

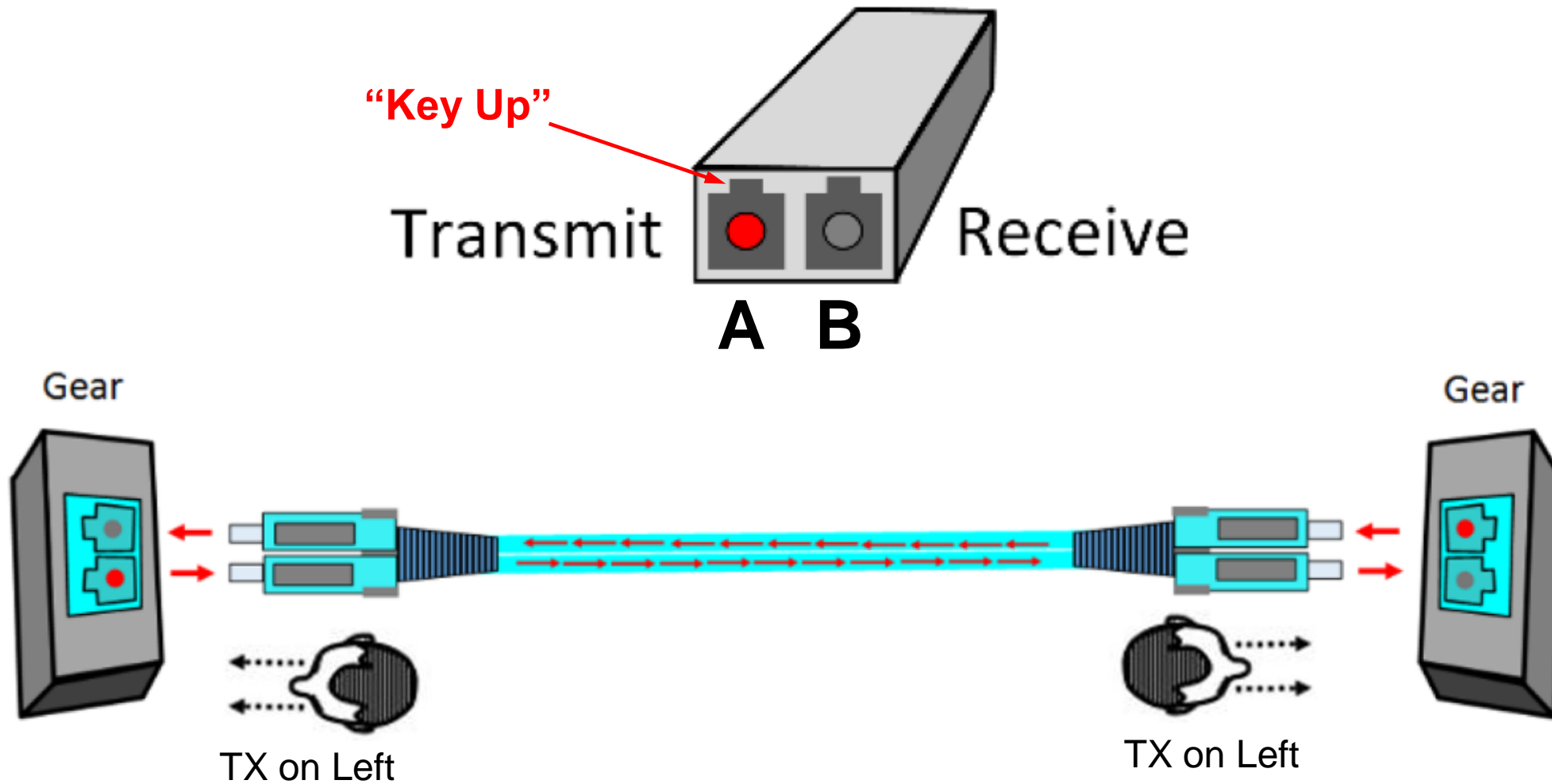
Structured Cabling Polarity Methods

Rick Pimpinella, Panduit Labs, Panduit Corp.

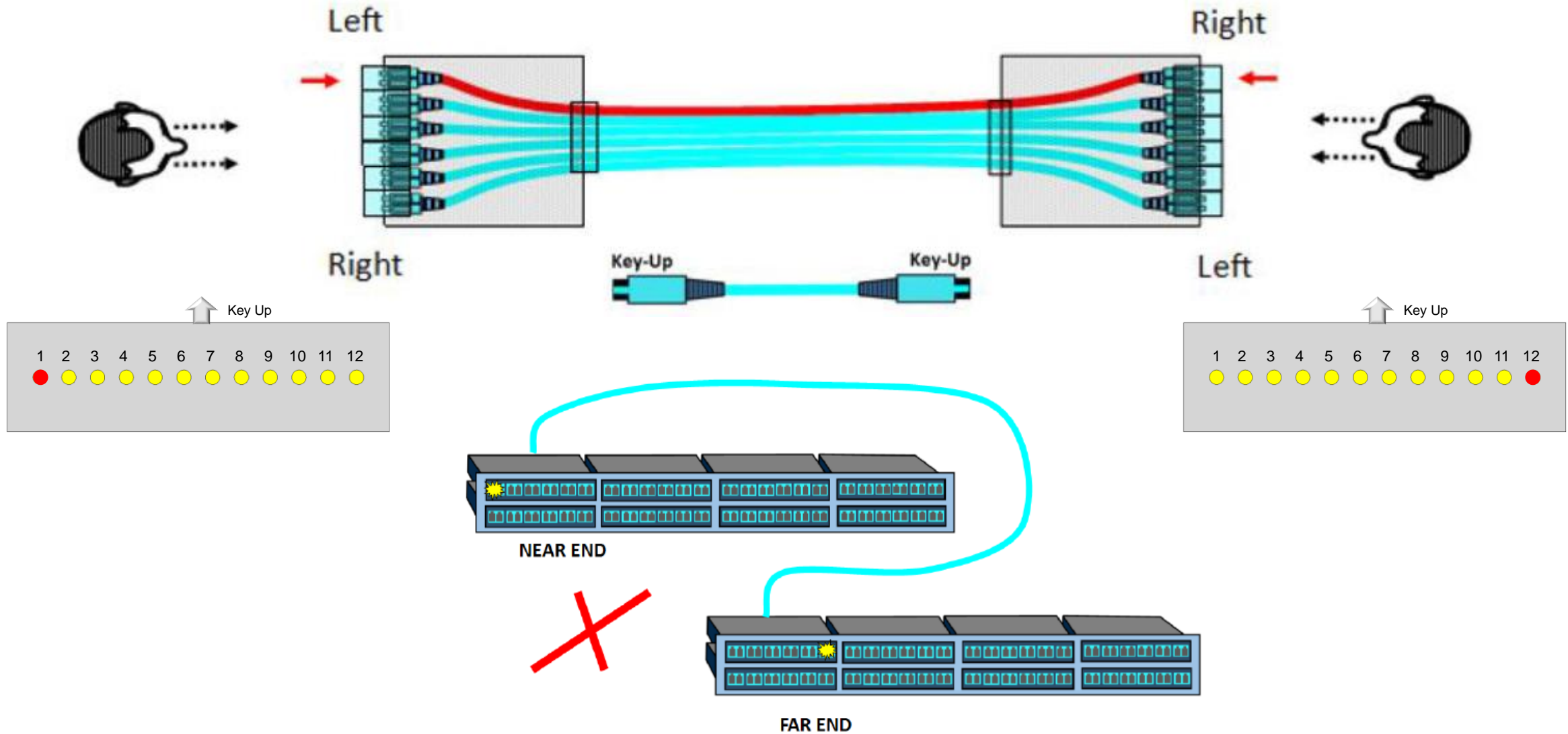
IEEE P802.3db 100 Gb/s, 200 Gb/s, and 400 Gb/s
Short Reach Fiber Task Force

Ad hoc Telecon, July 30, 2020

LC connector key orientation is “Key-Up”



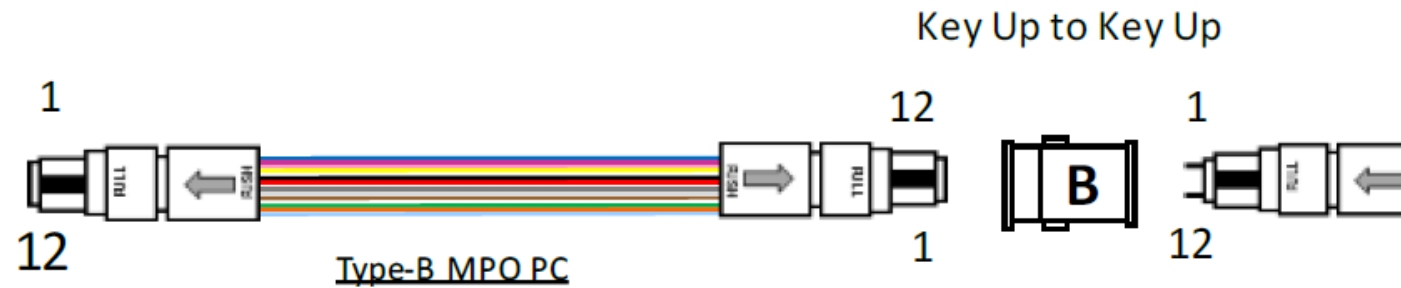
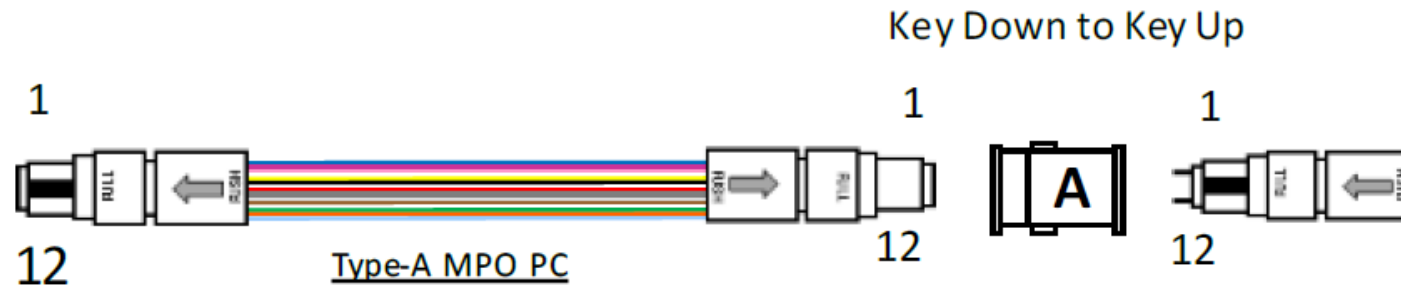
Structure Cabling (MPO) – Key-Up / Key-Up



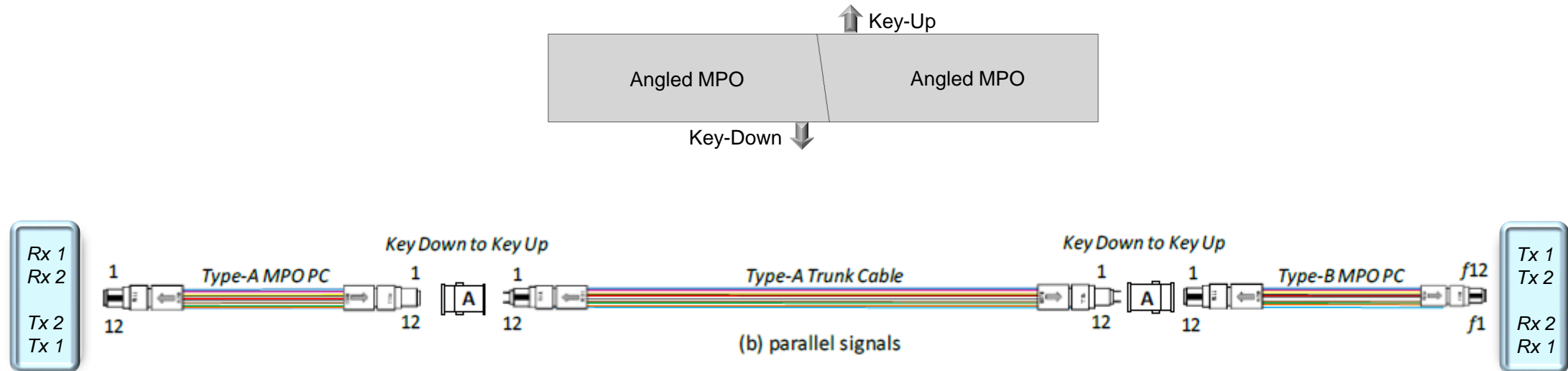
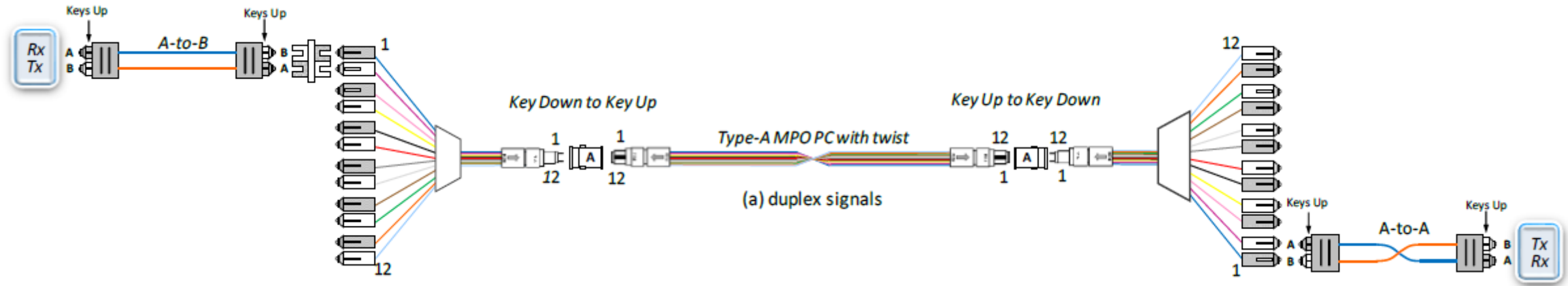
ANSI/TIA-568-C.0

- For optical channels to support network communications, the ordering of fibers in the structured cabling must maintain the “polarity” (transmit and receive) between network equipment transceiver ports.
- There are three methods defined A, B, and C for maintaining the optical fiber polarity.
- For a duplex and 12-fiber array connector structured cabling systems, following one duplex polarity method consistently will assure all channels are correctly connected.

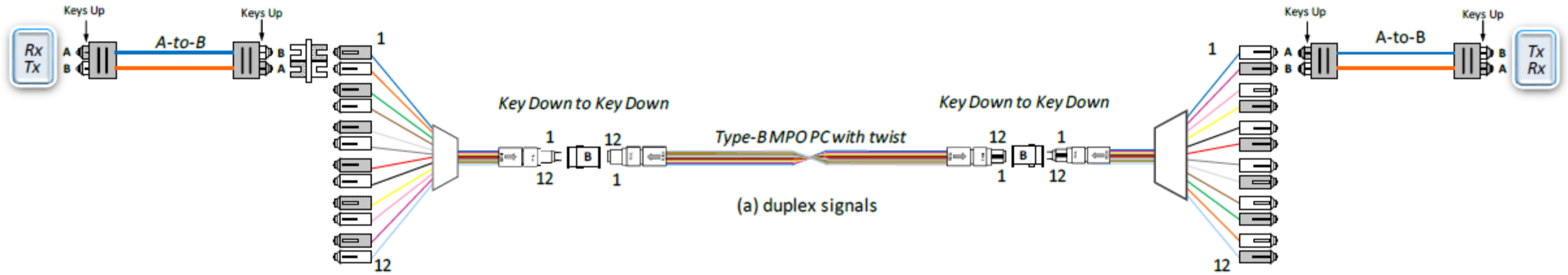
Key orientation – MPO patch cord types



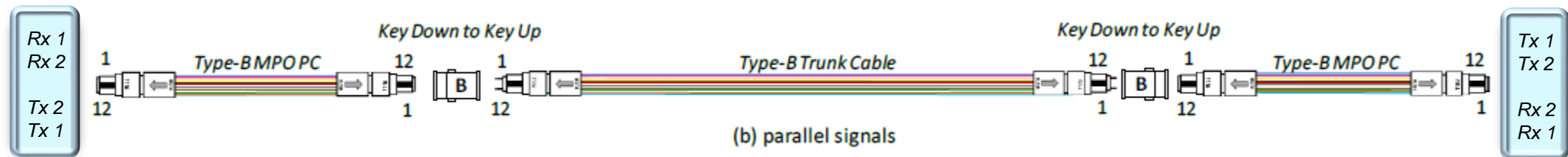
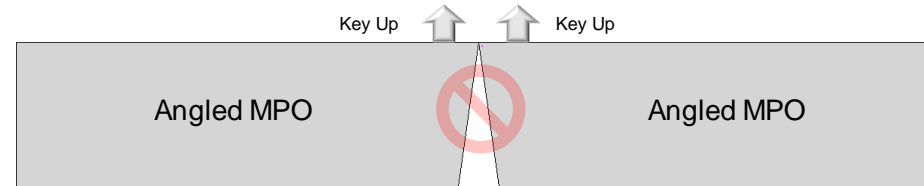
Method A: Key-Up / Key-Down



Method B: Key-Up / Key-Up (most common)

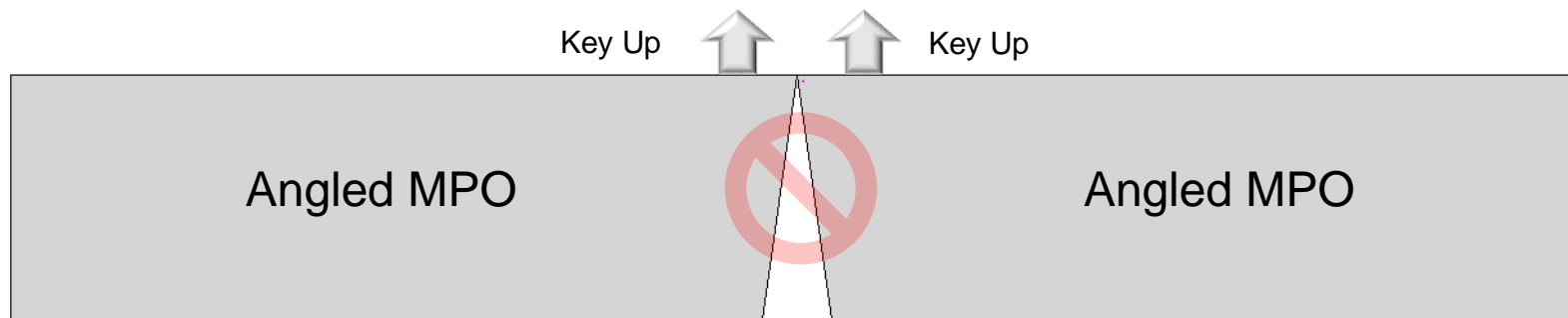
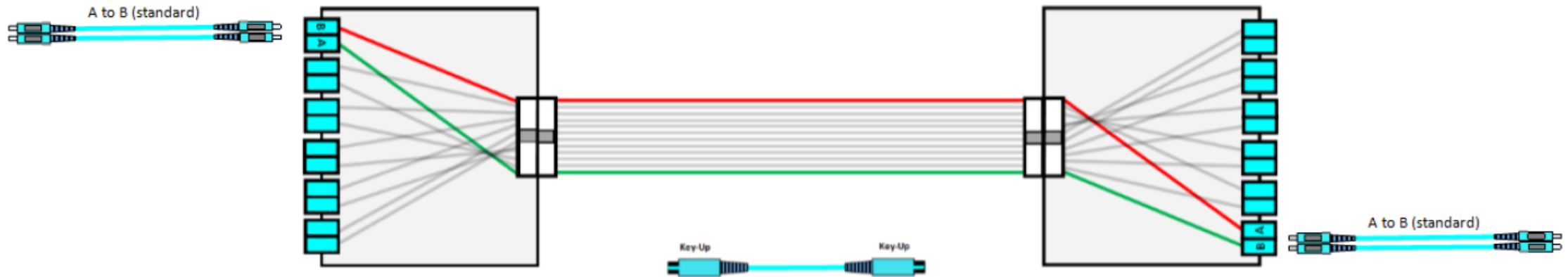


(a) duplex signals



(b) parallel signals

Universal Method: Key-Up / Key-Up



Summary

- **Angled MPO connectors are not specified for Structured Cabling**
- **The most common Methods, “B” & “Universal” utilize Key-Up to Key-Up**
 - Both methods not supported by angled MPOs
- **Including an option for angled MPOs will cause confusion in the industry**
- **The Task Force should only consider flat polished MPO connectivity**

BACKUP

TIA-568-C.0 Figures

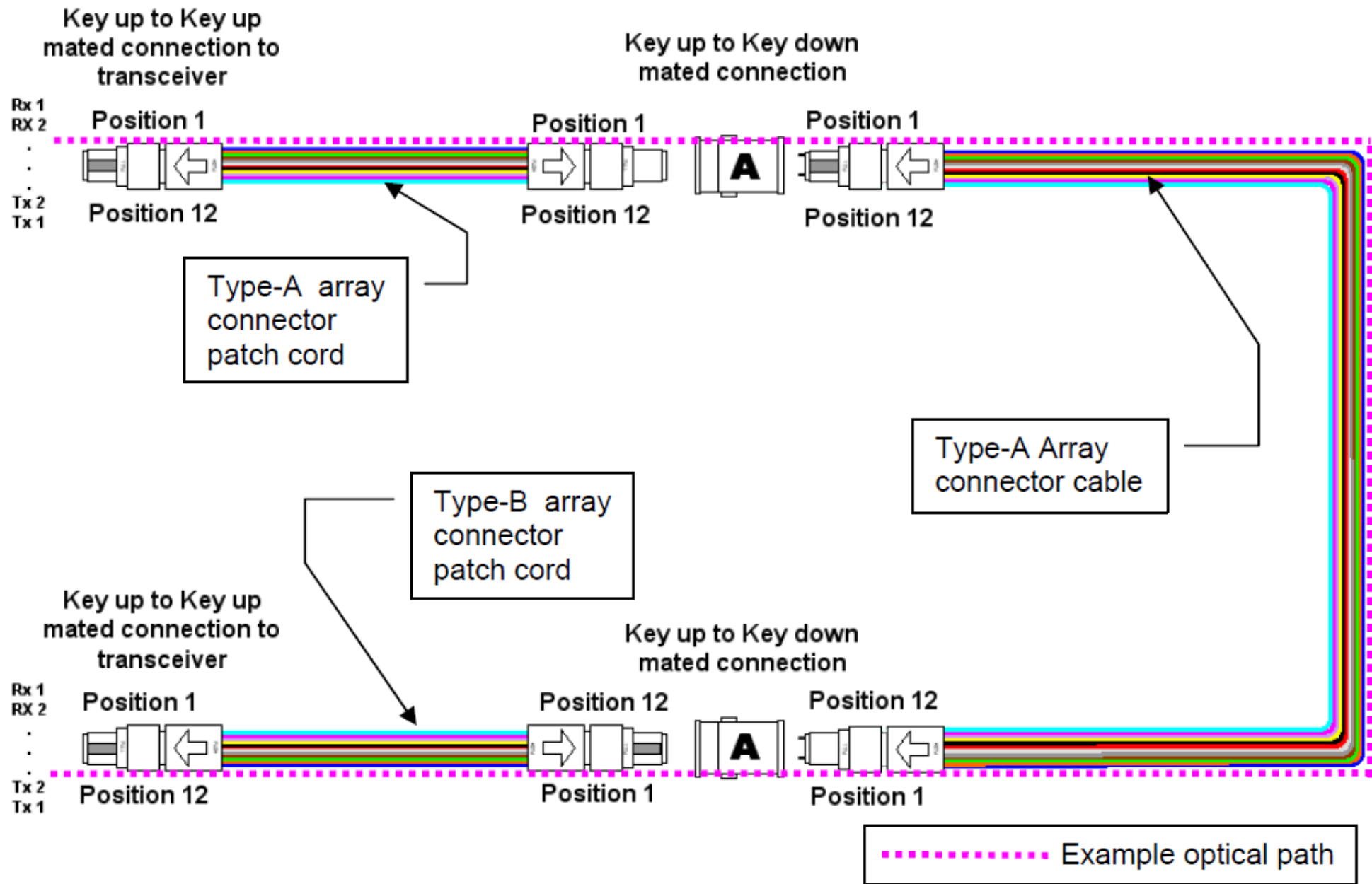


Figure 13 – Connectivity Method A for parallel signals

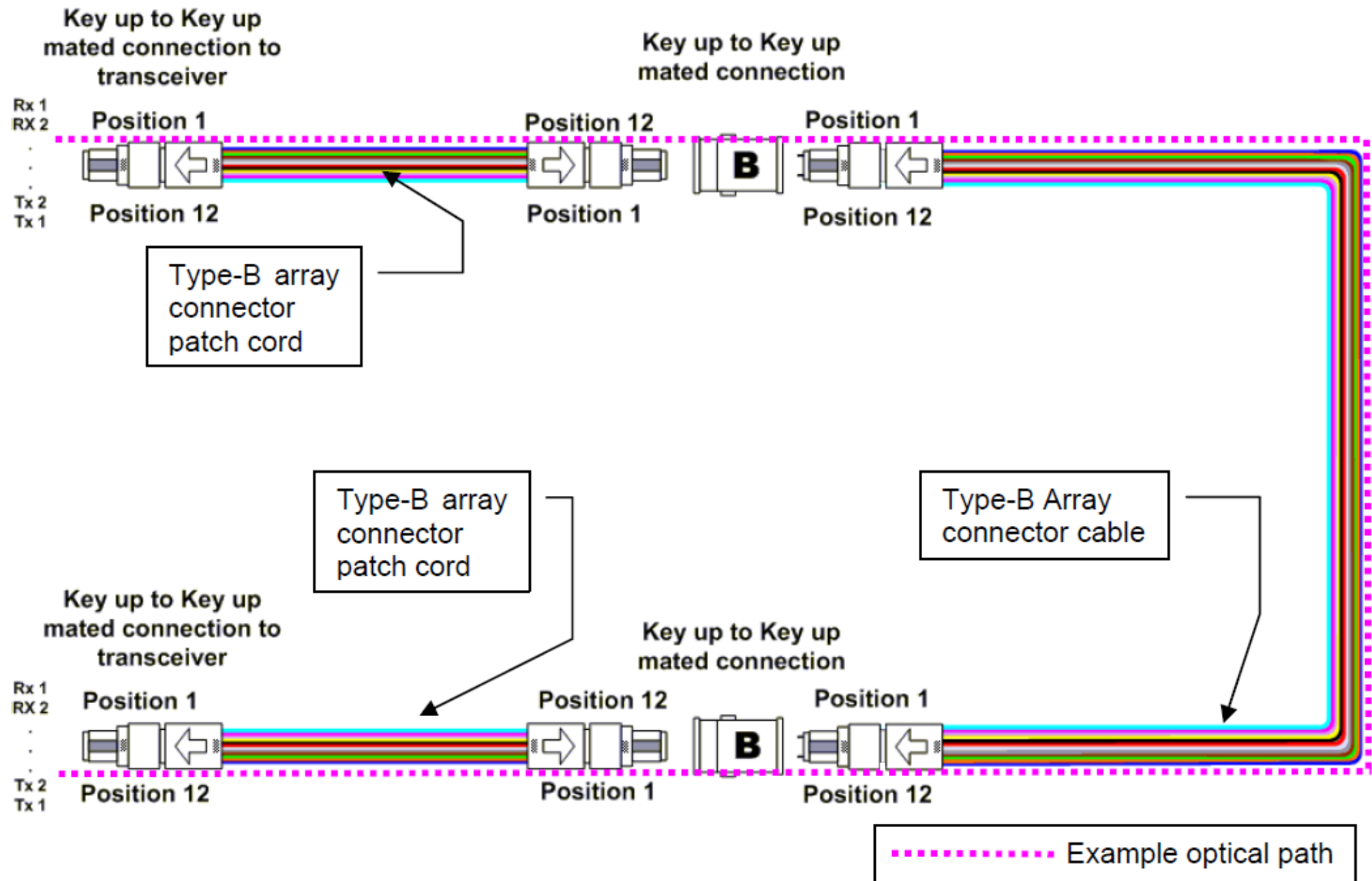


Figure 15 – Connectivity Method B for parallel signals