

# APPENDIX A: VERIFICATION PLOTS

# PCTEST

Date: 06/09/2021

750MHz Body Verification

## Medium

Frequency [MHz]	TSL	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [C]	Tissue Temperature [C]
750.0	750 Body	0.97	53.6	20.3	20.5

## Exposure Conditions

Phantom Section	Test Distance [mm]	Power [dBm]	Communication System, UID
Flat	15	23.0	CW, 0

## Hardware Setup

Phantom	Dipole	Probe, Calibration Date	Conversion Factor	DAE, Calibration Date
Twin-SAM V8.0 Right - 1981	D750V3 - SN1054	EX3DV4 - SN7570, 2020-12-15	10.24	DAE4 Sn859, 2020-12-07

## Software Setup

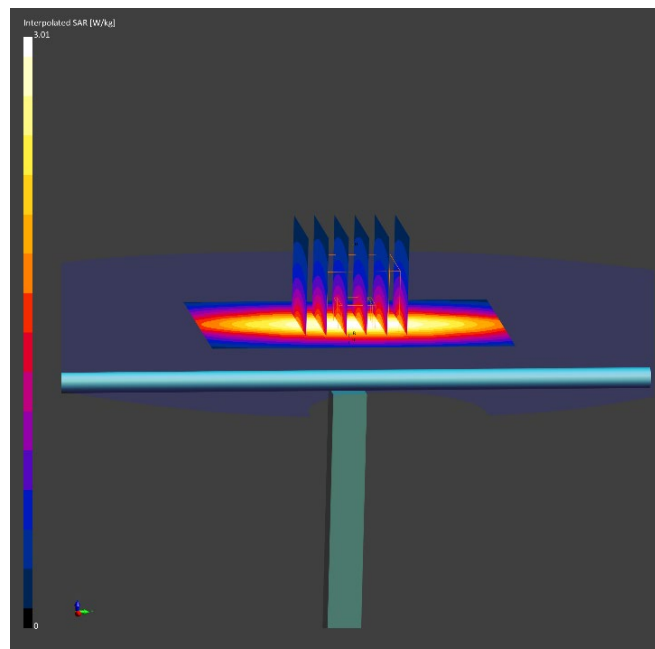
Software	Software Version
cDASY6 Module SAR	6.14.0.959

## Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5

## Measurement Results

	Zoom Scan
psSAR1g [W/Kg]	1.89
psSAR10g [W/Kg]	1.24
Dev. 1g [%]	7.14



# PCTEST

Date: 06/09/2021

835MHz Body Verification

## Medium

Frequency [MHz]	TSL	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [C]	Tissue Temperature [C]
835.0	835 Body	1.00	53.4	20.3	20.5

## Exposure Conditions

Phantom Section	Test Distance [mm]	Power [dBm]	Communication System, UID
Flat	15	23.0	CW, 0

## Hardware Setup

Phantom	Dipole	Probe, Calibration Date	Conversion Factor	DAE, Calibration Date
Twin-SAM V8.0 Right - 1981	D835V2 - SN4d047	EX3DV4 - SN7570, 2020-12-15	9.9	DAE4 Sn859, 2020-12-07

## Software Setup

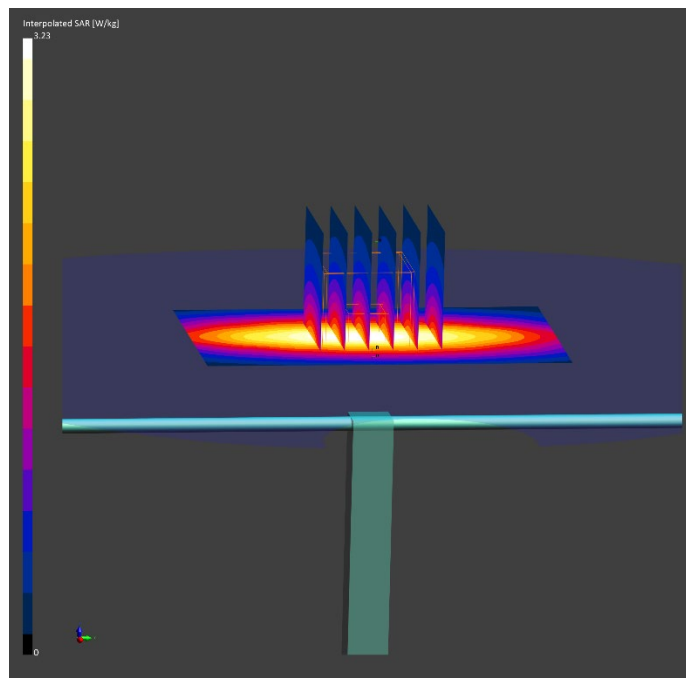
Software	Software Version
cDASY6 Module SAR	6.14.0.959

## Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5

## Measurement Results

	Zoom Scan
psSAR1g [W/Kg]	2.00
psSAR10g [W/Kg]	1.31
Dev. 1g [%]	5.60



# PCTEST

Date: 06/09/2021

1750MHz Body Verification

## Medium

Frequency [MHz]	TSL	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [C]	Tissue Temperature [C]
1750.0	1750 Body	1.48	54.2	20.4	19.8

## 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 - 1978	D1750V2 - SN1148	EX3DV4 - SN7417, 2021-02-16	8.43	DAE4 Sn665, 2021-02-12

## Software Setup

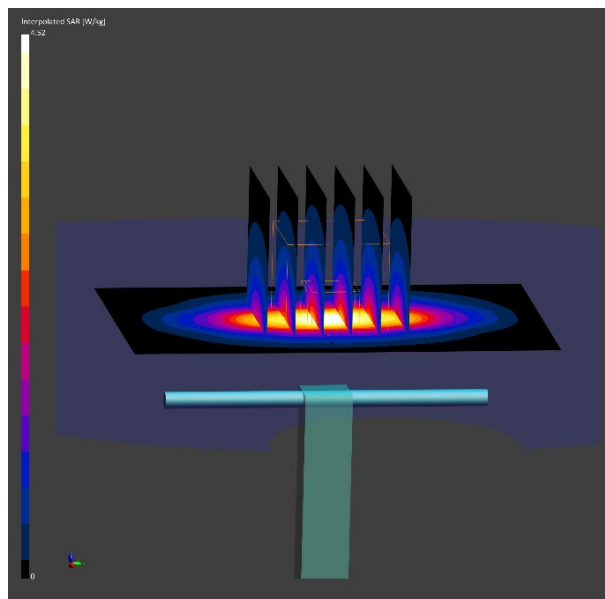
Software	Software Version
cDASY6 Module SAR	6.14.0.959

## Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5

## Measurement Results

	Zoom Scan
psSAR1g [W/Kg]	3.61
psSAR10g [W/Kg]	1.95
Dev. 1g [%]	-0.55



# PCTEST

Date: 06/02/2021

1900MHz Body Verification

## Medium

Frequency [MHz]	TSL	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [C]	Tissue Temperature [C]
1900.0	1900 Body	1.59	53.2	20.8	21.2

## 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 - 1978	D19000V2 - SN5d148	EX3DV4 - SN7417, 2021-02-16	8.01	DAE4 Sn665, 2021-02-12

## Software Setup

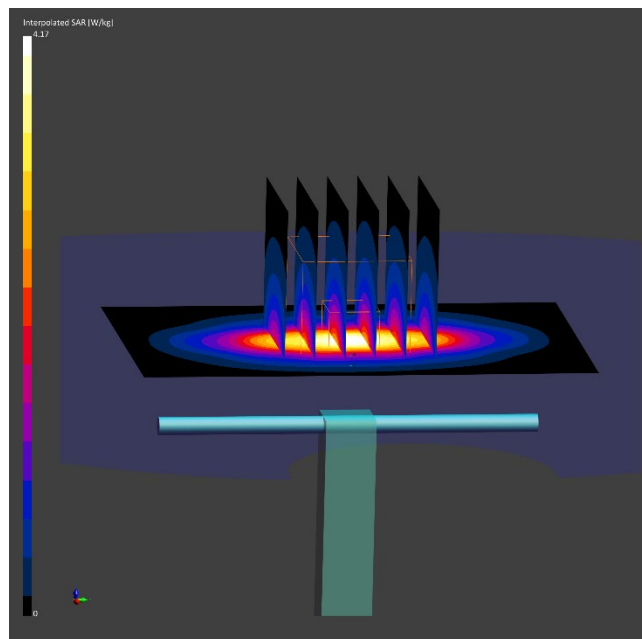
Software	Software Version
cDASY6 Module SAR	6.14.0.959

## Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5

## Measurement Results

	Zoom Scan
psSAR1g [W/Kg]	4.05
psSAR10g [W/Kg]	2.08
Dev. 10g [%]	1.46



# PCTEST

Date: 06/09/2021

1900MHz Body Verification

## Medium

Frequency [MHz]	TSL	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [C]	Tissue Temperature [C]
1900.0	1900 Body	1.58	54.0	20.4	19.8

## 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 - 1978	D1900V2 - SN5d148	EX3DV4 - SN7417, 2021-02-16	8.01	DAE4 Sn665, 2021-02-12

## Software Setup

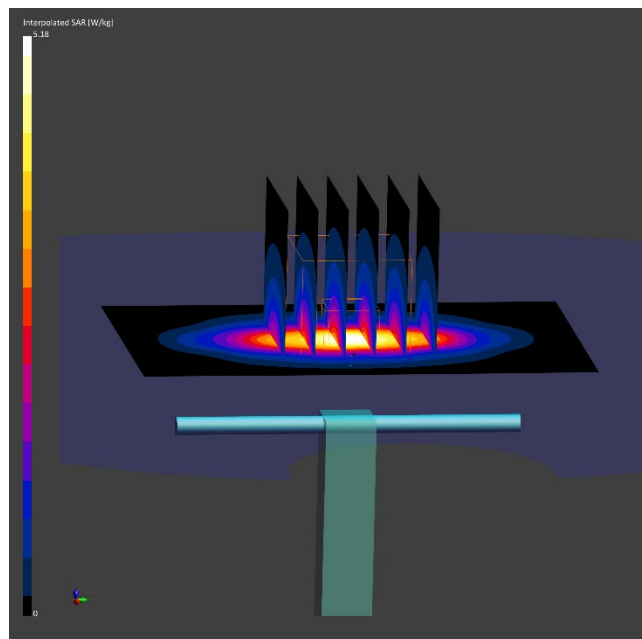
Software	Software Version
cDASY6 Module SAR	6.14.0.959

## Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5

## Measurement Results

	Zoom Scan
psSAR1g [W/Kg]	4.07
psSAR10g [W/Kg]	2.09
Dev. 1g [%]	4.09



# PCTEST

Date: 06/10/2021

2300MHz Body Verification

## Medium

Frequency [MHz]	TSL	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [C]	Tissue Temperature [C]
2300.0	2300 Body	1.89	50.5	20.3	22.5

## 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	D2300V2 - SN1073	EX3DV4 - SN7570, 2020-12-15	7.8	DAE4 Sn859, 2020-12-07

## Software Setup

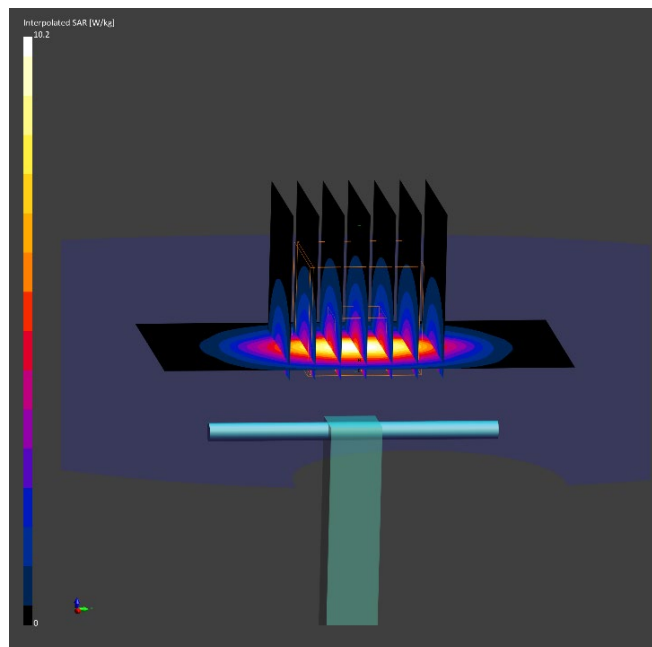
Software	Software Version
cDASY6 Module SAR	6.14.0.959

## 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	No	Yes
Grading Ratio	n/a	1.5

## Measurement Results

	Zoom Scan
psSAR1g [W/Kg]	4.94
psSAR10g [W/Kg]	2.34
Dev. 1g [%]	3.56



# PCTEST

Date: 06/09/2021

2600MHz Body Verification

## Medium

Frequency [MHz]	TSL	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [C]	Tissue Temperature [C]
2600.0	2600 Body	2.13	50.2	20.3	22.5

## 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	D2600V2 - SN1071	EX3DV4 - SN7570, 2020-12-15	7.36	DAE4 Sn859, 2020-12-07

## Software Setup

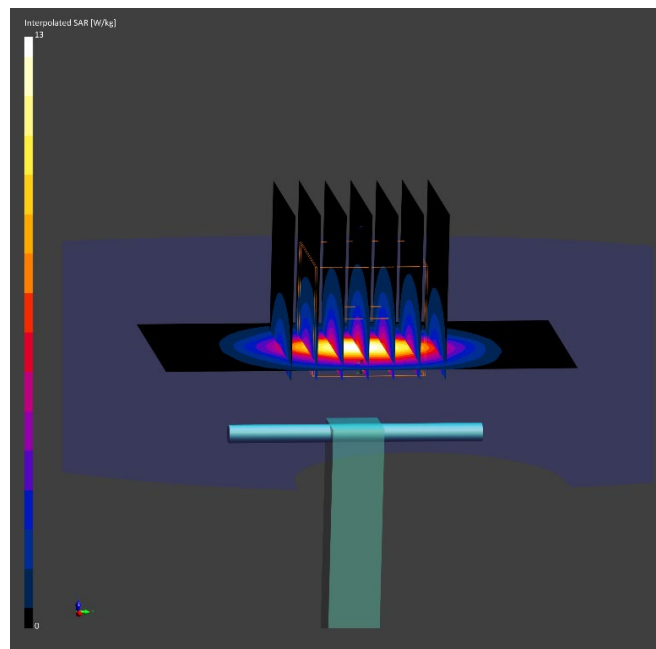
Software	Software Version
cDASY6 Module SAR	6.14.0.959

## 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	No	Yes
Grading Ratio	n/a	1.5

## Measurement Results

	Zoom Scan
psSAR1g [W/Kg]	5.85
psSAR10g [W/Kg]	2.59
Dev. 1g [%]	7.73





# PCTEST

Date: 06/04/2021

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, 01/11/2021	DAE4ip SN1639, 11/17/2020

## Software Setup

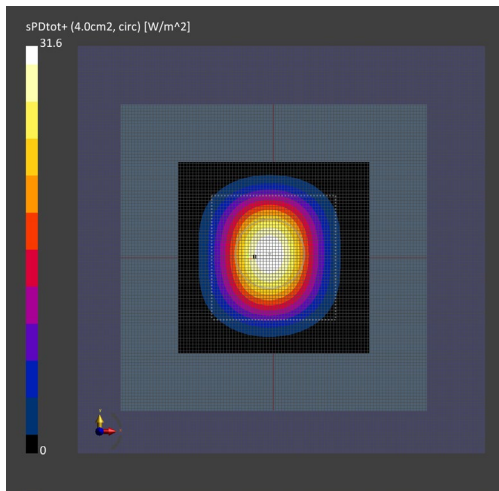
Software	Software Version
CDASY6 Module mmWave	2.2.0.76

## Scans Setup

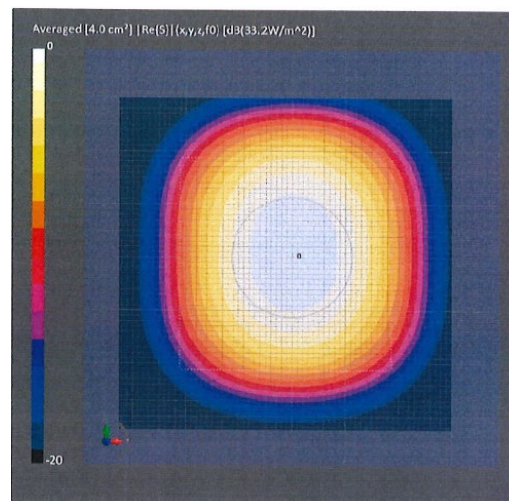
Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	5.55

## Measurement Results

Scan Type	5G Scan
Avg. Area [cm <sup>2</sup> ]	4.00
pS <sub>tot</sub> avg [W/m <sup>2</sup> ]	31.6
pS <sub>n</sub> avg [W/m <sup>2</sup> ]	31.2
E <sub>peak</sub> [V/m]	127
Deviation (dB)	-0.21



30GHz System Verification



Calibration Certificate

# PCTEST

Date: 06/04/2021

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, 06/24/2020	DAE4 SN665, 02/12/2021

## Software Setup

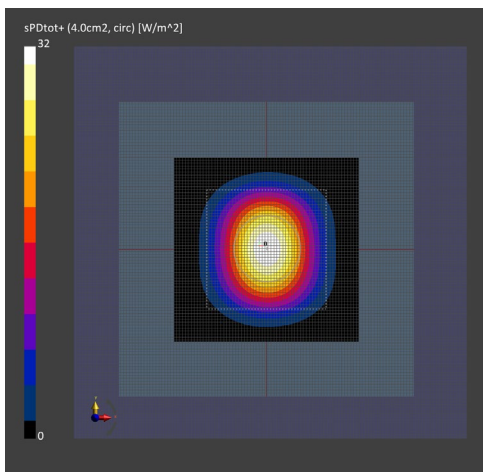
Software	Software Version
cDASY6 Module mmWave	2.2.0.76

## Scans Setup

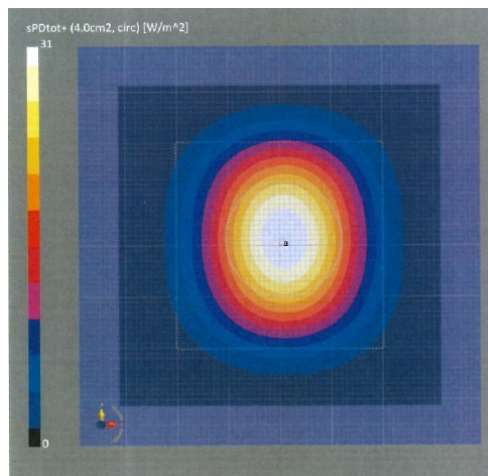
Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	5.55

## Measurement Results

Scan Type	5G Scan
Avg. Area [cm <sup>2</sup> ]	4.00
pS <sub>tot</sub> avg [W/m <sup>2</sup> ]	32.0
pS <sub>n</sub> avg [W/m <sup>2</sup> ]	31.7
E <sub>peak</sub> [V/m]	129
Deviation (dB)	0.14



30GHz System Verification



Calibration Certificate