



## Product Brochure

# SkyEdge IV Gemini S2X Family

## Enabling High-Speed Broadband Services for the Enterprise and Consumer Markets

### Enabling High-Speed Broadband Services

The SkyEdge IV Gemini Family consists of high-throughput VSATs designed to enable high-speed broadband Internet services for the enterprise and consumer markets.

SkyEdge IV Gemini VSATs are ideal for fast web browsing, video streaming, IPTV, VoIP, and other bandwidth-intensive services. In the enterprise space, Gemini has been successfully deployed in the retail, banking, ATM, SCADA, M2M, and lottery verticals, as well as supporting USO/USF and government-funded programs aimed at expanding broadband connectivity to underserved regions.

Geminis are backward compatible, thus preserving past investments with the proven SkyEdge II-c platform already deployed globally, meet all satellite communication needs for Very High Throughput Satellites (VHTS) and enable delivery of reliable, high-performance connectivity solutions.

### Complete Feature Set

The SkyEdge IV Gemini 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, Geminis contain a full set of protocol optimization and application acceleration features, including TCP, GTP protocol acceleration and header compression.

Gemini 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 Gemini family of VSATs is available in various form factors:

- Gemini-e S2X is a single-port VSAT router for the enterprise market
- Gemini-4 S2X is an integrated 4-Port VSAT Board ideal for high-speed enterprise broadband Internet services
- Gemini-4 S2X Card is a managed 4-port 1GbE LAN switch for the enterprise market

### Benefits

- Up to 100Mbps service for cellular backhauling, high-end enterprise and mobility services
- Includes advanced QoS, VLANs and routing protocols supporting enterprise services
- Fast web browsing with web acceleration and compression
- Enables high-quality VoIP and video
- Simple installation and service activation
- Central monitoring and service management
- Supports C, Ku and Ka bands
- Form Factors: Desktop/Card



Gemini-4 S2X



Gemini-e S2X



Gemini-4 card S2X

## Advanced VSAT Platform for Corporate and Enterprises

Based on multi-core ARM technology, SkyEdge IV Geminis enable high-speed services of up to 100Mbps in the forward direction and 40 Mbps 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 Gemini 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. Wideband DVB-S2X carriers in the forward direction and adaptive transmission in the return direction enables maximum service availability and highest bandwidth efficiency at any transmission condition. This is achieved by adaptive power control, changes to the carrier symbol rate, ModCod and spread-spectrum factor per VSAT on a per time-slot 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

### 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
<b>Gemini-e S2X</b>	153 x 140 x 35mm (WxDxH)	0.35Kg	100V-240V AC 11V – 60V DC	15W	0°C to +50°C	CE, FCC, EMC
<b>Gemini-4 S2X</b>	201 x 176.5 x 36mm (WxLxH)	0.55Kg	100V-240V AC 11V – 60V DC	15W	0°C to +50°C	CE, FCC, EMC
<b>Gemini-4 S2X Card</b>	175 x 162.5 x 21.1mm (WxDxH)	0.25Kg	100V-240V AC 11V – 60V DC	15W	0°C to +50°C	CE, FCC, EMC