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ICE-PIC6

ICE-PIC6

ICE Enterprises
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Peripheral Interconnect Component

Notice: End-of-Life has been announced for this product. It has been superseded by the ICE-PIC7. Please see End-of-Life for details.



ICE-PIC6 - PCI Express 8-lane DSP Card

The **ICE-PIC6** DSP card is a Gen 1 PCI Express card. It fits in either 8- or 16-lane slots. Jumper J4 is closed for special PCIe training compatibility behavior.

The card has a status LED next to the edge connector SMB. When the card is booted, the green LED flashes at roughly 1Hz. The red LED indicates PC transfers to/from the card.

Mounting an I/O module requires approximately 0.6 inches of slot width. All external module connectors are available at the card's edge connector.

The edge connector has 1 SMB connector to provide an external clock for output modules or a signal for synchronizing multiple cards.

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Features

- One Xilinx Virtex-IV FX60 programmed as 1-, 2-, 4-, 8-lane PCI-Express (3V), IOC controller and packet router
- Two 32-bit digital I/O module sites or two 4-lane Rocket I/O sites with a total bandwidth of 2 GBytes/sec each direction (840 MBytes/sec full duplex for each I/O module)
- Up to two processor module sites for application-specific processing needs with 1.6 GBytes/sec bandwidth, such as digital tuning, demodulators, FFT processing, or PLD processing (the standard ICE-PIC6 card has one processor module site, while the ICE-PIC6L has two). See details on ICE Processor_modules
- Two I/O module sites. For options, see ICE I/O_modules
- One SMB connector for external synchronization

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- 1500 MBytes/sec data capture/playback to PCI to/from 256 MB onboard DDR SDRAM
- 256 MB DDR SDRAM for short term memory with 4 GBytes/sec bandwidth
- Fixed-point processor performs 2-channel tuner, 100MHz FM/QAM demod, 22 GTap/sec FIR, 6us 2K RFFT
- All components are software configurable to support a variety of processing needs (see Software)
- Depending on your platform, you can order PT# **ICE-PIC6** (Regular - 4x8.5in), ICE-PIC6S (Short - 4x6in), or ICE-PIC6L (Long - 4x12.25in)

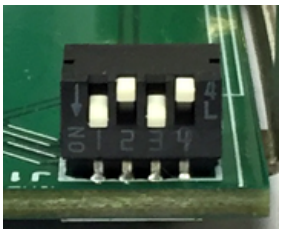
Applications

- Wideband data acquisition or forwarding, spectral analysis, etc., plus processor specific apps
- Video disk applications or large capacity data capture and playback

Documentation

For PIC6 questions regarding software, I/O Modules, and re-flashing the card, please refer to the ICE-PIC FAQ.

Jumper Configuration



ICE-PIC6 Factory Defaults

There are 3 dip switches for configuring the external clock/sync connector: (on/closed is with the switch baton toward the board)

- J1 – Factory **Closed/On** for onboard 50 ohm termination; Open/Off for high impedance
- J2 – Factory **Open/Off** for clock or trigger input; Closed/On for master trigger output signaling (External Trigger Source)
- J3 – Factory **Closed/On** for DC-coupled LVTTL clock or trigger; Open/Off for AC-coupled sinusoidal clock input
- J4 – Factory **Open/Off** – Switch Reserved

To synchronize acquisition/playback between multiple cards, J2 must be in place (closed) for both the master and slaves. The master asserts the XSOE flags to drive the line. The J1 terminators should be open. Add J3 for 2.5V 10kohm pull-up/down and diode protection on the input/output.

The PIC6's internal 8-bit test port can also be used to synchronize multiple cards. In this case, the master asserts TPOE to driver the test port and the slaves need the XTGO and XSTP flags.

The PIC6 onboard crystal is a fixed 100MHz clock. User crystals must be mounted on the I/O modules themselves. A programmable clock is available on the mainboard for generating digital signals.

Notes

1. The headers on the board are static sensitive: do not handle the board without taking proper static discharge precautions.
2. Make sure all connectors are oriented properly.

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Status and Configurations

EOL has been declared for this model: see End-of-Life for details. Please call for pricing and availability.

There are many possible configurations for the ICE-PIC6 based upon which I/O modules and Processor modules are chosen. Three basic PIC6 sizes are available to fit specific setups:

- **ICE-PIC6** "Regular", which has **two** I/O module sites and **one** processor module site
- ICE-PIC6S ("Short"), which has **two** I/O module sites but **no** processor module sites
- ICE-PIC6L ("Long"), which has **two** I/O module sites and **two** processor module sites

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