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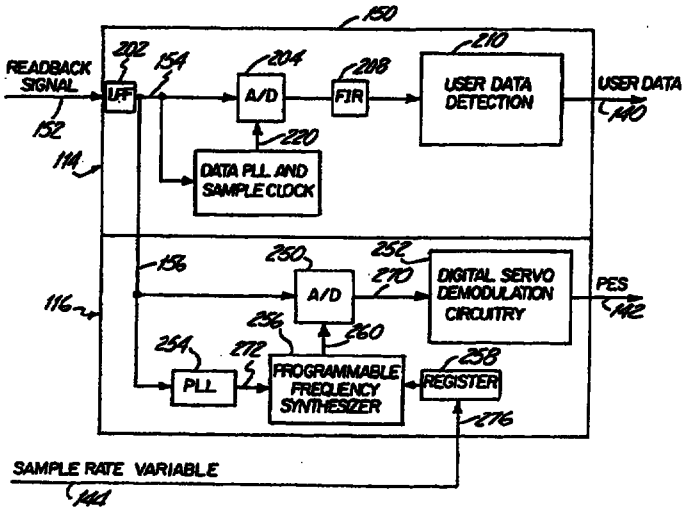
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(54) Title: SYNCHRONOUS DIGITAL DEMODULATOR WITH INTEGRATED READ AND SERVO CHANNELS



(57) Abstract

A synchronous digital demodulator and method for demodulating a read signal including a user data waveform (503) and a servo waveform (304, 505) which are generated by a read head (316) as the read head (316) passes over a user data area and a servo area, respectively, on a medium (122) in a storage device (100). The user data waveform (503) is converted to a series of digital user data values at a user data sample rate. The series of digital user data values are then applied to a user data detector circuit (210). The servo waveform (505) is converted to a series of digital servo values (506) at a servo sample rate, which is independent from the user data sample rate. The series of digital servo values (506) are demodulated synchronously with the servo waveform (504, 505) to produce a position error value (142) indicative of a position error of the read head (316) relative to a location on the medium (122).