

# MX0141KA1AVW

1:4 High-Speed Memory Bus MUX

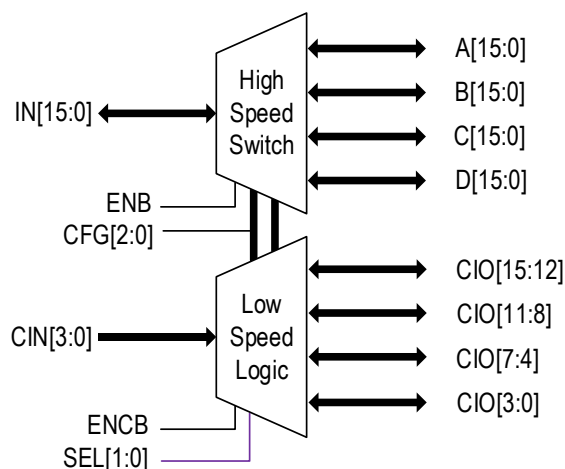
The MX0141KA1AVW is 1:4 high-speed MUX that is comprised of a high-speed 1:4 multiplexer (mux) path and a low speed multi-function control logic path.

The high-speed path consists of four passive switches that connects input port IN to four output ports A, B, C, and D. Each ports is 16-bit. The passive switches, which closed selectively, form a bidirectional multiplexer.

The low-speed path consists of active multi-function IOs that can be configured in different modes. This path also can be configured as unidirectional 1:4 mux with a 4-bit port width, 4:16 decoder, or 16-bit signals for port selection. The CIO pins can be used to drive Chip Enable pins of the NAND dies or high-speed mux selector.

Both high-speed and low-speed paths support SSTL\_12 and SSTL\_18 signaling.

## Block Diagram



## Typical Applications

- SSD drive memory expansion or load reduction for both ONFI3/4 and TOGGLE NAND Flash system
- General-purpose bus 1:4 multiplexer for high-speed, low-power product solutions

## Main Features

- 1:4 high bandwidth 16 bit bus multiplexer
- SSTL18 and SSTL12 signaling
- 4 × 11 mm FCCSP package with 0.65/0.5mm ball pitch

## High-Speed MUX Features

- Bidirectional passive port switches
- Pull-up/Pull-down/Tristate/bus-hold for deselected ports
- Pin-to-pin output skew < 30ps (within a port)
- Pin-to-pin output skew < 10ps (Differential pairs)
- Propagation delay < 150ps
- Insertion loss < 1dB at 800MHz
- Bus holding, weak pull-down, or weak pull-up for deselected ports in different configurations via the CFG pins

## Low-Speed MUX/Control Logic Features

- 4-bit in, 16-bit input/output logic targeted for Chip Enables or port selections
- Multiplexing or decoding
- Unidirectional, active multiplexing
- Multiple function selected via the CFG pins

Table 1. Characteristics of High-Speed Paths

Feature	High-Speed Path
Port speed	Up to 1600MT/s
Port size	16-bit
Direction	Bidirectional IN ↔ A, B, C, or D
Control pins	SEL[1:0], ENB, ENCB, CIN[3:0], CIO[15:0]
Signaling through port	SSTL_12, SSTL_18

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### Corporate Headquarters

TOYOSU FORESIA, 3-2-24 Toyosu,  
Koto-ku, Tokyo 135-0061, Japan  
[www.renesas.com](http://www.renesas.com)

### Contact Information

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