

Overview:

Within the Entertainment market there is an increasing use of network-based platforms for data transmission. The lighting segment alone has made the use of sACN, Art-Net and ETCNet protocols for communication between controllers, power distribution devices, fixtures, etc. commonplace. Ethernet-based protocols include the benefits of bi-directional communication between devices, DMX Universes numbering in the tens of thousands and the employment of consumer-off-the-shelf (COTS) components that dramatically reduce installation costs. Common platform standards include Category 3 (Cat3), Category 5 (Cat5) and Category 5 Enhanced (Cat5e). Cat5e is the current, most widespread and preferred of these standards and was released in 1999. Among the Cat5e benefits over its predecessors are increased performance requirements and stricter specifications while maintaining backwards compatibility.

Concerns:

However, there is a mounting concern regarding network communication bandwidths. The growing use of Ethernet protocols within the Lighting, Audio and Video segments, with their increasing demands, creates the worry that existing standards are reaching their saturation points. Additionally the Entertainment market is making use of commercially available products when putting together network based systems and the commercial market is advancing past Cat5e in order to satisfy its own growing demand for increased bandwidths.

Standards:

Category 6 (Cat6) is similar to the previously mentioned types. Cat6 is an established platform that utilizes a cable comprised of (4) twisted conductor pairs within a common jacket. Like the others, it is limited to a total cable length of 100 meters (328 feet) that must include the patch cable at either end of the link when considering the overall distance. The parts are interchangeable so a Cat5/5e cable will work with a Cat6 connector and vice versa.

So what is the difference? With each upgrade of cable, there is less signal loss, less cross talk and larger frequency bandwidth. Compared with Cat 5/5e, Cat 6 features more stringent specifications for crosstalk and system noise, offers increased speed (100 MHz versus 250 MHz) and bandwidth (100BASE-T (Gigabit Ethernet) versus 10GBASE-T (10-Gigabit Ethernet)).

However, it must be noted that network speed is more a function of the equipment used (network switch, PCs, etc.) than of the grade of cable. Any system will only perform at the level of the lowest link.

NOTE: The latest iteration of Gigabit Ethernet cabling is Category 6 Augmented (Cat6a). The 'a' is in recognition of the improved performance characteristics over

Cat6. Cat6a doubles data transmission bandwidth (from 250 MHz to 500MHz), decreases the chances of crosstalk interference, provides superior reliability and transmission speeds through greater lengths of cable. Cat6a cables are also often shielded which makes them ideal where additional interference may be a concern.

The Lex Products Advantage:

Lex Products has combined a rugged Cat6 cable with the latest Neutrik etherCON connector to create an extension that is unique within the industry. We are not aware of any other manufacturers currently offering a **TOUR-GRADE SHIELDED CAT6** product. This extension has been developed to resolve long-time industry reservations about using existing cables in less-than-ideal environments.

Lex has located a ruggedized Cat 6 cable for our industry. Some notes:

- Designed for mobile use in broadcasting and in all Class E network installations with transmission frequency up to 250MHz
- Compliant with ISO/IEC 11801 - EN 50173 - EIA/TIA 568B.2 and ensures accurate transmission of data up to 90 meter cable stretches
- For optimal data transfer along the entire cable, the internal position of the four twisted pairs should not be altered
 - In this regard, a particular foamy tape has been used to surround the twisted pairs and keep them fixed and properly spaced, thus maintaining the correct structure of the cable throughout its length
- A particular method has been used for the tinned copper braid shielding between the first and the second cable sheath, greatly improving the return loss values, which are usually critical with the standard S/FTP shielding
- The outer polyurethane (PUR) sheath has been particularly designed for rigorous conditions in outdoor applications, for use on cable drum, for mobile media vehicles and wherever high abrasion resistance and continuous bending cycles are needed, preserving enduring transmission quality
- This version of Cat6 can be wired with standard RJ45 connectors

Cables will be terminated using either Cat6 RJ45 connectors or Neutrik etherCON connectors. While both connections are backwards compatible and are very similar in appearance to Cat 3/5/5e connectors, Cat 6 connectors offer an electrical connection for the shield to minimize EMI.

When using the Neutrik etherCON connectors, the following applies:

- Ruggedized connector with CAT6A component compliance according to ISO / IEC 11801 and TIA / EIA 568-C.2
- PoE+ compliant according to 802.3at Type2
- IP 65 protected when mated with NE8FDX-P6-W or NE8FDX-Y6-W
- Rugged latch lock system million fold proven

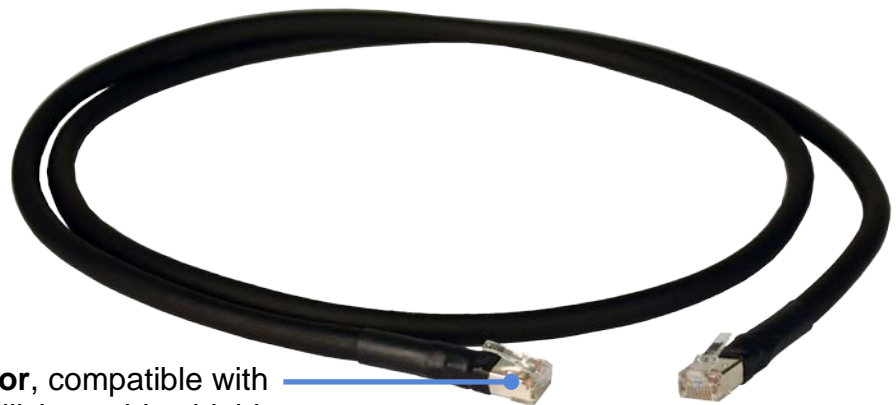
- Intermateable with the existing etherCON CAT5 range
- Unique Neutrik chuck-type strain relief

All cables are terminated to the T568B standard.

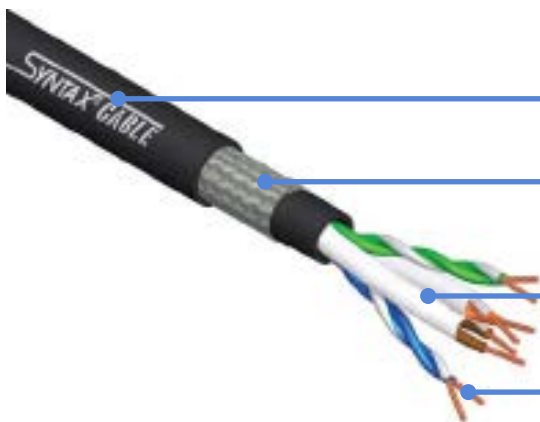
Features & Benefits:



Neutrik NE8MX6 Cat6A Connector
compatible with existing Cat5/5e devices



Cat6 'RJ45' Connector, compatible with
Cat5/5e devices, utilizing cable shield,



Polyurethane Jacket designed for abrasion resistance
and continuous bending cycles

Tinned Copper Braid with coverage >80%, improving
return loss values

Polyolefin Foam keeps twisted pairs fixed and

23AWG Solid Core Conductor

About Lex Products

Lex Products Corporation is a leading manufacturer of innovative power distribution and control systems for demanding markets, including entertainment, industrial and the military. Founded in 1989, the company specializes in portable power systems including distribution boxes, cable assemblies, cable protectors and other products, designed to withstand rough use and harsh environments. Lex Products is ISO 9001:2008 certified for all production, operations and support services across its three facilities.

Headquartered in Shelton, Connecticut, the company also has offices in Sun Valley, California. To learn more about Lex Products, please visit www.lexproducts.com.

Warranty:

Lex Products warrants the products it manufactures to be free from defects of material or workmanship for a period of one year from shipping date. Those products and/or components not manufactured by Lex Products shall be subject only to the warranty extended by the original manufacturer. Lex Products' warranty is restricted to the repair or replacement, at Lex Products option, of any part which proves to be defective and for which claim was made in writing prior to the expiration date of the warranty. This warranty does not apply to any defect arising from accident, misuse, unauthorized repair or negligent use. This warranty does not apply to normal wear and tear.