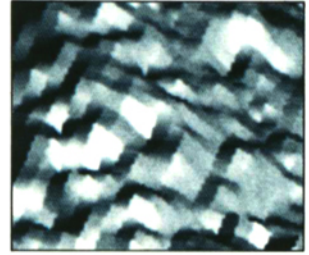
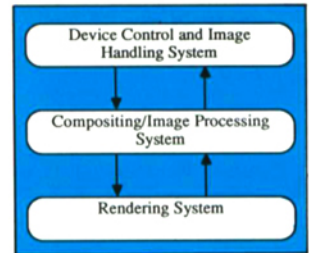


Highlights

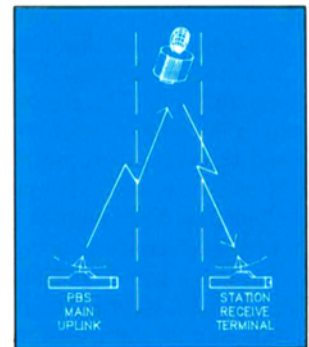
- 446 Improvements to NTSC by Multidimensional Filtering** • *E. Dubois and W. F. Schreiber* • This article presents, in a tutorial fashion, the basic elements required for understanding compatible improvement techniques for NTSC color multiplexing using multidimensional filtering at the transmitter and receiver. It discusses the multidimensional spectrum of moving pictures and relates the form of this spectrum to different types of image material. It also presents the basics of multidimensional filtering that are key to the techniques discussed for improving NTSC. Finally, systems for NTSC encoding and decoding using multidimensional processing are described.



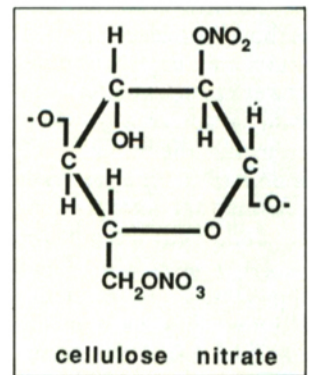
- 464 A High-Speed Architecture for Image Computation** • *L. K. Putnam, P. Lucht, and J. Davis* • A system architecture well suited to the tasks of generating, manipulating, and processing digital images of arbitrary sample resolution is presented. The architecture reflects a series of design decisions made at various conceptual levels. These decisions and the general system requirements which underlie them are examined. The architecture is outlined in a top-down fashion proceeding from the system interface level to the macroscopic hardware level to the PC board level. The parallel software architectural development is also summarized. Finally, a specific application software system is discussed.



- 470 Development and Performance of the PBS VBI Data Delivery System** • *A. A. Adeyeye and M. S. Richer* • This article discusses the PBS VBI data delivery system, a point-to-multipoint data link using the vertical blanking interval (VBI) of the public television signal. Development of the system for PBS Enterprises, a subsidiary of PBS, has taken place over the past several years, with emphasis on quality performance. Since broadcast television has traditionally been a harsh environment for VBI data systems, PBS has developed and implemented its own unique error-correction techniques. The methodology used to determine the error-correction parameters is discussed. Major components of the system, including the data inserter at the PBS uplink, the data bridge at a typical PBS member station, and the VBI Data Receiver (VDR™) at the end user's site, are described. A summary of the system performance is also presented.



- 474 Stability of Processed Cellulose Ester Photographic Films** • *A. T. Ram and J. L. McCrea* • The chemical stability of cellulose ester photographic film support is extremely important to archival keeping behavior. A 1981 study predicted that cellulose triacetate support films would have acceptable physical properties for at least 300 years under recommended storage conditions. This study on the total film, however, masked some of the degradation reactions resulting from the amphoteric nature of the gelatin emulsions. The effects of commonly used cellulose nitrate subbing material and triphenyl phosphate flame-retardant plasticizer on nonsensitized cellulose triacetate supports are now reported. These nonsensitized supports, after high-temperature incubations, follow a similar Arrhenius relationship, indicating that the presence of the sub and the plasticizer, at the concentrations commonly used with Kodak cellulose ester films, does not affect their archival keeping behavior.



- 484 Digital Intelligence in Professional Broadcast Monitors** • *J. Verbrugge, M. Piepers, and N. Lietaert* • Today's professional TV monitors are quite simple and almost standardized in their controls and alignment possibilities. However, alignment of monitors to show identical pictures (over a long period) and resetting to previously used control values are still difficult and time-consuming. This article describes a professional television monitor concept in which a microprocessor controls not only color alignment but all monitor functions, such as input selection, contrast and brightness settings, decoder functions, and internal test signals. The CVS monitor, an example of such a concept, is described, and possibilities emerging from total digital control are noted.

