TEMPO COMMUNICATIONS

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Application Note
Using a One Meter Bulkhead Jumper with the OFL100

Introduction

The OFL100 OTDR should always be used with a 1m buffer jumper at the bulkhead.

Benefits of using a 1m Bulkhead Jumper

- Protects the bulkhead finish from contamination and possible damage when connecting to cables and connectors with an unknown level of damage and or contamination.
- If the 1m jumper becomes damaged it can be thrown away and replaced. If the OTDR bulkhead becomes damaged the repair cost is very high for replacement or re-polishing. The OTDR then does not need to be sent back to the factory and remains in use.
- A hybrid 1 m jumper can be used so that any type of field connector can be connected. There is then no need to buy a multitude of costly adapters.
- The reflections from the OFL100 bulkhead and the one meter cable are within the event deadzone of the OFL100 and other similar OTDR's. If the OFL100 bulkhead is clean and in good condition the reflection from this interface will not be measurable.

Distribution in the UK & Ireland

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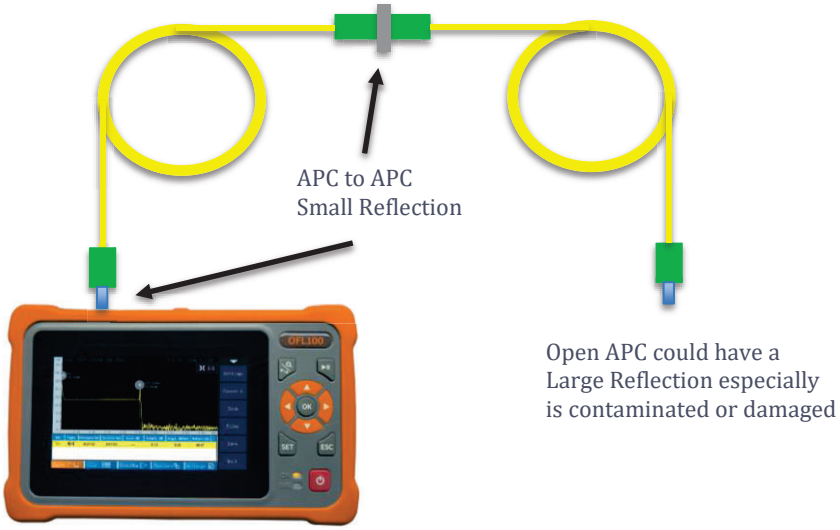
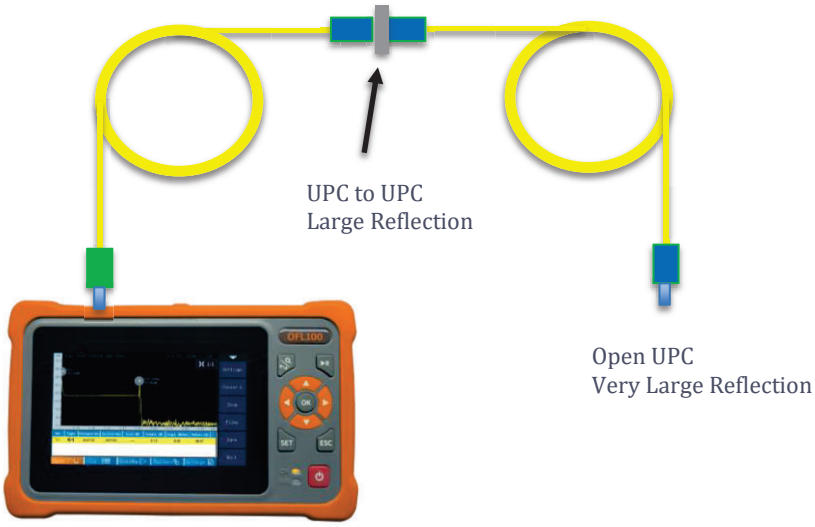
Practical Examples

The OFL100 with an APC bulkhead and an APC to APC 1m jumper



Mated APC connections have very low reflectivity (<65dB typical)
An open (not connected) APC could have a higher reflectivity (~45dB)

The OFL100 with an APC bulkhead and an APC to UPC 1m jumper

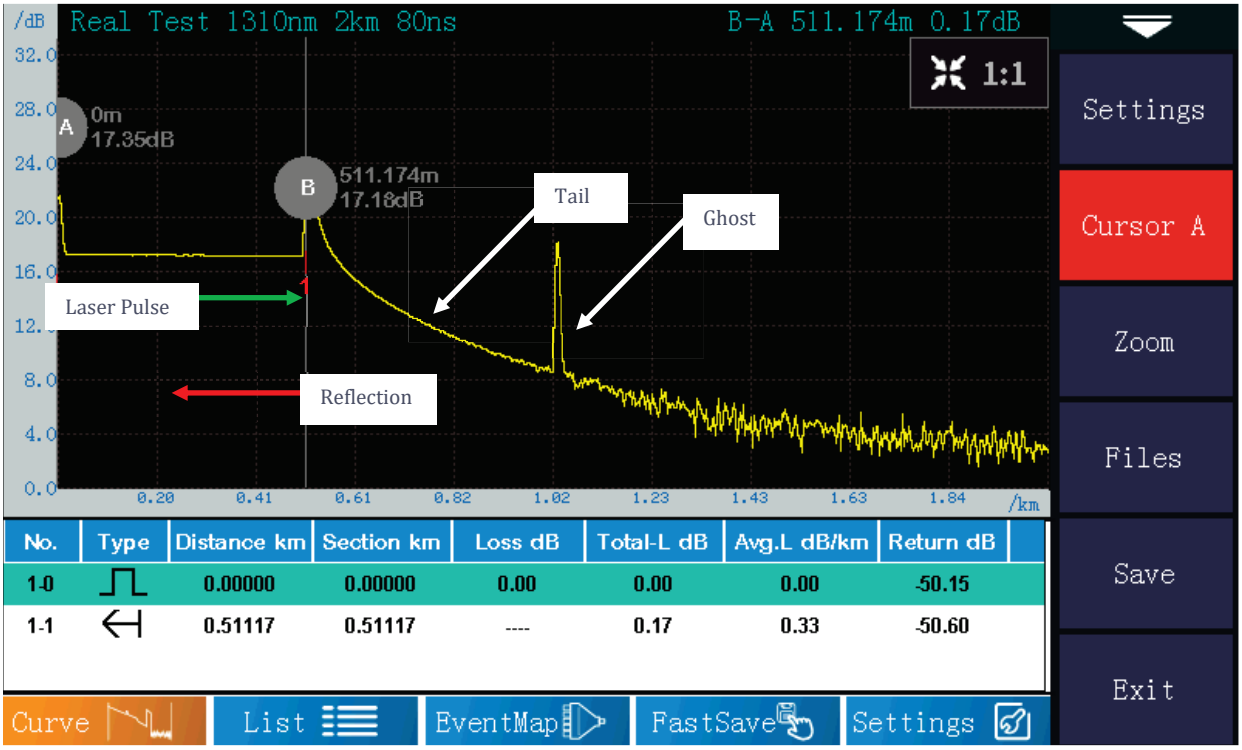


Mated UPC connections have high reflectivity (~45dB)
An open (not connected) UPC will have a very high reflectivity (~14dB)

Ghost Effects

A ghost is a reflection which is really not a reflection but is an artifact of a very high reflection, from perhaps and open or contaminated/damaged connector, sending light energy back to the OTDR. The light reflects back off of the highly reflective laser and it then travels down the fiber under test as if it were a laser pulse. Ghosts are always multiples of highly reflective events. Ghosting can be reduced when APC connectors are used and when all connectors are properly terminated. The tail after the reflective event indicates that the detector diode is not able to recover fast enough due to the high amount of light radiating onto it. The high light level causes a high current flow and it takes time for the detector to recover.

The OFL100 is supplied with an APC bulkhead so that the possibility of reflections is reduced. Ghost effects can be reduced by properly terminating cables, using APC connectors, cleaning and inspecting all connectors and or performing a Mandrell wrap on the end of an unterminated cable.



Conclusion/Recommendation

- The reflection from the bulkhead and the reflection from the end of the 1m jumper will appear as the same reflection since the resolution is determined by the event deadzone.
- The same end of the 1m jumper cable should always be connected to the OTDR bulkhead. This will preserve the quality of the polish on the OFL100 ODTR bulkhead.
- A hybrid cable can be used to transition to LC, FC etc rather than buying expensive additional adapters.
- An SC/APC to SC/UPC cable can be used to connect to flat polished networks.
- Reflections are the enemy of your network!

Notes

- Always clean and inspect connectors prior to mating.
- Always keep the dust cap on the connector when not in use.
- Replace the 1m jumper cable if it is suspected to be damaged.