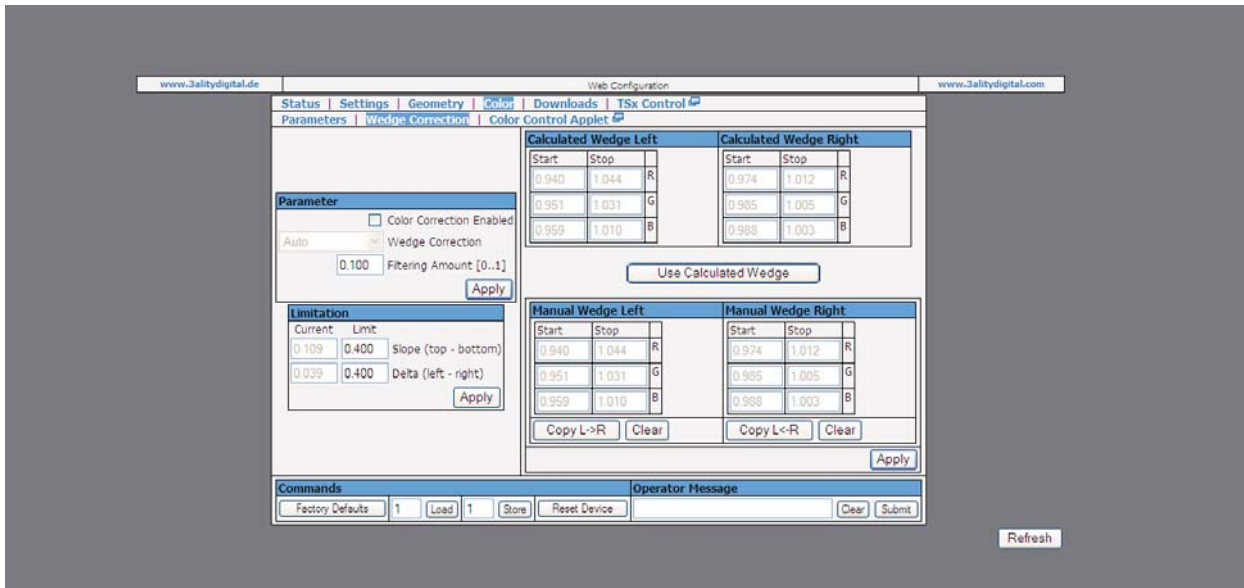


The SIP2100 Stereo Image Processor



SIP2100 STEREO IMAGE PROCESSOR

The SIP2100 stereo image processor is designed and built by 3ality Digital, a pioneer of modern stereoscopic production, and responsible for ground-breaking projects such as the critically-acclaimed digital 3D movie “U2 3D”. The SIP2100 is a distillation of 3ality Digital’s extensive, real-world stereoscopic image correction expertise – a system for post production that can analyse stereo content, correct faults and help create technically perfect Stereo3D.



The SIP2100 has applications right throughout the production chain – in acquisition, editing and deliverables. The result is better stereo, faster and cheaper – a major step forward in speeding the widespread adoption of Stereo3D in post and broadcast.

The SIP2100 has tools for handling geometric, color, dimensionalisation and sync issues that can occur in newly created or legacy stereo content. Users can quickly and easily identify and fix problems, make artistic decisions and create versions suitable for different delivery requirements, in a fraction of the time that might otherwise be required.

At the heart of the 3flex SIP2100 are sophisticated algorithms running on powerful hardware which can analyse and correct real time stereo HDSDI signals without rendering. The SIP2100’s realtime operation allows it to be used in the widest range of post and broadcast applications.

SIP2100
web interface



SIP 2100 KEY FEATURES

Analysis

- Signal format
- Signal timing
- Synchronization
- Alignment
- Zoom
- Rotation
- Vergence
- Focus
- Geometry
- Disparity
- 3D quality
- Color-wedge
- Global color match

Processing

- Image flip
- Image mirror
- Horizontal pre-shift
- Vertical alignment
- Color matching
- Color filtering
- De-bayering (3x3, 5x5, 7x7)
- 3D geometry assurance

Testing/Monitoring

- Frame grabber
- Frame freeze
- Test patterns
- Scopes (Waveform, Vectorscope)
- Reticules (Cross, Box, Ruler, Verticals)
- Mismatch warnings (Disparity, Alignment, Color, Focus)

Views

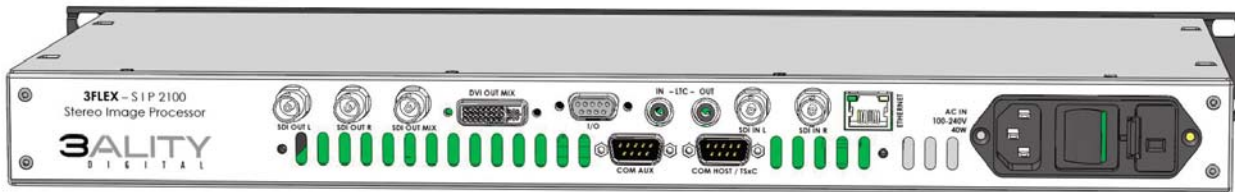
- Calculated (Average, YCbCr Difference, Luma Difference, Chroma Difference)
- Split screen views (Horizontal, Vertical and Checkerboard)
- Stereoscopic (Anaglyph, Flicker, Display Specific)
- Depth range and safe region advice
- Interocular / Convergence advice

Formats

- 1080P/PsF (23.98, 24, 25, 29.97, 30)
- 1080i (50, 59.94, 60)
- 720p (50, 60)

Other

- Manage safe Interocular and Convergence ranges of all cameras
- Metadata consolidation, embedding, timecode synchronization
- Mux/ Demux



SIP2100 HARDWARE SPECIFICATION

Video Processing Chain:

Color Space: YCbCr 4:2:2 – SMPTE 274m –ITU-R BT.709
 Pipeline Bit width: 10 bit per color channel, 20bit total

Geometry Analyzer:

Total Disparity Range: X: ± 63 pixel
 Y: ± 16 lines
 Detectable Height Misalignment: ± 16 lines, if no other geometric misalignment
 Detectable Rotation Misalignment: $\pm 1^\circ$ around image center, if no other geometric misalignment
 Detectable Zoom Mismatch: $\pm 2.5\%$, if no other geometric misalignment
 Detectable Keystoning Angle: $\pm 1^\circ$, if no other geometric misalignment
 Detectable Depth Disparity: 6.5% of the screen width, if no geometric misalignment

Image Alignment:

Y Alignment Range : ± 32 pixel, symmetrical
 X Pre-shift Range: ± 256 pixel, symmetrical

Wedge Corrector:

Colorspace: YCbCr
 Correction method: Between image top and bottom linearly interpolated matrix(3x3)+(1x3) for each (L/R) image
 Gain range: ± 2
 Input Bit width: 10
 Output Bit width: 10
 Coefficient Bit width: 12 (2 integer, 10 fractional)

Match and Artistic Color Corrector:

Colorspace: YCbCr
 Correction method: Matrix (3x3)+(1x3) for each (L/R) image
 Maximum gain: ± 4
 Input Bit width: 10
 Output Bit width: 10
 Coefficient Bit width: 16 (3 integer, 13 fractional)

Non-Linear 1D-LUT (Gamma):

Colorspace: YCbCr
 Correction method: 1D LUT
 Input Bit width: 10
 Output Bit width: 10

Connectors and Interfaces:

HD-SDI video inputs

Standard: 1.485 GBit/s SMPTE292M, SMPTE274M, SMPTE296M – 1080i/60, 1080i/59.94, 1080i/50, 1080p/30sF, 1080p/29.97sF, 1080p/25sF, 1080p/24sF, 1080p/23.98sF, 1080p/30, 1080p/29.97, 1080p/25, 1080p/24, 1080p/23.98, (720p/60, 720p/59.94, 720p/50)
 Connector: BNC (female), 75 Ω
 Input Equalization: Yes

HD-SDI video outputs

Standard: Same as input
 Outputs: Two video data streams
 One view/mix data stream
 Connector: BNC (female), 75 Ω
 Signal Voltage Swing: 750 ... 850 mV
 DC Offset: AC-coupled output

DVI-Out

Standard: DDWG DVI 1.0 Spec. DVI-D (digital interface support only) Only displays with 1920x1080x60fps or 1920x1200x60fps are supported
 Outputs: Mixed data (Left / Right / Overlay)
 Connector: DVI

Ethernet

Standard: 100MBit/s (IEEE802.3 100BaseT)
 Connector: RJ45

Dimensions:

1RU (19" w x 1.75" h x 20" d)

Weight:

2.5kg (approx)

Power

Input voltage: 100-240VAC @ 47-63Hz
 Load: 15W nom. / 40W max.

Quantel reserves the right to alter specifications without notice. Please contact your local Quantel office for details of current specifications.

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