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Accessories- additional devices which expand the ability of a piece of equipment to perform functions that are essential to its basic purpose. Broadband RF amplifiers are designed to accept accessories for functions such as signal distribution, two-way capability, forward and reverse balancing, thermal level control, etc. When possible, the accessories are designed to plug into the equipment without tools.

Analog- Analog is an electrical format that uses continuous physical variables, such as frequency.

Active - A circuit which requires an external source of power to operate.

Aerial plant - Configuration of a coaxial cable distribution system which suspends the coaxial cable, amplifier stations, and passives on steel cable, called strand, that is strung from utility poles. The strand is fastened to the poles at some distance up from the ground, in the air, hence "aerial".

ALC- Automatic Level Control. ALC is the ability of certain broadband RF amplifiers to maintain constant output levels. ALC implies a particular type of level control, the "closed-loop" system.

Amplifier - an active electronic device which increases the strength of a signal.

Antenna site - location of the antennas that receive the broadcast signals that will be distributed by the cable system.

Attenuation - The loss of strength of RF signal as it passes through coaxial cable, passives, or attenuators. Attenuation is measured in dB.

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Balancing:- The process of adjusting the gains in a coaxial cable distribution system to compensate for losses due to attenuation.

Bandedge - The frequency at one edge of the pass band of a device.

Bandwidth- Bandwidth refers to the range of frequencies available for a cable TV system to carry. The bandwidth determines the amount of information that can be carried, as well as its speed of transmission.

Bridger Amplifier (BA) :- An amplifier, either part of a trunk station or in a station of its own, which amplifies the trunkline signal to a level suitable from distribution to users. The independent type of Bridger amplifier is normally placed at the end of a trunk line, to terminate it and begin a number of feeders; these are called "terminating" Bridger amplifier stations.

Broadband :- Reference to the range of frequencies that will pass through or are affected by an electronic device. 'Broadband' means that a number of television channels will be passed or amplified by the devices; each television channel in India is 7 MHz wide.

Broadband 'RF' Amplifier:- An amplifier that is designed to amplify a broad pass band of radio frequencies. Broadband RF amplifiers intended for use in coaxial : cable distribution system amplify passbands from 5 MHz to as high as 860 MHz.

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Cable connector :- A device used to form a physically sturdy, electrically continuous connection between coaxial cable and equipment in the plant.

Cable powering :- The method of supplying power to the active equipment on a coaxial cable distribution system by using the coaxial cable to carry both the RF signal and the AC power.

Cable power supply :- A power transformer station designed especially for use in coaxial cable distribution systems. A cable power supply converts conventional line power, 230VAC@50 Hz sine wave, to 50 or 25 ac quasi square wave at the same frequency. The transformers which convert the waveform from 50 or 25 ac are capable of maintaining a steady output voltage throughout a broad range of Input voltage levels and output current levels.

Cable simulator:- A circuit whose frequency response is like that of a specific length of coaxial cable. Cable simulators are used to balance a broadband RF amplifier in a coaxial cable distribution system if the amplifier is "pre-equalized" and short spaced.

Cascade:- A succession of broadband RF amplifiers spaced apart by coaxial cable and passives.-Cascades are limited in length by the compounding of distortion products in each successive amplifier. The length is computed by identifying the number of amplifiers coupled output in input in the cascade

CATV (community antenna TV)- CATV is now known as cable TV. It refers to the 6-MHz path on the spectrum which carries a TV signal.

Characteristic Impedance:-The Impedance that a transmission line presents, regardless of length, due to the design and construction of the line. The symbol for characteristic impedance is "Z"

Coaxial cable:- Type of broadband line consisting of a center conductor surrounded by concentric layers of a dielectric, a shield ground conductor, and sometimes .a plastic sheath. The concentric arrangement reduces radiation of signal energy from the transmission line, and Induction of interference.

Coaxial cable distribution system - a system that uses coaxial cable to distribute and deliver a selection of television or similar RF signals to a number of subscribers in a given area. The distribution system is built on three levels: trunklines, feeders, and drops. Some systems also provide the capability for individual subscribers to send signals back to the origin headend) of the distribution system (two-way capability).

Combining network - a passive circuit that combines together a number of signals and places them on one output, while isolating the inputs from each other. Combining networks are used in system antenna sites to collect a number of channel signals together on the trunkline.

DC (Direct Current) - The flow of electricity in one direction through a circuit is proportional to the ratio of voltage to resistance. Do not confuse with "DC" below.

DC (Directional Coupler) - A:-device which splits the power of an RF signal to create two separate RF signal paths with a smaller loss in one path, or "leg" and substantial loss in the other leg. Directional couplers are described by the loss from the input leg to the higher-loss "tap" or "down" leg; a DC-8 presents approximately 8 dB of flal loss to RF signals passed through the "through" leg.

DBS (Direct Broadcast Satellite)-DBS is an entertainment and/or information service that can be received using an antenna at the subscriber's home.

Decoder-A decoder receives a digital signal and converts it back into an analog signal, creating an unscrambled, viewable picture.

Digital-Digital television technology takes the continuously varying quantities of analog, and separates them into separate and distinct levels, producing a higher quality picture with lower band with than analog.

Downstream:- The direction in a coaxial cable distribution system from its headed towards the subscribers.

Drop:- The part of the coaxial cable distribution system that connects to the equipment of the individual subscriber. Drop cables are usually of flexible coaxial cable of a small diameter Generally RG 59 than of a trunk line or feeder.

Decibel:- Standard unit for expressing transmission gain or loss, and relative power levels. Gains are expressed as positive dBs and losses as negative dBs. A unit used to measure and compare signal levels on a logarithmic scale.

Diplexing:- Separations done by allocating two RF suppressed signals to different frequency pass bands. When they must be handled or rocessed individually, and recombine them when the handling or processing is completed.

Distortion:- The change of some feature of an RF signal as a result of amplification of the signal. It is impossible to amplify a signal without distorting it, however, technological improvements in broadband RF amplifiers, and in the methods of balancing and operating them can result in keeping distortions to a minimum.

Distribution amplifier:- a broadband RF amplifier used to strengthen RF signals. The amplifier input levels are similar to trunk levels and the amplifier output signal levels are at distribution levels.

Distribution configuration:- The arrangement of accessories in a trunk or bridge amplifier station that will route the forward signal to a number of the distribution output ports built into the station.

Egress-Egress, in cable TV, refers to unwanted leakage of signals from a cable system.

Energization:- turning on an active device, such as a broadband RF amplifier. Energization of a coaxial cable distribution system involves connecting system power by either line or cable to the active device and activating the device's power supply.

Equalizer:- a circuit whose frequency response is characteristics to that of a specific length of coaxial cable to create an overall flat response.

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F-type connector-An "F"-type connector is used by the cable TV industry to connect coaxial cables to equipment.

General FCC (Federal Communication Commission)-The FCC is the U.S. government agency that regulates electronic communications.

Feeder:- That portion of the coaxial distribution system in which directional taps are placed to develop outlets to connect subscribers to the system.

Filter :- a passive device that separates RF signals according to frequency. Filters can be designed to pass or reject a signal if it falls within a specified range of frequencies. The range can either extend from one frequency to an extreme of the spectrum, or be a limited band of frequencies.

Flat:- having the same gain or loss at all frequencies within a given range.

General Frequency :- the number of times an electromagnetic wave repeats an identical cycle in unit of time. Frequencies are measured in Hertz, whose unit of time is one second, Direct current is considered to have frequency of zero. One Hertz (Hz) is equal to one cycle per second, a KHz is 1000 cycles per second, a MHz is one million cycles per second, etc.

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Gain- relative increase of an RF signal strength by amplification. Gain can be expressed as the ratio of voltage or power, after amplification relative to the voltage or power before amplification. Commonly, the ratio is expressed in dB.

Ghosting-Ghosting occurs when two signals are received at almost the same time, create a double image on your TV screen.

Hard-Wired- Installed permanently in a circuit, as opposed to being a plug in component or accessory.

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Headend- The origin of a coaxial cable distribution system, from which several cascades

of amplifier stations extend to distribute signals to the system's subscribers. The headend receives the signals from the antenna site, processes them as necessary for injecting them into the cable system, and adds non-broadcast signals if desired. The headend is usually located near the antenna site.

Hertz- Unit of measure of frequency of an alternating current, one Hertz equals one cycle per second.

HDTV-High Definition Television (HDTV) is a very high-quality TV signal that produces picture resolution almost as good as film.

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Impedance- Measured in Ohms. It is the opposition to flow of an alternating current in an electrical circuit. The mathematical symbol for impedance is "Z". The impedance of each component of a coaxial cable distribution system must be matched to all others to ensure that proper transfer of energy occurs. Cable system components, and the coaxial cable itself are built with 75 ohm impedance. Mismatched impedance results in the formation of standing waves of RF voltage between the source and the point of mismatch, and the consequent loss of signal strength called return loss.

Isolation- The amount of loss from one signal path to another.

Impulse-pay-per-view Impulse pay-per-view allows you to directly order programs using your remote control, which immediately authorizes viewing.

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Jack-A jack is the connector that allows you to attach a wire into a plug, thus creating a connection.

Jumper- Wire used to continue an electrical path across an accessory plug-in area part of a circuit board.

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LAN(local-area network)-LAN is the technology that allows cable companies to provide local community programming, as well as Internet access via a modem.

Leakage-Leakage refers to the undesired emission of signals out of a cable TV system, usually through corroded or loose connections, cracks in the cable, or loose device closures.

Level- Strength of an RF signal in decibels (dB) compared to 1 millivolt (mV) across 75 ohms ('dBmV")

Line Extender Amplifier- A broadband RF amplifier used to extend the reach of a feeder.

Line Powering- The method of supplying power to equipment in a cable system by connecting it to ac power to form conventional electrical power source (230 Vac) by direct connection or a line cord.

Local Origination Channel-A local origination channel is a channel programmed and exclusively controlled by the cable provider.

LOSS- The decrease of signal strength, reckoned in voltage or power, in a circuit or transmission medium. Compare to "gain".

Loss-gain block:- The fundamental design unit of a coaxial cable distribution system comprising a length of coaxial cable, perhaps a number of passives, and a broadband RF amplifier. The losses in cable and of passives are designed to equal the gain of the amplifier, and result in unity gain in that unit of the system.

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MegaHertz (MHz)-MHz is a unit of frequency equaling 1 million cycles per second.

Multiplexing-Multiplexing refers to the process of sending more than one signal within the same channel without mixing them.

Module- A packaged assembly of electronic components for use with other modules. A module is independently replaceable.

Motherboard- A printed-circuit board comprising plug in areas for more printed circuit boards, to connect them to each other and allow their quick replacement. In trunk and Bridger amplifier, the motherboard is the location for installation of most optional equipment.

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Ohms- Unit of resistance. Ohms are used to express resistance, reactance, and impedance, although the three variables are not synonymous.

Ohm's Law- The relationship of electrical voltage, current resistance, and power in a circuit. $E=IR$ where 'E' equals the voltage measured in volts. I equals the current of flow of electricity in amps, and R equals the resistance that the circuit presents for the flow measured in ohms.

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Passband - The range of frequencies that will pass through a circuit. Passbands are expressed by citing the frequency at each edge of the passband (5 to 30 Mhz.) or by citing the difference between the two frequencies (a band 300Mhz wide).

Passive- A piece of broadband RF equipment used in a coaxial cable distribution system to or divide RF signals. They are called passives as opposed to "actives" because they do not require power to function, all passives introduce some amount of RF loss.

Pay-per-view- Pay-per-view is a service that allows the user to request specific programs for viewing, with a fee charged.

Plug-in area- A location on a printed-circuit board, prepared with jacks and circuit traces which allow a specific type of accessory to be put into the signal path. In most cases, the plug-in area is designed to continue the signal path through a jumper if no accessory is installed; this jumper must be removed when an accessory is installed.

Pedestal- Cabinet or container used to protect amplifier stations in an underground plant.

Plant- The sum of equipment of a coaxial cable distribution system.

Power- The rate of energy dissipated at one point in a circuit in a unit of time. In times, alternating current is used to carry power on the cable to each amplifier station. the dissipation of power in an electrical circuit can be found by the formula: $P=EI$. where 'P' is the power measured in watts, 'E' equals the voltage measured in volts, and 'I' is the current in amps. E and I can be substituted by using the ohm's Law relationship.

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Q- A parameter of a reactive circuit that expresses the amount of reactance relative to the amount of resistance of the resonant frequency. A measure of the sharpness of resonance or frequency selectivity in a reactive circuit.

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Reactance- The part of a circuit's impedance that is due to capacitance or inductance. Reactance is expressed in ohms at a specific frequency.

RECOMMENDED LEVELS- The signal levels for the input or output of a broadband RF amplifier that the manufacturer, within the limits of the amplifier's design recommends. The recommended levels are noted on the amplifier's specification sheet.

RECOMMENDED SLOPE- The slope of the output signal levels of a broadband amplifier that the manufacturer recommends. Regardless of the output levels that are used for the amplifier* the slope should be set to the recommended value. To find the recommended slope of an amplifier, subtract the recommended low frequency output level from the recommended high frequency output level (both are noted on the amplifier's specification

sheet).

RESISTANCE- The opposition of a circuit to pass direct current. Resistance is measured in ohms.

RETURN LOSS- The decibel difference between the voltage of an RF signal traveling inward in a transmission line, and the voltage of the signal being reflected back to the source from an impedance mismatch in the line. If the reflected energy is small compared to the original 'incident' energy, the return loss will be very high.

RF- Radio Frequency. Refers to electrical current which alternates at a frequency which causes power to radiate (hence "radio") outward from its conductor.

RFI - Radio Frequency Interference. RFI is the presence of unwanted signals in the transmission path.

RF signal - The signals (television channels) that are distributed by a cable system to subscribers. Carrying the RF signal over the greatest distances of the system, with the least possible signal distortion during its travel. Trunklines are built of the largest coaxial cable diameter in the system, for the least loss of RF energy possible.

RF (radio frequency)- RF refers to an electromagnetic signal that's above the audio but below the infrared frequencies (from 15 KHz-100GHz).

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Scrambler- A scrambler is an electronic device that alters a signal so it can't be viewed on a normal TV unless a decoder is attached to the subscriber's set to unscramble the picture. It's located in the headend.

SLM- Signal Level Meter. A tuned radio frequency measuring device used to obtain the level of discrete RF signals. The meter (or other read-out device) will be calibrated in dBmV.

SHORT-SPACING- Placing a broadband RF amplifier into a coaxial cable distribution system closer to the preceding amplifier than is normal. There will be substantially less cable loss preceding the amplifier's input than that for which the amplifier may be designed. Short -spaced pre-equalized amplifiers require cable simulation.

SIGNAL DISTRIBUTION-

The creation of feeders from a trunkline, to extend into a concentration of subscribers. Signal distribution is achieved by the following methods: using a terminating Bridger amplifier at the end of a trunk cascade, or using the signal distribution capabilities of a Bridger section in a trunk Bridger amplifier.

SLOPE- Relative difference of RF signal levels due to the frequency response of coaxial cable, whose loss is directly proportional to the signal's frequency. Slope is expressed as a difference in dB of voltage between the higher and the lower of two frequencies.

Signature- The accumulation of peaks and valleys in the frequency response of a cascade. Although signature may complicate the balancing of longer cascades, and will make the levels of different channels of the passband inconsistent with another signature is an informal indication of the quality of a manufacture and alignment of the active equipment, an amplifier which produces an identifiable signature can be turned out of the system response by the adjustment of an amplifier response in the distribution system

("line balancing").

Slope Compensation- The feature of a level control system which corrects the output signal levels of a broadband RF amplifier in response to the changes of the amplifier's input level. Most models of broadband RF amplifiers have a "slope-compensated" level control system.

Spacing- Expression for the distance apart that broadband RF amplifiers are designed to be placed in a coaxial cable distribution system. The distance is expressed in dB of loss of both coaxial cable and of passives. When the amount of slope preceding from the amount specified, an equalizer or cable simulator must be used to counteract the slope difference.

Splicing- Connecting coaxial cable between parts of a system plant. Splicing involves cutting the cable to the proper length, stripping away the outer layers of the cable, and installing a cable connector on the stripped end. More broadly, splicing refers to all works performed in the installation of the system.

Subscriber-A subscriber is a customer who pays a fee for cable TV.

Snow-Snow refers to heavy random noise on a TV. It usually occurs when the signal is interrupted.

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Tap-A tap is installed in the feeder cable to connect the home TV set to the cable network.

Trunk amplifier - A broadband RF amplifier designed to serve in the trunkline of a coaxial cable distribution system. Trunk amplifiers must have low distortion figures, and usually are equipped with a system that maintains unity gain in the trunkline in spite of the changes in RF loss caused by changes in ambient temperature. Also, since trunklines attempt to cover the greatest physical distance possible, a major component of the losses between one trunk amplifier and another will be coaxial cable losses, which will have slope; trunk amplifiers are aligned through the amount of cable loss (with its accompanying slope) that the model of amplifier is expected to face most frequently.

Tuner-A tuner is a device, a circuit, or part of a circuit that selects a signal from a number of signals in a given frequency range.

Two-Way-Capability- The capability of a coaxial cable distribution system to carry RF signals from individual subscribers upstream the system's headend, as well as from the headend to the subscriber. The subscriber's signals are kept separate from the downstream signals by assigning them to different band of radio frequencies, usually from 5 to 30 MHz. Separate circuits in the amplifier stations of the system amplify these "reverse" signals.

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Underground Plant- Type of coaxial cable distribution system whose cable is buried or strung through underground utility passages. Amplifier and power supply stations are housed in pedestals.

Unity Gain- The concept of system design which requires that each fundamental design unit of the system will present the same amount of net gain. The design unit consists of a

length of coaxial cable and possibly a number of passives. which present loss, and an amplifier which is adjusted to present just enough gain to result in a net gain of zero. When the system is viewed as a whole, it too will present unity gain.

Upstream- The direction in the cable system from an individual subscriber toward the headend.

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Voltage- The force behind on electric current, felt from one point in a circuit to another ("across 75 ohms"). Voltage behaves similarly to pressure against a fluid.

Vom- Volt-Ohm Meter, an electronic instrument that measures voltage, current, and dc resistance.

VSWR- "Voltage Standing Wave Ratio" the comparison of reflected signal energy in a transmission line to its original signal. The reflected waves combine with the original signal to form voltage standing waves along the transmission line. The ratio of voltage , maximum to minimum of the standing waves along the line, is the VSWR. A "perfect" impedance match represents VSWR of 1. A less than perfect match will be represented by numbers greater than 1.