

NanoSpeed™ Premium 1x1, 1x2, 2X2 Fiber Optical Switch (1MHz)

(Protected by U.S. patents 7,403,677B1; 6,757,101B2; and pending patents)

Product Description

The NS Premium Series solid-state fiber optic switch connects optical channels by redirecting an incoming optical signal into a selected output optical fiber at high speed. This is achieved using patented electro-optical configuration featuring clean fast response without ripples. The NS fiber optic switch is designed to meet the most demanding switching requirements of continuous operations over 25 years and non-mechanical ultra-high reliability.

The NSP Series switch is controlled by 5V TTL signals with a specially designed electronic driver having performance optimized for various repetition rate.



Features

- Solid-State
- High speed
- Ultra-high reliability
- Low insertion loss
- Compact

Performance Specifications

NanoSpeed P Series Switches		Min	Typical	Max	Unit
Insertion Loss ^[1]	1900-2200nm		0.8	1.8	dB
	1260-1650nm		0.6	1.0	
	960-1100nm		0.8	1.3	
	780-960nm		1.2	1.5	
	520 - 680nm		1.5	2	
Cross Talk ^[2]		18	25	35	dB
PDL (SMF Switch only)			0.15	0.3	dB
PMD (SMF Switch only)			0.1	0.3	ps
ER (PMF Switch only)		18	25		dB
IL Temperature Dependency			0.25	0.5	dB
Return Loss		45	50	60	dB
Response Time (Rise, Fall)				300	ns
Driver Repeat Rate	200kHz driver	DC	200		kHz
	1000kHz driver	DC	1000		
Optic power Handling ^[3]	Normal power switches		300		mW
	High power switches			5	W
Operating Temperature		-5		70	°C
Storage Temperature		-40		85	°C

[1] Measured without connectors. For other wavelength, please contact us.

[2] Cross talk is measured at 500kHz, which may be degraded at the high repeat rate.

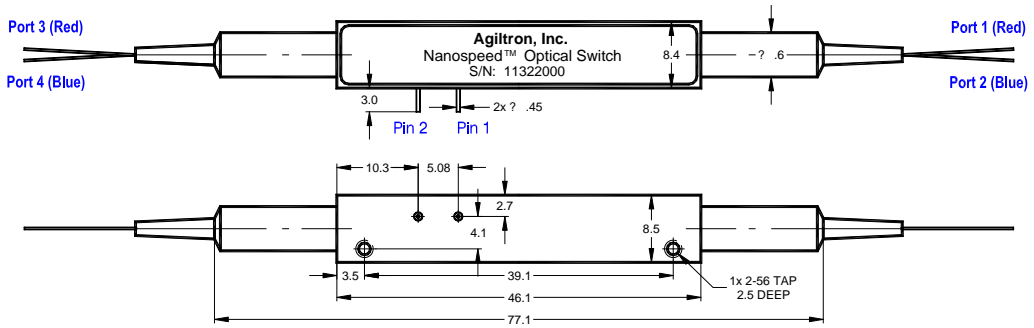
[3] Defined at 1310nm/1550nm. For the shorter wavelength, the handling power may be reduced, please contact us for more information.

Applications

- Optical blocking
- Configurable operation
- Instrumentation

NanoSpeed™ Premium 1x1, 1x2, 2X2 Fiber Optical Switch

Mechanical Dimensions (Unit: mm)



Optical Path Driving Table

Optical Path	TTL Signal
Port 1→Port 3, Port 2→Port 4	L (< 0.8V)
Port 1→Port 4, Port 2→Port 3	H (> 3.5V)

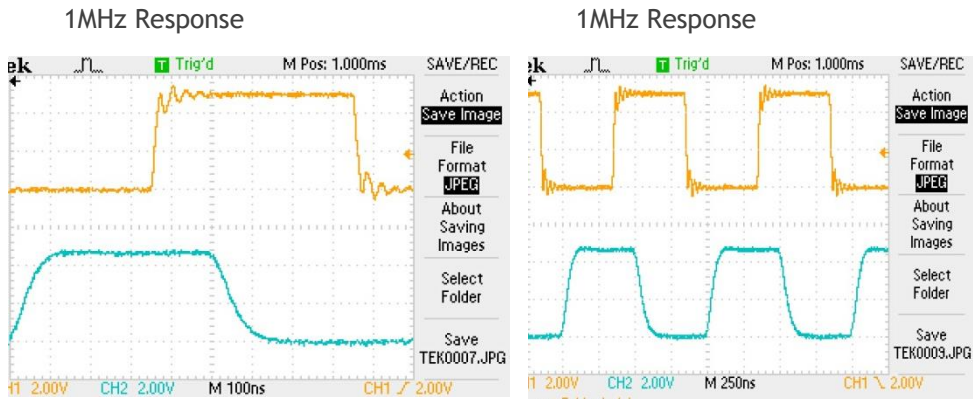
Driving Board Selection

Maximum Repetition Rate	Part Number (P/N)
200kHz	SWDR-11a2M1111
1000kHz	SWDR-11a2H1111

* Note: For customers that prefer to design their own driving circuit, they are responsible for the optical performance. For more technical information, please contact us.

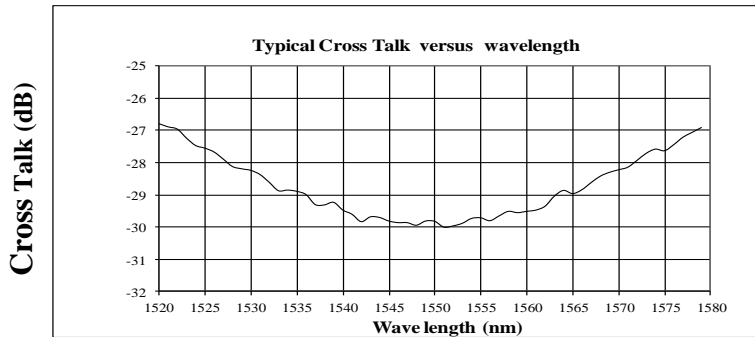
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Typical Speed and Repetition Measurement



Note: Top Traces are electrical; Bottom traces are optical

Typical Bandwidth Measurement



Ordering Information

NPSW-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Type	Wavelength	Configuration	Repetition Rate	Fiber Type	Fiber Length	Connector			
1x1=11 1x2=12 2x2=22	1060=1 2000=2 1310=3 1480=4 1550=5 1625=6 780=7 850=8 650=E 550=F 400=G 1565-1620=L Special=0	Single Stage=1	200kHz=1 1MHz=2	SMF-28=1 HI1060=2 HI780=3 PM1550/400=4 PM1550/250=5 PM850=8 PM980=9 Special=0	Bare fiber=1 900um loose tube=3 Special=0	None=1 FC/PC=2 FC/APC= 3 SC/PC=4 SC/APC=5 ST/PC=6 LC/PC=7 LC/APC=8 Special=0			