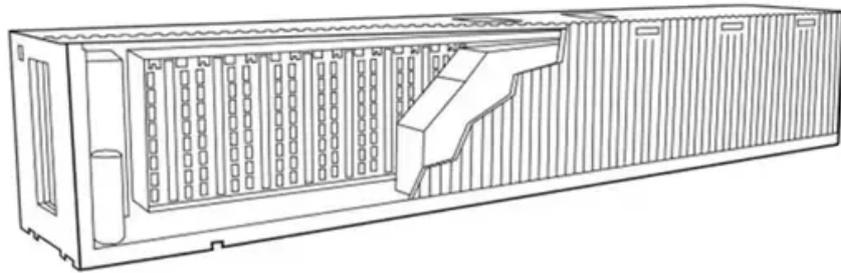


## ContainerPower Energy Solutions

# Base station communication power generation



## Overview

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What is a base station power consumption model?

In recent years, many models for base station power consumption have been proposed in the literature. The work in proposed a widely used power consumption model, which explicitly shows the linear relationship between the power transmitted by the BS and its consumed power.

What is a distributed collaborative optimization approach for 5G base stations?

In this paper, a distributed collaborative optimization approach is proposed for power distribution and communication networks with 5G base stations. Firstly, the model of 5G base stations considering communication load demand migration and energy storage dynamic backup is established.

What is a 5G base station?

At the same time, a large number of 5G base stations (BSs) are connected to distribution networks , which usually involve high power consumption and are equipped with backup energy storage , , giving it significant demand response potential.

What is a collaborative optimal operation model of 5G base stations?

Afterward, a collaborative optimal operation model of power distribution and communication networks is designed to fully explore the operation flexibility of 5G base stations, and then an improved distributed algorithm based on the ADMM is developed to achieve the collaborative optimization equilibrium.

Are cellular base stations a future-proof power model?

Debaillie, C. Desset, and F. Louagie, "A flexible and future-proof power model for cellular base stations," in IEEE 81st Vehicular Technology Conference (VTC Spring), 2015, pp. 1-7. S.

What are the parameters of BS Energy Storage?

The channel bandwidth  $B$  allocated by the user is 1 MHz, the upper limit of the BS's traffic processing capacity  $L_{\max}$  is 10 4 Mbps, and the traffic demand  $L_j$  of a single user is 100 Mbps. The detailed parameters of the BS energy storage are shown in Table 1.  $\omega$  is taken as small as 0.14 Yuan/kWh to encourage energy storage participation.

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