

6. Dielectric Waveguide

6.1 Dielectric slab waveguide

EM waves are classified into two groups, TE and TM mode, in a slab waveguide.

Consider the case of symmetric slab waveguide.

In case of a slab waveguide, the eigen modes are exactly determined.

In 3-dimensional dielectric waveguides, following approximate approaches are used to determine propagation constants.

6.2 Effective index method

6.3 Generalized effective index method (GEIM)

6.4 Perturbation feedback method

6.5 Marcatili's method