EU declaration of conformity

We certify that this apparatus conforms to the requirements of the EMC and Low Voltage Directives. Emissions EN 55103-1, susceptibility EN 55103-2 and safety EN 60950-1 2002.

15 July 2005 CE

Warranty

The ISIS Group warrants this unit against defects in materials and workmanship for a period of one year from the date of shipment. At its option, the company will repair or replace products that prove to be defective during the warranty period, provided they are returned to the company with advance notification and with freight prepaid. ISIS Group's policy states that all repairs are only conducted by an authorized representative of the company. As a result any unauthorized repair or attempted repair will automatically void the warranty.

When a distributor supplies the company's products, that distributor should be approached initially if there are any warranty problems.

The company makes no other warranties, express or implied, as to the merchantability, fitness for a particular purpose, or otherwise. The company's liability for any cause, including breach of contract, breach of warranty, or negligence, with respect to products sold by it, is limited to repair or replacement by the company, at its sole discretion. This remedy is exclusive. In no event shall the company be liable for any incidental or consequential damages, including loss of profits.

The ISIS Group
119 E. McKnight Way Grass Valley, CA 95949
Phone: 530-477-2984 Fax: 530-477-2986
Internet: www.isis-group.com Email: info@isis-group.com

ISIS Group
Video / Audio Signal Management

MiniBlox™

4420 SDI to composite analog 10-bit DAC

270Mb/s 525/625 SDI input with broadcast quality multi-standard NTSC/PAL composite analog output

User Manual

Latest information available at:
www.isis-group.com
www.miniblox.com

Specifications

SDI input

Standards	SMPTE 259M 270Mb/s 525/625 SDI
Connector	75Ω BNC
Signal Level	800mV p-p ±10% (terminated)
Return loss	>20dB @270MHz
Cable equalization	Up to 100m automatic (Belden 8281)

Analog outputs

Standards	NTSC USA & Japan , PAL (B, D, G, H, I), PAL N
Connectors	75Ω BNC
Signal level	1V p-p ±10%
DC offset	±100mV
Return loss	>36dB to 5.5MHz
Cable drive	Up to 800m

Performance

Frequency response	Flat to 5.5MHz, -3dB at ≈ 6MHz
Differential gain	<0.3%
Differential phase	<0.5°
Delay	<10nS
Data path	10-bit 4:2:2
Quantization	10-bit DAC

Power

Voltage	6-12V DC (center +v)
Current	350mA
Power connector	Locking 2.5mm jack connector

Other

LED	Shows signal presence
Temperature range	0˚C to 45˚C
Dimensions	3 1/4” x 2 1/2” x 1 1/8” (excluding connectors)
Weight	7oz

We reserve the right to change technical specifications without prior notice.

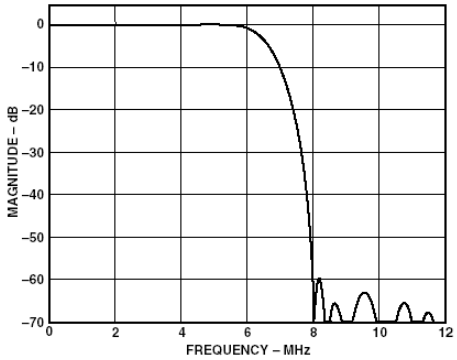


Fig 1 Internal Luminance output filter

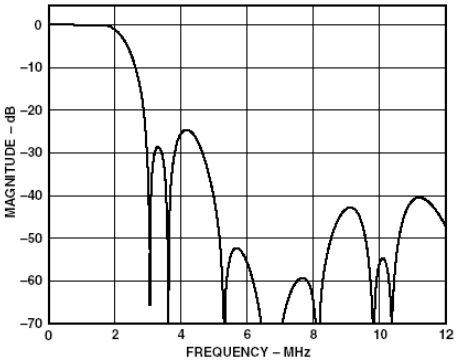


Fig 2 Internal chrominance filter

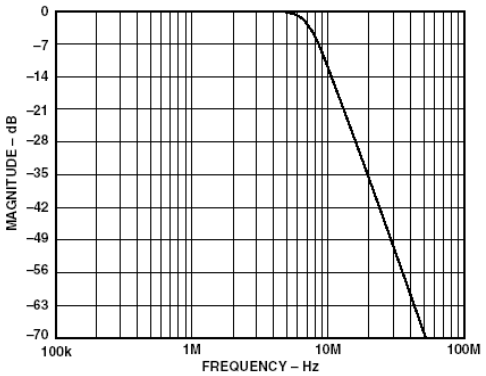
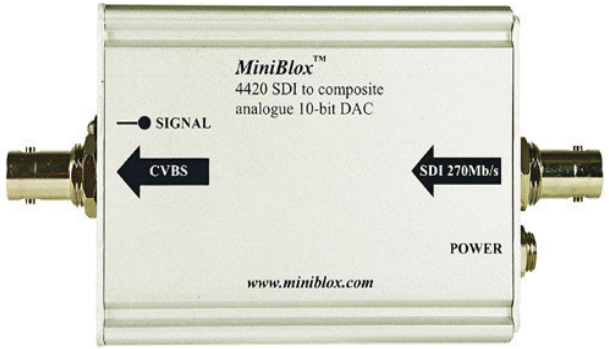


Fig 3 DAC output Filter

MiniBlox™ - solutions in a box

General description

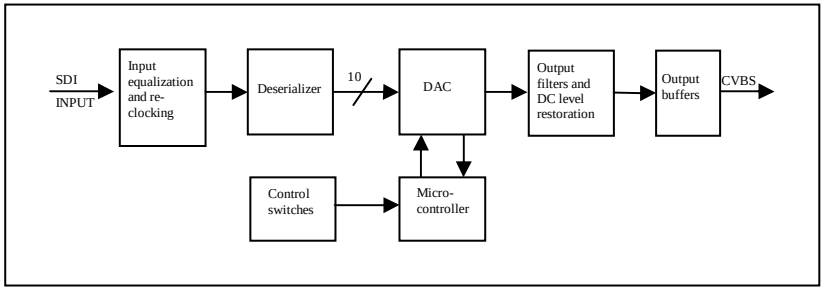
The 4420 is a full featured broadcast quality 270Mb/s SDI to composite analog converter. It is housed in an extremely compact and rugged aluminum case ideally suited to both studio and portable applications. The analog output is configurable to four different types of NTSC and PAL via switches on the end of the unit. These switches also control the output of two built in test patterns and the control of vertical blanking information.



4420 Main features

- SDI to composite analog DAC
- Multi-standard output
- 270Mb/s 525/625 operation
- 4x over-sampling
- 10-bit DAC
- VBI control
- Built in color bar generator
- Built in blackburst generator
- Compact and rugged design
- Locking connector for PSU

Functional block diagram



Installation and operation

The 4420 is simple to use and install.

- Set the dipswitches by referring to the table and description below or the table on the rear of the unit.
- Connect a valid 270Mb/s SDI input
- Connect analog output.
- Apply power to the 4420 unit either via the locking power connector from the 4000 external power supply or by sliding into the 1RU or 2RU rack mounting frame with central power supplies. An alternative power source can used to power the unit as long as the input power is within the range stated in the specifications.
- The 4-800MB mounting bracket can be used to install a MiniBlox unit. The bracket should first be fixed vertically to any surface. The MiniBlox can then be lowered onto the dovetail part of the bracket with the front endplate uppermost to retain it.
- The LED will be green when there is power and a valid 270Mb/s SDI signal present.
- The switch settings can be altered while the unit is powered and the changes are implemented immediately.

Switch settings

Switch	1	2	Switch	OFF	ON
PAL I	OFF	OFF	3	Pass VBI	Blank VBI
PAL M	OFF	ON	4	Not used	
NTSC USA	ON	OFF	5	Enable test patterns	
NTSC Japan	ON	ON	6	Color bars	Blackburst

The default switch setting on delivery is all switches in the off position.

- Switches 1 & 2 set the output analog video format. For correct operation of the unit the analog output format must match the input SDI format.
- Switch 3 controls the vertical blanking information (VBI) on the output analog video output.
- Switch 4 is unused on this unit**.**
- Switch 5 controls the test pattern output of the 4420 unit. To use either the color bar or blackburst test pattern output this switch should be turned on. To ensure correct operation of this feature a valid 270Mb/s SDI signal must be applied to the input.
- Switch 6 determines the type of test pattern output when switch 5 is enabled. When in the off position color bars will be present on the CVBS output, when in the on position a black burst signal will be present on the CVBS output.

Technical information and specifications

The following graphs show the filters that are applied to the analog output signal on the 4420.

Figure 1 shows the internal luminance filter on the DAC which has a -3dB cut off at ≈ 6MHz.

Figure 2 shows the internal chrominance filter on the DAC which has a -3dB cut off at ≈ 2MHz.

Figure 3 shows the external output filter response implemented before the cable drivers this has a -3dB cut off at ≈ 6.75MHz.