Fovea-F1 is a broadcast grade HD MEMC frame rate converter for standards & universal format conversion, computer graphics to video scan conversion and frame synchronizer with powerful MEMC FRC, noise reduction, image enhancement and aspect ratio conversion.

Key features include content adaptive Motion Estimation Motion Compensated (MEMC) frame rate conversion as well as powerful image quality restoration capabilities.

Fovea-F1 uses a dedicated MEMC motion-processing engine with powerful hybrid MEMC algorithms combining phase plane correlation, block matching & global motion estimation for accurate high-performance motion estimation with efficient cost-effective implementation.

Fovea-F1 has a range of pre-optimized MEMC presets for key content types, making selection of optimal operating parameters easy and quick by any operator.

VITC & LTC Embedded Timecode is supported and includes automatic conversion to/from drop-frame format & video delay correction.

Closed Caption support is provided including conversion between HD CEA708 and SD CEA608 formats.

Scan conversion mode can also be used to normalize computer scan rates to video scan rates with motion compensated conversion.

Proc-amp controls for image adjustment and legalization include luma gain/contrast, luma cutoff/black level, saturation, hue, R-Y, B-Y gains and cut-offs. Y, R-Y and B-Y.

Trim, Pan and Tilt functions enable display of a particular area as is custom aspect ratio control. Pre-defined aspect ratio conversion is provided including a progressive stretch for pseudo 16:9 from 4:3 source material.

Genlock to 3G-SDI, HD-SDI, SD-SDI, tri-level or bi-level sync or black & burst

Audio support for AES and embedded audio via 3G-SDI, HD-SDI and SD-SDI with support for audio embed and de-embed. Audio delay is automatically corrected for video processing time with precise delay calibration possible with 1mS granularity.

Dolby E Option for embedded Dolby E with 16-channel audio handling, maintains accurate Dolby E audio alignment with Dolby E audio frame rate conversion. 16-Channel audio model also available without Dolby E.

Fovea-F1
Motion Compensated HD/SD Frame Rate Converter
Broadcast Grade Standards Conversion & Optional Dolby E & Frame Synchronizer

- MEMC Motion Compensated Frame Rate Conversion
- Real-time content adaptive MEMC algorithm combines Phase Plane Correlation, Block Matching Motion Estimation and Global Motion Estimation
- Video and Film Processing with Cadence Preserve/Remove/Adjust
- Up to 16 Field/Frame Aperture for accurate processing of complex content
- Wide Range of MEMC Presets for easy use with most common content
- Perfect for demanding content such as Sports, Action, Music Promos and Commercials. Super-high-end performance at mid-market price
- Dolby E Audio Frame Rate Conversion and 16-Channel Audio Options
  - Converts between all common broadcast and film frame rates, also inputs computer graphics
  - Aspect Ratio Conversion & Pan/Zoom/Tilt/Trim, Logo Insertion & Safe Area Markers
  - MEMC Keep-Out Zone Definition and MEMC Demo Mode
  - Closed Caption support, HD CEA708 & SD CEA608 formats, VITC/LTC Embedded Timecode support
  - Frame Synchronizer, Genlock to Digital or Analog house sync, Audio Embed & De-Embed, Audio Delay Correction
  - Inputs: 3G-SDI, YPbPr, DVI, HDMI, Composite, S-Video and RGBHV/VGA
  - Outputs: 3G-SDI, YPbPr, DVI/HDMI
  - Per Pixel Motion Adaptive Temporal/Film Noise Filtering HD & SD, MPEG2 Codec Noise Reduction for SD
  - System control via a front panel LCD menu controlled using rugged front panel keys with built-in status indication.
  - Webserver remote control via TCP/IP, integrate with third-party control systems via TCP/IP or RS232 using API.
  - Dual-redundant power supply for provision of two power feeds in live-on-air applications.
**Fovea-F1**

Motion Compensated HD/SD Frame Rate Converter

Broadcast Grade Standards Conversion & Optional Dolby E & Frame Synchronizer

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**Inputs**
- 2x 3G-SDI with automatic cable EQ, (HD-SDI & SD-SDI compatible) with embedded audio capability for 3G, HD & SD
- 1x HDMI with audio & deep color, HDCP compatible
- 1x DVI-D, HDCP compatible
- 1x VGA Analog graphics via 5 BNCs supports RGBHV & RGsB
- 2x Composite Video via BNC (NTSC/PAL/SECAM)
- 1x S-Video via 2x BNC (NTSC/PAL/SECAM)

**Outputs**
- 1x 3G-SDI (HD-SDI/SD-SDI compatible) with embedded audio for 3G, HD & SD
- 1x DVI-D, HDCP compatible, HDMI deep color capable, dual-function output automatically switches between DVI or HDMI to suit device connected to output
- 1x Component Analog YPbPr via BNCs (standard audio)
- 4x AES 48KHz digital audio pairs via BNCs (standard audio)
- 8x AES 48KHz digital audio pairs video BNCs (with Dolby E or 16-CH option)

**Genlock**
- 2x Dedicated genlock inputs:
- 1x 3G-SDI (HD-SDI compatible) with active loop-through
- 1x Analog tri-level or bi-level sync or black & burst

**Video Input & Output Formats**
- Input and Output: 480i, 576i, 720p50/59.94/60, 1080i50/59.94/60, 1080p23.97/24/25/30/50/59.94/60, 1080psf23.97/24/25.
- Video Input: 2Kp23.97/24/25/30/50/59.94/60, 1080p23.97/24/25/30/50/59.94/60, 1080psf23.97/24/25.

**Computer Graphics Input Formats**
- 640x480, 800x600, 852x480, 853x480, 1024x600, 1024x768, 1280x720, 1280x768, 1360x768, 1365x768, 1366x768, 1400x768, 1440x900, 1440x1080, 1600x900, 1600x1080, 1600x1200, 2048x1080

**Modes of Operation**
- (1) MEMC Standards Conversions with image enhancement processing and filtering
- (2) Motion Adaptive mode for format conversion without frame rate conversion
- (3) With Dolby E option – Dolby E audio frame rate conversion

**Controls**
- Front panel controls with character LCD display and programmable input select keys
- Lockable keypad for live-on-air use
- Webserver for remote control via TCP/IP
- API-based remote control via RS232 serial port or TCP/IP
- USB port for firmware update

**Signal Paths**
- 10-bit 3G/HD-SDI 10-bit ADCs for composite, S-Video
- 12-bit ADCs for component & VGA video
- 8/10/12-bit HDMI, 8-bit DVI support
- All video buses are 10 bit, internal processing up to 16 bit as required by each process.

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