For Discussion on Whether to Choose Uni-directional or Bi-directional Fiber Option

Introduction

Bi-directional or uni-directional fiber options are now available when ordering the Loop-0 9300 Fiber Optical Mux. Properly chosen options ensure that our customers receive maximum value from Loop products. Option selection can be simplified by concentrating on two fundamental issues: distance and fiber direction. The information below will assist you in selecting the best options for your application.

Distance

Up to 20 km - Here are two types of choices for this distance range. They depend on whether you will be using uni-directional fiber or bi-directional fiber. Information on making that choice is outlined below in Section 2.

If you will be using bi-directional fiber your choices are:

SSM (single optical module with single bi-directional fiber – Master)

SSS (single optical module with single bi-directional fiber – Slave)

DSM (dual optical module with single bi-directional fiber – Master)

DSS (dual optical module with single bi-directional fiber – Slave)

NOTE 1: **SSM** & **SSS** should be ordered together

NOTE 2: **DSM** & **DSS** should be ordered together

NOTE 3: The dual modules offer protection

NOTE 4: **SSM/SSS/DSM/DSS** all have their **CONF** fixed at **1310/1550SC20** (1310 transmit/1550 receive

If you will be using uni-directional fiber choose either **SD** or **DD** with **1550SC20 CONF SD** is a single module with 2 uni-directional fibers.

DD (dual module with 4 uni-directional fibers) offers protection.

Up to 30 km - choose **SD** or **DD** with **1310FC30 CONF**.

SD is a single module with 2 uni-directional fibers.

DD (dual module with 4 uni-directional fibers) offers protection.

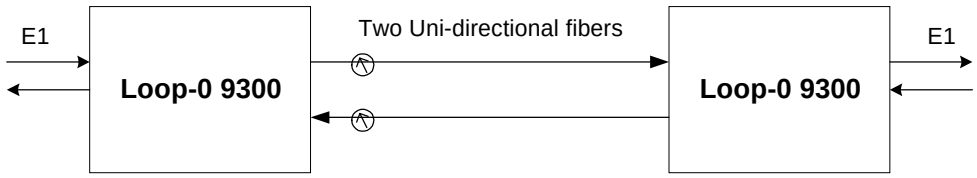
Up to 30 km - choose **SD** or **DD** with **1310SC50 CONF**.

SD is a single module with 2 uni-directional fibers.

DD (dual module with 4 uni-directional fibers) offers protection.

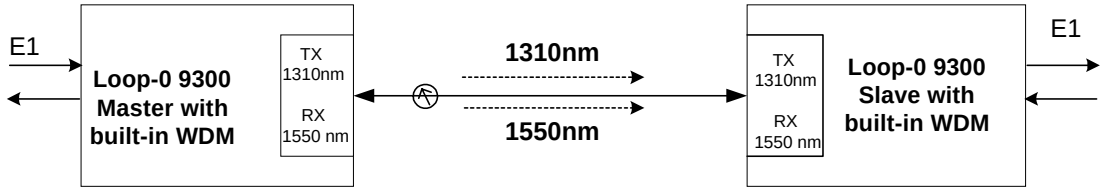
Uni-directional vs. Bi-directional Fiber

The following figure illustrates a typical uni-directional fiber application (unprotected). The signals are carried by two uni-directional fibers.



Unprotected Uni-directional Fiber Application

The following figure depicts a bi-directional fiber application (unprotected). A Wave Division Multiplexer built into this Loop 0-9300 option allows signals to travel in opposite directions on a single fiber.

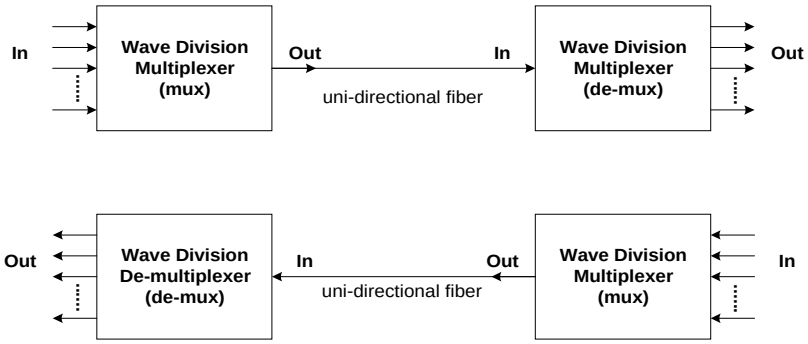


Unprotected Bi-directional Fiber Application

If it is in your company's best interests to use uni-directional fiber, then you should select either the SD or DD (protection) option. If you will be using bi-directional fiber, your choices are master or slave units with single or dual (protection) modules.

There are two main advantages to uni-directional fiber. One is a longer transmission range than that afforded by bi-directional fiber. The other is that considerable cost savings can be realized if signals from many fibers are muxed onto one uni-directional fiber for transmission purposes.

The following figure illustrates a uni-directional fiber application where an external WDM accepts the signals from many uni-directional fiber optic cables and muxes them for transmission onto a single uni-directional fiber. At the far end of the fiber another external Wave Division Multipexer de-muxes them back into separate fibers. Basically, this is a case of initially investing more money in equipment in order to obtain inexpensive expansion capability and lower fiber line transmission costs at some point in the future.



Wave Division Multiplexing on Uni-directional Fiber