

T781S mmw

Power Density Simulation Report

Revision: V1.0

Aug. 25 2021

1. Electromagnetic simulation method for power density

1.1 EM simulation tool

1.1.1 EM simulation tool description

The 7 mmWave power density (PD) simulation method for calculating PD (Power Density) for mobile phones with mmWave antenna modules is available in ANSYS Electromagnetics suite HFSS ver. 19.4 (2019 R2) is used. ANSYS HFSS is one of several commercial tools for 3D full-wave electromagnetic simulation used for antenna and RF structure design of high frequency component. ANSYS Electromagnetics suite HFSS ver. 19.4 (2019 R2) is implemented based on Finite Element Method (FEM), which operates in the frequency domain.

1.1.2 Mesh and convergence criteria

ANSYS Electromagnetic suite HFSS ver. 19.4 (2019 R2) uses the Finite Element Method (FEM) to solve the structure for 3D EM simulations to analyze power density. The volume area containing the simulated object should be subdivided into electrically small parts called finite elements with unknown functions. To subdivide system, the adaptive mesh technique in ANSYS Electromagnetics suite HFSS ver. 19.4 (2019 R2) is used. ANSYS Electromagnetics suite HFSS ver. 19.4 (2019 R2) starts to refine the initial mesh based on wavelength and calculate the error to iterative process for adaptive mesh refinement. The determination parameter of the number of iteration in ANSYS Electromagnetics suite HFSS ver. 19.4 (2019 R2) is defined as convergence criteria, delta S, and the iterative adaptive mesh process repeats until the delta S is met. In ANSYS Electromagnetics suite HFSS ver. 19.4 (2019 R2), the accuracy of converged results depends on the delta S. Figure 1 is an example of final adaptive mesh of the device (cross-section of top view).

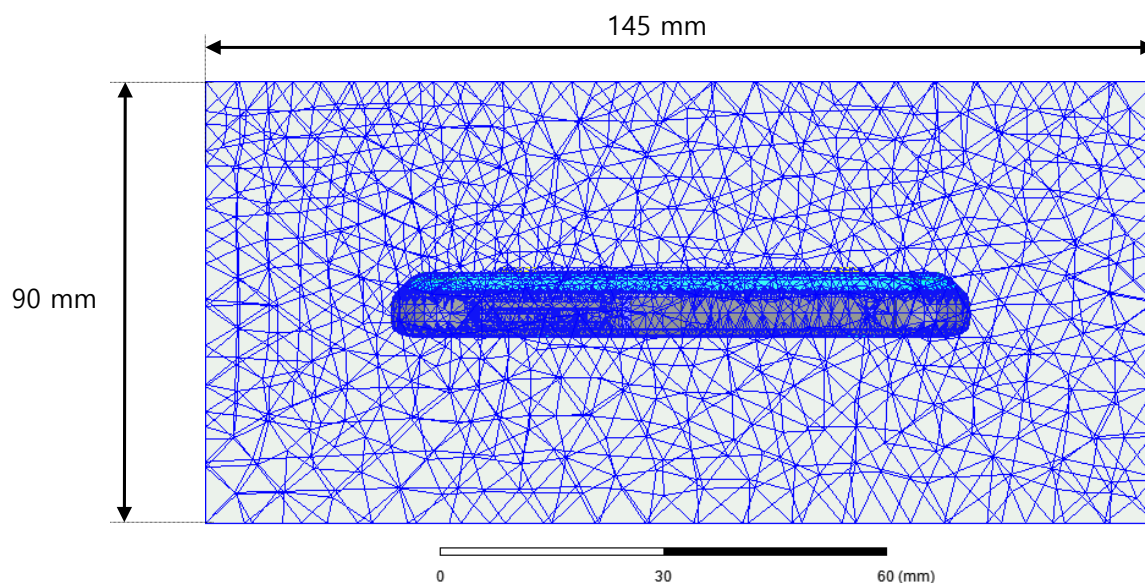


Figure 1. Example of HFSS mesh in a model of the device (Top view)

1.1.3 Time-averaged power density calculation

It is possible to get various kinds of physical quantities can be obtained after finishing 3D full-wave electromagnetic simulation. To calculate PD evaluation, two physical quantities, an electric field (\vec{E}) and a magnetic field (\vec{H}) are needed. The actual consumption power can be expressed as the real term of the time-averaged Poynting vector (S) from the cross product of \vec{E} and complex conjugation of \vec{H} as shown below:

$$(S) = \text{Re} (E \times H)$$

2

(S) can be expressed as point power density based on a peak value of each spatial point on mesh grids, and obtained directly from ANSYS Electromagnetics suite HFSS ver. 19.4 (2019 R2).

From the point power density(S), the spatial-averaged power density (PD_{av}) on an evaluated area (A) can be derived as shown below:

$$PD_{av} = \frac{1}{A} \int (S) \cdot ds = \frac{1}{2A} \int |\text{Re}(\vec{E} \times \vec{H})| \cdot ds,$$

where the spatial-averaged power density PD_{av} is total power density value considering on x, y and z components of point power density (S) and the evaluated area (A) is $4cm^2$.

1.2 Simulation setup

1.2.1 Modeling for simulation

The simulation approach to perform PD assessment for a smartphone requires accurate modeling for mmWave antenna module as well as the smartphone itself. Figure 2 shows the simulation model which is mounted two mmWave antenna modules. The simulation modeling includes most of the entire structure of device itself such as PCB, metal frame, battery, cables, and legacy antennas as well as mmWave antenna modules called as QMT0# and QMT1#. On the back side view, QMT1# is placed at the top side and antennas are facing the backside of the device. QMT0# is placed on the left side and antennas are facing the left side.

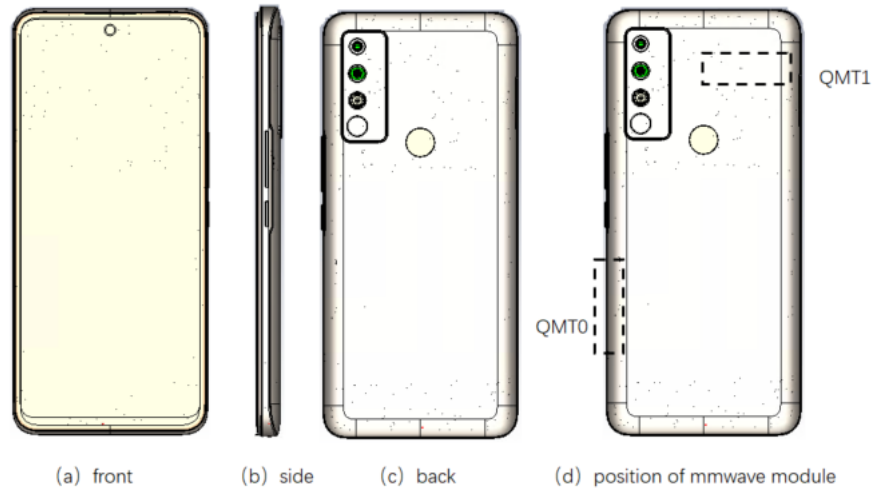


Figure 2. HFSS simulation model which is mounted two mmWave antenna modules

1.2.2 PD evaluation surfaces

Table 1 shows the PD evaluation planes for each mmWave antenna module and Figure 3 shows the PD evaluation planes and truncation area of the simulation model to find worst case of beamforming cases.

Please note that the “right” and “left” edge of mentioned in this report are defined from the perspective of looking at the device from the front side.

Table 1. PD evaluation surfaces

	Front	Back	Left From Front View	Right From Front View	Top	Bottom
	S1	S2	S3	S4	S5	S6
QTM#0	O	O	O	O	O	O
QTM#1	O	O	O	O	O	O

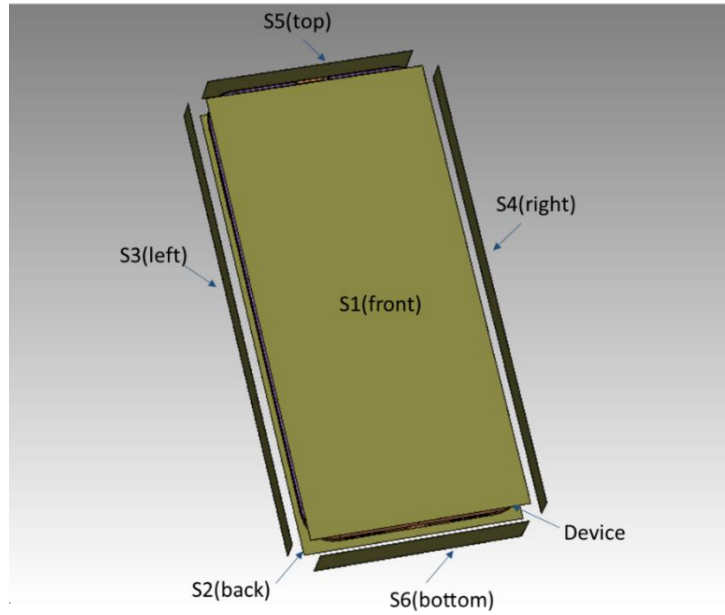


Figure 3. PD evaluation Surfaces

1.2.3 Radiation boundary condition

For radiation boundary, the 2nd order absorbing boundary condition (ABC) is used for all simulations in this report. This radiation boundary simulates an electrically open surface that allows waves to radiate infinitely far into space. The system absorbs the wave via the 2nd order radiation boundary, essentially ballooning the boundary infinitely far away from the structure and into space. The radiation boundaries may also be placed relatively close to a structure and can be of arbitrary shape.

Per ANSYS recommendations for their simulation tool, the radiation boundary plane must be located at least a quarter wavelength from strongly radiating structure, or at least a tenth of a wavelength from a weakly radiating structure. In this simulation report, about two or three wavelengths spacing from the device surfaces in all main beam directions are applied to ensure convergence.

By changing convergence error (i.e., maximum magnitude delta S) from 2% to 4% and moving the radiation boundary closer towards the device by 20%, the combined influence in PD value is < 0.04 dB which confirms that the simulation model is reliable using this setup.

1.2.4 Source excitation condition

Each of the two 5G mmWave array modules is the same part containing a 1x4 element array of dual-polarization patch antennas. The number of antenna ports of QTM#0 and QTM#1 for source excitation is equal to 16. The port of each patch antenna are separated in frequency and polarization. That is, the ports of each patch antenna are divided into a feed for 28 GHz and a feed for 39 GHz, and a vertical polarity feed and a horizontal polarity feed are divided.

Figure 4 shows the QTM#0 module structure and surrounding structure. The QTM#0 module

is encrypted in the ANSYS Electromagnetics suite (HFSS) and can only check the feeding position.

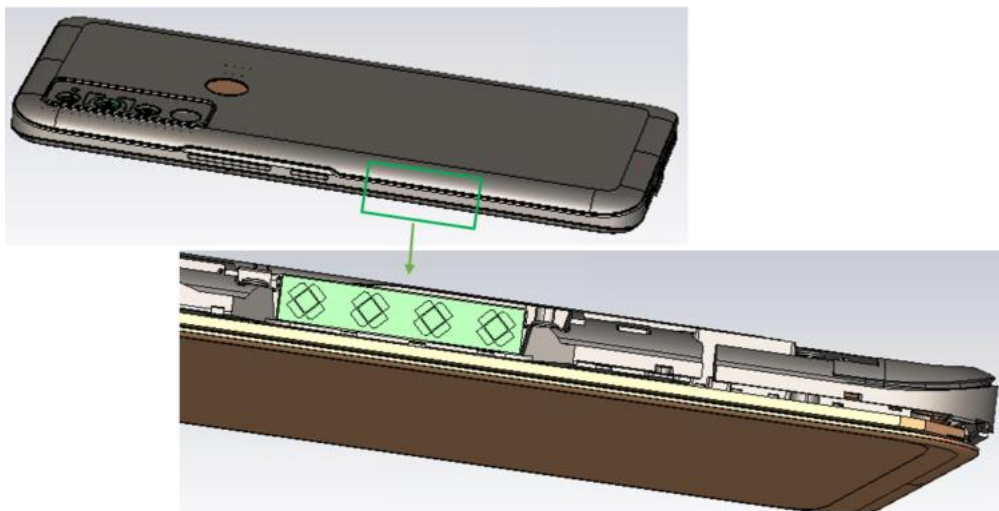


Figure 4. mmWave module (QTM#0)

After finishing 3D full wave electromagnetic simulation of modeling structure, the magnitude and phase information can be loaded for each port by using “Edit Sources” function in ANSYS Electromagnetics suite (HFSS). Figure 5 shows an example of antenna port excitations.

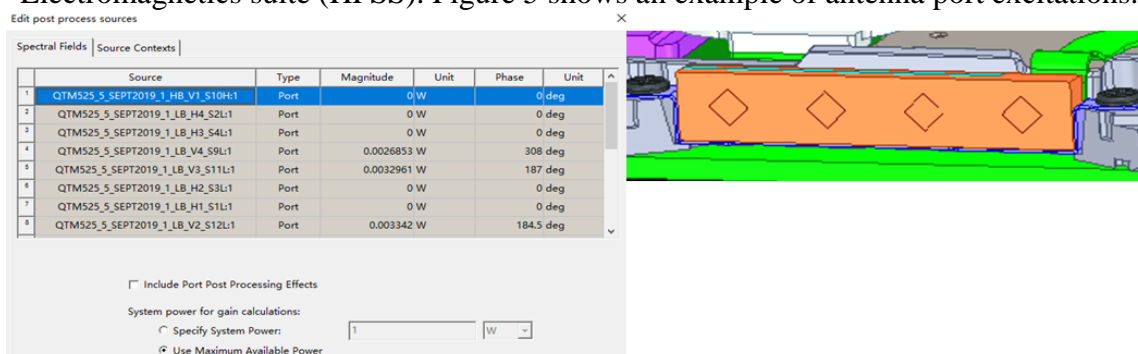


Figure 5. An example of port excitation (QTM#0)

Since ANSYS Electromagnetics suite (HFSS) uses FEM solver based on frequency domain analysis method, the input source for the port excitation applies sinusoidal waveform for each frequency.

1.2.5 Condition of simulation completion

The simulation completion condition of ANSYS Electromagnetics suite (HFSS) is defined as delta S. The ANSYS Electromagnetics suite (HFSS) calculates the S-parameter for the mesh conditions of each step and determines whether to proceed with the operation of the next step by comparing the difference between the S-parameters in the previous step. A difference between the previous step and the current step of S-parameter is expressed as delta S, and the delta S generally sets 0.02. The simulation result of this report is the result of setting delta S to 0.02.

2. Simulation verification

2.1 Spatial-averaged power density

As mentioned in the previous chapter, the Poynting vector (\mathcal{S}) can be obtained through cross product of an electric field (\vec{E}) and complex conjugate of a magnetic field (\vec{H}). The real term of the Poynting vector can be described as the point power density or peak power density. Using the point power density, the spatial-averaged power density can be obtained by the integral of 4cm^2 at 2.5 mm intervals of the point power density result. Figure 6 shows examples of the distribution plot of point power density and the averaged power density.

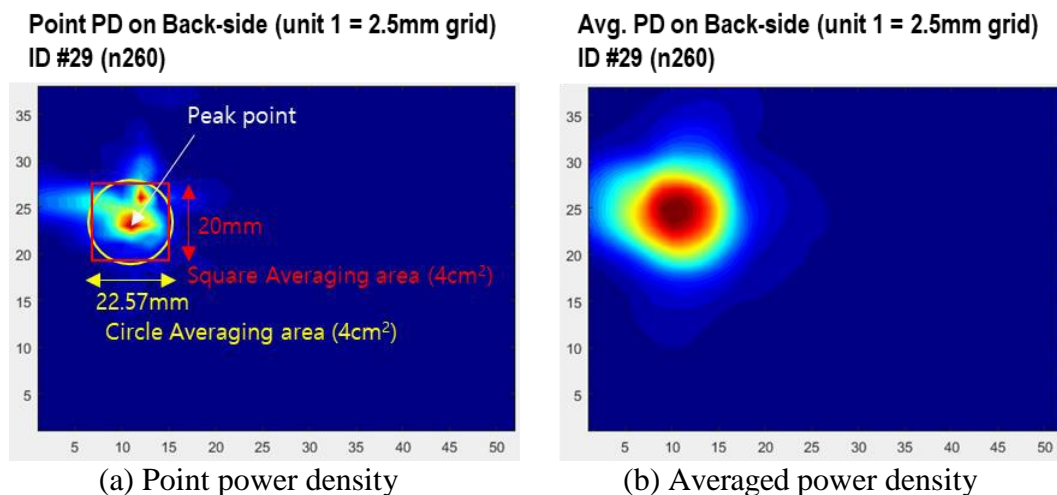


Figure 6. Power density distribution (Example)

2.2 Comparison between simulation and measurement

In this section, the simulated and measured power density distributions are compared with each mmWave antenna. Based on the comparison of the power density distribution, the simulated power density and the measured power density have a good correlation. The amplitude mismatch between the simulated 4 cm^2 average power density and the measured 4 cm^2 average power density is considered a housing influence and is used to determine the input power limit of each beam for RF exposure compliance (see RF Exposure Part 0 Report).

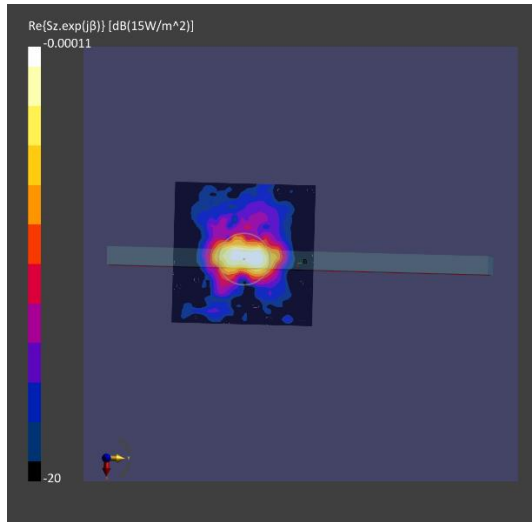
Input power per each active port is listed below for both simulation and measurement verification and power density characterization. For simulation, these values were entered directly into the HFSS model. For measurement, it was used to input these values for each active port using Factory Test Mode S/W.

Mode/Band	Antenna	Input Power (dBm) SISO	Input Power (dBm) MIMO
5G NR n261 (28 GHz)	QTM#0 Patch	6	6
	QTM#1 Patch	6	6
5G NR n260 (39 GHz)	QTM#0 Patch	6	6
	QTM#1 Patch	6	6

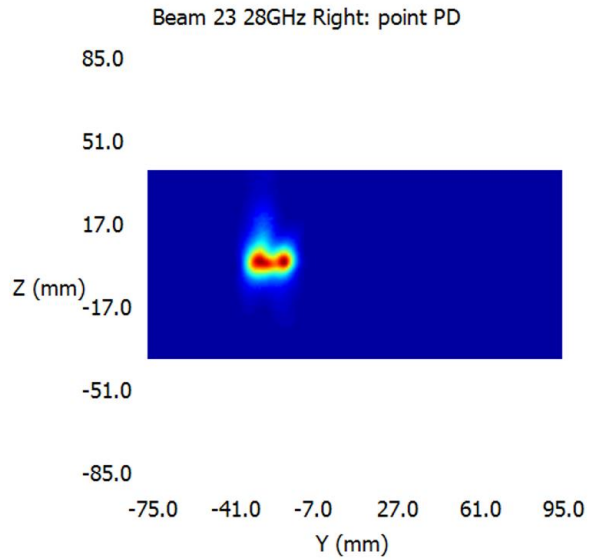
The simulation and measurement results below were performed at 2mm evaluation distance and 28GHz / 38.5GHz. The input.power.limit was determined based on the results below in the RF Exposure Part 0 Report.

6dBm input measurement / simulation							4cm2 avg. PD(W/m2)			
Band	Ant Type	Module	Ant Group	beam ID	Surface	Channel	Measured	Simulated		
			(Ant Polarization)							
n261	Patch	QTM0	AG0(V)	23	right	Mid	6.34	14.67		
				23	front		3	9.75		
			AG1(H)	151	right	Mid	7.14	13.99		
				160	front		3.98	8.91		
		QTM1	AG0(V)	18	back	Mid	8.32	16.12		
				29	top		0.963	3.31		
			AG1(H)	155	back	Mid	8.36	15.24		
				144	top		0.629	3.49		
		n260	Patch	QTM0	AG0(V)	27	right	Mid	7.78	15.94
						35	front		3.99	10.09
AG1(H)	151				right	Mid	5.64	14.65		
	151				front		3.24	8.93		
QTM1	AG0(V)			31	back	Mid	6.83	13.85		
				22	left		1.88	3.4		
	AG1(H)			159	back	Mid	5.49	12.97		
				146	left		1.19	3.05		

n261 Patch antenna QTM0 Ant_Group0(V-polarization) beam ID 23 Right-side Mid ch.

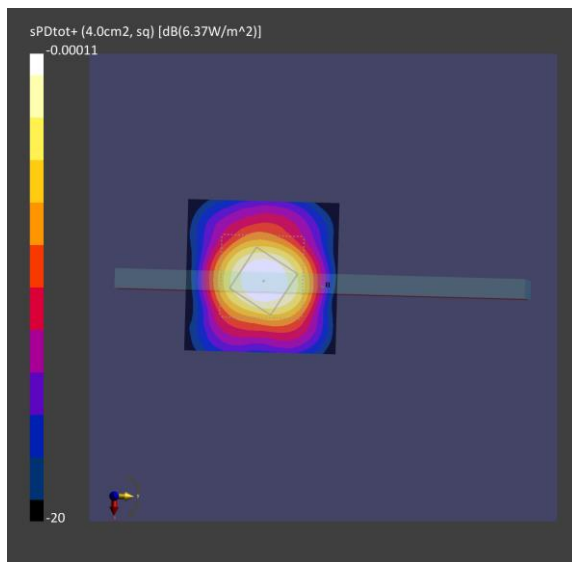


(a) Measurement

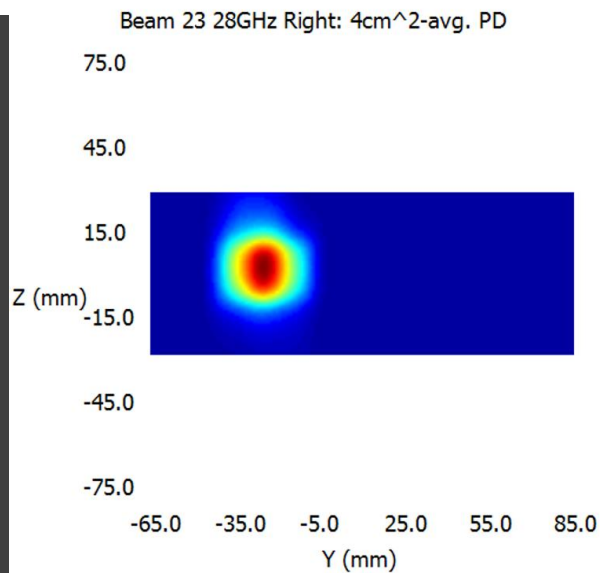


(b) Simulation

Patch antenna QTM0 AG0(V-polarization) beam ID 23, Point power density



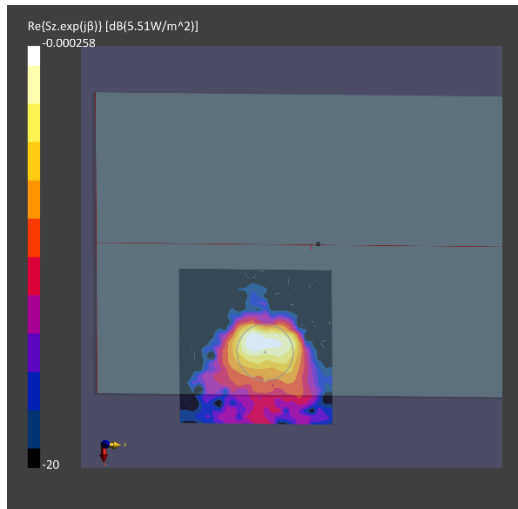
(a) Measurement



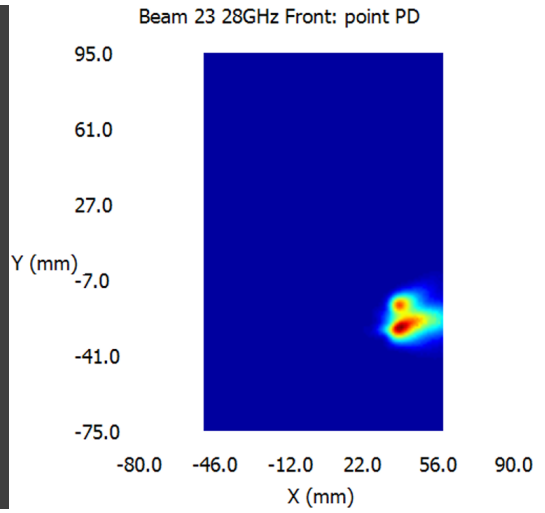
(b) Simulation

Patch antenna QTM0 AG0(V-polarization) beam ID 23, 4cm² Averaged power density

n261 Patch antenna QTM0 Ant_Group0(V-polarization) beam ID 23 front-side Mid ch.

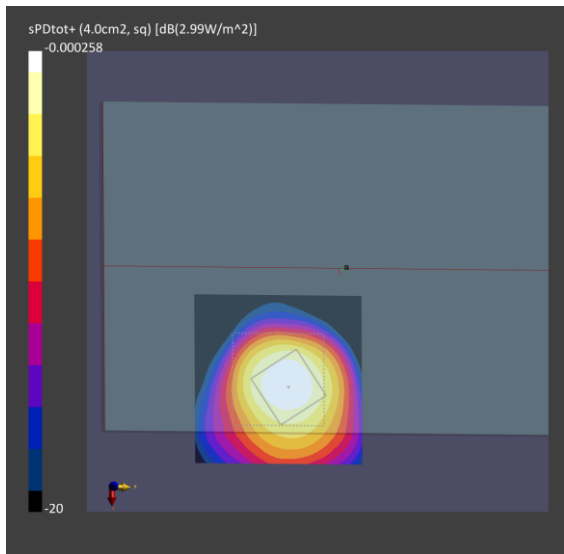


(a) Measurement

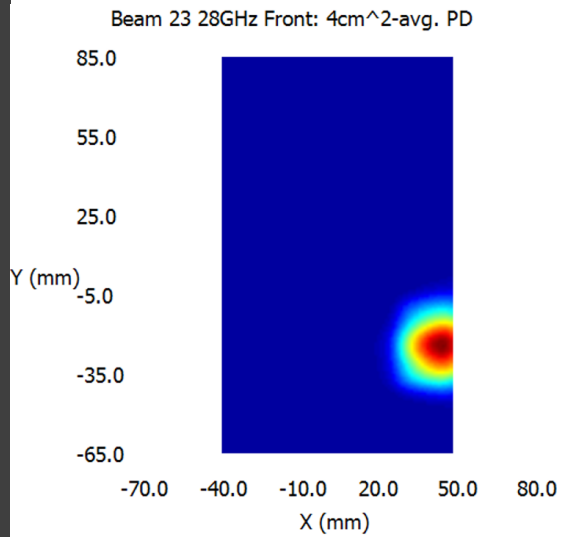


(b) Simulation

Patch antenna QTM0 AG0(V-polarization) beam ID 23, Point power density



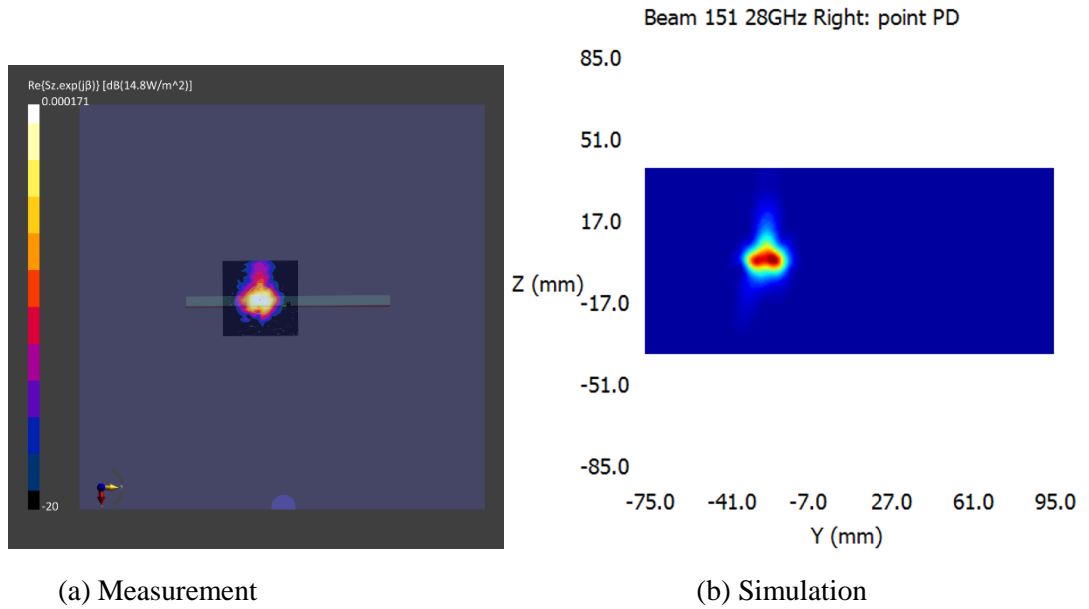
(a) Measurement



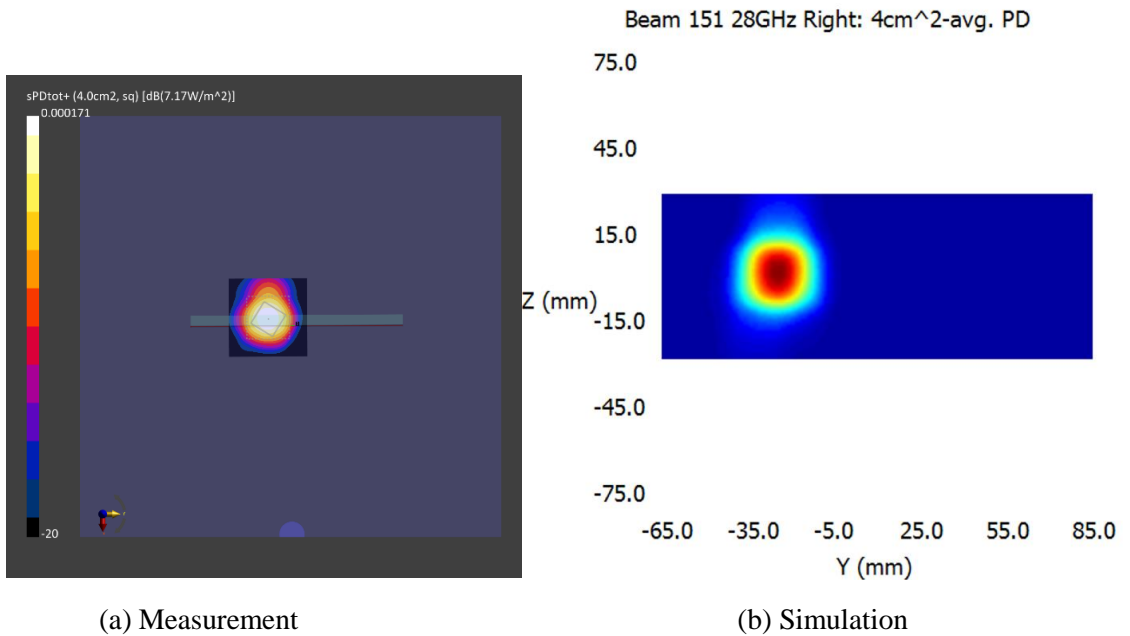
(b) Simulation

Patch antenna QTM0 AG0(V-polarization) beam ID 23, 4cm² Averaged power density

n261 Patch antenna QTM0 Ant_Group1(H-polarization) beam ID 151 Right-side Mid ch.

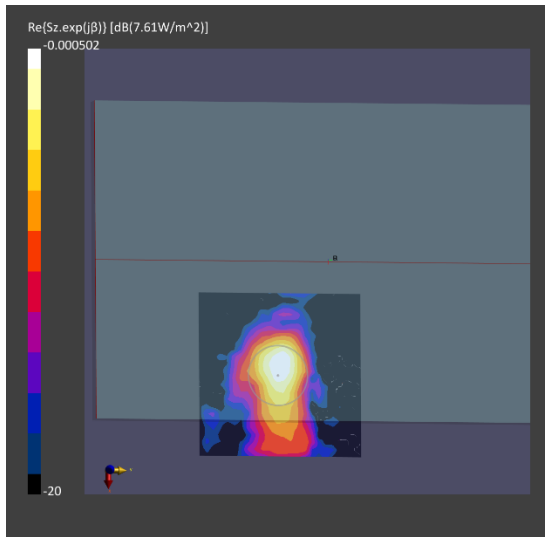


Patch antenna QTM0 AG1(H-polarization) beam ID 151, Point power density

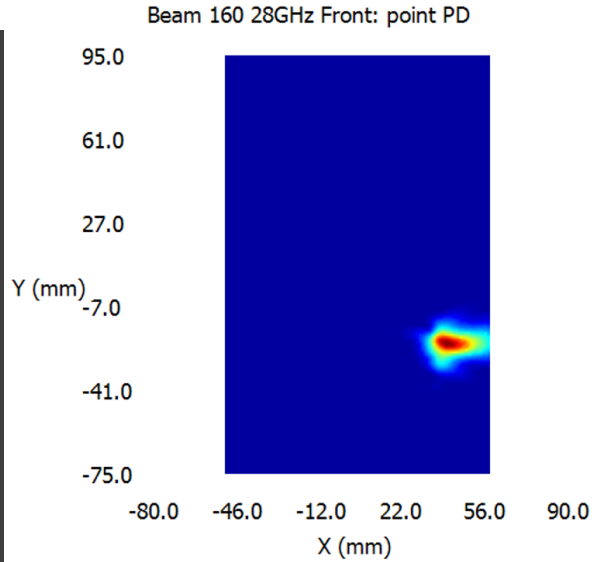


Patch antenna QTM0 AG0(V-polarization) beam ID 151, 4cm² Averaged power density

n261 Patch antenna QTM0 Ant_Group1(H-polarization) beam ID 160 front-side Mid ch.

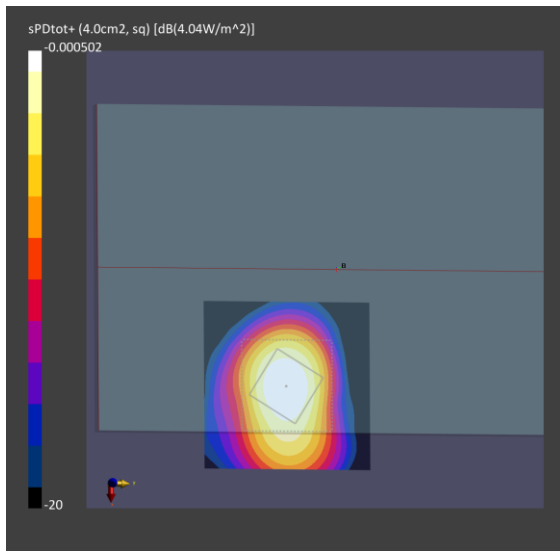


(a) Measurement

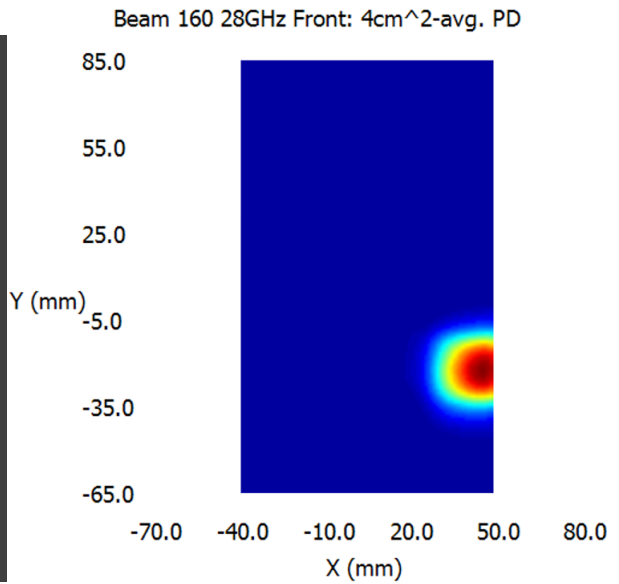


(b) Simulation

Patch antenna QTM0 AG1(H-polarization) beam ID 160, Point power density



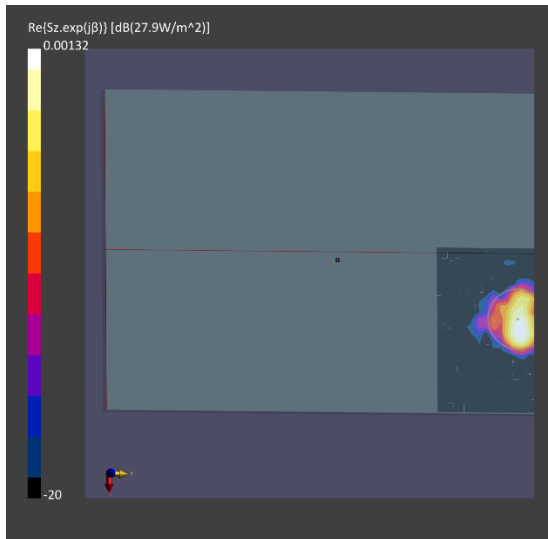
(a) Measurement



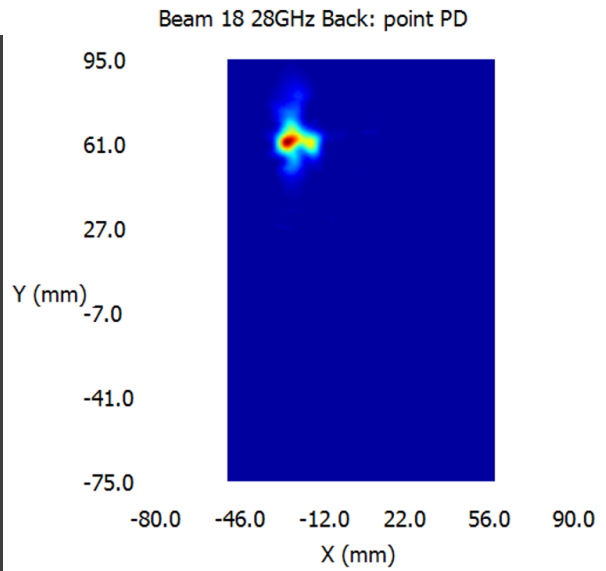
(b) Simulation

Patch antenna QTM0 AG0(V-polarization) beam ID 160, 4cm² Averaged power density

n261 Patch antenna QTM1 Ant_Group0(V-polarization) beam ID 18 Back-side Mid ch.

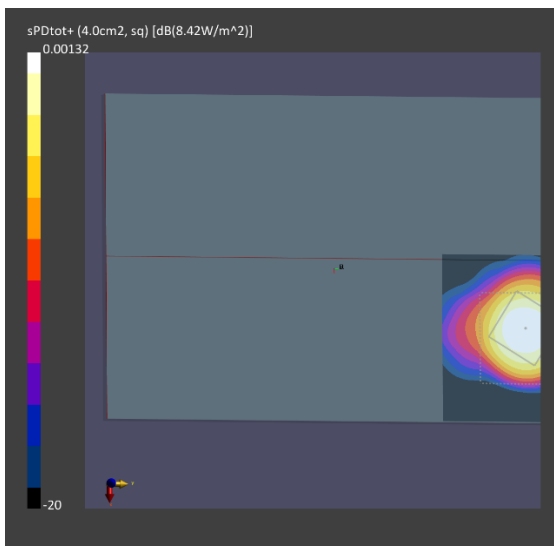


(a) Measurement

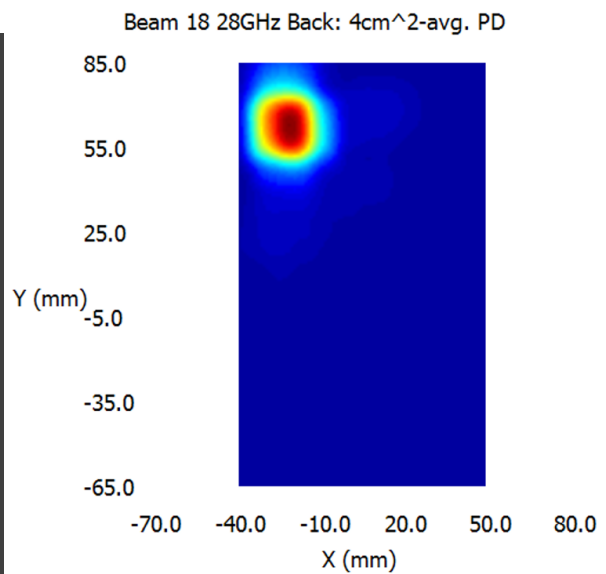


(b) Simulation

Patch antenna QTM1 AG0(V-polarization) beam ID 18, Point power density



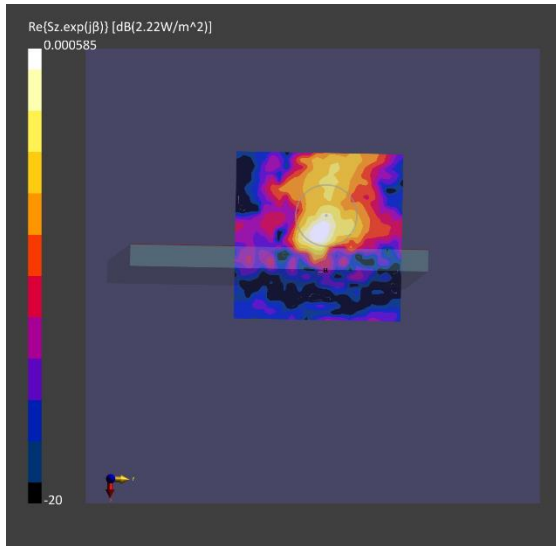
(a) Measurement



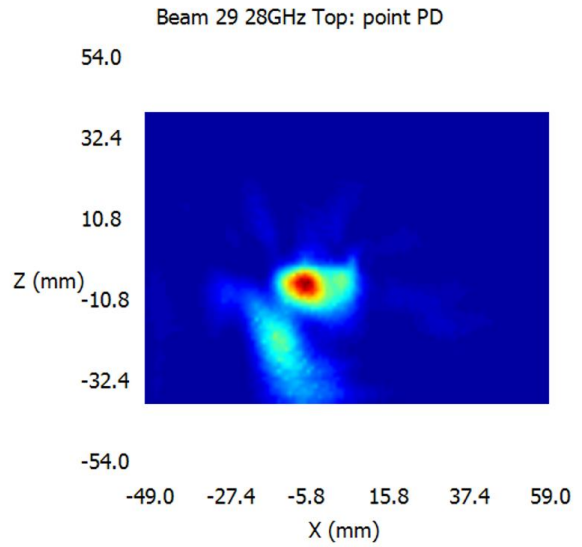
(b) Simulation

Patch antenna QTM0 AG0(V-polarization) beam ID 18, 4cm² Averaged power density

n261 Patch antenna QTM1 Ant_Group0(V-polarization) beam ID 29 top-side Mid ch

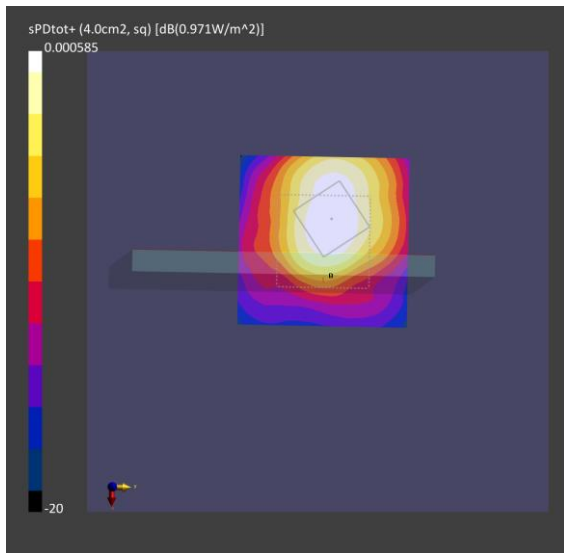


(a) Measurement

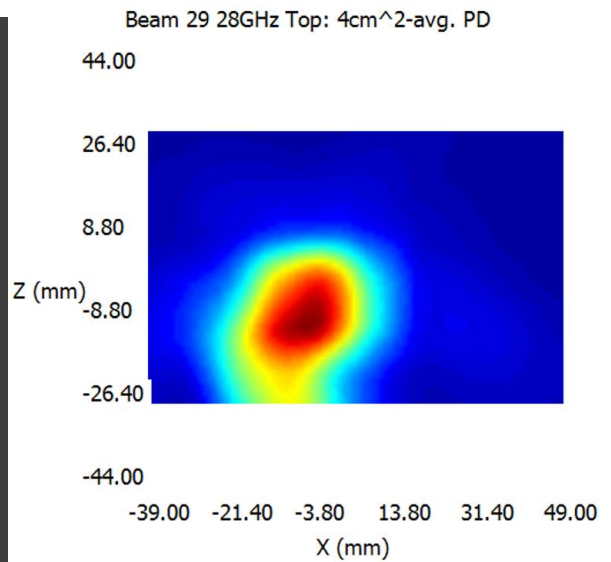


(b) Simulation

Patch antenna QTM1 AG0(V-polarization) beam ID 29, Point power density



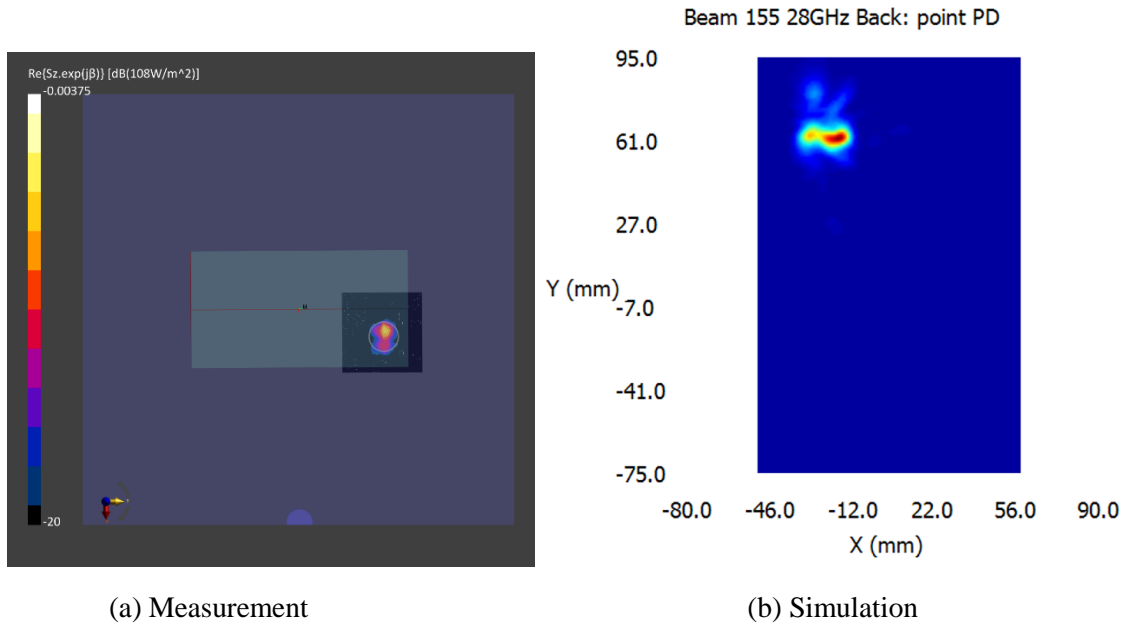
(a) Measurement



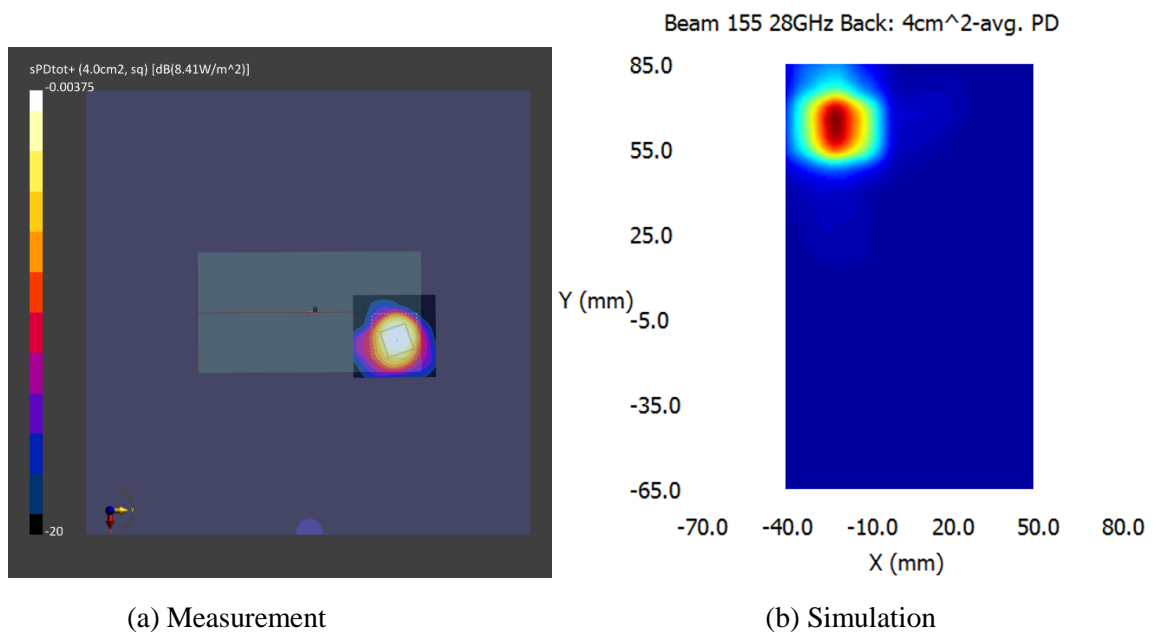
(b) Simulation

Patch antenna QTM0 AG0(V-polarization) beam ID 29, 4cm² Averaged power density

n261 Patch antenna QTM1 Ant_Group1(H-polarization) beam ID 155 Back-side Mid ch

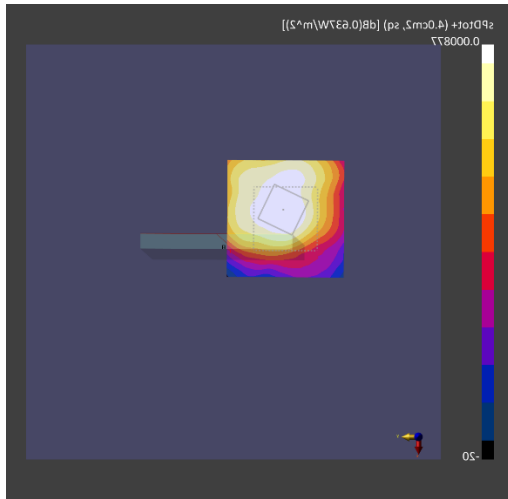


Patch antenna QTM1 AG1(H-polarization) beam ID 155, Point power density

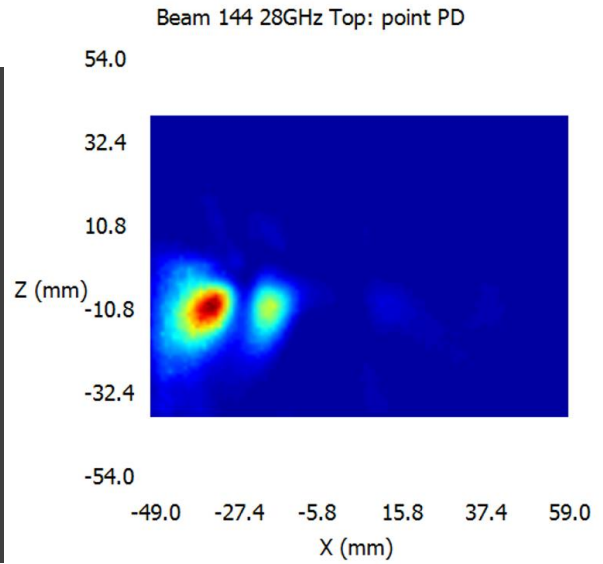


Patch antenna QTM0 AG0(V-polarization) beam ID 155, 4cm² Averaged power density

n261 Patch antenna QTM1 Ant_Group1(H-polarization) beam ID 144 top-side Mid ch.

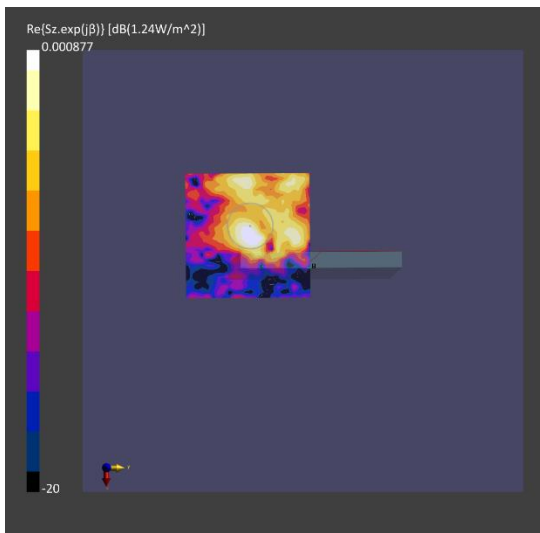


(a) Measurement

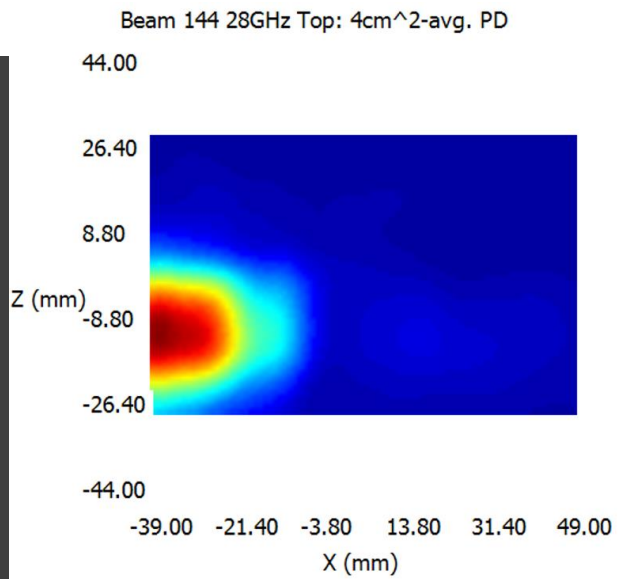


(b) Simulation

Patch antenna QTM1 AG1(H-polarization) beam ID 144, Point power density



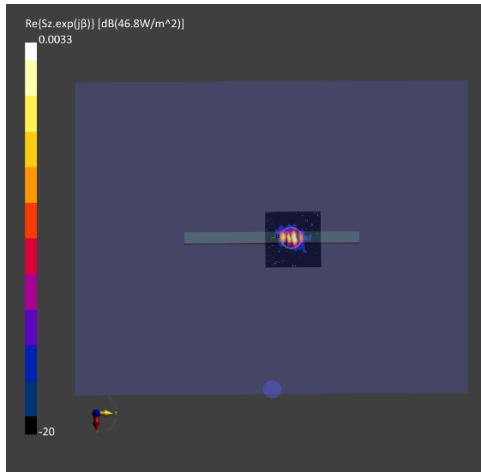
(a) Measurement



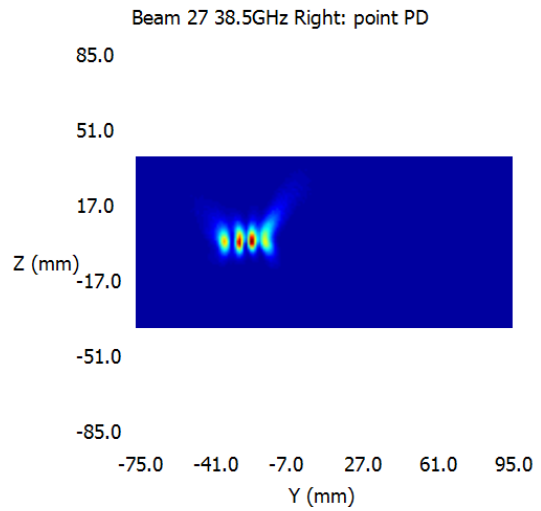
(b) Simulation

Patch antenna QTM0 AG0(V-polarization) beam ID 144, 4cm² Averaged power density

n260 Patch antenna QTM0 Ant_Group0(V-polarization) beam ID 27 Right-side Mid ch

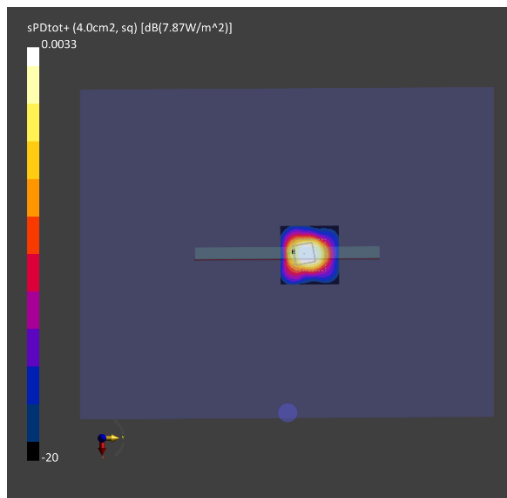


(a) Measurement

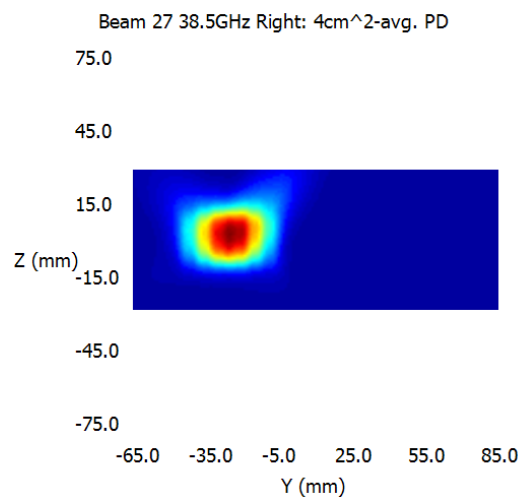


(b) Simulation

Patch antenna QTM0 AG0(V-polarization) beam ID 27, Point power density



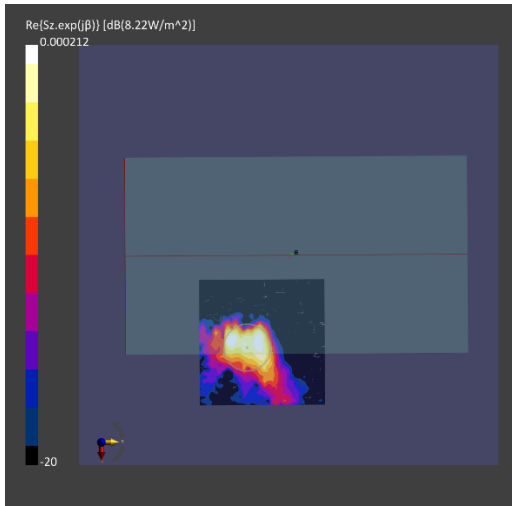
(a) Measurement



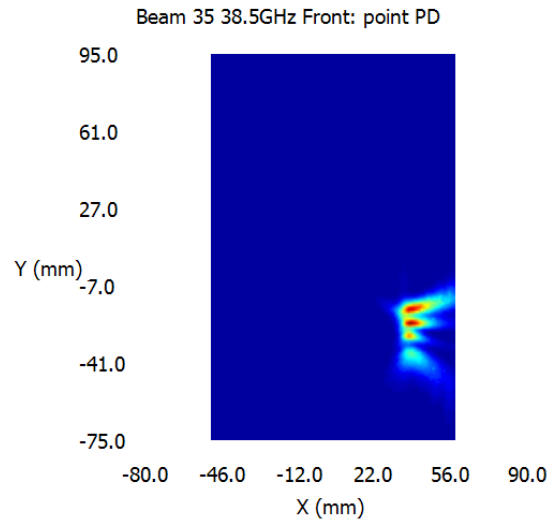
(b) Simulation

Patch antenna QTM0 AG0(V-polarization) beam ID 27, 4cm² Averaged power density

n260 Patch antenna QTM0 Ant_Group0(V-polarization) beam ID 35 Front-side Mid ch

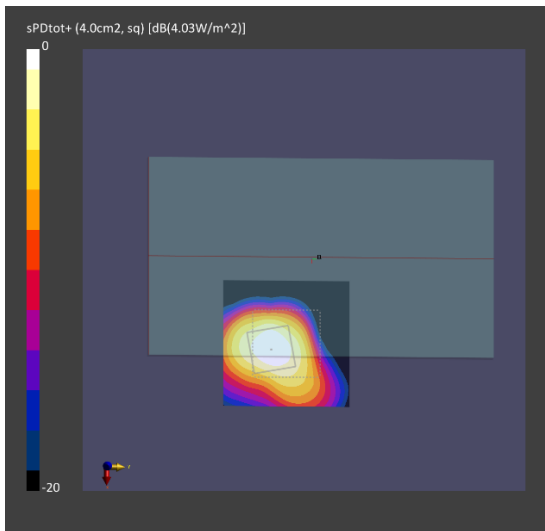


(a) Measurement

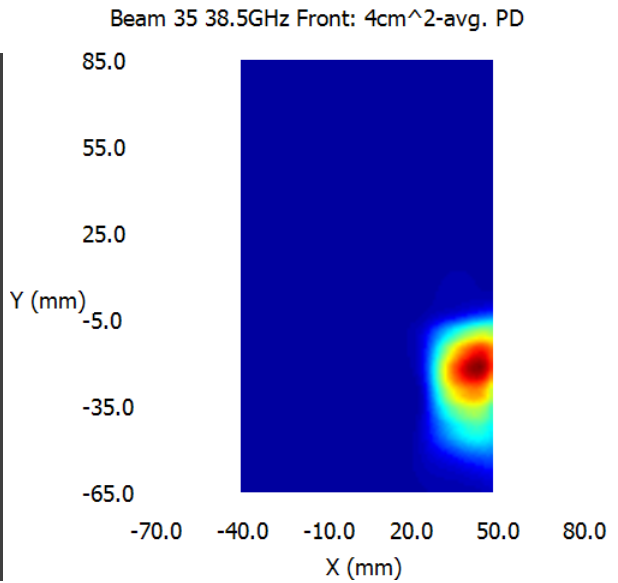


(b) Simulation

Patch antenna QTM0 AG0(V-polarization) beam ID 35, Point power density



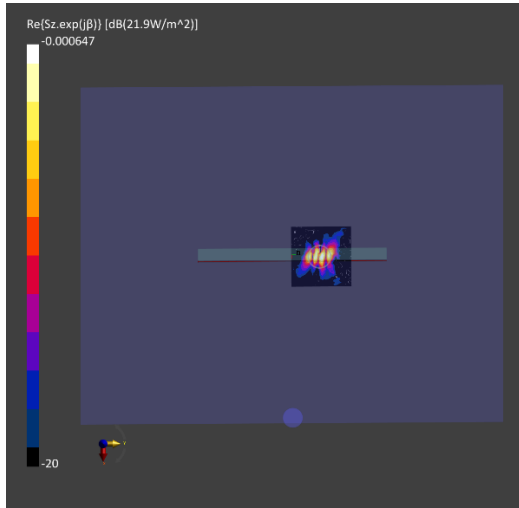
(a) Measurement



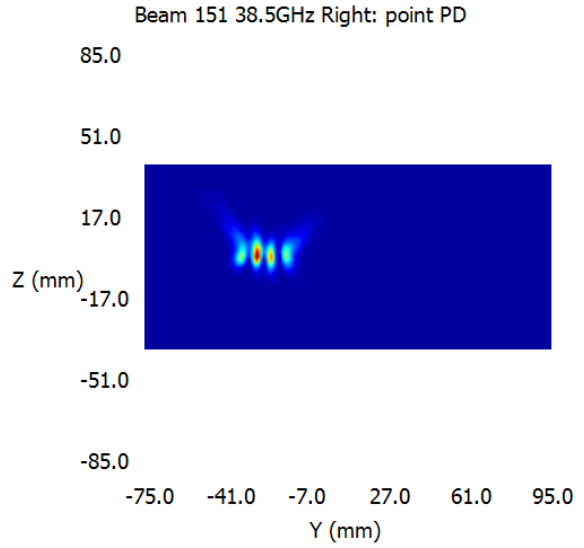
(b) Simulation

Patch antenna QTM0 AG0(V-polarization) beam ID 35, 4cm² Averaged power density

n260 Patch antenna QTM0 Ant_Group1(H-polarization) beam ID 151 Right-side Mid ch

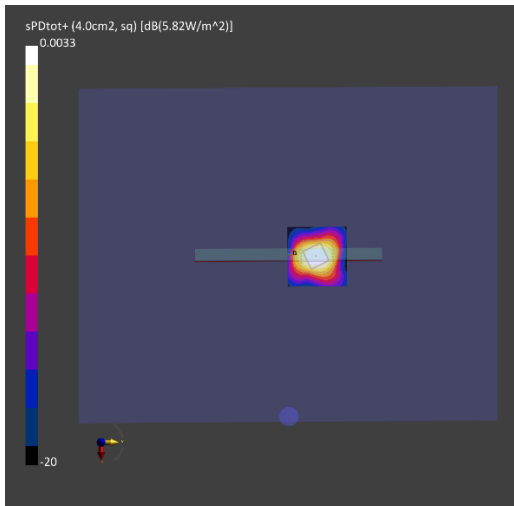


(a) Measurement

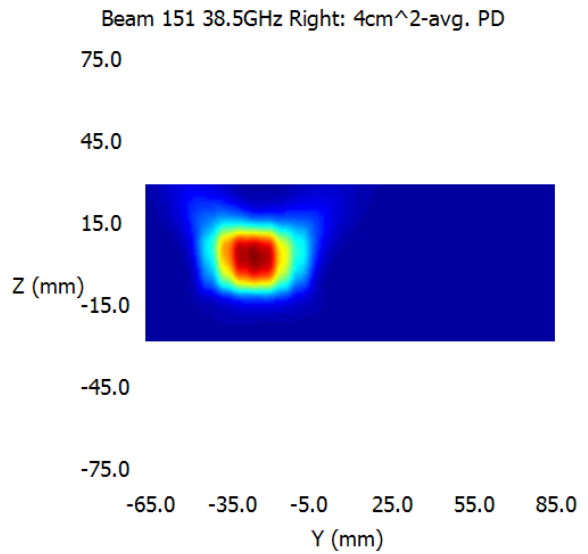


(b) Simulation

Patch antenna QTM0 AG1(H-polarization) beam ID 151, Point power density



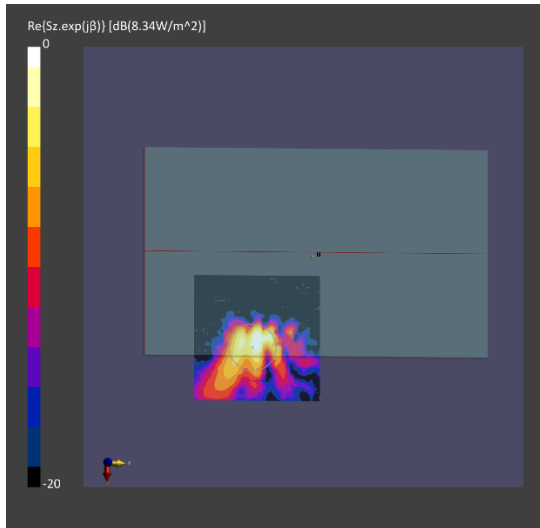
(a) Measurement



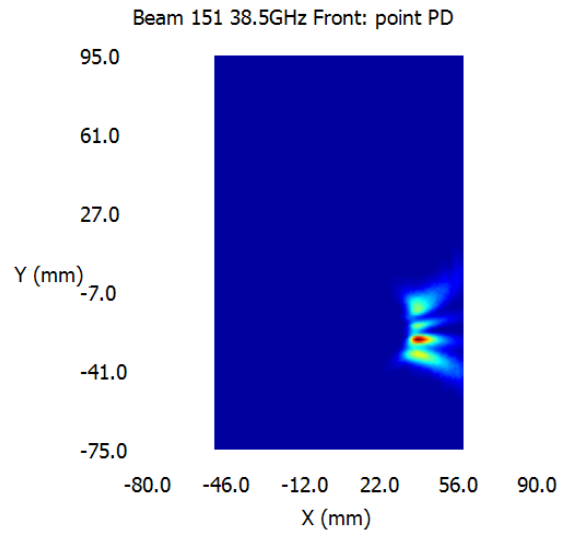
(b) Simulation

Patch antenna QTM0 AG0(V-polarization) beam ID 151, 4cm² Averaged power density

n260 Patch antenna QTM0 Ant_Group1(H-polarization) beam ID 151 Front-side Mid ch.

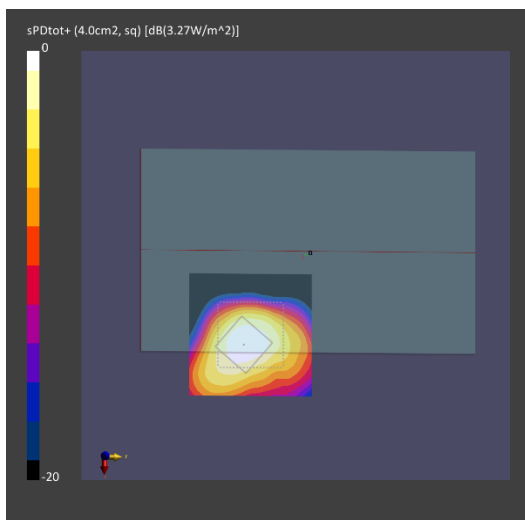


(a) Measurement

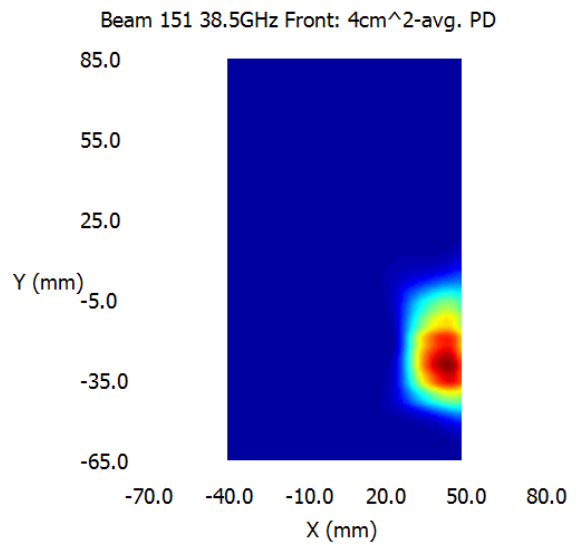


(b) Simulation

Patch antenna QTM0 AG1(H-polarization) beam ID 151, Point power density



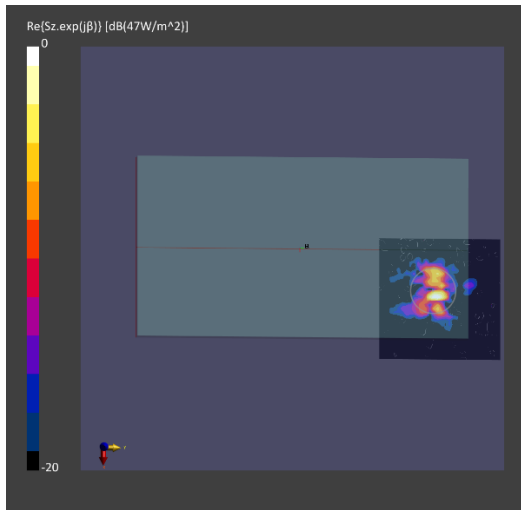
(a) Measurement



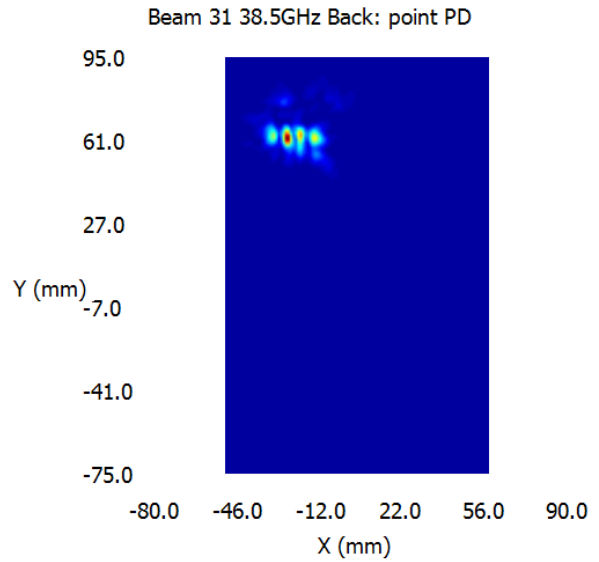
(b) Simulation

Patch antenna QTM0 AG0(V-polarization) beam ID 151, 4cm² Averaged power density

n260 Patch antenna QTM1 Ant_Group0(V-polarization) beam ID 31 Back-side Mid ch.

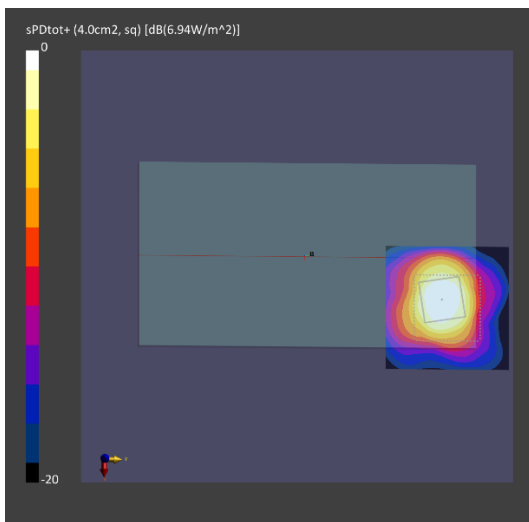


(a) Measurement

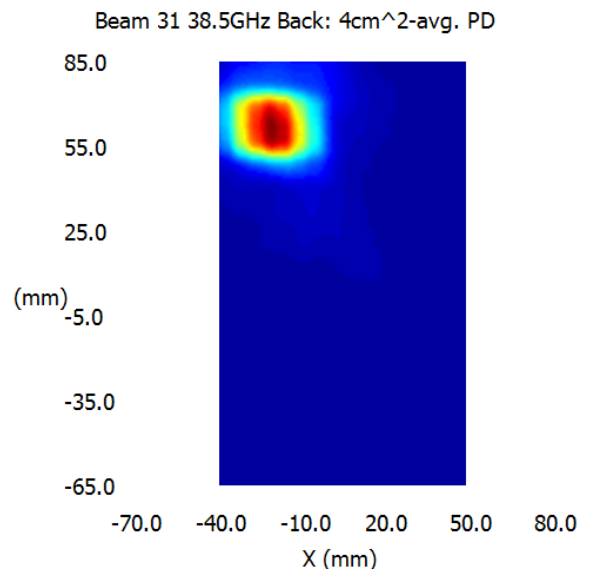


(b) Simulation

Patch antenna QTM1 AG0(V-polarization) beam ID 31, Point power density



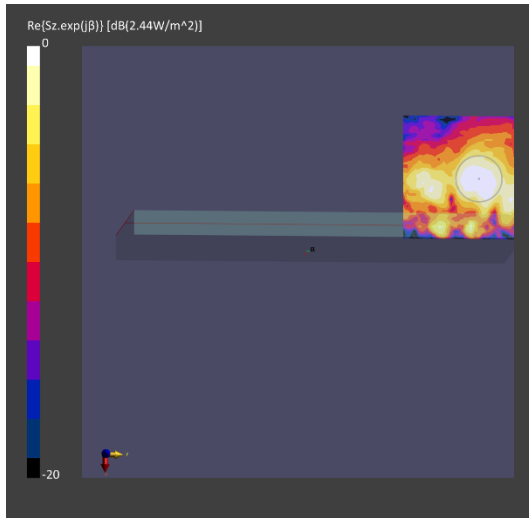
(a) Measurement



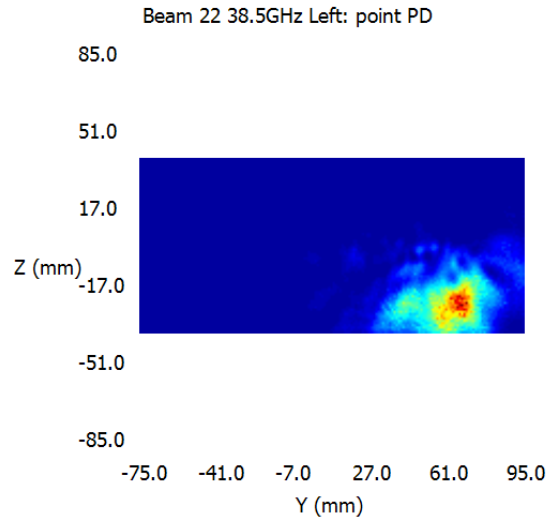
(b) Simulation

Patch antenna QTM0 AG0(V-polarization) beam ID 31, 4cm² Averaged power density

n260 Patch antenna QTM1 Ant_Group0(V-polarization) beam ID 22 Left-side Mid ch

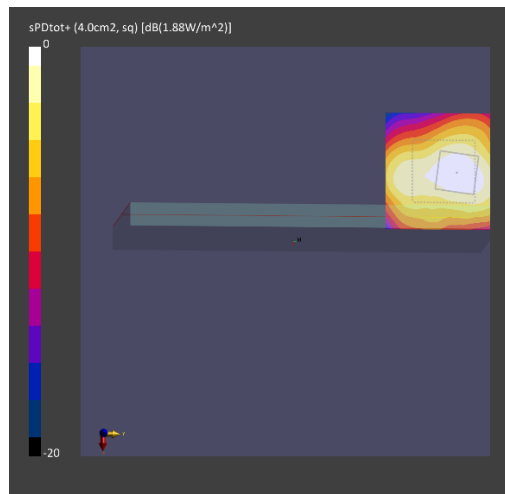


(a) Measurement

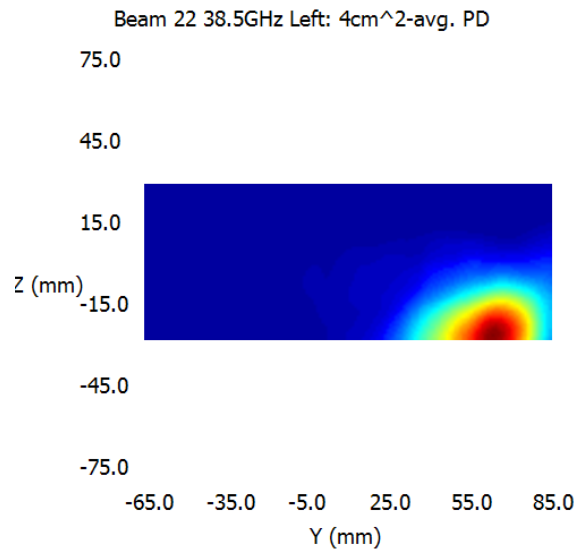


(b) Simulation

Patch antenna QTM1 AG0(V-polarization) beam ID 22, Point power density



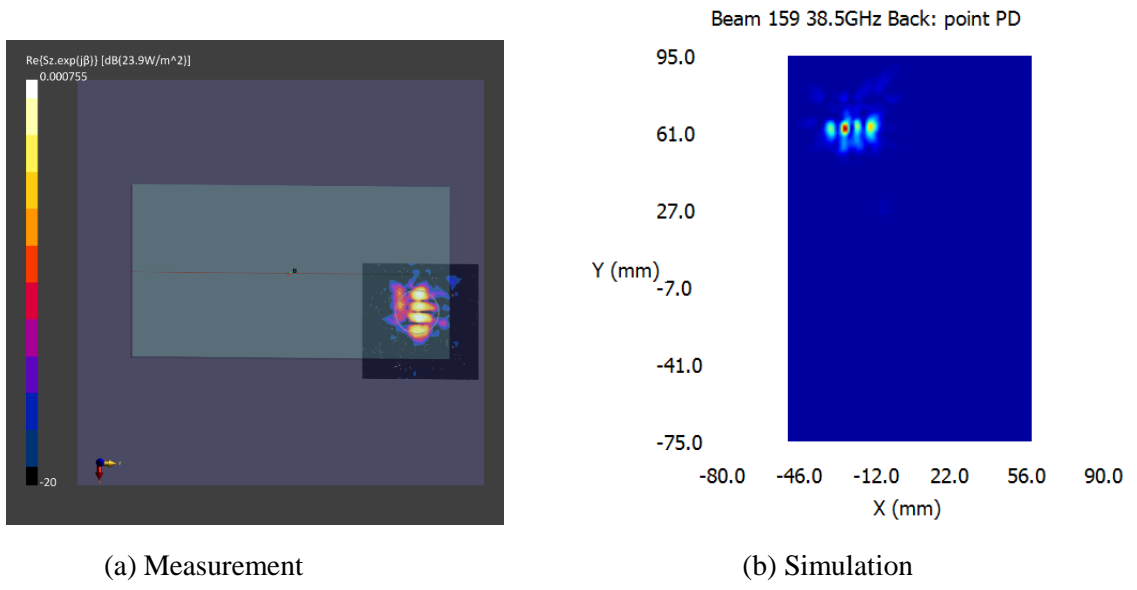
(a) Measurement



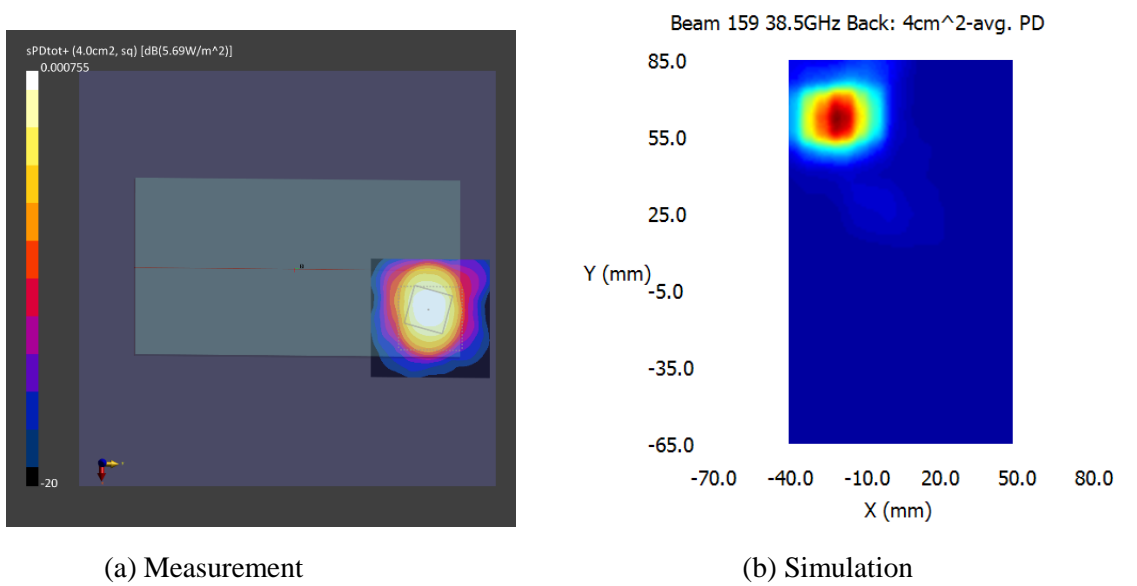
(b) Simulation

Patch antenna QTM0 AG0(V-polarization) beam ID 22, 4cm² Averaged power density

n260 Patch antenna QTM1 Ant_Group1(H-polarization) beam ID 159 Back-side Mid ch.

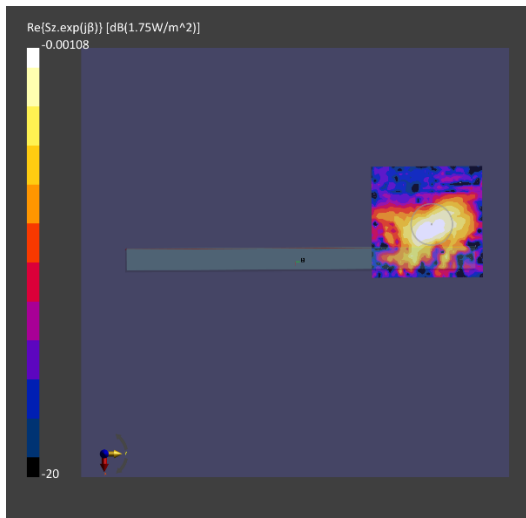


Patch antenna QTM1 AG1(H-polarization) beam ID 159, Point power density

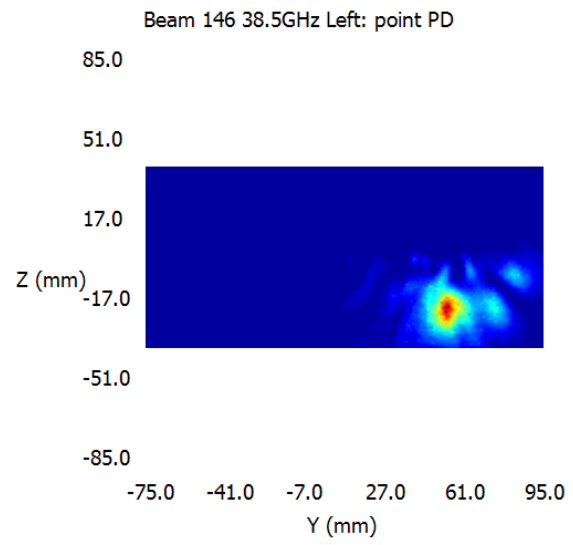


Patch antenna QTM0 AG0(V-polarization) beam ID 159, 4cm² Averaged power density

n260 Patch antenna QTM1 Ant_Group1(H-polarization) beam ID 146 left-side Mid ch.

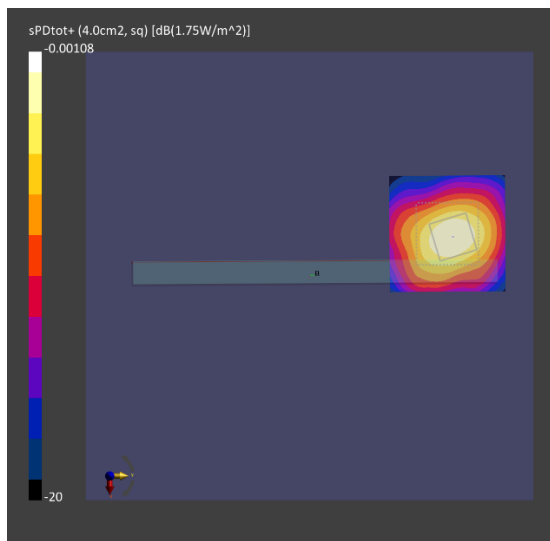


(a) Measurement

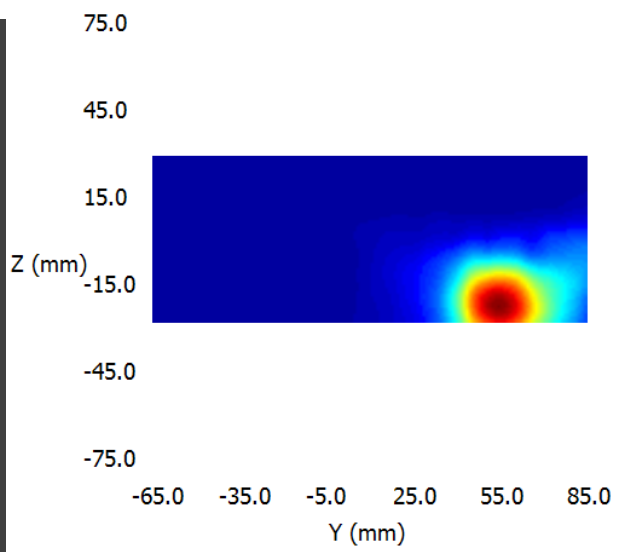


(b) Simulation

Patch antenna QTM1 AG1(H-polarization) beam ID 157, Point power density
Beam 146 38.5GHz Left: 4cm²-avg. PD



(a) Measurement



(b) Simulation

Patch antenna QTM0 AG0(V-polarization) beam ID 146, 4cm² Averaged power density

3. Simulation results

This section shows the PD simulation results of QTM#0 and QTM#1 at 28GHz and 39GHz for each evaluation surface specified in Table 1 at 2mm distance.

The relative phase between beam pairs is not controlled in the chipset design. Therefore, the relative phase between each beam pair was considered mathematically to identify the worst case conditions. The below tables MIMO results represent worst case of MIMO. After sweeping the relative phase between beams at 5 ° intervals from 0 ° to 360 °, the highest value is attached to the MIMO simulation results. The worst-case simulated PD determined from the tables in this section were used for conservativeness in input.power.limit determination in RF Exposure Part 0 Report.

3.1 PD for Low/Mid/High Channel at 28GHz / 39GHz

3.1.1 QTM#0 – Patch Antenna

Table 2 & Table 3 show the PD simulation evaluation of QTM#0 patch antenna at 28GHz / 39GHz for the corresponding evaluation surfaces specified in Table 1.

Table 2. PD of QTM#0 – patch antenna (28GHz)
QTM#0 Low Ch.

n261 Low ch.(27.5 GHz) /					4cm2 PD(W/m2) at 2 mm evaluation surfaces @6dBm						Ratio	4cm2 PD(W/m2) at 10 mm evaluation surfaces @6dBm						Ratio	
Band	Beam_ID	Ant module	Ant Type	Num. of Feed	relative phase worst PD for MIMO						Front 2mm/worst surface 2 mm	relative phase worst PD for MIMO						worst surface 10 mm/worst surface 2mm	
					front	back	left	right	top	bottom		front	back	left	right	top	bottom		
261	1		QTM0	PATCH	1	2.13	1.11	0	3.49	0.01	0.02	0.610315	0.84	0.39	0	1.54	0.01	0.02	0.441261
261	6		QTM0	PATCH	2	4.27	1.54	0.04	6.72	0.02	0.13	0.635417	2.02	0.58	0.02	3.03	0.02	0.14	0.450893
261	7		QTM0	PATCH	2	4.97	2.63	0.03	7.38	0.01	0.04	0.673442	2.5	1.12	0.02	3.87	0.01	0.04	0.52439
261	8		QTM0	PATCH	2	5.13	2.9	0.02	7.79	0	0.05	0.658537	2.56	1.22	0.02	4.08	0	0.06	0.523748
261	9		QTM0	PATCH	2	3.64	2.4	0.02	6.55	0.04	0.05	0.555725	1.71	0.95	0.01	2.82	0.03	0.06	0.430534
261	13		QTM0	PATCH	2	5	1.94	0.02	7.25	0.03	0.05	0.689655	2.39	0.83	0.01	3.58	0.02	0.05	0.493793
261	14		QTM0	PATCH	2	5.48	2.27	0.02	7.81	0.01	0.01	0.701665	2.59	1	0.01	4.2	0.01	0.01	0.537772
261	15		QTM0	PATCH	2	4.84	2.25	0.02	7.52	0.01	0.14	0.643617	2.34	0.88	0.01	3.68	0.01	0.15	0.489362
261	21		QTM0	PATCH	4	6.96	2.81	0.05	10.02	0.06	0.16	0.694611	3.18	1.18	0.03	4.75	0.05	0.16	0.474052
261	22		QTM0	PATCH	4	8.84	4.16	0.06	13.48	0.01	0.06	0.655786	4.37	1.77	0.04	6.7	0.01	0.06	0.497033
261	23		QTM0	PATCH	4	10.19	5.1	0.04	15.39	0.01	0.02	0.662118	5.21	2.24	0.03	8.14	0.01	0.02	0.528915
261	24		QTM0	PATCH	4	10.12	4.03	0.03	14.01	0.02	0.11	0.722341	5.21	1.58	0.02	8.07	0.01	0.12	0.576017
261	25		QTM0	PATCH	4	9.4	3.02	0.03	12.72	0.04	0.29	0.738994	4.71	1.06	0.02	6.56	0.03	0.32	0.515723
261	30		QTM0	PATCH	4	7.9	3.52	0.06	11.77	0.03	0.09	0.671198	3.81	1.49	0.04	5.83	0.03	0.09	0.495327
261	31		QTM0	PATCH	4	9.95	4.74	0.04	15.12	0.01	0.03	0.658069	5.03	2.04	0.03	7.65	0.01	0.03	0.505952
261	32		QTM0	PATCH	4	10.09	4.83	0.03	14.76	0.02	0.04	0.683604	5.25	2.05	0.03	8.33	0.01	0.04	0.564363
261	33		QTM0	PATCH	4	9.84	3.27	0.03	13.32	0.02	0.22	0.738739	5.02	1.18	0.02	7.2	0.02	0.24	0.540541
261		129	QTM0	PATCH	1	2.33	1.07	0.01	3.99	0.01	0.02	0.58396	0.9	0.3	0	1.84	0.01	0.03	0.461153
261		134	QTM0	PATCH	2	4.08	2.19	0.02	7.31	0.03	0.09	0.55814	1.96	0.79	0.02	3.36	0.03	0.09	0.459644
261		135	QTM0	PATCH	2	4.97	2.96	0.02	8.06	0.02	0.03	0.616625	2.45	1.16	0.01	4.37	0.02	0.03	0.542184
261		136	QTM0	PATCH	2	5.36	2.77	0.02	8.19	0.01	0.02	0.654457	2.57	1.08	0.01	4.57	0	0.02	0.557998
261		137	QTM0	PATCH	2	5.06	1.93	0.02	7.6	0.02	0.06	0.665789	2.43	0.69	0.01	3.89	0.02	0.06	0.511842
261		141	QTM0	PATCH	2	4.47	2.5	0.02	7.59	0.03	0.07	0.588933	2.18	0.93	0.01	3.78	0.03	0.07	0.498024
261		142	QTM0	PATCH	2	5.23	3.08	0.02	8.27	0.01	0.01	0.632406	2.55	1.22	0.01	4.65	0.01	0.01	0.562273
261		143	QTM0	PATCH	2	5.18	2.11	0.02	7.75	0.02	0.05	0.668387	2.48	0.77	0.01	4.08	0.02	0.05	0.526452
261		149	QTM0	PATCH	4	8.5	3.22	0.03	12.3	0.05	0.1	0.691057	4.36	1.18	0.02	6.9	0.04	0.1	0.560976
261		150	QTM0	PATCH	4	9.09	4.54	0.05	13.51	0.03	0.03	0.672835	4.79	1.89	0.04	8.09	0.03	0.03	0.598816
261		151	QTM0	PATCH	4	9.39	5.28	0.04	14.52	0.02	0.07	0.646694	4.96	2.3	0.03	8.38	0.01	0.07	0.577135
261		152	QTM0	PATCH	4	8.83	4.71	0.04	13.79	0.01	0.06	0.640319	4.51	2.05	0.03	7.57	0.01	0.07	0.548949
261		153	QTM0	PATCH	4	7.69	2.91	0.06	10.61	0.03	0.17	0.724788	3.92	1.15	0.03	5.57	0.02	0.18	0.524976
261		158	QTM0	PATCH	4	8.89	3.89	0.04	12.98	0.03	0.03	0.6849	4.65	1.55	0.03	7.64	0.03	0.03	0.588598
261		159	QTM0	PATCH	4	9.23	5.33	0.05	14.29	0.03	0.03	0.645906	4.86	2.33	0.04	8.39	0.03	0.03	0.587124
261		160	QTM0	PATCH	4	9.28	5.07	0.04	14.31	0.01	0.08	0.648498	4.87	2.15	0.03	8.15	0.01	0.08	0.569532
261		161	QTM0	PATCH	4	8.56	3.95	0.06	12.77	0.01	0.09	0.670321	4.37	1.65	0.04	7.01	0.01	0.1	0.548943
261	129	1	QTM0	PATCH	1	5.35	3.3	0.01	8.23	0.04	0.06	0.650061	2.08	1.12	0.01	3.59	0.03	0.06	0.436209
261	134	6	QTM0	PATCH	2	9.39	4.08	0.06	13.68	0.07	0.23	0.686404	4.31	1.44	0.05	7.27	0.06	0.24	0.531433
261	135	7	QTM0	PATCH	2	10.24	5.48	0.06	15.75	0.04	0.07	0.650159	5.11	2.22	0.05	8.47	0.03	0.07	0.537778
261	136	8	QTM0	PATCH	2	10.93	5.39	0.06	16.58	0.01	0.09	0.659228	5.31	2.18	0.05	8.95	0.01	0.1	0.539807
261	137	9	QTM0	PATCH	2	11.38	6.55	0.04	16.95	0.09	0.13	0.671386	5.43	2.66	0.03	8.16	0.07	0.14	0.481416
261	141	13	QTM0	PATCH	2	11.11	7.08	0.06	16.53	0.11	0.18	0.672111	5.48	3.15	0.04	8.51	0.09	0.18	0.514822
261	142	14	QTM0	PATCH	2	13.18	8.46	0.05	17.68	0.03	0.04	0.745475	6.27	3.86	0.04	9.42	0.03	0.04	0.532805
261	143	15	QTM0	PATCH	2	11.08	4.57	0.05	16.1	0.04	0.21	0.688199	5.28	1.74	0.04	8.64	0.04	0.22	0.536646
261	149	21	QTM0	PATCH	4	19.7	8.81	0.1	28.88	0.16	0.34	0.682133	9.62	3.54	0.09	14.85	0.14	0.35	0.514197
261	150	22	QTM0	PATCH	4	18.66	10.89	0.13	29.43	0.07	0.1	0.634047	9.44	4.71	0.1	16.26	0.06	0.11	0.552497
261	151	23	QTM0	PATCH	4	23.45	12.64	0.1	32.66	0.05	0.12	0.718004	12.27	6.16	0.08	20.49	0.05	0.12	0.627373

261	152	24	QTMO	PATCH	4	21.23	12.07	0.13	30.28	0.03	0.31	0.701123	10.76	5.2	0.1	18.18	0.03	0.33	0.600396
261	153	25	QTMO	PATCH	4	20.66	8.81	0.11	28.91	0.08	0.68	0.714632	10.65	3.38	0.08	15.33	0.07	0.73	0.530266
261	158	30	QTMO	PATCH	4	19.4	9.81	0.13	29.31	0.11	0.17	0.66189	9.69	4.08	0.11	15.45	0.09	0.17	0.527124
261	159	31	QTMO	PATCH	4	21.65	13	0.09	30.44	0.06	0.07	0.711235	11.43	6.11	0.07	18.81	0.05	0.07	0.617937
261	160	32	QTMO	PATCH	4	23.83	13.29	0.14	31.92	0.04	0.22	0.746554	12.5	6.29	0.11	19.81	0.04	0.23	0.620614
261	161	33	QTMO	PATCH	4	20.97	11.08	0.1	30.78	0.05	0.49	0.681287	10.45	4.44	0.07	17.56	0.04	0.53	0.5705

QTM#0 Mid Ch.

n261 Mid ch.(28 GHz) /					4cm2 PD(W/m2) at 2 mm evaluation surfaces @6dBm						Ratio	4cm2 PD(W/m2) at 10 mm evaluation surfaces @6dBm						Ratio	
					relative phase worst PD for MIMO							Front 2mm/worst surface 2 mm	relative phase worst PD for MIMO						
Band	Beam_ID	Ant module	Ant Type	Num. of Feed	front	back	left	right	top	bottom	front		back	left	right	top	bottom	worst surface 10 mm/worst surface 2mm	
261	1		QTM0	PATCH	1	2.15	1.21	0	3.47	0.01	0.02	0.62	0.87	0.43	0	1.54	0.01	0.02	0.44
261	6		QTM0	PATCH	2	4	1.52	0.03	6.32	0.03	0.15	0.63	1.85	0.56	0.02	2.77	0.02	0.16	0.44
261	7		QTM0	PATCH	2	4.67	2.48	0.02	6.87	0.01	0.04	0.68	2.35	1.04	0.02	3.59	0.01	0.04	0.52
261	8		QTM0	PATCH	2	4.73	2.85	0.03	7.29	0	0.06	0.65	2.41	1.19	0.02	3.73	0	0.06	0.51
261	9		QTM0	PATCH	2	3.3	2.84	0.01	6.35	0.04	0.07	0.52	1.58	1.09	0.01	2.74	0.03	0.08	0.43
261	13		QTM0	PATCH	2	5.02	1.94	0.02	7.22	0.02	0.05	0.70	2.37	0.86	0.02	3.64	0.02	0.05	0.50
261	14		QTM0	PATCH	2	5.45	2.34	0.02	7.75	0.01	0.01	0.70	2.6	1.05	0.01	4.3	0.01	0.01	0.55
261	15		QTM0	PATCH	2	4.43	2.4	0.02	7.1	0.02	0.16	0.62	2.17	0.94	0.02	3.4	0.01	0.18	0.48
261	21		QTM0	PATCH	4	6.39	2.81	0.04	9.56	0.07	0.14	0.67	2.87	1.17	0.04	4.46	0.07	0.14	0.47
261	22		QTM0	PATCH	4	8.29	4.14	0.04	12.91	0.02	0.06	0.64	4	1.73	0.03	6.46	0.02	0.06	0.50
261	23		QTM0	PATCH	4	9.75	4.89	0.04	14.67	0.01	0.01	0.66	4.91	2.16	0.03	7.79	0.01	0.01	0.53
261	24		QTM0	PATCH	4	9.54	4.48	0.02	13.63	0.01	0.14	0.70	5.03	1.81	0.02	7.69	0.01	0.15	0.56
261	25		QTM0	PATCH	4	8.71	3.62	0.03	12.1	0.05	0.37	0.72	4.41	1.26	0.02	6.15	0.04	0.4	0.51
261	30		QTM0	PATCH	4	7.29	3.52	0.04	11.18	0.03	0.07	0.65	3.48	1.48	0.03	5.51	0.03	0.07	0.49
261	31		QTM0	PATCH	4	9.58	4.68	0.04	14.54	0.01	0.03	0.66	4.7	2.02	0.03	7.53	0.01	0.03	0.52
261	32		QTM0	PATCH	4	9.65	4.75	0.03	14.26	0.01	0.04	0.68	5.06	1.94	0.03	7.95	0.01	0.05	0.56
261	33		QTM0	PATCH	4	9.16	3.88	0.03	12.8	0.03	0.28	0.72	4.74	1.42	0.02	6.78	0.03	0.31	0.53
261	129		QTM0	PATCH	1	2.35	1.05	0.01	4.02	0.01	0.03	0.58	0.94	0.31	0	1.8	0.01	0.03	0.45
261	134		QTM0	PATCH	2	3.96	2.55	0.02	7.38	0.04	0.1	0.54	1.92	0.93	0.01	3.28	0.03	0.11	0.44
261	135		QTM0	PATCH	2	4.91	3.17	0.02	8.09	0.02	0.04	0.61	2.42	1.27	0.02	4.23	0.02	0.04	0.52
261	136		QTM0	PATCH	2	5.34	2.67	0.02	7.97	0.01	0.02	0.67	2.61	1.05	0.02	4.35	0	0.02	0.55
261	137		QTM0	PATCH	2	4.92	1.78	0.02	7.25	0.03	0.06	0.68	2.4	0.62	0.01	3.61	0.02	0.06	0.50
261	141		QTM0	PATCH	2	4.36	2.84	0.02	7.66	0.03	0.08	0.57	2.14	1.07	0.02	3.68	0.03	0.08	0.48
261	142		QTM0	PATCH	2	5.21	3.11	0.02	8.18	0.01	0.01	0.64	2.56	1.25	0.02	4.47	0.01	0.01	0.55
261	143		QTM0	PATCH	2	5.08	1.96	0.02	7.41	0.02	0.05	0.69	2.48	0.71	0.01	3.81	0.02	0.05	0.51
261	149		QTM0	PATCH	4	8.27	3.83	0.03	12.63	0.06	0.08	0.65	4.35	1.45	0.03	6.77	0.05	0.08	0.54
261	150		QTM0	PATCH	4	8.63	4.67	0.04	13.2	0.03	0.03	0.65	4.64	1.96	0.03	7.64	0.02	0.03	0.58
261	151		QTM0	PATCH	4	8.89	5.35	0.04	13.99	0.01	0.08	0.64	4.67	2.39	0.03	7.86	0.01	0.08	0.56
261	152		QTM0	PATCH	4	8.43	4.74	0.06	13.34	0.01	0.08	0.63	4.29	2.12	0.04	7.23	0.01	0.08	0.54
261	153		QTM0	PATCH	4	7.22	2.74	0.08	9.94	0.03	0.15	0.73	3.72	1.17	0.05	5.13	0.02	0.16	0.52
261	158		QTM0	PATCH	4	8.59	4.24	0.03	13.01	0.03	0.03	0.66	4.6	1.71	0.03	7.35	0.03	0.03	0.56
261	159		QTM0	PATCH	4	8.59	5.26	0.04	13.66	0.03	0.03	0.63	4.55	2.31	0.04	7.77	0.03	0.03	0.57
261	160		QTM0	PATCH	4	8.91	5.12	0.04	13.86	0.01	0.08	0.64	4.64	2.26	0.03	7.75	0.01	0.09	0.56
261	161		QTM0	PATCH	4	8.01	3.85	0.08	12.08	0.02	0.11	0.66	4.12	1.66	0.05	6.52	0.02	0.12	0.54
261	129	1	QTM0	PATCH	1	5.65	3.42	0.01	8.05	0.03	0.08	0.70	2.23	1.14	0.01	3.45	0.03	0.08	0.43
261	134	6	QTM0	PATCH	2	8.98	4.41	0.05	13.13	0.08	0.25	0.68	4.18	1.55	0.04	6.83	0.06	0.26	0.52
261	135	7	QTM0	PATCH	2	10.03	5.66	0.08	15.47	0.03	0.08	0.65	5.08	2.37	0.06	8.13	0.03	0.08	0.53
261	136	8	QTM0	PATCH	2	10.52	5.55	0.07	15.92	0.02	0.1	0.66	5.25	2.36	0.06	8.38	0.01	0.1	0.53
261	137	9	QTM0	PATCH	2	10.87	7.16	0.04	16.46	0.08	0.19	0.66	5.32	2.83	0.03	7.71	0.07	0.2	0.47
261	141	13	QTM0	PATCH	2	11.49	7.68	0.07	16.22	0.09	0.2	0.71	5.66	3.39	0.05	8.31	0.08	0.21	0.51
261	142	14	QTM0	PATCH	2	13.71	8.86	0.06	17.48	0.03	0.03	0.78	6.63	4.1	0.05	9.29	0.02	0.03	0.53
261	143	15	QTM0	PATCH	2	10.55	4.77	0.05	15.18	0.05	0.25	0.69	5.19	1.92	0.04	8.02	0.04	0.27	0.53
261	149	21	QTM0	PATCH	4	18.94	9.91	0.12	28.5	0.2	0.28	0.66	9.62	4.04	0.09	14.26	0.18	0.29	0.50
261	150	22	QTM0	PATCH	4	17.57	11.64	0.12	28.91	0.08	0.11	0.61	9.1	4.92	0.1	15.49	0.07	0.12	0.54
261	151	23	QTM0	PATCH	4	22.35	12.6	0.11	31.33	0.05	0.13	0.71	11.66	6.1	0.09	19.4	0.04	0.14	0.62
261	152	24	QTM0	PATCH	4	20.24	12.99	0.13	29.58	0.04	0.32	0.68	10.34	5.57	0.1	17.42	0.03	0.34	0.59
261	153	25	QTM0	PATCH	4	19.16	9.38	0.12	27.1	0.07	0.62	0.71	10.07	3.81	0.09	14.39	0.07	0.66	0.53
261	158	30	QTM0	PATCH	4	18.65	10.79	0.13	29.05	0.11	0.15	0.64	9.64	4.47	0.11	14.78	0.1	0.16	0.51

QTM#0 Mid Ch.

261	159	31	QTM0	PATCH	4	20.9	13.25	0.13	29.26	0.07	0.08	0.71	10.89	6.12	0.1	17.92	0.06	0.08	0.61
261	160	32	QTM0	PATCH	4	22.93	13.56	0.15	30.57	0.03	0.21	0.75	12.13	6.26	0.12	18.76	0.03	0.23	0.61
261	161	33	QTM0	PATCH	4	20.07	12.15	0.12	29.98	0.06	0.5	0.67	10.1	5	0.1	16.88	0.05	0.54	0.56

QTM#0 High Ch.

n261 high ch.(28.35 GHz) /					4cm2 PD(W/m2) at 2 mm evaluation surfaces @6dBm						Ratio	4cm2 PD(W/m2) at 10 mm evaluation surfaces @6dBm						Ratio	
					relative phase worst PD for MIMO							Front 2mm/worst surface 2 mm	relative phase worst PD for MIMO						
Band	Beam_ID	Ant module	Ant Type	Num. of Feed	front	back	left	right	top	bottom	front		back	left	right	top	bottom	worst surface 10 mm/worst surface 2mm	
261	1		QTM0	PATCH	1	1.97	1.28	0	3.35	0.02	0.02	0.59	0.82	0.46	0	1.46	0.01	0.02	0.44
261	6		QTM0	PATCH	2	3.69	1.55	0.02	5.81	0.02	0.12	0.64	1.71	0.58	0.01	2.47	0.02	0.13	0.43
261	7		QTM0	PATCH	2	4.26	2.45	0.02	6.3	0.01	0.03	0.68	2.16	1.07	0.02	3.2	0.01	0.03	0.51
261	8		QTM0	PATCH	2	4.27	2.84	0.03	6.64	0	0.04	0.64	2.2	1.23	0.02	3.34	0	0.05	0.50
261	9		QTM0	PATCH	2	2.98	3.18	0.01	6.17	0.05	0.07	0.48	1.43	1.23	0.01	2.59	0.04	0.07	0.42
261	13		QTM0	PATCH	2	4.64	2.01	0.02	6.93	0.03	0.04	0.67	2.2	0.88	0.01	3.53	0.02	0.04	0.51
261	14		QTM0	PATCH	2	5.06	2.42	0.01	7.35	0.01	0.01	0.69	2.48	1.09	0.01	4.11	0.01	0.01	0.56
261	15		QTM0	PATCH	2	4.04	2.42	0.02	6.47	0.01	0.1	0.62	1.99	0.97	0.02	3.07	0.01	0.11	0.47
261	21		QTM0	PATCH	4	5.72	2.73	0.04	8.71	0.08	0.12	0.66	2.56	1.1	0.03	3.98	0.07	0.13	0.46
261	22		QTM0	PATCH	4	7.69	4.01	0.04	12	0.02	0.07	0.64	3.66	1.73	0.02	6.02	0.02	0.08	0.50
261	23		QTM0	PATCH	4	8.98	4.89	0.03	13.61	0.01	0.01	0.66	4.51	2.19	0.02	7.26	0.01	0.02	0.53
261	24		QTM0	PATCH	4	8.77	4.58	0.03	12.68	0.02	0.11	0.69	4.64	1.86	0.02	7.06	0.02	0.12	0.56
261	25		QTM0	PATCH	4	7.81	4.08	0.03	11.28	0.06	0.29	0.69	4.03	1.41	0.02	5.64	0.05	0.31	0.50
261	30		QTM0	PATCH	4	6.62	3.33	0.04	10.24	0.04	0.07	0.65	3.13	1.41	0.02	5	0.03	0.07	0.49
261	31		QTM0	PATCH	4	8.9	4.76	0.03	13.6	0.01	0.03	0.65	4.36	2.15	0.03	7.08	0.01	0.03	0.52
261	32		QTM0	PATCH	4	8.98	4.62	0.04	13.36	0.01	0.03	0.67	4.7	1.88	0.03	7.38	0.01	0.03	0.55
261	33		QTM0	PATCH	4	8.26	4.24	0.03	11.89	0.04	0.22	0.69	4.35	1.54	0.02	6.22	0.03	0.24	0.52
261	129		QTM0	PATCH	1	2.21	1.01	0.01	3.82	0.01	0.03	0.58	0.89	0.32	0.01	1.69	0.01	0.03	0.44
261	134		QTM0	PATCH	2	3.69	2.69	0.02	7.12	0.04	0.09	0.52	1.78	1.02	0.01	3.12	0.04	0.1	0.44
261	135		QTM0	PATCH	2	4.61	3.15	0.03	7.74	0.02	0.03	0.60	2.28	1.29	0.02	4.03	0.02	0.03	0.52
261	136		QTM0	PATCH	2	5.15	2.42	0.02	7.53	0.01	0.02	0.68	2.56	0.95	0.02	4.12	0	0.02	0.55
261	137		QTM0	PATCH	2	4.67	1.57	0.02	6.8	0.03	0.06	0.69	2.3	0.55	0.02	3.35	0.02	0.06	0.49
261	141		QTM0	PATCH	2	4.05	2.95	0.02	7.38	0.03	0.07	0.55	1.99	1.16	0.02	3.49	0.03	0.08	0.47
261	142		QTM0	PATCH	2	4.99	2.94	0.03	7.77	0.01	0.01	0.64	2.47	1.19	0.02	4.25	0.01	0.01	0.55
261	143		QTM0	PATCH	2	4.84	1.73	0.02	6.96	0.02	0.05	0.70	2.39	0.63	0.02	3.55	0.02	0.05	0.51
261	149		QTM0	PATCH	4	7.42	4.03	0.04	11.88	0.08	0.06	0.62	3.87	1.56	0.03	6.31	0.07	0.07	0.53
261	150		QTM0	PATCH	4	7.74	4.82	0.03	12.38	0.03	0.03	0.63	4.11	2.05	0.03	7.04	0.03	0.03	0.57
261	151		QTM0	PATCH	4	8.14	5.25	0.04	13.07	0.01	0.08	0.62	4.23	2.39	0.03	7.3	0.01	0.09	0.56
261	152		QTM0	PATCH	4	8.11	4.48	0.06	12.67	0.01	0.08	0.64	4.15	2.05	0.05	6.81	0.01	0.09	0.54
261	153		QTM0	PATCH	4	6.55	2.45	0.08	8.95	0.03	0.13	0.73	3.46	1.05	0.06	4.59	0.03	0.14	0.51
261	158		QTM0	PATCH	4	7.68	4.42	0.04	12.19	0.05	0.03	0.63	4.08	1.81	0.03	6.79	0.04	0.03	0.56
261	159		QTM0	PATCH	4	7.78	5.3	0.04	12.81	0.02	0.04	0.61	4.05	2.37	0.03	7.16	0.02	0.04	0.56
261	160		QTM0	PATCH	4	8.34	4.94	0.05	13.04	0.01	0.08	0.64	4.33	2.25	0.04	7.26	0.01	0.09	0.56
261	161		QTM0	PATCH	4	7.56	3.55	0.08	11.26	0.02	0.11	0.67	3.92	1.53	0.06	5.97	0.02	0.12	0.53
261	129	1	QTM0	PATCH	1	5.24	3.33	0.02	7.7	0.04	0.07	0.68	2.14	1.07	0.01	3.32	0.03	0.07	0.43
261	134	6	QTM0	PATCH	2	8.17	4.59	0.05	11.92	0.08	0.26	0.69	3.83	1.62	0.05	6.17	0.07	0.26	0.52
261	135	7	QTM0	PATCH	2	9.13	5.62	0.08	14.36	0.03	0.09	0.64	4.67	2.45	0.07	7.44	0.03	0.09	0.52
261	136	8	QTM0	PATCH	2	9.86	5.27	0.08	14.82	0.02	0.06	0.67	5.03	2.3	0.07	7.72	0.01	0.07	0.52
261	137	9	QTM0	PATCH	2	10.44	7.35	0.04	15.9	0.09	0.18	0.66	5.17	2.97	0.03	7.38	0.08	0.19	0.46
261	141	13	QTM0	PATCH	2	10.69	7.84	0.06	15.66	0.1	0.17	0.68	5.26	3.52	0.04	8.07	0.08	0.18	0.52
261	142	14	QTM0	PATCH	2	13.21	8.68	0.07	16.86	0.03	0.02	0.78	6.54	4.05	0.06	9.04	0.03	0.02	0.54
261	143	15	QTM0	PATCH	2	9.73	4.49	0.07	14.01	0.05	0.17	0.69	4.88	1.81	0.05	7.31	0.04	0.18	0.52
261	149	21	QTM0	PATCH	4	17.02	9.92	0.12	25.91	0.23	0.2	0.66	8.62	4.12	0.09	13.1	0.19	0.21	0.51
261	150	22	QTM0	PATCH	4	16.53	12.07	0.11	27.58	0.07	0.14	0.60	8.4	5.22	0.09	14.49	0.06	0.15	0.53
261	151	23	QTM0	PATCH	4	20.19	12.97	0.12	28.6	0.05	0.15	0.71	10.52	6.38	0.09	17.73	0.04	0.16	0.62
261	152	24	QTM0	PATCH	4	19.36	13.05	0.17	28.73	0.05	0.3	0.67	10.02	5.64	0.13	16.46	0.05	0.33	0.57
261	153	25	QTM0	PATCH	4	17.81	9.65	0.13	25.36	0.07	0.55	0.70	9.57	3.89	0.11	13.45	0.06	0.6	0.53
261	158	30	QTM0	PATCH	4	17.13	10.91	0.12	27.07	0.13	0.13	0.63	8.76	4.59	0.1	13.81	0.11	0.13	0.51

QTM#0 High Ch.

261	159	31	QTM0	PATCH	4	18.91	13.94	0.11	26.87	0.06	0.1	0.70	9.82	6.66	0.09	16.47	0.05	0.1	0.61
261	160	32	QTM0	PATCH	4	20.98	13.71	0.18	28.01	0.03	0.19	0.75	11.14	6.34	0.14	17.14	0.03	0.2	0.61
261	161	33	QTM0	PATCH	4	19.13	12.45	0.14	28.77	0.07	0.5	0.66	9.88	5.09	0.12	15.91	0.07	0.54	0.55

Table 3. PD of QTM#0 – patch antenna (39GHz)
QTM#0 Low Ch.

n261 Low ch.(37 GHz) /					4cm2 PD(W/m2) at 2 mm evaluation surfaces @6dBm						Ratio	4cm2 PD(W/m2) at 10 mm evaluation surfaces @6dBm						Ratio
Band	Beam_ID	Ant module	Ant Type	Nu m. of Fe ed	front	back	left	right	top	bottom	Front 2mm/worst surface 2 mm	relative phase worst PD for MIMO						worst surface 10 mm/worst surface 2mm
												front	back	left	right	top	bottom	
260	1	QTM0	PATC H	1	2.32	1.21	0.02	4.77	0.02	0.07	0.49	0.84	0.44	0.01	1.91	0.01	0.07	0.40
260	3	QTM0	PATC H	1	2.97	0.76	0.02	4.64	0.04	0.13	0.64	1.06	0.26	0.02	1.71	0.03	0.14	0.37
260	8	QTM0	PATC H	2	5.36	1.81	0.04	10.11	0.06	0.24	0.53	2.27	0.63	0.03	2.95	0.05	0.26	0.29
260	9	QTM0	PATC H	2	4.8	2.15	0.03	8.12	0.06	0.12	0.59	2.28	0.76	0.02	3.96	0.05	0.12	0.49
260	10	QTM0	PATC H	2	5.37	2.22	0.02	8.34	0.04	0.23	0.64	2.68	0.69	0.02	4.37	0.04	0.25	0.52
260	11	QTM0	PATC H	2	4.29	1.89	0.02	8.68	0.01	0.19	0.49	1.57	0.69	0.02	2.8	0.01	0.21	0.32
260	15	QTM0	PATC H	2	3.61	2.15	0.02	8.23	0.04	0.08	0.44	1.62	0.78	0.02	3.26	0.03	0.08	0.40
260	16	QTM0	PATC H	2	4.02	1.77	0.03	7.11	0.04	0.07	0.57	2.22	0.6	0.03	3.48	0.03	0.07	0.49
260	17	QTM0	PATC H	2	5.71	1.93	0.02	9.53	0.04	0.29	0.60	2.78	0.54	0.02	3.98	0.04	0.31	0.42
260	23	QTM0	PATC H	4	9.97	3.67	0.05	15.74	0.05	0.43	0.63	4.47	1.1	0.04	5.42	0.04	0.45	0.34
260	24	QTM0	PATC H	4	8.08	3.01	0.06	13.31	0.16	0.1	0.61	3.91	1.12	0.05	6.21	0.15	0.1	0.47
260	25	QTM0	PATC H	4	7.87	3.7	0.04	12.05	0.05	0.09	0.65	4.3	1.36	0.04	7	0.04	0.09	0.58
260	26	QTM0	PATC H	4	9.63	3.67	0.04	14.77	0.04	0.66	0.65	5.3	1.39	0.04	7.62	0.03	0.69	0.52
260	27	QTM0	PATC H	4	10.23	3.55	0.05	15.65	0.06	0.44	0.65	4.87	1.13	0.04	5.77	0.06	0.47	0.37
260	32	QTM0	PATC H	4	8.77	3.4	0.07	14.83	0.11	0.23	0.59	3.97	1.18	0.05	5.37	0.09	0.23	0.36
260	33	QTM0	PATC H	4	8.16	3.45	0.04	12.55	0.13	0.07	0.65	4.27	1.22	0.04	6.85	0.12	0.07	0.55
260	34	QTM0	PATC H	4	8.91	3.41	0.07	13.31	0.03	0.25	0.67	5.11	1.29	0.06	7.35	0.03	0.26	0.55
260	35	QTM0	PATC H	4	10.36	3.57	0.05	15.59	0.05	0.68	0.66	5.37	1.32	0.05	6.87	0.05	0.73	0.44
260	129	QTM0	PATC H	1	2.57	0.74	0.01	4.07	0.03	0.08	0.63	0.91	0.24	0.01	1.66	0.03	0.08	0.41
260	131	QTM0	PATC H	1	2.01	0.9	0.01	4.01	0.02	0.08	0.50	0.65	0.27	0.01	1.65	0.02	0.09	0.41
260	136	QTM0	PATC H	2	4.69	1.44	0.03	8.61	0.05	0.24	0.54	1.8	0.58	0.03	2.61	0.04	0.25	0.30
260	137	QTM0	PATC H	2	4.64	1.99	0.03	7.51	0.08	0.12	0.62	2.05	0.65	0.02	3.81	0.08	0.12	0.51
260	138	QTM0	PATC H	2	4.19	1.76	0.02	6.96	0.03	0.17	0.60	2.09	0.59	0.02	3.56	0.03	0.17	0.51
260	139	QTM0	PATC H	2	3.34	2.16	0.02	7.53	0.04	0.17	0.44	1.46	0.9	0.01	3.12	0.04	0.18	0.41
260	143	QTM0	PATC H	2	4.99	1.75	0.02	8.47	0.06	0.05	0.59	2.28	0.66	0.01	3.76	0.06	0.06	0.44
260	144	QTM0	PATC H	2	4.21	1.68	0.02	6.45	0.03	0.11	0.65	1.91	0.5	0.02	3.92	0.02	0.11	0.61
260	145	QTM0	PATC H	2	4.32	1.61	0.03	8.07	0.02	0.27	0.54	1.71	0.52	0.02	2.85	0.02	0.28	0.35
260	151	QTM0	PATC H	4	8.51	3.58	0.07	13.89	0.09	0.21	0.61	3.93	1.25	0.04	5.73	0.08	0.21	0.41
260	152	QTM0	PATC H	4	8.31	3.27	0.04	13.04	0.21	0.11	0.64	4.14	1.05	0.03	7.14	0.19	0.12	0.55
260	153	QTM0	PATC H	4	6.27	3.27	0.07	10.93	0.03	0.12	0.57	3.04	1.1	0.06	6.39	0.03	0.13	0.58
260	154	QTM0	PATC H	4	7.69	2.77	0.04	12.07	0.02	0.59	0.64	3.8	1.02	0.04	6.49	0.02	0.61	0.54

260		155	QTM0	PATC H	4	7.8	3.68	0.05	13.61	0.05	0.4	0.57	2.93	1.28	0.04	5.63	0.03	0.41	0.41
260		160	QTM0	PATC H	4	8.57	3.17	0.05	13.52	0.18	0.1	0.63	4.22	0.96	0.03	6.51	0.17	0.11	0.48
260		161	QTM0	PATC H	4	7.22	3.23	0.03	12.03	0.11	0.14	0.60	3.39	1.13	0.03	6.65	0.1	0.15	0.55
260		162	QTM0	PATC H	4	7.66	3.2	0.05	11.78	0.01	0.16	0.65	3.78	1.23	0.04	7.07	0.01	0.17	0.60
260		163	QTM0	PATC H	4	7.15	3.09	0.04	12.69	0.03	0.68	0.56	3.14	1.16	0.04	5.74	0.03	0.71	0.45
260	129	1	QTM0	PATC H	1	5.46	3.03	0.05	9.4	0.08	0.23	0.58	1.92	1.1	0.04	4.08	0.08	0.25	0.43
260	131	3	QTM0	PATC H	1	5.51	2.44	0.04	9.25	0.09	0.39	0.60	1.94	0.85	0.04	3.8	0.09	0.41	0.41
260	136	8	QTM0	PATC H	2	10.53	4.35	0.11	19.66	0.13	0.63	0.54	4.24	1.5	0.09	6.06	0.12	0.66	0.31
260	137	9	QTM0	PATC H	2	9.8	6.3	0.06	17.03	0.18	0.27	0.58	4.67	2.18	0.06	8.88	0.16	0.29	0.52
260	138	10	QTM0	PATC H	2	10.11	5.98	0.05	16.71	0.08	0.65	0.61	5.29	2.01	0.05	8.73	0.08	0.67	0.52
260	139	11	QTM0	PATC H	2	7.31	4.64	0.05	13.73	0.07	0.49	0.53	2.96	1.67	0.04	5.88	0.07	0.51	0.43
260	143	15	QTM0	PATC H	2	10.46	6.13	0.06	17.66	0.18	0.2	0.59	4.37	2.38	0.04	8.73	0.16	0.22	0.49
260	144	16	QTM0	PATC H	2	8.95	4.9	0.09	14.79	0.09	0.23	0.61	4.72	1.63	0.08	8.47	0.08	0.25	0.57
260	145	17	QTM0	PATC H	2	10.51	5.18	0.07	18.8	0.09	0.88	0.56	4.8	1.61	0.06	7.69	0.08	0.92	0.41
260	151	23	QTM0	PATC H	4	18.31	10.28	0.19	33	0.2	0.69	0.55	8.85	3.25	0.13	12.78	0.19	0.71	0.39
260	152	24	QTM0	PATC H	4	18.82	8.66	0.13	28.73	0.55	0.39	0.66	9.3	3.37	0.12	16.25	0.5	0.41	0.57
260	153	25	QTM0	PATC H	4	16.14	10.94	0.13	25.33	0.09	0.25	0.64	9.11	4.05	0.12	15.55	0.09	0.26	0.61
260	154	26	QTM0	PATC H	4	18.07	9.46	0.15	30.48	0.09	1.97	0.59	9.75	3.77	0.13	15.48	0.09	2.04	0.51
260	155	27	QTM0	PATC H	4	20.54	10.59	0.19	32.98	0.15	1.06	0.62	9.47	3.62	0.13	13.14	0.14	1.08	0.40
260	160	32	QTM0	PATC H	4	18.15	9.78	0.19	31.15	0.41	0.41	0.58	8.8	3.39	0.12	14.46	0.37	0.42	0.46
260	161	33	QTM0	PATC H	4	17.37	9.64	0.09	26.42	0.34	0.3	0.66	9.13	3.52	0.09	15.27	0.32	0.33	0.58
260	162	34	QTM0	PATC H	4	17.56	9.58	0.16	28.25	0.05	0.65	0.62	9.49	3.86	0.14	16.43	0.04	0.67	0.58
260	163	35	QTM0	PATC H	4	19.16	10.35	0.18	32.06	0.13	1.82	0.60	9.54	4.2	0.17	13.88	0.13	1.91	0.43

QTM#0 Mid Ch.

n260 Mid ch.(38.5 GHz) /					4cm2 PD(W/m2) at 2 mm evaluation surfaces @6dBm						Ratio	4cm2 PD(W/m2) at 10 mm evaluation surfaces @6dBm						Ratio
Band	Beam_ID	Ant modul e	Ant Type	Nu m. of Fe ed	relative phase worst PD for MIMO						Front 2mm/wor st surface 2 mm	relative phase worst PD for MIMO						worst surface 10 mm/worst surface 2mm
					front	back	left	right	top	bottom		front	back	left	right	top	bottom	
260	1	QTM0	PATC H	1	2.4	0.95	0.02	4.63	0.02	0.05	0.52	0.89	0.31	0.02	2.02	0.02	0.05	0.44
260	3	QTM0	PATC H	1	3	0.88	0.01	4.85	0.03	0.13	0.62	1.07	0.28	0.01	1.99	0.03	0.13	0.41
260	8	QTM0	PATC H	2	5.45	1.67	0.05	10.21	0.06	0.18	0.53	2.02	0.53	0.04	3.21	0.06	0.19	0.31
260	9	QTM0	PATC H	2	5.1	1.97	0.02	8.37	0.04	0.13	0.61	2.47	0.58	0.02	4.43	0.04	0.13	0.53
260	10	QTM0	PATC H	2	5.29	1.97	0.03	8.27	0.04	0.2	0.64	2.61	0.56	0.03	4.53	0.04	0.21	0.55
260	11	QTM0	PATC H	2	4.47	1.83	0.03	8.74	0.02	0.12	0.51	1.53	0.68	0.03	3.14	0.02	0.13	0.36
260	15	QTM0	PATC H	2	4.04	1.94	0.03	8.59	0.04	0.07	0.47	1.92	0.57	0.03	3.6	0.03	0.07	0.42
260	16	QTM0	PATC H	2	4.21	1.38	0.06	7.18	0.04	0.06	0.59	2.28	0.36	0.05	3.61	0.04	0.07	0.50
260	17	QTM0	PATC H	2	5.53	1.77	0.03	9.45	0.05	0.21	0.59	2.47	0.5	0.03	4.14	0.05	0.23	0.44
260	23	QTM0	PATC H	4	9.34	3.22	0.07	15.67	0.04	0.37	0.60	3.96	0.99	0.07	5.78	0.04	0.38	0.37
260	24	QTM0	PATC H	4	8.7	3.23	0.06	14.09	0.15	0.1	0.62	4.42	1.01	0.05	7.34	0.14	0.11	0.52
260	25	QTM0	PATC H	4	8.01	3.1	0.06	12.14	0.05	0.13	0.66	4.26	0.98	0.06	7.37	0.04	0.13	0.61
260	26	QTM0	PATC H	4	9.96	3.68	0.06	15.04	0.05	0.53	0.66	5.44	1.32	0.06	8.29	0.04	0.57	0.55
260	27	QTM0	PATC H	4	9.52	3.04	0.07	15.94	0.05	0.34	0.60	4.31	1.04	0.07	5.8	0.05	0.35	0.36
260	32	QTM0	PATC H	4	8.44	3.37	0.08	15.49	0.1	0.14	0.54	3.51	1.09	0.07	6.58	0.08	0.15	0.42
260	33	QTM0	PATC H	4	9.04	2.76	0.07	13.23	0.1	0.05	0.68	4.76	0.75	0.06	7.66	0.1	0.06	0.58
260	34	QTM0	PATC H	4	8.36	2.88	0.06	12.64	0.04	0.39	0.66	4.62	0.97	0.05	7.21	0.03	0.41	0.57
260	35	QTM0	PATC H	4	10.09	3.49	0.07	15.86	0.06	0.5	0.64	5.14	1.39	0.06	7.19	0.05	0.53	0.45
260	129	QTM0	PATC H	1	2.7	0.79	0.01	4.4	0.03	0.07	0.61	0.89	0.21	0.01	1.85	0.02	0.07	0.42
260	131	QTM0	PATC H	1	2.2	0.79	0.01	4.03	0.02	0.07	0.55	0.73	0.22	0.01	1.81	0.02	0.07	0.45
260	136	QTM0	PATC H	2	5.16	1.42	0.02	9.1	0.04	0.23	0.57	2.04	0.52	0.01	2.95	0.04	0.24	0.32
260	137	QTM0	PATC H	2	5	1.81	0.03	8.08	0.07	0.09	0.62	2.19	0.57	0.02	4.29	0.06	0.09	0.53
260	138	QTM0	PATC H	2	4.33	1.66	0.02	6.91	0.03	0.14	0.63	2.09	0.47	0.02	3.9	0.03	0.15	0.56
260	139	QTM0	PATC H	2	3.86	1.81	0.02	7.94	0.02	0.15	0.49	1.77	0.66	0.02	3.4	0.02	0.15	0.43
260	143	QTM0	PATC H	2	4.92	1.86	0.02	8.78	0.06	0.06	0.56	2.21	0.68	0.01	4.02	0.05	0.07	0.46
260	144	QTM0	PATC H	2	4.6	1.58	0.03	6.76	0.04	0.09	0.68	1.94	0.52	0.02	4.22	0.04	0.1	0.62
260	145	QTM0	PATC H	2	4.42	1.69	0.02	8.18	0.02	0.23	0.54	1.74	0.52	0.02	3.22	0.02	0.23	0.39
260	151	QTM0	PATC H	4	8.93	3.19	0.04	14.65	0.07	0.23	0.61	4.19	1.04	0.03	6.14	0.07	0.24	0.42
260	152	QTM0	PATC H	4	8.7	3.34	0.05	13.57	0.16	0.07	0.64	4.22	1.09	0.05	7.73	0.15	0.08	0.57
260	153	QTM0	PATC H	4	6.42	2.84	0.1	10.93	0.07	0.1	0.59	2.82	0.81	0.08	6.7	0.07	0.11	0.61
260	154	QTM0	PATC H	4	8.52	2.63	0.04	12.75	0.01	0.46	0.67	4.29	0.94	0.04	7.38	0.01	0.48	0.58

QTM#0 Mid Ch.

260		155	QTM0	PATC H	4	8.5	3.45	0.04	14.3	0.03	0.42	0.59	3.09	1.16	0.03	6.2	0.03	0.43	0.43
260		160	QTM0	PATC H	4	8.64	3.2	0.04	14.15	0.12	0.09	0.61	4.23	1.04	0.04	6.88	0.11	0.1	0.49
260		161	QTM0	PATC H	4	8.13	3.02	0.05	12.64	0.13	0.08	0.64	3.75	0.95	0.05	7.61	0.12	0.08	0.60
260		162	QTM0	PATC H	4	7.65	2.66	0.07	11.12	0.02	0.23	0.69	3.65	0.85	0.06	7.03	0.02	0.25	0.63
260		163	QTM0	PATC H	4	8.4	3.22	0.04	14.13	0.02	0.61	0.59	3.77	1.16	0.04	6.69	0.01	0.63	0.47
260	129	1	QTM0	PATC H	1	6.14	2.53	0.04	9.54	0.09	0.17	0.64	2.31	0.79	0.04	4.47	0.08	0.18	0.47
260	131	3	QTM0	PATC H	1	6.28	2.46	0.03	9.5	0.08	0.35	0.66	2.33	0.8	0.02	4.3	0.08	0.36	0.45
260	136	8	QTM0	PATC H	2	11.32	3.64	0.11	20.08	0.16	0.57	0.56	4.46	1.17	0.1	7.11	0.14	0.59	0.35
260	137	9	QTM0	PATC H	2	10.94	5.7	0.06	18.51	0.17	0.25	0.59	5.21	1.86	0.06	10.08	0.15	0.26	0.54
260	138	10	QTM0	PATC H	2	10.48	5.5	0.06	17	0.09	0.59	0.62	5.08	1.61	0.05	9.65	0.08	0.62	0.57
260	139	11	QTM0	PATC H	2	7.76	4.07	0.08	13.99	0.05	0.42	0.55	3.32	1.58	0.07	6.65	0.05	0.43	0.48
260	143	15	QTM0	PATC H	2	11.79	5.97	0.07	18.27	0.17	0.16	0.65	5.67	2.07	0.05	9.52	0.15	0.17	0.52
260	144	16	QTM0	PATC H	2	9.92	4.57	0.15	15.34	0.12	0.21	0.65	5.16	1.24	0.13	9.25	0.11	0.22	0.60
260	145	17	QTM0	PATC H	2	10.68	5.1	0.09	18.57	0.12	0.74	0.58	4.76	1.67	0.09	8.73	0.11	0.79	0.47
260	151	23	QTM0	PATC H	4	19.7	8.86	0.16	33.32	0.17	0.65	0.59	9.17	2.91	0.14	15.2	0.15	0.67	0.46
260	152	24	QTM0	PATC H	4	20.64	9.52	0.15	29.98	0.52	0.26	0.69	10.29	3.36	0.14	18.31	0.46	0.27	0.61
260	153	25	QTM0	PATC H	4	14.87	9.21	0.22	26.16	0.14	0.23	0.57	7.59	2.7	0.2	16.12	0.14	0.24	0.62
260	154	26	QTM0	PATC H	4	19.85	9.36	0.18	30.71	0.08	1.73	0.65	10.46	3.26	0.17	17.9	0.07	1.82	0.58
260	155	27	QTM0	PATC H	4	21.06	8.62	0.18	34.69	0.11	0.9	0.61	8.46	3.08	0.16	14.17	0.09	0.9	0.41
260	160	32	QTM0	PATC H	4	20.4	9.54	0.16	32.02	0.34	0.44	0.64	9.9	3.28	0.15	17.23	0.3	0.45	0.54
260	161	33	QTM0	PATC H	4	19	8.3	0.16	27.15	0.4	0.19	0.70	9.74	2.74	0.15	16.79	0.37	0.2	0.62
260	162	34	QTM0	PATC H	4	17.74	8.2	0.22	27.64	0.07	0.84	0.64	9.47	2.62	0.2	16.52	0.06	0.89	0.60
260	163	35	QTM0	PATC H	4	19.77	10.15	0.19	33.48	0.1	1.45	0.59	9.79	4.1	0.17	16.24	0.1	1.5	0.49

QTM#0 High Ch.

n260 high ch.(40 GHz) /					4cm2 PD(W/m2) at 2 mm evaluation surfaces @6dBm						Ratio	4cm2 PD(W/m2) at 10 mm evaluation surfaces @6dBm						Ratio	
Band	Beam_ID		Ant modul e	Ant Type	Nu m. of Fe ed	relative phase worst PD for MIMO						Front 2mm/w orst surface 2 mm	relative phase worst PD for MIMO						worst surface 10 mm/worst surface 2mm
						front	back	left	right	top	bottom		front	back	left	right	top	botto m	
260	1		QTM0	PATC H	1	2.44	0.72	0.01	4.08	0.01	0.04	0.60	0.92	0.18	0.01	1.75	0.01	0.05	0.43
260	3		QTM0	PATC H	1	2.3	1.16	0.01	3.98	0.02	0.09	0.58	0.8	0.35	0.01	1.79	0.02	0.09	0.45
260	8		QTM0	PATC H	2	4.65	1.52	0.03	8.23	0.04	0.12	0.57	1.81	0.46	0.03	2.91	0.03	0.12	0.35
260	9		QTM0	PATC H	2	4.32	2.06	0.02	7.44	0.03	0.11	0.58	2.07	0.59	0.03	3.82	0.02	0.12	0.51
260	10		QTM0	PATC H	2	4.73	2.2	0.02	7.59	0.03	0.16	0.62	2.34	0.63	0.02	3.92	0.02	0.17	0.52
260	11		QTM0	PATC H	2	4.6	1.43	0.03	7.95	0.01	0.11	0.58	1.62	0.54	0.03	2.67	0.01	0.12	0.34
260	15		QTM0	PATC H	2	4.44	1.5	0.02	7.78	0.02	0.04	0.57	2.1	0.46	0.02	3.36	0.02	0.05	0.43
260	16		QTM0	PATC H	2	4.12	1	0.03	6.43	0.04	0.09	0.64	2.29	0.28	0.03	3.09	0.03	0.09	0.48
260	17		QTM0	PATC H	2	4.8	1.73	0.02	8.13	0.03	0.14	0.59	2.2	0.49	0.02	3.57	0.03	0.14	0.44
260	23		QTM0	PATC H	4	8.4	3.08	0.09	13.65	0.02	0.21	0.62	3.65	0.89	0.08	5.55	0.02	0.22	0.41
260	24		QTM0	PATC H	4	7.57	2.87	0.05	11.73	0.09	0.07	0.65	3.72	0.86	0.05	6.45	0.08	0.07	0.55
260	25		QTM0	PATC H	4	6.8	3.39	0.05	10.95	0.05	0.2	0.62	3.58	1.1	0.05	6.31	0.04	0.2	0.58
260	26		QTM0	PATC H	4	8.18	3.23	0.05	12.69	0.05	0.34	0.64	4.4	1.15	0.04	6.62	0.05	0.35	0.52
260	27		QTM0	PATC H	4	8.43	2.95	0.09	13.91	0.02	0.2	0.61	3.88	0.88	0.08	5.36	0.02	0.21	0.39
260	32		QTM0	PATC H	4	8.04	3.02	0.09	13.42	0.04	0.1	0.60	3.46	0.91	0.08	6.18	0.03	0.1	0.46
260	33		QTM0	PATC H	4	7.67	2.77	0.05	11.24	0.09	0.07	0.68	4.14	0.76	0.04	6.48	0.07	0.07	0.58
260	34		QTM0	PATC H	4	7.15	3	0.06	11.06	0.04	0.36	0.65	3.79	1.05	0.05	5.77	0.04	0.38	0.52
260	35		QTM0	PATC H	4	8	3.21	0.06	13.1	0.03	0.34	0.61	4.09	1.12	0.06	6.17	0.03	0.35	0.47
260		129	QTM0	PATC H	1	2.31	1.02	0.01	3.74	0.02	0.05	0.62	0.8	0.3	0.01	1.72	0.02	0.05	0.46
260		131	QTM0	PATC H	1	2.16	0.61	0.01	3.52	0.01	0.06	0.61	0.81	0.18	0.01	1.61	0.01	0.06	0.46
260		136	QTM0	PATC H	2	4.4	1.32	0.02	7.33	0.03	0.12	0.60	1.75	0.45	0.02	2.74	0.03	0.12	0.37
260		137	QTM0	PATC H	2	4.65	1.71	0.02	7.11	0.04	0.11	0.65	2.14	0.58	0.02	3.87	0.03	0.12	0.54
260		138	QTM0	PATC H	2	4.16	1.73	0.02	6.41	0.03	0.15	0.65	1.92	0.5	0.02	3.62	0.03	0.16	0.56
260		139	QTM0	PATC H	2	4.11	1.22	0.01	7.11	0.01	0.1	0.58	1.94	0.44	0.01	3.18	0.01	0.1	0.45
260		143	QTM0	PATC H	2	3.98	2.44	0.02	7.85	0.04	0.02	0.51	1.73	0.93	0.02	3.62	0.04	0.02	0.46
260		144	QTM0	PATC H	2	4.16	1.75	0.05	6.37	0.05	0.09	0.65	1.55	0.58	0.04	3.81	0.04	0.09	0.60
260		145	QTM0	PATC H	2	3.96	1.58	0.02	6.86	0.03	0.12	0.58	1.45	0.48	0.02	2.95	0.03	0.13	0.43
260		151	QTM0	PATC H	4	7.7	3.32	0.05	13.24	0.04	0.07	0.58	3.63	1.01	0.03	5.69	0.04	0.08	0.43
260		152	QTM0	PATC H	4	7.62	3.17	0.05	11.56	0.11	0.05	0.66	3.56	1.23	0.04	6.78	0.1	0.06	0.59
260		153	QTM0	PATC H	4	6.25	2.6	0.06	9.79	0.07	0.18	0.64	2.75	0.75	0.05	5.68	0.06	0.19	0.58
260		154	QTM0	PATC H	4	7.4	2.94	0.05	11.04	0.02	0.36	0.67	3.72	0.77	0.04	6.6	0.02	0.38	0.60
260		155	QTM0	PATC H	4	7.52	3.44	0.03	12.62	0.03	0.23	0.60	2.83	1.11	0.02	5.85	0.03	0.23	0.46

QTM#0 High Ch.

260		160	QTM0	PATC H	4	7.52	3.22	0.05	12.58	0.07	0.05	0.60	3.57	1.11	0.04	6.46	0.06	0.05	0.51
260		161	QTM0	PATC H	4	7.23	2.43	0.04	10.47	0.1	0.09	0.69	3.3	0.84	0.04	6.23	0.09	0.09	0.60
260		162	QTM0	PATC H	4	6.3	2.86	0.06	9.74	0.05	0.41	0.65	3.12	0.81	0.05	5.63	0.04	0.43	0.58
260		163	QTM0	PATC H	4	7.65	3.21	0.03	12.12	0.02	0.39	0.63	3.39	0.99	0.03	6.49	0.02	0.4	0.54
260	129	1	QTM0	PATC H	1	6.44	2.45	0.04	8.62	0.05	0.15	0.75	2.41	0.72	0.04	4.08	0.04	0.15	0.47
260	131	3	QTM0	PATC H	1	6.21	2.44	0.02	8.29	0.06	0.21	0.75	2.42	0.74	0.02	3.82	0.06	0.22	0.46
260	136	8	QTM0	PATC H	2	10.13	2.95	0.1	16.55	0.1	0.37	0.61	3.72	0.95	0.09	6.08	0.08	0.39	0.37
260	137	9	QTM0	PATC H	2	9.91	4.83	0.05	16.32	0.11	0.23	0.61	4.61	1.44	0.05	9.51	0.09	0.24	0.58
260	138	10	QTM0	PATC H	2	9.56	5	0.06	15.47	0.09	0.42	0.62	4.6	1.35	0.05	9.08	0.09	0.45	0.59
260	139	11	QTM0	PATC H	2	8.13	2.81	0.06	12.89	0.03	0.34	0.63	3.62	1.05	0.05	6.24	0.03	0.35	0.48
260	143	15	QTM0	PATC H	2	11.54	5.54	0.05	16.25	0.1	0.09	0.71	5.51	1.9	0.05	8.32	0.08	0.09	0.51
260	144	16	QTM0	PATC H	2	10.18	4	0.15	14.12	0.12	0.19	0.72	5.35	1.16	0.13	7.86	0.1	0.21	0.56
260	145	17	QTM0	PATC H	2	10.35	4.5	0.08	15.91	0.09	0.47	0.65	4.01	1.42	0.08	7.89	0.09	0.49	0.50
260	151	23	QTM0	PATC H	4	18.1	7.43	0.16	29.17	0.09	0.4	0.62	7.92	2.63	0.15	13.08	0.08	0.42	0.45
260	152	24	QTM0	PATC H	4	17.74	8.75	0.14	24	0.33	0.13	0.74	8.43	3.01	0.12	15.95	0.28	0.14	0.66
260	153	25	QTM0	PATC H	4	13.97	7.73	0.19	22.93	0.13	0.39	0.61	7.4	2.17	0.17	13.92	0.12	0.42	0.61
260	154	26	QTM0	PATC H	4	16.72	7.03	0.19	24.87	0.11	1.21	0.67	8.95	2.14	0.17	15.02	0.1	1.28	0.60
260	155	27	QTM0	PATC H	4	17.44	6.83	0.18	29.59	0.08	0.53	0.59	7.63	2.45	0.17	12.32	0.07	0.55	0.42
260	160	32	QTM0	PATC H	4	18.45	8.08	0.15	27.42	0.14	0.22	0.67	8.19	2.8	0.13	15.13	0.12	0.22	0.55
260	161	33	QTM0	PATC H	4	16.45	6.68	0.16	22.54	0.33	0.19	0.73	8.51	1.94	0.15	14.32	0.28	0.2	0.64
260	162	34	QTM0	PATC H	4	14.64	7.04	0.2	23.16	0.13	0.78	0.63	7.86	2.4	0.18	13.53	0.12	0.83	0.58
260	163	35	QTM0	PATC H	4	16.96	7.97	0.15	27.33	0.06	1.12	0.62	8.11	2.87	0.12	14.47	0.05	1.15	0.53

3.1.2 QTM#1 – Patch Antenna

Table 4 & Table 5 show the PD simulation evaluation of QTM#1 patch antenna at 28GHz / 39GHz for the corresponding evaluation planes specified in Table 1.

Table 4. PD of QTM#1 – patch antenna (28GHz)

QTM#1 Low Ch.

n261 low ch.(27.5 GHz) /					4cm2 PD(W/m2) at 2 mm evaluation surfaces @6dBm						Ratio	4cm2 PD(W/m2) at 10 mm evaluation surfaces @6dBm						Ratio
Band	Beam_ID	Ant module	Ant Type	Nu m. of Fe ed	relative phase worst PD for MIMO						Front 2mm/worst surface 2 mm	relative phase worst PD for MIMO						worst surface 10 mm/worst surface 2mm
					front	back	left	right	top	bottom		front	back	left	right	top	bottom	
261	0	QTM1	PATC H	1	0.08	3.05	0.16	0.14	0.35	0.02	0.03	0.04	1.17	0.1	0.12	0.23	0.02	0.38
261	2	QTM1	PATC H	2	0.14	5.99	0.66	0.44	0.79	0.03	0.02	0.08	3.01	0.39	0.35	0.47	0.04	0.50
261	3	QTM1	PATC H	2	0.15	6.86	0.4	0.31	0.82	0.03	0.02	0.08	3.8	0.24	0.24	0.45	0.04	0.55
261	4	QTM1	PATC H	2	0.25	8.14	0.14	0.09	1	0.05	0.03	0.12	4.01	0.09	0.07	0.64	0.05	0.49
261	5	QTM1	PATC H	2	0.28	8.16	0.16	0.1	1.23	0.04	0.03	0.13	3.65	0.09	0.08	0.83	0.05	0.45
261	10	QTM1	PATC H	2	0.15	6.28	0.57	0.41	0.82	0.03	0.02	0.08	3.36	0.34	0.32	0.48	0.03	0.54
261	11	QTM1	PATC H	2	0.16	7.26	0.31	0.24	0.8	0.04	0.02	0.08	4	0.17	0.19	0.42	0.04	0.55
261	12	QTM1	PATC H	2	0.28	8.16	0.16	0.1	1.23	0.04	0.03	0.13	3.65	0.09	0.08	0.83	0.05	0.45
261	16	QTM1	PATC H	2	0.42	9.49	2.5	0.75	1.39	0.03	0.04	0.23	3.54	1.27	0.62	0.84	0.03	0.37
261	17	QTM1	PATC H	4	0.48	14.25	2.76	0.37	2.39	0.07	0.03	0.2	7.84	1.05	0.29	1.66	0.08	0.55
261	18	QTM1	PATC H	4	0.49	16.22	0.45	0.28	3.05	0.1	0.03	0.22	8.7	0.23	0.22	2.05	0.1	0.54
261	19	QTM1	PATC H	4	0.43	16.05	0.75	0.29	3.2	0.09	0.03	0.18	7.95	0.36	0.23	2.02	0.09	0.50
261	20	QTM1	PATC H	4	0.48	13.93	1.33	0.3	2.96	0.05	0.03	0.23	6.5	0.56	0.27	1.79	0.05	0.47
261	26	QTM1	PATC H	4	0.46	11.8	3.21	0.63	2.01	0.04	0.04	0.22	5.52	1.44	0.51	1.31	0.04	0.47
261	27	QTM1	PATC H	4	0.48	15.22	1.43	0.23	2.41	0.09	0.03	0.2	8.52	0.44	0.18	1.63	0.09	0.56
261	28	QTM1	PATC H	4	0.4	15.93	0.55	0.33	3.03	0.09	0.03	0.18	8.14	0.25	0.25	1.99	0.1	0.51
261	29	QTM1	PATC H	4	0.53	14.84	1.14	0.25	3.22	0.05	0.04	0.24	6.89	0.51	0.23	2	0.05	0.46
261	128	QTM1	PATC H	1	0.09	3.99	0.23	0.18	0.65	0.01	0.02	0.04	1.47	0.16	0.15	0.45	0.01	0.37
261	130	QTM1	PATC H	2	0.21	7.33	0.91	0.51	1.69	0.02	0.03	0.11	3.12	0.56	0.41	1.09	0.02	0.43
261	131	QTM1	PATC H	2	0.19	8.61	0.32	0.2	1.94	0.03	0.02	0.09	4.57	0.14	0.17	1.3	0.03	0.53
261	132	QTM1	PATC H	2	0.21	9.26	0.24	0.19	1.5	0.03	0.02	0.08	4.49	0.15	0.15	1.06	0.03	0.48
261	133	QTM1	PATC H	2	0.18	8.44	0.77	0.28	0.98	0.02	0.02	0.09	3.09	0.52	0.23	0.57	0.03	0.37
261	138	QTM1	PATC H	2	0.18	8.35	0.48	0.28	1.99	0.02	0.02	0.09	4.35	0.23	0.23	1.31	0.03	0.52
261	139	QTM1	PATC H	2	0.2	8.73	0.25	0.17	1.89	0.03	0.02	0.09	4.63	0.1	0.14	1.29	0.03	0.53
261	140	QTM1	PATC H	2	0.2	9.1	0.53	0.27	1.21	0.03	0.02	0.07	3.82	0.36	0.21	0.77	0.03	0.42
261	144	QTM1	PATC H	4	0.35	13.3	3.02	0.4	3.56	0.07	0.03	0.18	5.43	1.39	0.31	2.27	0.08	0.41
261	145	QTM1	PATC H	4	0.29	14.64	1.43	0.27	3.23	0.09	0.02	0.11	6.91	0.46	0.21	2.3	0.1	0.47
261	146	QTM1	PATC H	4	0.42	15.54	0.62	0.27	3.52	0.09	0.03	0.14	7.79	0.28	0.23	2.62	0.09	0.50
261	147	QTM1	PATC H	4	0.44	14.1	0.68	0.23	2.43	0.08	0.03	0.2	7.55	0.37	0.17	1.79	0.09	0.54
261	148	QTM1	PATC H	4	0.35	12.3	1.36	0.86	1.88	0.07	0.03	0.16	6.01	0.61	0.71	1.2	0.07	0.49

Table 4. PD of QTM#1 – patch antenna (28GHz)

261		154	QTM1	PATC H	4	0.34	13.3	2.87	0.37	3.46	0.07	0.03	0.17	5.46	1.27	0.29	2.27	0.07	0.41
261		155	QTM1	PATC H	4	0.33	15.59	0.8	0.2	3.47	0.1	0.02	0.11	7.72	0.24	0.17	2.49	0.11	0.50
261		156	QTM1	PATC H	4	0.49	15.31	0.39	0.27	2.99	0.06	0.03	0.15	8	0.18	0.23	2.22	0.06	0.52
261		157	QTM1	PATC H	4	0.38	13.21	0.9	0.54	2	0.09	0.03	0.21	6.78	0.46	0.47	1.45	0.09	0.51
261	128	0	QTM1	PATC H	1	0.27	7.78	0.43	0.45	1.01	0.04	0.03	0.12	2.77	0.23	0.36	0.69	0.04	0.36
261	130	2	QTM1	PATC H	2	0.61	14.56	1.72	1.42	2.95	0.07	0.04	0.26	7.92	0.98	1.09	1.66	0.08	0.54
261	131	3	QTM1	PATC H	2	0.46	16.29	0.79	0.78	3.29	0.08	0.03	0.24	10.04	0.42	0.64	2.07	0.08	0.62
261	132	4	QTM1	PATC H	2	0.83	19.65	0.4	0.37	3.03	0.09	0.04	0.32	9.5	0.25	0.32	2.04	0.1	0.48
261	133	5	QTM1	PATC H	2	0.77	19.64	1.05	0.62	2.83	0.08	0.04	0.31	7.53	0.66	0.49	1.84	0.09	0.38
261	138	10	QTM1	PATC H	2	0.51	15.28	1.1	1.03	3.2	0.06	0.03	0.21	9.47	0.62	0.81	1.98	0.07	0.62
261	139	11	QTM1	PATC H	2	0.55	17.06	0.65	0.64	3.3	0.08	0.03	0.25	10.18	0.3	0.54	2.09	0.09	0.60
261	140	12	QTM1	PATC H	2	0.84	20.16	0.8	0.6	3.06	0.08	0.04	0.33	8.47	0.5	0.47	2.04	0.09	0.42
261	144	16	QTM1	PATC H	4	1.14	26.47	6.33	1.42	6.01	0.13	0.04	0.49	11.05	3	1.1	3.54	0.15	0.42
261	145	17	QTM1	PATC H	4	1.39	30.19	5.02	0.95	6.68	0.18	0.05	0.49	16.4	2.02	0.79	4.67	0.2	0.54
261	146	18	QTM1	PATC H	4	1.47	32.72	1.22	0.89	7.1	0.23	0.04	0.45	18.51	0.48	0.74	5.45	0.25	0.57
261	147	19	QTM1	PATC H	4	1.41	30.88	2.34	0.71	6.53	0.19	0.05	0.55	16.35	1.16	0.52	4.8	0.2	0.53
261	148	20	QTM1	PATC H	4	1.35	28.45	4.67	1.33	6.31	0.19	0.05	0.56	14.51	2.02	1.04	3.97	0.2	0.51
261	154	26	QTM1	PATC H	4	1.25	28.71	6.26	1.32	6.49	0.12	0.04	0.48	13.32	2.67	1.09	3.89	0.13	0.46
261	155	27	QTM1	PATC H	4	1.45	31.37	2.84	0.6	6.74	0.23	0.05	0.47	17.89	1.06	0.49	5.17	0.26	0.57
261	156	28	QTM1	PATC H	4	1.45	31.99	1.29	1.04	6.65	0.21	0.05	0.45	17.25	0.65	0.86	4.97	0.23	0.54
261	157	29	QTM1	PATC H	4	1.45	30.18	3.56	0.95	6.1	0.22	0.05	0.52	15.37	1.6	0.74	4.1	0.24	0.51

Table 4. PD of QTM#1 – patch antenna (28GHz)
QTM#1 Mid Ch

n261 mid ch.(28 GHz) /					4cm2 PD(W/m2) at 2 mm evaluation surfaces @6dBm						Ratio	4cm2 PD(W/m2) at 10 mm evaluation surfaces @6dBm						Ratio
Band	Beam_ID	Ant module	Ant Type	Nu m. of Fe ed	relative phase worst PD for MIMO						Front 2mm/worst surface 2 mm	relative phase worst PD for MIMO						worst surface 10 mm/worst surface 2mm
					front	back	left	right	top	bottom		front	back	left	right	top	bottom	
261	0	QTM1	PATC H	1	0.11	3.1	0.17	0.16	0.38	0.02	0.04	0.05	1.25	0.11	0.12	0.25	0.02	0.40
261	2	QTM1	PATC H	2	0.16	5.71	0.64	0.48	0.7	0.04	0.03	0.09	2.84	0.38	0.36	0.41	0.05	0.50
261	3	QTM1	PATC H	2	0.15	6.75	0.47	0.37	0.78	0.03	0.02	0.08	3.74	0.21	0.27	0.43	0.04	0.55
261	4	QTM1	PATC H	2	0.34	8.2	0.12	0.1	1.05	0.04	0.04	0.15	4.17	0.09	0.07	0.65	0.05	0.51
261	5	QTM1	PATC H	2	0.37	8.19	0.2	0.09	1.35	0.04	0.05	0.17	3.85	0.11	0.07	0.88	0.05	0.47
261	10	QTM1	PATC H	2	0.16	6.06	0.58	0.45	0.75	0.03	0.03	0.09	3.23	0.32	0.34	0.43	0.03	0.53
261	11	QTM1	PATC H	2	0.2	7.23	0.37	0.29	0.82	0.04	0.03	0.08	4	0.15	0.21	0.41	0.04	0.55
261	12	QTM1	PATC H	2	0.37	8.19	0.2	0.09	1.35	0.04	0.05	0.17	3.85	0.11	0.07	0.88	0.05	0.47
261	16	QTM1	PATC H	2	0.38	8.92	2.34	0.72	1.35	0.04	0.04	0.19	3.34	1.17	0.57	0.86	0.04	0.37
261	17	QTM1	PATC H	4	0.44	13.87	2.91	0.46	2.3	0.07	0.03	0.17	7.66	0.89	0.34	1.61	0.07	0.55
261	18	QTM1	PATC H	4	0.45	16.12	0.47	0.26	3.18	0.08	0.03	0.18	8.53	0.22	0.19	2.06	0.09	0.53
261	19	QTM1	PATC H	4	0.51	15.37	0.95	0.29	3.14	0.07	0.03	0.2	7.82	0.41	0.22	1.9	0.08	0.51
261	20	QTM1	PATC H	4	0.67	13.61	1.43	0.31	3.03	0.04	0.05	0.3	6.43	0.57	0.26	1.79	0.05	0.47
261	26	QTM1	PATC H	4	0.4	11.22	3.2	0.56	1.93	0.03	0.04	0.18	5.37	1.44	0.45	1.35	0.04	0.48
261	27	QTM1	PATC H	4	0.42	15.17	1.51	0.34	2.48	0.08	0.03	0.17	8.46	0.44	0.26	1.62	0.09	0.56
261	28	QTM1	PATC H	4	0.39	15.59	0.69	0.35	3.03	0.07	0.03	0.16	7.92	0.3	0.25	1.94	0.08	0.51
261	29	QTM1	PATC H	4	0.7	14.44	1.31	0.29	3.31	0.04	0.05	0.3	6.83	0.53	0.22	2.01	0.04	0.47
261	128	QTM1	PATC H	1	0.1	4.02	0.24	0.17	0.56	0.02	0.02	0.04	1.5	0.16	0.13	0.38	0.02	0.37
261	130	QTM1	PATC H	2	0.21	7.03	0.9	0.47	1.64	0.02	0.03	0.1	3.04	0.58	0.35	1.03	0.02	0.43
261	131	QTM1	PATC H	2	0.2	8.53	0.27	0.23	1.77	0.03	0.02	0.07	4.56	0.14	0.18	1.18	0.03	0.53
261	132	QTM1	PATC H	2	0.23	9.42	0.22	0.2	1.35	0.03	0.02	0.06	4.62	0.15	0.15	0.93	0.03	0.49
261	133	QTM1	PATC H	2	0.17	8.26	0.75	0.32	0.94	0.03	0.02	0.05	3.16	0.51	0.25	0.55	0.03	0.38
261	138	QTM1	PATC H	2	0.19	8.21	0.43	0.3	1.84	0.03	0.02	0.08	4.29	0.24	0.23	1.2	0.03	0.52
261	139	QTM1	PATC H	2	0.21	8.69	0.21	0.2	1.72	0.03	0.02	0.07	4.65	0.1	0.16	1.15	0.03	0.54
261	140	QTM1	PATC H	2	0.2	9.12	0.5	0.29	1.11	0.03	0.02	0.05	3.98	0.34	0.23	0.71	0.03	0.44
261	144	QTM1	PATC H	4	0.38	13.48	2.71	0.39	3.49	0.09	0.03	0.19	5.6	1.27	0.29	2.23	0.09	0.42
261	145	QTM1	PATC H	4	0.3	14.63	1.58	0.3	3.11	0.09	0.02	0.12	7.04	0.46	0.23	2.16	0.09	0.48
261	146	QTM1	PATC H	4	0.43	15.19	0.65	0.28	3.23	0.09	0.03	0.15	7.6	0.29	0.23	2.4	0.1	0.50
261	147	QTM1	PATC H	4	0.47	14.19	0.81	0.2	2.13	0.07	0.03	0.17	7.65	0.41	0.13	1.58	0.08	0.54
261	148	QTM1	PATC H	4	0.32	11.82	1.43	0.76	1.73	0.07	0.03	0.15	5.96	0.66	0.61	1.1	0.08	0.50
261	154	QTM1	PATC H	4	0.36	13.55	2.56	0.37	3.38	0.08	0.03	0.18	5.66	1.16	0.28	2.22	0.08	0.42

Table 4. PD of QTM#1 – patch antenna (28GHz)

261		155	QTM1	PATC H	4	0.33	15.24	0.95	0.24	3.16	0.1	0.02	0.12	7.74	0.27	0.19	2.26	0.1	0.51
261		156	QTM1	PATC H	4	0.51	14.97	0.44	0.27	2.78	0.06	0.03	0.16	7.65	0.21	0.23	2.06	0.07	0.51
261		157	QTM1	PATC H	4	0.4	13.25	1.03	0.42	1.78	0.08	0.03	0.18	7.01	0.49	0.36	1.28	0.09	0.53
261	128	0	QTM1	PATC H	1	0.35	7.71	0.42	0.51	1.05	0.06	0.05	0.15	3	0.22	0.39	0.68	0.06	0.39
261	130	2	QTM1	PATC H	2	0.62	13.21	1.66	1.59	3.01	0.1	0.05	0.22	7.03	0.93	1.19	1.83	0.11	0.53
261	131	3	QTM1	PATC H	2	0.56	16.5	0.98	1.01	3.28	0.07	0.03	0.23	9.44	0.44	0.77	2.12	0.07	0.57
261	132	4	QTM1	PATC H	2	1.01	19.82	0.34	0.4	3.15	0.09	0.05	0.38	9.5	0.21	0.33	2.1	0.1	0.48
261	133	5	QTM1	PATC H	2	0.85	19.66	0.94	0.57	2.94	0.08	0.04	0.33	7.74	0.6	0.44	1.92	0.09	0.39
261	138	10	QTM1	PATC H	2	0.52	15.24	1.25	1.28	3.28	0.08	0.03	0.21	8.75	0.58	0.97	2.11	0.08	0.57
261	139	11	QTM1	PATC H	2	0.69	17.29	0.79	0.83	3.27	0.07	0.04	0.26	9.68	0.34	0.64	2.09	0.08	0.56
261	140	12	QTM1	PATC H	2	0.97	20.19	0.69	0.54	3.22	0.09	0.05	0.37	8.68	0.44	0.42	2.14	0.1	0.43
261	144	16	QTM1	PATC H	4	1.15	26.16	6	1.63	5.82	0.14	0.04	0.46	11.2	2.7	1.26	3.5	0.15	0.43
261	145	17	QTM1	PATC H	4	1.32	30.7	5.83	1.24	6.34	0.19	0.04	0.45	16.56	1.87	0.97	4.5	0.21	0.54
261	146	18	QTM1	PATC H	4	1.51	32.7	1.21	0.9	6.85	0.2	0.05	0.47	17.27	0.54	0.72	5.26	0.22	0.53
261	147	19	QTM1	PATC H	4	1.58	31.32	3.22	0.79	6.16	0.14	0.05	0.53	16.41	1.39	0.54	4.61	0.15	0.52
261	148	20	QTM1	PATC H	4	1.6	27.56	4.86	1.22	5.91	0.17	0.06	0.59	13.91	2.08	0.99	3.64	0.19	0.50
261	154	26	QTM1	PATC H	4	1.28	28.51	6.69	1.39	6.35	0.14	0.04	0.44	13.49	2.81	1.11	3.95	0.15	0.47
261	155	27	QTM1	PATC H	4	1.34	31.86	3.19	0.87	6.2	0.22	0.04	0.44	17.75	1.09	0.67	4.76	0.25	0.56
261	156	28	QTM1	PATC H	4	1.57	31.8	1.78	1.07	6.32	0.18	0.05	0.46	16.09	0.8	0.86	4.8	0.2	0.51
261	157	29	QTM1	PATC H	4	1.77	28.79	4.13	0.77	5.75	0.19	0.06	0.59	14.64	1.76	0.62	3.8	0.2	0.51

QTM#1 High Ch

n261 high ch.(28.35 GHz) /					4cm2 PD(W/m2) at 2 mm evaluation surfaces @6dBm						Ratio	4cm2 PD(W/m2) at 10 mm evaluation surfaces @6dBm						Ratio	
					relative phase worst PD for MIMO						Front 2mm/worst surface 2 mm	relative phase worst PD for MIMO						worst surface 10 mm/worst surface 2mm	
Band	Beam_ID		Ant module	Ant Type	Nu m. of Fe ed	front	back	left	right	top		bottom	front	back	left	right	top		bottom
261	0		QTM1	PATC H	1	0.12	2.88	0.18	0.17	0.38	0.02	0.04	0.06	1.22	0.11	0.13	0.24	0.02	0.42
261	2		QTM1	PATC H	2	0.16	5.44	0.67	0.46	0.68	0.03	0.03	0.08	2.7	0.35	0.34	0.4	0.04	0.50
261	3		QTM1	PATC H	2	0.19	6.3	0.5	0.35	0.75	0.03	0.03	0.08	3.55	0.25	0.26	0.43	0.03	0.56
261	4		QTM1	PATC H	2	0.38	7.7	0.11	0.11	1.11	0.04	0.05	0.17	4.02	0.08	0.08	0.64	0.04	0.52
261	5		QTM1	PATC H	2	0.4	7.77	0.23	0.09	1.36	0.03	0.05	0.19	3.77	0.13	0.06	0.85	0.04	0.49
261	10		QTM1	PATC H	2	0.16	5.71	0.62	0.43	0.72	0.03	0.03	0.08	3.06	0.32	0.32	0.43	0.03	0.54
261	11		QTM1	PATC H	2	0.25	6.72	0.39	0.28	0.77	0.03	0.04	0.1	3.8	0.19	0.21	0.41	0.04	0.57
261	12		QTM1	PATC H	2	0.4	7.77	0.23	0.09	1.36	0.03	0.05	0.19	3.77	0.13	0.06	0.85	0.04	0.49
261	16		QTM1	PATC H	2	0.34	8.25	2.08	0.71	1.21	0.04	0.04	0.15	3.11	1.01	0.56	0.69	0.04	0.38
261	17		QTM1	PATC H	4	0.35	12.94	2.76	0.49	2.12	0.06	0.03	0.12	7.04	0.9	0.38	1.45	0.07	0.54
261	18		QTM1	PATC H	4	0.39	15.16	0.54	0.25	2.94	0.08	0.03	0.17	7.97	0.25	0.19	1.88	0.08	0.53
261	19		QTM1	PATC H	4	0.54	14.97	0.78	0.31	3.01	0.07	0.04	0.23	7.75	0.44	0.25	1.79	0.07	0.52
261	20		QTM1	PATC H	4	0.64	13.26	1.26	0.33	2.8	0.05	0.05	0.27	6.31	0.52	0.24	1.67	0.05	0.48
261	26		QTM1	PATC H	4	0.33	10.43	3.02	0.53	1.58	0.03	0.03	0.12	5.06	1.35	0.43	1.08	0.04	0.49
261	27		QTM1	PATC H	4	0.32	14.26	1.39	0.41	2.39	0.08	0.02	0.16	7.83	0.42	0.32	1.54	0.09	0.55
261	28		QTM1	PATC H	4	0.37	14.76	0.55	0.37	2.72	0.07	0.03	0.17	7.56	0.26	0.28	1.73	0.08	0.51
261	29		QTM1	PATC H	4	0.64	14.24	1.1	0.33	3.08	0.04	0.04	0.26	6.83	0.51	0.24	1.84	0.05	0.48
261	128		QTM1	PATC H	1	0.07	3.92	0.23	0.17	0.49	0.02	0.02	0.03	1.48	0.16	0.13	0.32	0.03	0.38
261	130		QTM1	PATC H	2	0.23	6.91	0.81	0.44	1.55	0.02	0.03	0.12	2.98	0.55	0.33	0.96	0.03	0.43
261	131		QTM1	PATC H	2	0.18	8.27	0.24	0.23	1.69	0.03	0.02	0.07	4.42	0.12	0.18	1.12	0.04	0.53
261	132		QTM1	PATC H	2	0.17	9.07	0.18	0.2	1.25	0.03	0.02	0.05	4.43	0.11	0.15	0.86	0.03	0.49
261	133		QTM1	PATC H	2	0.17	7.84	0.69	0.34	0.93	0.03	0.02	0.06	2.94	0.45	0.28	0.56	0.03	0.38
261	138		QTM1	PATC H	2	0.19	7.97	0.36	0.3	1.76	0.03	0.02	0.08	4.17	0.22	0.23	1.14	0.03	0.52
261	139		QTM1	PATC H	2	0.18	8.43	0.2	0.2	1.63	0.03	0.02	0.06	4.5	0.09	0.16	1.09	0.04	0.53
261	140		QTM1	PATC H	2	0.14	8.69	0.45	0.3	1.07	0.03	0.02	0.04	3.76	0.29	0.24	0.69	0.03	0.43
261	144		QTM1	PATC H	4	0.42	12.93	2.55	0.37	3.24	0.08	0.03	0.2	5.6	1.13	0.26	2.13	0.09	0.43
261	145		QTM1	PATC H	4	0.31	13.84	1.59	0.3	3.01	0.09	0.02	0.14	6.54	0.48	0.23	2	0.09	0.47
261	146		QTM1	PATC H	4	0.43	14.71	0.7	0.24	3.1	0.08	0.03	0.14	7.29	0.33	0.2	2.24	0.09	0.50
261	147		QTM1	PATC H	4	0.41	13.92	0.74	0.23	2.01	0.08	0.03	0.14	7.33	0.36	0.15	1.46	0.08	0.53
261	148		QTM1	PATC H	4	0.3	11.07	1.49	0.72	1.53	0.07	0.03	0.13	5.6	0.67	0.55	0.97	0.08	0.51
261	154		QTM1	PATC H	4	0.39	12.99	2.41	0.36	3.13	0.08	0.03	0.19	5.63	1.03	0.26	2.11	0.08	0.43

261		155	QTM1	PATC H	4	0.33	14.58	0.87	0.21	3.04	0.09	0.02	0.12	7.25	0.29	0.16	2.08	0.1	0.50
261		156	QTM1	PATC H	4	0.48	14.7	0.35	0.3	2.6	0.06	0.03	0.15	7.34	0.19	0.26	1.91	0.07	0.50
261		157	QTM1	PATC H	4	0.32	12.64	1.1	0.34	1.63	0.08	0.03	0.13	6.63	0.5	0.29	1.14	0.09	0.52
261	128	0	QTM1	PATC H	1	0.3	7.19	0.41	0.59	0.96	0.07	0.04	0.12	3.25	0.24	0.45	0.61	0.07	0.45
261	130	2	QTM1	PATC H	2	0.64	12.94	1.67	1.59	2.96	0.09	0.05	0.24	6.24	0.97	1.2	1.89	0.1	0.48
261	131	3	QTM1	PATC H	2	0.61	16.46	1.07	1.06	3.31	0.07	0.04	0.23	8.98	0.49	0.81	2.16	0.08	0.55
261	132	4	QTM1	PATC H	2	0.95	18.81	0.32	0.38	3.17	0.08	0.05	0.36	8.89	0.18	0.32	2.09	0.09	0.47
261	133	5	QTM1	PATC H	2	0.72	18.69	0.88	0.54	3.01	0.07	0.04	0.29	7.37	0.54	0.4	1.87	0.08	0.39
261	138	10	QTM1	PATC H	2	0.49	15.38	1.37	1.33	3.29	0.08	0.03	0.23	8.32	0.65	1	2.18	0.09	0.54
261	139	11	QTM1	PATC H	2	0.73	17.02	0.86	0.88	3.3	0.08	0.04	0.28	9.18	0.38	0.67	2.12	0.09	0.54
261	140	12	QTM1	PATC H	2	0.85	19.15	0.72	0.51	3.23	0.08	0.04	0.32	8.27	0.38	0.38	2.09	0.09	0.43
261	144	16	QTM1	PATC H	4	1.17	25.25	6.01	1.68	5.49	0.15	0.05	0.42	11.11	2.79	1.29	3.17	0.16	0.44
261	145	17	QTM1	PATC H	4	1.19	29.72	5.78	1.34	5.75	0.19	0.04	0.39	15.78	2.01	1.04	4.15	0.21	0.53
261	146	18	QTM1	PATC H	4	1.41	31.85	1.3	0.84	6.44	0.21	0.04	0.47	16.35	0.58	0.66	4.9	0.23	0.51
261	147	19	QTM1	PATC H	4	1.47	31.22	2.81	0.91	6.08	0.14	0.05	0.5	16.1	1.46	0.66	4.54	0.15	0.52
261	148	20	QTM1	PATC H	4	1.38	25.92	4.79	1.15	5.08	0.13	0.05	0.49	13.14	2.22	0.96	3.16	0.14	0.51
261	154	26	QTM1	PATC H	4	1.22	27.02	6.83	1.31	5.48	0.15	0.05	0.42	12.98	3.01	1.04	3.49	0.16	0.48
261	155	27	QTM1	PATC H	4	1.19	31.16	3.09	1.02	5.85	0.22	0.04	0.38	16.96	1.16	0.78	4.42	0.24	0.54
261	156	28	QTM1	PATC H	4	1.48	30.94	1.52	1.2	6.17	0.19	0.05	0.44	15.55	0.79	0.98	4.7	0.21	0.50
261	157	29	QTM1	PATC H	4	1.52	27.89	3.85	0.65	5.11	0.14	0.05	0.49	14.02	1.87	0.56	3.46	0.15	0.50

Table 5. PD of QTM#1 – patch antenna (39GHz)

QTM#1 Low Ch.

n260 low ch.(37 GHz) /					4cm2 PD(W/m2) at 2 mm evaluation surfaces @6dBm						Ratio	4cm2 PD(W/m2) at 10 mm evaluation surfaces @6dBm						Ratio
Band	Beam_ID	Ant module	Ant Type	Nu m. of Fe ed	relative phase worst PD for MIMO						Front 2mm/worst surface 2 mm	relative phase worst PD for MIMO						worst surface 10 mm/worst surface 2mm
					front	back	left	right	top	bottom		front	back	left	right	top	bottom	
260	0	QTM1	PATC H	1	0.06	3.04	0.22	0.13	0.32	0.01	0.02	0.03	1.38	0.15	0.1	0.18	0.01	0.45
260	2	QTM1	PATC H	1	0.13	3.86	0.41	0.1	0.51	0.01	0.03	0.05	1.45	0.24	0.08	0.26	0.01	0.38
260	4	QTM1	PATC H	2	0.18	6.67	0.59	0.25	0.97	0.02	0.03	0.07	2.68	0.35	0.21	0.52	0.02	0.40
260	5	QTM1	PATC H	2	0.17	5.84	1.2	0.24	0.74	0.03	0.03	0.09	3.26	0.45	0.19	0.5	0.04	0.56
260	6	QTM1	PATC H	2	0.17	6.55	0.85	0.24	0.8	0.03	0.03	0.08	2.64	0.51	0.18	0.5	0.03	0.40
260	7	QTM1	PATC H	2	0.13	7.15	1.42	0.32	0.61	0.03	0.02	0.06	2.41	0.63	0.24	0.3	0.03	0.34
260	12	QTM1	PATC H	2	0.13	5.92	0.39	0.35	0.92	0.02	0.02	0.05	2.76	0.2	0.27	0.47	0.02	0.47
260	13	QTM1	PATC H	2	0.23	6.16	1.46	0.14	0.78	0.03	0.04	0.11	3.42	0.77	0.12	0.48	0.04	0.56
260	14	QTM1	PATC H	2	0.22	7.3	0.92	0.15	0.81	0.02	0.03	0.09	2.46	0.6	0.09	0.51	0.03	0.34
260	18	QTM1	PATC H	4	0.42	12.46	2.75	0.67	1.97	0.04	0.03	0.16	5.21	1.43	0.45	1.14	0.04	0.42
260	19	QTM1	PATC H	4	0.3	9.87	1.67	0.62	1.51	0.05	0.03	0.14	5.15	0.62	0.43	0.9	0.05	0.52
260	20	QTM1	PATC H	4	0.23	10.26	2.13	0.8	1.57	0.07	0.02	0.11	5.89	1.17	0.59	0.85	0.07	0.57
260	21	QTM1	PATC H	4	0.51	11.55	2.19	0.25	1.62	0.07	0.04	0.23	6.23	1.25	0.21	0.8	0.08	0.54
260	22	QTM1	PATC H	4	0.45	13.06	3.13	0.66	1.87	0.05	0.03	0.18	5.39	1.69	0.46	1.07	0.05	0.41
260	28	QTM1	PATC H	4	0.29	11.58	2.52	0.63	1.73	0.03	0.03	0.13	5.24	1.22	0.44	1.06	0.03	0.45
260	29	QTM1	PATC H	4	0.22	9.14	1.08	0.72	1.57	0.1	0.02	0.12	5.07	0.54	0.56	0.94	0.11	0.55
260	30	QTM1	PATC H	4	0.43	10.4	2.65	0.24	1.77	0.05	0.04	0.22	5.96	1.23	0.2	0.93	0.05	0.57
260	31	QTM1	PATC H	4	0.49	13.1	2.63	0.39	1.59	0.05	0.04	0.22	5.56	1.57	0.29	0.92	0.05	0.42
260	128	QTM1	PATC H	1	0.05	3.28	0.21	0.14	0.57	0.02	0.02	0.02	1.72	0.14	0.09	0.32	0.02	0.52
260	130	QTM1	PATC H	1	0.1	3.44	0.43	0.12	0.42	0.01	0.03	0.05	1.57	0.26	0.09	0.21	0.01	0.46
260	132	QTM1	PATC H	2	0.12	6.95	0.69	0.24	0.93	0.03	0.02	0.06	2.77	0.44	0.15	0.48	0.03	0.40
260	133	QTM1	PATC H	2	0.1	5.51	0.44	0.24	1.09	0.02	0.02	0.06	3.3	0.31	0.19	0.65	0.02	0.60
260	134	QTM1	PATC H	2	0.19	6.23	0.79	0.12	0.98	0.02	0.03	0.08	3.1	0.48	0.1	0.58	0.02	0.50
260	135	QTM1	PATC H	2	0.13	7.02	0.73	0.24	0.9	0.03	0.02	0.06	2.74	0.46	0.14	0.47	0.04	0.39
260	140	QTM1	PATC H	2	0.27	7.68	1.11	0.18	0.62	0.02	0.04	0.13	2.68	0.66	0.14	0.33	0.02	0.35
260	141	QTM1	PATC H	2	0.16	5.82	0.7	0.17	1.03	0.02	0.03	0.07	3.25	0.45	0.14	0.63	0.02	0.56
260	142	QTM1	PATC H	2	0.2	6.85	0.79	0.16	0.9	0.03	0.03	0.09	2.82	0.48	0.09	0.46	0.03	0.41
260	146	QTM1	PATC H	4	0.26	11.73	2.08	0.61	1.61	0.03	0.02	0.12	5.07	1.16	0.42	0.72	0.03	0.43
260	147	QTM1	PATC H	4	0.38	9.9	1.04	0.45	1.51	0.03	0.04	0.17	4.67	0.49	0.35	0.75	0.04	0.47

260		148	QTM1	PATC H	4	0.34	10.25	1.52	0.47	1.83	0.05	0.03	0.18	5.28	0.75	0.33	1.2	0.05	0.52
260		149	QTM1	PATC H	4	0.68	11.01	2.05	0.16	1.93	0.04	0.06	0.29	5.29	1.06	0.12	1.39	0.04	0.48
260		150	QTM1	PATC H	4	0.39	10.87	1.51	0.45	1.51	0.07	0.04	0.21	4.65	0.58	0.35	0.88	0.07	0.43
260		156	QTM1	PATC H	4	0.38	11.11	2.05	0.54	1.23	0.06	0.03	0.23	4.69	0.96	0.39	0.64	0.06	0.42
260		157	QTM1	PATC H	4	0.32	9.87	1.03	0.51	1.97	0.05	0.03	0.16	4.7	0.49	0.41	1.15	0.06	0.48
260		158	QTM1	PATC H	4	0.47	10.25	1.77	0.29	1.61	0.05	0.05	0.23	5.64	0.95	0.23	1.09	0.05	0.55
260		159	QTM1	PATC H	4	0.34	12.23	2.55	0.24	1.69	0.04	0.03	0.15	5.55	1.65	0.16	0.92	0.04	0.45
260	128	0	QTM1	PATC H	1	0.12	6.87	0.48	0.35	1.16	0.03	0.02	0.06	3.45	0.32	0.25	0.7	0.03	0.50
260	130	2	QTM1	PATC H	1	0.31	7.49	1.18	0.29	1.14	0.03	0.04	0.12	3.5	0.76	0.23	0.66	0.03	0.47
260	132	4	QTM1	PATC H	2	0.4	14.43	1.72	0.71	2.5	0.06	0.03	0.16	6.84	1.03	0.5	1.35	0.07	0.47
260	133	5	QTM1	PATC H	2	0.34	10.75	1.77	0.71	1.69	0.07	0.03	0.16	5.71	0.89	0.55	0.88	0.08	0.53
260	134	6	QTM1	PATC H	2	0.53	13.23	2.18	0.45	2.11	0.05	0.04	0.2	6.19	1.33	0.36	1.46	0.06	0.47
260	135	7	QTM1	PATC H	2	0.39	11.61	2.33	0.72	1.52	0.07	0.03	0.19	5.15	1.07	0.47	0.82	0.08	0.44
260	140	12	QTM1	PATC H	2	0.49	13.54	1.94	0.72	1.77	0.06	0.04	0.25	6.05	1.26	0.59	0.9	0.06	0.45
260	141	13	QTM1	PATC H	2	0.56	10.91	2.35	0.43	1.79	0.08	0.05	0.23	6.01	1.45	0.34	0.97	0.08	0.55
260	142	14	QTM1	PATC H	2	0.57	14.8	2.47	0.34	2.18	0.06	0.04	0.23	6.3	1.51	0.21	1.43	0.06	0.43
260	146	18	QTM1	PATC H	4	0.79	27.93	6.59	2.1	4.11	0.1	0.03	0.32	11.49	3.96	1.42	2.18	0.11	0.41
260	147	19	QTM1	PATC H	4	0.77	20.95	3.97	1.39	3.33	0.11	0.04	0.39	10.96	1.5	1.06	1.8	0.12	0.52
260	148	20	QTM1	PATC H	4	0.68	22.73	5.5	1.53	4.41	0.15	0.03	0.4	11.51	2.81	1.16	2.64	0.17	0.51
260	149	21	QTM1	PATC H	4	2.09	26.35	5.92	0.47	4.14	0.12	0.08	0.9	12.67	3.12	0.42	2.45	0.13	0.48
260	150	22	QTM1	PATC H	4	0.97	27.35	6.02	1.03	3.82	0.12	0.04	0.41	11.92	2.83	0.77	2.11	0.14	0.44
260	156	28	QTM1	PATC H	4	1.01	25.4	6.12	1.34	3.52	0.1	0.04	0.54	10.9	2.72	0.93	2.06	0.12	0.43
260	157	29	QTM1	PATC H	4	0.75	20.56	2.84	1.67	4.13	0.18	0.04	0.34	10.61	1.29	1.29	2.52	0.2	0.52
260	158	30	QTM1	PATC H	4	1.54	23.79	6.93	0.56	4.58	0.11	0.06	0.77	12.77	3.43	0.44	2.35	0.12	0.54
260	159	31	QTM1	PATC H	4	1.14	28.04	6.31	1.06	3.95	0.13	0.04	0.44	11.78	4.16	0.75	2.25	0.15	0.42

QTM#1 Mid Ch

n260 Mid ch.(38.5 GHz) /					4cm2 PD(W/m2) at 2 mm evaluation surfaces @6dBm						Ratio	4cm2 PD(W/m2) at 10 mm evaluation surfaces @6dBm						Ratio
Band	Beam_ID	Ant module	Ant Type	Nu m. of Fe ed	relative phase worst PD for MIMO						Front 2mm/worst surface 2 mm	relative phase worst PD for MIMO						worst surface 10 mm/worst surface 2mm
					front	back	left	right	top	bottom		front	back	left	right	top	bottom	
260	0	QTM1	PATC H	1	0.05	3.44	0.18	0.15	0.37	0.01	0.01	0.02	1.61	0.12	0.1	0.21	0.01	0.47
260	2	QTM1	PATC H	1	0.08	4.02	0.43	0.13	0.5	0.01	0.02	0.04	1.69	0.27	0.1	0.24	0.01	0.42
260	4	QTM1	PATC H	2	0.15	7.2	0.64	0.3	0.96	0.02	0.02	0.06	3.02	0.39	0.21	0.5	0.02	0.42
260	5	QTM1	PATC H	2	0.2	6.46	1.12	0.21	0.72	0.03	0.03	0.08	3.5	0.4	0.19	0.4	0.03	0.54
260	6	QTM1	PATC H	2	0.16	7.01	0.77	0.27	0.87	0.03	0.02	0.08	3.22	0.51	0.22	0.52	0.03	0.46
260	7	QTM1	PATC H	2	0.15	8.05	1.56	0.3	0.67	0.03	0.02	0.06	2.95	0.69	0.23	0.43	0.04	0.37
260	12	QTM1	PATC H	2	0.12	6.56	0.42	0.4	0.9	0.02	0.02	0.06	3.11	0.27	0.3	0.44	0.02	0.47
260	13	QTM1	PATC H	2	0.28	6.42	1.3	0.12	0.84	0.03	0.04	0.12	3.73	0.7	0.1	0.45	0.03	0.58
260	14	QTM1	PATC H	2	0.17	7.72	0.92	0.13	0.83	0.03	0.02	0.07	2.94	0.62	0.11	0.48	0.03	0.38
260	18	QTM1	PATC H	4	0.27	12.75	2.91	0.41	1.94	0.06	0.02	0.11	5.95	1.49	0.26	1.13	0.07	0.47
260	19	QTM1	PATC H	4	0.22	11.82	1.68	0.81	1.73	0.05	0.02	0.12	5.98	0.69	0.58	1.05	0.05	0.51
260	20	QTM1	PATC H	4	0.24	10.81	2.2	0.82	1.6	0.04	0.02	0.14	6.47	1.1	0.67	0.76	0.05	0.60
260	21	QTM1	PATC H	4	0.44	12.58	2.07	0.34	1.64	0.06	0.03	0.19	6.99	1.43	0.27	0.79	0.07	0.56
260	22	QTM1	PATC H	4	0.25	13.14	3.4	0.39	1.83	0.07	0.02	0.1	5.76	1.5	0.26	1.04	0.08	0.44
260	28	QTM1	PATC H	4	0.25	12.41	2.54	0.6	1.66	0.04	0.02	0.12	5.93	1.27	0.38	1.02	0.04	0.48
260	29	QTM1	PATC H	4	0.23	11.54	1.12	0.71	2.09	0.08	0.02	0.14	6.2	0.56	0.58	1.11	0.09	0.54
260	30	QTM1	PATC H	4	0.34	10.95	2.03	0.35	1.96	0.04	0.03	0.15	6.79	0.97	0.27	1	0.05	0.62
260	31	QTM1	PATC H	4	0.31	13.85	3.04	0.3	1.3	0.05	0.02	0.15	6.39	1.84	0.21	0.67	0.05	0.46
260	128	QTM1	PATC H	1	0.06	3.71	0.17	0.13	0.66	0.02	0.02	0.03	1.89	0.11	0.1	0.46	0.02	0.51
260	130	QTM1	PATC H	1	0.13	3.89	0.44	0.12	0.5	0.01	0.03	0.06	1.79	0.26	0.1	0.28	0.01	0.46
260	132	QTM1	PATC H	2	0.1	7.69	0.9	0.28	1.11	0.05	0.01	0.04	2.95	0.47	0.23	0.57	0.05	0.38
260	133	QTM1	PATC H	2	0.16	6.72	0.42	0.33	1.34	0.02	0.02	0.08	3.74	0.27	0.25	0.98	0.02	0.56
260	134	QTM1	PATC H	2	0.28	7.08	0.78	0.15	1.21	0.04	0.04	0.13	3.5	0.47	0.1	0.91	0.05	0.49
260	135	QTM1	PATC H	2	0.12	7.72	0.93	0.25	1.06	0.05	0.02	0.05	2.91	0.5	0.2	0.55	0.05	0.38
260	140	QTM1	PATC H	2	0.4	8.04	1.42	0.27	0.69	0.02	0.05	0.17	2.92	0.79	0.21	0.39	0.02	0.36
260	141	QTM1	PATC H	2	0.26	6.84	0.69	0.19	1.3	0.03	0.04	0.12	3.65	0.43	0.14	1	0.03	0.53
260	142	QTM1	PATC H	2	0.25	7.57	0.88	0.12	1.05	0.06	0.03	0.1	3.07	0.51	0.09	0.67	0.07	0.41
260	146	QTM1	PATC H	4	0.41	12.82	3.05	0.68	1.7	0.06	0.03	0.17	4.84	1.92	0.5	0.85	0.06	0.38
260	147	QTM1	PATC H	4	0.71	11.39	1.21	0.29	1.72	0.04	0.06	0.27	5.79	0.42	0.23	0.88	0.04	0.51
260	148	QTM1	PATC H	4	0.56	11.28	1.62	0.57	2.07	0.06	0.05	0.32	6.02	0.82	0.4	1.48	0.07	0.53
260	149	QTM1	PATC H	4	0.47	12.48	1.96	0.17	2.48	0.08	0.04	0.2	6.42	1.13	0.11	1.85	0.09	0.51

260		150	QTM1	PATC H	4	0.57	12.19	1.94	0.45	1.85	0.05	0.05	0.22	6.22	0.64	0.37	0.98	0.06	0.51
260		156	QTM1	PATC H	4	0.53	12	2.78	0.89	1.34	0.05	0.04	0.23	5.51	1.11	0.7	0.77	0.06	0.46
260		157	QTM1	PATC H	4	0.56	11.04	1.54	0.5	2.1	0.06	0.05	0.28	5.82	0.68	0.35	1.47	0.06	0.53
260		158	QTM1	PATC H	4	0.56	11.72	1.45	0.38	1.91	0.05	0.05	0.32	6.19	0.76	0.28	1.4	0.05	0.53
260		159	QTM1	PATC H	4	0.58	12.97	2.75	0.22	2.21	0.06	0.04	0.23	5.1	1.76	0.17	1.32	0.07	0.39
260	128	0	QTM1	PATC H	1	0.15	7.68	0.56	0.34	1.44	0.04	0.02	0.07	3.61	0.33	0.25	0.99	0.04	0.47
260	130	2	QTM1	PATC H	1	0.27	8.25	1.06	0.28	1.34	0.03	0.03	0.12	3.67	0.63	0.24	0.69	0.03	0.44
260	132	4	QTM1	PATC H	2	0.32	15.74	2.17	0.7	2.79	0.08	0.02	0.11	7.48	1.15	0.5	1.39	0.08	0.48
260	133	5	QTM1	PATC H	2	0.54	12.8	1.63	0.65	2.23	0.07	0.04	0.23	6.74	0.77	0.55	1.37	0.08	0.53
260	134	6	QTM1	PATC H	2	0.59	14.44	1.9	0.51	2.79	0.07	0.04	0.27	7.46	1.31	0.39	2.14	0.08	0.52
260	135	7	QTM1	PATC H	2	0.29	12.97	2.58	0.87	1.94	0.11	0.02	0.13	5.9	1.23	0.63	1.13	0.11	0.45
260	140	12	QTM1	PATC H	2	0.57	14.69	2.12	0.83	2.03	0.05	0.04	0.25	6.34	1.21	0.65	1.1	0.05	0.43
260	141	13	QTM1	PATC H	2	0.85	12.8	2.05	0.38	2.15	0.08	0.07	0.34	7.09	1.28	0.33	1.35	0.08	0.55
260	142	14	QTM1	PATC H	2	0.55	15.94	2.53	0.33	2.35	0.1	0.03	0.24	7.55	1.63	0.23	1.6	0.11	0.47
260	146	18	QTM1	PATC H	4	0.75	28.94	7.39	1.63	4.08	0.12	0.03	0.37	12.23	4.12	1.14	2.02	0.13	0.42
260	147	19	QTM1	PATC H	4	1.25	24.32	4.01	1.39	4.04	0.1	0.05	0.46	12.75	1.27	1.08	2.34	0.11	0.52
260	148	20	QTM1	PATC H	4	1.02	24.82	5.91	1.38	5.02	0.13	0.04	0.51	13.44	3	1.09	3.39	0.15	0.54
260	149	21	QTM1	PATC H	4	1.32	27.29	5.47	0.78	4.85	0.18	0.05	0.56	14.35	3.13	0.56	3.19	0.19	0.53
260	150	22	QTM1	PATC H	4	1	27.39	6.44	0.91	4.5	0.16	0.04	0.4	13.36	2.88	0.68	2.47	0.17	0.49
260	156	28	QTM1	PATC H	4	0.8	26.26	6.56	1.82	3.75	0.12	0.03	0.39	12.41	2.94	1.35	2.01	0.12	0.47
260	157	29	QTM1	PATC H	4	1.2	24.68	3.26	1.26	5.33	0.19	0.05	0.57	13.05	1.61	0.95	3.32	0.22	0.53
260	158	30	QTM1	PATC H	4	1.38	24	4.93	0.85	4.76	0.11	0.06	0.75	13.84	2.54	0.64	3.06	0.12	0.58
260	159	31	QTM1	PATC H	4	0.92	29.26	6.46	0.84	4.17	0.16	0.03	0.42	11.72	3.72	0.66	2.35	0.17	0.40

QTM#1 Hig Ch

n260 High ch.(40 GHz) /					4cm2 PD(W/m2) at 2 mm evaluation surfaces @6dBm						Ratio	4cm2 PD(W/m2) at 10 mm evaluation surfaces @6dBm						Ratio	
Band	Beam_ID	Ant	Ant	Nu m. of	relative phase worst PD for MIMO						Front 2mm/worst surface 2 mm	relative phase worst PD for MIMO						worst surface 10 mm/worst surface 2mm	
					module	Type	Feed	front	back	left		right	top	bottom	front	back	left		right
260	0		QTM1	PATC H	1	0.06	3.26	0.14	0.18	0.34	0.01	0.02	0.03	1.48	0.11	0.14	0.19	0.01	0.45
260	2		QTM1	PATC H	1	0.08	4.23	0.4	0.11	0.41	0.01	0.02	0.03	1.78	0.23	0.09	0.28	0.01	0.42
260	4		QTM1	PATC H	2	0.14	7.67	0.74	0.21	0.77	0.02	0.02	0.06	3.22	0.34	0.17	0.4	0.02	0.42
260	5		QTM1	PATC H	2	0.16	6.61	1.1	0.21	0.91	0.02	0.02	0.09	3.6	0.41	0.18	0.57	0.02	0.54
260	6		QTM1	PATC H	2	0.14	6.88	0.73	0.32	0.68	0.02	0.02	0.06	3.08	0.42	0.24	0.51	0.02	0.45
260	7		QTM1	PATC H	2	0.14	8.46	1.93	0.25	0.71	0.02	0.02	0.06	3.43	0.91	0.21	0.42	0.02	0.41
260	12		QTM1	PATC H	2	0.12	6.82	0.46	0.37	0.76	0.03	0.02	0.06	3.15	0.28	0.28	0.47	0.03	0.46
260	13		QTM1	PATC H	2	0.22	5.96	1.02	0.12	1.02	0.02	0.04	0.1	3.55	0.58	0.11	0.49	0.02	0.60
260	14		QTM1	PATC H	2	0.14	8.08	0.85	0.17	0.74	0.02	0.02	0.06	3.08	0.55	0.11	0.42	0.03	0.38
260	18		QTM1	PATC H	4	0.2	14	2.82	0.41	1.57	0.04	0.01	0.07	6.61	1.81	0.32	0.79	0.04	0.47
260	19		QTM1	PATC H	4	0.15	13.84	1.68	0.42	1.88	0.06	0.01	0.09	7.24	0.69	0.36	1.21	0.07	0.52
260	20		QTM1	PATC H	4	0.34	9.49	1.87	0.95	1.57	0.04	0.04	0.18	4.97	0.84	0.76	1.03	0.04	0.52
260	21		QTM1	PATC H	4	0.27	13	1.7	0.34	2.06	0.04	0.02	0.15	7.51	1.14	0.28	0.98	0.04	0.58
260	22		QTM1	PATC H	4	0.22	14.31	3.25	0.42	1.49	0.04	0.02	0.08	6.2	1.81	0.31	0.78	0.04	0.43
260	28		QTM1	PATC H	4	0.18	14.25	2.69	0.53	1.83	0.05	0.01	0.07	6.81	1.49	0.42	0.91	0.05	0.48
260	29		QTM1	PATC H	4	0.25	12.02	1.36	0.6	1.95	0.06	0.02	0.15	6.37	0.74	0.55	1.22	0.07	0.53
260	30		QTM1	PATC H	4	0.26	11.22	1.65	0.52	1.51	0.04	0.02	0.13	6.6	0.86	0.39	0.87	0.04	0.59
260	31		QTM1	PATC H	4	0.27	13.8	3.19	0.29	1.63	0.04	0.02	0.15	6.42	2.03	0.24	0.79	0.04	0.47
260	128		QTM1	PATC H	1	0.05	3.6	0.16	0.14	0.57	0.01	0.01	0.03	1.76	0.09	0.12	0.39	0.01	0.49
260	130		QTM1	PATC H	1	0.18	3.92	0.42	0.13	0.54	0.01	0.05	0.09	1.82	0.24	0.11	0.36	0.01	0.46
260	132		QTM1	PATC H	2	0.12	7.97	0.79	0.17	1.14	0.02	0.02	0.06	3.33	0.44	0.13	0.51	0.03	0.42
260	133		QTM1	PATC H	2	0.28	6.16	0.44	0.44	1.38	0.02	0.05	0.14	3.29	0.24	0.37	1	0.02	0.53
260	134		QTM1	PATC H	2	0.35	7.17	0.62	0.3	1.24	0.02	0.05	0.15	3.43	0.36	0.21	0.88	0.02	0.48
260	135		QTM1	PATC H	2	0.13	8.08	0.82	0.16	1.11	0.02	0.02	0.06	3.32	0.46	0.11	0.47	0.03	0.41
260	140		QTM1	PATC H	2	0.36	8.17	1.38	0.17	0.72	0.02	0.04	0.16	3.33	0.54	0.16	0.4	0.02	0.41
260	141		QTM1	PATC H	2	0.36	6.61	0.57	0.34	1.3	0.02	0.05	0.16	3.34	0.31	0.27	0.96	0.02	0.51
260	142		QTM1	PATC H	2	0.25	8	0.85	0.19	1.03	0.02	0.03	0.11	3.33	0.48	0.14	0.69	0.03	0.42
260	146		QTM1	PATC H	4	0.29	13.19	3.15	0.35	1.62	0.03	0.02	0.15	5.27	1.81	0.27	1.06	0.03	0.40
260	147		QTM1	PATC H	4	0.57	11.48	1.37	0.36	1.59	0.03	0.05	0.27	5.79	0.66	0.31	0.94	0.04	0.50
260	148		QTM1	PATC H	4	0.71	10.37	1.68	0.76	1.89	0.04	0.07	0.33	4.54	0.77	0.65	1.41	0.05	0.44
260	149		QTM1	PATC H	4	0.28	13.11	1.19	0.23	2.2	0.06	0.02	0.11	6.69	0.75	0.18	1.76	0.06	0.51
260	150		QTM1	PATC H	4	0.47	12.41	1.82	0.25	2.19	0.03	0.04	0.22	6.88	0.62	0.24	0.89	0.04	0.55

260		156	QTM1	PATC H	4	0.42	12.11	2.74	0.61	1.67	0.03	0.03	0.22	6.4	0.92	0.57	0.92	0.04	0.53
260		157	QTM1	PATC H	4	0.75	10.37	1.73	0.68	1.97	0.05	0.07	0.36	4.51	0.89	0.58	1.42	0.06	0.43
260		158	QTM1	PATC H	4	0.55	11.16	1.44	0.65	1.83	0.04	0.05	0.24	5.32	0.77	0.56	1.34	0.04	0.48
260		159	QTM1	PATC H	4	0.42	13.56	2.8	0.25	2.06	0.05	0.03	0.19	5.45	1.74	0.16	1.39	0.05	0.40
260	128	0	QTM1	PATC H	1	0.15	7.4	0.47	0.52	1.14	0.03	0.02	0.07	3.29	0.34	0.43	0.72	0.03	0.44
260	130	2	QTM1	PATC H	1	0.29	8.64	0.96	0.3	1.43	0.03	0.03	0.15	3.87	0.58	0.25	1.03	0.03	0.45
260	132	4	QTM1	PATC H	2	0.4	16.99	1.99	0.51	2.53	0.06	0.02	0.16	7.41	1.01	0.38	1.35	0.07	0.44
260	133	5	QTM1	PATC H	2	0.55	11.8	1.88	0.66	2.08	0.05	0.05	0.28	6.29	0.75	0.57	1.35	0.06	0.53
260	134	6	QTM1	PATC H	2	0.6	14.89	1.65	0.86	2.63	0.05	0.04	0.27	7.26	1.03	0.66	2.02	0.05	0.49
260	135	7	QTM1	PATC H	2	0.29	14.14	2.85	0.51	2.42	0.06	0.02	0.18	7.17	1.48	0.43	1.08	0.06	0.51
260	140	12	QTM1	PATC H	2	0.52	15.17	1.91	0.64	2.02	0.04	0.03	0.25	6.79	1.08	0.53	1.28	0.05	0.45
260	141	13	QTM1	PATC H	2	0.7	12.16	1.87	0.59	2.29	0.04	0.06	0.3	6.46	1.05	0.49	1.34	0.05	0.53
260	142	14	QTM1	PATC H	2	0.4	16.87	2.38	0.41	2.31	0.06	0.02	0.2	7.35	1.52	0.32	1.45	0.06	0.44
260	146	18	QTM1	PATC H	4	0.56	29.56	7.32	1.18	3.89	0.1	0.02	0.28	13.8	4.19	0.86	2.04	0.11	0.47
260	147	19	QTM1	PATC H	4	0.86	27.79	4.07	1.2	4.47	0.12	0.03	0.43	14.13	1.5	1.04	2.8	0.13	0.51
260	148	20	QTM1	PATC H	4	1.32	22.47	4.87	1.87	4.46	0.08	0.06	0.59	10.18	2.27	1.51	3.53	0.09	0.45
260	149	21	QTM1	PATC H	4	0.79	27.32	4.23	0.84	4.57	0.11	0.03	0.38	16.15	2.71	0.67	2.88	0.12	0.59
260	150	22	QTM1	PATC H	4	0.83	28.2	6.3	0.79	5.05	0.1	0.03	0.39	14.29	3.53	0.58	2.41	0.11	0.51
260	156	28	QTM1	PATC H	4	0.64	28.48	6.83	1.38	4.72	0.13	0.02	0.37	14.48	3.16	1.25	2.14	0.15	0.51
260	157	29	QTM1	PATC H	4	1.35	24.7	4.65	1.8	4.67	0.18	0.05	0.61	12.18	2.43	1.58	3.34	0.2	0.49
260	158	30	QTM1	PATC H	4	0.94	24.32	3.76	1.76	3.96	0.09	0.04	0.42	13.17	1.97	1.35	2.79	0.1	0.54
260	159	31	QTM1	PATC H	4	0.7	28.68	7.06	0.65	4.88	0.1	0.02	0.33	12.08	4.37	0.45	2.47	0.11	0.42