US Wireless Carrier FAQ

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FAQ - US Wireless Carrier

Factors to consider when choosing a US Carrier

What factors do you need to consider when choosing between wireless carriers in the US?

We have recently seen some customers reporting problems getting routers activated on some new data plans: We have seen some carriers start to restrict which devices can be used on certain plans, even restricting plans to not allow many devices that are officially approved for use on the carriers network.

In general, it is most reliable to activate the device with a company that is both a Peplink authorized reseller, as well as an authorized reseller of the carrier you are trying to activate with - they can help guide you to compatible plans and often help with the activation.

You can find which models we have officially certified with each of these carriers as well as some notes where we have found even these certified devices are restricted from a few specific plans.

1) AT&T - We are aware that customers have difficulty using prepaid plans. These seem to be limited to specific hotspots, tablets and phones.
[You can find a compatible devices on their website by searching **Pepwave.**]

2) Verizon - We have certified many of our devices for their Nationwide and C-Band 5G services, which makes many of their 5G plans easy to activate. However, we still believe there are some tablet, hotspot, and general consumer phone plans that may still be restricted from our devices.

3) T-Mobile - We have certified many of our devices with their 5G service. However, we believe that some of their home internet plans may be hard or not able to activate with our devices.
[You can find a compatible devices on their website. Select “Device” and use the filter **Manufacturer > Pepwave.**]

4) US Cellular- We have seen reports of their “Home Internet” plans being restricted to a specific device provided by US Cellular. Moving that SIM card to the Peplink router has not been successful for customers. While we have successfully certified these devices for use on US Cellular’s network, they have chosen to restrict these plans to a specific device they are providing with the plan. This is not something that Peplink is able to influence or pursue additional certifications.

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Selecting a Peplink Router

What are the differences (and similarities) between the various Pepwave MAX routers?

You may find this comparison tool helpful to understand the different Pepwave MAX offerings. Your Peplink Partner is also an invaluable resource.

Which wireless carriers are the MAX routers compatible with in the USA?

To see which MAX routers are compatible with Verizon in the USA, you can click here for the latest certified 5G devices, or here for other devices.

For AT&T, you can visit AT&T's list of certified devices and search for "Pepwave".

For T-Mobile, you can visit T-Mobile for Business' IoT Device Certification page. To view Peplink's devices, select "Device" and within the filters, select "Pepwave" under "Manufacturer".

How important is it to know which bands a router can use prior to purchase?

It's important but that importance varies depending on how the device is being used. For example, for machine-to-machine (M2M) or Internet-of-Things (IoT) applications, virtually any Peplink router will work fine.

However, for optimum performance, the router should be compatible with the most important bands used by the carrier of choice. For example, if the owner is a T-Mobile customer, Band 41 (2500MHz) is important because TMO has a lot of licensed spectrum in this band. Band 71 may be important depending on where the router will be used.

In rural areas, Band 71 is very important because 600MHz fades less than the higher frequencies in open spaces. However, Band 71 is sometimes less important in urban areas. For example, if a government customer in the USA is using AT&T, it would be highly desirable that the router be capable of using the principal spectrum used for FirstNet, Band 14. The bands with which each Peplink router is compatible with are clearly listed on the specification sheet for that device. This information is also available from Peplink Partners.

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Does LTE-A vs LTE make a difference in performance?

Generally yes, but not always. There are three primary differences between a CAT-4 LTE router and a CAT-6 (or greater) LTE-A device. The first is that as the category ("CAT") of the router increases beyond 4, the number of bands at which the device can operate also increases. This often improves coverage and throughput.

The second difference is that LTE-A routers are capable of carrier aggregation ("CA"). This technology enables more than one simultaneous connection, often on different bands. This can increase throughput but also sometimes helps to mitigate fading and/or signal loss as the propagation of the various bands differs. The third benefit to LTE-A over LTE is that as the CAT of the modem in the router increases, greater speeds are possible. Indeed, the performance of the higher CAT LTE-A modems often exceed the performance of the network on which they're operated.

Knowing Your Wireless Carrier

How can I know what frequencies are used by a carrier in a given area?

Unfortunately, carriers rarely publish this information and it's important to note that the frequency mix changes periodically as the operators gain (and occasionally, lose) licenses or optimize their networks. One tool that may be used to gain an improved understanding is Cellmapper – https://www.cellmapper.net. Cellmapper is a crowd-sourced database which purports to show the location of cell sites and the frequencies in use at each one. This resource is not perfect and the data is sometimes outdated but it's a very good "start".

Can the wireless carrier I've chosen "see" the IMEI of the device I am using on its network?

Yes, the IMEI you are using is transmitted to the carrier.

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Can I activate my data plan using one device that is approved for use on a carrier's network, and then switch the SIM to a device that has not yet been certified for use on that network?

This is not recommended and it normally would not be successful. Peplink uploads the IMEIs of the device types that have been approved by the carrier. If the IMEI on the substitute product is not on that list, it is not likely to be provisioned by the carrier.

Must I notify the carrier if I change devices?

Generally not – with one important exception, Sprint. Sprint "locks" the service to a specific IMEI. You must contact Sprint's customer service before you can successfully change devices/IMEIs on that network. (Note: the Sprint network is being subsumed into the T-Mobile network that operates differently – no notice is typically required.)

Can I use a voice/data plan with my Peplink router?

While a plan intended for a phone may work, the best approach is to subscribe to a plan intended for routers and mobile devices. The best source for the answer to this question is the carrier itself or one of the carrier's dealers/agents.

I am having difficulties activating my wireless data plan. Can I use a phone to activate it so that I can easily receive a text activation message?

This usually works and is worth a try.

Working with a Peplink Router

Why can't I receive inbound cellular connections on my MAX router?

The most probable reason is that you are behind your carrier's "carrier grade network address translation" (CGNAT) firewall. CGNAT usually assigns the subscriber (in this case, you) a non-routable IP address which "translates" to a routable one at the carrier's firewall.

Part of the reason for this is security, but the greater reason is that this is a strategy to deal with the issue of insufficient IPv4 addresses.

(See here for a more detailed explanation of CGNAT. This is also a frequent topic of discussion in our Forum.)

Is there a way to overcome the router's inability to receive inbound cellular connections?

First things first, it's important to understand that this is not an issue with your router. Inbound connections are generally blocked by cellular carriers and this is independent of the device in use. There are at least two strategies for overcoming this issue.

The first is to obtain a static IP address from your carrier. The second is to employ a FusionHub. In the latter case, the owner of a Peplink router would create a PepVPN or SpeedFusion tunnel between the router and the FusionHub. This would direct inbound traffic to the public IP address of the FusionHub before being forwarded to the Peplink router via the PepVPN or SpeedFusion tunnel.

While there are "large" versions of the FusionHub available, Peplink grants users a free and permanent license for its innovative FusionHub Solo. Our Forum contains many discussions on how to do this and the only cost is for hosting the Solo – which is generally around $5 or so per month. Instructions and demonstrations can even be found on YouTube.

I have no cellular access via my MAX router and I see the cellular connection continuously report "obtaining IP address."

Assuming that the cellular data plan is active, the most common reason why this is displayed is because the "APN" is either not set or set incorrectly. To check the setting of this parameter, go to Dashboard → WAN Connection Status → Cellular → Details → Cellular Settings → APN.

Sometimes setting it to "Auto" will work but oftentimes, the APN setting must be obtained from the carrier and set manually. In addition, ensure that the router's firmware is up to date, the antennas are connected correctly, and that there is a sufficient signal from the cellular data provider.

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Why is my router reporting "No device detected"?

This uncommon error means that the router and its embedded modem are not communicating correctly. This is quite rare but the first steps to resolve this are to ensure that the router's firmware is up to date, then power-cycle the router as many as three times, and finally ensure that the power supply is reliable and its output voltage is within the specified range.

What does it mean when the cellular status is continually reported to be "resetting"?

This means that the modem has not finished rebooting. Many of the changes one may make to the router settings via the graphical user interface (GUI) require a reset of the modem and this process is not instantaneous. If this message continues for more than two minutes, power-cycle the router. Also, ensure that the firmware is updated and the power supply's voltage to the router is within the proper range.

I have a MAX BR1 Mini and it appears that the Ethernet WAN port is not working.

The BR1 Mini's WAN port is not enabled "out of the box". The acquisition cost of this product is relatively low for users who do not need (or want) an ethernet connection. However, Peplink has an optional license which enables the Ethernet WAN, Wi-Fi-as-WAN, Load Balancing, PepVPN, Hot Failover and WAN Smoothing. The MAX-BR1-MINI-LC-FS license is available at a nominal cost from the device owner's Peplink Partner or from Peplink's eStore.