



# What is Balun Transformer?

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### What is Balun Transformer?

Balun is name of device that can be like a **common mode choke**, unbalance to balance transformer, or a step up or down transformer.

**Balun** is an acronym of **BAL**anced **UN**balanced, it's used to convert an unbalanced signal to a balanced one or vice versa.

A balun transformer is a device that:

- joins a balanced line (one that has two conductors, with equal currents in opposite directions, such as a twisted pair cable).
- to an unbalanced line (one that has just one conductor and a ground, such as a coaxial cable).

Baluns isolate a transmission line and provide a balanced output. A typical use for a balun is in a television antenna.

**Balanced:** A method of transmitting signals using two signal lines. One line carries the source signal; the other carries a signal of opposite phase (antiphase).

**Unbalanced:** A method of transmitting signals using one signal line, with a ground line providing a reference potential.

### Why Use a Balun?

Baluns are used for two primary reasons:

- One : Eliminate “common mode current” on the transmission line.
- Two : Matching antenna impedance to the transmission line.

### Insertion Loss (dB)

Loss due to transmission from primary dot port to secondary dot port and secondary port. Most balun transformers are symmetrical through their central horizontal axis; therefore, an input can be applied at the primary dot port or the primary port with differential outputs at the secondary dot and secondary ports.

### Basics of Broadband Transformers

There are two kinds of broadband transformers. One is known as a conventional type, which has separate primary and secondary windings, as do power and audio transformers. The other type is called a transmission-line transformer. It is believed that the latter variety is the most efficient of the two. Transmission-line transformers are wound with twisted or parallel windings and produce specific integers of impedance transformation, such as 4:1, 9:1, and 16:1. Conventional transformers permit you to obtain any transformation ratio you need.