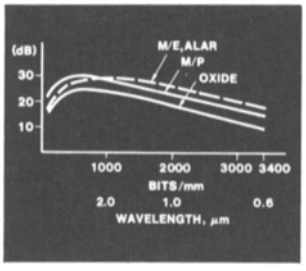
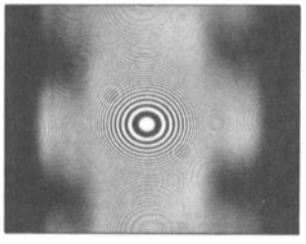
Highlights

702 A New Method of Video Synthesis Developed by NHK • *A. Iwata, Y. Monjo, T. Niikura, and H. Tamura* • The Video-Matte, a new technique developed by NHK for video synthesis in television, enables the synthesis of two location pictures into one which looks quite natural. Unlike the chroma key, Video-Matte does not require a costly color background for video synthesis. A key signal can be generated easily and at will on the monitor screen by means of computer graphics. This technique will help producers cut costs substantially.

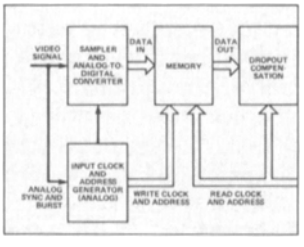
705 The Potential of a Modified 8mm Consumer Format in ENG • *M. O. Felix and C. H. Coleman* • ENG systems today use a number of incompatible formats, together with inconveniently large cassettes. Two mutually incompatible 1/4-in. formats have been proposed which use a pocket-sized cassette, but one not in large-scale production. This article analyzes the possibility of modifying the recent 8mm consumer format to provide professional performance, and examines both analog and digital solutions. The analog has the disadvantage of a segmented format. The digital requires a 4:1 bit-rate reduction from the D-1 (4:2:2) standard, but this appears an attractive compromise between performance and size.



707 Improved PAL Using a Combination of NTSC, SECAM, and PAL • *G. Holoch and N. Mayer* • In improving an existing television system, it is of utmost importance that the new signals be compatible with existing transmission characteristics such as RF and cable links and video recorders, as well as with existing receivers. The improved system should also be able to work with the signals of the conventional system. This article describes an improved PAL (I-PAL) system that meets these requirements. Cross-color and cross-luminance are removed, and the horizontal resolution of the luminance signal is enhanced.



713 Technical Advances in Type-C Picture Processing • *E. F. Morrison* • The time-base corrector (TBC) plays an important role in the operation of the Type-C VTR, for most of the features and adjustments are delegated to this unit. Residual uncorrected time-base errors contribute to the VTR's multiple-generation performance limitations. This article describes a high-performance TBC with a 4-f_{sc} sampling clock frequency and 9-bit linear quantization. Digital signal processing is used throughout the TBC for picture manipulation and digital control of all operational and preset video adjustments.



720 EBU Activity in Developing Specifications for Film and Television Camera Lenses • *M. Rotthaler* • It is the purpose of this article to reveal some of the previous and present activities, as well as future initiatives of the EBU in developing specifications for film and television camera lenses. A survey is given on those lens characteristics which are decisive for the resultant image quality, and some essential details of the recommended measuring procedures are described.

727 Implementation of Time Code Using Datakode® Magnetic Control Surface Film • *D. M. J. Compton and D. S. Dimitri* • A complete system has been developed using Eastman Kodak's Datakode® magnetic control surface to implement SMPTE time and control code on motion-picture film. The system, designed for use by Universal Studios and Technicolor, consists of 15 units made up of modular subunits. Computer-controlled film handling has been demonstrated at speeds from 10 to 1000 ft/min, with location accuracy for cutting purposes of better than 1/100 frame. The system permits substantial automation of many film-handling operations, with opportunity for faster turnaround time, lower costs, and more opportunity for creativity through computer assistance in otherwise time-consuming manual tasks.