

## REFLECTION AND TRANSMISSION COEFFICIENTS

THE FRACTION REFLECTED AND TRANSMITTED OF AN IMPINGING WAVE ARE A FUNCTION OF THE INTRINSIC IMPEDANCES OF THE 2 MEDIUMS.

$\Gamma$  = REFLECTION COEFFICIENT (FRACTION 'BOUNCING')

$T$  = TRANSMISSION COEFFICIENT (FRACTION GOING THROUGH)

$$\Gamma = \frac{E_{\text{REFLECTED}}}{E_{\text{INCIDENT}}} = \frac{\eta_2 - \eta_1}{\eta_2 + \eta_1}$$

$$T = \frac{E_{\text{TRANSMITTED}}}{E_{\text{INCIDENT}}} = \frac{2\eta_2}{\eta_2 + \eta_1}$$

WHERE

$$\eta = \sqrt{\frac{\mu}{\epsilon \epsilon_r^*}}$$

AND

$$\epsilon_r^* = \epsilon_r + \frac{\sigma}{j\omega\epsilon_0}$$

CONDUCTIVITY