

Satwave Arrays builds Ku-band and Ka-Band AESAs to connect with satellites on any constellation and orbit. Their capabilities are centered on high-performance designs for mission-specific applications in industry and defense. Key features include:

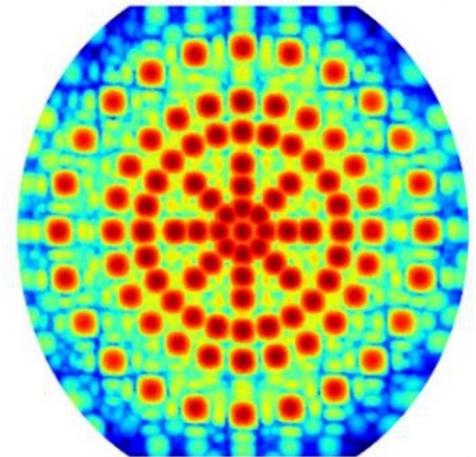
- AESA design scalable to custom sizes and multi-panel antennas
- Stacked patch radiating elements with proprietary, ML optimized, inner layers for wideband performance, enhanced cross-polarization, and improved efficiency at large scan angles
- Engineered in-house to retain design control
- PCB-based design, manufacturable at lower cost at scale
- Built on commercially available Analog Beam-Forming Integrated Circuits (BFICs)
- Targeted to be IP67 compliant and to operate in MIL-STD-810H environments
- Full system - Antenna Control Unit and Auto tracking algorithm to integrate with external modem
- Driven by FreeRTOS software, which is supported by Amazon and used by millions of devices



Satwave’s Engineering Philosophy

- **Data-Driven Design:** Simulation is always paired with real-world measurements
- **Open-Book Engineering:** Customers receive detailed performance data and validation reports
- **Transparency & Reliability:** No performance claims without measured proof

The Ka-Band AESA PCB design was tested in a Planar Near Field Range and Compact Antenna Test Range to generate comprehensive view of antenna performance. To avoid known AESA risks such as areas of poor performance across pointing range or working only in a small region near broadside, Satwave measured hundreds of beams across steer, frequency and polarizations. Below are selected key test results.

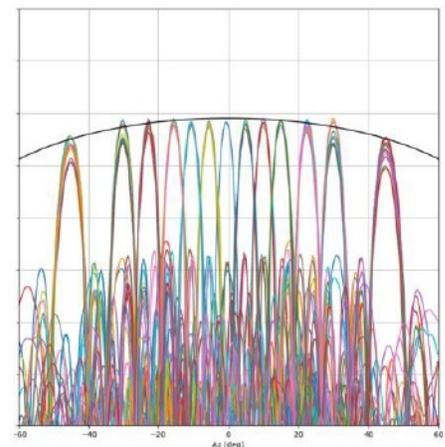


Frequencies: 17.7 – 21.2 GHz, 27.5 – 31.0 GHz
Size: 19.7” x 19.7” x 3” (50 x 50 x 7.8 cm.)
Weight: <35 lbs (<16 kg)
Power: 375W
Scan Range: 60° without grating lobes

EIRP	LP	CP
0° (measured)	46 dBW	49 dBW
45° (measured)	44 dBW	47 dBW
60° (extrapolated)	41.8 dBW	44.8 dBW

G/T	25° C	Hottest*
0° (measured)	10 dB/K	7.1 dB/K
45° (measured)	8 dB/K	5.2 dB/K
60° (extrapolated)	6 dB/K	3.2 dB/K

*Hottest BFIC operating temperature - 85 °C



3D patterns and cuts of 97 beams overlaid on top of each other @29 GHz

Satwave Arrays Inc. proprietary - Data Sheet represents Satwave Arrays Ka-Band AESA as configured for optimal market parameters. Actual configuration for customers and results may vary. For more information, email info@satwave.ai.