



Product Brochure

SkyEdge IV Capricorn S2X Family

Ultra-High Performance VSATs

Enabling High-Speed Broadband Services

SkyEdge IV Capricorn is an ultra-high-performance, highly efficient VSAT family ideal for vertical markets that demand high throughput and high-speed services, such as 4G/5G cellular backhauling, mobility, enterprise and IP trunking. Designed to work with high throughput satellites, the Capricorns' adaptive transmission technologies maximize performance, improve service availability and reduce operational costs. For cellular backhauling, Capricorn VSATs include Gilat's patented embedded cellular data acceleration technology that enables full LTE speeds for cellular handheld devices. Based on multi-core ARM technology, Capricorn VSATs provide high-speed services of up to 250Mbps in the forward direction and up to 75Mbps in the return direction. For IP trunking and mobility, Capricorn VSATs deliver acceleration and PPS performances that support hundreds of users per VSAT. Capricorns are backward compatible, thus preserving past investments with the proven SkyEdge II-c platform already deployed globally, meets all satellite communication needs for Very High Throughput Satellites (VHTS) and enables delivery of reliable, high-performance connectivity solutions.

Flexibility x 4

The four-port 1Gb Ethernet LAN eliminates the need for an external switch. Each port can be individually managed, including assigning VLANs, monitoring, and configuring Ethernet link parameters.

Complete Feature Set

The SkyEdge IV Capricorn family includes a full-featured IP router, with advanced application-based QoS, VLANs, and next-generation IPv6 networking. To ensure fast running of applications, web browsing and a high-quality user experience, Capricorns contain a full set of protocol optimization and application acceleration features, including TCP, GTP protocol acceleration and header compression. Capricorn VSATs provide the highest level of transmission security, supporting X.509 terminal authentication and AES-256-bit link layer encryption with dynamic key rotation to protect all user traffic.

A VSAT for Every Business Need

To serve specific business needs, the SkyEdge IV Capricorn family of VSATs is available in various form factors.

- Capricorn-4 is a compact unit installed on the customer's premises
- Capricorn Pro is a telco-grade, rack-mounted router ideal for mobility service and IP trucking
- Capricorn Outdoor is a rugged, all-weather VSAT solution perfect for harsh, unattended environments

Benefits

- Up to 250Mbps service for cellular backhauling, high-end enterprise and mobility services
- Configurable for either layer-3 or layer-2 services
- On-demand inbound switchover between TDMA and high-speed SCPC carrier
- Fast web browsing with web acceleration and compression
- Form factors: Desktop, Telco-grade Rack-Mount, Outdoor



Capricorn-4



Capricorn Pro



Capricorn Outdoor

Advanced VSAT Platform for Corporate and Enterprises

Based on multi-core ARM technology, SkyEdge IV Capricorns enable high-speed services of up to 250Mbps in the forward direction and 75Mbps in the return direction. The ultra-high speed exhibited by this VSAT platform, combined with built-in TCP acceleration, is ideal for vertical markets that demand high bandwidth and high packets-per-second performance such as Cellular Backhaul, Mobility Services, ISP PoP Locations, and Corporate Networking.

Enhanced Central Service Management Interface for VNOs

The SkyEdge IV Capricorn Family is part of a complete VSAT ground system that includes an advanced Network Management System (Elastix-TotalNMS) and facilitates service management available to VNOs via an electronic B2B interface.

SkyEdge IV Service Management enables VNOs to manage their services independently of the satellite network operator, providing a complete management suite. This includes real-time viewing of the service status, events, alarms and statistics, as well as historic/trend

analysis of the service over longer periods. This system also provides VNOs with an automated and easy-to-use interface for the simple creation, activation and management of end-to-end services with a high level of flexibility.

Superior VSAT Technology

Designed to support the latest standard and high throughput satellites, SkyEdge IV Capricorn VSATs' advanced adaptive transmission technologies maximize performance and improve service availability. The Capricorn family is based on Gilat's VSAT technologies, which power over a million terminals worldwide.

Maximum Spectral Efficiency

Gilat's innovative transmission technologies deliver exceptional performance and space segment efficiencies. Adaptive transmission in the return direction enables high on-the-move service availability and maximum bandwidth efficiency at any condition – at beam peak, beam edge, fade and different traffic demands. This is achieved by adaptive power control and changes to the carrier symbol rate and ModCod per VSAT on a per-timeslot basis.

Technical Specifications

Forward Channel

Standard:

DVB-S2X Adaptive Coding and Modulation (ACM)

Carrier Rate:

5Msps-500Msps

Roll-Off:

0.05, 0.1, 0.2

Modulation:

QPSK, 8PSK, 16APSK, 32APSK, 64APSK, 256APSK

Coding:

LDPC, BCH FEC:
All DVB-S2X FECs

Return Channel (Elastix-SCPC and TDMA)

Access Scheme:

Elastix-SCPC and MF-TDMA

Inbound Rates:

Symbol rate – 128Ksps-30Msps

Modulation:

BPSK, QPSK, 16QAM 64QAM

Coding:

XDC

Dynamic Range:

-15dB to 15 dB

Modem Interfaces

RF Input / Output:

- Two female F connectors, 75 Ω
- RF in frequency – 950-2150MHz
- RF out frequency – 950-2400MHz
- DISEqC

Data Interfaces:

- 4 x Ethernet 10/100/1000BaseT RJ-45, 802.1q VLAN

Management Interface:

- Web-based local management
- Full FCAPS management
- Remote software upgrades over the air
- SNMP

Enhanced Features

Enhanced IP Features:

IPv4/IPv6, DHCP, NAT/PAT, DNS Caching, IGMPv2, VLANs, RIPv2, Static Routes

Layer-2:

Ethernet frame forwarding
802.1p QoS
802.1ad

QoS:

Per VSAT and per Managed Group, CIR, MIR, CBR, DiffServ and priority-based queuing, application-based priority

Security:

- AES-256-bit link encryption
- ACL Firewall
- x.509 Terminal Authentication

Application Acceleration and Protocol Optimization

- TCP acceleration
- GTP cellular data acceleration

Mobility – Antenna Interface:

- OpenAMIP (IP)

Environmental and Mechanical Specifications

	Dimensions	Weight	Operating Voltage	Power Consumption	Operating Temp.	Certifications
Capricorn 4	201 x 176.5 x 36mm (WxDxH)	0.35Kg	100V-240V AC Auto Range 11V – 60V DC^	15W	0°C to +50°C	CE, FCC, EMC
Capricorn Pro	440 x 240 x 44.5mm (WxLxH)	3.5Kg	100V-240V AC Auto Range 48v DC	20W	0°C to +50°C	CE, FCC, EMC
Capricorn Outdoor	297 x 297 x 102mm (WxDxH)	6.3Kg	48v DC	20W	-40°C to +60°C and up to 100% humidity, IP67	CE, FCC, EMC