

# FS-415

## SDI Video Synchronizer

Value Priced SDI Synchronization,  
Legalization & Embedding

### Key Features

- Synchronize SMPTE 259M sources
- Digital proc amp
- Reference quality test pattern generator
- VITS inserter
- Freeze Frame or Field
- Embed or De-embed when paired with DAS-441A
- Provides perfect lip-sync when paired with DAS-441A



FS-415  
Connector  
View

The FS-415 provides high quality SDI video synchronization, legalization and audio embedding for applications where analog I/O is not required.

The FS-415 SDI Video Synchronizer is a modular card for Integrity™ system frames, which accepts one SDI input and produces a synchronized serial digital video output with video legalization. When paired with a DAS-441A Audio Synchronizer, it de-embeds and embeds one group of four-channel audio. This product provides an affordable solution for synchronizing microwave or satellite receivers which generate a SMPTE 259M-C digital output. The FS-415 includes advanced features like line-by-line VITS generation, multiple hot switch modes, and an advanced video legalizer. The Perfect-Palette™ Legalizer corrects illegal colors without creating a hue shift, by proportionally adjusting R-Y and B-Y gain together.

A reference quality test pattern may be selected as the synchronizer output to aid in testing and normalizing levels of equipment

in the downstream path. Outputs are downstream of a video processing amplifier, which provides user adjustments of Gain, Black, Chroma and Hue (Hue in NTSC only). The FS-415 provides precise audio delay steering data to an Integrity DAS-441A audio card for perfect lip-sync of AES3 or analog audio. All user adjustments are under menu control from any Integrity system control panel. Each card may be configured by the user to operate in either NTSC/525 or PAL/625 mode.

The FS-415 modular card can be combined with other Integrity system frames, cards and control panels for compact installation in both mobile and fixed applications.

**integrity**

PERFECT SIGNAL  
IDEAL CONTROL  
CLEAR VALUE



## FS-415 SPECIFICATIONS

### Video Input

SDI (BNC)	SMPTE 259M-C
SDI return loss	> 19 dB to 270 MHz

### Video Outputs

SDI (2x BNC)	SMPTE 259M-C
Output SDI clock jitter	< 300 pS p-p
SDI return loss	> 19 dB to 270 MHz

### Performance

Signal to Noise Ratio	> 64 dB (Unweighted Luma)
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### Genlock Reference

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

### Input Loss Modes

Pass input; Cut-to-black; Freeze last good field or Timeout (Freeze last good field then timeout and cut-to-black)

### Output Timing

H Phase	Infinitely variable
V Phase	Infinitely variable

### Proc Amp Controls

Video Gain	$\pm 6$ dB
Black Level	$\pm 100$ mV (14 IRE)
Chroma Gain	$\pm 6$ dB
Hue	$\pm 45^\circ$

### Environmental and Mechanical

Power consumption	11 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)
<i>Cards require installation in Integrity system frames sold separately</i>	
FRM-301 (1RU) frame	1.75" x 19.0" x 17.0"
FRM-304 (4RU) frame	7.0" x 19.0" x 21.0"

CAD drawings to aid system designers are available on request.

