

The USR4525 and USR4526 Gigabit Fiber TAPs (Test Access Points) will tap a single network link or segment and make copies of traffic. Network segments may be monitored using a network analyzer, security devices or any monitoring appliance or tool. Capture full-duplex traffic without dropping any packets.

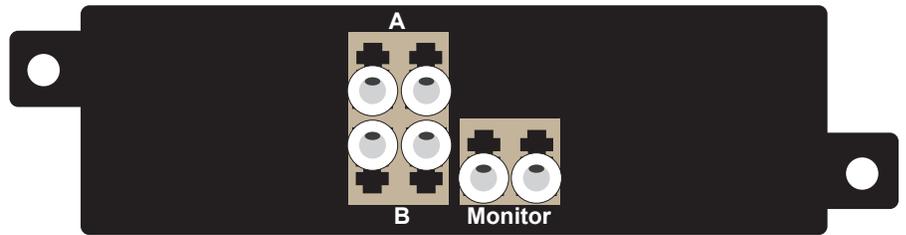
### Package Contents:

- USR Gigabit Fiber TAP with mounting tabs for use with USR4522-RMK (4 unit 1U rackmount)
- 2 mounting screws
- Information Card

### USR4525

#### Multi-Mode Front View

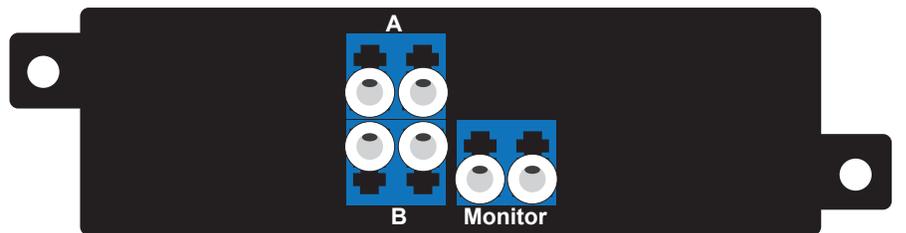
A/B: Full-duplex LC Fiber Ports  
Monitor: Dual-simplex directional port  
(output only)



### USR4526

#### Single-Mode Front View

A/B: Full-duplex LC Fiber Ports  
Monitor: Dual-simplex directional port  
(output only)

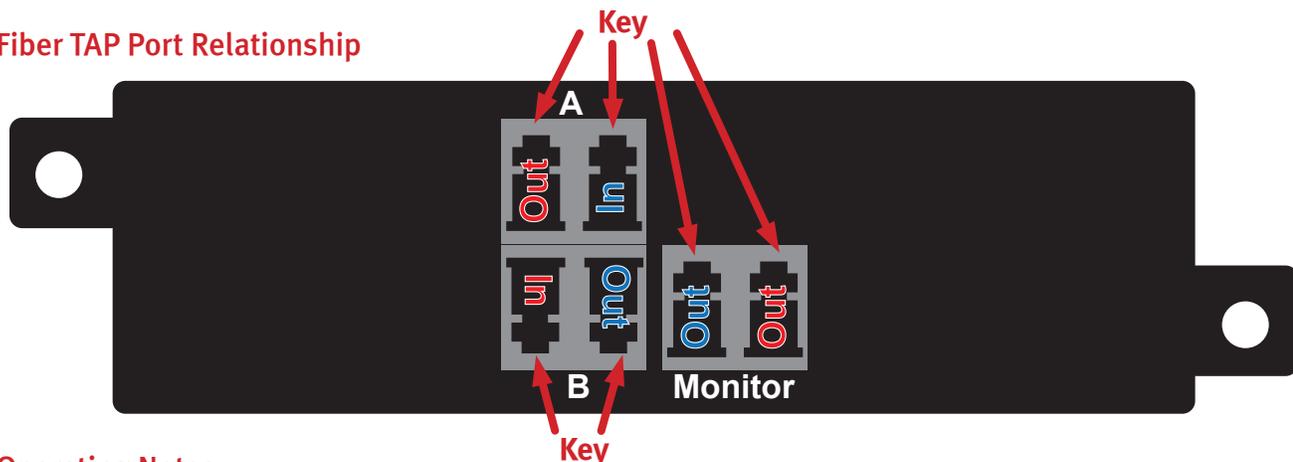


NOTE: All fiber connectors are keyed, the key pointing up for A and Monitor, B points down.

### Installation Steps

1. Unpack the TAP and, if desired attach to the optional rack mount. Instructions are provided on page 3.
2. Install the network TAP into the live network. Using fiber cables, connect ports A and B between two live network devices where monitoring is desired. **Make sure you hear a "click" when inserting the cables. Be careful not to confuse the input/output ports.** See the Fiber TAP Port Relationship image below and the example on the next page.
3. Verify network traffic is flowing, confirming that network cabling is correct.
4. Connect fiber cable to the monitoring tools for traditional traffic monitoring.

### Fiber TAP Port Relationship



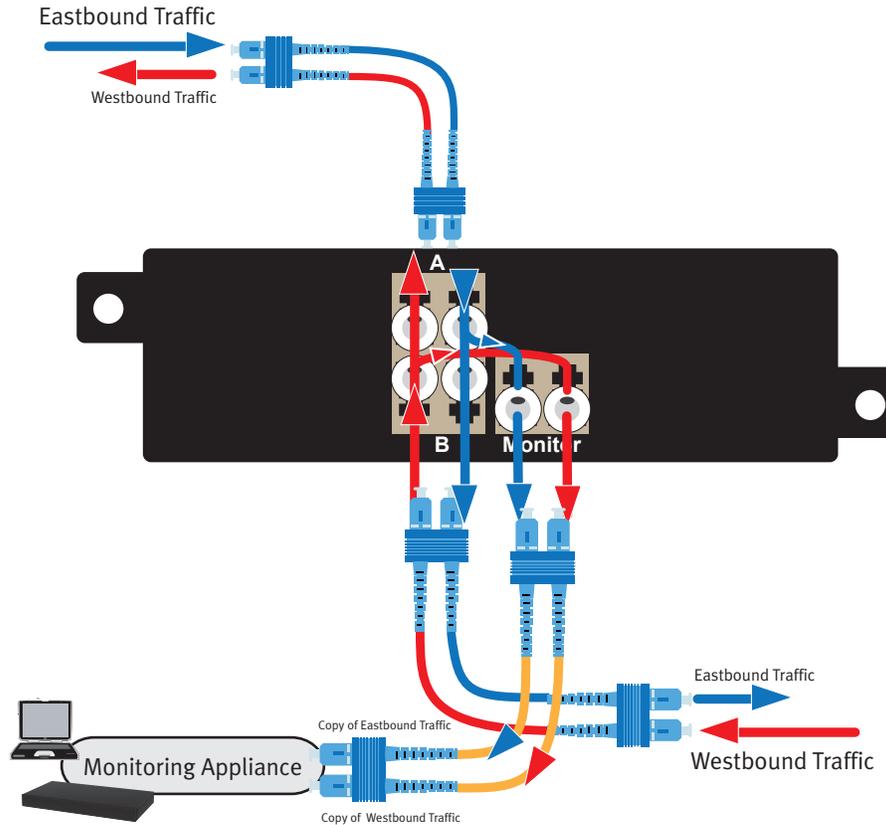
### Operating Notes:

- Network equipment with single-mode SFP cannot interface to network equipment with multi-mode SFP. It is important that the endpoint devices connected to each TAP network port use the same type of fiber interface.
- Single-mode fiber must be used on all ports of a single-mode fiber TAP.
- Multi-mode fiber must be used on all ports of a multi-mode fiber TAP.
- The monitoring equipment connected to the TAP monitor ports must be capable of the same maximum speed as the network equipment interfaces. Oversubscription may occur if the speeds are mismatched.

## Definitions

**Breakout:** Separates data flows for half-duplex directional monitoring. Ideal when utilization is very high and packet loss is not an option.

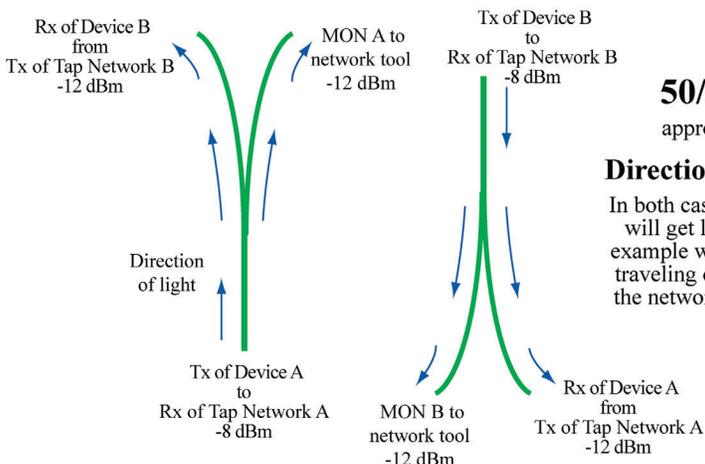
**Passive:** A powerless device. Live network TAP ports maintain link with each, continuing traffic flow between critical network devices.



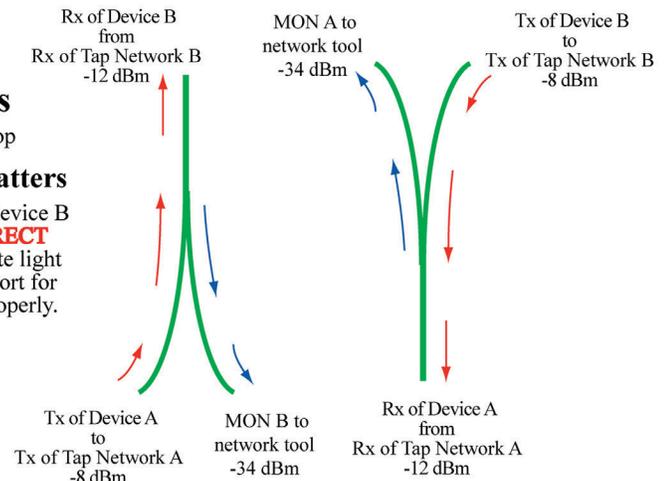
## Considerations for Fiber Installation:

Fiber TAPs are splitters that divide the light traveling along the fiber into two separate channels. The splitting of the fiber takes signal strength from one fiber and divides it into two (or more) fibers requiring enough light from the main channel to be shared among the divided fibers - meaning that you need to take into consideration the “light budget” to allow for the loss of light on each split channel. By installing the fibers in the proper direction there should be enough light to work properly. If light does not enter the TAP in the proper direction, the light traveling out from the Monitor port will be inadequate for the network tool to utilize the data. This is a common problem that results in link faults on the network tools. To remedy the problem, simply swap the Network connectors (In to Out and Out to In) for proper connectivity and link activity.

### CORRECT



### INCORRECT



### 50/50 Splitters

approximate 4dBm drop

### Direction of Light Matters

In both cases device A and device B will get link. The **INCORRECT** example will have inadequate light traveling out of the MON port for the network tool to work properly.

## Optical Fiber Insertion Losses for Passive Fiber TAPs

Optical Fiber Insertion Loss for OS1, OS2 with 1310/1550nm - Corning 9/125 micron

Split Ratio	Splitter: Single-Mode (OS1, OS2) with LC Connector*		Splitter plus loss with one mated pair**		Splitter plus loss with two mated pairs***	
	Network Port	Monitor Port	Network Port	Monitor Port	Network Port	Monitor Port
50/50	3.6 dB	3.6 dB	3.9 dB	3.9 dB	4.2 dB	4.2 dB
Directivity: ≥50dB						
Operating Temperature:-40 to +85C						

Optical Fiber Insertion Loss for OM1, OM3 with 850/1300nm - OM1 Models Corning 62.5 micron - OM3 Models Corning 50 micron

Split Ratio	Splitter: Multi-Mode with LC Connector*		Splitter plus loss with one mated pair**		Splitter plus loss with two mated pairs***	
	Network Port	Monitor Port	Network Port	Monitor Port	Network Port	Monitor Port
50/50	3.7 dB	3.7 dB	4 dB	4 dB	4.3 dB	4.3 dB
Directivity: ≥40dB						
Operating Temperature:-40 to +85C						

Optical Fiber Insertion Loss for OM4 with 850nm - OM4 Clearcurve BIF 900um buffer

Split Ratio	Splitter: Multi-Mode MTP Connector*		Splitter plus loss with one mated pair**		Splitter plus loss with two mated pairs***	
	Network Port	Monitor Port**	Network Port	Monitor Port**	Network Port	Monitor Port
50/50	3.8 dB	3.8 dB	4.1 dB	4.1 dB	4.4 dB	4.4 dB
Directivity: ≥40dB						
Operating Temperature:-40 to +85C						

\* Measured loss through splitter only \*\* Measured loss through splitter; plus one mated pair (two fibers terminated and connected together with a fiber optic coupler).  
 \*\*\* Measured loss through splitter, plus two additional mated pairs. For methodology, read: Tech Notes on Measuring Budget Light Loss

## Rackmounting the USR Gigabit Fiber TAP

The USR4522-RMK rackmount kit is available separately to mount 4 units horizontally.



### Installing the USR Gigabit Fiber TAP into the USR4522-RMK Rackmount unit:

1. Insert the TAP into any available slot of the installed rackmount.
2. Align the rackmount tabs.
3. Insert and tighten included screws to secure the TAP to the rack.
4. Install into a 1U space in a standard 19" rack. Mounting screws are included with the USR4522-RMK.

### Warranty and Support Information:

This product is subject to the U.S. Robotics Corporation Limited Warranty. To view a copy of the Limited Warranty, please see: [www.usr.com/support/4525](http://www.usr.com/support/4525) or [www.usr.com/support/4526](http://www.usr.com/support/4526)

For information on how to contact USR Technical Support, please see the USR corporate website at: [www.usr.com/support](http://www.usr.com/support)

### Regulatory Information:

**CE** CE Compliance Declaration of Conformity  
 Hereby, USRobotics declares that these TAPs, USR Multi-mode Gigabit LC Fiber TAP and USR Single-mode Gigabit LC Fiber TAP, are in compliance with the essential requirements and other relevant provisions of RoHS Directive EU 2015/863. An electronic copy of the original CE Declaration of Conformity is available at the USR website: [www.usr.com/support/4525](http://www.usr.com/support/4525) or [www.usr.com/support/4526](http://www.usr.com/support/4526)

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