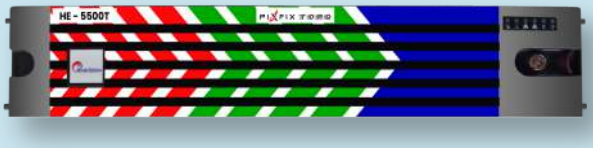
RiverSilica
Pixels Connected - Video Perfected

PIXFIX TORQ-FX

Ultra Dense Video Processor For LIVE and ON-Demand

PIXFIX™ Torq – FX The World's First Next Generation Hybrid Ultra-Dense Video Processing Appliance



PRODUCT AT A GLANCE

PIXFIX™ Torq-FX delivers enterprise-grade, ultra-dense encoding and transcoding for live and on-demand video, all at the lowest cost per stream.

Running on powerful platforms—**HE3160T, HE5500T, HE3430T, and HE97210T**—it supports **32 to 1024** video inputs, offering unmatched scalability.

With support for a wide range of input formats and flexible output options, **PIXFIX™ Torq-FX** is the ideal solution for high-volume, high-efficiency video processing.

Powering Ultra-Dense Video Workflows

When it comes to Ultra-Dense enterprise-grade Encoding/Transcoding for Live and On-demand video content, **RiverSilica's PIXFIX™ Torq-FX** delivers unmatched performance and efficiency designed for **CDN, Data center, Cable Aggregation, TELCO/ISP, and Surveillance markets**, and it offers the industry's most flexible and cost-effective infrastructure for processing single and multiscreen applications. Powered by RiverSilica's patented **RAFT™, SAND™, and HELM™** algorithms, and built on the industry's first **PIXFLEX™** Hb interleaved director architecture with hardware and software acceleration, it ensures intelligent video quality optimization and aids in seamless workflow processing. Driven by the industry's first hybrid Pipeline combining Hardware and Software processing that can operate independently or together to meet the highest demands in the video industry.

Scalable Performance Unmatched Density

PIXFIX™ Torq-FX supports from 32 to 1024 Full HD inputs within a single appliance, offering flexible input interfaces and output formats. Whether you're delivering live or on-demand content, it handles up to 2560 processed streams in multi-bit rate formats.

Built for enterprise-scale operations, **Torq-FX** enables you to manage hundreds or thousands of simultaneous streams with ease. Its high-density architecture allows seamless scaling within a single unit—maximising your investment and delivering exceptional ROI.

Applications

PIXFIX™ Torq-FX is designed for high-performance, continuous live and on-demand video processing in ultra-dense environments. Ideal for CDN, data centres, surveillance, and cable TV aggregation, it delivers optimized rack usage and the lowest cost per stream in its class.

Whether you need to consolidate camera feeds in the surveillance sector, or process user-generated content in a data centre, CDN, or cloud setups—**PIXFIX™ Torq-FX** is the perfect fit.

With support for 32 to 1024 live or on-demand input channels, it delivers enterprise-grade performance, exceptional video quality, and rapid return on investment.

For complete end-to-end video workflow solutions, **PIXFIX™ Torq-FX** integrates seamlessly with **PIXFIX™ Streama** for streaming and **PIXFIX™ SoapBox** for archiving and content management.

Available in a range of platform models including **HE3160T, HE5500T, HE3430T, and HE97210T, Torq-FX** is ready to scale with your needs.

Features and Benefits

- **Scalable Input Options**
  Supports **32 to 1024** video channels, with flexible input interfaces including IP and raw formats—ideal for single and multi-screen workflows.
- **Hybrid Processing Architecture**
  World's first appliance combining hardware and software processing for high performance and efficiency through **PIXFLEX™** Hb interleaved architecture
- **Advanced Video Processing**
  Highly versatile, Configurable and Ultra Flexible. Software defined video processing powered by RiverSilica's **RAFT™, SAND™, and HELM™** algorithms, with intelligent hardware acceleration with PIXFIX™ Torq-FX hardware acceleration engine - for configurable and concurrent operations.
- **Codec Flexibility**
  Supports MPEG-2, H.264, and HEVC for both live and on-demand delivery.
- **Multiple Output Formats**
  Offers broad compatibility across platforms and use cases.
- **Efficient Workflow Management**
  Designed for ultra-dense video environments with easy configuration and seamless scaling.
- **Dynamic Operation**
  Adjust parameters on the fly—no need to stop or restart workflows.
- **Optimized Bitrate Control** through **PIXABIT™** Machine learning methodology.
- **Superior Video Quality**
- Ensures consistent performance with **PIXIT™** quality management tools.
- **Complete Ecosystem Support**
  - **PIXFIX™ Visor** – for control and monitoring
  - **PIXFIX™ Streama** – for high-quality streaming
  - **PIXFIX™ SoapBox** – for archiving and content management

Platform Availability

Available on **PIXFIX™ HE Series: 3160T, 5500T, 3430T, and 97210T.**

General Specifications for

PIXFIX TORQ-FX

INPUT INTERFACE
- 10Gig, 25/40Gig
- SD-SDI, HD-SDI, 3G-SDI, 6G-SDI, 12G-SDI
- HDMI - From 1.4A / 2.0B

INPUT STREAM
- TS/UDP (Unicast and multicast SPTS and MPTS)
- TS/RTP (Unicast and multicast SPTS and MPTS)
- TS/HTTP
- RTMP
- RTSP
- SRT
- Signal generator
- MOV, MP4, MKV, TS

INPUT VIDEO CODECS
- H.264 – BP/MP/HP–4:2:0,4:2:2 8-Bit, 10-Bit
- HEVC – 4:2:0, 4:2:2 MAIN, MAIN10
- MJPEG
- MPEG2
- VP9 – Profile 0, 2
- Fixed and variable frame rate
- Standard and non-standard resolution
- Error resilience and concealment for erroneous input
- Video passthrough
- Input video quality detection
- Input video frame skip detection
- Input Video Codec detection

INPUT AUDIO CODECS
- MPEG1 Layer2, Layer3
- AAC (LC, HE, HEv2)
- Dolby Passthrough
- Up to 8 channels 24-bit in IP
- Up to 96KHz sampling frequency
- Up to 16 channels 24-bit in Raw
- Audio passthrough
- Input audio quality detection
- Input audio Codec detection

INPUT HANDLING
- Input stream switching- failure driven
- Input file looping
- Auto sensing of incoming media, media info
- Input stream view on web console

CONTROL & MONITORING
- Thumbnails preview on web console
- Express Job Settings
- Web based UI
- Dynamic parameter changing while job is running
- Exposed API's
- Multiple user management and role-based access
- Real time Graphical job health statistics
- Load recommendation analytics
- Log and Notifications alert

PLATFORM SPECS
- Available on 1RU, 2RU, 3RU and 4RU chassis
- Runs on RiverSilica PIXFIX™ T-series platform
- RHEL
- Optional RAID
- Up to 6 Network ports, 24 TB storage space

OUTPUT INTERFACES
- 10Gig, 25/40Gig

OUTPUT STREAM
- TS/UDP & TS/RTP Unicast and multicast
- HLS
- SRT
- RTMP uplink to popular CDNs

OUTPUT VIDEO CODECS
- H.264
- HEVC
- MPEG2

OUTPUT AUDIO CODECS
- AAC-MPEG4
- MPEG-1 Layer2
- DOLBY Passthrough
- Up to 16 channel, 24-bit audio
- Up to 96 KHz sampling frequency

PRE-PROCESSING
- Content based De-interlacing
- Perceptual quality-based video scaler
- Standard and non-standard resolution

ENCODING FEATURES
- Look-ahead based encoding
- AI enhanced encoding
- Low latency encoding & sub-second Glass to Glass delay
- CBR, VBR streams
- Configurable display aspect ratio (DAR) and preserving it during scaling
- Multi language/track audio coding in a single program
- Audio dB level indicator for each encoded audio stream
- Up to 700Mbps for live delivery

SYSTEMS
- System configuration backup and restore
- Remote File storage mount – NFS, CIFS, USB, NAS
- Auto restart of jobs in unrecoverable errors
- Multiple output streams, simultaneous archiving while streaming
- SNMP, NMS
- System dashboard with real-time statistics
- Complete network diagnostic involving DNS test, Speed test, Tracer

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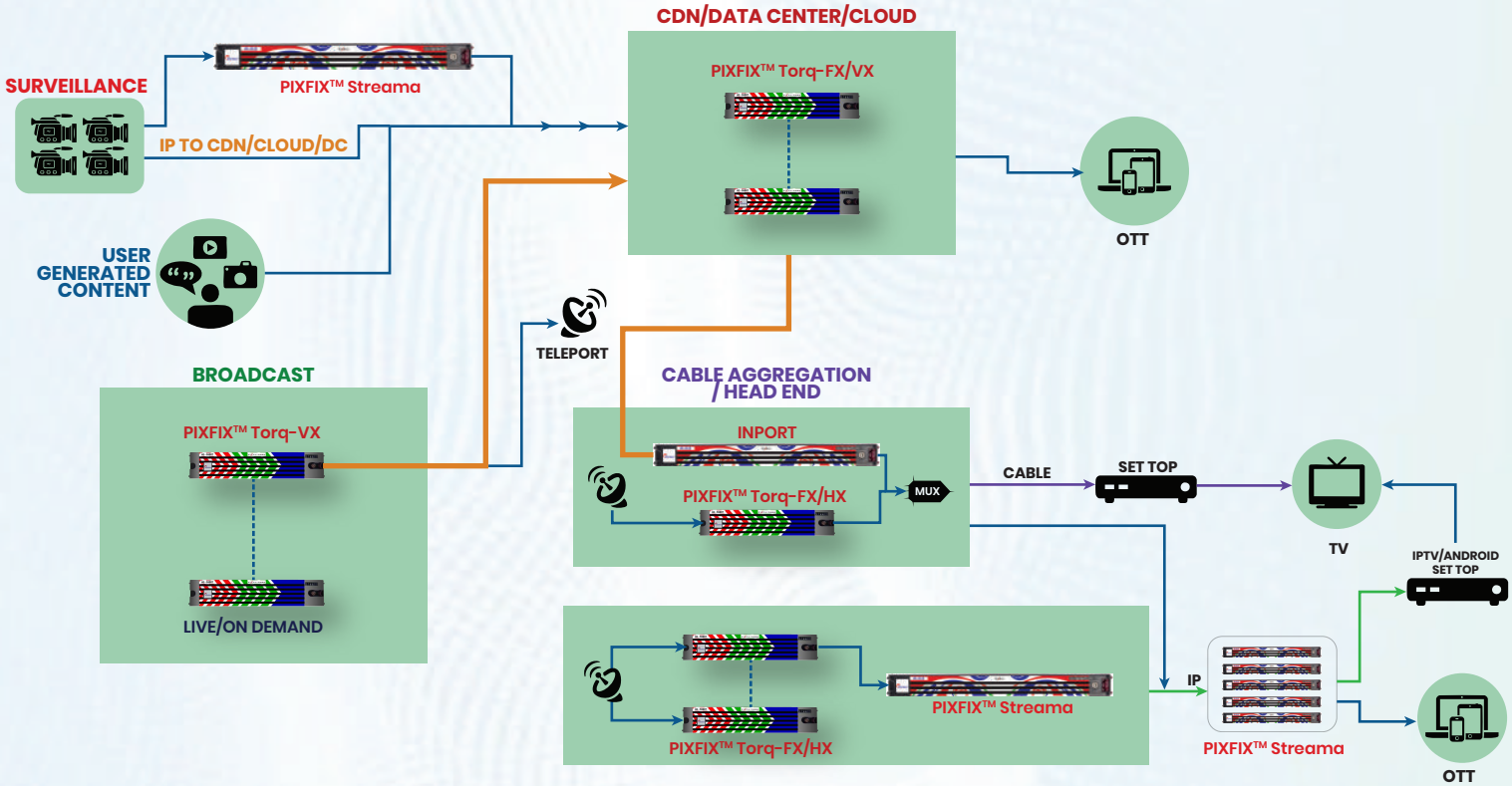
PIXFIX™ Torq-FX on PIXFIX™ HW Platform Configuration

PIXFIX™ Torq Ordering Information								
S.NO	LICENSE	HW PLATFORM	Torq Category	Torq Category	ENET	SDI	HDMI	CHASSIS
1	PIXFIX™ Torq-FX	PIXFIX™ 3160T	TQ1X32	TQ1X64	2X10 Gig	8 CH -> R18	4 CH -> R14	1RU
2	PIXFIX™ Torq-FX	PIXFIX™ 3160T	TQ2X32	TQ2X64	4X10 Gig	16 CH -> R28	8 CH -> R24	2RU
3	PIXFIX™ Torq-FX	PIXFIX™ 3430T	TQ3X32	TQ3X64	25/40 Gig	24 CH -> R38	12 CH -> R34	3RU
4	PIXFIX™ Torq-FX	PIXFIX™ 3430T	TQ4X32	TQ4X64	2X25/40 Gig	-	20 CH -> R54	4RU
5	PIXFIX™ Torq-FX	PIXFIX™ 5500T	TQ5X32	TQ5X64	-	-	-	-
6	PIXFIX™ Torq-FX	PIXFIX™ 5500T	TQ6X32	TQ6X64	-	-	-	-
7	PIXFIX™ Torq-FX	PIXFIX™ 97210T	-	-	-	-	-	-

- Torq category Add on partcode is based on the number of streams to be processed (Contact RiverSilica Technologies)
- Base HW model selection is based on Hybrid processing needs
- Add on SDI/HDMI is based on number of input interfaces required
- Chassis varies based on the configuration and the need for performance
- Optional redundancy is possible in 1 + 1 combination with additional PIXFIX™ Visor license in the 1 + 1, N+1 or M+N mode
- For additional storage beyond base 1TB (Contact RiverSilica Technologies)

PIXFIX™ Torq-FX Workflow



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