HUBBELL NextSpeed

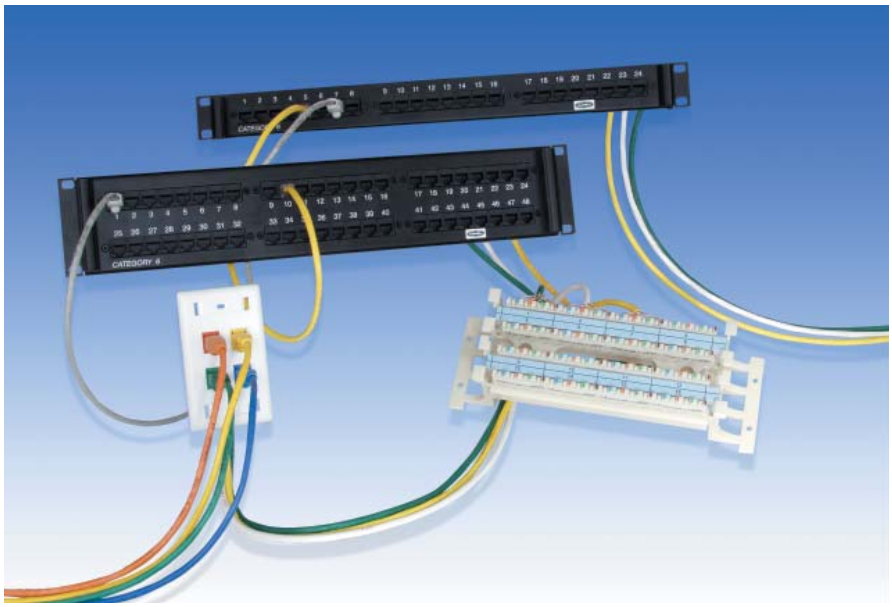
Category 6 System

10GbE Qualified (55m).

8dB Channel Margin from 1 to 250 MHz.

PoE Verified.

Comprehensive Single Source Warranty Coverage.



Hubbell Premise Wiring's engineering expertise delivers excellence in structured cabling, providing the industry's leading Category 6 solution. The **NEXTSPEED**® Category 6 System maximizes work force productivity and return on investment by delivering error-free transmissions. Installing a **NEXTSPEED**® Category 6 System creates a business advantage in productivity, revenue and delivers a competitive edge to your organization.

STANDARDS/VERIFICATIONS

- All components verified Category 6 component compliant.
- ETL verified Category 6.
- ETL verified positive PSACR of 10dB @ 250 MHz with approved cable.
- Laboratory tested to support IEEE 802.3af DTE Power.
- Third-Party Verified, error-free Gigabit Ethernet performance to IEEE 802.3ab specifications.

APPLICATIONS

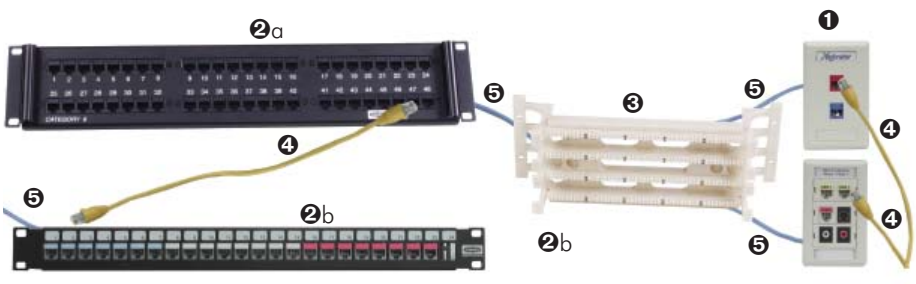
- ▲ 10GBASE-T (55m).
- ▲ 10/100/1000BASE-T.
- ▲ 155/622 Mbps ATM.
- ▲ Audio/Video to the desktop.
- ▲ Converged network data:
  - Data.
  - Voice.
  - Security.
  - Building automation.

FEATURES

- ■ Guaranteed installed 4-connector channel PSACRperformance 8dB above the Category 6 channel requirements on all Category 6 System registered installations*.
- ■ Minimum channel capacity of 10 Gbps maximizes dynamic performance for real world applications.
- ■ Maximum bandwidth allows for more than 4 connectors in a channel, exceeding all Category 6 channel requirements.
- ■ **MISSION CRITICAL**® Premium 25-Year System Warranty.

* Field verification by Hubbell approved handheld testers, attenuation measurements are excluded. All projects must be installed and registered by HPW MCCI (MISSION CRITICAL Certified Installer). Accuracy level of handheld tester ± 3dB.

Channel Configuration



4-Connector Channel: ❺ ≤ 90 meters; ❹ ≤ 10 meters

SYSTEM COMPONENTS
Hubbell's Connectivity

❶ XCELERATOR™ Jacks, Cat 6

❷a NEXTSPEED® Patch Panel, Cat 6, 48-port

❷b NEXTSPEED® Patch Panel, Cat 6, 24-port

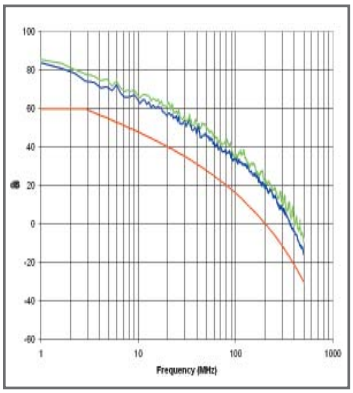
❸ Consolidation Point, Cat 6

❹ NEXTSPEED® Patch Cords, Cat 5e

❺ NEXTSPEED® Cable, Cat 6, 4-pair, UTP

■ TIA Spec ■ Average ■ Worst Case

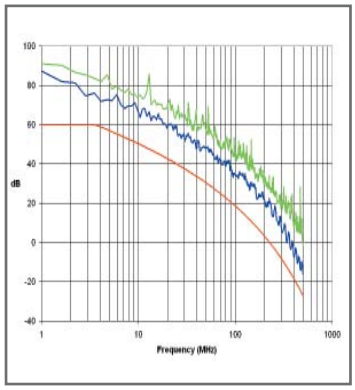
Power-Sum ACR (PSACR)



PSACR - Difference between the attenuation and the Power-Sum NEXT at a given frequency (signal to noise ratio). Available bandwidth is the point where PSACR is equal to zero.

FREQ	WORST CASE	AVERAGE	TIA SPEC
1.0	83.7	85.2	59.7
10.0	65.0	67.0	47.9
31.3	50.4	52.6	34.5
62.5	40.4	45.1	24.2
100.0	33.6	35.8	15.9
155.0	25.9	30.6	6.6
200.0	18.3	21.2	0.3
250.0	14.0	18.2	-5.8
350.0	2.6	9.4	-16.4
500.0	-15.5	-9.6	-30.2

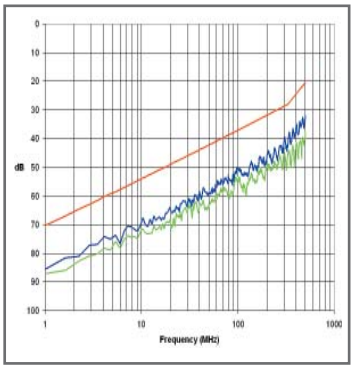
Attenuation to Crosstalk Ratio (ACR)



ACR - Difference expressed in dB between the signal attenuation produced by a cable and the near-end crosstalk (NEXT).

FREQ	WORST CASE	AVERAGE	TIA SPEC
1.0	87.4	90.9	60.0
10.0	67.9	74.0	50.5
31.3	53.2	62.3	37.2
62.5	42.5	59.2	27.0
100.0	35.2	43.3	18.7
155.0	29.8	36.8	9.5
200.0	21.8	34.4	3.3
250.0	15.3	24.4	-2.8
350.0	3.5	18.2	-13.4
500.0	-16.3	-1.3	-27.1

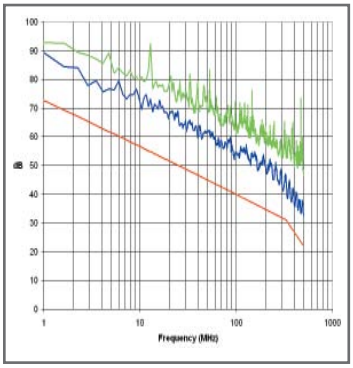
Power-Sum Near-End Crosstalk (PSNEXT)



PSNEXT- The unwanted signal coupling from multiple transmitters at the near-end into a pair measured at the near-end.

FREQ	WORST CASE	AVERAGE	TIA SPEC
1.0	85.5	87.1	70.3
10.0	70.5	72.6	54.2
31.3	60.9	62.8	45.8
62.5	55.2	59.8	40.6
100.0	50.6	54.9	37.1
155.0	50.6	54.9	33.8
200.0	45.8	49.1	31.9
250.0	46.4	49.8	30.2
350.0	41.9	47.6	26.9
500.0	31.8	37.8	20.4

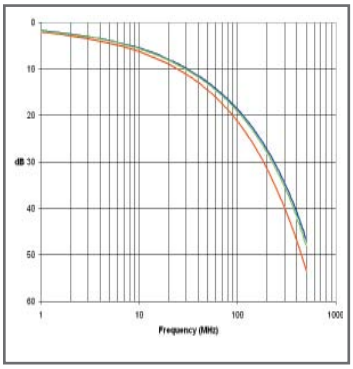
Near-End Crosstalk (NEXT)



NEXT- The noise coupled from one pair onto another pair at the near-end.

FREQ	WORST CASE	AVERAGE	TIA SPEC
1.0	89.3	89.3	72.7
10.0	73.6	74.7	56.8
31.3	63.4	66.2	48.5
62.5	57.1	62.0	43.4
100.0	54.8	57.8	40.0
155.0	54.5	54.5	36.7
200.0	50.1	54.1	34.8
250.0	47.7	53.1	33.1
350.0	42.8	49.6	29.7
500.0	32.6	42.7	22.0

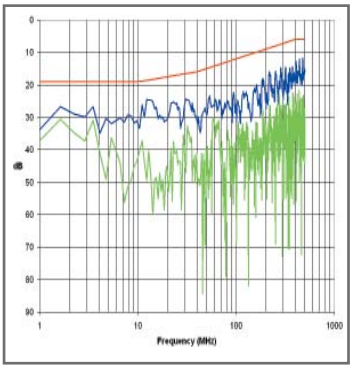
Attenuation



Attenuation - The decrease in magnitude of transmission signal strength between points, expressed in dB as the ratio of output to input signal level.

FREQ	WORST CASE	AVERAGE	TIA SPEC
1.0	1.8	1.9	2.1
10.0	5.5	5.6	6.2
31.3	10.0	10.3	11.3
62.5	14.5	14.8	16.4
100.0	18.7	19.1	21.2
155.0	23.7	24.3	27.2
200.0	27.4	28.0	31.5
250.0	31.0	31.8	35.9
350.0	37.7	38.7	43.5
500.0	46.8	48.0	53.4

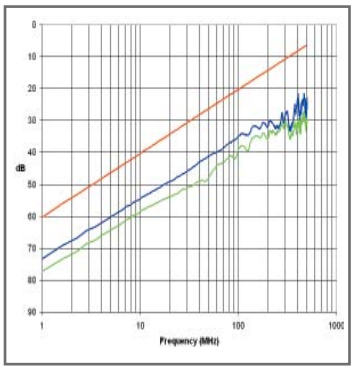
Return Loss



Return Loss - Ratio of the signal reflected back at the transmitter relative to the original signal sent. In a full duplex application, like 1000BASE-T, significant Return Loss can cause network errors.

FREQ	WORST CASE	AVERAGE	TIA SPEC
1.0	33.9	37.2	19.0
10.0	31.0	43.6	19.0
31.3	24.4	47.0	16.5
62.5	25.0	36.0	14.1
100.0	26.2	45.0	12.0
155.0	21.0	37.8	10.1
200.0	24.7	41.3	9.0
250.0	16.8	45.2	8.0
350.0	15.4	42.4	6.6
500.0	16.1	44.0	6.0

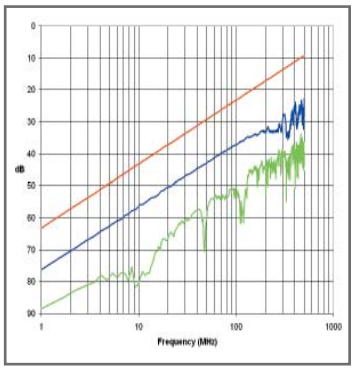
Power-Sum Equal Level Far-End Crosstalk (PSELFEXT)



PSELFEXT - A computation of the unwanted signal coupling from multiple transmissions at the near-end into a pair measured at the far-end and normalized to the received signal level.

FREQ	WORST CASE	AVERAGE	TIA SPEC
1.0	73.4	77.3	60.3
10.0	54.7	58.9	40.5
31.3	45.6	50.8	30.4
62.5	39.7	43.8	24.4
100.0	35.1	39.4	20.3
155.0	31.9	34.8	16.5
200.0	32.0	35.8	14.2
250.0	31.8	33.5	12.3
350.0	31.7	34.3	9.4
500.0	23.3	31.5	6.3

Equal Level Far-End Crosstalk (ELFEXT)



ELFEXT - A measure of the unwanted signal coupling from a transmitter at the near-end into another pair measured at the far-end and relative to the received signal level.

FREQ	WORST CASE	AVERAGE	TIA SPEC
1.0	76.2	88.6	63.3
10.0	56.9	81.1	43.5
31.3	46.7	60.3	33.4
62.5	41.0	53.1	27.4
100.0	37.4	52.8	23.3
155.0	34.1	44.0	19.5
200.0	33.2	45.4	17.2
250.0	33.0	43.4	15.3
350.0	33.6	42.0	12.4
500.0	24.6	40.5	9.3

Hubbell Premise Wiring

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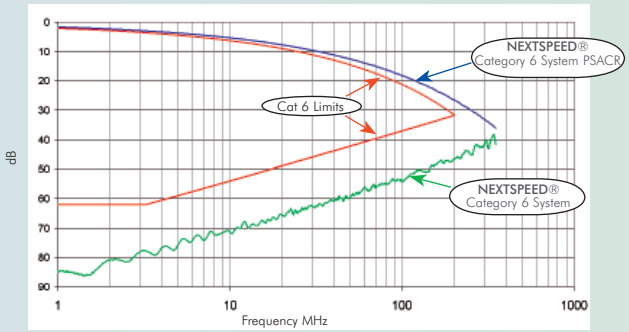
The Significance of PSACR

PSACR

* Today most applications operate under the 100 MHz ceiling; however, as technology continues to push the bandwidth envelope, NEXTSPEED® 6 provides positive PSACR well beyond the Category 6 requirements, providing support for emerging applications.

19dB above Cat 6 Channel Requirements @100MHz*



- Unsurpassed Signal to Noise Ratio.
- Greater Network Efficiency.
- High Bandwidth Capacity.
- Seamless Network Convergence.
- Future-proofing.

The Significance of Bit Error Rate (BER)

- Network Support for Existing and Emerging Technology.
- Clean, Error-Free Data Transmission.
- Provides Noise Reduction and Immunity.
- Return on Investment.
- Total Cost of Ownership.

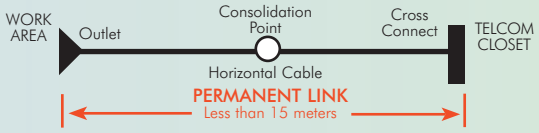
BER Test Results for NEXTSPEED® 6 Channel Active Testing

	NEAR-END*		FAR-END*	
Frame Size	64	1518	64	1518
Tx Frames**	10,037,068,049	11,791,614,540	10,037,044,035	11,791,619,271
Rx Frames**	10,037,044,035	11,791,619,271	10,037,068,049	11,791,614,540
Rx Bytes	642,370,818,240	17,899,678,053,378	642,372,355,136	17,899,678,871,720
CRC Errors***	0	0	0	0
Oversize	0	0	0	0
Frag/Undersize	0	0	0	0
BER ($\leq 1*10^{-10}$)	0	0	0	0

* NEAR and FAR-END designations selected arbitrarily to distinguish the two ends of a system.
** Tx: Transmitted, Rx: Received
*** CRC: Cyclic Redundancy Check

The "Short Link" Phenomenon

"Short Link" problems are typically defined as 15m or less with multiple connections in close proximity. These connections, if unbalanced create additional Near End Crosstalk (NEXT), due to resonance effects. This resonance phenomenon is directly related to the overall Return Loss (RL) or balance of the end-to-end link. The NEXTSPEED® Category 6 System combines Hubbell's "center balanced" Cat 6 connectivity with optimally matched Cat 6 enhanced cabling to provide exceptional Category 6 link/channel performance from 5m to 90m.



The Warranty Protection

NEXTSPEED® Category 6 System provides the industry's most comprehensive 25-year warranty coverage on all applications designed to operate over Cat 6 rated cabling systems, including continuous power applications. (IEEE 802.3af - DTE Power)

System Guarantees

Installed 4-connector channel performance 8dB above Category 6 channel requirements on all **NEXTSPEED® Category 6** registered installations*.

- Positive PSACR well beyond 300MHz.
- Current and Future Application Assurance.
- Reliability/System Performance.
- QOS:
  - Error-Free Transmission.
- Performance:
  - Provide $\leq 1 * 10^{-10}$ BER (small & large packet size). 100/1000BASE-T
  - Channel Capacity: 10Gbps

HUBBELL PREMISE WIRING MC 25 SYSTEM WARRANTY

NEXTSPEED® 6 Future Support

- Multi-Gigabit Technology
- Streaming Media:
  - Voice Over IP (VoIP).
  - Real Time Video.
- Broadband Video.
- Data Centers.
- Zone Cabling.
- PoE Applications.

* Field verification by HPW approved handheld testers, attenuation measurements are excluded. All registered projects must be installed by HPW MCCI (MISSION CRITICAL Certified Installer). Accuracy level of handheld tester +/- 3dB.

ORDERING INFORMATION

NEXTSPEED® Jacks, Category 6

The XJ6 jack supports data center 10GbE applications to 55 meters with usable bandwidth exceeding 500 MHz.

Catalog No. **HXJ6XX**

XX = Color:
'**BK**' = Black
'**B**' = Blue
'**EI**' = Electric Ivory
'**GL25**' = Gold*
'**GY**' = Gray
'**GN**' = Green
'**OW**' = Office White
'**OR**' = Orange
'**P25**' = Purple*
'**R**' = Red
'**TI**' = Telco Ivory
'**W**' = White
'**Y**' = Yellow
* 25-packs only.

NEXTSPEED® Patch Panel, Category 6

Patch panels are supplied with labeling for T568B wiring. The 8-port adapter's fully enclosed shell protects the PCB from contaminants and errant terminations, and also allows icons to be installed on each jack port for identification.

Ports	Height	Color*	Catalog No.
24	1.75" (45)	Black	**P6E24U**
48	3.50" (89)	Black	**P6E48U**
96	7.00" (178)	Black	**P6E96U**

* For white panel, add "**W**" to Catalog No.

P6E48U

NEXTSPEED® Patch Cords, Category 6

The PCX6 patch cords feature verified Category 6 performance and incorporate a patented ISO-Termination method. This unique termination process is designed to control NEXT (near end cross talk), increase performance and reduce RL (return loss).

Color	Catalog No. Black	Catalog No. Blue	Catalog No. Gray	Catalog No. Yellow
	PCX6BK**	**PCX6B****	**PCX6GY****	**PCX6Y****

** = Length: '**03**' = 3'; '**06**' = 6'; '**08**' = 8'; '**10**' = 10'; '**12**' = 12'; '**16**' = 16'; '**20**' = 20'.

6-110 Block Kit

The perfect high-performance consolidation point, the 6-110 system delivers component compliant Category 6 performance.

Description*	Catalog No.
64-Pair Kit with legs and 16 connecting blocks*	**6110FTK64WL**
64-Pair Kit w/o legs and 16 connecting blocks*	**6110FTK64NL**
192-Pair Kit with legs and 64 connecting blocks*	**6110FTK192WL**

* 6-110, 4-pair connecting blocks

NEXTSPEED® Category 6, 4-pair UTP Cable

Hubbell's **NEXTSPEED**® Category 6 cable provides considerable margin above all electrical transmission performance requirements specified in TIA/EIA-568-B.2 and ISO/IEC 11801 (2nd edition) standards.

Color	Catalog No. Riser Spool	Catalog No. Riser REELEX*	Catalog No. Plenum Spool	Catalog No. Plenum REELEX*
Blue	**C6SRB**	**C6RRB**	**C6SPB**	**C6RPB**
Gray	**C6SRGY**	**C6RRGY**	**C6SPGY**	**C6RPGY**
White	**C6SRW**	**C6RRW**	**C6SPW**	**C6RPW**
Yellow	**C6SRY**	**C6RRY**	**C6SPY**	**C6RPY**

* REELEX is licensed and patented by Windings Inc.

6-110 Patch Cords

Available with 110 to 110 or 110 to RJ45 connectors, these patch cords provide modularity and quick termination to our 6-110 connecting blocks.

Length	Catalog No. 6-110 to 6-110	Catalog No. 6-110 to RJ45 (T568B)
3'	**6110PCL3**	**6119PCL3**
5'	**6110PCL5**	**6119PCL5**
7'	**6110PCL7**	**6119PCL7**
9'	**6110PCL9**	**6119PCL9**
12'	**6110PCL12**	**6119PCL12**

Hubbell Premise Wiring
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DS-A7 08/05

Worldwide Locations

Hubbell Premise Wiring, Asia Pacific	852-2836-7131	Fax: 852-2836-7132	Hubbell Premise Wiring, Latin America	305-408-4501	Fax: 305-408-8201
Hubbell Canada Inc.	905-839-1138	Fax: 905-839-9108	Hubbell de Mexico, S.A. de C.V.	(5255) 9151-9999	Fax: (5255) 9151-9989
Hubbell Premise Wiring, Central America	506-309-4158	Fax: 506-260-1616	Hubbell Premise Wiring, Middle East	971-4-393-4192	Fax: 971-4-393-4194
Hubbell Premise Wiring, China	8621-6309-0119	Fax: 8621-6309-0122	Hubbell-Taian Co., Ltd., Taiwan	886-2-2522-1862	Fax: 886-2-2522-1872
Hubbell Premise Wiring, Colombia	571-245-8940	Fax: 571-340-0925	Hubbell Premise Wiring, Turkey	90-216-313-5016	Fax: 90-216-414-8148
Hubbell Premise Wiring, Europe	44-01283 500500	Fax: 44-01283 500400	Hubbell Premise Wiring, Venezuela	58-416-680-7453	Fax: 58-281-274-7900
Hubbell Int'l. Inc., Korea Branch	82-2-(0)2607-1363	Fax: 82-2-(0)2603-7386			