SKYEDGE II-C CAPRICORN PLUS

High speed VSAT for multiple data intensive applications

ENABLING DATA INTENSIVE SERVICES

Today's growing need for data intensive applications requires higher-speed VSATs. Capricorn PLUS is designed with this need in mind, providing high throughput of up to 400Mbps download and 100Mbps upload concurrently. This enables multiple hundreds of users to simultaneously use popular media rich applications, seamlessly over a satellite link. Gilat provides a unique and comprehensive solution for data intensive services that is achieved when combined with Gilat's patented Dynamic Channels technology for full network utilization. Gilat is paving the way to 5G backhauling over satellite with higher throughputs and greater efficiencies to support exponential growth in network capacity as well as in the number and types of connected devices and services.

SERVING MULTIPLE APPLICATIONS

Capricorn PLUS is a member of the SkyEdge II-c multi-application platform enabling a shared bandwidth pool for a wide variety of applications such as maritime, enterprise and 4G/5G cellular backhaul with backward compatibility to 2G/3G networks. These use cases have a significantly different traffic profile which traditionally required separate bandwidth pools for each application, causing an inefficient use of bandwidth due to a static resources allocation. Gilat's field-proven Dynamic Channels technology enables optimal dynamic allocation of bandwidth every 40 msec, truly adapting the network resources to each application's need on a per VSAT basis, according to the required SLA.

BUILT FOR GLOBAL MOBILITY NETWORKS

Capricorn PLUS has added value stemming from SkyEdge II-c's scalability and flexibility for large global mobility networks that supports tens of satellites and teleports and practically an unlimited number of VSATs over a single network. This network is managed by Gilat's advanced, field proven, TotalNMS providing a comprehensive management suite for the mobility network operator as well as their VNOs. Moreover, SkyEdge II-c Cloud QoS enables SLA enforcement over multiple satellites and beams per VNO or group of VSATs. Capricorn PLUS Mobility services include: high-speed Doppler compensation, transmit power control with link adaptation, OpenAMIP antenna interface and dynamic spread spectrum and PSD control. The VSAT also incorporates Automatic Beam Switchover (ABS), ensuring continuity of passenger service. ABS is managed via Gilat's sophisticated centralized mobility manager ensuring optimal beam switching decisions according to location, load, SLA and regulation.

BENEFITS

- **More Services - for data intensive applications such as backhaul 4G/5G, maritime, enterprise**
- **More Throughput - up to 400/100Mbps for data intensive applications**
- **More Virtualization - with Multi access Edge Computing (MEC) infrastructure**
- **More Compatibility - to 5G architecture**
- **More Efficiency - less satellite capacity for more sites with more throughput**
- **More Adaptivity - full resource utilization under any link conditions and service needs**
- **More Security - supporting latest authentication and encryption protocols**
- **More Integration Simplicity - via multiple protocol acceleration over Layer-2 and Layer-3 topologies**

COMPLETE FEATURE SET

Capricorn PLUS is a Multi access Edge Computing (MEC) enabled IP router supporting value-added virtualized functions and includes all the SkyEdge II-c VSAT platform features, such as advanced application-based QoS, VLANs, and next generation IPv6 networking. Capricorn PLUS can also be configured as a Layer-2 modem enabling seamless integration to the cellular core, Telco and Enterprise networks. This simple core network integration at Layer-2 or Layer-3 ensures the required operational flexibility for any type of service provisioning.

To ensure fast web browsing and a high-quality user experience for a variety of applications, Capricorn PLUS contains a full set of protocol optimization and application acceleration for both Layer3 and Layer2 network topologies.

Capricorn PLUS provides the highest level of transmission security, supporting X.509 terminal authentication, and AES-256 link layer encryption with dynamic key rotation to protect all user traffic.

MAXIMUM SPECTRAL EFFICIENCY

Gilat's innovative transmission technologies delivers exceptional performance and space segment efficiencies.

High availability and maximum bandwidth efficiency at any condition and for any number of VSATs for multiple concurrent applications is achieved with Gilat's technology. Wideband DVB-S2X carriers in the forward direction and fast adaptive transmission with Gilat's patented Dynamic Channels technology, powered with advanced LDPC codes in the return direction

This is achieved by adaptive power control, changes to the carrier symbol rate, modulation, coding and spread-spectrum factor per VSAT on a per time-slot basis, yielding full utilization of space segment while maximizing user-experience. Capricorn PLUS incorporates SDR technology enabling simple software upgrades enhancing the return channel capabilities even further.

TECHNICAL SPECIFICATIONS

FORWARD CHANNEL

Standard:
DVB-S2X ACM
Carrier Channel:
1.5Msps-500Msps
Modulation:
QPSK, 8PSK, 16APSK, 32APSK, 64APSK, 256APSK
Coding:
LDPC, BCH
all DVB-S2X FEC rates

RETURN CHANNEL

Access Scheme:
MF-TDMA Dynamic Channels
Carrier Channel:
128Ksps – 30Msps
Modulation:
16QAM, QPSK, BPSK, S-BPSK (up to 12 SF)
Coding:
LDPC

PERFORMANCE

FWD:
400Mbps
RTN:
100Mbps

MODEM INTERFACES

RF Input / Output:
- 2 female F-connectors, 75Ω,
- RF in: 950-2150MHz
- RF out: 950-24 00MHz DISEqC

Data Interfaces:
- 2 x Ethernet 10 GbE RJ-45 , Auto negotiation
- 1 x Ethernet 10/100/1000BaseT RJ-45
- 1 x Serial Interface RJ-45

Management Interface:
- 4 x Ethernet 10/100/1000BaseT RJ-45
- Web-based local management
- SNMP

NETWORKING

Layer 2:
- Layer 2 Ethernet frame forwarding, VLAN Re-tagging
- 802.1q and 802.1ad for UNI/NNI
- Point to Point, Point to Multi-Point

Layer 3:
- IPv4/IPv6, TCP, UDP, ICMP, DHCP, NAT/PAT, DNS Caching, RTP header compression, IGMPv2/v3, SIP, VRFs, RIPv2, Static Routes

Other:
- VLANs support

ENHANCED FEATURES

Mobility:
Doppler compensation, automatic satellite/beam switching, OpenAMIP antenna interface, PSD control, Geo fencing, No Tx zones

Cellular - 4G:
GTP (IPv6/IPv4) acceleration, VoLTE

Security:
AES-256 bit link encryption, ACL Firewall, X.509 Terminal Authentication

QoS:
Per VSAT and per VNO: CIR, MIR, CBR, DiffServ support, strict and weighted priority based queuing, 802.1p – priority based QoS (for layer 2)

Cloud-QoS
Global QoS management over multiple satellite and/or beams, on a per Managed Group basis

ENVIRONMENTAL AND MECHANICAL

Operating Voltage:
- 48V DC
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 up to 12W BUC
Antenna / BUC Size:
Variable
Operating Temperature:
-40°C to +60°C

GILAT
SATELLITE
NETWORKS