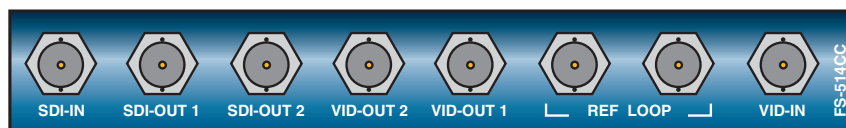


FS-514CC

Video Synchronizer with Legalizer and Color Corrector

Key Features

- Synchronizes one source— analog or digital
- Composite analog and SDI inputs and outputs
- Clean, quiet composite to SDI decoding and SDI synchronizing with Auto-TBC
- Coring & averaging noise reduction filters
- 12-bit input processing for transparency and improved signal-to-noise
- Perfect-Palette Video Legalizer and RGB Color Corrector
- Proc amp controls
- Built-in test signal generator
- Built-in VITS Inserter
- NTSC/525 or PAL/625 switchable
- Companion DAS-441 card (optional) for automatic lip sync correction, audio A/D and D/A conversion
- Companion DAS-441 card (optional) for de-embed from SDI source and/or embed into SDI outputs



FS-514CC
Connector
View

Synchronizer. Decoder. Encoder. Legalizer. Color-Corrector. Pair it with the DAS-441A and it's also an audio embedder. Switch between PAL and NTSC via the user menu.

The SDI synchronizer accepts an SDI input or uses Fortel DTV's proprietary 12-bit adaptive QuadraComb™ comb filter to decode the composite input and generate the SDI output. This decoder generates a cleaner, more accurate SDI signal by eliminating quantizing errors and unwanted comb artifacts. Dual Band Processing and Dynamic Threshold Modification preserve luminance detail and reduce chroma crawl and false chroma. In analog-to-SDI conversion applications, the DUPLEX feature allows the card to utilize the SDI input and analog outputs as a separate converter—intended for wrap-around applications such as the input and output of a digital island. With duplex off, one selected input (analog or digital) is the source for the two analog and two digital outputs, post synchronization.

Its Perfect-Palette™ Legalizer fixes out-of-range colors better by first analyzing “what it was supposed to be” and then correctly adapting each pixel to a legal value without causing a hue shift while minimizing clipping effects. Independent settings for RGB, Luminance and Composite thresholds.

The built-in Color Corrector provides digital adjustments for White Balance, Gamma Balance and Black Balance plus Black Stretch in both RGB and composite modes. The color corrector is upstream of the legalizer, assuring that illegal colors will not be produced by user adjustments.

The FS-514CC modular card can be combined with other Integrity system frames, cards and control panels for compact installation in both mobile and fixed applications.

FS-514CC SPECIFICATIONS

Video Inputs

Composite Analog (BNC)	1V 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 may be relay bypassed to Composite out #1

Video Outputs

Composite Analog (2x BNC)	1V p-p into 75 Ω
Analog return loss	>40 dB to 5.75 MHz
SDI (2x BNC)	SMPTE 259M-C
Output SDI clock jitter	<740 pS p-p (wideband, 10 Hz highpass 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)	1V 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; Kill all outputs; 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	\pm 0.1 dB to 5.5 MHz
LFR in TBC ON mode	+0.1/-0.5 dB to 4.5 MHz
Differential Gain	<0.5%
Differential Phase	<0.5°
K Factor (2T)	<0.3%
K Factor in TBC ON mode	<1%

Output Timing

H Phase	Infinitely variable
V Phase	Infinitely variable
Residual TBC jitter	< \pm 3nS

Proc Amp Controls

Video Gain	\pm 6 dB
Black Level	\pm 200 mV (20 IRE)
Chroma Gain	\pm 6 dB
Hue (NTSC only)	0–360°

Independent proc amp settings are stored for Composite and SDI inputs

Environmental & 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" x 19.0" x 17.0"
FRM-304 (4RU)	7.0" x 19.0" x 21.0"

CAD drawings to aid system designers are available on request.