Bluebell ✳

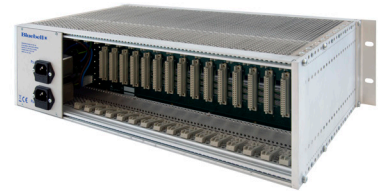# BC SERIES MODULAR FIBRE OPTIC INTERFACE SYSTEM

BC100i Modular Rack Frame System

The BC100i is a major evolution of Bluebell's BC100 rack frame for the BC Series of fibre optic interface cards. Like the BC100, it features dual redundant power supplies and can hold up to 15 single-slot BC cards of any type, but provides significantly enhanced card monitoring.
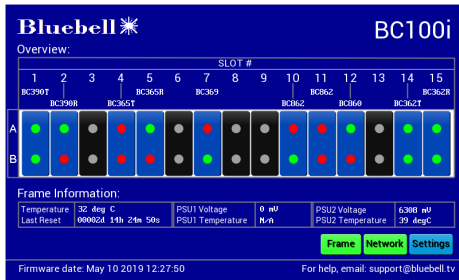
The BC100i is ideal for use in OB and live sound trucks, fixed installations and fly-away systems. BC Series cards plug into the rear of the frame so that all copper or fibre cabling is retained within the rack enclosure; system monitoring is presented on the front panel. External monitoring via an IP network is also available if an optional BM102i or BM103 network card is fitted into a dedicated rear slot ('Slot 16'). Both network card types are fully compatible with SNMP protocol v2.1.

The frame's main internal motherboard now includes a microcontroller and memory, handling all card status data. A 7 inch colour touchscreen on the front panel provides a continuous, colour-coded display showing the status of the signals on each card: this has been designed to resemble the LED display of the earlier BC100 frame, for immediate familiarity. Much additional information is also available on-screen, including confirmation of card type, PSU status, supply rail voltages and internal temperature. There is also a per-slot page displaying card-specific data, the nature of which depends on the card type. A page is also available providing information and status of an optional BM102i or BM103 network card, if one is fitted. A front panel USB port allows simple procedure for installing firmware updates from a flash drive.

Dual redundant power supplies (PSUs) can be fitted: these are accessible and hot-swappable from the front of the frame. Each PSU is capable of powering a frame fully loaded with any BC Series card combination. The two PSUs have independent IEC AC inlets, and employ load sharing to feed the internal electronics, so there is no interruption should one PSU fail.

The standard frame uses convection cooling and will only require the provision of vertical spacing above and below in most installations to ensure satisfactory operation. However, for locations where the ambient temperature is particularly high, the frame may be ordered with a factory-fitted internal low-speed fan card which reduces the internal temperature by approx. 10 °C.

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Front panel display examples

Bluebell ✴ — BC100i

Overview:

SLOT #

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
BC390T		BC390R		BC365R	BC365T		BC369				BC362	BC360		BC362T · BC362R

Frame Information:

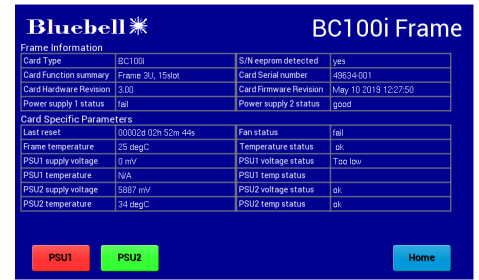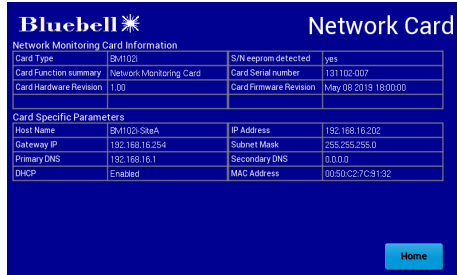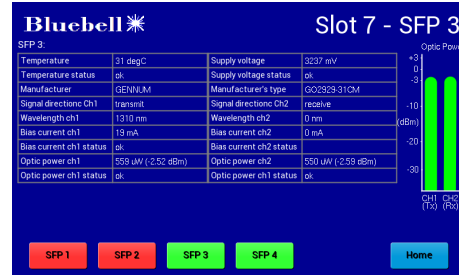| Temperature | 32 deg C | | PSU1 Voltage | 0 mV | PSU2 Voltage | 6308 mV |
| Last Reset | 00002d 14h 24m 50s | | PSU1 Temperature | N/A | PSU2 Temperature | 39 degC |

Frame Network Settings

Firmware date: May 10 2019 12:27:50   For help, email: support@bluebell.tv

Home page

Bluebell ✴ — Slot 2

Card Information

Card Type	BC390R	S/N eeprom detected	yes
Card Function summary	2x 3-12G Opt -> 4x HD-12G SDI	Card Serial number	CR002
Card Hardware Revision	1	Card Firmware Revision	1.40
Card ch A signal status	good	Card ch B signal status	fail

Card Specific Parameters

I/P 1	12G	O/P 1	3G
I/P 2	No Lock	O/P 2	3G
		O/P 3	3G
		O/P 4	3G
		Mode	7	Change
		Mode Seln	Auto	Change

SFP 1   Home

Card Info page

Bluebell ✴ — BC100i Frame

Frame Information

Card Type	BC100i	S/N eeprom detected	yes
Card Function summary	Frame 3U, 15slot	Card Serial number	49634-001
Card Hardware Revision	3.00	Card Firmware Revision	May 10 2019 12:27:50
Power supply 1 status	fail	Power supply 2 status	good

Card Specific Parameters

Last reset	00002d 02h 52m 44s	Fan status	fail
Frame temperature	25 degC	Temperature status	ok
PSU1 supply voltage	0 mV	PSU1 voltage status	Too low
PSU1 temperature	N/A	PSU1 temp status	
PSU2 supply voltage	5887 mV	PSU2 voltage status	ok
PSU2 temperature	34 degC	PSU2 temp status	ok

PSU1   PSU2   Home

Frame page

Bluebell ✴ — Network Card

Network Monitoring Card Information

Card Type	BM102i	S/N eeprom detected	yes
Card Function summary	Network Monitoring Card	Card Serial number	131102-007
Card Hardware Revision	1.00	Card Firmware Revision	May 08 2019 18:00:00

Card Specific Parameters

Host Name	BM102i-SiteA	IP Address	192.168.16.202
Gateway IP	192.168.16.254	Subnet Mask	255.255.255.0
Primary DNS	192.168.16.1	Secondary DNS	0.0.0.0
DHCP	Enabled	MAC Address	00:50:C2:7C:91:32

Home

Network Card page

Bluebell ✴ — Slot 7 - SFP 3

SFP 3:

Temperature	31 degC	Supply voltage	3237 mV
Temperature status	ok	Supply voltage status	ok
Manufacturer	GENNUM	Manufacturer's type	GO2929-31CM
Signal directionc Ch1	transmit	Signal directionc Ch2	receive
Wavelength ch1	1310 nm	Wavelength ch2	0 nm
Bias current ch1	19 mA	Bias current ch2	0 mA
Bias current ch1 status	ok	Bias current ch2 status	
Optic power ch1	559 uW (-2.52 dBm)	Optic power ch2	550 uW (-2.59 dBm)
Optic power ch1 status	ok	Optic power ch1 status	ok

Optic Power: +3, 0, -3, -10 (dBm), -20, -30   CH1 (Tx) CH2 (Rx)

SFP 1   SFP 2   SFP 3   SFP 4   Home

SFP Info page (example)

Network Monitoring

To allow a Bluebell BC card system to be fully integrated into a facility-wide monitoring environment, two optional network monitoring cards are available for the BC100i. The BM102i is a replacement for the earlier BM102 card and makes the status of all signals, cards and PSUs available as a series of simple web pages that can be viewed anywhere on the connected network using a compatible browser. The BM102i is fully compatible with third party SNMP management systems.

The BM103 is a more advanced version of network monitoring card: it provides all the monitoring functions of the BM102i, but adds wireless connectivity, faster Ethernet speeds and the capability of including image and video content in the monitoring data.

BC Series cards

The Bluebell BC Series of cards is a cost-effective and flexible modular system which facilitates the transport of many different kinds of signals over fibre-optic links, producing significant savings in cost and weight. The range is very extensive with over 100 card types: cards are available to interface 4K, 3G-SDI, HD-SDI, SD-SDI, DVB-ASI digital video, broadcast quality PAL/NTSC, MADI, AES/EBU and analogue audio, 10/100/1000baseT Ethernet and serial data with infrastructure or field-deployed fibre optic cables.

Specifications

BC100i General Specifications	
Number of card slots	15 + 1 for network card option
Power supplies	2 x 100W modular units, fully redundant
Power input	90 to 250 VAC, 47-63 Hz
Fuses	2 x T5AH 250V, integral with AC inlets
Operating temperature range	-30 °C to +70 °C
Dimensions (w x h x d)	445 mm x 132.5 mm (3RU) x 250 mm
Weight	11 kg (fully-loaded)
Warranty	5 years

Conformities	
EMI/RFI	89/336/EEC, EN55022B, EN61000-4-2, EN61000-4-4 (Level 2), EN61000-4-4FTB, EN61000-4-5, EN61000-4-11
Electrical	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4
RoHS	Directive 2002/95/EC

Bluebell ✴

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