Supplementary Information for

**Research on Reducing Beam Peak Search Test Time for 5G mm-Wave OTA Measurement**

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**This file includes:**

Supplementary flow chart

Supplementary program

**1. The simulation flow chart**

The design program of the composite antenna array for NH×NV array configuration (Row × Column) is summarized in Fig. 1.



**2. The statement of program in file program.zip**

There are totally six program files, among which **Combined\_Pattern\_N/P.mat and Sampling\_R\_calculation.mat** are the subfunctions that need to be called to evaluate the direction diagram. Then, **main\_single/composite.mat** are the loop array/scan angle of the total loop program. The calculation results are compared and counted in comparison results.xlsx