

## Hybrid Fiber Coaxial System (HFC)

The communications system used by Cable operators is called Hybrid Fiber Coaxial System (HFC). This system uses coaxial cable and fiber optics to transport video, voice and data to your home. Coaxial cable experiences a loss of signal as the length of the cable and the frequency increases. See chart 12. Cable operators in the early days of Cable, could plan on reaching homes that were less than 11 miles from the **Head-end**. With the use of fiber optics, starting in the 1980's, Cable operators were able to serve homes that were more than 50 miles from the Head-end.

Cable Loss/100'	50 MHz	200 MHz	1000 MHz
RG-59	2.1 dB	4.5 dB	11 dB
RG-6	2.0 dB	4.0 dB	10 dB
.750 Hard-line	.35 dB	.74 dB	1.74 dB

Chart 12

***For Your Review and Critical Thinking*** *The last mile of Cable communications to your home is using coaxial cable.*

HFC is the distribution method of choice used by Cable Operators. Cable's wired competitors are the Incumbent Local Exchange Carrier (ILEC) and the Competitive Local Exchange Carrier (CLEC). ILECs, such as Verizon are using only fiber optics to connect to your home. Once in the home, Verizon distributes video, voice and data on CAT5 cable and coaxial cable. Other ILECs, such as AT&T are using a combination of fiber optics and copper wires to make connections to your home. ILECs have served their communities with telephone (voice) for over a century. Their communications systems were created and designed for this voice service. ILEC's are now competing with Cable operators by upgrading their communications systems. The HFC network owned by the Cable operator, is the dominate system used in the delivery of video and data. This domination of HFC is slowly eroding. ***Fiber to the home (FTTH)*** delivery of communications is now becoming more a mode of operation for Cable.

FTTH requires a special device to distribute video, voice and data to the home.

Hold Your Horses! What did you just read that was not understandable? Use Feedback Sheet.

Compare the answers that you found in this section "For Your Review and Critical Thinking, to these below.

1. The control of the data sources is a technique used by Cable operators to provide quality of service to the customer. This quality of service is dependent on the networks demand, capabilities and position in the market.
2. Cable operators can control their content sources by using internal and external devices. These devices can modify the bit rate of a scene and enhance picture quality.
3. A television broadcaster is not required to operate in HDTV when a translator is used for reception of the signal. Some rural areas of the U.S. may not be able to participate in the ATSC conversion.