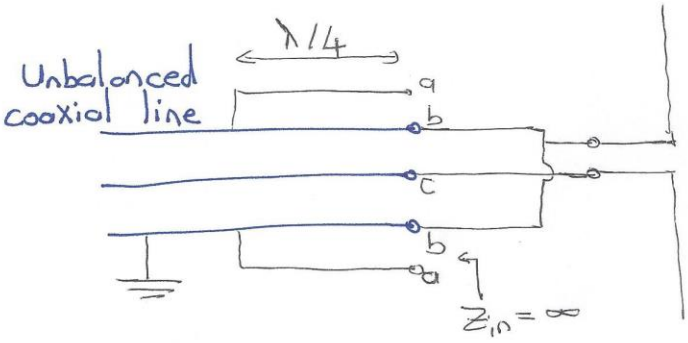
# Balun Transformer




Matching a coaxial cable to a dipole antenna using a balun transformer

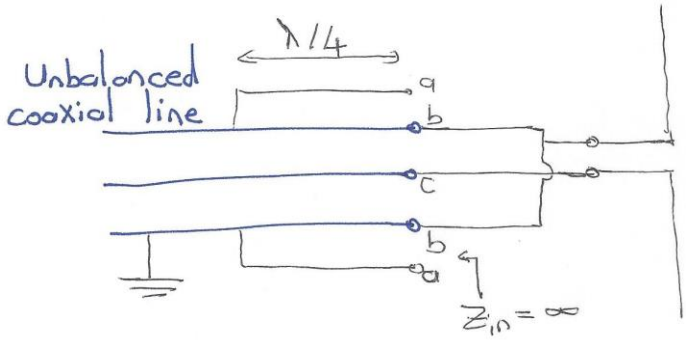
Another type of quarter-wave transformer is called balun transformer.

It is able to transform from a balanced (or ungrounded) line (or load) to an unbalanced (or grounded) line (or load) without disturbing the equilibrium conditions on either line.

A balun transformer can be used as an transition between an unbalanced coaxial line and a balanced antenna or two-wire line.

A two-wire line should be balanced with respect to ground so that the conductors carry equal and opposite currents.

If a coaxial line is connected to an unbalanced load, a current will be transmitted along the outside of the coaxial cable. This will result in high loss.




Matching a coaxial cable to a dipole antenna using a balun transformer

One type of balun transformer is shown in the figure above.

It consists of a short-circuited quarter wavelength sleeve (arm) mounted concentrically around the end of a coaxial coble. The outer conductor of the coaxial line is grounded.

Since the balun sleeve is a quarter-wave lag and short-circuited, the input impedance at the open ends 'a-b' is infinite.

Hence, conductor b is isolated from ground, and the ends 'b-c' of the coaxial coble may be connected to a balanced dipole antenna.