

**Exhibit 3 – Infringement Claim Chart for U.S. Patent No. 10,104,425**  
**HTC 5G Hub**

The '425 Patent – Claims	HTC 5G Hub
<p>45. A wireless device for communicating information comprising:</p>	<p>The HTC 5G Hub is a wireless device for communicating information.</p> <p>For example, the HTC 5G Hub is a mobile hub that communicates information in many ways, such as placing and receiving phone calls (through its use as a hotspot), sending and receiving video or audio data signals, or controlling or monitoring smart home devices.</p>
<p>[a] a transceiver configured to receive, via a WiFi network, a first wireless signal corresponding to information directed to the wireless device, the information comprising a call,</p>	<p>The HTC 5G Hub has a transceiver configured to receive, via a WiFi network, a first wireless signal corresponding to information directed to the wireless device, the information comprising a call.</p> <p>For example, the HTC 5G Hub is configured to operate as a 5G hotspot that enables up to 20 users connect to its 5G connectivity. A user of a first mobile device, for example, can create a WiFi connection with the HTC 5G Hub. The user of the first mobile device may initiate a voice or video call with another device using that WiFi connection to the HTC 5G Hub. After receiving, over WiFi, a wireless signal reflective of the call initiation from the first mobile device, the HTC 5G Hub may then complete the call to the other device using its 5G network connection. The wireless signal reflective of the call initiation, as well as any signals used to set up the WiFi connection or any signals that are sent after the call has been initiated, are examples of the claimed first wireless signal.</p> <p>In fact, the 5G Hub is probably most similar to a <a href="#">Google Home</a> with set-top box capabilities. It can broadcast Wi-Fi to up to 20 devices, but it also runs <a href="#">Android 9 Pie</a> and can connect to an external display with a USB Type-C to HDMI cable. It has its own 5-inch 720p screen and speakers, so you can enjoy content directly on it. And the 5G Hub is powered by a Snapdragon 855 chipset and 4GB of RAM, so it can handle practically any application and even demanding games, provided you bring your own Bluetooth controller.</p> <p><a href="https://www.tomsguide.com/us/htc-5g-hub-specs-price,news-29491.html">https://www.tomsguide.com/us/htc-5g-hub-specs-price,news-29491.html</a></p>

**Exhibit 3 – Infringement Claim Chart for U.S. Patent No. 10,104,425**  
**HTC 5G Hub**

## Using HTC 5G Hub as a Wi-Fi hotspot

Share your data connection with other devices by turning HTC 5G Hub into a Wi-Fi hotspot.



- Make sure the data connection is turned on.
- You must have an approved data plan associated with your account from your mobile operator to use this service. Devices connected to your Wi-Fi hotspot use data from your subscribed data plan.
- To help minimize security risks, use the default security settings and set a strong, unique password.

1. Press and hold the POWER button, then tap **HTC 5G Hub mode** in the selection menu.

If **Android mode** appears in the menu, it means you're already in **HTC 5G Hub mode**.

2. From the Dashboard, tap **Tap here to set up Wi-Fi HOTSPOT**.

If you see a Wi-Fi network name and password instead of **Tap here to set up Wi-Fi HOTSPOT**, your hotspot is already active. You can tap the dial to change settings or turn it off.


3. You'll see **HTC 5G Hub \_\_\_\_\_** as the default hotspot name. Use the default, or tap **Hotspot name** to change it.

**Exhibit 3 – Infringement Claim Chart for U.S. Patent No. 10,104,425**  
**HTC 5G Hub**

4. Tap Hotspot password to check the default password. Use the default or change it.

The password will be required for other devices to connect and use HTC 5G Hub as a wireless router.

5. Tap Advanced > Manage users to set a limit to the number of users who can connect to your Wi-Fi hotspot.
6. Tap the Wi-Fi hotspot On/Off switch to turn it on.

HTC 5G Hub is ready to be used as a Wi-Fi hotspot when you see  on the status bar.

[http://dl4.htc.com/web\\_materials/Manual/HTC\\_5G\\_Hub/HTC\\_5G\\_Hub\\_User\\_Guide\\_WWE\\_Sprint.pdf?\\_ga=2.21635836.67837398.1576705343-428253233.1566834920](http://dl4.htc.com/web_materials/Manual/HTC_5G_Hub/HTC_5G_Hub_User_Guide_WWE_Sprint.pdf?_ga=2.21635836.67837398.1576705343-428253233.1566834920)

The HTC 5G Hub uses the Qualcomm Snapdragon 855 Mobile Platform.

Enjoy ultra-low-latency, 60fps, and 4K resolution—gaming at its finest—with the HTC 5G Hub.

Combining the processing power of Qualcomm<sup>®</sup> Snapdragon™ 855 Mobile Platform with Android 9 Pie, the HTC 5G Hub allows for unprecedented data speeds and power for native Android and PC games supported on the largest of screens.

<https://www.htc.com/us/5g/htc-5g-hub/>

Given the HTC 5G Hub’s ability to make voice or video calls to a device on behalf of a mobile device connected to the HTC 5G Hub via WiFi, a transceiver associated with the Qualcomm Snapdragon 855 Mobile Platform is configured to receive, via a WiFi network, a first wireless signal corresponding to information directed to the wireless device, the information comprising a call.

**Exhibit 3 – Infringement Claim Chart for U.S. Patent No. 10,104,425**  
**HTC 5G Hub**

<p>[b] the first wireless signal being a compressed signal,</p>	<p>The first wireless signal is a compressed signal.</p> <p>For example, the HTC 5G Hub uses the 802.11ac networking standard for WiFi communications.</p> <p>Purely as a Wi-Fi hotspot, the Hub is very good. Its high-end equipment and large body give it excellent dual-band 802.11ac Wi-Fi performance. I got 150 feet of range with the Hub, where portable hotspots and phone hotspot modes tend to give about 100 feet of range. It also provides Wi-Fi to 20 devices, more than most portable hotspots.</p> <p><a href="https://www.pcmag.com/review/369056/htc-5g-hub-sprint">https://www.pcmag.com/review/369056/htc-5g-hub-sprint</a></p> <p>The 802.11ac standard allows for compressed signals to be transmitted and received. One example of that is a technique called beamforming. Beamforming improves WiFi reception and reduces interference by focusing a WiFi signal in a specific direction. As part of the beamforming process, the device seeking a WiFi connection, sends compressed signals to the source of the WiFi connection.</p>

**Exhibit 3 – Infringement Claim Chart for U.S. Patent No. 10,104,425**  
**HTC 5G Hub**

**2.3.3 Standards-based beamforming**

Any device (with multiple antennas) can beamform to any other device at any time. What 802.11ac adds is the opportunity for the receiver to help the beamforming transmitter to do a better job of beamforming. This is called “sounding,” and it enables the beamformer to precisely steer its transmitted energy toward the receiver. 802.11ac defines a single, though optional, protocol for one 802.11ac device to sound other 802.11ac devices. The protocol selected closely follows the 802.11n explicit compressed feedback protocol, as follows.

A device, typically an AP, sends a “Very High Throughput (VHT) Null Data Packet (NDP) Announcement” frame. Its only purpose is to contain the address of the AP and of the target recipients. The VHT NDP Announcement frame is immediately followed by a “VHT Null Data Packet” (VHT NDP) intended for those target recipients. Each intended recipient measures the RF channel from the AP to itself using the preamble of the VHT NDP and compresses the channel. The first intended recipient responds with the compressed channel information in a VHT Compressed Beamforming frame immediately, and other recipients respond when they are polled by the AP. The VHT NDP Announcement frame, the VHT NDP, and the VHT Compressed Beamforming frame are all similar to features in 802.11n. However, because of some subtle differences, the 802.11ac sounding is not backward compatible with 802.11n devices.



# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.