

# Glossary of Terms

## ACTIVE

A device that needs power to process signals.

## AGC

**Automatic gain control:** Property of an amplifier to maintain a constant output level as the input varies by a certain amount.

## AM

**Amplitude modulation:** a modulation format used for the transmission of video in the USA.

## AMPLIFIER

An active device that increases the strength of a signal by a predetermined amount.

## ASI

**Asynchronous serial interface:** A popular video interface for headend equipment that uses 75 Ohms coaxial cable and operates at a wire speed of 270 Mbps.

## ASPECT RATIO

The ratio of width to height of a picture. Standard definition uses 4:3 and high definition uses 16:9 aspect ratios.

## ATSC

Advanced Television Systems Committee is a group which defines the standards for digital television transmission in the United States and many other.

## BASEBAND

A signal that is not modulated onto a carrier.

## BIT

A single binary element having a value of 1 either 1 or 0.

## BIT RATE

The number of data transmitted per second.

## BTSC

**Broadcast television system committee:** a committee that developed analog TV stereo transmission in the USA.

## BYTE

A collection of eight bits.

## C/N RATIO

**Carrier to noise ratio:** the ratio expressed in decibels of the RMS power in a video carrier during sync tip to the RMS noise power in a 4 MHz bandwidth.

## CAT 6

A balanced 100 Ohms cable with four pairs of conductors used for data, voice and video transmission.

## COMBINER

A device with two or more ports used to combine signals into one port.

## CSO

**Composite second order:** a type of distortion generated as a result of combining multiple signals in an amplifier.

## COMPRESSION

This is a non-linear amplifier characteristic in which an increase in amplifier input does not result in a proportional increase in amplifier output.

**dB Decibel:** A measure of the relative strength of two signals.

**dBm Decibel Mill watts:** Decibel with respect to one mill watt in a 75 Ohms system. It is a power ratio. 0 dBm = 1 milliwatt

**dBmV Decibel Millivolts:** decibel with respect to one millivolts in a 75 Ohms system. It is a voltage ratio. 0 dbm = - 48.75 dBm

## DE-EMPHASIS

A decrease in the related strength of the high frequency component of the audio signal after demodulation. It has a time constant of 75 micro seconds.

## DEMODULATOR

A device used to convert modulated RF signal to baseband low frequency signal.

## DTCP

**Digital transmission content protection:** Encryption system used with video transmission on IEEE 1394 networks.

## EB/NO

**Bit energy to noise power:** a figure of merit used in satellite digital transmission to characterize the input signal integrity of a received satellite signal.

## ENCODER

A device use to digitize analog video or audio signal.

## ENCRYPTION

The process of making digital signal impossible to receive by any device that has no permission to receive it.

## EQUALIZER

A device used in CATV distribution to compensate for signal attenuation at high frequency.

## FM

**Frequency modulation:** A modulation method used for analog television audio.

## FEC

**Forward error correction:** Error correction mechanism used in digital data transmission to correct bit errors.

## FILTER

S device that passes one frequency while rejecting the rest.

## GAIN

Amplitude increase of an amplifier measured in decibel.

## GD

**Group delay:** is phase deviation with respect to frequency in a network.

## GROUND BLOCK

A passive device located at the subscribers premises that allows a safety ground to be connected to the drop.

## HDCP

**High bandwidth digital copy protection:** Encryption system used with video transmission on HDMI video display interfaces.

## HEADEND

The point at which all programming is collected and formatted for distribution into a coaxial system.

## HFC

### Hybrid fiber coax:

A network for transmitting signals modulated onto RF carriers that consist of RF carriers modulated onto optical carriers for transmission over fiber optic cables.

## HRC

**Harmonically related carriers:** A method of establishing picture carriers on a cable plant so that all carriers are harmonics of a single fundamental frequency close to 6 MHz.

## IP

### Internet protocol:

A layer 3 protocol in the OSI model that assigns addresses to the different endpoints in a network and handles transport of data to and from those networks.

## INGRESS

Unwanted signals that enters into a coaxial system through a defective connector.

## IRD

**Integrated receiver decoder:** A device used in cable headend to convert scrambled satellite signal to base band video and audio.

## KA BAND

High Frequency band used in satellite applications for the transmission of video and audio signals.

## LPF

**Low pass filter:** a filter that passes low frequency signals while rejecting the higher frequency signal.

## LO

**Local oscillator:** a circuit that generates a very stable carrier a specific frequency.

## MODULATOR

A device that accepts video and audio signals and assigns them a channel in the cable band.

## MODULATION

The process of impressing low frequency signal onto high frequency carrier for transmission.

## MER

**Modulation Error rate:** a figure of merit used in the characterization of a digital signal.

## MPEG

**Motion Picture experts group:** the body that authored MPEG 2, 4, AVC, video compression standards.

## NCTA

**National Cable Television Association:** a trade organization that represent companies in the cable television industry.

## NODE

The portion of coaxial cable plant served from one optical fiber.

**NF Noise figure:** The ratio, measured in dB, of the noise produced by a device.

## NTSC

**National television Systems committee:** a body that developed analog video transmission in North America.

## OCAP

**Open cable Application Platform:** Standardized middleware that provides certain applications for a set top terminal.

## OPENCABLE

A set of industry standards intended to define the next generation digital consumer devices used by the CATV industry.

## PAL

Phase alternating lines; television system used in most of Europe.

## PIXEL

**Picture element:** the smallest unit of a picture that can be represented as a combination of three primary colors.

## PON

Passive optical network: This an all optical network with no active components between the service provider and the customer.

## PRE-EMPHASIS

This is an increase in the related strength of the high frequency component of the audio signal before modulation. It has a time constant of 75 Micro seconds.

## PROGRAM STREAM

A combination of video, audio, and related data that make up a real a complete audio visual experience.

## QAM

**Quadrature amplitude modulation:** A digital modulation method used by the CATV industry in which symbol values are by amplitude and phase changes.

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## QPSK

**Quadrature phase shift keying:** A digital modulation method used by the satellite industry in which the state of two bit symbol is represented by one of four possible phase states.

## RAIN FADE

Satellite signal loss due to absorption and reflection caused by rain drops within the signal path.

## RL

**Return loss:** a measure of impedance mismatch, expressed in db, in a coaxial system.

## SCTE

**Society of Cable Television Engineers:** A standards body that define specifications for cable television products.

## SCRAMBLING

The process of making a video and audio signal image unintelligible.

## TAP

A device in installed in the distribution arm of a cable system to divert a portion of the cable signal to customer homes.

## TCP

Transmission control protocol: a connection oriented protocol with error correction mechanism that provides highly reliable data communication services over an IP network.

## TDR

**Time domain reflectometer:** a device that measures the quality of a transmission line by transmitting a pulse and then measuring signals reflected as a function of time.

## TDM

**Time division multiplex:** a data transmission method in which individual data signal streams share a transmission channel, and each occupying the channels for a portion of total time.

## TERMINATION TERMINATOR

A device installed at the end of a coaxial system to prevent signal reflection.

## TRANSMODULATOR

A device that converts QPSK signal to QAM.

## TRANSCODER

A device that converts MPEG 4 to MPEG 2 signals or MPEG 2 to MPEG 4.

## TWISTED PAIR

A balanced cable used for transmission of balance audio and for Ethernet.

## UTP

**Unshielded twisted pair:** A data cable consisting of one or more twisted pair without shielding.

## UPC

**Ultra polished connector:** An optical fiber connector that minimizes loss and reflections by careful polishing of the fiber end and alignment with the mating fiber.

## UPSTREAM

Signal flow from the subscriber to the headend.

## UDP

**User datagram protocol:** A connectionless layer 4 protocol used with IP to transmit data.

## VBI

**Vertical blanking interval:** The time in a television receiver during which the electron beam is moving from the bottom of the screen towards the top to start a new field.

## VOD

**Video on demand:** An interactive system, with VCR functionalities, that allows users to select and watch paid programs.

## VIDEO COMPRESSION

The reduction in bandwidth of a digital signal prior to transmission by removing redundant information in the signal.

## VITS

**Vertical interval test signals:** Signals that are inserted into the VBI to allow testing the quality of the transmission link independent of the video programming.

## VOIP

**Voice over Internet protocol:** a method of transmitting voice signals by converting them into packets and transmitted over IP network.

## VSB

**Vestigial side band transmission:** The elimination of the lower side band of an amplitude modulated signal while transmitting all of the upper side band.

## VSWR

This is the same as return loss expressed as a voltage.

## WAVELENGTH

The ratio of the velocity of propagation of a wave to frequency.

## WDM

**Wavelength division multiplexing:** The use of optical fiber to simultaneously carry signals at different wavelength.

## WATT

Unit of measurement of power.