert	-	-	-
MPSE-24	Power sensor	Anritsu Corporation	MA24106A	1026164	2022/03/17	12
MPSE-25	Power sensor	Anritsu Corporation	MA24106A	1031504	2022/03/17	12
MPSE-32	Power Sensor	Anritsu Corporation	MA24118A	2123074	2022/08/02	12
MPSE-33	Power Sensor	Anritsu Corporation	MA24118A	2123095	2022/08/02	12
MHDC-21	Dual Directional Coupler	Keysight Technologies Inc	778D	MY52180243	-	-
MHDC-12	Dual Directional Coupler	Hewlett Packard	772D	2839A0016	-	-
MRFA-24	Pre Amplifier	R&K	R&K CGA020M602-2633R	B30550	2022/06/27	12
MPA-34	Pre Amplifier	R&K	AA350-RS	22055001	2022/08/02	12
MPA-35	Pre Amplifier	R&K	AA360-RS	22055001	2022/08/02	12
MAT-78	Attenuator	Telegrartner	J01156A0011	42294119	-	-

Liquid meas.

COTS-MSAR-04	Dielectric assessment software	Schmid&Partner Engineering AG	DAK	-	-	-
MDPK-03	Dielectric assessment kit	Schmid & Partner Engineering AG	DAKS-3.5	0008	2022/04/19	12
MNA-03	Vector Reflectometer	COPPER MOUNTAIN TECHNOLOGIES	PLANAR R140	0030913	2022/04/18	12
MOS-37	Digital thermometer	LKM electronic	DTM3000	-	2022/07/03	12
MHBBL600-10000	Head Simulating Liquid	Schmid & Partner Engineering AG	HBBL600-10000V6	SL AAH U16 BC	-	-
MWTR-01	Water, distilled	KISHIDA CHEMICAL Co.,Ltd.	020-85566	K70244M	-	-

Source

MDA-20	Dipole Antenna	Schmid&Partner Engineering AG	D750V3	1058	2021/05/11	24
SSDA-04	Dipole Antenna	Schmid&Partner Engineering AG	D835V2	4d149	2022/03/14	36
SSDA-06	Dipole Antenna	Schmid&Partner Engineering AG	D1750V2	1089	2022/03/15	36
SSDA-08	Dipole Antenna	Schmid&Partner Engineering AG	D1900V2	5d169	2022/03/15	36
SSDA-09	Dipole Antenna	Schmid & Partner Engineering AG	D1950V3	1149	2022/04/14	36
MDA-07	Dipole Antenna	Schmid & Partner Engineering AG	D2450V2	713	2022/09/12	12
MDA-19	Dipole Antenna	Schmid&Partner Engineering AG	D2600V2	1030	2022/03/18	36
MDA-23	Dipole Antenna	Schmid & Partner Engineering AG	D3500V2	1052	2019/12/11	36
MDA-25	Dipole Antenna	Schmid & Partner Engineering AG	D3900V2	1006	2022/04/19	12
MDA-08	Dipole Antenna	Schmid&Partner Engineering AG	D5GHzV2	1020	2021/11/18 *1)	12
MVSm-04	Verification Source	Schmid & Partner Engineering AG	5G Verification Source 10 GHz	1051	2022/08/15	12

Power meas.

MURC-10	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	165750	2022/06/17	12
MURC-13	UXM 5G Wireless Test Platform	Keysight Technologies Inc	E7515B	MY59321679	2022/02/08	12
MPSE-28	RF Device, Active, Power Meter	Rohde & Schwarz	NRP8S	110600	2022/06/10	12
MPSE-29	RF Device, Active, Power Meter	Rohde & Schwarz	NRP50S	101418	2022/06/10	12
MPSE-30	RF Device, Active, Power Meter	Rohde & Schwarz	NRP50S	101419	2022/06/10	12
MAT-21	Attenuator(20dB)(above1GHz)	HIROSE ELECTRIC CO.,LTD.	AT-120	901247	2022/01/23	12
MAT-17	Attenuator(20dB)_DC-1GHz_N	Weinschel Corp	MODEL 1	BG0143	2021/12/23	12
MAT-86	Attenuator	Weinschel Associates	WA56-20	56200213	2022/05/01	12

*Hyphens for Last Calibration Date and Cal Int (month) are instruments that Calibration is not required (e.g. software), or instruments checked in advance before use.

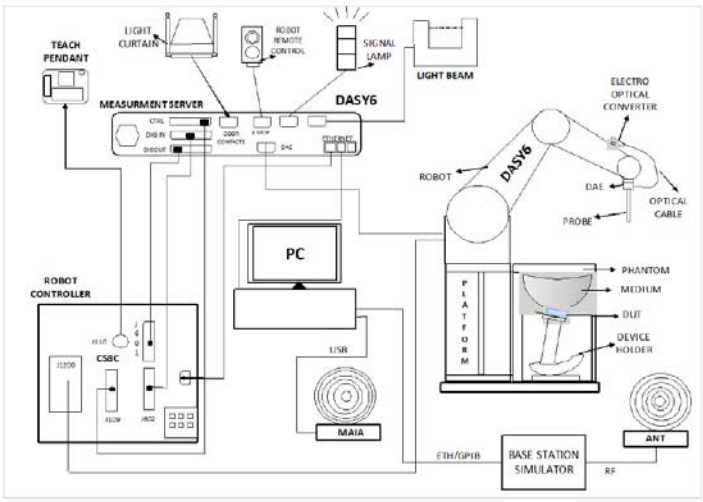
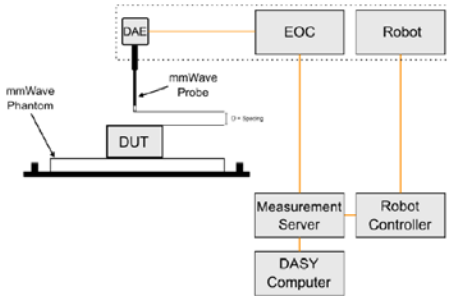
The expiration date of the calibration is the end of the expired month.
As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.

The expiration*1) This test equipment was used for the tests before the expiration date of the calibration.

16.1 Test system

16.1.1 System components

SAR	mmW power density
	

16.1.2 Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE4 or DAE3) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16-bit AD-converter, and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information, as well as an optical uplink for commands and the clock.

16.1.3 Probes (SAR)

Dosimetric Probes: These probes are specially designed and calibrated for use in liquids with high permittivities. They should not be used in air, since the spherical isotropy in air is poor (+/- 2 dB). The dosimetric probes are specially calibrated in various liquids at different frequencies.

16.1.4 EOC

The electrooptical converter (EOC), which is mounted on the robot arm. An internal data link is used from the EOC to the robot back panel. From there, a 10-meter cable connects to the measurement server DAE input.

16.1.5 Robot

The DASY6 system uses the high precision industrial robots TX60L from Stuaubli SA (France).

16.1.6 Simulated Tissues (Liquid)

series of tissue simulating liquids are available for various testing applications. The dielectric parameters of these liquids are matched to the target tissue parameters over a certain frequency range. A summary of available liquids is as follows:

HEAD TISSUE LIQUIDS	Dielectric parameters for simulating head-tissue parameters as defined in the SAR compliance standards (IEEE 1528, IEC 62209-1/2, etc.) Frequency range: 4 MHz – 10 GHz Tolerance to target: ±5% / ± 10% Detailed specifications: HSL
BODY TISSUE LIQUIDS	Dielectric parameters for simulating body-tissue parameters as defined in the SAR measurement guidance (FCC KDB 865664) Frequency range: 150 MHz – 6 GHz Tolerance to target: ±5% / ±10% Detailed specifications: MSL
SPECIAL LIQUIDS	CTIA Applications: brain tissue simulating liquid for radiation measurements according to CTIA 2.2 Appx C.3 MRI Solutions: tissue simulating Media for RF safety evaluation at MR Frequencies

16.1.7 Others

The SAR phantom, mmW phantom, the device holder and other accessories according to the targeted measurement.

17 Appendixes

Refer to separated files for the following appendixes.

Appendix A: DUT and SAR Setup Photos

Appendix B: SAR Measurement data

Appendix C: System Check

Appendix D: Calibration data

Appendix E: Antenna location

Appendix F: Proximity Sensor Verification

18 Revision History

Original Test Report No.: 14367173H-B

This report is a revised version of 14367173H-B. 14367173H-B is replaced with this report.

Revision	Test Report No.	Date	Page Revised Contents
- (Original)	14367173H-B	January 27, 2023	-
1	14367173H-B-R1	February 21, 2023	Clause 12.2.3 System Check Results for SAR and PD Corrected errors in table (row of 9/20 3500 MHz) ・Meas value 20mW: 2.25 -> 2.65 ・Values of column of “Meas value Normalized to 1W” and “System performance check”

End of Report