

Wi-Fi & Routers

A PMUG Presentation

April 11, 2020

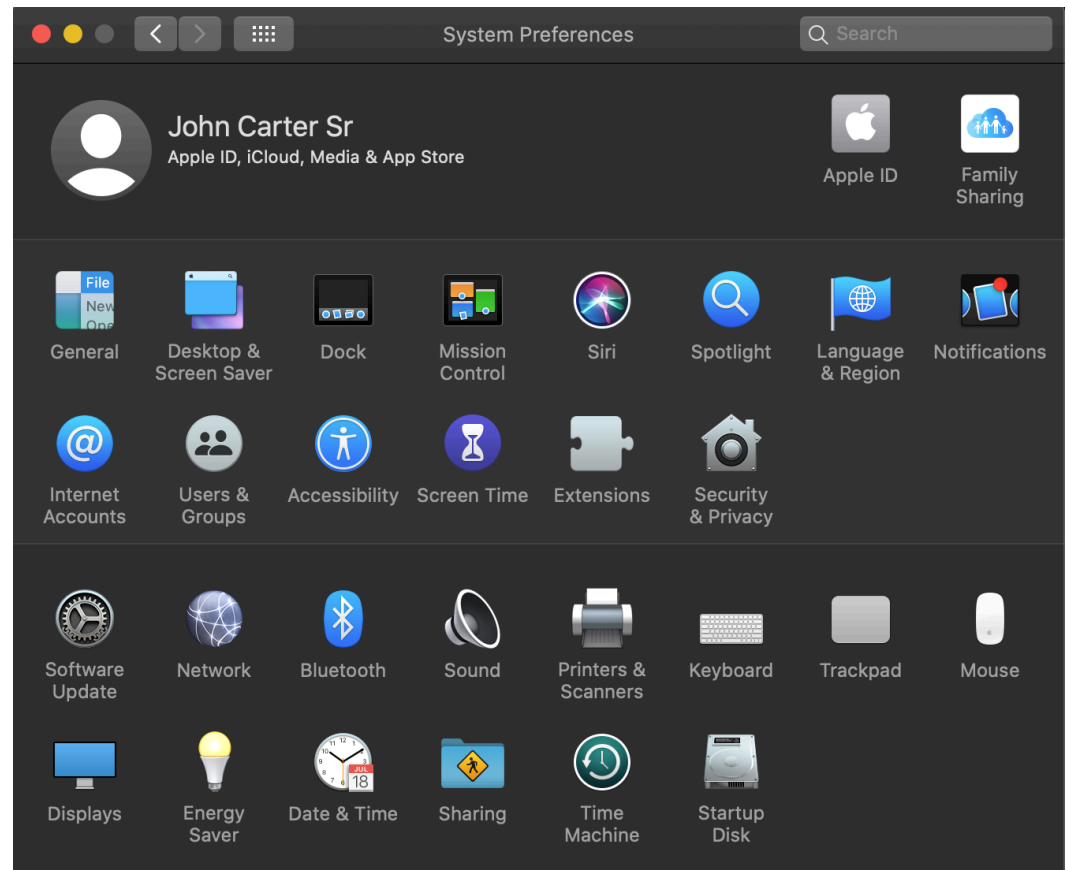
by John Carter

macOS



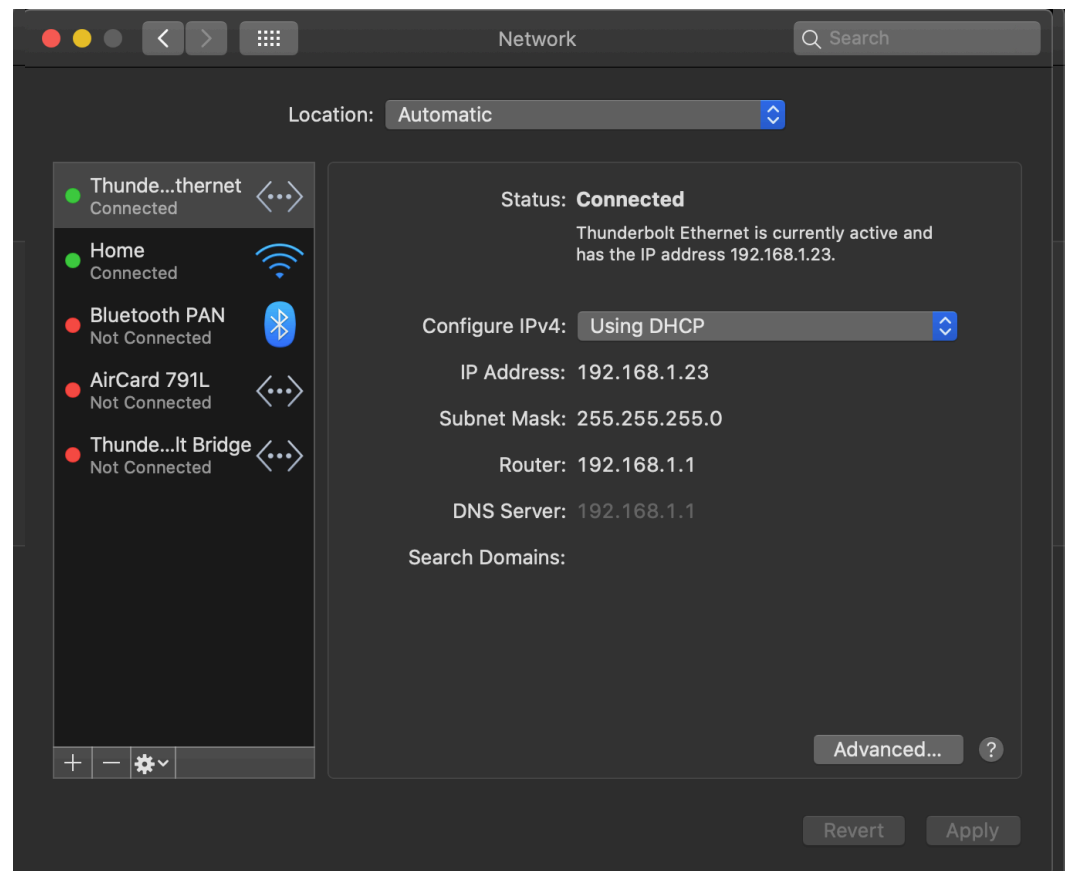
macOS

- System Preferences



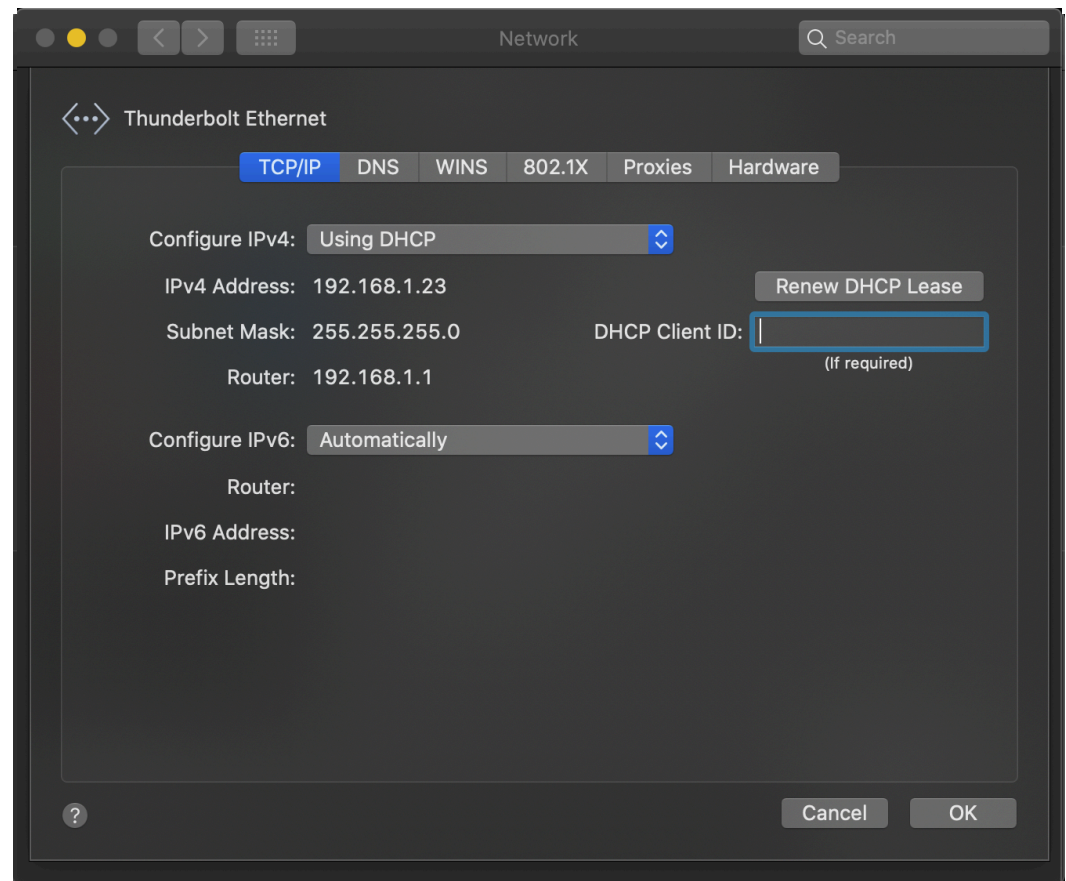
macOS

- System Preferences
 - Network



macOS

- System Preferences
 - Network
 - Advanced
 - TCP/IP
 - DNS



Find your Mac

- List of Wi-Fi specs
 - https://everymac.com/systems/by_capability/macs-with-airport-airport-extreme.html



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Mac Specs: By Capability: Wi-Fi Capable Macs (Airport)

The Wi-Fi capabilities, formerly referred to as AirPort (802.11b) and AirPort Extreme (802.11g, 802.11a, 802.11n) capabilities, of each recent -- G3 and later -- Mac are listed below. For all Macs that match a specific version of Wi-Fi -- courtesy of EveryMac.com's [Ultimate Mac Sort](#) -- click the Wi-Fi capability of interest (right column).

Please note that AirPort is Apple's name for 802.11b, and AirPort Extreme is Apple's original name for 802.11g and 802.11n (some AirPort Extreme models also unofficially support 802.11a). Systems with "Optional" support AirPort wireless networking but did not have it pre-installed.

Please also be mindful of asterisks, as these indicate that particularly important details are provided on the complete specs page.

If you are not sure which Mac you have, look it up by Order Number, Model Number, EMC Number, Model Identifier or Serial Number with EveryMac.com's [Ultimate Mac Lookup](#) feature. If you need help, refer to [Mac Identification](#).

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Apple Computer

[eMac G4/700](#)

[eMac G4/800](#)

AirPort

[802.11b \(Optional\)](#)

[802.11b \(Optional\)](#)



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- AirPort**
- [802.11b \(Optional\)](#)
- [802.11b \(Optional\)](#)



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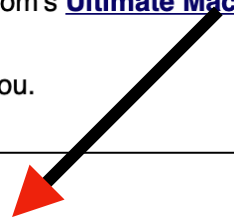
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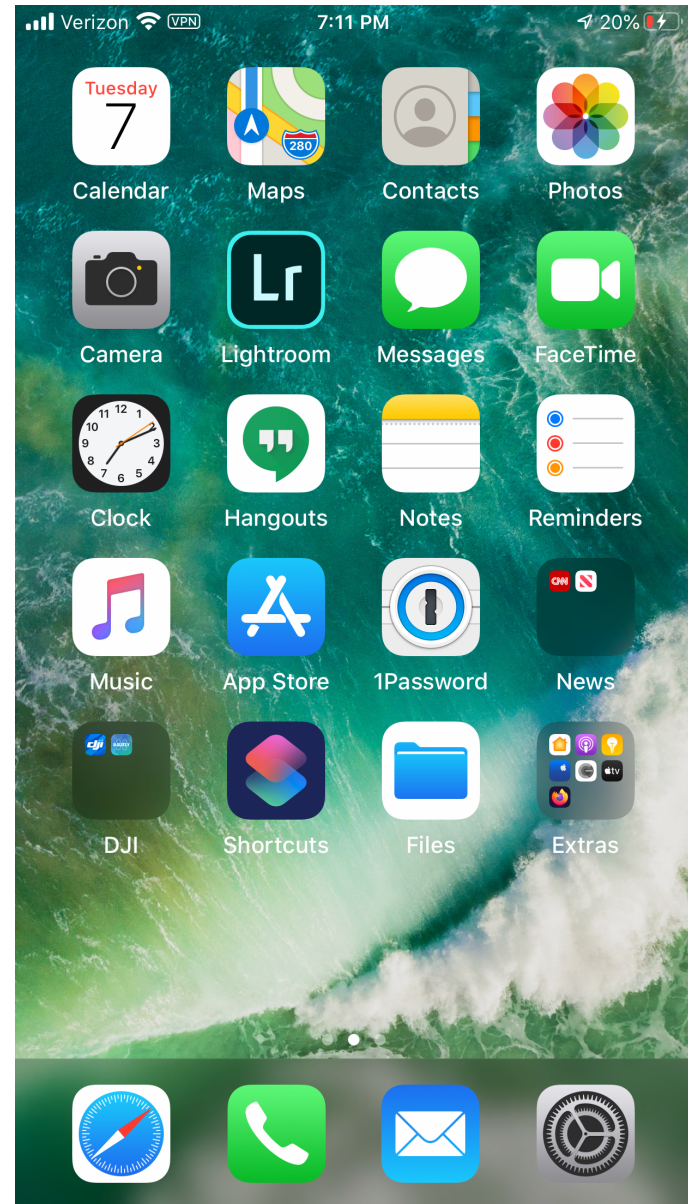


iPhone



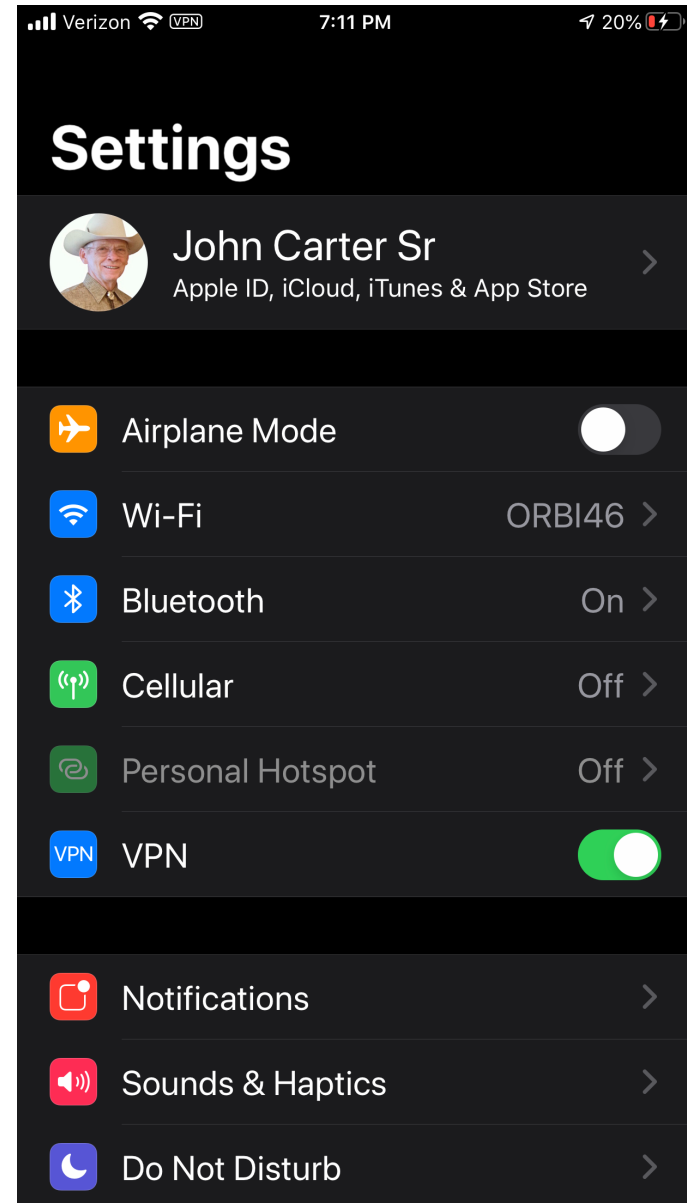
iPhone

- Settings



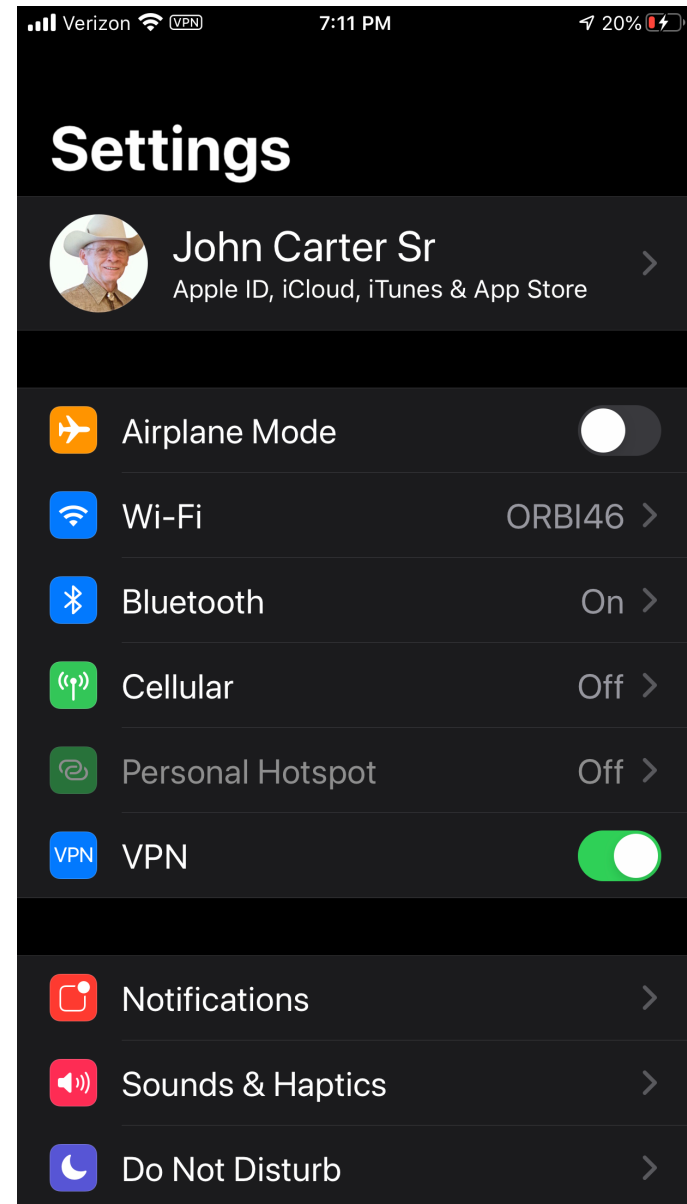
iPhone

- Settings
 - Wi-Fi



iPhone

- Settings
 - Wi-Fi
 - iPhone 8: 802.11ac Wi-Fi with MIMO
 - iPhone Xr: 802.11ac Wi-Fi with 2x2 MIMO
 - iPhone 11: 802.11ax Wi-Fi 6 with 2x2 MIMO
 - iPhone 11 Pro: 802.11ax Wi-Fi 6 with 2x2 MIMO



iPad

iPad

iPad mini:

Wi-Fi (802.11a/b/g/n/ac); simultaneous dual band (2.4GHz and 5GHz); HT80 with MIMO

iPad:

Wi-Fi (802.11a/b/g/n/ac); dual band (2.4GHz and 5GHz); HT80 with MIMO

iPad Air:

Wi-Fi (802.11a/b/g/n/ac); simultaneous dual band (2.4GHz and 5GHz); HT80 with MIMO

iPad Pro:

802.11ax Wi-Fi 6; simultaneous dual band (2.4GHz and 5GHz); HT80 with MIMO

iPad

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Wi-Fi (802.11a/b/g/n/ac); simultaneous dual band (2.4GHz and 5GHz); HT80 with MIMO

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Wi-Fi (802.11a/b/g/n/ac); dual band (2.4GHz and 5GHz); HT80 with MIMO

iPad Air:

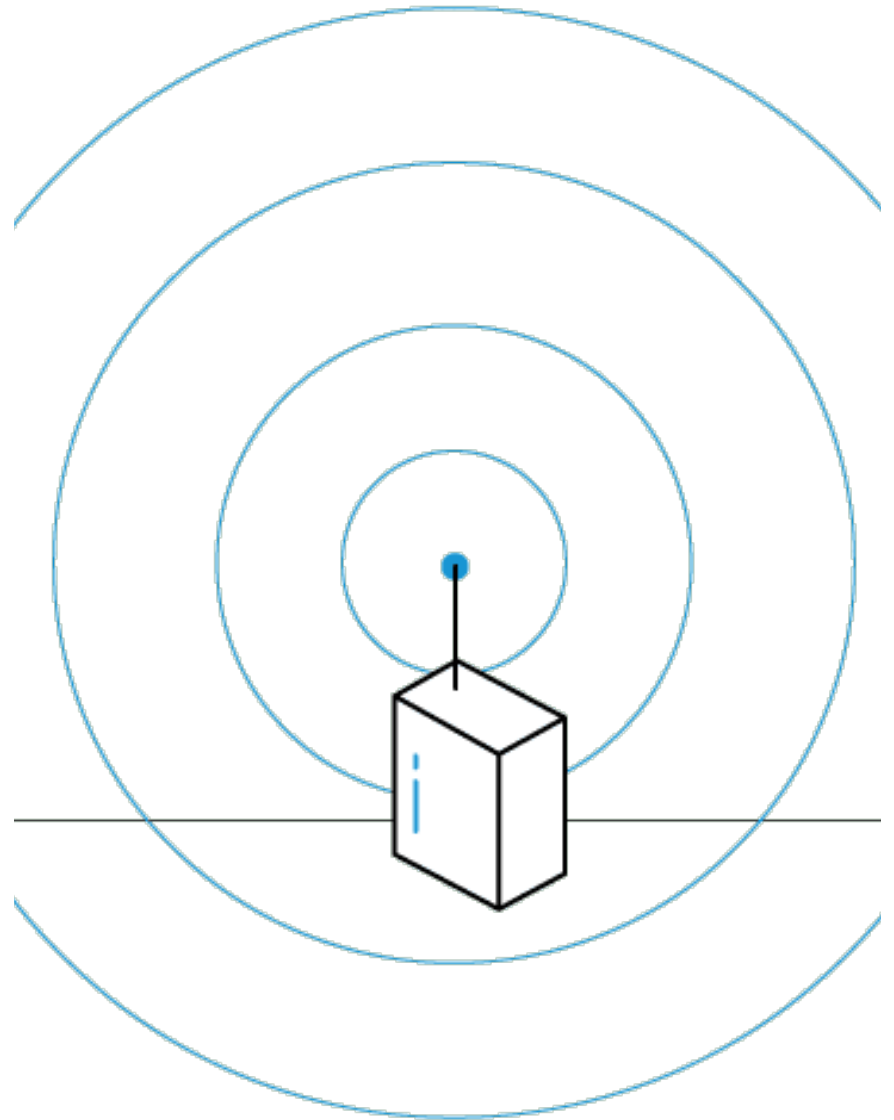
Wi-Fi (802.11a/b/g/n/ac); simultaneous dual band (2.4GHz and 5GHz); HT80 with MIMO

iPad Pro:

802.11ax Wi-Fi 6; simultaneous dual band (2.4GHz and 5GHz); HT80 with MIMO

Wi-Fi Standards

- 802.11b
- 802.11a
- 802.11g
- 802.11n (Wi-Fi 4 dual band)
- 802.11ac (Wi-Fi 5, supports beamforming)
- 802.11ax (Wi-Fi 6)



Beamforming



Beamforming

- 802.11n, 802.11ac



Beamforming

- 802.11n, 802.11ac
- Requires MIMO
 - Multiple in-out



Beamforming

- 802.11n, 802.11ac
- Requires MIMO
 - Multiple in-out
- \$139



Beamforming

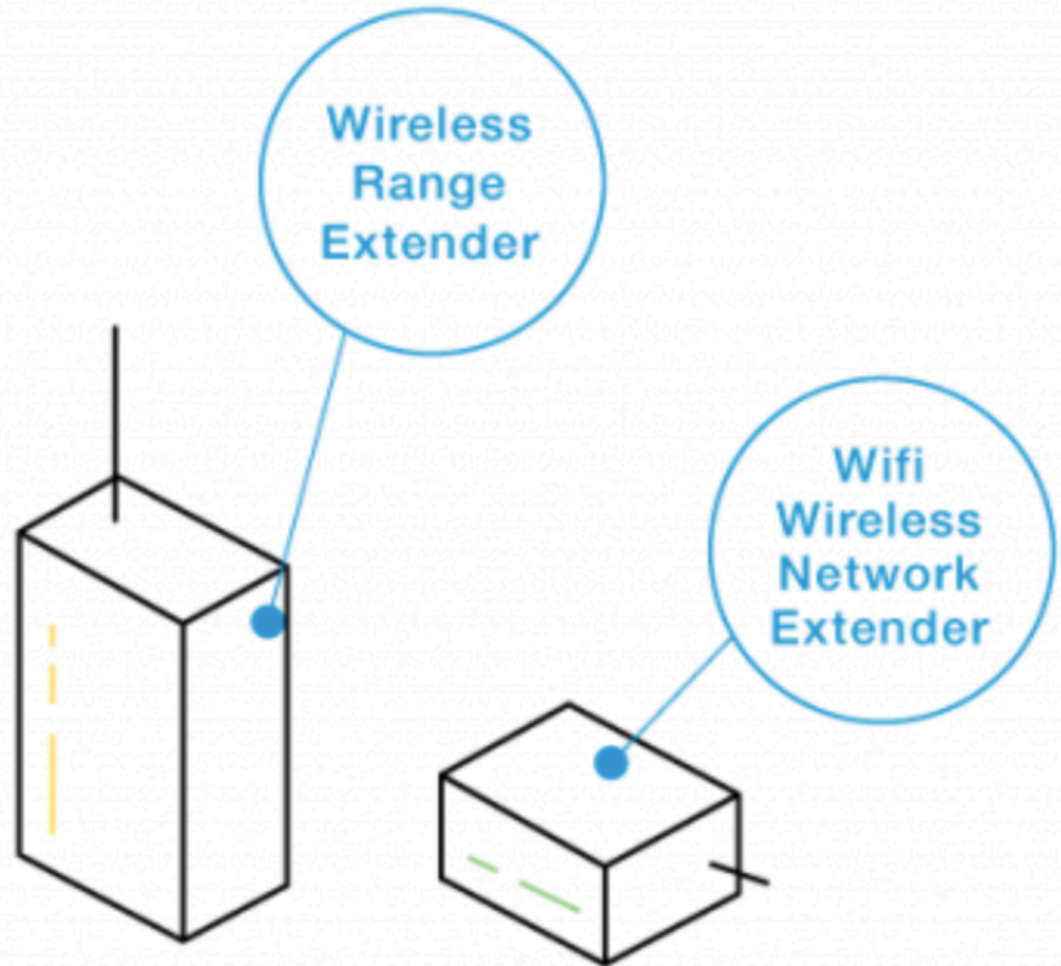
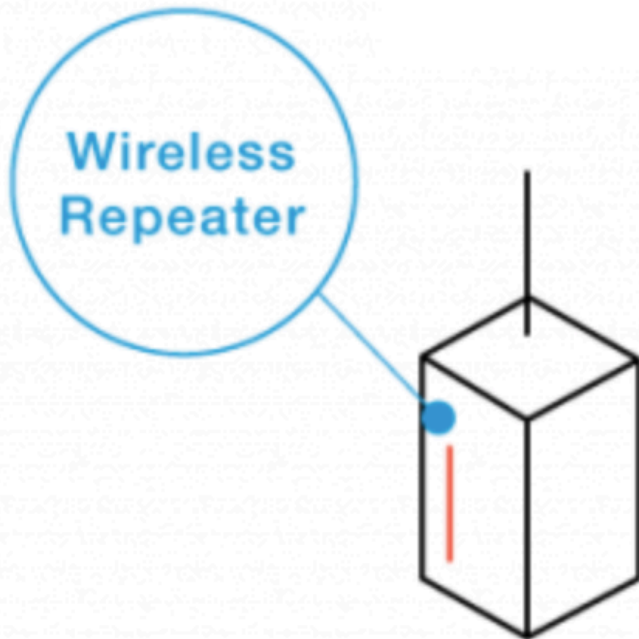


Today's WiFi

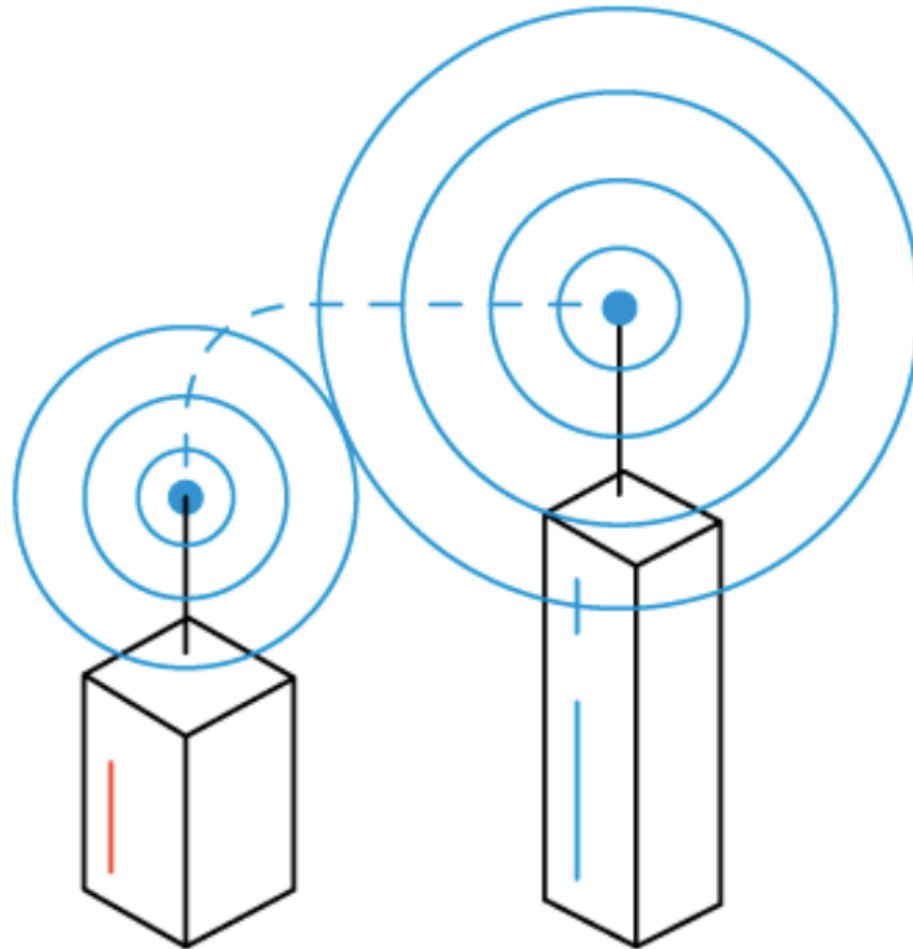


802.11ac Beamforming Technology

Wi-Fi Boosters



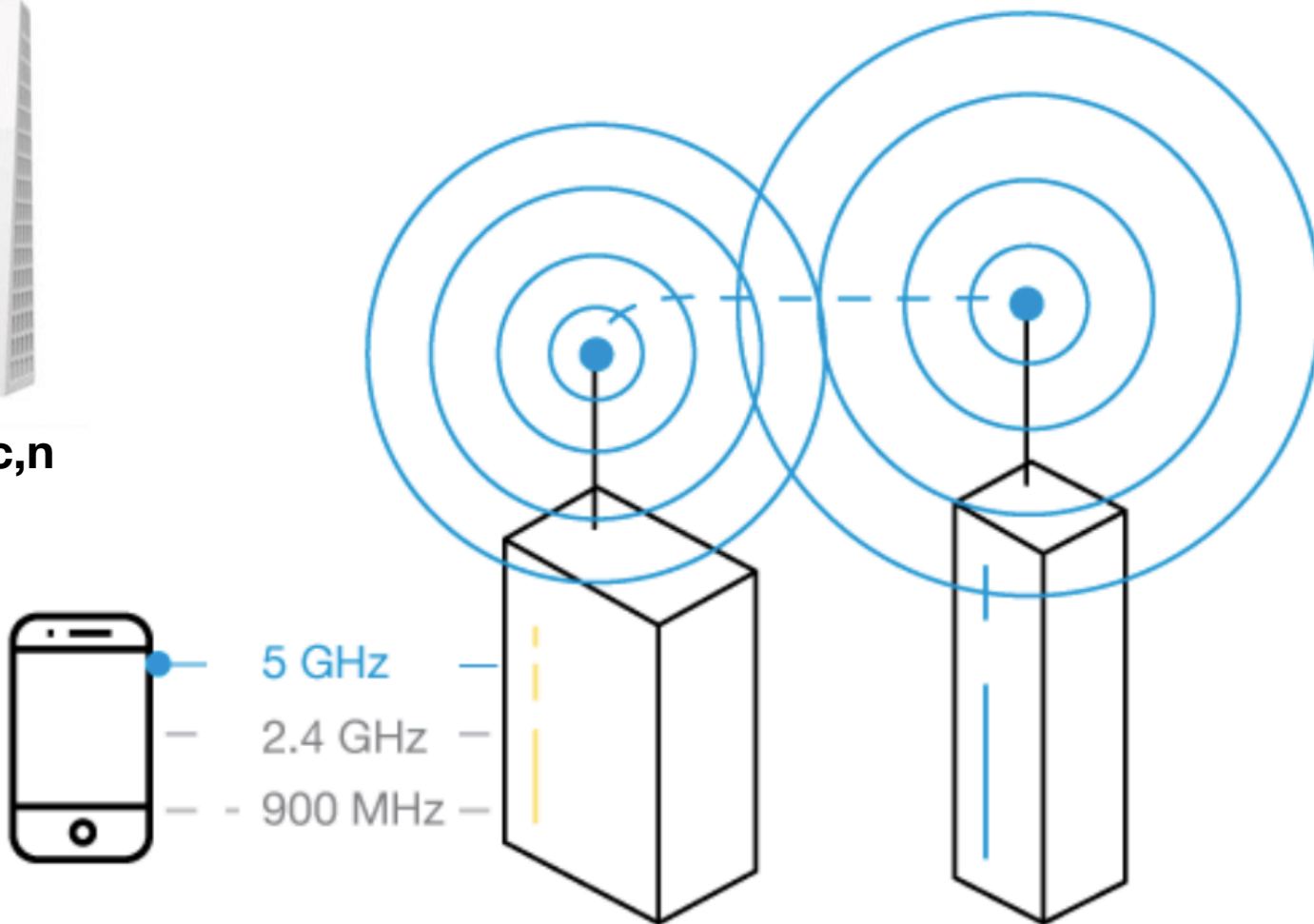
Wireless Repeaters



Wireless Range Extenders



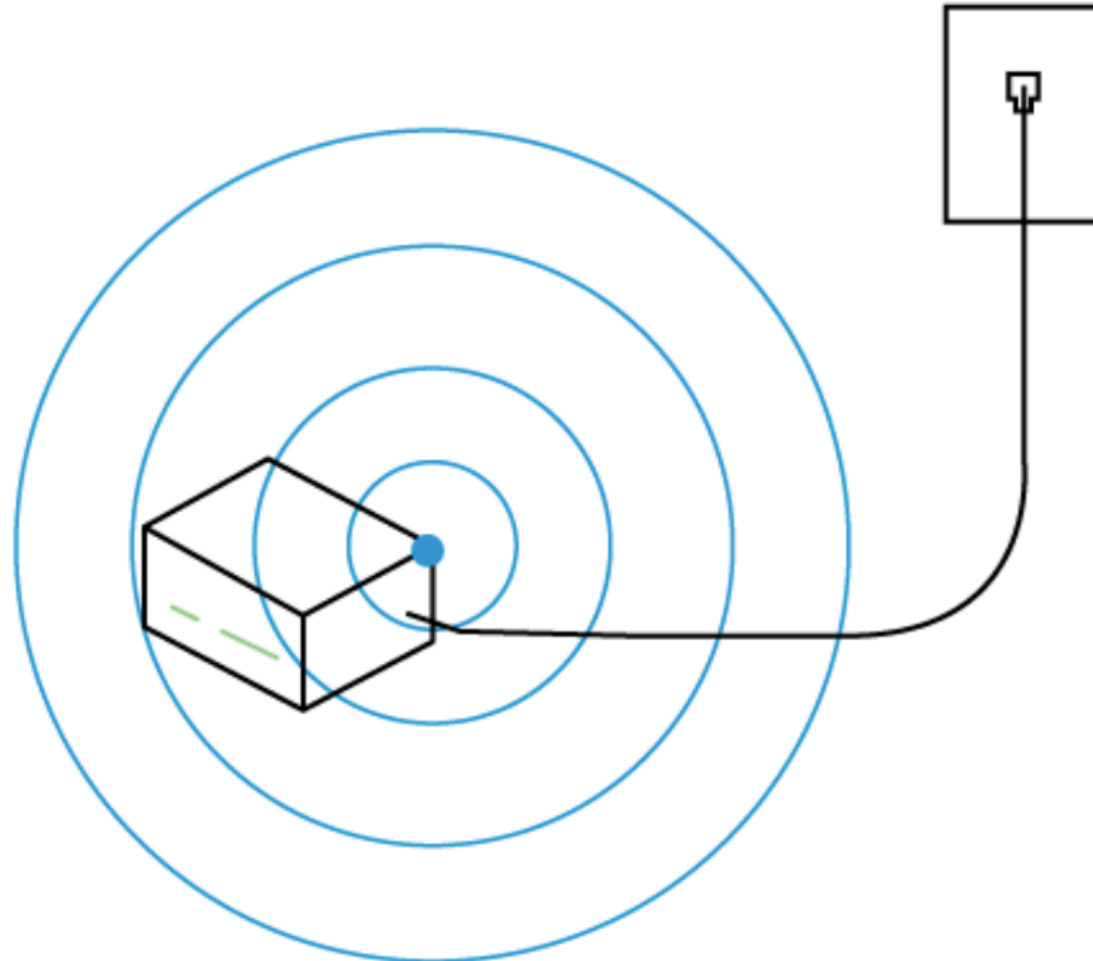
802.11ac,n



Wi-Fi Network Extenders



802.11ac



Actiontec®

Powerline Adapter



Not a Wi-Fi extender solution.

eero



802.11a/b/g/n/ac
Dual Band or Tri-band options
Beamforming

eero 3-pack

Everything a busy family needs.

Fast, reliable WiFi for up to 5,000 sq. ft.

Netgear



802.11ac,n

Netgear

- Best for very large homes



802.11ac,n

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- Best for very large homes
- \$190 for pair



802.11ac,n

Netgear

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Master



Satellite

802.11ac,n





That's All Folks