



## **OPERATIONS MANUAL**

**for**

**BC551**

**3G/SD/HD ↔ Fibre**

**With reverse Audio link**

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The BC551T transmitter and BC551R receiver modules enable the transport of a 3G-SDI, HD-SDI, SD-SDI or DVB-ASI signal over fibre optical cable. A reverse path for a stereo audio signal is carried on a second fibre making the BC551 perfect for adding cost effective fibre I/O to compact remote camera systems.

The BC551 modules can be housed in any BC compatible enclosure such as the BC100 (3U) or BC160 (1U) racks

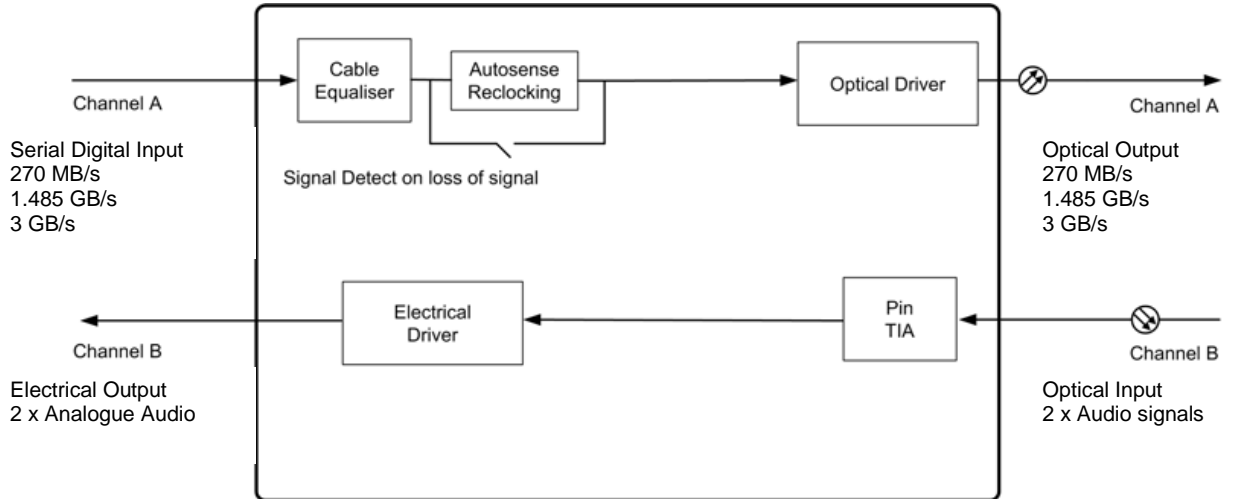
The BC551 units are compact fibre optic converters that are perfectly suited to provide interference free transmission and for extending the range of electrical signals, particularly HD-SDI and 3G-SDI signals.

In the BC551T transmitter, the incoming digital video signal is auto-sensed and then equalised and re-clocked prior to conversion and transmission down a single optical fibre. In the BC551R receiver the incoming optical signal is fed to a trans-impedance and limiting amplifier before being electrically re-clocked on the output.

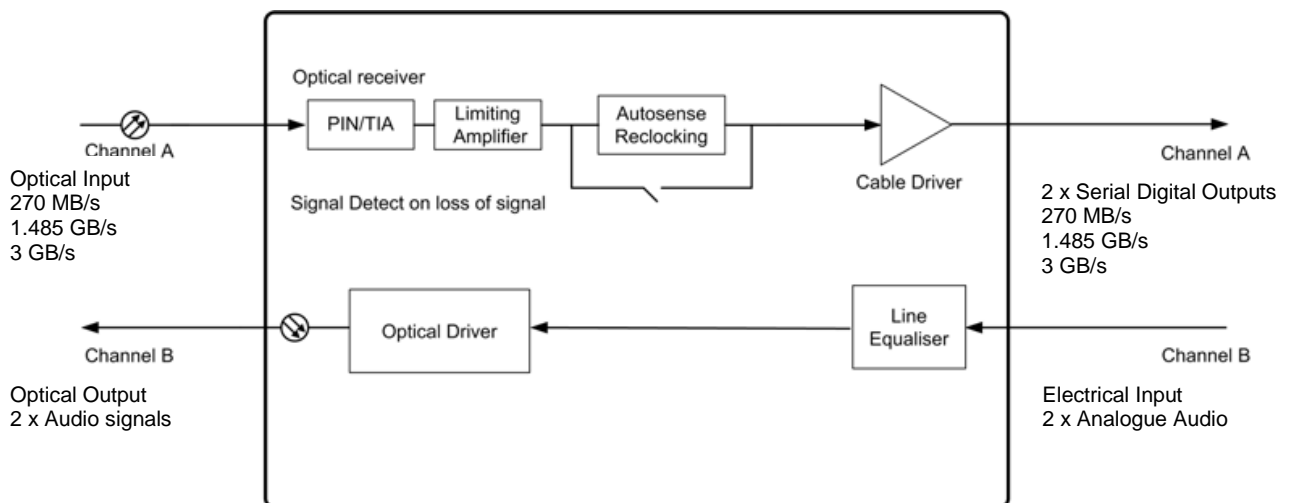
The video channel can also operate in non-re-clocking mode and handle data rates from 50 Mb/s to 3 Gb/s.

The BC551T and BC551R are available in single-mode, WDM, and CWDM variants to suit any fibre application, achieved via interchangeable SFP transceiver modules. The optical input sensitivity and output power and wavelength are dependent on the SFP module fitted. Contact sales office for details.

BC551T



BC551R



**General module specifications**

Depth	87mm (inc connectors)
Width	20mm (4HP)
Height	129mm (3RU)
Weight	100g
Operating Temperature	-30°C to +70°C
Power supply voltage	6V DC Nominal (accepts 4.5 to 17V DC)
Power consumption	2.0W

**Electrical Input**

Connector	1 x 75 Ohm BNC (per IEC 60169-8 Amendment 2)
Format	Re-clocked (bypass allows data rates down to 50 Mb/s) (Unless specified, factory default is re-clocking mode. Non-re-clocking mode is accessed via pcb link.)
Standards	SMPTE 424M, SMPTE 292M, SMPTE 259M, SMPTE 297M, DVB-ASI Auto-Sensing for SD-SDI, ASI, HD-SDI, 3G-SDI
Equalisation	Automatic to 100 m @ 3 Gb/s Automatic to 200 m @ 1.485 Gb/s Automatic to 300 m @ 270 Mb/s
Return Loss	> 15 dB @ 1.485 Gb/s

**Electrical Output - Video**

Connector	1 x 75 Ohm BNC (per IEC 60169-8 Amendment 2)
Format	Active, driven, optionally re-clocked, copy of video input.

**Electrical Output - Audio**

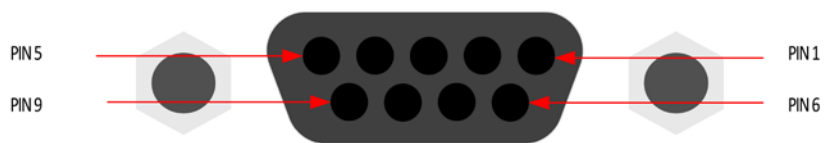
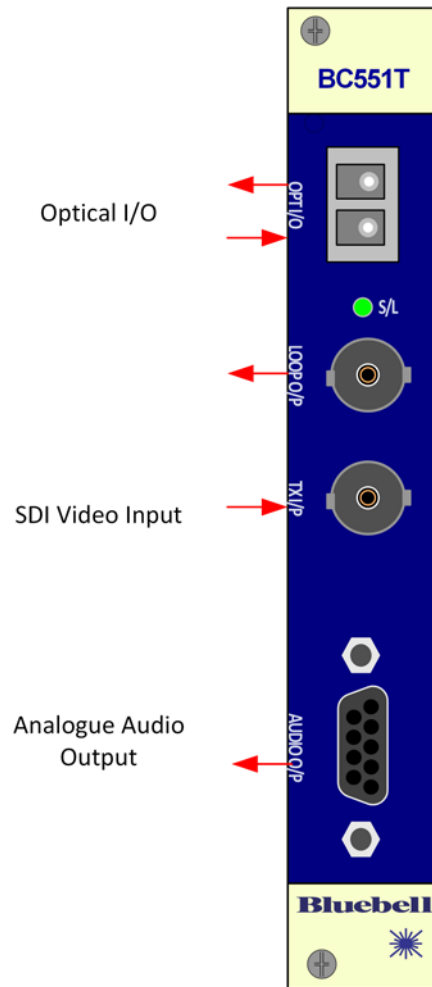
Connector	9 pin D type
Format	2 x analogue audio, balanced pair, signals

**Optical Input/Output**

Connector	SFP transceiver with LC connectors
Wavelength	1310 nm, 1550 nm (see Ordering Information for variants)
Optical Performance	Dependent on SFP module fitted

**Conformance**

EMI/RFI	Complies with 89/336/EEC
Electrical	Complies with EN 61000-6-1, EN61000-6-2
Laser Safety	Complies with Class 1 laser: 24 CFR 1040.10 & 1040.11
RoHS	Complies with Directive 2002/95/EC
Warranty	5 years



Analogue Audio Output  
9-pin D-socket (female pins)

pin 1	LEFT+
pin 2	LEFT-
pin 3	Ground
pin 4	RIGHT+
pin 5	RIGHT-
pin 6	LEFT Ground
pin 7	
pin 8	
pin 9	RIGHT Ground

**Internal Link Settings on BC551TX board**

	Link	To Link	
<b>Digital input video clocking</b>			
LK101	Pin 1	Pin 2	disable SDI digital input re-clocking
LK101	Pin 2	Pin 3	enable SDI digital input re-clocking (Default)

**Indicator LEDs**

Indicator	Function
"S/L" LED LD1 (below SFP module)	green = SDI/HD/3G input signal detected on BNC red = no signal detected on BNC









**General module specifications**

Depth	87mm (inc connectors)
Width	20mm (4HP)
Height	129mm (3RU)
Weight	100g
Operating Temperature	-30°C to +70°C
Power supply voltage	6V DC Nominal (accepts 4.5 to 17V DC)
Power consumption	1.8W

**Optical Input/Output**

Connector	SFP transceiver with LC connectors
Wavelength	1310 nm, 1550 nm (see Ordering Information for variants)
Optical Performance	Dependent on SFP module fitted

**Electrical Input - Audio**

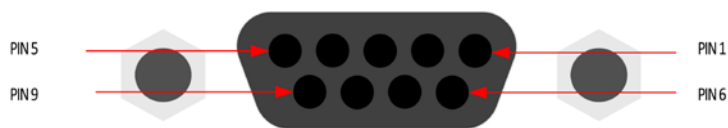
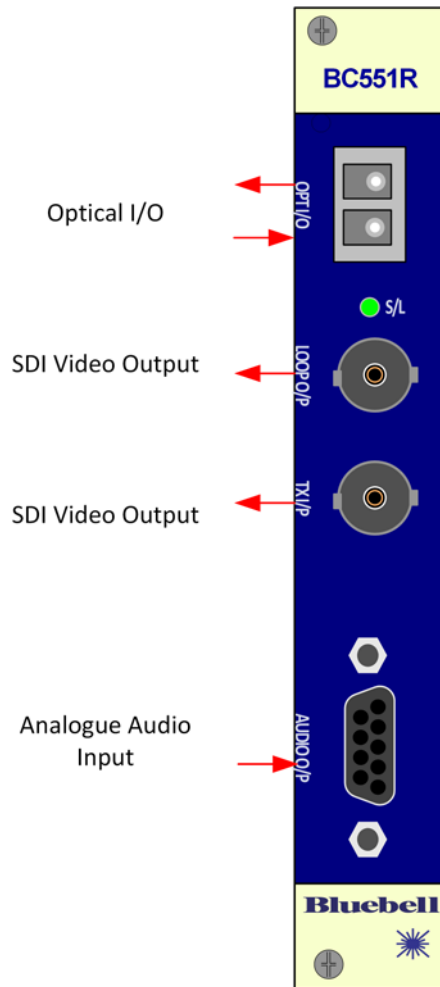
Connector	9 pin D type
Format	2 x analogue audio, balanced pair, signals

**Electrical Output - Video**

Connector	2 x 75 Ohm BNC (per IEC 60169-8 Amendment 2)
Format	Re-clocked (bypass allows data rates down to 50 Mb/s) (Unless specified, factory default is re-clocking mode. Non-re-clocking mode is accessed via pcb link.)
Standards	SMPTE 424M, SMPTE 292M, SMPTE 259M, SMPTE297M, DVB-ASI Automatic rate selection for SD-SDI, HD-SDI and 3G-SDI
Return Loss	> 15 dB @ 1.485 Gb/s
Signal Level	800mV $\pm$ 10%
DC Offset	0 $\pm$ 0.5 V
Jitter	<0.15 UI line equalised

**Conformance**

EMI/RFI	Complies with 89/336/EEC
Electrical	Complies with EN 61000-6-1, EN61000-6-2
Laser Safety	Complies with Class 1 laser: 24 CFR 1040.10 & 1040.11
RoHS	Complies with Directive 2002/95/EC
Warranty	5 years



Analogue Audio Input  
9-pin D-socket (female pins)

pin 1	LEFT+
pin 2	LEFT-
pin 3	Ground
pin 4	RIGHT+
pin 5	RIGHT-
pin 6	LEFT Ground
pin 7	
pin 8	
pin 9	RIGHT Ground

**Internal Link Settings on BC551RX board**

	Link	To Link	
<b>Digital video receiver clocking</b>			
LK1	Pin 1	Pin 2	disable received video signal re-clocking
LK1	Pin 2	Pin 3	enable received video signal re-clocking (Default)

**Indicator LED**

Indicator	Function
"S/L" LED LD1 (below SFP module)	green = locked to input signal on optic fibre red = Not locked to input signal on optic fibre

<b>Circuit Description</b>	<b>BC551RX</b>
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