



SkyEdge™ System

Providing a broad range of solutions via a single system

A giant step forward in the VSAT industry, SkyEdge™ is a “One system does it all” platform, enabling interactive data, broadband IP, public & corporate telephony and video on the same platform. This integrated system, along with significant technological advancements, supports the SkyEdge family of products making it more than just a satellite access network but a true means to grow your business. SkyEdge provides a truly unrivalled offering on today’s market.

One System Does it All

With unmatched technical and operational experience embedded into one enhanced system, SkyEdge offers a wide range of service options, applications and solutions. Networks, regardless of size, can now provide value added features, full flexibility and multiple types of VSATs for a better service offering. Flexible system architecture combined with VSAT expansion cards can best support diverse markets, from single line remote payphones for Universal Service Obligation (USO) to state of the art broadband solutions. With strategic benefits and a reliable, simple to manage solution, SkyEdge is perfect for tailoring to your current and future communication requirements.

Fully supporting mesh, star and multistar topologies, SkyEdge provides you with a true competitive edge. Integrating full mesh capabilities for applications such as circuit switched voice, VoIP, LAN/WAN trunking and video conferencing allows for better use of resources, superior performance and higher user satisfaction.

Embedded circuit switched voice and VoIP provide toll quality voice in a mesh topology. Both standard and IP phones are directly hooked up to the VSAT, with no need for residential gateways or conversion boxes. The SkyEdge system also enables seamless PSTN and Internet backbone connectivity.

Beyond the Standard

The SkyEdge’s unique system supports DVB-RCS standard and multi-service VSATs, all on the same network. More than just receiving full compliance with DVB-RCS requirements, operators receive an array of operation and performance enhancement tools and features based on a wealth of experience in deploying and

operating some of the largest VSAT networks in the world. Embedded software such as IP and HTTP acceleration yield best user experience, while VPN and encryption provide high-end network security for both corporations and private networks.

Above and beyond the DVB-RCS access scheme, SkyEdge boasts additional access schemes and enhanced IP features for full flexibility and support in a complex IP environment.

SkyEdge utilizes highly efficient outbound, supporting both 8PSK modulation and turbo coding technologies, which results in a 30% improvement in bandwidth utilization over the standard DVB-S. An outbound range from 340 kbps to 66 Mbps provides flexible and incremental bandwidth allocation, a major advantage for small-scale networks, starting from a minimal initial investment and seamlessly growing to accommodate large networks.

Higher Technology

End-to-end QoS, vital for running a cost effective IP network, is simple with the flexible and dependable bandwidth access features. Managing bandwidth on a per user or per application basis, SkyEdge provides tiered services, equal access to bandwidth and even enables minimum-speed guarantees.

A single, modular and sophisticated NMS system supports the SkyEdge family of VSATs for simple control of all network components. The Windows-based NMS provides centralized monitoring using statistics, alarms, network configuration, report generation and gathers call data records from the sites for billing operations. Unique NMS features such as partitioning of the hub, dynamic configuration of space segment and auto commissioning allow optimal allocation of resources.





Technical Specifications

Network

Architecture:

- **Two-Way:** Mesh, Star, Multi-star topology
- **Services:** Data; IP, Legacy, Mesh IP Trunking
Telephony; Mesh circuit switched voice, Mesh VoIP

Frequency Range:

	Rx	Tx
Ku-Band:	10.95 - 11.70 GHz	14.00 - 14.50 GHz
	11.70 - 12.20 GHz	13.75 - 14.25 GHz
	12.20 - 12.75 GHz	
C-Band:	3.62 - 4.20 GHz	5.850 - 6.425 GHz

Extended

C-Band:	4.50 - 4.80 GHz	7.625 - 7.925 GHz
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- **Capacity:** Up to 32,000 VSATs
- **Protocol Support:** IP, Async, (X.3/X.28/X.29), and X.25
- **IP Functionalities:** TCP, UDP, RIP V1, RIP V2, IRDP, ARP, ICMP, Subnetting and classless (A,B,C,D) addressing, IGMP, IP prioritization, DHCP, ACL, NAT
- **Voice Compression:** 6.3 Kbps (ITU G.723.1), 8Kbps (ITU G.729)
- **Echo Canceller:** ITU G.168
- **Group 3 Fax Relay Speed:** T.38, Up to 14.4 kbps
- **Optional Features:** Voice and IP Prepaid, HTTP acceleration, QoS, Volume based QoS, Reliable IP multicast

Hub Station

User Ports:

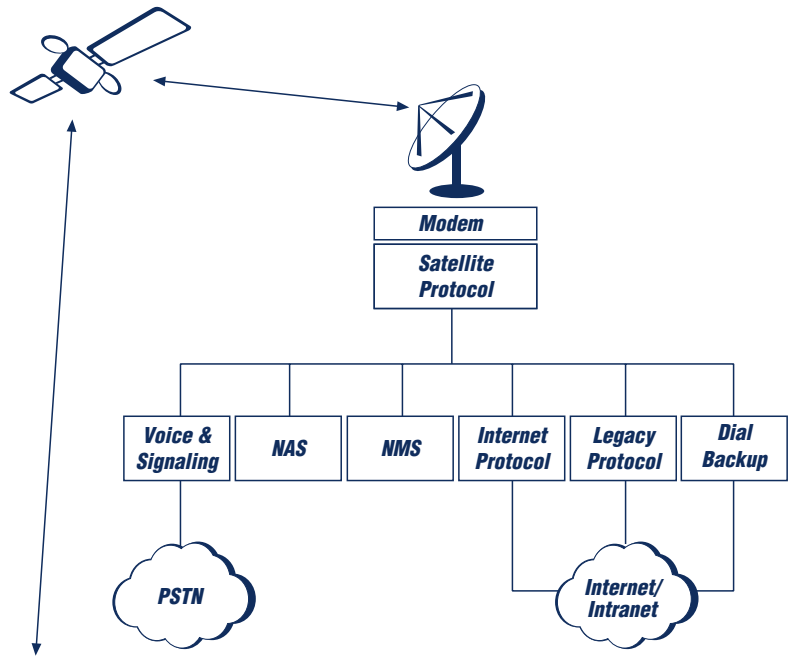
- **Ethernet LAN:** 100BaseT
- **Voice signaling:** SS7, MFRCR2
- **Voice interface:** E1 (ITU G.703, G704)

Outbound Carrier:

- **Standard:** DVB-S
- **Carrier bit rate:** 340Kbps - 66Mbps
- **Modulation:** QPSK or 8PSK (optional)
- **Coding:** Viterbi & Reed Solomon or Turbo (optional)
- **FEC Rate:** 1/2, 2/3, 3/4, 5/6, 7/8

Inbound Carrier:

- **Access Scheme:** Combined TDMA, FDMA & DAMA, Standard DVB-RCS
- **Bit rate:** 60Kbps - 2Mbps, Supporting different bit rates for different work groups
- **Modulation:** GMSK & MSK
- **Coding:** Turbo coding FEC ~3/4, ~7/8



SkyEdge Product Family



Key Features

- Multiple network topologies - full mesh, star and multi-star
- DVB-RCS and multi-service VSATs are supported in the same network
- Enhanced DVB-RCS support
- All embedded features: End-to-end QoS, TCP and HTTP acceleration, accelerated VPN, mesh, circuit switched voice & VoIP
- Variety of VSAT expansion cards (Voice, Serial, Quad LAN, Mesh, E1)
- IP Data on demand
- End-to-end QoS with tiered services and SLA enforcement
- SS7 supplementary services and efficient fast call setup
- Numbering plan
- Toll quality voice, Fax & in-band data
- Bundled telephony & IP
- GMSK modulation for inbound
- 8 PSK modulation for outbound
- Inbound channel speed up to 2Mbps
- Automatic self-redundancy for each hub component
- NAS (Network Attached Storage) device for easy to manage, cost effective data storage
- Windows and SNMP based NMS
- Shared hub support-allocating hub resources per customer
- Remote NMS monitoring & control

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SkyEdge™ Product Family

SkyEdge™ Pro
Multi-Service VSAT

SkyEdge™ Call
Telephony VSAT

SkyEdge™ IP
IP Router VSAT

SkyEdge™ DVB-RCS
Enhanced Standard VSAT

SkyEdge™ Gateway
Trunking Solutions VSAT