	10MHz/25RB#12	Bottom Edge	20600	844	23.31	24.0	1.172	-0.03	0.706	0.828
	10MHz/25RB#12	Front Side	20450	829	23.26	24.0	1.186	-0.05	0.703	0.834
	10MHz/25RB#12	Rear Side	20450	829	23.26	24.0	1.186	0.04	0.722	0.856
	10MHz/25RB#12	Left Edge	20450	829	23.26	24.0	1.186	0.03	0.674	0.799
	10MHz/25RB#12	Bottom Edge	20450	829	23.26	24.0	1.186	0.05	0.696	0.825
	10MHz/25RB#12	Front Side	20525	836.5	23.26	24.0	1.186	-0.06	0.696	0.825
	10MHz/25RB#12	Rear Side	20525	836.5	23.26	24.0	1.186	0.07	0.720	0.854
	10MHz/25RB#12	Left Edge	20525	836.5	23.26	24.0	1.186	0.04	0.668	0.792
	10MHz/25RB#12	Bottom Edge	20525	836.5	23.26	24.0	1.186	-0.10	0.692	0.821

SAR Values [LTE Band 7]

Plot No.	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Measured / Reported SAR numbers-Body& hotspot open distance 10mm										
	20MHz/1RB#99	Front Side	21350	2560	22.58	23.0	1.102	0.03	0.720	0.793
#23	20MHz/1RB#99	Rear Side	21350	2560	22.58	23.0	1.102	-0.10	**0.740**	0.815
	20MHz/1RB#99	Left Edge	21350	2560	22.58	23.0	1.102	-0.04	0.698	0.769
	20MHz/1RB#99	Bottom Edge	21350	2560	22.58	23.0	1.102	-0.10	0.710	0.782
	20MHz/1RB#99	Rear Side	20850	2510	22.30	23.0	1.175	-0.05	0.721	**0.847**
	20MHz/1RB#0	Rear Side	21100	2535	22.57	23.0	1.104	-0.07	0.735	0.811
	20MHz/50RB#50	Front Side	21350	2560	21.42	22.0	1.143	0.05	0.610	0.697
	20MHz/50RB#50	Rear Side	21350	2560	21.42	22.0	1.143	0.07	0.621	0.710
	20MHz/50RB#50	Left Edge	21350	2560	21.42	22.0	1.143	-0.03	0.579	0.662
	20MHz/50RB#50	Bottom Edge	21350	2560	21.42	22.0	1.143	-0.09	0.591	0.675

SAR Values [LTE Band 25]

Plot No.	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Measured / Reported SAR numbers-Body& hotspot open distance 10mm										
	20MHz/1RB#49	Front Side	26590	1905	25.11	26.0	1.227	0.07	0.825	1.013
	20MHz/1RB#49	Rear Side	26590	1905	25.11	26.0	1.227	0.03	0.813	0.998
	20MHz/1RB#49	Left Edge	26590	1905	25.11	26.0	1.227	-0.02	0.797	0.978
#24	20MHz/1RB#49	Bottom Edge	26590	1905	25.11	26.0	1.227	0.05	**0.841**	**1.032**
	20MHz/1RB#49	Front Side	26140	1860	24.93	26.0	1.279	0.03	0.743	0.951
	20MHz/1RB#49	Rear Side	26140	1860	24.93	26.0	1.279	0.07	0.765	0.979
	20MHz/1RB#49	Left Edge	26140	1860	24.93	26.0	1.279	-0.05	0.720	0.921
	20MHz/1RB#49	Bottom Edge	26140	1860	24.93	26.0	1.279	0.03	0.739	0.945
	20MHz/1RB#99	Front Side	26365	1882.5	24.89	26.0	1.291	-0.09	0.740	0.956
	20MHz/1RB#99	Rear Side	26365	1882.5	24.89	26.0	1.291	0.11	0.759	0.980
	20MHz/1RB#99	Left Edge	26365	1882.5	24.89	26.0	1.291	0.04	0.711	0.918
	20MHz/1RB#99	Bottom Edge	26365	1882.5	24.89	26.0	1.291	0.07	0.732	0.945
	20MHz/50RB#24	Front Side	26590	1905	24.14	25.0	1.219	0.11	0.752	0.917
	20MHz/50RB#24	Rear Side	26590	1905	24.14	25.0	1.219	-0.07	0.742	0.904
	20MHz/50RB#24	Left Edge	26590	1905	24.14	25.0	1.219	0.05	0.726	0.885
	20MHz/50RB#24	Bottom Edge	26590	1905	24.14	25.0	1.219	-0.03	0.768	0.936
	20MHz/50RB#24	Front Side	26140	1860	23.93	25.0	1.279	0.03	0.652	0.834
	20MHz/50RB#24	Rear Side	26140	1860	23.93	25.0	1.279	-0.07	0.675	0.864
	20MHz/50RB#24	Left Edge	26140	1860	23.93	25.0	1.279	0.06	0.630	0.806
	20MHz/50RB#24	Bottom Edge	26140	1860	23.93	25.0	1.279	-0.07	0.642	0.821
	20MHz/50RB#0	Front Side	26365	1882.5	23.90	25.0	1.288	0.11	0.643	0.828
	20MHz/50RB#0	Rear Side	26365	1882.5	23.90	25.0	1.288	0.05	0.663	0.854
	20MHz/50RB#0	Left Edge	26365	1882.5	23.90	25.0	1.288	-0.03	0.609	0.785
	20MHz/50RB#0	Bottom Edge	26365	1882.5	23.90	25.0	1.288	0.10	0.630	0.812

SAR Values [LTE Band 26 Lower Band]

Plot No.	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Measured / Reported SAR numbers-Body& hotspot open distance 10mm										
	10MHz/1RB#25	Front Side	26740	819	25.31	26.0	1.172	-0.11	0.715	0.838
#25	10MHz/1RB#25	Rear Side	26740	819	25.31	26.0	1.172	0.09	**0.733**	**0.859**
	10MHz/1RB#25	Left Edge	26740	819	25.31	26.0	1.172	-0.07	0.693	0.812
	10MHz/1RB#25	Bottom Edge	26740	819	25.31	26.0	1.172	0.05	0.706	0.828
	10MHz/25RB#12	Front Side	26740	819	24.26	25.0	1.186	0.09	0.668	0.792
	10MHz/25RB#12	Rear Side	26740	819	24.26	25.0	1.186	-0.05	0.684	0.811
	10MHz/25RB#12	Left Edge	26740	819	24.26	25.0	1.186	-0.07	0.640	0.759
	10MHz/25RB#12	Bottom Edge	26740	819	24.26	25.0	1.186	-0.11	0.663	0.786

SAR Values [LTE Band 26 Higher Band]

Plot No.	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Measured / Reported SAR numbers-Body& hotspot open distance 10mm										
	15MHz/1RB#0	Front Side	26865	831.5	25.15	26.0	1.216	-0.11	0.902	1.097
#26	15MHz/1RB#0	Rear Side	26865	831.5	25.15	26.0	1.216	0.04	**0.914**	**1.112**
	15MHz/1RB#0	Left Edge	26865	831.5	25.15	26.0	1.216	-0.07	0.872	1.061
	15MHz/1RB#0	Bottom Edge	26865	831.5	25.15	26.0	1.216	0.05	0.885	1.076
	15MHz/1RB#37	Front Side	26915	836.5	25.08	26.0	1.236	-0.07	0.883	1.091
	15MHz/1RB#37	Rear Side	26915	836.5	25.08	26.0	1.236	0.05	0.895	1.106
	15MHz/1RB#37	Left Edge	26915	836.5	25.08	26.0	1.236	0.03	0.856	1.058
	15MHz/1RB#37	Bottom Edge	26915	836.5	25.08	26.0	1.236	0.10	0.862	1.065
	15MHz/1RB#0	Front Side	26965	841.5	25.14	26.0	1.219	0.11	0.902	1.100
	15MHz/1RB#0	Rear Side	26965	841.5	25.14	26.0	1.219	-0.03	0.911	1.110
	15MHz/1RB#0	Left Edge	26965	841.5	25.14	26.0	1.219	0.04	0.869	1.059
	15MHz/1RB#0	Bottom Edge	26965	841.5	25.14	26.0	1.219	0.07	0.886	1.080
	15MHz/36RB#0	Front Side	26865	831.5	24.20	25.0	1.202	0.11	0.810	0.974
	15MHz/36RB#0	Rear Side	26865	831.5	24.20	25.0	1.202	-0.05	0.829	0.997
	15MHz/36RB#0	Left Edge	26865	831.5	24.20	25.0	1.202	-0.03	0.783	0.941
	15MHz/36RB#0	Bottom Edge	26865	831.5	24.20	25.0	1.202	-0.10	0.803	0.965
	15MHz/36RB#0	Front Side	26915	836.5	24.19	25.0	1.205	0.011	0.810	0.976
	15MHz/36RB#0	Rear Side	26915	836.5	24.19	25.0	1.205	0.05	0.825	0.994
	15MHz/36RB#0	Left Edge	26915	836.5	24.19	25.0	1.205	0.07	0.786	0.947
	15MHz/36RB#0	Bottom Edge	26915	836.5	24.19	25.0	1.205	-0.08	0.795	0.958
	15MHz/36RB#0	Front Side	26965	841.5	24.12	25.0	1.225	0.05	0.797	0.976
	15MHz/36RB#0	Rear Side	26965	841.5	24.12	25.0	1.225	-0.03	0.814	0.997
	15MHz/36RB#0	Left Edge	26965	841.5	24.12	25.0	1.225	0.11	0.775	0.949
	15MHz/36RB#0	Bottom Edge	26965	841.5	24.12	25.0	1.225	0.07	0.787	0.964

SAR Values [LTE Band 66]

Plot No.	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Measured / Reported SAR numbers-Body& hotspot open distance 10mm										
	10MHz/1RB#25	Front Side	132622	1775	24.87	25.0	1.030	0.07	0.662	0.682
	10MHz/1RB#25	Rear Side	132622	1775	24.87	25.0	1.030	-0.03	0.651	0.671
	10MHz/1RB#25	Left Edge	132622	1775	24.87	25.0	1.030	-0.04	0.624	0.643
#27	10MHz/1RB#25	Bottom Edge	132622	1775	24.87	25.0	1.030	-0.03	**0.674**	**0.694**
	10MHz/25RB#0	Front Side	132622	1775	23.84	24.0	1.038	0.03	0.574	0.596
	10MHz/25RB#0	Rear Side	132622	1775	23.84	24.0	1.038	-0.05	0.585	0.607
	10MHz/25RB#0	Left Edge	132622	1775	23.84	24.0	1.038	-0.09	0.545	0.565
	10MHz/25RB#0	Bottom Edge	132622	1775	23.84	24.0	1.038	0.10	0.557	0.578

SAR Values [LTE Band 41]

Plot No.	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
Measured / Reported SAR numbers-Body& hotspot open distance 10mm										
	20MHz/1RB#99	Front Side	41140	2645	23.03	24.0	1.250	-0.06	0.610	0.763
#28	20MHz/1RB#99	Rear Side	41140	2645	23.03	24.0	1.250	0.05	**0.625**	**0.781**
	20MHz/1RB#99	Left Edge	41140	2645	23.03	24.0	1.250	0.11	0.578	0.723
	20MHz/1RB#99	Bottom Edge	41140	2645	23.03	24.0	1.250	-0.05	0.595	0.744
	20MHz/50RB#50	Front Side	41140	2645	22.07	23.0	1.239	0.04	0.571	0.707
	20MHz/50RB#50	Rear Side	41140	2645	22.07	23.0	1.239	-0.07	0.579	0.717
	20MHz/50RB#50	Left Edge	41140	2645	22.07	23.0	1.239	0.09	0.542	0.671
	20MHz/50RB#50	Bottom Edge	41140	2645	22.07	23.0	1.239	-0.10	0.546	0.676

10.5 SAR Measurement Variability

SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. The following procedures are applied to determine if repeated measurements are required.

1 Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

2 When the original highest measured SAR is ⩾ 0.80 W/kg, repeat that measurement once.

3 Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ⩾1.45 W/kg (~ 10% from the 1-g SAR limit).

4 Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

SAR Measurement Variability

Band	Mode	Test Position	Ch.	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
LTE Band 5	10MHz/1RB#0	Front Side	20600	10	0.854	0.836	1.022	N/A
	10MHz/1RB#0	Rear Side	20600	10	0.846	0.875	1.035	N/A
	10MHz/1RB#0	Left Edge	20600	10	0.826	0.819	1.008	N/A
	10MHz/1RB#0	Bottom Edge	20600	10	0.830	0.844	1.017	N/A
	10MHz/1RB#49	Front Side	20450	10	0.811	0.808	1.004	N/A
	10MHz/1RB#49	Rear Side	20450	10	0.811	0.833	1.027	N/A
	10MHz/1RB#49	Bottom Edge	20450	10	0.806	0.784	1.028	N/A
	10MHz/1RB#0	Front Side	20525	10	0.803	0.779	1.030	N/A
	10MHz/1RB#0	Rear Side	20525	10	0.809	0.828	1.024	N/A
	10MHz/1RB#0	Bottom Edge	20525	10	0.802	0.789	1.016	N/A
LTE Band 25	20MHz/1RB#49	Front Side	26590	10	0.805	0.825	1.025	N/A
	20MHz/1RB#49	Rear Side	26590	10	0.813	0.788	1.032	N/A
	20MHz/1RB#49	Bottom Edge	26590	10	0.841	0.811	1.037	N/A
LTE Band 26 Higher Band	15MHz/1RB#0	Front Side	26865	10	0.902	0.881	1.024	N/A
	15MHz/1RB#0	Rear Side	26865	10	0.909	0.914	1.006	N/A
	15MHz/1RB#0	Left Edge	26865	10	0.872	0.843	1.034	N/A
	15MHz/1RB#0	Bottom Edge	26865	10	0.872	0.885	1.015	N/A
	15MHz/1RB#37	Front Side	26915	10	0.883	0.883	1.000	N/A
	15MHz/1RB#37	Rear Side	26915	10	0.887	0.895	1.009	N/A
	15MHz/1RB#37	Left Edge	26915	10	0.856	0.836	1.024	N/A
	15MHz/1RB#37	Bottom Edge	26915	10	0.860	0.862	1.003	N/A
	15MHz/1RB#0	Front Side	26965	10	0.902	0.881	1.024	N/A
	15MHz/1RB#0	Rear Side	26965	10	0.911	0.884	1.031	N/A

	15MHz/1RB#0	Left Edge	26965	10	0.840	0.869	1.035	N/A
	15MHz/1RB#0	Bottom Edge	26965	10	0.886	0.883	1.004	N/A
	15MHz/36RB#0	Front Side	26865	10	0.801	0.810	1.011	N/A
	15MHz/36RB#0	Rear Side	26865	10	0.829	0.822	1.009	N/A
	15MHz/36RB#0	Bottom Edge	26865	10	0.803	0.792	1.014	N/A
	15MHz/36RB#0	Front Side	26915	10	0.810	0.795	1.019	N/A
	15MHz/36RB#0	Rear Side	26915	10	0.825	0.823	1.002	N/A
	15MHz/36RB#0	Rear Side	26965	10	0.814	0.811	1.004	N/A

10.6 Simultaneous Transmission Analysis

Per FCC KD B447498 D01, simultaneous transmission SAR test exclusion may be applied when the sum of the 1-g SAR for all the transmitting antenna in a specific a physical test configuration is ≤1.6 W/Kg. When the sum is greater than the SAR limit, SAR test exclusion is determined by the SAR to peak location separation ratio.

$$\text{Ratio}=\frac{(SAR_1+SAR_2)^{1.5}}{(\text{peak location separation,mm})}<0.04$$

The following procedures adopted from “FCC SAR Considerations for Cell Phones with Multiple Transmitters” are applicable to handsets with built-in unlicensed transmitters such as 802.11 a/b/g/n and Bluetooth devices which may simultaneously transmit with the licensed transmitter.

Application Simultaneous Transmission information:

No.	Simultaneous Transmission Configurations	Portable Handset		
		Head	Body-worn	Hotspot
1	WWAN (2/3/4G) + WLAN 2.4GHz	Yes	Yes	Yes
2	WWAN (2/3/4G) + WLAN 5GHz	Yes	Yes	Yes
3	WWAN (2/3/4G) + Bluetooth	Yes	Yes	Yes
4	WWAN (2/3/4G)+WLAN 5GHz + Bluetooth	Yes	Yes	Yes

Note: WLAN2.4G and BT share the same antenna and cannot transmitting at the same time.

10.8.2 Evaluation of Simultaneous SAR

Head Simultaneous transmission SAR for WLAN/BT and GSM/WCDMA/LTE

Exposure Position	1	2	3	4	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)	SPLSR
	MAX. WWAN Reported SAR	MAX. WLAN2.4G Reported SAR	MAX. WLAN 5G Reported SAR	Bluetooth					
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)					
Left Cheek	0.564	0.435	0.218	0.106	**0.999**	0.782	0.670	0.888	N/A
Left Tilt	0.547	0.419	0.218	0.090	0.966	0.765	0.637	0.855	N/A
Right Cheek	0.569	0.427	0.218	0.103	0.996	0.787	0.672	0.890	N/A
Right Tilt	0.561	0.413	0.218	0.091	0.974	0.779	0.652	0.870	N/A

MAX. ΣSAR_{1g} =**0.999** W/kg<1.6 W/kg, so the Simultaneous transmission SAR with volume scan are not required.

Body-worn and hotspot Simultaneous transmission SAR for WLAN/BT and GSM/WCDMA/LTE

Exposure Position	1	2	3	4	1+2 Summed 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	1+3+4 Summed 1g SAR (W/kg)	SPLSR
	MAX. WWAN Reported SAR	MAX. WLAN2.4G Reported SAR	MAX. WLAN 5G Reported SAR	Bluetooth					
	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)					
Front Side	1.100	0.263	0.109	0.234	1.363	1.209	1.334	1.443	N/A
Rear Side	1.112	0.263	0.109	0.234	1.375	1.221	1.346	**1.455**	N/A
Left Edge	1.061	0.263	0.109	0.234	1.324	1.17	1.295	1.404	N/A
Right Edge	N/A	0.263	0.109	0.234	0.263	0.109	0.234	0.343	N/A
Top Side	N/A	0.263	0.109	0.234	0.263	0.109	0.234	0.343	N/A
Bottom Edge	1.080	0.263	0.109	0.234	1.343	1.189	1.314	1.423	N/A

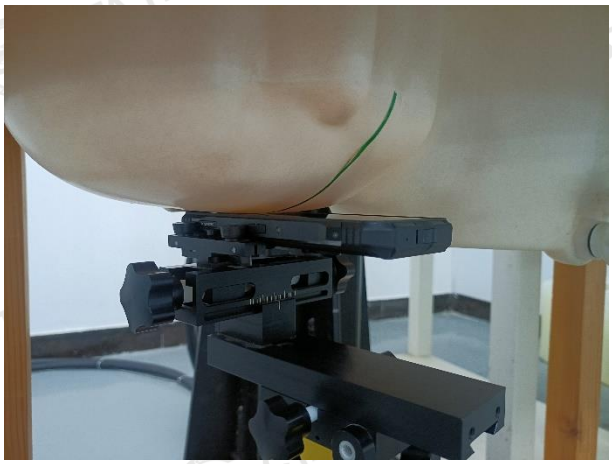
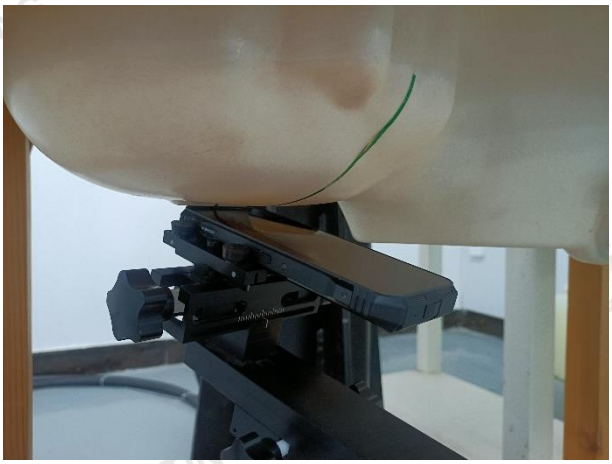
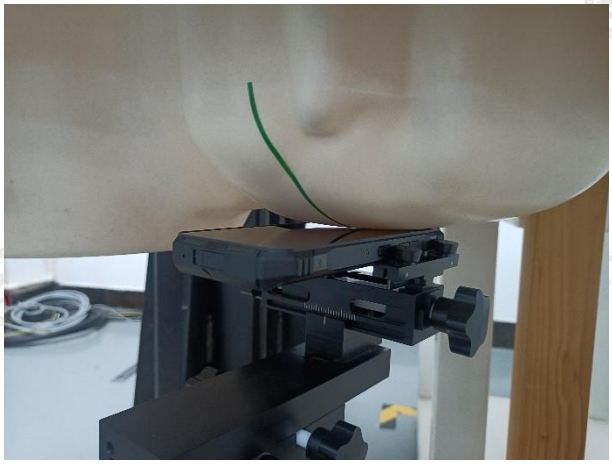
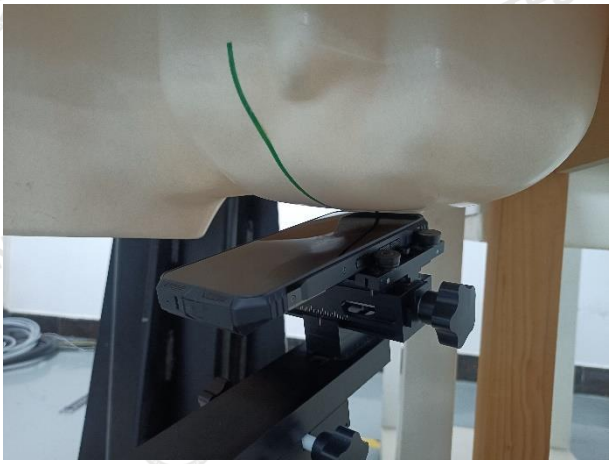
MAX. ΣSAR_{1g} =**1.455** W/kg<1.6 W/kg, so the Simultaneous transmission SAR with volume scan are not required.

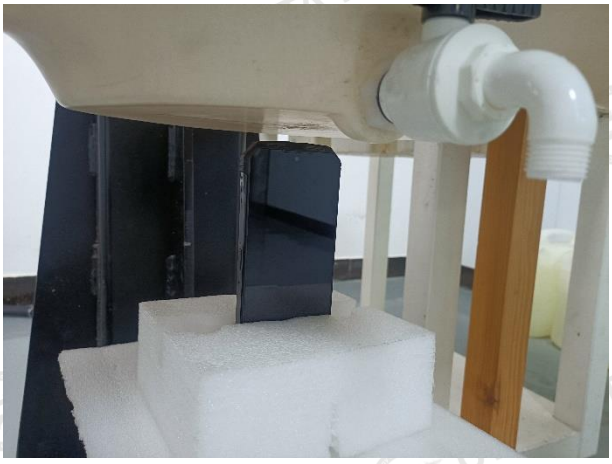
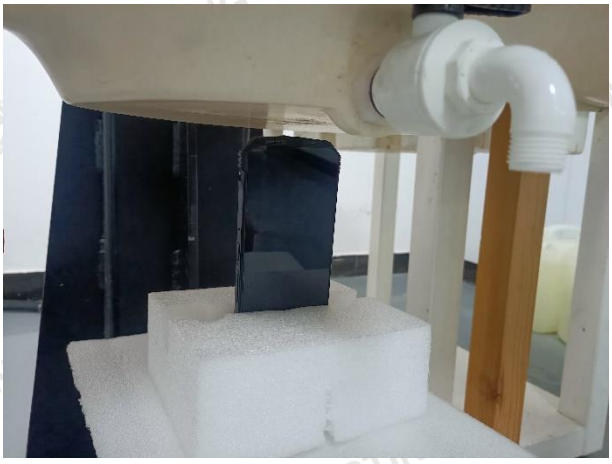
11 Measurement Uncertainty

NO	Source	Uncert. ai（%）	Prob. Dist.	Div. k	ci (1g)	ci (10g)	Stand.Uncert. ui (1g)	Stand.Uncert. ui (10g)	*Veff*
1	Repeat	0. 4	N	1	1	1	0. 4	0. 4	9
Instrument									
2	Probe calibration	7	N	2	1	1	3.5	3.5	∞
3	Axial isotropy	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
4	Hemispherical isotropy	9.4	R	$\sqrt{3}$	0.7	0.7	3.9	3.9	∞
5	Boundary effect	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
6	Linearity	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
7	Detection limits	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
8	Readout electronics	0.3	N	1	1	1	0.3	0.3	∞
9	Response time	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
10	Integration time	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
11	Ambient noise	3.0	R	$\sqrt{3}$	1	1	1.7	1.7	∞
12	Ambient reflections	3.0	R	$\sqrt{3}$	1	1	1.7	1.7	∞
13	Probe positioner mech. restrictions	0.4	R	$\sqrt{3}$	1	1	0.2	0.2	∞
14	Probe positioning with respect to phantom shell	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	∞
15	Max.SAR evaluation	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞

Test sample related									
16	Device positioning	3.8	N	1	1	1	3.8	3.8	99
17	Device holder	5.1	N	1	1	1	5.1	5.1	5
18	Drift of output power	5.0	R	$\frac{1}{\sqrt{3}}$	1	1	2.9	2.9	∞
Phantom and set-up									
19	Phantom uncertainty	4.0	R	$\frac{1}{\sqrt{3}}$	1	1	2.3	2.3	∞
20	Liquid conductivity (target)	5.0	R	$\frac{1}{\sqrt{3}}$	0.64	0.43	1.8	1.2	∞
21	Liquid conductivity (meas)	2.5	N	1	0.64	0.43	1.6	1.2	∞
22	Liquid Permittivity (target)	5.0	R	$\frac{1}{\sqrt{3}}$	0.6	0.49	1.7	1.5	∞
23	Liquid Permittivity (meas)	2.5	N	1	0.6	0.49	1.5	1.2	∞
Combined standard			RSS	$U_c = \sqrt{\sum_{i=1}^{n} C_i^2 U_i^2}$			11.4%	11.3%	236
Expanded uncertainty(P=95%)		$U = k U_c$,k=2					**22.8%**	**22.6%**	

Appendix A. EUT Photos and Test Setup Photos

	
Right Head Cheek	Right Head Tilted
	
Left Head Cheek	Left Head Tilted
	
Front Side (10mm)	Rear Side (10mm)

	
Right Side (10mm)	Left Side (10mm)
	
Top Side (10mm)	Bottom Side (10mm)

Appendix B. Plots of SAR System Check

835MHz System Check

Date: 04/18/2024

DUT: Dipole 835 MHz; Type: D835V2; Serial: 484

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 835 MHz; σ = 0.909 S/m; ε_r = 41.322; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- •Probe: EX3DV4 – SN7380; ConvF(9.62, 9.62, 9.62); Calibrated: June 21, 2023;
- •Sensor-Surface: 4mm (Mechanical Surface Detection)
- •Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- •Phantom: SAM 1; Type: SAM;
- •Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 3.48 W/kg

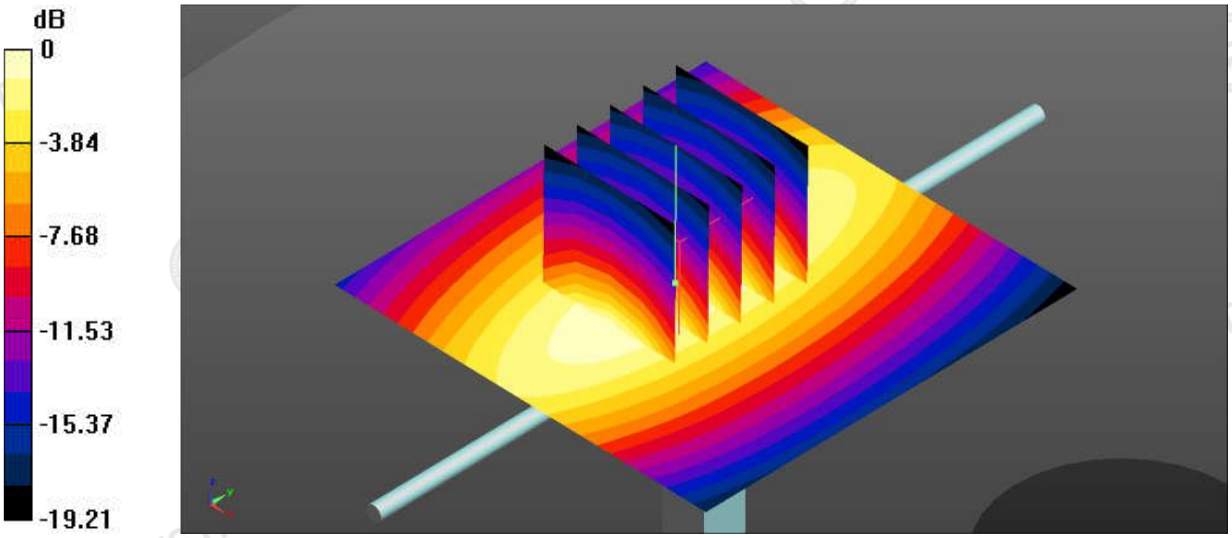
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 62.41 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 4.12 W/kg

SAR(1 g) = 2.43 W/kg; SAR(10 g) = 1.84 W/kg

Maximum value of SAR (measured) =3.51W/kg



0 dB = 3.51 W/kg

System Performance Check 835MHz 250mW

1750 MHz System Check

Date: 04/19/2024

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: 2d158

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1750 MHz; σ = 1.354 S/m; ε_r = 39.314; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- •Probe: EX3DV4 – SN7380; ConvF(8.35, 8.35, 8.35); Calibrated: June 21, 2023;
- •Sensor-Surface: 4mm (Mechanical Surface Detection)
- •Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- •Phantom: SAM 1; Type: SAM;
- •Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 15.7 W/kg

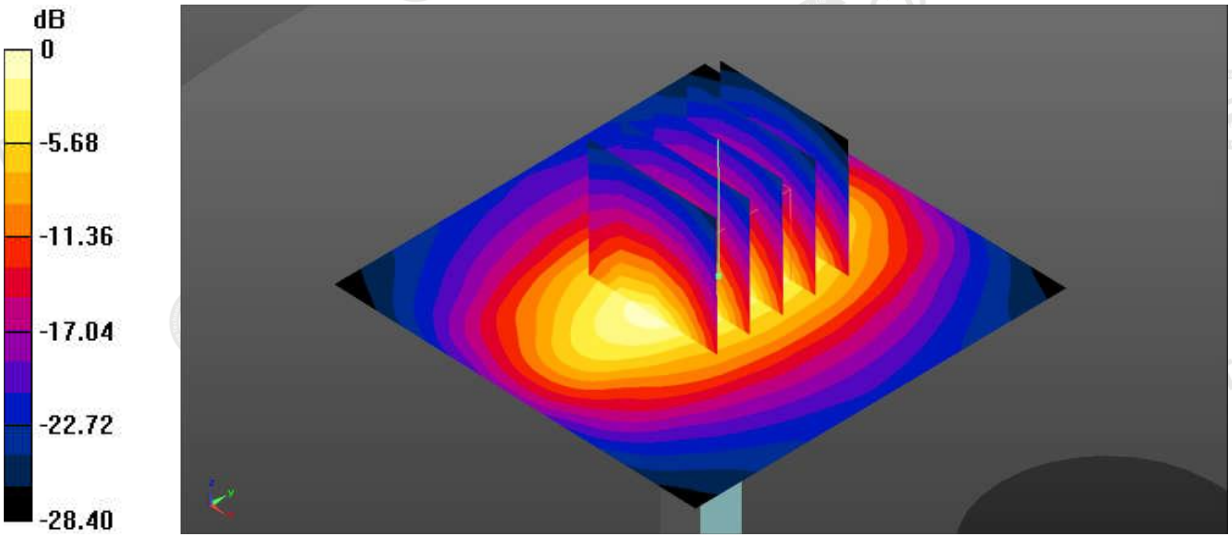
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 90.3 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 19.1 W/kg

SAR(1 g) = 9.40 W/kg; SAR(10 g) = 5.08 W/kg

Maximum value of SAR (measured) = 15.7 W/kg



0 dB = 15.7 W/kg

System Performance Check 1750MHz 250mW

1900MHz System Check Date: 04/23/2024

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d002

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1900 MHz; σ = 1.420 S/m; εr =40.812; ρ = 1000 kg/m3

Phantom section: Flat Section

DASY5 Configuration:

- •Probe: EX3DV4 – SN7380; ConvF(8.05, 8.05, 8.05); Calibrated: June 21, 2023;
- •Sensor-Surface: 4mm (Mechanical Surface Detection)
- •Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- •Phantom: SAM 1; Type: SAM;
- •Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 13.4 W/kg

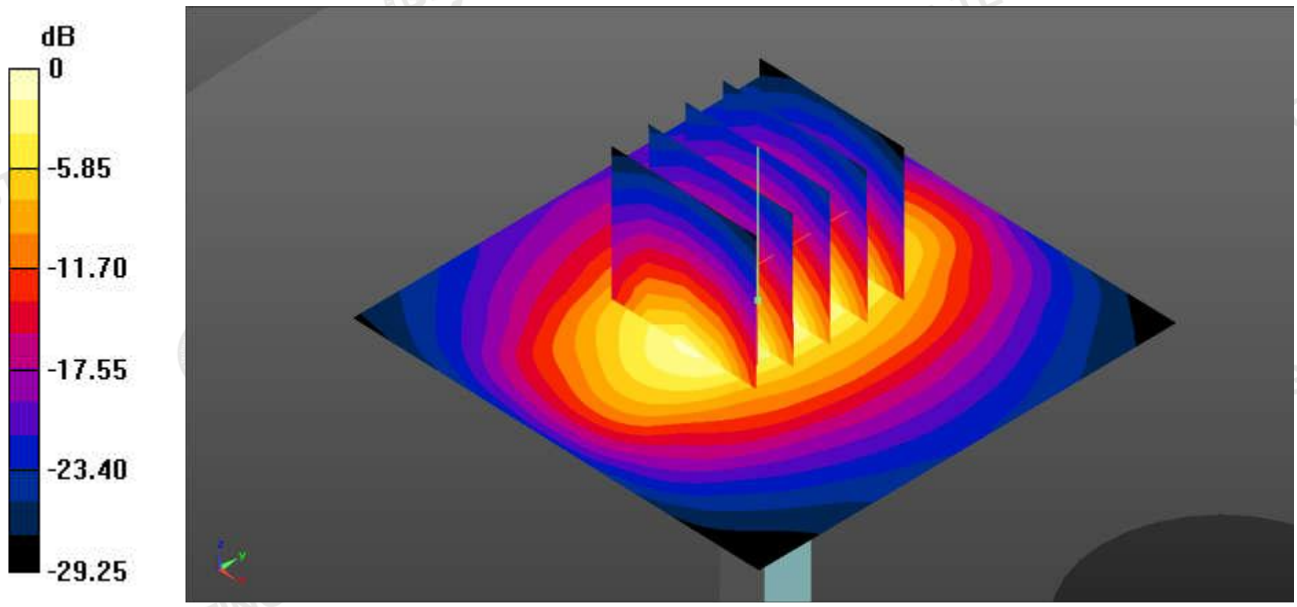
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 82.95 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 16.70 W/kg

SAR(1 g) = 10.33 W/kg; SAR(10 g) = 5.19 W/kg

Maximum value of SAR (measured) = 14.4 W/kg



0 dB = 14.4 W/kg

System Performance Check 1900MHz 250mW

2450MHz System Check Date: 04/24/2024

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 745

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 2450 MHz; σ = 1.796 S/m; εr = 40.266; ρ = 1000 kg/m3

Phantom section: Flat Section

DASY5 Configuration:

- •Probe: EX3DV4 – SN7380; ConvF(7.50, 7.50, 7.50); Calibrated: June 21, 2023;
- •Sensor-Surface: 4mm (Mechanical Surface Detection)
- •Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- •Phantom: SAM 1; Type: SAM;
- •Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (71x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 19.1 W/kg

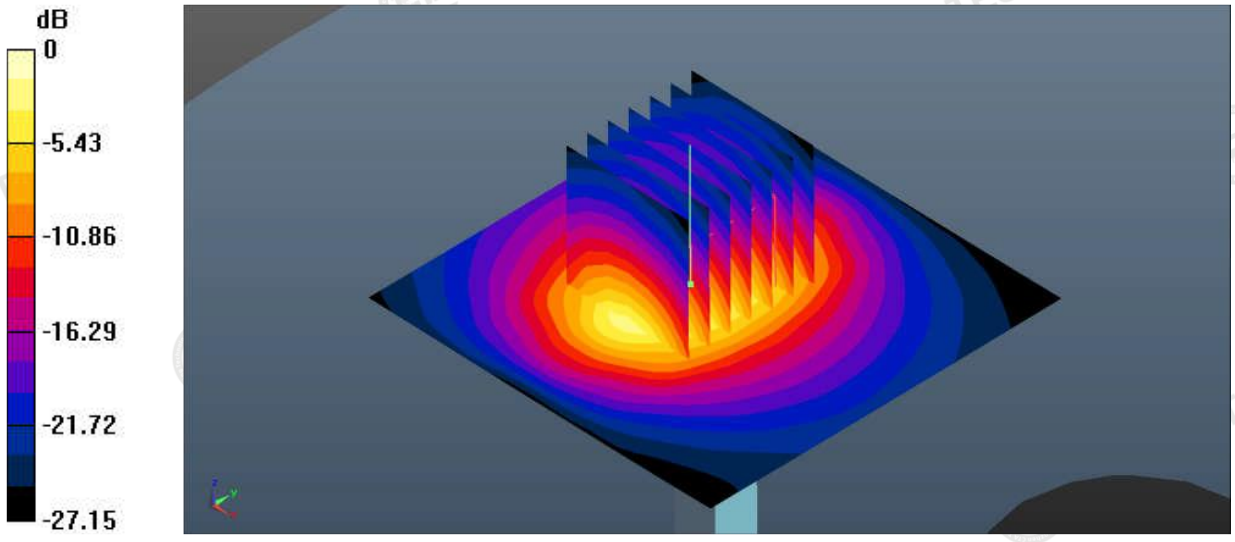
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 106.8 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 25.1 W/kg

SAR(1 g) = 13.35 W/kg; SAR(10 g) = 6.21 W/kg

Maximum value of SAR (measured) = 18.2 W/kg



0 dB = 18.2 W/kg

System Performance Check 2450MHz 250mW

2600MHz System Check Date: 04/25/2024

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1073

Communication System: CW; Frequency: 2600 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 2600 MHz; σ = 1.980 S/m; εr = 39.737; ρ = 1000 kg/m3

Phantom section: Flat Section

DASY5 Configuration:

- •Probe: EX3DV4 – SN7380; ConvF(7.35, 7.35, 7.35); Calibrated: June 21, 2023;
- •Sensor-Surface: 4mm (Mechanical Surface Detection)
- •Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- •Phantom: SAM 1; Type: SAM;
- •Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (91x101x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 20.5 W/kg

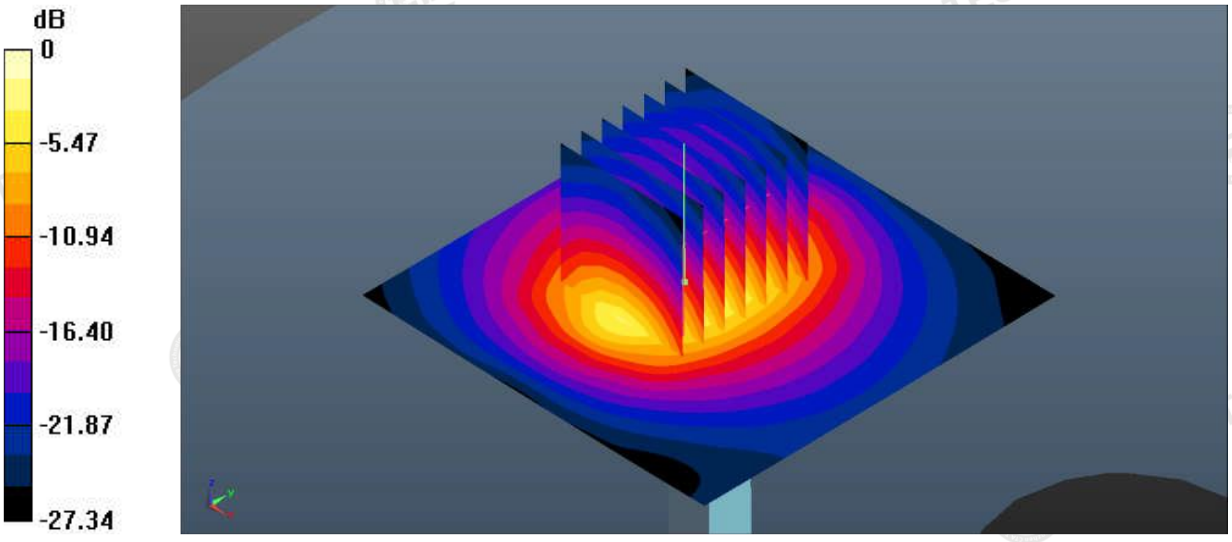
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 107.5 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 28.0 W/kg

SAR(1 g) = 13.96 W/kg; SAR(10 g) = 6.46 W/kg

Maximum value of SAR (measured) = 20.5 W/kg



0 dB = 20.5 W/kg

System Performance Check 2600MHz 250mW

Appendix C. Plots of SAR Test Data

#1.

Date: 04/18/2024

GSM850_GSM Voice_Right Cheek_0mm_Ch251

Communication System: UID 0, GSM (0); Frequency: 848.8 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.891 S/m; ε_r = 41.662 ; ρ = 1000 kg/m^3

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(9.62, 9.62, 9.62); Calibrated: June 21, 2023;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.324 W/kg

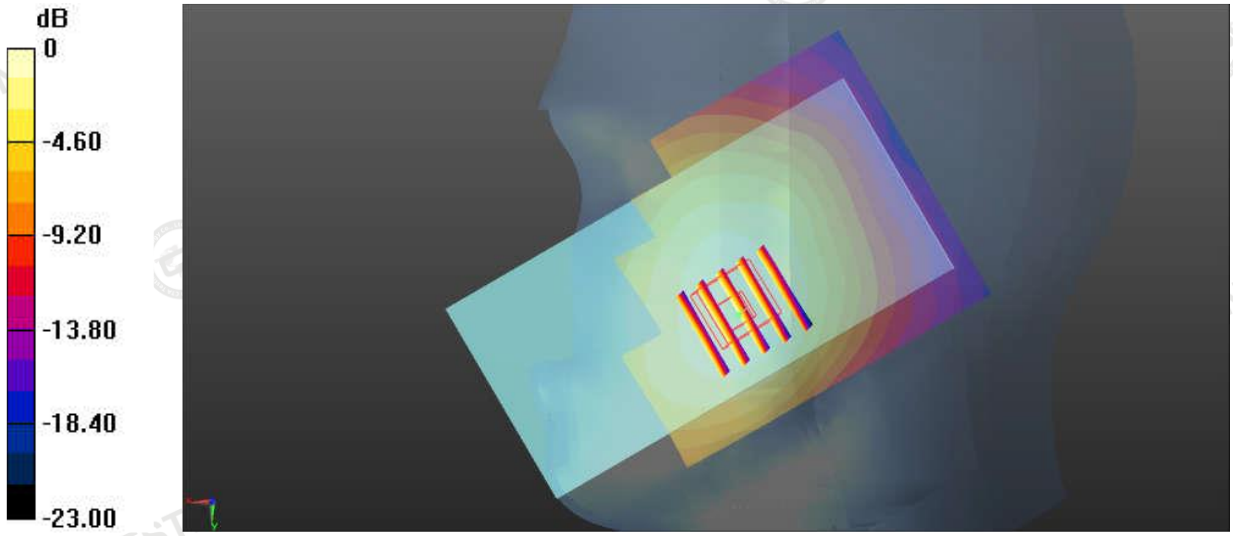
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.43 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.438 W/kg

SAR(1 g) = 0.330 W/kg; SAR(10 g) = 0.214 W/kg

Maximum value of SAR (measured) = 0.305 W/Kg



#2.

Date: 04/23/2024

GSM1900_GSM Voice_Right Cheek_0mm_Ch512

Communication System: UID 0, GSM (0); Frequency: 1850.2 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.407 S/m; ε_r = 39.320; ρ = 1000 kg/m^3

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(8.05, 8.05, 8.05); Calibrated: June 21, 2023;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.374 W/kg

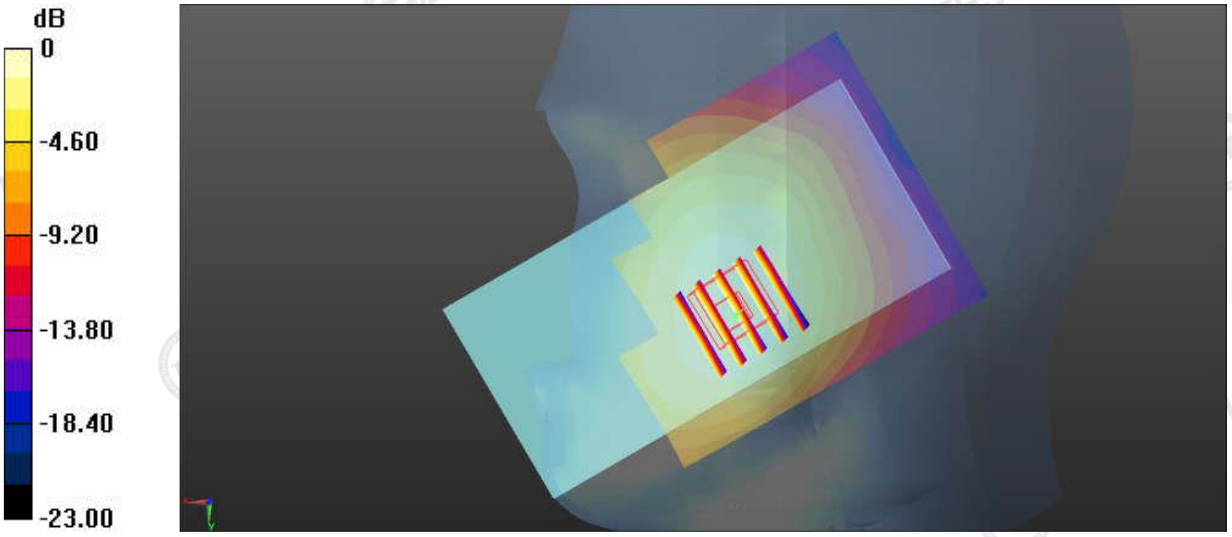
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.441 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.458 W/kg

SAR(1 g) = 0.211 W/kg; SAR(10 g) = 0.105 W/kg

Maximum value of SAR (measured) = 0.311 W/Kg



#3.

Date: 04/23/2024

WCDMA II_RMC 12.2Kbps_Right Cheek_0mm_Ch9262

Communication System: UID 0, WCDMA (0); Frequency: 1852.4 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.428 S/m; ε_r = 40.700; ρ = 1000 kg/m^3

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(8.05, 8.05, 8.05); Calibrated: June 21, 2023;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.235 W/kg

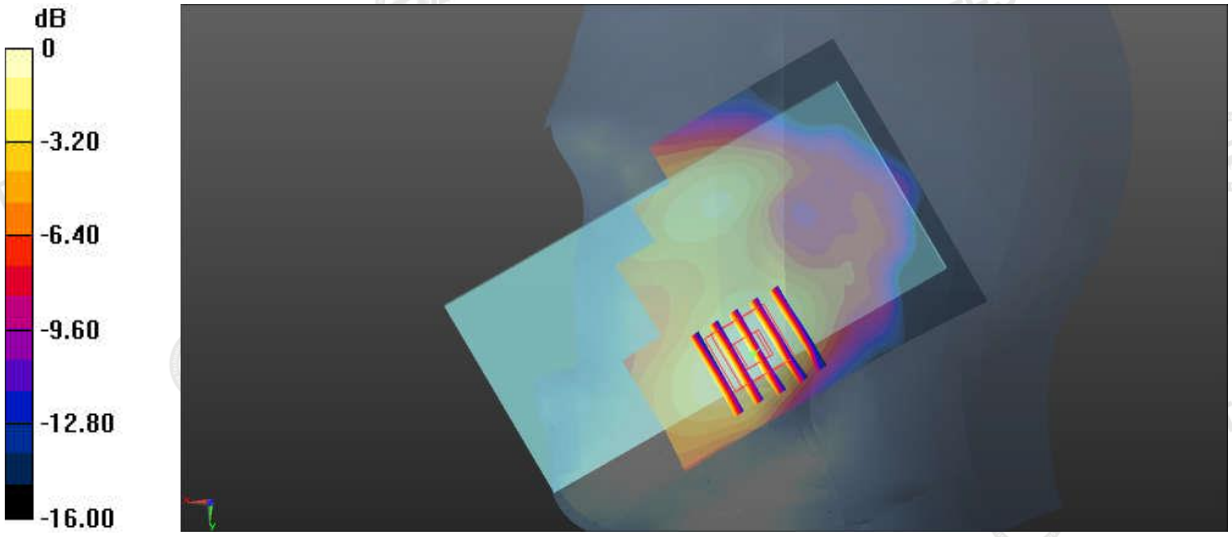
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.044 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.287 W/kg

SAR(1 g) = 0.185 W/kg; SAR(10 g) = 0.098 W/kg

Maximum value of SAR (measured) = 0.217 W/Kg



#4.

Date: 04/19/2024

WCDMA IV_RMC 12.2Kbps_Right Cheek_0mm_Ch1412

Communication System: UID 0, WCDMA (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1732.6 MHz; σ = 1.334 S/m; ε_r = 40.974; ρ = 1000 kg/m^3

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(8.35, 8.35, 8.35); Calibrated: June 21, 2023;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.218 W/kg

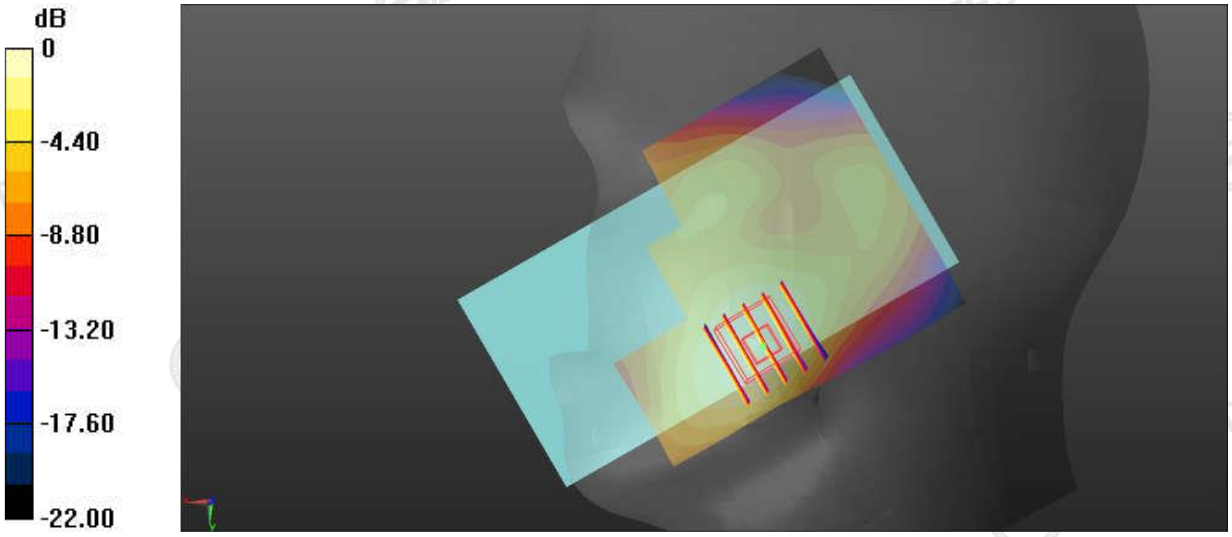
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.821 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.357 W/kg

SAR(1 g) = 0.201 W/kg; SAR(10 g) = 0.144 W/kg

Maximum value of SAR (measured) = 0.200 W/Kg



#5.

Date: 04/18/2024

WCDMA V_RMC 12.2Kbps_Right Cheek_0mm_Ch4132

Communication System: UID 0, WCDMA (0); Frequency: 826.4 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.889 S/m; ε_r = 41.542; ρ = 1000 kg/m^3

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(9.62, 9.62, 9.62); Calibrated: June 21, 2023;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.544 W/kg

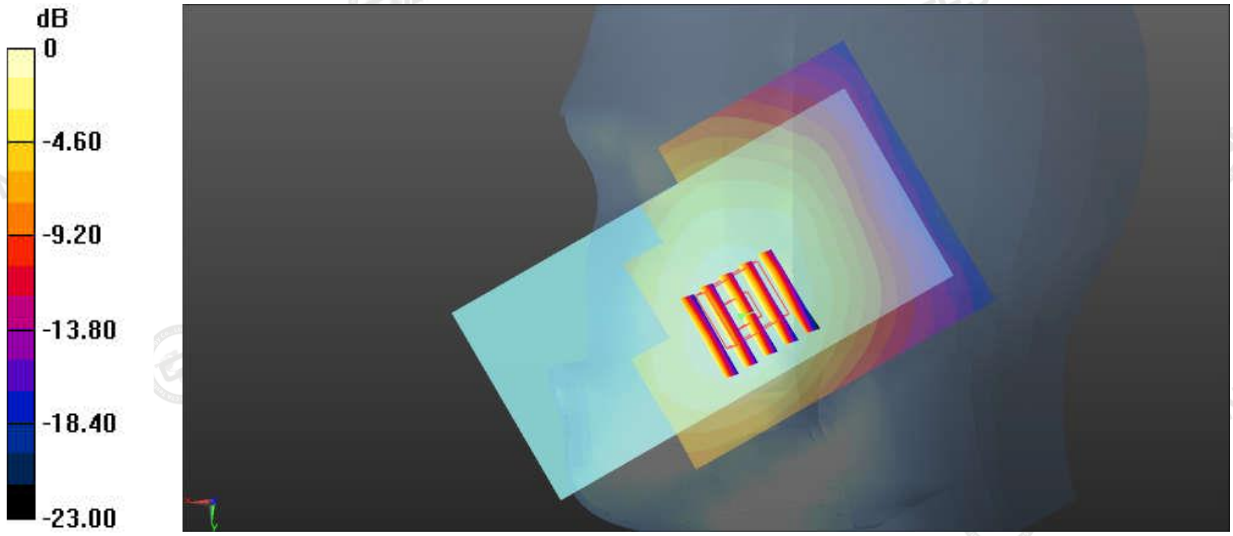
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.855 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.621 W/kg

SAR(1 g) = 0.471 W/kg; SAR(10 g) = 0.277 W/kg

Maximum value of SAR (measured) = 0.485 W/Kg



#6.

Date: 04/19/2024

LTE Band 4_20M_QPSK_1RB#0_Right Cheek_0mm_Ch20300

Communication System: UID 0, LTE (0); Frequency: 1775.0 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): = 1775.0 MHz; σ = 1.341 S/m; εr = 40.894; ρ = 1000 kg/m3

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(8.35, 8.35, 8.35); Calibrated: June 21, 2023
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.338 W/kg

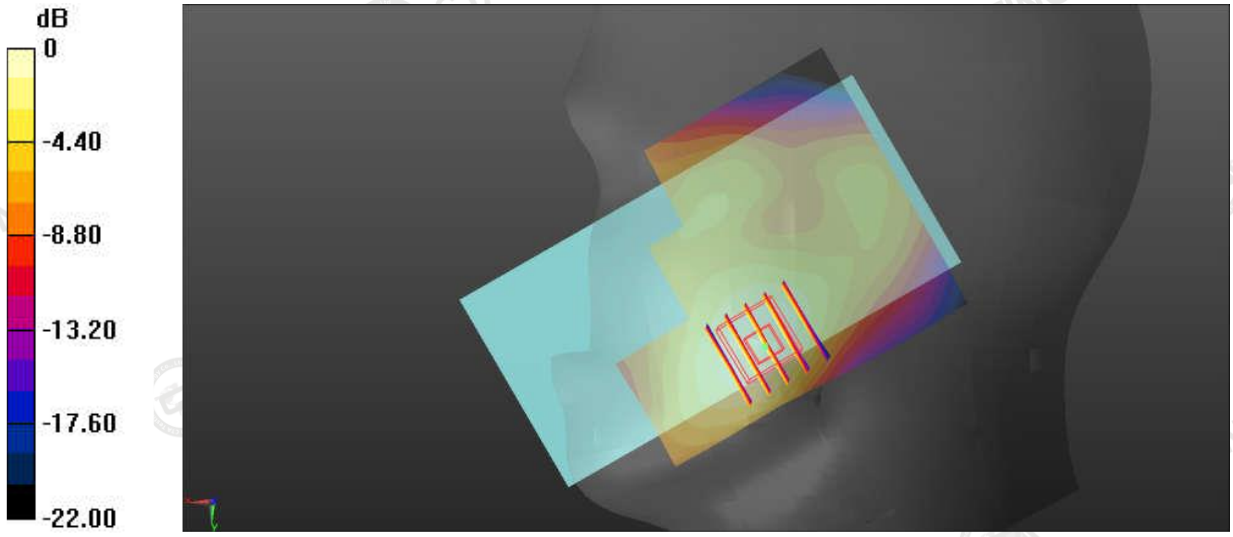
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.745 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.457 W/kg

SAR(1 g) = 0.211 W/kg; SAR(10 g) = 0.145 W/kg

Maximum value of SAR (measured) = 0.377 W/Kg



#7.

Date: 04/18/2024

LTE Band 5_10M_QPSK_1RB#0_Right Cheek_0mm_Ch20600

Communication System: UID 0, LTE (0); Frequency: 844.0 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 844.0 MHz; σ = 0.884 S/m; εr = 41.235; ρ = 1000 kg/m3

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(9.62, 9.62, 9.62); Calibrated: June 21, 2023;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.511 W/kg

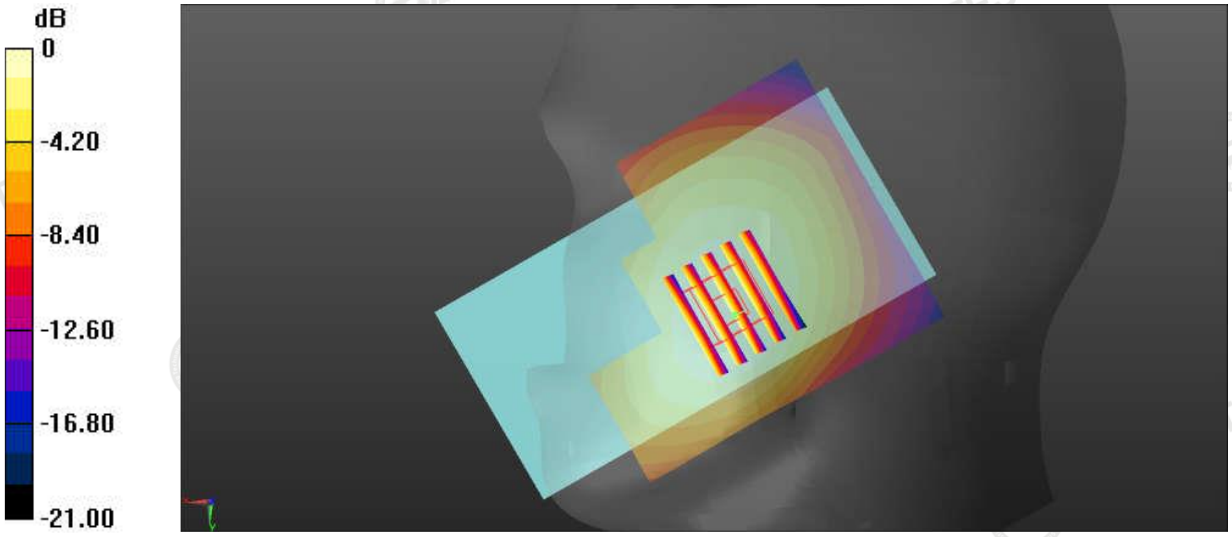
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.565 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.741 W/kg

SAR(1 g) = 0.505 W/kg; SAR(10 g) = 0.329 W/kg

Maximum value of SAR (measured) = 0.615 W/Kg



#8.

Date: 04/25/2024

LTE Band 7_20M_QPSK_1RB#99_Right Cheek_0mm_Ch21350

Communication System: UID 0, LTE (0); Frequency: 2560.0 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 2560.0 MHz; σ = 1.962 S/m; εr = 39.862; ρ = 1000 kg/m3

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(7.35, 7.35, 7.35); Calibrated: June 21, 2023;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (91x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.450 W/kg

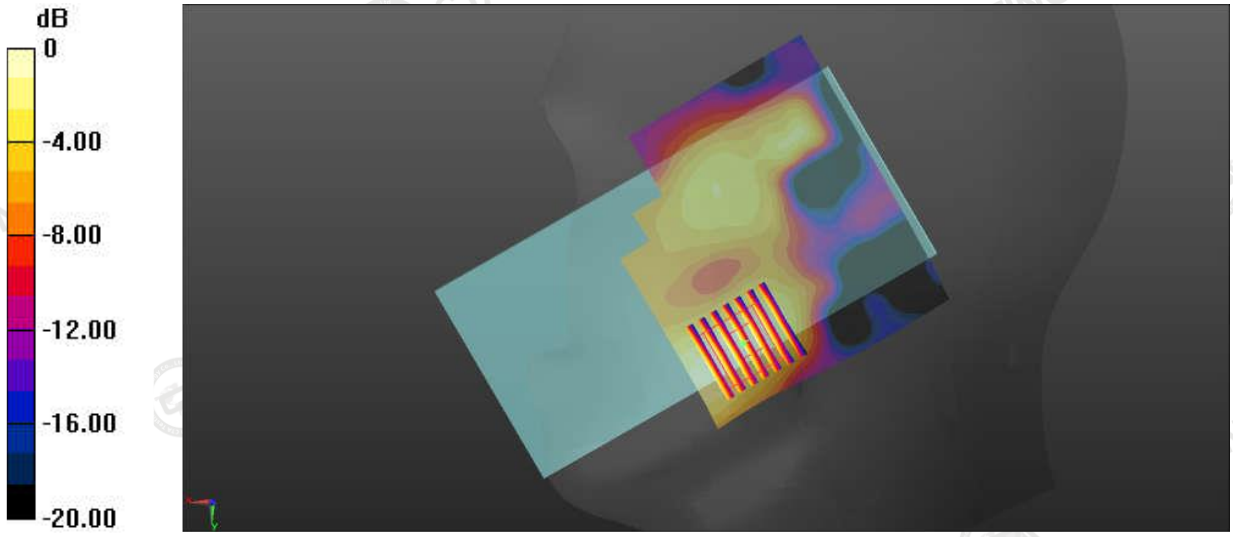
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.25 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.574 W/kg

SAR(1 g) = 0.284 W/kg; SAR(10 g) = 0.156 W/kg

Maximum value of SAR (measured) = 0.410 W/Kg



#9.

Date: 04/23/2024

LTE Band 25_20M_QPSK_1RB#49_ Left Cheek _0mm_Ch26590

Communication System: UID 0, Generic LTE (0); Frequency: 1905.0 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1905.0 MHz; σ = 1.374 S/m; εr =38.880; ρ = 1000 kg/m3

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(8.05, 8.05, 8.05); Calibrated: June 21, 2023;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.254 W/kg

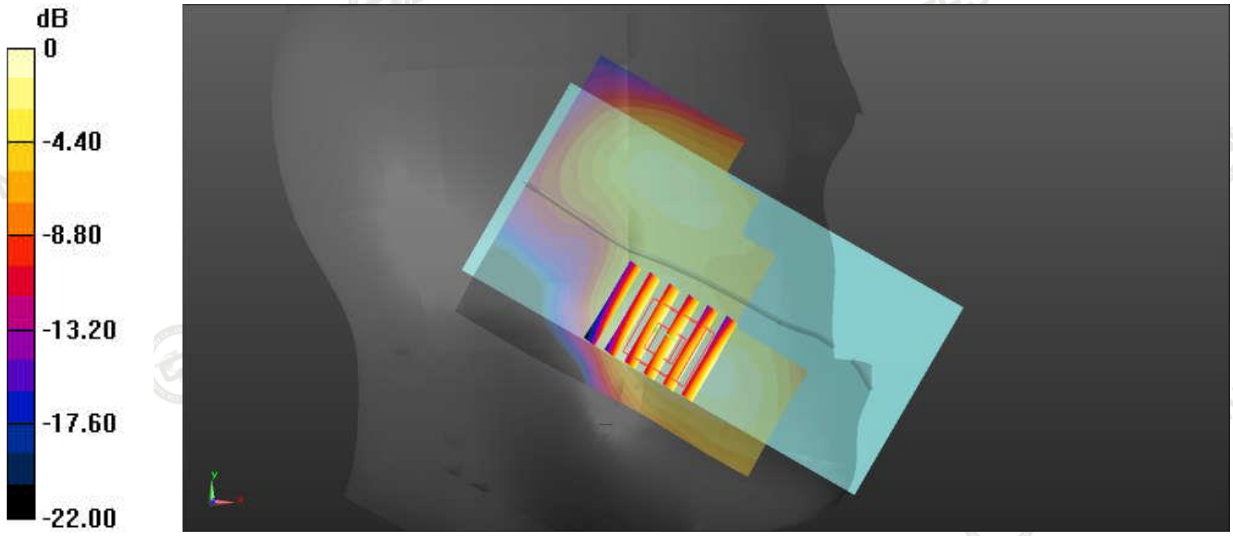
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.544 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.368 W/kg

SAR(1 g) = 0.204 W/kg; SAR(10 g) = 0.132 W/kg

Maximum value of SAR (measured) = 0.248 W/Kg



#10.

Date: 04/18/2024

LTE Band 26 Lower band_10M_QPSK_1RB#25_Left Cheek_0mm_Ch26740

Communication System: UID 0, LTE (0); Frequency: 819.0 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): f = 819.0 MHz; σ = 0.879 S/m; εr = 41.537; ρ = 1000 kg/m3

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(9.62, 9.62, 9.62); Calibrated: June 21, 2023;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.525 W/kg

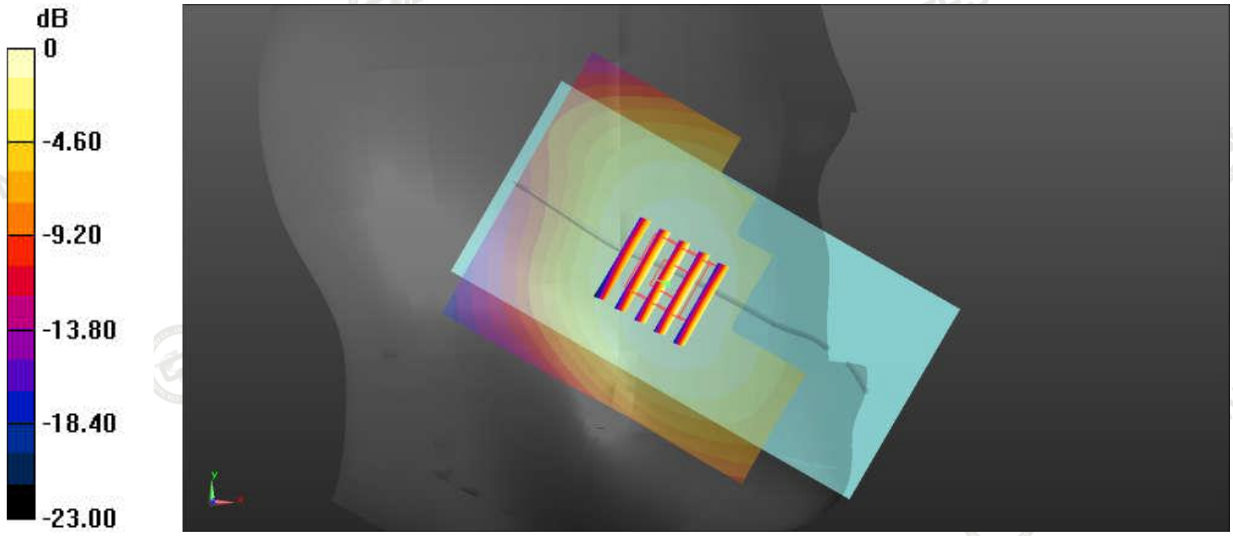
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.85 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.724 W/kg

SAR(1 g) = 0.477 W/kg; SAR(10 g) = 0.274 W/kg

Maximum value of SAR (measured) = 0.511 W/Kg



#11.

Date: 04/18/2024

LTE Band 26 Higher band_15M_QPSK_1RB#0_Right Cheek_0mm_Ch26865

Communication System: UID 0, LTE (0); Frequency: 831.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.902 S/m; εr = 41.837; ρ = 1000 kg/m3

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(9.62, 9.62, 9.62); Calibrated: June 21, 2023;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.447 W/kg

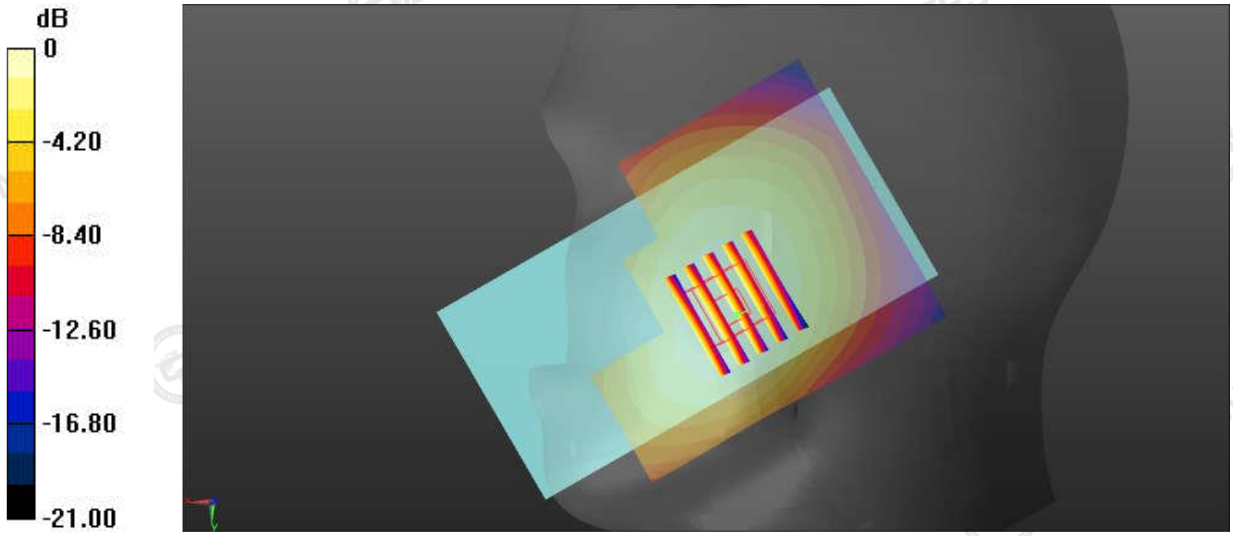
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.362 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.749 W/kg

SAR(1 g) = 0.462 W/kg; SAR(10 g) = 0.254 W/kg

Maximum value of SAR (measured) = 0.432 W/Kg



#12.

Date: 04/19/2024

LTE Band 66_10M_QPSK_1RB#25_Right Cheek_0mm_Ch132622

Communication System: UID 0, LTE (0); Frequency: 1775.0 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): = 1775.0 MHz; σ = 1.348 S/m; εr = 39.763; ρ = 1000 kg/m3

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(8.35, 8.35, 8.35); Calibrated: June 21, 2023
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.325 W/kg

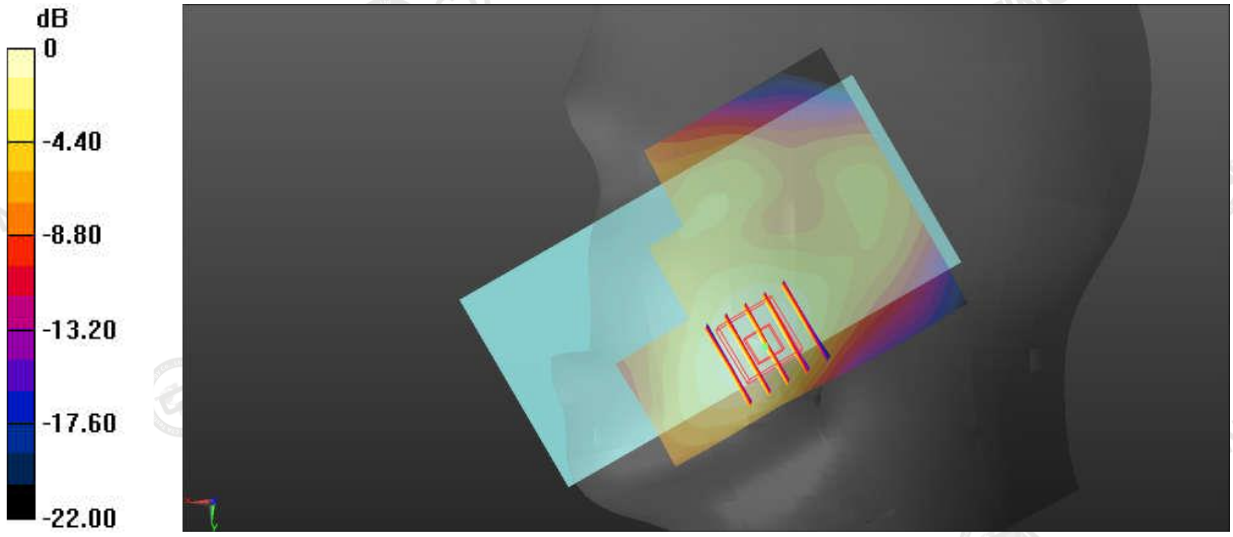
Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.532 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.452 W/kg

SAR(1 g) = 0.211 W/kg; SAR(10 g) = 0.132 W/kg

Maximum value of SAR (measured) = 0.385 W/Kg



#13.

Date: 04/25/2024

LTE Band 41_20M_QPSK_1RB#99_Right Cheek_0mm_Ch41140

Communication System: UID 0, LTE (0); Frequency: 2645.0 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): = 2645.0 MHz; σ = 1.984 S/m; εr = 38.676; ρ = 1000 kg/m3

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(10.02, 10.02, 10.02); Calibrated: June 21, 2023
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (91x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.265 W/kg

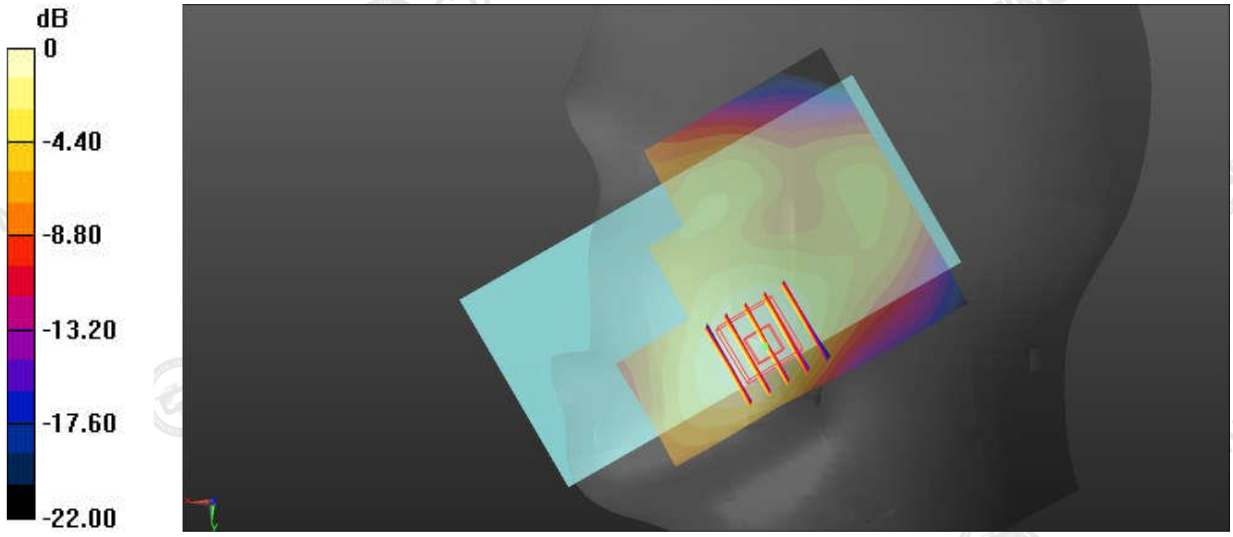
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.098 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.456 W/kg

SAR(1 g) = 0.213 W/kg; SAR(10 g) = 0.134 W/kg

Maximum value of SAR (measured) = 0.305 W/Kg



#14.

Date: 04/24/2024

WLAN2.4GHz_802.11b 1Mbps_Left Cheek_0mm_Ch01

Communication System: UID 0, WIFI (0); Frequency: 2412.0 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 2412.0 MHz; σ = 1.829 S/m; ε_r = 38.440; ρ = 1000 kg/m^3

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(7.50, 7.50, 7.50); Calibrated: June 21, 2023
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (91x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.425 W/kg

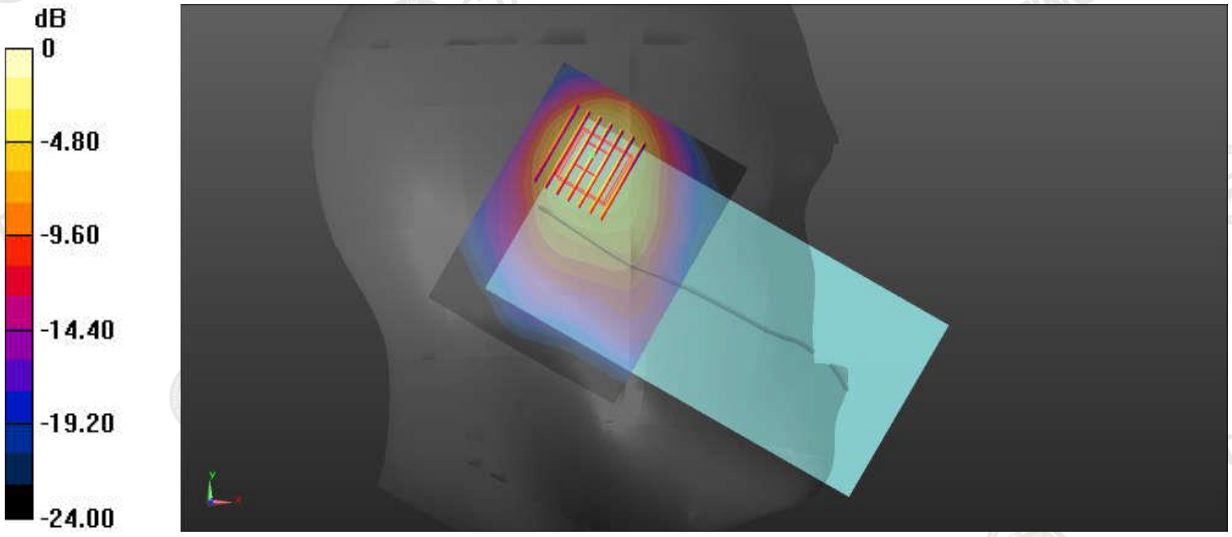
Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.57 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.721 W/kg

SAR(1 g) = 0.404 W/kg; SAR(10 g) = 0.215 W/kg

Maximum value of SAR (measured) = 0.632 W/Kg



#15.

Date: 04/24/2024

Bluetooth_GFSK_Left Cheek_0mm_Ch00

Communication System: UID 0, WIFI (0); Frequency: 2402.0 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 2402.0 MHz; σ = 1.791 S/m; ε_r = 40.062; ρ = 1000 kg/m^3

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(7.50, 7.50, 7.50); Calibrated: June 21, 2023
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (91x71x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.111 W/kg

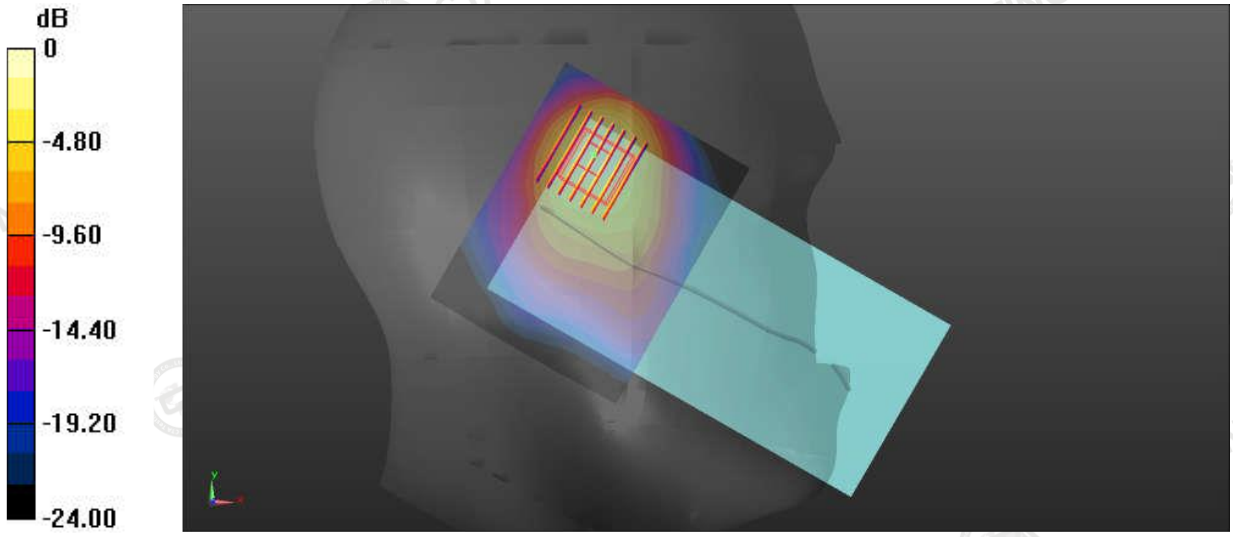
Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.85 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.303 W/kg

SAR(1 g) = 0.103 W/kg; SAR(10 g) = 0.057 W/kg

Maximum value of SAR (measured) = 0.215 W/Kg



#16.

Date: 04/18/2024

GPRS850 _ 2Tx slots _ Rear Side _CH190_10mm

Communication System: UID 0, GSM (0); Frequency: 836.6 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.915 S/m; ε_r = 42.264; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(9.62, 9.62, 9.62); Calibrated: June 21, 2023
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (71x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.889 W/Kg

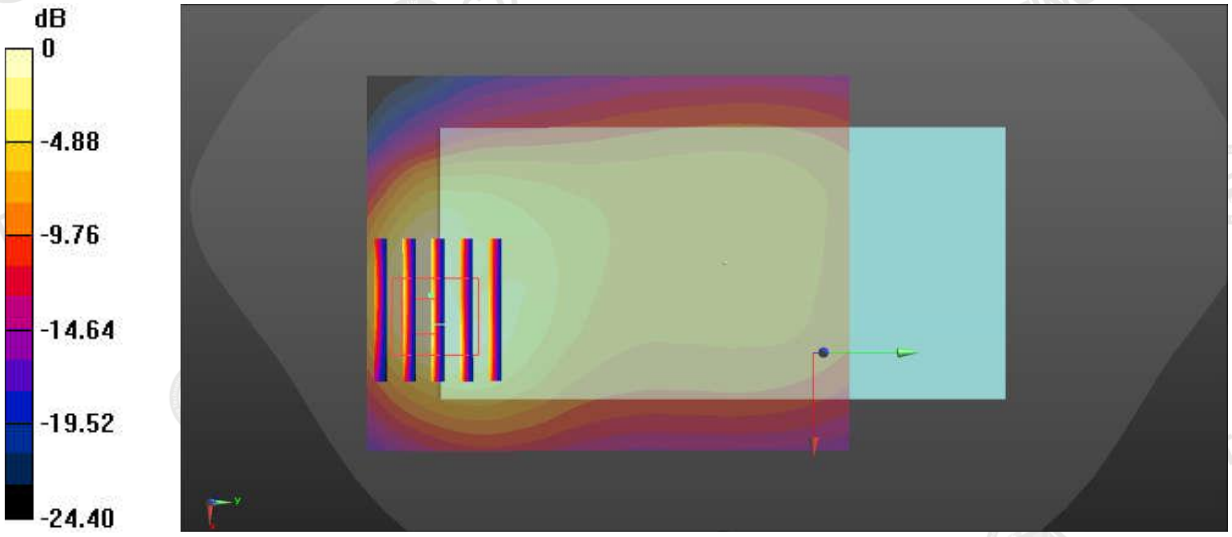
Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.67 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.974 W/kg

SAR(1 g) = 0.547 W/Kg; SAR(10 g) = 0.347W/Kg

Maximum value of SAR (measured) = 0.786 W/Kg



#17.

Date: 04/23/2024

GPRS 1900 _3Tx slots _Rear Side_10mm_CH512

Communication System: UID 0, GSM (0); Frequency: 1850.2 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1850.2 MHz; σ = 1.429 S/m; εr =39.104; ρ = 1000 kg/m3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(8.05, 8.05, 8.05); Calibrated: June 21, 2023
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (71x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.19 W/Kg

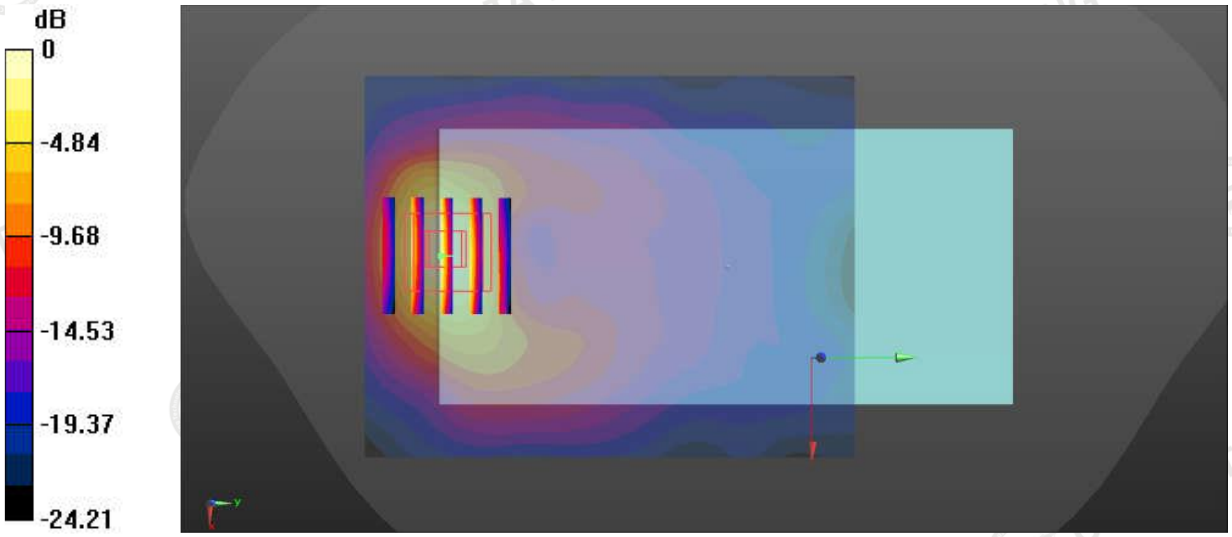
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.85 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 1.38 W/kg

SAR(1 g) = 0.744 W/Kg; SAR(10 g) = 0.398 W/Kg

Maximum value of SAR (measured) = 1.15 W/Kg



#18.

Date: 04/23/2024

WCDMA II_RMC 12.2Kbps_ Bottom Side_10mm_Ch9262

Communication System: UID 0, Generic WCDMA (0); Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.426 S/m; ε_r = 39.504; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(8.05, 8.05, 8.05); Calibrated: June 21, 2023
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (41x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.05 W/Kg

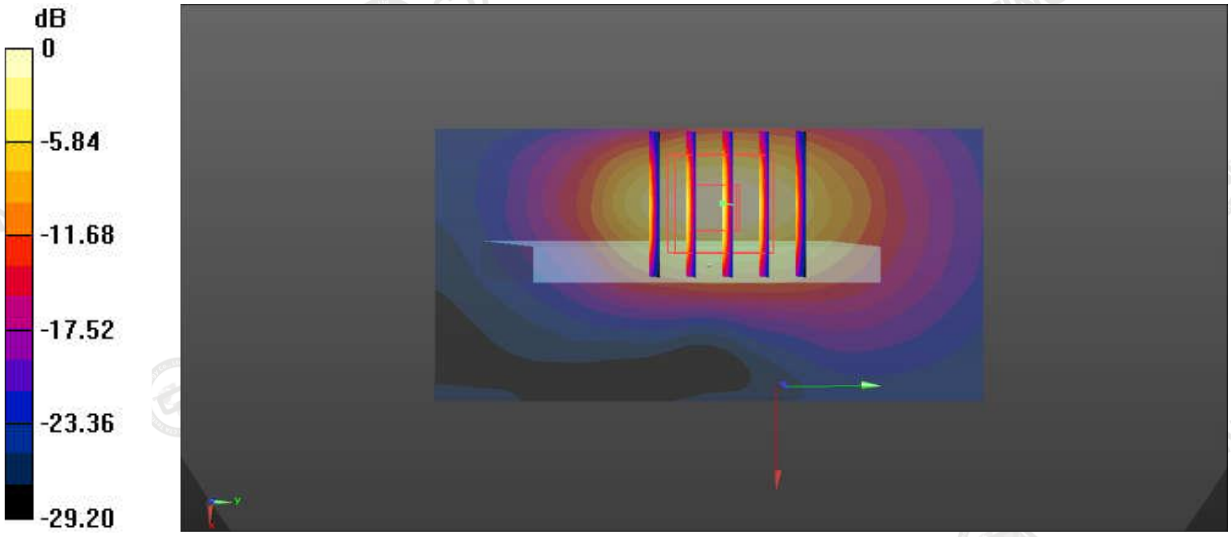
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.54 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 1.47 W/kg

SAR(1 g) = 0.774 W/Kg; SAR(10 g) = 0.530 W/Kg

Maximum value of SAR (measured) = 1.35 W/Kg



#19.

Date: 04/19/2024

WCDMA IV_RMC 12.2Kbps_ Bottom Side_10mm_Ch1412

Communication System: UID 0, Generic WCDMA (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1732.6 MHz; σ = 1.393 S/m; εr = 39.948; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(8.35, 8.35, 8.35); Calibrated: June 21, 2023
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (41x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.945 W/Kg

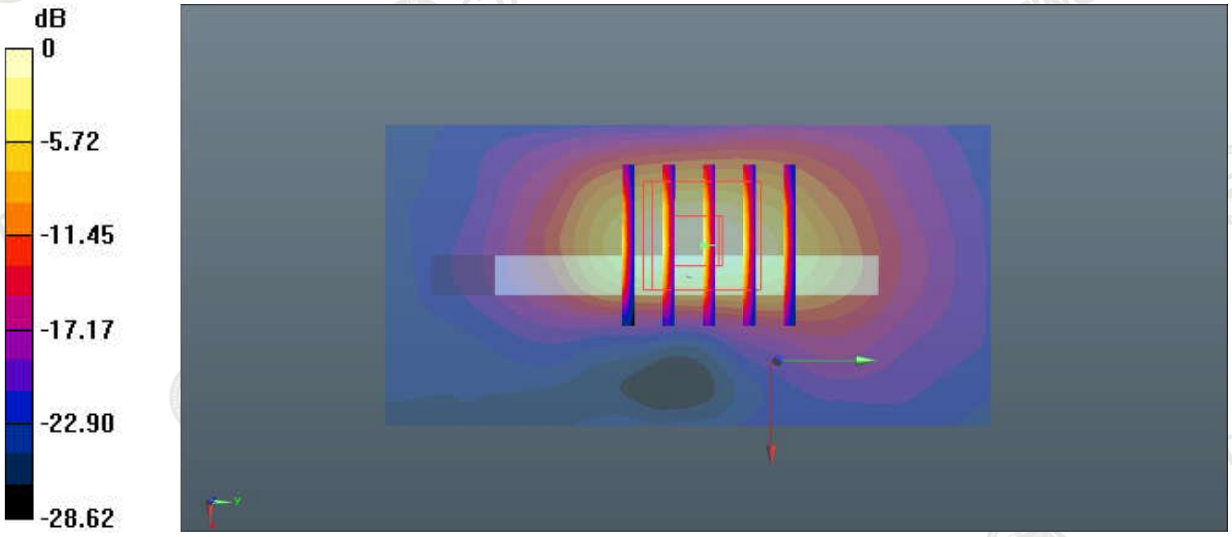
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.65 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.15 W/kg

SAR(1 g) = 0.662 W/Kg; SAR(10 g) = 0.232 W/Kg

Maximum value of SAR (measured) = 1.12 W/Kg



#20.

Date: 04/18/2024

WCDMA V_RMC 12.2Kbps_ Rear Side_10mm_Ch4132

Communication System: UID 0, Generic WCDMA (0); Frequency: 826.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.887 S/m; εr = 42.247; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(9.62, 9.62, 9.62); Calibrated: June 21, 2023
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.09 W/Kg

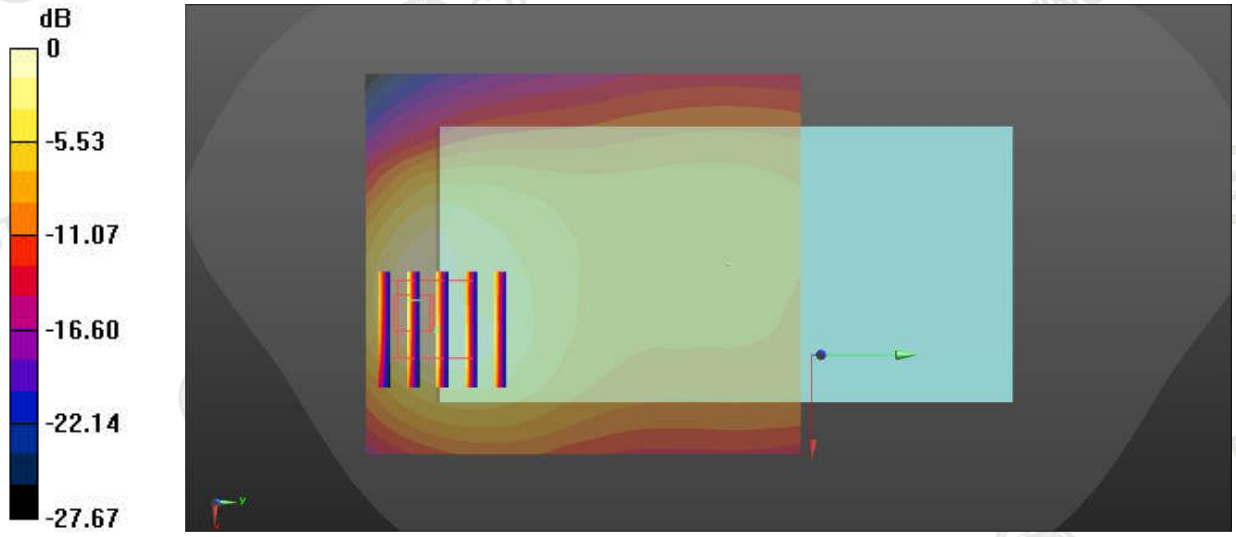
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.47 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.36 W/Kg

SAR(1 g) = 0.754 W/Kg; SAR(10 g) = 0.514 W/Kg

Maximum value of SAR (measured) = 1.21 W/Kg



#21.

Date: 04/19/2024

LTE Band 4_20M_QPSK_1RB#0_ Bottom Side _10mm_Ch20300

Communication System: UID 0, Generic LTE (0); Frequency: 1775.0 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1775.0 MHz; σ = 1.356 S/m; εr = 39.807; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(8.35, 8.35, 8.35); Calibrated: June 21, 2023
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (41x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.769 W/Kg

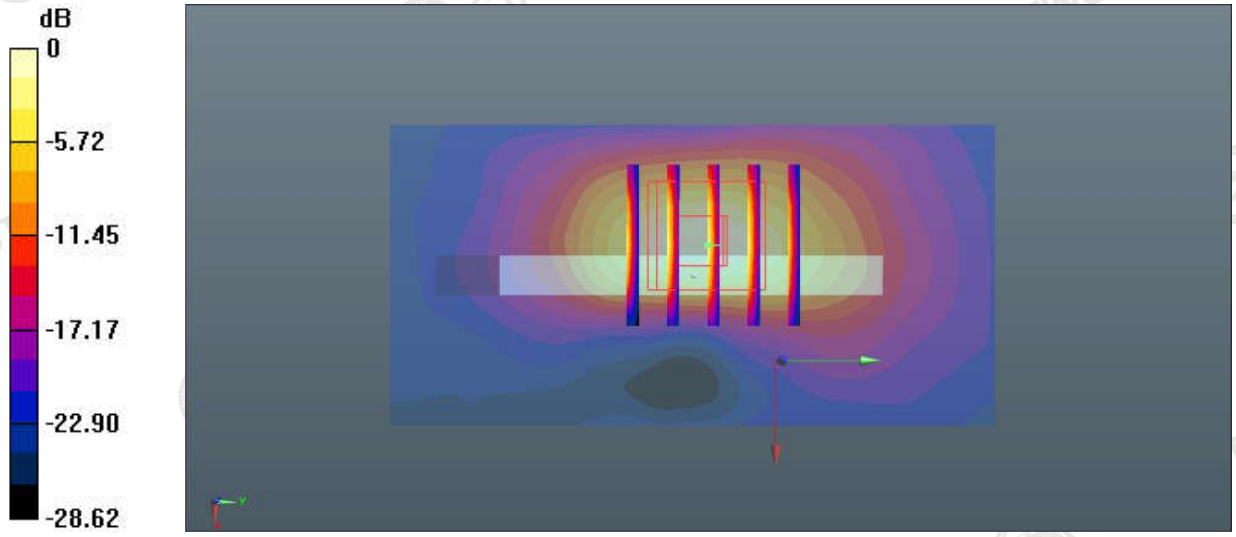
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.58 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.01 W/kg

SAR(1 g) = 0.655 W/Kg; SAR(10 g) = 0.271 W/Kg

Maximum value of SAR (measured) = 0.821 W/Kg



#22.

Date: 04/18/2024

LTE Band 5_10M_QPSK_1RB#0_ Rear Side _10mm_Ch20600

Communication System: UID 0, Generic LTE (0); Frequency: 844.0 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): f = 844.0 MHz; σ = 0.889 S/m; εr = 40.496; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(9.62, 9.62, 9.62); Calibrated: June 21, 2023
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.12 W/Kg

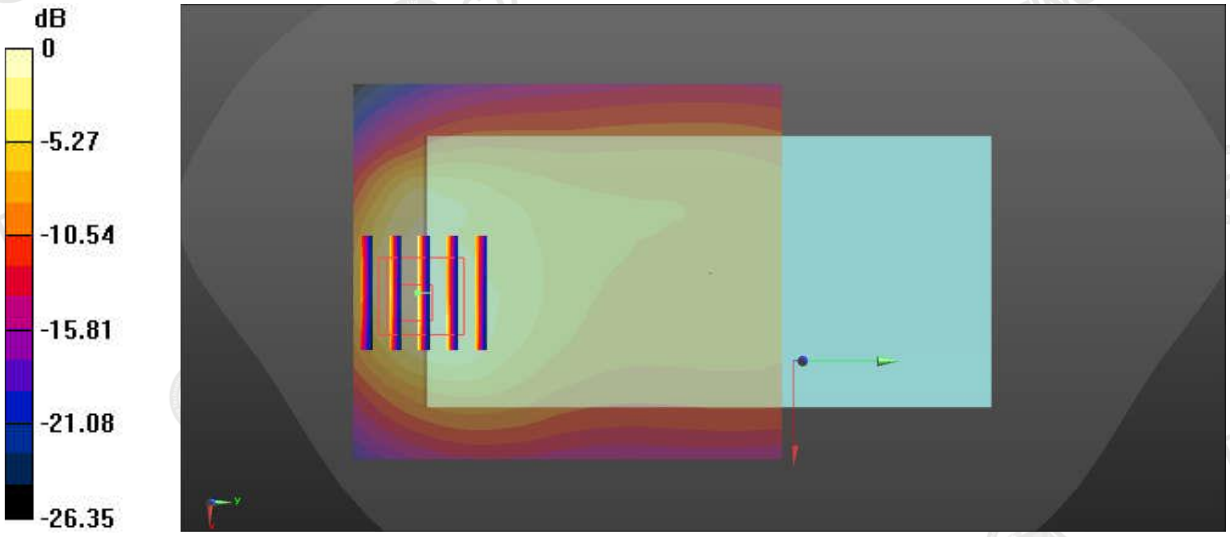
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.25 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.56 W/kg

SAR(1 g) = 0.875 W/Kg; SAR(10 g) = 0.483 W/Kg

Maximum value of SAR (measured) = 1.49 W/Kg



#23.

Date: 04/25/2024

LTE Band 7_20M_QPSK_1RB#99_ Rear Side _10mm_Ch21350

Communication System: UID 0, Generic LTE (0); Frequency: 2560.0 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): f = 2560.0 MHz; σ = 1.961 S/m; εr = 39.023; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(7.35, 7.35, 7.35); Calibrated: June 21, 2023
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (91x101x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.985 W/Kg

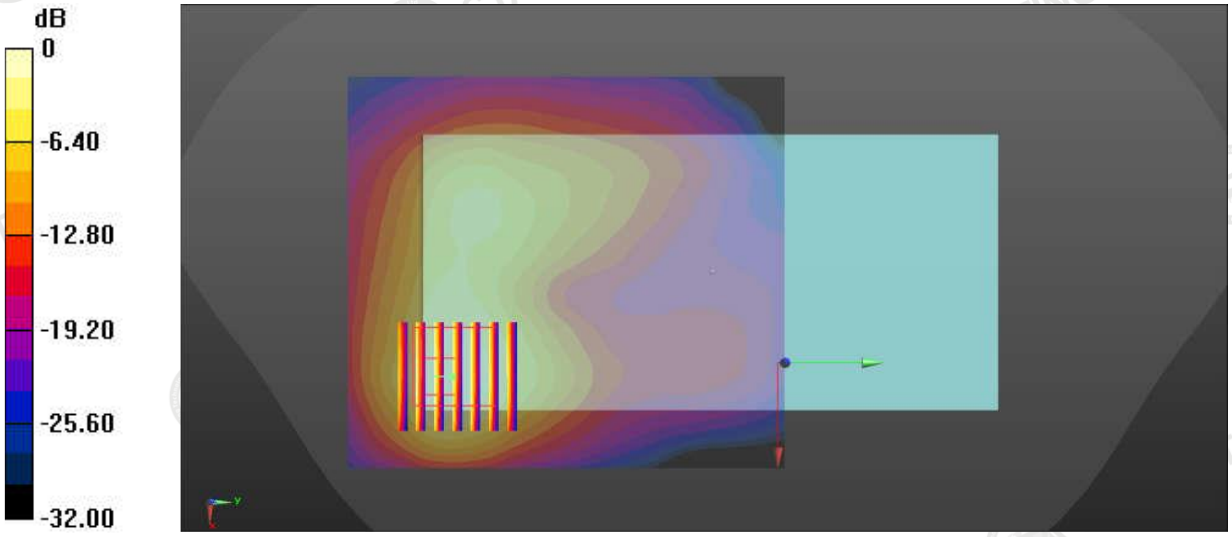
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.451 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 1.35 W/kg

SAR(1 g) = 0.740 W/kg; SAR(10 g) = 0.377 W/kg

Maximum value of SAR (measured) = 1.22 W/Kg



#24.

Date: 04/23/2024

LTE Band 25_20M_QPSK_1RB#49_ Bottom Side _10mm_Ch26590

Communication System: UID 0, Generic LTE (0); Frequency: 1905.0 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1905.0 MHz; σ = 1.391 S/m; εr = 39.392; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(8.05, 8.05, 8.05); Calibrated: June 21, 2023
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (41x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.01 W/Kg

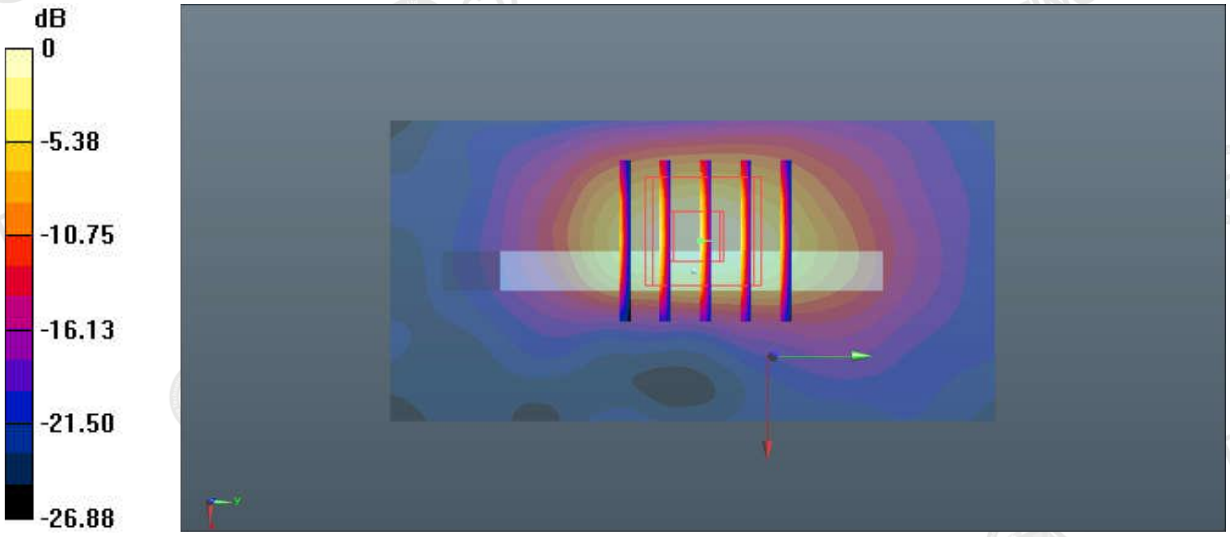
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.953 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.415 W/kg

SAR(1 g) = 0.841 W/Kg; SAR(10 g) = 0.401 W/Kg

Maximum value of SAR (measured) = 1.31 W/Kg



#25.

Date: 04/18/2024

LTE Band 26 lower band_10M_QPSK_1RB#25_ Rear Side _10mm_Ch26740

Communication System: UID 0, Generic LTE (0); Frequency: 819.0 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): f = 819.0 MHz; σ = 0.886 S/m; εr = 41.685; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(9.62, 9.62, 9.62); Calibrated: June 21, 2023
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.875 W/Kg

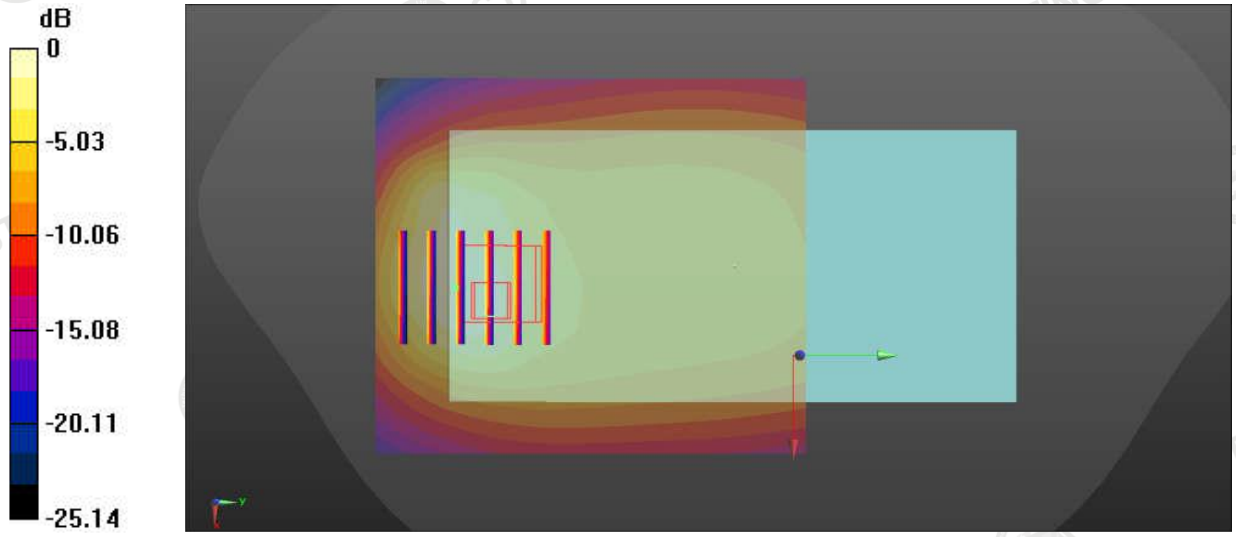
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.22 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.521 W/kg

SAR(1 g) = 0.733 W/Kg; SAR(10 g) = 0.318 W/Kg

Maximum value of SAR (measured) = 1.27 W/Kg



#26.

Date: 04/18/2024

LTE Band 26 Higher band_15M_QPSK_1RB#0_ Rear Side _10mm_Ch26865

Communication System: UID 0, Generic LTE (0); Frequency: 831.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.908 S/m; εr = 41.728; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(9.62, 9.62, 9.62); Calibrated: June 21, 2023
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.04 W/Kg

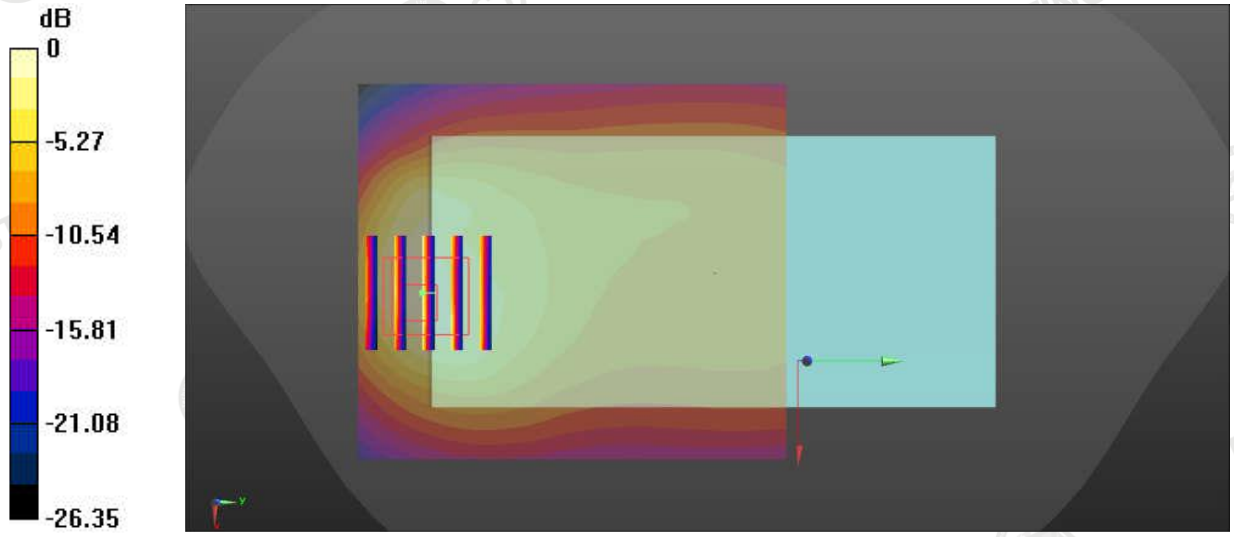
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.42 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 2.18 W/kg

SAR(1 g) = 0.914 W/Kg; SAR(10 g) = 0.503 W/Kg

Maximum value of SAR (measured) = 1.98 W/Kg



#27.

Date: 04/19/2024

LTE Band 66_10M_QPSK_1RB#25_ Bottom Side _10mm_Ch132622

Communication System: UID 0, Generic LTE (0); Frequency: 1775.0 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1775.0 MHz; σ = 1.366 S/m; εr = 40.112; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(8.35, 8.35, 8.35); Calibrated: June 21, 2023
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (41x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.758 W/Kg

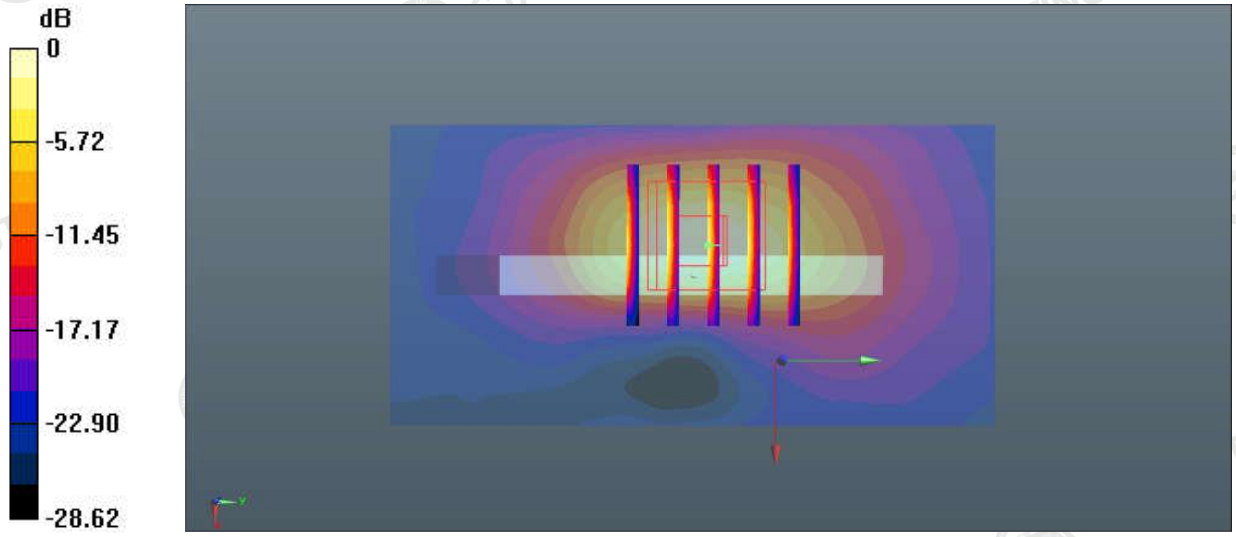
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.74 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.06 W/kg

SAR(1 g) = 0.674 W/Kg; SAR(10 g) = 0.285 W/Kg

Maximum value of SAR (measured) = 0.885 W/Kg



#28.

Date: 04/25/2024

LTE Band 41_20M_QPSK_1RB#99_ Rear Side _10mm_Ch41140

Communication System: UID 0, Generic LTE (0); Frequency: 2645.0 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): f = 2645.0 MHz; σ = 2.013 S/m; εr = 39.335; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7380; ConvF(9.62, 9.62, 9.62); Calibrated: June 21, 2023
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn428; Calibrated: Aug.30,2023;
- Phantom: SAM 1; Type: SAM;
- Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.10 (7164)

Area Scan (91x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.870 W/Kg

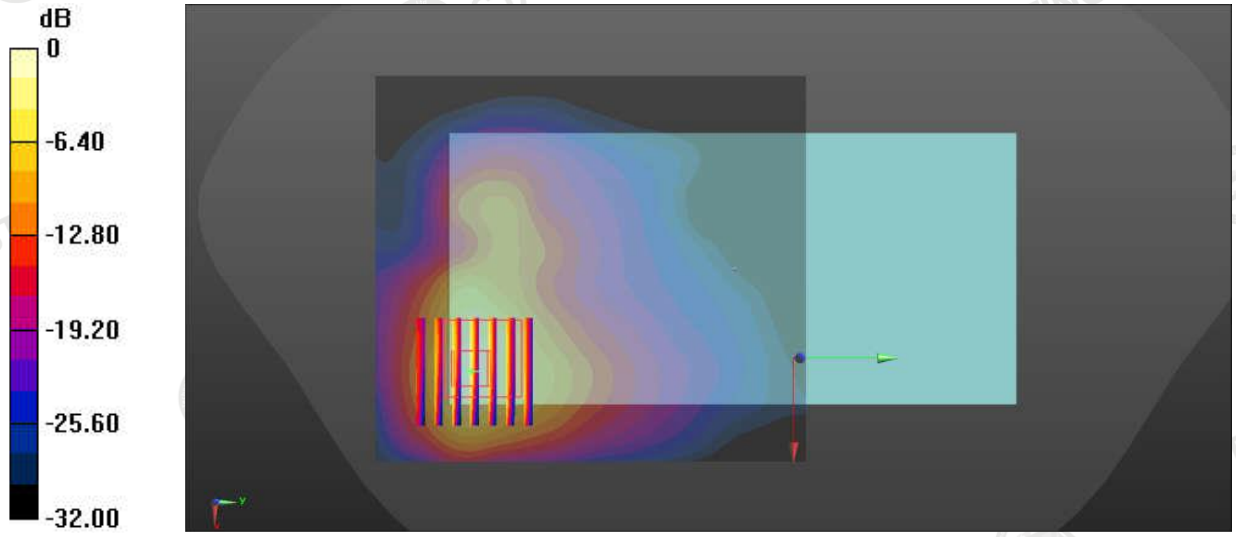
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.34 V/m; Power Drift = 0.05 dB

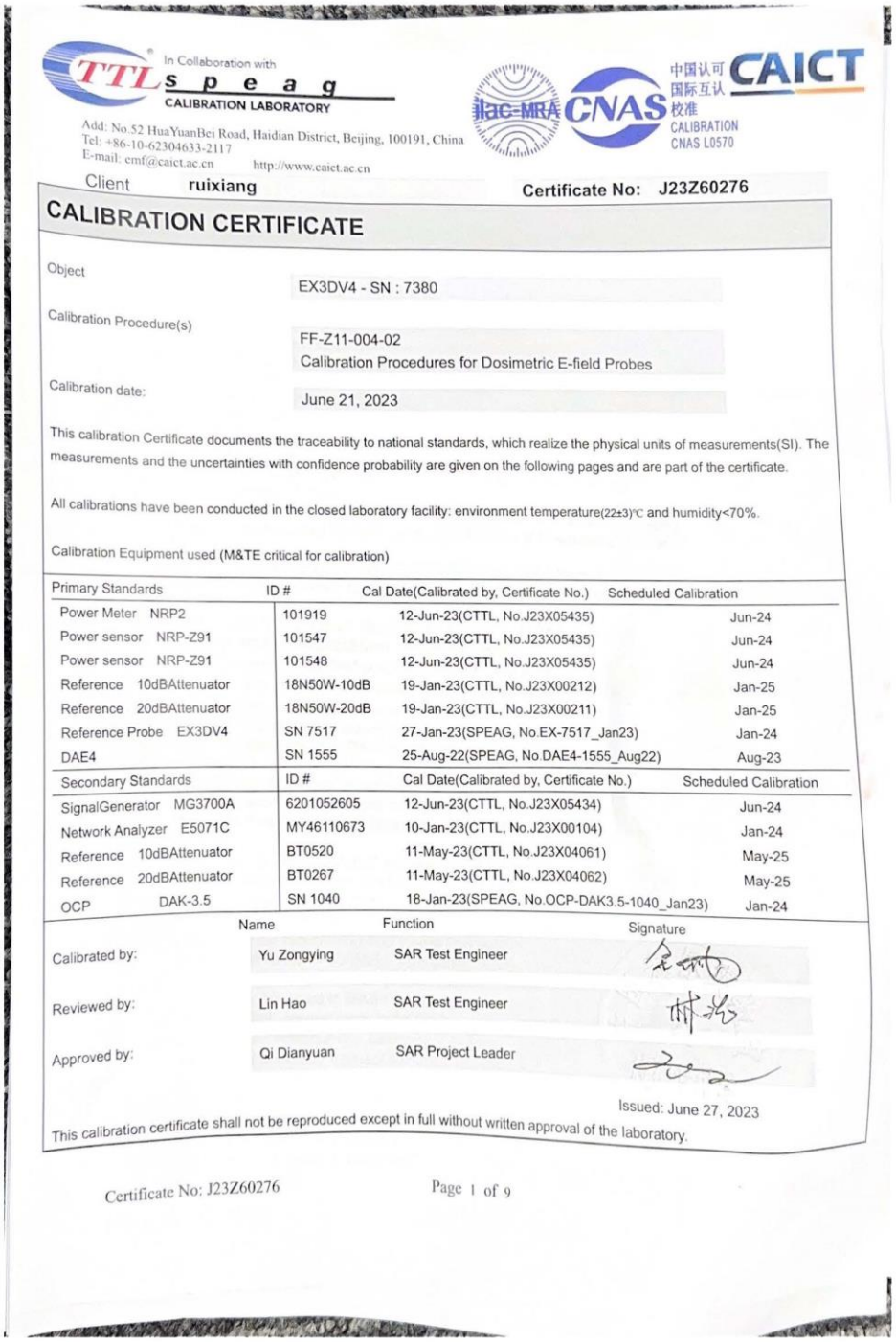
Peak SAR (extrapolated) = 1.12 W/kg

SAR(1 g) = 0.625 W/Kg; SAR(10 g) = 0.387 W/Kg

Maximum value of SAR (measured) = 1.08 W/Kg



Appendix D. DASY System Calibration Certificate



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中国认可 国际互认 校准 CALIBRATION CNAS L0570

Client ruixiang Certificate No: J23Z60276

CALIBRATION CERTIFICATE

Object: EX3DV4 - SN : 7380

Calibration Procedure(s): FF-Z11-004-02
Calibration Procedures for Dosimetric E-field Probes

Calibration date: June 21, 2023

This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements(SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature(22±3)°C and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	101919	12-Jun-23(CTTL, No.J23X05435)	Jun-24
Power sensor NRP-Z91	101547	12-Jun-23(CTTL, No.J23X05435)	Jun-24
Power sensor NRP-Z91	101548	12-Jun-23(CTTL, No.J23X05435)	Jun-24
Reference 10dBAttenuator	18N50W-10dB	19-Jan-23(CTTL, No.J23X00212)	Jan-25
Reference 20dBAttenuator	18N50W-20dB	19-Jan-23(CTTL, No.J23X00211)	Jan-25
Reference Probe EX3DV4	SN 7517	27-Jan-23(SPEAG, No.EX-7517_Jan23)	Jan-24
DAE4	SN 1555	25-Aug-22(SPEAG, No.DAE4-1555_Aug22)	Aug-23
Secondary Standards	**ID #**	**Cal Date(Calibrated by, Certificate No.)**	**Scheduled Calibration**
SignalGenerator MG3700A	6201052605	12-Jun-23(CTTL, No.J23X05434)	Jun-24
Network Analyzer E5071C	MY46110673	10-Jan-23(CTTL, No.J23X00104)	Jan-24
Reference 10dBAttenuator	BT0520	11-May-23(CTTL, No.J23X04061)	May-25
Reference 20dBAttenuator	BT0267	11-May-23(CTTL, No.J23X04062)	May-25
OCP DAK-3.5	SN 1040	18-Jan-23(SPEAG, No.OCP-DAK3.5-1040_Jan23)	Jan-24

	Name	Function	Signature
Calibrated by:	Yu Zongying	SAR Test Engineer	
Reviewed by:	Lin Hao	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: June 27, 2023

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: J23Z60276 Page 1 of 9

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Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A,B,C,D	modulation dependent linearization parameters
Polarization Φ	Φ rotation around probe axis
Polarization θ	θ rotation around an axis that is in the plane normal to probe axis (at measurement center), i θ=0 is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

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"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization θ=0 (f≤900MHz in TEM-cell; f>1800MHz: waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E^2-field uncertainty inside TSL (see below ConvF).
- *NORM(f)x,y,z = NORMx,y,z* frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- PAR: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics.
- *Ax,y,z; Bx,y,z; Cx,y,z;VRx,y,z:*A,B,C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f≤800MHz) and inside waveguide using analytical field distributions based on power measurements for f >800MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty valued are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORMx,y,z* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from±50MHz to±100MHz.
- *Spherical isotropy (3D deviation from isotropy):* in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset:* The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle:* The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required).

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DASY/EASY – Parameters of Probe: EX3DV4 – SN:7380

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (*k*=2)
Norm(μV/(V/m)²)[A]	0.44	0.35	0.41	±10.0%
DCP(mV)[B]	100.5	101.6	100.6	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (*k*=2)
0	CW	X	0.0	0.0	1.0	0.00	161.9	±2.2%
		Y	0.0	0.0	1.0		139.0	
		Z	0.0	0.0	1.0		149.3	

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%.

[A] The uncertainties of Norm X, Y, Z do not affect the E²-field uncertainty inside TSL (see Page 4).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainly is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

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DASY/EASY – Parameters of Probe: EX3DV4 – SN:7380

Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz][C]	Relative Permittivity[F]	Conductivity (S/m)[F]	ConvF X	ConvF Y	ConvF Z	Alpha[G]	Depth[G] (mm)	Unct. (k=2)
750	41.9	0.89	10.02	10.02	10.02	0.17	1.27	±12.7%
835	41.5	0.90	9.62	9.62	9.62	0.18	1.30	±12.7%
1750	40.1	1.37	8.35	8.35	8.35	0.28	1.02	±12.7%
1900	40.0	1.40	8.05	8.05	8.05	0.24	1.11	±12.7%
2100	39.8	1.49	8.00	8.00	8.00	0.24	1.11	±12.7%
2300	39.5	1.67	7.75	7.75	7.75	0.65	0.67	±12.7%
2450	39.2	1.80	7.50	7.50	7.50	0.65	0.69	±12.7%
2600	39.0	1.96	7.35	7.35	7.35	0.47	0.85	±12.7%
3500	37.9	2.91	6.85	6.85	6.85	0.41	1.03	±13.9%
3700	37.7	3.12	6.69	6.69	6.69	0.43	1.03	±13.9%
3900	37.5	3.32	6.58	6.58	6.58	0.30	1.50	±13.9%
4100	37.2	3.53	6.62	6.62	6.62	0.35	1.25	±13.9%
4200	37.1	3.63	6.52	6.52	6.52	0.30	1.45	±13.9%
4400	36.9	3.84	6.44	6.44	6.44	0.30	1.50	±13.9%
4600	36.7	4.04	6.41	6.41	6.41	0.35	1.48	±13.9%
4800	36.4	4.25	6.36	6.36	6.36	0.35	1.50	±13.9%
4950	36.3	4.40	5.95	5.95	5.95	0.35	1.55	±13.9%
5250	35.9	4.71	5.45	5.45	5.45	0.40	1.55	±13.9%
5600	35.5	5.07	4.86	4.86	4.86	0.45	1.40	±13.9%
5750	35.4	5.22	4.96	4.96	4.96	0.45	1.40	±13.9%

[C] Frequency validity above 300 MHz of ±100MHz only applies for DASY v4.4 and higher (Page 2), else it is restricted to ±50MHz. The uncertainty is the RSS of ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

[F] At frequency up to 6 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ±10% if liquid compensation formula is applied to measured SAR values. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for the frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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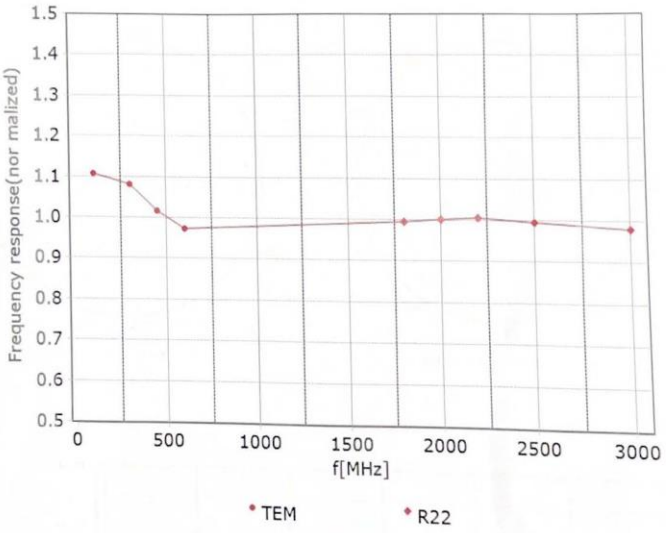
Frequency Response of E-Field
(TEM-Cell: ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: ±7.4% (*k*=2)

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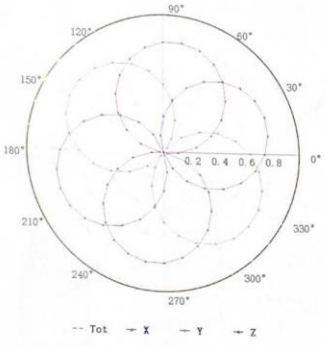
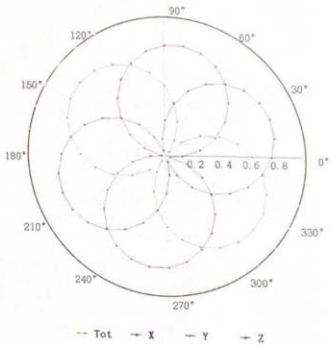
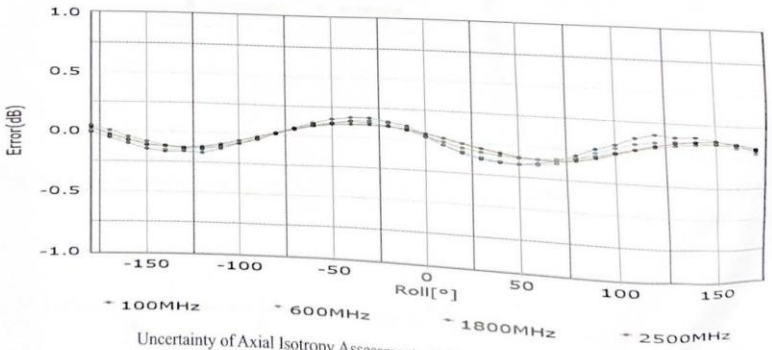
Receiving Pattern (Φ), θ=0°

f=600 MHz, TEM



f=1800 MHz, R22





Uncertainty of Axial Isotropy Assessment: ±1.2% (*k*=2)

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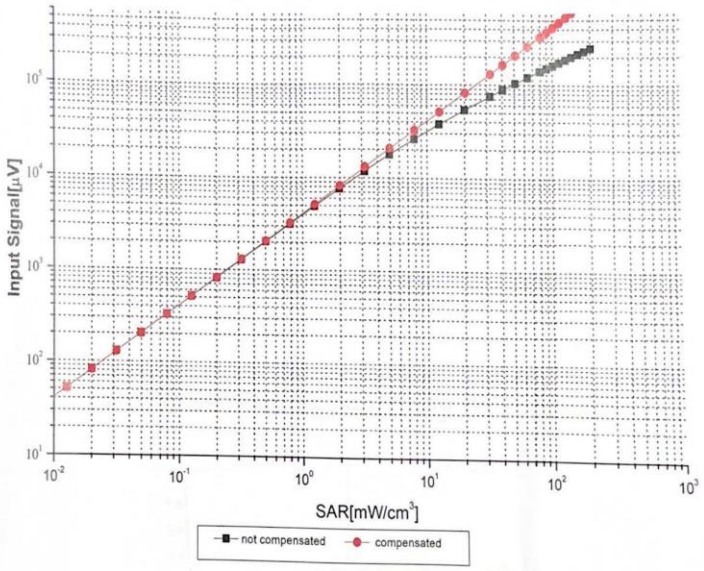
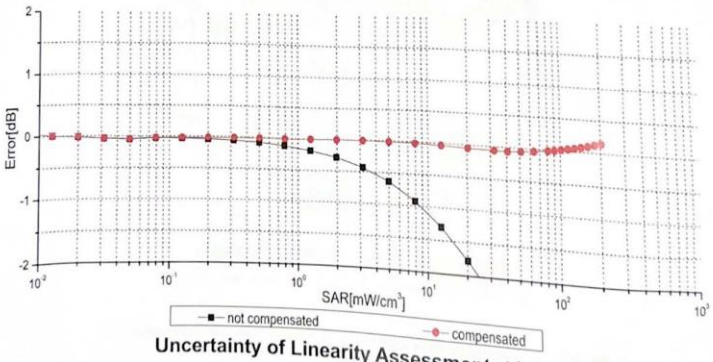
Dynamic Range f(SAR_{head})
(TEM cell, f = 900 MHz)





Uncertainty of Linearity Assessment: ±0.9% (*k*=2)

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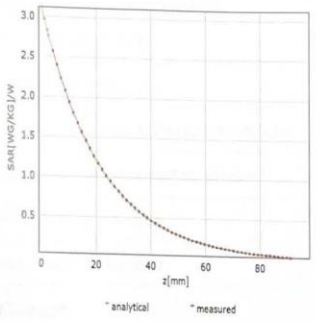
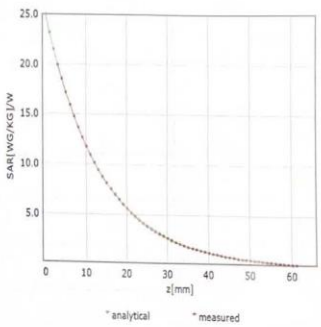
Conversion Factor Assessment

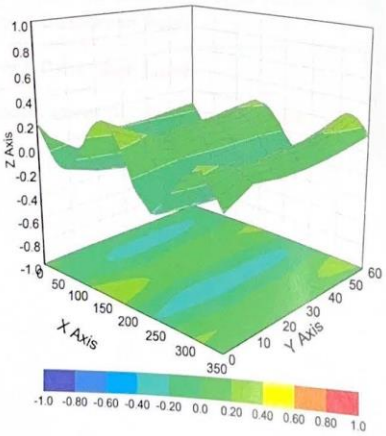
f=750 MHz,WGLS R9(H_convF)



f=1750 MHz,WGLS R22(H_convF)



Deviation from Isotropy in Liquid



Uncertainty of Spherical Isotropy Assessment: ±3.2% (*k*=2)

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DASY/EASY – Parameters of Probe: EX3DV4 – SN:7380

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	83.7
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disable
Probe Overall Length	337mm
Probe Body Diameter	10mm
Tip Length	9mm
Tip Diameter	2.5mm
Probe Tip to Sensor X Calibration Point	1mm
Probe Tip to Sensor Y Calibration Point	1mm
Probe Tip to Sensor Z Calibration Point	1mm
Recommended Measurement Distance from Surface	1.4mm

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CNAS CALIBRATION CNAS L0570

Client : CTA Certificate No: J23Z60391

CALIBRATION CERTIFICATE

Object	DAE3 - SN: 428
Calibration Procedure(s)	FF-Z11-002-01 Calibration Procedure for the Data Acquisition Electronics (DAEx)
Calibration date:	August 30, 2023

This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements(SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature(22±3)°C and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Process Calibrator 753	1971018	12-Jun-23 (CTTL, No.J23X05436)	Jun-24

	Name	Function	Signature
Calibrated by:	Yu Zongying	SAR Test Engineer	
Reviewed by:	Lin Hao	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: September 06, 2023

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Glossary:

DAE	data acquisition electronics
Connector angle	information used in DASY system to align probe sensor X to the robot coordinate system.

Methods Applied and Interpretation of Parameters:

- *DC Voltage Measurement*: Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- *Connector angle*: The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The report provide only calibration results for DAE, it does not contain other performance test results.

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DC Voltage Measurement

A/D - Converter Resolution nominal
High Range: 1LSB = 6.1μV , full range = -100...+300 mV
Low Range: 1LSB = 61nV , full range = -1.....+3mV
DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Calibration Factors	X	Y	Z
High Range	404.468 ± 0.15% (k=2)	404.804 ± 0.15% (k=2)	404.579 ± 0.15% (k=2)
Low Range	3.95934 ± 0.7% (k=2)	3.95437 ± 0.7% (k=2)	3.91875 ± 0.7% (k=2)

Connector Angle

Connector Angle to be used in DASY system	258.5° ± 1 °

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CALIBRATION CNAS L0570

Client CTA Certificate No: J23Z60387

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 484
Calibration Procedure(s)	FF-Z11-003-01 Calibration Procedures for dipole validation kits
Calibration date:	August 25, 2023

This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22±3)°C and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	106277	22-Sep-22 (CTTL, No.J22X09561)	Sep-23
Power sensor NRP8S	104291	22-Sep-22 (CTTL, No.J22X09561)	Sep-23
Reference Probe EX3DV4	SN 3617	31-Mar-23(CTTL-SPEAG,No.Z23-60161)	Mar-24
DAE4	SN 1556	11-Jan-23(CTTL-SPEAG,No.Z23-60034)	Jan-24
Secondary Standards	**ID #**	**Cal Date (Calibrated by, Certificate No.)**	**Scheduled Calibration**
Signal Generator E4438C	MY49071430	05-Jan-23 (CTTL, No. J23X00107)	Jan-24
NetworkAnalyzer E5071C	MY46110673	10-Jan-23 (CTTL, No. J23X00104)	Jan-24

	Name	Function	Signature
Calibrated by:	Zhao Jing	SAR Test Engineer	
Reviewed by:	Lin Hao	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: September 1, 2023

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Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure for The Assessment of Specific Absorption Rate of Human Exposure to Radio Frequency Fields from Hand-held and Body-mounted Wireless Communication Devices- Part 1528: Human Models, Instrumentation and Procedures (Frequency range of 4 MHz to 10 GHz)", October 2020
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) 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%.

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Measurement Conditions

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

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Triple Flat Phantom 5.1C	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	42.1 ± 6 %	0.90 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.42 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**9.68 W/kg ± 18.8 % (*k*=2)**
SAR averaged over 10 cm^3 (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	1.56 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**6.24 W/kg ± 18.7 % (*k*=2)**

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Appendix (Additional assessments outside the scope of CNAS L0570)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	49.8Ω- 2.74jΩ
Return Loss	- 31.2dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.299 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feed-point 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 feed-point may be damaged.

Additional EUT Data

Manufactured by	SPEAG

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DASY5 Validation Report for Head TSL Date: 2023-08-25

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 484

Communication System: UID 0, CW; Frequency: 835 MHz

Medium parameters used: f = 835 MHz; σ = 0.904 S/m; ε_r = 42.11; ρ = 1000 kg/m^3

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: EX3DV4 - SN3617; ConvF(10.1, 10.1, 10.1) @ 835 MHz; Calibrated: 2023-03-31
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1556; Calibrated: 2023-01-11
- Phantom: MFP_V5.1C (20deg probe tilt); Type: QD 000 P51 Cx; Serial: 1062
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57.93 V/m; Power Drift = -0.01 dB

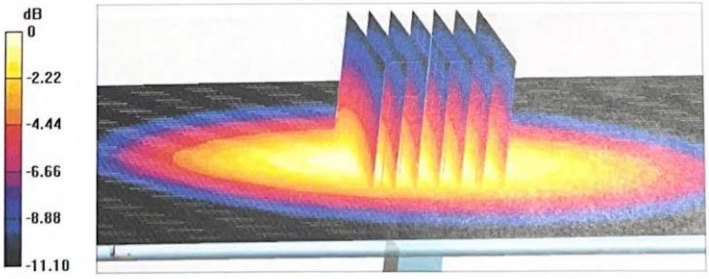
Peak SAR (extrapolated) = 3.92 W/kg

SAR(1 g) = 2.42 W/kg; SAR(10 g) = 1.56 W/kg

Smallest distance from peaks to all points 3 dB below = 16.3 mm

Ratio of SAR at M2 to SAR at M1 = 62.1%

Maximum value of SAR (measured) = 3.36 W/kg



0 dB = 3.36 W/kg = 5.26 dBW/kg

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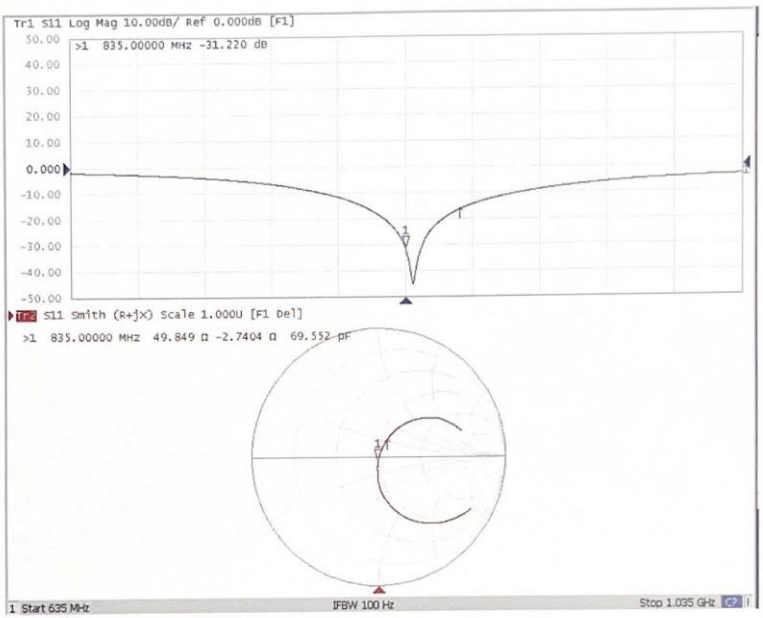
Impedance Measurement Plot for Head TSL



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CNAS L0570

Client **Morlab** **Certificate No: Z21-60475**

CALIBRATION CERTIFICATE

Object	D1800V2 - SN: 2d158
Calibration Procedure(s)	FF-Z11-003-01 Calibration Procedures for dipole validation kits
Calibration date:	December 17, 2021

This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22±3)℃ and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	106277	24-Sep-21 (CTTL, No.J21X08326)	Sep-22
Power sensor NRP8S	104291	24-Sep-21 (CTTL, No.J21X08326)	Sep-22
ReferenceProbe EX3DV4	SN 7307	26-May-21(SPEAG,No.EX3-7307_May21)	May-22
DAE4	SN 1556	15-Jan-21(SPEAG,No.DAE4-1556_Jan21)	Jan-22
Secondary Standards	**ID #**	**Cal Date(Calibrated by, Certificate No.)**	**Scheduled Calibration**
Signal Generator E4438C	MY49071430	01-Feb-21 (CTTL, No.J21X00593)	Jan-22
NetworkAnalyzer E5071C	MY46110673	14-Jan-21 (CTTL, No.J21X00232)	Jan-22

	Name	Function	Signature
Calibrated by:	Zhao Jing	SAR Test Engineer	
Reviewed by:	Lin Hao	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: December 27, 2021

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lossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORMx,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 assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016
c) IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010
d) KDB865664, 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%.

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Measurement Conditions

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

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Triple Flat Phantom 5.1C	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1800 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.8 ± 6 %	1.38 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.67 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**39.2 W/kg ± 18.8 % (*k*=2)**
SAR averaged over 10 cm^3 (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	4.98 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**20.1 W/kg ± 18.7 % (*k*=2)**

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Appendix (Additional assessments outside the scope of CNAS L0570)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	49.7Ω- 3.22jΩ
Return Loss	- 29.8dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.121 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

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DASY5 Validation Report for Head TSL Date: 2021-11-17

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN: 2d158

Communication System: UID 0, CW; Frequency: 1800 MHz; Duty Cycle: 1:1

Medium parameters used: f = 1800 MHz; σ = 1.378 S/m; ε_r = 40.8; ρ = 1000 kg/m^3

Phantom section: Right Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: EX3DV4 - SN7307; ConvF(8.34, 8.34, 8.34) @ 1800 MHz; Calibrated: 2021-05-26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1556; Calibrated: 2021-01-15
- Phantom: MFP_V5.1C (20deg probe tilt); Type: QD 000 P51 Cx; Serial: 1062
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

System Performance Check/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 102.1 V/m; Power Drift = -0.02 dB

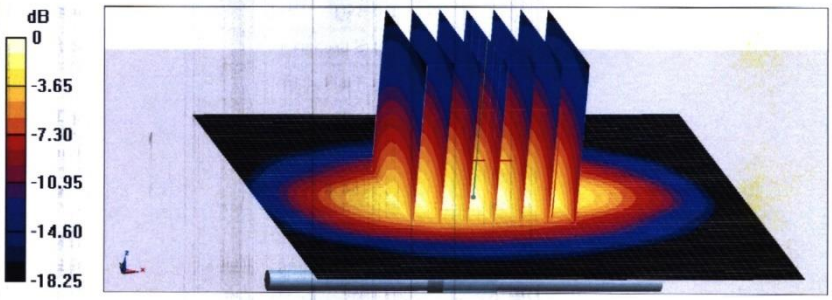
Peak SAR (extrapolated) = 18.9 W/kg

SAR(1 g) = 9.67 W/kg; SAR(10 g) = 4.98 W/kg

Smallest distance from peaks to all points 3 dB below = 10.2 mm

Ratio of SAR at M2 to SAR at M1 = 51.3%

Maximum value of SAR (measured) = 15.5 W/kg



0 dB = 15.5 W/kg = 11.90 dBW/kg

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Impedance Measurement Plot for Head TSL