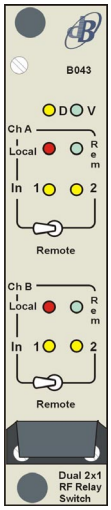
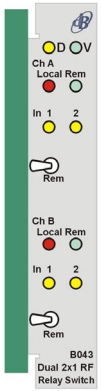
Broadcast

B043

DUAL 2 X 1 RF RELAY SWITCH





Handbook

Version 1.0 16/06/2004



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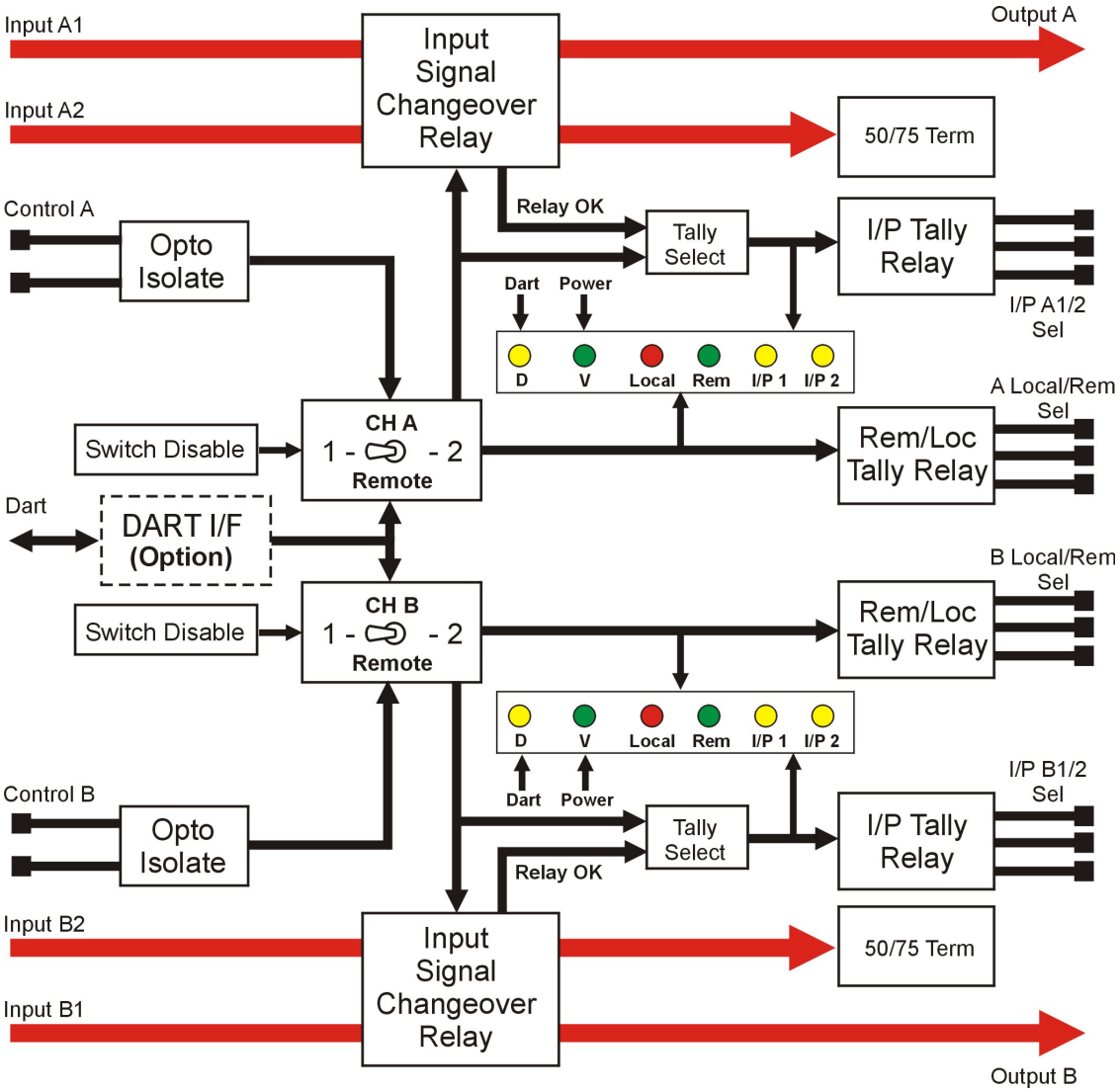
SPECIFICATION **10**

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Introduction

The B043 is a dual 2x1 HF signal changeover unit for switching ASI DVB Transport Streams, analogue video, SDI, RF, G703 and AES (unbalanced) signals up to 1GHz. It fits in either 1U or 3U Avitel or Vistek frames and all power is derived from the frame PSU. A passive rear connector is required for all signal interconnections (see Installation chapter).

Each changeover switch is implemented using a high quality relay. Unselected inputs have either a 50Ω, 75Ω termination or high impedance depending on the module version. GPI control inputs can be isolated, active low or active high as selected by links on the module.



The B043 Dual RF 2x1 Relay Switch

In the event of power loss to the frame, signals can still pass through the module where input A1 is routed to output A and input B1 is routed to output B.

LEDs on the front panel indicate which input is selected and whether the channel is in local or remote mode. There are two manual control switches on the module front panel, which select Input 1, Remote or Input 2 for each channel. Each switch may be disabled independently by removing an appropriate link on the module.

Channel selection and local/remote status signals are available as isolated contacts or with a common connected to 0V. In addition the input remote status signals may be configured to indicate if the relay coil has failed to operate.

The B043 can be monitored and controlled from any remote device via the GPI interface connector, or via DARTnet using Vistek's ViewFind and/or a Vistek V1605 control panel.

Note: An optional DART compatible Sub-Board type B040 is available which provides monitoring status to the DART bus.

Main features

- Dual 2x1 switcher for video, ASI DVB Transport Streams, SDI, RF, G703 and AES (unbalanced) signals for Avitel and Vistek frames
- Switches signals up to 1GHz
- Choice of rear connector depending on frame
- De-selected inputs terminated with factory fitted option of 50R, 75R or Hi Z (specify at time of ordering)
- Front panel toggle switch for each channel selects input 1, input 2 or remote – may be disabled for remote control
- Optically isolated or active low/active high control inputs
- Front panel LED's show input selected and local/remote control for each channel
- Channel selection and loc/rem remote status signals available as isolated contacts or with common connected to 0V
- Channel selection remote status signals can be configured to indicate if relay coil has failed to operate

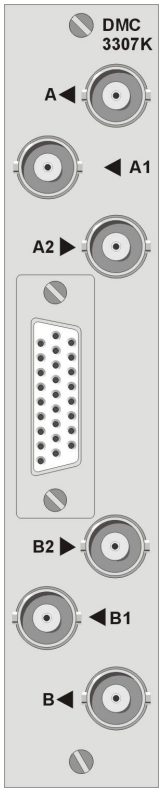
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Installation

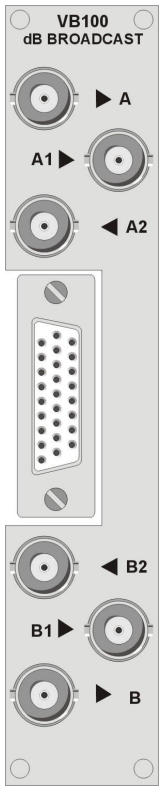
Selecting rear connectors

The available rear connectors and the frames/signal I/O used are as follows:

Type	Frame	Connectors	Signal types
DMC 3307K	1U/3U Avitel	BNCs	ASI, analogue video, SDI, RF, G703 or digital audio (AES unbalanced)
VB100	1U(F010)/3U Vistek	BNCs	ASI, analogue video, SDI, RF, G703 or digital audio (AES unbalanced)



Avitel style chassis DMC 3307K



3U Vistek style chassis VB100

Rear panel connections

SIGNAL	CONNECTOR	COMMENTS
A1	BNC	Channel A Input 1
A2	BNC	Channel A Input 2
A	BNC	Channel A Output
B1	BNC	Channel B Input 1
B2	BNC	Channel B Input 2
B	BNC	Channel B Output

Control & Status 26 way 'D' type			
PIN	**SIGNAL (pins 1-13)**	**PIN**	**SIGNAL (pins 14-26)**
1	Control 0V	**14**	0V
2	Control +12V	**15**	N/C
3	Control A (Active Low)	**16**	N/C
4	Control A (Active High)	**17**	B2 Selected
5	A Remote Selected	**18**	B1 Selected
6	A Local Selected	**19**	B1/B2 Selected Common
7	A Remote/Local Common	**20**	B Local/Remote Common
8	A1/A2 Selected Common	**21**	B Local Selected
9	A1 Selected	**22**	B Remote Selected
10	A2 Selected	**23**	Control B (Active High)
11	N/C	**24**	Control B (Active Low)
12	N/C	**25**	Control +12V
13	0V	**26**	Control 0V

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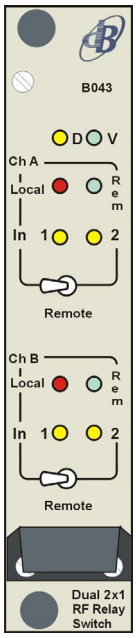
Configuration and operation

Control options

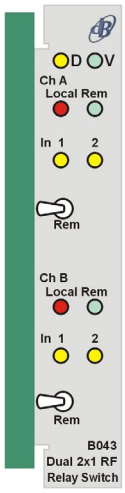
The B043 has three control options:

- Local front panel control – enable/disable with JP3 & JP4 for CH1, JP10 & JP11 for CH2
- GPI control – Isolated, active high or active low
- DARTnet control

Front panel control



Avitel



Vistek

LED Indicators:

D Yellow – Flashing indicates DART monitoring is active
V Green – Indicates DC power present & OK
Local Red – Input selection controlled from front panel
Rem Green – Input selection controlled remotely
In 1 Yellow – Input 1 selected
In 2 Yellow – input 2 selected

Toggle Switches (3 position):

Rem Left – Input 1
Centre – Remote
Right – Input 2

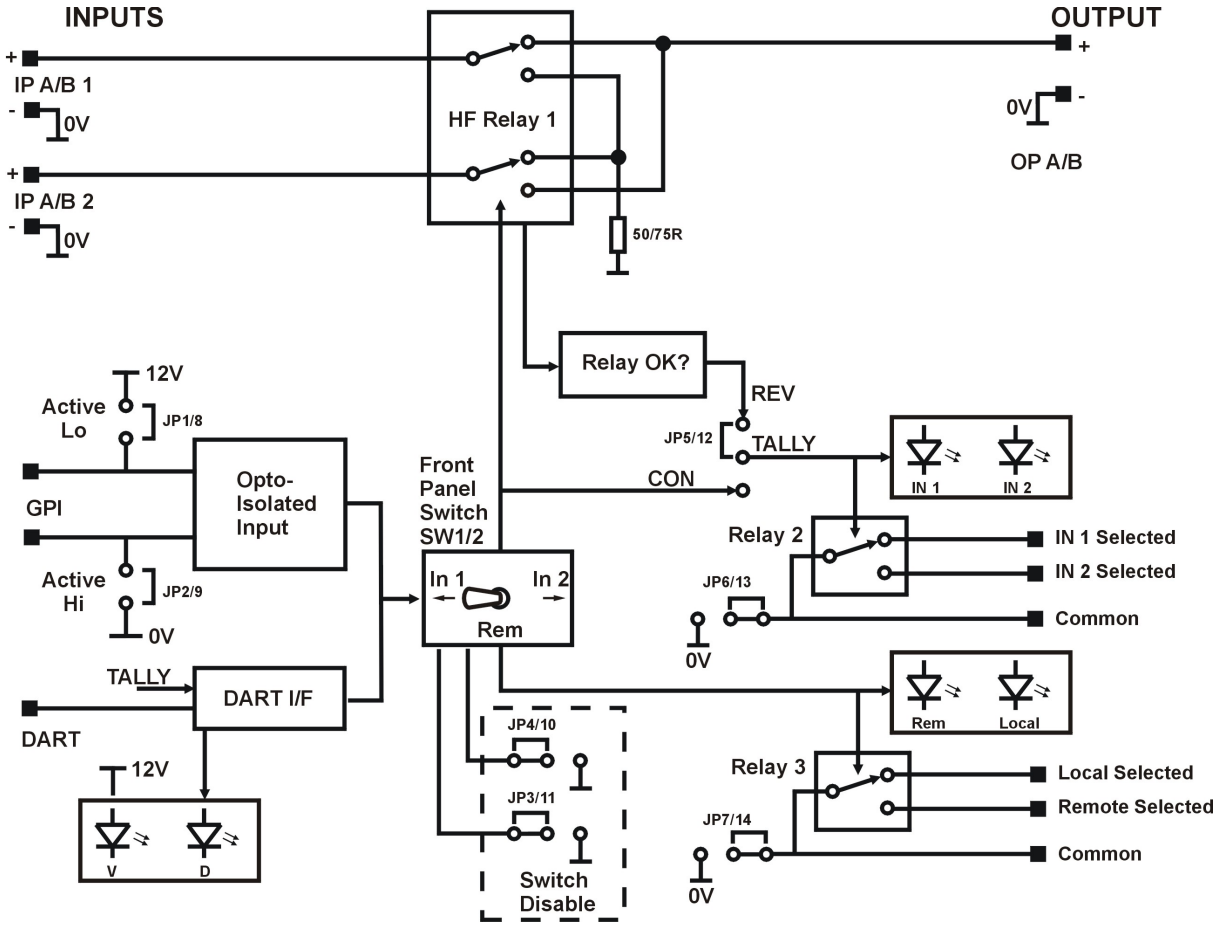
The front panel is equipped with LEDs and switches in two groups, one for each channel.

Use the switches to select Input 1 (left position), Remote (central position) or Input 2 (right position) for each channel. Each switch may be disabled independently by moving the appropriate links on the module.

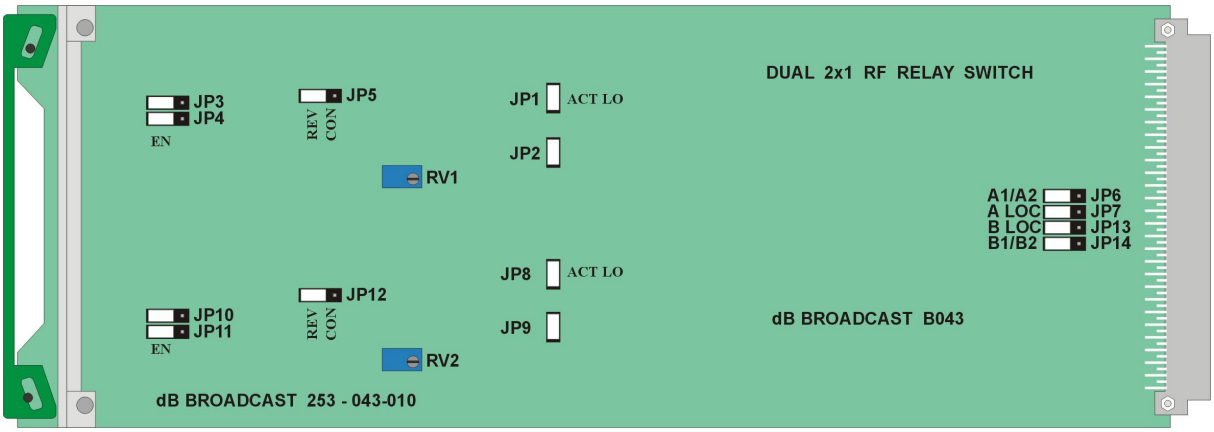
Configuration

Each channel has a number of configuration jumper links, JP1 to JP14 to set the following options:

- Remote control input active high/active low/isolated
- Front panel signal changeover control enabled/disabled
- Derivation of input selection tallies
- Input selection and local/remote tallies to be grounded common or ground-free



The B043 Dual 2 x 1 RF Relay Switch – functional view (both channels identical)



The B043 dual 2 x 1 HF Relay Switch showing jumper links

Link functions

Jumper No	Channel A jumpers
JP1	Insert link for Channel A Active Low Control (JP2 open). Remove both JP1 and JP2 for an isolated control input.
JP2	Insert link for Channel A Active High Control (JP1 open). Remove both JP1 and JP2 for an isolated control input.
JP3/4	Insert links in LH position to enable Channel A front panel input changeover control switch. Insert in RH position to disable.
JP5	Insert link in the position marked REV(ertive) for the input selection A1/A2 tallies to be derived from the drive to the signal changeover relay coil. Insert link in the position marked CON(trol) for the A1/A2 tallies to be derived from the front panel or external control inputs.
JP6	Insert link in the RH position for the common of the A1/A2 selected tally to be earth-free. Insert link in the LH position for this common to be grounded.
JP7	Insert link in the RH position for the common of the A remote/A local tally to be earth-free. Insert link in the LH position to ground it.

Jumper No	Channel B jumpers
JP8	Insert link for Channel B Active Low Control (JP9 open).
JP9	Insert link for Channel B Active High Control (JP8 open).
JP10/11	Insert links in LH position to enable Channel B front panel input changeover control switch. Insert in RH position to disable.
JP12	Insert link in the position marked REV(ertive) for the input selection B1/B2 tallies to be derived from the drive to the signal changeover relay coil. Insert link in the position marked CON(trol) for the B1/B2 tallies to be derived from the front panel or external control inputs.
JP13	Insert link in the RH position for the common of the B1/B2 selected tally to be earth-free. Insert link in the LH position for this common to be grounded.
JP14	Insert link in the RH position for the common of the B remote/B local tally to be earth-free. Insert link in the LH position for this common to be grounded.

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Remote control

The B043 has two remote control options:

Contact closure or 12V (dependent on configuration) applied to the remote control port routes the output of a channel to Input 2. The output is routed to Input 1 in the absence of a control input.

To force the B043 to switch, either insert JP1 and connect CTLA (LO) pin 3 to OV pin 1, or insert JP2 and connect CTLA (HI) pin 4 to +12V pin 2.

With the B040 option, control is possible over DARTnet from a controller when the unit is fitted into a DART-equipped Avitel or Vistek rack.

Sample problems and their solutions

The unit does not appear to operate correctly

Check that the green 'V' LED is illuminated and that the module is seated correctly in the frame.

Check that the appropriate rear connector has been wired correctly.

Check that the desired control interface is enabled and that other control options are not active.

There is no DART control

Ensure that the frame has been fitted with the DART control module (In the Vistek 3RU frame this is the V606 module; in Avitel frames it is standard and is part of the PSU).

Check that the B043 module is fitted with the B040 DART sub-board

Check that the DART interface has been enabled for the channel being controlled.

Ensure that other control interfaces are not active

There is no GPI control

Check that GPI control has been enabled and that other control interfaces are active

Check the configuration for the appropriate control polarity.

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Ordering information

B043 types

Different frames require different mechanical fittings. All module functionality is identical.

B043-50	50 Ohm Version for Avitel Chassis
B043-75	75 Ohm Version for Avitel Chassis
B043/V-50	50 Ohm Version for Vistek Chassis
B043/V-75	75 Ohm Version for Vistek Chassis
B040	Optional DARTnet Interface sub-board - does not require a slot within a frame

3U Avitel configuration

ERF 3390K–P1	3U Chassis, 14 Module slots, 1 PSU slot, (no PSUs included)
ERF 3390K–P2	3U Chassis, 12 Module slots, 2 PSU slots, (no PSUs included)
MPS 3392L	PSU for above chassis
DMC 3307K	BNC Rear connector module

1U Avitel configuration

ERF 1131K	1U Chassis, 3 Module slots, PSU mounted externally, (no PSUs included)
MPS 0330	PSU for above chassis (requires mounting holsters)
ECA 0331	Mounting holsters for PSU MPS 0330
DMC 3307K	BNC Rear connector module

3U Vistek configuration

V1606-dB-2PSU	3U Chassis, 14 Module slots, 2 PSU slots (2 PSUs included)
V1606-dB-48V	3U Chassis, 14 Module slots, 2 48V PSU slots (2 48V PSUs included)
VB100	BNC Rear connector module

1U Vistek configuration (dual PSU)

F010	1U Chassis, 2 Module slots, 2 PSUs (PSUs included)
VB100	BNC rear connector module

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Specification

INPUTS & OUTPUTS

Signal formats	RF signals up to 1GHz ASI (DVB-PI-232) Analogue Video SDI (EBU Tech 3267-E and SMPTE 259M) AES-3id (1995) G703 (CCITT Rec. G703)
Connectors	BNC
Impedance (unselected input)	75 Ohms, 50 Ohms or Hi-Z depending on version