# XipLink XV-SCPS TCP Accelerator

Maximum Wireless Performance
Increased throughput and reduced cost

XipLink XV-SCPS TCP accelerators deliver the satellite and wireless industries' most advanced performance in easily installed Virtual Machines (VM), assuring exceptional throughput at a nominal capital cost. XipLink offers five models of XV-SCPS virtual accelerators, supporting links with aggregate capacities up to 2 Gbps and 300,000 TCP sessions to dramatically increase throughput to end users.

XipLink's high-performance and efficient solution scales to support HTS satellite and wireless backhaul links. XipLink virtual accelerators uniquely support the highest session counts per capital cost due to their scalable dynamic socket buffer design. XipLink has implemented the open and interoperable Space Communication Protocol Standard – Transport Protocol (SCPS-TP), as defined in CCSDS 714.0-B-2, ISO 15893:2010 and MIL-STD-2045-44000.

Accelerated TCP Sessions over any constrained link
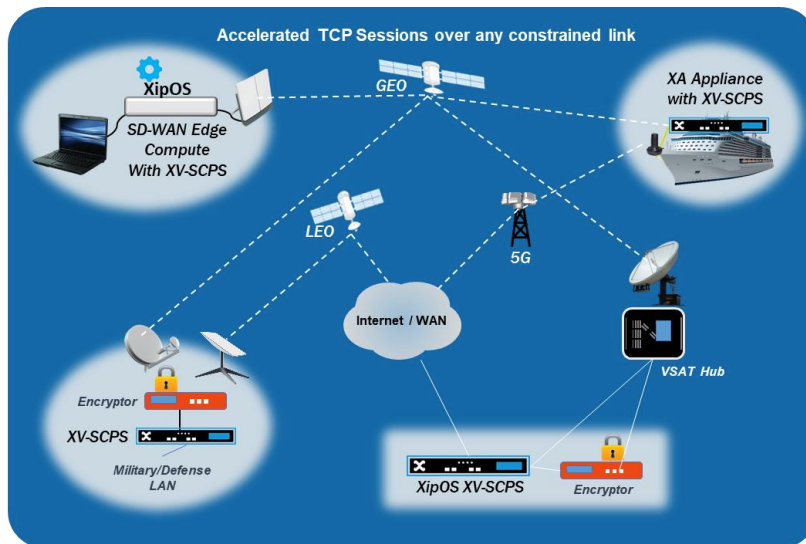
XipLink Operating System (XipOS) is a scalable and robust network operating system providing bridging and routing functionality to support flexible deployment scenarios. To increase overall effectiveness, XipOS provides a hierarchical class-based QoS mechanism enforcing minimum, maximum and shared bandwidth configurations for traffic shaping of multiple sites, users and applications/services.

XV-SCPS TCP accelerators are interoperable with all SCPS-compliant TCP accelerators and with fully featured XipLink Appliances or virtual solutions in mixed deployments in the same network. If optimization features are later required, XV-SCPS accelerators can be upgraded to fully featured XA optimizers while retaining 90% of the capital invested. XipLink devices work over any wireless, wireline or hybrid network including the following network technologies;

• VSAT, Trunk & Access	- TDMA / SCPC / Mesh
• Terrestrial Wireless	- WiMAX / Microwave / Extended Wi-Fi
• Cellular Networks	- 2G, 3G, 4G/LTE, 5G
• MSS & MEO	- Inmarsat, Iridium, O3b, Starlink, OneWeb and similar

XipLink Operating System (XipOS)

SCPS-TP Protocol Acceleration
Fills the wireless link to capacity
- SCPS-TP based TCP acceleration
- Fast Start can saves 1 RTT for (web) requests
- XipLink Enhancements
  - *Selective Negative Acknowledgement*
  - *Acknowledgement Frequency Reduction*
  - *Dynamic Buffer Management*
- XipLink Transport Control (XTC) Modes:
  - *Enhanced TCP*
  - *Fixed Rate Control*
  - *Dynamic Rate Control*
  - *Delay-Based Rate Control*

TCP Payload Data Compression
Exceeds the wireless link bandwidth
- Dramatic bandwidth gain on compressible traffic
- Stream based data compression:
  - Higher savings than packet based compression
  - Reduces packet count by better filling packets
  - Works on unencrypted data flows

Advanced Quality of Service (QoS)
Shape the wireless link bandwidth
- Hierarchical QoS classes
- Configurable committed, maximum rates
- Support for strict priority servicing

Transparent VLAN 802.1Q Acceleration
Accelerates VLAN tagged TCP traffic
- Transparent bridging for 4.096 VLANs
- Traffic isolation per VLAN with acceleration
- VLAN-aware TCP layer prevents data leaks

Transparent GTP / GRE Tunnel Acceleration
Accelerates TCP traffic carried in GTP / GRE tunnels
- Preserves GTP / GRE tunnels for transparency
- Allows for Maximum performance inside tunnels

Optional Integrated IPsec Encryption VPN Capability
Accelerate, compress & secure traffic in a single device
- Implements AES data encryption standard
- Simple IPSec VPN management GUI included

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XV-SCPS TCP Accelerators

XV-SCPS Accelerator Model	Total Rate (In + Out)	Max. TCP Sessions	TCP (SCPS) Acceleration	TCP Data Compression	QoS & Shaping	VPN Option	Recommended XH Platform
XV-SCPS-50M	50 Mbps	10,000	Yes	Yes	Yes	Yes*	XH-1 Rev6
XV-SCPS-100M	100 Mbps	20,000	Yes	Yes	Yes	Yes*	XH-10 Rev6
XV-SCPS-500M	500 Mbps	75,000	Yes	Yes	Yes	Yes*	XH-100 Rev6
XV-SCPS-1G	1 Gbps	150,000	Yes	Yes	Yes	Yes*	XH-1000 Rev6
XV-SCPS-2G	2 Gbps	300,000	Yes	Yes	Yes	No	XH-1000 Rev6

Optional capabilities

XipLink's XV-SCPS TCP accelerator product line provides exceptional investment protection. The model range offers industry-leading acceleration throughput and TCP session counts initially, while also supporting software upgradeability from XV-SCPS to equivalent scale, fully-featured XV models to enable the entire complement of wireless optimization features, if required. XipLink's full feature set includes header compression and coalescing for VoIP, cellular backhaul and real-time traffic, byte caching for significant bandwidth savings on repetitive traffic and link balancing and bonding to incrementally scale and add redundancy via aggregation of multiple wireless links.

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