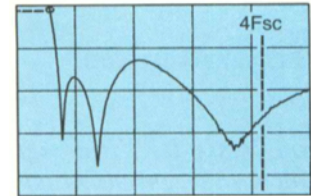
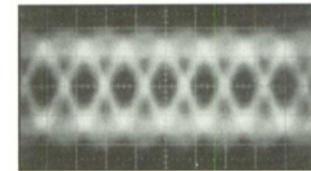


Highlights

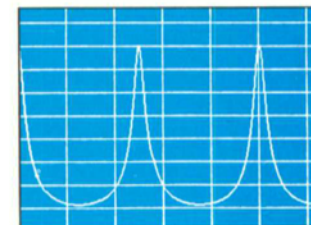
- 732 Multigeneration Performance of a Digital Composite VTR • F. Morrison •** A composite DVTR designed to operate in an existing composite environment must provide distortion-free signals after many generations. In this article, the effect of each distortion is investigated, and methods are developed to minimize the cumulative effects of all analog distortions. The sampling process of the analog-to-digital (A/D) converter introduces quantizing noise that may become noticeable after many generations.



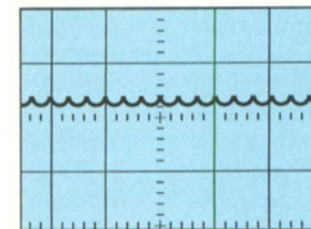
- 738 HDTV Digital VTR • L. Thorpe, T. Yoshinaka, and K. Tsujikawa •** Considerable progress has been made in the development and refinement of an HDTV production system based upon the 1125/60 proposal. This experience with the 1125/60 format has underscored a critical need for a new higher-performance HDTV VTR. A digital VTR designed to meet these requirements is described here.



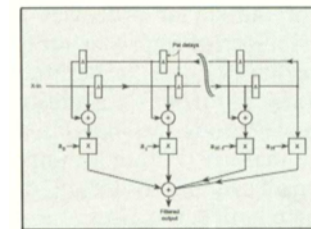
- 748 Spectrum-Compatible High-Definition Television Transmission System • W. Bretl, R. Citta, R. Lee, and P. Fockens •** The Spectrum-Compatible HDTV (SC-HDTV) system achieves the encoding of a 28.9-MHz source signal for transmission over a conventional 6-MHz channel. The new signal format reduces mutual interference between existing NTSC broadcasts and the new high-definition broadcasts to such a degree that significant amounts of currently "taboo" spectrum space become available. As a result, practically all existing NTSC stations can be assigned a second 6-MHz high-definition channel.



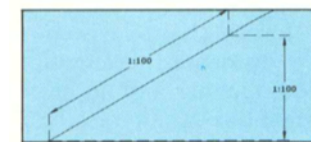
- 754 The Application of Electronic Ballasting with Medium Arc Metal Halide Lamps • F. S. Henry •** There is a rapidly growing interest in the application of electronic ballasting to power medium arc metal halide lamps. Several techniques have recently been developed that provide excellent possibilities for satisfactory operation of the medium arc lamps with increased frequencies and square or rectangular waveforms produced by electronic ballasts. These topics are discussed, along with a practical approach to correct ballast design as a function of the medium arc metal halide lamp's requirements.



- 760 Implementation of a Programmable System for Real-Time Digital Video Processing • M. Fortier and E. Dubois •** A real-time video system (RVS), featuring programmable signal-processing elements, has been constructed for research on digital video signal processing. Except for input and output interfaces, the system is entirely digital, with $4f_{sc}$ or 13.5-MHz sampling rates. A flexible architecture allows insertion of circuit boards with specialized functions in the signal pathway. Its capabilities are illustrated as they relate to proposed enhanced NTSC encoders and decoders.



- 765 The Arriflex Adjustable Contrast Filter: The ARRI VariCon • S. Loth and H. P. Jones •** In the process of recording film or video images, the need frequently arises to reduce overall image contrast. This is accomplished by a new invention, the ARRI VariCon filter. This device allows a cinematographer to reduce the total contrast range of a scene quickly and selectively.



- 771 The Arriflex Contrast Meter: A New Nonsubjective Method of Measuring Contrast on the Set • S. Loth and H. P. Jones •** The human eye is able to record a broad range of contrast because of its highly adaptive nature. The contrast range that the eye is able to accommodate is well in excess of the current capabilities of either film or video. It has, as a result, always been difficult for cinematographers to correlate what they see with what they can record on film. The new contrast meter allows a cinematographer to measure contrast on a set quickly and accurately and to precisely match that to the final image that will be recorded on film.

