PIXFIX MbIRD

Industry's best in class

RF to Broadcast/ OTT Encode, Transcode video processor

For FTA RF DVB signals to be video processed for Cable operators and ISPs, PIXFIX™ MbIRD - the All-in-one Software defined video processor can effectively Encode and Transcode all the video signals that can be downlinked from the terrestrial Multi Band frequency. The highly versatile and ultra-flexible product fits and morphs in to required IP work flow seamlessly from any DVB-S/S2 downlink. Embedded with RiverSilica's PIXABIT™, 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 RF and IP inputs simultaneously MbIRD delivers simultaneous processing of live video assets across both BROADCAST and OTT needs. 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 workflow later- MbIRD adapts as you wish. With PIXFIX™ MbIRD, you are sure to be on the right path of fastest ROI and lowest TCO.

APPLICATIONS

PIXFIX™ MbIRD provides cable operators and ISPs an All-in-one infrastructure for an integrated solution for the cable operators and ISPs right from receiving the RF signals all the way up to Encoding and Transcoding. Pick and choose the work flow, may it be ENCODE or TRANSCODE, PIXFIX™ MbIRD adapts to it due to its versatility and software defined video processing. It can be reconfigured for any combination of the work flow based on one's needs.

PRODUCT AT A GLANCE

Entry and Enterprise grade All-in-one video processing PIXFIX™ MbIRD running on EL/HE Hardware infrastructure delivers the desired performance for multifunctional RF to Broadcast and OTT IP Video work flow needs.

Capable of ingesting from 1 to 4 RF inputs based on the various interfaces across its PIXFIX™ HW infrastructure, gives the customer the most flexible multi format multi bitrate output options.

PIXFIX™ MbIRD in the Cable and ISP market delivers both Broadcast and OTT class video from RF on L-BAND and additionally Transcodes 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™ MbIRD is a straight fit in to Cable head end and ISP head end for broadcast video delivery and OTT streaming market with its All-in-one integrated approach. This approach gives highly cost effective rack friendly single box solution which can ENCODE/TRANSCODE, STORE and STREAM.

PIXFIX™ MbIRD scales from single RF input, all the way up to four inputs for dense encoding/transcoding that can be mixed and directly packaged in to a deliverable stream for cable distribution or make it Multi screen ready. This Includes simultaneous storage in desired formats and can convert file formats that are OTT friendly.

Currently available on PIXFIX™ EL, and HE Series in 1RU, 2RU form factors respectively to help in scaling 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 defined video processing and acceleration using RAFT™, SAND™ and HELM™.
- Unified work flow pipeline from RF video input to streaming format output like HLS, RTMP etc., which helps in optimizing the rack needs.
- Flexibility for Broadcast and OTT Multi Screen delivery by processing video inputs across IP and RF.
- Multiple Pre and Post processing features with customizable API 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.
- 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™ MbIRD is available on RiverSilica's PIXFIX™ EL, HE series chassis based on COTS Intel™ platform.

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General specifications for

PIXFIX MbIRD

INPUT INTERFACES
- Multiple Gigabit IP interface
- RF input

INPUT STREAM
- 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
- DVB-C
- DVB-T/T2
- TS/UDP, TS/RTP (Unicast and multicast SPTS and MPTS)
- Image slate
- Signal generator

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

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

METADATA
- CEA608/708 Closed captioning
- SCTE 35

INPUT HANDLING
- Input stream switching- manual/failure driven
- Input archiving with slicing based on time, size, and clock
- Auto sensing of incoming media, media info
- Input stream view on web console
- Input stream capture

STREAMING PROTOCOL
- HLS
- RTMP

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

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

OUTPUT INTERFACES
- Multiple Gigabit IP interface with redundancy

OUTPUT STREAM
- TS/UDP & TS/RTP Unicast and multicast – SPTS, MPTS
- MP4, MOV, FLV, MKV, MXF
- ZIXI, SRT, NDI, HTTP, FTP

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

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

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

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

METADATA
- CEA 608/708 pass through
- SCTE cue tones for UDP/RTMP/HLS and custom for AWS, Akamai, Hotstar, Zee etc.,
- Host of other CUETONE features

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

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

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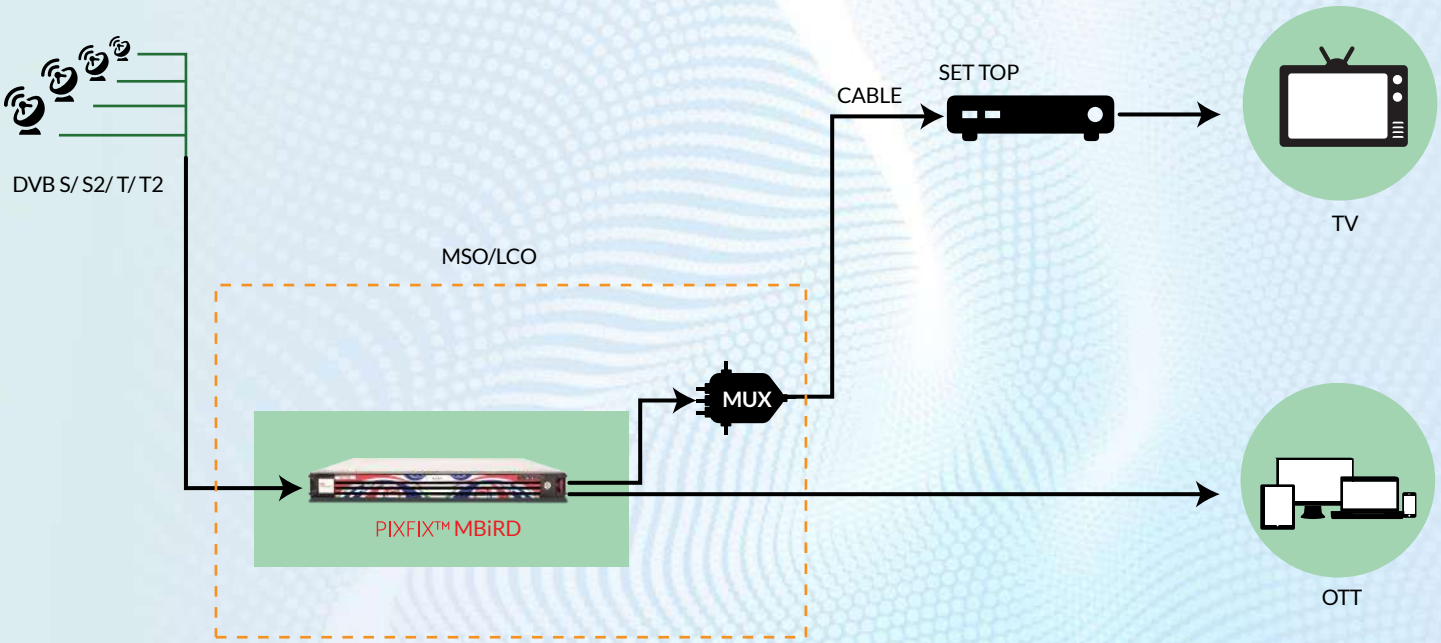
PIXFIX™ MbIRD on PIXFIX™ HW platform configuration

S.NO	LICENSE	HW PLATFORM	CHASSIS	DEPTH	POWER	RPS	ENET	ENET	HDD	RF
		PART NO			SUPPLY			ADDL	SATA	INPUT
1	PIXFIX™ MbIRD	EL1000RF1	1RU	HALF	250W	×	1X1Gig	×	1TB	1
2	PIXFIX™ MbIRD	EL1720RF4	1RU	FULL	350W	×	2X1Gig	×	1TB	4
3	PIXFIX™ MbIRD	HE3160RF1	1RU	FULL	600W	×	2X1Gig	×	1TB	1
4	PIXFIX™ MbIRD	HE3160RF4	1RU	FULL	600W	×	2X1Gig	×	1TB	4
5	PIXFIX™ MbIRD	HE5500DRF4	1RU	FULL	600W	YES	2X1Gig	2X10Gig	1TB	4

* The input interface combination supports RF ports from down link on L-Band frequency from 1 to 4 ports.
* Based on the number of channels and frequency cluster, RiverSilica will be able to benchmark and generate the models for any given density.
* 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™ MbIRD Multitasker



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