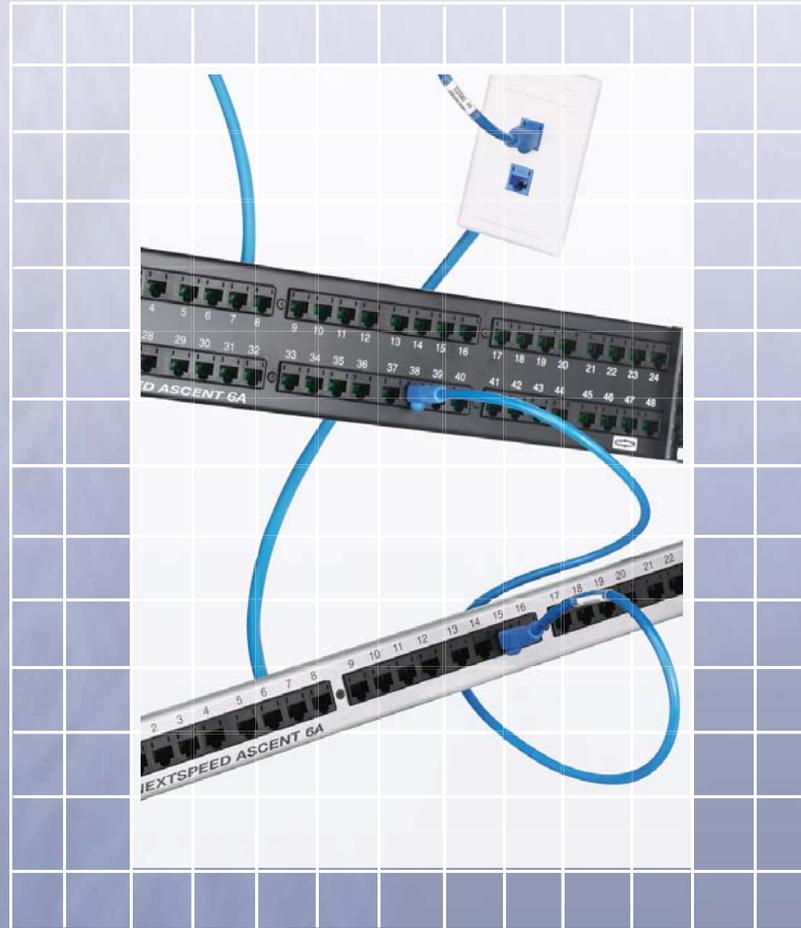




Make Sure Your Links Don't Fall Short!

publication

technology



Hubbell Premise Wiring



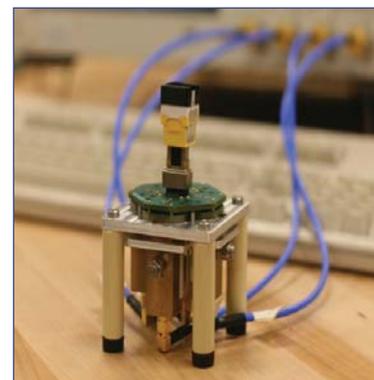
# Make Sure Your Links Don't Fall Short!



## What do you mean less than 10 Meters?

A significant question has surfaced, "When installing a new Category 6A cabling system in the datacenter, how short of a link can be installed?" Some manufacturers do not warranty links less than 10 meters while many others come with limitations, stipulations, special configurations or exceptions on their shortest possible link.

Component level performance exceeding minimum compliance is necessary for datacenter applications.



## Standard Says...

The IEEE defines the minimum channel performance necessary to support a new application such as 10GBASE-T. The TIA cabling committee typically adopts those requirements, improving cabling performance where required. A top down model derives the necessary requirements for connectivity, cables and cords that when combined would constitute compliant links and channels under worst-case installation conditions. These conditions (referred to as model configuration) are defined in Annex J of TIA-568-C.2 and range from a full 100m, 4-connector channel down to a 10m, 2-connector permanent link. When the installed link or channels are shorter than 10m, the model no-longer ensures that combining connectors and cables will yield compliant links and channels. If the connectivity or cables are marginal or non-compliant, then it is almost guaranteed that the resulting link or channel will fail to meet the specified transmission requirements. This type of failure is most commonly observed in AXT, RL or NEXT measurements. Shorter links and channels require component compliant connections with margin beyond the standard.

## Enterprise vs. Datacenter

Why are short links so important?

**Enterprise:** In a typical enterprise the average permanent link (PL) is 50-60 meters, accounting for close to 80% of the cumulative cabling distribution. The distribution (Table 2) shows PL's less than 10 meters only account for fewer than 6% of the overall cabling infrastructure which would not be an issue.

**Datacenter:** Conversely in the datacenter this is a whole different story! Close to 40% of the cumulative cabling distribution is 10 meters or less, which poses a critical question, "Will the cabling infrastructure I installed perform?" 10GBASE-T was designed as a high bandwidth, high speed data transfer application for the datacenter. That being said, it is crucial to the CIO and IT Director to know that the cabling infrastructure installed was designed to perform under the 10 meter stipulation, regardless of what was defined in the Annex J of TIA-568-C.2 standard, knowing that 40% of all PL's will be 10 meters or less.

Table 1

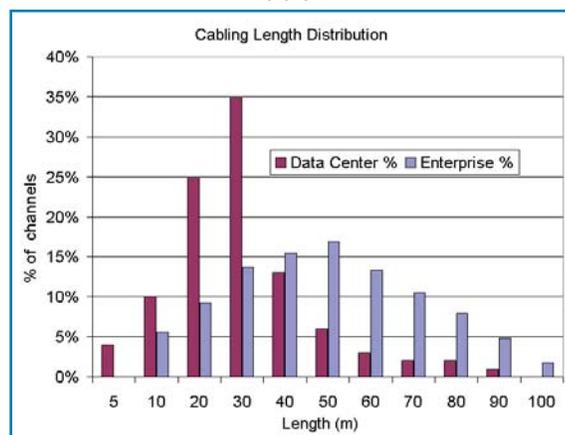
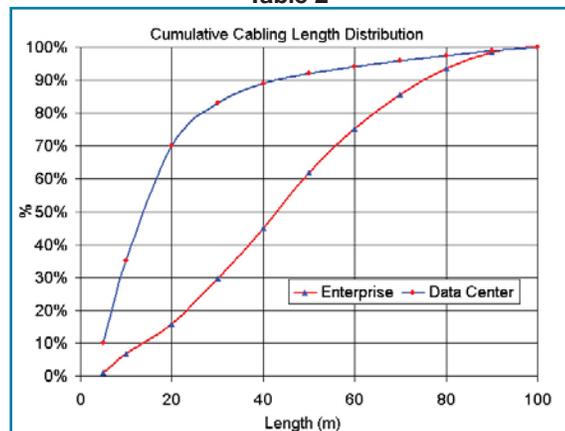


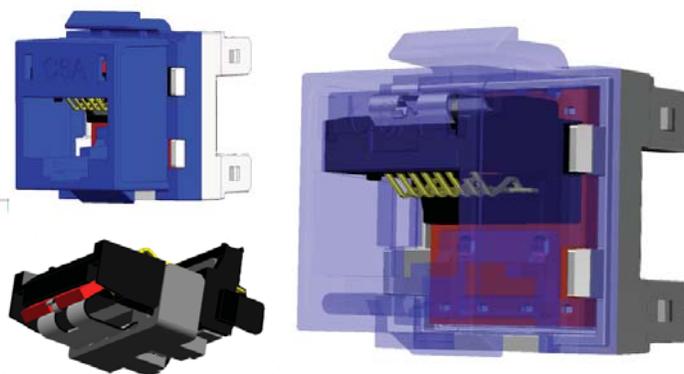
Table 2



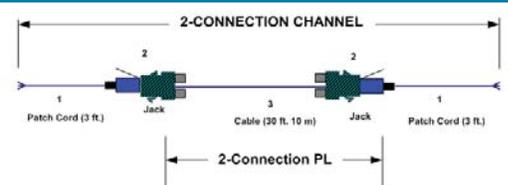


## The Solution!

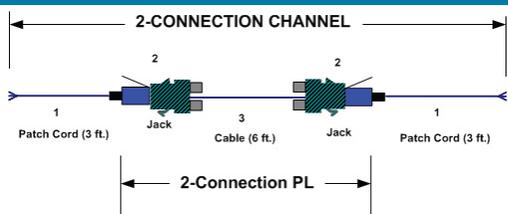
Hubbell's **NEXTSPEED®** Ascent Category 6A system exceeds all current and proposed C6A specifications, resolving design issues that limit distance and performance. These C6A solutions provide the best possible permanent links and channels in every possible configuration and length. The enhanced common mode design and AXT suppression techniques allow the Ascent C6A system to support connections between 1 meter and 100 meters apart based on practical real world channel configurations.



### TIA Standard Worst Case 10-Meter Permanent Link



### Hubbell's Worst Case 2-Meter Permanent Link

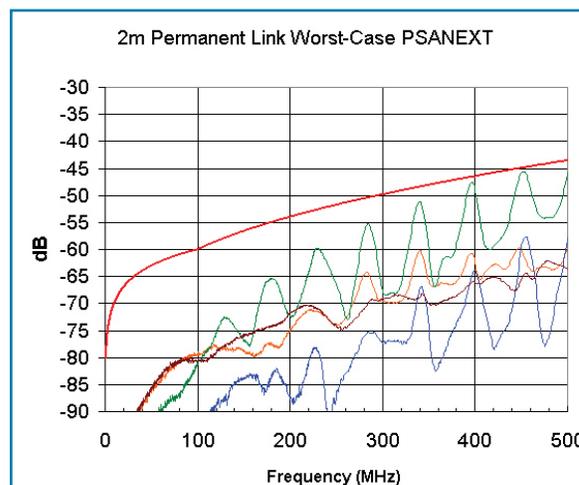
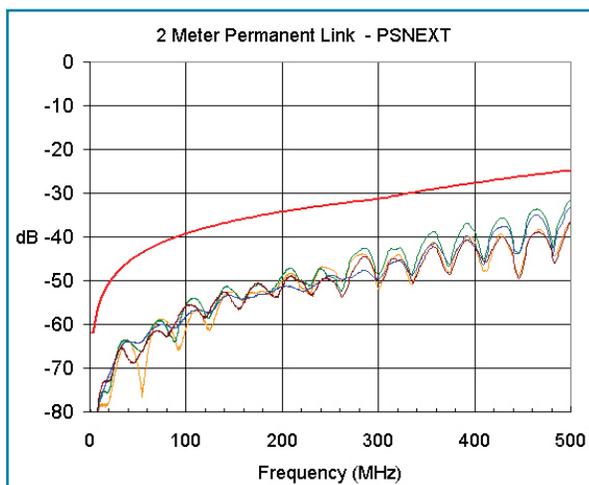


## Worst Case Configurations

TIA 568-C.2 annex J defines the channel and link configurations used to develop the standard limits. Hubbell's team of engineers fully qualified the performance in configurations that are significantly worse than those assumed in the standard. Testing was done for systems from 1m to 100m in order to provide the assurance in real world installations. For example, the shortest permanent length assumed in the standard is a 10m link, while Hubbell has tested the system in a 2m link and with a 1m patch cord.

## Channel & Permanent Link NEXT and ANEXT

The superior component NEXT performance yields channels and links with significant headroom throughout the frequency range. Channel and Link PSNEXT and PSANEXT are also significantly better than the standard requirements. Improved return loss minimizes reflected power into the transmitter and reduces the power usage in the electronics.



**Permanent Links 10 meters or less are Critical for the datacenter. Hubbell's NextSpeed Ascent Category 6A Component System assures the highest performance needed from 1 to 100 meters without any exceptions or stipulations!**



## NEXTSPEED® Ascent Category 6A Jacks

The NEXTSPEED® Ascent Category 6A jack exceeds TIA and ISO Category 6A component specifications, delivering extended bandwidth and reliability for all LAN, multimedia and Power over Ethernet applications.

Delivery: 1 per Bag/Carton of 25. 25 per Bag/Carton of 1

Catalog No. **HJ6AXX** ✓10G ✓6A Catalog No. **HJ6AXX25** ✓10G ✓6A



**XX** = See Jack Color Options below.

AL=Almond	BK=Black	B=Blue	EI=Electric Ivory	GL=Gold	GY=Gray	GN=Green	LA=Light Almond
OW=Office White	OR=Orange	P=Purple	R=Red	TI=Telco Ivory	W=White	Y=Yellow	

## NEXTSPEED® Ascent, Category 6A, Component Patch Panels

The NEXTSPEED® Ascent Category 6A Panels are third party verified for TIA and ISO Category 6A component specifications and are the perfect solution for the datacenter delivering extended bandwidth and reliability for all IEEE Ethernet applications.

Format Width Color Catalog No.

Standard	19" (483)	Black	<b>HP6AXXU</b>	✓10G	✓6A
Standard	19" (483)	Silver	<b>HP6AXXUS</b>	✓10G	✓6A
Angled	19" (483)	Black	<b>HP6AXXAU</b>	✓10G	✓6A

Replace "XX" with port size: "24" = 24 ports; "48" = 48 ports



## NEXTSPEED® Ascent Category 6A Patch Cords

Color: Gray

Catalog No. **HC6AxxYY** ✓10G ✓6A

**xx** = Standard Color:

"B" = Blue; "GY" = Gray For other colors replace color designation with one of the following:

OR = Orange, R = Red, GN = Green, P = Purple, W = White

**YY** = Standard Length:

"01" = 3'; "03" = 3'; "05" = 5'; "07" = 7'; "10" = 10'; "15" = 15'; "20" = 20'.

MTO lengths: 25', 30', 35', 40', 45', 50', 55', 60', 75', and 100'.



## NEXTSPEED® Ascent Category 6A Cable

Color	Catalog No.	Riser Spool (1000' length)	Catalog No.	Plenum Spool (1000' length)
Blue	<b>C6ASRB</b>	✓10G ✓6A	<b>C6ASPB</b>	✓10G ✓6A
Gray	<b>C6ASRGY</b>	✓10G ✓6A	<b>C6ASPGY</b>	✓10G ✓6A
White	<b>C6ASRW</b>	✓10G ✓6A	<b>C6ASPW</b>	✓10G ✓6A
Yellow	<b>C6ASRY</b>	✓10G ✓6A	<b>C6ASPY</b>	✓10G ✓6A



## NEXTSPEED® Ascent Category 6A Trunk Cable Assemblies

BIDnet™ Pre-Terminated Cable Assemblies are Make-to-Order items. Please call our Inside Sales Team for lead-time and availability.

✓10G  
✓6A

- 100% tested.
- High performing factory terminations eliminate installation labor and preparation.
- Balanced, pre-terminated cable assemblies provide improved channel performance.

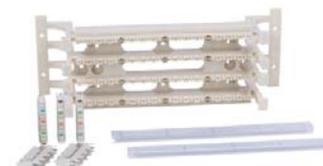


## NEXTSPEED® Ascent Category 6A Field Termination Kits

Description*	Catalog No.	✓10G	✓6A
64-Pair Kit with legs and 16 connecting blocks*	<b>6110FTK64WL</b>	✓10G	✓6A
64-Pair Kit w/o legs and 16 connecting blocks*	<b>6110FTK64NL</b>	✓10G	✓6A
192-Pair Kit with legs and 64 connecting blocks*	<b>6110FTK192WL</b>	✓10G	✓6A

\* 6-110, 4-pair connecting blocks.

See page E14 for more information.



**HUBBELL®**  
Premise Wiring

[www.hubbell-premise.com](http://www.hubbell-premise.com)



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