Hitachi Cable America Inc.

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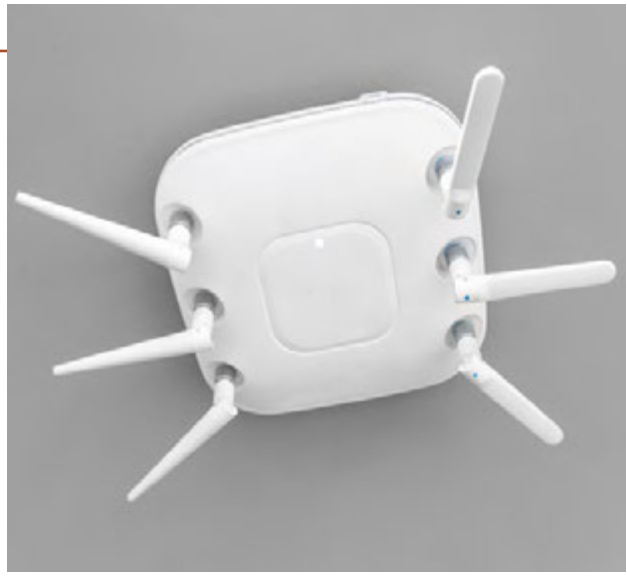
Inspire the Next

Technology in Education

Education

Today's school campuses are rich in technology. Whether it's K through 12 or a university, schools are integrating a wide range of technologies to improve communication and safety and enhance energy efficiency. In 2017, K-12 spending on technology in the U.S. was estimated at $14 billion while higher education was estimated at $12.8 billion. Where was the money spent? Camera systems, door access control, public address and Power over Ethernet (PoE) lighting systems are some of the systems in or being added to educational institutions. There are also forms of technology that students and educators directly interact with including smart white boards, LCD projectors, laptops, desktops and more. And, since nearly all of this technology is networked, it is the campus network infrastructure that ultimately must support it all. This network of copper and fiber optic cables is responsible for providing users access to both local servers and the internet through cabled and wireless connections.



For higher education institutions, it is estimated that each student has with them 4 to 5 devices that will be networked. These include cell phones, laptops, tablets and gaming systems. Computers and gaming systems are also being used to watch television and movies through online venues which further increases the burden on the network. Portable devices, like smartphones, are being used to read e-books, listen to educational podcasts, watch educational videos, access email, track school projects and more. And, these smartphones utilize WIFI. Good WIFI across campus is not just a desirable feature for a school to offer. It is a necessity. In fact, supporting mobile devices is the number one priority in college technology spending. As more and more students bring their technology to campus, schools have to update and upgrade their networks. Not doing so could result in their networks being overwhelmed. Additionally, the school could get a reputation as being behind the technology curve. 58% of surveyed higher education officials have said that their current infrastructure will not support a smart campus past 5 years. Of that, 22% said their infrastructure cannot support technologies of a smart campus for more than 1 year*. Technology is evolving so fast, the technology administrators at these schools find it difficult to keep up.

Though many colleges and universities have their own standard for network infrastructure, these are generally all based on the ANSI/TIA-568-2.D Commercial Building Telecommunications Cabling Standard. Within that standard are products offering various levels of performance. The highest performing copper option in the current ANSI/TIA standard is Category 6A.

A Category 6A infrastructure is designed to support 10 Gigabit Ethernet to the desk top. In addition to 10 Gig, a Category 6A system is the recommended infrastructure for WIFI access points. More specifically, Category 6A cable is the only cable designed to support IEEE 802.3an Ethernet @ 10 Gbps, IEEE 802.11ac (Wi-Fi) @ 1.3 Gbps and the soon to be released IEEE 802.11 ax (Wi-Fi 6) @ 10Gbps.

BICSI, a leading network infrastructure association recommends 2 Category 6A cables to each access point. This is intended to support both current and future WIFI needs. The best performing Category 6A network is one based on shielded cables. A shielded network offers the best immunity from outside electronic noise (RFI & EMI) and therefore delivers better signal integrity. Hitachi offers a Category 6A shielded solution. However, Hitachi now offers an unshielded Category 6A solution that performs virtually on par with a fully shielded system. Hitachi's Supra 10G-XE™ is a new type of Category 6A communication cable that provides the enhanced performance of a fully shielded solution while installing and terminating like an unshielded one. The Supra 10G-XE is also rated to accommodate up to 120 watts of power or more and can easily support Power over Ethernet applications based on IEEE 802.3 af, at and bt standards.

To simplify cabling across a campus, Hitachi now offers its Drybit™ Category 6 and 6A cables that are both plenum-rated and suitable for outdoor/wet environments. With a dry core design, Drybit cables eliminate the need to use two types of cables, outdoor and plenum-rated, when a cable run must penetrate both environments. Drybit cables can also support up to 120 watts of power so they are ideal for PoE applications. When power and signal are needed over great distances, Hitachi offers it Power+™ line of copper/fiber optic composite cables. Supporting powered devices up to 10,000 feet and including fiber optic strands, Power+ Composite cables extend the reach of the network, whether it be for security cameras or other networked devices. With more and more devices being powered over Ethernet cables, it is important to select a cable that efficiently and safely supports the PoE devices of today and tomorrow.

Hitachi also offers a large selection of fiber optic cables that can be used to link data rooms within a building or link buildings from one corner of campus to another. These designs include indoor/outdoor and armored cables to ensure that no matter what path the cable takes, it is safely protected. Hitachi's indoor/outdoor fiber optic cables are tight buffered and gel-free making them an easy to terminate option for below grade and aerial applications. These indoor/outdoor cables are available with plenum and riser ratings, which makes them ideal for going directly from outdoor environments to indoor spaces with no transition necessary. They are available with multimode optical fiber, including OM4 optical fiber which can accommodate 10 Gbit Ethernet up to 550 meters and singlemode fiber, which can support 10 Gbit Ethernet data rates and faster up to 10,000 meters. Hitachi's use of low-loss, bend-insensitive fiber optic cable designs also permits a variety of hyper-small constructions, such as our NanoCore® cables that offer up to 144 strands of fiber in a very small 9.9mm cable diameter. These high-strand small footprint cables can be terminated with fusion spliced connectors making them ideal for long runs where pathway space may be a concern.

If planning new construction, adding to an exist building or doing a network upgrade, consider a cable infrastructure that delivers the high performance that today's students require. Choose cables made by Hitachi Cable America in Manchester, New Hampshire.

*Center for Digital Education, "Preparing for the Connected Campus" October 2017

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Located in Manchester, New Hampshire, Hitachi Cable America's (HCA) 300,000 square-foot facility produces over 4,500 unique cable constructions. HCA has been manufacturing cables at this facility since 1986 and operates 24/7 to supply demand. In addition to producing network related cables, HCA builds cables for the medical industry, the cellular phone industry, industrial applications, supercomputing and more.

Products from Hitachi Cable America Include:

Category 5e, 6 & 6A Cables
Category 7,7A & 8 Cables
Fiber Optic Cables (indoor, outdoor & armored)
NanoCore™ Micro Distribution Fiber Optic Cables
Industrial Ethernet Cables
Coaxial & Mini-coaxial Cables
Distributed Antenna System Cables
Round & Ribbon Electronic Cables
ChannelFlex Flat Robotic Cables

MADE IN USA

HCA is proud to use Corning Optical Glass in all standard fiber optic cable constructions.

plus CORNING® ClearCurve® Optical Fiber

For more information about Open System Architecture, please contact us.

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