

## A-Core Container

# Qatar Communications 5G Commercial Base Station



## Overview

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What is a 5G base station?

5G base stations operate on various frequency bands, including sub-6 GHz and mmWave, to deliver ultra-low latency, high data throughput, and enhanced capacity. They support massive MIMO (Multiple Input Multiple Output) technology, enabling improved coverage and simultaneous connections for a large number of devices.

How 5G technology is transforming connectivity?

5G technology is revolutionizing connectivity, and the manufacturers of 5G equipment are leading this transformation. From modems and base stations to RAN, antenna arrays, and core networks, these companies are providing cutting-edge solutions. Leading vendors are offering innovative products to enhance network speed, coverage, and efficiency.

What is a 5G radio access network?

The 5G Radio Access Network (RAN) is the interface between user devices and the 5G core network. It comprises base stations and small cells that manage radio communications, enabling ultra-fast data transfer and low-latency connections.

What is a 5G NR Network?

As defined in 3GPP TS 38.300, the 5G NR network consists of NG RAN (Next Generation Radio Access Network) and 5GC (5G Core Network). As shown, NG-RAN is composed of gNBs (i.e., 5G Base stations) and ng-eNBs (i.e., LTE base stations). The figure above depicts the overall architecture of a 5G NR system and its components.

What is a 5G core?

The 5G core is the central component of the 5G network, responsible for managing data traffic, mobility, and network services. It employs a cloud-

native, service-based architecture that ensures flexibility and scalability for diverse use cases.

Who is the biggest 5G provider in Africa?

The second biggest 5G operator is Mobily, also from Saudi Arabia, which had almost 3.3 million subscriptions by end-2022. In third place is Africa's largest fifth-generation provider, Vodacom South Africa, with around 2.7 million.

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