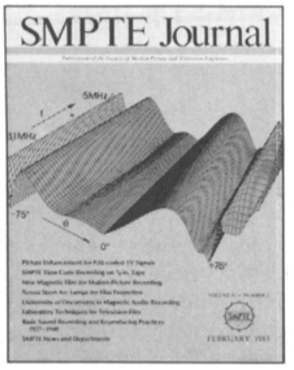
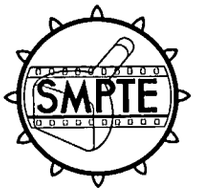
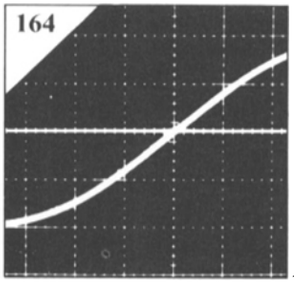


HIGHLIGHTS

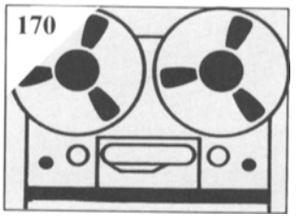




Picture Enhancement for PAL-coded TV Signals by Digital Processing in TV Receivers

M. Jacobsen

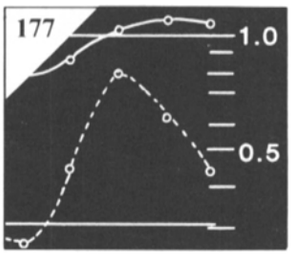
Digital PAL-respective NTSC-decoding and sophisticated analog hardware have contributed to the sharp increase in digital processing of video signals for HDTV. This article details several important steps in digital signal processing, discussing signal separation with digital filters, improvement of picture sharpness, aperture correction of luminance channels, switching equalization of chrominance channels, and noise reduction. The processing of luminance and chrominance channels is outlined, with supporting figures and illustrations throughout. The digital processing of broadcast video signals will soon be commonplace in TV studios, and digital techniques will also be used for signal processing by TV receivers.



SMPTE Time Code Recording on Quarter-Inch Tape

A. M. Bourget

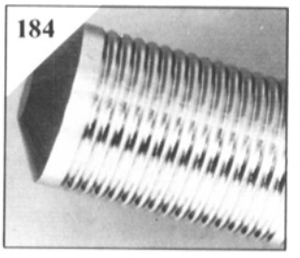
This article outlines several steps that will ensure full exchange compatibility between time-coded 1/4-in. tapes, allowing two or more audio/video data units to be fully interlocked. Five basic parameters are fully defined. They are: tracks configuration, tracks dimensions, modulation type, magnetic flux, and coincidence of audio signal and time-code signal. The parameters are illustrated, and detailed observations of the advantages and disadvantages of the proposed system are given. In addition, possible areas of application are detailed, with supporting figures. The SMPTE time code was defined many years ago, and is now accepted as a universal standard.



A New Generation of Magnetic Film for Motion-Picture Recording

D. Anderson

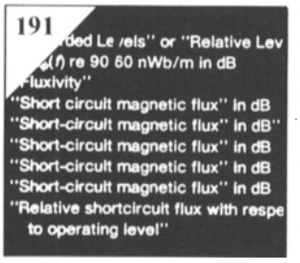
Recent developments in magnetic oxide manufacturing have made possible a new high-output, low-noise magnetic film. This product exhibits greater headroom and lower distortion. Oxide surface treatment creates a very smooth surface resulting in low asperity noise. A durable oxide binder allows many record/play passes with minimal signal degradation. It is designed for critical master recordings and yields quality heretofore unattainable with current state-of-the-art magnetic film.



Xenon Short Arc Lamps for Film Projection: The State of the Art After 20 Years

K. Luttio and G. Berggren

Xenon short arc lamps were developed in Europe over thirty years ago, but were not used in the United States until twenty years ago. The first major applications of these lamps were with developments associated with the New York World's Fair, and later serious applications were found in studios and theaters in the mid-1960's. Since that time, growth in the use of xenon arc lamps has been rapid and widespread. Unfortunately, with only half a dozen factory sources, the various short arc bulbs were often introduced in noninterchangeable designs by manufacturers using a variety of lengths and pin fittings. This tends to complicate the various applications, but there are a limited number of lamp designs between 500 and 5000 W which fit all studio and theater applications. The various types and sizes are outlined and reviewed here.



Uniformity of Documents Related to Magnetic Audio Recording

P. Weinschenk-Tabernero

Existing Standards and Recommended Practices for magnetic audio recording use widely divergent terminology, notation, and mathematics, even though their technical subject matter is very similar. It is shown that two relatively simple formulas are sufficient to describe the recorded characteristic curve in all relevant documents. Some basic definitions of terms are suggested, and the mathematics used in the documents are discussed. Comments with regard to specific existing documents are included.