

0-Wi-Fi EXTENDERS, ROUTERS, AND MESH FROM THE VIEWPOINT OF A CLIENT

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Web location for this
presentation:

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SUMMARY

Inside "settings" inside any computer, tablet, or cell phone, you will see a very simplified but useful view of the Wi-Fi extenders and Wi-Fi mesh that are available for you.

TOPICS

- "Settings" Viewpoint of the Wi-Fi Environment:
Wi-Fi Extender
- "Settings" Viewpoint of a
Wi-Fi Mesh

**Internet Cloud
(= "Data Plan")**

Arcadyan "GATEWAY" PROVIDED BY VERIZON

Wi-Fi Extender

Router acting as "Main" part of the mesh

Router acting as Satellite part of the mesh

CLIENT VIEWPOINT

- Any unique "Wireless Access Point" name (= "Service Set Identifier" = "SSID") is only allowed to be displayed once inside the "Settings" or "Wi-Fi Connections" screen of a computer, tablet, cell phone, or a "network app", even if the SSID is being broadcast from more than one extender, router, or mesh device

CLIENT VIEWPOINT (continued)

- Each "SSID" that is displayed can either represent a group of Wi-Fi transmitter/receivers either on the same router or a Wi-Fi extender or OR a "mesh" group of Wi-Fi transmitter/receivers located on more than one router or Wi-Fi extender or mesh device.

Wi-Fi EXTENDER

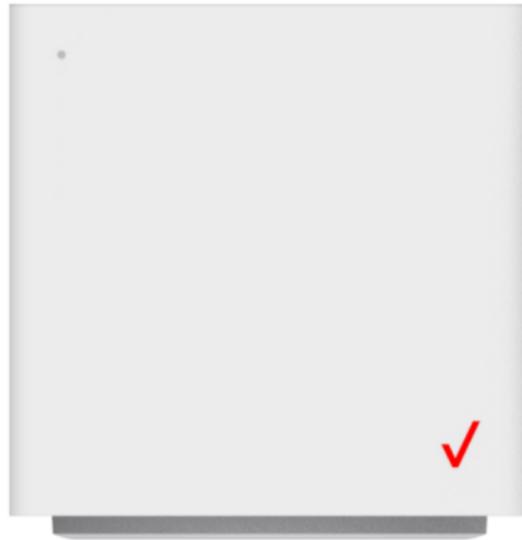
- A Wi-Fi extender is a subordinate device that connects to a Wi-Fi router or the Wi-Fi router part of a Internet Service Provider's "point of presence" device or another mesh device to extend the coverage range of the device that the Wi-Fi extender.

VERIZON "HOME INTERNET" GATEWAY

- Verizon_XC7J3W
is the SSID (= Service Set Identifier) of my "Verizon Home Internet" gateway's two Wi-Fi transmitter/receivers.
This is how the Verizon gateway looks from inside the "Wi-Fi list" in my Windows 11 computer:



Verizon Internet Gateway

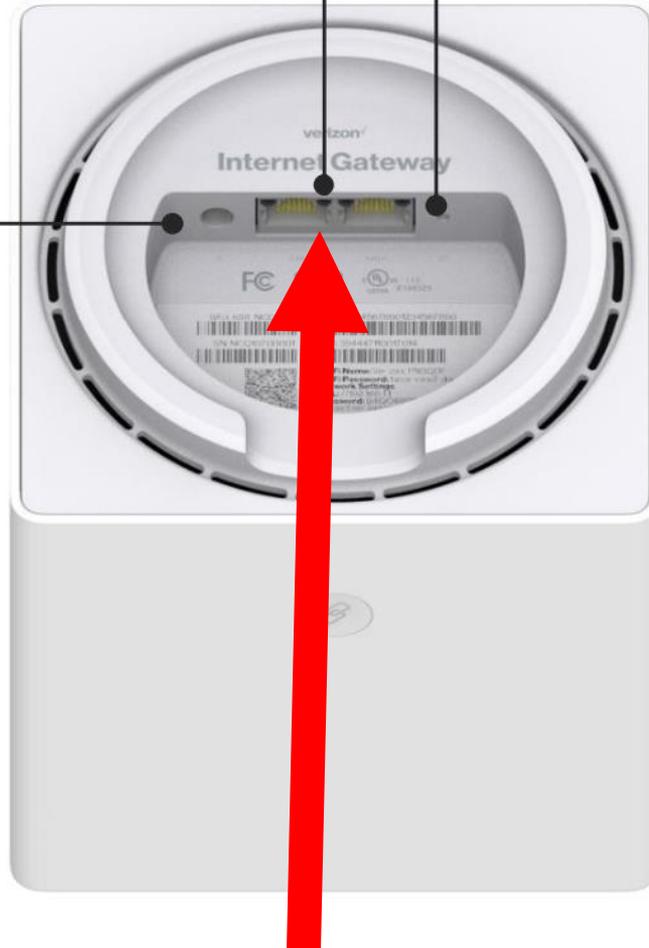


Bottom

LAN Ports

Reset button

DC Jack



- https://scache.vzw.com/dam/support/pdf/user_guide/verizon-internet-gateway-ncq-1338-user-guide-v1.pdf

- https://www.amazon.com/dp/B0C7RRYFH3?ref=ppx_yo2ov_dt_b_product_details&th=1

← Wi-Fi



Verizon_XC7J3W
Connected, secured



Disconnect

VERIZON "HOME INTERNET" GATEWAY (continued)

- The Verizon gateway has two "Wi-Fi 6" transmitter/receivers:
a 2.5 GHz RF transmitter
and
a 5 GHz RF transmitter
- Both of the transmitter/receivers have the same SSID.
- Each transmitter/receiver has a unique BSSID.

VERIZON "HOME INTERNET" GATEWAY (continued)

- The operating system "Wi-Fi Settings" or "Wi-Fi Connections" screen of any computer, any tablet, any cell phone cannot display the two transmitter-receivers of the Verizon "Home Internet" gateway as separate entities.

VERIZON "HOME INTERNET" GATEWAY (continued)

- However, the free version of the "Netspot" app that runs in Windows.. or Android or macOS correctly displays the two transmitter-receivers as separate entities:

NetSpot - Inspector

Inspector Survey Planning Search

Networks around you

17 of 37 networks selected

SSID	BSSID	Channel	Frequency	Channel wid...	Band	Security	Vendor	Mode
<input checked="" type="checkbox"/> Verizon_XC7J3W	FC:12:63:44:98:B9	6, +1	2437	40	2.4	WPA2-Personal	ASKEY CO...	n/ax
<input checked="" type="checkbox"/> Verizon_XC7J3W	FC:12:63:44:98:BA	112 (106)	5560	80	5	WPA2-Personal	ASKEY CO...	n/a...



Networks around you

17 of 37 networks selected

SSID		BSSID	Channel	Frequency	Channel wid...	Band
✓ Verizon_XC7J3W	🔒	FC:12:63:44:98:B9	6, +1	2437	40	2.4
✓ Verizon_XC7J3W	🔒	FC:12:63:44:98:BA	112 (106)	5560	80	5

MULTI-LINK OPERATION ("MLO")

- "Wi-Fi 7" has a new feature called "Multi-link operation"
- MLO = "Multi-link operation"
- **devilsadvocate2_MLO** consists of a SSID that transmits on all three or all two frequencies simultaneously.

← Wi-Fi



devilsadvocate2_MLO
Connected, secured



Disconnect



devilsadvocate2_5G_6GEXT



devilsadvocate2_6G



devilsadvocate2



devilsadvocate2_5G

More Wi-Fi settings



9:02 PM
3/13/2024



MULTI-LINK OPERATION ("MLO") (continued)

- **devilsadvocate2_MLO** (continued)

See

<https://www.tp-link.com/us/blog/1067/what-is-wifi-7-s-multi-link-operation-mlo-/#How%20Can%20I%20Use%20MLO?>

MULTI-LINK OPERATION ("MLO") (continued)

- **devilsadvocate2_MLO** (continued)
When you connect an end-user client to a "Multi-link operation" SSID, your client device uses all two or three frequency channels/transmitters-receivers of the Wi-Fi router at the same time.

"SMART CONNECT"

- **devilsadvocate2_5G_6EXT**

is provided by the router's "Smart Connect" capability:

This feature lets the router and the client negotiate/handshake to decide whether to connect to the

devilsadvocate2_5G

or the

devilsadvocate2_6G

transmitter/receiver of the router.

"SMART CONNECT" (continued)

- "Smart Connect" has been an optional feature for many generations of routers. It works well in some situations and causes problems in other situations.

The TP-Link*****_5G_6EXT SSID is used by the TP-Link Smart Connect feature, which automatically assigns connected devices to the Wi-Fi band that provides the fastest speed. When Smart Connect is enabled, the router's 2.4GHz and 5GHz networks share the same SSID and password. By default, this SSID uses all three bands, but you can turn the 2.4GHz off to include only the 5GHz and 6GHz bands. Wi-Fi 7 clients can connect to this SSID using two bands simultaneously to increase the bandwidth, while Wi-Fi 6 devices can only use one band at a time. ^

