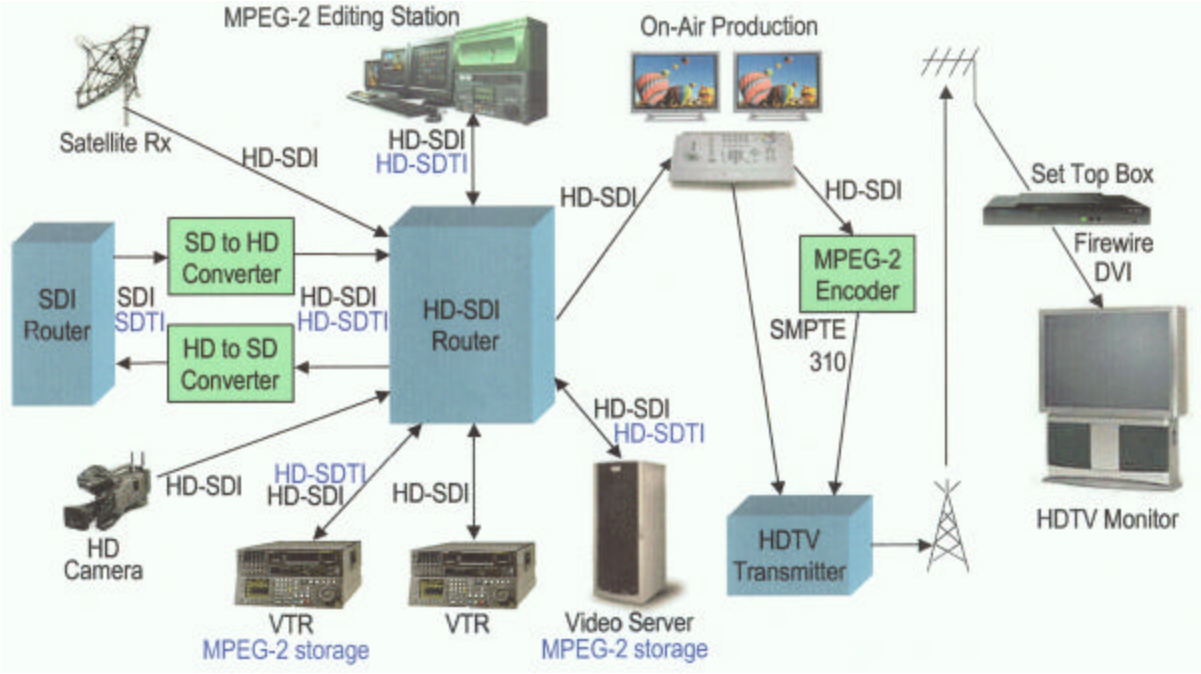
ALLEN AVIONICS, INC.

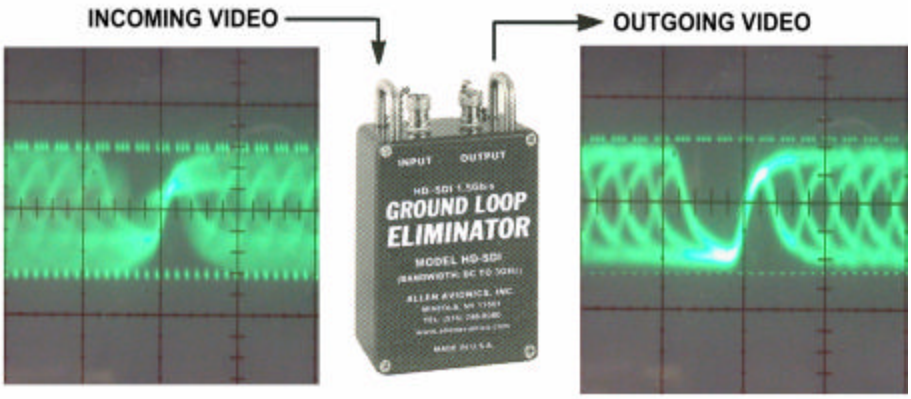
Stop Ground Loops

SDI and HD-SDI HUM ELIMINATORS

Stop potential hum interference with HD Serial Digital (HD SDI SMPTE 292M)



Shown above is a typical High Definition Broadcast chain showing the potential interconnects that could result in ground loops and the introduction of induced noise. Even though SDI is more immune to extraneous noise and low frequency components (hum) problems can still exist. As with analog signals, once you have noise in the signal, it is extremely difficult and costly to remove. Jitter caused by induced noise effects can compound problems created by unstable signal sources, poor re-clocking systems, cable attenuation and can be the demise of digital signals. HD-SDI Serial Digital signal transmissions at 1.485Gbps over a cable contain a range of low to high frequencies like analog signals and are subject to analog-type distortions like induced noise as well as unique digital distortions related to sampling and quantizing. These distortions may result in a variety of visible impairments. Unlike analog signals, the digital signals do not degrade gracefully and are subject to a cliff effect. The eye pattern is typically used to evaluate signal quality. When an external factor such as random induced noise affects the absolute bit timing it can result in lost data.



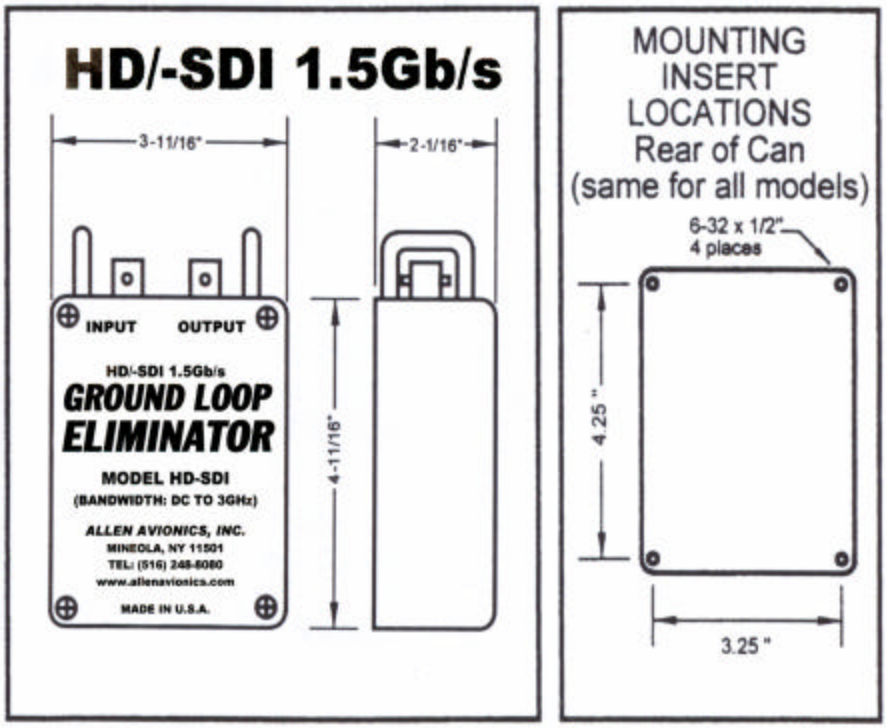
Looking at an eye pattern for HD-SDI affected by extraneous induced noise (**Incoming Video**) the data zero crossing point (risetime/falltime area) appears smeared indicating the potential for a bit error and the loss of data. Using the Allen Avionics HD-SDI Ground Loop Eliminator you can eliminate the potential for this kind of data loss. See (**Outgoing Video)** The model HD-SDI Ground Loop Eliminator supports the four transmission rates of SMPTE 259m and SMPTE 292m 1.485Gbps HD SDI.

224 East Second Street Mineola, NY 11501 Tel: 516-248-8080 Fax: 516-747-6724
Visit us on the web at www.allenavionics.com

Model HD-SDI Ground Loop Eliminator

Specifications:

Serial Video Input	Supports all transmission rates of SMPTE 259m and SMPTE292m Up to1.50 Gbps HD SDI.
Number of inputs	1 Single Channel
Connector	BNC per IEC60169-8
Impedance	75 Ohms Unbalanced
Ground loop isolation	Greater than 60dB
Bandwidth	3.0 GHz
Return Loss	Greater than 15dB to 1.5GHz
Package	Cast aluminum case
Weight	Approx. 3 lbs.



How to find and eliminate ground loops and prevent AC Hum.

For complex systems you may need to repeat the following steps starting with a different piece of equipment in various combinations to locate the problem and correct it.

Study the typical High Definition Broadcast chain showing the potential interconnects that could result in ground loops and the introduction of induced noise. Compare it to your system and pick a place to start.

#1 Strip the system down to one display and one Video or Audio source. Disconnect anything you can to simplify the system.

#2 Add one piece of equipment back at a time. Reconnect Cables, power and check for Humbars in the Video or Hum in the audio.

#3 proceed until you find the offending component(s) that is causing the problem.

#4 Once you know what combination of components is responsible Allen Avionics Will probably have a Audio or Video Hum Eliminator or isolation transformer you can insert between the offending equipment and the rest of the system to permanently stop the Hum

Allen Avionics has hum eliminators for SDI, HD-SDI, S Video, NTSC, Composite, HDTV Analog (Y,Pb,Pr or RGB), Component, Y R-Y B-Y. They can be used with any brand of Audio or Video equipment.

For additional technical information or ordering information call our technical sales department at 516-248-8080.You can also see us on the Web at www.allenavionics.com

Email any questions you may have to sales@allenavionics.com

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