

# 1: Wi-Fi BASICS

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# EXECUTIVE SUMMARY

Understanding the details of Wi-Fi wireless networking can provide you with the ability to resolve problems.

# TOPICS

- User Equipment (UEs) Show/See Wireless "Service Set Identifiers" (SSIDs)
- UEs Only Show You a Single SSID
- The Single SSID Can Represent Many Wi-Fi Transmitter Receivers

# A SINGLE SSID CAN REPRESENT ONE OR MANY Wi-Fi TRANSMITTER/RECEIVERS

- Multiple Wi-Fi transmitter/receivers in each wireless Wi-Fi router
- Multiple Wi-Fi transmitter/receivers in each wireless Wi-Fi extender or node that is attached to either other extenders or nodes or to a Wi-Fi router

# Wi-Fi TRANSMITTER/RECEIVERS INSIDE A TYPICAL Wi-Fi ROUTER

- 2.45 Gigahertz band transceiver
- 5 Gigahertz band transceiver
- 6 Gigahertz band transceiver
- 2.45 Gigahertz band guest transceiver
- 5 Gigahertz band guest transceiver
- 6 Gigahertz band guest transceiver

# Wi-Fi TRANSMITTER/RECEIVERS INSIDE A TYPICAL Wi-Fi EXTENDER OR MESH NODE

- 2.45 Gigahertz band transceiver
- 5 Gigahertz band transceiver
- 6 Gigahertz band transceiver
- 2.45 Gigahertz band guest transceiver
- 5 Gigahertz band guest transceiver
- 6 Gigahertz band guest transceiver

# FREQUENCY BAND CAPABILITIES OF USER EQUIPMENT (UE)

- Most consumer-level cameras and wireless doorbells can only connect to a 2.45 Gigahertz band Wi-Fi transceiver
- Most computers and tablets can connect either a 2.45 Gigahertz transceiver or a 5 Gigahertz transceiver with 5 Gigahertz transceivers providing faster data speeds



# USER EQUIPMENT (UE) ONLY SHOWS YOU ONE "INSTANCE" OF A "SERVICE SET IDENTIFIER" (SSID)

- When you use a UE device to look at available wireless Wi-Fi networks, any single SSID that is displayed can be 1 to n number of Wi-Fi transmitter receivers in 1 to n number of physical Wi-Fi hardware devices

## "BAND STEERING" ISSUES

- <https://syndicated.wifinowglobal.com/resource/what-is-band-steering-and-is-it-worth-enabling/>
- <https://www.broadbandbuyer.com/features/3254-what-does-wifi-band-steering-mean/>
- <https://us.hitrontech.com/learn/cable-modem-routers-beamforming-vs-band-steering-vs-mu-mimo/>

## "BAND STEERING" ISSUES (continued)

- <https://selectra.in/internet-speedtest/band-steering>
- <https://bestwirelessroutersnow.com/what-is-band-steering/>
- "Band steering" is called "Smart Connect" in Netgear and TP-Link routers