

# RF Power Dividers

## Installation Instructions

### PRODUCT DESCRIPTION

RF power dividers, which are available for VHF, UHF, 800 MHz, and PCS applications, permit the customer to design multiple antenna arrays in the field to achieve keyhole patterns, additional gain, and shadow-filling.

Constructed of rugged copper with constant-impedance, female N-connectors, they provide a neat and effective way to connect two or four equal-length 50-ohm cable connections to each antenna. This cable array can then be easily connected to the same transmitter.

An example using the RF power divider would be: Feeding a signal to two omnidirectional antennas mounted on opposing tower faces to provide a more omnidirectional pattern (see Figure 2). Another application could be: Feeding a signal to two or four yagi antennas for a high-gain, highly-directional array (see Figure 3).

### SPECIFICATIONS

VSWR: Less than 1.4:1

Power: 500 watts maximum

There are eight models available to cover the normal frequencies from 144-1990 MHz. These models are shown in the following table.

Model	Frequency Range	Number of Outputs	Size
K 522	144-174 MHz	2	20" x 5/8" dia.
K 542	144-174 MHz	4	38" x 5/8" dia.
K 526	406-512 MHz	2	8" x 5/8" dia.
K 546	406-512 MHz	4	14" x 5/8" dia.
K 528	800-960 MHz	2	5" x 5/8" dia.
K 548	800-960 MHz	4	8" x 5/8" dia.
K 528M	1850-1990 MHz	2	2-3/4" x 5/8" dia.
K 548M	1850-1990 MHz	4	4-5/16" x 5/8" dia.

### INSTALLATION

For phased arrays, follow the antenna manufacturer's instructions and recommendations, observing proper spacing between mounted antennas and proper antenna orientation. (Spacing should be at approximately one wavelength for optimum performance; see Figure 4.)

It is important for all individual antennas to be fed in-phase, and all like elements to be oriented in the same direction.

For optimum performance, observe the following guidelines when installing power dividers:

1. Use only high-quality, 50-ohm cable (such as RG-213/U or Heliacx) from the divider to the antennas and from the transmitter to the power divider.
2. The cable length to each antenna is not critical; however, electrically, each cable must be the same length for the antennas to remain in-phase.
3. To reduce the chance of damage from wind, ice, etc., securely fasten the power divider and cables to the antenna boom and tower.

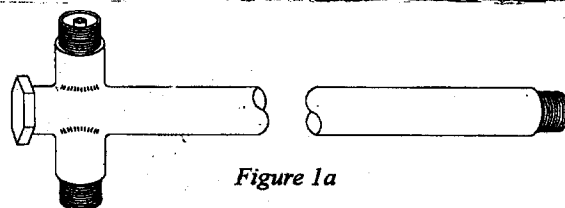


Figure 1a

Figure 1a illustrates the following models.

Model	Frequency
K 522	144-174 MHz
K 526	406-512 MHz
K 528	800-960 MHz
K 528M	1850-1990 MHz

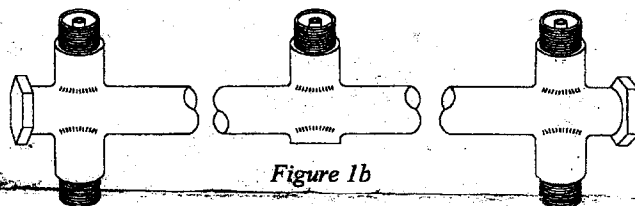


Figure 1b

Figure 1b illustrates the following models.

Model	Frequency
K 542	144-174 MHz
K 546	406-512 MHz
K 548	800-960 MHz
K 548M	1850-1990 MHz

Figure 1 - RF Power Dividers

### Warning!

Installation of any antenna near power lines is **dangerous**. For your safety, follow proper installation procedures.



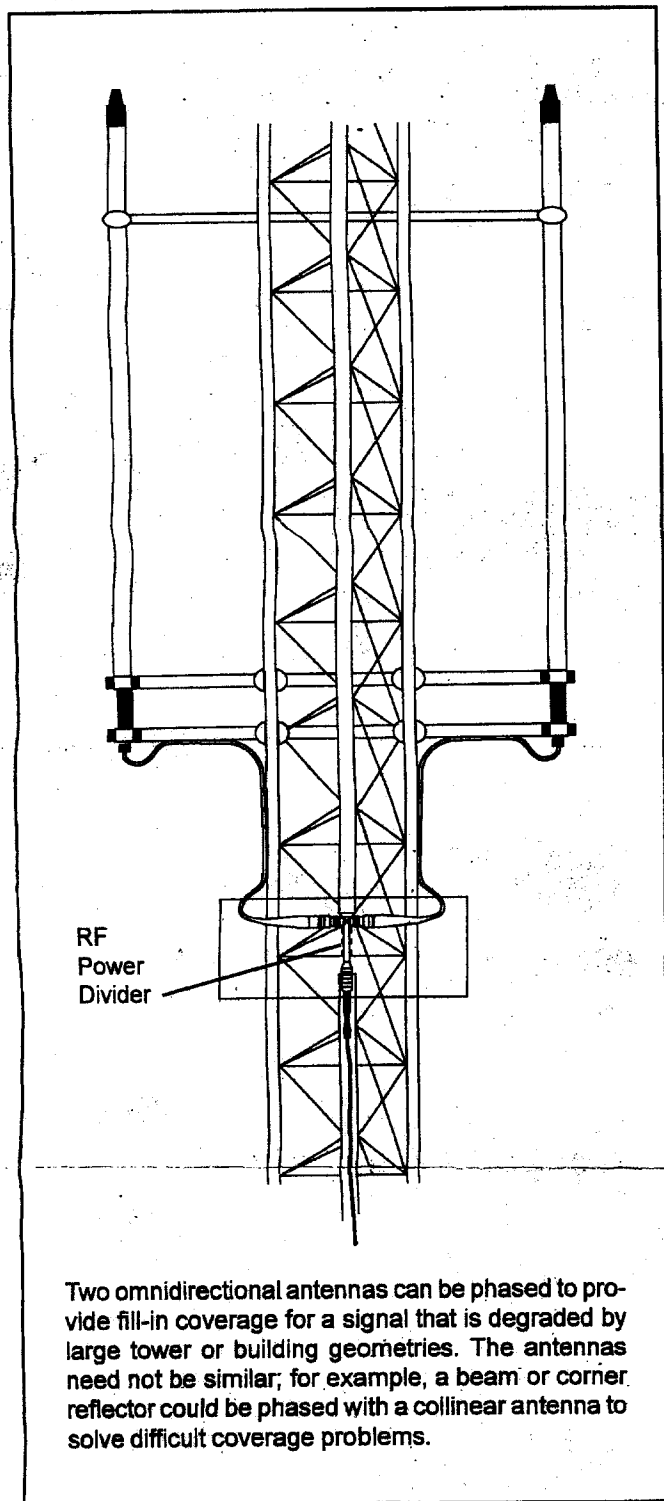


Figure 2 - Feeding Two Antennas to Avoid Tower Shielding

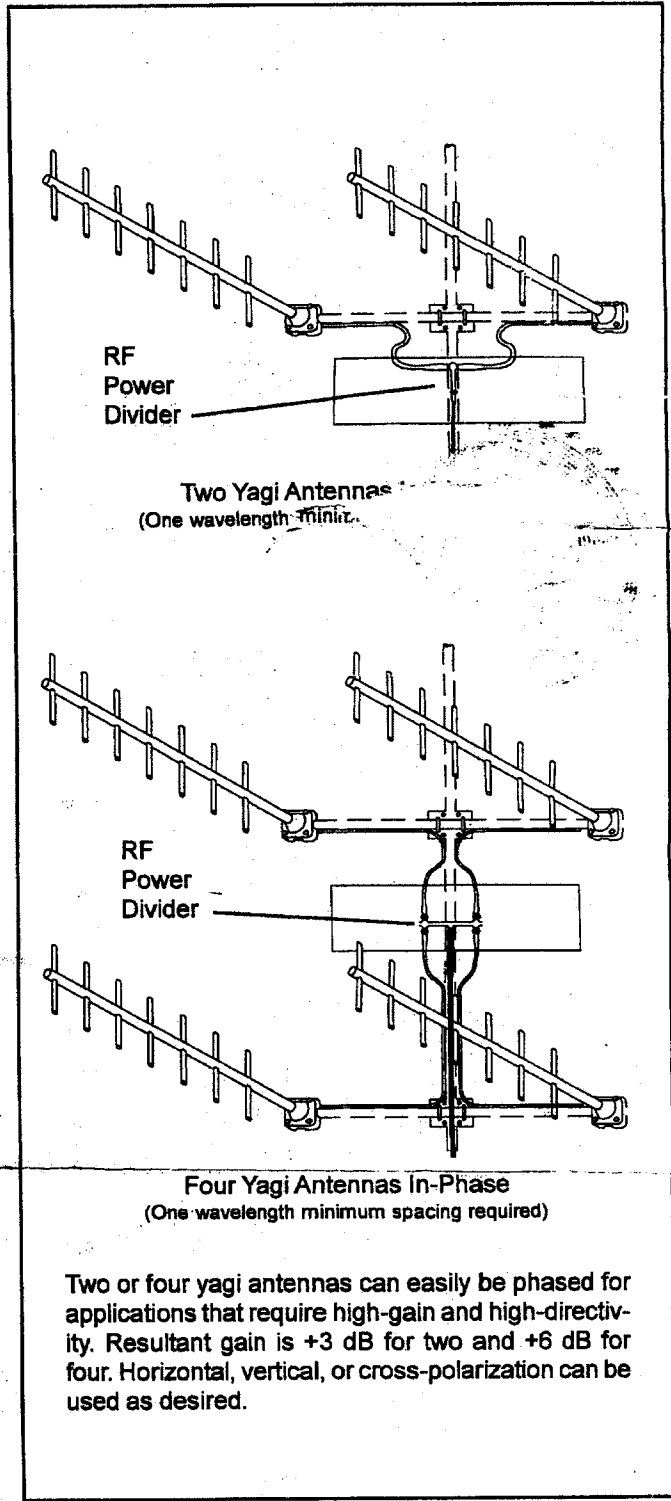


Figure 3 - Feeding Two or Four Yagi Antennas In-Phase

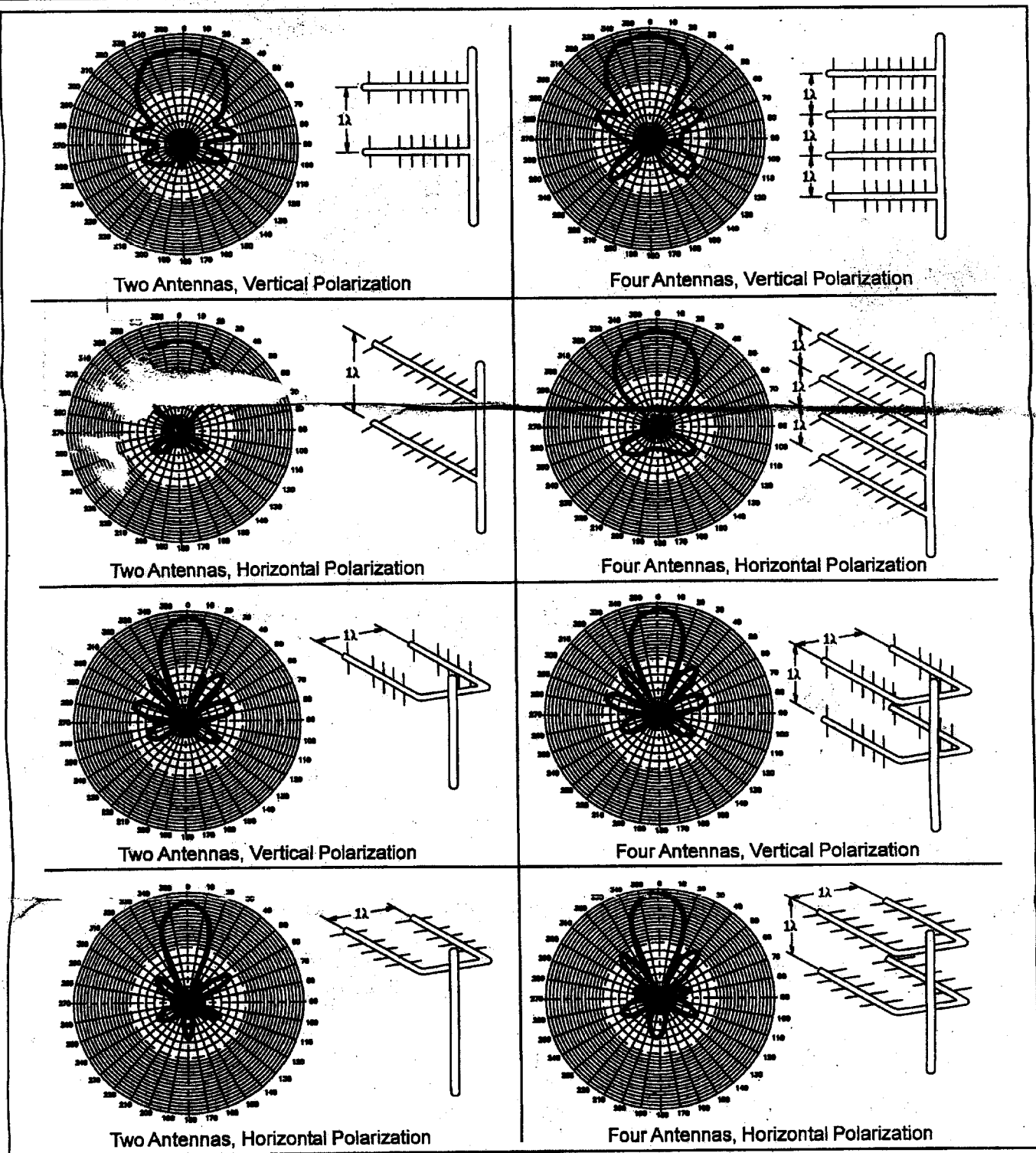


Figure 4 - Phased Yagi Radiation Pattern Examples (One wavelength boom-to-boom spacing)

