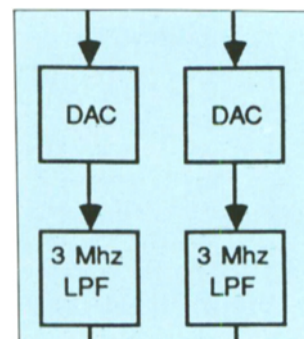


Highlights

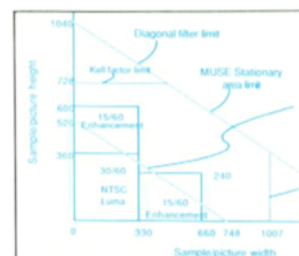
- 4 The President's Message • M. L. French •** Members of the SMPTE, I very much appreciate this opportunity in the January issue of our *Journal* to convey to you and your families best wishes for the New Year. It is indeed an honor to be elected President of this prestigious Society. Thank you for your support and trust. January, the first month of the year, derives its name from Janus, the god in Roman mythology of doors, gateways, and also of beginnings. The Romans believed that good beginnings ensured good endings. I tend to agree. So, as we open the door to 1989 and I begin my term of office, let us all resolve to work together in a spirit of continuing professional cooperation. The officers and Board of Governors who will serve with me are experienced and dedicated.



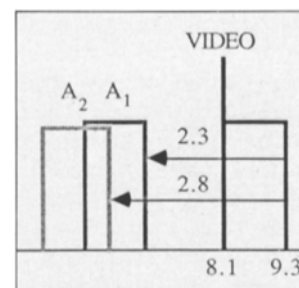
- 5 Channel-Compatible 6-MHz HDTV Distribution Systems • W. F. Schreiber, A. B. Lippman, A. N. Netravali, E. H. Adelson, and D. H. Staelin •** A new TV distribution that uses receiver technology deemed practical in the near future and that is intended to achieve the highest possible image quality within a given channel capacity is proposed. This system is designed to be used immediately for controlled-access systems such as cable. It is also suitable for eventual broadcasting use in a two-stage strategy in which an intermediate backward-compatible system is the first stage. Applications to FM, recording, and digital transmission are described. The efficiency of analog channel utilization is improved over NTSC by the use of double sideband quadrature modulation of two 3-MHz signals on a single carrier in the center of the band and by elimination of the retrace intervals and sound carrier.



- 14 Single-Channel Backward-Compatible EDTV Systems • By A. B. Lippman, A. N. Netravali, E. H. Adelson, W. R. Neuman, and W. F. Schreiber •** This article describes some methods for adding supplementary information to a compatible NTSC broadcast signal so that an advanced receiver can decode that information to provide improved picture quality (Extended Definition Television, or EDTV), while a standard NTSC receiver will display an image with minimally visible impairments. In particular, chrominance information is transmitted at one-half the frame rate and alternate frames are used to encode high-definition luminance information in the chrominance signal. This is useful for any EDTV system.



- 20 Applications of the Laser Vision Standard Videodisc in the Broadcasting Industry • D. Hayes •** Although the videodisc was developed primarily for the consumer market, recent improvements in the technology have increased its potential for expansion into broadcast areas. LaserVision has proven a powerful tool in a variety of nonbroadcast operations. With current off-the-shelf equipment capable of delivering the signal at low cost, numerous broadcast applications are now possible. A background of the development of the LaserVision system, followed by a description of the technology, is first presented. Possible broadcast applications relating to syndication of programs, archiving and retrieval, and cart machine operations are then discussed.



- 25 Video Recording Formats in Transition • K. Sadashige •** An overview of various videotape recorder (VTR) formats and some predictions for the future are presented. Among these predictions: Digital recording formats, including the D-1, D-2, and component HDTV formats, will dominate the high end of video recorder application fields in the 1990s. As techniques for mass replication of digital tape are nearly perfected, the logical direction for the consumer videocassette recorder (VCR) to go is digital. A consumer high-definition digital VCR will also be developed. For the large segment of video recorder applications between the high end and consumer areas, component analog video (CAV) recording and extended-definition color-under recording will be the mainstays through the foreseeable future.

