

### ***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



### ***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.

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

**4412 SDI to universal analog  
monitoring DAC**

*270Mb/s 525/625 SDI input with multi-standard  
NTSC/PAL composite, RGB(S), YUV, or YC analog  
outputs*

**User Manual**

**Latest information available at:**  
***[www.isis-group.com](http://www.isis-group.com)***  
***[www.miniblox.com](http://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        | >18dB @270MHz                      |
| Cable equalization | Up to 100m automatic (Belden 8281) |

### ***Analog outputs***

|              |  |
|--------------|--|
| Format       | Composite, RGB(S), YUV & YC                  |
| Standards    | NTSC USA & Japan, PAL (B, D, G, H, I), PAL M |
| Connectors   | 75Ω BNC                                      |
| Signal level | 1V p-p ±10%                                  |
| DC offset    | ±100mV                                       |
| 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          | 8-bit 4.2.2                    |
| Quantization       | 10-bit DAC                     |

### ***Power***

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

### ***Other***

|                   |   |
|-------------------|---|
| LED               | Shows power and signal presence                 |
| Temperature range | 0°C to 45°C                                     |
| Dimensions ex BNC | 3 1/4" x 2 1/2" x 1 1/8" (excluding connectors) |
| Weight            | 6oz   |

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

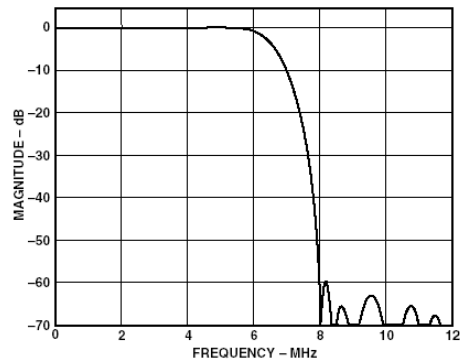


Fig 1 Internal Luminance output filter

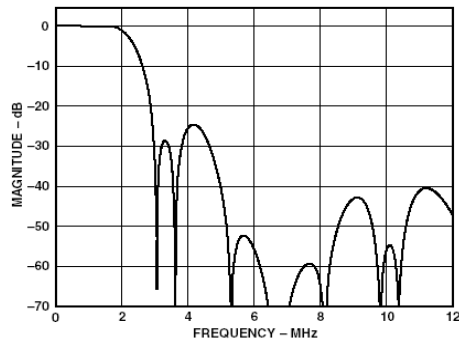


Fig 2 Internal chrominance filter

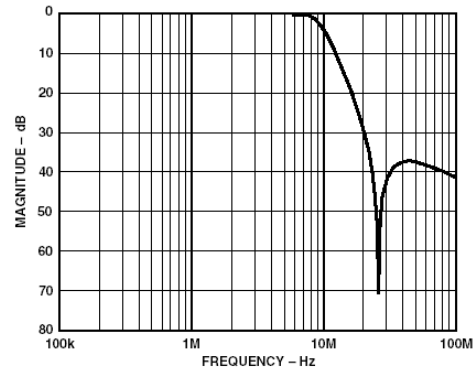
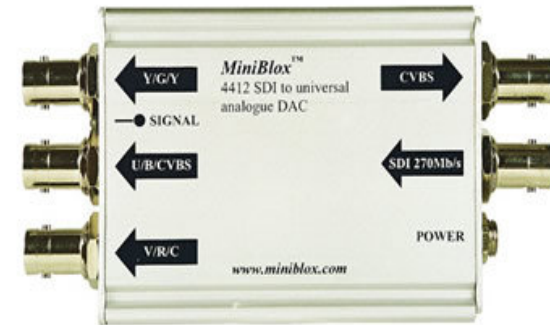


Fig 3 DAC output Filter

## MiniBlox™ - solutions in a box

### General description

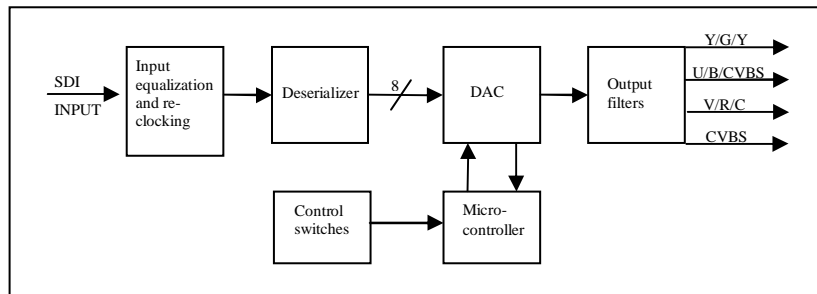
The 4412 is a monitoring quality 270Mb/s SDI to universal analog converter. It is housed in an extremely compact and rugged aluminum case ideally suited to both studio and portable applications. The analog output is set to YUV & composite (CVBS), RGB & CVBS, RGBS, or YC & CVBS via switches on the end of the unit. These switches also control the output of a built-in color bars test pattern.



### 4412 Main features

- SDI to universal analog DAC
- Composite, component RGB(S), YUV & YC outputs
- 270Mb/s 525/625 operation
- 8-bit data stream
- Built in color bar generator
- Compact and rugged design
- Locking connector for PSU

## Functional block diagram



## Installation and operation

The 4412 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 4412 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 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.
- The switch settings can be altered while the unit is powered and the changes are implemented immediately.

## Switch settings

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 & 4 set the output format of the analog composite or component output.
- Switch 5 is not used in the 4412 unit.
- Switch 6 controls the output of the color bar test pattern. When in the off position the converted signal will be present on the outputs. When in the on position the internal color bars signal will be present on the 4412 outputs. To ensure correct operation of this feature a valid 270Mb/s SDI signal must be applied to the input.

| Switch     | 1           | 2   |
|------------|-------------|-----|
| PAL I      | OFF         | OFF |
| PAL M      | OFF         | ON  |
| NTSC USA   | ON          | OFF |
| NTSC Japan | ON          | ON  |
| Switch     | 3           | 4   |
| YUV+CVBS   | OFF         | OFF |
| RGB+CVBS   | OFF         | ON  |
| RGBS       | ON          | OFF |
| YC+2CVBS   | ON          | ON  |
| Switch     | OFF         | ON  |
| 5          | Not used    |     |
| 6          | Colour bars |     |

## Technical information and specifications

The 4412 uses a 10-bit DAC with an 8-bit data path.

The following graphs show the filters that are applied to the analog output signals on the 4412.

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

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

The internal filters are set by the control software and are selected to meet most users' requirements. If different internal filters are required the unit can be modified for a small fee. Please contact your supplier for details.

Figure 3 shows the external output filter response implemented before the outputs. This filter has a -3dB cut off at  $\approx 9$ MHz.