

What is this ?



These are integrated logic circuits of the 74HC series, but with the “U” or unbuffered series.

The example **SN74HCU04N** and **SN74HC04N** are both **Hex Inverters**, in this instance, from TI’s 74HC family, but there’s an important distinction:

1. SN74HC04N

- **Type:** Standard **Hex Inverter**
- **Function:** Provides six independent inverters with **Schmitt-trigger-like switching** characteristics (well-defined thresholds, suitable for normal digital logic use).
- **Intended Use:** General-purpose logic applications.
- **Operation:** Inputs and outputs are buffered, so the transfer function is more digital (sharp transitions, not intended for analog use).

2. SN74HCU04N

- **Type:** **Unbuffered Hex Inverter** (the “U” = **Unbuffered**)
- **Function:** Six inverters with a **more linear transfer region** (no internal buffering).
- **Intended Use:** Special applications like **oscillators, crystal oscillators, and analog waveform shaping**, where you want to exploit the inverter’s **analog-like behavior** in the transition region.
- **Operation:** Because it’s unbuffered, it doesn’t have multiple stages of amplification inside, so the input/output curve is more gradual and suitable for analog feedback loops.

Rule of Thumb:

- Use **SN74HC04N** for normal digital logic inversion.
- Use **SN74HCU04N** if you’re building **oscillators or frequency generators** that need the inverter’s linear region.