Specification

SDI input	
Standards	SMPTE 259M 270Mb/s 525/625 SDI
Connector	75Ω BNC
Signal Level	800mV p-p ±10% (terminated)
Return loss	>20dB to 270MHz
Cable equalisation	Up to 100m automatic (Belden 8281)
Analogue outputs	
Standards	PAL (B, D, G, H, I), PAL M, NTSC USA & Japan
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 (centre +ve)
Current	350mA at 6V
Power connector	Locking 2.5mm jack connector
Other	
LED	Shows signal presence
Temperature range	0˚C to 40˚C
Dimensions	63.5mm x 84mm x 30mm (excluding connectors)
Weight	200g
We reserve the right to change technical specifications without prior notice. E&OE.	

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DTL MiniBlox™

Broadcast

User Guide

4420 SDI to composite analogue 10-bit DAC

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

www.miniblox.com

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

CE

Warranty

DTL Broadcast Ltd 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. Repairs may only be conducted by an authorised representative of the company. As a result any unauthorised 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.

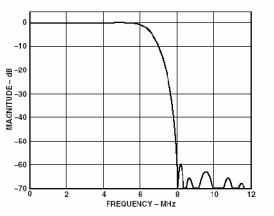


Fig 1 Internal luminance output filter

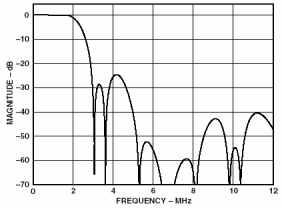


Fig 2 Internal chrominance filter

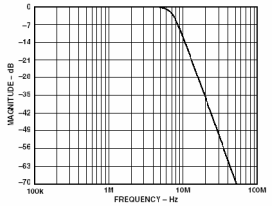


Fig 3 DAC output filter

DTL MiniBlox™ - solutions in a box

General description

The 4420 is a full featured broadcast quality 270Mb/s SDI to composite analogue converter

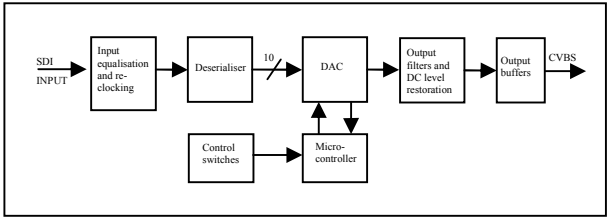
The analogue output is configurable to four different types of PAL and NTSC via switches on the end of the unit. These switches also control the output of two built in test patterns and the control of vertical blanking information.

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

Main features

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

Functional block diagram



Installation and operation

The unit 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 analogue output.
- Apply power to the unit either via the locking power connector from the external power supply or 1U rack frame, or by sliding into the 2U rack mounting frame with central power supplies.
- The LED will be green when there is power and a valid 270Mb/s SDI signal present.
- The switch settings can be altered whilst the unit is powered and the changes are implemented immediately.
- The mounting bracket supplied 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.

Switch settings

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

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

- Switches 1&2 set the output analogue video format. For correct operation of the unit the analogue output format must match the input SDI format.
- Switch 3 blanks the information in the vertical interval for the analogue output.
- Switch 4 is not used.
- Switch 5 controls the test pattern output of the 4420 unit. To use either the colour 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 colour 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 analogue output signals on the unit.

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.