SKYEDGE II-C CAPRICORN S2X FAMILY

Ultra-High Performance VSATs

ENABLING HIGH-SPEED BROADBAND SERVICES

SkyEdge II-c Capricorn is an ultra-high-performance VSAT family designed to enable corporate services, cellular backhauling and mobility services. For mobility-enabled VSATs, Capricorn delivers acceleration and packet-per-second performances that support hundreds of users per VSAT.

For 3G and LTE cellular backhauling, Capricorn includes Wavestream's patent-pending cellular data acceleration technology that enables full LTE speeds of up to 200Mbps for cellular handheld devices.

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

Capricorn is a full-featured IP router, with advanced application-based QoS, VLANs, and next-generation IPv6 networking. In addition, Capricorn can be configured to support layer-2 services.

To ensure fast running of applications, web browsing and a high-quality user experience, Capricorn contains a full set of protocol optimization and application acceleration features and provides the highest level of transmission security to protect all user traffic.

A VSAT FOR EVERY BUSINESS NEED

To serve specific business needs, the 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 MEC** is a telco-grade, rack-mounted router supporting Mobile Edge Computing for end-to-end IPsec
- **Capricorn Outdoor** is a rugged, all-weather VSAT solution perfect for harsh, unattended environments

BENEFITS

- **Up to 200Mbps 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: Dektop, Telco-grade rack-mount, Outdoor**

ADVANCED VSAT PLATFORM FOR CORPORATE AND ENTERPRISES

Based on the latest generation, multi-core ARM technology, Capricorn enables high-speed services up to 200Mbps in the forward direction and 100Mbps in the return direction. The ultra-high speed exhibited by this VSAT platform, combined with built-in TCP and HTTP acceleration technologies, is ideal for Cellular Backhaul, Mobility services, ISP PoP Locations, Oil & Gas, Video Contribution and Corporate Networking.

ENHANCED CENTRAL SERVICE MANAGEMENT INTERFACE FOR VNOS

Capricorn VSATs are 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.

MAXIMUM SPECTRAL EFFICIENCY

Wavestream's innovative transmission technologies deliver exceptional performance and space segment efficiencies. Wideband DVB-S2X carriers in the forward direction, as well as adaptive transmission in the return direction, enable high on-the-move service availability and maximum bandwidth efficiency at any condition – at beam peak, beam edge, at fade and at different traffic demands. 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: 1.5Msps-500Msps
Roll-off: 0.05, 0.1, 0.2
Modulation:
QPSK, 8PSK, 16APSK, 32APSK, 64APSK, 256APSK
Coding: LDPC, BCH
FEC: DVB-S2X FECs

RETURN CHANNEL

Access Scheme:
MF-TDMA, Dynamic Channels
Inbound Rates:
Symbol rate - 128Ksps-30Msps
Modulation: BPSK, QPSK, 16QAM
Coding: LDPC
FEC:
1/4, 1/3, 2/5, 1/2, 2/3, 3/4, 5/6, 8/9
Spread Spectrum FEC:
Spreading Factor: 2, 4, 6, 8, 12
BPSK 1/4, 1/3, 2/5, 1/2

RETURN CHANNEL (SCPC)

Standard:
DVB-S2 Adaptive Coding and Modulation (ACM)
Carrier Rate: 1.5Msps - 40Msps
Modulation:
QPSK, 8PSK, 16APSK
Coding: LDPC, BCH
FEC:
1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9

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 1 x Serial Interface RJ-45

Management Interface:
Web-based local management, Remote software upgrades over the air, NMS remote management, SNMP

ENHANCED FEATURES

IP Features:
IPv4/IPv6, TCP, UDP, ICMP, DHCP, NAT/PAT, DNS Caching, cRTP, IGMPv2, SIP, DiffServ, VLANs, RIPv2, Static Routes
Layer-2:
Ethernet frame forwarding
802.1p QoS
802.1ad, VLAN Re-tagging
Point to Point, Point to Multi-Point
QoS:
Per VSAT and per Managed Group, CIR, MIR, CBR, DiffServ and priority-based queuing, application-based priority, dynamic key rotation

Security:
AES-256 bit link encryption IPSEC Client, ACL Firewall, X.509 E2E IPSEC (Capricorn MEC S2X only), Terminal Authentication
Embedded Application Acceleration & Protocol Optimization:
TCP acceleration, HTTP web pre-fetch acceleration and compression, GTP cellular data acceleration
Mobility – Antenna Interface:
OpenAMIP (IP).

OUTDOOR UNIT (ODU)

Frequency Bands: C, Ku, Ka
Transmit Power:
Via IDU 24V or 48V DC insertion^
Antenna Size: 0.7m and higher
Operating Temperature:
-40ºC to +60ºC

ENVIRONMENTAL AND MECHANICAL SPECIFICATIONS

	DIMENSIONS	WEIGHT	OPERATING VOLTAGE	OPERATING TEMP.	CERTIFICATIONS
CAPRICORN 4	201 x 176.5 x 36mm (WxDxH)	0.35Kg	100V-240V AC Auto Range 11V - 60V DC^	0ºC to +50ºC	CE, FCC, EMC
CAPRICORN PRO	440 x 240 x 44.5mm (WxLxH)	3.5Kg	100V-240V AC Auto Range 48v DC	0ºC to +50ºC	CE, FCC, EMC
CAPRICORN MEC	440 x 340 x 44.5mm (WxLxH)	4.9Kg	48v DC	0ºC to +50ºC	CE, FCC, EMC
CAPRICORN OUTDOOR	310 x 310 x 110mm (WxDxH)	6.3Kg	48v DC	-40ºC to +60ºC and up to 100% humidity, IP67	CE, FCC, EMC

^ Requires selection of appropriate IDU power supply

WAVESTREAM