APPENDIX A: VERIFICATION PLOTS

ELEMENT

DUT: Dipole 2300.0 MHz; Type: D2300V2 - SN1073

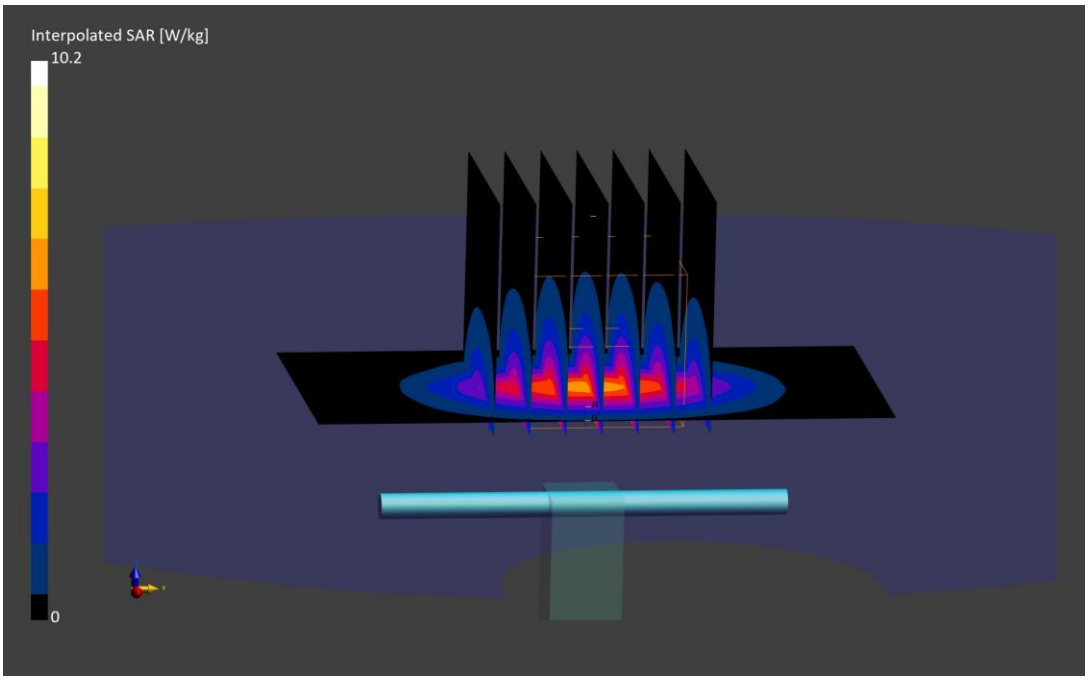
Communication System: UID: 0, CW; Frequency: 2300.0 MHz
Medium: 2450 Head; Medium parameters used:
f = 2300.0 MHz; cond = 1.71 S/m; perm = 39.6; density = 1000 kg/m3
Phantom Section: Flat; Space: 10 mm

Test Date: 11/10/2022; Ambient Temp: 22.3^{0}C; Tissue Temp: 20.8^{0}C

Probe: EX3DV4 - SN7670; ConvF:(8.22,8.22,8.22); Calibrated: 2022-08-22
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1681; Calibrated: 2022-08-15
Phantom: Twin-SAM V8.0 (Left); Serial: 1964
Measurement SW: DASY Module SAR V16.2.0.1425

2300 MHz System Verification at 20 dBm (100 mW)

Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=5.0 mm, dy=5.0 mm, dz=1.5 mm;
Graded Ratio: 1.5
Peak SAR (extrapolated) = 10.3 W/kg
SAR(1 g) = 4.98 W/kg; SAR(10 g) = 2.38 W/kg
Deviation (1 g) = 2.47%



ELEMENT

DUT: Dipole 3700.0 MHz; Type: D3700V2 - SN1067

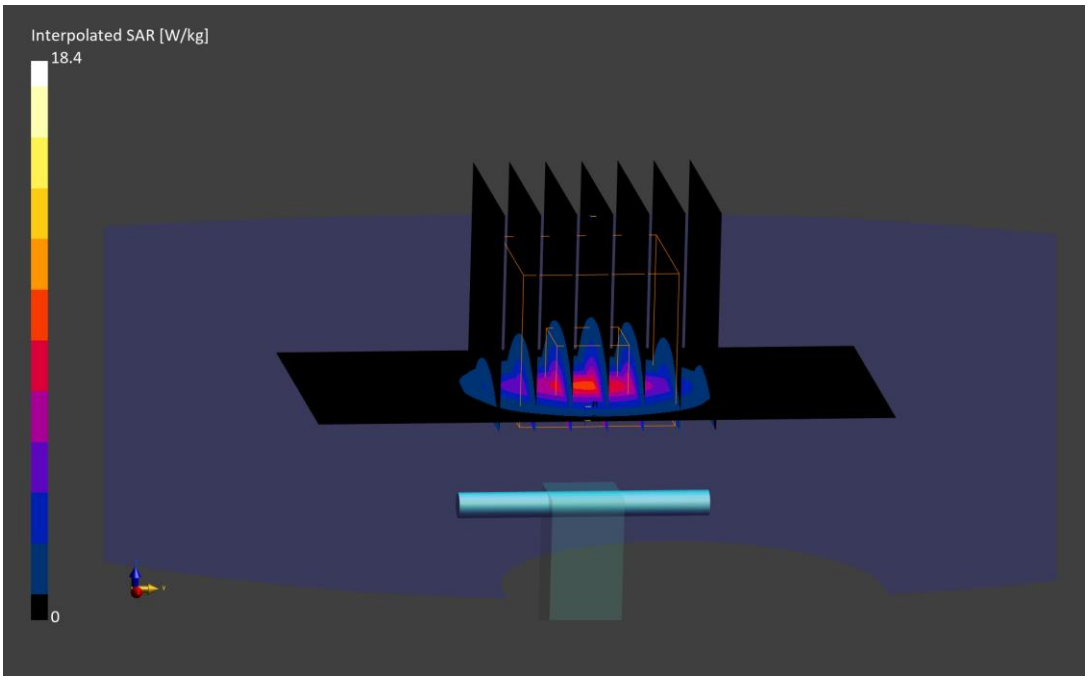
Communication System: UID: 0, CW; Frequency: 3700.0 MHz
Medium: 3600 Head; Medium parameters used:
f = 3700.0 MHz; cond = 2.97 S/m; perm = 37.4; density = 1000 kg/m3
Phantom Section: Flat; Space: 10 mm

Test Date: 11/10/2022; Ambient Temp: 22.3^{0}C; Tissue Temp: 20.8^{0}C

Probe: EX3DV4 - SN7670; ConvF:(6.95,6.95,6.95); Calibrated: 2022-08-22
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1681; Calibrated: 2022-08-15
Phantom: Twin-SAM V8.0 (Left); Serial: 1964
Measurement SW: DASY Module SAR V16.2.0.1425

3700 MHz System Verification at 20 dBm (100 mW)

Area Scan (40.0 x 80.0): Measurement grid: dx=10.0 mm, dy=10.0 mm
Zoom Scan (28.0 x 28.0 x 28.0): Measurement grid: dx=5.0 mm, dy=5.0 mm, dz=1.4 mm;
Graded Ratio: 1.5
Peak SAR (extrapolated) = 18.4 W/kg
SAR(1 g) = 6.96 W/kg; SAR(10 g) = 2.58 W/kg
Deviation (1 g) = 3.57%



ELEMENT

DUT: Dipole 1750.0 MHz; Type: D1765V2 - SN1008

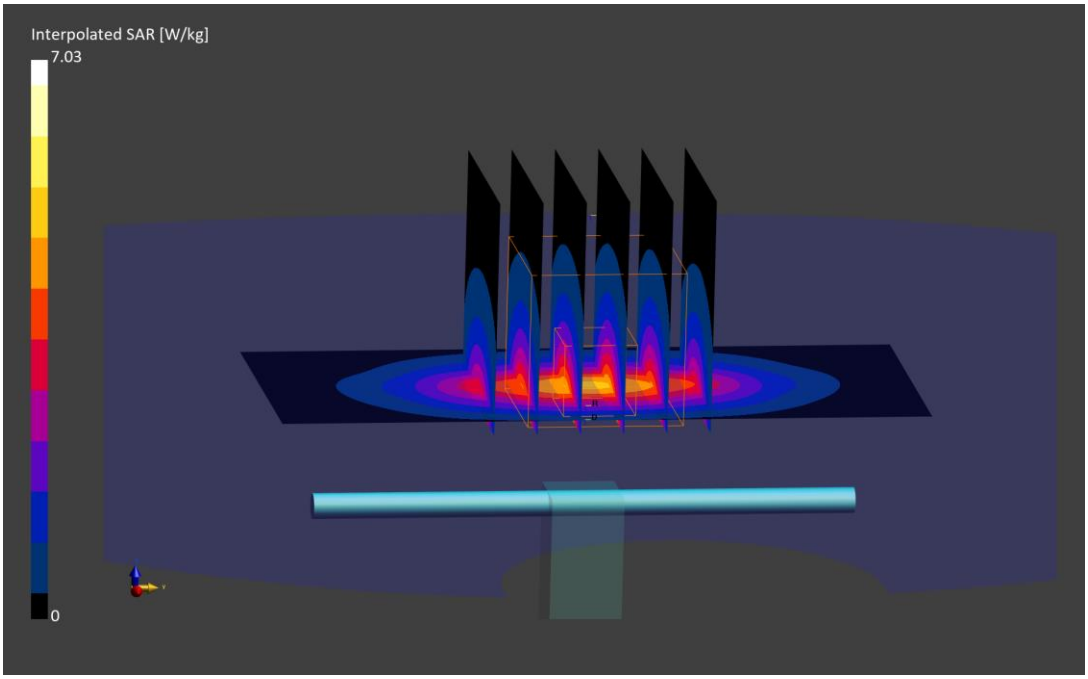
Communication System: UID: 0, CW; Frequency: 1750.0 MHz
Medium: 1750 Body; Medium parameters used:
f = 1750.0 MHz; cond = 1.54 S/m; perm = 51.5; density = 1000 kg/m3
Phantom Section: Flat; Space: 10 mm

Test Date: 10/11/2022; Ambient Temp: 22.3^{0}C; Tissue Temp: 20.7^{0}C

Probe: EX3DV4 - SN7670; ConvF:(8.53,8.53,8.53); Calibrated: 2022-08-22
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1681; Calibrated: 2022-08-15
Phantom: Twin-SAM V8.0 (Left); Serial: 1964
Measurement SW: DASY Module SAR V16.2.0.1425

1750 MHz System Verification at 20 dBm (100 mW)

Area Scan (40.0 x 90.0): Measurement grid: dx=10.0 mm, dy=15.0 mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=6.0 mm, dy=6.0 mm, dz=1.5 mm;
Graded Ratio: 1.5
Peak SAR (extrapolated) = 7.03 W/kg
SAR(1 g) = 3.82 W/kg; SAR(10 g) = 2.00 W/kg
Deviation (10 g) = 0.50%



ELEMENT

DUT: Dipole 1900.0 MHz; Type: D1900V2 - SN5d148

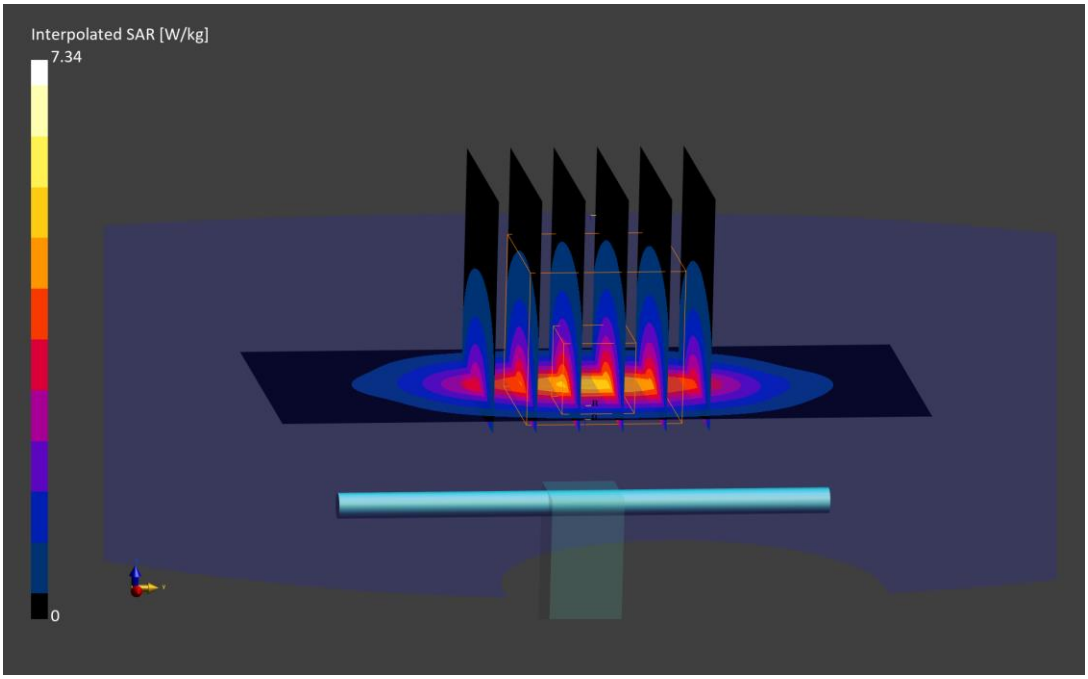
Communication System: UID: 0, CW; Frequency: 1900.0 MHz
Medium: 1900 Body; Medium parameters used:
f = 1900.0 MHz; cond = 1.54 S/m; perm = 51.9; density = 1000 kg/m3
Phantom Section: Flat; Space: 10 mm

Test Date: 10/06/2022; Ambient Temp: 22.5^{0}C; Tissue Temp: 21.6^{0}C

Probe: EX3DV4 - SN7670; ConvF:(8.26,8.26,8.26); Calibrated: 2022-08-22
Sensor-Surface: 1.4mm (VMS + 6p)
Electronics: DAE4 Sn1681; Calibrated: 2022-08-15
Phantom: Twin-SAM V8.0 (Left); Serial: 1964
Measurement SW: DASY Module SAR V16.2.0.1425

1900 MHz System Verification at 20 dBm (100 mW)

Area Scan (40.0 x 90.0): Measurement grid: dx=10.0 mm, dy=15.0 mm
Zoom Scan (30.0 x 30.0 x 30.0): Measurement grid: dx=6.0 mm, dy=6.0 mm, dz=1.5 mm;
Graded Ratio: 1.5
Peak SAR (extrapolated) = 7.34 W/kg
SAR(1 g) = 4.02 W/kg; SAR(10 g) = 2.09 W/kg
Deviation (1 g) = 0.75%; Deviation (10 g) = 0.00%



ELEMENT

Date: 10/07/2022
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
EUmmWV3 - SN9421_F1-55GHz, 2022-03-15	DAE4 Sn1530, 2022-01-12

Software Setup

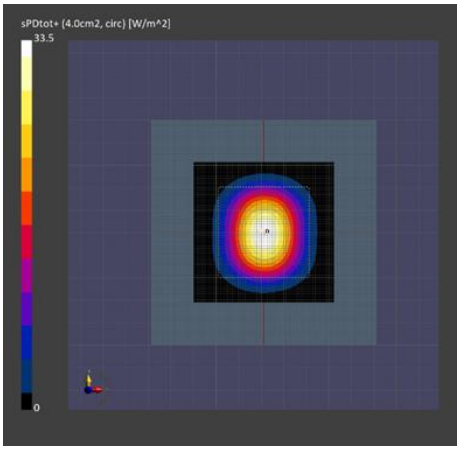
Software	Software Version
cDasy6 Module mmWave	3.0.0.841

Scans Setup

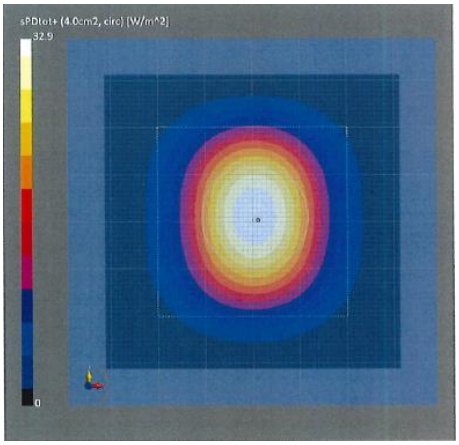
Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	5.55

Measurement Results

Scan Type	5G Scan
Avg. Area [cm²]	4.00
pS_{tot} avg [W/m²]	33.5
pS_n avg [W/m²]	33.1
E_{peak} [V/m]	133
Deviation [dB]	0.10



30GHz System Verification



Calibration Certificate

ELEMENT

Date: 10/21/2022
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 - SN9421_F1-55GHz, 2022-03-15	DAE4 Sn1530, 2022-01-12

Software Setup

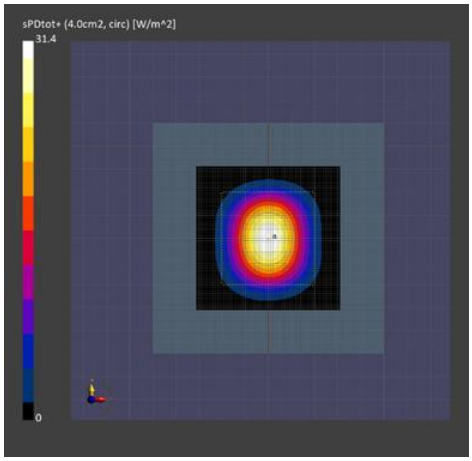
Software	Software Version
cDasy6 Module mmWave	3.0.0.841

Scans Setup

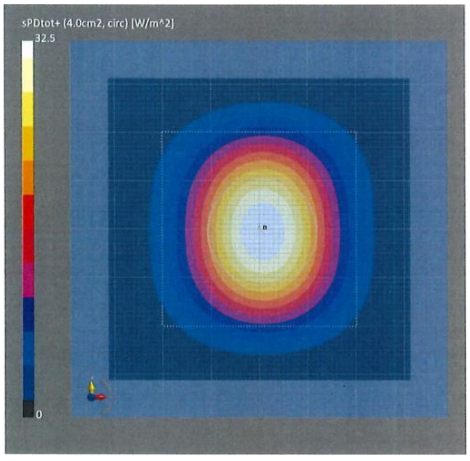
Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	5.55

Measurement Results

Scan Type	5G Scan
Avg. Area [cm²]	4.00
pS_{tot} avg [W/m²]	31.4
pS_n avg [W/m²]	30.9
E_{peak} [V/m]	126
Deviation [dB]	-0.14



30GHz System Verification



Calibration Certificate

ELEMENT

Date: 10/31/2022
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
EUmmWV3 - SN9421_F1-55GHz, 2022-03-15	DAE4 Sn1530, 2022-01-12

Software Setup

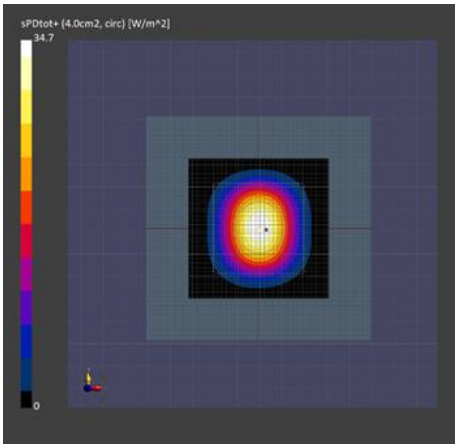
Software	Software Version
cDasy6 Module mmWave	3.0.0.841

Scans Setup

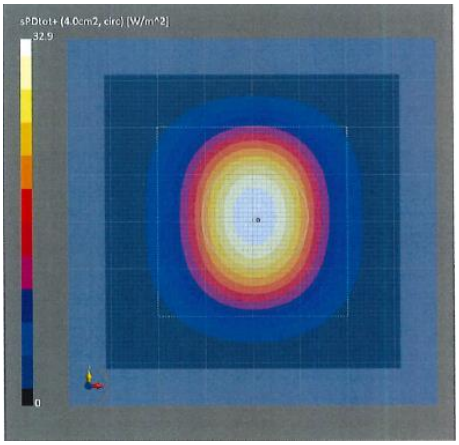
Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	5.55

Measurement Results

Scan Type	5G Scan
Avg. Area [cm²]	4.00
pS_{tot} avg [W/m²]	34.7
pS_n avg [W/m²]	34.2
E_{peak} [V/m]	135
Deviation [dB]	0.26



30GHz System Verification



Calibration Certificate

ELEMENT

Date: 11/3/2022
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
EUmmWV3 - SN9421_F1-55GHz, 2022-03-15	DAE4 Sn1530, 2022-01-12

Software Setup

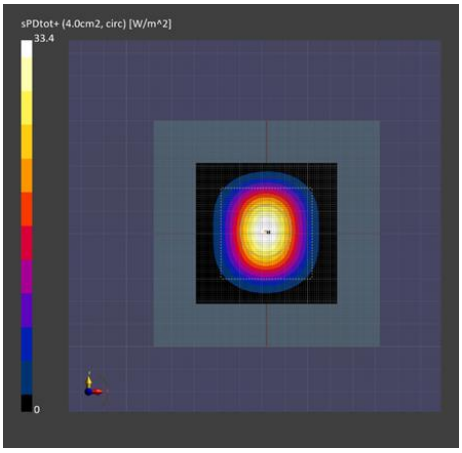
Software	Software Version
cDasy6 Module mmWave	3.0.0.841

Scans Setup

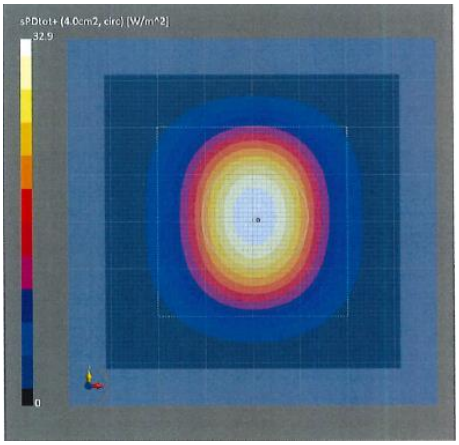
Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	5.55

Measurement Results

Scan Type	5G Scan
Avg. Area [cm²]	4.00
pS_{tot} avg [W/m²]	33.4
pS_n avg [W/m²]	33.0
E_{peak} [V/m]	133
Deviation [dB]	0.09



30GHz System Verification



Calibration Certificate