

Application Note

VXC[™] Coupler and VXC[™] Assembly use in MPTLs and Channels

Purpose

To show what performance degradation (if any) can be expected with the use of a VXC Coupler or VXC Assembly in an MPTL (Modular Plug Terminated Link) or in a Channel.



VXC Coupler Impact

To confirm performance impact of adding the VXC Coupler as a consolidation point or additional connection in the channel, two channels were created and evaluated:

- 1. 243 FT long 2 connector Cat 6A channel utilizing SST cable and ATLAS-X1 jacks
- 2. 243 FT long 3 connector Cat 6A channel utilizing SST cable, ATLAS-X1 jacks and a VXC Coupler added at 75 FT from end 2 of the channel



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The result of this testing shows that the addition of the VXC[™] Coupler had <u>NO</u> impact on the electrical performance of the channel compared to the 2-connector channel that was used as the baseline.

Channel ID	Summary	Test Limit	Length	Headroom
1	PASS	TIA Cat 6A Channel (+All)	243 ft	7.2dB (NEXT)
2	PASS	TIA Cat 6A Channel (+All)	243 ft	7.2db (NEXT)

VXC[™] Assembly Impact

To quantify the impact of the VXC Assembly, we conducted similar testing on three different link configurations:

- Baseline Permanent Link Test 213 FT long 2 connector Cat 6A permanent link using SST cable and ATLAS-X1 jacks
- 2. MPTL using a direct attach solution 213 FT long 2 connector Cat 6A permanent link using SST Cable, ATLAS-X1 Jack on end 1 and a Cat 6A field term plug on end 2
- 3. MPTL 213 FT long 2 connector Cat 6A permanent link using SST Cable, ATLAS-X1 Jack on end 1 and a VXC Assembly on end 2







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Permanent Link 2 (MPTL using 6APLG Plug)



Permanent Link 3 (MPTL using VXC[™] Assembly)



The result of this testing illustrates that the addition of the **VXC Assembly** has some impact on the electrical performance of the permanent link, mostly caused by the addition of the patch cable, but it still provides a significant amount of headroom over the standard.

Perm. Link ID	Summary	Test Limit	Length	Headroom	
1	PASS	TIA Cat 6A Permanent Link (+All)	213 ft	6.6dB (NEXT)	
2	PASS	TIA Cat 6A MPTL (+PoE)	212 ft	6.1db (NEXT)	
3	PASS	TIA Cat 6A MPTL (+PoE)	212 ft	4.6dB (NEXT)	

Conclusions

Utilizing the VXC Coupler in a channel has no impact on the performance. The addition of this extra connector is invisible in terms of the impact on electrical performance of the channel as the headroom is identical with and without the VXC Coupler included.

Using the VXC Assembly has some negative impact to electrical performance, primarily due to the introduction of the patch cable (smaller AWG and stranded conductor cabling), but the impact is relatively small and should not create any performance issues in the field as the links we constructed and tested still had excellent headroom above the standard.

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