

PIXFIX Versa

Industry's First all-in-one Video Processor



For All-in-one IP Video work flow solutions PIXFIX™ Versa. The All-in-one software defined video processor can effectively Encode, Transcode, Decode, Store, Stream, Multiplex, Mix, Play etc. The highly versatile and ultra-flexible product fits and morphs in to required IP work flow dynamically. Embedded with RiverSilica's PIXBIT™, PIXMAX™, technologies based on state of the art video algorithms, the product delivers both broadcast and OTT solutions under the same hood.

Capable of taking multiple inputs and multiple formats - Versa delivers simultaneous processing of video assets across Live and File, archives and streams as an all-in-one solution. The single pipeline feature offers the customer an end to end solution for integrated IP work flow. It is flexible enough to configure for an intended work flow today and to adapt to another work flow later - Versa adapts as you wish. With PIXFIX™ Versa, you are sure to be on the right path of fastest ROI and lowest TCO.

APPLICATIONS

PIXFIX™ Versa provides All-in-one infrastructure for an integrated solution right from Encoding, Transcoding- all the way up to archiving and streaming from a unified standpoint. Pick and choose the work flow, may it be ENCODE, TRANSCODE, STORE, STREAM, MULTIPLEX, MIX and PLAY, PIXFIX Versa adapts to it due to Versatility and software defined video processing. It can be reconfigured for any combination of the work flow based on one's needs.

PIXFIX™ Versa in the BROADCAST and TELCO market delivers both Broadcast and OTT class video and additionally multiplexes as well with in the same infrastructure. It can additionally store for further monitoring purposes. This vastly reduces the rack space and helps in integrating multiple services in to a singular work flow.

PIXFIX™ Versa is a straight fit in to EDUCATION, CORPORATE, FAITH and GOVERNMENT for field encoding, streaming market with its All-in-one integrated approach. This approach gives highly cost effective rack friendly single box solution which can ENCODE/TRANSCODE, DECODE, STORE and STREAM.

PIXFIX™ Versa scales from multi interface single input field encoding, all the way up to sixteen inputs dense encoding/transcoding that can be mixed and muxed to be directly packaged in to a deliverable stream that is Multi screen ready. Includes simultaneous storage in desired formats and can convert file formats that is OTT friendly.

Currently available on PIXFIX™ Mini Chassis SB Series, PIXFIX™ EL, and HE Series in 1RU, 2RU form factors respectively help in scalling the channel density and Storage challenges.

FEATURES AND BENEFITS

- Highly Versatile, Ultra flexible and configurable All-in-one functionality through state of the art software deined video processing and acceleration using RAFT™, SAND™ and HELM™
- Unified work flow pipeline from RAW video input to streaming format output like HLS, RTMP, DASH etc. Which helps in optimizing the rack needs.
- Flexibility for broadcast and OTT Multi Screen delivery by processing multiple video inputs across IP, ASI, HDMI, SDI and COMPOSITE inputs and IP, ASI and SDI outputs simultaneously
- Multiplexing multiple inputs for broadcast delivery
- Multiple CUETONE strategies with customizable options
- Intermixing of input video for studio needs
- MPEG2, H264, HEVC support along with multiple streaming formats for both LIVE and OFFLINE needs
- Support for multiple CDNs
- Express configurability for field encoding applications for single channel needs
- Dynamic parameter management without Encoder stoppage
- Multibit rate and dynamic bitrate management through PIXABIT™
- Control and safety through integrated PIXFIX™ Visor
- Up to 24TB storage availability with multi format capability
- PIXFIX™ Versa is available on RiverSilica's PIXFIX™ EL, HE series chassis based on COTS Intel™ platform.



PRODUCT AT A GLANCE

Entry and Enterprise-grade All-in-one video processing PIXFIX™ Versa running on EL/HE Hardware infrastructure delivers the desired performance for multifunctional IP Video workflow needs.

Capable of ingesting from 1 to 16 inputs or more based on the various interfaces across interfaces across its PIXFIX™ HW infrastructure, gives the customer the most flexible input and output options.

General Specifications



INPUT INTERFACES

- o Multiple Gigabit IP interface
- o ASI, SD/HD/UHD SDI with raw and compressed (Dolby™) audio, HDMI with Embedded Audio
- o Composite, Component, USB Webcam
- o RF input
- o GPIO, USB keypad

INPUT STREAM

- o TS/UDP, TS/RTP (Unicast and multicast SPTS and MPTS)
- o TS/HTTP
- o RTMP, RTSP, HLS
- o ZIXI, NIMBRA EDGE, NDI, SRT
- o Image slate
- o Playlist
- o DVB-S/S2 (QPSK, 8-PSK, 16/32-PSK), 950 to 2150 MHz (L-Band frequency) support. Symbol rate – 4 to 40MBd, BBFRAME/Full TS-output/LNB 13V18V 400mA, DiSEqC control
- o Signal generator

INPUT VIDEO CODECS

- o H.264 – BP/MP/HP – 4:2:2 10-Bit 4:2:0 8-bit
- o MPEG4 SP/ASP
- o MPEG2 – ML/HL
- o HEVC
- o VC1, Apple Prores
- o Fixed and variable frame rate
- o Standard and non-standard resolution
- o 4Kp60 up to 50Mbps for live delivery
- o Error resilience and concealment for erroneous input
- o Input video frame skip detection
- o Video pass through

INPUT AUDIO CODECS

- o MPEG1 Layer2 & Layer3
- o Dolby™-AC3
- o AAC-MPEG2
- o AAC-MPEG4 (LC, HE-AAC, HE-AACv2)
- o MPEG4 ALS
- o WAV
- o Up to 8 channels 24 bit, 96KHz audio
- o Up to 96KHz sampling frequency
- o Audio pass through

METADATA

- o CEA608/708 Closed captioning
- o SCTE 35/104 Cue-points
- o WSS & AFD metadata
- o DVB subtitles

INPUT HANDLING

- o Input stream switching- manual/failure driven
- o Input file looping & ROI selection
- o Input archiving with slicing based on time, size, and clock
- o Auto sensing of incoming media, media info
- o Input stream view on web console
- o Input stream capture
- o Watch folder configuration
- o Media playlist creation and playlist management

STREAMING PROTOCOL

- o HLS, HDS
- o Mpeg DASH, RTMP, RTSP
- o CMAF
- o MSS

ACCESS, CONTROL & MONITORING

- o Multi account user management
- o Granular license control
- o Multi node configurability
- o Thumbnails preview on web console
- o Tile based preview and output stream preview
- o Web based UI
- o Express Job Settings
- o Pre and post job scripts
- o Jobs scheduling and Prioritization
- o Dynamic parameter changing while job is running
- o System configuration/jobs export, import, backup and restore

PLATFORM SPECIFICATIONS

- o Runs on COTS Intel™ Platform
- o CentOS
- o Based on Mini, 1RU, 2RU chassis
- o Optional RPS and RAID
- o Upgradable to 6-Gigabit ports, 24GB storage space

OUTPUT INTERFACES

- o SD/HD-SDI, HDMI, ASI, Multiple Gigabit IP interface with redundancy
- o Composite, Component

OUTPUT STREAM

- o RTMP, RTSP
- o TS/UDP & TS/RTP Unicast and multicast – SPTS, MPTS
- o MPEG2, MP4, MOV, FLV, MKV, MXF
- o ZIXI, NIMBRA EDGE, SRT, NDI, HTTP, FTP, TCP/IP

OUTPUT VIDEO CODECS

- o H.264 BP/MP/HP 4:2:0 8-bit, 4:2:2 10-bit
- o HEVC 4:2:0 8-bit, 4:2:2 10-bit
- o PRORES, WMV, MPEG2

OUTPUT AUDIO CODECS

- o MPEG 1 Layer2/3
- o AC3 (pass through), EAC3 (pass through), Dolby™-E (pass through)
- o AAC-MPEG2, AAC-MPEG4 (LC, HEAAC, HEAACv2)
- o Up to 8 channel, 24bit audio
- o Up to 96 KHz sampling frequency

PRE-PROCESSING

- o Hue, Contrast, brightness, saturation and gamma correction
- o De interlacing through BOB, Motion adaptive, IVTC modes
- o Perceptual quality based video scaler
- o Standard and non-standard resolution
- o Framerate conversion
- o Video Flipping
- o Multiple alpha blended logo overlay, Static/scrolling text overlay
- o Clock and Timer code overlay, Cropping, Letter boxing
- o Different font style for text overlay
- o Chroma sub sampling
- o Audio equalizer and volume control, Loudness control
- o Audio sample rate and bit depth conversion, rate maintainer
- o Audio Channel management, Interpolation, Drop and Pad, Mix and Match
- o Multi-channel/track audio in single channel
- o Track pass through/Process settings
- o Picture in Picture, Multiple input video tile management
- o Single process to multi package, multi publish point

ENCODING FEATURES WITH DEEP DIVE CONFIGURABILITY

- o Look ahead based encoding, Low latency encoding & sub-second G to G delay
- o De-blocking filter, Interlaced/Progressive Encoding
- o GOP, Buffer delay Adjustment
- o CBR, VBR and constrained VB streams
- o Scene change detection & characteristics based encoding
- o Encode, Transcode acceleration through RAFT™, HELM™, SAND™ algorithms
- o Configurable display aspect ratio and preserving DAR during scaling
- o Profile level configurable post thumb nail generation, profile level frame rate conversion, GOP interval adjustment, Buffer delay setting for quality management
- o Multi language/track audio coding in a single program
- o Up to 8 channel, 24 bit audio encoding
- o AES/BISS Encryption

METADATA

- o CEA 608/708 pass through
- o SCTE cue tones for UDP/RTMP/HLS and custom for AWS, Akamai, Hotstar, Zee etc.,
- o Host of other CUETONE features including CSV file based SCTE
- o DVB subtitles pass through and burning

MISC FEATURES

- o Lip Sync correction
- o Cross stream multiplexing - Video from one source and audio from another
- o Output file push to remote FTP/HTTP servers
- o Delayed output for render/playback synchronization
- o Delayed stream output, Delayed push to specific to publish point
- o Stream specific processing for different application (Ex: Different logo for each profile)
- o Raw output simultaneously during streaming
- o Input/output stream redundancy
- o SSH tunneling for ZEN Master
- o IP pass through for LIVE and FILE
- o Supports copying Video and or audio tracks for different processing work flow
- o REST APIs

SYSTEMS

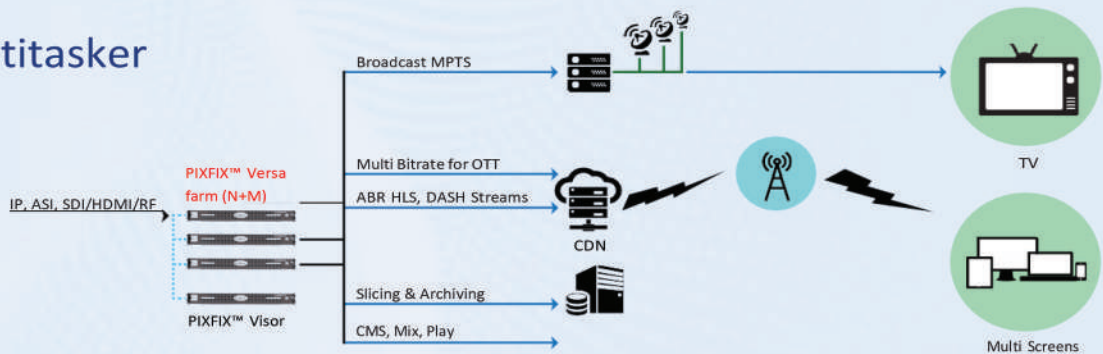
- o Remote File storage mount – NFS, CIFS, USB, NAS, S3
- o Active Passive Redundancy
- o Auto restart of jobs in unrecoverable errors
- o Logs and Notification alerts through email etc.,
- o Real time health statistics
- o Input stream available indicator
- o Real time stats of CPU, memory, network, Jobs on Dashboard
- o Device manager for auto detecting PnP devices
- o Complete network diagnostic involving DNS test, Speed test, Tracer
- o NTP clock sync and settings
- o Timezone settings
- o VLAN creation

PIXFIX™ Versa on PIXFIX™ HW platform configuration

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		PART NO			SUPPLY			ADDL	SATA		INPUT	INPUT/OUTPUT	INPUT
1	PIXFIX™ Versa	EL550/1000	1RU	HALF	350W	✗	1 X 1 Gig	✗	1TB	✗	✗	1	✗
2	PIXFIX™ Versa	EL1000R11	1RU	HALF	350W	✗	1 X 1 Gig	✗	1TB	✗	✓	1	✓
3	PIXFIX™ Versa	EL1720	1RU	FULL	600W	✗	2 X 1 Gig	✗	1TB	✗	✗	4	✗
4	PIXFIX™ Versa	EL1720R12	1RU	FULL	600W	✗	2 X 1 Gig	✗	1TB	2	✗	2	✓
5	PIXFIX™ Versa	EL1720R14	1RU	FULL	600W	✗	2 X 1 Gig	✗	1TB	4	✗	4	✓
6	PIXFIX™ Versa	EL1720M	1RU	FULL	600W	✗	2 X 1 Gig	✗	1TB	✗	✗	4	✗
7	PIXFIX™ Versa	EL1720MR14	1RU	FULL	600W	✗	2 X 1 Gig	✗	1TB	4	✗	4	✓
8	PIXFIX™ Versa	EL1720D	1RU	FULL	600W	✗	2 X 1 Gig	✗	1TB	✗	✗	4	✗
9	PIXFIX™ Versa	EL1720DR14	1RU	FULL	600W	✗	2 X 1 Gig	✗	1TB	4	✗	4	✓
10	PIXFIX™ Versa	HE3160	1RU	FULL	600W	✗	2 X 1 Gig	✗	1TB	✗	✗	8	✗
11	PIXFIX™ Versa	HE5500MR24	2RU	FULL	600W	✗	2 X 1 Gig	✗	1TB	8	✗	8	✓
12	PIXFIX™ Versa	HE3160D	1RU	FULL	600W	YES	2 X 1 Gig	2 X 10 Gig	1TB	✗	✗	8	✗
13	PIXFIX™ Versa	HE5500R24	1RU	FULL	600W	YES	2 X 1 Gig	2 X 10 Gig	1TB	8	✗	8	✓
14	PIXFIX™ Versa	HE5500C28	2RU	FULL	740W	YES	2 X 1 Gig	2 X 10 Gig	1TB	✗	✗	16	COMP/IP
15	PIXFIX™ Versa	EL550/1000AIO1H11	1RU/2RU	HALF/FULL	350W	✗	1 X 1 Gig	✓	1TB	✓	✓	1/1	✓
16	PIXFIX™ Versa	EL1000AIO2H11	1RU/2RU	HALF/FULL	350W	✗	1 X 1 Gig	✓	1TB	✓	✓	2/1	✓
17	PIXFIX™ Versa	EL1720H14R11H11	1RU/2RU	HALF/FULL	350W	✗	1 X 1 Gig	✓	1TB	✓	✓	4/2	✓

- * The input interface combination supports ASI, HDMI other than SDI. For any custom configuration, kindly contact RiverSilica.
- * Redundancy is pre-built with PIXFIX™ Visor through every VERSA.
- * For additional storage beyond 1TB and 2 x 1 Gbps, please contact RiverSilica.
- * The models depicted in the graphics and above tabular column are for representative purposes and based on customer needs the models and look may change.
- * For RPS models, please contact RiverSilica.

PIXFIX™ Versatile Multitasker



PIXFIX™ Education / Corporate market

