

Application Note

MTP/MPO Polarity Management V02

Dr. A. S. Keizer
Director of Engineering
FibreFab Ltd
alan.keizer@fibrefab.com

P. Galardziak
Product Manager- Multifibre Connectivity
FibreFab Ltd
patryk.galardziak@fibrefab.com

Scope: Duplex links carried over cables using MTP/MPO connectors

Three standard methods for managing two fibre duplex links in multi-fibre connection are defined in TIA/EIA 568-C.3

All three methods are used in data centre design. It is most important to confirm the appropriate method when placing orders for MPT/MPO cassettes and truck cables.

Method A

- Suitable for both singlemode and multimode
- Employs key up to key down adapters to connect array connector
- One cassette type applicable for both ends
- Compatible with emerging 40Gbps standard
- This is the default standard configuration offered by FibreFab
- **A-A type of patchcord must be applied at selected end in situation where 2 cassettes are applied within optical link**

Registration of Fibre 1 is maintained throughout the optical circuit. Fibre 1 in the near end cassette mates to Fibre 1 in the trunk assembly, which mates to Fibre1 in the remote cassette, and the circuit, is complete by using a non-standard A-A polarity patch cord.

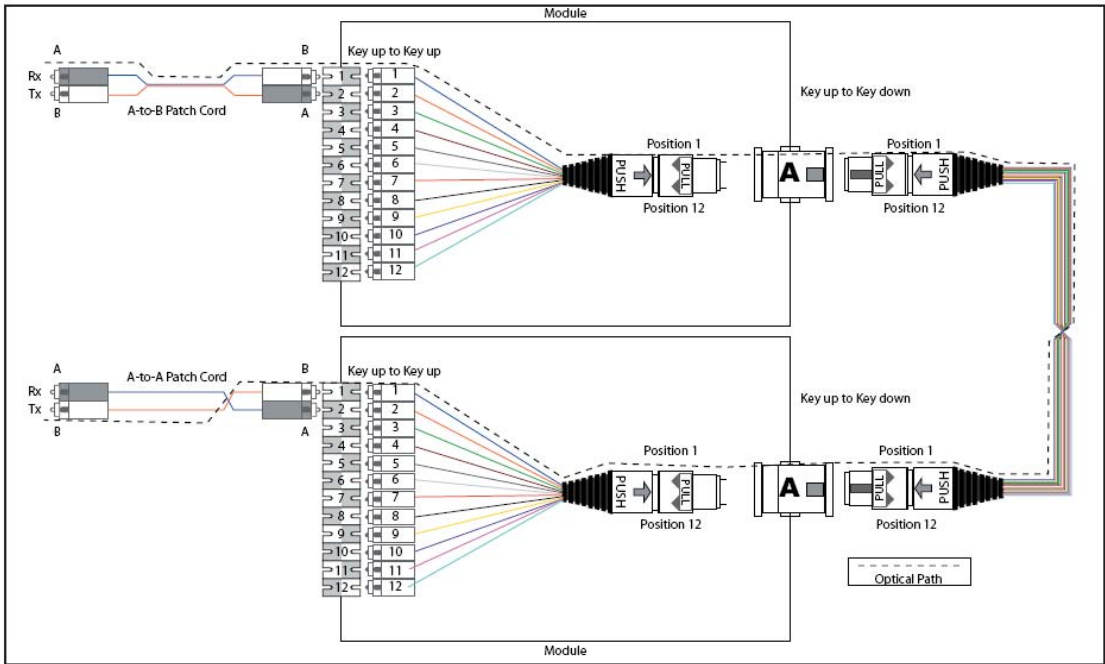


Figure 1: Method A Connectivity

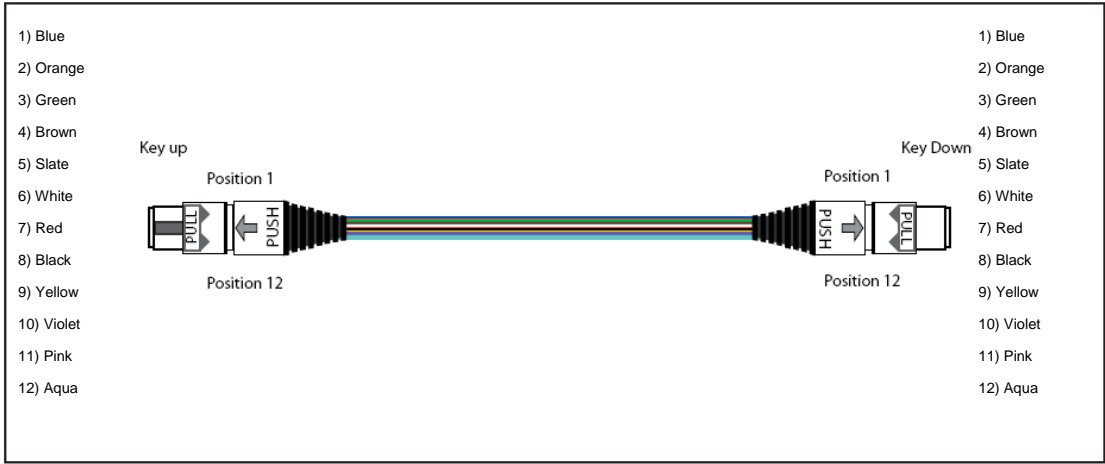


Figure 2: Method A Backbone

Method B

- Employs key up to key down adapters to connect array connector
- Compatible with emerging 40Gbps standard
- Suitable for multimode (flat polished) array connectors only
- Requires two different cassettes each end complicating network deployment

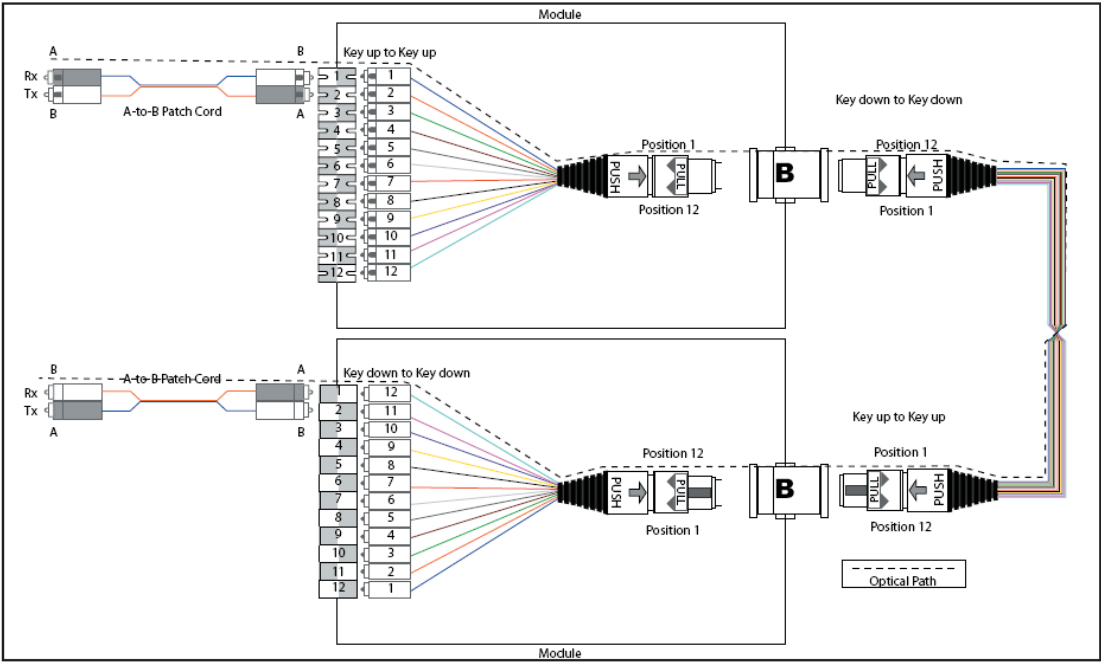


Figure 3: Method B Connectivity

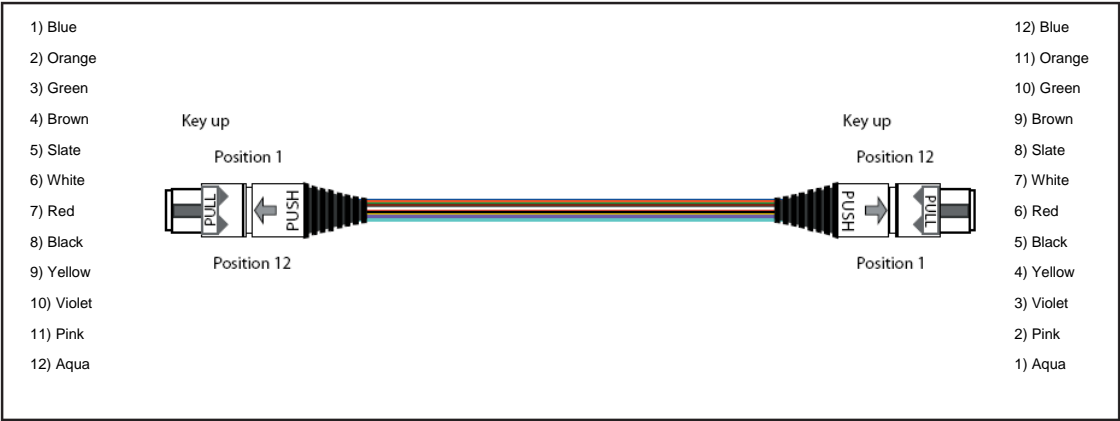


Figure 4: Method B Backbone

Method C

- Suitable for both singlemode and multimode
- Employs key up to key down adapters to connect array connector
- One cassette type applicable for both ends
- A-B type of patchcord are used at both ends in situation where 2 cassettes are applied within optical link
- **Nor recommended to apply with emerging 40Gbps standard**

In Method C, the fibre circuit is completed by utilizing standard A-B polarity patch cords at the beginning and end of the link, like method A. The fibre pair flip his accomplished in the array cable itself and not in the far end patch cords as in Method A.

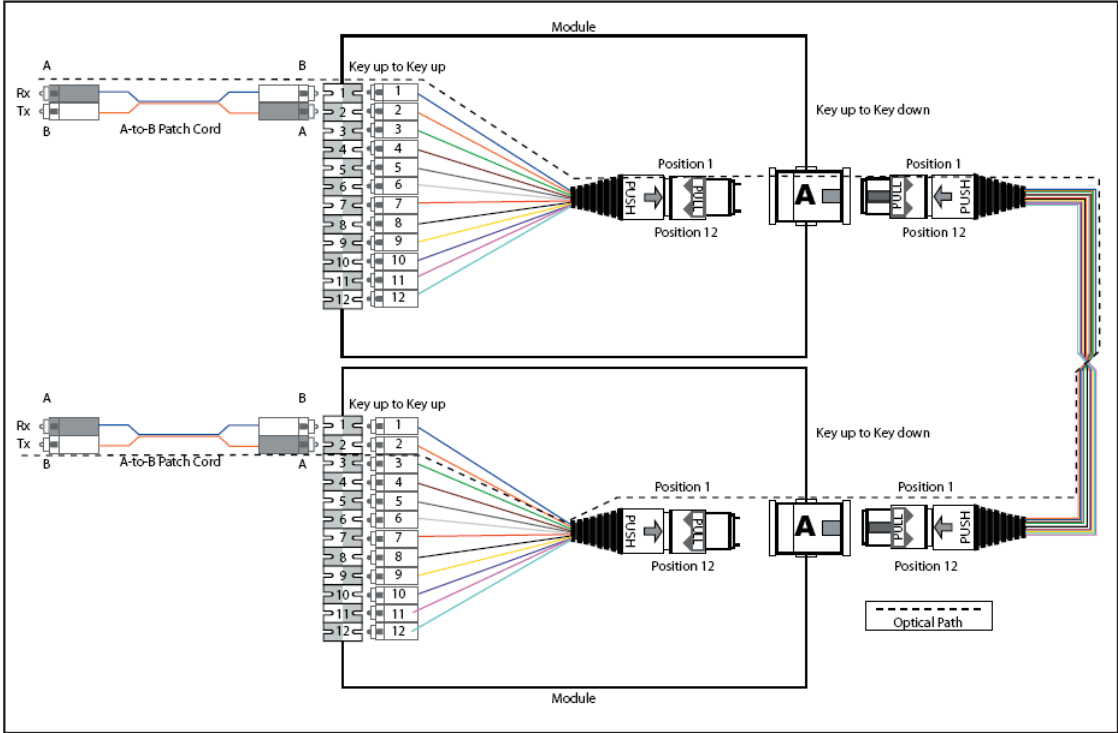


Figure 5: Method C Connectivity

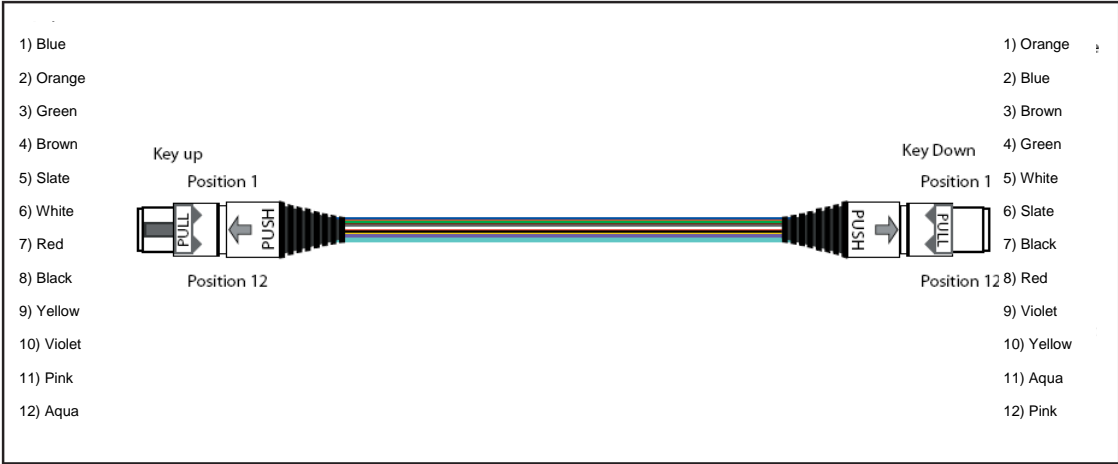


Figure 6: Method C Backbone