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DESCRIPTION

The SSI 32H6522 Sector Servo Demodulator, a BiCMOS monolithic integrated circuit housed in a 32-lead TQFP package, operates from a single 5V supply. It performs integral (area) detection of multiphase, differential-burst-encoded position-error signal (PES) information in high-performance sector servo environments. Multiphase quadrature is useful when servoing with MR heads having recording widths substantially less than a track pitch. Up to eight consecutive servo bursts can be captured. The result of the area detection is digitized in bit-serial form. The device is intended for use in all-digital high-performance embedded servos, and for use with a variety of commercially-available recording channel integrated circuits.

The SSI 32H6522 receives an analog input in differential form from the normal or differentiator output of the channel filter. Also, to support functions peripheral to the servo, two additional auxiliary analog input channels are provided for assignment at the discretion of the user. Typical use of the auxiliary inputs is to digitize performance metric indicators furnished by analog recording channels.

The SSI 32H6522 contains an area-regulating AGC loop, a single area detector, and a 10-bit A/D converter for digitizing burst areas. Also included are eight track-hold circuits with on-chip hold capacitors, and an analog multiplexor. As each burst is integrated, the resulting voltage is stored in an associated track-hold circuit. An additional track-hold is associated with the two auxiliary analog input channels; this ensures low aperture error when converting the auxiliary inputs. Finally, the device incorporates a control pin to command power-down mode.

All sequencing and queuing functions associated with management of the multiple functions of the chip must be externally provided.

FEATURES

- Area-regulating AGC loop
- Gate synchronized area detection for up to eight servo bursts
- On chip integration capacitor
- 10-bit A/D converter with 1.2 μ s conversion time
- Supports A/D conversion on two auxiliary analog inputs
- Serial port interface to A/D converter
- Precision bandgap voltage reference output
- Power-down mode with power dissipation less than 50 mW
- Small footprint 32-lead TQFP

SSI 32H6522

Sector Servo Demodulator

BLOCK DIAGRAM

