

16Z073_QDEC – Quadrature Decoder IP Core

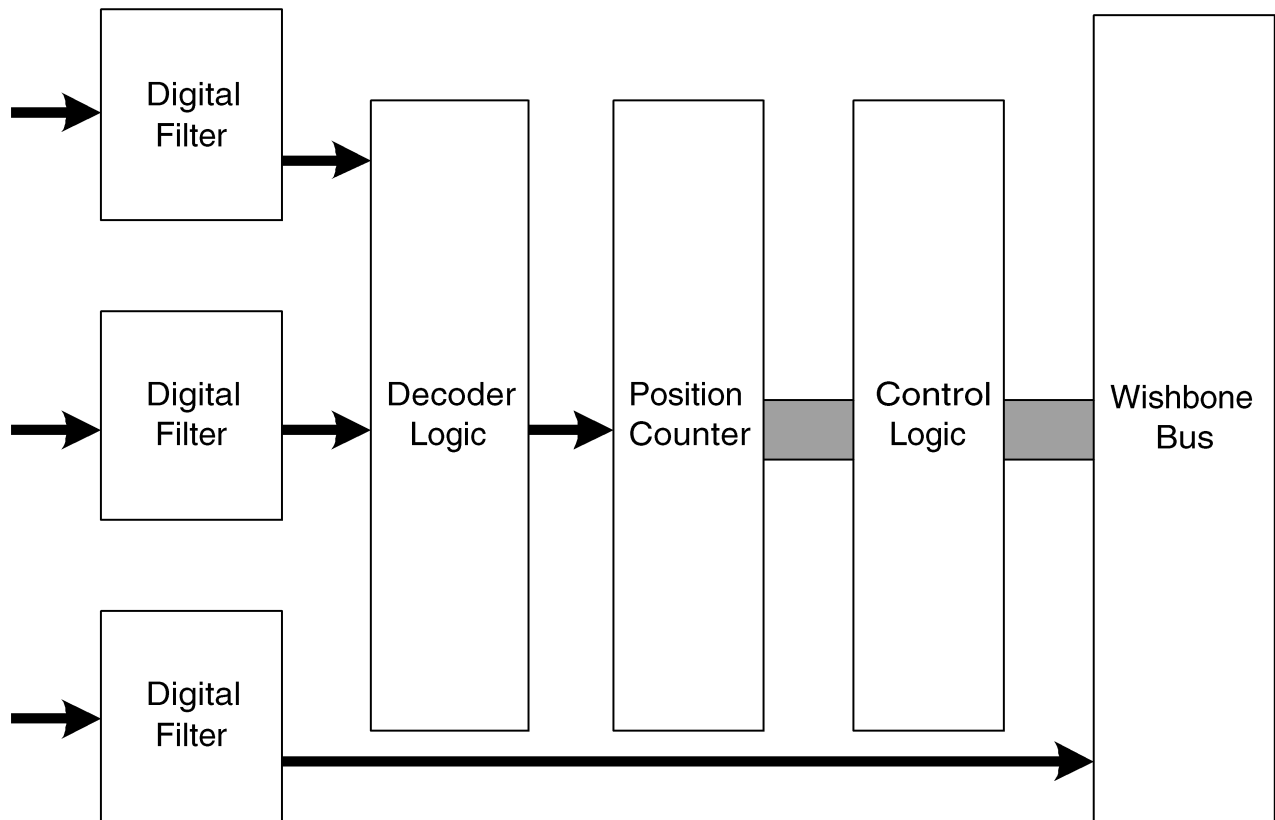
- **FPGA IP Core**
- **Wishbone bus interface**
- **Rotary encoder switch interface**



The quadrature decoder can be used to interface a rotary encoder switch with 2-bit quadrature coded output and with an optional pushbutton switch. A rotary switch is normally used as part of a user interface to move the cursor or an icon on a display. The rotary switch generates quadrature signals with a 90 degrees phase difference. They are used to determine movement (or rotation), as well as the direction of movement (or rotation). The quadrature decoder provides information about the quadrature encoder (rotary switch), like the rotary switch position or the pushbutton status.

MEN IP cores are described in standard VHDL language and the standard Wishbone bus is used as the system interface. By using IP cores, application-specific functions can be performed flexibly and individually in the FPGA on a growing range of MEN CPU boards. These IP cores can be assembled from the MEN function library and reconfigured, combined with IP cores from other providers or even completely redeveloped as required. The FPGA behaves just like a standard PCI component. The FPGA functions are loaded by software when the system is booted and are available in less than 1 s. On PowerPC® platforms the FPGA can be dynamically updated during operation. On Pentium® platforms FPGA updates are also possible in the boot Flash during operation and are then available once the system is rebooted.

Diagram



Technical Data

Size	■ Logic elements (Altera® Cyclone® device family): 100 typ. ■ Pin count min: 2 ■ Pin count max: 3
System-Bus Interface	■ Wishbone bus interface compliant with Wishbone Specification B.3 ■ 32-bit data transfer, 33MHz bus frequency ■ Supported Wishbone bus cycles □ Single read/write
Functionality	■ Input for quadrature encoder ■ 90 degrees phase-shifted signals A and B ■ Push-button signal

Ordering Information

Software: Linux	This product is designed to work under Linux. See below for potentially available separate software packages from MEN. <table> <tr> <td>13Z073-06</td><td>MDIS4™/2004/MDIS5™ low-level driver sources (MEN) for 16Z073_QDEC</td></tr> </table>	13Z073-06	MDIS4™/2004/MDIS5™ low-level driver sources (MEN) for 16Z073_QDEC
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Software: Windows®	This product is designed to work under Windows®. See below for potentially available separate software packages from MEN. <table> <tr> <td>13Z073-70</td><td>MDIS4™/2004/MDIS5™ Windows® driver (MEN) for 16Z073_QDEC</td></tr> </table>	13Z073-70	MDIS4™/2004/MDIS5™ Windows® driver (MEN) for 16Z073_QDEC
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Software: VxWorks®	This product is designed to work under VxWorks®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets. <table> <tr> <td>13Z073-06</td><td>MDIS4™/2004/MDIS5™ low-level driver sources (MEN) for 16Z073_QDEC</td></tr> </table>	13Z073-06	MDIS4™/2004/MDIS5™ low-level driver sources (MEN) for 16Z073_QDEC
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Software: QNX®	This product is designed to work under QNX®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets. <table> <tr> <td>13Z073-06</td><td>MDIS4™/2004/MDIS5™ low-level driver sources (MEN) for 16Z073_QDEC</td></tr> </table>	13Z073-06	MDIS4™/2004/MDIS5™ low-level driver sources (MEN) for 16Z073_QDEC
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Software: OS-9®	This product is designed to work under OS-9®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets. <table> <tr> <td>13Z073-06</td><td>MDIS4™/2004/MDIS5™ low-level driver sources (MEN) for 16Z073_QDEC</td></tr> </table>	13Z073-06	MDIS4™/2004/MDIS5™ low-level driver sources (MEN) for 16Z073_QDEC
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For operating systems not mentioned here [contact MEN sales](#).

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