LANmark-6A

HIGH-SPEED COPPER SOLUTION FOR 10 GIGABIT APPLICATIONS

Nexans

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From the beginning on, 10G Ethernet was intended to retain backwards compatibility and full interoperability with 10/100/1000M bit/sec Ethernet - but offering ten times more performance. Its use is expanding in data centres and storage area networks (SANs) where more bandwidth, higher capacity and density are required.

Fibre optic cabling solutions currently exist to address such use, but fibre can be expensive to implement and deploy depending on the size, scope and intricacy of the installation.

Conventional unshielded twisted pair (UTP) copper cable is less expensive on the surface, but extremely risky due to its greater potential for electromagnetic interference (EMI) and alien cross talk (AXT), as well as exorbitant costs to field-test and remedy these issues post-installation.

Needed is a cost-effective, copper alternative for 10G employing advanced shielding technology to negate expensive EMI/AXT problems. At the same time, cabling should also be slim, easy to install, run and terminate over long channel lengths – a true 'win-win' solution.

That alternative is Nexans' LANmark Category 6_A, 7 or 7_A shielded copper cabling specifically crafted for 10G applications.

"10GBase-T is still the newest and fastest Ethernet protocol for twisted pair solutions over 100m"

STEFAN EISENDRATH,
Team Leader R&D

"Most IT professionals today embrace screened cabling as the best solution for 10G."

MIKE HOLMES,
Marketing Manager

Why gamble?

At best, UTP solutions provide the bare minimum of protection against interference and cross talk issues mandating expensive, post-deployment testing for these potential problems. Such tests can reveal unpleasant and costly surprises that may void any initial, unit cost savings expected with UTP cables.

LANmark Category 6_A (Cat.6_A) adheres to the 10GBase-T (or IEEE802.3an) standards for 10G applications providing outstanding protection against EMI/AXT as well as offering high transmission rates (up to 500MHz) over long channel lengths (up to 100 metres).

In addition, LANmark-6A is compliant with the latest cabling and component standards ISO/IEC 11801: 2011, TIA568-C.2 and EN50173-1: 2011 to ensure confidence for plug/jack interoperability.

10GBase-T is the most sensitive application developed for copper cabling so far:

- 10^{-12} bit error rate (BER)
- If poor signal to noise ratios occur, which may lead to catastrophic failure, transmission stops immediately; not slowly degrades

LANmark-6A is specifically designed to provide very good signal to noise ratios thanks to its outstanding resistance to:

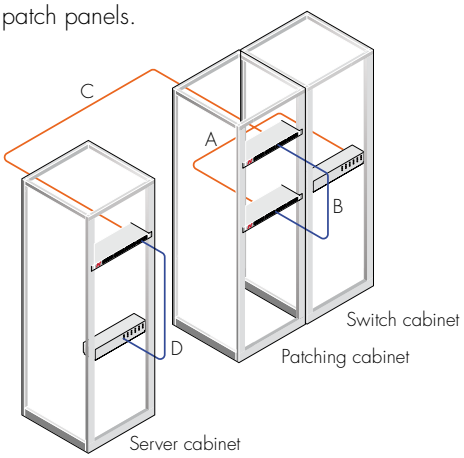
- Signals from adjacent cables (Alien NEXT and Alien FEXT)
- External noise

Short connections save space

For data centre use, screened LANmark-6A end to end channels are possible as short as 12 metre-lengths versus the traditional 24 metres. This makes them ideally suited for very short connections between patch panels.

Short length channels of 12m are possible

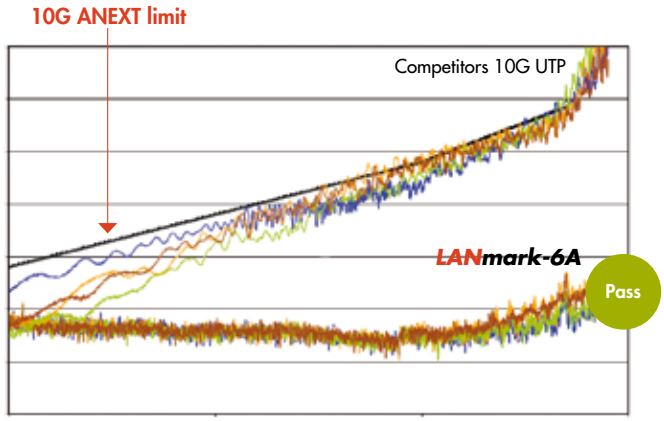
5m interconnect link (A)
1m patch cord (B)
5m horizontal link (C)
1m patch cord (D)



Why screening?

Most 10G applications involve highly concentrated cable bundles installed in cramped, hot conduits in data centre, SAN or large office environments. Additionally, electric power lines and wireless office equipment abound, resulting in high background noise.

Proper cable screening eliminates the need for space-wasting separation of UTP cables, which allows larger bundles in cable channels. This contributes to lower installation costs. And screened systems provide massive headroom to AXT, as well as a high degree of overall noise immunity.



Screened cabling is more efficient and less expensive than its UTP counterpart for 10G because:

- UTP is physically larger than screened, 10Gbase-T cables. Thinner, screened cables therefore require less physical containment, eliminating the need for double-spacing, wider cable ducts, etc.
- Screened cabling totally eliminates the need to perform expensive, on-site testing for AXT following installation. Remedies for AXT can be extremely costly, depending on the difficulties revealed.
- Connector spacing or placement for UTP requires extra cabinet space and patching difficulties. Thinner screened cables require less space, are easier to connect.

Nexans has a long history in developing screened solutions. LANmark-7 was the first standards-based system compliant when 10G first emerged and this expertise enabled development of the latest Cat.6_A products.

"The debate over the cost, performance and standards compliance of screened copper cabling has now been put to rest thanks to the many groundbreaking attributes of Nexans' LANmark Cat.6_A, 7 and 7_A solutions."

NANCY DE CLERCK,
Product Manager

"No matter where in the world you install Nexans cabling to support 10Gbase-T, you're covered by all applicable standards."

DIDIER WILLEMS,
Project Design
& Support Manager

Major finance organisation
(UK)
Data centre

Nexans provides LANmark fibre-optic and 10 Gigabit solutions with LANsense Intelligent Infrastructure Management to provide totally reliable application support and remote management for its data centre.

Blaguss/Eurolines
(Austria)
Transport

Nexans' combination of LANmark solutions proves to be a reliable, future-proof solution for international travel and transport company.

PRE-TERM COPPER

- Jack-Jack, Jack-Plug or Plug-Plug units
- Single or bundles of units available
- Shielded Cat.6_A performance
- Nexans 6x4pr multipair pre-terminated assembly in unique design
- Optimised design for installation in large bundles and high density patching racks, ideal for data centres
- Coding of all units or assemblies for traceability
- Labeling of the pre-terminated units and packing according to customer's wishes
- Fully covered by the Nexans 25 years warranty

CONNECTOR

- Superior performance for all frequencies up to 500MHz
- 360° closed Rear Cover to avoid Alien Xtalk and offer excellent EMC performance
- Fully Cat.6_A compliant
- Very easy to install
- Short depth connector for all wall and floor boxes
- Bulk-100 and Eco-24 packaging available
- Part numbers: N420.66A and N420.67A

EVO

Shorter, quicker, easier...

CABLE

Two superior performance 500MHz cable constructions are offered:

- F/FTP
  - Uses 4 individually screened pairs
  - Immune against Alien Xtalk
  - Overall aluminium screen
  - Fully Cat.6_A compliant
  - Part number: N100.69xG
- F1/UTP
  - Unique design with internal cross member instead of 4 individual foils to allow fast, easy connector termination
  - Outward facing aluminium foil to ensure instant screening contact to connector rear cover
  - Immune against Alien Xtalk
  - Fully Cat.6_A compliant
  - Part number: N100.62xG

PATCH CORD

- High speed patch cords using 4 individually screened pairs
- Superior performance for all frequencies up to 500MHz
- Immune against Alien Xtalk
- slim and robust boot design offering mechanical protection and supporting high density patching
- equipped with black removable latch protector, replaceable with optional coloured version (7 additional colours), allowing differentiation between applications
- Fully Cat.6_A compliant
- Part number: N11A.U1FxxxOK (LSZH Orange)
  N11A.U1FxxxDK (LSZH Grey)

Crafted for performance excellence

Nexans' LANmark Cat.6_A solutions employ unique shielding technology involving the inner protective foil's metallic-side facing outwards. This makes it easier to install and bound on patch panels, making connections more reliable and less expensive through reduced installation time. They meet or exceed all application requirements worldwide that support 10Gbase-T:

- LANmark-6A
  IEEE802.3an; TIA TSB155; ISO/IEC TR24750;
  TIA 568-C.2 Cat.6A
  ISO/IEC 11801: 2011 Class E_A and Cat.6_A
  EN50173-1: 2011 Class E_A and Cat.6_A
- LANmark-7/7A
  (with RJ45 Cat.6_A patch cord)
  Cat.6_A compliance with future upgrade potential up to Cat.7_A using GG45 cords

No matter where in the world you install Nexans cabling to support 10Gbase-T, you're covered by all applicable standards.

LANmark-6A guaranteed Channel Margin (compared to TIA Cat.6A)	
• NEXT	2 dB
• PSNEXT	2 dB
• ACR-F	6 dB
• PSACR-F	6 dB
• Return Loss	2 dB
• PSANEXT	15 dB
• PSAELFEXT	15 dB

Leadership pays off for you

The debate over the cost, performance and standards compliance of screened copper cabling has now been put to rest thanks to the many groundbreaking attributes of Nexans' LANmark Category 6_A solution.

Nexans 10G zero risk solutions

- Standard compliant
- Multiple solutions available
- All individual 10G components are specified up to 500MHz
- Full 100m support
- Guaranteed to support the 10GBase-T application – IEEE 802.3an
- Guaranteed headroom on Alien Xtalk
- No field testing needed for Alien Xtalk
- No hidden cost
- Easy to install

Proven performance

It is now widely accepted that screened Cat. 7_A and 6_A copper cabling will play a significant role in the future deployment of 10G applications. Nexans has already installed various 10Gbase-T systems successfully throughout the world, and continues to invest in product development.

LANmark-6A
connect to tomorrow

25 year warranty

10G
10 Gigabit Ethernet

University A Coruña
(Spain)
Education

Nexans LANmark-6A 10G shielded cabling has provided a robust, reliable and future-proofed infrastructure for one of Spain's leading civil engineering centres of learning at the University of A Coruña.

United Nations
(Switzerland)
Government

The Office of the High Commissioner for Human Rights (OHCHR) in Geneva has deployed a Nexans LANmark-6A infrastructure that delivers the bandwidth needed today and in the long-term.

About Nexans

With energy at the basis of its development, Nexans, worldwide expert in the cable industry, offers an extensive range of cables and cabling solutions. The Group is a global player in the energy transmission and distribution, industry and building markets. Nexans addresses a wide series of market segments: from energy and telecom networks to energy resources (wind turbines, photovoltaic, oil and gas, and mining) to transportation (shipbuilding, aerospace, automotive and automation, and railways). Nexans is a responsible industrial company that regards sustainable development as integral to its global and operational strategy. Continuous innovation in products, solutions and services, employee development and commitment, customer orientation and the introduction of safe industrial processes with limited environmental impact are among the key initiatives that place Nexans at the core of a sustainable future.
With an industrial presence in 40 countries and commercial activities worldwide,
Nexans employs 25,000 people and had sales in 2012 of nearly 7.2 billion euros.
Nexans is listed on NYSE Euronext Paris, compartment A.
For more information, please consult: www.nexans.be

In the field of LAN Cabling Systems, Nexans Cabling Solutions offer a complete range of products and value added services providing improved reliability and reduced cost of ownership for Network Managers, together with faster installation times for installers.

In addition to LANmark brand cabling systems, Nexans also specialises in LANsense Intelligent Infrastructure Management (IIM) products including Environmental Monitoring and Access Control (EMAC) devices.
Nexans offers an unrivalled choice of LAN infrastructure solutions to a global customer based through an extensive network of regional offices and Key Account Management team.

For more information visit www.nexans.com/LANsystems

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