



FCC ID: ACJ9TGFZG2

Power Density (PD) Simulation Report

Revision A

Date of issue: 14 July, 2021

Model: FZ-G2

Applicant: Panasonic Corporation North of America

1. Power Density (PD) Simulation Methodology

1.1 Simulation Tool

1.1.1 Tool Description

This report used CST Studio Suite 2021 (CST) to simulate Power Density (PD) in the millimeter wave band. CST is a 3D electromagnetic full-wave simulation software with multiple solvers. In this project, a Time Domain Solver based on Transmission Line Method (TLM) is used.

The Time Domain Solver divides the computational domain into small hexahedral cells, creates a transmission line matrix, and calculates the telegraph equations step by step. To improve the accuracy of the simulation, a local mesh refinement is used for the domain of the QTM simulation model.

1.1.2 TLM Mesh

In the Time domain solver, using the fine mesh for high accuracy, the number of meshes becomes huge and the simulation becomes difficult, for this improvement TLM Solver has an octree-based meshing scheme has been implemented.

In this scheme, the overall number of cells is reduced by making the unnecessary areas into large cells, the critical component can keep the fine mesh, that the simulation results are highly accurate.

Figure 1 shows an example of TLM solver meshing, in which (a) is the fine meshes for high accuracy and (b) shows these after implementing the octree-based meshing scheme.

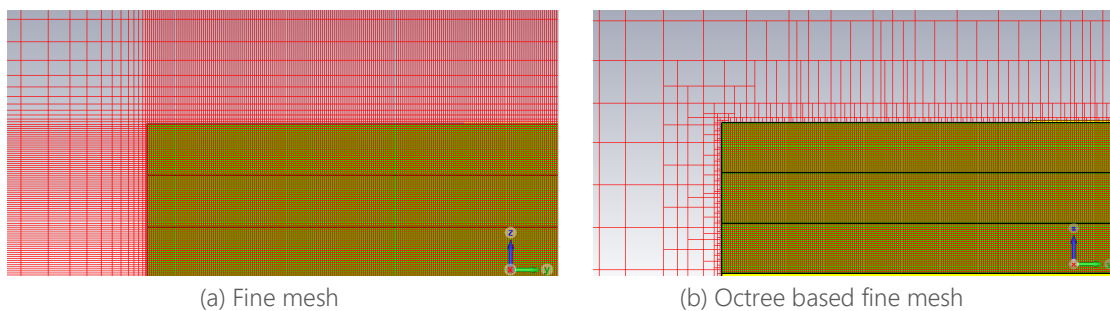


Figure 1. Example of TLM solver meshing.

1.1.3 Boundary and Convergence condition

CST uses TLM to represent the electromagnetic field. Perfectly Matched Layer (PML) is used for boundary conditions. The distance between the simulation model and the PML boundary is greater than $1/4\lambda$ of the target frequency. TLM transient solver in CST Studio Suite ensures the convergence level of S-parameter and radiated powers lower than 0.001.

1.1.4 Power Density Calculation

$$PD_{average} = \frac{1}{N} \sum_{x=1}^N \langle \vec{S} \rangle \quad (1)$$

$$\langle \vec{S} \rangle = \text{Re} \left(\frac{1}{2} \vec{E} \times \vec{H}^* \right) \quad (2)$$

In the power flow results of CST, the average PD of 4 cm² is calculated by (1) and (2), where N is the number of calculated points in the 4 cm² area around the target point, $\langle \vec{S} \rangle$ is the real part of pointing vector from the cross product of electric field (E) and complex conjugation of magnetic field (H) at each mesh cells.

1.2 Simulation Setup

1.2.1 3D Modeling

The simulation model integrated with three mmWave antenna module shows in Figure 2. The simulation modeling includes complete mechanical structure of device such as Chassis, Main board, LCD, battery, all 5G sub-6/WiFi antennas and mmWave antenna modules call as mmwave#0, mmwave#1 and mmwave#2. mmwave#0 is placed on the right side and antennas are facing the right side of the device. mmwave#1 is placed on the left side and antennas are facing the left side of the device. mmwave#2 is placed on the top side and antennas are facing the top side of the device.

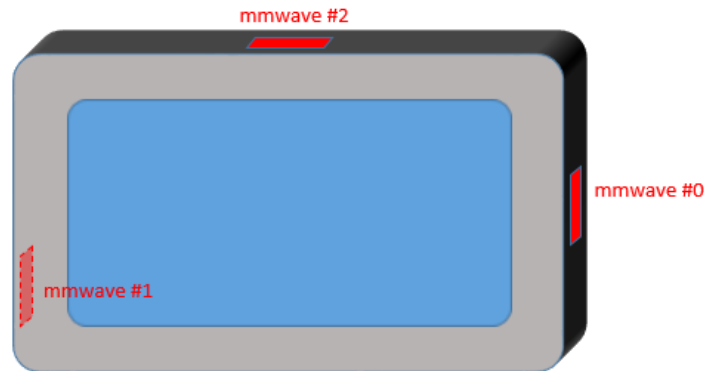


Figure 2. Simulation model which is mounted three mmWave antenna modules.

1.2.2 PD Evaluation Planes

For this DUT, based on the location of mmwave#0, mmwave#1 and mmwave#2, the surface planes identified for PD evaluation to determine the worst-case PDs are selected and listed in Table 1. Figure 3 shows the PD evaluation planes of the simulation model to find worst case of beamforming IDs. The relevant PD evaluation planes, S1(Edge2), S2(Edge4), S3(Edge1), S4(Rear) and S5(Tilt) are spaced 2mm from the device.

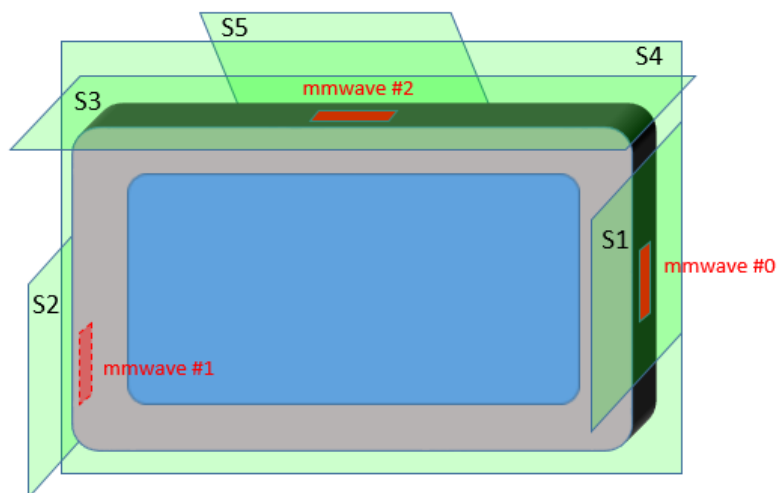


Figure 3. Evaluating surfaces for PD.

Table 1. PD Evaluation Planes

Antenna module	Left side (S1)	Right side(S2)	Top side (S3)	Rear side (S4)	Tilt (S5)
mmwave#0	Yes	No	Yes	Yes	No
mmwave#1	No	Yes	Yes	Yes	No
mmwave#2	No	No	Yes	Yes	Yes

1.2.3 Source Excitation Condition

Each antenna modules of mmwave#0, mmwave#1 and mmwave#2 are identical and has 16 feed-in ports. Out of 16 ports, 8 ports are for 1x4 patch array antenna at n258 and n261 bands and others are for 1x4 patch array antenna at n260 band. Out of 8 ports of the patch array, 4ports are for vertical polarization and 4 ports are for horizontal polarization.

The antenna ports are controlled by the software to create the appropriate mmWave beam. And the phase, magnitude and used ports are defined in the codebook which is referred by the software.

Figure 4 shows the mmWave module (mmwave#0) structure. The simulation model of QTM525-5 module is encrypted in the CST simulator and can only be checked the feed-in location.

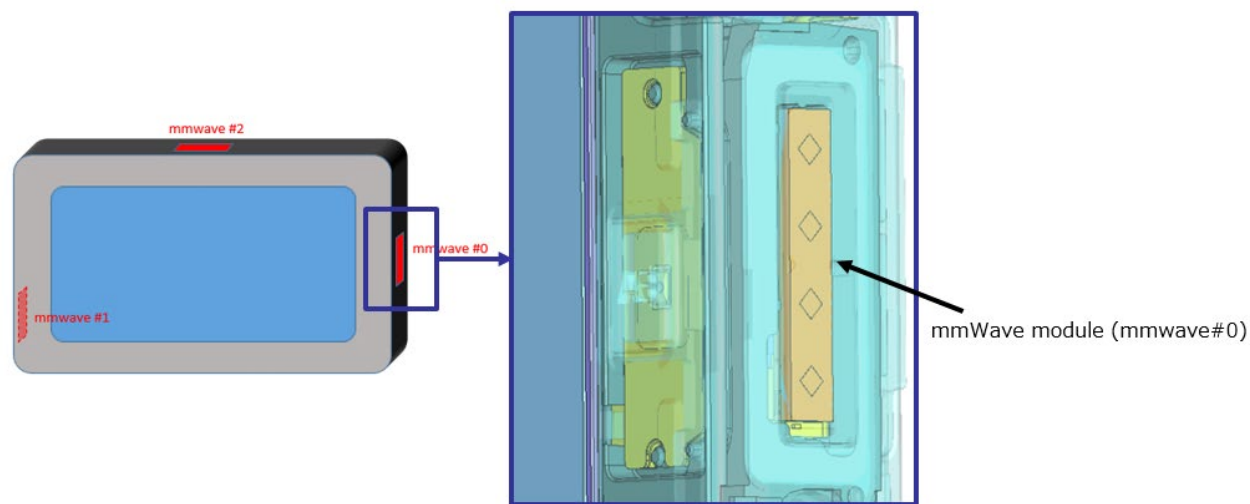


Figure 4. mmWave module

After finished the electromagnetic simulation of mmWave antenna module in CST simulator, the magnitude and phase information can be defined at each ports based on the codebook information and set up by using “Setup Solver” function in CST Studio Suite 2021. Figure 5 shows an example of the mmWave antenna ports excitation in mmwave#0.

The PD simulation is executed for Low, Middle and High channels at each band. The relative phase between beam pairs is not controlled by the chipset. Therefore, the relative phase between beams is swept from 0° to 360° at 5° step intervals and the highest PD is identified as a worst-case.

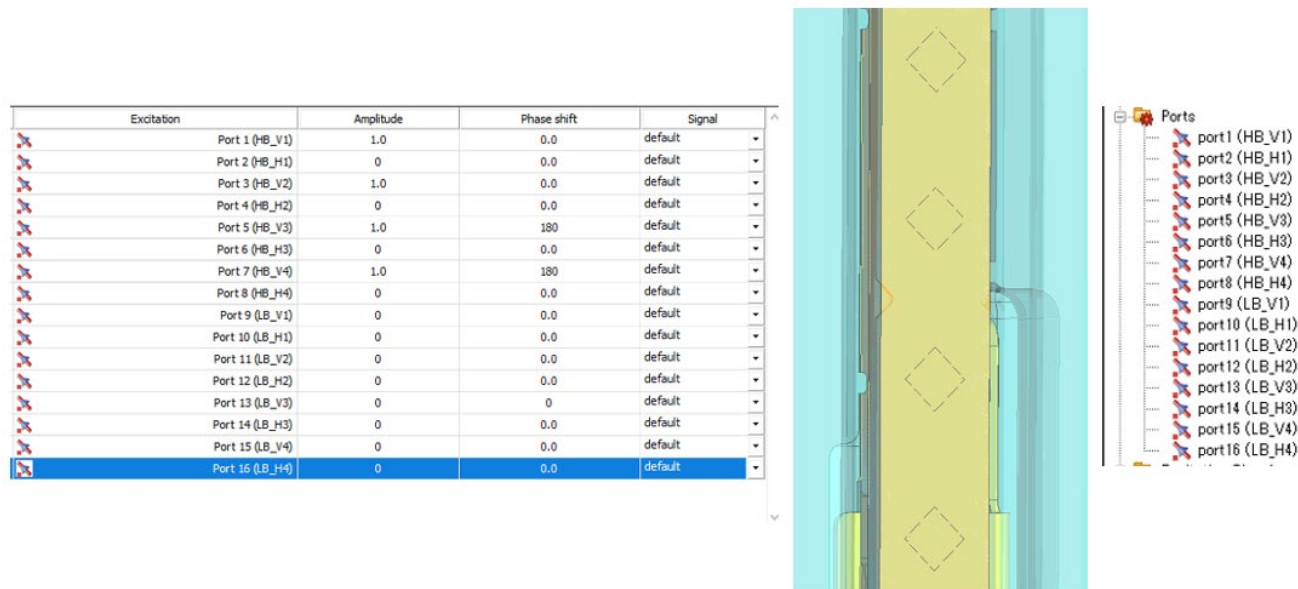


Figure 5. An example of port excitation (mmWave#0)

2. Simulation Verification

2.1 Spatial Averaged Power Density

Spatial averaging is needed to determine the MPE values from power density simulation results over the 4 cm² area required by the FCC. Using the localized power density, the total spatial power density can be obtained by the integral of 4 cm² of the localized power density result. Figure 6 shows examples of the distribution plot of the localized and averaged power density.

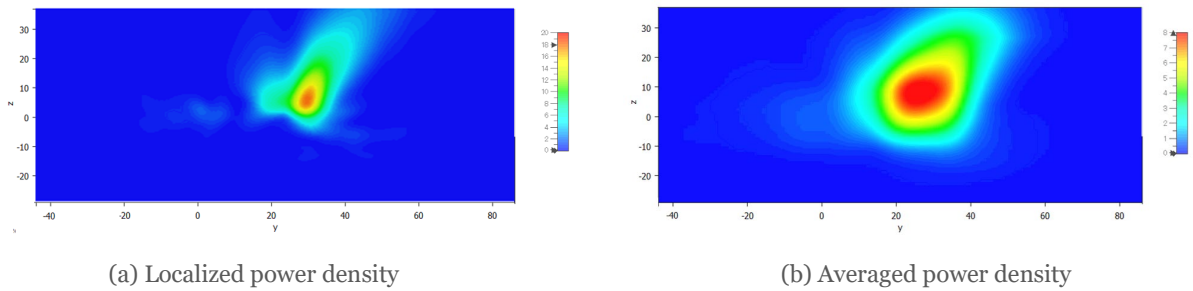


Figure 6. Power density distribution example

2.2 Comparison between Simulation and Measurement

The simulated and measured power density distributions are compared to each mmWave antennas in this section.

Based on comparison of power density distributions, simulated power density and measured power density have a good correlation. Measurement uncertainty in mmWave frequency in measurement side and inaccuracy of material properties in mmWave frequency in the simulation side are considered as error factors.

The input powers per each active port are below for both simulation and measurement validation and power density characterization. For simulation, these values were entered directly into CST model. For measurement, FTM software was used to input these values for each active port.

Table 2. Input Power for mmWave modules

Mode / Band	Antenna	Input Power (dBm) SISO	Input Power (dBm) MIMO
5G NR n258	mmwave#0	6	6
	mmwave#1	6	6
	mmwave#2	6	6
5G NR n260	mmwave#0	6	6
	mmwave#1	6	6
	mmwave#2	6	6
5G NR n261	mmwave#0	6	6
	mmwave#1	6	6

Mode / Band	Antenna	Input Power (dBm) SISO	Input Power (dBm) MIMO
	mmwave#2	6	6

The below simulation and measurement result were performed at 2mm distance at 24GHz, 28GHz and 39GHz. Since 24GHz band is separated in two FCC bands, the middle channel is also defined separately in Mid-low and Mid-high channels. The input.power.limit was decided according to the simulation results.

Table 3. PD comparison result between Simulation and Measurement

Power Density 4cm ² avg. PD (W/m ²)								
Band	Surface ID	Antenna	Beam ID	Polarization	Channel	Measured (W/m ²)	Simulated (W/m ²)	Sim. vs Meas. ΔdB
n258	S1	mmwave#0	22	V	Mid-low	10.30	10.84	0.22
			163	H	Mid-high	10.40	10.77	0.15
	S2	mmwave#1	27	V	Mid-high	11.90	12.55	0.23
			167	H	Mid-low	11.00	11.94	0.36
	S3	mmwave#2	34	V	Mid-high	12.60	12.15	-0.16
			162	H	Mid-low	10.10	12.10	0.78
n260	S1	mmwave#0	36	V	Mid	7.72	8.64	0.49
			153	H	Mid	8.09	8.21	0.06
	S2	mmwave#1	30	V	Mid	9.87	10.50	0.27
			155	H	Mid	8.53	9.89	0.64
	S3	mmwave#2	44	V	Mid	10.50	10.23	-0.11
			164	H	Mid	9.34	9.37	0.01
n261	S1	mmwave#0	37	V	Mid	9.92	10.16	0.10
			151	H	Mid	10.90	10.12	-0.32
	S2	mmwave#1	41	V	Mid	10.50	12.17	0.64
			169	H	Mid	10.80	11.35	0.21
	S3	mmwave#2	46	V	Mid	11.50	11.41	-0.03
			174	H	Mid	11.40	11.22	-0.07

mmwave#0 / Band: n258

Polarization: V

Polarization: H

Beam ID: 22

Beam ID: 163

Sim. (W/m²)

Meas. (W/m²)

Sim. (W/m²)

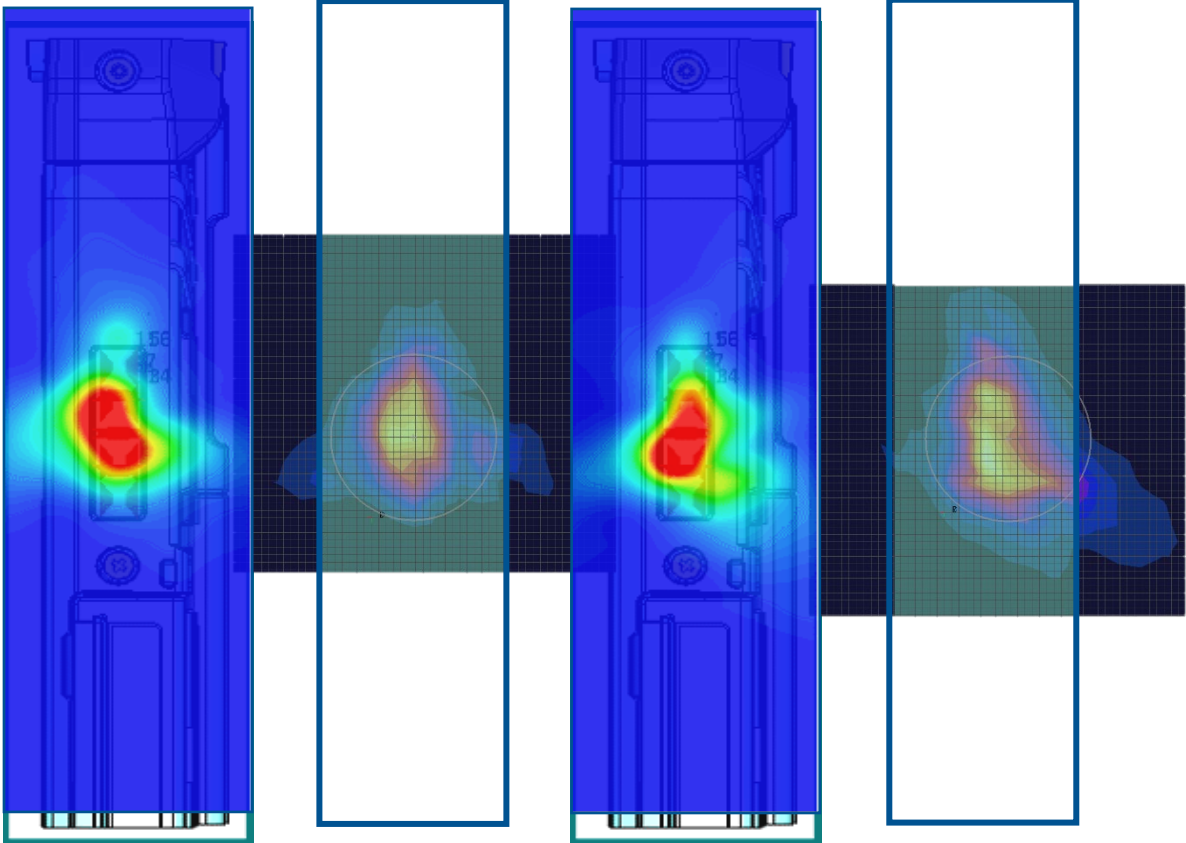
Meas. (W/m²)

10.84

10.30

10.77

10.40



mmwave#1 / Band: n258

Polarization: V

Polarization: H.

Beam ID: 27

Beam ID: 167

Sim. (W/m²)

Meas. (W/m²)

Sim. (W/m²)

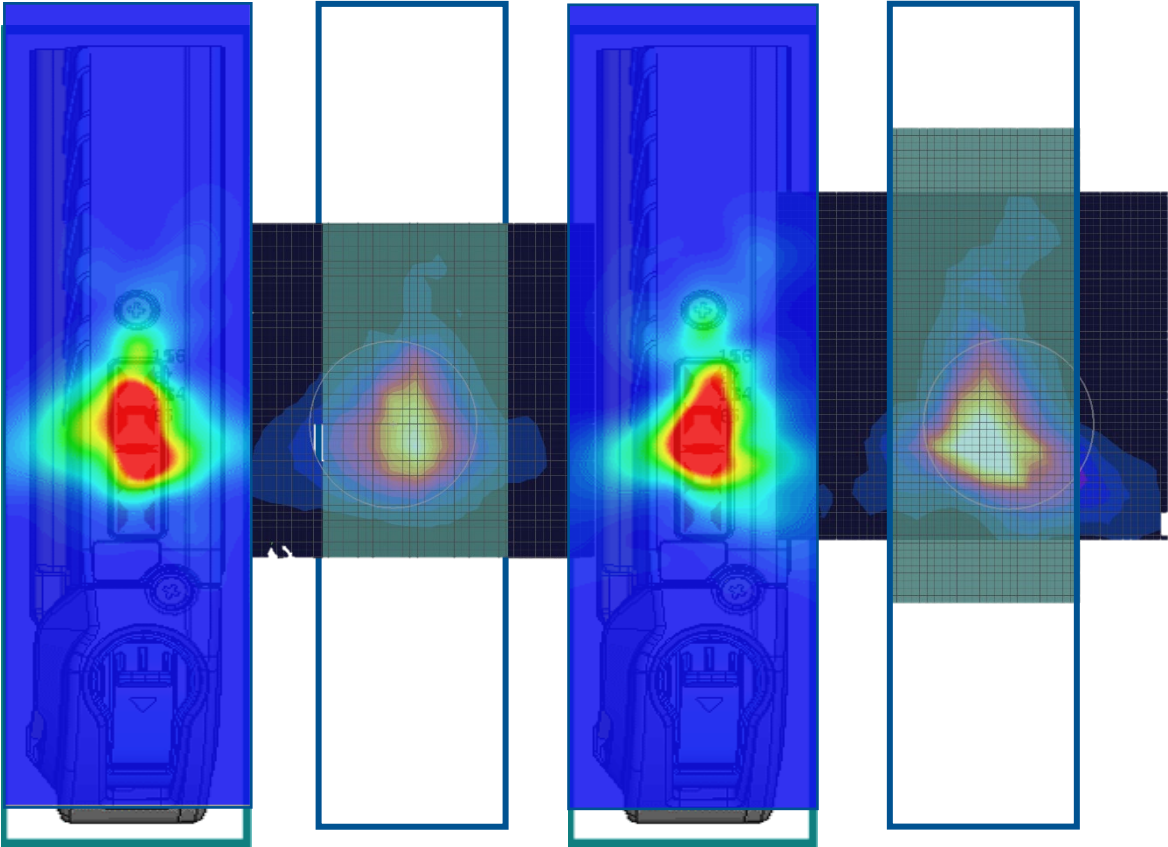
Meas. (W/m²)

12.55

11.90

11.94

11.00



mmwave#2 / Band: n258

Polarization: V

Polarization: H

Beam ID: 34

Beam ID: 162

Sim. (W/m²)

Meas. (W/m²)

Sim. (W/m²)

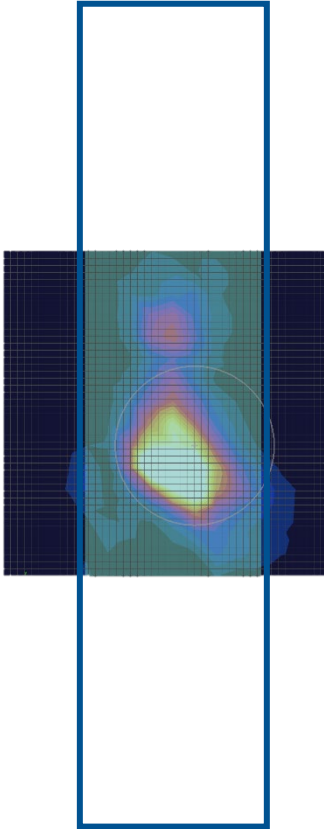
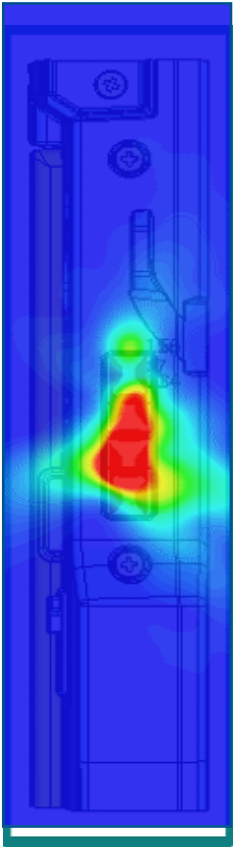
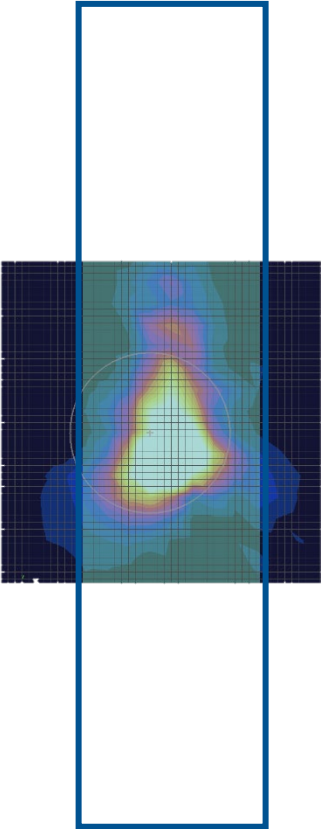
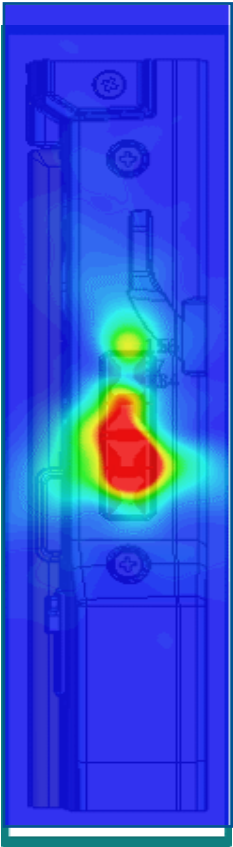
Meas. (W/m²)

12.15

12.6

12.10

11.3



mmwave#0 / Band: n260

Polarization: V

Polarization: H

Beam ID: 36

Beam ID: 153

Sim. (W/m²)

Meas. (W/m²)

Sim. (W/m²)

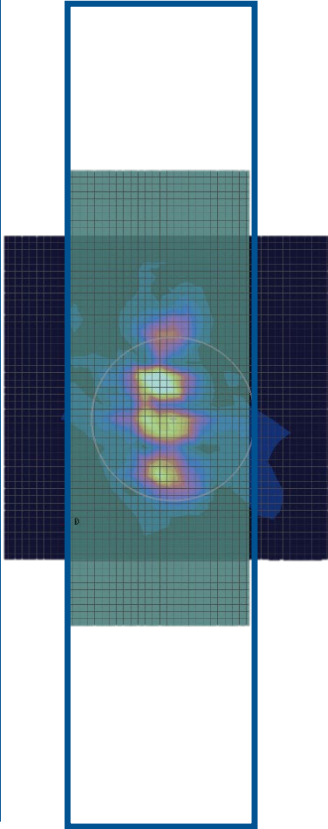
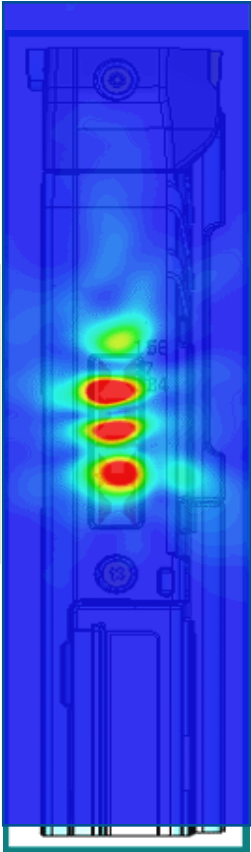
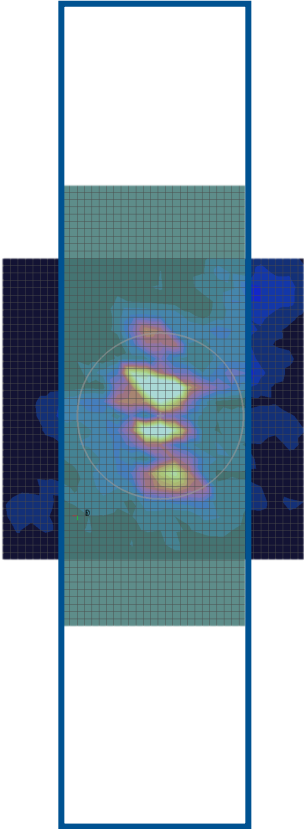
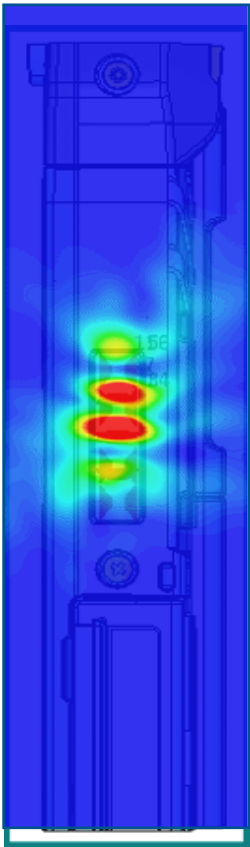
Meas. (W/m²)

8.64

7.72

8.21

8.09



mmwave#1 / Band: n260

Polarization: V

Polarization: H

Beam ID: 30

Beam ID: 155

Sim. (W/m²)

Meas. (W/m²)

Sim. (W/m²)

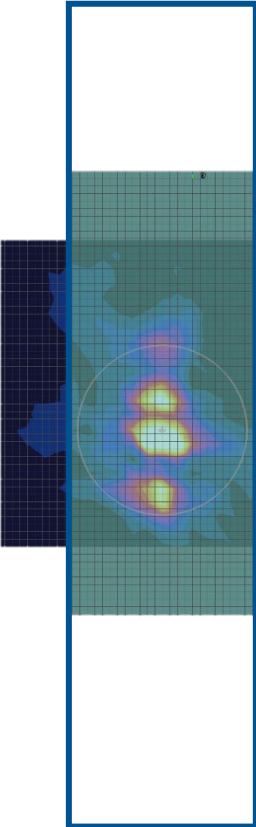
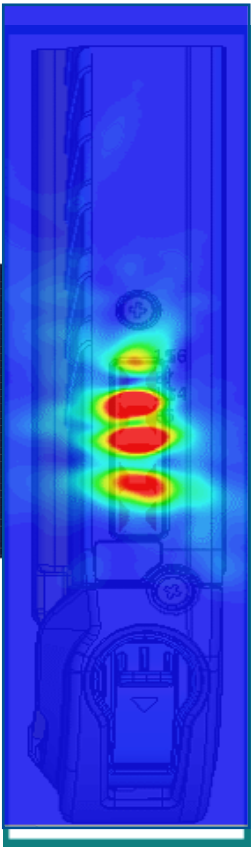
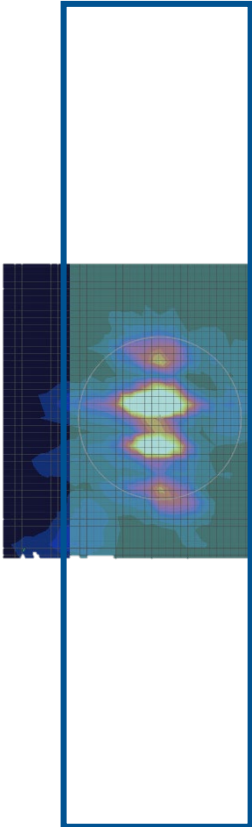
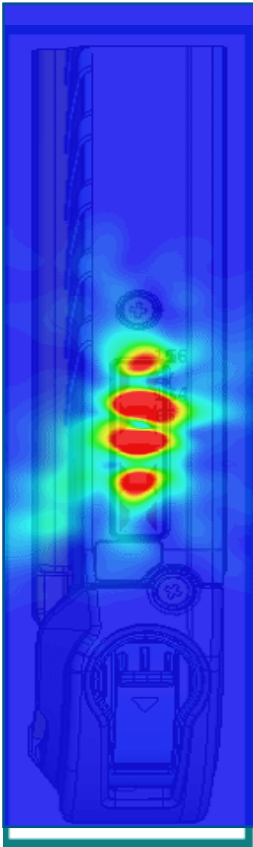
Meas. (W/m²)

10.5

9.87

9.98

8.53



mmwave#2 / Band: n260

Polarization: V

Polarization: H

Beam ID: 44

Beam ID: 172

Sim. (W/m²)

Meas. (W/m²)

Sim. (W/m²)

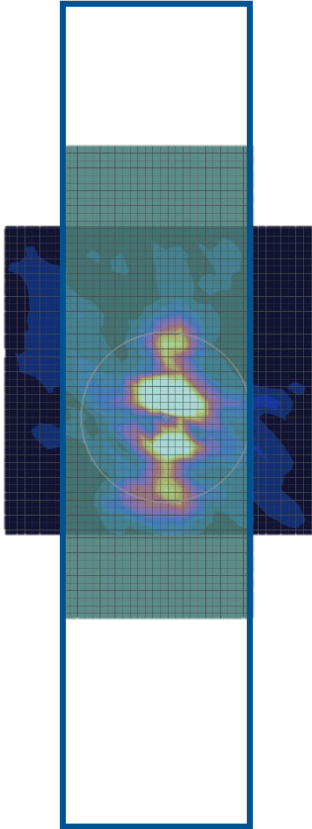
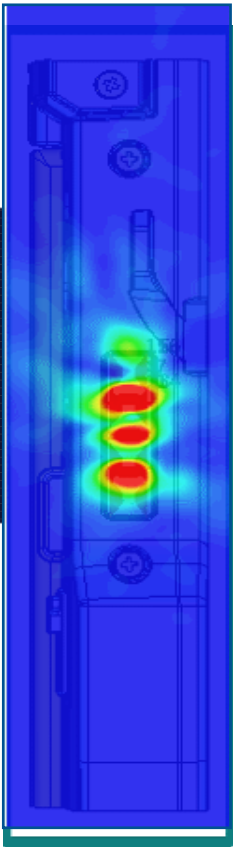
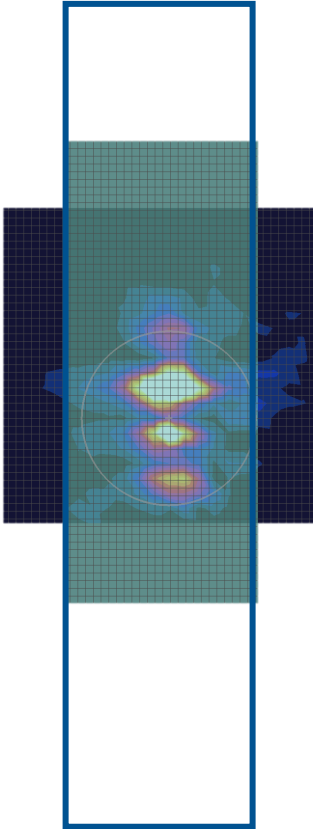
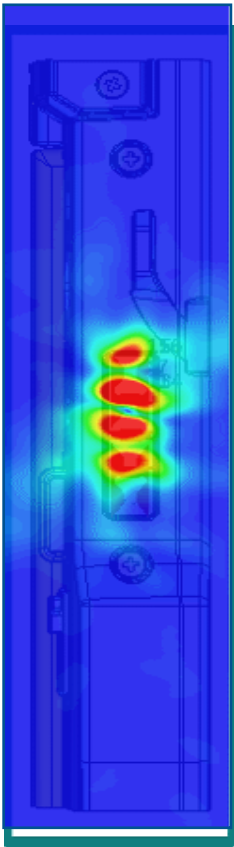
Meas. (W/m²)

10.23

10.5

9.37

9.34



mmwave#0 / Band: n261

Polarization: V

Polarization: H

Beam ID: 37

Beam ID: 151

Sim. (W/m²)

Meas. (W/m²)

Sim. (W/m²)

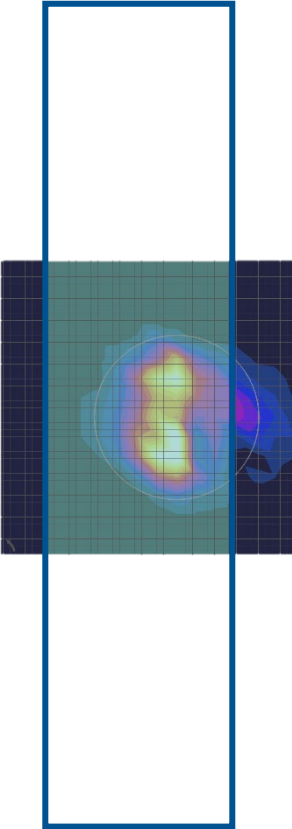
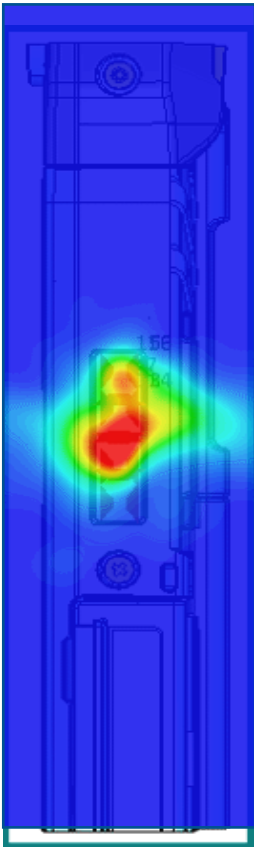
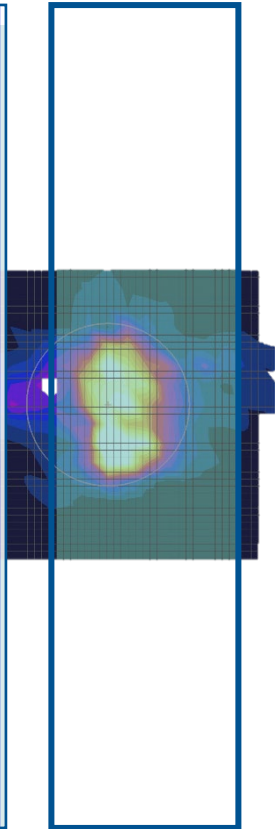
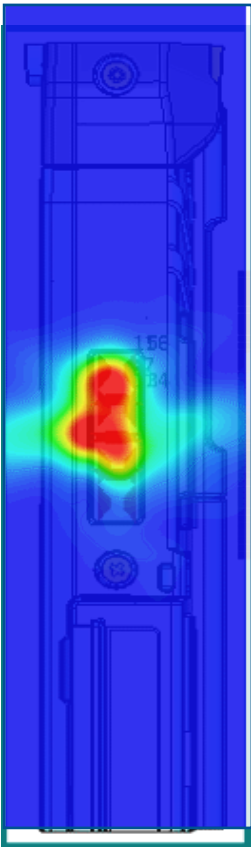
Meas. (W/m²)

20.32

9.92

20.24

10.9



mmwaave#1 / Band: n261

Polarization: V

Polarization: H

Beam ID: 41

Beam ID: 169

Sim. (W/m²)

Meas. (W/m²)

Sim. (W/m²)

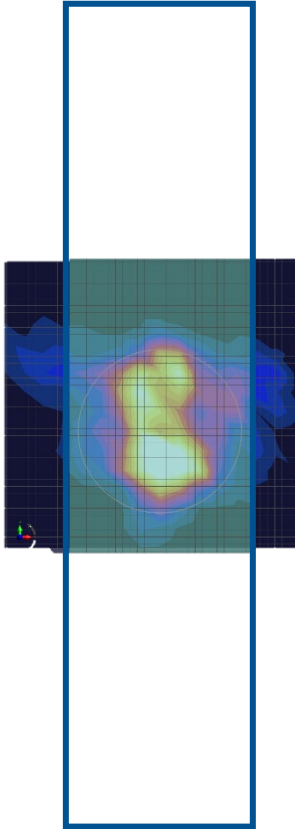
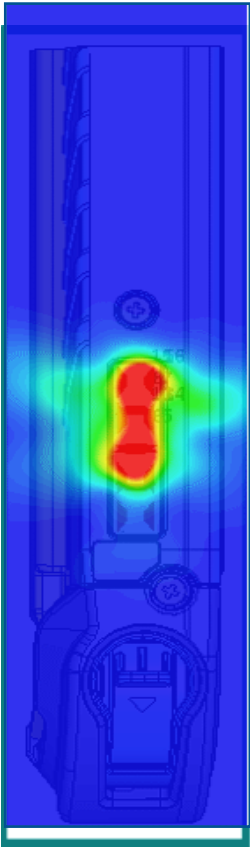
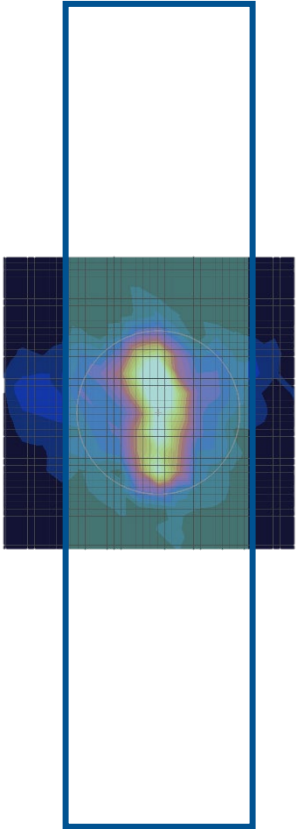
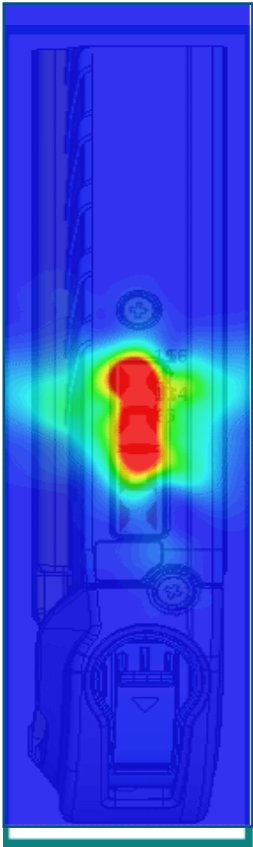
Meas. (W/m²)

24.34

10.5

22.69

10.8



mmwave#2 / Band: n261

Polarization: V

Polarization: H

Beam ID: 46

Beam ID: 174

Sim. (W/m²)

Meas. (W/m²)

Sim. (W/m²)

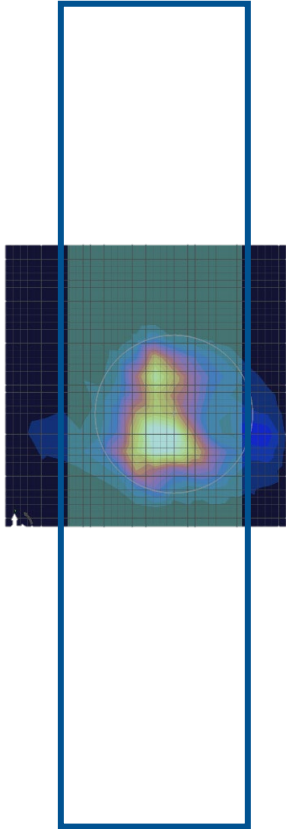
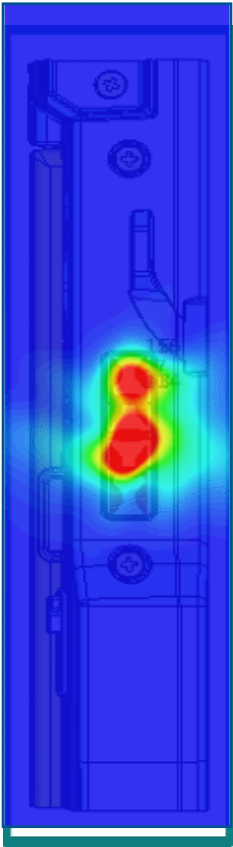
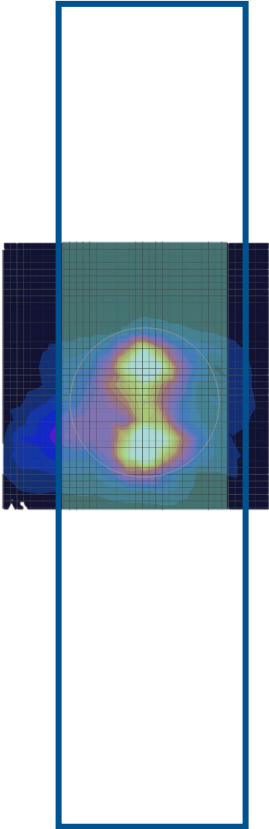
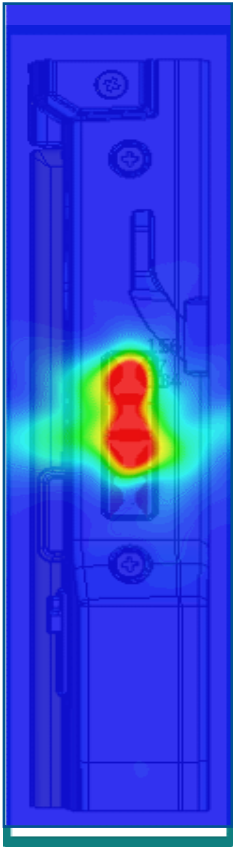
Meas. (W/m²)

22.82

11.5

22.43

11.4



3. Simulation Result

3.1 PD for Low/Mid/High channel at 24GHz/28GHz/39GHz

The following Table 4-12 show the PD simulation evaluation of mmwave#0 / mmwave#1 / mmwave#2 mmWave modules at 24GHz / 28GHz / 39GHz for each evaluation plane. A frequency range that is not subject to FCC certification in n258 band is also evaluated and listed in Table 13-15.

Table 4. Simulated PD of n258 mmwave#0

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)											
			Low ch			Mid-low ch			Mid-high ch			High ch		
			S1	S3	S4	S1	S3	S4	S1	S3	S4	S1	S3	S4
0		1	2.95	0.03	0.30	2.97	0.03	0.29	2.94	0.02	0.26	2.92	0.02	0.26
1		1	2.20	0.01	0.16	2.15	0.01	0.17	2.11	0.01	0.20	2.27	0.01	0.21
6		2	4.65	0.07	0.52	4.65	0.07	0.49	4.57	0.06	0.43	4.69	0.05	0.38
7		2	6.27	0.00	0.73	6.28	0.00	0.73	6.31	0.01	0.70	6.24	0.01	0.70
8		2	5.26	0.07	0.48	5.28	0.07	0.47	5.22	0.06	0.42	5.15	0.05	0.44
15		2	5.33	0.04	0.69	5.31	0.04	0.67	5.23	0.04	0.62	5.32	0.04	0.58
16		2	4.16	0.04	0.31	4.17	0.04	0.32	3.84	0.03	0.48	4.05	0.02	0.50
21		4	9.82	0.05	1.31	9.76	0.05	1.25	10.04	0.06	1.15	10.38	0.05	1.11
22		4	10.83	0.03	1.33	10.84	0.03	1.32	10.73	0.03	1.24	10.80	0.03	1.15
23		4	10.68	0.01	1.00	10.67	0.01	1.03	10.55	0.01	1.10	10.68	0.01	1.07
24		4	10.53	0.05	0.91	10.58	0.04	0.88	10.11	0.03	1.08	10.06	0.02	1.27
25		4	8.48	0.18	0.66	8.53	0.17	0.64	7.86	0.11	0.64	7.55	0.08	0.93
35		4	10.48	0.03	1.31	10.49	0.03	1.27	10.50	0.04	1.14	10.59	0.03	1.09
36		4	10.81	0.02	1.23	10.78	0.02	1.24	10.78	0.02	1.24	10.79	0.03	1.19
37		4	10.50	0.02	0.90	10.47	0.02	0.92	10.21	0.01	1.26	10.49	0.01	1.23
38		4	10.00	0.09	0.87	10.10	0.09	0.83	9.56	0.06	0.90	9.36	0.04	1.18
128		1	2.78	0.01	0.12	2.78	0.01	0.12	2.77	0.01	0.13	2.69	0.01	0.13
129		1	2.63	0.01	0.26	2.63	0.01	0.26	2.58	0.01	0.25	2.69	0.01	0.22
134		2	4.24	0.04	0.17	4.26	0.04	0.17	4.20	0.03	0.22	4.05	0.04	0.26
135		2	5.44	0.00	0.22	5.46	0.00	0.23	5.47	0.00	0.25	5.38	0.00	0.26

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)											
			Low ch			Mid-low ch			Mid-high ch			High ch		
			S1	S3	S4	S1	S3	S4	S1	S3	S4	S1	S3	S4
136		2	4.80	0.03	0.50	4.82	0.03	0.47	4.67	0.03	0.40	4.47	0.03	0.49
143		2	4.86	0.02	0.16	4.86	0.02	0.16	4.80	0.02	0.20	4.63	0.03	0.24
144		2	5.28	0.01	0.31	5.29	0.01	0.32	5.28	0.01	0.33	5.22	0.01	0.33
149		4	9.79	0.03	0.93	9.70	0.03	0.94	9.60	0.03	0.93	9.04	0.05	0.91
150		4	10.30	0.03	0.82	10.25	0.03	0.84	10.42	0.02	0.81	10.58	0.02	0.79
151		4	10.26	0.01	0.97	10.28	0.01	0.98	10.44	0.01	1.05	10.46	0.00	1.02
152		4	10.54	0.02	1.17	10.57	0.02	1.15	10.51	0.01	1.14	10.36	0.01	1.25
153		4	9.12	0.11	1.01	9.15	0.10	0.98	9.14	0.07	0.78	9.05	0.05	0.92
163		4	10.68	0.02	0.90	10.63	0.02	0.90	10.77	0.02	0.85	10.50	0.02	0.82
164		4	10.47	0.01	0.84	10.42	0.01	0.86	10.41	0.01	0.84	10.39	0.01	0.77
165		4	10.29	0.01	1.09	10.33	0.01	1.09	10.39	0.01	1.18	10.36	0.01	1.22
166		4	9.66	0.07	1.11	9.69	0.06	1.06	9.74	0.04	0.90	9.66	0.03	1.06
0	128	1	5.30	0.03	0.30	5.28	0.03	0.29	5.22	0.02	0.24	5.13	0.02	0.23
1	129	1	4.25	0.02	0.46	4.15	0.02	0.48	3.99	0.01	0.56	4.62	0.01	0.53
6	134	2	9.30	0.16	0.93	9.40	0.16	0.91	9.41	0.14	0.91	9.33	0.14	0.86
7	135	2	12.34	0.01	1.07	12.42	0.01	1.08	12.58	0.01	1.11	12.43	0.02	1.13
8	136	2	8.33	0.12	0.88	8.37	0.12	0.84	8.13	0.11	0.65	8.11	0.10	0.96
15	143	2	9.48	0.05	0.80	9.40	0.04	0.76	9.14	0.03	0.74	9.13	0.03	0.76
16	144	2	8.48	0.05	0.74	8.60	0.05	0.75	8.36	0.04	1.04	8.56	0.03	0.94
21	149	4	18.74	0.06	1.72	18.59	0.06	1.66	18.86	0.08	1.61	18.95	0.08	1.65
22	150	4	20.53	0.05	1.89	20.48	0.04	1.93	20.56	0.04	1.80	21.08	0.05	1.62
23	151	4	18.74	0.02	1.98	18.73	0.02	2.02	19.06	0.01	2.35	19.81	0.01	2.25
24	152	4	19.88	0.06	2.65	19.91	0.06	2.55	19.16	0.04	2.92	18.85	0.04	3.55
25	153	4	16.73	0.26	2.35	16.74	0.23	2.22	15.79	0.17	1.71	14.99	0.14	2.54
35	163	4	20.50	0.05	1.72	20.51	0.05	1.71	20.77	0.05	1.61	20.92	0.06	1.57
36	164	4	20.00	0.02	2.07	19.83	0.01	2.11	19.70	0.01	2.07	20.14	0.01	1.85

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)											
			Low ch			Mid-low ch			Mid-high ch			High ch		
			S1	S3	S4	S1	S3	S4	S1	S3	S4	S1	S3	S4
37	165	4	18.78	0.03	2.26	18.70	0.03	2.30	18.42	0.02	3.07	18.87	0.02	3.22
38	166	4	18.53	0.14	2.44	18.55	0.13	2.28	17.55	0.09	2.08	17.17	0.08	3.14

Table 5. Simulated PD of n258 mmwave#1

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)											
			Low ch			Mid-low ch			Mid-high ch			High ch		
			S2	S3	S4	S2	S3	S4	S2	S3	S4	S2	S3	S4
2		1	3.47	0.00	0.42	3.46	0.00	0.41	3.45	0.01	0.41	3.57	0.01	0.37
3		1	2.91	0.01	0.33	2.89	0.01	0.35	2.87	0.01	0.38	2.91	0.01	0.38
9		2	5.92	0.03	0.92	5.91	0.03	0.88	5.93	0.03	0.78	5.81	0.03	0.69
10		2	7.11	0.00	1.46	7.15	0.00	1.45	7.18	0.00	1.44	7.16	0.00	1.40
11		2	5.12	0.02	0.69	5.00	0.02	0.69	4.83	0.02	0.72	5.11	0.02	0.69
17		2	6.35	0.02	1.21	6.36	0.02	1.18	6.37	0.02	1.11	6.29	0.02	1.04
18		2	7.06	0.01	1.43	7.13	0.01	1.44	7.19	0.01	1.41	7.13	0.00	1.31
26		4	11.28	0.03	2.37	11.22	0.03	2.30	11.31	0.02	2.01	11.21	0.03	1.79
27		4	12.23	0.02	1.94	12.28	0.02	1.95	12.55	0.02	2.03	12.45	0.02	1.88
28		4	12.16	0.00	1.99	12.23	0.00	2.03	12.39	0.00	2.30	12.61	0.00	2.08
29		4	11.72	0.03	1.64	11.66	0.03	1.66	11.65	0.02	1.82	11.63	0.01	1.98
30		4	10.34	0.06	1.60	10.26	0.06	1.60	10.31	0.06	1.55	10.32	0.05	1.58
39		4	12.14	0.02	2.10	12.17	0.02	2.07	12.35	0.01	1.96	12.21	0.01	1.74
40		4	12.43	0.01	2.06	12.45	0.01	2.09	12.51	0.01	2.24	12.61	0.01	2.01
41		4	11.91	0.00	1.84	11.97	0.00	1.91	12.24	0.00	2.26	12.50	0.00	2.26
42		4	11.66	0.03	1.63	11.61	0.03	1.64	11.59	0.03	1.77	11.56	0.02	1.90
130		1	3.80	0.00	0.55	3.79	0.00	0.56	3.74	0.01	0.53	3.54	0.00	0.45
131		1	3.37	0.01	0.55	3.37	0.01	0.57	3.28	0.01	0.57	3.25	0.01	0.56
137		2	5.27	0.01	0.48	5.23	0.01	0.48	5.13	0.02	0.53	4.94	0.02	0.56

Beam ID 1	Beam ID 2	Feed no.	4cm ² PD simulation result (W/m ²)											
			Low ch			Mid-low ch			Mid-high ch			High ch		
			S2	S3	S4	S2	S3	S4	S2	S3	S4	S2	S3	S4
138		2	5.99	0.00	0.40	6.01	0.00	0.42	6.01	0.00	0.50	5.98	0.00	0.48
139		2	6.29	0.02	1.00	6.26	0.02	0.98	6.27	0.02	0.98	5.95	0.02	0.94
145		2	5.54	0.01	0.37	5.52	0.01	0.38	5.44	0.01	0.45	5.28	0.01	0.43
146		2	6.12	0.00	0.49	6.17	0.00	0.51	6.21	0.00	0.56	6.23	0.00	0.55
154		4	11.71	0.02	1.83	11.68	0.02	1.81	11.34	0.02	1.66	10.82	0.02	1.67
155		4	11.54	0.01	1.31	11.52	0.01	1.33	11.53	0.01	1.33	11.55	0.01	1.47
156		4	11.84	0.00	1.51	11.83	0.00	1.56	11.89	0.00	1.69	11.78	0.01	1.39
157		4	11.51	0.01	1.95	11.51	0.01	1.95	11.69	0.01	2.19	11.55	0.01	1.96
158		4	11.57	0.02	1.88	11.51	0.02	1.89	11.38	0.02	1.84	10.87	0.02	1.79
167		4	11.96	0.01	1.59	11.94	0.01	1.58	11.82	0.01	1.51	11.55	0.01	1.61
168		4	11.61	0.01	1.29	11.56	0.01	1.33	11.43	0.01	1.38	11.36	0.01	1.34
169		4	11.37	0.01	1.66	11.42	0.01	1.71	11.87	0.00	2.01	12.01	0.01	1.66
170		4	11.67	0.02	1.87	11.62	0.02	1.88	11.51	0.02	1.83	10.99	0.02	1.78
2	130	1	7.85	0.01	0.58	7.95	0.00	0.60	8.00	0.00	0.65	8.05	0.00	0.60
3	131	1	5.89	0.02	1.10	5.93	0.02	1.12	5.84	0.02	1.24	6.08	0.02	1.20
9	137	2	12.07	0.08	1.82	12.12	0.07	1.84	12.35	0.07	1.84	12.15	0.08	1.94
10	138	2	13.42	0.00	1.49	13.53	0.00	1.51	13.64	0.00	1.56	13.48	0.01	1.64
11	139	2	10.40	0.05	2.25	10.27	0.05	2.17	9.83	0.06	2.45	9.80	0.06	2.40
17	145	2	11.39	0.03	2.12	11.34	0.02	2.11	11.28	0.03	2.11	11.08	0.02	1.95
18	146	2	12.84	0.01	1.99	12.89	0.01	2.04	12.93	0.01	2.23	12.87	0.01	2.29
26	154	4	23.25	0.02	4.01	23.27	0.02	3.95	22.68	0.03	3.43	22.72	0.03	3.31
27	155	4	23.77	0.02	2.87	23.96	0.03	2.94	24.08	0.03	2.94	23.96	0.03	2.83
28	156	4	23.09	0.01	3.41	23.27	0.01	3.61	23.83	0.01	4.47	24.22	0.01	3.74
29	157	4	21.63	0.06	4.04	21.66	0.06	4.05	22.12	0.05	5.00	22.43	0.04	5.34
30	158	4	20.22	0.08	4.21	19.94	0.09	4.17	19.47	0.10	4.04	18.80	0.10	4.19
39	167	4	24.19	0.01	3.21	24.40	0.01	3.21	24.24	0.01	2.89	24.30	0.01	2.96

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)											
			Low ch			Mid-low ch			Mid-high ch			High ch		
			S2	S3	S4	S2	S3	S4	S2	S3	S4	S2	S3	S4
40	168	4	23.55	0.02	3.22	23.63	0.02	3.34	23.60	0.02	3.65	23.81	0.02	3.09
41	169	4	21.67	0.01	3.61	21.86	0.01	3.84	23.22	0.01	5.43	24.00	0.01	5.11
42	170	4	21.29	0.05	3.28	21.12	0.06	3.29	20.75	0.06	3.77	20.06	0.05	4.08

Table 6. Simulated PD of n258 mmwave#2

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)											
			Low ch			Mid-low ch			Mid-high ch			High ch		
			S3	S5	S4	S3	S5	S4	S3	S5	S4	S3	S5	S4
4		1	3.49	0.95	0.61	3.49	0.95	0.60	3.45	0.97	0.57	3.46	0.96	0.58
5		1	2.71	0.71	0.36	2.77	0.73	0.36	2.79	0.77	0.40	2.92	0.82	0.45
12		2	5.02	1.26	0.86	5.10	1.21	0.83	4.85	1.23	0.92	5.06	1.36	0.98
13		2	6.92	2.61	1.61	6.95	2.62	1.60	6.92	2.62	1.55	6.95	2.57	1.56
14		2	6.95	2.28	1.48	6.87	2.24	1.45	6.73	2.29	1.36	6.60	2.24	1.26
19		2	6.94	2.34	1.46	6.95	2.35	1.46	6.93	2.33	1.45	6.88	2.30	1.47
20		2	6.12	2.03	1.27	6.12	2.03	1.23	6.07	2.05	1.20	6.15	1.95	1.09
31		4	11.57	2.75	1.57	11.56	2.74	1.64	10.46	2.68	1.67	10.43	2.91	2.06
32		4	11.47	3.82	2.29	11.56	3.76	2.28	11.83	3.65	2.44	11.89	3.51	2.31
33		4	11.80	4.48	2.52	11.90	4.47	2.50	12.06	4.51	2.40	12.15	4.43	2.28
34		4	12.13	4.55	2.25	12.04	4.61	2.28	12.15	4.80	2.52	12.07	4.71	2.32
43		4	11.91	4.01	2.23	11.96	3.96	2.24	11.67	3.80	2.51	11.78	3.73	2.58
44		4	11.54	4.02	2.34	11.65	3.98	2.33	11.89	3.92	2.39	11.91	3.76	2.24
45		4	11.52	4.28	2.50	11.50	4.30	2.45	11.72	4.52	2.37	11.59	4.50	2.09
132		1	3.40	0.52	0.25	3.39	0.53	0.25	3.33	0.58	0.26	3.29	0.61	0.27
133		1	3.04	0.62	0.58	3.10	0.61	0.60	3.28	0.53	0.51	3.34	0.52	0.59
140		2	5.97	1.99	1.14	6.04	1.98	1.21	5.90	1.84	1.23	5.70	1.54	1.00
141		2	6.08	1.32	0.44	6.10	1.34	0.46	6.03	1.39	0.49	6.02	1.41	0.54

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)											
			Low ch			Mid-low ch			Mid-high ch			High ch		
			S3	S5	S4	S3	S5	S4	S3	S5	S4	S3	S5	S4
142		2	6.97	1.47	1.24	7.02	1.52	1.26	7.17	1.58	1.33	7.22	1.69	1.53
147		2	6.11	1.41	0.55	6.12	1.44	0.58	6.14	1.51	0.59	6.10	1.55	0.65
148		2	6.79	1.70	0.98	6.78	1.72	0.99	6.47	1.69	1.07	6.31	1.64	0.93
159		4	11.37	3.40	1.99	11.44	3.44	2.05	11.26	3.43	1.94	10.60	3.31	1.93
160		4	11.26	4.38	2.27	11.35	4.34	2.35	11.52	4.28	2.37	11.49	3.98	2.20
161		4	11.46	3.16	2.01	11.53	3.17	2.02	11.53	3.14	1.91	11.47	3.05	1.82
162		4	12.13	2.49	1.66	12.10	2.53	1.71	11.85	2.52	1.88	11.54	2.73	2.12
171		4	11.71	4.38	2.19	11.81	4.39	2.28	11.84	4.41	2.36	11.47	4.17	2.28
172		4	11.38	3.53	2.06	11.44	3.49	2.08	11.54	3.35	1.95	11.58	3.11	1.78
173		4	11.82	2.82	1.83	11.85	2.86	1.86	11.71	2.91	1.89	11.64	3.13	2.17
4	132	1	6.33	1.35	0.70	6.28	1.24	0.67	6.12	1.28	0.65	5.98	1.31	0.66
5	133	1	4.81	1.54	1.29	5.00	1.54	1.26	5.39	1.38	1.09	5.86	1.51	1.33
12	140	2	10.14	4.18	2.81	10.21	4.12	2.87	9.45	4.03	2.97	9.23	3.93	2.87
13	141	2	12.20	4.00	1.71	12.21	3.30	1.73	12.09	3.41	1.79	11.97	3.53	2.02
14	142	2	12.88	3.64	2.62	12.90	3.16	2.57	13.23	3.52	2.37	13.15	3.62	2.46
19	147	2	12.71	3.07	1.85	12.76	3.82	1.83	12.75	3.79	1.80	12.56	3.67	1.80
20	148	2	12.21	4.28	1.97	12.31	3.50	2.02	12.35	3.60	2.21	12.23	3.53	2.12
31	159	4	21.49	8.66	3.62	21.45	6.61	3.90	19.71	6.72	3.91	18.56	7.38	4.84
32	160	4	21.01	6.37	5.29	21.04	8.65	5.38	21.71	8.27	5.78	22.09	7.50	5.35
33	161	4	21.92	7.69	5.05	22.02	7.03	4.92	22.28	6.93	4.51	22.46	6.76	4.20
34	162	4	23.75	6.43	3.74	23.57	7.65	3.70	23.55	7.88	4.08	23.20	8.23	4.10
43	171	4	21.88	7.91	4.71	21.84	9.13	4.95	21.16	9.03	5.57	20.84	8.97	6.04
44	172	4	21.45	7.29	4.94	21.59	7.24	4.94	22.42	6.95	5.04	22.71	6.37	4.36
45	173	4	22.83	8.00	4.54	22.83	7.06	4.37	22.96	7.42	3.94	22.83	7.78	3.98

Table 7. Simulated PD of n260 mmwave#0

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)								
			Low ch			Mid ch			High ch		
			S1	S3	S4	S1	S3	S4	S1	S3	S4
0		1	2.33	0.03	0.28	2.87	0.02	0.31	2.78	0.01	0.43
1		1	2.46	0.01	0.22	2.74	0.01	0.28	2.76	0.01	0.29
6		2	4.57	0.01	0.53	4.88	0.01	0.55	5.07	0.01	0.45
7		2	3.72	0.06	0.40	4.47	0.06	0.44	3.96	0.05	0.56
8		2	4.01	0.02	0.49	4.74	0.01	0.66	4.90	0.01	0.76
15		2	3.86	0.04	0.28	4.56	0.04	0.39	4.45	0.03	0.39
16		2	3.86	0.06	0.53	4.66	0.05	0.58	4.12	0.05	0.78
21		4	8.23	0.02	0.99	8.36	0.04	1.19	8.42	0.02	1.30
22		4	7.31	0.03	0.78	8.58	0.02	0.83	8.55	0.01	0.74
23		4	6.70	0.09	0.60	7.30	0.11	0.77	6.91	0.08	0.84
24		4	6.49	0.11	0.92	8.23	0.05	1.11	7.70	0.05	1.22
25		4	8.16	0.04	0.92	8.54	0.05	1.21	8.27	0.02	1.06
36		4	8.03	0.02	0.78	8.64	0.03	0.99	8.61	0.01	0.97
37		4	6.34	0.07	0.59	7.12	0.08	0.76	7.20	0.07	0.91
38		4	6.39	0.10	0.83	7.85	0.08	1.00	7.40	0.05	0.95
39		4	7.49	0.05	1.22	8.35	0.03	1.37	8.07	0.03	1.59
128		1	2.01	0.01	0.21	2.35	0.02	0.27	2.38	0.01	0.37
129		1	2.37	0.02	0.22	2.58	0.01	0.25	2.57	0.01	0.50
134		2	4.38	0.04	0.39	4.65	0.04	0.42	4.71	0.02	0.61
135		2	3.74	0.03	0.37	4.43	0.03	0.50	4.47	0.02	0.67
136		2	4.74	0.03	0.47	5.21	0.03	0.56	5.13	0.01	0.37
143		2	3.36	0.03	0.33	3.85	0.04	0.45	3.45	0.02	0.51
144		2	3.48	0.01	0.38	3.98	0.02	0.50	4.17	0.01	1.32
149		4	6.99	0.06	0.70	7.27	0.03	0.90	7.40	0.02	0.73
150		4	6.43	0.09	0.60	7.69	0.09	0.93	7.70	0.03	0.96
151		4	6.22	0.05	0.71	6.87	0.04	0.82	6.19	0.04	1.65

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)								
			Low ch			Mid ch			High ch		
			S1	S3	S4	S1	S3	S4	S1	S3	S4
152		4	6.49	0.01	0.81	7.56	0.02	1.19	7.61	0.01	1.23
153		4	8.24	0.06	0.78	8.21	0.04	0.93	8.19	0.02	1.07
164		4	7.32	0.07	0.55	7.75	0.04	0.81	7.70	0.02	0.72
165		4	6.19	0.07	0.63	7.00	0.09	0.78	6.90	0.05	1.31
166		4	5.44	0.03	0.82	7.30	0.03	1.00	7.24	0.02	1.60
167		4	7.86	0.03	1.02	7.61	0.04	1.04	8.06	0.01	0.01
0	128	1	4.55	0.03	0.59	5.33	0.03	0.59	5.02	0.02	0.75
1	129	1	4.66	0.03	0.39	5.25	0.02	0.57	5.32	0.02	0.79
6	134	2	8.73	0.04	0.81	9.87	0.04	0.83	9.84	0.02	0.85
7	135	2	6.63	0.13	0.57	8.22	0.10	0.82	8.25	0.04	1.27
8	136	2	8.69	0.06	1.14	9.81	0.07	0.97	9.29	0.04	1.24
15	143	2	7.35	0.06	1.06	8.83	0.05	1.46	7.23	0.07	1.36
16	144	2	7.03	0.05	0.68	8.25	0.05	0.76	8.71	0.02	1.06
21	149	4	15.14	0.10	1.50	16.45	0.04	1.69	15.84	0.04	2.27
22	150	4	12.90	0.30	1.15	15.82	0.19	1.64	16.02	0.08	2.04
23	151	4	12.45	0.09	1.12	12.91	0.15	1.23	13.00	0.13	1.61
24	152	4	13.46	0.05	1.47	15.87	0.04	1.95	15.60	0.04	2.45
25	153	4	15.28	0.09	1.52	16.72	0.09	1.54	17.17	0.06	2.22
36	164	4	14.21	0.17	1.47	16.68	0.08	1.47	15.81	0.04	2.04
37	165	4	13.05	0.12	1.43	14.58	0.16	1.57	14.36	0.10	1.45
38	166	4	12.10	0.09	1.32	14.36	0.09	1.66	14.96	0.09	1.89
39	167	4	14.90	0.06	2.10	15.19	0.04	1.92	16.11	0.02	2.38

Table 8. Simulated PD of n260 mmwave#1

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)								
			Low ch			Mid ch			High ch		
			S2	S3	S4	S2	S3	S4	S2	S3	S4
2		1	2.95	0.01	0.38	3.31	0.01	0.44	3.34	0.00	0.62
3		1	2.90	0.00	0.49	3.23	0.00	0.54	3.13	0.00	0.48
9		2	5.34	0.00	0.79	5.85	0.00	0.89	5.91	0.00	1.13
10		2	4.36	0.02	0.50	4.99	0.02	0.59	4.84	0.01	0.73
11		2	6.18	0.02	0.92	6.90	0.01	0.97	6.51	0.00	1.09
17		2	5.54	0.01	0.90	6.15	0.01	0.88	6.37	0.01	1.04
18		2	4.81	0.00	0.71	5.30	0.01	0.96	5.19	0.00	0.85
26		4	9.80	0.01	1.54	10.49	0.01	1.72	9.69	0.01	1.91
27		4	8.59	0.01	1.58	9.52	0.01	1.66	9.52	0.00	1.38
28		4	7.64	0.02	1.10	8.28	0.04	1.23	8.13	0.02	1.59
29		4	7.73	0.02	1.39	9.17	0.01	1.76	9.25	0.01	1.77
30		4	9.68	0.01	1.64	10.50	0.01	1.83	9.66	0.01	1.96
40		4	10.14	0.01	1.47	10.08	0.01	1.67	9.75	0.00	1.74
41		4	6.94	0.01	1.97	8.59	0.01	2.06	9.06	0.01	1.66
42		4	7.34	0.03	1.37	8.66	0.02	1.60	8.93	0.01	1.56
43		4	8.65	0.02	1.43	10.10	0.01	1.79	9.45	0.01	1.87
130		1	2.35	0.00	0.45	2.81	0.00	0.46	2.76	0.00	0.41
131		1	2.93	0.01	0.40	3.18	0.00	0.35	3.02	0.00	0.47
137		2	5.53	0.01	0.83	6.33	0.01	0.80	5.94	0.00	0.82
138		2	3.72	0.01	0.75	4.27	0.00	0.60	4.08	0.00	0.57
139		2	4.22	0.00	0.86	4.98	0.00	0.89	4.94	0.00	0.70
145		2	4.28	0.01	0.68	4.97	0.00	0.69	4.66	0.00	0.68
146		2	5.07	0.00	0.78	5.64	0.00	0.94	5.60	0.00	0.99
154		4	8.87	0.00	1.51	9.87	0.01	1.58	9.30	0.00	1.70
155		4	8.59	0.03	1.45	9.98	0.01	1.51	9.15	0.01	1.54

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)								
			Low ch			Mid ch			High ch		
			S2	S3	S4	S2	S3	S4	S2	S3	S4
156		4	7.43	0.02	1.02	7.96	0.01	1.06	7.67	0.01	1.32
157		4	6.61	0.01	1.29	8.07	0.01	1.39	8.08	0.01	1.44
158		4	8.97	0.00	1.57	9.89	0.01	1.52	9.39	0.00	1.66
168		4	9.06	0.01	1.68	9.86	0.01	1.42	9.42	0.01	1.58
169		4	7.33	0.04	1.64	8.74	0.02	1.20	8.38	0.01	1.32
170		4	7.43	0.01	1.22	7.88	0.01	1.13	7.48	0.01	1.29
171		4	7.64	0.01	1.23	9.27	0.01	1.69	8.65	0.01	1.73
2	130	1	5.64	0.00	0.85	6.29	0.01	0.89	6.19	0.01	1.16
3	131	1	5.75	0.01	0.89	6.34	0.00	0.98	6.36	0.00	1.19
9	137	2	10.73	0.01	2.05	12.24	0.01	1.75	11.59	0.01	1.88
10	138	2	8.11	0.04	1.11	9.26	0.04	0.92	9.05	0.01	0.59
11	139	2	10.23	0.02	2.18	11.97	0.01	1.83	11.22	0.00	1.42
17	145	2	8.73	0.03	1.32	10.28	0.02	1.65	10.71	0.01	1.82
18	146	2	9.92	0.00	1.52	11.29	0.01	1.54	10.69	0.01	1.29
26	154	4	19.81	0.02	2.91	20.97	0.02	3.04	19.53	0.01	3.33
27	155	4	18.44	0.05	3.49	21.62	0.02	3.45	19.21	0.02	3.04
28	156	4	16.06	0.02	1.99	17.32	0.03	2.37	16.22	0.02	3.79
29	157	4	14.19	0.02	2.23	16.93	0.03	2.78	17.56	0.01	2.79
30	158	4	19.28	0.02	3.08	20.36	0.02	2.99	19.11	0.01	3.12
40	168	4	18.75	0.02	3.61	20.72	0.03	2.92	19.00	0.01	2.90
41	169	4	15.08	0.09	2.55	17.37	0.04	2.77	17.19	0.02	2.57
42	170	4	14.57	0.02	2.63	16.44	0.01	3.50	16.59	0.01	3.83
43	171	4	17.12	0.03	2.15	19.32	0.03	2.85	18.28	0.01	2.91

Table 9. Simulated PD of n260 mmwave#2

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)								
			Low ch			Mid ch			High ch		
			S3	S5	S4	S3	S5	S4	S3	S5	S4
4		1	2.92	0.66	0.44	3.34	0.71	0.51	3.35	0.91	0.67
5		1	2.93	0.79	0.55	3.25	0.93	0.59	3.14	0.87	0.51
12		2	5.58	1.24	0.90	5.86	1.30	0.89	5.64	1.12	0.83
13		2	4.54	1.06	0.57	5.07	1.22	0.70	4.71	1.37	0.91
14		2	5.17	1.24	0.89	5.76	1.40	1.02	5.86	1.66	1.26
19		2	4.73	1.02	0.69	5.28	1.20	0.85	5.07	1.32	0.86
20		2	4.96	0.98	0.79	5.45	1.26	1.12	5.59	1.46	1.09
31		4	9.75	2.16	1.49	10.06	2.37	1.82	9.83	2.42	1.84
32		4	8.58	2.25	1.57	10.19	2.87	1.90	9.41	2.86	2.17
33		4	7.80	1.96	1.30	8.19	2.17	1.44	8.06	2.39	1.81
34		4	7.46	2.47	2.16	8.99	2.60	2.00	9.17	2.79	1.62
35		4	9.74	2.37	1.63	10.02	2.28	1.61	10.13	2.61	1.71
44		4	9.44	2.19	1.86	10.23	2.55	1.97	9.83	2.72	2.06
45		4	7.27	2.11	1.31	8.90	2.48	1.69	8.71	2.68	1.70
46		4	7.29	2.52	2.14	8.57	2.47	2.12	8.75	2.62	1.73
47		4	8.54	2.40	1.79	9.72	2.66	1.70	9.85	2.97	1.54
132		1	2.35	0.65	0.42	2.76	0.75	0.46	2.73	0.70	0.47
133		1	2.93	0.59	0.39	3.06	0.62	0.42	2.92	0.85	0.58
140		2	5.93	1.11	0.87	5.98	1.34	0.98	5.91	1.82	1.31
141		2	3.81	1.10	0.69	4.34	1.30	0.68	3.96	1.08	0.60
142		2	4.32	1.09	0.81	4.79	1.09	0.78	4.90	1.13	0.85
147		2	5.18	1.26	0.80	5.74	1.58	1.03	5.62	1.72	1.20
148		2	5.16	1.20	0.75	5.73	1.32	0.79	5.55	1.42	0.88
159		4	8.96	2.12	1.37	9.30	2.42	1.60	8.91	2.45	1.79
160		4	8.62	2.06	1.52	9.26	2.48	1.84	9.19	3.12	2.24

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)								
			Low ch			Mid ch			High ch		
			S3	S5	S4	S3	S5	S4	S3	S5	S4
161		4	7.32	2.44	1.41	7.81	2.45	1.30	7.30	2.25	1.52
162		4	7.64	1.98	1.72	8.96	2.63	1.45	8.33	2.74	1.53
163		4	9.06	2.21	1.75	9.23	2.22	1.67	9.51	3.00	2.17
172		4	9.24	2.13	1.59	9.37	2.32	1.66	9.67	2.89	2.20
173		4	7.53	1.94	1.30	8.91	2.61	1.96	8.70	2.94	2.10
174		4	7.51	2.35	1.14	7.83	2.44	1.13	7.45	2.30	1.50
175		4	9.06	2.19	1.68	9.30	2.19	1.68	9.47	2.66	2.01
4	132	1	5.33	1.51	0.97	6.21	1.48	1.08	6.01	1.40	1.26
5	133	1	5.85	1.35	0.95	6.27	1.28	1.22	6.21	1.15	1.41
12	140	2	12.25	1.96	1.79	12.62	2.25	1.78	12.17	2.69	1.90
13	141	2	7.93	2.36	1.29	9.39	2.53	1.79	8.19	1.97	1.96
14	142	2	9.82	3.21	2.36	11.27	3.21	2.13	11.09	3.04	1.84
19	147	2	9.65	2.42	1.63	11.08	2.86	1.48	10.32	3.18	1.29
20	148	2	10.02	2.45	1.73	11.21	2.79	1.91	10.27	3.44	1.80
31	159	4	18.72	3.83	3.29	19.72	4.59	2.66	18.80	5.12	2.87
32	160	4	17.76	3.69	2.96	19.33	4.86	3.26	18.90	5.26	3.49
33	161	4	13.95	3.79	2.21	14.13	3.66	2.13	15.09	3.94	2.90
34	162	4	15.29	4.22	3.02	17.49	4.72	2.68	17.57	5.41	2.64
35	163	4	18.81	5.11	4.46	20.52	4.55	4.47	20.34	4.98	4.32
44	172	4	18.49	3.79	3.09	19.08	4.58	2.83	19.48	4.95	3.32
45	173	4	15.81	3.69	3.70	18.27	4.12	3.32	17.62	4.90	3.52
46	174	4	14.25	3.67	2.47	15.08	4.08	2.36	15.68	3.93	3.00
47	175	4	18.50	4.97	4.38	20.78	4.53	4.54	20.26	5.51	4.27

Table 10. Simulated PD of n261 mmwave#0

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)								
			Low ch			Mid ch			High ch		
			S1	S3	S4	S1	S3	S4	S1	S3	S4
0		1	2.85	0.01	0.23	2.80	0.01	0.24	2.69	0.01	0.24
1		1	2.81	0.00	0.30	2.78	0.00	0.35	2.77	0.00	0.36
6		2	4.63	0.03	0.38	4.57	0.02	0.44	4.29	0.02	0.45
7		2	5.72	0.01	0.57	5.56	0.01	0.58	5.27	0.01	0.57
8		2	4.13	0.01	0.39	4.22	0.01	0.46	4.27	0.01	0.50
15		2	5.02	0.01	0.58	5.33	0.00	0.66	5.34	0.00	0.63
16		2	5.36	0.01	0.43	5.18	0.01	0.43	4.89	0.01	0.43
21		4	8.70	0.05	0.96	9.23	0.03	1.12	8.96	0.03	1.19
22		4	9.70	0.02	1.19	9.79	0.02	1.30	9.33	0.02	1.27
23		4	9.53	0.02	1.15	9.75	0.02	1.21	9.66	0.02	1.12
24		4	9.77	0.02	0.91	9.74	0.02	0.93	9.34	0.01	0.92
25		4	6.84	0.03	0.82	6.95	0.03	0.82	6.88	0.03	0.69
36		4	8.92	0.04	1.01	9.43	0.03	1.15	9.11	0.03	1.23
37		4	9.93	0.01	1.32	10.16	0.01	1.41	9.93	0.01	1.34
38		4	9.81	0.02	0.90	9.68	0.02	0.95	9.31	0.02	0.92
39		4	8.36	0.03	0.90	8.46	0.02	0.88	8.25	0.02	0.78
128		1	2.65	0.01	0.20	2.60	0.01	0.20	2.51	0.01	0.21
129		1	3.03	0.00	0.21	3.02	0.00	0.21	2.91	0.00	0.21
134		2	4.04	0.02	0.25	3.95	0.02	0.22	3.84	0.02	0.20
135		2	5.05	0.00	0.31	5.00	0.00	0.32	4.86	0.00	0.34
136		2	4.21	0.02	0.58	4.15	0.02	0.57	4.07	0.02	0.58
143		2	4.68	0.01	0.26	4.62	0.01	0.25	4.50	0.01	0.23
144		2	5.19	0.01	0.52	5.37	0.01	0.52	5.29	0.01	0.51
149		4	7.58	0.04	0.62	7.89	0.04	0.56	7.79	0.04	0.47
150		4	9.51	0.02	0.63	9.62	0.02	0.60	9.33	0.02	0.55

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)								
			Low ch			Mid ch			High ch		
			S1	S3	S4	S1	S3	S4	S1	S3	S4
151		4	9.94	0.01	0.73	10.12	0.01	0.73	9.92	0.01	0.74
152		4	10.11	0.00	1.01	10.11	0.00	1.02	9.74	0.01	1.01
153		4	8.40	0.04	1.31	8.58	0.04	1.21	8.36	0.03	1.14
164		4	8.53	0.04	0.62	8.79	0.03	0.57	8.62	0.03	0.50
165		4	9.84	0.01	0.66	9.98	0.01	0.64	9.75	0.01	0.62
166		4	10.02	0.00	0.81	10.02	0.00	0.83	9.67	0.01	0.85
167		4	8.91	0.03	1.35	9.13	0.03	1.26	8.91	0.03	1.19
0	128	1	5.22	0.01	0.29	4.99	0.00	0.30	4.73	0.00	0.29
1	129	1	6.61	0.01	0.53	6.64	0.01	0.61	6.55	0.01	0.63
6	134	2	8.54	0.03	0.74	8.26	0.03	0.76	7.81	0.02	0.71
7	135	2	10.66	0.01	0.51	10.40	0.01	0.48	9.93	0.01	0.43
8	136	2	5.81	0.03	0.65	5.80	0.04	0.72	5.57	0.03	0.70
15	143	2	8.77	0.02	0.71	8.97	0.02	0.80	8.85	0.02	0.77
16	144	2	10.20	0.02	0.78	10.13	0.02	0.81	9.80	0.03	0.84
21	149	4	16.59	0.10	1.25	17.45	0.09	1.42	17.27	0.08	1.39
22	150	4	18.91	0.06	1.54	19.67	0.05	1.57	19.18	0.04	1.49
23	151	4	19.86	0.04	1.85	20.97	0.03	1.80	20.90	0.03	1.74
24	152	4	20.26	0.02	2.49	20.77	0.02	2.37	20.41	0.02	2.22
25	153	4	15.36	0.08	3.22	16.04	0.09	3.06	16.22	0.06	2.68
36	164	4	17.85	0.08	1.36	18.78	0.06	1.47	18.44	0.06	1.44
37	165	4	19.38	0.04	1.79	20.35	0.03	1.75	20.24	0.03	1.67
38	166	4	20.49	0.02	1.89	20.93	0.02	1.87	20.48	0.02	1.82
39	167	4	17.19	0.05	3.10	17.80	0.05	2.92	17.80	0.04	2.56

Table 11. Simulated PD of n261 mmwave#1

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)								
			Low ch			Mid ch			High ch		
			S2	S3	S4	S2	S3	S4	S2	S3	S4
2		1	3.42	0.01	0.43	3.30	0.01	0.45	3.10	0.00	0.46
3		1	2.56	0.00	0.30	2.76	0.00	0.36	2.77	0.00	0.38
9		2	6.09	0.01	0.89	5.88	0.01	0.82	5.57	0.00	0.78
10		2	6.57	0.00	1.17	6.44	0.01	1.16	6.12	0.00	1.17
11		2	6.08	0.00	1.12	6.35	0.00	1.27	6.19	0.01	1.34
17		2	6.43	0.00	1.03	6.20	0.00	0.95	5.87	0.00	0.93
18		2	6.09	0.02	1.03	6.07	0.02	1.08	5.79	0.01	1.08
26		4	9.39	0.01	1.76	9.47	0.01	1.69	9.36	0.01	1.52
27		4	11.53	0.01	2.14	11.69	0.01	2.01	11.52	0.00	1.81
28		4	11.86	0.01	1.81	11.83	0.01	1.75	11.33	0.01	1.82
29		4	11.60	0.01	2.17	11.76	0.01	2.15	11.36	0.01	2.19
30		4	9.97	0.03	1.51	10.48	0.02	1.71	10.16	0.02	1.63
40		4	9.72	0.01	1.82	9.81	0.01	1.75	9.72	0.01	1.55
41		4	12.18	0.01	1.93	12.17	0.01	1.84	11.78	0.01	1.78
42		4	11.61	0.01	2.03	11.69	0.01	1.97	11.30	0.01	2.02
43		4	11.01	0.02	1.93	11.45	0.02	2.04	11.00	0.01	2.06
130		1	3.05	0.01	0.42	2.98	0.00	0.41	2.82	0.00	0.42
131		1	2.70	0.00	0.43	2.96	0.00	0.39	3.01	0.00	0.36
137		2	5.27	0.01	1.04	5.17	0.01	1.06	4.95	0.00	1.06
138		2	5.47	0.00	0.63	5.48	0.00	0.62	5.18	0.00	0.60
139		2	4.79	0.02	0.80	4.69	0.02	0.75	4.46	0.01	0.71
145		2	5.44	0.00	0.91	5.38	0.00	0.94	5.11	0.00	0.94
146		2	4.98	0.02	0.51	4.95	0.01	0.50	4.72	0.01	0.48
154		4	7.84	0.02	1.79	7.75	0.02	1.64	7.60	0.01	1.54
155		4	10.97	0.01	2.05	11.19	0.01	1.88	11.00	0.01	1.93

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)								
			Low ch			Mid ch			High ch		
			S2	S3	S4	S2	S3	S4	S2	S3	S4
156		4	11.01	0.00	1.63	11.05	0.00	1.61	10.72	0.00	1.49
157		4	10.81	0.02	1.27	11.04	0.02	1.20	10.74	0.01	1.09
158		4	8.50	0.03	1.11	8.84	0.03	1.13	8.86	0.03	1.18
168		4	9.89	0.02	2.04	9.94	0.02	1.79	9.79	0.01	1.74
169		4	11.21	0.00	1.82	11.34	0.00	1.78	10.97	0.00	1.77
170		4	10.83	0.01	1.41	11.01	0.00	1.37	10.80	0.00	1.25
171		4	9.85	0.03	1.15	10.12	0.03	1.18	10.06	0.03	1.16
2	130	1	6.31	0.00	0.81	5.99	0.00	0.74	5.54	0.00	0.71
3	131	1	4.85	0.00	0.65	5.65	0.01	0.63	5.86	0.01	0.63
9	137	2	10.50	0.00	1.91	9.97	0.00	1.72	9.09	0.00	1.56
10	138	2	11.95	0.00	2.58	11.71	0.00	2.56	11.19	0.00	2.50
11	139	2	8.66	0.02	1.69	8.80	0.02	1.76	8.36	0.02	1.89
17	145	2	12.94	0.00	1.86	12.70	0.00	1.97	12.23	0.00	2.08
18	146	2	10.90	0.03	1.24	10.89	0.02	1.12	10.31	0.02	1.05
26	154	4	16.55	0.02	3.77	16.59	0.02	3.11	16.41	0.02	2.61
27	155	4	23.58	0.02	5.98	24.01	0.02	5.16	23.62	0.02	4.88
28	156	4	23.11	0.01	3.55	23.20	0.01	3.59	22.51	0.01	3.57
29	157	4	22.50	0.04	3.08	23.01	0.04	3.10	22.55	0.03	3.08
30	158	4	18.58	0.03	2.20	19.68	0.04	2.21	19.49	0.03	2.42
40	168	4	20.12	0.03	5.69	20.28	0.03	4.84	19.94	0.02	4.31
41	169	4	24.16	0.01	4.53	24.41	0.01	4.19	23.65	0.01	4.12
42	170	4	22.42	0.02	3.18	22.59	0.02	3.36	22.24	0.02	3.34
43	171	4	21.08	0.04	2.84	22.07	0.05	2.80	21.69	0.04	2.97

Table 12. Simulated PD of n261 mmwave#2

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)								
			Low ch			Mid ch			High ch		
			S3	S5	S4	S3	S5	S4	S3	S5	S4
4		1	2.86	0.73	0.38	2.78	0.73	0.37	2.66	0.72	0.37
5		1	3.33	0.93	0.53	3.32	0.93	0.54	3.29	0.94	0.52
12		2	5.93	1.38	0.87	5.78	1.40	0.88	5.65	1.42	0.82
13		2	6.40	2.54	1.37	6.36	2.53	1.35	6.24	2.49	1.35
14		2	5.58	1.46	0.82	5.50	1.50	0.82	5.40	1.56	0.81
19		2	6.20	1.87	1.01	6.09	1.86	1.01	5.94	1.86	0.98
20		2	5.87	2.10	1.18	5.84	2.13	1.16	5.77	2.14	1.15
31		4	8.24	1.85	1.41	8.08	1.85	1.33	8.04	1.85	1.15
32		4	11.50	3.01	1.86	11.17	3.08	1.84	11.28	3.15	2.01
33		4	11.35	4.18	2.18	11.32	4.13	2.19	11.16	4.15	2.42
34		4	10.72	4.29	2.38	11.22	4.44	2.51	10.99	4.49	2.75
35		4	8.99	2.96	1.62	9.43	3.02	1.82	9.62	2.98	1.97
44		4	10.78	2.54	1.72	10.36	2.61	1.67	10.53	2.61	1.71
45		4	11.45	3.50	1.91	11.40	3.52	1.93	11.29	3.60	2.17
46		4	11.69	4.63	2.54	11.41	4.55	2.51	11.24	4.66	2.83
47		4	9.74	3.35	1.77	10.44	3.52	2.02	10.51	3.57	2.17
132		1	2.27	0.48	0.31	2.23	0.45	0.30	2.14	0.41	0.30
133		1	3.03	0.72	0.45	2.97	0.68	0.44	2.87	0.63	0.47
140		2	5.83	1.60	0.95	5.70	1.43	0.85	5.56	1.30	0.86
141		2	5.58	1.24	0.69	5.50	1.14	0.69	5.28	1.02	0.71
142		2	5.81	1.16	0.78	6.04	1.06	0.87	6.08	0.98	0.72
147		2	5.37	1.55	0.98	5.28	1.48	0.99	5.03	1.36	1.06
148		2	5.05	0.99	0.58	5.04	0.91	0.57	4.98	0.80	0.57
159		4	8.05	2.94	1.84	8.11	2.71	1.82	8.15	2.67	1.93
160		4	10.55	4.30	2.53	11.09	4.23	2.48	11.18	3.95	2.45

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)								
			Low ch			Mid ch			High ch		
			S3	S5	S4	S3	S5	S4	S3	S5	S4
161		4	10.67	3.20	1.53	11.02	3.11	1.41	10.94	2.84	1.24
162		4	10.37	2.36	1.26	10.58	2.26	1.30	10.62	2.13	1.28
163		4	8.77	1.95	1.18	9.11	1.94	1.30	9.46	1.90	1.32
172		4	9.55	3.87	2.33	9.89	3.69	2.30	10.02	3.58	2.38
173		4	10.69	3.61	1.93	10.96	3.45	1.78	10.79	3.03	1.56
174		4	10.92	2.85	1.40	11.22	2.81	1.34	11.24	2.57	1.21
175		4	9.10	2.01	1.19	9.43	1.98	1.30	9.76	1.92	1.31
4	132	1	5.55	1.36	0.85	5.44	1.36	0.87	5.27	1.34	0.86
5	133	1	6.24	1.41	0.88	6.20	1.32	0.84	6.08	1.22	0.85
12	140	2	10.27	2.82	1.95	9.86	2.86	1.83	9.50	2.82	1.70
13	141	2	12.13	3.12	2.42	12.05	2.92	2.36	11.68	2.74	2.32
14	142	2	8.71	2.35	1.24	8.71	2.43	1.15	8.77	2.43	1.08
19	147	2	12.51	3.25	2.93	12.26	3.22	3.02	11.84	3.18	3.12
20	148	2	10.82	2.84	1.66	10.72	2.70	1.53	10.64	2.46	1.43
31	159	4	15.62	4.49	3.99	15.89	4.07	3.96	16.17	3.70	3.77
32	160	4	22.47	6.79	5.21	23.20	6.65	5.06	24.17	6.62	5.09
33	161	4	22.25	7.76	3.91	22.67	7.14	4.02	22.73	6.82	3.81
34	162	4	21.39	6.74	3.31	22.73	6.85	3.53	22.68	6.53	3.64
35	163	4	19.09	4.47	2.21	19.72	4.44	2.38	19.97	4.25	2.58
44	172	4	20.18	5.68	4.74	20.63	5.64	4.53	21.63	5.58	4.53
45	173	4	22.08	8.09	4.57	22.65	7.62	4.50	22.72	7.41	4.25
46	174	4	22.81	7.53	3.64	22.83	7.31	3.76	22.68	6.82	3.82
47	175	4	19.52	5.11	2.52	20.86	5.14	2.88	21.18	5.02	3.11

Table 13. Simulated PD of n258 mmwave#0 (out of FCC frequency range)

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)					
			Low ch			High ch		
			S1	S3	S4	S1	S3	S4
0		1	2.92	0.02	0.24	2.89	0.01	0.23
1		1	2.27	0.01	0.22	2.04	0.00	0.17
6		2	4.72	0.06	0.33	4.62	0.04	0.30
7		2	6.12	0.01	0.66	5.84	0.01	0.64
8		2	4.98	0.03	0.38	4.96	0.03	0.35
15		2	5.32	0.05	0.52	5.09	0.03	0.52
16		2	4.27	0.01	0.41	4.07	0.01	0.35
21		4	9.91	0.06	1.07	8.47	0.05	0.97
22		4	10.85	0.04	1.17	9.45	0.02	1.23
23		4	10.79	0.02	0.99	9.91	0.03	1.12
24		4	9.96	0.02	1.08	9.17	0.01	1.03
25		4	7.29	0.04	0.69	6.44	0.04	0.73
35		4	10.40	0.04	1.12	8.74	0.05	1.05
36		4	10.36	0.04	1.12	9.90	0.02	1.32
37		4	10.78	0.01	1.12	10.20	0.01	1.06
38		4	9.08	0.03	0.96	8.11	0.02	0.92
128		1	2.70	0.01	0.15	2.68	0.01	0.21
129		1	2.62	0.01	0.25	2.39	0.00	0.19
134		2	4.15	0.04	0.24	4.05	0.02	0.30
135		2	5.25	0.00	0.30	5.16	0.00	0.34
136		2	4.41	0.03	0.49	4.38	0.01	0.35
143		2	4.62	0.03	0.25	4.51	0.02	0.27
144		2	5.12	0.00	0.38	5.02	0.00	0.47
149		4	8.16	0.07	0.91	7.98	0.05	0.65
150		4	10.75	0.02	0.81	9.59	0.03	0.73

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)					
			Low ch			High ch		
			S1	S3	S4	S1	S3	S4
151		4	10.48	0.01	0.92	10.14	0.01	0.86
152		4	10.15	0.02	1.40	9.72	0.01	1.28
153		4	9.17	0.05	1.19	7.92	0.04	1.27
163		4	9.88	0.04	0.86	8.85	0.04	0.66
164		4	10.27	0.01	0.68	9.93	0.01	0.74
165		4	10.47	0.01	1.21	10.12	0.01	1.05
166		4	9.63	0.03	1.33	8.62	0.03	1.36
0	128	1	5.19	0.01	0.28	5.35	0.01	0.33
1	129	1	4.89	0.01	0.54	3.80	0.00	0.25
6	134	2	9.70	0.14	0.69	9.23	0.11	0.85
7	135	2	12.21	0.02	1.09	11.89	0.02	1.20
8	136	2	8.44	0.08	1.04	8.51	0.03	0.63
15	143	2	9.32	0.02	0.72	9.30	0.01	0.69
16	144	2	8.79	0.01	0.76	8.39	0.01	0.85
21	149	4	18.66	0.08	1.83	16.92	0.08	1.28
22	150	4	21.73	0.05	1.65	19.18	0.03	1.84
23	151	4	20.79	0.01	1.87	19.26	0.03	1.77
24	152	4	18.87	0.03	3.67	18.84	0.02	3.32
25	153	4	14.59	0.10	2.66	14.41	0.08	2.63
35	163	4	20.95	0.05	1.70	17.77	0.06	1.45
36	164	4	19.92	0.02	1.66	19.39	0.01	1.82
37	165	4	20.41	0.01	3.07	20.36	0.01	2.65
38	166	4	17.28	0.05	3.32	17.06	0.04	3.00

Table 14. Simulated PD of n258 mmwave#1 (out of FCC frequency range)

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)					
			Low ch			High ch		
			S2	S3	S4	S2	S3	S4
2		1	3.66	0.00	0.39	3.55	0.00	0.52
3		1	2.92	0.00	0.33	2.50	0.00	0.29
9		2	5.83	0.03	0.59	5.65	0.03	0.65
10		2	7.00	0.00	1.42	6.64	0.01	1.20
11		2	5.42	0.01	0.61	5.26	0.00	0.76
17		2	6.26	0.02	0.95	5.96	0.02	0.93
18		2	6.93	0.00	1.38	6.63	0.00	1.11
26		4	11.02	0.03	1.61	9.71	0.03	1.49
27		4	12.50	0.02	1.80	11.19	0.02	2.14
28		4	12.49	0.00	2.12	11.91	0.01	1.80
29		4	11.35	0.01	1.99	10.62	0.01	2.22
30		4	9.87	0.03	1.44	8.57	0.01	1.55
39		4	11.87	0.02	1.52	10.27	0.02	1.72
40		4	12.38	0.01	2.00	11.74	0.02	2.06
41		4	12.46	0.00	2.31	12.24	0.00	2.01
42		4	11.23	0.01	1.89	10.43	0.01	2.13
130		1	3.53	0.01	0.43	3.55	0.01	0.42
131		1	3.11	0.01	0.55	2.61	0.00	0.43
137		2	4.89	0.03	0.62	4.92	0.02	0.75
138		2	5.79	0.00	0.45	5.57	0.00	0.61
139		2	5.64	0.02	1.10	5.25	0.01	0.68
145		2	5.18	0.02	0.44	5.10	0.02	0.52
146		2	5.96	0.00	0.54	5.65	0.00	0.81
154		4	9.62	0.04	1.29	9.03	0.03	1.22
155		4	11.63	0.02	1.60	10.39	0.02	1.41

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)					
			Low ch			High ch		
			S2	S3	S4	S2	S3	S4
156		4	11.53	0.01	1.34	11.09	0.01	1.55
157		4	11.73	0.01	2.07	10.97	0.01	1.87
158		4	10.35	0.03	2.16	9.40	0.02	2.13
167		4	10.81	0.03	1.45	9.77	0.03	1.29
168		4	11.38	0.01	1.49	10.86	0.02	1.49
169		4	12.28	0.00	1.67	11.19	0.01	1.70
170		4	10.47	0.03	2.16	9.56	0.02	2.12
2	130	1	8.24	0.00	0.68	7.77	0.00	0.93
3	131	1	5.88	0.02	1.12	4.40	0.00	0.68
9	137	2	11.75	0.10	1.91	11.57	0.09	2.36
10	138	2	13.07	0.01	1.81	12.41	0.02	2.26
11	139	2	9.75	0.04	2.43	9.26	0.01	1.85
17	145	2	11.24	0.02	1.71	10.88	0.03	1.25
18	146	2	12.76	0.01	2.50	12.28	0.00	2.87
26	154	4	21.96	0.02	2.77	19.72	0.01	2.83
27	155	4	24.59	0.05	3.09	22.21	0.05	3.74
28	156	4	24.60	0.01	3.78	23.30	0.02	3.70
29	157	4	22.47	0.02	5.80	22.00	0.01	6.13
30	158	4	18.42	0.09	4.93	18.41	0.03	5.38
39	167	4	24.21	0.02	2.86	20.83	0.01	3.31
40	168	4	24.09	0.03	3.38	22.74	0.04	3.49
41	169	4	25.09	0.00	5.08	23.82	0.00	4.77
42	170	4	20.13	0.04	5.32	20.44	0.02	5.14

Table 15. Simulated PD of n258 mmwave#2 (out of FCC frequency range)

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)			
			Low ch		High ch	
			S3	S4	S3	S4
4		1	3.40	0.56	3.40	0.55
5		1	2.87	0.43	2.32	0.33
12		2	5.22	0.78	5.02	0.70
13		2	6.71	1.53	6.55	1.43
14		2	6.36	1.13	6.38	1.14
19		2	6.67	1.43	6.48	1.22
20		2	6.05	1.03	5.95	1.16
31		4	9.76	1.69	9.67	1.49
32		4	12.28	2.25	11.72	2.02
33		4	11.90	2.36	11.90	2.62
34		4	11.10	2.14	9.67	1.83
43		4	11.57	2.37	11.72	1.91
44		4	12.14	2.25	11.54	2.15
45		4	12.04	2.19	10.91	2.49
132		1	3.18	0.33	3.08	0.45
133		1	3.31	0.75	2.59	0.46
140		2	6.25	1.21	5.41	1.13
141		2	5.76	0.59	5.77	0.71
142		2	7.11	1.44	6.24	0.94
147		2	5.87	0.71	5.72	0.88
148		2	6.31	0.74	6.28	0.85
159		4	10.94	2.12	9.40	2.29
160		4	11.97	2.55	11.41	2.43
161		4	11.31	1.74	10.93	1.64
162		4	10.49	1.87	9.26	1.30

Beam ID 1	Beam ID2	Feed no.	4cm ² PD simulation result (W/m ²)			
			Low ch		High ch	
			S3	S4	S3	S4
171		4	11.63	2.53	10.87	2.64
172		4	11.54	1.97	11.01	1.82
173		4	11.56	1.86	10.44	1.49
4	132	1	6.05	0.80	6.40	0.98
5	133	1	6.12	1.48	4.19	0.63
12	140	2	10.26	2.56	9.34	1.80
13	141	2	11.82	2.33	12.47	2.69
14	142	2	13.75	2.27	12.89	1.77
19	147	2	12.39	1.64	12.37	1.12
20	148	2	12.02	1.82	11.80	2.07
31	159	4	18.69	4.67	18.66	4.42
32	160	4	24.10	5.72	23.75	4.92
33	161	4	22.84	4.46	23.69	4.35
34	162	4	22.91	3.84	19.47	2.72
43	171	4	22.48	6.32	23.01	5.53
44	172	4	23.61	4.61	23.07	4.58
45	173	4	23.93	3.93	21.74	3.72

3.2 Ratio of PD results for simultaneous transmission evaluation

The ratio of non-worst surface PD result to the worst surface PD result for each beam ID and channel is used to support RF exposure analysis for simultaneous transmission consideration(s) in the part1 RF exposure test report. The highest ratio of non-worst surface PD result to the worst surface PD result for each mmWave module and each band is listed in Table 16 – 18.

Table 16. Ratio of PD results (mmwave#0)

Band	S3 / S1	Beam ID	Channel	S4 / S1	Beam ID	Channel
n258	0.02	25	Low ch	0.19	24/152	High ch
n260	0.02	22/150	Low ch	0.32	144	High ch
n261	0.01	6	Low ch	0.21	25/153	Low ch

Table 17. Ratio of PD results (mmwave#1)

Band	S3 / S2	Beam ID	Channel	S4 / S2	Beam ID	Channel
n258	0.01	9/137	Low ch	0.25	11/139	Mid-high ch
n260	0.01	169	Low ch	0.28	41	Low ch
n261	0.00	139	Low ch	0.28	40/168	Low ch

Table 18. Ratio of PD results (mmwave#2)

Band	S5 / S3	Beam ID	Channel	S4 / S3	Beam ID	Channel
n258	0.43	43/171	High ch	0.31	12/140	Mid-high ch
n260	0.35	46	Low ch	0.29	46	Low ch
n261	0.41	46	High ch	0.26	19/147	High ch

3.3 EIRP simulation results

The EIRP simulation result for each beam ID and channel is used to support RF test consideration(s) in the FCC Part 30 RF test report. The EIRP simulation result for each mmWave module and each band is listed in each Tables. The worst value is shown in the red cell.

Beam ID 1	Beam ID2	mmwave#	Ant Pol (V/H)	# of Antenna port	EIRP simulation result (dBm)			
					L-ch (n258a)	H-ch (n258a)	L-ch (n258b)	H-ch (n258b)
0		0	V	1	11.5	11.3	10.6	10.4
1		0	V	1	9.4	9.4	9.3	9.7
2		1	V	1	10.7	10.6	11.3	11.5
3		1	V	1	10.2	10.2	9.2	9.7
4		2	V	1	10.7	10.4	10.0	10.0
5		2	V	1	10.0	9.8	10.1	10.4
6		0	V	2	13.8	13.9	13.5	13.1
7		0	V	2	15.0	14.9	14.8	14.8
8		0	V	2	14.4	14.5	15.1	14.4
9		1	V	2	14.7	14.6	14.3	13.8
10		1	V	2	14.6	14.6	14.7	14.9
11		1	V	2	13.3	13.5	13.8	13.7
12		2	V	2	13.3	12.9	12.7	13.2
13		2	V	2	14.4	14.5	14.5	14.6
14		2	V	2	16.3	16.2	16.3	16.2
15		0	V	2	15.0	14.9	14.7	14.3
16		0	V	2	13.8	14.2	14.2	14.1
17		1	V	2	15.0	14.9	14.6	14.9
18		1	V	2	14.4	14.3	13.8	14.5
19		2	V	2	13.8	13.9	13.9	13.9
20		2	V	2	14.9	14.6	14.1	14.3
21		0	V	4	18.8	18.6	18.7	19.0
22		0	V	4	19.7	19.7	19.6	20.0
23		0	V	4	19.4	19.3	19.2	19.2
24		0	V	4	18.6	18.9	19.3	19.3
25		0	V	4	18.2	18.2	17.6	17.3
26		1	V	4	18.4	18.3	18.6	19.0
27		1	V	4	19.6	19.5	20.0	20.2
28		1	V	4	19.3	19.3	19.3	19.4
29		1	V	4	18.8	18.9	19.0	18.8
30		1	V	4	18.2	17.9	17.7	17.6
31		2	V	4	17.8	18.1	17.7	17.5

Beam ID 1	Beam ID2	mmwave#	Ant Pol (V/H)	# of Antenna port	EIRP simulation result (dBm)			
					L-ch (n258a)	H-ch (n258a)	L-ch (n258b)	H-ch (n258b)
32		2	V	4	18.6	18.7	18.5	18.9
33		2	V	4	19.5	19.6	19.7	20.2
34		2	V	4	19.4	19.4	19.5	19.3
35		0	V	4	19.2	19.1	19.2	19.0
36		0	V	4	19.6	19.7	19.8	20.2
37		0	V	4	19.6	19.6	19.3	19.5
38		0	V	4	18.0	18.2	18.8	19.1
39		1	V	4	19.6	19.6	19.4	19.5
40		1	V	4	19.4	19.6	19.5	19.8
41		1	V	4	18.9	19.0	19.3	19.5
42		1	V	4	18.8	18.9	19.0	18.7
43		2	V	4	18.7	18.7	19.1	19.5
44		2	V	4	18.6	18.6	19.2	19.1
45		2	V	4	19.2	19.5	19.6	19.7
128		0	H	1	9.5	9.5	10.6	9.8
129		0	H	1	10.4	10.9	10.7	11.0
130		1	H	1	11.3	11.4	10.7	10.1
131		1	H	1	9.9	9.9	10.0	9.6
132		2	H	1	9.3	9.4	9.8	9.6
133		2	H	1	9.6	9.5	10.6	10.8
134		0	H	2	14.8	14.8	14.9	14.7
135		0	H	2	13.3	13.4	13.4	13.5
136		0	H	2	13.7	14.1	14.2	14.0
137		1	H	2	13.5	13.6	13.4	13.7
138		1	H	2	14.0	13.9	13.8	13.2
139		1	H	2	14.5	14.5	14.3	14.6
140		2	H	2	14.1	14.0	13.2	13.3
141		2	H	2	13.6	13.9	14.3	14.1
142		2	H	2	13.7	13.9	14.3	14.1
143		0	H	2	15.2	15.2	15.1	14.8
144		0	H	2	13.1	13.2	13.2	13.3
145		1	H	2	14.3	14.4	14.0	14.0

Beam ID 1	Beam ID2	mmwave#	Ant Pol (V/H)	# of Antenna port	EIRP simulation result (dBm)			
					L-ch (n258a)	H-ch (n258a)	L-ch (n258b)	H-ch (n258b)
146		1	H	2	13.4	13.4	13.9	13.9
147		2	H	2	13.0	13.0	13.3	13.9
148		2	H	2	14.2	14.2	14.8	15.1
149		0	H	4	19.3	19.3	19.3	19.5
150		0	H	4	19.8	19.8	20.0	20.1
151		0	H	4	18.8	18.8	19.0	19.3
152		0	H	4	18.7	18.9	19.1	19.3
153		0	H	4	16.4	16.6	16.7	17.4
154		1	H	4	18.3	18.5	18.9	18.8
155		1	H	4	19.4	19.4	19.0	18.9
156		1	H	4	18.2	18.5	18.9	19.0
157		1	H	4	19.0	19.1	19.1	18.9
158		1	H	4	18.5	18.5	18.8	18.9
159		2	H	4	18.0	18.1	17.6	17.8
160		2	H	4	19.0	19.2	19.3	19.3
161		2	H	4	19.0	19.3	19.7	19.7
162		2	H	4	18.0	17.9	18.2	19.3
163		0	H	4	19.6	19.8	20.0	19.9
164		0	H	4	19.5	19.6	19.6	19.8
165		0	H	4	19.0	19.1	19.5	19.4
166		0	H	4	17.6	17.5	17.5	18.2
167		1	H	4	18.7	18.8	18.9	18.8
168		1	H	4	19.3	19.2	18.8	18.8
169		1	H	4	18.1	18.2	18.4	18.9
170		1	H	4	18.6	18.6	19.0	19.1
171		2	H	4	18.6	18.6	18.6	19.0
172		2	H	4	18.9	18.8	19.0	19.5
173		2	H	4	18.7	19.0	19.5	19.8
0	128	0	V&H	1	14.3	14.1	13.6	13.6
1	129	0	V&H	1	12.4	12.4	12.4	13.6
2	130	1	V&H	1	14.2	14.3	14.2	13.9

Beam ID 1	Beam ID2	mmwave#	Ant Pol (V/H)	# of Antenna port	EIRP simulation result (dBm)			
					L-ch (n258a)	H-ch (n258a)	L-ch (n258b)	H-ch (n258b)
3	131	1	V&H	1	13.5	13.4	13.0	12.6
4	132	2	V&H	1	13.5	13.3	12.7	12.9
5	133	2	V&H	1	12.6	12.3	12.7	12.5
6	134	0	V&H	2	17.9	17.7	17.4	17.1
7	135	0	V&H	2	17.6	17.6	17.7	17.8
8	136	0	V&H	2	16.2	16.6	17.3	17.7
9	137	1	V&H	2	17.1	17.1	16.7	16.9
10	138	1	V&H	2	17.3	17.3	17.6	17.5
11	139	1	V&H	2	17.1	16.8	15.5	15.5
12	140	2	V&H	2	17.2	17.4	17.3	16.8
13	141	2	V&H	2	16.6	16.7	17.0	16.9
14	142	2	V&H	2	16.9	16.6	17.7	18.1
15	143	0	V&H	2	18.3	18.3	18.4	18.0
16	144	0	V&H	2	16.8	16.8	17.0	17.5
17	145	1	V&H	2	17.5	17.7	17.8	17.3
18	146	1	V&H	2	16.7	16.7	16.6	17.2
19	147	2	V&H	2	16.8	16.6	17.0	16.8
20	148	2	V&H	2	18.2	18.1	17.6	17.9
21	149	0	V&H	4	20.7	20.7	21.2	21.2
22	150	0	V&H	4	21.8	22.0	22.6	22.9
23	151	0	V&H	4	21.8	21.7	21.4	22.3
24	152	0	V&H	4	21.2	21.2	21.2	21.5
25	153	0	V&H	4	20.3	20.3	19.6	19.4
26	154	1	V&H	4	20.3	20.3	20.2	20.6
27	155	1	V&H	4	21.8	21.7	21.7	22.2
28	156	1	V&H	4	21.0	21.0	21.3	21.8
29	157	1	V&H	4	21.0	20.9	20.5	21.6
30	158	1	V&H	4	19.5	19.6	20.0	19.5
31	159	2	V&H	4	20.4	20.0	19.8	18.9
32	160	2	V&H	4	21.6	21.6	21.6	21.8
33	161	2	V&H	4	21.5	21.7	22.1	22.4

Beam ID 1	Beam ID2	mmwave#	Ant Pol (V/H)	# of Antenna port	EIRP simulation result (dBm)			
					L-ch (n258a)	H-ch (n258a)	L-ch (n258b)	H-ch (n258b)
34	162	2	V&H	4	20.9	20.9	21.3	21.5
35	163	0	V&H	4	21.8	22.0	21.7	21.8
36	164	0	V&H	4	22.2	22.4	22.8	23.3
37	165	0	V&H	4	21.6	21.6	21.1	21.6
38	166	0	V&H	4	20.1	20.0	19.6	19.8
39	167	1	V&H	4	21.6	21.6	21.2	21.6
40	168	1	V&H	4	21.6	21.9	21.9	21.9
41	169	1	V&H	4	21.3	21.5	21.7	22.0
42	170	1	V&H	4	20.2	20.0	19.7	19.9
43	171	2	V&H	4	19.9	20.1	20.0	20.5
44	172	2	V&H	4	20.6	20.8	21.5	22.3
45	173	2	V&H	4	21.0	21.6	22.1	22.1

Beam ID 1	Beam ID2	mmwave#	Ant Pol (V/H)	# of Antenna port	EIRP simulation result (dBm)		
					L-ch	M-ch	H-ch
0		0	V	1	11.9	12.3	12.1
1		0	V	1	11.5	11.5	12.3
2		1	V	1	11.7	12.0	11.2
3		1	V	1	11.9	11.5	11.3
4		2	V	1	12.0	11.4	11.7
5		2	V	1	11.2	12.1	11.9
6		0	V	2	15.1	15.0	15.4
7		0	V	2	16.6	17.6	17.2
8		0	V	2	15.6	14.9	16.0
9		1	V	2	13.8	15.5	15.0
10		1	V	2	16.2	16.7	15.6
11		1	V	2	14.7	15.8	15.0
12		2	V	2	14.4	15.3	15.1
13		2	V	2	16.2	15.6	16.4
14		2	V	2	14.3	16.3	15.3
15		0	V	2	16.0	16.3	15.8
16		0	V	2	15.7	16.1	16.7
17		1	V	2	15.5	15.9	16.6
18		1	V	2	14.8	14.8	14.2
19		2	V	2	13.4	15.1	15.4
20		2	V	2	14.1	15.2	15.4
21		0	V	4	19.3	19.3	19.7
22		0	V	4	18.6	20.4	20.6
23		0	V	4	21.0	21.8	20.9
24		0	V	4	18.3	19.9	20.9
25		0	V	4	18.8	18.2	17.8
26		1	V	4	18.5	19.5	19.5
27		1	V	4	20.3	20.5	20.4
28		1	V	4	20.5	20.9	20.2
29		1	V	4	18.7	20.2	19.8
30		1	V	4	18.8	19.7	19.8
31		2	V	4	18.7	19.0	19.2

Beam ID 1	Beam ID2	mmwave#	Ant Pol (V/H)	# of Antenna port	EIRP simulation result (dBm)		
					L-ch	M-ch	H-ch
32		2	V	4	18.5	19.9	20.7
33		2	V	4	20.7	20.7	20.5
34		2	V	4	19.3	20.0	20.4
35		2	V	4	19.2	19.4	19.6
36		0	V	4	18.9	19.7	20.1
37		0	V	4	20.4	20.8	20.7
38		0	V	4	20.1	21.0	21.5
39		0	V	4	20.3	18.9	19.5
40		1	V	4	19.2	19.4	19.7
41		1	V	4	18.8	20.6	20.5
42		1	V	4	18.8	19.7	19.8
43		1	V	4	19.5	19.9	20.2
44		2	V	4	19.3	20.3	18.5
45		2	V	4	19.3	19.3	19.7
46		2	V	4	19.2	19.7	20.5
47		2	V	4	19.3	20.0	20.6
128		0	H	1	10.4	10.5	10.9
129		0	H	1	11.4	11.9	11.1
130		1	H	1	10.9	10.7	10.2
131		1	H	1	11.5	11.5	11.9
132		2	H	1	10.7	11.4	10.2
133		2	H	1	12.2	11.6	12.4
134		0	H	2	14.9	15.9	16.1
135		0	H	2	16.0	16.7	15.4
136		0	H	2	14.3	14.9	15.9
137		1	H	2	14.6	15.1	15.3
138		1	H	2	14.9	15.9	14.4
139		1	H	2	14.5	14.7	14.5
140		2	H	2	14.6	15.5	17.1
141		2	H	2	15.0	15.5	14.9
142		2	H	2	13.5	14.1	14.2
143		0	H	2	15.0	15.1	14.8

Beam ID 1	Beam ID2	mmwave#	Ant Pol (V/H)	# of Antenna port	EIRP simulation result (dBm)		
					L-ch	M-ch	H-ch
144		0	H	2	13.7	14.7	15.3
145		1	H	2	13.5	13.9	14.8
146		1	H	2	15.8	14.9	14.9
147		2	H	2	15.8	15.4	15.3
148		2	H	2	14.8	15.6	17.0
149		0	H	4	17.8	19.3	19.1
150		0	H	4	19.4	19.8	21.4
151		0	H	4	21.6	22.0	20.9
152		0	H	4	18.9	19.1	19.7
153		0	H	4	18.4	19.9	20.7
154		1	H	4	19.2	20.2	20.4
155		1	H	4	19.4	20.3	20.8
156		1	H	4	20.8	21.5	20.1
157		1	H	4	18.8	19.8	19.9
158		1	H	4	18.7	19.8	20.4
159		2	H	4	18.6	18.4	19.8
160		2	H	4	19.7	18.8	19.1
161		2	H	4	20.9	21.2	20.3
162		2	H	4	19.3	19.9	20.1
163		2	H	4	18.9	18.5	19.6
164		0	H	4	18.8	20.9	20.6
165		0	H	4	20.8	21.0	21.3
166		0	H	4	18.0	20.1	21.1
167		0	H	4	18.5	18.6	18.5
168		1	H	4	18.1	19.4	19.8
169		1	H	4	18.3	20.7	20.3
170		1	H	4	20.5	21.6	20.9
171		1	H	4	20.1	20.4	19.8
172		2	H	4	17.8	18.3	19.9
173		2	H	4	20.6	19.4	19.2
174		2	H	4	20.3	21.0	20.9
175		2	H	4	18.1	19.6	20.5

Beam ID 1	Beam ID2	mmwave#	Ant Pol (V/H)	# of Antenna port	EIRP simulation result (dBm)		
					L-ch	M-ch	H-ch
0	128	0	V&H	1	15.7	14.9	13.9
1	129	0	V&H	1	14.8	15.5	15.3
2	130	1	V&H	1	14.6	15.0	14.0
3	131	1	V&H	1	16.0	15.1	14.0
4	132	2	V&H	1	15.6	14.9	14.1
5	133	2	V&H	1	14.6	14.6	14.6
6	134	0	V&H	2	16.6	17.7	18.2
7	135	0	V&H	2	19.5	19.7	18.7
8	136	0	V&H	2	17.2	17.9	19.3
9	137	1	V&H	2	18.3	17.9	18.2
10	138	1	V&H	2	19.7	20.0	19.2
11	139	1	V&H	2	18.0	18.6	18.8
12	140	2	V&H	2	18.1	19.1	18.4
13	141	2	V&H	2	18.7	18.9	17.9
14	142	2	V&H	2	18.1	19.3	18.2
15	143	0	V&H	2	19.4	19.8	18.7
16	144	0	V&H	2	17.3	16.7	18.0
17	145	1	V&H	2	16.7	17.7	18.1
18	146	1	V&H	2	17.5	19.1	18.6
19	147	2	V&H	2	18.1	19.2	18.6
20	148	2	V&H	2	18.4	18.5	19.4
21	149	0	V&H	4	20.7	22.0	21.1
22	150	0	V&H	4	22.4	22.4	22.9
23	151	0	V&H	4	24.4	24.6	24.0
24	152	0	V&H	4	21.4	22.3	22.9
25	153	0	V&H	4	20.2	20.7	21.9
26	154	1	V&H	4	21.4	21.4	22.1
27	155	1	V&H	4	23.0	23.0	22.6
28	156	1	V&H	4	23.0	24.2	22.0
29	157	1	V&H	4	21.3	22.3	22.9
30	158	1	V&H	4	21.9	22.1	22.4
31	159	2	V&H	4	20.9	20.9	21.7

Beam ID 1	Beam ID2	mmwave#	Ant Pol (V/H)	# of Antenna port	EIRP simulation result (dBm)		
					L-ch	M-ch	H-ch
32	160	2	V&H	4	23.2	23.1	22.1
33	161	2	V&H	4	22.9	24.4	23.8
34	162	2	V&H	4	22.0	22.6	22.8
35	163	2	V&H	4	21.7	22.0	21.8
36	164	0	V&H	4	21.3	22.4	22.8
37	165	0	V&H	4	23.8	24.8	24.4
38	166	0	V&H	4	21.0	23.2	24.1
39	167	0	V&H	4	21.1	21.9	22.8
40	168	1	V&H	4	21.7	22.3	21.9
41	169	1	V&H	4	21.7	22.9	23.5
42	170	1	V&H	4	21.7	22.2	22.0
43	171	1	V&H	4	22.6	22.6	23.1
44	172	2	V&H	4	20.5	22.4	22.2
45	173	2	V&H	4	22.6	22.9	23.1
46	174	2	V&H	4	22.6	23.3	24.1
47	175	2	V&H	4	21.7	22.4	22.7

Beam ID 1	Beam ID2	mmwave#	Ant Pol (V/H)	# of Antenna port	EIRP simulation result (dBm)		
					L-ch	M-ch	H-ch
0		0	V	1	10.7	10.4	10.1
1		0	V	1	9.8	10.4	9.8
2		1	V	1	10.2	9.9	9.9
3		1	V	1	8.1	8.5	9.1
4		2	V	1	9.2	9.6	9.6
5		2	V	1	9.8	9.8	9.8
6		0	V	2	14.6	14.8	14.9
7		0	V	2	14.5	14.5	14.3
8		0	V	2	14.0	13.7	12.8
9		1	V	2	14.5	14.5	14.5
10		1	V	2	14.7	14.2	14.3
11		1	V	2	13.3	13.6	13.6
12		2	V	2	13.7	13.5	13.2
13		2	V	2	14.1	13.9	14.3
14		2	V	2	14.5	14.7	15.0
15		0	V	2	13.3	13.9	13.8
16		0	V	2	14.8	14.5	14.1
17		1	V	2	14.6	14.6	14.3
18		1	V	2	15.4	15.0	14.7
19		2	V	2	14.3	14.1	13.8
20		2	V	2	14.7	15.2	15.4
21		0	V	4	18.7	19.0	19.2
22		0	V	4	19.6	20.0	19.9
23		0	V	4	19.3	19.3	19.3
24		0	V	4	18.6	18.5	18.7
25		0	V	4	17.9	17.7	17.6
26		1	V	4	19.3	19.4	19.2
27		1	V	4	20.2	20.3	20.2
28		1	V	4	18.9	18.9	18.8
29		1	V	4	19.2	19.5	18.9
30		1	V	4	19.0	18.6	18.3
31		2	V	4	18.9	18.4	17.5

Beam ID 1	Beam ID2	mmwave#	Ant Pol (V/H)	# of Antenna port	EIRP simulation result (dBm)		
					L-ch	M-ch	H-ch
32		2	V	4	18.8	18.6	19.0
33		2	V	4	19.6	19.4	19.3
34		2	V	4	19.3	19.6	19.7
35		2	V	4	18.5	18.8	19.0
36		0	V	4	19.1	19.6	19.3
37		0	V	4	19.6	19.6	19.5
38		0	V	4	18.7	18.2	18.2
39		0	V	4	19.3	18.7	18.4
40		1	V	4	19.5	19.6	19.4
41		1	V	4	19.3	19.3	19.5
42		1	V	4	18.6	18.9	18.7
43		1	V	4	19.9	19.7	19.7
44		2	V	4	18.9	19.1	18.8
45		2	V	4	19.0	18.8	19.2
46		2	V	4	19.7	19.4	19.4
47		2	V	4	18.9	19.6	20.0
128		0	H	1	9.8	9.5	9.7
129		0	H	1	11.8	11.1	11.0
130		1	H	1	9.5	9.5	9.2
131		1	H	1	9.3	9.7	10.2
132		2	H	1	8.7	8.4	8.2
133		2	H	1	9.3	9.7	10.2
134		0	H	2	14.1	13.6	13.0
135		0	H	2	13.0	13.1	13.6
136		0	H	2	13.5	13.4	12.9
137		1	H	2	13.6	14.2	13.8
138		1	H	2	14.4	14.5	13.7
139		1	H	2	13.3	13.3	12.6
140		2	H	2	14.6	14.9	15.8
141		2	H	2	13.4	13.4	13.6
142		2	H	2	14.6	15.0	14.5
143		0	H	2	13.6	13.2	13.3

Beam ID 1	Beam ID2	mmwave#	Ant Pol (V/H)	# of Antenna port	EIRP simulation result (dBm)		
					L-ch	M-ch	H-ch
144		0	H	2	15.1	15.3	15.6
145		1	H	2	13.5	13.2	13.3
146		1	H	2	14.0	14.3	13.8
147		2	H	2	13.7	13.5	14.0
148		2	H	2	13.4	13.7	13.5
149		0	H	4	18.3	18.2	17.9
150		0	H	4	19.9	19.9	19.5
151		0	H	4	19.0	18.9	18.9
152		0	H	4	20.1	19.8	19.6
153		0	H	4	19.0	18.9	18.8
154		1	H	4	17.9	17.5	18.0
155		1	H	4	19.5	20.0	19.8
156		1	H	4	19.0	19.2	19.2
157		1	H	4	19.7	19.9	19.8
158		1	H	4	17.4	16.8	17.4
159		2	H	4	18.2	17.8	18.3
160		2	H	4	19.8	19.8	19.9
161		2	H	4	19.3	19.3	19.6
162		2	H	4	18.9	19.0	19.3
163		2	H	4	18.2	17.7	17.6
164		0	H	4	19.7	19.4	18.7
165		0	H	4	19.6	19.5	19.1
166		0	H	4	19.7	19.9	19.8
167		0	H	4	19.4	19.3	19.1
168		1	H	4	19.2	19.3	19.4
169		1	H	4	19.2	19.2	19.3
170		1	H	4	19.4	19.4	18.7
171		1	H	4	18.1	18.3	18.0
172		2	H	4	19.6	19.6	19.5
173		2	H	4	18.9	19.2	19.6
174		2	H	4	19.6	19.6	19.7
175		2	H	4	18.5	18.0	17.9

Beam ID 1	Beam ID2	mmwave#	Ant Pol (V/H)	# of Antenna port	EIRP simulation result (dBm)		
					L-ch	M-ch	H-ch
0	128	0	V&H	1	12.6	12.6	12.7
1	129	0	V&H	1	13.0	13.0	13.2
2	130	1	V&H	1	12.2	12.2	12.1
3	131	1	V&H	1	11.8	12.7	12.5
4	132	2	V&H	1	12.1	12.8	12.5
5	133	2	V&H	1	13.0	12.5	12.6
6	134	0	V&H	2	18.0	17.8	17.3
7	135	0	V&H	2	17.0	16.7	16.9
8	136	0	V&H	2	16.6	16.3	16.7
9	137	1	V&H	2	17.3	17.5	17.2
10	138	1	V&H	2	17.1	17.0	16.8
11	139	1	V&H	2	15.6	15.9	15.9
12	140	2	V&H	2	16.8	16.9	17.4
13	141	2	V&H	2	16.6	16.8	17.1
14	142	2	V&H	2	15.5	16.9	17.2
15	143	0	V&H	2	17.4	17.3	16.9
16	144	0	V&H	2	19.4	19.4	19.5
17	145	1	V&H	2	16.7	16.7	16.5
18	146	1	V&H	2	16.5	16.2	15.8
19	147	2	V&H	2	16.9	17.0	17.0
20	148	2	V&H	2	16.8	16.5	16.5
21	149	0	V&H	4	22.3	21.9	22.1
22	150	0	V&H	4	22.8	22.8	22.8
23	151	0	V&H	4	22.3	22.4	22.4
24	152	0	V&H	4	21.3	22.1	22.3
25	153	0	V&H	4	20.8	20.6	20.9
26	154	1	V&H	4	20.4	20.2	20.3
27	155	1	V&H	4	22.1	22.5	22.7
28	156	1	V&H	4	22.1	22.6	22.6
29	157	1	V&H	4	21.8	22.3	22.1
30	158	1	V&H	4	21.3	21.2	21.0
31	159	2	V&H	4	20.2	19.7	19.9

Beam ID 1	Beam ID2	mmwave#	Ant Pol (V/H)	# of Antenna port	EIRP simulation result (dBm)		
					L-ch	M-ch	H-ch
32	160	2	V&H	4	22.7	22.8	22.6
33	161	2	V&H	4	22.4	22.2	22.7
34	162	2	V&H	4	21.9	22.3	22.5
35	163	2	V&H	4	21.5	21.6	21.4
36	164	0	V&H	4	22.4	22.7	22.5
37	165	0	V&H	4	22.4	22.6	22.3
38	166	0	V&H	4	21.9	22.3	22.4
39	167	0	V&H	4	21.7	21.9	22.0
40	168	1	V&H	4	22.1	22.1	21.9
41	169	1	V&H	4	21.9	22.2	22.3
42	170	1	V&H	4	22.0	21.9	21.8
43	171	1	V&H	4	21.8	21.9	22.1
44	172	2	V&H	4	22.2	22.4	21.6
45	173	2	V&H	4	21.7	22.1	22.8
46	174	2	V&H	4	22.6	22.3	22.1
47	175	2	V&H	4	21.3	22.0	22.1

4. Uncertainty

The amplitude level of PD simulation is biased due to material property parameter configuration in device housing at high frequencies. Material property is difficult to model due to complexity of material and operating frequency. Therefore, it is not possible to assign an exact uncertainty for simulation result. However, for this RF exposure evaluation, simulation results were only used to select highest Beam ID for measurement. Power density results between measurement and simulation showed similar trend to justify selection of Beam ID used for measurement. All final power density evaluations were performed on measurement system with mmWave module design related uncertainty of 2.1dB.