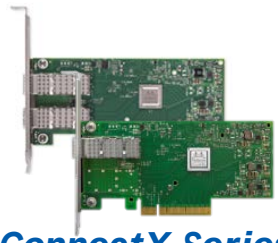
# Broadcast Media & Entertainment

## Technical Brief

### Defining and Delivering Next Generation IP-based Broadcast Studios

Remove the complexity, inefficiency and individual customization of Serial Digital Interface (SDI) – IP based networks empower broadcast and post-production industries to UHD and beyond.

## Mellanox® 25/100GbE IP Broadcast and Network Offering



### *ConnectX Series Adapters*

*10/25/40/50/100Gb Ethernet*

IP-based broadcast and video streaming applications require the highest efficiency. Mellanox offers hardware-based stateless offloads and flow steering engines to reduce packet-processing, allowing for the most efficient broadcast, video streaming, production and post-production processes.

### *SN Series Open Ethernet Switches*

*10/25/40/50/100Gb Ethernet*

Delivering the industry's highest performance and lowest latency is key in supporting throughput requirements for 4K, 8K, HFR and HDR video. Mellanox also provides efficient buffers, QoS & DSCP marking, zero-packet loss and predictable performance to deliver the ultimate experience for live streaming, broadcasting and video production.

### *LinkX Cables and Transceivers*

*10/25/40/50/100Gb Ethernet*

Transmitting video requires a very high degree of accuracy and performance. For this reason, Mellanox interconnects are built and tested to have the industry's lowest Bit Error Rate (BER) of 10e-15, this results in fewer transmission errors and retries with the lowest latencies to deliver the ultimate in video quality.

- Ethernet supports maximum performance and flexibility (Mac OS support through ATTO)
- Reduce infrastructure costs, expedite production, and reduce software licenses
- Process more video in less time, at a lower cost
- Future-proof solution ready for 8K video
- 10GbE for HD, 25GbE for 4K, and 100GbE for 8K.

## IP-based End-to-end Networking

Companies like BBC, FOX and NBC are actively converting to IP infrastructure. Change the economics of broadcasting with Mellanox - from live sports, production studios, data transport, and content distribution to storage applications. With a proven and scalable solution comprised of Mellanox Spectrum switches, ConnectX-4 adapters and LinkX cables, our customers save time and money while delivering extremely reliable HDR video to viewers.

# Technical Validation

Advantages for Broadcast, Media & Entertainment

## Dramatically Improve the Performance of Multicast Applications


Mellanox VMA messaging accelerator software helps to boosts performance as much as 500% and cuts latency by as much as 80%. This has a profound effect on increasing application throughput by reducing messaging latency and freeing CPU cycles which can then be used by the application.

## Consistent and Very Low Packet Delay Variation (jitter) and Port-to-port Latency

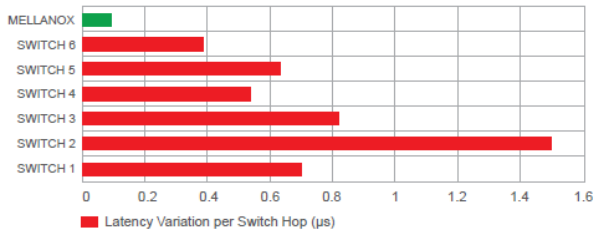



**Figure 1: Packet Delay Variations (Jitter)**


**Figure 2: Port-to-Port Switch Latency**

Based on testing done by **Fox Networks** and **Aperi Corporation**, Mellanox Spectrum was proven to deliver the lowest packet delay variation (Figure 1.) and port-to-port latency when compared across multiple switch vendors (Figure 2.).

## Consistent & Predictable Performance Across Ports, Workloads and Packet Size

Mellanox offers a large flexible buffer pool that is available to all ports on the switch rather than being divided into groups of ports.

Flexible buffer pool benefits:

- Zero-packet loss means 'bursty' traffic is stored and forwarded as required.
- Fair bandwidth allocation evenly supports all video streams versus the competition which allows one stream to consume half the bandwidth. Figure 3.

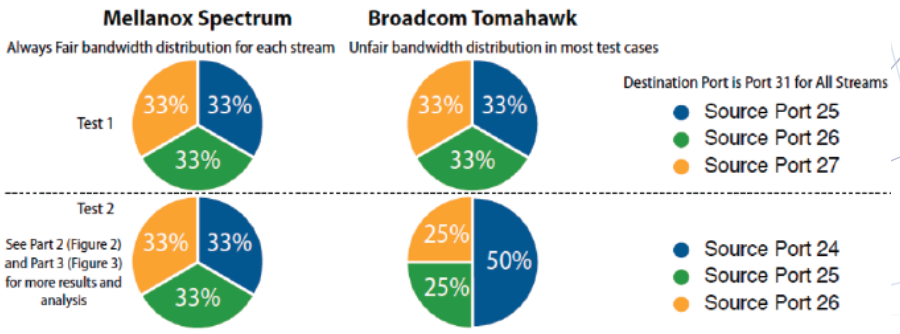



**Figure 3:** Fair Bandwidth Distribution

## OpenFlow Integration and In Fabric Containerized Broadcast Services

Support for OpenFlow allows for seamless configuration of Multicast-to-Unicast and Unicast-to-Multicast translation, stream duplication, and NAT-based stream switching for manipulation of flows within a switch and across the fabric. Support for RESTful API's provides dynamic control of how broadcast flows are forwarded throughout the networking fabric and by containerizing IP studio services and running them on the switch, broadcast engineers can focus on building an ideal IP media fabric for their studio without utilizing additional servers and virtual machines.

## Joint Task Force for Networked Media (JT-NM)

For over two years, Mellanox has been leading technical discussions and interoperability testing with the JT-NM and other industry associations.

To learn more visit: [www.mellanox.com/media-entertainment](www.mellanox.com/media-entertainment)