

PRE-EXPERIMENT QUIZ

1. A radar transmitter feeds high power to an antenna. Show how a directional coupler may be connected to monitor power fed to the antenna.
2. Show how a dual directional coupler may be used to monitor incident power as well as reflected power from a device.
3. What is the effect of finite directivity when a coupler is used to monitor reflected power?
4. For the 4-port directional coupler (Fig.1) assume that
$$S_{14} = S_{23} - S_{11} = S_{22} = 0$$
and $S_{12}, S_{13}, S_{24}, S_{34}$ not equal to zero. Show that such a device has all four ports matched
5. Describe the construction and principle of operation of a two-hole waveguide coupler. With what modification one may achieve good directivity over a wide band of frequencies?