

## Specification

<b>Video input</b>	
3G	SMPTE 424M & 425M-AB (2.97 & 2.967Gb/s) 1080p50/59.94/60
HD	SMPTE 292M (1.485 & 1.435Gb/s) 1080i 60/59.94/50 1080p psf 30/29.97/25/24/23.98 720p 60/59.94/50/30/29.97/25/24/23.98
SD	SMPTE 259M-C (270Mb/s) 625i 50 525i 59.94
Number	1
Connector	75Ω BNC
Return loss	>15dB to 1.485GHz >10dB 1.5 to 2.97GHz
Cable equalisation	3G 140m, HD 230m, SD 250m (Belden 1694A)
<b>Video outputs</b>	
Standards	As input
Format	As input
Number	2
Connectors	75Ω BNCs
Jitter	<0.20ui peak-to-peak
Return loss	>15dB to 1.485GHz >10dB 1.5 to 2.97GHz
<b>Embedding</b>	
Standards	SMPTE 299M & 272M-C
<b>Audio inputs</b>	
Inputs	Balanced analogue audio
Number	2 stereo pairs
Connector	Female 15pin sub-D (optional XLR breakout cable)
Impedance	>20kΩ
Input level	Adjustable 0dBFS = +12 to +26dBu
Maximum level	+24dBu
Quantisation	24 bit
Noise floor	<-90dB (A weighted)
Distortion	<0.002% (20Hz-20KHz)
Frequency response	+/-0.2dB (20Hz-20KHz)
Crosstalk	<-90dB (20Hz-20KHz)

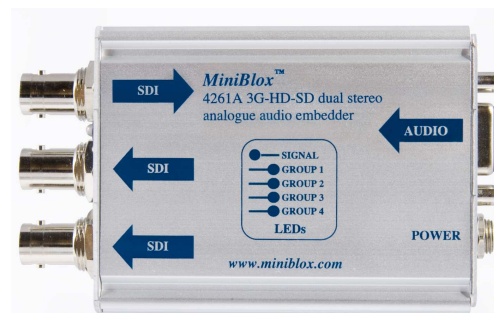
<b>Electrical</b>	
Voltage	6-12VDC
Power	<3W
Connector	Locking 2.5mm jack (centre +ve)
Safety	EN60950
<b>Control</b>	
Setup	6 way dip switch
LEDs	Power, input presence & group status
<b>Other</b>	
Size (mm)	63.5 x 84 x 30 plus connectors
Weight	175g
Temperature	5°C to 40°C
Humidity	80% max (non condensing)

<b>Options</b>	
SCA15SD-X05	Audio cable HD15M to 4F XLRs
4006	Desktop power supply with IEC inlet
4010	1U rack mounting frame for up to 5 units including PSU
4020	2U rack mounting frame for up to 14 units & single or dual PSUs
4021	Power supply for 4020 2U frame

# DTL MiniBlox™



## User Guide

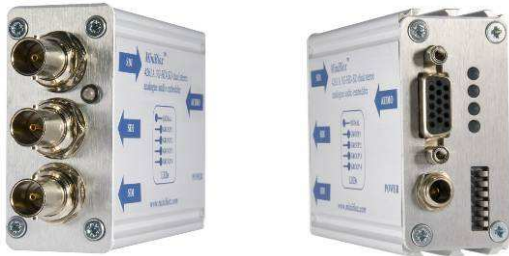
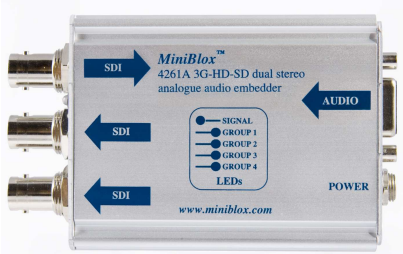


## 4261A 3G-HD-SD dual stereo analogue audio embedder

*Inserts two balanced analogue audio stereo pairs into any group within an SDI signal*

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

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**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.

10 February 2009



**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.

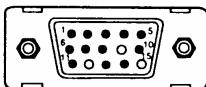
The company makes no other warranties, express or implied, as to the merchantability, fitness for a particular purpose, or otherwise. The company's liability for any cause, including breach of contract, breach of warranty, or negligence, with respect to products sold by it, is limited to repair or replacement 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.

## Audio inputs

When used with the optional XLR breakout cable, inputs are as shown below

XLR	Input
IN A1	Pair 2 - Left
IN A2	Pair 2 - Right
IN A3	Pair 1 - Left
IN A4	Pair 1 - Right

The pin out of the 15 way sub-D connector is as shown below:



15 way sub-D connector viewed looking in to pins of plug

Pin	Input	Signal
1	Pair 2 - Right	+
2	Pair 2 - Left	Screen
3	Pair 1 - Right	+
4	Pair 1 - Left	Screen
5	Not used	NA
6	Pair 2 - Right	-
7	Pair 2 - Left	+
8	Pair 1 - Right	-
9	Pair 1 - Left	+
10	Not used	NA
11	Pair 2 - Right	Screen
12	Pair 2 - Left	-
13	Pair 1 - Right	Screen
14	Pair 1 - Left	-
15	Not used	NA

Version 1.1 update on 7/02/2011

## DTL MiniBlox™ - solutions in a box

### General description

The 4261A 3G-HD-SD analogue audio embedder inserts two balanced stereo analogue audio pairs into any group in the ancillary data space of an SDI signal.

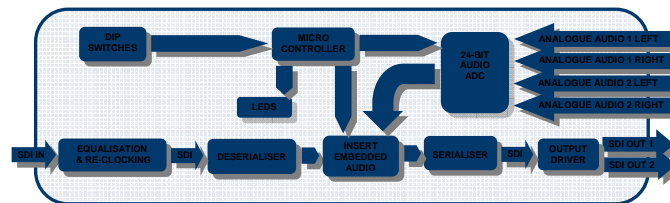
The unit automatically detects whether the SDI input is 3G, HD or 270Mb/s SD SDI. Audio conversion employs high quality 24-bit ADCs. Adjustable full scale input levels meet all international standards. There is automatic input cable equalisation and two re-clocked SDI outputs are provided. Units can be cascaded to enable embedding into all four available groups.

The unit requires an external power supply or a rack mounting frame. A 1RU frame is available which takes up to 5 units and a 2U one that takes up to 14. Audio XLR breakout cables and external power supplies are also available.

### Key features

- Automatic 3G, HD, or SD SDI standard detection
- Inserts two balanced analogue audio stereo pairs into any group
- Replaces or adds to existing audio
- High quality 24 bit audio ADC
- Adjustable full scale input levels to meet all international standards
- LEDs show group status and input signal presence
- Automatic input cable equalisation
- 2 re-clocked SDI outputs
- Compact and rugged design
- Optional XLR breakout cable
- Optional external power supply
- Optional rack mounting frames with central power supplies

### 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 breakout cable (when this option has been ordered).
- Connect a valid SDI input and analogue audio inputs. See the audio input section on page 6 for connecting to the XLR breakout cable or to a 15-pin male sub-D connector (not supplied).
- Connect SDI outputs (if required).
- 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.
- On power-up the unit will perform a short (3 second) self test. The group LEDs will flash while this is in progress.
- The signal LED will be green when there is power and a valid SDI signal present or red when there is power but no valid SDI signal.
- One of the group LEDs will light corresponding to the group selected by the switches. This LED will be green if the unit is receiving a valid video signal and successfully embedding audio. The LED will otherwise be red. Orange LEDs indicate which groups are already present in the SDI stream.
- 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 the 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
Group 1	OFF	OFF	3	Cascade	Overwrite
Group 2	OFF	ON	4	24-bit SD	20-bit SD
Group 3	ON	OFF	5	DS1	DS2
Group 4	ON	ON	6	Toggle level *	
* LED flashes red 1 = 18dB, 2 = 24dB & 3 = custom					

Switches 1 & 2 set the group into which audio packets are inserted.

Switch 3 determines whether existing audio packets are deleted from the video signal. When the switch is off, new audio packets are appended without deletion of existing packets allowing up to four units to be connected in cascade.

Switch 4 controls the bit depth of the embedded audio for SD SDI only (audio depth is always 24 bit in 3G & HD). When the switch is off, extended audio

packets are multiplexed into the video signal (24 bit audio). When the switch is on, extended audio packets are not included (20 bit audio).

Switch 5 selects between embedding on data stream one or two when embedding into a 3G Level B signal.

Switch 6 controls the analogue level of the input; three levels are available 18dBu, 24dBu and a custom setting (default on delivery 20dBu). These levels are toggled through by activating and immediately deactivating the switch. The group LEDs will flash for two second as per the table below indicating the operating analogue audio input level.

Level	LEDs
18dB	Group 1 flash red with group 2,3&4 green
24dB	Group 2 flash red with group 1,3&4 green
Custom	Group 3 flash red with group 1,2&4 green

If switch 6 is left on for more than six seconds the unit will enter custom level select mode – all group LEDs will flash red while the unit is in this mode. Refer to the next paragraph for details.

### Custom level select mode

To meet all international analogue audio full scale input levels the unit has a custom analogue input level select mode. In this mode it is possible to select any input level between <12dBu and 24dBu in 0.5dBu increments. The default value of the custom level on delivery is 20dBu. Once the value of the custom level is altered it will remain stored in memory until changed again.

To set the analogue input level:-

- Activate switch 6, once this has been on for more than six seconds the unit will enter custom level select mode. This can be verified by all four group LEDs on the front of the box flashing red.
- Switch 1-5 will now set the expected analogue input level as per the table below.
- To exit the custom level select mode deactivate switch 6, the value on switches 1-5 will be stored in memory. It will be necessary to reset switches 1-5 to the desired settings for normal use.

Switch 1	Switch 2	Switch 3	Switch 4	Switch 5	Level
0	0	0	0	0	12dBu
0	0	0	0	1	12.5dBu
0	0	0	1	0	13dBu
0	0	0	1	1	13.5dBu
0	0	1	0	0	14dBu
0	0	1	0	1	14.5dBu
↓	↓	↓	↓	↓	↓
↓	↓	↓	↓	↓	↓
1	1	0	1	0	25.5dBu
1	1	0	1	1	26dBu