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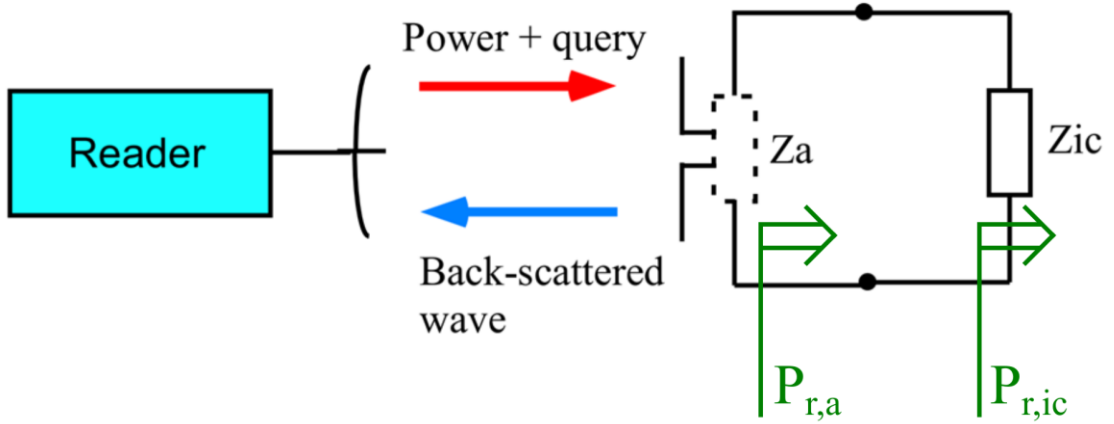

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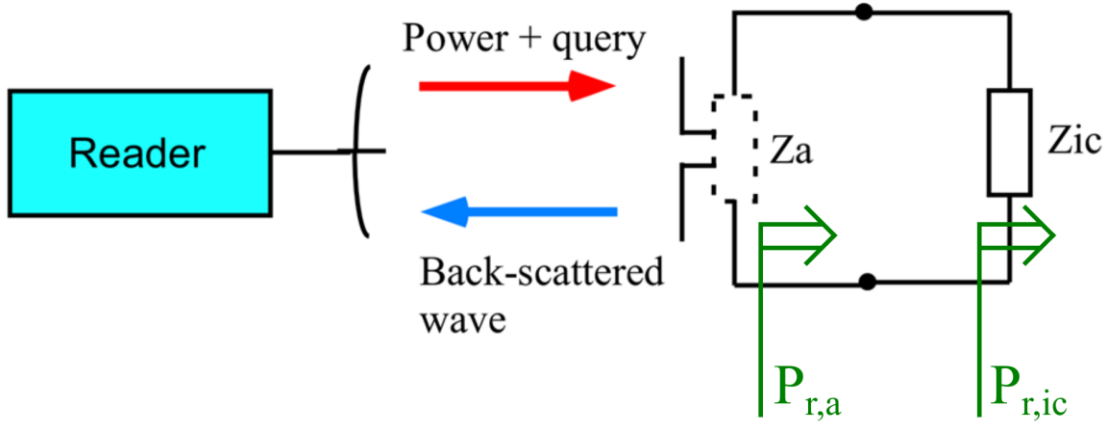

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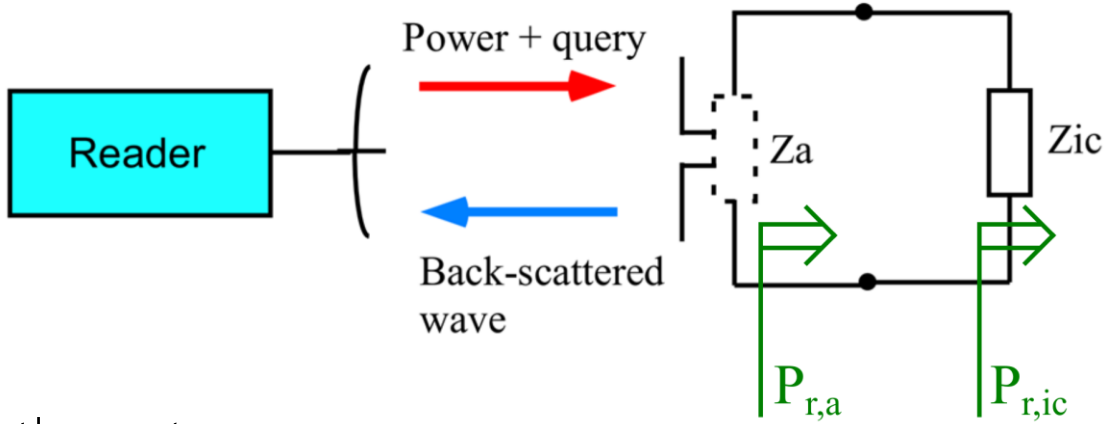

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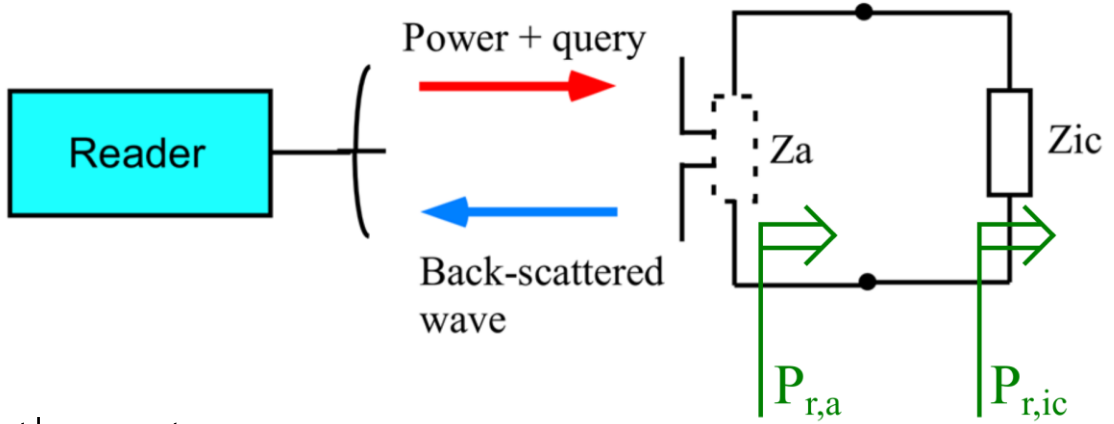

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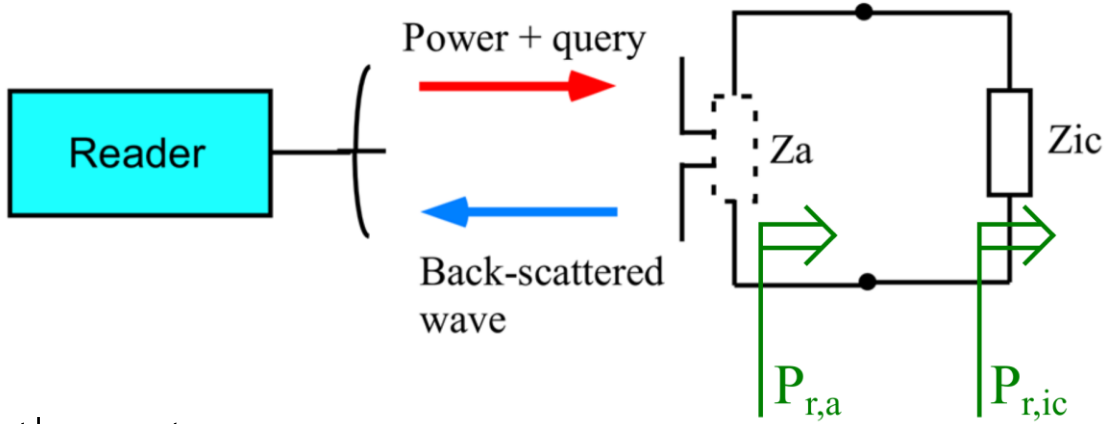

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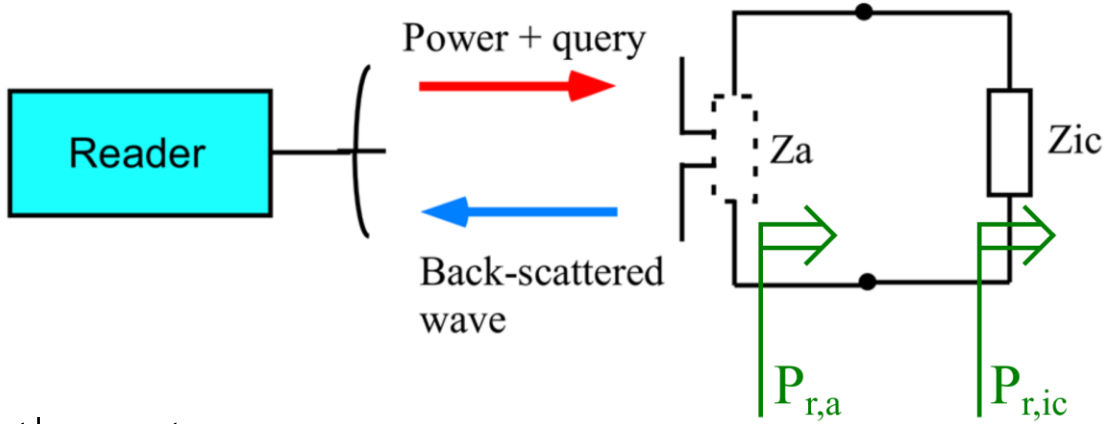

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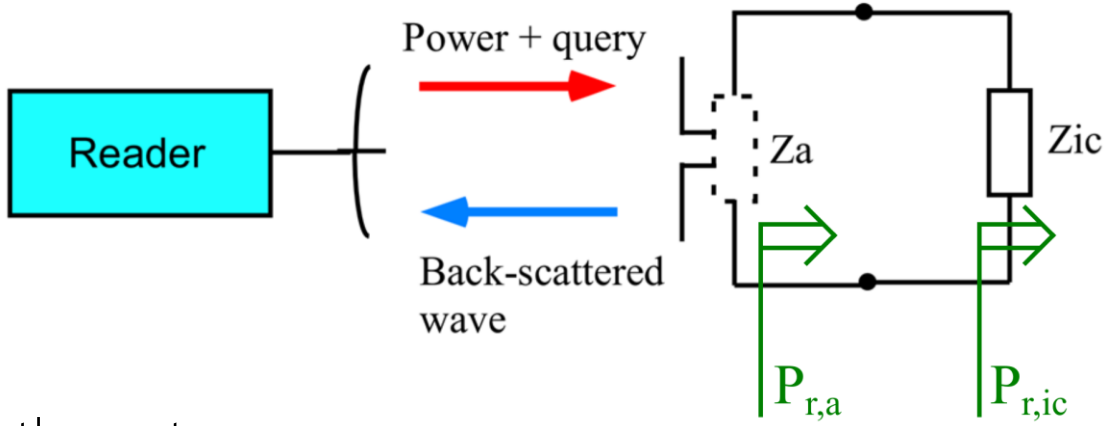

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S12E02

- Distance 0.2 m < r < 0.5 m
- Tag antenna gain: $G_r = -20\ \mathrm{dBi} = 0.01$
- Reflection coefficient: $\Gamma = 0.1 = -20\ \mathrm{dB}$
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$$P_r = S G_r \frac{\lambda^2}{4\pi} \tau \chi_{pol} = S G_r \frac{\lambda^2}{4\pi} (1 - |\Gamma^*|^2) = 0.19\ \mu\mathrm{W} = -67.3\ \mathrm{dBW} = -37.3\ \mathrm{dBm}$$

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Antenna gain (slide 50):

$$G = \eta D = -18.86 + 2.5 = -16.36 \text{ dBi}$$