



KVH SATELLITE TV SYSTEM

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Automotive Satellite System Development

CHALLENGE

The KVH Trac Vision A5, a satellite TV system designed for SUV and RV aftermarket applications, featured a revolutionary low profile that could be achieved only through a complex plastic enclosure. The components required exceptional strength and durability, tight processing tolerances, and the ability to incorporate a number of essential components.

SOLUTION

Cascade Engineering partnered with Paragon Die and Engineering to analyze materials and develop prototype tooling for five key housing components. Over 20 sets of prototype glass-filled urethane parts were produced for customer design verification. Extensive DFM (Design For Manufacturing) evaluation was conducted to ensure correct part rib-to-wall ratios, part fit, mold construction, and assembly considerations. MoldFlow/cooling analysis/warp analysis was conducted to determine optimal gate locations and monitor mold performance.

RESULTS

Tooling for the project was completed in six weeks and quality parts delivered to KVH on time. Five housing components in all were produced — trim ring, radome, azimuth table, base cover, and shut off cover — and all met or exceeded processing goals:

- Minimal warp
- Superior aesthetics
- Ultrasonic CNC controlled insertion of critical components
- Trim ring assured consistent fit with bottom cover
- Radome thickness optimized for better signal reception
- Polyurethane paint on radome provided UV stabilization
- New gating system shortened lead time