

Wireless Home Networking

Channels, mesh vs AP, wired vs wireless, Starlink — the choices that actually matter for fast home Wi-Fi.

3

NON-OVERLAPPING 2.4G CHANNELS

Wi-Fi 7

CURRENT SPEC

5 GHz

DEFAULT FOR SPEED

LEO

STARLINK ORBIT

• Channels — the part everyone gets wrong

2.4 GHz

Use ONLY 1, 6, or 11

Only three non-overlapping channels. Setting "Auto" usually picks 6. Most interference is on channel 6 — pick 1 or 11 first.

5 GHz: many clean channels

Channels 36-48 and 149-165 are widely supported. DFS channels (52-144) work but pause briefly if radar detected.

• Topology — mesh, AP, or single router?

Single router

Small apartment, <1,500 sq ft. Simplest. Works fine for most users.

<1.5K sqft

RECOMMENDED

Wired access points

Multiple APs hardwired to a central switch. Best performance. Needs ethernet pulled to AP locations.

Mesh (wireless backhaul)

Easy install, no wiring. Trade ~50% throughput per hop. Good for renters or wire-less homes.

No wires

PRO TIP

Wire what you can. Every device on ethernet leaves more airtime for the ones that can't. Run cable during any renovation.

COMMON MISTAKE

One router for a 3,000 sqft home. The router can't physically reach the far corners. Adding range extenders compounds the problem.

STARLINK ESSENTIALS

- 1 LEO satellites at ~550 km**
Low latency (~25-50ms) vs traditional GEO (~600ms)
- 2 Phased-array dish**
No moving parts; tracks satellites electronically
- 3 Real speeds: 100-300 Mbps**
Where service is good
- 4 Best for: rural / mobile / backup**
Cable / fiber still wins in served urban areas

DECISION TREE

- 1 Apartment / small home**
→ Single Wi-Fi 6E/7 router
- 2 Renting larger home**
→ Mesh system
- 3 Own larger home**
→ Wired APs on ethernet
- 4 Rural / no fiber**
→ Starlink + Wi-Fi inside

Full guide: djenterprises.ai/blog/wireless-home-networking

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