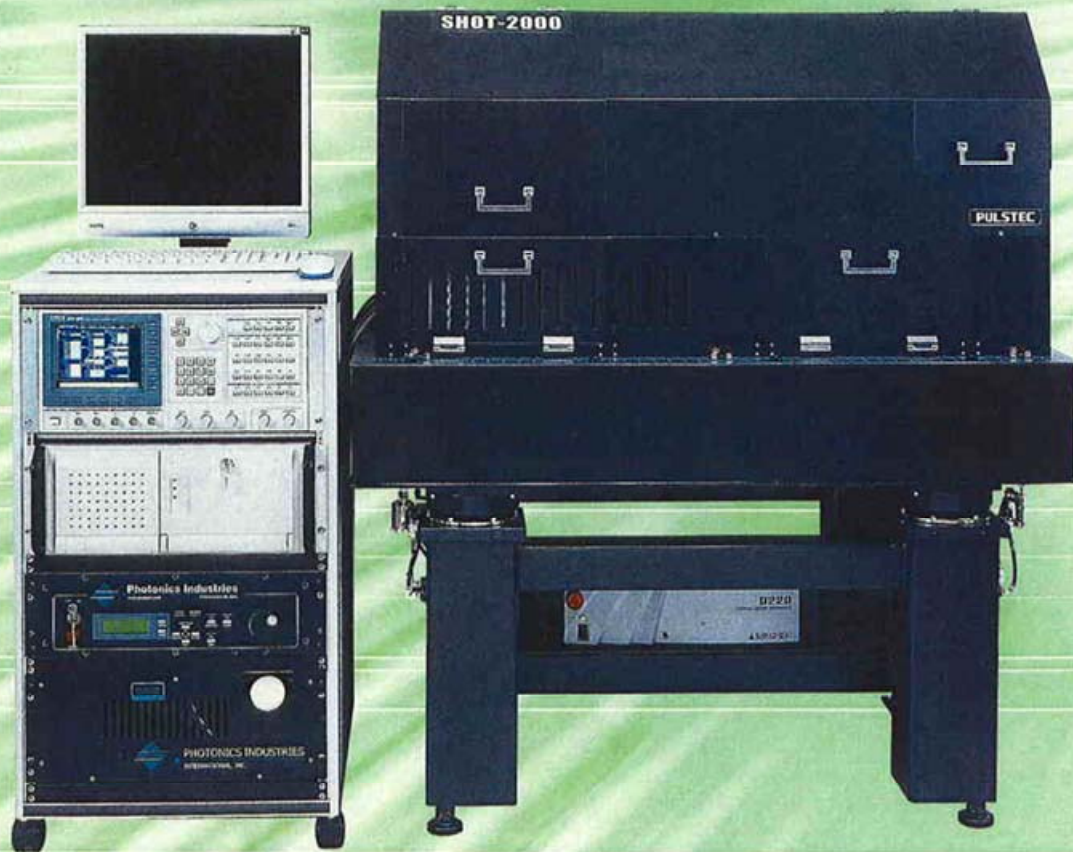


Holographic Versatile Disc Test System
[Collinear Method]

SHOT-2000

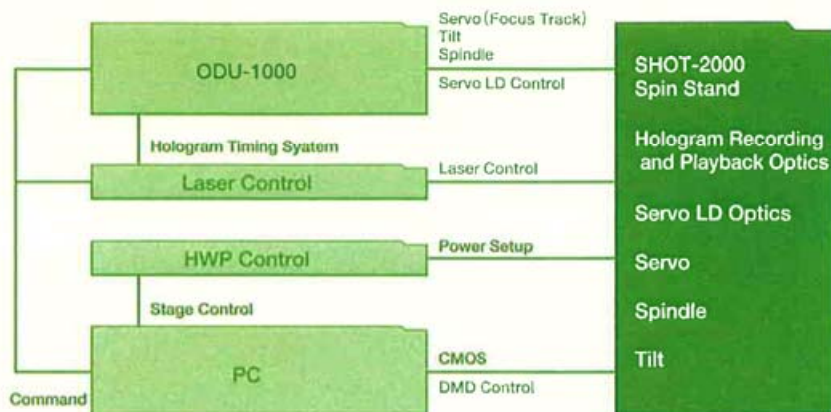
Standard Holographic Optical Tester



System Outline

HVD(Holographic Versatile Disc)evaluation system,SHOT-2000(Standard Holographic Optical Tester),is developed to record the HVD hologram and evaluate its playback condition based on the ODU-1000(Optical Disc Unit),the de-fact standard evaluation system for optical discs.

Block Diagram



Objective Media

Holographic Versatile Disc ϕ 120mm

System Specification

Optics

- Record • Playback Laser
 - Wavelength 532nm \pm TBD
 - Max output 8W Pulse (Reference laser)
Heat conversion 0.8mJ @50kHz generation
- Servo Laser
 - Wavelength 655nm \pm 5nm
 - Max output 12mW Pulse
5mW CW
- Error Detection Method
 - Focus Astigmatism
 - Tracking DPD • Push-Pull

Mechanical Unit

- Feed
 - Access warranty (Disc radius):
25.00~75.00mm (Setting resolution 0.01mm)
 - Drive motor method:DC motor (with encoder)
 - Ball screw (Lead 1.00mm/Rev)
 - Feed method: Disc feed
(Pulse count method from the reference position)
- Spindle
 - Rotational method: CAV position-CLV.EXT
 - Drive motor: DC motor (with encoder)
 - Encoder output:A,B phase 81,000
(Possible to divide into 324,000 one disc rotation by quadrupling)
 - Clamp method:Mechanical clamp
 - Rotational range:90~300r.p.m.
- Tangential • Radial Skew
 - Drive motor:5 phase stepping motor
 - Movable range: \pm 0.8 $^{\circ}$ (Max angle \pm 1 $^{\circ}$)
 - Setting resolution:Ta 0.01deg, Ra 0.01deg
 - The radius skew is only available for the radius of approx 40mm.

Recording • Playback

Set the laser power and DMD pattern with PC before executing Record/Playback.
Then, set the recording position related items (sector, recording and playback position, and number of overwrite) from HOLOGRAM in ODU menu.
Click "Holographic Write" or "Holographic Read" button to execute.
The evaluation is controlled from PC because the number of overwrite is set to "1", and the data is input into CMOS.
For the shift-multiplexing, the recording is carried out with variable set-up followed by the playback evaluation.
This system records/evaluates the identical recording position of full one rotational sector (120sectors) with same DMD pattern, power, and overwrite number.

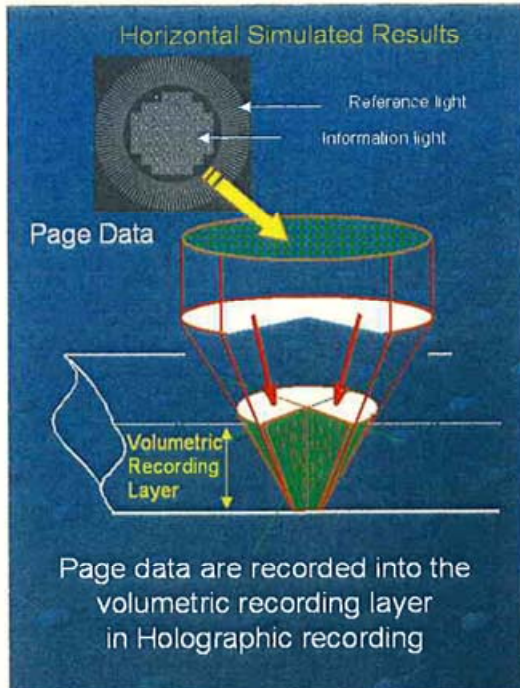
Software Screen

Parameter Setting Screen

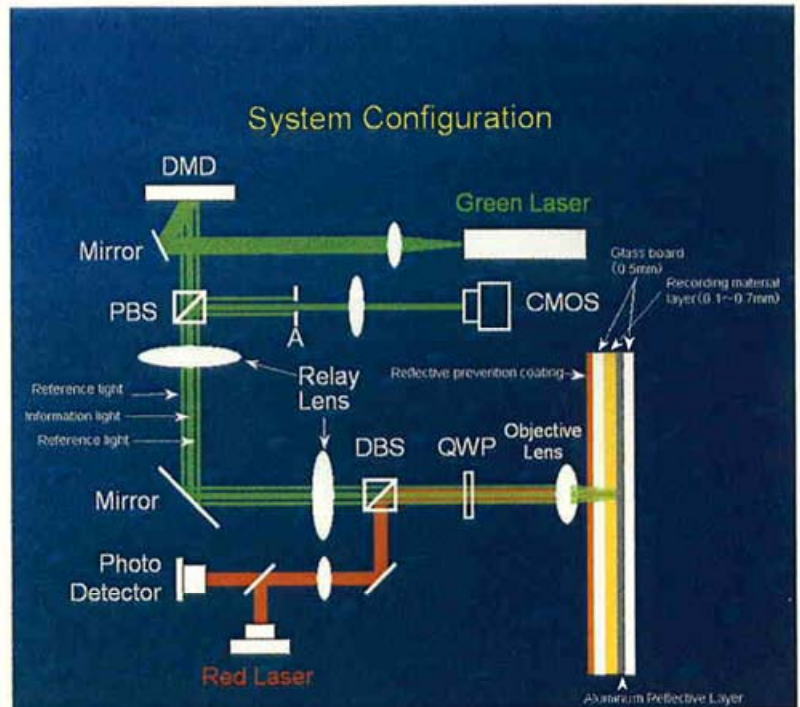
Data Analysis Software

SNR(AIIPage) = 5.44
 Error Count = 6 BER = 2.297794E-004

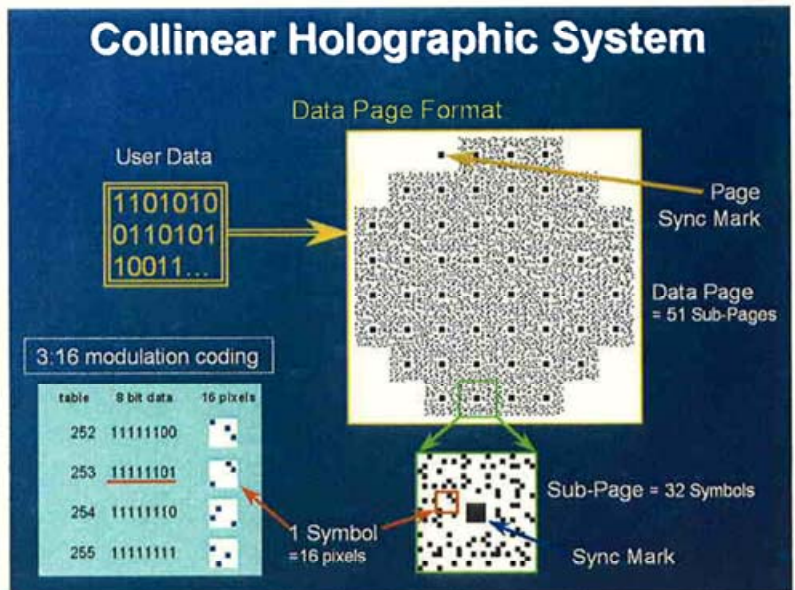
Ave(ON) = 191.25 : Sigma(ON) = 27.993
 Ave(OFF) = 15.79 : Sigma(OFF) = 16.002



Page Data Format & Coding



Collinear Holography Optics



Data Recording Mechanism

※Please be noted that this specs may change without prior notice.



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