

### ***EU declaration of conformity***

We certify that this apparatus conforms to the requirements of the EMC and Low Voltage Directives. Emissions EN55103-1, susceptibility EN55103-2 and safety EN60950-1 2002.

15 July 2005



### ***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](http://www.isis-group.com) Email: [info@isis-group.com](mailto:info@isis-group.com)



***MiniBlox***<sup>TM</sup>

**4426 SDI to universal analog 10-bit DAC**

*270Mb/s 525/625 SDI input with broadcast quality multi-standard NTSC/PAL composite or component analog output and with reclocked SDI output*

**User Manual**

**Latest information available at:**

***[www.isis-group.com](http://www.isis-group.com)***

***[www.miniblox.com](http://www.miniblox.com)***

**Specification**

<b>SDI input</b>	
Standards	SMPTE 259M 270Mb/s 525/625 SDI
Connector	75Ω BNC
Signal level	800mV p-p ±10%
Return loss	>18dB up to 270MHz
Cable equalization	>350m automatic (Belden 8281)
<b>Re-clocked SDI output</b>	
Standards	SMPTE 259M 270Mb/s 525/625 SDI
Connector	75Ω BNC
Signal level	800mVp-p ±10%
DC offset	±100mV
Return loss	>18dB up to 270MHz
<b>Analog output</b>	
Standards	NTSC USA & Japan, PAL (B, D, G, H, I), PAL N
Format	Composite
Connectors	75Ω BNC
Signal level	1Vp-p
DC offset	±50mV
Return loss	>36dB to 5.5MHz
Cable drive	Up to 800m (Belden 8281)
Test patterns	Color bars (SDI input required)
Frequency response	Flat to 5.5MHz, -3dB at ≈ 6MHz
Differential gain	<0.3%
Differential phase	<0.5°
Delay	<10ns
Input	10-bit 4:2:2
Quantization	10-bit DAC
<b>Power</b>	
Voltage	6-12V DC
Current	500mA at 6V
Power connector	Locking 2.5mm jack connector (center +v)
<b>Other</b>	
LEDs	Show group status and signal presence
Temperature range	0°C to 40°C
Dimensions	3 1/4" x 2 1/2" x 1 1/8" (excluding connectors)
Weight	9oz

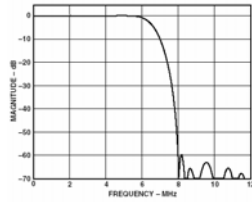


Figure 1 – Internal luminance output filter

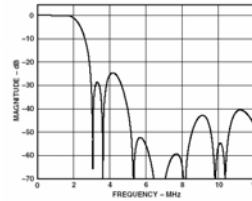


Figure 2 – Internal chrominance filter

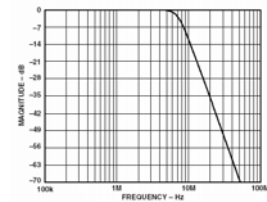


Figure 3 – DAC output filter

## **MiniBlox™ - solutions in a box**

### **General description**

The 4424 is a broadcast quality 270Mb/s SDI to composite analog converter.

It has a re-clocked SDI output. 525 or 625 SDI input is automatically detected. Switches on the end of the unit control the output of the built in test patterns, and blanking of information in the vertical interval.

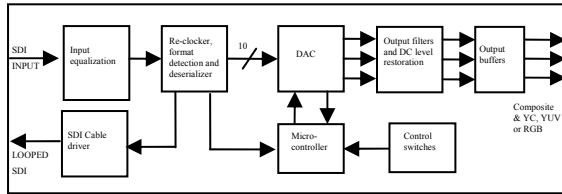
It is housed in an extremely compact and rugged aluminum case ideally suited to both studio and portable applications.



### **Features**

- SDI to universal analog DAC
- Composite, component, RGB or YC outputs
- SMPTE/EBU or Beta component levels
- Automatic 270Mb/s 525/625 operation
- 4x over-sampling
- 10-bit DAC
- VBI control
- Automatic input cable equalization to over 350m
- Re-clocked SDI output
- Built in color bar (requires an SDI input)
- Compact and rugged design
- Locking connector for PSU

## Functional block diagram



## Installation and operation

The unit is simple to install and use.

- 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 an SDI output (if required)
- Connect analog output.
- Apply power to the unit either via the locking power connector from the 4000 external power supply or 1RU rack frame, or by sliding into the 2RU rack mounting frame with central power supplies. An alternative power source can be 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. Red indicates the input signal is missing.
- The switch settings can be altered while the unit is powered and the changes are implemented immediately.

## Switch settings

Switch	1	2
YUV	OFF	OFF
RGB	OFF	ON
CVBS+YC	ON	OFF
Switch		
3	NTSC Japan or PAL N	
4	Blank VBI	
5	Color bars	
6	Beta levels	

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

- Switches 1 and 2 are used to select the analog output format
- Switch 3 is used if the required composite output is either NTSC Japan (no pedestal) or PAL N
- Switch 4 is not used
- Switch 5 selects the color bar test pattern (SDI input is still required).
- Switch 6 selects between SMPTE and Betacam component levels

## Technical information and specifications

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

Figure 1 shows the internal luminance filter on the DAC which has a -3dB cut off at  $\approx 6\text{MHz}$ .

Figure 2 shows the internal chrominance filter on the DAC which has a -3dB cut off at  $\approx 2\text{MHz}$ .

Figure 3 shows the external output filter response implemented before the cable drivers. This has a -3dB cut off at  $\approx 6.75\text{MHz}$ .