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# Scattering from a PEC strip located at planar interface of free-space and lossy dispersive dielectric-magnetic medium using Kobayashi Potential method

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## Abstract

Kobayashi potential method has been used to study the scattering of electromagnetic plane wave from a Perfect Electric Conducting (PEC) strip placed at planar interface of the free space and dielectric-magnetic medium. The strip has been assumed to be thicker than the skin depth and also, it is thinner than a tenth of the free-space wavelength. Furthermore, it has been assumed that dielectric-magnetic medium is homogeneous, lossy and dispersive. Lorentz-Drude model has been used to incorporate losses and dispersion both in permittivity and permeability of the dielectric-magnetic medium. Depending upon the frequency, the lossy dispersive dielectric-magnetic medium may behave as ENG  $\{Re(\epsilon) < 0\}$ , MNG  $\{Re(\mu) < 0\}$ , DNG  $\{Re(\epsilon, \mu) < 0\}$ , and DPS  $\{Re(\epsilon, \mu) > 0\}$ . Scattered field pattern was observed at different operating frequencies by varying different parameters of the considered geometry. The monostatic and bistatic scattering widths

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