

Technology Information Brief

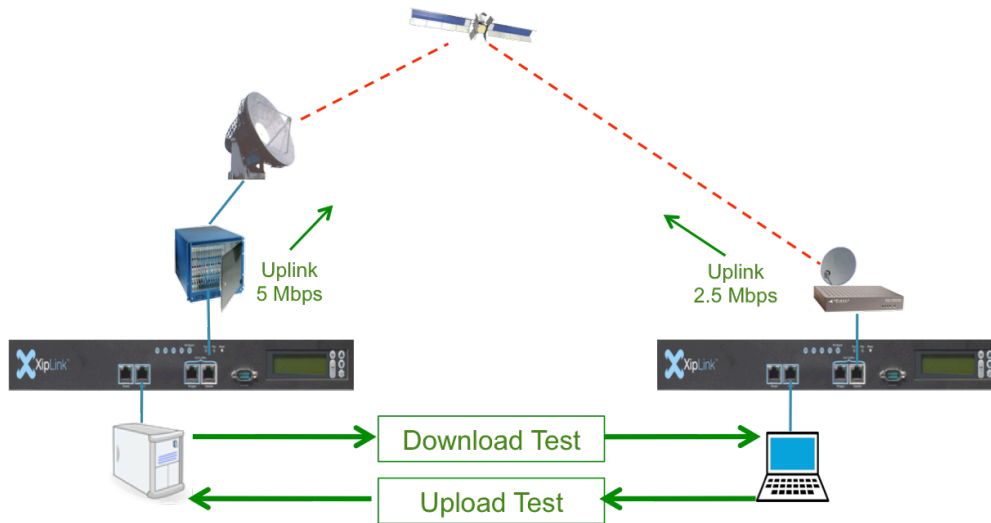
VSAT Network Optimization

VSAT Optimization Testing

XipLink XA-4000 optimizer's were installed at a hub-site and a remote site across a VSAT network. The hub-site was allocated 5 Mbps of forward channel (uplink) capacity, while the remote site was allocated 2.5 Mbps of forward channel (uplink) capacity. The delay on this network averaged ~600 MSec Round Trip Time (RTT). XipOS - Fixed Rate Control algorithm was selected.

The primary method used to determine the benefits of XipLink wireless optimization software is to transfer several well known files with different characteristics across the wireless link while measuring the usable bandwidth.

For the first test across a VSAT network, we initially downloaded the files from the hub-side Server to the remote PC and reference this as a "Download Test". In the second set of tests we uploaded the same set of files from the remote PC to the hub-side Server and reference this as an "Upload Test".



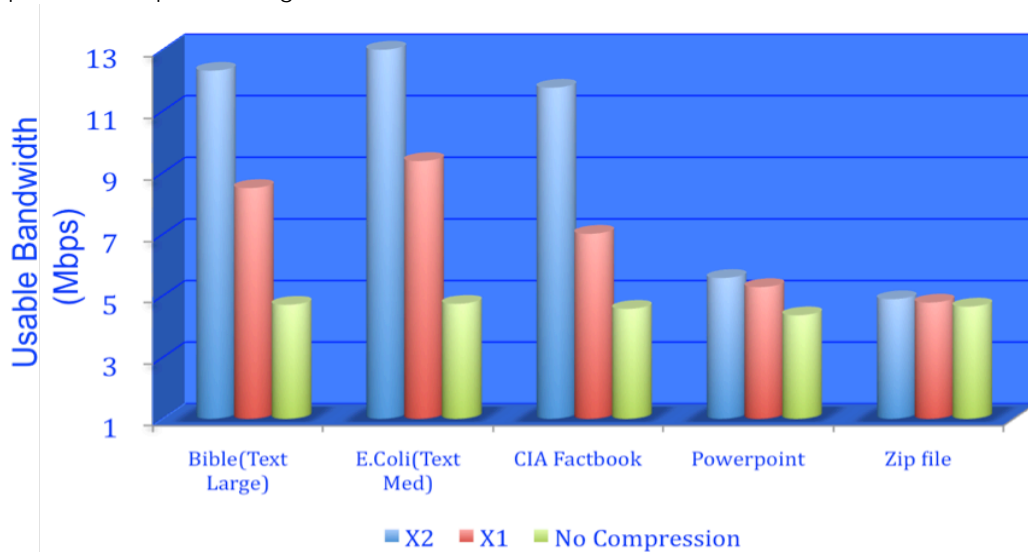
In our tests we transferred the following files with and without wireless optimization:

- Bible (highly compressible text)
- E. Coli (medium compressibility text)
- CIA Factbook (text)
- Powerpoint presentation
- Zip archive file.

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Download Test

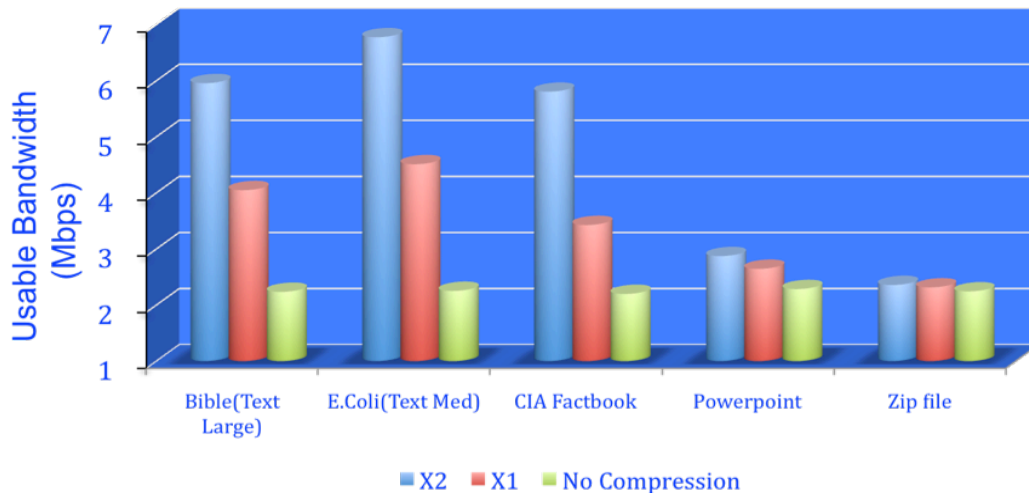
Each file is transferred once as a baseline using no compression. These results show that an un-optimized file transfer approaches the bandwidth allocation for the forward channel. We then transfer the same files again, but this time using the XipOS X1 compression algorithm and once again using the XipOS X2 compression algorithm.



Usable Bandwidth using XipOS X1 and X2 optimization over a 5 Mbps forward channel

Upload Test

The same network was used to test file transfers in the opposite direction, uploading the file from the remote PC to the hub-side Server. The primary difference in this test is that the forward channel (uplink) from the remote PC is only allocated 2.5 Mbps. Delay remained consistent at ~600 MSecs RTT.



Usable Bandwidth using XipOS X1 and X2 optimization over a 2.5 Mbps forward channel