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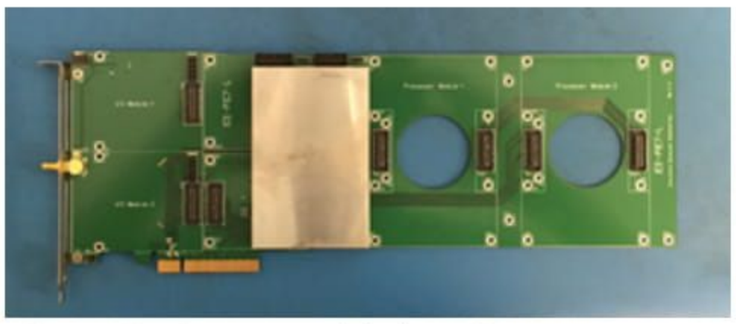
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Find the *ICE Enterprises ICE-PIC7L* at our website: *Click HERE*



ICE-PIC7 (Long model shown)

The ICE-PIC7 is an advanced Digital Signal Processing (DSP) card for use in PCI-Express based computer platforms. Two I/O module sites and up to two processor module sites are provided. The I/O sites are capable of Direct-Digital, Analog-to-Digital, Digital-to-Analog (with IF or RF), or Bi-directional Optical module operation. One processor module (ICE-PIC7) or two processor modules (ICE-PIC7L) can be added for tune-filter-decimate applications, channelizing applications, or adding your own custom gate array code for customer specific applications. The wide range of inputs, outputs, and processing capabilities make this an excellent solution for the most demanding signal processing requirements.

The ICE-PIC7 is based on the Xilinx™ Kintex-7 FPGA, and includes a custom heat spreader. Server/Test Station installations should have sufficient internal chassis air flow across the card to maintain card status temperatures below 55 degrees C. As a reference, SAS hard disk drives in servers require temperatures less than 50 degrees C. When optimum airflow is present, typical temperatures for the PIC Card series are 40-45 degrees C.

With attached I/O Modules, the card meets PICMG requirements for single-slot occupancy. External connections to I/O modules are available at the card edge mounting plate. This mounting plate includes an SMB connector, which can be used to provide external triggering, synchronization, and DC-IRIG-B input (3.3V LVTTL level).

Features

- One Xilinx Kintex7 325T programmed as 1-, 2-, 4-, 8-lane PCI-Express, IOC controller, and packet router
- Two 32-bit digital I/O module sites
- Up to two processor module sites for application-specific processing needs with 800 MBytes/sec input or 800 MBytes/sec output per port bandwidth
- Popular uses include digital tuning, demodulation, FFT processing, or PLD processing (the standard ICE-PIC7 Regular card has one processor module site, while the ICE-PIC7L 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 / IRIG time input
- 1500+ MBytes/sec PCI-Express host bus transfers
- 1 GB onboard DDR3 SDRAM
- Fixed-point processor cores (FM/QAM demod, FIR, RFFT)
- All components are software configurable to support a variety of processing needs (see Software)
- Thermal shutdown and over-temp protection
- Depending on your platform, you can order PT# ICE-PIC7 (Regular - 4x9in) or ICE-PIC7L (Long - 4x12.25in)

Applications

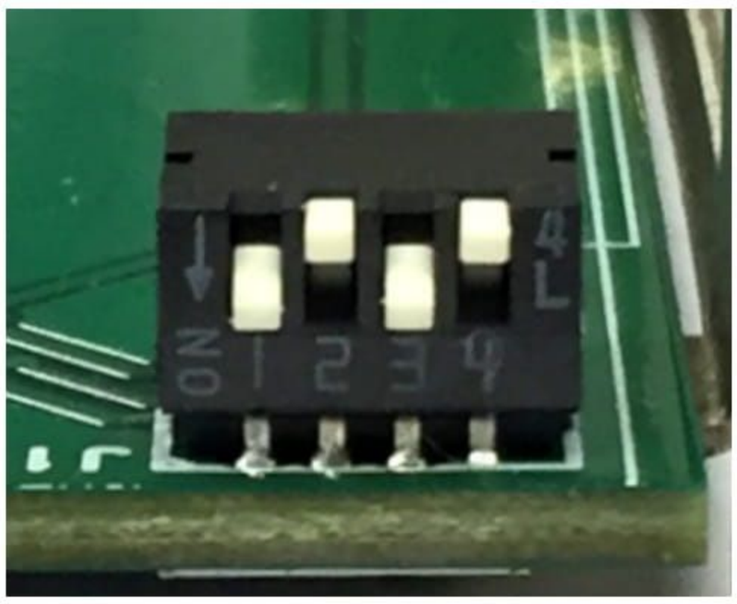
- Wideband data acquisition or forwarding, spectral analysis, plus processor specific apps
- Video disk applications or large capacity data capture and playback
- Signal/IF or RF Environment Reception and Generation
- Communication Transmission
- Instrumentation
- Custom Gate Array applications for analog signal processing or optical processing

Specifications

Input Specifications – External Reference and Triggering

Parameter	Impedance	Minimum	Typical	Maximum	Units
External Sine Wave Clock	50 ohm	+/- 0.5	+/- 1.0	+/- 2.0	V_{p-p}
External LVTTL Input	50 ohm	0.5	3.3	4.0	V_{p-p}

Jumper Configuration



PIC7 Factory Defaults

There are 4 dip switches located on the top of the card near the L-Bracket. Various configured settings are used depending on the user's application. For the switch to be ON (also designated closed) is with the switch baton toward the board. In the graphic above an arrow indicates the ON position.

- 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 slave cards. The master asserts the e**X**ternal **S**ync **O**utput **E**nable (XSOE) flags to drive the line. The J1 terminators should be **open**.

The PIC7'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 e**X**ternal **T**rigger **Go** (XTGO) and e**X**ternal **S**ync via **T**est **P**ort (XSTP) flags.

The PIC7's 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.

For more information, please see the ICE-PIC FAQ page.

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.

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-PIC7 based upon which I/O modules and Processor modules are chosen. There are two basic PIC7 sizes are available to fit specific setups:

- ICE-PIC7 "Regular", which has **two** I/O module sites and **one** processor module site
- ICE-PIC7L ("Long"), which has **two** I/O module sites and **two** processor module sites

Triggering Note: The trigger input is inserted on the PPS SMB connection. An LVTTL trigger is expected. An LVTTL (3.3 V) 1PPS input can be used as the trigger. Once a playback output session begins the 1st rising edge of the inbound 1PPS is read and the trigger stays high for the remainder of the playback session.

Absolute Maximum Ratings

Parameter	Value	Units	Conditions
Electrical			
Vcc	12.0	VDC +/- 5%	From PCIe Bus 25 Watts (Card only with no I/O or processor modules)
Environmental			
Operating Temperature	-10 to +65	Degrees C	
Storage Temperature	-40 to +85	Degrees C	

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