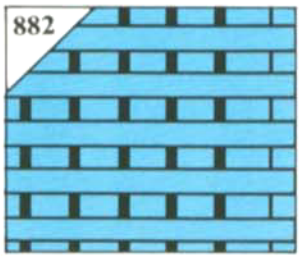
Highlights



Resolution Considerations in Using CCD Imagers in Broadcast-Quality Cameras

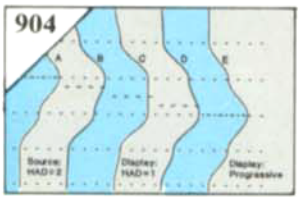
T.M. Gurley and C.J. Haslett

This article details some of the advantages of frame-transfer CCDs over pickup tubes in broadcast cameras, particularly in the areas of sensitivity, SNR, lag, and highlight handling, which can be exploited to portray motion more clearly. These advantages are shown to accrue from fundamental differences in the way the imagers operate, which also require different techniques for assessing performance. One important aspect of performance, resolution, is treated in detail. Static resolution concepts are reexamined in the context of discretely sampled images.

Super Motion System

L.J. Thorpe, T. Nakamura, and K. Ninomiya

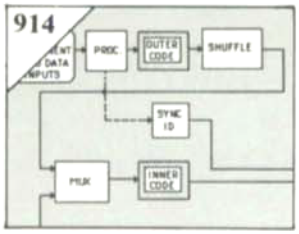
A radically new television field-acquisition system to enhance the capture of motion is described. The Super Motion system is comprised of a new genre of color television camera and a new VTR system. The motion judder and image blur associated with conventional TV pictures when played on a standard slow-motion recorder have been overcome. This is accomplished by shooting the scene with a camera whose frame rate is three times as high as that of a normal 525/30 camera. New technologies incorporated in the system — mixed-field pickup tubes, fiber-optic transmission, digital processing and standards conversion, and high-speed C-MOS digital LSI chips to encode *RGB* to NTSC — are described.



Enhanced Television—A Progressive Experience

J.L.E. Baldwin

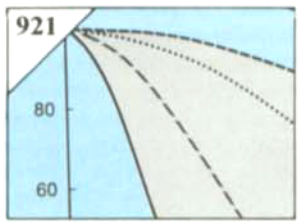
Before adopting an incompatible higher definition television standard, which could not be broadcast in an acceptable bandwidth without the use of several field stores in every receiver, it is sensible to investigate the use of field stores in receivers to provide noticeably better subjective vertical resolution by progressively scanning the display. The transmission would continue to use conventional interlaced 525 or 625-line standards. If aliasing due to the sampling inherent in the number of lines in a displayed field is the important limitation, the use of progressive scanning in the display could double the vertical resolution.



Digital Television Tape Recording: A Report of Progress Toward a Standard

F.M. Remley

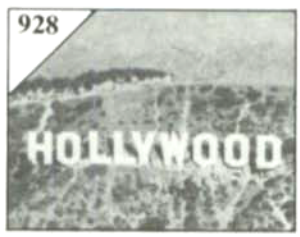
As a result of widespread interest in the development of digital television systems, an SMPTE study group on DTTR was established four years ago. Early in the discussions it became apparent that the future digital broadcast video recorder would not evolve directly from present recorder designs, but that new technology would be required to make such a machine practical. This article describes the progress that has been made toward the development of a DTTR standard. It is certain that SMPTE and EBU will succeed in completing specifications for a single digital video recording format and that the results will be contributed to the CCIR in November 1985.



Scanning Requirements for Motion-Picture Post-Production

L.E. DeMarsh, R.R. Firth, and R.C. Sehlin

An attempt is being made to define a single worldwide high-definition television (HDTV) production standard. This HDTV technology is likely to be applied in the post-production of motion pictures. The electronic system should be designed so that the quality of its film ouput is not significantly degraded from that produced in the current all-film system. It is suggested that a scan standard with 2200 scan lines is a minimum requirement for film post-production.



127th SMPTE Technical Conference and Equipment Exhibit

The SMPTE 127th Technical Conference and Equipment Exhibit will be held Oct. 27-Nov. 1, 1985, at the Los Angeles Convention Center in Los Angeles, Calif. The conference will feature five days of technical sessions on motion pictures and television beginning on Monday, October 28. One of the major attractions of the meeting, the SMPTE Equipment Exhibit, will open on Monday, October 28. The exhibit, which is one of the year's most important displays of professional filmmaking and television equipment, is expected to contain more than 750 booths, with most of the major manufacturers of film and video equipment participating.