

# BeamPRO

## Analog Time-Delay Beamformer

### INTRODUCTION

BeamPRO™ is the industry's first truly analog, true time-delay beamformer. With no switches, diodes or active components in the RF path; it is a completely passive dielectric device that offers breakthrough performance across a number of metrics.



### BENEFITS OF ANALOG BEAMFORMING

With BeamPRO's analog beamforming, the time delay is fully controllable with essentially infinite variability. The result is true analog beam positioning with no discrete beam steps.

### PERFORMANCE BENEFITS of BEING PASSIVE & DIELECTRIC

Eliminating all active RF components offers the following:

- Elimination of amplitude and phase distortion
- No distortion corrections needed
- Ultra-high efficiency
- Low noise temperature
- Low power use
- Beam repositioning at power – HOT control with high power handling (only limited by dielectric breakdown voltage)

### SIMPLICITY – LOW COST

BeamPRO eliminates the need for phase shifters, power dividers, combiners, and transmit/receive switches. There are no moving parts and the device interfaces directly with the RF chain including power amp and LNA. The result is a higher performing, lighter, more compact, more power-efficient and much lower cost system.

### TIME DOMAIN BEAM FORMING

The totally passive and analog nature of BeamPRO means that beam repositioning speed is not a function of the speed of RF switching components. As such, BeamPRO's beam repositioning speed can be in the nanoseconds. This offers a low-cost and highly effective means to achieve Time Domain Beamforming, the use of which can dramatically increase spectral efficiency.

### LARGE INSTANTENOUS BANDWIDTH

The BeamPRO waveguide construction is able to support instantaneous bandwidth of 3:1 or more.

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## SPECIFICATIONS:

### FEATURES

- Low Power consumption
- Low Noise
- Compact/Lightweight
- Wide Frequency Range (10 MHz to 75 GHz)
- Excellent Phase/Amplitude Accuracy
- Flange Mounting

### FREQUENCY SCALABLE TO MEET REQUIREMENTS

### MECHANICAL

- Body Dimensions (L x W x H): Frequency dependent
- Weight: based on frequency and number of ports
- Mounting: Flange mounting
- Flange Mounting Hole: as required

### ENVIRONMENTAL

- Operating temperature range -40°C to 105°C
- Storage Temperature range -40°C to 105°C
- Relative Humidity MIL-STD-810G method 507.4 @ 30°

### APPLICATIONS

- Maritime
- Aerospace
- Military
- SATCOM
- 5G
- RADAR

### ANTENUM ABOUT

Antenum is an innovative, new antenna company located in Merrimack, NH. The Company offers CALPRO, a groundbreaking conformal antenna systems for vehicles and has recently announced the introduction of BeamPRO, a totally passive, analog time-delay beamformer. Founded by veterans of the defense industry, Antenum is dedicated to bringing radically improved antenna systems to market in both the commercial and defense arenas.