

## Appendix B - System Performance Check Plots

Date: 2023/1/13

**System Performance Check at 2450 MHz**

**DUT: D2450V2\_SN712**

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1  
 Medium parameters used:  $f = 2450 \text{ MHz}$ ;  $\sigma = 1.817 \text{ S/m}$ ;  $\epsilon_r = 39.468$ ;  $\rho = 1000 \text{ kg/m}^3$   
 Phantom section: Flat Section  
 Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN7756; ConvF(7.68, 7.68, 7.68) @ 2450 MHz; Calibrated: 2022/8/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2022/7/19
- Phantom: ELI; Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**System Performance Check at 2450MHz/Area Scan (81x81x1):** Interpolated grid:  $dx=1.200 \text{ mm}$ ,  $dy=1.200 \text{ mm}$   
 Maximum value of SAR (interpolated) = 4.47 W/kg

**System Performance Check at 2450MHz/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 49.74 V/m; Power Drift = -0.04 dB

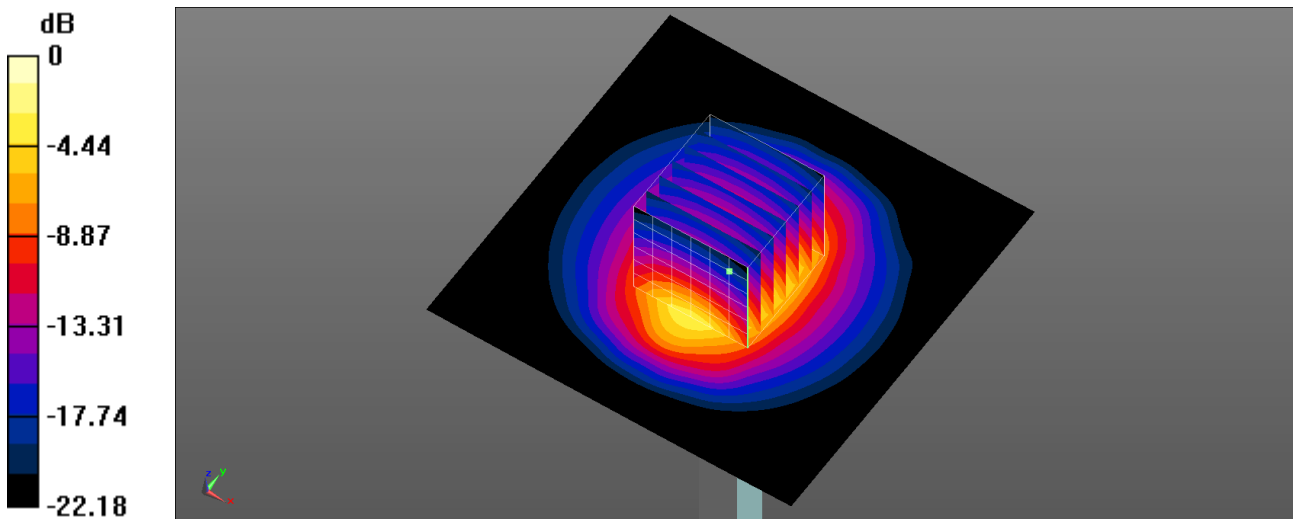
Peak SAR (extrapolated) = 5.42 W/kg

**SAR(1 g) = 2.59 W/kg; SAR(10 g) = 1.21 W/kg**

Smallest distance from peaks to all points 3 dB below = 9.5 mm

Ratio of SAR at M2 to SAR at M1 = 47.4%

Maximum value of SAR (measured) = 4.39 W/kg



0 dB = 4.39 W/kg = 6.42 dBW/kg

Date: 2023/1/11

**System Performance Check at 5250 MHz**

**DUT: D5GHzV2\_SN1021**

Communication System: UID 0, CW (0); Frequency: 5250 MHz; Duty Cycle: 1:1  
 Medium parameters used:  $f = 5250 \text{ MHz}$ ;  $\sigma = 4.646 \text{ S/m}$ ;  $\epsilon_r = 35.504$ ;  $\rho = 1000 \text{ kg/m}^3$   
 Phantom section: Flat Section  
 Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN7647; ConvF(5.74, 5.74, 5.74) @ 5250 MHz; Calibrated: 2022/4/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1253; Calibrated: 2022/12/16
- Phantom: ELI; Type: QD OVA 002 AA; Serial: 1133
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**System Performance Check at 5250MHz/Area Scan (91x91x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$   
 Maximum value of SAR (interpolated) = 9.44 W/kg

**System Performance Check at 5250MHz/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=1.4\text{mm}$

Reference Value = 50.67 V/m; Power Drift = 0.01 dB

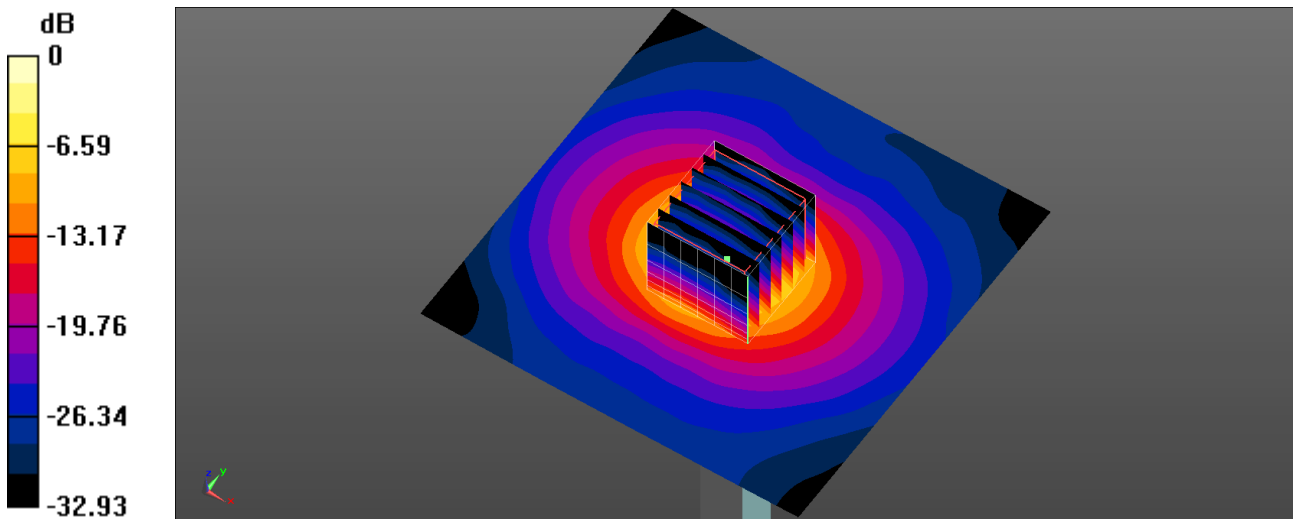
Peak SAR (extrapolated) = 16.6 W/kg

**SAR(1 g) = 3.93 W/kg; SAR(10 g) = 1.1 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.2 mm

Ratio of SAR at M2 to SAR at M1 = 63.6%

Maximum value of SAR (measured) = 9.65 W/kg



0 dB = 9.65 W/kg = 9.85 dBW/kg

Date: 2023/1/11

**System Performance Check at 5600 MHz**

**DUT: D5GHzV2\_SN1021**

Communication System: UID 0, CW (0); Frequency: 5600 MHz; Duty Cycle: 1:1  
Medium parameters used:  $f = 5600$  MHz;  $\sigma = 5.003$  S/m;  $\epsilon_r = 34.838$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section  
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN7647; ConvF(5.19, 5.19, 5.19) @ 5600 MHz; Calibrated: 2022/4/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1253; Calibrated: 2022/12/16
- Phantom: ELI; Type: QD OVA 002 AA; Serial: 1133
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**System Performance Check at 5600MHz/Area Scan (91x91x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm  
Maximum value of SAR (interpolated) = 10.6 W/kg

**System Performance Check at 5600MHz/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 50.92 V/m; Power Drift = 0.08 dB

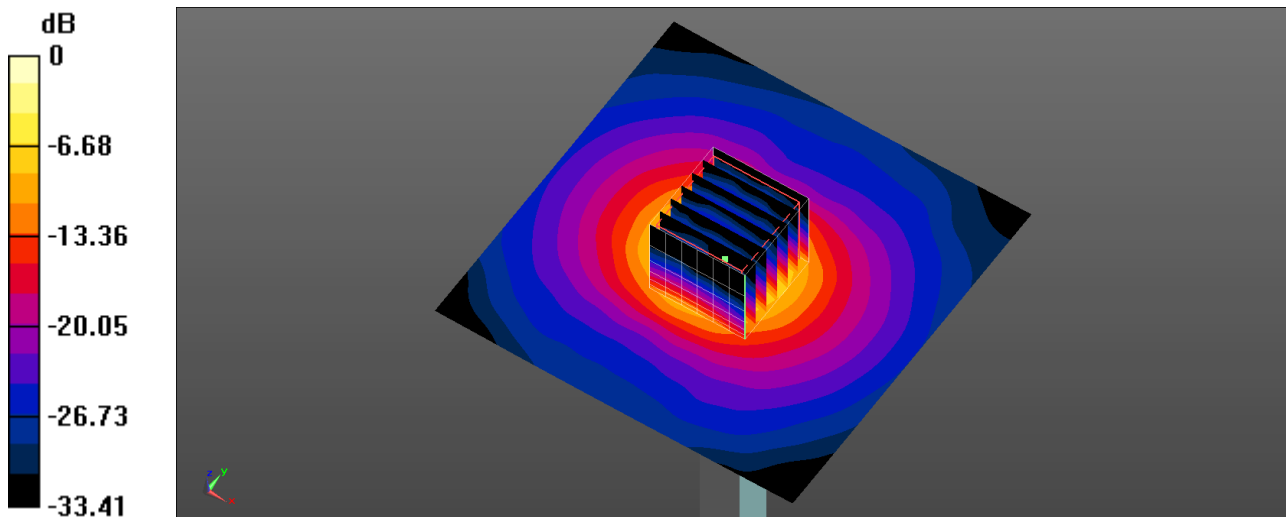
Peak SAR (extrapolated) = 19.9 W/kg

**SAR(1 g) = 4.2 W/kg; SAR(10 g) = 1.15 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.4 mm

Ratio of SAR at M2 to SAR at M1 = 59.6%

Maximum value of SAR (measured) = 10.6 W/kg



0 dB = 10.6 W/kg = 10.25 dBW/kg

Date: 2023/1/12

**System Performance Check at 5750 MHz**

**DUT: D5GHzV2\_SN1021**

Communication System: UID 0, CW (0); Frequency: 5750 MHz; Duty Cycle: 1:1  
 Medium parameters used:  $f = 5750 \text{ MHz}$ ;  $\sigma = 5.142 \text{ S/m}$ ;  $\epsilon_r = 34.546$ ;  $\rho = 1000 \text{ kg/m}^3$   
 Phantom section: Flat Section  
 Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN7647; ConvF(5.25, 5.25, 5.25) @ 5750 MHz; Calibrated: 2022/4/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1253; Calibrated: 2022/12/16
- Phantom: ELI; Type: QD OVA 002 AA; Serial: 1133
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**System Performance Check at 5750MHz/Area Scan (91x91x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$   
 Maximum value of SAR (interpolated) = 9.30 W/kg

**System Performance Check at 5750MHz/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=1.4\text{mm}$

Reference Value = 47.23 V/m; Power Drift = 0.12 dB

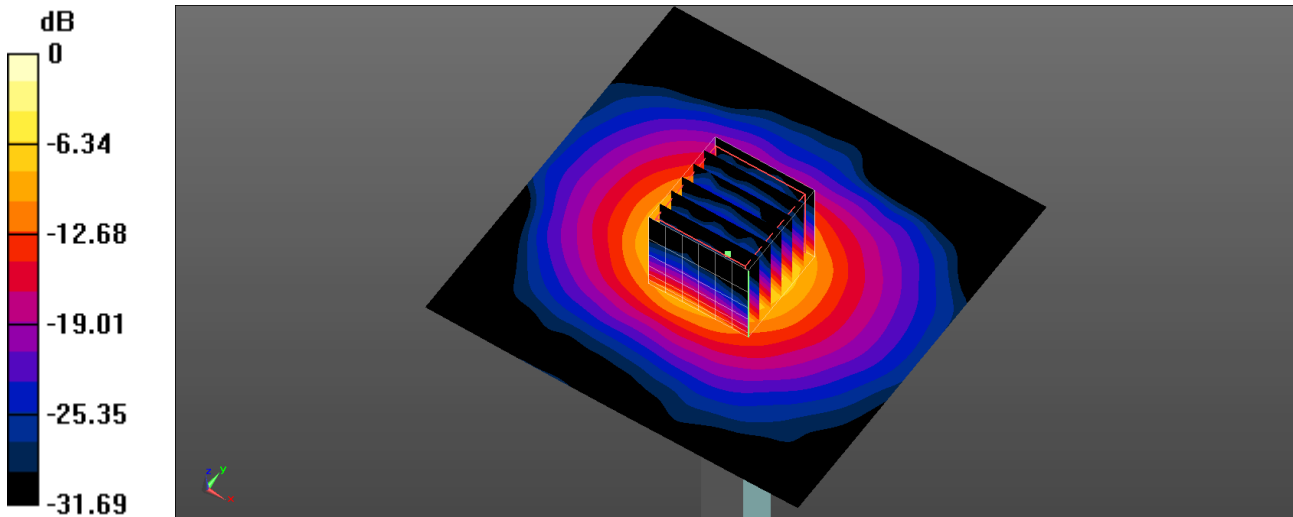
Peak SAR (extrapolated) = 18.1 W/kg

**SAR(1 g) = 3.72 W/kg; SAR(10 g) = 1.02 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.4 mm

Ratio of SAR at M2 to SAR at M1 = 60.3%

Maximum value of SAR (measured) = 9.51 W/kg



0 dB = 9.51 W/kg = 9.78 dBW/kg

Date: 2023/1/12

**System Performance Check at 5800 MHz**

**DUT: D5GHzV2\_SN1021**

Communication System: UID 0, CW (0); Frequency: 5800 MHz; Duty Cycle: 1:1  
 Medium parameters used:  $f = 5800 \text{ MHz}$ ;  $\sigma = 5.194 \text{ S/m}$ ;  $\epsilon_r = 34.458$ ;  $\rho = 1000 \text{ kg/m}^3$   
 Phantom section: Flat Section  
 Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN7756; ConvF(4.6, 4.6, 4.6) @ 5800 MHz; Calibrated: 2022/8/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2022/7/19
- Phantom: ELI; Type: QD OVA 002 AA; Serial: 1133
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**System Performance Check at 5800MHz/Area Scan (91x91x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$   
 Maximum value of SAR (interpolated) = 9.55 W/kg

**System Performance Check at 5800MHz/Zoom Scan (8x8x7)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=1.4\text{mm}$

Reference Value = 47.03 V/m; Power Drift = -0.08 dB

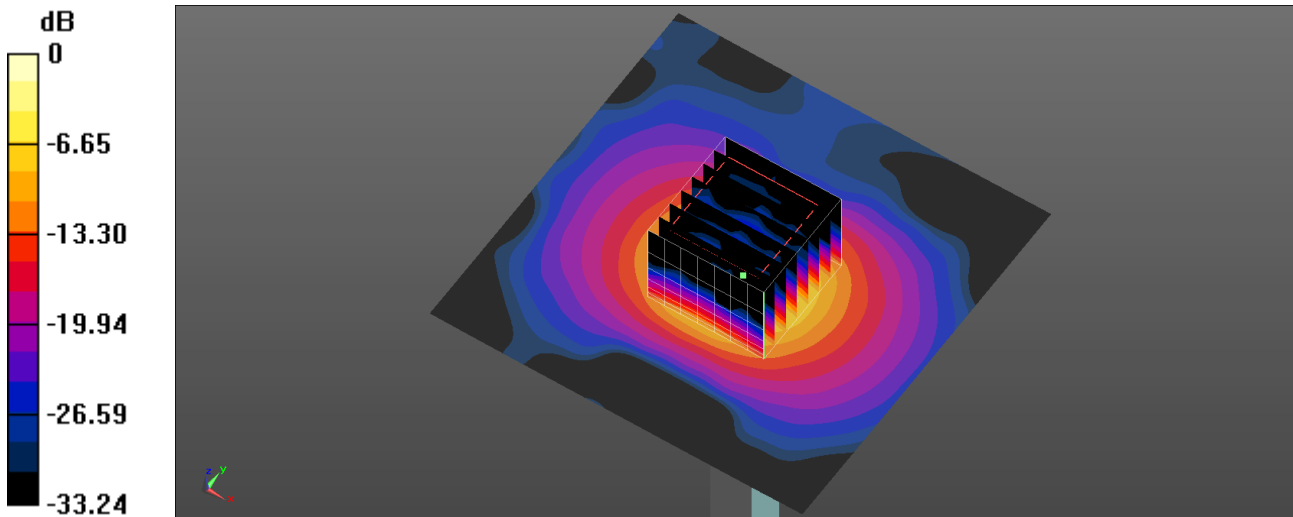
Peak SAR (extrapolated) = 17.6 W/kg

**SAR(1 g) = 3.87 W/kg; SAR(10 g) = 1.12 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.6 mm

Ratio of SAR at M2 to SAR at M1 = 60.7%

Maximum value of SAR (measured) = 10.0 W/kg



0 dB = 10.0 W/kg = 10.00 dBW/kg

### System Performance Check Report Summary

Dipole	Frequency [MHz]
D6.5GHzV2 - SN1016	6500.0

### Exposure Conditions

Phantom Section, TSL	Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat,	0		, 0--	6500.0, 0	5.5	6.12	35.0

### Hardware Setup

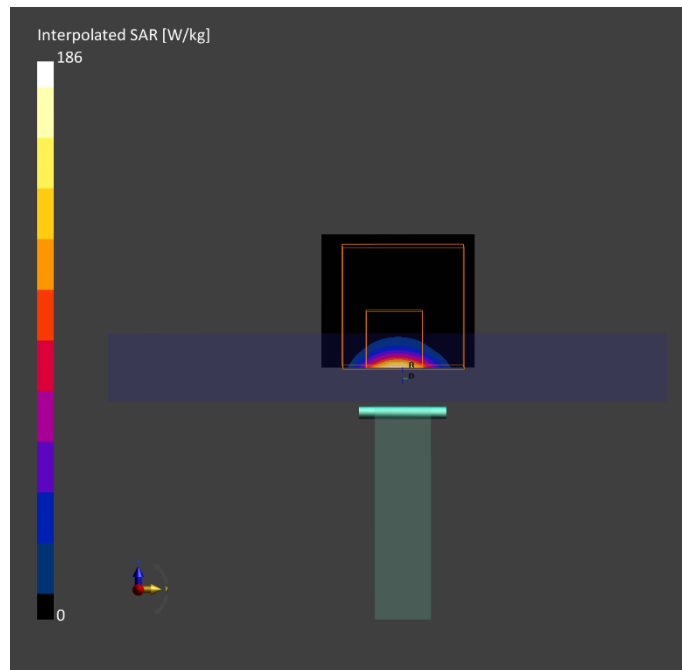
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1175	HSL6G	EX3DV4 - SN3847, 2022-03-24	DAE4 Sn541, 2022-03-23

### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	51.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-1-18	2023-1-18
psSAR1g [W/Kg]	24.9	27.7
psSAR10g [W/Kg]	4.82	5.13
psPDab (1.0cm2, sq) [W/m2]		276
psPDab (4.0cm2, sq) [W/m2]		123
Power Drift [dB]	0.11	-0.04
TSL Correction	Positive only	Positive only
M2/M1 [%]		46.5
Dist 3dB Peak [mm]		4.5



Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
5G Verification Source 10 GHz	100.0 x 100.0 x 100.0	SN: 2003	-

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G Air	10.00	Validation band	CW	10000.0, 10000	1.0

Hardware Setup

Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave- 5G Phantom	Air	EUmmWV3 - SN9403_F1-55GHz, 2022-12-07	DAE4 Sn541, 2022-03-23

Scan Setup

	5G Scan
Grid Extents [mm]	120.0 x 120.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	10.0
MAIA	N/A

Measurement Results

	5G Scan
Date	2023-01-19
Avg. Area [cm <sup>2</sup> ]	4.00
psPDn+ [W/m <sup>2</sup> ]	156
psPDtot+ [W/m <sup>2</sup> ]	158
psPDmod+ [W/m <sup>2</sup> ]	162
E <sub>max</sub> [V/m]	281
H <sub>max</sub> [A/m]	0.756
Power Drift [dB]	0.11

