

## E-band slotted microstrip patch antenna array for 5G broadband applications

### ABSTRACT

An antenna is one of solution for wireless devices which can be proposed for future 5G systems for high data rate broadband, communications. The antenna system can be design for multiple-input-multiple-output (MIMO) system at a waveband of millimeter (mm) range. The MIMO system consists of the mm-wave array of 2 by 1 slot antennas. The combination of the antenna array system covers the range of frequency from 83.581GHz to 86.483GHz of mm-wave band at 85 GHz. The antenna array dimension is 0.94 mm by 2.28 mm by 0.16 mm. Results obtained from simulation across the 5G band showed peak gain values of 5.82dBi, VSWR of 1.09 with -10dB return loss of -27.5dB.

**Keyword:** MIMO; mm-wave; Wide-band antenna; Antenna array; Slot