Product Brochure

Cobra 1414Ka

Multi-Orbit Ka-Band Electronically Steered Antenna for Land Mobility Platforms

Compact, Low-Profile Ka-band ESA

The Cobra Ka is a compact, full-duplex Ka-band electronically steered antenna (ESA) designed to deliver reliable, high-throughput satellite connectivity for Land Mobility Platforms. Optimized for size, weight and power (SWaP) constrained applications, the Cobra Ka combines a flat, low-profile form factor with multi-orbit operational flexibility across GEO, MEO and LEO satellite networks.

Supporting multi-Mbps throughput and extremely fast electronic beam steering, the Cobra Ka is purpose built for high performance mobile connectivity applications.

Purpose-Built for Land Mobility

The Cobra Ka is engineered specifically for wheeled platforms in outdoor environments where traditional mechanically steered antennas are not practical. The configuration weighs approximately 4 kg and measures only 40 x 20 x 9 cm, enabling integration into space-constrained land tactical designs.

The low profile of 9 cm allows installation on many mobile platforms without compromising vehicle performance. With no moving parts, the Cobra Ka delivers excellent MTBF and high reliability under continuous motion, vibration and harsh operational conditions.

Multi-Orbit Ka-Band Operations

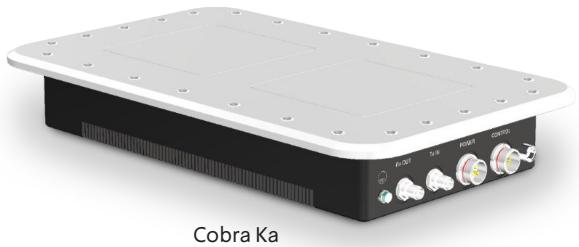
Designed to operate seamlessly across satellite orbits, the Cobra Ka supports GEO, MEO and LEO networks and is compatible with both existing Ka-band systems and emerging Ka LEO constellations. The antenna supports the full Ka frequency range, with software control enabling or disabling of bands as required:

- Transmit: 27.5-30GHz
- Receive: 17.7-20.2GHz

Extremely fast and seamless beam and polarization switching ensure continuity of service across beams, satellites and orbital layers without mechanical movement.

Benefits

- Compact, low-profile, low-SWaP Ka-band ESA optimized for small mobile land platforms
- Lightweight, ≈4 kg
- Full-duplex, multi-orbit operation across GEO, MEO and LEO
- Full Ka-band frequency support with software-controlled bands
- Proven COTS chipset delivering field-tested ESA performance
- Full 360° azimuth and wide elevation coverage with fast beam switching
- No moving parts for high reliability and excellent MTBF
- Flexible architecture with integrated or OpenAMIP external modem deployment



Cobra Ka

High-Performance ESA Technology

The Cobra Ka ESA is based on a proven COTS chipset, delivering field-tested performance in a compact form factor suitable for commercial land mobile platforms.

It delivers up to 44 dBW Tx EIRP and 8 dB/K Rx G/T under boresight conditions. The antenna supports a full field of view with 360° azimuth coverage and an elevation range of approximately 15° to 90°, maintaining connectivity during maneuvering and high-dynamic profiles.

Integrated and Flexible Architecture

The Cobra Ka can be ordered as a single-box solution including an integrated modem or deployed with any OpenAMIP compliant external modem. The antenna enclosure includes all required ACU, RF, tracking sensors and power supply, simplifying integration and installation.

When navigation, heading or inertial data are provided by the platform, the Cobra Ka can integrate with external inputs to enable lighter and more cost-efficient implementations while maintaining performance and accuracy. In addition, an internal GPS can be used, or a connection to an external GPS can be provided.

Designed for Mobile Environments

The Cobra Ka is designed for demanding outdoor conditions across land domains, protected against exposure to dust, sand, water ingression, shock and vibration.

Complete Secure Terminal with Gilat Modems

When implemented with Gilat's state of the art modems, the Cobra Ka provides a full terminal with QoS, advanced security, TDMA and SCPC capabilities, bandwidth savings algorithms, extensive management and many other features available with the SkyEdge IV family of products.

Technical Specifications

OpenAMIP:
OpenAMIP for external modem integration

GUI:
Web based interface for antenna controller for full management and monitoring of the antenna

Beam Switching:
Support beam and satellite switchovers in <100msec

BIT:
CBIT, IBIT, PBIT

Power Saving Modes:
TX+RX, RX only, Stby

Cold Start Acquisition (from power up) Time:
< 60 sec

Re acquisition (after link loss during flight):
< 3 sec

Terminal Size:
40 x 20 x 9 cm

Light Weight:
≈4 kg

Power Input (DC):
22 36 VDC (TBC)

Frequencies of Operation:
TX: 27.5-30GHz
RX: 17.7 – 20.2 GHz

G/T:
8 dB/K at boresight

EIRP:
44 dBW
Elevation Scan Range: 0º to 75º from boresight

Environmental:
Support Shock, Vibrations, Temperature, Altitude, Acceleration as defined by those expected by Land Mobility Platforms

09/08/2026