# DATA RETRIEVAL SYSTEM AND METHOD WITHIN A CONSTANT ANGULAR VELOCITY CD-ROM

## ABSTRACT OF THE DISCLOSURE

A method and system retrieving data stored on a compact disk read only memory (CD-ROM) device using the constant angular velocity (CAV) reading technique. Unlike the constant linear acceleration (CLA) reading technique, in the CAV reading technique the data retrieval rates of the CD-ROM read head vary depending on the radius of the annular recording track that is being read. Data rates can be as much as 2.5x faster for the outer recording tracks compared to the inner recording tracks. The novel system utilizes a narrow capture band phase lock loop circuit in conjunction with a microcontroller which controls the center frequency supplied to the phase lock loop circuit. The microcontroller adjusts the center frequency of the phase lock loop circuit depending on the track (e.g., radius) position of the read head of the CD-ROM device. With the center frequency adjusted close to the data rate of the current track, the phase lock loop circuit needs only a narrow capture band to accurately retrieve the read reference clock from the current track. In one embodiment, the microcontroller is aware of the read head position because it controls read head movement. A microcontroller controlled programmable oscillator (e.g., synthesizer) is used in one embodiment of the novel system to generate the required center frequencies. Direct computation or a look-up table based on the read head position can be used by the microcontroller to determine the required center frequencies. A decoder is supplied with the read reference clock for data decoding.

(Figure 5)