

# 5g base station three-dimensional communication





## Overview

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How can a 5G cellular network be developed?

The developed model can facilitate the rollout of 5G technology. Due to the high propagation loss and blockage-sensitive characteristics of millimeter waves (mmWaves), constructing fifth-generation (5G) cellular networks involves deploying ultra-dense base stations (BSs) to achieve satisfactory communication service coverage.

Should 5G base stations be tripled?

To cover the same area as traditional cellular networks (2G, 3G, and 4G), the number of 5G base stations (BSs) could be tripled (Wang et al., 2014). Furthermore, Ge, Tu, Mao, Wang, and Han, (2016) suggested that to achieve seamless coverage services, the density of 5G BSs would reach 40-50 BSs/km<sup>2</sup>.

What is 5G communication technology?

5G communication technology uses a high-frequency millimeter wave (mmWave) to carry huge amounts of data over a short distance (Bai & Heath, 2015).

What is the coverage radii of 5G BS?

Most of the service/coverage radii of 5G BSs are between 100 and 300 meters (Maccartney, Zhang, Nie, & Rappaport, 2013; Sulyman et al., 2014). In addition, the densely distributed buildings in urban areas limit the propagation and coverage of 5G signals.



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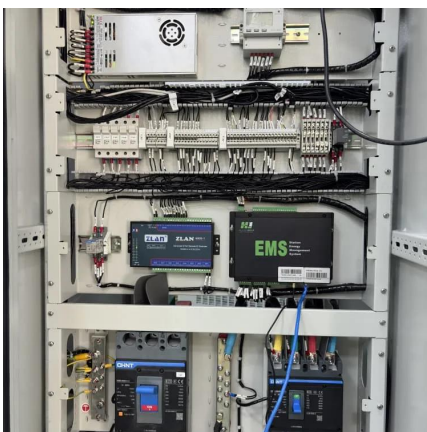
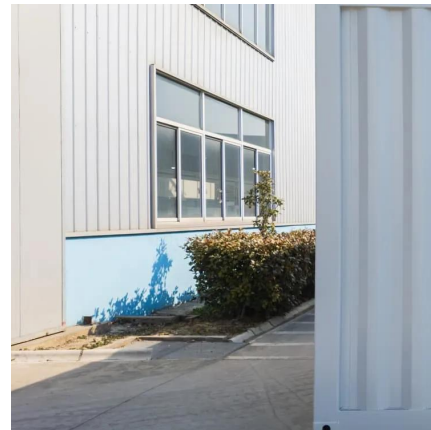


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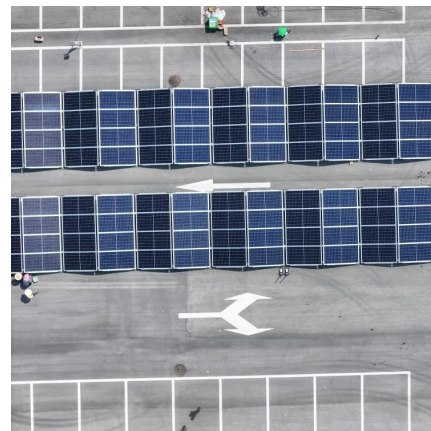
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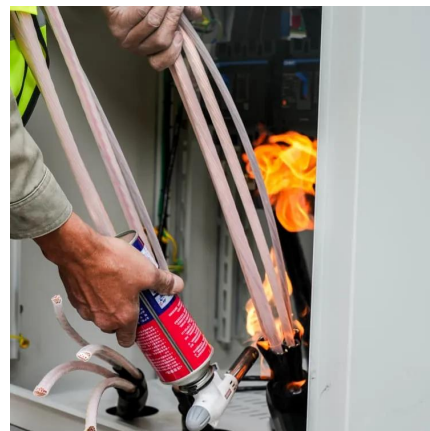
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