# R562L5 Sub6_mmw Power Density Simulation Report

# 1. Electromagnetic simulation method for power density

## 1.1 EM simulation

### 1.1.1 EM simulation tool description

The 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. 21.1 (2021 R1) is used. ANSYS HFSS is one of several commercial tools for 3D fullwave electromagnetic simulation used for antenna and RF structure design of high frequency component. ANSYS Electromagnetics suite HFSS ver. 21.1 (2021 R1) 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. 21.1 (2021 R1) 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. 21.1 (2021 R1) is used. ANSYS Electromagnetics suite HFSS ver. 21.1 (2021 R1) 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 iterations in ANSYS Electromagnetics suite HFSS ver. 21.1 (2021 R1) 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. 21.1 (2021 R1), 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).

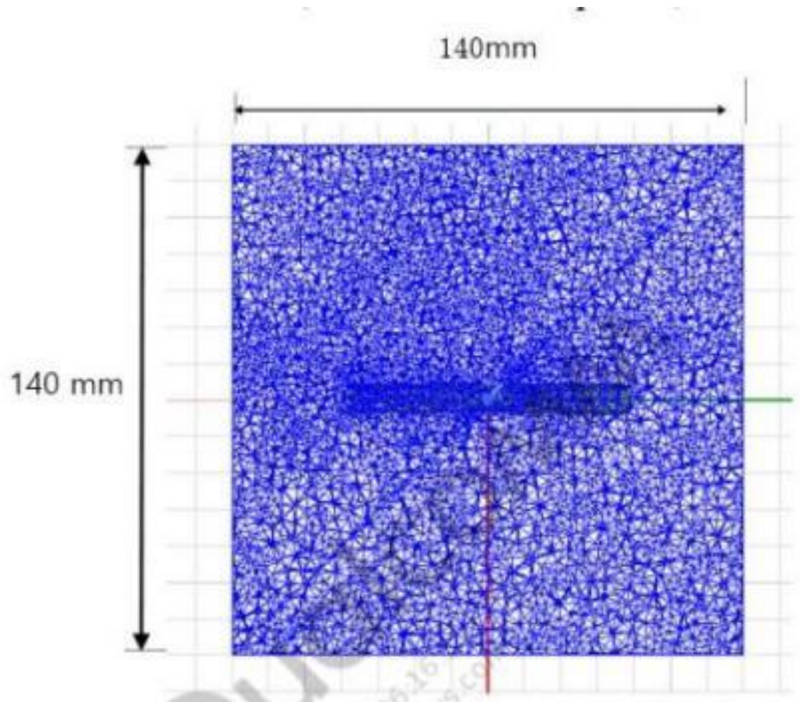


Figure 1-1: Example of HFSS mesh in a model of the device (Top view)

### 1.1.3 Time-averaged power density calculation

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

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

(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. 21.1 (2021 R1).

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

$$PD_{av}=\frac{1}{A}\int_A \langle\vec{S}\rangle . ds=\frac{1}{2A}\int_A \left|Re(\vec{E}\times\vec{H}*)\right| ds$$

## 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#. The position of QTM0#(module0) and QTM1#(module1) as the following Figure 1-2


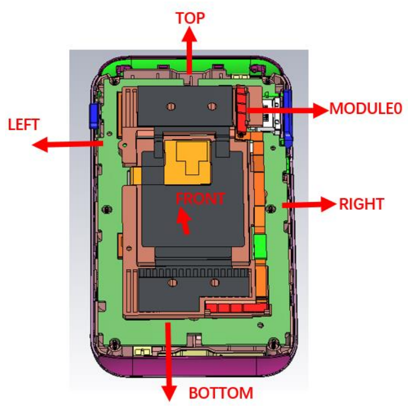


Figure 1-2: HFSS simulation model which is mounted one mmWave antenna modules

### 1.2.2 PD evaluation surfaces

Figure 1-3 shows the PD evaluation planes and truncation area of the simulation model to find worst case surfaces for evaluation. Table 1-1 shows the surfaces selected for PD evaluation planes for QTM#0.

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 1-1: PD evaluation surfaces**

| | Front | Back | Left From Front View | Right From Front View | Top | Bottom |
|---|---|---|---|---|---|---|
| | S1 | S2 | S3 | S4 | S5 | S6 |
| QTM#0 | √ | | √ | √ | √ | |

### 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 1x5 element array of dual-polarization patch antennas. The number of antenna ports of QTM#0 for source excitation is equal to 10. The port of each patch antenna is 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 1-3 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

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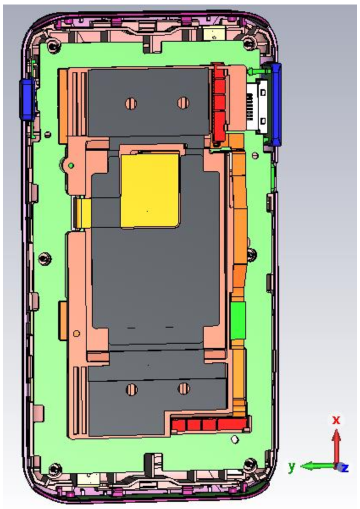



Figure 1-3: EUT simulation model

After finishing 3D full wave electromagnetic simulation of modeling structure, the magnitude and phase informationcan be loaded for each port by using "Edit Sources" function in ANSYS Electromagnetics suite (HFSS). Figure 4 shows an example of antenna port excitations.

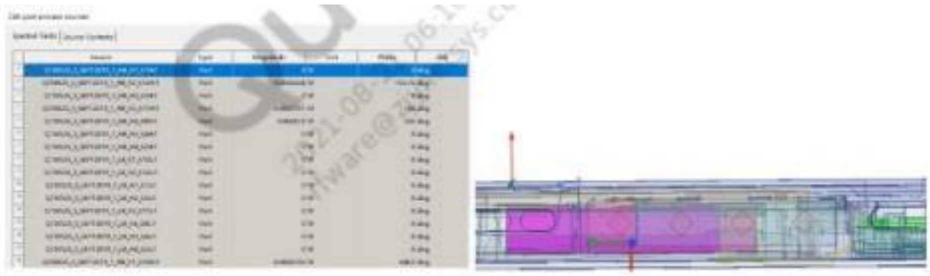


Figure 1-4: An example of port excitation (QTM#0)

Since ANSYS Electromagnetics suite (HFSS) uses FEM solver based on frequency domainanalysis 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. Codebook

The codebook supported by this EUT is shown in Table 2-1 below.

. N261 codebook

| Band | Beam_ID | Module | Ant_Group | Subarray | Ant_Type | Ant_Feed | Paired_With |
|---|---|---|---|---|---|---|---|
| 261 | 0 | 0 | 0 | 0 | PATCH | 9 | 128 |
| 261 | 1 | 0 | 0 | 0 | PATCH | 10 | 129 |
| 261 | 2 | 0 | 0 | 0 | PATCH | 11 | 130 |
| 261 | 3 | 0 | 0 | 0 | PATCH | 12 | 131 |
| 261 | 4 | 0 | 0 | 0 | PATCH | 13 | 132 |
| 261 | 5 | 0 | 0 | 0 | PATCH | 9;10 | 133 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 261 | 6 | 0 | 0 | 0 | PATCH | 9;10 | 134 |
| 261 | 7 | 0 | 0 | 0 | PATCH | 9;10 | 135 |
| 261 | 8 | 0 | 0 | 0 | PATCH | 11;12 | 136 |
| 261 | 9 | 0 | 0 | 0 | PATCH | 12;13 | 137 |
| 261 | 10 | 0 | 0 | 0 | PATCH | 12;13 | 138 |
| 261 | 11 | 0 | 0 | 0 | PATCH | 12;13 | 139 |
| 261 | 12 | 0 | 0 | 0 | PATCH | 9;10;11;12;13 | 140 |
| 261 | 13 | 0 | 0 | 0 | PATCH | 9;10;11;12;13 | 141 |
| 261 | 14 | 0 | 0 | 0 | PATCH | 9;10;11;12;13 | 142 |
| 261 | 15 | 0 | 0 | 0 | PATCH | 9;10;11;12;13 | 143 |
| 261 | 16 | 0 | 0 | 0 | PATCH | 9;10;11;12;13 | 144 |
| 261 | 17 | 0 | 0 | 0 | PATCH | 9;10;11;12;13 | 145 |
| 261 | 18 | 0 | 0 | 0 | PATCH | 9;10;11;12;13 | 146 |
| 261 | 19 | 0 | 0 | 0 | PATCH | 9;10;11;12;13 | 147 |
| 261 | 20 | 0 | 0 | 0 | PATCH | 9;10;11;12;13 | 148 |
| 261 | 128 | 0 | 1 | 1 | PATCH | 1 | 0 |
| 261 | 129 | 0 | 1 | 1 | PATCH | 2 | 1 |
| 261 | 130 | 0 | 1 | 1 | PATCH | 3 | 2 |
| 261 | 131 | 0 | 1 | 1 | PATCH | 4 | 3 |
| 261 | 132 | 0 | 1 | 1 | PATCH | 5 | 4 |
| 261 | 133 | 0 | 1 | 1 | PATCH | 2;3 | 5 |
| 261 | 134 | 0 | 1 | 1 | PATCH | 1;2 | 6 |
| 261 | 135 | 0 | 1 | 1 | PATCH | 1;2 | 7 |
| 261 | 136 | 0 | 1 | 1 | PATCH | 1;2 | 8 |
| 261 | 137 | 0 | 1 | 1 | PATCH | 4;5 | 9 |
| 261 | 138 | 0 | 1 | 1 | PATCH | 4;5 | 10 |
| 261 | 139 | 0 | 1 | 1 | PATCH | 3;4 | 11 |
| 261 | 140 | 0 | 1 | 1 | PATCH | 1;2;3;4;5 | 12 |
| 261 | 141 | 0 | 1 | 1 | PATCH | 1;2;3;4;5 | 13 |
| 261 | 142 | 0 | 1 | 1 | PATCH | 1;2;3;4;5 | 14 |
| 261 | 143 | 0 | 1 | 1 | PATCH | 1;2;3;4;5 | 15 |
| 261 | 144 | 0 | 1 | 1 | PATCH | 1;2;3;4;5 | 16 |
| 261 | 145 | 0 | 1 | 1 | PATCH | 1;2;3;4;5 | 17 |
| 261 | 146 | 0 | 1 | 1 | PATCH | 1;2;3;4;5 | 18 |
| 261 | 147 | 0 | 1 | 1 | PATCH | 1;2;3;4;5 | 19 |
| 261 | 148 | 0 | 1 | 1 | PATCH | 1;2;3;4;5 | 20 |

. N260 codebook

| Band | Beam_ID | Module | Ant_Group | Subarray | Ant_Type | Ant_Feed | Paired_With |
|---|---|---|---|---|---|---|---|
| 260 | 0 | 0 | 0 | 2 | PATCH | 13 | 128 |
| 260 | 1 | 0 | 0 | 2 | PATCH | 12 | 129 |
| 260 | 2 | 0 | 0 | 2 | PATCH | 11 | 130 |
| 260 | 3 | 0 | 0 | 2 | PATCH | 10 | 131 |
| 260 | 4 | 0 | 0 | 2 | PATCH | 9 | 132 |
| 260 | 5 | 0 | 0 | 2 | PATCH | 11;10 | 133 |
| 260 | 6 | 0 | 0 | 2 | PATCH | 13;12 | 134 |
| 260 | 7 | 0 | 0 | 2 | PATCH | 13;12 | 135 |
| 260 | 8 | 0 | 0 | 2 | PATCH | 13;12 | 136 |
| 260 | 9 | 0 | 0 | 2 | PATCH | 11;10 | 137 |
| 260 | 10 | 0 | 0 | 2 | PATCH | 11;10 | 138 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 260 | 11 | 0 | 0 | 2 | PATCH | 10;9 | 139 |
| 260 | 12 | 0 | 0 | 2 | PATCH | 13;12;11;10;9 | 140 |
| 260 | 13 | 0 | 0 | 2 | PATCH | 13;12;11;10;9 | 141 |
| 260 | 14 | 0 | 0 | 2 | PATCH | 13;12;11;10;9 | 142 |
| 260 | 15 | 0 | 0 | 2 | PATCH | 13;12;11;10;9 | 143 |
| 260 | 16 | 0 | 0 | 2 | PATCH | 13;12;11;10;9 | 144 |
| 260 | 17 | 0 | 0 | 2 | PATCH | 13;12;11;10;9 | 145 |
| 260 | 18 | 0 | 0 | 2 | PATCH | 13;12;11;10;9 | 146 |
| 260 | 19 | 0 | 0 | 2 | PATCH | 13;12;11;10;9 | 147 |
| 260 | 20 | 0 | 0 | 2 | PATCH | 13;12;11;10;9 | 148 |
| 260 | 128 | 0 | 1 | 3 | PATCH | 4 | 0 |
| 260 | 129 | 0 | 1 | 3 | PATCH | 5 | 1 |
| 260 | 130 | 0 | 1 | 3 | PATCH | 3 | 2 |
| 260 | 131 | 0 | 1 | 3 | PATCH | 2 | 3 |
| 260 | 132 | 0 | 1 | 3 | PATCH | 1 | 4 |
| 260 | 133 | 0 | 1 | 3 | PATCH | 2;1 | 5 |
| 260 | 134 | 0 | 1 | 3 | PATCH | 5;3 | 6 |
| 260 | 135 | 0 | 1 | 3 | PATCH | 5;3 | 7 |
| 260 | 136 | 0 | 1 | 3 | PATCH | 4;5 | 8 |
| 260 | 137 | 0 | 1 | 3 | PATCH | 3;2 | 9 |
| 260 | 138 | 0 | 1 | 3 | PATCH | 2;1 | 10 |
| 260 | 139 | 0 | 1 | 3 | PATCH | 2;1 | 11 |
| 260 | 140 | 0 | 1 | 3 | PATCH | 4;5;3;2;1 | 12 |
| 260 | 141 | 0 | 1 | 3 | PATCH | 4;5;3;2;1 | 13 |
| 260 | 142 | 0 | 1 | 3 | PATCH | 4;5;3;2;1 | 14 |
| 260 | 143 | 0 | 1 | 3 | PATCH | 4;5;3;2;1 | 15 |
| 260 | 144 | 0 | 1 | 3 | PATCH | 4;5;3;2;1 | 16 |
| 260 | 145 | 0 | 1 | 3 | PATCH | 4;5;3;2;1 | 17 |
| 260 | 146 | 0 | 1 | 3 | PATCH | 4;5;3;2;1 | 18 |
| 260 | 147 | 0 | 1 | 3 | PATCH | 4;5;3;2;1 | 19 |
| 260 | 148 | 0 | 1 | 3 | PATCH | 4;5;3;2;1 | 20 |

Table 2-1: EUT codebook

# 3. Simulation verification

The beams selected for simulation verification are highlighted in yellow in Table 2-1. Input power level used for comparison is listed in Table 3-1

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

**Table 3-1: Input power used in simulation validation**

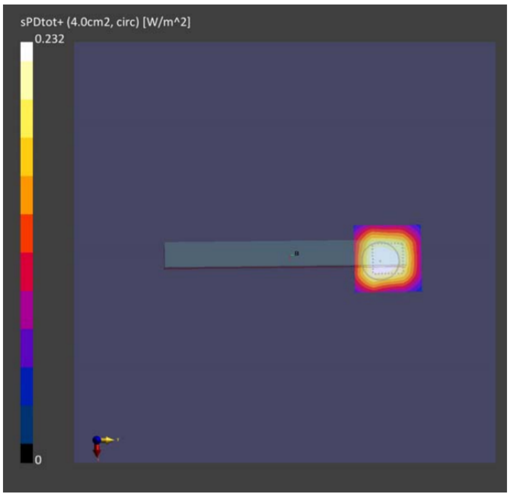
The simulation and measurement were performed at 2mm evaluation distance. The simulated and measured 4cm2 averaged PD results are shown in Table 3-2.

| Band | Ant Type | Module | Ant Group (Ant Polarization) | beam ID | Surface | Measured | Simulated(Middle) | Delta(Simulated-Measured) |
|---|---|---|---|---|---|---|---|---|
| n261 | Patch | QTM0 | AG0(V) | 14 | Frontface | 11.3 | 24.66 | 3.39 |
| | | | | | Rightface | 0.157 | 2.47 | 11.97 |
| | | | | | Topface | 0.232 | 0.16 | -1.61 |
| | | | AG1(H) | 148 | Frontface | 10.1 | 22.46 | 3.47 |
| | | | | | Rightface | 0.253 | 3.75 | 11.71 |
| | | | | | Leftface | 0.111 | 0.44 | 5.98 |
| n260 | Patch | QTM0 | AG0(V) | 19 | Frontface | 5.71 | 16.52 | 4.61 |
| | | | | | Rightface | 0.39 | 1.57 | 6.05 |
| | | | | | Topface | 0.082 | 0.53 | 8.10 |
| | | | AG1(H) | 142 | Frontface | 7.7 | 17.62 | 3.60 |
| | | | | | Rightface | 0.082 | 2.55 | 14.93 |
| | | | | | Topface | 0.014 | 0.25 | 12.52 |

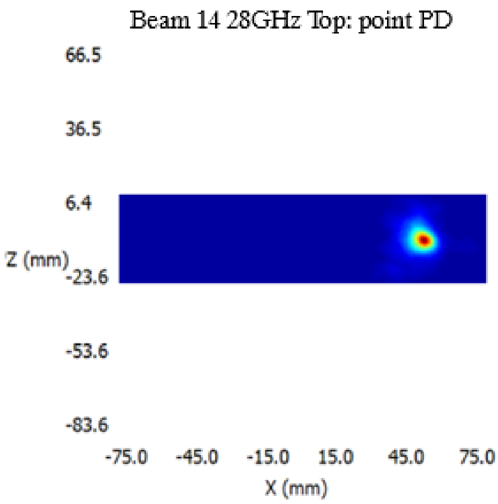
Table 3-2: Simulated and measured 4cm2 averaged PD comparison

Below Figures show Measured and simulated PD distributions for selected beams. As can be seen, the Simulated point PD distribution and Measured point PD distribution have good correlation on all surfaces evaluated.

. N261 QTM0: mid channel, Beam14, Top face, Point PD




(a) Measurement




(b) Simulation

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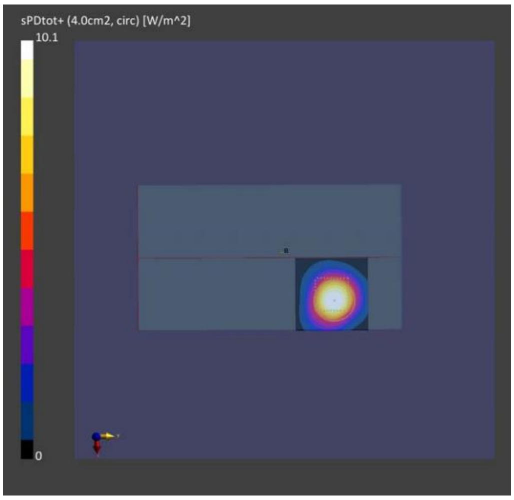
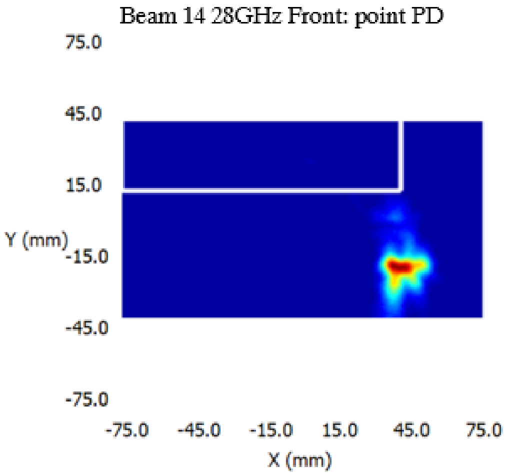
N261 QTM0: mid channel, Beam14, Front face, Point PD

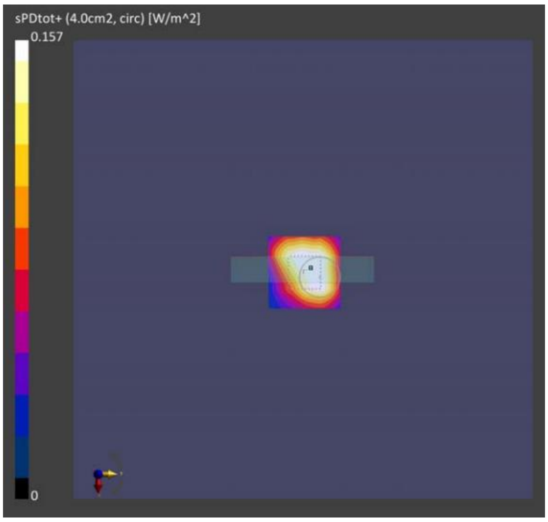



(a) Measurement

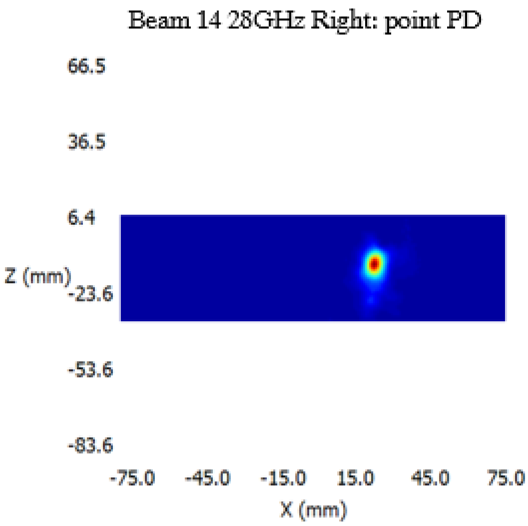



(b) Simulation

N261 QTM0: mid channel, Beam14, Right face, Point PD

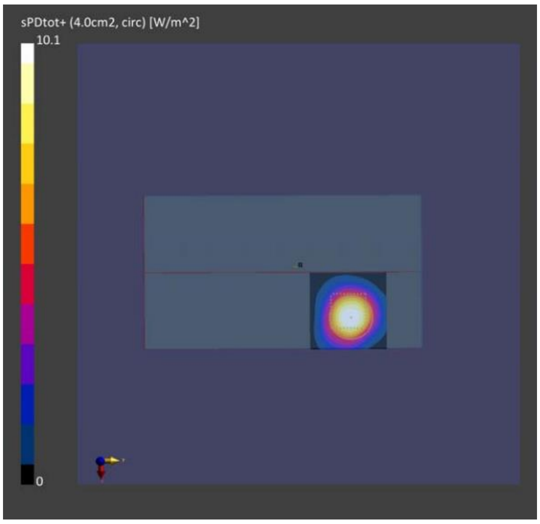


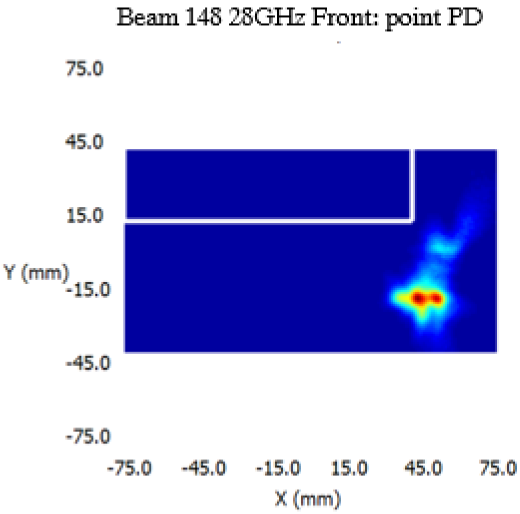

(a) Measurement




(b) Simulation

. N261 QTM0: Middle channel, Beam148, Front face, Point PD




(a) Measurement

(b) Simulation

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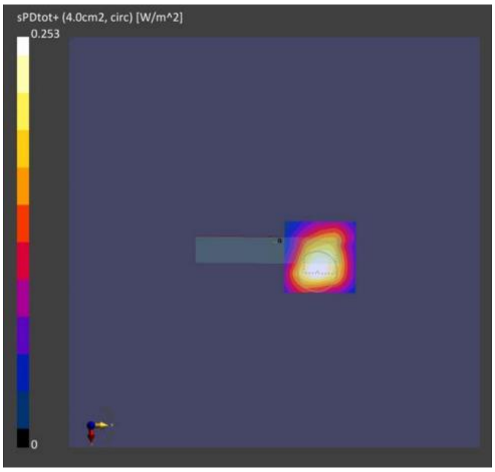
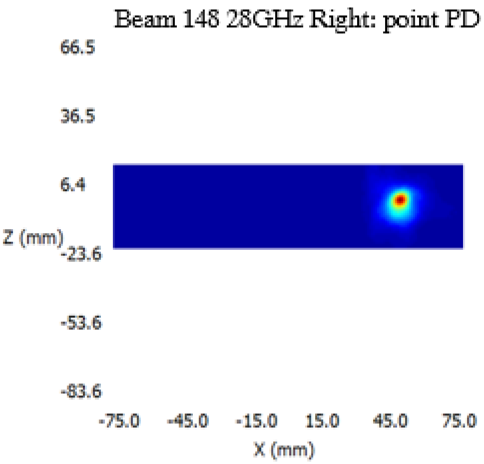
N261 QTM0: Middle channel, Beam148, Right face, Point PD

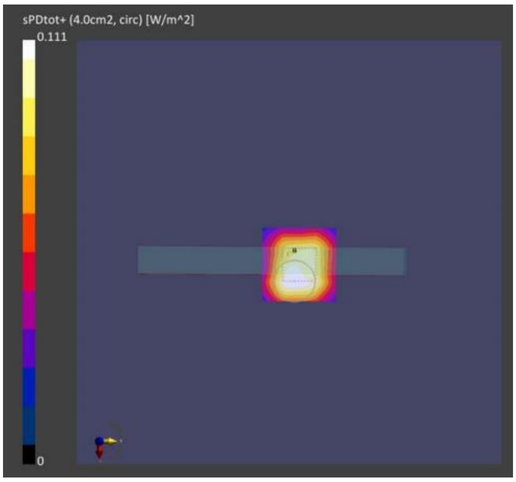


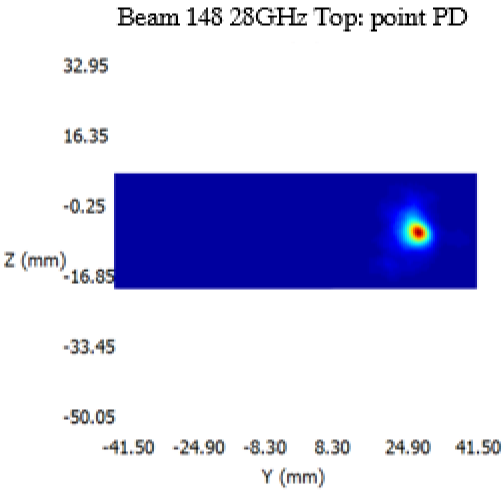

(a) Measurement

(b) Simulation

N261 QTM0: Middle channel, Beam148, Top face, Point PD

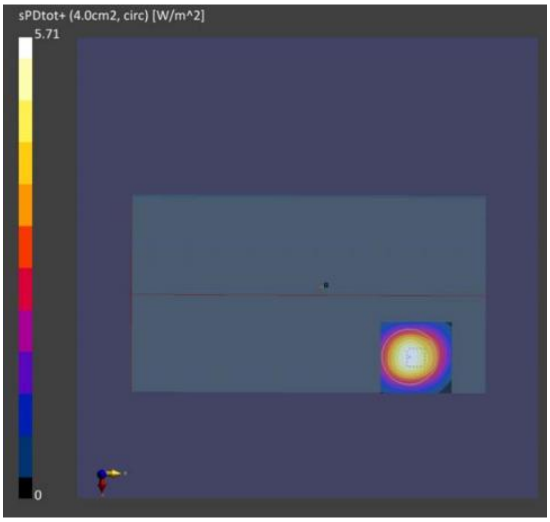



(a) Measurement

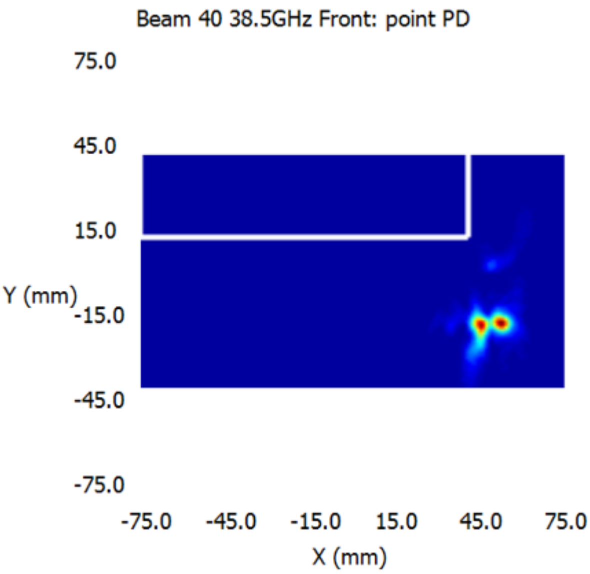



(b) Simulation

. N260 QTM0: Middle channel, Beam19, Front face, Point PD

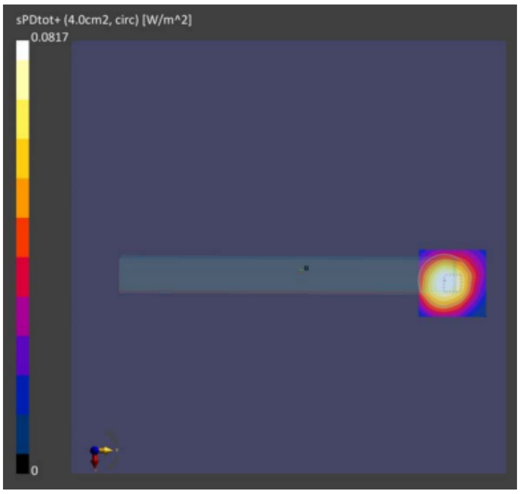



(a) Measurement

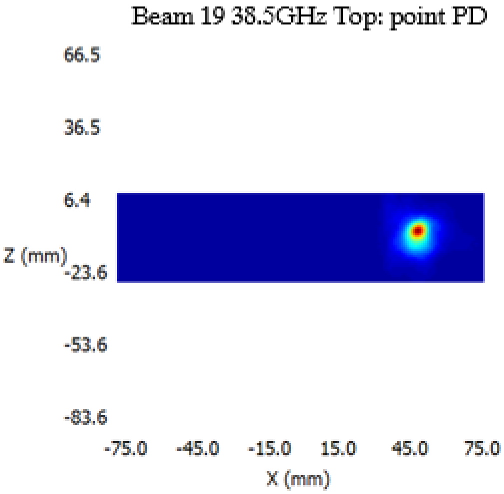



(b) Simulation

. N260 QTM0: Middle channel, Beam19, Top face, Point PD




(a) Measurement




(b) Simulation

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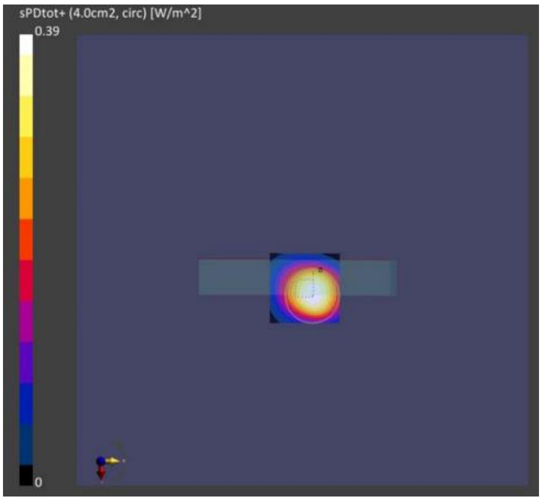
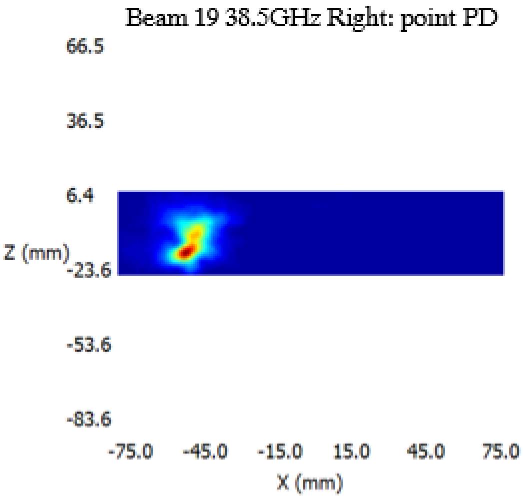
N260 QTM0: Middle channel, Beam19, Right face, Point PD

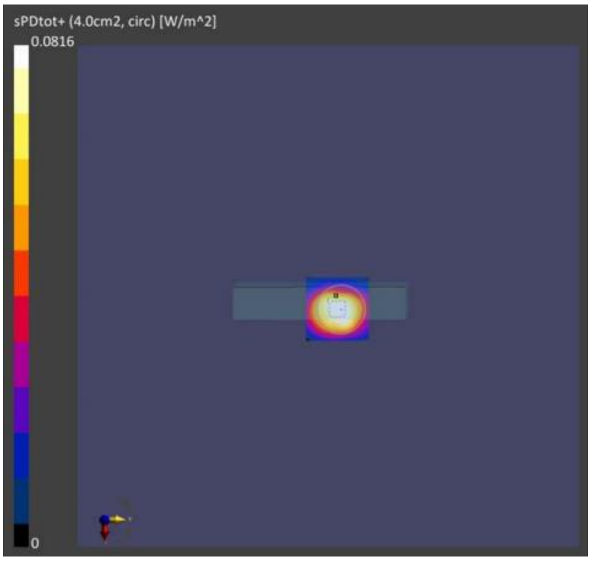


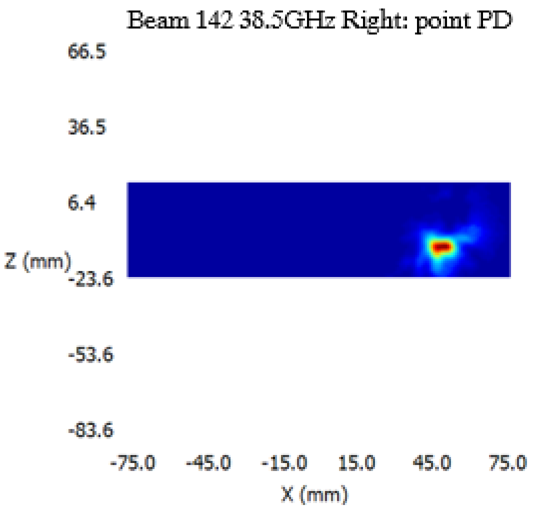

(a) Measurement




(b) Simulation

N260 QTM0: Middle channel, Beam142, Right face, Point PD




(a) Measurement (b) Simulation

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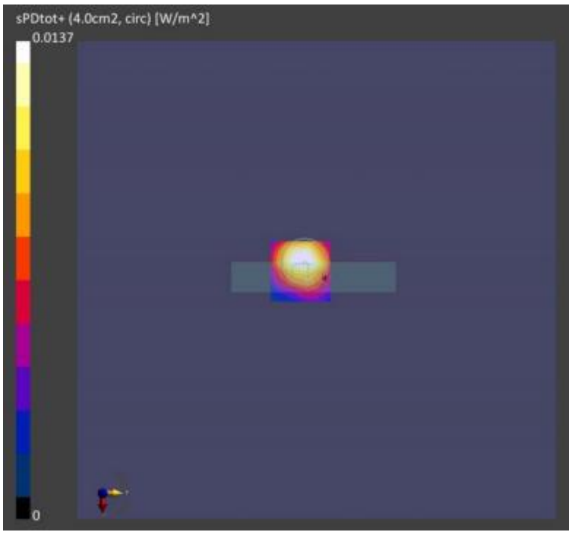
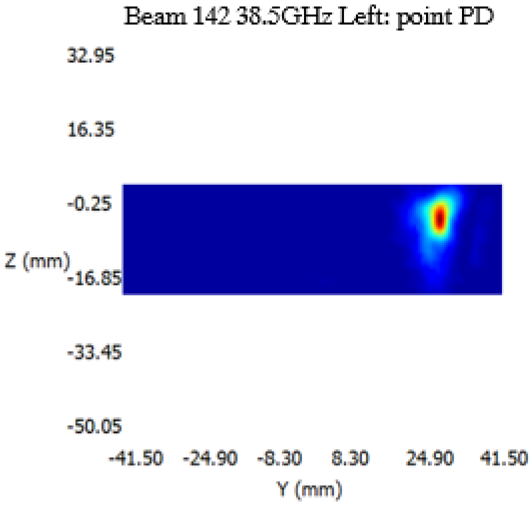
N260 QTM0: Middle channel, Beam142, Left face, Point PD




(a) Measurement (b) Simulation

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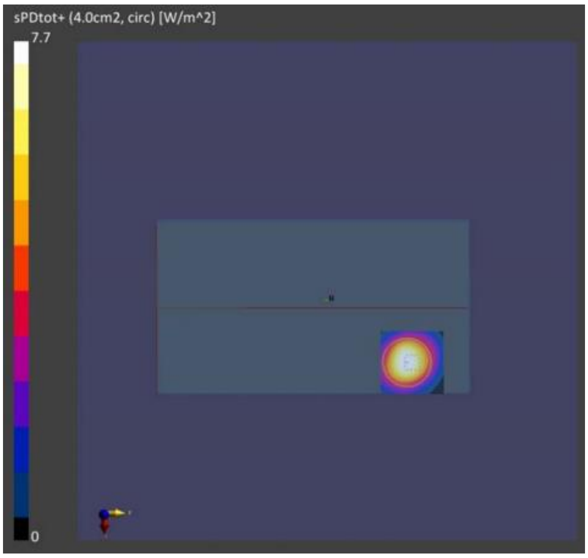
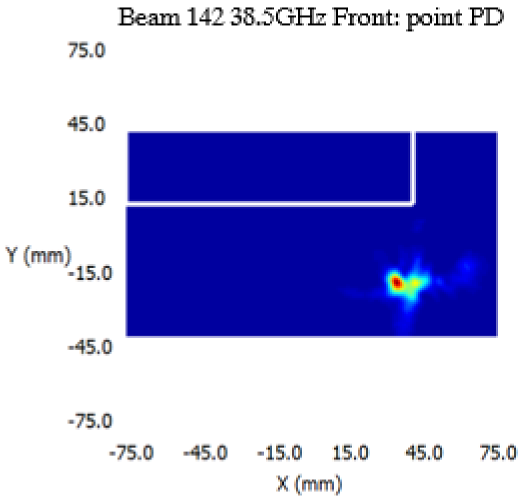
N260 QTMO: Middle channel, Beam142, Front face, Point PD




(a) Measurement




(b) Simulation

# 4. Simulation Result

The model is validated in Section 3, the PD exposure of EUT can be reliably assessed using the validated simulation approach. The PD simulation was performed at n261 and n260. The simulated PD results are reported in this section. The Ratio of PD exposure from front surface to the worst surface at 2mm, and the ratio of PD exposure from 2mm to 10mm evaluation distance for each beam are also reported for simultaneous transmission analysis in Part 1.

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 PD result for each MIMO beam represents the highest PD value after sweeping the relative phase between two SISO beams with a ‘5 degree’ step interval from 0 degree to 360 degree.

### 4.1 PD for Low/Mid/High Channel at n261 and n260

Below Tables show the PD simulation evaluation of QTMO at N261 and N260 for those surface which need to take it into consideration as shown in Figure 1-3.

QTMO N261 Low channel SISO

| Frequency (GHz) | Module | Beam 2 | Beam 1 | 4cm2 PD(W/m2) at 2mm evaluation surfaces @6dBm | | | | Max Ratio / Ratio | | | 4cm2 PD(W/m2) at 10mm evaluation surfaces @6dBm | | | Max Ratio / Ratio | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 1 | 0.18 | 0.06 | | | | 0.48 | 0.13 | 0.07 |
| | | | | Front | Right | TOP | Max PD | Front | Right | TOP | Front | Right | TOP | Front | Right | TOP |
| 27.5 | 0 | | 0 | 3.58 | 0.34 | 0.1 | 3.57808 | 1 | 0.10 | 0.03 | 1.01 | 0.28 | 0.1 | 0.28 | 0.08 | 0.03 |
| 27.5 | 0 | | 1 | 4.80 | 0.37 | 0.19 | 4.79952 | 1 | 0.08 | 0.04 | 1.42 | 0.22 | 0.21 | 0.30 | 0.05 | 0.04 |
| 27.5 | 0 | | 2 | 4.96 | 0.38 | 0.14 | 4.95943 | 1 | 0.08 | 0.03 | 1.52 | 0.25 | 0.16 | 0.31 | 0.01 | 0.03 |
| 27.5 | 0 | | 3 | 5.24 | 0.4 | 0.17 | 5.2426 | 1 | 0.08 | 0.03 | 1.54 | 0.29 | 0.17 | 0.29 | 0.01 | 0.03 |
| 27.5 | 0 | | 4 | 4.43 | 0.35 | 0.13 | 4.4339 | 1 | 0.08 | 0.03 | 1.38 | 0.27 | 0.14 | 0.31 | 0.06 | 0.03 |
| 27.5 | 0 | | 5 | 9.87 | 1.4 | 0.32 | 9.87124 | 1 | 0.14 | 0.03 | 3.6 | 0.96 | 0.33 | 0.36 | 0.10 | 0.03 |
| 27.5 | 0 | | 6 | 9.00 | 0.72 | 0.19 | 9.00227 | 1 | 0.08 | 0.02 | 3.33 | 0.48 | 0.2 | 0.37 | 0.05 | 0.02 |
| 27.5 | 0 | | 7 | 8.11 | 0.51 | 0.09 | 8.10793 | 1 | 0.06 | 0.01 | 3.28 | 0.54 | 0.08 | 0.40 | 0.07 | 0.01 |
| 27.5 | 0 | | 8 | 9.53 | 0.51 | 0.44 | 9.52528 | 1 | 0.05 | 0.05 | 3.05 | 0.54 | 0.49 | 0.32 | 0.06 | 0.05 |
| 27.5 | 0 | | 9 | 8.89 | 0.76 | 0.26 | 8.88796 | 1 | 0.09 | 0.03 | 3.09 | 0.49 | 0.3 | 0.35 | 0.06 | 0.03 |
| 27.5 | 0 | | 10 | 8.61 | 0.57 | 0.08 | 8.60626 | 1 | 0.07 | 0.01 | 3.51 | 0.52 | 0.07 | 0.41 | 0.06 | 0.01 |
| 27.5 | 0 | | 11 | 8.43 | 0.55 | 0.07 | 8.42609 | 1 | 0.07 | 0.01 | 3.46 | 0.53 | 0.07 | 0.41 | 0.06 | 0.01 |
| 27.5 | 0 | | 12 | 21.99 | 3.87 | 0.37 | 21.9896 | 1 | 0.18 | 0.02 | 9.22 | 2.89 | 0.39 | 0.42 | 0.13 | 0.02 |
| 27.5 | 0 | | 13 | 21.87 | 3.09 | 0.1 | 21.8737 | 1 | 0.14 | 0.01 | 10.03 | 2.74 | 0.1 | 0.46 | 0.13 | 0.01 |
| 27.5 | 0 | | 14 | 24.24 | 2.18 | 0.14 | 24.2438 | 1 | 0.09 | 0.01 | 10.5 | 2.39 | 0.13 | 0.43 | 0.10 | 0.01 |
| 27.5 | 0 | | 15 | 24.32 | 1.45 | 0.2 | 24.3209 | 1 | 0.06 | 0.01 | 9.52 | 1.89 | 0.2 | 0.39 | 0.08 | 0.01 |
| 27.5 | 0 | | 16 | 24.21 | 1.45 | 0.48 | 24.213 | 1 | 0.06 | 0.02 | 8.35 | 1.63 | 0.49 | 0.34 | 0.07 | 0.02 |
| 27.5 | 0 | | 17 | 21.77 | 3.26 | 0.17 | 21.7735 | 1 | 0.15 | 0.01 | 9.91 | 2.6 | 0.18 | 0.46 | 0.12 | 0.01 |
| 27.5 | 0 | | 18 | 21.91 | 2.52 | 0.2 | 21.9062 | 1 | 0.12 | 0.01 | 10.02 | 2.45 | 0.19 | 0.46 | 0.11 | 0.01 |
| 27.5 | 0 | | 19 | 23.03 | 1.68 | 0.11 | 23.0314 | 1 | 0.07 | 0.01 | 10.73 | 2.33 | 0.1 | 0.47 | 0.10 | 0.01 |
| 27.5 | 0 | | 20 | 24.52 | 1.45 | 0.18 | 24.519 | 0 | 0.06 | 0.01 | 9.56 | 1.9 | 0.19 | 0.39 | 0.08 | 0.01 |
| 27.5 | 0 | | 128 | 4.01 | 0.32 | 0.14 | 4.00675 | 1 | 0.08 | 0.03 | 1.16 | 0.22 | 0.13 | 0.29 | 0.05 | 0.03 |
| 27.5 | 0 | | 129 | 3.49 | 0.27 | 0.13 | 3.49274 | 1 | 0.08 | 0.04 | 1.09 | 0.21 | 0.13 | 0.31 | 0.06 | 0.04 |
| 27.5 | 0 | | 130 | 4.69 | 0.29 | 0.15 | 4.68572 | 1 | 0.06 | 0.03 | 1.44 | 0.21 | 0.15 | 0.31 | 0.04 | 0.03 |
| 27.5 | 0 | | 131 | 5.02 | 0.23 | 0.15 | 5.02448 | 1 | 0.05 | 0.03 | 1.49 | 0.18 | 0.16 | 0.30 | 0.04 | 0.03 |
| 27.5 | 0 | | 132 | 4.03 | 0.21 | 0.23 | 4.03305 | 1 | 0.05 | 0.06 | 1.2 | 0.15 | 0.25 | 0.30 | 0.04 | 0.06 |
| 27.5 | 0 | | 133 | 8.17 | 0.34 | 0.36 | 8.16894 | 1 | 0.04 | 0.04 | 2.47 | 0.35 | 0.37 | 0.30 | 0.04 | 0.05 |
| 27.5 | 0 | | 134 | 10.16 | 0.72 | 0.24 | 10.1575 | 1 | 0.07 | 0.02 | 4.3 | 0.61 | 0.24 | 0.42 | 0.06 | 0.02 |
| 27.5 | 0 | | 135 | 10.05 | 0.83 | 0.14 | 10.0528 | 1 | 0.08 | 0.01 | 3.96 | 0.58 | 0.14 | 0.39 | 0.06 | 0.01 |
| 27.5 | 0 | | 136 | 5.81 | 0.85 | 0.26 | 5.81075 | 1 | 0.15 | 0.04 | 1.54 | 0.54 | 0.25 | 0.27 | 0.09 | 0.04 |
| 27.5 | 0 | | 137 | 8.94 | 0.35 | 0.29 | 8.9352 | 1 | 0.04 | 0.03 | 3.04 | 0.35 | 0.31 | 0.34 | 0.04 | 0.03 |
| 27.5 | 0 | | 138 | 10.16 | 0.81 | 0.07 | 10.1573 | 1 | 0.08 | 0.01 | 4.4 | 0.62 | 0.08 | 0.43 | 0.06 | 0.01 |
| 27.5 | 0 | | 139 | 7.23 | 0.95 | 0.12 | 7.23462 | 1 | 0.13 | 0.02 | 2.55 | 0.67 | 0.12 | 0.35 | 0.09 | 0.02 |
| 27.5 | 0 | | 140 | 21.02 | 1.08 | 1.3 | 21.0247 | 1 | 0.05 | 0.06 | 9.26 | 1.21 | 1.54 | 0.44 | 0.06 | 0.07 |
| 27.5 | 0 | | 141 | 20.24 | 1.58 | 0.34 | 20.2388 | 1 | 0.08 | 0.02 | 9.62 | 1.77 | 0.41 | 0.48 | 0.09 | 0.02 |
| 27.5 | 0 | | 142 | 20.92 | 2.64 | 0.16 | 20.9243 | 1 | 0.13 | 0.01 | 9.69 | 2.29 | 0.19 | 0.46 | 0.11 | 0.01 |
| 27.5 | 0 | | 143 | 20.93 | 3.08 | 0.14 | 20.9309 | 1 | 0.15 | 0.01 | 9.36 | 2.38 | 0.16 | 0.45 | 0.11 | 0.01 |
| 27.5 | 0 | | 144 | 20.40 | 2.7 | 0.59 | 20.3953 | 1 | 0.13 | 0.03 | 7.04 | 1.73 | 0.57 | 0.35 | 0.08 | 0.03 |
| 27.5 | 0 | | 145 | 21.18 | 1.07 | 0.8 | 21.1768 | 1 | 0.05 | 0.04 | 9.82 | 1.24 | 0.98 | 0.46 | 0.06 | 0.05 |
| 27.5 | 0 | | 146 | 19.84 | 2.07 | 0.13 | 19.8377 | 1 | 0.10 | 0.01 | 9.22 | 2.12 | 0.13 | 0.46 | 0.11 | 0.01 |
| 27.5 | 0 | | 147 | 20.90 | 2.82 | 0.13 | 20.8958 | 1 | 0.13 | 0.01 | 9.68 | 2.3 | 0.18 | 0.46 | 0.11 | 0.01 |
| 27.5 | 0 | | 148 | 21.86 | 3.05 | 0.29 | 21.8638 | 1 | 0.14 | 0.01 | 8.49 | 2.18 | 0.22 | 0.39 | 0.10 | 0.01 |

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QTMO N261 Low channel MIMO

| Frequency (GHz) | Module | Beam 2 | Beam 1 | 4cm2 PD(W/m2) at 2mm evaluation surfaces @6dBm | | | | Max Ratio | | | 4cm2 PD(W/m2) at 10mm evaluation surfaces @6dBm | | | Max Ratio | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 1 | 0.16 | 0.06 | | | | 0.5 | 0.13 | 0.06 |
| | | | | | | | | Ratio | | | | | | Ratio | | |
| | | | | Front | Right | TOP | Max PD | Front | Right | TOP | Front | Right | TOP | Front | Right | TOP |
| 27.5 | 0 | 128 | 0 | 9.51 | 0.96 | 0.33 | 9.5071 | 1 | 0.10 | 0.03 | 3.11 | 0.74 | 0.31 | 0.33 | 0.08 | 0.03 |
| 27.5 | 0 | 129 | 1 | 8.86 | 0.54 | 0.32 | 8.86477 | 1 | 0.06 | 0.04 | 2.61 | 0.5 | 0.35 | 0.29 | 0.06 | 0.04 |
| 27.5 | 0 | 130 | 2 | 10.71 | 0.8 | 0.44 | 10.7105 | 1 | 0.07 | 0.04 | 3.45 | 0.54 | 0.5 | 0.32 | 0.05 | 0.05 |
| 27.5 | 0 | 131 | 3 | 10.91 | 0.82 | 0.43 | 10.9064 | 1 | 0.08 | 0.04 | 3.45 | 0.68 | 0.48 | 0.32 | 0.06 | 0.04 |
| 27.5 | 0 | 132 | 4 | 8.98 | 0.56 | 0.53 | 8.98439 | 1 | 0.06 | 0.06 | 2.8 | 0.48 | 0.56 | 0.31 | 0.05 | 0.06 |
| 27.5 | 0 | 133 | 5 | 18.38 | 2.19 | 0.77 | 18.3775 | 1 | 0.12 | 0.04 | 6.22 | 1.7 | 0.84 | 0.34 | 0.09 | 0.05 |
| 27.5 | 0 | 134 | 6 | 18.51 | 1.97 | 0.58 | 18.5091 | 1 | 0.11 | 0.03 | 7.85 | 1.45 | 0.55 | 0.42 | 0.08 | 0.03 |
| 27.5 | 0 | 135 | 7 | 18.02 | 1.76 | 0.33 | 18.0168 | 1 | 0.10 | 0.02 | 7.66 | 1.25 | 0.31 | 0.43 | 0.07 | 0.02 |
| 27.5 | 0 | 136 | 8 | 15.32 | 1.41 | 0.86 | 15.3159 | 1 | 0.09 | 0.06 | 4.68 | 1.17 | 0.91 | 0.31 | 0.08 | 0.06 |
| 27.5 | 0 | 137 | 9 | 21.24 | 1.34 | 0.66 | 21.2393 | 1 | 0.06 | 0.03 | 7.5 | 0.94 | 0.73 | 0.35 | 0.04 | 0.03 |
| 27.5 | 0 | 138 | 10 | 18.49 | 1.85 | 0.18 | 18.4928 | 1 | 0.10 | 0.01 | 8.19 | 1.36 | 0.17 | 0.44 | 0.07 | 0.01 |
| 27.5 | 0 | 139 | 11 | 16.30 | 2 | 0.29 | 16.3032 | 1 | 0.12 | 0.02 | 7.05 | 1.62 | 0.27 | 0.43 | 0.10 | 0.02 |
| 27.5 | 0 | 140 | 12 | 45.91 | 5.66 | 1.84 | 45.912 | 1 | 0.12 | 0.04 | 19.86 | 4.51 | 2.23 | 0.43 | 0.10 | 0.05 |
| 27.5 | 0 | 141 | 13 | 43.59 | 5.93 | 0.63 | 43.5919 | 1 | 0.14 | 0.01 | 21.69 | 4.96 | 0.69 | 0.50 | 0.11 | 0.02 |
| 27.5 | 0 | 142 | 14 | 44.07 | 7.11 | 0.47 | 44.0717 | 1 | 0.16 | 0.01 | 20.94 | 5.74 | 0.52 | 0.48 | 0.13 | 0.01 |
| 27.5 | 0 | 143 | 15 | 47.93 | 5.81 | 0.37 | 47.9288 | 1 | 0.12 | 0.01 | 20.49 | 5.12 | 0.39 | 0.43 | 0.11 | 0.01 |
| 27.5 | 0 | 144 | 16 | 48.75 | 5.19 | 1.66 | 48.7465 | 1 | 0.11 | 0.03 | 17.78 | 4.05 | 1.58 | 0.36 | 0.08 | 0.03 |
| 27.5 | 0 | 145 | 17 | 44.25 | 5.32 | 1.27 | 44.2455 | 1 | 0.12 | 0.03 | 20.62 | 4.49 | 1.57 | 0.47 | 0.10 | 0.04 |
| 27.5 | 0 | 146 | 18 | 43.01 | 6.67 | 0.42 | 43.0076 | 1 | 0.16 | 0.01 | 20.63 | 5.65 | 0.44 | 0.48 | 0.13 | 0.01 |
| 27.5 | 0 | 147 | 19 | 44.72 | 5.67 | 0.39 | 44.7209 | 1 | 0.13 | 0.01 | 20.94 | 4.82 | 0.47 | 0.47 | 0.11 | 0.01 |
| 27.5 | 0 | 148 | 20 | 49.04 | 5.72 | 0.59 | 49.0398 | 1 | 0.12 | 0.01 | 20.35 | 4.94 | 0.55 | 0.41 | 0.10 | 0.01 |

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QTMO N261 Middle channel SISO

| Frequency (GHz) | Module | Beam 2 | Beam 1 | 4cm2 PD(W/m2) at 2mm evaluation surfaces @6dBm | | | | Max Ratio | | | 4cm2 PD(W/m2) at 10mm evaluation surfaces @6dBm | | | Max Ratio | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 1 | 0.19 | 0.06 | | | | 0.48 | 0.14 | 0.07 |
| | | | | | | | | Ratio | | | | | | Ratio | | |
| | | | | Front | Right | TOP | Max PD | Front | Right | TOP | Front | Right | TOP | Front | Right | TOP |
| 28 | 0 | | 0 | 4.03 | 0.34 | 0.11 | 4.03 | 1 | 0.08 | 0.03 | 1.3 | 0.27 | 0.11 | 0.32 | 0.07 | 0.03 |
| 28 | 0 | | 1 | 4.93 | 0.43 | 0.19 | 4.93 | 1 | 0.09 | 0.04 | 1.43 | 0.27 | 0.2 | 0.29 | 0.05 | 0.04 |
| 28 | 0 | | 2 | 5.05 | 0.43 | 0.17 | 5.05 | 1 | 0.09 | 0.03 | 1.58 | 0.28 | 0.19 | 0.31 | 0.06 | 0.04 |
| 28 | 0 | | 3 | 5.22 | 0.46 | 0.17 | 5.22 | 1 | 0.09 | 0.03 | 1.58 | 0.31 | 0.19 | 0.30 | 0.06 | 0.04 |
| 28 | 0 | | 4 | 4.39 | 0.42 | 0.13 | 4.39 | 1 | 0.10 | 0.03 | 1.45 | 0.32 | 0.14 | 0.33 | 0.07 | 0.03 |
| 28 | 0 | | 5 | 10.15 | 1.58 | 0.32 | 10.15 | 1 | 0.16 | 0.03 | 3.73 | 1.06 | 0.33 | 0.37 | 0.10 | 0.03 |
| 28 | 0 | | 6 | 9.55 | 0.85 | 0.25 | 9.55 | 1 | 0.09 | 0.03 | 3.62 | 0.56 | 0.2 | 0.38 | 0.06 | 0.02 |
| 28 | 0 | | 7 | 8.94 | 0.59 | 0.09 | 8.94 | 1 | 0.07 | 0.01 | 3.83 | 0.61 | 0.07 | 0.43 | 0.07 | 0.01 |
| 28 | 0 | | 8 | 9.39 | 0.5 | 0.57 | 9.39 | 1 | 0.05 | 0.06 | 3.1 | 0.53 | 0.61 | 0.33 | 0.06 | 0.06 |
| 28 | 0 | | 9 | 9.42 | 0.91 | 0.33 | 9.42 | 1 | 0.10 | 0.04 | 3.3 | 0.58 | 0.29 | 0.35 | 0.06 | 0.03 |
| 28 | 0 | | 10 | 9.31 | 0.67 | 0.08 | 9.31 | 1 | 0.07 | 0.01 | 3.99 | 0.58 | 0.07 | 0.43 | 0.06 | 0.01 |
| 28 | 0 | | 11 | 9.2 | 0.64 | 0.06 | 9.2 | 1 | 0.07 | 0.01 | 3.96 | 0.6 | 0.06 | 0.43 | 0.07 | 0.01 |
| 28 | 0 | | 12 | 23.12 | 4.35 | 0.38 | 23.12 | 1 | 0.19 | 0.02 | 9.67 | 3.2 | 0.39 | 0.42 | 0.14 | 0.02 |
| 28 | 0 | | 13 | 22.82 | 3.59 | 0.12 | 22.82 | 1 | 0.16 | 0.01 | 10.34 | 3.1 | 0.12 | 0.45 | 0.14 | 0.01 |
| 28 | 0 | | 14 | 24.66 | 2.47 | 0.16 | 24.66 | 1 | 0.10 | 0.01 | 11.15 | 2.63 | 0.14 | 0.45 | 0.11 | 0.01 |
| 28 | 0 | | 15 | 24.55 | 1.4 | 0.34 | 24.55 | 1 | 0.06 | 0.01 | 10.39 | 1.82 | 0.35 | 0.42 | 0.07 | 0.01 |
| 28 | 0 | | 16 | 24.55 | 1.48 | 0.56 | 24.55 | 1 | 0.06 | 0.02 | 9.35 | 1.67 | 0.55 | 0.38 | 0.07 | 0.02 |
| 28 | 0 | | 17 | 22.81 | 3.99 | 0.21 | 22.81 | 1 | 0.17 | 0.01 | 10.08 | 3.19 | 0.18 | 0.44 | 0.14 | 0.01 |
| 28 | 0 | | 18 | 22.84 | 2.76 | 0.27 | 22.84 | 1 | 0.01 | 0.01 | 10.57 | 2.6 | 0.25 | 0.46 | 0.11 | 0.01 |
| 28 | 0 | | 19 | 24.49 | 1.4 | 0.3 | 24.49 | 1 | 0.06 | 0.01 | 11.3 | 2.45 | 0.09 | 0.46 | 0.10 | 0.00 |
| 28 | 0 | | 20 | 23.85 | 1.88 | 0.13 | 23.85 | 1 | 0.01 | 0.01 | 10.5 | 1.85 | 0.31 | 0.44 | 0.08 | 0.01 |
| 28 | 0 | | 128 | 4.31 | 0.36 | 0.15 | 4.31 | 1 | 0.01 | 0.03 | 1.32 | 0.24 | 0.15 | 0.31 | 0.06 | 0.03 |
| 28 | 0 | | 129 | 3.68 | 0.31 | 0.15 | 3.68 | 1 | 0.08 | 0.04 | 1.15 | 0.25 | 0.14 | 0.31 | 0.07 | 0.04 |
| 28 | 0 | | 130 | 4.83 | 0.31 | 0.15 | 4.83 | 1 | 0.06 | 0.03 | 1.46 | 0.22 | 0.16 | 0.30 | 0.05 | 0.03 |
| 28 | 0 | | 131 | 5.04 | 0.25 | 0.14 | 5.04 | 1 | 0.05 | 0.03 | 1.54 | 0.16 | 0.16 | 0.31 | 0.03 | 0.03 |
| 28 | 0 | | 132 | 4.67 | 0.3 | 0.19 | 4.67 | 1 | 0.06 | 0.04 | 1.32 | 0.19 | 0.2 | 0.28 | 0.04 | 0.04 |
| 28 | 0 | | 133 | 8.74 | 0.41 | 0.42 | 8.74 | 1 | 0.05 | 0.05 | 2.7 | 0.35 | 0.42 | 0.31 | 0.04 | 0.05 |
| 28 | 0 | | 134 | 10.21 | 0.78 | 0.23 | 10.21 | 1 | 0.08 | 0.02 | 4.37 | 0.62 | 0.24 | 0.43 | 0.06 | 0.02 |
| 28 | 0 | | 135 | 10.3 | 0.95 | 0.15 | 10.3 | 1 | 0.09 | 0.01 | 3.97 | 0.65 | 0.16 | 0.39 | 0.06 | 0.02 |
| 28 | 0 | | 136 | 6.24 | 1.01 | 0.31 | 6.24 | 1 | 0.16 | 0.05 | 1.66 | 0.66 | 0.31 | 0.27 | 0.11 | 0.05 |
| 28 | 0 | | 137 | 9.5 | 0.37 | 0.33 | 9.5 | 1 | 0.04 | 0.03 | 3.33 | 0.38 | 0.34 | 0.35 | 0.04 | 0.04 |
| 28 | 0 | | 138 | 10.33 | 0.88 | 0.07 | 10.33 | 1 | 0.09 | 0.01 | 4.38 | 0.63 | 0.08 | 0.42 | 0.06 | 0.01 |
| 28 | 0 | | 139 | 7.5 | 1.07 | 0.16 | 7.5 | 1 | 0.14 | 0.02 | 2.74 | 0.67 | 0.16 | 0.37 | 0.09 | 0.02 |
| 28 | 0 | | 140 | 21.65 | 1.3 | 0.72 | 21.65 | 1 | 0.06 | 0.03 | 10.51 | 1.29 | 1.6 | 0.49 | 0.06 | 0.07 |
| 28 | 0 | | 141 | 21.49 | 1.85 | 0.25 | 21.49 | 1 | 0.09 | 0.01 | 10.34 | 2.03 | 0.33 | 0.48 | 0.09 | 0.02 |
| 28 | 0 | | 142 | 21.73 | 3.03 | 0.22 | 21.73 | 1 | 0.14 | 0.01 | 9.88 | 2.63 | 0.24 | 0.45 | 0.12 | 0.01 |
| 28 | 0 | | 143 | 22.4 | 3.69 | 0.17 | 22.4 | 1 | 0.16 | 0.01 | 9.82 | 2.79 | 0.2 | 0.44 | 0.12 | 0.01 |
| 28 | 0 | | 144 | 22.46 | 3.31 | 0.64 | 22.46 | 1 | 0.15 | 0.03 | 7.45 | 2.11 | 0.61 | 0.33 | 0.09 | 0.03 |
| 28 | 0 | | 145 | 22.18 | 1.21 | 1.38 | 22.18 | 1 | 0.05 | 0.06 | 10.92 | 1.51 | 0.92 | 0.49 | 0.07 | 0.04 |
| 28 | 0 | | 146 | 21.35 | 2.4 | 0.14 | 21.35 | 1 | 0.11 | 0.01 | 9.65 | 2.4 | 0.12 | 0.45 | 0.11 | 0.01 |
| 28 | 0 | | 147 | 21.8 | 3.29 | 0.19 | 21.8 | 1 | 0.15 | 0.01 | 9.95 | 2.65 | 0.26 | 0.46 | 0.12 | 0.01 |
| 28 | 0 | | 148 | 22.46 | 3.75 | 0.27 | 22.46 | 1 | 0.17 | 0.01 | 9.12 | 2.67 | 0.2 | 0.41 | 0.12 | 0.01 |

. QTMO N261 Middle channel MIMO

| Frequency (GHz) | Module | Beam 2 | Beam 1 | 4cm2 PD(W/m2) at 2mm evaluation surfaces @6dBm | | | | Max Ratio | | | 4cm2 PD(W/m2) at 10mm evaluation surfaces @6dBm | | | Max Ratio | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 1 | 0.17 | 0.06 | | | | 0.49 | 0.08 | 0.07 |
| | | | | | | | | Ratio | | | | | | Ratio | | |
| | | | | Front | Right | TOP | Max PD | Front | Right | TOP | Front | Right | TOP | Front | Right | TOP |
| 28 | 0 | 128 | 0 | 9.91 | 0.9 | 0.32 | 9.91 | 1 | 0.09 | 0.03 | 3.32 | 0.65 | 0.31 | 0.34 | 0.07 | 0.03 |
| 28 | 0 | 129 | 1 | 9.07 | 0.74 | 0.34 | 9.07 | 1 | 0.08 | 0.04 | 2.76 | 0.7 | 0.33 | 0.30 | 0.08 | 0.04 |
| 28 | 0 | 130 | 2 | 11.03 | 0.92 | 0.5 | 11.03 | 1 | 0.08 | 0.05 | 3.54 | 0.61 | 0.56 | 0.32 | 0.06 | 0.05 |
| 28 | 0 | 131 | 3 | 10.95 | 0.89 | 0.48 | 10.95 | 1 | 0.08 | 0.04 | 3.61 | 0.59 | 0.51 | 0.33 | 0.05 | 0.05 |
| 28 | 0 | 132 | 4 | 9.79 | 0.71 | 0.49 | 9.79 | 1 | 0.07 | 0.05 | 3.08 | 0.56 | 0.48 | 0.31 | 0.06 | 0.05 |
| 28 | 0 | 133 | 5 | 18.88 | 2.55 | 0.71 | 18.88 | 1 | 0.14 | 0.04 | 6.38 | 1.74 | 0.71 | 0.34 | 0.01 | 0.04 |
| 28 | 0 | 134 | 6 | 18.97 | 2.31 | 0.54 | 18.97 | 1 | 0.12 | 0.03 | 7.83 | 1.67 | 0.52 | 0.41 | 0.01 | 0.03 |
| 28 | 0 | 135 | 7 | 18.61 | 2.01 | 0.3 | 18.61 | 1 | 0.11 | 0.02 | 7.95 | 1.41 | 0.26 | 0.43 | 0.01 | 0.01 |
| 28 | 0 | 136 | 8 | 15.43 | 1.53 | 0.98 | 15.43 | 1 | 0.10 | 0.06 | 5.03 | 1.18 | 1.03 | 0.33 | 0.01 | 0.07 |
| 28 | 0 | 137 | 9 | 21.72 | 1.47 | 0.7 | 21.72 | 1 | 0.07 | 0.03 | 7.85 | 1.02 | 0.64 | 0.36 | 0.01 | 0.03 |
| 28 | 0 | 138 | 10 | 18.82 | 2.1 | 0.16 | 18.82 | 1 | 0.11 | 0.01 | 8.27 | 1.51 | 0.15 | 0.44 | 0.01 | 0.01 |
| 28 | 0 | 139 | 11 | 17.9 | 2.03 | 0.35 | 17.9 | 1 | 0.11 | 0.02 | 7.28 | 1.52 | 0.33 | 0.41 | 0.01 | 0.02 |
| 28 | 0 | 140 | 12 | 49.11 | 6.21 | 2.12 | 49.11 | 1 | 0.13 | 0.04 | 21.22 | 4.69 | 2.48 | 0.43 | 0.01 | 0.05 |
| 28 | 0 | 141 | 13 | 46.08 | 7.25 | 0.46 | 46.08 | 1 | 0.16 | 0.01 | 22.43 | 5.82 | 0.54 | 0.49 | 0.01 | 0.01 |
| 28 | 0 | 142 | 14 | 46.51 | 7.68 | 0.6 | 46.51 | 1 | 0.17 | 0.01 | 22.33 | 6.21 | 0.58 | 0.48 | 0.01 | 0.01 |
| 28 | 0 | 143 | 15 | 49.96 | 6.54 | 0.6 | 49.96 | 1 | 0.13 | 0.01 | 21.43 | 5.4 | 0.54 | 0.43 | 0.01 | 0.01 |
| 28 | 0 | 144 | 16 | 51.9 | 5.98 | 1.83 | 51.9 | 1 | 0.12 | 0.04 | 19.34 | 4.8 | 1.79 | 0.37 | 0.01 | 0.03 |
| 28 | 0 | 145 | 17 | 46.62 | 6.55 | 1.21 | 46.62 | 1 | 0.14 | 0.03 | 21.88 | 5.18 | 1.53 | 0.47 | 0.01 | 0.03 |
| 28 | 0 | 146 | 18 | 45.38 | 7.47 | 0.62 | 45.38 | 1 | 0.16 | 0.01 | 21.69 | 6.17 | 0.59 | 0.48 | 0.01 | 0.01 |
| 28 | 0 | 147 | 19 | 47.12 | 6.6 | 0.48 | 47.12 | 1 | 0.14 | 0.01 | 21.86 | 5.47 | 0.56 | 0.46 | 0.01 | 0.01 |
| 28 | 0 | 148 | 20 | 51.4 | 6.51 | 0.8 | 51.4 | 1 | 0.13 | 0.02 | 21.49 | 5.36 | 0.7 | 0.42 | 0.01 | 0.01 |

. QTMO N261 High channel SISO

| Frequency (GHz) | Module | Beam 2 | Beam 1 | 4cm2 PD(W/m2) at 2mm evaluation surfaces @6dBm | | | | Max Ratio | | | 4cm2 PD(W/m2) at 10mm evaluation surfaces @6dBm | | | Max Ratio | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 1 | 0.19 | 0.06 | | | | 0.49 | 0.14 | 0.07 |
| | | | | | | | | Ratio | | | | | | Ratio | | |
| | | | | Front | Right | TOP | Max PD | Front | Right | TOP | Front | Right | TOP | Front | Right | TOP |
| 28.35 | 0 | | 0 | 4.26 | 0.33 | 0.09 | 4.26 | 1 | 0.01 | 0.02 | 1.44 | 0.27 | 0.1 | 0.34 | 0.06 | 0.02 |
| 28.35 | 0 | | 1 | 4.81 | 0.43 | 0.18 | 4.81 | 1 | 0.09 | 0.04 | 1.53 | 0.26 | 0.16 | 0.32 | 0.05 | 0.03 |
| 28.35 | 0 | | 2 | 5.15 | 0.43 | 0.16 | 5.15 | 1 | 0.01 | 0.03 | 1.62 | 0.31 | 0.18 | 0.31 | 0.06 | 0.03 |
| 28.35 | 0 | | 3 | 5.3 | 0.49 | 0.18 | 5.3 | 1 | 0.01 | 0.03 | 1.63 | 0.32 | 0.19 | 0.31 | 0.06 | 0.04 |
| 28.35 | 0 | | 4 | 4.35 | 0.43 | 0.13 | 4.35 | 1 | 0.10 | 0.03 | 1.46 | 0.33 | 0.13 | 0.34 | 0.08 | 0.03 |
| 28.35 | 0 | | 5 | 10.4 | 1.62 | 0.32 | 10.4 | 1 | 0.01 | 0.03 | 3.83 | 1.08 | 0.3 | 0.37 | 0.10 | 0.03 |
| 28.35 | 0 | | 6 | 9.66 | 0.79 | 0.25 | 9.66 | 1 | 0.08 | 0.03 | 3.88 | 0.5 | 0.21 | 0.40 | 0.05 | 0.02 |
| 28.35 | 0 | | 7 | 9.22 | 0.56 | 0.07 | 9.22 | 1 | 0.01 | 0.01 | 4.15 | 0.6 | 0.06 | 0.45 | 0.07 | 0.01 |
| 28.35 | 0 | | 8 | 9.43 | 0.51 | 0.58 | 9.43 | 1 | 0.05 | 0.06 | 3.07 | 0.5 | 0.62 | 0.33 | 0.05 | 0.07 |
| 28.35 | 0 | | 9 | 9.49 | 0.88 | 0.33 | 9.49 | 1 | 0.09 | 0.03 | 3.5 | 0.53 | 0.27 | 0.37 | 0.06 | 0.03 |
| 28.35 | 0 | | 10 | 9.56 | 0.61 | 0.08 | 9.56 | 1 | 0.06 | 0.01 | 4.32 | 0.57 | 0.07 | 0.45 | 0.06 | 0.01 |
| 28.35 | 0 | | 11 | 9.46 | 0.59 | 0.06 | 9.46 | 1 | 0.01 | 0.01 | 4.3 | 0.58 | 0.05 | 0.45 | 0.06 | 0.01 |
| 28.35 | 0 | | 12 | 23.55 | 4.59 | 0.37 | 23.55 | 1 | 0.19 | 0.02 | 10.05 | 3.35 | 0.37 | 0.43 | 0.14 | 0.02 |
| 28.35 | 0 | | 13 | 23.09 | 3.52 | 0.1 | 23.09 | 1 | 0.15 | 0.01 | 10.8 | 2.96 | 0.09 | 0.47 | 0.13 | 0.00 |
| 28.35 | 0 | | 14 | 23.76 | 2.53 | 0.17 | 23.76 | 1 | 0.01 | 0.01 | 11.39 | 2.7 | 0.14 | 0.48 | 0.11 | 0.01 |
| 28.35 | 0 | | 15 | 24.67 | 1.37 | 0.4 | 24.67 | 1 | 0.06 | 0.02 | 10.76 | 1.74 | 0.41 | 0.44 | 0.07 | 0.02 |
| 28.35 | 0 | | 16 | 24.56 | 1.3 | 0.61 | 24.56 | 1 | 0.05 | 0.02 | 9.81 | 1.49 | 0.6 | 0.40 | 0.06 | 0.02 |
| 28.35 | 0 | | 17 | 23.41 | 4 | 0.23 | 23.41 | 1 | 0.17 | 0.01 | 10.6 | 3.17 | 0.18 | 0.45 | 0.14 | 0.01 |
| 28.35 | 0 | | 18 | 23.19 | 2.77 | 0.28 | 23.19 | 1 | 0.01 | 0.01 | 10.9 | 2.59 | 0.26 | 0.47 | 0.11 | 0.01 |
| 28.35 | 0 | | 19 | 24.18 | 1.98 | 0.12 | 24.18 | 1 | 0.01 | 0.01 | 11.45 | 2.49 | 0.09 | 0.47 | 0.10 | 0.00 |
| 28.35 | 0 | | 20 | 24.96 | 1.36 | 0.36 | 24.96 | 1 | 0.05 | 0.01 | 10.91 | 1.75 | 0.37 | 0.44 | 0.07 | 0.01 |
| 28.35 | 0 | | 128 | 4.36 | 0.32 | 0.15 | 4.36 | 1 | 0.01 | 0.03 | 1.41 | 0.21 | 0.14 | 0.32 | 0.05 | 0.03 |
| 28.35 | 0 | | 129 | 3.87 | 0.34 | 0.17 | 3.87 | 1 | 0.09 | 0.04 | 1.15 | 0.26 | 0.16 | 0.30 | 0.07 | 0.04 |
| 28.35 | 0 | | 130 | 4.92 | 0.3 | 0.15 | 4.92 | 1 | 0.06 | 0.03 | 1.53 | 0.2 | 0.16 | 0.31 | 0.04 | 0.03 |
| 28.35 | 0 | | 131 | 5.1 | 0.28 | 0.16 | 5.1 | 1 | 0.05 | 0.03 | 1.61 | 0.18 | 0.17 | 0.32 | 0.04 | 0.03 |
| 28.35 | 0 | | 132 | 4.81 | 0.34 | 0.2 | 4.81 | 1 | 0.07 | 0.04 | 1.35 | 0.23 | 0.2 | 0.28 | 0.05 | 0.04 |
| 28.35 | 0 | | 133 | 8.91 | 0.33 | 0.46 | 8.91 | 1 | 0.04 | 0.05 | 2.81 | 0.26 | 0.44 | 0.32 | 0.03 | 0.05 |
| 28.35 | 0 | | 134 | 10.25 | 0.79 | 0.21 | 10.25 | 1 | 0.08 | 0.02 | 4.54 | 0.58 | 0.22 | 0.44 | 0.06 | 0.02 |
| 28.35 | 0 | | 135 | 10.37 | 1 | 0.2 | 10.37 | 1 | 0.10 | 0.02 | 4.08 | 0.67 | 0.19 | 0.39 | 0.06 | 0.02 |
| 28.35 | 0 | | 136 | 6.64 | 0.99 | 0.32 | 6.64 | 1 | 0.15 | 0.05 | 1.78 | 0.62 | 0.32 | 0.27 | 0.09 | 0.05 |
| 28.35 | 0 | | 137 | 9.58 | 0.34 | 0.35 | 9.58 | 1 | 0.04 | 0.04 | 3.46 | 0.33 | 0.34 | 0.36 | 0.03 | 0.04 |
| 28.35 | 0 | | 138 | 10.38 | 0.91 | 0.07 | 10.38 | 1 | 0.09 | 0.01 | 4.52 | 0.63 | 0.08 | 0.44 | 0.06 | 0.01 |
| 28.35 | 0 | | 139 | 7.84 | 1.07 | 0.16 | 7.84 | 1 | 0.14 | 0.02 | 2.89 | 0.7 | 0.16 | 0.37 | 0.09 | 0.02 |
| 28.35 | 0 | | 140 | 23.3 | 1.27 | 1.28 | 23.3 | 1 | 0.05 | 0.05 | 10.76 | 1.31 | 1.47 | 0.46 | 0.06 | 0.06 |
| 28.35 | 0 | | 141 | 21.8 | 2.02 | 0.22 | 21.8 | 1 | 0.09 | 0.01 | 10.65 | 2.12 | 0.3 | 0.49 | 0.10 | 0.01 |
| 28.35 | 0 | | 142 | 21.99 | 3.08 | 0.22 | 21.99 | 1 | 0.14 | 0.01 | 10.16 | 2.64 | 0.23 | 0.46 | 0.12 | 0.01 |
| 28.35 | 0 | | 143 | 22.75 | 3.76 | 0.15 | 22.75 | 1 | 0.17 | 0.01 | 10.12 | 2.86 | 0.14 | 0.44 | 0.13 | 0.01 |
| 28.35 | 0 | | 144 | 23.02 | 3.64 | 0.71 | 23.02 | 1 | 0.16 | 0.03 | 7.61 | 2.32 | 0.66 | 0.33 | 0.10 | 0.03 |
| 28.35 | 0 | | 145 | 23.08 | 1.52 | 0.64 | 23.08 | 1 | 0.07 | 0.03 | 11.36 | 1.67 | 0.84 | 0.49 | 0.07 | 0.04 |
| 28.35 | 0 | | 146 | 21.27 | 2.37 | 0.16 | 21.27 | 1 | 0.11 | 0.01 | 9.91 | 2.27 | 0.16 | 0.47 | 0.11 | 0.01 |
| 28.35 | 0 | | 147 | 22.17 | 3.36 | 0.19 | 22.17 | 1 | 0.15 | 0.01 | 10.21 | 2.72 | 0.23 | 0.46 | 0.12 | 0.01 |
| 28.35 | 0 | | 148 | 23.16 | 3.87 | 0.29 | 23.16 | 1 | 0.17 | 0.01 | 9.43 | 2.78 | 0.23 | 0.41 | 0.12 | 0.01 |

. QTMO N261 High channel MIMO

| Frequency (GHz) | Module | Beam 2 | Beam 1 | 4cm2 PD(W/m2) at 2mm evaluation surfaces @6dBm | | | | Max Ratio | | | 4cm2 PD(W/m2) at 10mm evaluation surfaces @6dBm | | | Max Ratio | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 1 | 0.17 | 0.07 | | | | 0.5 | 0.14 | 0.07 |
| | | | | | | | | Ratio | | | | | | Ratio | | |
| | | | | Front | Right | TOP | Max PD | Front | Right | TOP | Front | Right | TOP | Front | Right | TOP |
| 28.35 | 0 | 128 | 0 | 9.8 | 0.77 | 0.32 | 9.8 | 1 | 0.08 | 0.03 | 3.46 | 0.59 | 0.29 | 0.35 | 0.06 | 0.03 |
| 28.35 | 0 | 129 | 1 | 9.33 | 0.73 | 0.38 | 9.33 | 1 | 0.08 | 0.04 | 2.9 | 0.64 | 0.32 | 0.31 | 0.07 | 0.03 |
| 28.35 | 0 | 130 | 2 | 11.13 | 0.97 | 0.5 | 11.13 | 1 | 0.09 | 0.04 | 3.76 | 0.64 | 0.54 | 0.34 | 0.06 | 0.05 |
| 28.35 | 0 | 131 | 3 | 11 | 0.95 | 0.49 | 11 | 1 | 0.09 | 0.04 | 3.76 | 0.59 | 0.53 | 0.34 | 0.05 | 0.05 |
| 28.35 | 0 | 132 | 4 | 10 | 0.84 | 0.47 | 10 | 1 | 0.08 | 0.05 | 3.04 | 0.66 | 0.46 | 0.30 | 0.07 | 0.05 |
| 28.35 | 0 | 133 | 5 | 18.96 | 2.43 | 0.75 | 18.96 | 1 | 0.13 | 0.04 | 6.43 | 1.62 | 0.71 | 0.34 | 0.09 | 0.04 |
| 28.35 | 0 | 134 | 6 | 19.24 | 2.28 | 0.48 | 19.24 | 1 | 0.12 | 0.02 | 8.2 | 1.62 | 0.47 | 0.43 | 0.08 | 0.02 |
| 28.35 | 0 | 135 | 7 | 18.89 | 2.1 | 0.31 | 18.89 | 1 | 0.11 | 0.02 | 8.33 | 1.48 | 0.29 | 0.44 | 0.08 | 0.02 |
| 28.35 | 0 | 136 | 8 | 15.37 | 1.48 | 1.08 | 15.37 | 1 | 0.10 | 0.07 | 5.04 | 1.22 | 1.14 | 0.33 | 0.08 | 0.07 |
| 28.35 | 0 | 137 | 9 | 21.72 | 1.51 | 0.7 | 21.72 | 1 | 0.07 | 0.03 | 8.15 | 1 | 0.62 | 0.38 | 0.05 | 0.03 |
| 28.35 | 0 | 138 | 10 | 19.1 | 2.01 | 0.14 | 19.1 | 1 | 0.11 | 0.01 | 8.66 | 1.44 | 0.13 | 0.45 | 0.08 | 0.01 |
| 28.35 | 0 | 139 | 11 | 18.78 | 1.92 | 0.33 | 18.78 | 1 | 0.10 | 0.02 | 7.49 | 1.61 | 0.31 | 0.40 | 0.09 | 0.02 |
| 28.35 | 0 | 140 | 12 | 50.21 | 6.91 | 2.07 | 50.21 | 1 | 0.14 | 0.04 | 21.71 | 4.93 | 2.39 | 0.43 | 0.10 | 0.05 |
| 28.35 | 0 | 141 | 13 | 46.4 | 7.83 | 0.4 | 46.4 | 1 | 0.17 | 0.01 | 23.38 | 6.29 | 0.5 | 0.50 | 0.14 | 0.01 |
| 28.35 | 0 | 142 | 14 | 47.33 | 7.88 | 0.64 | 47.33 | 1 | 0.17 | 0.01 | 23.65 | 6.38 | 0.59 | 0.50 | 0.13 | 0.01 |
| 28.35 | 0 | 143 | 15 | 49.88 | 6.76 | 0.8 | 49.88 | 1 | 0.14 | 0.02 | 21.68 | 5.29 | 0.74 | 0.43 | 0.11 | 0.01 |
| 28.35 | 0 | 144 | 16 | 52.73 | 6.29 | 2.04 | 52.73 | 1 | 0.12 | 0.04 | 20.03 | 5.01 | 2.03 | 0.38 | 0.10 | 0.04 |
| 28.35 | 0 | 145 | 17 | 47.62 | 7.33 | 1.18 | 47.62 | 1 | 0.15 | 0.02 | 22.83 | 5.7 | 1.48 | 0.48 | 0.12 | 0.03 |
| 28.35 | 0 | 146 | 18 | 45.36 | 7.73 | 0.73 | 45.36 | 1 | 0.17 | 0.02 | 22.69 | 6.34 | 0.7 | 0.50 | 0.14 | 0.02 |
| 28.35 | 0 | 147 | 19 | 48.31 | 7.17 | 0.42 | 48.31 | 1 | 0.15 | 0.01 | 23.22 | 5.71 | 0.46 | 0.48 | 0.12 | 0.01 |
| 28.35 | 0 | 148 | 20 | 51.2 | 6.69 | 0.96 | 51.2 | 1 | 0.13 | 0.02 | 21.79 | 5.42 | 0.88 | 0.43 | 0.11 | 0.02 |

. QTMO N260 LOW channel SISO

| Frequency (GHz) | Module | Beam 2 | Beam 1 | 4cm2 PD(W/m2) at 2mm evaluation surfaces @6dBm | | | | Max Ratio | | | 4cm2 PD(W/m2) at 10mm evaluation surfaces @6dBm | | | Max Ratio | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 1 | 0.17 | 0.15 | | | | 0.52 | 0.13 | 0.14 |
| | | | | | | | | Ratio | | | | | | Ratio | | |
| | | | | Front | Right | TOP | Max PD | Front | Right | TOP | Front | Left | Right | Front | Left | Right |
| 37 | 0 | | 0 | 2.90 | 0.25 | 0.07 | 2.90053 | 1 | 0.09 | 0.02 | 1.02 | 0.2 | 0.09 | 0.35 | 0.07 | 0.03 |
| 37 | 0 | | 1 | 2.78 | 0.26 | 0.08 | 2.77925 | 1 | 0.09 | 0.03 | 0.98 | 0.16 | 0.07 | 0.35 | 0.06 | 0.03 |
| 37 | 0 | | 2 | 4.37 | 0.33 | 0.19 | 4.36832 | 1 | 0.08 | 0.04 | 1.43 | 0.26 | 0.17 | 0.33 | 0.06 | 0.04 |
| 37 | 0 | | 3 | 3.70 | 0.3 | 0.14 | 3.70151 | 1 | 0.08 | 0.04 | 1.26 | 0.23 | 0.13 | 0.34 | 0.06 | 0.04 |
| 37 | 0 | | 4 | 3.56 | 0.21 | 0.09 | 3.5614 | 1 | 0.06 | 0.03 | 1.24 | 0.16 | 0.08 | 0.35 | 0.04 | 0.02 |
| 37 | 0 | | 5 | 6.75 | 0.46 | 0.28 | 6.74887 | 1 | 0.07 | 0.04 | 2.16 | 0.37 | 0.28 | 0.32 | 0.05 | 0.04 |
| 37 | 0 | | 6 | 7.88 | 0.35 | 0.29 | 7.87581 | 1 | 0.04 | 0.04 | 2.32 | 0.37 | 0.32 | 0.29 | 0.05 | 0.04 |
| 37 | 0 | | 7 | 7.34 | 0.91 | 0.27 | 7.34363 | 1 | 0.12 | 0.04 | 3.42 | 0.79 | 0.22 | 0.47 | 0.11 | 0.03 |
| 37 | 0 | | 8 | 8.23 | 0.9 | 0.45 | 8.23442 | 1 | 0.11 | 0.05 | 2.05 | 0.59 | 0.42 | 0.25 | 0.07 | 0.05 |
| 37 | 0 | | 9 | 7.70 | 0.88 | 0.6 | 7.69593 | 1 | 0.11 | 0.08 | 1.92 | 0.66 | 0.54 | 0.25 | 0.09 | 0.07 |
| 37 | 0 | | 10 | 8.15 | 0.85 | 0.16 | 8.15473 | 1 | 0.10 | 0.02 | 3.2 | 0.64 | 0.19 | 0.39 | 0.08 | 0.02 |
| 37 | 0 | | 11 | 3.85 | 0.51 | 0.19 | 3.84707 | 1 | 0.13 | 0.05 | 1.36 | 0.38 | 0.2 | 0.35 | 0.10 | 0.05 |
| 37 | 0 | | 12 | 11.14 | 1.44 | 1.7 | 11.1364 | 1 | 0.13 | 0.15 | 3.63 | 1.07 | 1.58 | 0.33 | 0.10 | 0.14 |
| 37 | 0 | | 13 | 15.10 | 1.27 | 1.17 | 15.1042 | 1 | 0.08 | 0.08 | 3.39 | 0.83 | 1.32 | 0.22 | 0.05 | 0.09 |
| 37 | 0 | | 14 | 13.82 | 1.36 | 0.44 | 13.8199 | 1 | 0.10 | 0.03 | 5.28 | 0.86 | 0.47 | 0.38 | 0.06 | 0.03 |
| 37 | 0 | | 15 | 14.17 | 2.35 | 0.44 | 14.1711 | 1 | 0.17 | 0.03 | 6.45 | 1.83 | 0.36 | 0.46 | 0.13 | 0.03 |
| 37 | 0 | | 16 | 14.20 | 1.32 | 1.66 | 14.1964 | 1 | 0.09 | 0.12 | 3.07 | 1.01 | 1.64 | 0.22 | 0.07 | 0.12 |
| 37 | 0 | | 17 | 10.97 | 1.41 | 1.56 | 10.9727 | 1 | 0.13 | 0.14 | 3.33 | 1.04 | 1.4 | 0.30 | 0.09 | 0.13 |
| 37 | 0 | | 18 | 16.31 | 1.55 | 0.87 | 16.3105 | 1 | 0.10 | 0.05 | 6.16 | 1.31 | 0.83 | 0.38 | 0.08 | 0.05 |
| 37 | 0 | | 19 | 16.34 | 2.03 | 0.18 | 16.3383 | 1 | 0.12 | 0.01 | 6.65 | 1.64 | 0.19 | 0.41 | 0.10 | 0.01 |
| 37 | 0 | | 20 | 13.74 | 1.2 | 0.63 | 13.7369 | 1 | 0.09 | 0.05 | 4.25 | 0.92 | 0.64 | 0.31 | 0.07 | 0.05 |
| 37 | 0 | | 128 | 3.43 | 0.13 | 0.06 | 3.42747 | 1 | 0.04 | 0.02 | 1.52 | 0.13 | 0.05 | 0.44 | 0.04 | 0.01 |
| 37 | 0 | | 129 | 4.08 | 0.41 | 0.11 | 4.08381 | 1 | 0.10 | 0.03 | 1.21 | 0.3 | 0.09 | 0.30 | 0.07 | 0.02 |
| 37 | 0 | | 130 | 4.22 | 0.35 | 0.15 | 4.21844 | 1 | 0.08 | 0.04 | 1.44 | 0.25 | 0.13 | 0.34 | 0.06 | 0.03 |
| 37 | 0 | | 131 | 3.73 | 0.31 | 0.16 | 3.73264 | 1 | 0.08 | 0.04 | 1.24 | 0.22 | 0.17 | 0.33 | 0.06 | 0.05 |
| 37 | 0 | | 132 | 3.73 | 0.22 | 0.07 | 3.72693 | 1 | 0.06 | 0.02 | 1.87 | 0.17 | 0.06 | 0.50 | 0.05 | 0.02 |
| 37 | 0 | | 133 | 5.54 | 0.49 | 0.27 | 5.54081 | 1 | 0.09 | 0.05 | 2.32 | 0.35 | 0.26 | 0.42 | 0.06 | 0.05 |
| 37 | 0 | | 134 | 7.93 | 0.79 | 0.57 | 7.92914 | 1 | 0.10 | 0.07 | 2.27 | 0.45 | 0.42 | 0.29 | 0.06 | 0.05 |
| 37 | 0 | | 135 | 7.23 | 0.84 | 0.36 | 7.23087 | 1 | 0.12 | 0.05 | 3.5 | 0.62 | 0.29 | 0.48 | 0.09 | 0.04 |
| 37 | 0 | | 136 | 7.68 | 0.7 | 0.26 | 7.68059 | 1 | 0.09 | 0.03 | 2.34 | 0.59 | 0.19 | 0.30 | 0.08 | 0.02 |
| 37 | 0 | | 137 | 7.28 | 0.69 | 0.52 | 7.28419 | 1 | 0.09 | 0.07 | 3.07 | 0.53 | 0.49 | 0.42 | 0.07 | 0.07 |
| 37 | 0 | | 138 | 7.79 | 0.97 | 0.39 | 7.79305 | 1 | 0.12 | 0.05 | 2.93 | 0.64 | 0.28 | 0.38 | 0.08 | 0.04 |
| 37 | 0 | | 139 | 7.88 | 0.57 | 0.28 | 7.8766 | 1 | 0.07 | 0.04 | 3.13 | 0.54 | 0.22 | 0.40 | 0.07 | 0.03 |
| 37 | 0 | | 140 | 16.14 | 1.14 | 0.8 | 16.1418 | 1 | 0.07 | 0.05 | 6.48 | 0.78 | 0.59 | 0.40 | 0.05 | 0.04 |
| 37 | 0 | | 141 | 13.11 | 1.86 | 0.9 | 13.1138 | 1 | 0.14 | 0.07 | 3.81 | 1.24 | 0.78 | 0.29 | 0.09 | 0.06 |
| 37 | 0 | | 142 | 18.35 | 2.63 | 0.31 | 18.3481 | 1 | 0.14 | 0.02 | 6.6 | 2.23 | 0.27 | 0.36 | 0.12 | 0.01 |
| 37 | 0 | | 143 | 18.09 | 1.98 | 0.24 | 18.0936 | 1 | 0.11 | 0.01 | 9.35 | 1.8 | 0.24 | 0.52 | 0.10 | 0.01 |
| 37 | 0 | | 144 | 16.39 | 2.12 | 1.16 | 16.3906 | 1 | 0.13 | 0.07 | 6.23 | 1.85 | 1.1 | 0.38 | 0.11 | 0.07 |
| 37 | 0 | | 145 | 16.96 | 1.13 | 0.69 | 16.9619 | 1 | 0.07 | 0.04 | 7.27 | 0.96 | 0.5 | 0.43 | 0.06 | 0.03 |
| 37 | 0 | | 146 | 11.29 | 1.81 | 0.96 | 11.2886 | 1 | 0.16 | 0.09 | 3.46 | 1.09 | 0.85 | 0.31 | 0.10 | 0.08 |
| 37 | 0 | | 147 | 15.97 | 2.03 | 0.28 | 15.9729 | 1 | 0.13 | 0.02 | 7.77 | 1.7 | 0.23 | 0.49 | 0.11 | 0.01 |
| 37 | 0 | | 148 | 16.79 | 1.68 | 1.52 | 16.7854 | 1 | 0.10 | 0.09 | 7.41 | 1.72 | 1.24 | 0.44 | 0.10 | 0.07 |

. QTMO N260 LOW channel MIMO

| Frequency (GHz) | Module | Beam 2 | Beam 1 | 4cm2 PD(W/m2) at 2mm evaluation surfaces @6dBm | | | | Max Ratio | | | 4cm2 PD(W/m2) at 10mm evaluation surfaces @6dBm | | | Max Ratio | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 1 | 0.15 | 0.14 | | | | 0.5 | 0.13 | 0.14 |
| | | | | | | | | Ratio | | | | | | Ratio | | |
| | | | | Front | Right | TOP | Max PD | Front | Right | TOP | Front | Left | Right | Front | Left | Right |
| 37 | 0 | 128 | 0 | 3.60 | 0.38 | 0.2 | 3.59806 | 1 | 0.11 | 0.06 | 1.77 | 0.31 | 0.19 | 0.49 | 0.09 | 0.05 |
| 37 | 0 | 129 | 1 | 7.10 | 0.79 | 0.27 | 7.09503 | 1 | 0.11 | 0.04 | 2.54 | 0.55 | 0.22 | 0.36 | 0.08 | 0.03 |
| 37 | 0 | 130 | 2 | 9.45 | 0.85 | 0.62 | 9.44717 | 1 | 0.09 | 0.07 | 3.35 | 0.6 | 0.56 | 0.35 | 0.06 | 0.06 |
| 37 | 0 | 131 | 3 | 8.14 | 0.73 | 0.43 | 8.14099 | 1 | 0.09 | 0.05 | 2.75 | 0.69 | 0.46 | 0.34 | 0.08 | 0.06 |
| 37 | 0 | 132 | 4 | 4.43 | 0.5 | 0.21 | 4.42828 | 1 | 0.11 | 0.05 | 2.2 | 0.37 | 0.2 | 0.50 | 0.08 | 0.05 |
| 37 | 0 | 133 | 5 | 11.80 | 1.23 | 0.89 | 11.8012 | 1 | 0.10 | 0.08 | 4.82 | 1.01 | 0.88 | 0.41 | 0.09 | 0.07 |
| 37 | 0 | 134 | 6 | 17.91 | 1.27 | 1.4 | 17.9063 | 1 | 0.07 | 0.08 | 5.98 | 0.9 | 1.39 | 0.33 | 0.05 | 0.08 |
| 37 | 0 | 135 | 7 | 17.85 | 2.21 | 0.96 | 17.8539 | 1 | 0.12 | 0.05 | 8.26 | 1.66 | 0.82 | 0.46 | 0.09 | 0.05 |
| 37 | 0 | 136 | 8 | 12.12 | 1.82 | 1 | 12.1205 | 1 | 0.15 | 0.08 | 3.35 | 1.34 | 0.91 | 0.28 | 0.11 | 0.08 |
| 37 | 0 | 137 | 9 | 17.13 | 2.08 | 1.83 | 17.134 | 1 | 0.12 | 0.11 | 6.64 | 1.88 | 1.79 | 0.39 | 0.11 | 0.10 |
| 37 | 0 | 138 | 10 | 16.92 | 1.87 | 0.88 | 16.9241 | 1 | 0.11 | 0.05 | 6.78 | 1.57 | 0.63 | 0.40 | 0.09 | 0.04 |
| 37 | 0 | 139 | 11 | 11.51 | 1.02 | 0.68 | 11.511 | 1 | 0.09 | 0.06 | 4.38 | 0.84 | 0.58 | 0.38 | 0.07 | 0.05 |
| 37 | 0 | 140 | 12 | 28.52 | 2.82 | 3.07 | 28.5192 | 1 | 0.10 | 0.11 | 11.03 | 2.36 | 3.01 | 0.39 | 0.08 | 0.11 |
| 37 | 0 | 141 | 13 | 33.03 | 3.81 | 3.61 | 33.029 | 1 | 0.12 | 0.11 | 8.56 | 2.71 | 3.6 | 0.26 | 0.08 | 0.11 |
| 37 | 0 | 142 | 14 | 30.69 | 4.29 | 0.87 | 30.6942 | 1 | 0.14 | 0.03 | 12.06 | 3.89 | 0.87 | 0.39 | 0.13 | 0.03 |
| 37 | 0 | 143 | 15 | 35.00 | 4.52 | 0.91 | 34.9967 | 1 | 0.13 | 0.03 | 16.21 | 4.24 | 0.79 | 0.46 | 0.12 | 0.02 |
| 37 | 0 | 144 | 16 | 35.44 | 3.53 | 4.93 | 35.4423 | 1 | 0.10 | 0.14 | 10.26 | 2.78 | 4.86 | 0.29 | 0.08 | 0.14 |
| 37 | 0 | 145 | 17 | 28.97 | 2.91 | 2.67 | 28.9744 | 1 | 0.10 | 0.09 | 12.09 | 2.49 | 2.67 | 0.42 | 0.09 | 0.09 |
| 37 | 0 | 146 | 18 | 29.65 | 4.07 | 3.05 | 29.6462 | 1 | 0.14 | 0.10 | 10.28 | 3.16 | 2.94 | 0.35 | 0.11 | 0.10 |
| 37 | 0 | 147 | 19 | 31.86 | 4.93 | 0.65 | 31.8637 | 1 | 0.15 | 0.02 | 14.36 | 4.01 | 0.61 | 0.45 | 0.13 | 0.02 |
| 37 | 0 | 148 | 20 | 30.00 | 4.1 | 3.49 | 29.999 | 1 | 0.14 | 0.12 | 12.17 | 3.5 | 3.19 | 0.41 | 0.12 | 0.11 |

. QTMO N260 Middle channel SISO

| Frequency (GHz) | Module | Beam 2 | Beam 1 | 4cm2 PD(W/m2) at 2mm evaluation surfaces @6dBm | | | | Max Ratio | | | 4cm2 PD(W/m2) at 10mm evaluation surfaces @6dBm | | | Max Ratio | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 1 | 0.16 | 0.12 | | | | 0.55 | 0.11 | 0.13 |
| | | | | | | | | Ratio | | | | | | Ratio | | |
| | | | | Front | Right | TOP | Max PD | Front | Right | TOP | Front | Right | TOP | Front | Right | TOP |
| 38.5 | 0 | | 0 | 3.11 | 0.2 | 0.06 | 3.11279 | 1 | 0.06 | 0.02 | 1.21 | 0.18 | 0.06 | 0.39 | 0.06 | 0.02 |
| 38.5 | 0 | | 1 | 3.03 | 0.23 | 0.07 | 3.03452 | 1 | 0.08 | 0.02 | 0.9 | 0.15 | 0.07 | 0.30 | 0.05 | 0.02 |
| 38.5 | 0 | | 2 | 4.28 | 0.27 | 0.21 | 4.27857 | 1 | 0.06 | 0.05 | 1.5 | 0.27 | 0.19 | 0.35 | 0.06 | 0.04 |
| 38.5 | 0 | | 3 | 4.31 | 0.24 | 0.17 | 4.31051 | 1 | 0.06 | 0.04 | 1.5 | 0.21 | 0.17 | 0.35 | 0.05 | 0.04 |
| 38.5 | 0 | | 4 | 3.94 | 0.24 | 0.07 | 3.93988 | 1 | 0.06 | 0.02 | 1.43 | 0.2 | 0.07 | 0.36 | 0.05 | 0.02 |
| 38.5 | 0 | | 5 | 7.41 | 0.46 | 0.29 | 7.40715 | 1 | 0.06 | 0.04 | 2.39 | 0.43 | 0.35 | 0.32 | 0.06 | 0.05 |
| 38.5 | 0 | | 6 | 8.43 | 0.55 | 0.22 | 8.42968 | 1 | 0.07 | 0.03 | 2.89 | 0.55 | 0.26 | 0.34 | 0.07 | 0.03 |
| 38.5 | 0 | | 7 | 7.37 | 0.67 | 0.29 | 7.37028 | 1 | 0.09 | 0.04 | 4 | 0.71 | 0.29 | 0.54 | 0.10 | 0.04 |
| 38.5 | 0 | | 8 | 9.10 | 0.79 | 0.57 | 9.10192 | 1 | 0.09 | 0.06 | 2 | 0.47 | 0.52 | 0.22 | 0.05 | 0.06 |
| 38.5 | 0 | | 9 | 8.71 | 0.71 | 0.69 | 8.71327 | 1 | 0.08 | 0.08 | 2.21 | 0.43 | 0.68 | 0.25 | 0.05 | 0.08 |
| 38.5 | 0 | | 10 | 8.43 | 0.55 | 0.24 | 8.43321 | 1 | 0.07 | 0.03 | 3.51 | 0.45 | 0.19 | 0.42 | 0.05 | 0.02 |
| 38.5 | 0 | | 11 | 4.66 | 0.44 | 0.16 | 4.65799 | 1 | 0.09 | 0.03 | 1.68 | 0.28 | 0.17 | 0.36 | 0.06 | 0.04 |
| 38.5 | 0 | | 12 | 13.68 | 1.21 | 1.61 | 13.6796 | 1 | 0.09 | 0.12 | 3.95 | 0.79 | 1.72 | 0.29 | 0.06 | 0.13 |
| 38.5 | 0 | | 13 | 15.59 | 1.3 | 1.11 | 15.5933 | 1 | 0.08 | 0.07 | 3.73 | 0.84 | 1.08 | 0.24 | 0.05 | 0.07 |
| 38.5 | 0 | | 14 | 15.75 | 1.39 | 0.29 | 15.7488 | 1 | 0.09 | 0.02 | 6.03 | 0.95 | 0.25 | 0.38 | 0.06 | 0.02 |
| 38.5 | 0 | | 15 | 14.98 | 1.36 | 0.61 | 14.977 | 1 | 0.09 | 0.04 | 7.52 | 1.35 | 0.56 | 0.50 | 0.09 | 0.04 |
| 38.5 | 0 | | 16 | 15.21 | 1.31 | 1.41 | 15.2131 | 1 | 0.09 | 0.09 | 3.6 | 0.96 | 1.39 | 0.24 | 0.06 | 0.09 |
| 38.5 | 0 | | 17 | 12.84 | 0.96 | 1.3 | 12.8408 | 1 | 0.07 | 0.10 | 4.22 | 0.62 | 1.37 | 0.33 | 0.05 | 0.11 |
| 38.5 | 0 | | 18 | 15.64 | 1.12 | 0.14 | 15.6383 | 1 | 0.07 | 0.01 | 7.08 | 1.32 | 0.46 | 0.45 | 0.08 | 0.03 |
| 38.5 | 0 | | 19 | 16.52 | 1.57 | 0.53 | 16.5206 | 1 | 0.10 | 0.03 | 7.99 | 1.09 | 0.17 | 0.48 | 0.07 | 0.01 |
| 38.5 | 0 | | 20 | 16.19 | 1.6 | 0.87 | 16.1908 | 1 | 0.10 | 0.05 | 4.58 | 1.01 | 0.96 | 0.28 | 0.06 | 0.06 |
| 38.5 | 0 | | 128 | 3.70 | 0.13 | 0.06 | 3.70457 | 1 | 0.04 | 0.02 | 1.86 | 0.1 | 0.05 | 0.50 | 0.03 | 0.01 |
| 38.5 | 0 | | 129 | 4.15 | 0.38 | 0.11 | 4.15286 | 1 | 0.09 | 0.03 | 1.16 | 0.29 | 0.08 | 0.28 | 0.07 | 0.02 |
| 38.5 | 0 | | 130 | 4.16 | 0.31 | 0.2 | 4.15925 | 1 | 0.07 | 0.05 | 1.5 | 0.18 | 0.21 | 0.36 | 0.04 | 0.05 |
| 38.5 | 0 | | 131 | 3.93 | 0.37 | 0.16 | 3.93183 | 1 | 0.09 | 0.04 | 1.36 | 0.21 | 0.18 | 0.35 | 0.05 | 0.05 |
| 38.5 | 0 | | 132 | 4.11 | 0.28 | 0.12 | 4.10901 | 1 | 0.07 | 0.03 | 1.94 | 0.22 | 0.09 | 0.47 | 0.05 | 0.02 |
| 38.5 | 0 | | 133 | 5.58 | 0.55 | 0.34 | 5.57937 | 1 | 0.10 | 0.06 | 2.32 | 0.35 | 0.32 | 0.42 | 0.06 | 0.06 |
| 38.5 | 0 | | 134 | 8.12 | 1.01 | 0.45 | 8.11974 | 1 | 0.12 | 0.06 | 2.48 | 0.6 | 0.47 | 0.31 | 0.07 | 0.06 |
| 38.5 | 0 | | 135 | 7.38 | 0.58 | 0.38 | 7.3816 | 1 | 0.08 | 0.05 | 3.78 | 0.48 | 0.35 | 0.51 | 0.07 | 0.05 |
| 38.5 | 0 | | 136 | 8.55 | 0.75 | 0.22 | 8.54643 | 1 | 0.09 | 0.03 | 2.63 | 0.51 | 0.15 | 0.31 | 0.06 | 0.02 |
| 38.5 | 0 | | 137 | 7.77 | 0.42 | 0.61 | 7.76864 | 1 | 0.05 | 0.08 | 3.18 | 0.35 | 0.64 | 0.41 | 0.05 | 0.08 |
| 38.5 | 0 | | 138 | 7.74 | 1 | 0.32 | 7.73519 | 1 | 0.13 | 0.04 | 3.34 | 0.6 | 0.23 | 0.43 | 0.08 | 0.03 |
| 38.5 | 0 | | 139 | 7.90 | 0.48 | 0.25 | 7.90281 | 1 | 0.06 | 0.03 | 3.54 | 0.43 | 0.2 | 0.45 | 0.05 | 0.03 |
| 38.5 | 0 | | 140 | 15.67 | 1.48 | 1.16 | 15.6662 | 1 | 0.09 | 0.07 | 6 | 0.97 | 1.07 | 0.38 | 0.06 | 0.07 |
| 38.5 | 0 | | 141 | 14.98 | 2.11 | 0.62 | 14.9846 | 1 | 0.14 | 0.04 | 4.51 | 1.27 | 0.44 | 0.30 | 0.08 | 0.03 |
| 38.5 | 0 | | 142 | 17.62 | 2.55 | 0.25 | 17.6212 | 1 | 0.14 | 0.01 | 7.52 | 1.92 | 0.21 | 0.43 | 0.11 | 0.01 |
| 38.5 | 0 | | 143 | 17.56 | 2.24 | 0.64 | 17.5577 | 1 | 0.13 | 0.04 | 9.7 | 1.22 | 0.79 | 0.55 | 0.07 | 0.04 |
| 38.5 | 0 | | 144 | 17.35 | 1.08 | 0.89 | 17.3531 | 1 | 0.06 | 0.05 | 6.73 | 1.75 | 0.7 | 0.39 | 0.10 | 0.04 |
| 38.5 | 0 | | 145 | 16.07 | 0.98 | 1.03 | 16.0656 | 1 | 0.06 | 0.06 | 6.79 | 0.97 | 1.02 | 0.42 | 0.06 | 0.06 |
| 38.5 | 0 | | 146 | 13.25 | 2.12 | 0.69 | 13.253 | 1 | 0.16 | 0.05 | 3.92 | 1.26 | 0.56 | 0.30 | 0.10 | 0.04 |
| 38.5 | 0 | | 147 | 15.72 | 1.14 | 0.32 | 15.7232 | 1 | 0.07 | 0.02 | 7.99 | 1.04 | 0.27 | 0.51 | 0.07 | 0.02 |
| 38.5 | 0 | | 148 | 16.36 | 1.69 | 1.34 | 16.3645 | 1 | 0.10 | 0.08 | 7.83 | 1.34 | 1.22 | 0.48 | 0.08 | 0.07 |

. QTMO N260 Middle channel MIMO

| Frequency (GHz) | Module | Beam 2 | Beam 1 | 4cm2 PD(W/m2) at 2mm evaluation surfaces @6dBm | | | | Max Ratio | | | 4cm2 PD(W/m2) at 10mm evaluation surfaces @6dBm | | | Max Ratio | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 1 | 0.17 | 0.14 | | | | 0.54 | 0.12 | 0.16 |
| | | | | | | | | Ratio | | | | | | Ratio | | |
| | | | | Front | Right | TOP | Max PD | Front | Right | TOP | Front | Right | TOP | Front | Right | TOP |
| 38.5 | 0 | 128 | 0 | 4.05 | 0.42 | 0.17 | 4.05198 | 1 | 0.10 | 0.04 | 2.17 | 0.35 | 0.16 | 0.54 | 0.09 | 0.04 |
| 38.5 | 0 | 129 | 1 | 7.85 | 0.65 | 0.17 | 7.8462 | 1 | 0.08 | 0.02 | 2.53 | 0.54 | 0.13 | 0.32 | 0.07 | 0.02 |
| 38.5 | 0 | 130 | 2 | 9.40 | 0.6 | 0.81 | 9.39813 | 1 | 0.06 | 0.09 | 3.57 | 0.61 | 0.77 | 0.38 | 0.06 | 0.08 |
| 38.5 | 0 | 131 | 3 | 9.53 | 0.75 | 0.56 | 9.53227 | 1 | 0.08 | 0.06 | 3.25 | 0.53 | 0.65 | 0.34 | 0.06 | 0.07 |
| 38.5 | 0 | 132 | 4 | 5.34 | 0.54 | 0.22 | 5.33975 | 1 | 0.10 | 0.04 | 2.48 | 0.5 | 0.19 | 0.46 | 0.09 | 0.04 |
| 38.5 | 0 | 133 | 5 | 13.54 | 1.34 | 1.02 | 13.5445 | 1 | 0.10 | 0.08 | 4.87 | 1.04 | 1.16 | 0.36 | 0.08 | 0.09 |
| 38.5 | 0 | 134 | 6 | 18.95 | 1.92 | 1.18 | 18.9512 | 1 | 0.10 | 0.06 | 6.7 | 1.29 | 1.32 | 0.35 | 0.07 | 0.07 |
| 38.5 | 0 | 135 | 7 | 16.52 | 1.53 | 1.27 | 16.5225 | 1 | 0.09 | 0.08 | 8.69 | 1.69 | 1.25 | 0.53 | 0.10 | 0.08 |
| 38.5 | 0 | 136 | 8 | 14.95 | 2.48 | 0.88 | 14.9502 | 1 | 0.17 | 0.06 | 4.09 | 1.75 | 0.83 | 0.27 | 0.12 | 0.06 |
| 38.5 | 0 | 137 | 9 | 19.26 | 1.76 | 2.44 | 19.2559 | 1 | 0.09 | 0.13 | 7.6 | 1.18 | 2.56 | 0.39 | 0.06 | 0.13 |
| 38.5 | 0 | 138 | 10 | 19.42 | 1.9 | 1.04 | 19.4163 | 1 | 0.10 | 0.05 | 9.39 | 1.29 | 0.75 | 0.48 | 0.07 | 0.04 |
| 38.5 | 0 | 139 | 11 | 12.01 | 0.99 | 0.37 | 12.0087 | 1 | 0.08 | 0.03 | 5.08 | 0.84 | 0.28 | 0.42 | 0.07 | 0.02 |
| 38.5 | 0 | 140 | 12 | 30.83 | 2.57 | 4.35 | 30.8331 | 1 | 0.08 | 0.14 | 12.34 | 1.74 | 4.8 | 0.40 | 0.06 | 0.16 |
| 38.5 | 0 | 141 | 13 | 34.24 | 4.17 | 3.07 | 34.2378 | 1 | 0.12 | 0.09 | 10.83 | 2.85 | 2.49 | 0.32 | 0.08 | 0.07 |
| 38.5 | 0 | 142 | 14 | 33.14 | 4.86 | 1 | 33.1384 | 1 | 0.15 | 0.03 | 14.9 | 3.91 | 0.85 | 0.45 | 0.12 | 0.03 |
| 38.5 | 0 | 143 | 15 | 36.15 | 3.02 | 2.76 | 36.1524 | 1 | 0.08 | 0.08 | 18.36 | 3.87 | 2.53 | 0.51 | 0.11 | 0.07 |
| 38.5 | 0 | 144 | 16 | 33.79 | 4.18 | 3.33 | 33.7875 | 1 | 0.12 | 0.10 | 11.41 | 3.24 | 3.69 | 0.34 | 0.10 | 0.11 |
| 38.5 | 0 | 145 | 17 | 30.02 | 2.28 | 4.1 | 30.022 | 1 | 0.08 | 0.14 | 13.37 | 1.94 | 4.45 | 0.45 | 0.06 | 0.15 |
| 38.5 | 0 | 146 | 18 | 31.78 | 3.9 | 1.71 | 31.7772 | 1 | 0.12 | 0.05 | 13.22 | 2.9 | 1.55 | 0.42 | 0.09 | 0.05 |
| 38.5 | 0 | 147 | 19 | 32.89 | 2.96 | 0.45 | 32.887 | 1 | 0.09 | 0.01 | 17.34 | 2.9 | 0.41 | 0.53 | 0.09 | 0.01 |
| 38.5 | 0 | 148 | 20 | 36.36 | 4.78 | 3.61 | 36.3606 | 1 | 0.13 | 0.10 | 13.82 | 3.06 | 3.69 | 0.38 | 0.08 | 0.10 |

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. QTM0 N260 High channel SISO

| Frequency (GHz) | Module | Beam 2 | Beam 1 | 4cm2 PD(W/m2) at 2mm evaluation surfaces @6dBm | | | | Max Ratio | | | 4cm2 PD(W/m2) at 10mm evaluation surfaces @6dBm | | | Max Ratio | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 1 | 0.16 | 0.11 | | | | 0.54 | 0.11 | 0.11 |
| | | | | | | | | Ratio | | | | | | Ratio | | |
| | | | | Front | Right | TOP | Max PD | Front | Right | TOP | Front | Right | TOP | Front | Right | TOP |
| 40 | 0 | | 0 | 2.57 | 0.28 | 0.06 | 2.57 | 1 | 0.11 | 0.02 | 0.93 | 0.17 | 0.06 | 0.36 | 0.07 | 0.02 |
| 40 | 0 | | 1 | 2.95 | 0.36 | 0.1 | 2.95 | 1 | 0.12 | 0.03 | 0.88 | 0.25 | 0.09 | 0.30 | 0.08 | 0.03 |
| 40 | 0 | | 2 | 4.36 | 0.18 | 0.26 | 4.36 | 1 | 0.04 | 0.06 | 1.58 | 0.12 | 0.23 | 0.36 | 0.03 | 0.05 |
| 40 | 0 | | 3 | 4.04 | 0.25 | 0.18 | 4.04 | 1 | 0.06 | 0.04 | 1.38 | 0.22 | 0.2 | 0.34 | 0.05 | 0.05 |
| 40 | 0 | | 4 | 3.94 | 0.31 | 0.06 | 3.94 | 1 | 0.08 | 0.02 | 1.39 | 0.24 | 0.07 | 0.35 | 0.06 | 0.02 |
| 40 | 0 | | 5 | 7.4 | 0.34 | 0.34 | 7.4 | 1 | 0.05 | 0.05 | 2.1 | 0.28 | 0.42 | 0.28 | 0.04 | 0.06 |
| 40 | 0 | | 6 | 8.08 | 0.44 | 0.17 | 8.08 | 1 | 0.05 | 0.02 | 3.05 | 0.45 | 0.22 | 0.38 | 0.06 | 0.03 |
| 40 | 0 | | 7 | 7.33 | 0.5 | 0.52 | 7.33 | 1 | 0.07 | 0.07 | 3.72 | 0.49 | 0.48 | 0.51 | 0.07 | 0.07 |
| 40 | 0 | | 8 | 8.8 | 0.71 | 0.46 | 8.8 | 1 | 0.08 | 0.05 | 2.3 | 0.42 | 0.5 | 0.26 | 0.05 | 0.06 |
| 40 | 0 | | 9 | 8.81 | 0.66 | 0.72 | 8.81 | 1 | 0.07 | 0.08 | 2.54 | 0.51 | 0.75 | 0.29 | 0.06 | 0.09 |
| 40 | 0 | | 10 | 7.78 | 0.51 | 0.29 | 7.78 | 1 | 0.07 | 0.04 | 3.36 | 0.3 | 0.19 | 0.43 | 0.04 | 0.02 |
| 40 | 0 | | 11 | 4.35 | 0.67 | 0.14 | 4.35 | 1 | 0.15 | 0.03 | 1.47 | 0.47 | 0.12 | 0.34 | 0.11 | 0.03 |
| 40 | 0 | | 12 | 14.57 | 0.84 | 1.29 | 14.57 | 1 | 0.06 | 0.09 | 4.32 | 0.57 | 1.41 | 0.30 | 0.04 | 0.10 |
| 40 | 0 | | 13 | 15.63 | 0.96 | 0.85 | 15.63 | 1 | 0.06 | 0.05 | 5.5 | 0.59 | 0.67 | 0.35 | 0.04 | 0.04 |
| 40 | 0 | | 14 | 16.44 | 1.74 | 0.34 | 16.44 | 1 | 0.11 | 0.02 | 6.18 | 1.12 | 0.3 | 0.38 | 0.07 | 0.02 |
| 40 | 0 | | 15 | 14.19 | 1.39 | 1.55 | 14.19 | 1 | 0.10 | 0.11 | 6.1 | 1.33 | 1.48 | 0.43 | 0.09 | 0.10 |
| 40 | 0 | | 16 | 14.73 | 0.96 | 0.89 | 14.73 | 1 | 0.07 | 0.06 | 4.03 | 0.8 | 0.9 | 0.27 | 0.05 | 0.06 |
| 40 | 0 | | 17 | 13.92 | 1 | 1.17 | 13.92 | 1 | 0.07 | 0.08 | 4.15 | 0.83 | 1.35 | 0.30 | 0.06 | 0.10 |
| 40 | 0 | | 18 | 16.04 | 1.21 | 0.42 | 16.04 | 1 | 0.08 | 0.03 | 7.25 | 0.87 | 0.37 | 0.45 | 0.05 | 0.02 |
| 40 | 0 | | 19 | 14.55 | 1.17 | 0.37 | 14.55 | 1 | 0.08 | 0.03 | 7.03 | 0.89 | 0.31 | 0.48 | 0.06 | 0.02 |
| 40 | 0 | | 20 | 15.99 | 1.92 | 0.99 | 15.99 | 1 | 0.12 | 0.06 | 4.75 | 1.19 | 1 | 0.30 | 0.07 | 0.06 |
| 40 | 0 | | 128 | 3.45 | 0.12 | 0.06 | 3.45 | 1 | 0.03 | 0.02 | 1.88 | 0.1 | 0.05 | 0.54 | 0.03 | 0.01 |
| 40 | 0 | | 129 | 3.71 | 0.34 | 0.16 | 3.71 | 1 | 0.09 | 0.04 | 1.12 | 0.22 | 0.12 | 0.30 | 0.06 | 0.03 |
| 40 | 0 | | 130 | 3.89 | 0.35 | 0.26 | 3.89 | 1 | 0.09 | 0.07 | 1.35 | 0.23 | 0.23 | 0.35 | 0.06 | 0.06 |
| 40 | 0 | | 131 | 3.68 | 0.42 | 0.2 | 3.68 | 1 | 0.11 | 0.05 | 1.11 | 0.26 | 0.22 | 0.30 | 0.07 | 0.06 |
| 40 | 0 | | 132 | 4.14 | 0.23 | 0.1 | 4.14 | 1 | 0.06 | 0.02 | 2.11 | 0.17 | 0.09 | 0.51 | 0.04 | 0.02 |
| 40 | 0 | | 133 | 5.53 | 0.55 | 0.38 | 5.53 | 1 | 0.10 | 0.07 | 2.47 | 0.36 | 0.4 | 0.45 | 0.07 | 0.07 |
| 40 | 0 | | 134 | 8.03 | 1 | 0.38 | 8.03 | 1 | 0.12 | 0.05 | 2.28 | 0.6 | 0.37 | 0.28 | 0.07 | 0.05 |
| 40 | 0 | | 135 | 6.48 | 0.69 | 0.63 | 6.48 | 1 | 0.11 | 0.10 | 2.83 | 0.52 | 0.61 | 0.44 | 0.08 | 0.09 |
| 40 | 0 | | 136 | 8.12 | 0.64 | 0.28 | 8.12 | 1 | 0.08 | 0.03 | 2.67 | 0.36 | 0.23 | 0.33 | 0.04 | 0.03 |
| 40 | 0 | | 137 | 7.81 | 0.46 | 0.86 | 7.81 | 1 | 0.06 | 0.11 | 2.64 | 0.43 | 0.83 | 0.34 | 0.06 | 0.11 |
| 40 | 0 | | 138 | 6.8 | 1.06 | 0.11 | 6.8 | 1 | 0.16 | 0.02 | 2.79 | 0.67 | 0.1 | 0.41 | 0.10 | 0.01 |
| 40 | 0 | | 139 | 6.68 | 0.61 | 0.33 | 6.68 | 1 | 0.09 | 0.05 | 3.31 | 0.35 | 0.26 | 0.50 | 0.05 | 0.04 |
| 40 | 0 | | 140 | 14.42 | 1.33 | 1.4 | 14.42 | 1 | 0.09 | 0.10 | 6.05 | 1.03 | 1.32 | 0.42 | 0.07 | 0.09 |
| 40 | 0 | | 141 | 15.53 | 1.83 | 0.36 | 15.53 | 1 | 0.12 | 0.02 | 5.43 | 1.13 | 0.28 | 0.35 | 0.07 | 0.02 |
| 40 | 0 | | 142 | 14.94 | 1.57 | 0.15 | 14.94 | 1 | 0.11 | 0.01 | 6.81 | 1.13 | 0.11 | 0.46 | 0.08 | 0.01 |
| 40 | 0 | | 143 | 16.52 | 1.46 | 1.15 | 16.52 | 1 | 0.09 | 0.07 | 9 | 1.54 | 0.98 | 0.54 | 0.09 | 0.06 |
| 40 | 0 | | 144 | 17.16 | 1.49 | 0.64 | 17.16 | 1 | 0.09 | 0.04 | 7.54 | 1.1 | 0.7 | 0.44 | 0.06 | 0.04 |
| 40 | 0 | | 145 | 14.87 | 1.13 | 1.56 | 14.87 | 1 | 0.08 | 0.10 | 6.8 | 1.07 | 1.43 | 0.46 | 0.07 | 0.10 |
| 40 | 0 | | 146 | 13.83 | 2.15 | 0.65 | 13.83 | 1 | 0.16 | 0.05 | 4.17 | 1.44 | 0.45 | 0.30 | 0.10 | 0.03 |
| 40 | 0 | | 147 | 12.97 | 1.13 | 0.83 | 12.97 | 1 | 0.09 | 0.06 | 6.39 | 0.85 | 0.77 | 0.49 | 0.07 | 0.06 |
| 40 | 0 | | 148 | 15.19 | 2.13 | 1.13 | 15.19 | 1 | 0.14 | 0.07 | 7.6 | 1.28 | 1.07 | 0.50 | 0.08 | 0.07 |

. QTMO N260 High channel MIMO

| Frequency (GHz) | Module | Beam 2 | Beam 1 | 4cm2 PD(W/m2) at 2mm evaluation surfaces @6dBm | | | | Max Ratio | | | 4cm2 PD(W/m2) at 10mm evaluation surfaces @6dBm | | | Max Ratio | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 1 | 0.18 | 0.17 | | | | 0.6 | 0.12 | 0.17 |
| | | | | | | | | Ratio | | | | | | Ratio | | |
| | | | | Front | Right | TOP | Max PD | Front | Right | TOP | Front | Right | TOP | Front | Right | TOP |
| 40 | 0 | 128 | 0 | 3.88 | 0.43 | 0.17 | 3.88 | 1 | 0.11 | 0.04 | 2.32 | 0.31 | 0.17 | 0.60 | 0.08 | 0.04 |
| 40 | 0 | 129 | 1 | 7.6 | 0.89 | 0.31 | 7.6 | 1 | 0.12 | 0.04 | 2.47 | 0.67 | 0.22 | 0.33 | 0.09 | 0.03 |
| 40 | 0 | 130 | 2 | 9.41 | 0.59 | 0.96 | 9.41 | 1 | 0.06 | 0.10 | 3.64 | 0.45 | 0.89 | 0.39 | 0.05 | 0.09 |
| 40 | 0 | 131 | 3 | 9.09 | 0.6 | 0.72 | 9.09 | 1 | 0.07 | 0.08 | 2.99 | 0.53 | 0.82 | 0.33 | 0.06 | 0.09 |
| 40 | 0 | 132 | 4 | 5.01 | 0.5 | 0.21 | 5.01 | 1 | 0.10 | 0.04 | 2.73 | 0.45 | 0.21 | 0.54 | 0.09 | 0.04 |
| 40 | 0 | 133 | 5 | 15.14 | 1.21 | 1.35 | 15.14 | 1 | 0.08 | 0.09 | 4.12 | 0.86 | 1.58 | 0.27 | 0.06 | 0.10 |
| 40 | 0 | 134 | 6 | 17.47 | 1.67 | 0.95 | 17.47 | 1 | 0.10 | 0.05 | 6.85 | 1.05 | 1.04 | 0.39 | 0.06 | 0.06 |
| 40 | 0 | 135 | 7 | 14.97 | 1.47 | 2.18 | 14.97 | 1 | 0.10 | 0.15 | 7.87 | 1.54 | 2.08 | 0.53 | 0.10 | 0.14 |
| 40 | 0 | 136 | 8 | 13.46 | 1.92 | 0.72 | 13.46 | 1 | 0.14 | 0.05 | 4.85 | 1.35 | 0.75 | 0.36 | 0.10 | 0.06 |
| 40 | 0 | 137 | 9 | 19 | 1.49 | 3 | 19 | 1 | 0.08 | 0.16 | 8.33 | 1.47 | 3.04 | 0.44 | 0.08 | 0.16 |
| 40 | 0 | 138 | 10 | 18.65 | 1.6 | 0.56 | 18.65 | 1 | 0.09 | 0.03 | 9.68 | 1.08 | 0.39 | 0.52 | 0.06 | 0.02 |
| 40 | 0 | 139 | 11 | 11.05 | 1.32 | 0.62 | 11.05 | 1 | 0.12 | 0.06 | 5.52 | 0.96 | 0.48 | 0.50 | 0.09 | 0.04 |
| 40 | 0 | 140 | 12 | 32.81 | 2.39 | 4.54 | 32.81 | 1 | 0.07 | 0.14 | 14.54 | 1.85 | 4.8 | 0.44 | 0.06 | 0.15 |
| 40 | 0 | 141 | 13 | 31.02 | 3.45 | 1.78 | 31.02 | 1 | 0.11 | 0.06 | 12.44 | 2.21 | 1.56 | 0.40 | 0.07 | 0.05 |
| 40 | 0 | 142 | 14 | 30.74 | 3.13 | 0.72 | 30.74 | 1 | 0.10 | 0.02 | 13.9 | 2.61 | 0.59 | 0.45 | 0.08 | 0.02 |
| 40 | 0 | 143 | 15 | 35.21 | 3.98 | 4.66 | 35.21 | 1 | 0.11 | 0.13 | 18.58 | 4.32 | 4.35 | 0.53 | 0.12 | 0.12 |
| 40 | 0 | 144 | 16 | 31.47 | 2.29 | 2.49 | 31.47 | 1 | 0.07 | 0.08 | 11.93 | 1.71 | 2.79 | 0.38 | 0.05 | 0.09 |
| 40 | 0 | 145 | 17 | 30.74 | 2.82 | 5.18 | 30.74 | 1 | 0.09 | 0.17 | 15.09 | 2.78 | 5.27 | 0.49 | 0.09 | 0.17 |
| 40 | 0 | 146 | 18 | 31.79 | 5.81 | 1.14 | 31.79 | 1 | 0.18 | 0.04 | 14.38 | 3.78 | 0.91 | 0.45 | 0.12 | 0.03 |
| 40 | 0 | 147 | 19 | 27.6 | 2.89 | 1.41 | 27.6 | 1 | 0.10 | 0.05 | 14.83 | 2.12 | 1.19 | 0.54 | 0.08 | 0.04 |
| 40 | 0 | 148 | 20 | 32 | 4.06 | 3.65 | 32 | 1 | 0.13 | 0.11 | 14.75 | 3.03 | 3.91 | 0.46 | 0.09 | 0.12 |

Table 4-1: Max Ratio for SISO and MIMO per band per module

| Band | module | Distance | Max Ratio for SISO | Max Ratio for MIMO |
|---|---|---|---|---|
| N261 | 0 | 2mm | 1 | 1 |
| | | 10mm | 0.49 | 0.5 |
| | 0 | 2mm | 1 | 1 |
| | | 10mm | 0.55 | 0.6 |

# 5. Power Density Characterization

### 5.1 PD design target

For Qualcomm SDX62/QTM545, the total device uncertainty for mmW radio is 2.13dB.

To account for the total design related uncertainty, PD_design_target needs to be:

$$PD\_design\_target < PD_{regulatory\_limit} \times 10^{\frac{-total\ uncertainty}{10}}$$

With FCC 4cm2-averaged PD requirement of 10 W/m2 and the declared 2.13 dB device design related uncertainty, the PD_design_target for the EUT is determined as:

pn.designtarget=6w/m2

### 5.2 Worst-case housing influence determination

For non-metal material, the material property cannot be accurately characterized at mmW frequencies to date. The estimated material property for the device housing is used in the simulation model, which could influence the accuracy in simulation for PD amplitude quantification. Since the housing influence on PD could vary from surface to surface where the EM field propagates through, the most underestimated surface is used to quantify the worst-case housing influence for conservative assessment.

Since the mmW antenna modules are placed at different location as shown in Figure 1-3, only material/housing surrounded has impact on EM field propagation, in turn impact on power density. Therefore, only adjacent surfaces for each QTM (as listed in Table 3-2 ) were used to evaluate the worst-case housing influence for each frequency band. For this EUT, when comparing a simulated 4cm2-avgeraged PD and measured 4 cm2-avgerated PD, the worst error introduced for each antenna module operating at each band when using the estimated material property in the simulation is highlighted yellow in Table 3-2. Thus, the worst-case housing influence, denoted as Δmin=Sim.PD-Meas.PD , is determined as:

Table 5-1: Δmin for QTM0 and QTM1

| Band | QTM | Δmin(db) |
|---|---|---|
| N260 | 0 | 4.61 |
| N261 | 0 | 3.47 |

Δmin represents the worst case where RF exposure is underestimated the most in simulation when using the estimated material property for glass/plastics of the housing. For conservative assessment, the is used as the worst-case factor and applied to all the beams in the corresponding beam group to determine input power limits in PD char for compliance.

### 5.3 PD Char of the EUT

This section describes the PD Char generation that complies with the PD_design_target determined in Section 5.1 and is in compliance with the regulatory power density limit.

#### 5.3.1 Scaling factor for SISO beams

Determine scaling factor for low, mid, high channel, S(i)low_or_mid_high by:

$$S(i)_{low\ or\ mid\ or\ high} = \frac{PD\ design\ target}{sim.PD_{surface(i)}} \quad , i \in SISO\ beams$$

Then finalize scaling factor, S(i), by using equation below:

$$S(i)=min\{S_{low}(i), S_{mid}(i), S_{high}(i)\} \ , i \in SISO\ beams$$

and this scaling factor S(i), is applied to the input power at each antenna port to determine *input.power.limit* for SISO beams.

scaling factor S(i) list

### 5.3.2 Scaling factor for MIMO beams

The relative phase between beam pair is not controlled in the EUT and could vary from run to run. Therefore, for beam pair, based on the simulation results, the worst-case scaling factor needs to be determined mathematically to ensure the compliance.

For beam pair, extract the E-fields and H-fields from the corresponding single beams at low, mid and high channel for each supported band and for all identified surfaces of the EUT.

For a given beam pair containing *beam_a* and *beamb*, and for a given channel, let relative phase between *beam_a* and *beamb* = ∅ , and the total PD of the beam pair can be expressed as:

$$total\ PD\ (\emptyset) = \frac{1}{2}\sqrt{Re\{PD_x(\emptyset)\}^2 + Re\{PD_y(\emptyset)\}^2 + Re\{PD_z(\emptyset)\}^2}$$
$$= \frac{1}{2} Re\left\{\left(\vec{E_a} + \vec{E_b} e^{j\omega\emptyset}\right) \times \left(\vec{H_a} + \vec{H_b} e^{j\omega\emptyset}\right)^*\right\} \quad (4)$$

where, PDx(∅ ), PDy(∅ ) and PDz(∅ ) are the three components of the total PD (∅ ); and are the extracted E-fields and H-fields of *beam_a*, while and are the extracted E-fields and H-fields of *beam_b*. Sweep ∅ with a 5。 step from 0。 to 360。 to determine the worst-case, ∅ , which results in the highest total PD (∅ ) among all identified surfaces for this MIMO beam at this channel.

Follow the above procedure to determine ∅ for all three channels of all bands supported, and obtain the scaling factor given by the below equation for low, mid and high channels:

$$s(i)_{low\_or\_mid\_or\_high} = \frac{PD\ design\ target}{total\ PD\ (\emptyset(i)_{worstcase})}, i \in MIMO\ beams$$

Similar to SISO beam, the worst-case scaling factor, S(i), for MIMO beam *i* is determined as:

$$\mathbf{s(i)} = min\{slow(i), smid\ (i), shigh\ (i)\}, i \in MIMO\ beams$$

and this scaling factor S(i), is applied to the input power at each antenna port to determine *input.power.limit* for MIMO beams.

Table 5-2: S(i) min for all supported beams

| Band | Module | Beam2 | Beam1 | Si | Si | Si | Si | Band | Module | Beam2 | Beam1 | Si | Si | Si | Si |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Low | Mid | High | min | | | | | Low | Mid | High | min |
| n260 | 0 | | 0 | 0.67 | 0.60 | 0.57 | 0.57 | n261 | 0 | | 0 | 0.83 | 0.77 | 0.94 | 0.77 |
| n260 | 0 | | 1 | 0.50 | 0.49 | 0.50 | 0.49 | n261 | 0 | | 1 | 0.87 | 0.79 | 0.82 | 0.79 |
| n260 | 0 | | 2 | 0.49 | 0.48 | 0.47 | 0.47 | n261 | 0 | | 2 | 0.55 | 0.56 | 0.55 | 0.55 |
| n260 | 0 | | 3 | 0.46 | 0.46 | 0.45 | 0.45 | n261 | 0 | | 3 | 0.65 | 0.56 | 0.60 | 0.56 |
| n260 | 0 | | 4 | 0.54 | 0.55 | 0.55 | 0.54 | n261 | 0 | | 4 | 0.68 | 0.61 | 0.61 | 0.61 |
| n260 | 0 | | 5 | 0.24 | 0.24 | 0.23 | 0.23 | n261 | 0 | | 5 | 0.36 | 0.33 | 0.33 | 0.33 |
| n260 | 0 | | 6 | 0.27 | 0.25 | 0.25 | 0.25 | n261 | 0 | | 6 | 0.31 | 0.29 | 0.30 | 0.29 |
| n260 | 0 | | 7 | 0.30 | 0.27 | 0.26 | 0.26 | n261 | 0 | | 7 | 0.33 | 0.33 | 0.33 | 0.33 |
| n260 | 0 | | 8 | 0.25 | 0.26 | 0.26 | 0.25 | n261 | 0 | | 8 | 0.29 | 0.26 | 0.27 | 0.26 |
| n260 | 0 | | 9 | 0.27 | 0.26 | 0.25 | 0.25 | n261 | 0 | | 9 | 0.31 | 0.28 | 0.27 | 0.27 |
| n260 | 0 | | 10 | 0.28 | 0.26 | 0.25 | 0.25 | n261 | 0 | | 10 | 0.30 | 0.29 | 0.31 | 0.29 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| n260 | 0 | | 11 | 0.29 | 0.26 | 0.25 | 0.25 | n261 | 0 | | 11 | 0.63 | 0.52 | 0.55 | 0.52 |
| n260 | 0 | | 12 | 0.11 | 0.10 | 0.10 | 0.10 | n261 | 0 | | 12 | 0.22 | 0.18 | 0.17 | 0.17 |
| n260 | 0 | | 13 | 0.11 | 0.11 | 0.10 | 0.10 | n261 | 0 | | 13 | 0.16 | 0.15 | 0.15 | 0.15 |
| n260 | 0 | | 14 | 0.10 | 0.10 | 0.10 | 0.10 | n261 | 0 | | 14 | 0.17 | 0.15 | 0.15 | 0.15 |
| n260 | 0 | | 15 | 0.10 | 0.10 | 0.10 | 0.10 | n261 | 0 | | 15 | 0.17 | 0.16 | 0.17 | 0.16 |
| n260 | 0 | | 16 | 0.10 | 0.10 | 0.10 | 0.10 | n261 | 0 | | 16 | 0.17 | 0.16 | 0.16 | 0.16 |
| n260 | 0 | | 17 | 0.11 | 0.11 | 0.10 | 0.10 | n261 | 0 | | 17 | 0.22 | 0.19 | 0.17 | 0.17 |
| n260 | 0 | | 18 | 0.11 | 0.11 | 0.10 | 0.10 | n261 | 0 | | 18 | 0.15 | 0.15 | 0.15 | 0.15 |
| n260 | 0 | | 19 | 0.10 | 0.10 | 0.10 | 0.10 | n261 | 0 | | 19 | 0.15 | 0.15 | 0.17 | 0.15 |
| n260 | 0 | | 20 | 0.10 | 0.10 | 0.10 | 0.10 | n261 | 0 | | 20 | 0.18 | 0.15 | 0.15 | 0.15 |
| n260 | 0 | | 128 | 0.60 | 0.56 | 0.55 | 0.55 | n261 | 0 | | 128 | 0.70 | 0.65 | 0.70 | 0.65 |
| n260 | 0 | | 129 | 0.69 | 0.65 | 0.62 | 0.62 | n261 | 0 | | 129 | 0.59 | 0.58 | 0.65 | 0.58 |
| n260 | 0 | | 130 | 0.51 | 0.50 | 0.49 | 0.49 | n261 | 0 | | 130 | 0.57 | 0.58 | 0.62 | 0.57 |
| n260 | 0 | | 131 | 0.48 | 0.48 | 0.47 | 0.47 | n261 | 0 | | 131 | 0.65 | 0.61 | 0.65 | 0.61 |
| n260 | 0 | | 132 | 0.60 | 0.52 | 0.50 | 0.50 | n261 | 0 | | 132 | 0.65 | 0.59 | 0.58 | 0.58 |
| n260 | 0 | | 133 | 0.30 | 0.28 | 0.27 | 0.27 | n261 | 0 | | 133 | 0.43 | 0.43 | 0.44 | 0.43 |
| n260 | 0 | | 134 | 0.24 | 0.24 | 0.24 | 0.24 | n261 | 0 | | 134 | 0.30 | 0.30 | 0.30 | 0.30 |
| n260 | 0 | | 135 | 0.24 | 0.23 | 0.23 | 0.23 | n261 | 0 | | 135 | 0.33 | 0.33 | 0.37 | 0.33 |
| n260 | 0 | | 136 | 0.41 | 0.39 | 0.36 | 0.36 | n261 | 0 | | 136 | 0.31 | 0.28 | 0.30 | 0.28 |
| n260 | 0 | | 137 | 0.27 | 0.25 | 0.25 | 0.25 | n261 | 0 | | 137 | 0.33 | 0.31 | 0.31 | 0.31 |
| n260 | 0 | | 138 | 0.24 | 0.23 | 0.23 | 0.23 | n261 | 0 | | 138 | 0.31 | 0.31 | 0.35 | 0.31 |
| n260 | 0 | | 139 | 0.33 | 0.32 | 0.31 | 0.31 | n261 | 0 | | 139 | 0.31 | 0.30 | 0.36 | 0.30 |
| n260 | 0 | | 140 | 0.11 | 0.11 | 0.10 | 0.10 | n261 | 0 | | 140 | 0.15 | 0.15 | 0.17 | 0.15 |
| n260 | 0 | | 141 | 0.12 | 0.11 | 0.11 | 0.11 | n261 | 0 | | 141 | 0.18 | 0.16 | 0.16 | 0.16 |
| n260 | 0 | | 142 | 0.12 | 0.11 | 0.11 | 0.11 | n261 | 0 | | 142 | 0.13 | 0.14 | 0.16 | 0.13 |
| n260 | 0 | | 143 | 0.12 | 0.11 | 0.11 | 0.11 | n261 | 0 | | 143 | 0.13 | 0.14 | 0.15 | 0.13 |
| n260 | 0 | | 144 | 0.12 | 0.11 | 0.10 | 0.10 | n261 | 0 | | 144 | 0.15 | 0.14 | 0.14 | 0.14 |
| n260 | 0 | | 145 | 0.11 | 0.11 | 0.10 | 0.10 | n261 | 0 | | 145 | 0.14 | 0.15 | 0.16 | 0.14 |
| n260 | 0 | | 146 | 0.12 | 0.11 | 0.11 | 0.11 | n261 | 0 | | 146 | 0.21 | 0.18 | 0.17 | 0.17 |
| n260 | 0 | | 147 | 0.12 | 0.11 | 0.11 | 0.11 | n261 | 0 | | 147 | 0.15 | 0.15 | 0.19 | 0.15 |
| n260 | 0 | | 148 | 0.11 | 0.11 | 0.10 | 0.10 | n261 | 0 | | 148 | 0.14 | 0.15 | 0.16 | 0.14 |
| n260 | 0 | 128 | 0 | 0.25 | 0.24 | 0.25 | 0.24 | n261 | 0 | 128 | 0 | 0.67 | 0.59 | 0.62 | 0.59 |
| n260 | 0 | 129 | 1 | 0.27 | 0.27 | 0.26 | 0.26 | n261 | 0 | 129 | 1 | 0.34 | 0.31 | 0.32 | 0.31 |
| n260 | 0 | 130 | 2 | 0.23 | 0.22 | 0.22 | 0.22 | n261 | 0 | 130 | 2 | 0.26 | 0.26 | 0.26 | 0.26 |
| n260 | 0 | 131 | 3 | 0.22 | 0.22 | 0.22 | 0.22 | n261 | 0 | 131 | 3 | 0.30 | 0.25 | 0.27 | 0.25 |
| n260 | 0 | 132 | 4 | 0.27 | 0.25 | 0.24 | 0.24 | n261 | 0 | 132 | 4 | 0.54 | 0.45 | 0.48 | 0.45 |
| n260 | 0 | 133 | 5 | 0.13 | 0.13 | 0.13 | 0.13 | n261 | 0 | 133 | 5 | 0.20 | 0.18 | 0.16 | 0.16 |
| n260 | 0 | 134 | 6 | 0.13 | 0.13 | 0.13 | 0.13 | n261 | 0 | 134 | 6 | 0.13 | 0.13 | 0.14 | 0.13 |
| n260 | 0 | 135 | 7 | 0.13 | 0.13 | 0.13 | 0.13 | n261 | 0 | 135 | 7 | 0.13 | 0.15 | 0.16 | 0.13 |
| n260 | 0 | 136 | 8 | 0.16 | 0.16 | 0.16 | 0.16 | n261 | 0 | 136 | 8 | 0.20 | 0.16 | 0.18 | 0.16 |
| n260 | 0 | 137 | 9 | 0.11 | 0.11 | 0.11 | 0.11 | n261 | 0 | 137 | 9 | 0.14 | 0.13 | 0.13 | 0.13 |
| n260 | 0 | 138 | 10 | 0.13 | 0.13 | 0.13 | 0.13 | n261 | 0 | 138 | 10 | 0.14 | 0.12 | 0.13 | 0.12 |
| n260 | 0 | 139 | 11 | 0.15 | 0.13 | 0.13 | 0.13 | n261 | 0 | 139 | 11 | 0.21 | 0.20 | 0.22 | 0.20 |
| n260 | 0 | 140 | 12 | 0.05 | 0.05 | 0.05 | 0.05 | n261 | 0 | 140 | 12 | 0.08 | 0.08 | 0.07 | 0.07 |
| n260 | 0 | 141 | 13 | 0.06 | 0.05 | 0.05 | 0.05 | n261 | 0 | 141 | 13 | 0.07 | 0.07 | 0.08 | 0.07 |
| n260 | 0 | 142 | 14 | 0.05 | 0.05 | 0.05 | 0.05 | n261 | 0 | 142 | 14 | 0.08 | 0.07 | 0.08 | 0.07 |
| n260 | 0 | 143 | 15 | 0.05 | 0.05 | 0.05 | 0.05 | n261 | 0 | 143 | 15 | 0.07 | 0.07 | 0.07 | 0.07 |
| n260 | 0 | 144 | 16 | 0.05 | 0.05 | 0.05 | 0.05 | n261 | 0 | 144 | 16 | 0.07 | 0.07 | 0.08 | 0.07 |
| n260 | 0 | 145 | 17 | 0.05 | 0.05 | 0.05 | 0.05 | n261 | 0 | 145 | 17 | 0.08 | 0.08 | 0.08 | 0.08 |
| n260 | 0 | 146 | 18 | 0.06 | 0.05 | 0.05 | 0.05 | n261 | 0 | 146 | 18 | 0.08 | 0.08 | 0.08 | 0.08 |
| n260 | 0 | 147 | 19 | 0.05 | 0.05 | 0.05 | 0.05 | n261 | 0 | 147 | 19 | 0.08 | 0.07 | 0.09 | 0.07 |
| n260 | 0 | 148 | 20 | 0.05 | 0.05 | 0.05 | 0.05 | n261 | 0 | 148 | 20 | 0.08 | 0.07 | 0.08 | 0.07 |

### 5.3.3 Input power limit when only mmW radio is ON

When only mmW radio is on, the power limit specifies the power level (denoted as *input.power.limit*) at antenna port that corresponds to PD_design_target for all the beams. The reference power used in simulation is 6dBm and denoted as *Pref.*

The logic to determine *input.power.limit* is as shown below:

**If** -TxAGC uncertainty at reference power level < Δ *min* < TxAGC uncertainty at reference power level, then

***input.power.limit(i)=Pref+10*log(S(i)), i ∈ all beams*** (1)

**else** if Δ *min* < -TxAGC uncertainty at reference power level,

***input.power.limit(i)=Pref+10*log(S(i))+(Δmin+TxAGC uncertanity at reference power level) (2)***

***I ∈ all beams***

**else** if Δ *min* > TxAGC uncertainty at reference power level,

***input.power.limit(i)=Pref+10*log(S(i))+(Δ*****min-*****TxAGC uncertanity at reference power level)*** (3)

***I ∈ all beams***

Following above logic, the *input.power.limit* for this EUT can be calculated as:

**Table 5-2: power.limit calculation**

| Band | Module | Δmin(db) | Input.power.limit(dbm) | Notes |
|---|---|---|---|---|
| N261 | 0 | 3.47 | 6dbm+10*log(S(i))+(3.47-2.13) | Using Eq.3 |
| N260 | 0 | 4.61 | 6dbm+10*log(S(i))+(4.61-2.13) | Using Eq.3 |

Note the Δmin (dB) used is the minimum of Hpol and Vpol per QTM per band (see Table 3-2). Resulted *input.power.limit* for all beams is listed in Table below

**Table 5-3: input.power.limit for n260/n261**

| Band | Module | Beam 2 | Beam 1 | Si min | Δmin | Equation | input power limit | Band | Module | Beam 2 | Beam 1 | Si min | Δmin | Equation | input power limit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| n260 | 0 | | 0 | 0.57 | 4.61 | Eq.3 | 7.14 | n261 | 0 | | 0 | 0.77 | 3.47 | Eq.3 | 5.86 |
| n260 | 0 | | 1 | 0.49 | 4.61 | Eq.3 | 6.50 | n261 | 0 | | 1 | 0.79 | 3.47 | Eq.3 | 5.97 |
| n260 | 0 | | 2 | 0.47 | 4.61 | Eq.3 | 6.31 | n261 | 0 | | 2 | 0.55 | 3.47 | Eq.3 | 4.39 |
| n260 | 0 | | 3 | 0.45 | 4.61 | Eq.3 | 6.19 | n261 | 0 | | 3 | 0.56 | 3.47 | Eq.3 | 4.44 |
| n260 | 0 | | 4 | 0.54 | 4.61 | Eq.3 | 6.96 | n261 | 0 | | 4 | 0.61 | 3.47 | Eq.3 | 4.84 |
| n260 | 0 | | 5 | 0.23 | 4.61 | Eq.3 | 3.26 | n261 | 0 | | 5 | 0.33 | 3.47 | Eq.3 | 2.09 |
| n260 | 0 | | 6 | 0.25 | 4.61 | Eq.3 | 3.58 | n261 | 0 | | 6 | 0.29 | 3.47 | Eq.3 | 1.53 |
| n260 | 0 | | 7 | 0.26 | 4.61 | Eq.3 | 3.78 | n261 | 0 | | 7 | 0.33 | 3.47 | Eq.3 | 2.12 |
| n260 | 0 | | 8 | 0.25 | 4.61 | Eq.3 | 3.64 | n261 | 0 | | 8 | 0.26 | 3.47 | Eq.3 | 1.20 |
| n260 | 0 | | 9 | 0.25 | 4.61 | Eq.3 | 3.66 | n261 | 0 | | 9 | 0.27 | 3.47 | Eq.3 | 1.34 |
| n260 | 0 | | 10 | 0.25 | 4.61 | Eq.3 | 3.63 | n261 | 0 | | 10 | 0.29 | 3.47 | Eq.3 | 1.53 |
| n260 | 0 | | 11 | 0.25 | 4.61 | Eq.3 | 3.67 | n261 | 0 | | 11 | 0.52 | 3.47 | Eq.3 | 4.11 |
| n260 | 0 | | 12 | 0.10 | 4.61 | Eq.3 | -0.29 | n261 | 0 | | 12 | 0.17 | 3.47 | Eq.3 | -0.84 |
| n260 | 0 | | 13 | 0.10 | 4.61 | Eq.3 | -0.20 | n261 | 0 | | 13 | 0.15 | 3.47 | Eq.3 | -1.15 |
| n260 | 0 | | 14 | 0.10 | 4.61 | Eq.3 | -0.49 | n261 | 0 | | 14 | 0.15 | 3.47 | Eq.3 | -1.71 |
| n260 | 0 | | 15 | 0.10 | 4.61 | Eq.3 | -0.49 | n261 | 0 | | 15 | 0.16 | 3.47 | Eq.3 | -0.96 |
| n260 | 0 | | 16 | 0.10 | 4.61 | Eq.3 | -0.47 | n261 | 0 | | 16 | 0.16 | 3.47 | Eq.3 | -1.03 |
| n260 | 0 | | 17 | 0.10 | 4.61 | Eq.3 | -0.26 | n261 | 0 | | 17 | 0.17 | 3.47 | Eq.3 | -0.65 |
| n260 | 0 | | 18 | 0.10 | 4.61 | Eq.3 | -0.22 | n261 | 0 | | 18 | 0.15 | 3.47 | Eq.3 | -1.33 |
| n260 | 0 | | 19 | 0.10 | 4.61 | Eq.3 | 0.77 | n261 | 0 | | 19 | 0.15 | 3.47 | Eq.3 | -1.39 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| n260 | 0 | | 20 | 0.10 | 4.61 | Eq.3 | -0.54 | n261 | 0 | | 20 | 0.15 | 3.47 | Eq.3 | -1.30 |
| n260 | 0 | | 128 | 0.55 | 4.61 | Eq.3 | 7.04 | n261 | 0 | | 128 | 0.65 | 3.47 | Eq.3 | 5.10 |
| n260 | 0 | | 129 | 0.62 | 4.61 | Eq.3 | 7.55 | n261 | 0 | | 129 | 0.58 | 3.47 | Eq.3 | 4.61 |
| n260 | 0 | | 130 | 0.49 | 4.61 | Eq.3 | 6.51 | n261 | 0 | | 130 | 0.57 | 3.47 | Eq.3 | 4.54 |
| n260 | 0 | | 131 | 0.47 | 4.61 | Eq.3 | 6.35 | n261 | 0 | | 131 | 0.61 | 3.47 | Eq.3 | 4.84 |
| n260 | 0 | | 132 | 0.50 | 4.61 | Eq.3 | 6.61 | n261 | 0 | | 132 | 0.58 | 3.47 | Eq.3 | 4.62 |
| n260 | 0 | | 133 | 0.27 | 4.61 | Eq.3 | 3.93 | n261 | 0 | | 133 | 0.43 | 3.47 | Eq.3 | 3.32 |
| n260 | 0 | | 134 | 0.24 | 4.61 | Eq.3 | 3.32 | n261 | 0 | | 134 | 0.30 | 3.47 | Eq.3 | 1.69 |
| n260 | 0 | | 135 | 0.23 | 4.61 | Eq.3 | 3.27 | n261 | 0 | | 135 | 0.33 | 3.47 | Eq.3 | 2.11 |
| n260 | 0 | | 136 | 0.36 | 4.61 | Eq.3 | 5.21 | n261 | 0 | | 136 | 0.28 | 3.47 | Eq.3 | 1.47 |
| n260 | 0 | | 137 | 0.25 | 4.61 | Eq.3 | 3.62 | n261 | 0 | | 137 | 0.31 | 3.47 | Eq.3 | 1.86 |
| n260 | 0 | | 138 | 0.23 | 4.61 | Eq.3 | 3.27 | n261 | 0 | | 138 | 0.31 | 3.47 | Eq.3 | 1.87 |
| n260 | 0 | | 139 | 0.31 | 4.61 | Eq.3 | 4.49 | n261 | 0 | | 139 | 0.30 | 3.47 | Eq.3 | 1.81 |
| n260 | 0 | | 140 | 0.10 | 4.61 | Eq.3 | -0.24 | n261 | 0 | | 140 | 0.15 | 3.47 | Eq.3 | -1.29 |
| n260 | 0 | | 141 | 0.11 | 4.61 | Eq.3 | 0.05 | n261 | 0 | | 141 | 0.16 | 3.47 | Eq.3 | -1.12 |
| n260 | 0 | | 142 | 0.11 | 4.61 | Eq.3 | -0.22 | n261 | 0 | | 142 | 0.13 | 3.47 | Eq.3 | -1.85 |
| n260 | 0 | | 143 | 0.11 | 4.61 | Eq.3 | -0.14 | n261 | 0 | | 143 | 0.13 | 3.47 | Eq.3 | -1.79 |
| n260 | 0 | | 144 | 0.10 | 4.61 | Eq.3 | -0.19 | n261 | 0 | | 144 | 0.14 | 3.47 | Eq.3 | -1.60 |
| n260 | 0 | | 145 | 0.10 | 4.61 | Eq.3 | -0.20 | n261 | 0 | | 145 | 0.14 | 3.47 | Eq.3 | -1.50 |
| n260 | 0 | | 146 | 0.11 | 4.61 | Eq.3 | 0.14 | n261 | 0 | | 146 | 0.17 | 3.47 | Eq.3 | -1.53 |
| n260 | 0 | | 147 | 0.11 | 4.61 | Eq.3 | -0.03 | n261 | 0 | | 147 | 0.15 | 3.47 | Eq.3 | -1.24 |
| n260 | 0 | | 148 | 0.10 | 4.61 | Eq.3 | -0.22 | n261 | 0 | | 148 | 0.14 | 3.47 | Eq.3 | -1.53 |
| n260 | 0 | 128 | 0 | 0.24 | 4.61 | Eq.3 | 3.47 | n261 | 0 | 128 | 0 | 0.59 | 3.47 | Eq.3 | 4.71 |
| n260 | 0 | 129 | 1 | 0.26 | 4.61 | Eq.3 | 3.73 | n261 | 0 | 129 | 1 | 0.31 | 3.47 | Eq.3 | 1.84 |
| n260 | 0 | 130 | 2 | 0.22 | 4.61 | Eq.3 | 2.97 | n261 | 0 | 130 | 2 | 0.26 | 3.47 | Eq.3 | 1.04 |
| n260 | 0 | 131 | 3 | 0.22 | 4.61 | Eq.3 | 3.02 | n261 | 0 | 131 | 3 | 0.25 | 3.47 | Eq.3 | 1.00 |
| n260 | 0 | 132 | 4 | 0.24 | 4.61 | Eq.3 | 3.43 | n261 | 0 | 132 | 4 | 0.45 | 3.47 | Eq.3 | 3.51 |
| n260 | 0 | 133 | 5 | 0.13 | 4.61 | Eq.3 | 0.65 | n261 | 0 | 133 | 5 | 0.16 | 3.47 | Eq.3 | -1.01 |
| n260 | 0 | 134 | 6 | 0.13 | 4.61 | Eq.3 | 0.59 | n261 | 0 | 134 | 6 | 0.13 | 3.47 | Eq.3 | -1.99 |
| n260 | 0 | 135 | 7 | 0.13 | 4.61 | Eq.3 | 0.67 | n261 | 0 | 135 | 7 | 0.13 | 3.47 | Eq.3 | -1.73 |
| n260 | 0 | 136 | 8 | 0.16 | 4.61 | Eq.3 | 1.55 | n261 | 0 | 136 | 8 | 0.16 | 3.47 | Eq.3 | -0.96 |
| n260 | 0 | 137 | 9 | 0.11 | 4.61 | Eq.3 | 0.06 | n261 | 0 | 137 | 9 | 0.13 | 3.47 | Eq.3 | -2.06 |
| n260 | 0 | 138 | 10 | 0.13 | 4.61 | Eq.3 | 0.62 | n261 | 0 | 138 | 10 | 0.12 | 3.47 | Eq.3 | -2.09 |
| n260 | 0 | 139 | 11 | 0.13 | 4.61 | Eq.3 | 0.69 | n261 | 0 | 139 | 11 | 0.20 | 3.47 | Eq.3 | 0.00 |
| n260 | 0 | 140 | 12 | 0.05 | 4.61 | Eq.3 | -3.58 | n261 | 0 | 140 | 12 | 0.07 | 3.47 | Eq.3 | -4.37 |
| n260 | 0 | 141 | 13 | 0.05 | 4.61 | Eq.3 | -3.24 | n261 | 0 | 141 | 13 | 0.07 | 3.47 | Eq.3 | -4.55 |
| n260 | 0 | 142 | 14 | 0.05 | 4.61 | Eq.3 | -3.32 | n261 | 0 | 142 | 14 | 0.07 | 3.47 | Eq.3 | -4.41 |
| n260 | 0 | 143 | 15 | 0.05 | 4.61 | Eq.3 | -3.56 | n261 | 0 | 143 | 15 | 0.07 | 3.47 | Eq.3 | -4.79 |
| n260 | 0 | 144 | 16 | 0.05 | 4.61 | Eq.3 | -3.79 | n261 | 0 | 144 | 16 | 0.07 | 3.47 | Eq.3 | -4.71 |
| n260 | 0 | 145 | 17 | 0.05 | 4.61 | Eq.3 | -3.35 | n261 | 0 | 145 | 17 | 0.08 | 3.47 | Eq.3 | -4.09 |
| n260 | 0 | 146 | 18 | 0.05 | 4.61 | Eq.3 | -3.14 | n261 | 0 | 146 | 18 | 0.08 | 3.47 | Eq.3 | -4.23 |
| n260 | 0 | 147 | 19 | 0.05 | 4.61 | Eq.3 | -3.41 | n261 | 0 | 147 | 19 | 0.07 | 3.47 | Eq.3 | -4.38 |
| n260 | 0 | 148 | 20 | 0.05 | 4.61 | Eq.3 | -3.68 | n261 | 0 | 148 | 20 | 0.07 | 3.47 | Eq.3 | -4.82 |