

Our **PNA series** antennas are physically small and ideally suited for applications where directivity is important and small size is critical. **PNA** antennas are designed to exhibit a directional pattern comparable to that of a well designed log periodic antenna. A typical VHF **PNA** antenna however, is only one tenth the size of a log periodic.

An excellent balance of the dipoles with respect to ground helps to reject locally generated (common mode) interference. The pattern exhibited by a **PNA** antenna in the "H" plane is essentially a cardioid. The deep null at the rear of the pattern can be used effectively to reject a strong signal from one direction.

These miniature directional antennas are practical for use with a rotator for rotation in azimuth to minimize interference from noise sources in the azimuth direction.



PNA-230/A

An optional broadband low-noise preamplifier can be used with the antenna to overcome transmission line loss and other system losses inherent in small antennas. The use of this amplifier is not essential if a receiver with high sensitivity is used. A **PNA** antenna integrated with a pre-amplifier and rechargeable batteries or a power supply provides a directional receiving system of an unusually small size. The directivity characteristics are essentially independent of frequency, with an efficiency sufficient to meet the necessary criterion of masking the receiver noise with the atmospheric noise.

A cross-polarized **PNA** antenna system exhibits a directional pattern in both the vertical and horizontal polarization planes that is comparable to that of a well designed log periodic antenna over the entire frequency range of operation.

The basic **PNA** design may be modified to provide a **PNM** (see direction finding antennas) **series** antenna which is ideally suited for direction finding capabilities. The modification provides two selectable patterns in addition to the standard unidirectional cardioid pattern normally used for receiving purposes.



PNA-1721/A

The first of these is a bi-directional "Figure-Eight" pattern. This pattern exhibits two sharp nulls which can be used to obtain accurate bearing information.

After obtaining a bearing, one can resolve the 180 degree ambiguity by switching to the cardioid pattern. The second additional pattern is omni directional which can be used for general search and surveillance.

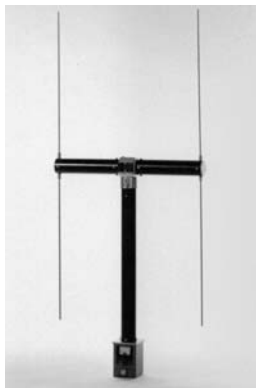
PASSIVE NETWORK ARRAY WIDEBAND DIRECTIONAL ANTENNAS

SPECIFICATIONS

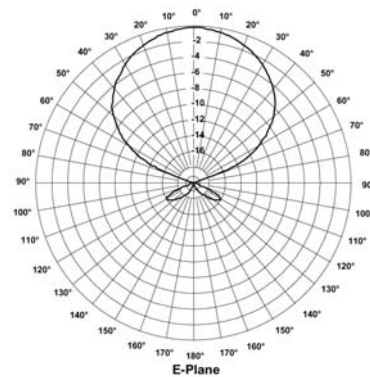
IMPEDANCE: 50 ohms, nominal
WIND AND ICE: OPERATIONAL: 50 mph
 SURVIVAL: 100 mph without ice,
 50 mph with 0.5" radial ice

F/B RATIO: 15 dB minimum
PATTERN: Cardioid in "H" plane
DIRECTIVITY: 5 - 7 dBi
MATERIAL: Aluminum, Fiberglass

	FREQUENCY (MHZ)	POLARIZATION	ELEMENT LENGTH	BOOM LENGTH	WEIGHT (LBS / KG)	CONNECTOR
PNA-2/B	20 - 30	Vertical	12 ft	8 ft	45 / 20	N
PNA-230/A	20 - 30	Dual	12 ft	8 ft	50 / 23	N
PNA-2010/A	20 - 100	Dual	80"	40"	35 / 16	N
PNA-3020/C	30 - 200	Linear, Variable	40"	20"	6 / 3	BNC
PNA-3020/XP1	30 - 200	Linear, Dual	41"	20"	15 / 7	N
PNA-1721/A	174 - 216	Linear	24"	17"	<1 lb	BNC



PNA-3020/C



PNA-3020/C

RADIATION PATTERNS AT 200 MHZ

TYPICAL FIELD ANTENNA FACTOR FOR PNA-3020/C

