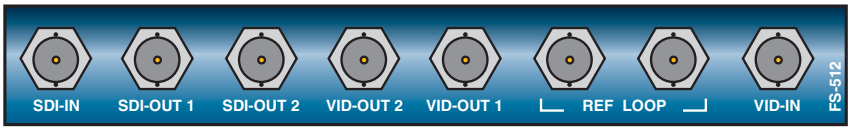
FS-512

Video Decoder/Synchronizer

The perfect pre-processing solution for applications that require the highest quality video decoding

Key Features

- Synchronize analog or digital source
- QuadraComb™ decoding
- Digital Proc Amp
- Test Pattern Generator
- VITS Generator/Inserter
- Pass or mask data in the VBI
- Exceptional noise immunity
- Freeze Frame or Field
- Time Base Correction
- Video AGC
- NTSC or PAL Operable
- Embed or de-embed audio when paired with DAS-441A
- Lip-sync correction when paired with DAS-441A



FS-512 Connector View

The FS-512 synchronizes analog or digital video signals to a video reference and provides two SDI outputs and two analog outputs from the selected input. Operable in NTSC/525 or PAL/625 mode, it provides world class decoding of composite analog to SDI, never before possible.

QuadraComb™, the industry's first 4-D digital comb filter

QuadraComb™ goes beyond 3-D digital comb filters by applying additional spatial and temporal error detectors. The resulting information provides better control of the comb filter and drives comb filter processing. This dynamic logic in QuadraComb™ eliminates problems inherent in 3-D combing. Cross-color and hanging dot artifacts are greatly reduced beyond other techniques, retaining the finest details and textures normally lost by other comb filters.

Advanced features included are VITS generation/insertion, add/remove setup, full frame test patterns, time base correction, video AGC and hot switch. A unique, undecoded analog output is selectable, which bypasses the decode/re-encode process entirely, providing composite digital synchronization in parallel with the decoded component digital outputs.

When paired with a DAS-441A audio synchronizer, the combination can provide audio embedding and lip-sync correction.

FS-512 SPECIFICATIONS

Video Inputs

Composite analog (BNC)	1 V p-p into 75 Ω
Sampling & processing	12 bits at 27 MHz
Analog return loss	> 40 dB to 5.75 MHz
SDI (BNC)	SMPTE 259M-C
SDI return loss	> 19 dB to 270 MHz

The composite analog input can be relay bypassed to Composite Out #1

Video Outputs

Composite Analog (2x BNC)	1 V p-p into 75 Ω
Analog return loss	> 40 dB to 5.75 MHz
SDI (2x BNC)	SMPTE 259M-C
Output SDI clock jitter	< 700 pS p-p (wide band, 10 Hz high pass filter)
SDI return loss	> 19 dB to 270 MHz

A TTL level audio delay control pulse can be jumpered to replace Composite Output #2 or SDI Output #2

Genlock Reference

Composite analog (2x BNC)	1 V p-p (looping input)
Return loss	> 40 dB to 5.75 MHz

Noise Handling

The input sync separator and clock generator will capture and maintain lock with noisy inputs that approach 0 dB S/N ratio.

Input Loss Modes

Pass bad video; Cut-to-black; Freeze last good field or Freeze last good field then timeout to black.

Performance

Signal to Noise Ratio	> 64 dB (Unweighted luminance)
Luminance Freq. Response	± 0.05 dB to 5.5 MHz
TBC mode	+ 0.05/-1.15 dB to 4.0 MHz,
	- 0.35 dB at 5.0 MHz
Differential Gain	< 0.5 %
Differential Phase	< 0.5 °
K factor (2T)	< 0.5 %
TBC mode	< 1 %

Output Timing

H Phase	Infinitely variable
V Phase	Infinitely variable
Residual TBC jitter	< ± 3 nS

Proc Amp Controls

Video Gain	± 6 dB
Black Level	± 100 mV (14 IRE)
Chroma Gain	± 6 dB
Hue	± 45 °

Independent proc amp settings are stored for the Composite and SDI inputs

Environmental and Mechanical

Power consumption	12 W
Operating temperature	0 °C to +45 °C
Humidity	10 % to 95 %, non-condensing
Card Dimensions	6.0" x 9.4" (15.2 cm x 23.9 cm)

Cards require installation in Integrity system frames sold separately

FRM-301	(1RU)	1.75" H x 19.0" W x 17.0" D
FRM-304	(4RU)	7.0" H x 19.0" W x 21.0" D

CAD drawings to aid system designers are available on request.