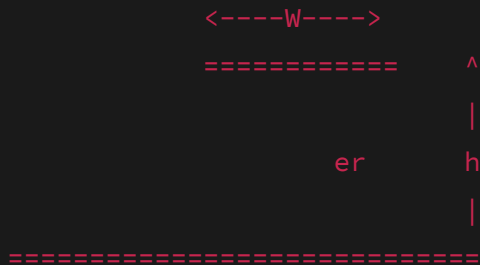


This module defines objects of the following class.

Class

Microstripline



Microstrip line

Reference: Hong & Lancaster.

Defines an object of the type Microstrip line. The object can be defined in either of the following two ways.

1) Defining the characteristics impedance Z_0 of the line. In this method, the required width of the msl will be computed using synthesis equations.

2) Defining the width W of the line. In this method, the resultant characteristics impedance is computed using the analysis equations.

If both W and Z_0 are given during the definition, then priority is given to W over Z_0 for defining the msl. Either one of these must be defined.

Attributes:

- Substrate dielectric constant: ϵ_r (Given by user)
- Substrate thickness: h (Given by user. In units of meters. Must.)
- Thickness of the msl metal conductor: t (Given by the user. In units of meters. OPTIONAL. Not implemented yet.)
- Effective substrate dielectric constant: ϵ_{r_eff} (Computed)

- Width of the msl: W (In units of meters. Computed from Z_0 , if not defined by the user.)
- Characteristics impedance: Z_0 (In units of Ohm. Computed if W is defined. If W is not defined, takes the value given by the user.)
- If both W and Z_0 are not defined: Gives an error.
- Length of the msl: l (In units of meters. Preferably should be given by the user. Takes value=1 meter, if not defined by the user.)
- Frequency: ω . (In units of rad/sec. Must if an object of Network class has to be computed as an attribute. Optional is only using it for synthesis and analysis.)
- An object of class Network: NW (Object type: Network. Computed and defined only when ω is defined.)
- Guided wavelength: λ_g (In units of meters. Computed when ω is defined.)
- Phase velocity: v_p (In units of meters/sec. Computed)
- Phase constant: β (In units of rad/m. Computed when ω is defined.)