

Ex. 1035

A Guide to Cellular Frequency Bands Used by US Carriers

Written by: **Kajeet**

Discover the different cellular frequency bands utilized by major carriers in the United States and how they impact your mobile experience.

Understanding Cellular Frequency Bands

Cellular frequency bands are specific ranges of radio frequencies that carriers use to provide wireless communication services. These bands are allocated by the Federal Communications Commission (FCC) and each carrier has its own set of frequency bands that they utilize for their network.

Understanding cellular frequency bands is important as it helps you understand how your mobile device connects to the carrier's network. Different frequency bands have different characteristics and can affect the coverage, capacity, and speed of your mobile connection.

The two main types of cellular frequency bands used by carriers in the United States are the low-frequency bands and the high-frequency bands. Low-frequency bands, such as 700 MHz, provide better coverage and can penetrate buildings and obstacles more effectively. High-frequency bands, such as 2.5 GHz, offer higher capacity and faster data speeds but have shorter range and are easily blocked by obstacles.

By knowing the frequency bands used by your carrier, you can choose a mobile device that supports those bands to ensure compatibility and optimal performance.

Verizon's Frequency Bands

Verizon, one of the major cellular carriers in the United States, utilizes several frequency bands for its network. The primary low-frequency band used by Verizon is 700 MHz, which provides broad coverage and better indoor penetration.

In addition to the low-frequency band, Verizon also utilizes high-frequency bands such as 1900 MHz, 1700/2100 MHz, and 2500 MHz to enhance capacity and data speeds in specific areas. These high-frequency bands are typically used in densely populated areas and urban environments.

By utilizing a combination of low and high-frequency bands, Verizon aims to provide a balance between coverage and capacity, ensuring a reliable and fast mobile experience for its customers.

Low-Frequency Bands:

- **700 MHz (Band 13):** This is Verizon's primary low-frequency band, offering broad coverage and good signal penetration within buildings. It's particularly beneficial for rural areas and ensures reliable service even in remote locations.
- **850 MHz (Band 5/n5):** This band provides additional coverage and complements Band 13, particularly in dense urban areas. It's also being used for 5G deployment, offering a wider range and better building penetration compared to high-band frequencies.

Mid-Frequency Bands:

- **1700/2100 MHz (Band 4/AWS):** This band provides a good balance between coverage and capacity, offering faster speeds than Band 13 and still reaching a wide area. It's widely used in urban and suburban areas to support increased data demands.
- **1900 MHz (Band 2):** This band offers even faster speeds than Band 4 but with slightly less coverage. It's primarily used in densely populated areas and urban centers to offload traffic and provide higher capacity for users.

High-Frequency Bands:

- **2500 MHz (Band 41):** This mid-band spectrum is primarily used for 5G deployment, offering significantly faster speeds than lower bands. However, its coverage is more limited, mainly focusing on densely populated areas and key locations.

- **39 GHz (Band n260):** This high-band spectrum offers the fastest speeds currently available on Verizon's 5G network. However, its range is extremely limited, typically covering only small areas within a city or around specific hotspots.
- **24 GHz (Band n261):** This high-band spectrum offers similar characteristics to n260, providing extremely fast speeds but with limited coverage primarily focused on specific locations.

AT&T's Frequency Bands

AT&T, another major cellular carrier in the United States, also utilizes a variety of frequency bands for its network. AT&T's low-frequency band is 700 MHz, which provides wide coverage and better building penetration similar to Verizon.

In addition to the low-frequency band, AT&T uses high-frequency bands such as 850 MHz, 1900 MHz, and 1700/2100 MHz to provide enhanced capacity and faster data speeds in specific areas.

AT&T has also started deploying the 5G network using high-frequency bands like 850 MHz, 1900 MHz, and 1700/2100 MHz. These bands offer higher data speeds and lower latency, enabling new applications and services.

With its diverse range of frequency bands, AT&T aims to deliver a seamless mobile experience to its customers, whether it's for voice calls, browsing the internet, or streaming multimedia content.

Low-Frequency Bands:

- **700 MHz (Bands 12/17/29):** This is AT&T's primary low-frequency band, offering broad nationwide coverage and good building penetration. It's particularly beneficial for rural areas and ensures reliable service even in remote locations.

Mid-Frequency Bands:

- **850 MHz (Band 5):** This band provides additional coverage and complements Band 12/17/29, particularly in dense urban areas. It also plays a role in 5G

deployment, offering a wider range and better building penetration compared to high-band frequencies.

- **1900 MHz (Band 2):** This band offers faster speeds than Band 12/17/29 and 850 MHz but with slightly less coverage. It's primarily used in densely populated areas and urban centers to offload traffic and provide higher capacity for users.
- **1700/2100 MHz (Bands 4/66):** This band offers a good balance between coverage and capacity, offering faster speeds than Band 12/17/29 and still reaching a wide area. It's widely used in urban and suburban areas to support increased data demands.
- **2300 MHz (Band 30):** This band is mainly used for additional 4G capacity in specific areas.

High-Frequency Bands:

- **39 GHz (Band n260):** This high-band spectrum offers the fastest speeds currently available on AT&T's 5G network. However, its range is extremely limited, typically covering only small areas within a city or around specific hotspots.
- **24 GHz (Band n261):** This high-band spectrum offers similar characteristics to n260, providing extremely fast speeds but with limited coverage primarily focused on specifi

TALK TO US

Additionally:

- AT&T also utilizes Band 14, acquired from FirstNet, which provides additional 4G capacity in specific areas.
- The availability of specific frequency bands may vary depending on location.
- AT&T is constantly expanding its 5G coverage across various bands, including low-band (n5) and mid-band (n41) deployments.

T-Mobile's Frequency Bands

[Skip to content](#)[SUPPORT](#)[CLIENT LOGIN](#)[kajeet.](#)[Industries](#)[Company](#)[Resources](#)[TALK
TO
US](#)

support the deployment of 5G technology. These high-frequency bands offer faster data speeds and low latency, enabling a seamless mobile experience.

By utilizing a combination of low, mid, and high-frequency bands, T-Mobile aims to deliver reliable coverage and high-speed connectivity to its customers, ensuring they can stay connected wherever they go.

Low-Frequency Bands:

- **600 MHz (Band 71):** This is T-Mobile's primary low-frequency band, offering exceptional coverage across the country, particularly in rural areas and deep inside buildings. It's ideal for providing a reliable connection even in remote locations.

Mid-Frequency Bands:

- **700 MHz (Band 12):** This band offers additional coverage and complements Band 71, especially in areas where broader coverage is needed. It also contributes to 5G deployment, providing a wider range and good building penetration.
- **1900 MHz (Band 2):** This band offers faster speeds than Band 71 and 12, particularly beneficial in areas with high data demands. It's often used in urban and suburban environments to offload traffic and provide increased capacity.
- **1700/2100 MHz (Band 4/66):** This band strikes a balance between coverage and

capacity, offering decent speeds and reaching a wide area. It's widely used in urban and suburban areas to support growing data needs.

High-Frequency Bands:

- **2500 MHz (Band 41):** This mid-band spectrum is a cornerstone of T-Mobile's 5G network, offering significantly faster speeds than lower bands. It's deployed in various locations, including urban centers and key transportation corridors.
- **39 GHz (Band n260):** This high-band spectrum delivers the fastest speeds available on T-Mobile's 5G network. However, its coverage range is limited, focusing on densely populated areas and specific hotspots.
- **24 GHz (Band n261):** Similar to n260, this high-band spectrum offers blazing-fast speeds but with limited coverage primarily focused on specific locations like stadiums or event venues.

Additionally:

- T-Mobile also utilizes Band 25 (1900 MHz) for 2G and 4G services in certain areas.
- The availability of specific frequency bands may vary depending on location.
- T-Mobile is actively expanding its 5G network coverage across all bands, including deploying low-band (n5) for broader reach and mid-band (n41) for increased capacity in key areas.

Please be advised that the information provided regarding cellular carrier frequency bands is subject to change. The availability of specific bands, their corresponding frequencies, and coverage areas may vary depending on location, carrier network upgrades, and other factors. The descriptions provided above are for informational purposes only.

For the most accurate and up-to-date information regarding frequency bands and network coverage, it is recommended to consult the official websites of the respective cellular carriers or reliable third-party sources specializing in telecommunications news and data.

By referring to these verified sources, you can ensure you have the latest information and make informed decisions regarding your cellular service.

Talk to Us

Tag(s): [Tech](#) , [4G and 5G](#) , [Blog Posts](#) , [LTE](#) , [Telecom](#)

Kajeet

Other posts you might be interested in

[VIEW ALL POSTS](#)

[BLOG POSTS](#)

🕒 4 MIN READ

[4G AND 5G](#)

🕒 13 MIN READ

The ABCs of Wireless Services for Telecom / Cable Companies

Wireless services are a seamless and cost-effective way to expand reach and increase revenue. Many cable companies looking to expand their service offerings beyond...

[READ MORE](#)

The Future of 4G and 5G LTE in Education

Advanced wireless technologies such as 4G and 5G LTE are force multipliers for other innovative technologies such as IoT, AI, and edge computing. These...

[READ MORE](#)

BLOG POSTS

🕒 5 MIN READ

Telecom/Cable Company Considerations when Deploying Cellular Solutions

Is your failover provider providing you with this? Internet outages can result in revenue loss and decreased operational deficiencies for business users. C...

[READ MORE](#)

o Our Blog

; and Kajeet updates.



What We Do

Networks and Connectivity

Devices and Hardware

Industries

Private Wireless Networks

Education

Platforms

Healthcare

Public Sector

Access

Communication Services

Support

Transportation

Client Login

EV Charging

Industrial IoT

Resource Center

Company

Blog

Leadership

Downloadable content

Our Partners

FAQs

Careers

Webinars

Events

Patents and IP

Legal

Contact us

Accessories support

Business inquires

Media & analyst inquiries