

# XipLink Software Optimization Product

## Enhance user experience and network efficiency while securely scaling hybrid networks

XipLink technology provides state-of-the-art optimization for satellite and wireless communications, paired with a leading Multi-Orbit SD-WAN solution. This combination guarantees superior performance and cost efficiency. With decades of specialized expertise in Wireless Link Optimization, XipLink's technology integrates advanced mechanisms across multiple layers of the networking stack.

The XipLink Optimization Software (XipOS) can be provided as a software virtual network function (XV prefix) that scales from 1,000 to 300,000 TCP sessions on a desktop or 1U platform. Aggregate throughput beyond 3Gbit/s is delivered via a highly scalable virtualized blade server. XipOS software is deployed as a virtual function and is remotely managed using a user-friendly Graphical User Interface or can be centrally managed via XipLink central management software (XMS).

Conveniently integrated hardware appliances are available for projects where no Edge CPE is available. These appliances are identified by the XA prefix. XipLink also provides high speed, fully integrated appliances for deployment to satellite ground stations or hybrid cloud environments.

### Hybrid Intelligent Link Bonded and Balanced Network



XipLink devices work over any wireless, wireline or hybrid network including the following network technologies;

- VSAT and Access Networks (TDMA / SCPC / Mesh)
- Terrestrial Wireless (WiMax / Microwave / Extended WiFi)
- Cellular / LTE (2.5G / 3G / 4G / 5G Interconnect and Backhaul)
- Terrestrial (Point-to-Point and Point-to-Multipoint)
- MSS (Inmarsat®, Iridium® and equivalent)

## XipLink Optimization System (XipOS)

### SCPS-TP Protocol Acceleration

*Fills the wireless link to capacity*

- SCPS-TP based TCP acceleration
- Fixed, Dynamic, & Delay-Based Rate Control
- Ack Frequency Reduction with SNACK

### Multi-Orbit support - Link Bonding & Steering

*Dramatic increase in capacity with reliability*

- Increase capacity and/or reliability
- Real-time Link Intelligence
- Steer selected traffic to specific links
- Session persistence
- Stream duplication to improve availability

### Internet Optimizations

*Improve QoE for browsing and video streaming*

- Faster page start and finish for HTTP & HTTPS
- Video plays earlier, delivers consistent quality
- Sustain 1080p and 4K UHD video streaming

### Adaptive Quality of Service (QoS)

*Shape the wireless link bandwidth*

- Intelligent traffic shaping
- Hierarchical QoS classes
- Adaptive QoS based on link speed & quality
- Configurable committed & maximum rates

### Data Compression and Byte Caching

*Exceeds the wireless link bandwidth*

- Dramatic bandwidth gain, as high 10 - 30%+
- Packets Per Second (PPS) benefits for VoIP, VoLTE, Voice Apps using XipLink Real Time (XRT)
- Byte Caching up to 80% reduction

### Mobile Network Optimization (MNO)

*Controls growth in cellular TCP & UDP traffic*

- Supports 2.5G, 3G, 4G/LTE, 5G & Wi-Fi hotspots
- 30%+ traffic reduction and 100 Mbps+ TCP

### Advanced Protocol Support Features

*Optimizes unique formats and tunneled traffic*

- Transparent VLAN support
- GRE and GTP tunnel traffic optimization
- VXLAN and MPLS support

### IPSec with CMPv2

*Optimizes/Accelerates traffic inside VPN tunnels*

- Encryption up to AES-256
- Decrypt/optimize/encrypt (DOE)
- Compliant with 3GPP standards for MNO's

### XipLink Management

*Manage and Monitor XipOS Edge devices*

- Centralized configuration and monitoring
- GUI based element manager

# XipLink Appliance Range

Integrated Appliances	Software Images <sup>1</sup>	Hardware Platforms <sup>2</sup>	Aggregate Bitrate	Maximum Optimized TCP Sessions <sup>3</sup>
XA-1K	XV-1K	XH-1	6 Mbps	1,000
XA-2K	XV-2K		10 Mbps	2,000
XA-4K	XV-4K		20 Mbps	4,000
XA-6K	XV-6K	XH-10	30 Mbps	6,000
XA-10K	XV-10K		50 Mbps	10,000
XA-20K	XV-20K		100 Mbps	20,000
XA-30K	XV-30K	XH-100	200 Mbps	30,000
XA-60K	XV-60K		400 Mbps	60,000
XA-100K	XV-100K		650 Mbps	100,000
XA-150K	XV-150K	XH-1000	1.0 Gbps	150,000
XA-200K	2 x XV-100K		1.3 Gbps	200,000
XA-300K	2 x XV-150K		2.0 Gbps	300,000
	3 x XV-100K		3.0 Gbps	300,000

1 Software upgradeable in field within a platform group

2 Refer to Platform Datasheet

3 Sessions above this limit are maintained and passed through unoptimized

## XipOS Software Features

<b>User Experience</b>	TCP Acceleration using the SCPS-TP standard, scalable TCP up to 1Gbit/s per XV image, fast start, congestion controls, acknowledgment frequency reduction, selective negative acknowledgement, DNS caching
<b>Optimization Features</b>	Packet Coalescing with Header Compression, Stream Compression, Byte Caching
<b>Transparent Tunnel Acceleration</b>	Accelerate TCP embedded in tunnel technologies: Transparent GTP (4G and 5G), GRE, VLAN, MPLS and XipLink Lightweight Tunnels (XLT)
<b>Layer 2 Support</b>	Layer 2 over Layer 3 (VXLAN) and VLAN Tagging
<b>Traffic Steering with Link Balancing &amp; Bonding</b>	Link bonding and balancing, Real-time Link Intelligence, Traffic Steering by application, QoS per link, Dynamic buffer management, Stream duplication, Adaptive QoS
<b>Advanced QoS</b>	Class based weighted fair queuing (CBWFQ), Min/Max/Guaranteed Bandwidth, Bandwidth Pooling, Allow/Deny, Selective Optimization
<b>Security</b>	VPN / IPsec, Pre-Shared Secrets, X509 Certificates, CMPv2, IPsec Decrypt-Optimize-Encrypt (DOE) supports acceleration of encrypted traffic
<b>Traffic Types Supported</b>	IPv4, IPv6, GRE, MPLS, VLAN, GTP
<b>Network Mode</b>	Bridge Mode, Router Mode
<b>IP Routing</b>	Static Routes, BGP, RIP, OSPF
<b>Redundancy/Resiliency</b>	LAN By-Pass, Rapid STP, CARP/VRRP, Multiple OS partitions
<b>Network Management</b>	Web GUI Element Manager, SNMP, NetConf, XMS Central Manager