

WHEN DO YOU USE OTDR's?

It is very important to understand when you need an OTDR and when it is not appropriate. If you are installing an outside plant network such as a long distance network or a long campus LAN with splices between cables, you will want an OTDR to check if the fibers and splices are good. The OTDR can see the splice after it is made and confirm it's performance. It can also find stress problems in the cables caused by improper handling during installation. If you are doing restoration after a cable cut, the OTDR will help find the location of the cut and help confirm the quality of temporary and permanent splices to restore operation. On singlemode fibers where connector reflections are a concern, the OTDR will pinpoint bad connectors easily.

OTDRs should not be used to measure cable plant loss. That is the job of the source and power meter, which duplicates the actual fiber optic link, as we described in the first part of this article and is documented by every standard ever written for cable plant loss. The loss measured will not correlate between the two methods; the OTDR cannot show the actual cable plant loss that the system will see.

The limited distance resolution of the OTDR makes it very hard to use in a LAN or building environment, where cables are usually only a few hundred feet long. The OTDR has a great deal of difficulty resolving features in the short cables of a LAN and is more often than not simply confusing to the user.

Since OTDRs are very expensive and have only specific uses, the decision to buy one must be made carefully. The user should know their application and from there decide on an OTDR that meets their specification requirements. Two of the most important features when choosing an OTDR are the dynamic range and the attenuation dead zone. If the user is testing outside plant over long distances, the most important specification to them would be the dynamic range of the product. If the user is testing short distances like a LAN network, the most important specification to them would be the deadzone of the product. However, if you are not familiar with their operation or cannot understand the results of OTDR tests, it would be much better to hire a specialist to do the testing for you.