

LS7366R PRESS RELEASE

32-bit Quadrature Counter with Serial (SPI) Interface offers multi-mode programmability

The **LS7366R** is an Integrated Circuit for decoding and counting quadrature clocks directly from Incremental Encoders. It provides for a dedicated solution to position and displacement tracking at 40×10^6 /sec line rate (at 5V) from the encoder and a count limit of 2^{32} . Its serial interface (SPI) greatly reduces the required IO wire count as compared to a parallel bus structure. It can also operate with non-quadrature clock signals and provides various counting modes for signal conditioning. The **LS7366R** operates over the voltage range of 3V to 5.5V.

Programming of the **LS7366R** and all communications between itself and a host controller are made with four simple instructions: READ_reg, WRITE_reg, LOAD_reg and CLEAR_reg. The functional modes are controlled with two bytes of data written into two on-chip Mode Registers.

The configurable modes are:

- Quadrature/non-quadrature count inputs
- Quad cycle resolution selection by factor of x1, x2 or x4
- Modulo-n counting for programmable frequency generation
- Range-limit counting for Limit-switch emulation
- Single-cycle counting
- 1-Byte/2-Byte/3-Byte/4-Byte counter modes with auto-adjust of IO byte count.

The Count related status is stored in a Status register. A 32-bit Input Register along with a 32-bit Comparator is provided for comparing a target value with the instantaneous count. Two maskable output Flags are also provided for signaling count related events. The Index and the Quadrature inputs are digitally filtered for noise suppression.

The **LS7366R** is offered in RoHS compliant 14-Pin DIP, SOIC and TSSOP packages.