

RS-232 Fallback Switch Model 232FBC

Introduction

B&B Electronics' Model 232FBC permits two serial devices to share a serial port on a host computer by automatically switching between the two. This can be done through two different modes of automated switching: Port Combiner mode and Fallback mode. In Port Combiner mode whichever port asserts control first is enabled and locks out the other port until the first port drops control. In Fallback mode the Primary port is enabled as the default port and you can select whether the Primary or Alternate port overrides the other if both are transmitting. The 232FBC can also be switched manually to either port using a toggle switch located on the front of the device.



Asserting Control

Slave ports assert control in two ways. The first is to transmit data from one of the slave ports. This latches the assertion for the duration of the transmission and 50 milliseconds after data has stopped. The second way to assert control is to raise a jumper selected handshake line. The handshake line can be set independently on each slave port to CD, CTS, or DSR. Use JP1 to select the controlling handshake line for the Primary port and JP4 to select the controlling handshake line for the Alternate port. To disable the handshake control on either slave port, simply remove the corresponding jumper. The path will not drop control until the selected handshake line has been lowered and data has ceased to transmit for 50 milliseconds.

When a slave port has asserted control that port is enabled. This allows data to flow freely between the master and asserted ports. The 232FBC holds DTR high on a slave port when it is enabled or is capable of being enabled. This indicates that the port is able to communicate with the master port. When it is not possible for a slave port to communicate with the master port the 232FBC will lower DTR on that slave port.

Automatic Switching

Port Combiner Mode: Use this mode when you have two devices of equal priority and you want to connect to whichever is ready. Whichever port asserts control first is enabled and has its DTR held high. This locks out the other port and holds its DTR low until the first port drops control. When neither port asserts control, both ports are disabled and have DTR raised. To select this mode, set the toggle switch on the top to "Auto". Remove the screws in the box and remove the cover to reveal the jumpers. Set the Mode jumper (JP2) to "Port Combiner". The Override jumper (JP3) has no effect.

Fallback Mode: Use this mode for switching between redundant lines or for specific switching needs that are not covered under Port Combiner mode. When neither port asserts control, the Primary port is enabled and DTR is raised on both slave ports. When both slave ports attempt to assert control the 232FBC enables the port that is selected by the override jumper (JP3), raising its DTR and lowering DTR on the other slave port. When one slave port asserts itself that port is enabled and its DTR is raised. In this case DTR is lowered on the non-asserted slave port if it is NOT selected as the override port. To select this mode, set the toggle switch on the top to "Auto". Remove the screws in the box and remove the cover to reveal the jumpers. Set the Mode jumper (JP2) to "Fall Back", and set the Override jumper (JP3) to "Alternate" or "Primary".

Manual Switching

On the top of the 232FBC there is a toggle switch labeled "Primary Auto Alternate". This allows the user to manually switch to the Primary or Alternate slave port without interfering with the jumper settings just like a switch box. Selecting "Primary" or "Alternate" with the toggle switch overrides the automatic switching features and enables that slave port, raising its DTR and lowering the other port's DTR.

Pinouts

The Master port on the 232FBC is configured as an RS-232 DCE port with a DB25 female connector. The Alternate and Primary ports on the 232FBC are configured as RS-232 DTE ports with a DB25 male connector on each. Table 1 and Table 2 show the configurations of the ports.

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Phone: (815) 433-5100
Office Fax: (815) 434-5105
Tech Fax: (815) 433-5104
Sales Fax: (815) 433-5109

B & B electronics
MANUFACTURING COMPANY
707 Dayton Road -- P.O. Box 1040 -- Ottawa, IL 61350 USA

Home Page: www.bb-elec.com
E-mail: sales@bb-elec.com
support@bb-elec.com

Table 1: Master Port Pinouts

Signal	Pin	Direction
Fr. GND	1	-----
TD	2	Input
RD	3	Output
RTS	4	Input
CTS	5	Output
DSR	6	Output
S. GND	7	-----
CD	8	Output
XCLK	15	Output
RCLK	17	Output
SIG. QUAL	21	Output
RI	22	Output
EXT. CLK	24	Input

Table 2: Slave Port Pinouts

Signal	Pin	Direction
Fr. GND	1	-----
TD	2	Output
RD	3	Input
RTS	4	Output
CTS	5	Input
DSR	6	Input
S. GND	7	-----
CD	8	Input
XCLK	15	Input
RCLK	17	Input
DTR	20	Output
SIG. QUAL	21	Input
RI	22	Input
EXT. CLK	24	Output

Specifications

Dimensions: 4.8 X 2.8 X .9 inches (12.2 X 7.1 X 2.3 cm)
 Temperature range: 0°C to 70°C
 Supply voltage: 9-15 VDC @ 225 mA max.
 Connectors: DB-25 female master
 DB-25 male slaves

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 Tech Fax: (815) 433-5104
 Sales Fax: (815) 433-5109



Home Page: www.bb-elec.com
 E-mail: sales@bb-elec.com
support@bb-elec.com