

XipLink

XE-Embedded XipLink Optimization Software



XA - Appliances

XO - Options

XS - Specialty Products

XE - Embedded XipOS

XE-Embedded XipOS

XipOS Software for BSD, Linux, Windows *Increase the bandwidth to any wireless device*

XE-Embedded XipOS is a full featured implementation of XipLink's award winning wireless optimizer software ready for integration into BSD, Linux or Windows devices, increasing the maximum bandwidth across any wireless data network.

Some examples of devices with embedded XipOS include:

- VSAT / DVB / SCPC Satellite modems
- Military and commercial encryption devices
- Broadband Aviation and Marine Routers
- Terrestrial Customer Premise Equipment (CPE)
- LTE and WiMax Base Station Radios
- Middle-ware for roaming first responders

XipOS modules operate in kernel memory using XipLink Dynamic Socket Buffers to maintain performance even in small or mobile devices with limited CPU and memory. For flexibility, programmers select which XipOS modules fit each device.

XipOS works between users of any two enabled devices. Any XA-Appliance operates with devices using XE-Embedded XipOS, the XS-104 single board computer or users with a XipStick™ portable optimizer across any wireless network.

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XipOS Features

SCPS-TP Protocol Acceleration

- Native SCPS-TP
- I-PEP Compliant
- SNACK / ACK Frequency Reduction

Advanced Data Compression

- XipOS streaming data compression

Internet Web Optimization

- Object Pre-Fetching / TCP Fast-Start

XipOS Transport Controls (XTC)

- Fixed Rate Control
- Dynamic Rate Control
- Programmable Rate Control
- Basic Rate Control

Operates over any Wireless Network

- MSS / Star / Hub-and-Spoke / Mesh
- Point-to-Point and Point-to-Multipoint

On-Board IPsec Encryption option

- AES 128 / 256 bit and SHA 256

Specifications (typical Linux)

- Disk / Flash Footprint - 4 MB
- RAM - 10MB
- 24 KB per TCP Accelerated Session (Minimum Recommended)



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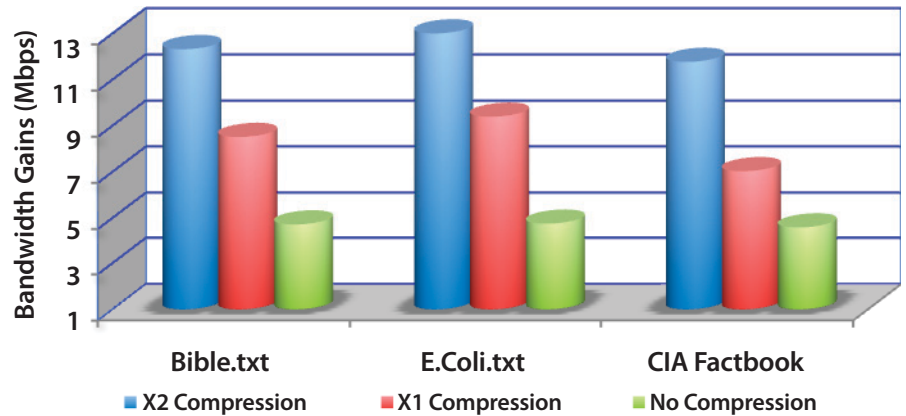
XE-Embedded XipOS

XipLink Optimization Software (XipOS)

XipLink Optimization Software (XipOS) delivers maximum bandwidth across wireless communication links by combining protocol acceleration, streaming data compression and Internet web optimizations. XE-Embedded XipOS contains XipLink's, award winning algorithms ready to integrate on a per module basis into any BSD, Linux or Windows device.

XipOS is based on extensions to the industry standard Space Communications Protocol Specification (SCPS) which is designed to support default and proprietary vendor options to increase link capacity while ensuring interoperability and transparent optimization for all TCP applications.

By installing the software in-line, before any encryption devices, optimization occurs even over secure networks that could otherwise not increase bandwidth using data optimization.



Bandwidth Gain Results - VSAT-TDMA Network

Download File Transfer - 5.0 Mbps Downlink / 2.5 Mbps Uplink

XipOS overcomes the challenges of TCP across any wireless data link, increasing the usable bandwidth from 2X to 10X for all TCP applications.

Varying latency (delay) because of long links and users roaming
High bit error rates because of constantly changing RF link conditions
Link asymmetry because of smaller, lower power remote radios

Embedded XipOS Software Features

SCPS-TP Protocol Acceleration

- Kernel based using XipLink Dynamic Socket Buffers
- Transparent operation as SCPS-TP proxy gateway
- Satlabs I-PEP compliance for interoperability
- XipLink Transport Control Modes
 - Fixed Rate Control Mode*
 - Programmable Rate Control Mode*
 - Dynamic Rate Control Mode*
 - Basic Rate Control Mode*
- Configurable Error Recovery techniques
- Selective acceleration or bypass mode using rules

Quality of Service

- DSCP classification and re-marking
- TCP Weighted Fair Queuing per class
- UDP / VOIP or other data prioritization
- Logical Network Classes to scale hub sites
- Integrated with Transport Control Modes

Data Compression Algorithms

- Multiple, simultaneous algorithms (X1 and X2)
- Active Resource Manager for dynamic control

Customized User Interface

- Maintain your branding with custom screens

Internet Optimizations

- HTTP Object Pre-Fetch
- TCP Fast Start

Management

- Web based graphical user interface uses HTTPS
- SSH secure command line interface
- Standard and Proprietary SNMP MIB's for monitoring

Network and Redundancy Capabilities

- Installs as Layer 2 Bridge or Layer 3 IP Router
- Dynamic routing protocols - BGP, RIP, OSPF
- Redundant appliances use CARP protocol - hot-standby
- IP Version 6 Routing

Virtual Private Networking (VPN)

- XipOS optimization operates over any encrypted network
- Includes commercial and military / NGO encryption types
- Typically installed in-line so optimized data is encrypted
- Enables on-board IPsec encryption to reduce equipment