

## 4.2 - Impedance and Admittance Matrices

**Reading Assignment:** *pp. 170-174*

A passive load is an example of a **1-port** device—only **one** transmission line is connected to it.

**Q:** *But, we use impedance  $Z$ , admittance  $Y$ , or reflection coefficient  $\Gamma$  to **characterize** a load. How do we characterize a **multi-port** device?*

**A:**

**HO: The Impedance Matrix**

**HO: The Admittance Matrix**

**HO: Reciprocal and Lossless Devices**

**Q:** *But how can we **determine**/measure the impedance and admittance matrix?*

**A:** **Example: Evaluating the Admittance Matrix**

**Q:** *OK, but what are the impedance and admittance matrix good for? How can we **use** it to solve circuit problems?*

**A:** **Example: Using the Impedance Matrix**