

APPENDIX A: VERIFICATION PLOTS

PCTEST

Date: 11/4/2021

3700MHz Head Verification

Medium

Frequency [MHz]	TSL	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [C]	Tissue Temperature [C]
3700.0	3600 Head	3.01	38.1	21.0	20.5

Exposure Conditions

Phantom Section	Test Distance [mm]	Power [dBm]	Communication System, UID
Flat	10	20.0	CW, 0

Hardware Setup

Phantom	Dipole	Probe, Calibration Date	Conversion Factor	DAE, Calibration Date
Twin-SAM V8.0 Right - 1981	D3700V2 - SN1067	EX3DV4 - SN7570, 2020-12-15	6.92	DAE4 Sn859, 2020-12-07

Software Setup

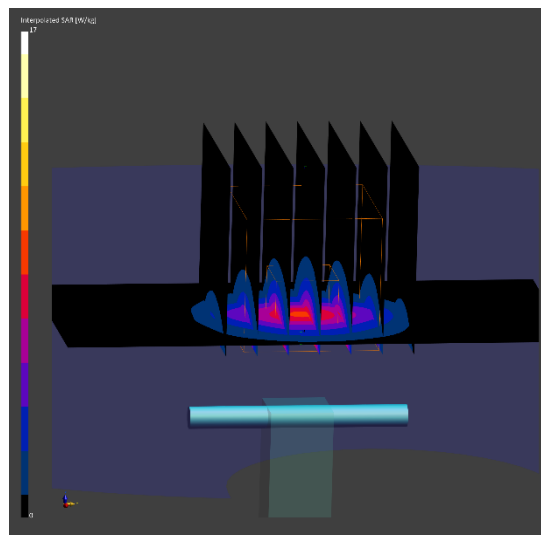
Software	Software Version
cDASY6 Module SAR	16.0.0.116

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	28.0 x 28.0 x 28.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5

Measurement Results

	Zoom Scan
psSAR1g [W/Kg]	6.37
psSAR10g [W/Kg]	2.36
Dev. 1g [%]	-5.21



PCTEST

Date: 10/27/2021

1750MHz Body Verification

Medium

Frequency [MHz]	TSL	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [C]	Tissue Temperature [C]
1750.0	1750 Body	1.42	53.6	21.6	21.4

Exposure Conditions

Phantom Section	Test Distance [mm]	Power [dBm]	Communication System, UID
Flat	10	20.0	CW, 0

Hardware Setup

Phantom	Dipole	Probe, Calibration Date	Conversion Factor	DAE, Calibration Date
Twin-SAM V8.0 Right - 1981	D1750V2 - SN1148	EX3DV4 - SN7570, 2020-12-15	8.46	DAE4 Sn859, 2020-12-07

Software Setup

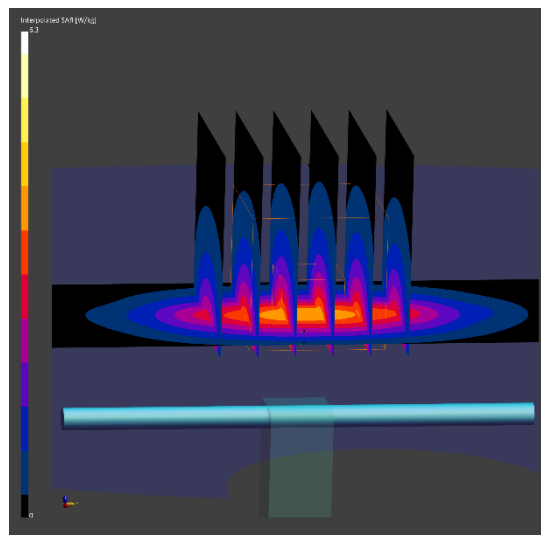
Software	Software Version
cDASY6 Module SAR	16.0.0.116

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5

Measurement Results

	Zoom Scan
psSAR1g [W/Kg]	3.42
psSAR10g [W/Kg]	1.84
Dev. 1g [%]	-5.79



PCTEST

Date: 10/25/2021

1900MHz Body Verification

Medium

Frequency [MHz]	TSL	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [C]	Tissue Temperature [C]
1900.0	1900 Body	1.55	51.3	21.5	21.3

Exposure Conditions

Phantom Section	Test Distance [mm]	Power [dBm]	Communication System, UID
Flat	10	20.0	CW, 0

Hardware Setup

Phantom	Dipole	Probe, Calibration Date	Conversion Factor	DAE, Calibration Date
Twin-SAM V8.0 Right - 1981	D1900V2 - SN5d148	EX3DV4 - SN7570, 2020-12-15	8.12	DAE4 Sn859, 2020-12-07

Software Setup

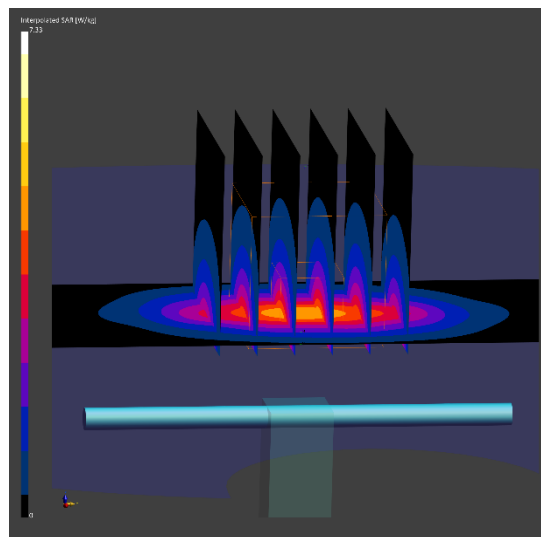
Software	Software Version
cDASY6 Module SAR	16.0.0.116

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5

Measurement Results

	Zoom Scan
psSAR1g [W/Kg]	3.77
psSAR10g [W/Kg]	1.92
Dev. 1g [%]	-3.58



PCTEST

Date: 11/3/2021

1900MHz Body Verification

Medium

Frequency [MHz]	TSL	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [C]	Tissue Temperature [C]
1900.0	1900 Body	1.54	50.7	20.0	21.0

Exposure Conditions

Phantom Section	Test Distance [mm]	Power [dBm]	Communication System, UID
Flat	10	20.0	CW, 0

Hardware Setup

Phantom	Dipole	Probe, Calibration Date	Conversion Factor	DAE, Calibration Date
Twin-SAM V8.0 Right - 1981	D1900V2 - SN5d148	EX3DV4 - SN7570, 2020-12-15	8.12	DAE4 Sn859, 2020-12-07

Software Setup

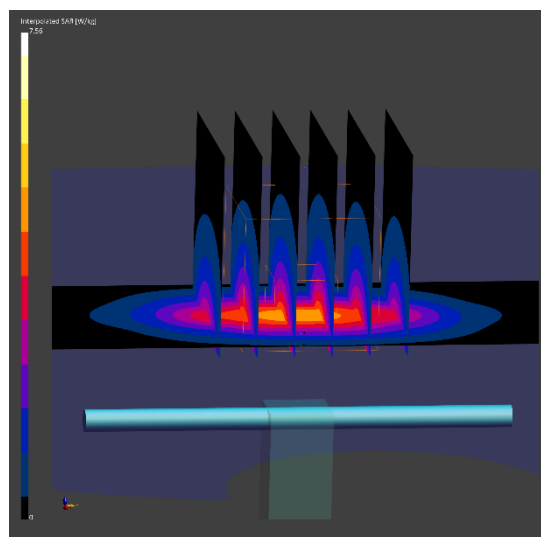
Software	Software Version
cDASY6 Module SAR	16.0.0.116

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5

Measurement Results

	Zoom Scan
psSAR1g [W/Kg]	3.94
psSAR10g [W/Kg]	2.04
Dev. 1g [%]	0.77
Dev. 10g [%]	-0.49



PCTEST

Date: 10/27/2021

2300MHz Body Verification

Medium

Frequency [MHz]	TSL	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [C]	Tissue Temperature [C]
2300.0	2300 Body	1.85	52.9	21.5	22.1

Exposure Conditions

Phantom Section	Test Distance [mm]	Power [dBm]	Communication System, UID
Flat	10	20.0	CW, 0

Hardware Setup

Phantom	Dipole	Probe, Calibration Date	Conversion Factor	DAE, Calibration Date
Twin-SAM V8.0 Right - 1981	D2300V2 - SN1073	EX3DV4 - SN7570, 2020-12-15	7.8	DAE4 Sn859, 2020-12-07

Software Setup

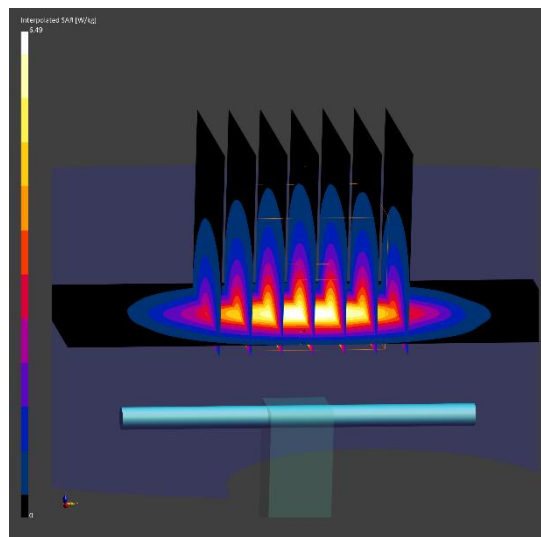
Software	Software Version
cDASY6 Module SAR	16.0.0.116

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5

Measurement Results

	Zoom Scan
psSAR1g [W/Kg]	4.92
psSAR10g [W/Kg]	2.37
Dev. 10g [%]	1.28



PCTEST

Date: 11/2/2021

30 GHz System Verification

Device Under Test Properties

DUT	Serial Number
30 GHz Verification Source	1035

Exposure Conditions

Phantom Section	Position	Test Distance [mm]	Band	Frequency [MHz]
5G	FRONT	5.55	Validation band	30000.0

Hardware Setup

Probe, Calibration Date	DAE, Calibration Date
EUmmWV3 - SN9389_F1-78GHz, 2020-11-16	DAE4ip Sn1638, 2020-11-17

Software Setup

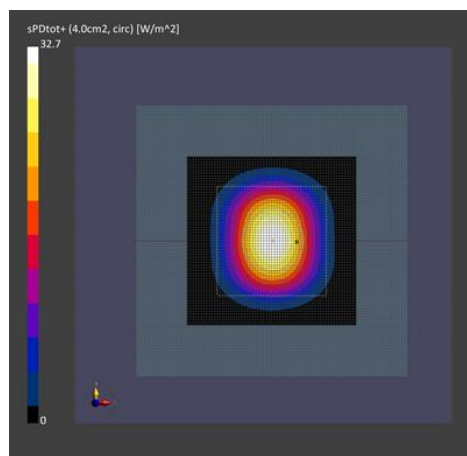
Software	Software Version
cDASY6 Module mmWave	2.4.2.62

Scans Setup

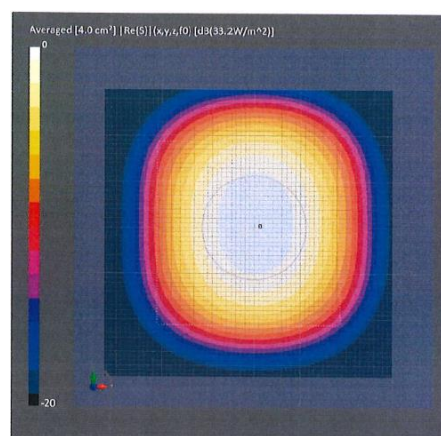
Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	5.55

Measurement Results

Scan Type	5G Scan
Avg. Area [cm ²]	4.00
pS _{tot} avg [W/m ²]	32.7
pS _n avg [W/m ²]	32.3
E _{peak} [V/m]	129
Deviation (dB)	0.23



30GHz System Verification



Calibration Certificate

PCTEST

Date: 11/3/2021

30 GHz System Verification

Device Under Test Properties

DUT	Serial Number
30 GHz Verification Source	1035

Exposure Conditions

Phantom Section	Position	Test Distance [mm]	Band	Frequency [MHz]
5G	FRONT	5.55	Validation band	30000.0

Hardware Setup

Probe, Calibration Date	DAE, Calibration Date
EummWV3 - SN9364_F1-55GHz, 2021-06-21	DAE4 Sn1582, 2021-04-07

Software Setup

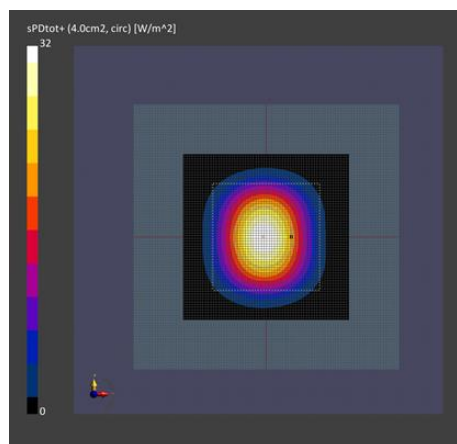
Software	Software Version
cDASY6 Module mmWave	2.4.2.62

Scans Setup

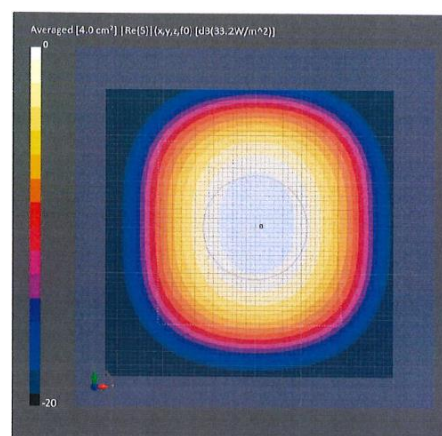
Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	5.55

Measurement Results

Scan Type	5G Scan
Avg. Area [cm ²]	4.00
pS _{tot} avg [W/m ²]	32.1
pS _n avg [W/m ²]	31.7
E _{peak} [V/m]	129
Deviation (dB)	0.15



30GHz System Verification



Calibration Certificate

PCTEST

Date: 11/3/2021

30 GHz System Verification

Device Under Test Properties

DUT	Serial Number
30 GHz Verification Source	1045

Exposure Conditions

Phantom Section	Position	Test Distance [mm]	Band	Frequency [MHz]
5G	FRONT	5.55	Validation band	30000.0

Hardware Setup

Probe, Calibration Date	DAE, Calibration Date
EummWV4 - SN9523_F1-78GHz, 2021-01-11	DAE4 Sn1449, 2021-09-15

Software Setup

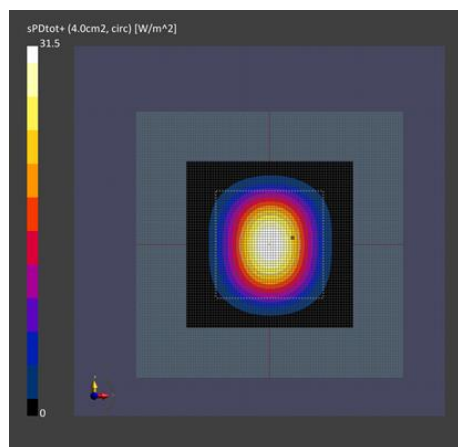
Software	Software Version
cDASY6 Module mmWave	2.4.2.62

Scans Setup

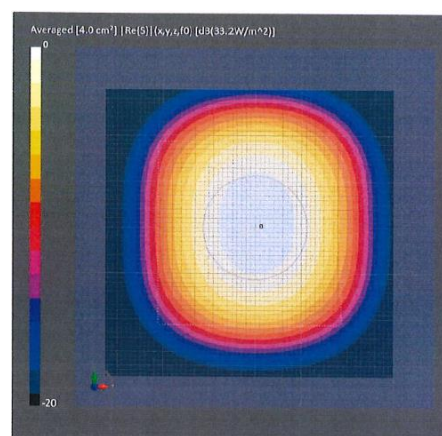
Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	5.55

Measurement Results

Scan Type	5G Scan
Avg. Area [cm ²]	4.00
pS _{tot} avg [W/m ²]	31.5
pS _n avg [W/m ²]	31.1
E _{peak} [V/m]	127
Deviation (dB)	-0.23



30GHz System Verification



Calibration Certificate

PCTEST

Date: 11/4/2021

30 GHz System Verification

Device Under Test Properties

DUT	Serial Number
30 GHz Verification Source	1045

Exposure Conditions

Phantom Section	Position	Test Distance [mm]	Band	Frequency [MHz]
5G	FRONT	5.55	Validation band	30000.0

Hardware Setup

Probe, Calibration Date	DAE, Calibration Date
EUmmWV4 - SN9541_F1-55GHz, 2021-05-20	DAE4 Sn665, 2021-02-12

Software Setup

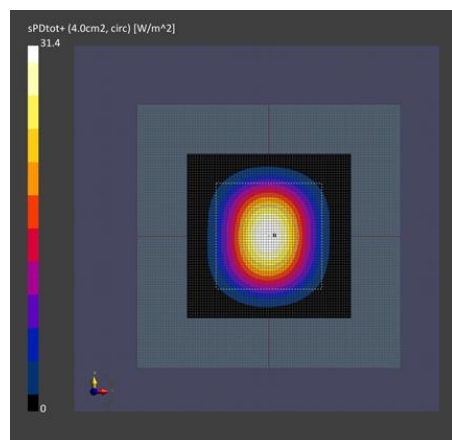
Software	Software Version
cDASY6 Module mmWave	2.4.2.62

Scans Setup

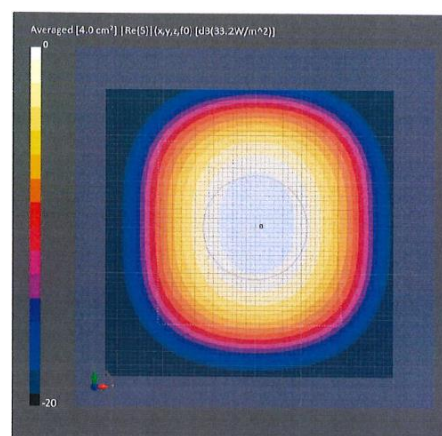
Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	5.55

Measurement Results

Scan Type	5G Scan
Avg. Area [cm ²]	4.00
pS _{tot} avg [W/m ²]	31.4
pS _n avg [W/m ²]	31.0
E _{peak} [V/m]	126
Deviation (dB)	-0.24



30GHz System Verification



Calibration Certificate