

Appendix G

Acronyms and Glossary

Acronyms

AEA —*heLiCan Electronics Association*, table 2-3.
AM/LCD —Active Matrix Liquid Crystal Display
ANSI —**American National** Standards Institute, table 2-3.
ASIC —Application Specific Integrated Circuit
ATSC —Advanced Television Standards committee, table 2-3.
ATTC —**Advanced** Television Test Center, table 2-3.
ATV —Advanced Television
BTA —Broadcast Technology Association
CM'S —Center for Advanced Television Studies, table 2-3.
CCD —Charge-Coupled Device
CCIR —Comite **Consultatif** International des **Radiocommunications**
CD —Compact Disk
DARPA —Defense Advanced Research Projects Agency (**DoD**)
DAT —Digital Audio Tape
DBS —Direct Broadcast Satellite
DoD —U.S. Department of Defense
DRAM —Dynamic Random Access Memory
DSP —Digital Signal Processor
DVI —Digital Video Interactive
EBU —European Broadcasting Union
EDTV —Extended- or Enhanced-Definition Television
EIA —Electronic Industries Association, table 2-3.
EIAJ —Electronic Industries Association of Japan.
FCC —Federal Communications Commission
FSS —Fixed Satellite Services
GHz —Gigahertz
HD-MAC —High Definition Multiplexed Analog Component
HRs —High Resolution Systems
HDTV —High Definition Television
IC —Integrated Circuit.
IDTV —Improved Definition Television
IEEE —Institute of Electrical and Electronics Engineers, table 2-3.
ISDN —Integrated Services Digital Network
ITFs —Instructional Television Fixed Service
ITU —International Telecommunications Union
kHz —Kilohertz
LCD —Liquid Crystal Display
LPTV —**Low-Power** Television
MHz —Megahertz
MITI —The Japanese Ministry of International Trade and Industry
MSO —Multiple System Operator

MMDs —Multichannel Multipoint Distribution Service
MMT —Multi-media Terminals
MPAA —Motion Picture Association of America, table 2-3.
MPT —The Japanese Ministry of Posts and Telecommunications
MUSE —Multiple **sub-Nyquist** Sample Encoding
NAB —National Association of Broadcasters, table 2-3.
NCTA —**National Cable Television** Association, table 2-3.
NHK —Nippon Hoso **Kyokai** (Japan)
NTIA —National Telecommunications and Information Administration
NTSC —National Television Systems Committee
PAL —Phase Alternation by Line
SECAM —Sequential Encoded Color Amplitude Modulation
SMATV —Satellite Master Antenna Television
SMPTE —Society of Motion Picture and Television Engineers, table 2-3.
TVRO —Television Receive Only
UHF —Ultra High Frequency
VCR —Video Cassette Recorder
VHF —Very High Frequency
VHS —Video Home System
VRAM —Video Random Access Memory

Glossary

525/59.94; 625/50: The number of scan lines followed by the field rate for the existing NTSC (U. S., Japan, etc.), PAL (Europe except France, China, etc.), SECAM (France, Soviet Union, etc.) color TV systems.
1050/59.94; 1125/60; 1250/50: The number of scan lines followed by the field rate for various HDTV system proposals, corresponding to the United States, Japan, and Europe, respectively.
Active Matrix Liquid Crystal Display (AM/LCD): An advanced type of liquid crystal display.
Advanced Television (ATV): Refers generically to all the improvements in TV over today's system, including **IDTV**, **EDTV**, and **HDTV**.
Application Specific Integrated Circuit (ASIC): A type of integrated circuit produced in relatively limited numbers for a specific application.
Artifact: An audio or video error or defect introduced during the processing or transmission of a TV signal.
Aspect Ratio: the ratio of a screen's width to its height. Today's TVs have a **4:3 aspect** ratio. HDTV systems typically call for a **5:3** or **16:9** ratio.

Bandwidth: The range of frequencies available for or used to carry an electronic signal.

Beta: The first, but less popular, format for home VCRs.

Bit Rate: The rate at which digital data is carried or transmitted, measured in units of bits (binary digits) per second. This is the digital equivalent of an analog bandwidth.

Broad Band: A signal that requires a large bandwidth to be transmitted or equipment that must be capable of receiving and transmitting accurately a signal with a large bandwidth.

Broadcast Technology Association (BTA): An organization of private Japanese broadcasters and equipment manufacturers.

C-Band: The range of frequencies from 4 to 6 GHz. See figure 3-1.

Cable TV Labs: A lab setup by the NCTA to test cable systems, including those for ATV, table 2-3.

Charge-Coupled Devices (CCD): A type of solid-state electronic device used as a sensor in some types of cameras.

ClearVision: The Japanese EDTV system.

Comite Consultatif International des Radiocommunications (CCIR): An organization under the ITU which studies technical questions and issues recommendations for international radio matters.

Compact Disk (CD): An optical storage medium used for music and for computer data, among others.

Compatibility: The ability of one type of TV set to receive and display the signals designed for another TV system. See box 4-3.

Digital Audio Tape (DAT): A new technology that records music on magnetic tape in a digital format. DAT has many applications to computer data storage.

Digital Signal Processor (DSP): A type of digital chip that manipulates a video (in the case of HDTV) signal. For the purposes here, this manipulation is usually to either compress the signal so that it can be transmitted or decompress it and turn it back into a viewable picture.

Digital Video Interactive (DVI): A digital technology in which the viewer can interact with the image being shown. For example, a viewer might take a video “walk” through a building being designed by an architect and see the details of the interior or view the building from any desired angle, at that person’s discretion.

Direct Broadcast Satellite (DBS): It transmits TV signals directly to satellite receiver dishes at viewer’s homes. DBS is a high-power system that requires only small dishes.

Downlink: The transmission (or receiver system) from a satellite.

Dynamic Random Access Memory (DRAM): A computer memory chip. The capacity of DRAMs is measured in bits—1Kb (1,000 bits), 1Mb (1 million

bits), etc. The storage capacity of a computer or other systems is measured in bytes—1 KB, 1MB, etc.—and one byte equals 8 bits.

Eureka 95: The joint project to develop ATV systems for Europe.

European Broadcasting Union (EBU): A union of European broadcast organizations whose purpose is, among others, to develop standards for the exchange of program material among its members.

Extended- or Enhanced-Definition TV (EDTV): A form of TV that provides a better picture than today’s TV or IDTV using today’s broadcasts, but somewhat less resolution than HDTV. EDTV requires modest changes in today’s NTSC broadcast signal, but is compatible with it while remaining within today’s channel bandwidths. EDTV usually has a greater than 4:3 aspect ratio.

Federal Communications Commission (FCC): The U.S. Government agency dealing with communications issues and allocation of the radio frequency spectrum.

FCC Advisory Committee on Advanced Television Service: The industry committee set up by the FCC to make recommendations on advanced television system broadcasting standards.

Fiber: Optical fibers used to carry information, usually in the form of pulses of light.

Field: The alternate lines that compose half of a complete television picture or frame. In the United States, fields are shown at a rate of 59.94 fields per second; in Europe, fields are shown at a rate of 50 fields per second.

Fixed Satellite Services (FSS): Satellites that are assigned geostationary orbits and provide information transmission services.

Frame: A complete television picture, including both even and odd alternating scans. The frame rate in the United States is 29.97 frames per second; in Europe, it is 25 frames per second. If frames are shown at too slow a rate, there can be an annoying flicker to the picture.

Gigahertz (GHz): One billion cycles per second.

Headend: A cable TV system’s control center where incoming signals from satellites and other sources are put on cables going to subscribers.

Hertz (Hz): Cycles per second. One kHz is 1,000 cycles per second; one MHz is 1 million cycles per second; one GHz is 1 billion cycles per second.

High Definition Multiplexed Analog Component (HD-MAC): The European HDTV system for DBS delivery.

High Definition TV (HDTV): Usually defined as having roughly twice the resolution of today’s TV systems, a wider aspect ratio of 5:3 or more, and compact disk quality sound.

High Resolution Systems or High Definition Systems

- (HRS): Information** systems that **provide a high resolution visual image**. See box 1-1 for examples.
- HiVision:** The Japanese HDTV system based on their MUSE standard.
- Improved Definition TV (IDTV):** A television that uses digital technologies to improve the picture seen even with today's conventional broadcasts.
- Instructional Television Fixed Service (ITFS):** A TV delivery service by line-of-sight microwave that the FCC licenses for use by educational institutions.
- Integrated Services Digital Network (ISDN):** A fully digital telephone network now being implemented. This system makes use of the existing copper wire infrastructure but adds improved electronics which allow much higher data rates to be carried.
- Interlaced Scan:** A technique which first shows all the even lines of the TV picture or frame, and then shows all the odd lines of the frame. Each set of lines corresponds to one field. This allows the picture to be shown without flicker while reducing the total bandwidth necessary to transmit the picture.
- International Telecommunications Union (ITU):** An intergovernmental organization with 164 member countries, whose purpose is to develop regulations and voluntary recommendations, provide coordination of telecommunication development, and foster technical assistance to developing countries. The CCIR is one of the organizations under the ITU.
- Kilohertz (kHz):** One thousand cycles per second
- Ku-Band:** The range of frequencies between 11 to 14 GHz. See figure 3-1.
- Liquid Crystal Display (LCD):** The type of display used on calculators and watches.
- Low-Power TV (LPTV):** Stations licensed by the FCC to use low transmitter power, usually in areas not locally served by full-power stations.
- Megahertz (MHz):** One million cycles per second.
- Multichannel Multipoint Distribution Service (MMDS):** A TV delivery system using line-of-sight microwave with four or more channels operated by a single company. MMDS is often called wireless cable' and is similar to ITFS in operation.
- Multi-media Terminals (MMT):** Computer terminals that can combine normal text and graphics with near-real-time video images or other forms of visual display.
- Multiple System Operator (MSO):** A company that operates more than one cable TV system.
- Multiplex:** See box 3-1.
- Multiple Sub-Nyquist Sampling Encoding (MUSE):** The bandwidth compression technique developed by Japan's NHK to allow delivery of an HDTV quality signal over a DBS system.
- National Telecommunications and Information Administration (NTIA):** A U.S. Government agency under the Department of Commerce.
- National Television Systems Committee (NTSC):** The industry group that defined the current U.S. B&W and then color TV standards. The NTSC system is used in the United States, Canada, Japan, and elsewhere.
- Nippon Hoso Kyokai (NHK):** The national radio and television broadcasting organization for Japan. Has extensively funded and coordinated HDTV development in Japan.
- Optical Disks:** Recording media including CDs that store information in patterns of microscopic pits on the surface of the disk, which can then be detected by a solid state laser and detector system and reproduced as sound, images, or data.
- Pay Per View:** Program services purchased by subscribers on a per-program rather than per-month basis
- Phase Alternation by Line (PAL):** The type of TV system used in most European countries (with the notable exception of France), The People's Republic of China, Australia, and elsewhere.
- Progressive Scan:** A TV picture that is shown in a single scan—the way we read a book—rather than by alternately sending all even and all odd Lines as for an interlaced scan.
- Resolution:** A measure of a picture's detail.
- Satellite Master Antenna Television (SMATV):** Or "private cable"; a miniature cable system that receives programming by satellite and serves a housing complex or hotel.
- Sequential Encoded Color Amplitude Modulation (SECAM):** The TV system used today in France, the Soviet Union, and elsewhere.
- Taboo Channel:** A TV channel left unused in order to prevent interference on adjacent active TV channels in the same geographic area.
- Television Receive Only (TVRO):** A satellite receiving antenna, also known as a downlink or a backyard dish.
- Transponder:** A satellite component that receives and retransmits a TV signal or perhaps many narrower-band data channels.
- Ultra High Frequency (UHF):** The band including TV channels 14 through 83. See figure 3-1.
- Uplink:** The transmission or corresponding equipment to a satellite for relay.
- Very High Frequency (VHF):** The band including TV channels 2-13, which are more powerful than UHF channels. See figure 3-1.
- Video Cassette Recorder (VCR):** Piece of equipment used for recording and replaying TV broadcasts or prerecorded video material at home.
- Video Home System (VHS):** The most common format for today's VCRs.
- Video Random Access Memory (VRAM):** A type of memory chip similar to a DRAM, that is optimized for high-speed handling of video images.
- Sources include: "Behind the Buzzwords," *Channels/Field Guide, 1989*; and "Everyone's Talking About HDTV, But What Are The Facts?" Ampex, Redwood City, CA, 1989.