



SABER Series Media Converters



3G SABER Media Converter

Partners in Broadcast, Telecom & Satellite Solutions

Small Form-Factor Pluggable (SFP)

SABER[®] Media Converter



The new AVP Active product family combines the requirements of Media, Broadcast & Outdoor Broadcast/Truck applications in a compact and solid platform.

It performs to the highest industry specifications utilizing the latest advanced Small Form-Factor Pluggable (SFP) technology. The SABER features 2 independent SFP paths and incorporates internal power (locking) for reliance and dependability. This simple 2 path design allows for integration into virtually any facility or platform, from Media to Broadcast to Outdoor Broadcast/Truck based designs.

Features:

- Utilizes latest SFP (Small Form Pluggable) Technology
- Full support up to, and including 3G signals
- Embedded audio support (depending upon SFP installed)
- Up to 4 Totally INDEPENDENT signal Paths
- Locking Power Supply for confidence
- Made in North America
- Rack Mountable (January 2013)



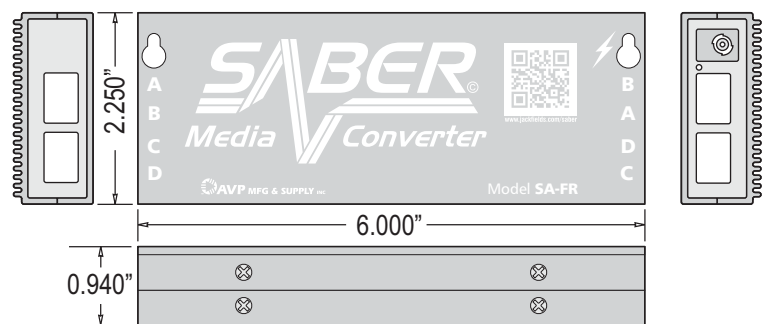
Applications Include:

- Broadcast Facilities
- Outdoor Broadcast Applications
- Camera Applications
- Remote Applications

Types of Signal Processing offered on the SABER Platform

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HDMI to Fiber (1310)	5
HDMI to Copper (1694/1855)	5
DVI to Fiber	5
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Optical to Electrical (O/E up to 3G per path)	6
Electrical to Optical (O/E up to 3G per path)	6
Digital to Analog SDi Decoding over Fiber (1310)	7
Digital to Analog SDi Decoding over Copper (1694/1855)	7
Analog SDi to Digital Encoding over Fiber (1310)	8
Analog SDi to Digital Encoding over Copper (1694/1855)	8
OR any combination of the above processing	

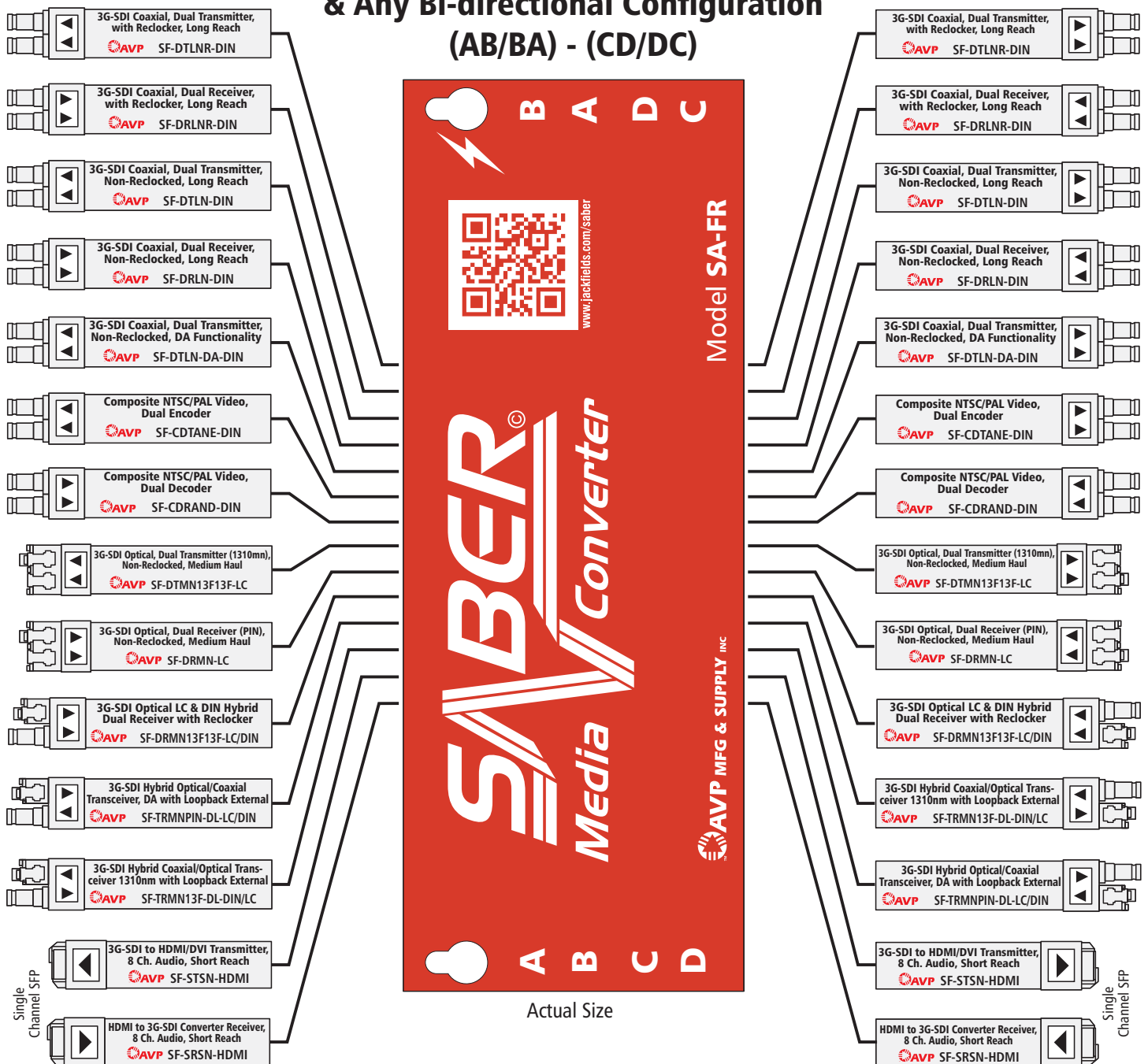
Note: HDMI & DVI SFPs are SINGLE signal path. All other SFPs are DUAL paths.



System	
Density:	SABER holds up to 4 independent SFP modules
Impedance:	75W
Connectors Supported:	DIN 1.0/2.3, HDBNC, LC Optical & HDMI/DVI
Physical	
Dimensions:	6.000"W x 2.250"D x 0.940"H
SFP Module Capacity:	Up to 4 AVP SFP modules including Dual TX and Dual RX
Status Indicator OK:	Green LED
Electrical	
Power Supply Configuration:	Single External Supply
Voltage:	DC Input 9-32VDC
Max Power Dissipation:	12 Watts (fully loaded)
Note:	Power consumption dependent on SFP type
External Power Supply Brick	
AC Mains Input:	Auto Ranging, 90-264VAC, 50/60Hz
Number of outputs:	1
Output Voltage:	24VDC@0.75A
Warranty	
Warranty:	One year, date of shipment from AVP

SABER Offers Total Signal Processing

Flexibility from
Left to Right & Right to Left
& Any Bi-directional Configuration
(AB/BA) - (CD/DC)



*HDBNC interface available

(SPF modules sold separately)





SDI SFP COAXIAL DUAL TRANSMITTER WITH RECLOCKER, NON-MSA, DIN 1.0/2.3

The SF-DTLNR Series is an electrical SFP Dual Transmitter with Reclocker module designed to transmit two reclocked SDI signals up to 2.97Gbps over 75Ω coaxial cables via Din 1.0/2.3 connectors. Cable Driver slew rates is automatically configured in order to achieve compliance to SMPTE 424M/SMPTE 292M and SMPTE 259M. By suppressing accumulated jitter, each reclocker procures optimal output jitter performance.



SDI SFP COAXIAL DUAL TRANSMITTER, NON-RECLOCKED, NON-MSA, DIN 1.0/2.3

The SF-DTLN Series is an electrical SFP Dual Transmitter module designed to transmit two SDI signals up to 2.97Gbps over 75Ω coaxial cables via Din 1.0/2.3 connectors. Cable Driver slew rates is automatically configured in order to achieve compliance to SMPTE 424M/SMPTE 292M and SMPTE 259M.



SDI SFP COAXIAL DUAL RECEIVER WITH RECLOCKER, NON-MSA, DIN 1.0/2.3

The SF-DRLNR Series is an electrical SFP Dual Receiver with Reclocker module designed to receive two SDI signals up to 2.97Gbps over 75Ω coaxial cables via Din 1.0/2.3 connectors. Equalizer features DC restoration to compensate for the DC content of SMPTE pathological test patterns. By suppressing accumulated jitter, each Reclocker procures predictable cable length on every system.



SDI SFP COAXIAL DUAL RECEIVER, NON-RECLOCKED, NON-MSA, DIN 1.0/2.3

The SF-DRLN Series is an electrical SFP Dual Receiver module designed to receive two SDI signals up to 2.97Gbps over 75Ω coaxial cables via Din 1.0/2.3 connectors. Equalizer features DC restoration to compensate for the DC content of SMPTE pathological test patterns.



COMPOSITE NTSC/PAL VIDEO SFP DUAL ENCODER, NON-MSA, DIN 1.0/2.3

The (NTSC PAL codec SFP) SF-CDTANE-DIN is an electrical SFP dual transmitter module designed to encode two video composite (CVBS) over 75Ω coaxial cables via DIN connectors. The module encodes the SD-SDI signal to NTSC or PAL composite output.



3G-SDI SFP HYBRID OPTICAL/COAXIAL TRANSCEIVER, MEDIUM HAUL, (PIN), NON-MSA, DA WITH LOOPBACK EXTERNAL, LC/DIN 1.0/2.3 CONNECTORS

The SF-TRMNPIN-DL-Series is a hybrid SFP distribution amplifier module designed to receive SDI signals up to 2.97Gbps on fiber over single mode fiber (9um/125um) and to transmit a copy over 75Ω coaxial cables via a Din 1.0/2.3 connector. The SF-TRMNPIN-DL-Series contains a PIN photodiode receiver with -21dBm of sensitivity.



ASI/SD/HD/3G-SDI SFP DUAL OPTICAL TRANSMITTER, MEDIUM HAUL, NON-MSA

The SF-DTMN13F13F-LC is an optical SFP dual transmitter 1310nm module designed to transmit two SDI signals up to 2.97Gbps over single mode fiber (9um/125um). The module is carefully designed to accept pathological test patterns. The SF-DTMN13F13F-LC contains two 1310nm Fabry-Perot laser transmitters with optical output power of -1dBm +/- 1dBm.



ASI/SD/HD/3G-SDI SFP DUAL OPTICAL DUAL RECEIVER, MEDIUM HAUL, NON-MSA

The SF-DRMN-LC is an optical SFP dual receiver module designed to receive two SDI signals up to 2.97Gbps over single mode fiber (9um/125um). The module is carefully designed to accept pathological test patterns. The SF-DRMN-LC contains two PIN photodiode receiver with -22dBm of sensitivity with pathological signal.



3G-SDI TO HDMI/DVI TRANSMITTER WITH 8 CHANNEL AUDIO, SHORT REACH, NON-MSA, HDMI TYPE D, with RETENTION CLIP
The SF-STSN-HDMI is an electrical SFP transmitter module designed to convert SDI signals to an HDMI/DVI output (High definition multimedia interface® / Digital Visual Interface) without scaling artifacts. A copy of the reclocked SD/HD/3G-SDI source is loopback to the host. Up to 8 channel of audio is supported and embedded in the HDMI signal.



HDMI to 3G-SDI CONVERTER RECEIVER WITH 8 CHANNEL AUDIO, SHORT REACH, NON-MSA, HDMI TYPE D, with RETENTION CLIP

The SF-SRSN-HDMI is an electrical SFP receiver module designed to convert HDMI to an SDI signal output without scaling artifacts. The SF-SRSN-HDMI can support HDCP by programming a key into it. Up to 8 channel of PCM audio is supported.



COMPOSITE NTSC/PAL VIDEO SFP DUAL DECODER, NON-MSA, DIN 1.0/2.3

The (NTSC PAL codec SFP) SF-CDRAND-DIN is an electrical SFP dual receiver module designed to decode two video composite (CVBS) over 75Ω coaxial cables via DIN connectors. The module decodes NTSC or PAL composite inputs and convert to SD-SDI signal.



3G-SDI SFP HYBRID COAXIAL/OPTICAL TRANSCEIVER, MEDIUM HAUL, 1310NM, NON-MSA, DA WITH LOOPBACK EXTERNAL, DIN 1.0/2.3/LC CONNECTORS

The SF-TRMN13F-DL Series is a hybrid SFP distribution amplifier module designed to receive SDI signals up to 2.97Gbps over 75Ω coaxial cables via Din 1.0/2.3 connectors, transmit a copy on fiber over single mode fiber (9um/125um). The equalizer features DC restoration to compensate for the DC content of SMPTE pathological test patterns. The SF-TRMN13F-DL Series also contains a 1310nm Fabry-Perot laser transmitter with optical output power of -2dBm.

SABER Series, advanced Small Form-Factor Pluggable (SFP) technology components

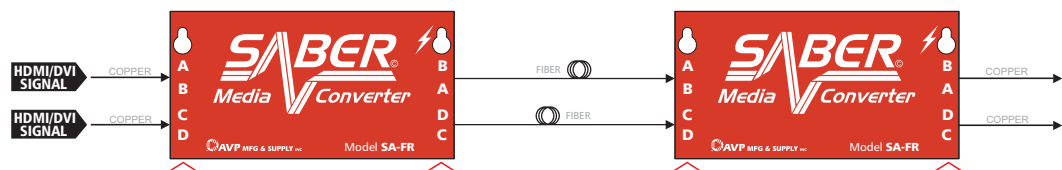


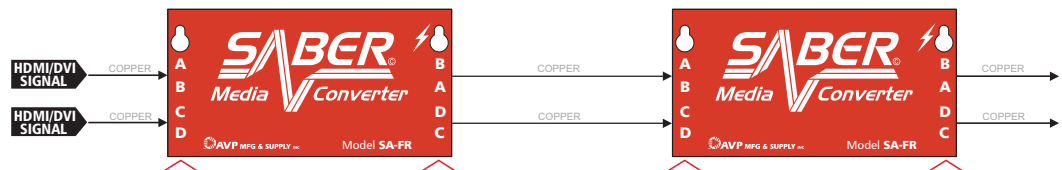
Signal Type	Model	Description
HDMI	SA-FR	SABER Series Enclosure, anodized, with 4 SFP Internal Cages, Power Status LED, Power Supply required, use SA-PS-NA or SA-PS-EU; (SFP modules sold separately)
	SA-PS-NA	Power Supply Unit, North American Adaptor Type for SABER Series
	SA-PS-EU	Power Supply Unit, with European & Global Power Supply Adaptors for SABER Series
	SA-MF18E2-Z	2RU, Multi-Frame Rackmount Enclosure, empty, holds up to 18 SABER Modules, includes one External Single Power Supply, MF-RPS-xx*
	SA-MFK	SABER Kit, Power Status LED, includes mounting plates, for use with 2RU Multi-Frame SA-MF18E2-Z; (SFP modules sold separately)
	MF-RPS-xx*	Redundant External Power Supply for use with SA-MF18E2-Z
		* Add: -NA (North America), -EU (Europe), -UK (United Kingdom), -JP (Japan), -AU (Australia) or -CN (China), to end of power supply Model Number for your respective region IEC320 C14 Grounded Power Cord.
	SA-FC	SABER Field Case, watertight, air tight, crushproof, chemical resistant, holds up to 8 SABERs, assorted SFPs, Conversion Cables. Customer specific
	SF-STSN-HDMI	HDMI/DVI SFP Transmitter with 8CH audio, Short Reach, Non-MSA, HDMI type D Connectors
	SF-SRSN-HDMI	HDMI SFP Receiver with 8CH audio, Short Reach, Non-MSA, HDMI type D Connectors
Coaxial*	SF-DTLNR-DIN	3G-SDI SFP Coaxial, Dual Transmitter with Reclocker, Long reach, Non-MSA, DIN 1.0/2.3 Connectors
	SF-DRLNR-DIN	3G-SDI SFP Coaxial, Dual Receiver with Reclocker, Long reach, Non-MSA, DIN 1.0/2.3 Connectors
	SF-DTLN-DIN	3G-SDI SFP Coaxial, Dual Transmitter, Long reach, Non-Reclocked, Non-MSA, DIN 1.0/2.3 Connectors
	SF-DRLN-DIN	3G-SDI SFP Coaxial, Dual Receiver, Long reach, Non-Reclocked, Non-MSA, DIN 1.0/2.3 Connectors
Transceiver & DA*	SF-TRLNR-DIN	3G-SDI SFP Coaxial, Transceiver, with Reclocker, Long Reach, Non-MSA, DIN 1.0/2.3 Connectors
	SF-TRLN-DIN	3G-SDI SFP Coaxial, Transceiver, Long Reach, Non-MSA, Non-Reclocked, DIN 1.0/2.3 Connectors
	SF-DTLN-DA-DIN	3G-SDI SFP Coaxial, Dual Transmitter, Non-Reclocked. DA functionality. Non-MSA, DIN 1.0/2.3 Connectors
	SF-TRMNPIN-DL-LC/DIN	3G-SDI SFP Hybrid Optical/Coaxial Transceiver, Medium Haul, (PIN), Non-MSA, DA with Loopback External, LC/DIN 1.0/2.3
Analog*	SF-TRMN13F-DL-DIN/LC	3G-SDI SFP Hybrid Coaxial/Optical Transceiver, Medium Haul, 1310nm, Non-MSA, DA with Loopback External, DIN 1.0/2.3/LC Connectors
	SF-CDTANE-DIN	Composite NTSC/PAL Video SFP Dual Encoder Non-MSA, DIN 1.0/2.3 Connectors
	SF-CDRAND-DIN	Composite NTSC/PAL Video SFP Dual Decoder, Non-MSA, DIN 1.0/2.3 Connectors
Fiber	SF-DTMN13F13F-LC	3G-SDI SFP Optical, Dual Transmitter (1310nm), Non-Reclocked, Medium Haul, Non-MSA, LC Connectors
	SF-DRMN-LC	3G-SDI SFP Optical, Dual Receiver (PIN), Non-Reclocked, Medium Haul, Non-MSA, LC Connectors
Accessories	HMDPC-2M-BLACK-HMA	Cable, HDMI type D Plug to HDMI type A Plug, black, 2meters
	HMDPC-4M-BLACK-HMA	Cable, HDMI type D Plug to HDMI type A Plug, black, 4meters
	HMDPC-6M-BLACK-HMA	Cable, HDMI type D Plug to HDMI type A Plug, black, 6meters
	HMDPC-2M-BLACK-DV	Cable, HDMI type D Plug to DVI Plug, black, 2meters, for DVI Processing
	HMDPC-4M-BLACK-DV	Cable, HDMI type D Plug to DVI Plug, black, 4meters, for DVI Processing
	D12PC-1-BLACK-BN	Cable, DIN 1.0/2.3/LC Plug (M) to BNC Jack (F), 1 foot, black, Belden 1855A
	D12PC-2-BLACK-BN	Cable, DIN 1.0/2.3/LC Plug (M) to BNC Jack (F), 2 feet, black, Belden 1855A

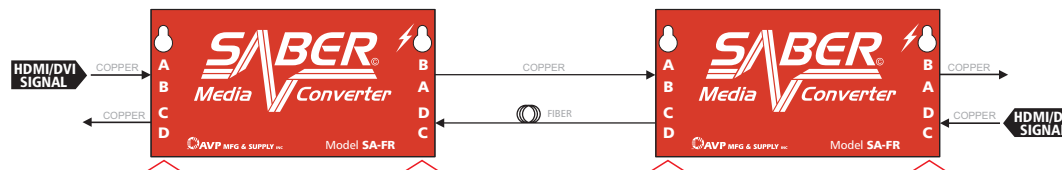
*HDBNC interface available

HDMI/DVI to Optical or Electrical Conversion

These packaged configurations for SABER will allow for the processing of up to 2 HDMI/DVI signals, one way or bi-directional, over copper and/or fiber depending on your specific needs. SABER allows for total flexibility in signal processing. SABER fully supports signals up to and including 3G (SMPTE 424M). Specific HDMI/DVI cables are needed for individual applications.

FIBER DUAL PATH (ONE WAY, LEFT TO RIGHT, OR RIGHT TO LEFT)				SK-M2O
				Kit consists of: SA-FR x2 SA-PS-NA x2 SF-SRSN-HDMI x2 SF-STSN-HDMI x2 SF-DTMN-13F13F-LC x2 SF-DRMN-LC x2 HMDPC-4M-BLACK-HMA x4
HDMI/DVI SIGNAL COPPER A B C D SF-SRSN-HDMI SF-SRSN-HDMI	A/B C/D SF-DTMN13F13F-LC SF-DTMN13F13F-LC	A/B C/D SF-DRMN-LC SF-DRMN-LC	B/A D/C SF-STSN-HDMI SF-STSN-HDMI	

COPPER DUAL PATH (ONE WAY, LEFT TO RIGHT, OR RIGHT TO LEFT)				SK-M2E-D
				Kit consists of: SA-FR x2 SA-PS-NA x2 SF-SRSN-HDMI x2 SF-STSN-HDMI x2 SF-DTLNR-DIN x2 SF-DRLNR-DIN x2 HMDPC-4M-BLACK-HMA x4
HDMI/DVI SIGNAL COPPER A B C D SF-SRSN-HDMI SF-SRSN-HDMI	A/B C/D SF-DTLNR-DIN SF-DTLNR-DIN	A/B C/D SF-DRLNR-DIN SF-DRLNR-DIN	B/A D/C SF-STSN-HDMI SF-STSN-HDMI	

BI-DIRECTIONAL HYBRID (COPPER & FIBER)				SK-M2E-M2O-D
				Kit consists of: SA-FR x2 SA-PS-NA x2 SF-SRSN-HDMI x2 SF-STSN-HDMI x2 SF-DTLNR-DIN x1 SF-DRLNR-DIN x1 SF-DTMN-13F13F-LC x1 SF-DRMN-LC x1 HMDPC-4M-BLACK-HMA x4
HDMI/DVI SIGNAL COPPER A B C D SF-SRSN-HDMI SF-STSN-HDMI	A/B C/D SF-DTLNR-DIN SF-DRMN-LC	A/B C/D SF-DTMN13F13F-LC SF-DTMN13F13F-LC	B/A D/C SF-STSN-HDMI SF-SRSN-HDMI	

Ordering Information

Kit Type	Model	DIN1.0/2.3 Connectors	Description
HDMI	SK-M2O		SABER Kit, HDMI to Optical (Fiber) Conversion
HDMI		SK-M2E-D	SABER Kit, HDMI to Electrical (Copper) Conversion
HDMI		SK-M2E-M2O-D	SABER Kit, HDMI Bi-Directional Hybrid (Copper & Fiber) Conversion
DVI	SK-V2O		SABER Kit, DVI to Optical (Fiber) Conversion
DVI		SK-V2E-D	SABER Kit, DVI to Electrical (Copper) Conversion
DVI		SK-V2E-M2O-D	SABER Kit, DVI Bi-Directional Hybrid (Copper & Fiber) Conversion
Add -EU to end of Kit Model Number to receive Power Supply Unit, with European & Global PS Adaptors for SABER Series			

*HDBNC interface available



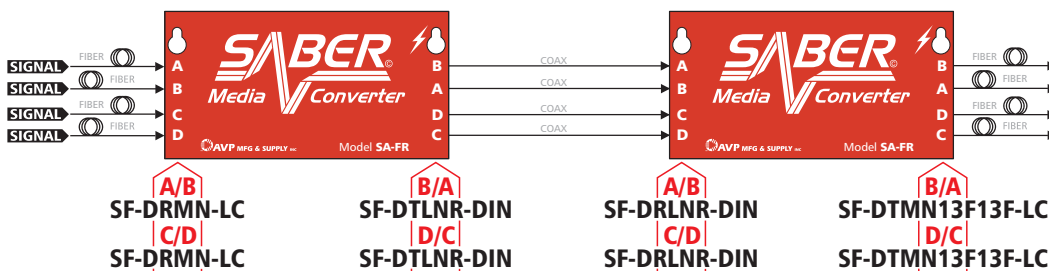
*Supported HDMI Resolutions:

SMPTE 424M 1080p
 1920 x 1080p
 SMPTE 292M 720p
 1280 x 720p
 SMPTE 292M 1080i
 1920 x 1080i 30
 SMPTE 259M 525i
 720 x 486
 SMPTE 259M 625i
 720 x 576

Optical/Electrical up to 3G Conversion

These packaged configurations for SABER will allow for the processing of up to 4 Fiber Signals (single mode) to Electrical (copper), or up to 4 electrical (copper) signals to Fiber (single mode) depending on your specific needs. These signal paths can be either way (Left to Right or Right to Left) within the SABER or bi-directional as needed. SABER allows for total flexibility in signal processing. SABER fully supports signals up to and including 3G (SMPTE 424M).

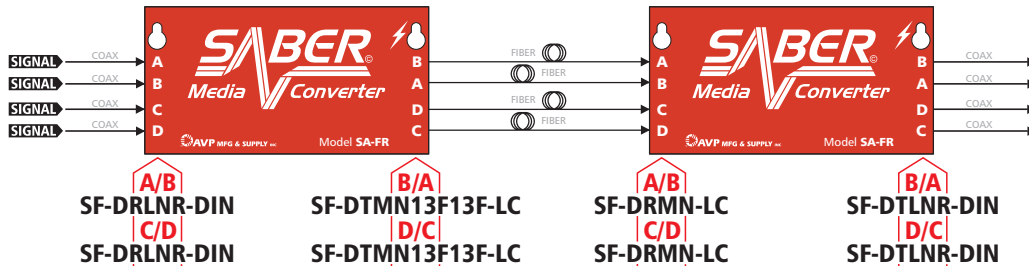
OPTICAL TO ELECTRICAL OVER COPPER



SK-02E-D

Kit consists of:
SA-FR x2
SA-PS-NA x2
SF-DRMN-LC x2
SF-DTMN-13F13F-LC x2
SF-DTLNR-DIN x2
SF-DRLNR-DIN x2

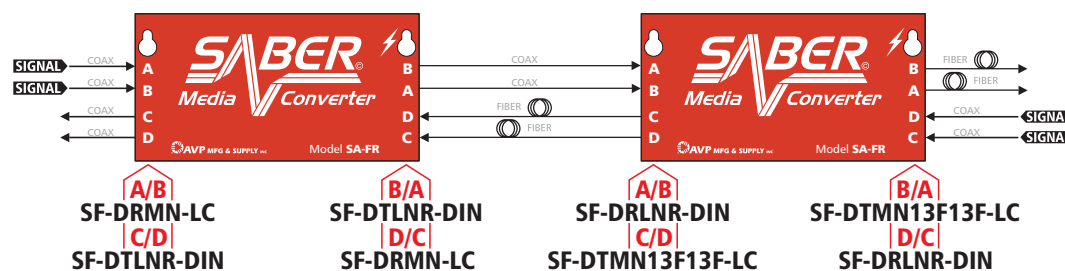
ELECTRICAL TO OPTICAL OVER FIBER



SK-E20-D

Kit consists of:
SA-FR x2
SA-PS-NA x2
SF-DRLNR-DIN x2
SF-DTMN13F13F-LC x2
SF-DRMN-LC x2
SF-DTLNR-DIN x2

BI-DIRECTIONAL OPTICAL TO ELECTRICAL (HYBRID)



SK-02E-02E-D

Kit consists of:
SA-FR x2
SA-PS-NA x2
SF-DRLNR-DIN x2
SF-DTLNR-DIN x2
SF-DTMN-13F13F-LC x2
SF-DRMN-LC x2

Ordering Information

Kit Type	DIN1.0/2.3 Connectors	Description
Optical to Electrical	SK-02E-D	SABER Kit, Optical to Electrical over Copper (Coax) Conversion
Electrical to Optical	SK-E20-D	SABER Kit, Electrical to Optical over Fiber (Optical) Conversion
Hybrid Bi-Directional	SK-02E-02E-D	SABER Kit, Optical to Electrical over Copper & Fiber Bi-Directional Hybrid Conversion

Add -EU to end of Kit Model Number to receive Power Supply Unit, with European & Global PS Adaptors for SABER Series

*HDBNC interface available



Digital to Analog SDI Conversion using Fiber or Copper

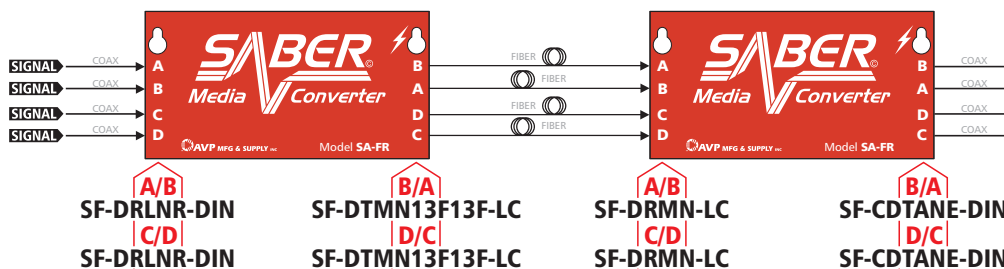
These packaged configurations for SABER will allow for the processing of up to 4 digital to analog conversions with the added functionality of further conversion within the SABER of these signals to either electrical (copper) and/or Fiber (single mode). These signal paths can be either way (Left to Right or Right to Left) within the SABER or bi-directional as needed. SABER allows for total flexibility in signal processing. SABER fully supports signals up to and including 3G (SMPTE 424M).

DIGITAL TO ANALOG OVER FIBER

SK-D2AO-D

Kit consists of:

SA-FR x2
SA-PS-NA x2
SF-CDTANE-DIN x2
SF-DTMN-13F13F-LC x2
SF-DRMN-LC x2
SF-DRLNR-DIN x2

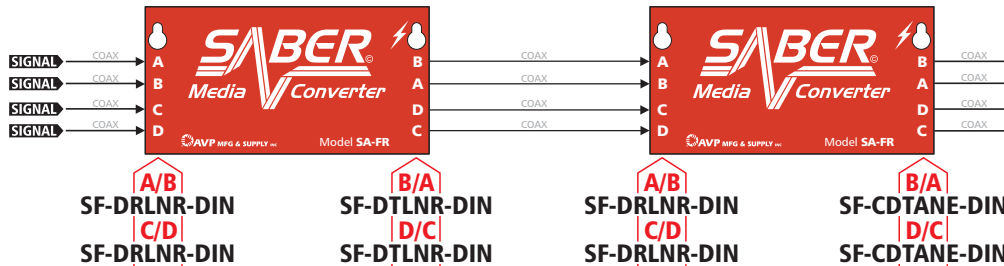


DIGITAL TO ANALOG OVER COPPER

SK-D2AE-D

Kit consists of:

SA-FR x2
SA-PS-NA x2
SF-CDTANE-DIN x2
SF-DTLNR-DIN x2
SF-DRLNR-DIN x4

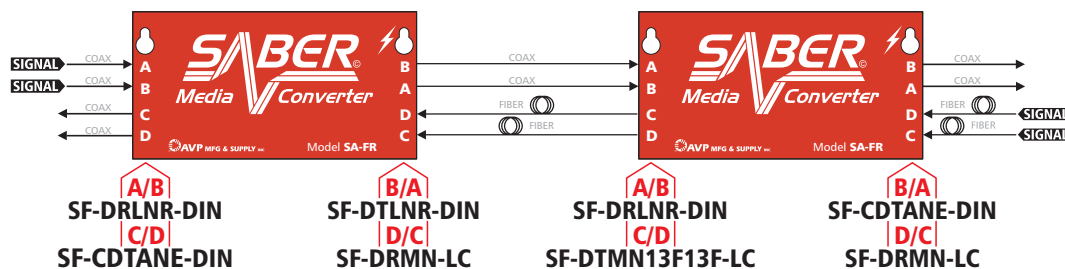


BI-DIRECTIONAL HYBRID DECODER (L to R / R to L) (COPPER & FIBER)

SK-D2AE-D2AO-D

Kit consists of:

SA-FR x2
SA-PS-NA x2
SF-CDTANE-DIN x2
SF-DRLNR-DIN x2
SF-DTLNR-DIN x1
SF-DTMN-13F13F-LC x1
SF-DRMN-LC x2



Ordering Information

Kit Type	DIN1.0/2.3 Connectors	Description
D to A Decoding	SK-D2AO-D SK-D2AE-D SK-D2AE-D2AO-D	SABER Kit, Digital to Analog Decoding over Fiber (Optical) Conversion SABER Kit, Digital to Analog Decoding over Copper (Electrical) Conversion SABER Kit, Digital to Analog Decoding over Copper & Fiber Bi-Directional Conversion
Add -EU to end of Kit Model Number to receive Power Supply Unit, with European & Global PS Adaptors for SABER Series		

*HDBNC interface available





SABER Video Converter

Partners in Broadcast, Telecom & Satellite Solutions

Small Form-Factor Pluggable (SPF)

Analog SDI to Digital Conversion over Fiber or Copper

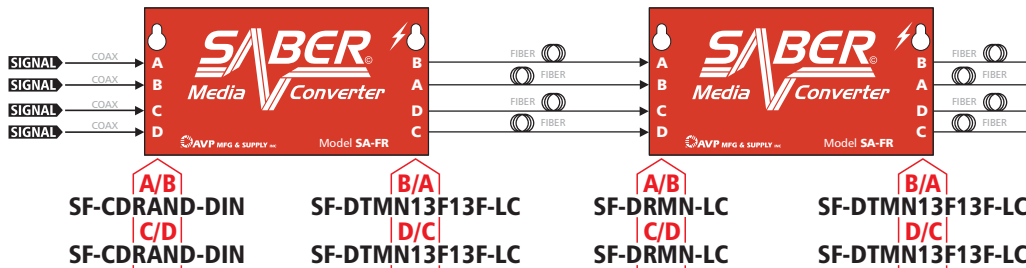
These packaged configurations for SABER will allow for the processing of up to 4 analog to digital conversions with the added functionality of further conversion within the SABER of these signals to either electrical (copper) and/or Fiber (single mode). These signal paths can be either way (Left to Right or Right to Left) within the SABER or bi-directional as needed. SABER allows for total flexibility in signal processing. SABER fully supports signals up to and including 3G (SMPTE 424M).

ANALOG TO DIGITAL TO FIBER

SK-A2D0-D

Kit consists of:

- SA-FR x2
- SA-PS-NA x2
- SF-CDRAND-DIN x2
- SF-DTMN13F13F-LC x4
- SF-DRMN-LC x2

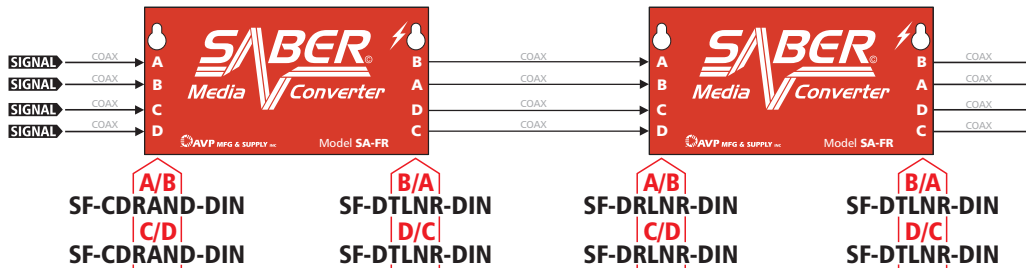


ANALOG TO DIGITAL TO COPPER

SK-A2DE-D

Kit consists of:

- SA-FR x2
- SA-PS-NA x2
- SF-CDRAND-DIN x2
- SF-DTLNR-DIN x4
- SF-DRLNR-DIN x2

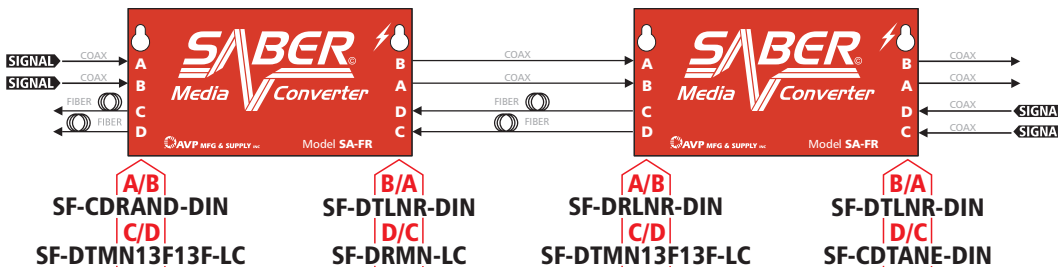


BI-DIRECTIONAL HYBRID ENCODER (L to R / R to L) (COPPER & FIBER)

SK-A2DE-A2D0-D

Kit consists of:

- SA-FR x2
- SA-PS-NA x2
- SF-CDRAND-DIN x2
- SF-DTLNR-DIN x2
- SF-DRLNR-DIN x1
- SF-DTMN13F13F-LC x2
- SF-DRMN-LC x1



Ordering Information

Kit Type	DIN1.0/2.3 Connectors	Description
A to D Encoding	SK-A2D0-D	SABER Kit, Analog to Digital Encoding over Fiber (Optical) Conversion
	SK-A2DE-D	SABER Kit, Analog to Digital Encoding over Copper (Electrical) Conversion
	SK-A2DE-A2D0-D	SABER Kit, Analog to Digital Encoding over Copper & Fiber Bi-Directional Conversion
Add -EU to end of Kit Model Number to receive Power Supply Unit, with European & Global PS Adaptors for SABER Series		

*HDBNC interface available

In the interest of improved design and performance, AVP reserves the right to make changes in its specifications without prior notice. Copyright © 2014 AVP MFG & Supply Inc.



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