

Power Density Simulation Report

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1. Numerical modeling for Power Density (PD) calculations

1.1 Full-wave numerical computation tool

To calculate the Power Density (PD) of the phone at FR2 frequencies, a commercial software called HFSS [1], which is a part of ANSYS Electronics Desktop 2021 R2 package, has been used. This software is a 3D full-wave electromagnetic (EM) computational solver based on Finite Element Method (FEM).

1.2 Full-wave simulation setup

1.2.1 Simulation model

The device includes two mmWave modules, referred to as Plane-A sub-module and Plane-B sub-module, located at the top and the back side of the device, respectively, as shown in Figure 1-1. In order to obtain accurate PD calculations, it is necessary to have accurate modeling of the mmWave antennas as well as all other components of the device in close proximity to the mmWave antennas. The simulation model therefore must include all components of the device located within a distance of at least one wavelength from the mmWave modules. A list of the components included in the simulation model includes housing, mmWave antenna modules, sub6 antennas, PCB, shield cans, Flexible Printed Circuits (FPCs), battery, all components having metallic parts, etc.

1.2.2 Mesh settings and solution setup

ANSYS HFSS features an automatic adaptive mesh refinement algorithm which refines the computational mesh iteratively in regions with strong EM fields and thereby generates very accurate high-frequency simulation results. The steps of adaptive mesh refinement algorithm execution are as follows. First, an initial computational mesh is created, based on the solution setup parameters entered by the user, and is then used to obtain the initial solution for the EM fields of the simulation model. The algorithm then adaptively refines the mesh in each subsequent iteration until a desired solution accuracy, specified by the user, is achieved. The solution accuracy is commonly defined by a convergence parameter called ΔS , which is a variation in the magnitude of all S-parameters between the consecutive iterations of the algorithm [1]. The ΔS parameter specified for all PD simulations presented in this report is 0.02. Figure 1-2 shows an example cut surface in the model showing a tetrahedral computational mesh created by the adaptive mesh refinement algorithm in one of the HFSS simulation models. A radiation boundary with Absorbing Boundary Condition (ABC) is assigned to the outer surface of an air-box surrounding the simulation model, which allows the EM waves to propagate

outward from the boundary of the domain without generating any reflected EM waves.



Figure 1-1 Placement of the L-shaped mmWave modules, called Plane-A sub-module and Plane-B sub-module, positioned at the top and back side of the device, respectively.

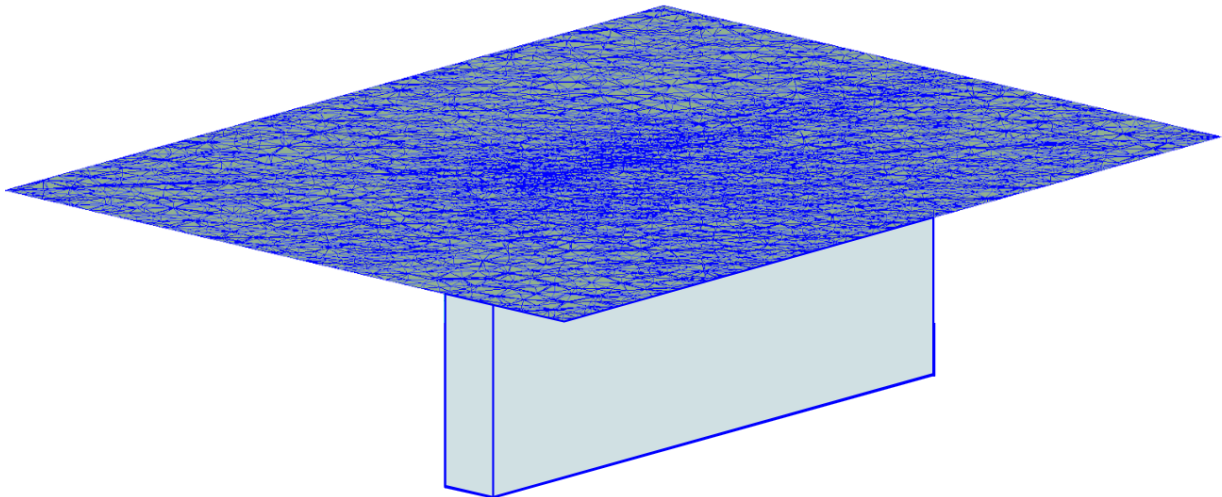


Figure 1-2 An example cut surface in an HFSS simulation model showing the tetrahedral mesh created by the adaptive mesh refinement algorithm.

The FEM simulations are performed separately for the two mmWave antenna arrays. In both of

these two simulations, 16 wave-ports are assigned to the 16 feed points of the mmWave antenna array . Specifically, 8 of these 16 wave-ports are located at the 8 vertical polarization feed points of the mmWave antenna array (V), and the remaining 8 wave-ports are located at the 8 horizontal polarization feed points of the mmWave antenna array (H). After the FEM simulations are completed and full-wave EM solutions are obtained, the magnitude and phase values of the 16 wave-ports excitation signals are sequentially assigned for each of the beams in the codebook. This is accomplished as a post-processing step by using the “Edit post process sources” tab in the HFSS environment, as shown in Figure 1-3 for one of the beams from the codebook.

	Source	Type	Magnitude	Unit	Phase	Unit
1	HFSSDesign1_1_1:1	Port	0	W	0	deg
2	HFSSDesign1_1_2:1	Port	0	W	0	deg
3	HFSSDesign1_1_3:1	Port	0	W	0	deg
4	HFSSDesign1_1_4:1	Port	0.002635	W	477.161	deg
5	HFSSDesign1_1_5:1	Port	0.002464	W	232.39	deg
6	HFSSDesign1_1_6:1	Port	0.002468	W	196.576	deg
7	HFSSDesign1_1_7:1	Port	0.002297	W	331.85	deg
8	HFSSDesign1_1_8:1	Port	0	W	0	deg
9	HFSSDesign1_1_9:1	Port	0	W	0	deg
10	HFSSDesign1_1_10:1	Port	0	W	0	deg
11	HFSSDesign1_1_11:1	Port	0	W	0	deg
12	HFSSDesign1_1_12:1	Port	0	W	0	deg
13	HFSSDesign1_1_13:1	Port	0	W	0	deg
14	HFSSDesign1_1_14:1	Port	0	W	0	deg
15	HFSSDesign1_1_15:1	Port	0	W	0	deg
16	HFSSDesign1_1_16:1	Port	0	W	0	deg
17	HFSSDesign1_1_19:1	Port	0	W	0	deg
18	HFSSDesign1_1_20:1	Port	0	W	0	deg
19	HFSSDesign1_1_17:1	Port	0	W	0	deg
20	HFSSDesign1_1_18:1	Port	0	W	0	deg
21	HFSSDesign1_1_23:1	Port	0	W	0	deg
22	HFSSDesign1_1_24:1	Port	0	W	0	deg
23	HFSSDesign1_1_21:1	Port	0	W	0	deg
24	HFSSDesign1_1_22:1	Port	0	W	0	deg
25	HFSSDesign1_1_27:1	Port	0	W	0	deg
26	HFSSDesign1_1_28:1	Port	0	W	0	deg
27	HFSSDesign1_1_25:1	Port	0	W	0	deg
28	HFSSDesign1_1_26:1	Port	0	W	0	deg
29	HFSSDesign1_1_31:1	Port	0	W	0	deg
30	HFSSDesign1_1_32:1	Port	0	W	0	deg
31	HFSSDesign1_1_29:1	Port	0	W	0	deg
32	HFSSDesign1_1_30:1	Port	1	W	0	deg

Figure 1-3 An example of magnitude and phase assignments to the wave-ports in the “Edit post process sources” tab in the HFSS environment.

1.2.3 Time-averaged PD calculation

After the convergence criterion is achieved in the last iterative pass, that is $\text{Max}\{|\Delta S|\}$ is smaller than the specified value of the convergence parameter ΔS (that being 0.02 in this report, as mentioned above), the values of the electric and magnetic field vectors \vec{E} and \vec{H} respectively, are calculated, and then used to calculate the PD by the following formula:

$$PD = \frac{1}{2} \left| \text{Re} \left\{ \vec{E} \times \vec{H}^* \right\} \right|$$

Based on the calculated PD , the time-averaged PD (PD_{ave}) over a surface A can be obtained as:

$$PD_{ave} = \frac{1}{2A} \int_A \left| \text{Re} \left\{ \vec{E} \times \vec{H}^* \right\} \right| \cdot dS$$

To determine the RF exposure from the mmW antennas in the device, the values of the electric and magnetic field vectors at the six surfaces S1, S2, S3, S4, S5, and S6 shown in Figure 1-4 are needed. Depending on the simulation or measurement setting, the distance from these six surfaces to the device is set to be either 2 mm or 10 mm. For specific positions and orientations of the mmWave antennas in the device, the surface integration terms in the above formula for the PD_{ave} corresponding to some of these six surfaces are negligible, and thus can be excluded from the PD_{ave} calculation. Table 1-1 specifies, via green square markings, which of these six surfaces need to be used in the above formula for the PD_{ave} for the two mmWave modules in our device. As seen, the surfaces S1, S2, S3, and S5 need to be used in the PD_{ave} calculations for both Plane-A and Plane-B calculations.

In the spatially averaged power density calculations, the surface A is a circle in the evaluation plane with an area of 4 [cm²]. Furthermore, PD_{ave} is calculated at the points of a grid with 0.1 mm step size defined in each evaluation plane.

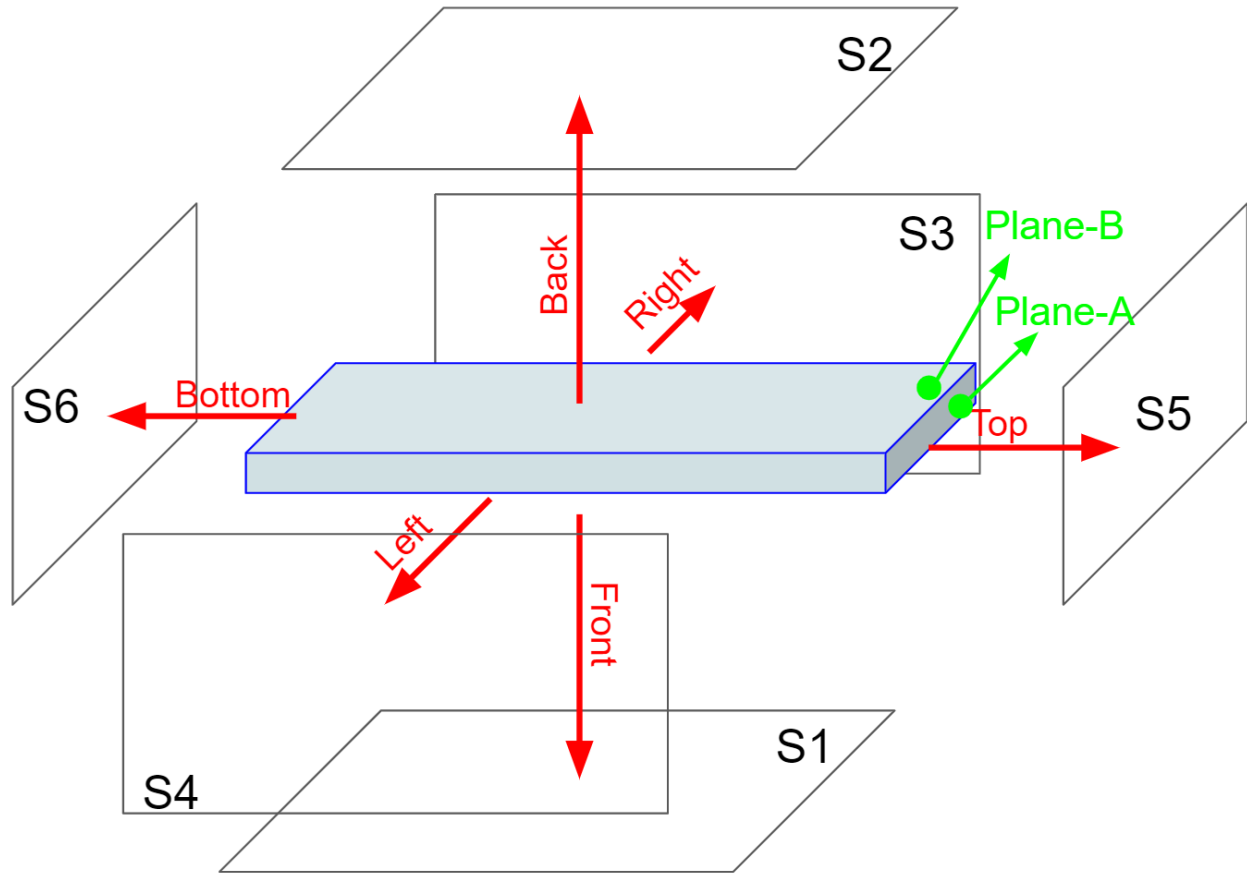


Figure 1-4 *PD* evaluation surfaces. Averaged power densities (PD_{ave}) are calculated and measured on the specified surfaces (S1, S2, S3, and S5) surrounding the phone.

Table 1-1 *PD* evaluation surfaces considered for each mmWave module in our device.

	S1 (front)	S2 (back)	S3 (right)	S4 (left)	S5 (top)	S6 (bottom)
Plane-A				x		x
Plane-B				x		x

2. Simulation and modeling validation

2.1 Comparison between simulation and measurement

Following the time-average *PD* calculation procedure described in section 1.2.3, the distributions of *PD* and PD_{ave} are calculated in the evaluation planes and are compared with the measurements for a selected number of beams from the codebook, whose IDs are listed in Table 2-1. Also shown in this table are simulated and measured results for the PD_{ave} for both n260 and n261 frequency bands, and both vertical and horizontal polarizations, denoted as V

and H, respectively.

Figure 2-1 shows orientation of the device for the PD and PD_{ave} distribution plots presented in Figures 2-2 to 2-25. The presented plots demonstrate a good agreement between simulated and measured results for both PD and PD_{ave} .

Table 2-1 Simulated and measured PD_{ave} for selected beams with 17 [dBm] input power.

Test No.	Sub-module	Beam ID	Band	Freq. [GHz]	Pol.	Exp. Surface	Test Separation	Averaged PD [W/m ²]		Delta=Sim-Meas
								Sim.	Meas.	
1	Plane-A	06	n260	38.5	H	S5 (Top)	2mm	7.53	6.2	0.84
2	Plane-A	01	n260	38.5	V	S5 (Top)	2mm	6.79	5.43	0.97
3	Plane-A	06	n260	38.5	H+V	S5 (Top)	2mm	15.15	11.5	1.20
4	Plane-B	03	n260	38.5	H	S2 (Back)	2mm	6.39	3.38	2.77
5	Plane-B	03	n260	38.5	V	S2 (Back)	2mm	6.53	4.15	1.97
6	Plane-B	03	n260	38.5	H+V	S2 (Back)	2mm	15.48	10.3	1.77
7	Plane-A	06	n261	27.925	H	S5 (Top)	2mm	11.26	6.97	2.08
8	Plane-A	04	n261	27.925	V	S5 (Top)	2mm	11.32	7.53	1.77
9	Plane-A	03	n261	27.925	H+V	S5 (Top)	2mm	22.08	16.9	1.16
10	Plane-B	04	n261	27.925	H	S2 (Back)	2mm	8.38	6.9	0.84
11	Plane-B	03	n261	27.925	V	S2 (Back)	2mm	8.22	5.66	1.62
12	Plane-B	04	n261	27.925	H+V	S2 (Back)	2mm	18.94	14.5	1.16

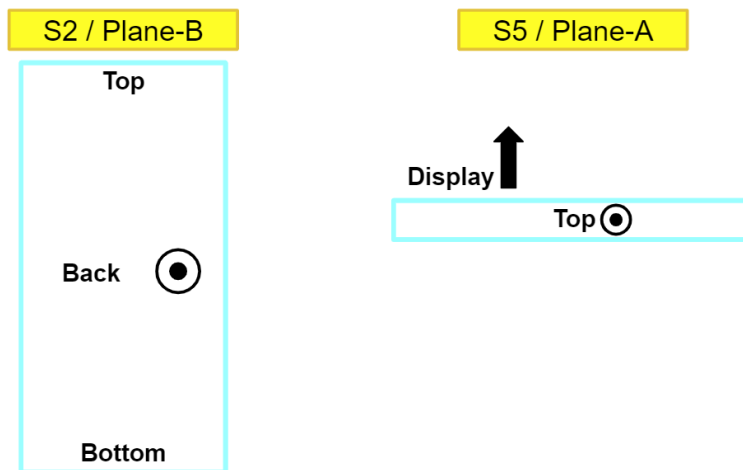


Figure 2-1 Orientation of the device for the PD distribution plots.

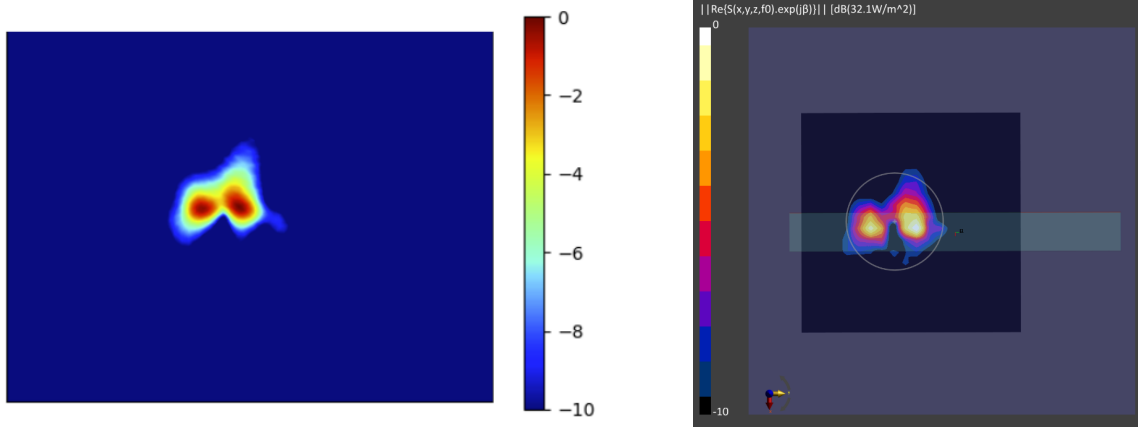


Figure 2-2 Simulated (left) and measured (right) *PD* distribution for the following configuration: Band n261, MID Channel, Beam ID 06, H polarization, Plane-A, plotted on the surface S5 (top) with 2mm separation distance to the DUT.

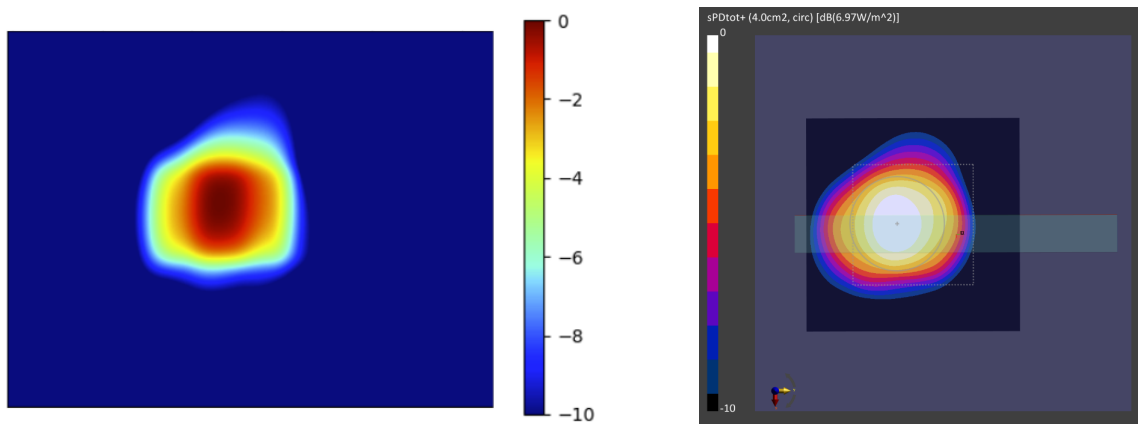


Figure 2-3 Simulated (left) and measured (right) averaged *PD* for the following configuration: Band n261, MID Channel, Beam ID 06, H polarization, Plane-A, plotted on the surface S5 (top) with 2mm separation distance to the DUT.

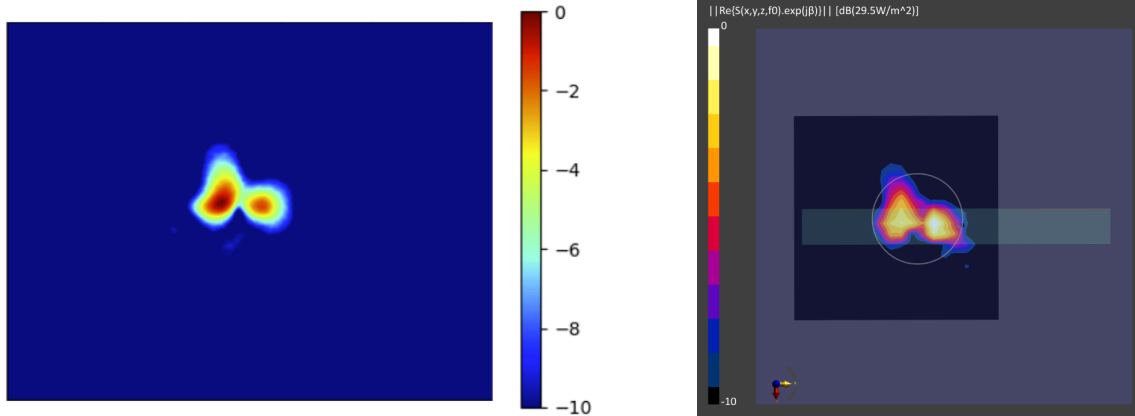


Figure 2-4 Simulated (left) and measured (right) *PD* distribution for the following configuration: Band n261, MID Channel, Beam ID 04, V polarization, Plane-A, plotted on the surface S5 (top) with 2mm separation distance to the DUT.

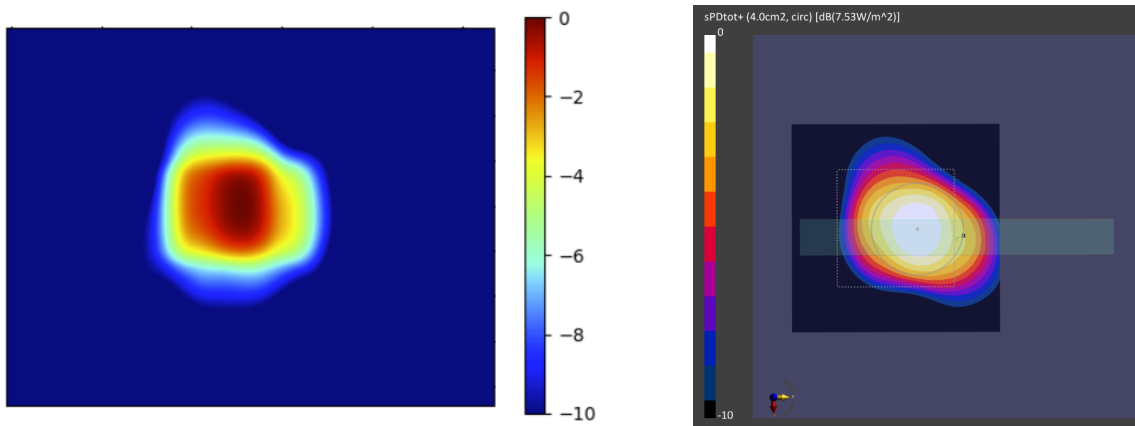


Figure 2-5 Simulated (left) and measured (right) averaged *PD* for the following configuration: Band n261, MID Channel, Beam ID 04, V polarization, Plane-A, plotted on the surface S5 (top) with 2mm separation distance to the DUT.

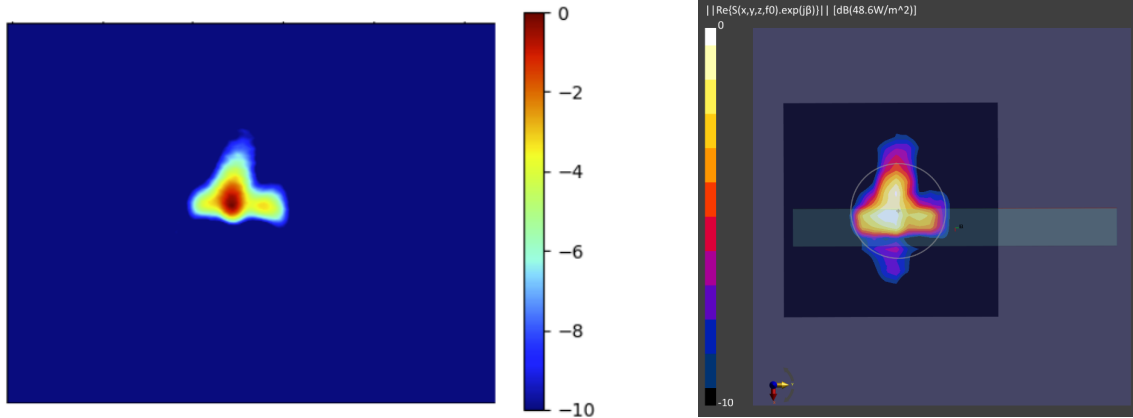


Figure 2-6 Simulated (left) and measured (right) *PD* distribution for the following configuration: Band n261, MID Channel, Beam ID 03, H+V polarization, Plane-A, plotted on the surface S5 (top) with 2mm separation distance to the DUT.

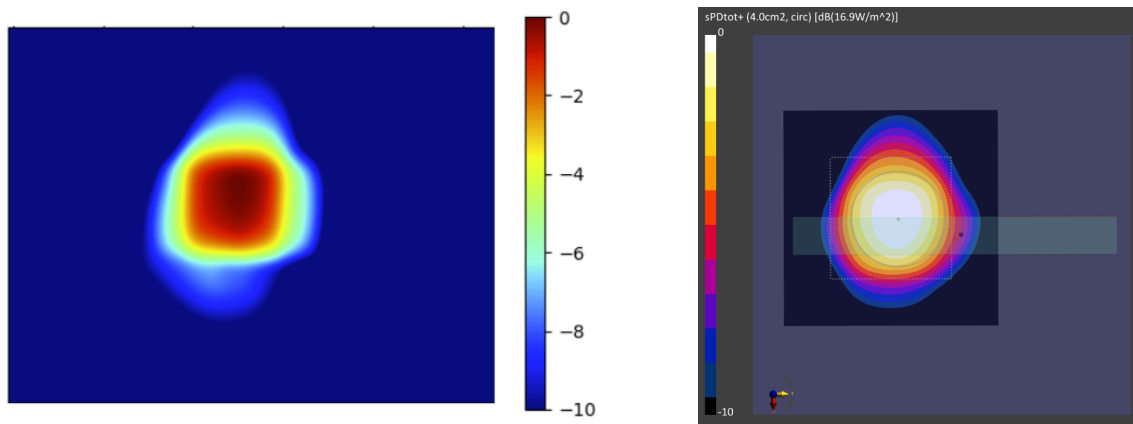


Figure 2-7 Simulated (left) and measured (right) averaged *PD* for the following configuration: Band n261, MID Channel, Beam ID 03, H+V polarization, Plane-A, plotted on the surface S5 (top) with 2mm separation distance to the DUT.

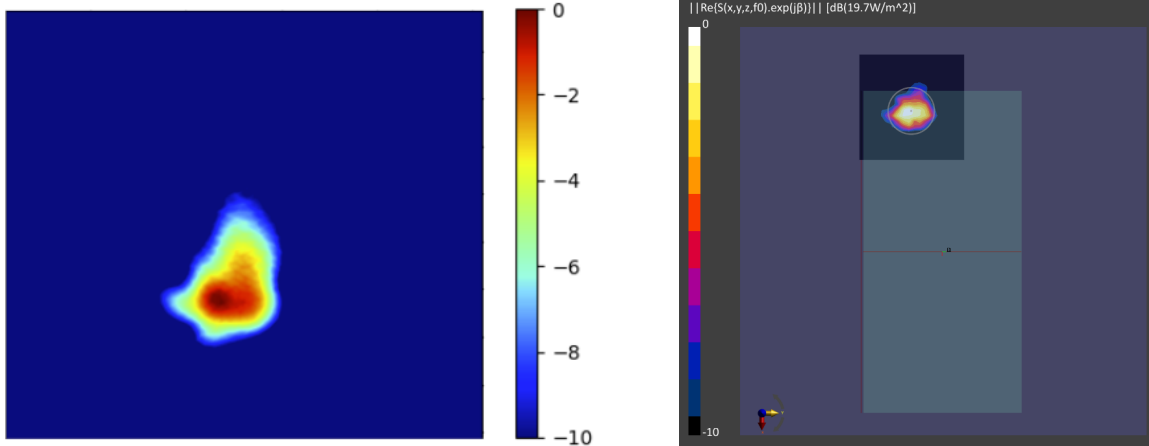


Figure 2-8 Simulated (left) and measured (right) *PD* distribution for the following configuration: Band n261, MID Channel, Beam ID 04, H polarization, Plane-B, plotted on the surface S2 (back) with 2mm separation distance to the camera bump.

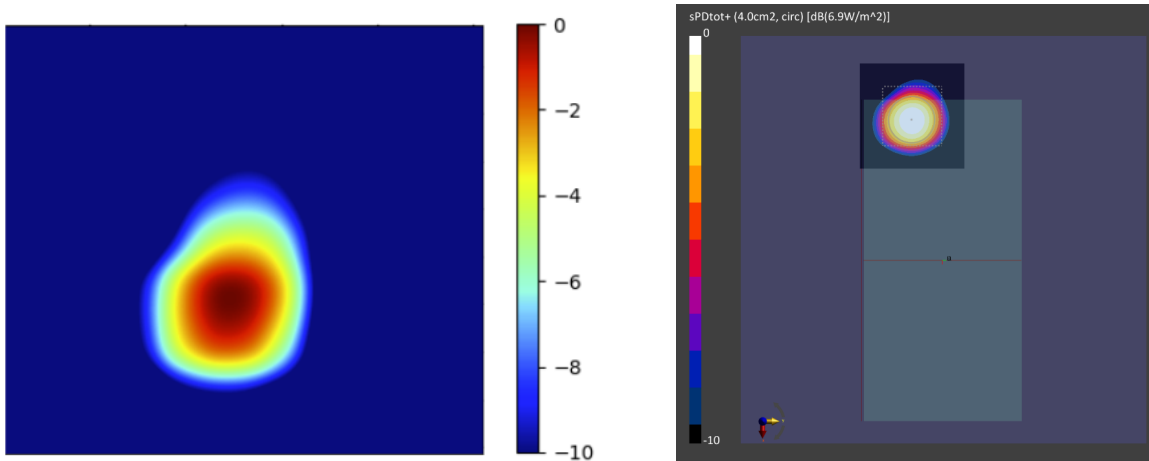


Figure 2-9 Simulated (left) and measured (right) averaged *PD* for the following configuration: Band n261, MID Channel, Beam ID 04, H polarization, Plane-B, plotted on the surface S2 (back) with 2mm separation distance to the camera bump.

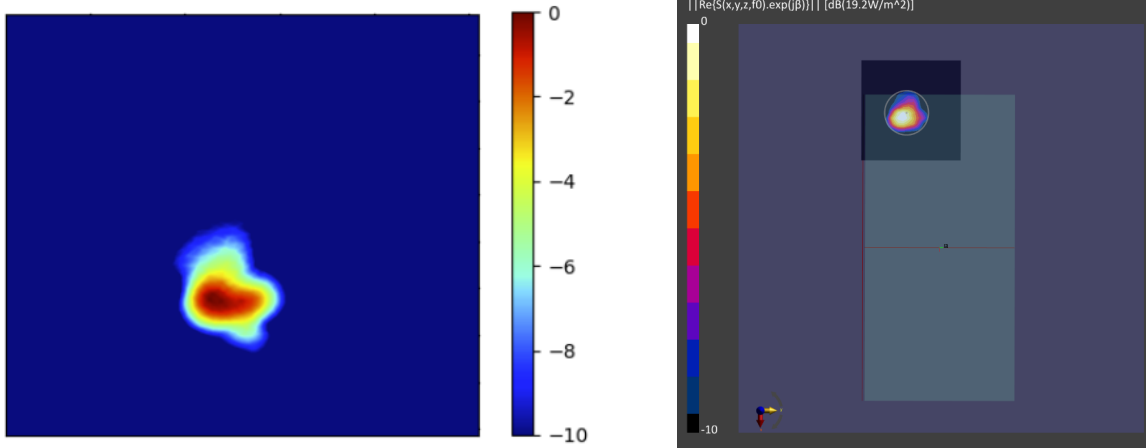


Figure 2-10 Simulated (left) and measured (right) PD distribution for the following configuration: Band n261, MID Channel, Beam ID 03, V polarization, Plane-B, plotted on the surface S2 (back) with 2mm separation distance to the camera bump.

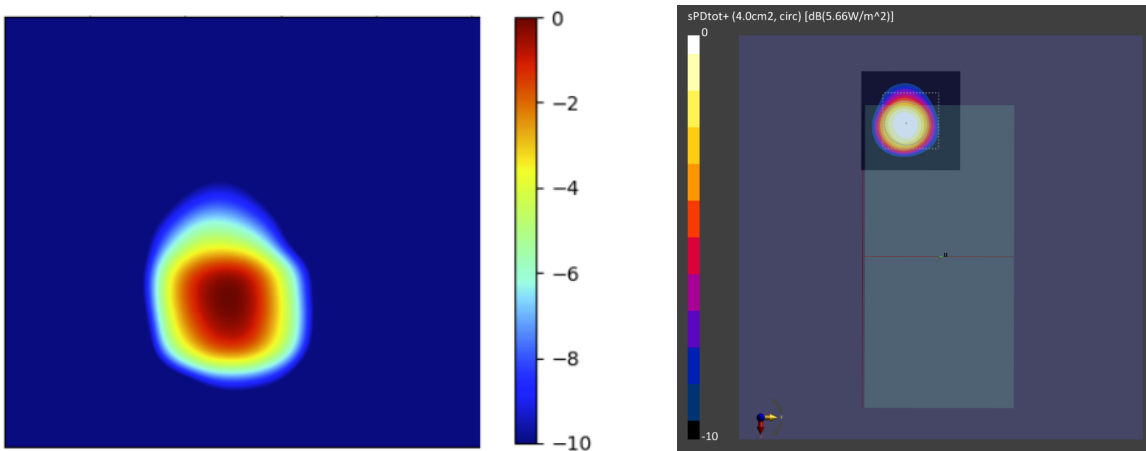


Figure 2-11 Simulated (left) and measured (right) averaged PD for the following configuration: Band n261, MID Channel, Beam ID 03, V polarization, Plane-B, plotted on the surface S2 (back) with 2mm separation distance to the camera bump.

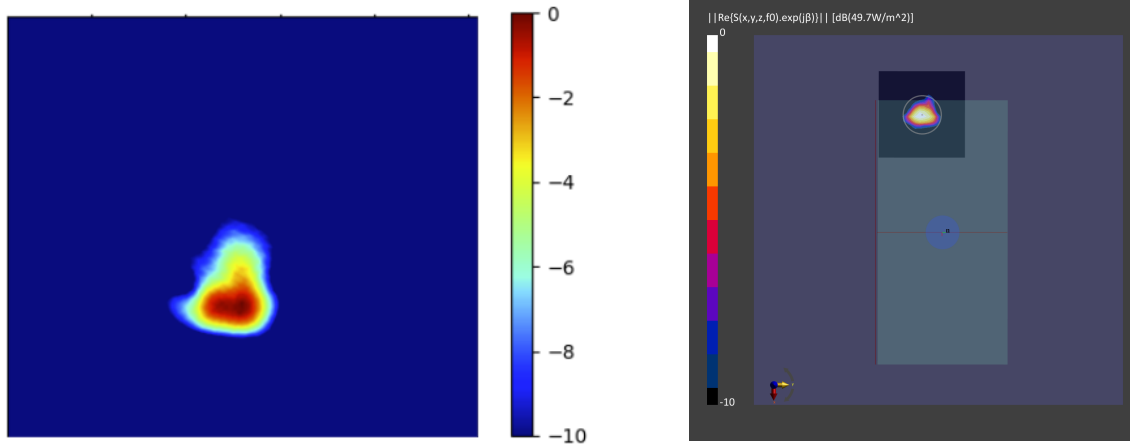


Figure 2-12 Simulated (left) and measured (right) *PD* distribution for the following configuration: Band n261, MID Channel, Beam ID 04, H+V polarization, Plane-B, plotted on the surface S2 (back) with 2mm separation distance to the camera bump.

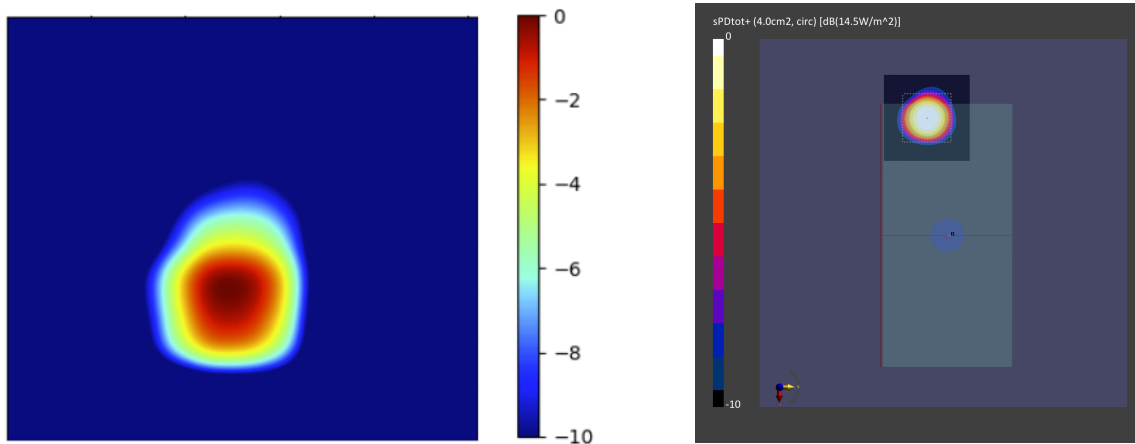


Figure 2-13 Simulated (left) and measured (right) averaged *PD* for the following configuration: Band n261, MID Channel, Beam ID 04, H+V polarization, Plane-B, plotted on the surface S2 (back) with 2mm separation distance to the camera bump.

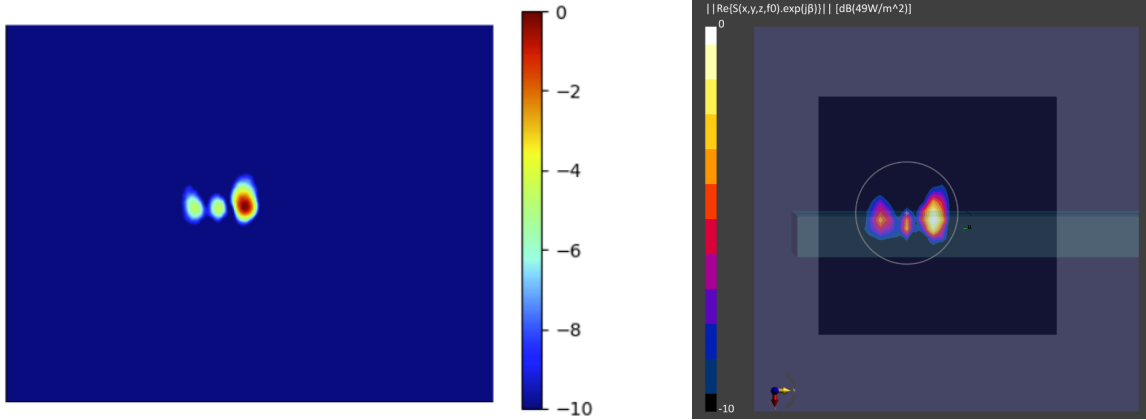


Figure 2-14 Simulated (left) and measured (right) *PD* distribution for the following configuration: Band n260, MID Channel, Beam ID 06, H polarization, Plane-A, plotted on the surface S5 (top) with 2mm separation distance to the DUT.

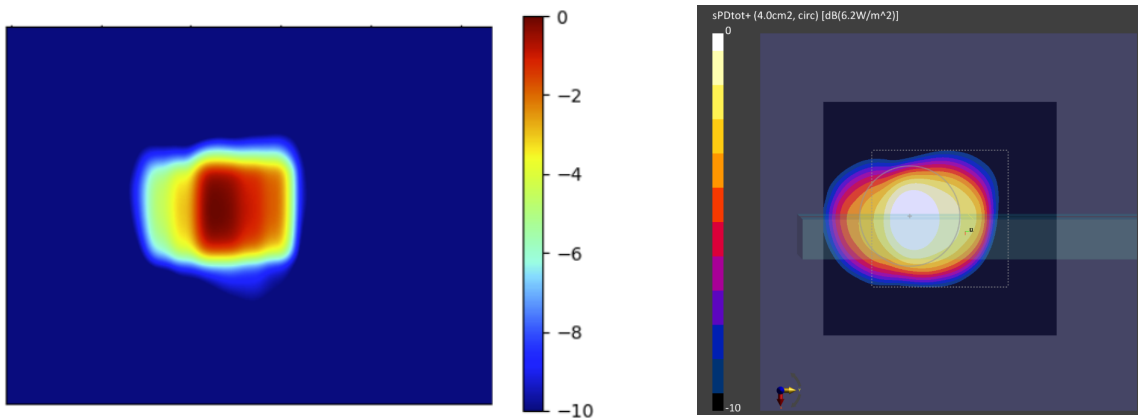


Figure 2-15 Simulated (left) and measured (right) averaged *PD* for the following configuration: Band n260, MID Channel, Beam ID 06, H polarization, Plane-A, plotted on the surface S5 (top) with 2mm separation distance to the DUT.

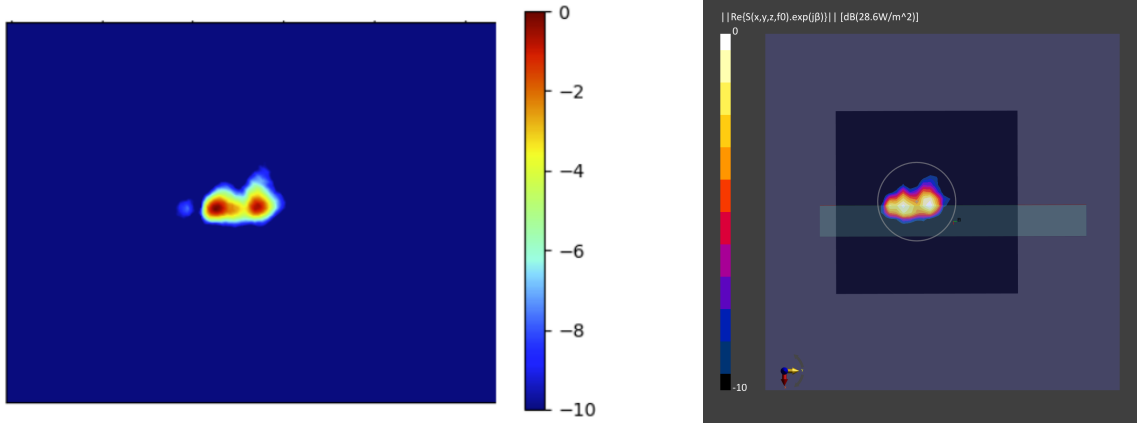


Figure 2-16 Simulated (left) and measured (right) *PD* distribution for the following configuration: Band n260, MID Channel, Beam ID 01, V polarization, Plane-A, plotted on the surface S5 (top) with 2mm separation distance to the DUT.

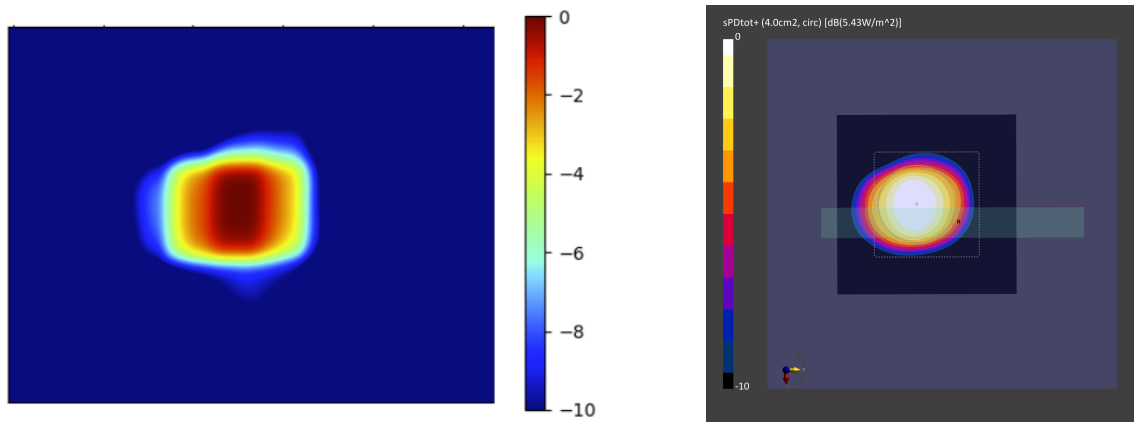


Figure 2-17 Simulated (left) and measured (right) averaged *PD* for the following configuration: Band n260, MID Channel, Beam ID 01, V polarization, Plane-A, plotted on the surface S5 (top) with 2mm separation distance to the DUT.

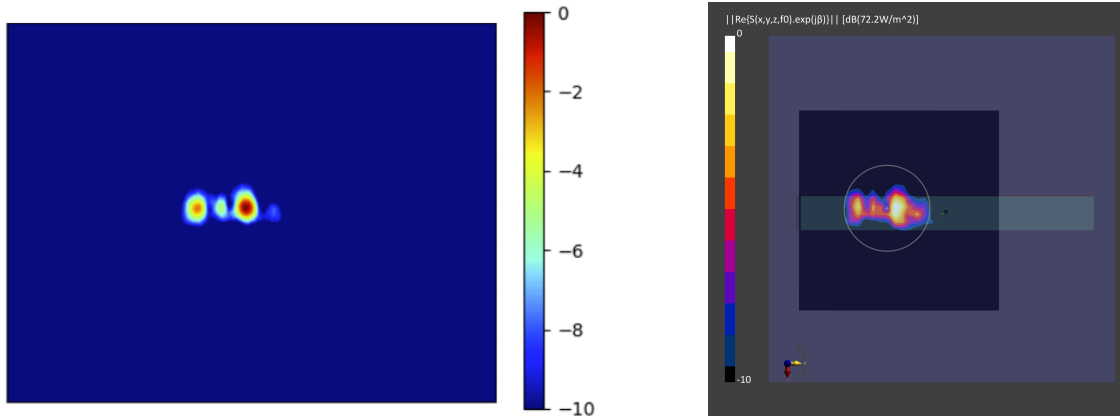


Figure 2-18 Simulated (left) and measured (right) *PD* distribution for the following configuration: Band n260, MID Channel, Beam ID 06, H+V polarization, Plane-A, plotted on the surface S5 (top) with 2mm separation distance to the DUT.

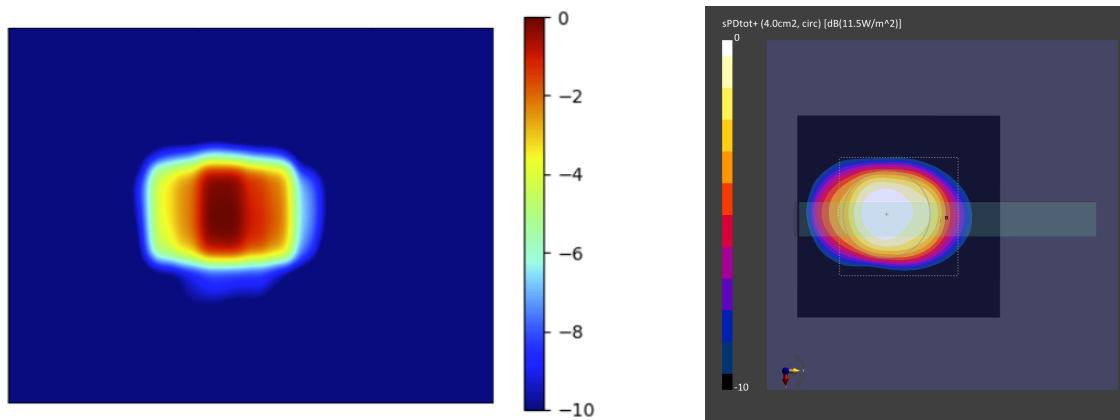


Figure 2-19 Simulated (left) and measured (right) averaged *PD* for the following configuration: Band n260, MID Channel, Beam ID 06, H+V polarization, Plane-A, plotted on the surface S5 (top) with 2mm separation distance to the DUT.

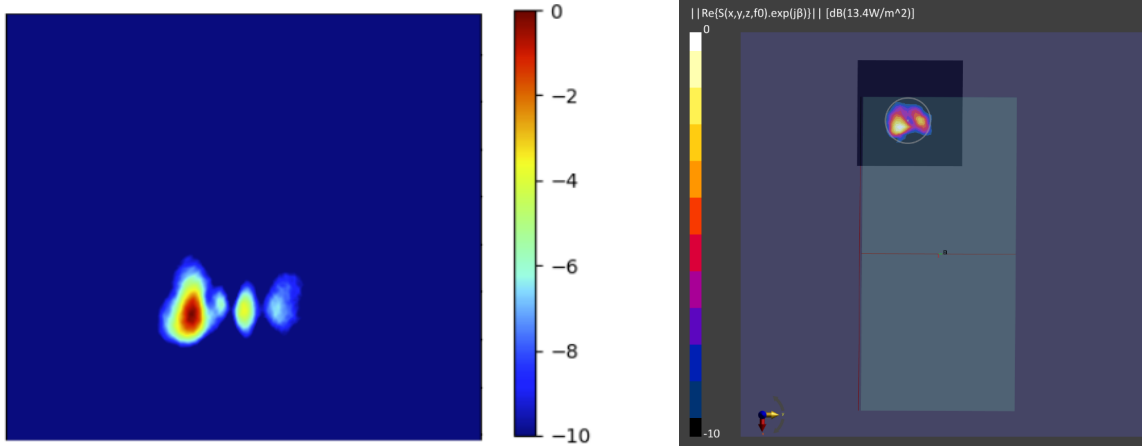


Figure 2-20 Simulated (left) and measured (right) *PD* distribution for the following configuration: Band n260, MID Channel, Beam ID 03, H polarization, Plane-B, plotted on the surface S2 (back) with 2mm separation distance to the camera bump.

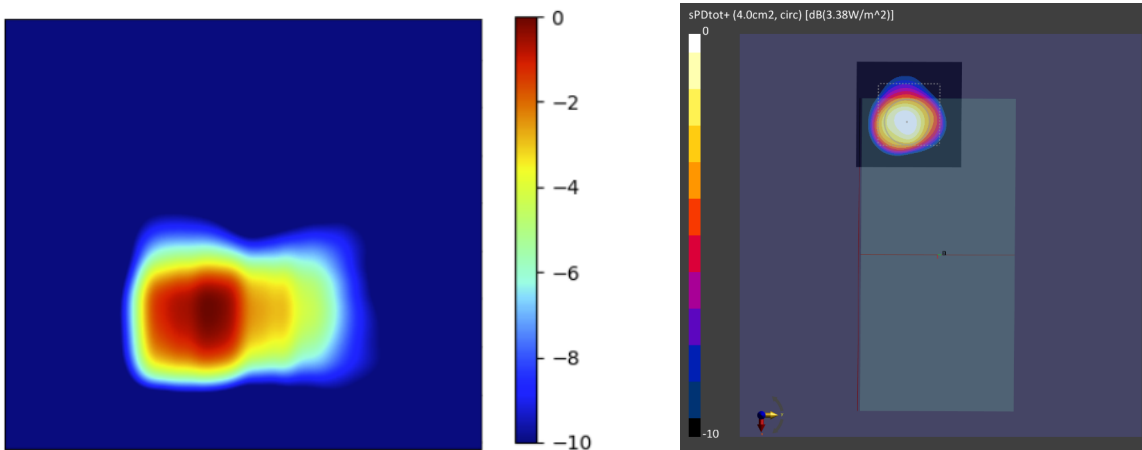


Figure 2-21 Simulated (left) and measured (right) averaged *PD* for the following configuration: Band n260, MID Channel, Beam ID 03, H polarization, Plane-B, plotted on the surface S2 (back) with 2mm separation distance to the camera bump.

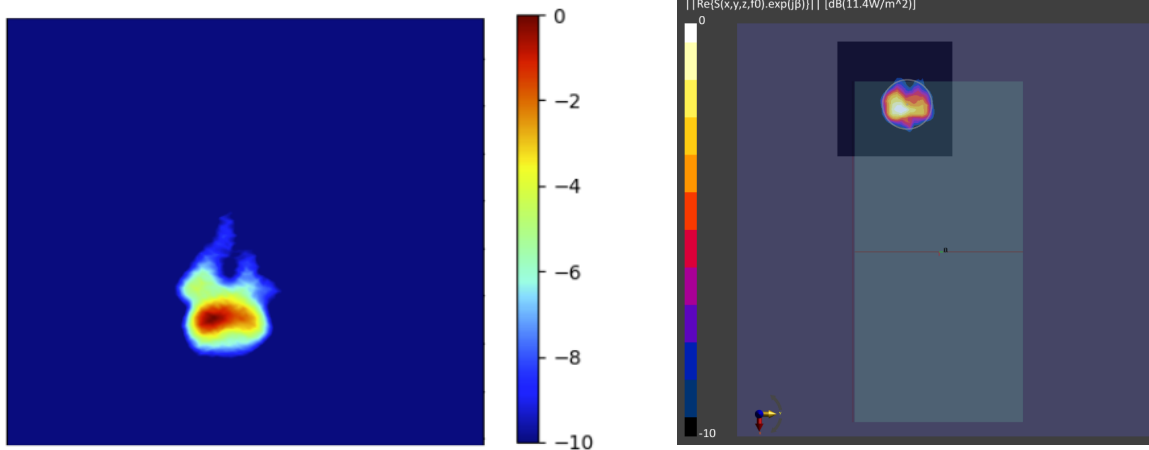


Figure 2-22 Simulated (left) and measured (right) *PD* distribution for the following configuration: Band n260, MID Channel, Beam ID 03, V polarization, Plane-B, plotted on the surface S2 (back) with 2mm separation distance to the camera bump.

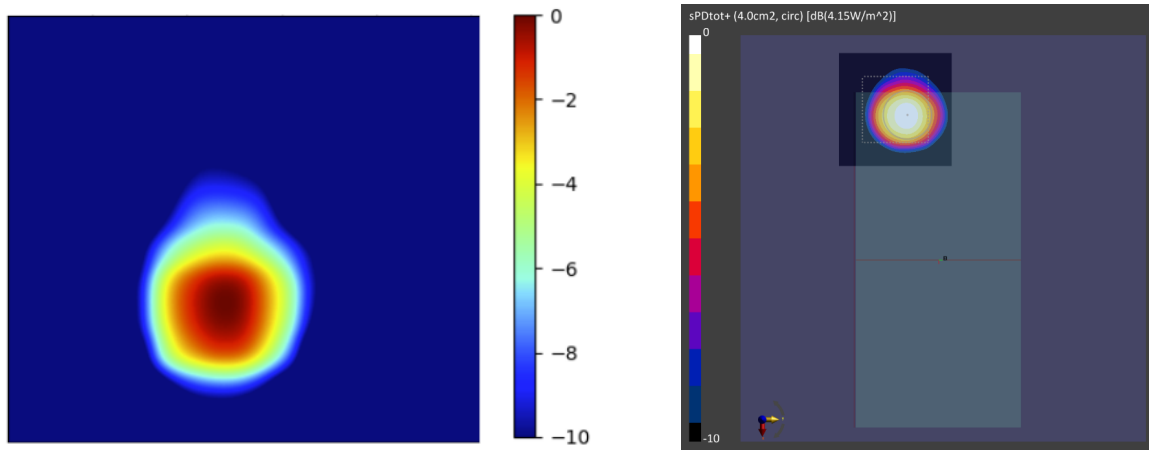


Figure 2-23 Simulated (left) and measured (right) averaged *PD* for the following configuration: Band n260, MID Channel, Beam ID 03, V polarization, Plane-B, plotted on the surface S2 (back) with 2mm separation distance to the camera bump.

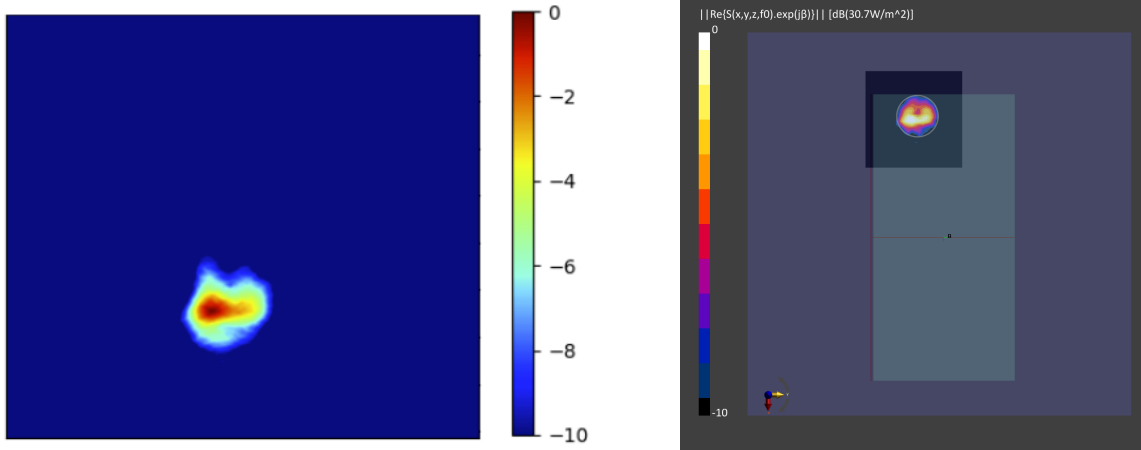


Figure 2-24 Simulated (left) and measured (right) *PD* distribution for the following configuration: Band n260, MID Channel, Beam ID 03, H+V polarization, Plane-B, plotted on the surface S2 (back) with 2mm separation distance to the camera bump.

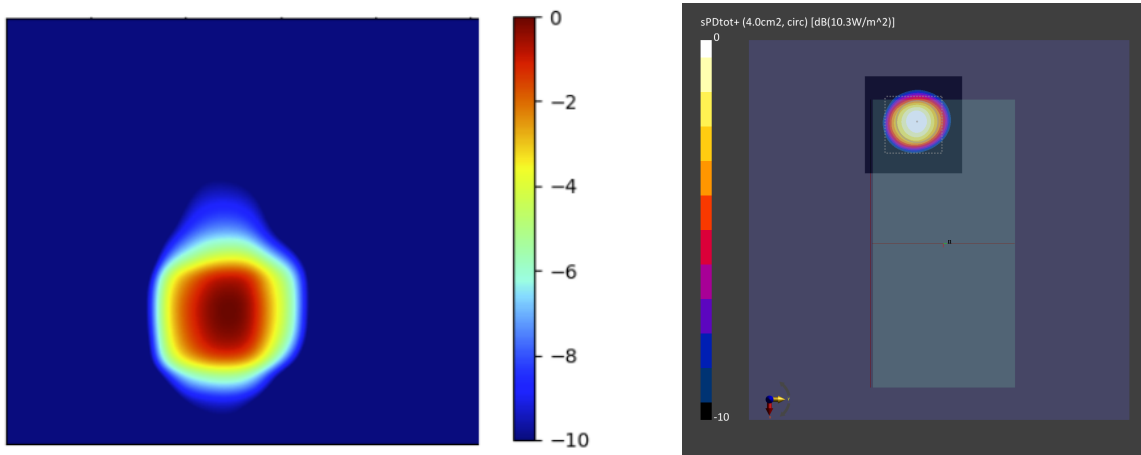


Figure 2-25 Simulated (left) and measured (right) averaged *PD* for the following configuration: Band n260, MID Channel, Beam ID 03, H+V polarization, Plane-B, plotted on the surface S2 (back) with 2mm separation distance to the camera bump.

2.2 Calculated PD per beam ID

The simulated time-average PD calculated for the selected evaluation planes for all beams in the codebook are presented in this section. The calculations are done for the MID channels of n260 and n261 frequency bands for both Plane-A and Plane-B. Since the paired beams are not phase coherent, the relative phase difference between the corresponding paired beams with vertical (V) and horizontal (H) polarizations is swept from 0° to 360° in 5° steps and the PD_{ave} is calculated for all of these phase difference values in order to capture the largest possible PD_{ave} value. The PD_{ave} values for every beam ID are reported in the Tables 2-2 to Table 2-13. For the beam IDs with paired beam configuration, the largest possible PD_{ave} values calculated using this relative phase difference sweeping method are reported.

PD Simulation(W/m ²) Limit = 10 W/m ²		Low Channel												
		2mm					70.42%	54.79%	25.47%	10 mm				65.00%
		S1	S2	S2	S3	S5	S1/S5	S2/S5	S3/S5	S1	S2	S3	S5	10mm/2mm
Pol	Beam ID	Front	Back	Back(CB)	Right	Top				Front	Back	Right	Top	S5/S5
H	0	2.825	2.308	1.314	1.211	6.278	0.450	0.368	0.193	1.083	0.837	0.725	2.532	0.40
H	1	3.352	2.673	1.783	0.409	4.878	0.687	0.548	0.084	1.610	1.201	0.204	3.088	0.63
H	2	4.438	2.605	1.812	0.361	7.469	0.594	0.349	0.048	1.873	1.136	0.207	4.280	0.57
H	3	5.092	2.599	1.903	0.445	8.508	0.598	0.305	0.052	2.137	1.323	0.262	4.879	0.57
H	4	4.409	2.184	1.339	0.861	7.885	0.559	0.277	0.109	1.698	0.875	0.481	4.261	0.54
H	5	3.176	2.359	1.509	1.439	7.224	0.440	0.327	0.199	1.294	0.941	0.869	2.959	0.41
H	6	3.034	2.485	1.606	1.374	7.460	0.407	0.333	0.184	1.052	0.956	0.828	2.757	0.37
V	0	2.935	2.553	1.484	0.836	6.983	0.420	0.366	0.120	1.152	0.839	0.506	2.872	0.41
V	1	4.151	2.569	1.616	0.361	7.569	0.548	0.339	0.048	1.851	1.068	0.216	4.300	0.57
V	2	5.180	2.464	1.933	0.416	7.933	0.653	0.311	0.052	2.377	1.406	0.236	4.853	0.61
V	3	5.317	3.167	2.208	0.819	8.403	0.633	0.377	0.097	2.455	1.452	0.485	5.025	0.60
V	4	4.277	2.587	1.797	0.915	6.865	0.623	0.377	0.133	1.862	1.297	0.375	4.384	0.64
V	5	3.197	2.625	1.617	1.512	6.064	0.527	0.433	0.249	1.274	1.126	0.864	3.244	0.53
V	6	3.404	2.502	1.476	1.871	7.346	0.463	0.341	0.255	1.257	0.996	1.064	3.235	0.44
H+V	0	7.014	5.936	3.373	2.677	13.152	0.533	0.451	0.204	2.837	2.121	1.713	6.400	0.49
H+V	1	8.956	6.805	4.549	0.846	12.718	0.704	0.535	0.067	4.551	3.010	0.488	7.679	0.60
H+V	2	10.523	7.205	5.306	1.038	15.652	0.672	0.460	0.066	4.961	3.905	0.591	10.075	0.64
H+V	3	10.305	7.980	5.517	1.331	18.069	0.570	0.442	0.074	4.773	3.509	0.769	10.929	0.60
H+V	4	9.338	6.668	4.596	2.335	15.418	0.606	0.432	0.151	3.830	3.307	1.164	10.022	0.65
H+V	5	7.457	6.920	4.578	3.316	14.029	0.532	0.493	0.236	3.319	3.119	1.964	7.246	0.52
H+V	6	7.334	6.459	3.625	3.887	15.386	0.477	0.420	0.253	2.942	2.027	2.354	5.991	0.39

Table 2-2 Simulated averaged PD over 4 [cm²] area on Plane-A Module @ n260 LOW Channel.

PD Simulation(W/m ²) Limit = 10 W/m ²		Mid Channel												
		2mm					63.12%	71.47%	28.91%	10 mm				67.31%
		S1	S2	S2	S3	S5	S1/S5	S2/S5	S3/S5	S1	S2	S3	S5	10mm/2mm
Pol	Beam ID	Front	Back	Back(CB)	Right	Top				Front	Back	Right	Top	S5/S5
H	0	2.862	2.402	1.452	1.586	7.144	0.401	0.336	0.222	1.061	0.788	1.033	2.567	0.36
H	1	2.691	2.063	1.456	0.770	4.706	0.572	0.438	0.164	1.183	1.104	0.458	2.624	0.56
H	2	2.568	2.282	1.668	0.279	4.859	0.529	0.470	0.057	1.004	1.110	0.160	2.635	0.54
H	3	3.756	3.040	2.201	0.406	6.722	0.559	0.452	0.060	1.500	1.466	0.238	3.671	0.55
H	4	3.331	2.904	2.097	0.505	6.380	0.522	0.455	0.079	1.295	1.327	0.273	3.182	0.50
H	5	3.520	2.769	1.976	1.065	7.017	0.502	0.395	0.152	1.402	1.146	0.585	2.956	0.42
H	6	3.452	2.734	1.819	1.316	7.537	0.458	0.363	0.175	1.167	1.170	0.852	3.082	0.41
V	0	2.468	2.642	1.542	0.979	6.250	0.395	0.423	0.157	1.031	0.788	0.589	2.559	0.41
V	1	4.194	2.339	1.570	0.458	6.792	0.618	0.344	0.067	1.916	1.036	0.291	4.337	0.64
V	2	3.858	2.681	1.914	0.260	6.229	0.619	0.430	0.042	1.821	1.326	0.126	3.960	0.64
V	3	3.637	3.590	2.580	0.435	5.799	0.627	0.619	0.075	1.650	1.703	0.272	3.610	0.62
V	4	3.535	3.386	2.625	0.728	5.601	0.631	0.604	0.130	1.551	1.898	0.271	3.577	0.64
V	5	3.380	2.827	1.855	1.584	5.478	0.617	0.516	0.289	1.429	1.281	0.921	3.511	0.64
V	6	3.011	2.682	1.784	1.716	6.256	0.481	0.429	0.274	1.189	1.126	1.072	3.085	0.49
H+V	0	6.935	5.768	3.426	3.295	14.214	0.488	0.406	0.232	2.737	1.982	2.157	6.085	0.43
H+V	1	7.820	6.443	4.432	1.601	12.793	0.611	0.504	0.125	3.690	3.132	1.030	8.611	0.67
H+V	2	6.550	7.756	5.587	0.741	12.750	0.514	0.608	0.058	2.932	3.797	0.382	7.995	0.63
H+V	3	7.419	10.558	7.557	1.151	14.773	0.502	0.715	0.078	3.484	4.740	0.716	8.210	0.56
H+V	4	7.287	9.663	7.517	1.678	13.765	0.529	0.702	0.122	3.156	5.350	0.714	8.196	0.60
H+V	5	7.625	8.456	5.515	2.985	13.398	0.569	0.631	0.223	3.480	3.642	1.672	7.527	0.56
H+V	6	6.907	7.598	5.086	3.703	15.152	0.456	0.501	0.244	2.609	2.804	2.433	6.616	0.44

Table 2-3 Simulated averaged PD over 4 [cm²] area on Plane-A Module @ n260 MID Channel.

PD Simulation(W/m ²) Limit = 10 W/m ²		High Channel												
		2mm					74.24%	80.68%	25.82%	10 mm				63.26%
		S1	S2	S2	S3	S5	S1/S5	S2/S5	S3/S5	S1	S2	S3	S5	10mm/2mm
Pol	Beam ID	Front	Back	Back(CB)	Right	Top				Front	Back	Right	Top	S5/S5
H	0	2.610	1.959	1.170	1.051	5.349	0.488	0.366	0.197	0.799	0.613	0.638	2.204	0.41
H	1	2.101	1.637	1.023	0.960	4.458	0.471	0.367	0.215	0.875	0.703	0.613	1.988	0.45
H	2	1.517	2.246	1.463	0.293	3.147	0.482	0.714	0.093	0.614	0.876	0.185	1.469	0.47
H	3	2.147	2.239	1.509	0.269	4.640	0.463	0.482	0.058	0.796	0.920	0.155	2.210	0.48
H	4	2.573	2.413	1.693	0.358	4.965	0.518	0.486	0.072	0.999	1.097	0.229	2.303	0.46
H	5	2.623	2.523	1.717	0.646	4.921	0.533	0.513	0.131	1.042	1.045	0.383	2.114	0.43
H	6	2.813	2.225	1.483	0.901	5.416	0.519	0.411	0.166	0.977	0.898	0.540	2.547	0.47
V	0	1.917	1.573	0.929	0.797	4.421	0.434	0.356	0.180	0.803	0.516	0.507	1.814	0.41
V	1	3.442	1.744	1.124	0.439	4.926	0.699	0.354	0.089	1.700	0.781	0.307	3.023	0.61
V	2	3.061	1.845	1.242	0.231	4.631	0.661	0.399	0.050	1.471	0.854	0.131	2.930	0.63
V	3	2.585	2.201	1.528	0.416	4.330	0.597	0.508	0.096	1.186	1.024	0.203	2.642	0.61
V	4	2.938	2.990	2.193	0.474	4.598	0.639	0.650	0.103	1.291	1.522	0.173	2.840	0.62
V	5	2.842	1.951	1.349	1.070	4.534	0.627	0.430	0.236	1.331	0.966	0.575	2.778	0.61
V	6	2.154	1.677	1.095	1.217	4.713	0.457	0.356	0.258	0.955	0.803	0.708	2.447	0.52
H+V	0	4.799	3.787	2.291	1.996	10.798	0.444	0.351	0.185	1.852	1.277	1.237	4.153	0.38
H+V	1	6.984	4.455	2.907	1.817	9.408	0.742	0.474	0.193	3.513	2.069	1.239	5.434	0.58
H+V	2	5.527	5.363	3.667	0.879	8.864	0.624	0.605	0.099	2.696	2.401	0.562	4.734	0.53
H+V	3	5.486	6.572	4.542	0.952	9.720	0.564	0.676	0.098	2.509	3.092	0.563	5.077	0.52
H+V	4	6.814	8.199	5.881	0.969	10.162	0.670	0.807	0.095	3.079	4.067	0.631	5.561	0.55
H+V	5	6.669	6.731	4.475	1.871	9.725	0.686	0.692	0.192	3.249	2.990	1.045	5.036	0.52
H+V	6	5.251	5.257	3.471	2.505	10.729	0.489	0.490	0.233	1.984	2.278	1.429	5.111	0.48

Table 2-4 Simulated averaged PD over 4 [cm²] area on Plane-A Module @ n260 HIGH Channel.

PD Simulation(W/m ²) Limit = 10 W/m ²		Low Channel												
		2mm					2.67%	18.21%	20.33%	10 mm				41.91%
		S1	S2	S2	S3	S5	S1/S2	S3/S2	S5/S2	S1	S2	S3	S5	10mm/2mm
Pol	Beam ID	Front	Back	Back(CB)	Right	Top				Front	Back	Right	Top	S2/S2
H	0	0.348	13.428	4.927	2.284	1.958	0.026	0.170	0.146	0.177	2.855	1.342	0.914	0.21
H	1	0.121	15.060	6.776	2.743	2.104	0.008	0.182	0.140	0.067	4.635	1.751	0.863	0.31
H	2	0.169	13.378	6.639	1.798	1.796	0.013	0.134	0.134	0.077	5.152	0.667	0.903	0.39
H	3	0.130	14.326	7.386	0.349	2.312	0.009	0.024	0.161	0.068	5.687	0.110	1.218	0.40
H	4	0.132	14.429	7.225	0.316	2.420	0.009	0.022	0.168	0.071	5.544	0.126	1.344	0.38
H	5	0.171	13.406	6.461	1.030	2.398	0.013	0.077	0.179	0.097	4.742	0.778	1.220	0.35
H	6	0.320	12.217	4.807	1.671	1.696	0.026	0.137	0.139	0.173	3.070	0.898	0.961	0.25
V	0	0.208	15.496	6.057	1.573	1.779	0.013	0.102	0.115	0.086	4.568	0.952	0.706	0.29
V	1	0.173	14.511	5.714	1.949	1.856	0.012	0.134	0.128	0.075	4.140	1.048	1.018	0.29
V	2	0.205	13.944	6.810	0.994	2.535	0.015	0.071	0.182	0.095	5.257	0.269	1.298	0.38
V	3	0.168	13.597	7.033	0.339	2.662	0.012	0.025	0.196	0.093	5.558	0.155	1.393	0.41
V	4	0.167	13.503	6.839	0.863	2.422	0.012	0.064	0.179	0.087	5.582	0.424	1.304	0.41
V	5	0.244	14.158	6.344	1.175	1.974	0.017	0.083	0.139	0.115	4.919	0.620	0.953	0.35
V	6	0.101	16.558	6.355	1.402	1.636	0.006	0.085	0.099	0.053	4.049	0.802	0.681	0.24
H+V	0	0.846	31.654	12.303	4.848	3.805	0.027	0.153	0.120	0.420	8.210	3.244	1.862	0.26
H+V	1	0.461	31.069	13.648	5.279	5.093	0.015	0.170	0.164	0.245	9.154	3.276	2.274	0.29
H+V	2	0.555	30.983	15.559	2.986	5.678	0.018	0.096	0.183	0.290	12.382	1.086	3.022	0.40
H+V	3	0.373	33.052	17.047	0.839	6.719	0.011	0.025	0.203	0.223	13.853	0.394	3.515	0.42
H+V	4	0.401	31.618	15.979	1.707	6.352	0.013	0.054	0.201	0.229	12.914	0.791	3.598	0.41
H+V	5	0.671	31.145	15.251	3.466	6.069	0.022	0.111	0.195	0.367	11.452	1.806	3.158	0.37
H+V	6	0.505	31.696	12.531	3.564	4.844	0.016	0.112	0.153	0.254	7.562	2.126	2.371	0.24

Table 2-5 Simulated averaged PD over 4 [cm²] area on Plane-B Module @ n260 LOW Channel.

PD Simulation(W/m ²) Limit = 10 W/m ²		Mid Channel												
		2mm					2.69%	15.85%	20.04%	10 mm				40.46%
		S1	S2	S2	S3	S5	S1/S2	S3/S2	S5/S2	S1	S2	S3	S5	10mm/2mm
Pol	Beam ID	Front	Back	Back(CB)	Right	Top				Front	Back	Right	Top	S2/S2
H	0	0.138	11.288	4.415	1.582	1.499	0.012	0.140	0.133	0.059	2.622	0.959	0.805	0.23
H	1	0.109	11.500	5.087	1.823	1.178	0.009	0.159	0.102	0.047	3.444	1.024	0.547	0.30
H	2	0.202	10.729	5.141	1.007	1.470	0.019	0.094	0.137	0.112	3.909	0.140	0.727	0.36
H	3	0.214	12.816	6.396	0.384	1.972	0.017	0.030	0.154	0.115	4.716	0.181	0.949	0.37
H	4	0.201	12.988	6.355	0.427	1.910	0.015	0.033	0.147	0.114	4.674	0.218	0.985	0.36
H	5	0.184	10.640	5.050	0.872	1.699	0.017	0.082	0.160	0.093	3.614	0.482	0.955	0.34
H	6	0.164	10.442	4.293	1.088	1.406	0.016	0.104	0.135	0.070	2.475	0.670	0.746	0.24
V	0	0.151	11.981	4.305	1.302	1.168	0.013	0.109	0.097	0.080	2.831	0.717	0.536	0.24
V	1	0.156	10.907	4.958	1.516	2.117	0.014	0.139	0.194	0.068	3.606	0.688	1.089	0.33
V	2	0.176	12.202	6.110	0.518	2.205	0.014	0.042	0.181	0.085	4.547	0.127	1.169	0.37
V	3	0.240	12.926	6.538	0.398	2.088	0.019	0.031	0.162	0.141	4.867	0.222	1.090	0.38
V	4	0.275	11.672	5.552	0.816	1.559	0.024	0.070	0.134	0.144	4.394	0.467	0.793	0.38
V	5	0.236	11.709	4.490	1.118	1.168	0.020	0.095	0.100	0.120	3.482	0.649	0.536	0.30
V	6	0.108	12.463	4.819	1.301	1.686	0.009	0.104	0.135	0.051	2.782	0.701	0.735	0.22
H+V	0	0.324	25.428	10.120	3.805	2.949	0.013	0.150	0.116	0.168	6.115	2.372	1.593	0.24
H+V	1	0.321	23.477	10.969	3.503	3.966	0.014	0.149	0.169	0.149	7.633	1.832	1.940	0.33
H+V	2	0.530	24.480	12.391	1.778	4.905	0.022	0.073	0.200	0.327	9.904	0.373	2.469	0.40
H+V	3	0.614	30.524	15.484	1.256	5.442	0.020	0.041	0.178	0.398	12.200	0.691	2.816	0.40
H+V	4	0.723	26.854	13.315	1.917	4.856	0.027	0.071	0.181	0.429	10.600	1.057	2.567	0.39
H+V	5	0.549	23.416	10.817	2.835	3.849	0.023	0.121	0.164	0.294	8.215	1.656	2.090	0.35
H+V	6	0.391	24.440	9.525	2.855	4.078	0.016	0.117	0.167	0.182	5.668	1.541	1.797	0.23

Table 2-6 Simulated averaged PD over 4 [cm²] area on Plane-B Module @ n260 MID Channel.

PD Simulation(W/m ²) Limit = 10 W/m ²		High Channel												
		2mm					2.53%	14.35%	23.19%	10 mm				35.96%
		S1	S2	S2	S3	S5	S1/S2	S3/S2	S5/S2	S1	S2	S3	S5	10mm/2mm
Pol	Beam ID	Front	Back	Back(CB)	Right	Top				Front	Back	Right	Top	S2/S2
H	0	0.152	10.556	3.940	1.422	1.472	0.014	0.135	0.139	0.069	2.326	0.858	0.753	0.22
H	1	0.109	9.851	4.063	1.331	0.859	0.011	0.135	0.087	0.050	2.791	0.672	0.417	0.28
H	2	0.145	8.809	4.064	0.473	1.188	0.016	0.054	0.135	0.075	2.904	0.141	0.613	0.33
H	3	0.184	10.807	5.291	0.454	1.640	0.017	0.042	0.152	0.111	3.630	0.195	0.803	0.34
H	4	0.175	10.782	5.263	0.363	1.777	0.016	0.034	0.165	0.084	3.632	0.206	0.953	0.34
H	5	0.168	7.939	3.681	0.768	1.123	0.021	0.097	0.141	0.085	2.640	0.424	0.619	0.33
H	6	0.136	9.856	3.797	1.190	1.372	0.014	0.121	0.139	0.058	2.300	0.730	0.685	0.23
V	0	0.121	10.091	3.738	1.180	1.326	0.012	0.117	0.131	0.070	2.273	0.649	0.658	0.23
V	1	0.161	8.111	3.980	1.164	1.881	0.020	0.143	0.232	0.071	2.738	0.347	1.131	0.34
V	2	0.191	9.486	4.805	0.311	2.069	0.020	0.033	0.218	0.104	3.228	0.130	1.315	0.34
V	3	0.239	10.709	5.483	0.386	2.241	0.022	0.036	0.209	0.144	3.851	0.219	1.249	0.36
V	4	0.185	8.625	4.084	0.796	1.428	0.021	0.092	0.166	0.104	2.922	0.444	0.715	0.34
V	5	0.137	9.893	3.663	0.935	1.159	0.014	0.094	0.117	0.066	2.610	0.519	0.578	0.26
V	6	0.087	10.423	4.081	1.313	1.639	0.008	0.126	0.157	0.040	2.538	0.738	0.875	0.24
H+V	0	0.265	23.198	9.062	3.154	2.798	0.011	0.136	0.121	0.147	5.698	1.982	1.457	0.25
H+V	1	0.440	18.899	8.450	2.537	2.984	0.023	0.134	0.158	0.218	5.847	1.094	1.747	0.31
H+V	2	0.446	19.063	9.068	1.252	3.728	0.023	0.066	0.196	0.255	6.485	0.512	2.258	0.34
H+V	3	0.604	23.864	12.026	1.220	4.736	0.025	0.051	0.198	0.398	8.490	0.667	2.562	0.36
H+V	4	0.476	19.873	9.765	1.580	3.604	0.024	0.080	0.181	0.298	7.041	0.878	1.895	0.35
H+V	5	0.344	19.462	8.098	2.011	2.658	0.018	0.103	0.137	0.150	5.896	1.152	1.335	0.30
H+V	6	0.259	21.756	8.425	2.570	3.354	0.012	0.118	0.154	0.128	5.112	1.454	1.706	0.23

Table 2-7 Simulated averaged PD over 4 [cm²] area on Plane-B Module @ n260 HIGH Channel.

PD Simulation(W/m ²) Limit = 10 W/m ²		Low Channel												
		2mm					81.43%	89.46%	22.38%	10 mm				60.15%
		S1	S2	S2	S3	S5	S1/S5	S2/S5	S3/S5	S1	S2	S3	S5	10mm/2mm
Pol	Beam ID	Front	Back	Back(CB)	Right	Top				Front	Back	Right	Top	S5/S5
H	0	3.058	6.454	4.875	1.537	7.214	0.424	0.895	0.213	1.038	2.704	0.807	2.238	0.31
H	1	6.518	5.670	4.115	1.429	8.447	0.772	0.671	0.169	2.935	2.374	0.753	3.537	0.42
H	2	5.548	3.474	2.245	0.825	8.211	0.676	0.423	0.100	2.694	1.248	0.432	3.978	0.48
H	3	5.798	3.359	2.163	0.758	8.776	0.661	0.383	0.086	2.924	1.203	0.339	4.577	0.52
H	4	4.554	4.332	2.941	0.582	7.819	0.582	0.554	0.074	1.943	1.711	0.280	3.794	0.49
H	5	3.288	4.844	3.017	1.283	6.711	0.490	0.722	0.191	1.391	1.402	0.675	2.828	0.42
H	6	7.336	3.222	2.037	1.251	10.882	0.674	0.296	0.115	3.624	1.022	0.694	5.002	0.46
V	0	3.387	5.566	3.836	0.703	7.671	0.441	0.726	0.092	1.263	1.857	0.439	2.826	0.37
V	1	4.355	5.510	3.678	0.944	7.924	0.550	0.695	0.119	1.732	1.783	0.557	3.211	0.41
V	2	5.665	4.356	2.902	0.885	9.200	0.616	0.473	0.096	2.374	1.442	0.530	4.450	0.48
V	3	6.310	3.403	2.354	0.803	9.559	0.660	0.356	0.084	3.276	1.409	0.437	5.019	0.53
V	4	7.568	3.117	2.258	0.870	11.117	0.681	0.280	0.078	3.848	1.473	0.525	5.078	0.46
V	5	7.905	4.168	2.666	1.940	10.487	0.754	0.397	0.185	3.641	1.333	1.139	4.142	0.39
V	6	6.601	4.173	2.894	1.960	9.060	0.729	0.461	0.216	2.729	1.714	1.107	3.332	0.37
H+V	0	8.948	12.12 4	8.502	2.834	16.851	0.531	0.719	0.168	3.326	4.690	1.475	7.023	0.42
H+V	1	14.921	12.44 2	8.217	2.707	19.569	0.762	0.636	0.138	6.199	4.556	1.415	9.128	0.47
H+V	2	15.682	9.615	6.660	2.234	20.509	0.765	0.469	0.109	7.798	3.728	1.331	11.148	0.54
H+V	3	17.940	7.895	5.599	2.211	22.031	0.814	0.358	0.100	9.760	3.549	1.088	13.250	0.60
H+V	4	17.286	8.677	6.216	2.305	21.450	0.806	0.405	0.107	9.123	4.016	1.367	11.989	0.56
H+V	5	13.383	9.124	5.622	3.897	19.395	0.690	0.470	0.201	5.872	3.189	2.270	8.080	0.42
H+V	6	15.235	7.485	5.506	4.344	19.416	0.785	0.386	0.224	6.193	3.739	2.532	9.306	0.48

Table 2-8 Simulated averaged PD over 4 [cm²] area on Plane-A Module @ n261 LOW Channel.

PD Simulation(W/m ²) Limit = 10 W/m ²		Mid Channel												
		2mm					80.26%	79.32%	22.22%	10 mm				58.71%
		S1	S2	S2	S3	S5	S1/S5	S2/S5	S3/S5	S1	S2	S3	S5	10mm/2mm
Pol	Beam ID	Front	Back	Back(CB)	Right	Top				Front	Back	Right	Top	S5/S5
H	0	3.606	5.911	4.515	1.279	7.452	0.484	0.793	0.172	1.276	2.638	0.705	2.251	0.30
H	1	6.300	5.361	3.951	1.397	8.520	0.739	0.629	0.164	2.879	2.401	0.726	3.496	0.41
H	2	5.165	3.632	2.327	0.959	8.143	0.634	0.446	0.118	2.539	1.318	0.533	3.813	0.47
H	3	5.996	3.381	2.164	0.701	9.211	0.651	0.367	0.076	2.996	1.247	0.384	4.671	0.51
H	4	4.571	4.307	2.892	0.552	7.833	0.584	0.550	0.070	1.789	1.732	0.275	3.808	0.49
H	5	3.243	4.964	3.047	1.419	6.948	0.467	0.714	0.204	1.336	1.433	0.794	2.977	0.43
H	6	7.472	3.288	1.978	1.321	11.265	0.663	0.292	0.117	3.672	0.931	0.778	5.213	0.46
V	0	3.635	4.986	3.448	0.699	8.036	0.452	0.620	0.087	1.361	1.742	0.394	3.023	0.38
V	1	4.458	5.312	3.506	0.894	8.176	0.545	0.650	0.109	1.796	1.654	0.531	3.440	0.42
V	2	5.838	4.354	2.941	0.913	9.520	0.613	0.457	0.096	2.315	1.548	0.549	4.657	0.49
V	3	6.410	3.302	2.307	0.640	9.997	0.641	0.330	0.064	3.324	1.353	0.351	5.261	0.53
V	4	7.478	3.262	2.220	0.731	11.326	0.660	0.288	0.064	3.799	1.466	0.435	5.147	0.45
V	5	7.716	4.073	2.555	1.764	10.504	0.735	0.388	0.168	3.615	1.413	1.056	4.229	0.40
V	6	6.597	4.071	2.781	1.923	9.397	0.702	0.433	0.205	2.774	1.710	1.105	3.530	0.38
H+V	0	10.032	10.980	8.054	2.655	18.274	0.549	0.601	0.145	3.703	4.637	1.427	7.899	0.43
H+V	1	14.933	11.600	7.521	2.643	19.644	0.760	0.591	0.135	6.022	4.567	1.362	9.289	0.47
H+V	2	14.907	9.290	6.548	2.483	19.905	0.749	0.467	0.125	7.184	3.814	1.502	10.661	0.54
H+V	3	17.637	7.539	5.366	1.559	22.083	0.799	0.341	0.071	9.632	3.782	0.906	12.964	0.59
H+V	4	16.427	8.564	6.069	1.906	20.467	0.803	0.418	0.093	8.447	4.159	1.079	11.382	0.56
H+V	5	12.421	9.331	5.855	3.562	19.174	0.648	0.487	0.186	5.499	3.568	2.051	8.221	0.43
H+V	6	15.234	8.085	5.117	4.436	19.967	0.763	0.405	0.222	6.338	3.258	2.652	9.750	0.49

Table 2-9 Simulated averaged PD over 4 [cm²] area on Plane-A Module @ n261 MID Channel.

PD Simulation(W/m ²) Limit = 10 W/m ²		High Channel												
		2mm					77.84%	71.23%	21.40%	10 mm				57.31%
		S1	S2	S2	S3	S5	S1/S5	S2/S5	S3/S5	S1	S2	S3	S5	10mm/2mm
Pol	Beam ID	Front	Back	Back(CB)	Right	Top				Front	Back	Right	Top	S5/S5
H	0	3.943	5.692	4.365	1.059	7.992	0.493	0.712	0.132	1.377	2.735	0.616	2.786	0.35
H	1	6.363	5.237	3.900	1.236	8.994	0.707	0.582	0.137	2.941	2.504	0.602	3.752	0.42
H	2	4.604	3.945	2.481	1.069	7.988	0.576	0.494	0.134	2.222	1.381	0.579	3.634	0.45
H	3	5.964	3.441	2.201	0.798	9.464	0.630	0.364	0.084	2.870	1.281	0.447	4.680	0.49
H	4	4.834	4.207	2.783	0.561	8.143	0.594	0.517	0.069	1.658	1.645	0.259	3.847	0.47
H	5	3.067	4.909	2.946	1.433	7.016	0.437	0.700	0.204	1.178	1.449	0.807	3.089	0.44
H	6	7.081	3.505	2.029	1.358	11.175	0.634	0.314	0.122	3.430	0.972	0.804	5.171	0.46
V	0	3.652	4.318	3.101	0.728	8.048	0.454	0.537	0.090	1.448	1.760	0.364	3.090	0.38
V	1	4.383	4.895	3.250	0.777	8.169	0.537	0.599	0.095	1.787	1.586	0.453	3.542	0.43
V	2	5.936	4.242	2.868	0.935	9.767	0.608	0.434	0.096	2.213	1.574	0.577	4.818	0.49
V	3	6.344	3.273	2.277	0.707	10.221	0.621	0.320	0.069	3.242	1.360	0.367	5.376	0.53
V	4	6.953	3.524	2.384	0.577	11.069	0.628	0.318	0.052	3.473	1.462	0.330	5.054	0.46
V	5	7.287	4.017	2.441	1.545	10.406	0.700	0.386	0.148	3.471	1.277	0.936	4.301	0.41
V	6	6.419	4.159	2.851	1.792	9.599	0.669	0.433	0.187	2.780	1.811	1.077	3.741	0.39
H+V	0	10.317	10.27 1	7.382	2.500	19.187	0.538	0.535	0.130	4.119	4.865	1.452	8.395	0.44
H+V	1	14.690	10.93 8	7.198	2.336	19.479	0.754	0.562	0.120	6.063	4.399	1.196	9.441	0.48
H+V	2	13.568	10.16 4	6.486	2.724	18.628	0.728	0.546	0.146	6.339	3.790	1.630	9.782	0.53
H+V	3	16.499	7.885	5.641	1.838	21.195	0.778	0.372	0.087	8.868	3.937	1.118	12.147	0.57
H+V	4	14.911	9.291	6.014	1.734	19.504	0.765	0.476	0.089	7.259	4.122	0.877	10.548	0.54
H+V	5	11.055	9.695	5.715	3.215	19.151	0.577	0.506	0.168	4.967	3.372	1.827	8.484	0.44
H+V	6	14.232	9.223	5.270	4.365	20.395	0.698	0.452	0.214	5.997	3.063	2.601	9.805	0.48

Table 2-10 Simulated averaged PD over 4 [cm²] area on Plane-A Module @ n261 HIGH Channel.

PD Simulation(W/m ²) Limit = 10 W/m ²		Low Channel												
		2mm					3.70%	20.39%	35.95%	10 mm				40.19%
		S1	S2	S2	S3	S5	S1/S2	S3/S2	S5/S2	S1	S2	S3	S5	10mm/2mm
Pol	Beam ID	Front	Back	Back(CB)	Right	Top				Front	Back	Right	Top	S2/S2
H	0	0.364	11.414	5.105	2.328	1.880	0.032	0.204	0.165	0.173	3.025	1.303	0.807	0.26
H	1	0.171	11.961	6.208	1.883	2.554	0.014	0.157	0.213	0.088	3.970	1.108	1.103	0.33
H	2	0.245	13.904	7.455	1.119	3.445	0.018	0.080	0.248	0.130	5.251	0.507	2.200	0.38
H	3	0.198	15.771	8.227	0.334	3.693	0.013	0.021	0.234	0.106	5.751	0.150	2.345	0.36
H	4	0.220	15.582	8.597	0.176	4.710	0.014	0.011	0.302	0.113	5.595	0.087	2.982	0.36
H	5	0.305	13.138	7.048	0.412	4.028	0.023	0.031	0.307	0.139	4.432	0.202	2.312	0.34
H	6	0.324	11.926	6.231	0.310	3.617	0.027	0.026	0.303	0.140	3.846	0.137	2.028	0.32
V	0	0.314	8.470	3.724	1.102	2.098	0.037	0.130	0.248	0.143	2.127	0.635	1.025	0.25
V	1	0.374	11.565	6.224	1.816	4.158	0.032	0.157	0.360	0.174	3.801	1.115	2.278	0.33
V	2	0.270	13.388	7.193	1.490	4.221	0.020	0.111	0.315	0.118	4.432	0.918	2.441	0.33
V	3	0.155	15.968	8.310	0.434	3.892	0.010	0.027	0.244	0.074	5.651	0.168	2.235	0.35
V	4	0.195	15.510	8.066	0.245	3.614	0.013	0.016	0.233	0.113	5.546	0.145	2.021	0.36
V	5	0.302	14.786	7.701	0.452	3.924	0.020	0.031	0.265	0.162	5.343	0.267	2.189	0.36
V	6	0.284	12.306	6.198	0.371	3.143	0.023	0.030	0.255	0.153	4.082	0.233	1.497	0.33
H+V	0	0.974	32.238	12.218	5.223	5.338	0.030	0.162	0.166	0.454	6.860	2.978	2.353	0.21
H+V	1	0.730	35.754	16.953	4.701	8.012	0.020	0.131	0.224	0.384	10.725	2.755	3.972	0.30
H+V	2	0.589	34.985	18.305	3.383	8.440	0.017	0.097	0.241	0.334	12.863	1.825	4.907	0.37
H+V	3	0.436	36.126	19.369	0.803	8.764	0.012	0.022	0.243	0.230	14.520	0.377	5.083	0.40
H+V	4	0.446	35.709	19.703	0.496	9.459	0.012	0.014	0.265	0.243	14.331	0.289	5.478	0.40
H+V	5	0.872	33.896	17.267	1.063	8.287	0.026	0.031	0.244	0.459	12.000	0.584	4.898	0.35
H+V	6	0.841	31.734	15.054	0.805	7.514	0.027	0.025	0.237	0.432	9.579	0.445	3.845	0.30

Table 2-11 Simulated averaged PD over 4 [cm²] area on Plane-B Module @ n261 LOW Channel.

PD Simulation(W/m ²) Limit = 10 W/m ²		Mid Channel												
		2mm					4.27%	20.34%	32.26%	10 mm				39.86%
		S1	S2	S2	S3	S5	S1/S2	S3/S2	S5/S2	S1	S2	S3	S5	10mm/2mm
Pol	Beam ID	Front	Back	Back(CB)	Right	Top				Front	Back	Right	Top	S2/S2
H	0	0.302	11.191	5.314	2.276	1.911	0.027	0.203	0.171	0.145	3.204	1.339	0.775	0.29
H	1	0.178	12.275	6.511	1.996	2.702	0.014	0.163	0.220	0.096	4.260	1.212	1.197	0.35
H	2	0.208	14.282	7.464	1.118	3.294	0.015	0.078	0.231	0.113	5.253	0.535	2.087	0.37
H	3	0.180	15.836	8.278	0.302	3.691	0.011	0.019	0.233	0.093	5.861	0.130	2.335	0.37
H	4	0.219	15.392	8.383	0.278	4.546	0.014	0.018	0.295	0.113	5.500	0.147	2.910	0.36
H	5	0.320	12.797	6.891	0.446	3.976	0.025	0.035	0.311	0.142	4.366	0.247	2.349	0.34
H	6	0.348	11.623	6.131	0.309	3.600	0.030	0.027	0.310	0.149	3.780	0.152	2.088	0.33
V	0	0.379	8.857	3.960	1.089	1.811	0.043	0.123	0.205	0.185	2.398	0.624	0.888	0.27
V	1	0.385	11.979	6.135	1.658	3.865	0.032	0.138	0.323	0.184	3.706	1.022	2.114	0.31
V	2	0.235	13.516	7.127	1.345	3.933	0.017	0.099	0.291	0.110	4.422	0.833	2.271	0.33
V	3	0.156	15.765	8.222	0.402	3.678	0.010	0.025	0.233	0.076	5.667	0.152	2.111	0.36
V	4	0.218	15.609	8.044	0.340	3.519	0.014	0.022	0.225	0.124	5.534	0.219	1.996	0.35
V	5	0.284	15.121	7.804	0.449	3.862	0.019	0.030	0.255	0.159	5.360	0.263	2.202	0.35
V	6	0.226	13.299	6.638	0.320	3.101	0.017	0.024	0.233	0.131	4.372	0.210	1.482	0.33
H+V	0	0.894	31.461	12.113	4.919	4.968	0.028	0.156	0.158	0.430	6.902	2.850	2.185	0.22
H+V	1	0.755	36.256	17.246	4.788	7.936	0.021	0.132	0.219	0.426	11.016	2.826	3.932	0.30
H+V	2	0.512	34.543	17.767	3.159	8.002	0.015	0.091	0.232	0.302	12.590	1.846	4.631	0.36
H+V	3	0.403	35.387	18.837	0.749	8.328	0.011	0.021	0.235	0.213	14.105	0.332	4.862	0.40
H+V	4	0.508	34.542	18.946	0.765	8.911	0.015	0.022	0.258	0.288	13.729	0.477	5.303	0.40
H+V	5	0.903	33.467	16.877	1.153	8.193	0.027	0.034	0.245	0.479	11.619	0.703	4.976	0.35
H+V	6	0.874	32.602	15.187	0.684	7.499	0.027	0.021	0.230	0.438	9.595	0.400	3.907	0.29

Table 2-12 Simulated averaged PD over 4 [cm²] area on Plane-B Module @ n261 MID Channel.

PD Simulation(W/m ²) Limit = 10 W/m ²		High Channel												
		2mm					4.07%	20.23%	32.70%	10 mm				39.95%
		S1	S2	S2	S3	S5	S1/S2	S3/S2	S5/S2	S1	S2	S3	S5	10mm/2mm
Pol	Beam ID	Front	Back	Back(CB)	Right	Top				Front	Back	Right	Top	S2/S2
H	0	0.272	10.984	5.476	2.222	2.055	0.025	0.202	0.187	0.138	3.409	1.313	0.754	0.31
H	1	0.166	12.347	6.558	1.950	2.760	0.013	0.158	0.224	0.090	4.310	1.195	1.284	0.35
H	2	0.168	14.358	7.454	1.036	3.148	0.012	0.072	0.219	0.086	5.242	0.499	1.965	0.37
H	3	0.171	15.515	8.211	0.273	3.662	0.011	0.018	0.236	0.084	5.861	0.116	2.309	0.38
H	4	0.192	14.766	8.025	0.355	4.266	0.013	0.024	0.289	0.093	5.332	0.182	2.712	0.36
H	5	0.332	12.245	6.702	0.456	4.004	0.027	0.037	0.327	0.141	4.280	0.263	2.359	0.35
H	6	0.376	11.242	6.020	0.298	3.660	0.033	0.027	0.326	0.162	3.693	0.160	2.108	0.33
V	0	0.371	9.097	4.083	1.061	1.631	0.041	0.117	0.179	0.192	2.491	0.617	0.840	0.27
V	1	0.366	12.078	6.322	1.540	3.842	0.030	0.127	0.318	0.185	3.855	0.954	2.156	0.32
V	2	0.213	13.187	7.085	1.237	3.767	0.016	0.094	0.286	0.102	4.437	0.766	2.216	0.34
V	3	0.164	15.097	7.930	0.328	3.394	0.011	0.022	0.225	0.075	5.565	0.122	1.950	0.37
V	4	0.200	15.071	7.733	0.405	3.240	0.013	0.027	0.215	0.119	5.373	0.272	1.885	0.36
V	5	0.229	14.385	7.392	0.439	3.569	0.016	0.030	0.248	0.127	5.075	0.257	2.053	0.35
V	6	0.187	12.781	6.253	0.289	2.864	0.015	0.023	0.224	0.108	4.068	0.189	1.368	0.32
H+V	0	0.787	29.911	11.604	4.437	4.568	0.026	0.148	0.153	0.394	6.658	2.562	2.007	0.22
H+V	1	0.670	34.768	16.845	4.436	7.939	0.019	0.128	0.228	0.385	10.842	2.721	3.961	0.31
H+V	2	0.428	33.521	17.299	2.831	7.871	0.013	0.084	0.235	0.244	12.315	1.714	4.609	0.37
H+V	3	0.399	33.834	18.090	0.617	7.836	0.012	0.018	0.232	0.207	13.516	0.258	4.659	0.40
H+V	4	0.450	32.824	17.950	0.943	8.184	0.014	0.029	0.249	0.263	12.988	0.585	4.938	0.40
H+V	5	0.885	32.283	16.140	1.270	7.974	0.027	0.039	0.247	0.432	10.941	0.816	4.849	0.34
H+V	6	0.884	31.383	14.411	0.687	7.316	0.028	0.022	0.233	0.424	8.931	0.378	3.880	0.28

Table 2-13 Simulated averaged PD over 4 [cm²] area on Plane-B Module @ n261 HIGH Channel.

3. References

- [1] [ANSYS HFSS for Antenna Simulation](#)