

# Coax Choices

Best coax for UHF frequency and why.

For UHF frequencies (300 MHz to 3 GHz), the best coaxial cable depends on your specific needs, but LMR-400, RG-213, and LMR-600 are often top choices due to their performance characteristics. Here's a breakdown:

Best Coax Options for UHF:

LMR-400:

Why: Low loss (about 2.7 dB/100 ft at 465 MHz), good flexibility, and suitable for runs up to 100-200 feet. It has a solid dielectric and double shielding, reducing signal leakage and interference.

Uses:

Ideal for amateur radio, GMRS, Wi-Fi, and general UHF applications where moderate lengths and cost-effectiveness are key. Impedance: 50 ohms, standard for most UHF systems.

RG-213:

Why: Affordable, with decent loss (around 5.1 dB/100 ft at 465 MHz) and good power handling (up to 1 kW at UHF). It's durable and widely available but slightly less efficient than LMR-400.

Use Case:

Good for shorter runs or budget-conscious setups like ham radio or base stations.

LMR-600:

Why: Extremely low loss (1.75 dB/100 ft at 465 MHz), excellent for long cable runs or high-power applications. Its thicker construction improves performance but reduces flexibility.

Uses:

Best for professional setups, long-distance UHF links, or critical applications like repeaters.

Why These Are Best:

- Low Attenuation: UHF signals attenuate significantly over distance, so low-loss cables like LMR-400 or LMR-600 preserve signal strength.
- Shielding: Double-shielded cables (e.g., LMR series) minimize interference, critical in UHF's crowded spectrum.
- Impedance Matching: All recommended cables are 50 ohms, matching most UHF equipment for minimal signal reflection.
- Power Handling: UHF applications often involve moderate to high power (e.g., transceivers), and these cables support that without breakdown.

#### Key Considerations:

- Cable Length: For short runs (<50 ft), RG-213 is sufficient. For longer runs, LMR-400 or LMR-600 is better.
- Flexibility: LMR-400 is more flexible than LMR-600, making it easier to install in tight spaces.
- Cost: RG-213 is cheaper but less efficient; LMR-600 is pricier but ideal for performance-critical setups.
- Connectors: Ensure compatibility with your equipment (e.g., N-type, UHF, or SMA connectors).

#### Recommendation:

##### General Use:

LMR-400 strikes the best balance of low loss, flexibility, and cost for most UHF applications.

High-Performance/Long Runs: LMR-600 for minimal loss over long distances.

Budget Option: RG-213 for short runs or less demanding setups.

If you have specific requirements (e.g., cable length, power, or environment), let me know, and I can refine the recommendation.

Also, I don't recommend Amazon for Coax purchases. Stick to places like Buy Two Way Radios, DX Engineering, Gigi Parts and Ham Radio Outlet.

Recommend this link for a Coax Calculator which will show you what we are.

<https://kv5r.com/ham-radio/coax-loss-calculator/>