

## A-Core Container

# Uruguay Communications 5G Base Station Model



## Overview

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What is a 5G NR base station?

It facilitates communication between user equipment (UE), such as smartphones and IoT devices, and the core network. Unlike LTE base stations (eNodeBs), 5G NR base stations are designed to handle the enhanced requirements of 5G, such as high throughput, network slicing, and support for multiple frequency bands.

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

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.

What are the components of a 5G base station?

Baseband Unit (BBU): Handles baseband signal processing. Remote Radio Unit (RRU): Converts signals to radio frequencies for transmission. Active Antenna Unit (AAU): Integrates RRU and antenna for 5G-era efficiency. 2. Power Supply System This acts as the “blood supply” of the base station, ensuring uninterrupted power. It includes:.

How are 5G base stations selected?

However, the selection of 5G base station locations is also influenced by local terrain and population distribution, and obstacles such as streets, buildings, and trees can significantly impact signal propagation.

Which area is selected to optimize the coverage of 5G base stations?

As shown in Fig. 8, an area covering an area of 25 square kilometers in Jilin City is selected as the location for dense urban areas to optimize the coverage of 5G base stations. Fig. 8. Distribution of initial base stations in dense urban areas.

Why is 5G network planning important?

While enhancing the performance of individual base stations is crucial, the synergistic effect among all base stations is equally indispensable for further enhancing the overall performance of 5G communication systems. Therefore, addressing the challenges of 5G wireless network planning has become increasingly important .

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