DIGITAL BEAMFORMING (DBF) ANTENNAS

The DBF Antenna is an array of intelligent beamforming modules (DBMs) that are arranged to create an antenna of any desired shape or size. Each DBM is like a “Lego” block that can be connected to other DBMs to form a mesh network that automatically configures itself as a coherent antenna aperture. Driven by “Universal Beamforming Technology” (UBT), the DBF antenna is able to automatically acquire and track several targets simultaneously once their frequency and bandwidth have been specified.

**Very Fast Signal Acquisition times!**

**General:**
- 16 beams standard, more as an option
- Any beam can support up to 120 MHz instantaneous bandwidth
- G/T = -8dB/deg.K each DBM.
- Overall G/T adds linearly
  - 10 DBMs = 2 dB/deg.K.
  - 100 DBMs = 12 dB/deg.K.
- Ground, Air, Sea-Based Systems

**Dizzying Angular Tracking Rates!**

**SWaP:**
- Size: 10” x 10” x 3” (S-Band)
- Weight: 5 lbs per DBM
- Power: 50W/DBM

**Other:**
- Operates in a mesh network when connected to other DBMs
- Can be non-planar, non-contiguous
- Fault Tolerant: Can lose many DBMs from array gracefully
- Many BIT /BIST and integration/troubleshooting tools
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Measured or Demonstrated Performance:
- DBMs will automatically acquire and form beams on a 6µV/mtr. signal with standard processing option, lower signal strengths with extended processing options
- Signal Acquisition time ~ 20 msec at ~100 mile ranges
- Angular tracking rates: >60 deg/sec

Many DBF Antenna Configurations Available:
- Single DBM System (15 lbs)
- 1x3 Portable (50 lbs)
- 3x3 Portable (120 lbs)
- 10x10 (Sea-Based DBF Antenna – 4 Segments, Removable DBMs for shipping)
- Conformal/Non-Contiguous -> i.e. 60 DBM Airborne Antenna (425 lbs)