

## 3-Port Fiber Optical Switch Systems ( Nanosecond Switches )



### KEY FEATURES

- 3-Port Fiber Optically Pigtailed
- 1x2 and 2x1 Configurations
- Compact Size and Rack Mount
- Solid-state: No Moving Parts
- Nanosecond Speed Response: ~200 ns
- Low Insertion Loss
- Low Power Consumption
- High Reliability, Environmentally Stable
- 9/125  $\mu\text{m}$  Single-Mode (SM) Fiber
- Custom Configurations Available

### APPLICATIONS

- Optical Add/Drop, Cross Connect, and Ring Protection
- System Monitoring
- Telecommunication Applications
- Test & Measurement
- Optical Component Network or Field Projects in Fiber Optics Sensing System
- OEM Designs

### 3-Port Nanosecond Fiber Optical Switch Systems

The Brimrose 3-port fiber optical switch system plays a major role in modern fiber optic telecommunication and sensing systems that demands high-reliability operation, response, and continuous high-frequency switching.

This fiber optical switch is a powerful tool to switch an optical signal at nanosecond speed (200ns). The optical switch has two configurations: 1x2 or 2x1. The switch is bi-directional. The optical switch consists of the all fiber optic switch device and corresponding driver packaged in a rack-mountable enclosure. The switching is done by an external TTL compatible low voltage signal.

The Brimrose high-speed RF optical switch driver is packaged in a rack-mountable instrument case. The optical switch driver is an RF generator utilizing a Quartz crystal referenced phase locked loop (PLL) synthesizer.

**Brimrose Corporation of America**



## 3-Port Nanosecond Optical Switch System Preliminary Specification

Model #	OS-2-1-C-55	
<b>Switch Type</b>	1x2 or 2x1	
<b>Wavelength Range (nm) *</b>	C Band	
<b>Control Input (V) - TTL Signal **</b>	0-5	
<b>Switch Time (ns)</b>	~200	
<b>Number of Input Ports per Switch</b>	2x1 Optical Switch	1x2 optical Switch
	2 Input Ports	1 Input Port
<b>Number of Output Ports per Switch</b>	2x1 Optical Switch	1x2 optical Switch
	1 Output Port	2 Output Ports
<b>Case Type</b>	3-Port Fiber Optically Pigtailed	
<b>Fiber Type *</b>	9/125 $\mu$ m Single-Mode	
<b>Optical Connector Types *</b>	FC/APC	
<b>Total Insertion Loss (dB)</b>	< 2.5-3.0	
<b>Delay Time (<math>\mu</math>s)</b>	~1	
<b>Case Size (mm)</b>	150 x 45 x 14	

\* Others available.

\*\* TTL compatible voltage source for drive switch.

One optical channel will be up-shifted by 55 MHz and the other will be downshifted by -55 MHz.

For more information, please check the Brimrose website or contact us at [office@brimrose.com](mailto:office@brimrose.com).



## RF Driver Specification

Driver Model #	FFE-XX-B2-FY-X
<b>Frequency (MHz)</b>	XX MHz (compatible with the AO device)
<b>Frequency Control</b>	Quartz crystal referenced phase locked loop.
<b>Frequency Accuracy (%)</b>	0.015
<b>Frequency Stability (Hz)</b>	< 100
<b>Harmonic Content (dBc)</b>	≤ - 10 (Max)
<b>Output Power (Watt)</b>	Nominal on both RF Out 1 and RF Out 2.
<b>Modulation</b>	B2 TTL; DC-8 MHz:
<b>Modulation Input</b>	0-5 V; 330 Ω
<b>Operating Power</b>	117 VAC +/-10% 50-60Hz, (220 VAC ±25% optional) 55W max.
<b>Enclosure</b>	The unit will be packaged in a 190 mm (7.5 inch) wide by 90 mm (3.5 inch) high by 220 mm (8.75 inch) deep instrument case. The rear panel heat sink increases the depth to 270 mm (10.5 inches) maximum. The size is exclusive of connectors. A detachable AC line cord and RF cable are provided.
<b>Environmental</b>	Nominal Laboratory conditions: The maximum ambient temperature is +35° C. The unit is not sealed against moisture or condensing humidity.
<b>Option X</b>	Two RF outputs with a single "TTL in" to switch between.

If there are any questions please contact Brimrose at [office@brimrose.com](mailto:office@brimrose.com).

