

Integrated Optics for the Terahertz-Region

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The principles of Integrated Optics are transferred from optical frequencies to Terahertz frequencies. Thus an integrated circuit technology for low cost mass production in the Terahertz region is proposed. Planar dielectric lines with low index difference of core and cladding allow single mode operation at core dimensions exceeding the dimensions of rectangular waveguide by a factor of two to three. As an example an integrated 300 GHz vector Doppler radar is presented. Design criteria of the line and of components like directional coupler, antenna, single sideband modulator, diode detector are given.

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