

Glossary

The following are terms used within this guide. These terms are defined within the context of the optical fiber industry.

ABF

Air blown fiber. An alternate fiber provisioning scheme which requires pre-provisioning plastic tubes to all possible service locations. Fiber is later selectively installed to service locations. ABF is not compliant to TIA-568 standards and is not accommodated by typical building construction practices.

Acceptance Cone

An imaginary cone that defines the angle with which an optical fiber will accept incoming light.

Access Jumper

A length of fiber placed between the OTDR and an event along a fiber that is to be measured. This allows the user to see fiber on both sides of the event so that its loss can be estimated. Length must be significantly greater than the OTDR attenuation dead zone. A mechanical media termination device designed to align and join fiber optic connectors; often referred to as a coupling, bulk head or interconnect sleeve.

Adapter

A mechanical media termination device designed to align and join optical fiber connectors; often referred to as a coupling or interconnect sleeve.

AHJ

Authority having jurisdiction. The organization, office and/or individual responsible for “approving” equipment, an installation, or a procedure. Note: the phrase “authority having jurisdiction” is used in a broad manner since jurisdictions and “approval” agencies vary as do their responsibilities.

ALTOS® Cable

Corning Cable Systems stranded loose-tube cable in which buffer tubes contain two or more fibers and which uses innovative waterblocking technology for craft-friendliness.

AM

Amplitude modulation. An analog signal with a constant frequency and varying amplitude.

Anaerobic-Cure Connector

A field-installable connector with a polymer epoxy that hardens when combined with an activating agent.

Analog

A communications format that uses continuous physical variables such as voltage amplitude or frequency variations to transmit information.

Aramid Yarn

Strength elements that contribute cable tensile strength, support and additional protection of the optical fiber bundles.

Arbitrated Loop

Fibre Channel topology in which devices are connected in a loop; a token is used to control access.

Armor

Additional protective element beneath the cable outer jacket used to provide protection against severe outdoor environments and gnawing rodents. Usually made of plastic-coated steel, it may be corrugated for flexibility.

As-Built Test

Test performed after all installations (cable placement, splicing, connectorization) have been completed, to show the system performs to specifications; usually comprised of OTDR and end-to-end attenuation tests.

ATM (Asynchronous Transfer Mode)

A network communications protocol standard with a digital transmission switching format; designed for scalable bandwidth and multimedia voice, data and video transmission.

Attenuation

The decrease in magnitude of signal power transmitted between points; a term used for expressing the total loss of an optical system, normally measured in decibels (dB) at a specific wavelength.

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Attenuation Coefficient

The rate of optical power loss with respect to distance along the fiber, usually measured in decibels per kilometer (dB/km) at a specific wavelength; the lower the number, the better the fiber's attenuation. Typical multimode wavelengths are 850 and 1300 nanometers (nm); single-mode wavelengths are 1310 and 1550 nm. *Note: When specifying attenuation, it is important to note the value is maximum.*

Backbone (Data Center)

Provides interconnection between the main distribution area, the horizontal distribution area and entrance facilities.

Backbone Cabling (LAN)

The portion of premises telecommunications cabling that provides connections between telecommunications closets, equipment rooms and entrance facilities. The backbone cabling consists of the transmission media (optical fiber cable or copper twisted-pair), main and intermediate cross-connects, and terminations for the horizontal cross-connect, equipment rooms, and entrance facilities. The backbone cabling can further be classified as interbuilding backbone (cabling between buildings) or intrabuilding backbone (cabling within a building).

Backscatter

The portion of light that is scattered by the structure of the glass and travels back toward the source. The OTDR uses this scattered light to make measurements.

Bandwidth

Measure of the information-carrying capacity of an optical fiber usually measured in MHz•km at a specific wavelength. The higher the bandwidth, the better the fiber. *Note: This term is often used to specify the normalized modal bandwidth of a multimode fiber.*

Bend Radius (Fiber)

Radius a fiber can bend before the risk of breakage or increase in attenuation. *See Cable Bend Radius.*

Broadband

Denotes transmission facilities capable of handling a wide range of frequencies simultaneously, thus permitting multiple channels in communications systems. Normally associated with CATV systems.

Buffering

(1) A protective material extruded directly or around the coated fiber to protect it from the environment (also known as tight-buffered); (2) extruding a tube around colored fiber to allow isolation of the fiber from stresses in the cable (also known as buffer tubes).

Buffer Tubes

Extruded cylindrical tubes covering optical fiber(s) used for protection and isolation.

See Loose Tube.

Bulkhead

See Adapter.

Bundle

Many individual fibers contained within a single jacket or buffer tube. Also, a group of buffered fibers distinguished in some fashion from another group in the same cable core.

BW

Bandwidth

Byte

A sequence of 8 bits.

Cabinet

A physical enclosure for rack-mountable equipment. Cable optical fibers and other material(s) assembled to provide mechanical and environmental protection for the fibers.

Cable Assembly

Optical fiber cable with connectors installed on one or both ends. Cable assemblies are generally used for interconnection of optical fiber cable systems and opto-electronic equipment. If connectors are attached to only one end of a cable, it is known as a pigtail. If connectors are attached to both ends of a low-fiber-count cable, it is known as a jumper or patch cord.

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Cable Bend Radius

Cable bend radius during installation is the smallest radius bend for a cable experiencing a tensile load. Cable bend radius installed is the smallest diameter bend for a cable that is under no tensile load.

CamSplice™ Mechanical Splice

Corning Cable Systems' non-adhesive mechanical splice.

Carrier Sense Multiple Access/Collision Detection (CSMA/CD)

This is the communication scheme used in a shared Ethernet network.

Cascade

An architecture in which switches are “daisy chained” together. Frames are passed from switch to switch until the port for the destination device is reached.

CATV

Community access television

CCH

Closet Connector Housing

CCS

Closet Connector and Splice Housing

CDF

Closet Distribution Frame

Central Member

The center component of a stranded loose tube cable. It serves as an anti-buckling element to resist temperature-induced stresses. The central member material is either steel, fiberglass or glass-reinforced plastic (GRP).

Centralized Cabling

A cabling topology used with centralized electronics connecting the optical horizontal cabling with intrabuilding backbone cabling passively in the telecommunications closet or main cross-connect.

Channel

A dedicated path between two devices characterized by very high data rates and very low overhead; it is typically hardware intensive and addresses system data as part of the “setup” information.

Chromatic Dispersion

Signal dispersion caused by light traveling at multiple wavelengths which arrive at the detector at different times.

CJP

Closet jumper-management panel

Cladding

The material surrounding the core of an optical fiber. The cladding must have a lower index of refraction to keep the light in the core.

Class of Service

The four classes include connection oriented, connectionless, datagram and fractional bandwidth services.

Coating

A material applied to a fiber during the manufacturing process to protect it from the environment and handling.

Coaxial Cable

A central conductor surrounded by an insulator, which in turn is surrounded by a tubular outer conductor, which is covered by more insulant; also called coax cable.

Collision

The result when two users attempt to send data simultaneously on a shared media network. Data is corrupted and both devices must re-transmit their information.

Composite Cable

A cable containing both fiber and copper media.

Conduit

Pipe or tubing through which cables can be pulled or housed.

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Connecting Hardware

A device used to terminate an optical fiber cable with connectors and adapters providing an administration point for cross-connecting between cabling segments or interconnecting to electronic equipment.

Connector

A mechanical device used to align and join two fibers together to provide a means for attaching to and decoupling from a transmitter, receiver or another fiber. Commonly used connectors include the MT-RJ, SC, ST® compatible and LC Connectors.

Connector Module

A connector panel with a pre-installed cable assembly(ies) on the back plane which can be spliced to backbone cable fibers (designed for use with patch panels).

Connector Panel

A panel insert designed for use with patch panel housings. Connector panels often contain pre-installed adapters.

Core

The central region of an optical fiber through which light is transmitted.

Coupling

See Adapter.

Cross-Connect

Incoming and outgoing fibers terminate in adapter sleeves or the backplane of the patch panel. Single-fiber jumpers, which are installed on the front plane, complete the circuits.

Cross-Connect Switch

A fabric switch that connects only to other switches (I/O).

CSH

Closet Splice Housing

Composite Second Order Beat (CSO)

A clustering of second-order beats 1.25 MHz above the visual carriers in CATV systems.

Composite Triple Beat (CTB)

A clustering of third-order distortion products around the visual carriers in CATV systems.

Cut-Off Wavelength

The wavelength below which a single-mode fiber will support more than one mode of light.

CWDM

Course wavelength division multiplexing

dB

See Decibel.

Dead Zone

Attenuation dead zone is the distance after a reflective event at which the trace line has returned to within 0.5 dB of the actual backscatter line. Caused by the laser pulse reflecting as it passes through the connection or event.

Decibel

Unit for measuring the relative strength of light signals expressed as dB, it is equal to one-tenth the common logarithm of the ratio of the two power levels; expressed in dBm when a power level is compared to 1 milliwatt.

Demarcation Point

A point where the operational control or ownership changes.

Dielectric

Non-metallic electrically non-conductive. Glass fibers are considered dielectric. A dielectric cable contains no metallic components.

Digital

A data format that uses discreet physical levels to transmit information.

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Dispersion

The broadening of light pulses along a length of the fiber. Two major types are (1) modal dispersion caused by different optical path lengths in a multimode fiber; (2) chromatic dispersion which is the sum of material dispersion and waveguide dispersion in single-mode fiber. Material dispersion is pulse spread caused by different index of refraction for light of various wavelengths in a waveguide material. Waveguide dispersion is caused by light traveling at different speeds in the core and cladding of single-mode fibers. The spreading of a light pulse as it travels down a fiber. The higher the dispersion, the lower the maximum transmission frequency.

Dispersion Shifted Fiber

Single-mode fiber that has a zero dispersion wavelength in the 1500 nm region.

Distributed Feedback Laser (DFB)

Edge emitting laser typically used for 1310 nm/1550 nm operation.

DMD

Differential modal delay

Documentation

The methodical recording of test and physical data for a fiber system, including OTDR traces, end-to-end losses, connector and splice losses, route diagrams, meter/foot marks such that a complete record is produced of the active condition of the completed system.

DSP

Digital signal processing

DTE

Data terminal equipment

EDA

Equipment distribution area. The computer room space occupied by equipment racks or cabinets.

EDC

Environmental Distribution Center

Effective Modal Bandwidth (EMB)

The system modal bandwidth observed in a link for a specific fiber with a specific source.

Effective Modal Bandwidth, Calculated (EMBC)

Predicts source-fiber performance by integrating the fundamental properties of light sources with the multimode fiber's modal structure ensuring that the effective modal bandwidth (EMB) of a fiber will meet the 10 Gb/s requirement of 2000 MHz•km with any conforming laser.

Electromagnetic Interference (EMI)

Radiated or conducted electromagnetic energy that has an undesirable effect on electronic equipment or signal transmissions.

End-to-End Test

Measurement of optical power loss using a source and meter which transmits into one end of the fiber and receives at the other end; typically from one patch panel to another.

Entrance Facility

An entrance to a building for both public and private network service cables including the entrance point at the building wall and continuing to the equipment room or space.

Entrance Room (ER)

A space in which the joining of interbuilding or intrabuilding telecommunications backbone facilities takes place.

Equipment Room

A centralized space for telecommunications equipment that serves the occupants of a building. An equipment room is considered distinct from a telecommunications closet because of the nature or complexity of the equipment.

Ethernet

An IEEE network protocol standard for a 10 Mb/s local area network. The IEEE 802.3 standard defines the various requirements and speeds of Ethernet that include 10 Mb/s, 100 Mb/s, 1000 Mb/s and 10 Gb/s, Ethernet. *Also see Fast Ethernet, Gigabit Ethernet and 10 Gigabit Ethernet.*

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Event

Any component, such as connectors, splices, faults, etc. that is displayed on an OTDR trace.

Event Search

An OTDR's ability to use an algorithm to search, automatically, for all events in the cable, reporting their location and loss.

Fabric

Topology using switches to connect one or multiple devices to other devices that are part of the network.

Fan-Out

Corning Cable Systems' tight-buffered breakout-style multi-fiber cable designed for ease of connectorization and rugged applications for interbuilding or intrabuilding requirements.

Fast Ethernet

Ethernet at 100 Mb/s transmission rate. This is defined by the IEEE 802.3 standard.

FCC

Federal Communications Commission

Ferrule

A mechanical component, generally a rigid ceramic tube, used to protect and align a fiber in a connector.

Fiber

Thin filament of glass; an optical waveguide consisting of a core and a cladding that is capable of carrying information in the form of light.

Fiber Bend Radius

Minimum radius a fiber can bend without experiencing a reduction in optical fiber reliability.

Fiber Distributed Data Interface (FDDI)

A standard for a 100 Mb/s fiber optic local area network.

Fiber Identifier

A device that bends a fiber (slightly) so that enough light leaks out that a detection can determine the presence of traffic and its direction, as well as recognize the presence of a test tone (usually 2 kHz).

Fiber Optics

Light transmission through optical fibers for communication or signaling.

Fibre Channel

Connecting protocol commonly used in data centers to link servers to storage arrays. Fibre Channel mandates reliable delivery of data. Common data rates are 1 Gb/s, 2 Gb/s, 4 Gb/s and 10 Gb/s.

Field-Installable Connector

A optical connector that can be assembled in the field (at the job site) and installed by hand.

FM

Frequency modulation

FOTP

Fiber optic test procedures; defined in TIA/EIA Publication Series 455.

FP

Fabry perot (laser)

Frame

The smallest subset of data; frames make up sequences.

Fresnel Reflection Losses

Reflection losses that are incurred at the input and output of optical fibers due to the differences in refraction index between the core glass and immersion medium.

FTTx

A growing practice of provisioning individual subscribers with 100 percent optical fiber from the POP to the premises. The parity cost of fiber relative to copper plant and its extraordinary bandwidth advantage have made FTTx economically attractive in many applications.

Full-Duplex

Capable of transmitting and receiving over the same channel simultaneously. In pure digital networks, this is achieved with two optical fibers.

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Functional Levels

The model (consisting of five levels) that defines Fibre Channel operation. These levels include the physical media, encoding scheme, frame layout, services mapping.

Fusing

The actual operation of joining fibers together by fusion or by melting.

Fusion Splice

A permanent joint produced by the application of localized heat sufficient to fuse the ends of two optical fibers, forming a continuous single-light path.

FZB

Fiber Zone Box

Gainer

A splice loss measurement in which the trace appears to go up (more power) and there appears to be a gain, instead of a loss; typical in cases where fiber of differing manufacturers is spliced together. Testing from the opposite direction usually produces a corresponding loss equal to the power gain measured from the other direction.

GbE

See *Gigabit Ethernet*.

Ghost

An “echo” caused by highly reflective components (connectors) in which light is reflected back from the connection, strikes another connection, which reflects it back out into the fiber, only to be reflected back to the OTDR again.

Gigabit Ethernet

A 1000 Mb/s transmission rate. This is defined by the IEEE 802.3 standard.

Gigahertz (GHz)

A unit of frequency that is equal to one billion cycles per second.

Graded-Index

Multimode fiber design in which the refractive index of the core is lower toward the outside of the fiber core and higher toward the center of the core, thus providing higher bandwidth capabilities.

Half-Duplex

The transmission of data in both directions, but only one direction at a time. For example, two-way radio (push-to-talk phones) use half-duplex communications. When one party speaks, the other party listens.

Heat-Cure Connector

A field-installable connector with a polymer epoxy that hardens when exposed to heat.

Horizontal Cabling

That portion of the LAN that provides connectivity between the horizontal cross-connect and the work-area telecommunications outlet. In the data center, the horizontal cabling provides connectivity between the main distribution area/horizontal distribution area to the equipment distribution area. The horizontal cabling consists of transmission media, the outlet, the terminations of the horizontal cables, and horizontal cross-connect.

Horizontal Cross-Connect (HC)

The horizontal cross-connect (HC) is where the building backbone and horizontal cabling meet in the telecommunications room (TR).

Horizontal Distribution Area (HDA)

A space in a computer room where a horizontal cross-connect is located.

Housing

An enclosure, usually metallic, for splicing or termination.

Hybrid Cable

A fiber optic cable containing two or more different types of fiber, such as 62.5 μm multimode and single-mode.

ICH

Industrial Connector Housing

IEC

International Electrotechnical Commission

IEEE

Institute of Electrical and Electronics Engineers

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Index-Matching Gel

A gel with an index of refraction close to that of the optical fiber used to reduce reflections caused by refractive-index differences between glass and air.

Index of Refraction

The ratio of light velocity in a vacuum to its velocity in a given transmission medium.

Intelligent Transportation System (ITS)

A combination of electronics, telecommunications and information technology to the transportation sector for improving safety and travel times on the transportation system. Intelligent transportation systems collect, store, process and distribute information relating to the movement of people and goods.

Interbuilding Backbone

The portion of the backbone cabling between buildings. *See Backbone Cabling.*

Interconnect Sleeve

See Adapter.

Intermediate Cross-Connect (IC)

A secondary cross-connect in the backbone cabling used to mechanically terminate and administer backbone cabling between the main cross-connect and horizontal cross-connect.

International Organization for Standardization (ISO)

An organization that sets international standards, founded in 1946.

Intrabuilding Backbone

The portion of the backbone cabling within a building. *See Backbone Cabling.*

I/O Switch

A fabric switch that connects to both devices (input and output) and cross-connect switches.

ITU

International Telecommunications Union

JPEG

Joint Picture Expert Group

Jumper

Optical fiber cable that has connectors installed on both ends. *See Cable Assembly.*

Jumper Management

A means of providing an orderly administration of fibers. This is essential in areas of high density and should provide a means of routing single-mode and multimode fibers horizontally, vertically, and front to back in rack installations.

Kilometer (km)

One thousand meters, or approximately 3,281 ft. The kilometer is a standard unit of length measurement in fiber optics. Conversion is 1 ft = 0.3048 m.

kpsi

A unit of force per area expressed in thousands of pounds per square inch; usually used as the specification for fiber proof test, e.g., 100 Kpsi.

LANscape® Solutions

The complete tip-to-tip approach to fiber cabling solutions for private networks that consists of a comprehensive set of integrated products, services and support to ensure a successful and efficient fiber network that will serve as a stable communications infrastructure for years to come.

Laser

Light amplification by the simulated emission of radiation. A device that causes a uniform and coherent light that is very different from an ordinary light bulb. Many lasers deliver in an almost-perfectly parallel beam (collimated) that is very pure, approaching a single wavelength. Laser light can be focused down a tiny spot as small as a single wavelength.

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Latency

The time delay that frames experience in traversing the network, both relative to absolute time and each other. Voice and video are very sensitive to latency, whereas data generally is not very sensitive to latency.

Least Squares Analysis (LSA)

An OTDR loss measurement made using linear regression to determine the slope of the trace on each side of an event and extrapolate this slope to the location of the event, determining the vertical difference at that point, which is the loss measurement.

Light Emitting Diode (LED)

A display and lighting technology used in almost every electrical and electronic product on the market, from a tiny on/off light to digital readouts, flashlights, traffic lights and perimeter lighting. LEDs are commonly used in digital transmission sources for speeds ≤ 622 Mb/s.

Link

A telecommunications circuit between any two telecommunications devices, not including the equipment connector.

Local Area Network (LAN)

A geographically limited communications network intended for the local transport of voice, data and video; often referred to as a customer premises network.

Local Injection and Detection (LID)

A method of fusion splicing in which a light is injected into the core of one fiber and sensed in the other. The fibers are aligned until the maximum amount of light passes between them and they are fused together.

Logical vs. Physical Topology

A logical topology is how devices appear connected to the user. A physical topology is how they are actually interconnected with wires and cables.

LOMMF

Laser-optimized 50/125 μm multimode fiber where the bandwidth is optimized at 850 nm wavelength in support of ≥ 1 Gb/s operation.

Loose Tube Cable

Type of cable design whereby colored fibers are encased in buffer tubes.

Loss

Reduction in optical power due to adsorption, scattering and/or reflection.

LPAS

Lens profile alignment system. A method of fusion splicing in which the fibers are aligned based on the profile of the fiber. This method aligns the cladding of the fiber, not the fiber cores.

Main Cross-Connect (MC)

The centralized portion of the backbone cabling used to mechanically terminate and administer the backbone cabling, providing connectivity between equipment rooms, entrance facilities, horizontal cross-connects and intermediate cross-connects.

Main Distribution Area (MDA)

The space in a computer room where the main cross-connect is located.

Mass Splicing

Joining two to 12 fibers simultaneously by fusing the fibers together.

Material Dispersion

Pulse dispersion caused by the variation in the speed of light with wavelength.

MDPE

Medium density polyethylene; a type of plastic material, used as outside plant, commonly cable jackets.

Mechanical Splicing

Joining two fibers together by permanent or temporary mechanical means (vs. fusion splicing or connectors) to enable a continuous signal. The CamSplice™ Mechanical Splice is a good example.

Megahertz (MHz)

A unit of frequency that is equal to one million cycles per second.

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Mesh Network

A communications network in which there are at least two pathways to each node. A "fully meshed" network means that every node has a direct connection to every other node, which is a very elaborate and expensive architecture. Most mesh networks are partially meshed and require traversing nodes to go from each one to every other.

Meter

Device to measure optical power level (dBm).

Meter/Foot Marks

The distance markings stamped on the cable jacket by the factory in either m or ft.

Micrometer (μm)

One millionth of a meter; 10^{-6} m; typically used to express the geometric dimension of fibers, e.g., 62.5 μm .

Mode

A term used to describe an independent stable light path in a fiber, as in multimode or single-mode.

Mode Conditioner

The practice of wrapping a multimode fiber around a mandrel for the purpose of causing light in the cladding (cladding modes) to be lost, as well as to facilitate a more even distribution of light across the core.

Mode Field Diameter (MFD)

The area of a single-mode fiber in which light actually travels. This is typically larger than the core of the fiber.

Modulation

Coding of information onto the carrier frequency. This includes amplitude, frequency or phase modulation techniques.

Motion Pictures Experts Group (MPEG)

An ISO/ITU standard for compressing video.

Multifiber Cable

An optical fiber cable that contains two or more fibers.

Multimode Fiber

An optical waveguide in which light travels in multiple modes. Typical core/cladding sizes (measured in micrometers) are 62.5/125 and 50/125.

Multiplex

Combining two or more signals that can be individually recovered into a single bit stream.

Multipoint

Refers to a communications line (network) that provides a path from one location to many.

Multi-Stage

An architecture in which I/O and cross-connect switches are used to increase fabric bandwidth, through-put and resilience.

Multi-Trunking

Increasing available bandwidth by connecting more than one switched port to a single device.

Multiuser Telecommunications Outlet

A telecommunications outlet used to serve more than one work area, typically used in open-systems furniture applications.

National Electrical Code® (NEC®)

Provides practical safeguarding of persons and property from hazards arising from the use of electricity. This code is updated by the NEC every three years.

NIC

Network interface card

OFL

Over filled launch, typical of LED source systems.

On-the-Reel Test

Test of a new reel of cable prior to installation to verify length and condition of the fiber.

Optical Fiber

See Fiber.

Optical Hardware

Housings designed to facilitate splicing and/or termination of optical fiber cable.

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Optical Time Domain Reflectometer (OTDR)

An instrument that measures the transmission characteristics of optical fiber by sending a series of short pulses of light down the fiber and providing a graphic representation of the backscattered light.

Optical Waveguide

See Fiber.

Open Systems Interconnection (OSI)

Refers to a seven-layered model that serves as a guideline for creating and implementing network standards, devices and Internet working schemes to allow communication between multiple network devices.

OSE

Optical Splice Enclosure

Patch Panel

A collection of connector panels located in a common housing.

PBX

Private branch exchange

PCH

Pretium™ Connector Housing

Polyethylene (PE)

A type of plastic material used for outside plant cable jackets.

Physical Mesh

Each switch is connected directly to each of the other switches on the network.

Physical Ring

A cable layout in which each node is connected to two adjacent nodes. There is not a central point of cable termination.

Physical Star

A cable layout in which all cables route back to a central location, directly or through other consolidation points.

Pigtail

Optical fiber cable that has connectors installed on one end.
See Cable Assembly.

PIN Diode

A semiconductor device used to convert optical signals to electrical signals in a receiver.

Plenum

An air-handling space such as that found above drop-ceiling tiles or in raised floors; also, a fire-code rating for indoor cable suitable for use in plenum spaces.

Plug & Play™ Universal System

A fiber optic preterminated cabling system designed for the private networks environment. This innovative system reduces installation time and cost, for both end-users and contractors, by offering factory-terminated cables and polarity management. The modular design guarantees compatibility, flexibility and system performance for all optical connection spans.

PMD

Physical media dependent

Point-to-Point

Refers to a communications line that provides a path from one location to another (point A to point B).

Polyvinyl Chloride (PVC)

A common plastic used for insulating and jacketing many inside and indoor/outdoor cable products; typically used in flame-retardant cables.

Polyvinylidene Fluoride (PVDF)

A type of material used for cable jacketing, typically used in plenum rated cables.

Port

The transmit/receive connection that is found within a node.

Preconnectorized Assembly

A fiber optic cable that has been terminated by the manufacturer. The terminations can be housed in a protective pulling grip allowing innerduct installation. The terminations can also be pre-installed in hardware.

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Prefusing

A low-current electric arc used to clean the fiber end prior to fusion splicing.

PSTN

Public switched telephone network

Pulse Width

The time duration of a laser pulse emitted by the OTDR; ranges from a few nanoseconds to 20 microseconds, depending on model. Short pulses provide higher resolution for short cables, whereas longer pulses provide power needed to test long distance cables.

Quality of Service (QoS)

Describes a networks' ability to send time-dependent data.

Rack

Vertical support for equipment typically with 1.75 in of space between mounting holes. Standard rack sizes are 19 in and 23 in wide.

Rack Space

A unit of measure of 1.75 in for equipment space in a rack. Many housings are measured in rack space.

Receiver

An electronic package that converts optical signals to electrical signals.

Reference

The power level of the source as measured through a test jumper that will be connected to a fiber for testing. Measurements through the system fiber are compared to this value and the difference is the system loss.

Reflectance

The ratio of reflected power to incident power at a connector junction or other component or device, usually measured in decibels and typically stated as a negative value, e.g., -30 dB. The terms "return loss," "back reflection" and "reflectivity" are also used synonymously to describe device reflections, but are stated as positive values.

Reflection

Light which is reflected whenever there is a difference in media and the index of refraction, such as a connector interface, where air (different index) is present, or the end of a fiber, where glass meets air.

Repeater

A device used to regenerate an optical signal to allow an increase in the system length.

Resilience

A network's ability to preserve in the presence of failures. Example: The mesh architecture offers multiple paths between switches, so if a switch fails, only the users on that switch are out of operation; all other users are still functional.

Restricted Mode Launch (RML) Bandwidth

A test method for measuring the laser bandwidth of multimode fibers; detailed in TIA/EIA-455-204 (FOTP-204). Method is used to simulate launch characteristics of 1GbE systems.

Return Loss

See Reflectance.

RFI

Radio frequency interference

RH

Relative humidity

RIO

Ruggedized Information Outlet

Riser

Pathway for indoor cables that passes between floors, normally a vertical shaft or space; also a fire-code rating for indoor cable suitable for use in riser spaces.

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Route Diagram

A schematic diagram showing the physical location/layout of the fiber run and the location of splices and termination points.

Router

Provides connection over the OSI network layer (layer 3) based on the IP address.

Round Trip Delay (RTD)

Twice the time required for a packet to travel across a network.

Scattering

The loss of signal power (light) from the fiber core caused by impurities or changes in the index of refraction of the fiber.

SCF

Splice Closure Family

Sequence

One or more subsets of an exchange.

Signature Trace

An OTDR trace that is scaled so the entire fiber run is visible on the graph; traces meant to document a fiber are typically set up and saved/printed in this fashion.

Single-Mode Fiber (SMF)

An optical waveguide (or fiber) in which the signal travels in only one mode. The fiber has a small mode field diameter, typically around 9 μm .

SNMP

Simple network management protocol

SONET

Synchronous optical network

Source

Stabilized light-emitting device (LED or Laser) used with a meter to measure attenuation.

SPH

Single-Panel Housing

Splice Closure

A container used to house cable splice points and organize and protect splice trays; typically used in outside plant environments.

Splice Trays

Splice trays are required in order to protect, store and organize fibers and splices at splice points. A splice tray is typically a thin, rectangular sheet metal or plastic tray base with a splice organizer, which has a removable sheet metal or plastic cover.

Splicing

Joining of bare fiber ends to one another. *See Fusion Splice and Mechanical Splicing.*

Step Index

A fiber that has a constant index of refraction for the cladding as well as the core. It is called step index because the index of refraction profile resembles a step.

Storage Area Network (SAN)

A network dedicated to data storage and retrieval wherein multiple data storage devices are connected together. The SAN typically is linked to the local network to provide access to the data devices for system users.

STP

Shielded twisted pair

Super Absorbent Polymer (SAP)

Hydrophilic polyacrylates (water absorbing plastics, baby diaper technology) that are used in state-of-the-art water-blocked cables. These plastics are adhered to tapes or yarns in a cable to replace 100-year-old grease water-blocking technology.

Glossary

Telecommunications Room (TR)

An enclosed space for housing telecommunications equipment, cable terminations and cross-connects. The TR is the recognized cross-connect between the backbone and horizontal cabling.

Termination

A connection.

Test Jumper

A short, 2-3 m jumper used with meter/source for both referencing as well as conveniently connecting to each connector in a patch panel.

Through Splice

A splice used to join similar cables. This can be done to extend the length of a cable or distribute fiber circuits to smaller count cables.

TIA

Telecommunications Industry Association

Tight-Buffered Cable

Type of cable construction in which each glass fiber is tightly buffered by a protective thermoplastic coating to a diameter of 900 micrometers, providing ease of handling and connectorization.

Trace

The OTDR's graphical representation of a fiber which displays relative power on the vertical and distance on the horizontal scales.

Transition Splice

A splice, usually in the building entrance, to join flame-rated and non-flame rated cables together.

Transmission Control Protocol/Internet Protocol (TCP/IP)

Four-layer communication protocol developed by the U.S. Government.

Transmitter

An electronic device used to convert an electrical information signal to a corresponding optical signal for transmission by fiber. Transmitters are typically light emitting diodes (LEDs), VCSELs or laser diodes.

Waveguide Dispersion

Dispersion caused by light traveling in the cladding of the single-mode fiber.

Wavelength

The distance between two successive points of an electromagnetic waveform, usually measured in nanometers (nm).

WCH

Wall-Mountable Connector Housing

WCH-SSH

WCH Slack Storage Housing (mounts behind the WCH)

WDM

Wavelength division multiplexing. The simultaneous transmission of two or more wavelengths of light on a single fiber.

WIC

Wall-Mountable Interconnect Center

WMO

Workstation Multimedia Outlet

Work Area Telecommunications Outlet

A connecting device located in a work area at which the horizontal cabling terminates and provides connectivity for work area patch cords.

WSH

Wall-Mountable Splice Housing

UDP

User datagram protocol

Ultraviolet Cure Connector

A field-installable connector with a polymer epoxy that hardens when exposed to ultraviolet light.

UniCam® Connector

Corning Cable Systems' field-installable Connector that requires no epoxy and no polishing.

Glossary

Uplink Port

A port on a network hub or switch that is used to connect to other hubs and switches rather than an end station.

UTP

Unshielded twisted pair

VCSEL

Vertical cavity surface emitting laser (pronounced "vixel") is a type of laser diode that emits light from its surface rather than its edge. A VCSEL's circular beam is easy to couple with a fiber and due to its surface-emission architecture, can be tested on the wafer. VCSELs are also noted for their excellent power efficiency and durability.

Visual Fault Locator (VFL)

A visible Class II red light laser, typically 630-670 nm, that is used to check short cables such as pigtailed and jumpers for breaks by causing the break to glow red.

VoIP

Voice over Internet protocol

Zone Distribution Area (ZDA)

A space in a computer room where a zone outlet or a consolidation point is located.

Zero Dispersion Wavelength

Wavelength at which the chromatic dispersion of an optical fiber is zero.



Corning Cable Systems



Fiber Cabling Solutions for Premises Networks

Corning Cable Systems LLC

PO Box 489
Hickory, NC 28603-0489 USA
t 800 743 2675
f 828 901 5973
International +1-828-901-5000

www.corning.com/cablesystems

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