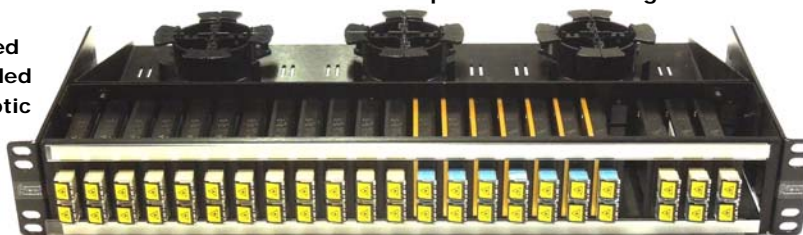


# Normal Through Optical Switch and Passive Fiber Optic Patchbay

1.5RU PANEL with integrated fiber management tray loaded with up to 24 NTOS fiber optic patchjacks



Fiber management back section of tray with 3 spindles for fiber organization

**Advanced Fiber Products'** normal through fiber optic switches save you time, money, and effort by allowing fast, organized, reconfiguration and easy maintenance of high speed fiber optic networks with the ease of a normalling patchbay. AFP's fiber optic patchbays offer singlemode and multimode options with an industry standard simplex or duplex LC connector interface.

AFP's optical normal through adaptors help eliminate the need for traditional fiber patchcords on the front of patchbays, normally an irritating monster of fiber networking architectures. Reducing cable clutter, weight and cost of cable management, AFP's optical normal through adaptors provide a rugged and reliable way to carry, monitor, and route your high-speed signals on the back of the patchbay.

AFP's Normal Through Optical Switches are passive devices which are signal protocol agnostic and are available for either singlemode or multimode networks. They carry and route Ethernet, HDTV, SDI, IP, Analog Video and all other data formats at any data rates. They operate with excellent reliability and optical performance.

Only when an industry standard LC connector is plugged to either of the front ports, will the signals be switched out for monitoring, temporary network re-configurations or maintenance. All "normal" patching configurations are seamlessly preconfigured and hidden behind the patch-panel as with legacy copper BNC type 'through' adaptors.

Applications for a passive, normalling, fiber optic patchbay include: serving as a primary routing device instead of an active fiber optic router, expanding the I/O's of an existing active fiber optic router, serving as a back-up in case of a catastrophic failure of an active fiber router, and a demarcation point to allow for easy re-routing of fiber connections to allow for maintenance.

## Features

- Excellent reliability—passive mechanical switch allows easy reconfiguration and maintenance of high speed fiber optic networks
- Passive fiber switch is signal agnostic
- Duplex LC industry standard interface
- Switch fiber optic paths with industry standard duplex LC and simplex LC patchcords.
- Modular panel design allows fiber optic switches to be removed from the front of the panel for easy expansion, maintenance and reconfiguration.
- Ultra high density duplex channels
- Singlemode and Multimode versions
- Color coded jack body. Gold for singlemode and black for multimode
- Spring loaded dust caps on front patch interface.
- Low insertion loss and High return loss for singlemode
- Rated for 10G signal traffic
- Easy to read designation strips.
- Integrated wire management tray

## Applications

- Government
- Military IT Networks
- Broadcast Fiber Networks
- Production Studio Fiber Networks
- Outdoor Broadcast (OB) Vehicles
- Entertainment Venue Fiber Networks

## Options

- 1RU, 1.5RU, and 2RU Patchbay Panels
- Adjustable front panel depth
- Front mount 24 Normal Through Optical Switches in one panel, pick and mix
- Full-Normal Singlemode (9/125)
- Full-Normal Multimode (50/125)
- Full-Normal Multimode (62.5/125)
- Crossover normal switch available

Patent Applications Pending

Enhanced  
Connectivity  
Solutions



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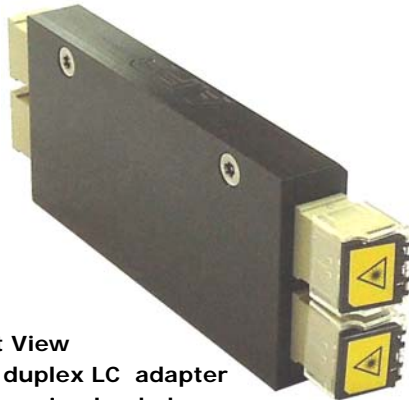
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NTOS Series Product Sheet  
Rev 13219.00

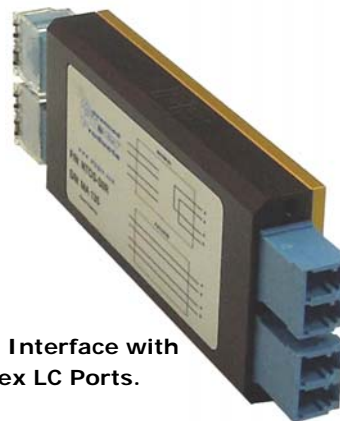
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**Optical Performance**

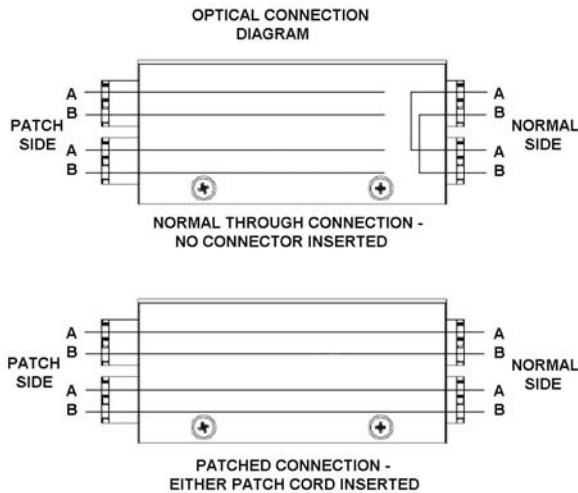
**Singlemode** — 9/125 IL. < 2dB, RL. > 45dB typical  
**Multimode** — 50/125 or 62.5/125 IL. < 2dB



**Front View**  
Each duplex LC adapter has a spring loaded cap.



**Back Interface with Duplex LC Ports.**



**Patch Side is on front of Module.**

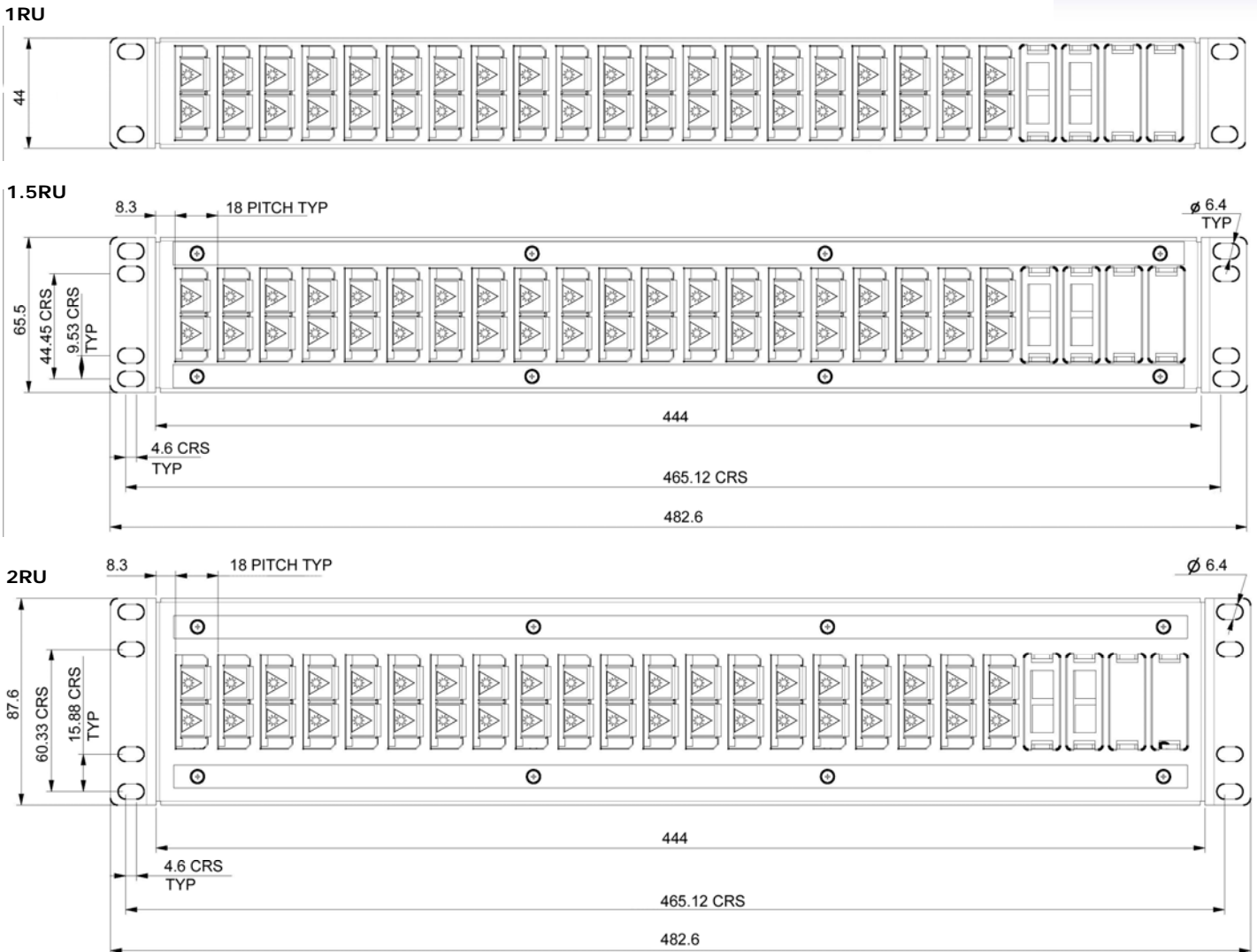
**Normal Side is on back of Module.**

**What is a Normaling Circuit?:** A normaling circuit describes a relationship between two ports on a patch panel, whereby one port is connected to another port by a normally closed switch that is opened when a patchcord is inserted. AFP's NTOS patchjacks are self-contained, passive, mechanical, fiber optic normaling circuits with a duplex LC interface. A normaling circuit is the basic building block of a crosspoint matrix to allow operators to easily switch fiber paths.

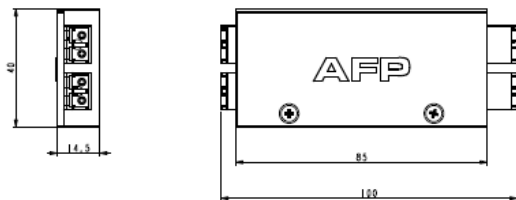
In the case of the AFP modules, the "normal" connection circuits are on the back side of the module. When a patch is connected to the front patch side, the normal path is broken allowing the signals to connect front to back. "Self-normaling" means that when all patches are removed from the front of a module, then the "normal" circuit paths on the back of the module return.



### Rack Elevations (mm)



### Normal Through Optical Switch Dimensions



**Advanced Fiber Products Ltd. (AFP)** is a leading designer, developer and manufacturer of optical and optoelectronic and specialized products for telecom, enterprise, industrial, military, and broadcast markets. The company headquartered at Haverhill, near Cambridge in the United Kingdom has developed a wide variety of novel and secure connectivity products both fiber and copper for use in sensitive and adverse operating environments.

**Product Part Numbers**

**Normal Through Fiber Optic Patchjacks**

Singlemode 9/125 Duplex LC (black body, gold cover, blue duplex LC) A-A, B-B	NTOS-S09
Multimode 50/125 Duplex LC (black body, black cover, tan duplex LC) A-A, B-B	NTOS-M50
Multimode 62.5/125 Duplex LC (black body, black cover, tan duplex LC) A-A, B-B	NTOS-M62

**Normal Through Fiber Optic Patchjacks with Crossover Normal**

Singlemode 9/125 Duplex LC (black body, gold cover, blue duplex LC) A-B B-A	NTOS-XS09
Multimode 50/125 Duplex LC (black body, black cover, tan duplex LC) A-B B-A	NTOS-XM50
Multimode 62.5/125 Duplex LC (black body, black cover, tan duplex LC) A-B B-A	NTOS-XM62

**1 RU Patchpanel with integrated fiber management tray**

19" 1 RU 24 x NTOS-S9R patchjacks - Singlemode 9/125	NTOSPNL1-24S09
19" 1 RU 24 x NTOS-M50R patchjacks - Multimode 50/125	NTOSPNL1-24M50
19" 1 RU 24 x NTOS-M62R patchjacks - Multimode 62.5/125	NTOSPNL1-24M62

**1.5 RU Patchpanel with integrated fiber management tray**

19" 1.5 RU 24 x NTOS-S9R patchjacks - Singlemode 9/125	NTOSPNL1.5-24S09
19" 1.5 RU 24 x NTOS-M50R patchjacks - Multimode 50/125	NTOSPNL1.5-24M50
19" 1.5 RU 24 x NTOS-M62R patchjacks - Multimode 62.5/125	NTOSPNL1.5-24M62

**2 RU Patchpanel with integrated fiber management tray**

19" 2 RU 24 x NTOS-S9R patchjacks - Singlemode 9/125	NTOSPNL2-24S09
19" 2 RU 24 x NTOS-M50R patchjacks - Multimode 50/125	NTOSPNL2-24M50
19" 2 RU 24 x NTOS-M62R patchjacks - Multimode 62.5/125	NTOSPNL2-24M62

**Accessories**

Blank insert to cover unused slots of the NTOS panel assembly	NTOS-BC
Blank insert with two openings for SC or LC feed-thru adaptors	NTOS-B2
Replacement Designation Strip Cap	NTOS-DES430C

*AFP's Optical Normal Through adaptors can be supplied as discrete components for integration in customer rack panels or supplied in AFP's own 24 Channel 1RU, 1.5RU, and 2RU panels with pick and mix of through modules.*

*To order, or receive more information on the normal through optical switch product line, contact Advanced Fiber Products directly.*

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