

SKYEDGE II-C GEMINI-4 BOARD

Integrated 4-Port VSAT Board



ENABLING HIGH-SPEED BROADBAND SERVICES EVERYWHERE

SkyEdge II-c Gemini-4 Board is a high-throughput VSAT designed to enable high-speed broadband Internet services for maritime mobility users such as yachts and fishing boats. The Gemini-4 Board VSAT enables fast web browsing, video streaming, IPTV, VoIP, and other bandwidth-intensive services. This solution is ideal for markets such as maritime where conformal coating is needed to protect against water, salt and dust.

Gemini-4 includes a full-featured IP router, eliminating the need for an external router through its support of enhanced IP routing features such as DHCP, NAT/PAT, VLANs, routing protocols, IPsec client and IGMP. Advanced QoS guarantees the performance of real-time applications such as VoIP and video streaming while simultaneously enabling additional data applications. Gemini-4 also supports next-generation IPv6 networking.

Centralized mobility management and support of automatic beam switching in addition to a full set of protocol optimization, header compression and application acceleration features ensure maximum satellite capacity usage and optimal user experience for maritime mobility applications. Gemini-4 provides 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.

ADVANCED VSAT PLATFORM FOR MARITIME

Based on the latest-generation ARM technology, Gemini-4 enables high-speed services while employing full link encryption, TCP and HTTP acceleration. The high speed exhibited by this VSAT platform is ideal for demanding, high-bandwidth applications and networking.

The terminal includes an intuitive, web-based Graphical User Interface to assist the user during the installation and service activation process.

INDIVIDUALLY MANAGED PORTS

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

BENEFITS

- Easy to integrate with mobility terminals using standard OpenAMIP interface
- Integrated, managed 4-port GbE LAN switch
- 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
- Forward and return channel adaptive transmission technologies
- Central monitoring and service management
- Supports C, Ku and Ka bands



ENHANCED CENTRAL SERVICE MANAGEMENT INTERFACE FOR VNOS

Gemini-4 is part of a complete VSAT ground system that includes an advanced Network Management System (NMS) and facilitates service management available to VNOS via an electronic B2B interface.

SkyEdge II-c Service Management enables VNOS to manage their services totally independent 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 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, Gemini-4's advanced adaptive transmission technologies maximize performance and improve service availability. Gemini-4 is based on Wavestream's VSAT technologies, which power over a million terminals worldwide.

TECHNICAL SPECIFICATIONS

FORWARD CHANNEL

Standard:

DVB-S2 Adaptive Coding and Modulation (ACM)

Carrier Rate:

1.5MSPS-67MSPS (235Mbps)

Modulation:

QPSK, 8PSK, 16APSK, 32APSK

Coding: LDPC, BCH**FEC:**

1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10

RETURN CHANNEL (TDMA)

Access Scheme:

MF-TDMA, Dynamic Channels

Inbound Rates:

Symbol rate - 128KSPS-6MSPS

Modulation:

BPSK, QPSK, 8PSK, 16QAM

Coding: TPC

FEC: 1/3, 2/5, 1/2, 2/3, 3/4, 4/5, 6/7

MODEM INTERFACES

RF Input / Output:

- Two female F connectors, 75 Ω

- RF in frequency - 950-2300MHz

- RF out frequency - 950-2300MHz

- DISEqC

Data Interfaces:

- 4 x Ethernet 10/100/1000BaseT

- RJ-45, 802.1q VLAN

- 1 x Serial Interface RJ-45

Management Interface:

- Web-based local management

- Full FCAPS management

- Remote software upgrades

over the air

- SNMP

ENHANCED FEATURES

IP Features:

IPv4/IPv6, TCP, UDP, ICMP, DHCP,

NAT/PAT, DNS Caching, cRTP,

IGMPv2, SIP, DiffServ, VLANs,

RIPv2, Static Routes

QoS:

Per VSAT and per Managed

Group, CIR, MIR, CBR, DiffServ

and priority-based queuing,

application-based priority

Security:

- AES-256 bit link encryption

- IPSEC Client

- ACL Firewall

- X.509 Terminal Authentication

Application Acceleration and Protocol Optimization

- TCP acceleration

- HTTP web pre-fetch acceleration

and compression

ENVIRONMENTAL AND MECHANICAL

Form Factor:

Board with optional conformal coating

Dimensions:

162 X 172mm (WxD)

Operating Voltage:

- 11V - 60V DC Auto Range

Operating Temperature:

0°C to +50°C

Certifications: CE, FCC, EMC

OUTDOOR UNIT (ODU)

Frequency Bands: C, Ku, Ka

Transmit Power:

Via IDU 24V or 48V DC insertion[^]

Antenna Size: 0.76m and higher

Operating Temperature:

-40°C to +60°C

[^] Requires selection of appropriate IDU power supply

ABOUT WAVESTREAM

Wavestream sets the standard in the design and manufacture of next generation high power solid state amplifiers. Wavestream's Family of Ka, Ku and X-band Solid State Power Amplifiers (SSPAs), Block Upconverters (BUCs) and transceivers provide systems integrators with field-proven, high performance solutions designed for ground mobile and fixed, gateway and airborne satellite communication systems worldwide.

These items are subject to the Export Administration Regulations (EAR), 15 C.F.R. Parts 730-774, and may not be exported or transferred to any non-U.S. person, except as authorized by the U. S. Department of Commerce.

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