

# 5g base station layout of Funafuti Communication





## Overview

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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 (BS).

How effective is 5G base station optimization in urban areas?

Comparison results of 5G base station optimization in general urban areas. As shown in Table 11, the algorithm proposed in this topic reduces the site construction cost by at least 13 %, improves the coverage by at least 5.4 %, and reduces the number of base stations by at least 17.6 % compared to other algorithms.

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.

How 5G mobile communication technology is affecting the network capacity?

With the rapid development of 5G mobile communication technology, the number of 5G users has significantly increased, leading to a corresponding expansion in network capacity . To meet the growing user demand, researchers have begun to focus on improving the throughput of base stations (e.g. Refs. [2, 3]).

How many 5G base stations are there in general urban areas?

It is known that there are 20 3/4G shared base stations in this area. According to Section 5, the number of base stations in general urban areas ranges from 20 to 36. Therefore, in the simulation experiment, the optimal results of the base station layout are shown in Table 10. Table 10. Layout results of 5G base station in general urban areas.



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### Mobile Communication Network Base Station Deployment Under 5G

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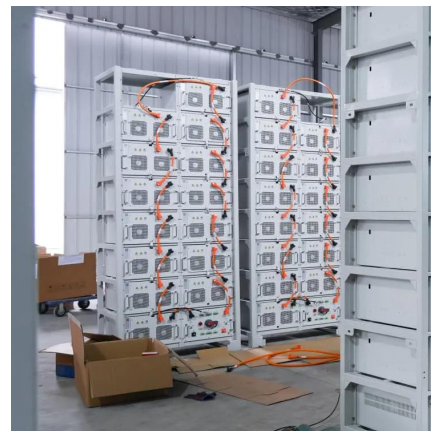
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Focusing on the layout of the 5G mobile communication base station in the city center, we design a 5G city network slicing strategy for the three typical application scenarios with enhanced ...



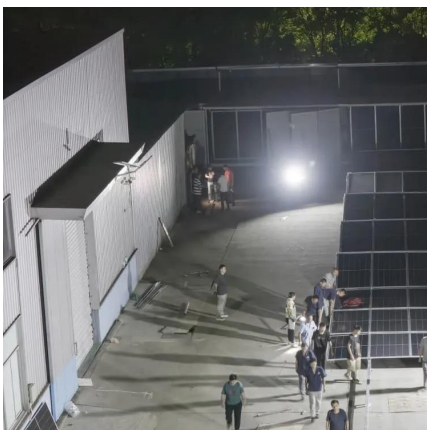
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Therefore, this proposes a 5G base station planning model based on the idea of the binary mask, combining differential evolution algorithm and Monte Carlo simulation to fully consider the ...



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