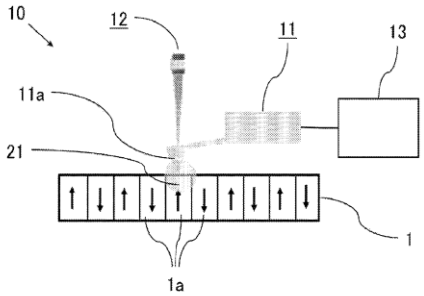
Tohoku Univ. Technology

Dielectric reproducing device and Dielectric recording and reproducing device



1. Data recording layer
1a. Bit
10. Dielectric reproducing device
11. Detection means
11a. Probe tip
12. Heating means
13. Reproducing means
21. Near-Field light generating device

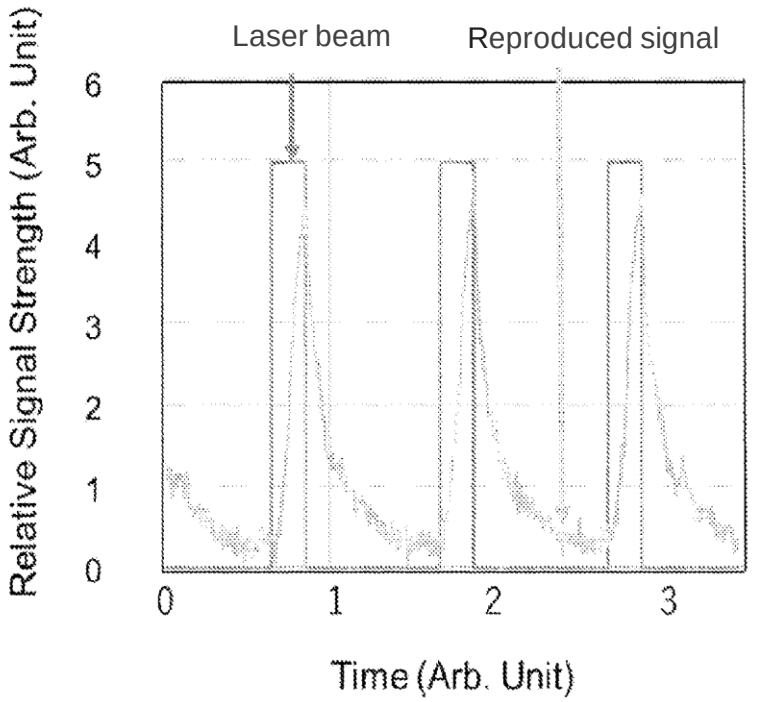
Reproducing speed can be improved than conventional dielectric reproducing device

By increasing the temperature of the position of the data recording layer to be detected, a reproduced signal with a large SN ratio can be detected

Overview

Conventionally, a hard disk drive using a magnetic recording medium is widely used as an information recording and reproducing device capable of random access with high density and large capacity. To further increase the capacity of a hard disk drive, it is required to improve the recording density, but there is a problem that the recording information is disturbed by thermal disturbance of the magnetic medium. Therefore, a dielectric recording and reproducing device using a dielectric material has been proposed as one which can be expected to increase the density than magnetic recording. However, there is a problem that the reproduction speed of recorded data is in the order of Mbps, and it is necessary to improve the reproduction speed for practical application.

The present invention has made it possible to provide a dielectric reproducing device and a dielectric recording and reproducing device capable of improving the reproduction speed. The present invention is characterized in that, when detecting the polarization state of each bit formed in a data recording layer composed of a dielectric material, the temperature of the bit detected by a heating means can be increased. As a result, since the nonlinear dielectric constant of each bit increases, it is possible to detect a reproduced signal having a large S/N ratio between the reproduced signal and the noise, thereby improving the reproduction speed of the data.



Product Application

- New recording device
- Servers, PCs, and recorders

IP Data

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