

# PowerCat UTP System Solutions

CATEGORY 5E AND 6 TECHNOLOGY THAT ENSURES THE INTEGRITY OF YOUR DATA



**PREMISE  
NETWORKS**  
A Division of Molex

*Bringing People & Technology Together, Worldwide<sup>SM</sup>*

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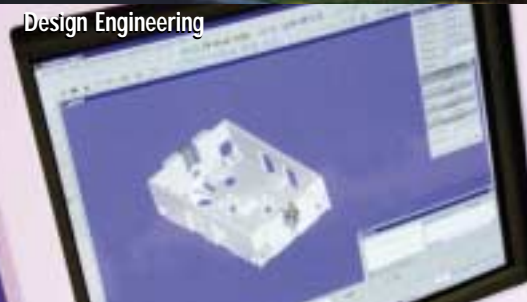
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# Optimum Performance Systems Designed for High Bandwidth Protocols



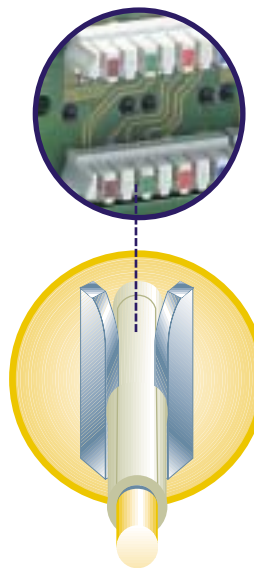
Specifying a structured cabling system that will meet the long term needs of your company is a challenging task given the speed at which technology is changing. It is vital that you install a system that provides superior electrical performance today with ample headroom for future requirements. As standards evolve, sometimes the choices can seem complex and even confusing. Implementing a new cabling system is a significant investment and you want to ensure you make the right decision for your business application.

By specifying Molex Premise Networks you will be partnering with a global company, who focuses exclusively on structured cabling systems. This commitment in maintaining Data Integrity is evident in every aspect of our business. All Molex Premise Networks systems are backed by a 25 year Product, System Performance and Application Assurance Warranty, when installed as a certified system by a Certified Installer. When you specify the Molex Premise Networks solution you benefit from global resources, standards exceeding performance and innovative solutions.

Copper horizontal cabling systems are used throughout the world as the most cost effective solution for most business applications. In the past few years, significant changes have been made in performance parameters for copper cabling systems – Category 5 has been superseded by the introduction of Category 5e, and now Category 6 has recently been ratified. Throughout these changes, Molex Premise Networks has been present as an active participant in the formation of these codes and standards, in several standards committees around the world.

It is Molex Premise Networks' mission to provide copper and fibre solutions that ensure the integrity of your data. This commitment is evident in every aspect of our business – from product design, testing, and ease of installation to customer and technical support. It is also reflected in the 25 Year Product, System Performance and Application Assurance Warranty you receive when installing a Certified Molex Premise Networks structured cabling system.

**We Warranty the Integrity of your System**



## Flexibility for Moves, Adds and Changes

Molex Premise Networks products are designed for maximum versatility to meet the ever-changing communications needs of today's office environment. Engineered to assist with reducing your technology expenditures, you can move, add and change jacks, labels, outlets and consolidation points with incredible ease in both open- and fixed- work area layouts to facilitate the every day dynamics of your office.

All Molex Premise Networks copper patch panels and modular jacks incorporate the patented KATT V-8 IDC connector. When terminated, its V-shaped contacts flex – not fatigue like other IDC's. This prevents wear and tear on the connector and protects the integrity of the connection – regardless of the number of re-terminations. You're assured reliable service for the life of the system.

## Solutions that Exceed Industry Performance Criteria

Molex Premise Networks offer a comprehensive range of both Category 5e and Category 6 products for virtually any application. These products exceed all relevant international performance standards, including TIA/EIA 568-B (including Category 6 Addendum 1), ISO/IEC 11801:2002 and AS/NZS 3080:2002, maximising the user's return on investment, by extending the useful life of the system.

Molex Premise Networks is currently partnering with ETL SEMKO, a division of Intertek Testing Services Ltd. and the world's largest product and commodities testing organisation operating 240 laboratories and 469 offices in 93 countries throughout North America, Europe and Asia. ITS ETL SEMKO has a Cabling System Channel/Link Verification Program designed to objectively test and verify the performance of manufacturers' cabling products and connectivity hardware in a LAN environment.

After purchasing product off the open market, ITS ETL SEMKO tests products in channel environments to verify performance to the TIA/EIA 568-B and ISO/IEC 11801 standards. Through rigorous tests such as data through-put or electrical parameter NEXT, PSNEXT, PSELFEXT, etc. interoperability and standards compliance between cabling products and connectivity specification are proven.

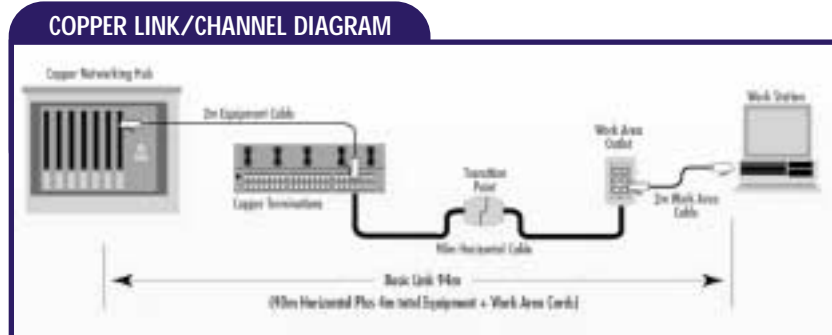




# Solutions that Exceed Industry Performance Standards

Although Category 5e was ratified in 1999 and published as Addendum 5 of ANSI/TIA/EIA-568-A, it became the base standard or base performance level for copper structured cabling systems with the release of ANSI/TIA/EIA-568-B in 2001. The performance parameters for Category 5e, while tested to 100MHz, are more stringent than the preceding Category 5 standard. The connectivity components, cables and patch cords need to comply to tighter specifications to collectively provide enhanced link and channel performance.

A system installed to the specifications of Category 5e performs to Category 5e and additional Class D requirements of amendment 3 of ISO/IEC 11801 and ANSI/TIA/EIA-568-B.



The table below details the TIA/EIA link and channel performance requirements of the Category 5e and Category 6\* standards.

Performance Parameter		Cat 5e @ 100MHz	Cat 6 @ 100MHz	Cat 6 @ 250MHz
<b>NEXT (-dB)</b>	Perm Link	32.3	41.8	35.3
	Channel	30.1	39.9	33.1
<b>PSNEXT (-dB)</b>	Perm Link	29.3	39.3	32.7
	Channel	27.1	37.1	30.2
<b>ELFEXT (-dB)</b>	Perm Link	18.6	24.2	16.2
	Channel	17.4	23.3	15.3
<b>PSELFEXT (-dB)</b>	Perm Link	15.6	21.2	13.2
	Channel	14.4	20.3	12.3
<b>Return Loss (-dB)</b>	Perm Link	12	14	10
	Channel	10	12	8
<b>Propagation Delay (nSec@10MHz)</b>	Perm Link	498	498	498
	Channel	555	555	555
<b>Delay Skew (nSec@10MHz)</b>	Perm Link	44	44	44
	Channel	50	50	50
<b>Insertion Loss/Attenuation (-dB)</b>	Perm Link	21	18.6	31.1
	Channel	24	21.3	35.9

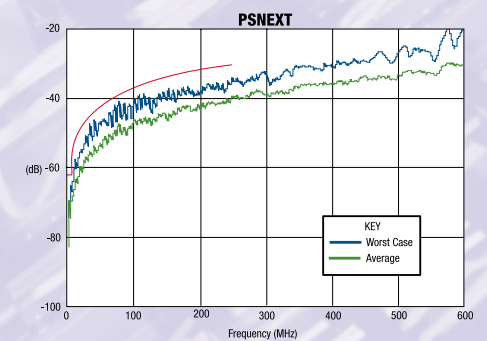
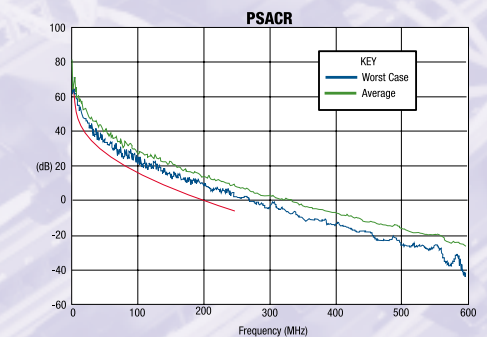
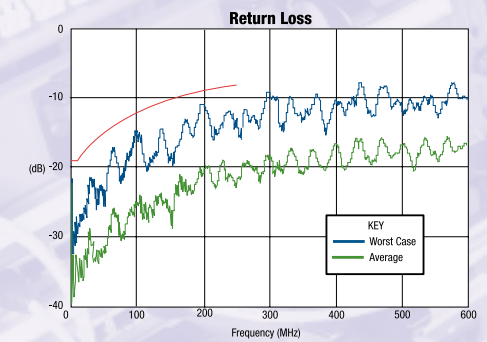
A standards compliant Category 5e Cabling system needs to show positive PowerSum ACR at 100MHz - where as a Category 6 compliant system needs positive PowerSum ACR at 200MHz. Thus Category 6 system gives at least twice as much bandwidth as Category 5e.

\* Final ratified Category 6 standard TIA/EIA 568-B.2-1

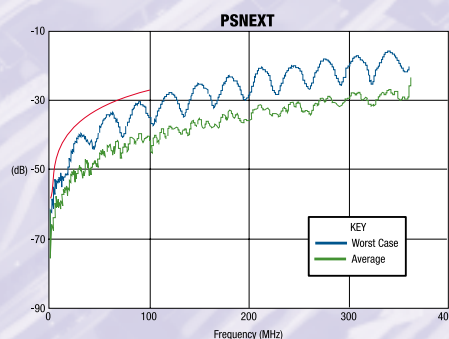
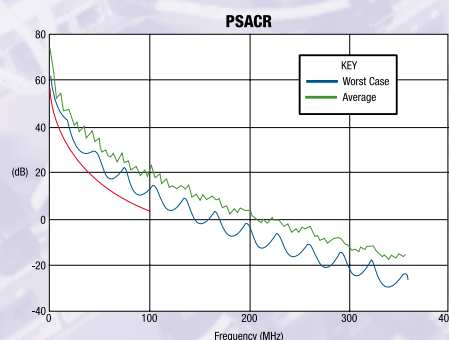
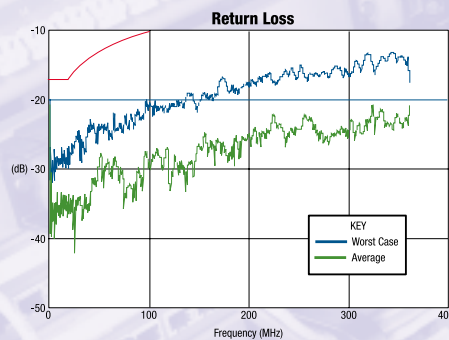
The **Category 6** standard represents a significant leap in performance and data transmission capability when compared to the Category 5e standard. The Category 6 standard has been designed to provide significant future proofing in order to accommodate the most demanding bandwidth applications. The system (Permanent Link and Channel) and individual components are all tested for compliance to a frequency of 250MHz.

The Category 6 standard is an integral part of the latest 2002 versions of TIA/EIA 568-B and ISO/IEC 11801 standards. These standards represent the pinnacle of performance for structured cabling systems.

## MOLEX POWERCAT 6 CATEGORY 6 CHANNEL PERFORMANCE



## MOLEX POWERCAT 5e CATEGORY 5e CHANNEL PERFORMANCE



### Advantage of Category 6 over Category 5E?

In short - positive PowerSum ACR beyond 200 MHz. This means around twice the nominal bandwidth of existing Category 5e cabling systems. There are other benefits too, such as enhanced Return Loss performance delivering assured support for high-speed, bi-directional applications like Gigabit Ethernet.

### Compatibility with existing systems?

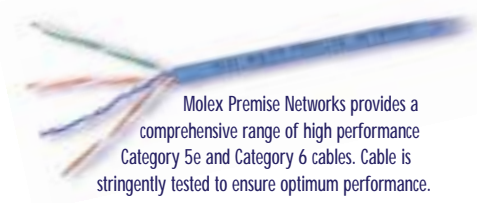
All Molex Premise Networks Category 6 systems are fully backwards compatible with Molex Category 5e systems - ensuring support for legacy applications.



# State-of-the-Art Industrial Design for Bandwidth Hungry Protocols



Molex Premise Networks manufactures a comprehensive range of Category 5e and Category 6 compliant cables, patch panels, patch cords, jacks and modules designed to meet all communications requirements. Exceeding all relevant international performance standards, including TIA/EIA 568-B including Category 6 Addendum 1), ISO/IEC 1180:2002 and AS/NZS 3080:2002, Molex Premise Networks' products provide optimum flexibility and performance – regardless of the amount of moves, adds and changes.



Molex Premise Networks provides a comprehensive range of high performance Category 5e and Category 6 cables. Cable is stringently tested to ensure optimum performance.

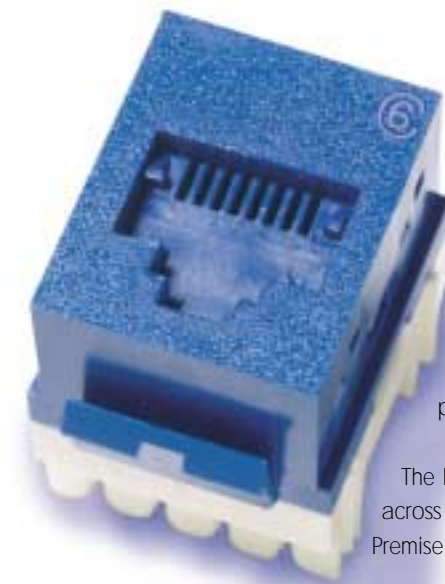
DataGate™ patch panels offer the additional feature of a patented shutter for each port. Designed incorporating the features of the DataGate jack, individual ports are protected from dust and contamination, whilst the shutter's spring-loaded pressure is designed to pop out any unseated patch cord – virtually eliminating faulty connections. DataGate panels also include individual coloured port identification and labelling, plus patented rear cable management "radius minders".



Available in 24 and 48 ports, Molex Premise Networks Standard patch panels offer a versatile cost competitive alternative for Category 5e and Category 6 installations. These panels feature rear cable management and port labelling facilities.



The Molex Premise Networks high density patch panel provides the user with Category 5e performance in a 32 or 48 ports 1U panel. Its unique stacked design with integral cable management is ideal for installations where space is of a premium. The high density patch panel provides maximum performance in minimum space.



The RJ-45 DataGate™ jack delivers increased flexibility for Category 5e and Category 6 applications. Designed to ensure a clean connection, the jack is configured with a patented shutter that protects the jack from dust and other contaminants whilst allowing for single-handed plug-ins and removal.

The DataGate jack is applicable across a broad range of Molex Premise Networks product.

The RJ-45 RILP is a low profile connector designed to support Category 5e and Category 6 applications. Designed for installation within faceplates, backboxes and trunking the RJ-45 is a modular system allowing the user to install as many outlets as necessary.



Primarily used within the Molex Premise Networks Euromod™ and MOD-SNAP™ wallplate systems, the RJ-45 connector is also utilised within a variety of modules designed for international bezel, such as: Bticino®, Cima®, Jung®, Legrand®, Opus 66®, Peha®, Strömfors®, Thorsman® and Vimar®.



**Synergy**, the rear-loading, field configurable family of products is virtually tamperproof. When configured with your choice of DataGate, BNC, video, audio, SC, ST or MTRJ fibre connectors, this contemporary line of products will meet virtually any wiring requirement.

The **USO II** multi-media outlet system is a comprehensive group of modular products which can be easily configured without removing the faceplate bezel. USO II modules make it easy to customise outlets for any UTP or fibre application. The combination of USO II and the DataGate jack offers the advantage of colour-coding your system.



The **Euromod** System of modules and wallplates provides a flexible and versatile method of installation. Enabling the user to fit as many modules as necessary Euromod is designed for a 25x50mm fascia.



The **MOD-SNAP** System of modules offers a space saving low profile design ideal for installation in shallow backboxes and floorbox applications.



Designed specifically for the Asia Pacific market, the **Synergy 86x86mm** faceplate accepts up to two MOD-Clip jacks or alternatively four DataGate jacks.



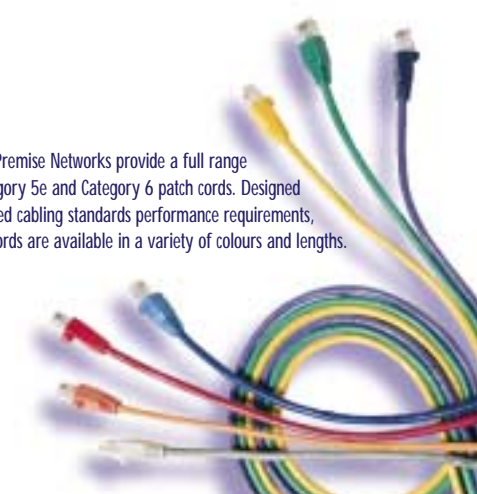
Designed specifically for the Asia Pacific market, the **MOD-Clip™** jack incorporates the unique DataGate technology. Available in Category 5e and Category 6 performance versions the MOD-Clip is designed to snap into Clipal, PDL and HPM wallplates.

Molex manufacture a complete range of **45x45mm** and **22.5x45mm** modules, specifically designed to comply with the Legrand wallplate system.



Molex Premise Networks modular jacks and wallplate systems are available in a wide variety of colours to match office decors and applications.

Molex Premise Networks provide a full range of Category 5e and Category 6 patch cords. Designed to exceed cabling standards performance requirements, patch cords are available in a variety of colours and lengths.



DataGate™, Synergy™, USO II™, Euromod™, MOD-SNAP™ and MOD-Clip™ are registered trademarks of Molex Premise Networks. All other referenced trademarks are registered to their respective companies.