Why use an Active antenna?
Why use an Active Antenna?

The difference between a passive and an active satellite antenna is:

**Active antenna**

- Includes two amplifiers, one for the downlink and one for the uplink.
- The amplifiers are located very close to the antenna.
- The purpose of the downlink amplifier is to maintain the best possible signal quality at reception. The purpose of the uplink amplifier is to deliver the needed RF power into the antenna.
- Without these amplifiers, the loss of the coaxial cable will have a severe impact on performance. **With an active antenna, it is possible to use long cables and still maintain performance.**

**Passive antenna**

- Includes only an antenna element, no amplifiers. A passive antenna is useful only for short runs of coaxial cable. **Cable loss will deteriorate system performance.**
Why use an Active Antenna?

Signal Quality (G/T) for Passive and Active Antennas vs cable length

Even at 40 m cable length, system performance is excellent with an active antenna.

If a passive antenna is operated in this region, it may still work, depending on the margin in the system.

Even at 2 m cable length, system performance is not meeting specs with a passive antenna.
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Conclusion:

An active antenna is the only choice for long cables

<table>
<thead>
<tr>
<th>Cable</th>
<th>Passive ant.</th>
<th>Active ant.</th>
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<tbody>
<tr>
<td>LMR240</td>
<td>Less than 3m</td>
<td>Less than 20m</td>
</tr>
<tr>
<td>LMR400</td>
<td>Less than 6m</td>
<td>Less than 40m</td>
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</table>