

# SmartVision QoE Server

NETWORK SERVER  
FOR A BETTER QUALITY OF EXPERIENCE

SmartVision QoE network server provides support for packet loss recovery and fast channel change, dramatically improving the quality of experience for subscribers to IPTV networks.



IPTV service providers are now becoming able to fully match satellite and cable operators for both variety and quality in Live TV programming, fully exploiting the introduction of H.264 technology and HD services. Until recently however, some Quality of Experience (QoE) issues with IPTV have impacted the viewer experience, leading to unacceptably high levels of customer churn. Of particular concern have been the delays in changing channels and visual interference caused by packet loss.

As an integral part of Thomson's IPTV solution, the SmartVision QoE server brings dramatic improvements in channel change times while also providing a highly efficient packet loss recovery mechanism to eliminate visual problems such as frozen or black frames.

## An Open Solution

Using standards-based communication protocols, the Set-Top-Box (STB) notifies the SmartVision QoE server when channels are being changed, allowing it to receive the first video frame much more quickly. This brings the channel change delay down from a typical two seconds to less than a second.

When packet loss is detected by the STB, it requests a retransmission of the missing packets according to the RTP retry standards (RFC4585, RFC4588). Because of the way that the SmartVision QoE server handles this request, the missing packets are recovered before the decoding process actually begins, eliminating any impairment of audio/video signals that could impact the viewing experience.

Based on the latest DVB and Internet standards, the SmartVision QoE server is fully interoperable with any set-top box that also implements these recommendations, removing the need to have proprietary agents running on the STB.

## A Scalable Solution

Capable of capturing up to 400 TV channels and supporting more than 25,000 simultaneous users, the SmartVision QoE server provides a scalable and cost-effective solution guaranteeing a greatly improved user experience over any IPTV system.

The Thomson's SmartVision CDN manages the operation of the QoE server and all aspects of load balancing and fail-over.

Designed to support many different types of network topology, SmartVision QoE servers can be deployed appropriately according to the network capacity required.

Scaling the system upwards simply involves adding another QoE server.

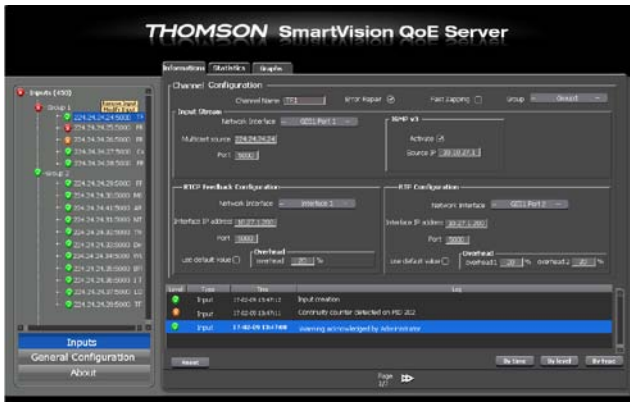
## Off-the-shelf IT Servers Combined with Network Streaming Accelerators

The SmartVision QoE servers use the most popular Intel-based technology. By avoiding custom-designed host platforms, IPTV service providers are not locked into proprietary systems and can benefit from the continuing performance and price improvements delivered by the computer industry.

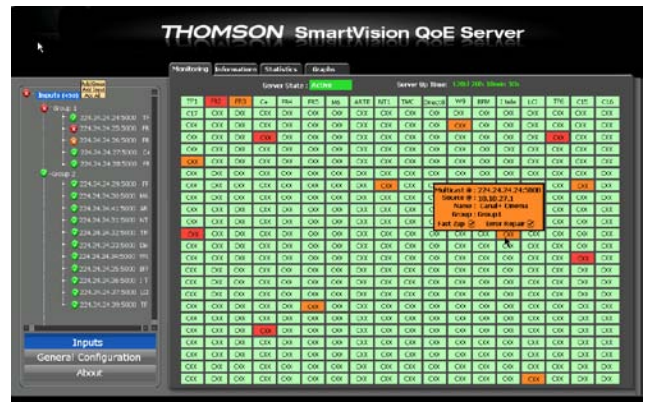
Thomson's outstanding Quad GES Gigabit network adapters provide the basis for very high server throughput. By using a high-speed Applications Programming Interface (API), each SmartVision QoE server can deliver an improved Quality of Experience to up to 100,000 subscribers.

## KEY FEATURES

- Fast Channel Change
- LiveTV packet loss recovery
- Support for various video formats (MPEG-2/H264, SD/HD, Clear/Scrambled)
- Load balancing mechanism to maximize scalability
- Management of an array of QoE servers from SmartVision CDN
- Standards-based implementation for maximum interoperability



SmartVision QOE Server - Channel Configuration



SmartVision QOE Server - Live Channels Monitoring View

## SPECIFICATIONS

### Media File Formats

- MPEG-2 over MPEG-2 transport streams
- H.264 over MPEG-2 transport streams
- SD or HD
- Clear or Scrambled transport streams

### Transport & Control Protocols

- RTP for Packet retransmission and FCC stream
- RTCP for control

### Performances

- 1800 streams @ 2 Mb/s per Quad GES streaming accelerator
- Up to 800 mbps of recording
- From 25,000 to 100,000 subscribers per server

### Administration

- Web-based GUI
- Monitoring view including status for each live program
- Alarms and logs
- Statistics (Input, Error Repair, Fast Channel Change)

### Network Interfaces

- From 1 to 4 Quad GES on a single server
- Each Quad GES adapter includes four SFP cages for either RJ45 or SX/LX Fiber modules

### Hardware Characteristics

- Chassis: 2 RU
- From 4 to 16 Gigabit Ethernet streaming outputs

## ORDERING INFORMATION

### QoE Server

#### SPD-32QOE2-A

SmartVision QoE Server - TWIN(1 QuadGES included - 1 QuadGES can be added)

#### SPD-32QOE4-A

SmartVision QoE Server - QUATTRO(1 QuadGES included - 3 QuadGES can be added)

### Hardware Option

#### SPD-32GES4

QuadGES Gigabit Ethernet card

#### SPD-3259-3

Quad 1000 Base SX SFP Modules(per QuadGES)

#### SPD-3259-4

Quad 1000 Base LX SFP Modules(per QuadGES)

#### SPD-3259-5

Quad 1000 Base RJ45 SFP Modules(per QuadGES)

### QoE Licenses

#### SPD-32QERR-A

SmartVision QoE - Error Repair License only(per 1000 users)

#### SPD-32QFCC-A

SmartVision QoE - Fast Channel Change SW License(per QuadGES Port)

### Record Licenses

#### SPD-3280

TV Channel input license(per channel)

### CDN

#### SPD-32CHAA

SmartVision CDN (HW Based)

## HEADQUARTERS

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## PROFESSIONAL SERVICES

Our professional services offerings ensure optimal system performance and maximize uptime. These services include call centers staffed around the clock; system planning, design, and commissioning; professional training courses; and technical maintenance programs and service agreements.

[www.thomson.net/support](http://www.thomson.net/support)