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Macintosh II Video Cable: Length Affects Performance

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TOPIC -----

What is the maximum length of Video Cable that can be used with the Apple High Resolution Monitors?

DISCUSSION -----

Apple formally supports only the monitor cables and cable lengths available through Apple--but theoretically, using 75 ohm impedance value cable (usually RG59U standard coaxial video cable), the signal will be very reliable up to 50 feet.

The distance is limited by the loss of signal strength through cable resistance:

- Specifications: 75 ohm impedance cable
- Signal strength: 13.33 amps; 1 volt
- Signal in MHz: 30.24

The DB loss per foot (or attenuation) using an RG59U standard cable is approximately .0015--resulting in a power loss of 4% of the original 1 volt signal at 100 feet.

The signal will drop to 50% at 2000 feet, with a 3 DB drop in power. Apple recommends staying within 95% percent of the signal, which would be under 150 feet. Increasing the monitor brightness control can correct for some of the signal loss.

(NOTE: Because of the TTL sync signal for the Apple High Resolution Monitors, it is unlikely the monitor will work correctly with sync signals under 4 volts, which would be a cable about 650 feet in length.)
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