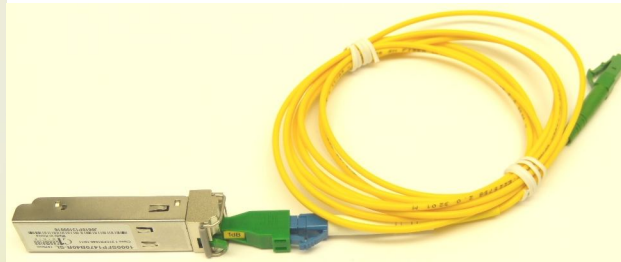


**Figure 1****Figure 2**

### Single Fiber Single Wavelength SFPs

Champion ONE offers single fiber single wavelength (SFSW) SFPs for 1GigE service on a single strand of single mode fiber. A SFSW SFP programmed with the same wavelength is installed at both end points of the fiber strand which simplifies implementation. If service demand increases, up to eight (8) 1GigE services can be provided over a single strand of fiber with the addition of Champion ONE's special CWDM passive units. This expansion capability increases the longevity of the customers' investment.

### Implementation Solution

This application note is being provided to assist customers when connecting fiber patch cables / fiber jumpers to the SFSW SFPs. The SFSW SFPs are built using LC/APC connectors. Champion ONE recommends using LC/APC fiber patch cables when installing SFSW SFPs. These cables usually have green connectors at both ends. Champion ONE recommends APC connectors at both ends to minimize the chance of back reflections. If you have fiber patch panels or LGXs with LC/APC connectors installed in your network, your choice of fiber patch cables should have LC/APC to LC/APC connectors. If your fiber patch panel contains another connector type such as SC/UPC, you will need to select a hybrid fiber patch cable, LC/APC to SC/APC. The insertion loss will be slightly higher when connecting an APC fiber patch cable to a fiber patch panel with UPC connectors, but the overall link performance will improve. It is also necessary to clean all of the fiber connectors to minimize the chance of back reflections.

If it is desired to utilize existing UPC Fiber patch cables as in Figure 1, place a 1dB LC/APC attenuator at the SFSW SFP before connecting the LC/UPC connector as in Figure 2 above. Lab testing has revealed that the link performs better when it is connected in this manner. If this fiber patch cable has an APC connector at the opposite end, it can be placed at the fiber patch panel even if the patch panel has UPC connectors. It is very important that a 1dB APC attenuator be installed at every SFSW SFP if a fiber patch cable with a UPC connector is going to be used.

On longer fiber spans, 20-40km, the SFSW SFPs may have difficulty establishing a link. First try re-cleaning the fiber connections. It may also be necessary to change the duplex options for that switch port from **Auto** to **Full** duplex. Please contact your Champion ONE sales representative with additional questions.