

A Study of Optical Recording Formats and Reproduction Systems for Wideband Video Signals

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This paper describes the studies of the establishment of the signal recording format to record the wideband video signals of the High-Vision and stereoscopic video signals on the optical disc with a limited capacity, and development of the prototype player system which reproduces the signals recorded on that disc. The studies contain the clarification of the system concept, such as the reproducing time and picture quality demanded by application fields of the system, ideas of the new video signal processing to record the wideband video signals on the disc with a limited capacity, suggestions of the disc recording format suitable for the application, and verification system for reproducing of the disc. Actually, as for the High-Vision video disc system, the MUSE system which records the MUSE signals, base standards for consumer products proposed by the author, and the base band system which uses the double-side simultaneous reproducing method to achieve both the high picture quality and long reproducing time aiming at business use, are discussed. On the other hand, for the stereoscopic video disc system, the flickerless stereoscopic video system which records the 4:1 interlace double-speed NTSC signals to solve the flicker problems and the MPEG 2 system which records the compressed stereoscopic digital video signals on the quad-density CD-ROM using the 635 nm laser, are discussed. The author built up a field of the wideband video recording technologies for the optical disc.