

Customers making technology acquisition decisions need to be able to evaluate and estimate the performance of complex IP blocks. In addition, software developers may wish to get an early look at the API and get a head start on the project well before silicon is available. To answer this need, Elliptic has enhanced its line of evaluation cards for its IP to include a card based on the Virtex IV FPGA. Like the EVAL-01 it also runs in a user-supplied Linux PC. The card occupies a single PCI slot.

Elliptic can offer a wide variety of its IP on the card and can combine multiple cores behind a single PCI interface. The list price for the card includes an evaluation license for any of the cores specified in this product brief.

Key Features:

- Full size PCI 32/33 Card with Xilinx XC4VLX160 FPGA
- Universal PCI connector
- Linux Fedora API
- Documentation
- 90 day warranty period including email support for installation and configuration



Figure 1 EVAL-01 PCI Evaluation Card

Introduction

The EVAL-01 is a full-sized PCI card designed to fit many PC chassis. The card requires a 5V supply for the on-board regulator. The vast majority of PCs are designed with ATX compliant motherboards and are therefore equipped with a 5V supply distributed to the PCI connector. Certain high performance PCs come with PCI slots designed for 66 MHz operation and 64 bit buses and these may be 3.3V only. This class of PC will not work with the EVAL-01; however if the EVAL-01 card is plugged into a PC with 3.3V capability, it will not be damaged. Please contact Elliptic Semiconductor support if there are any further questions on the compatibility of the EVAL-01 card with your target PC.

Configuration Options

The EVAL-01 can support the following IP cores:

AES Cores

- [CLP-03: AES Cipher](#)
- [CLP-10: AES CCM Cipher for 802.11a/b/g Applications](#)
- [CLP-11: Tiny AES Core](#)
- [CLP-14: High Throughput AES Core](#)
- [CLP-20: High Throughput AES-CCM](#)
- [CLP-24: High Throughput AES-GCM](#)
- [CLP-28: 802.16/WiMAX AES Core](#)

DES Cores

- [CLP-02: DES/3DES Cipher](#)
- [CLP-08: High Throughput DES/3DES Core](#)
- [CLP-19: Ultra-high Throughput DES/3DES Core](#)

ARC4 Core

- [CLP-04: ARC4 Cipher](#)

Hashing Core

- [CLP-26: Configurable SHA and MD5 Hash Core](#)

Asymmetric Cores

- [CLP-17: Elliptic Curve Cryptography \(ECC\) Point Multiplier Core](#)
- [CLP-23: RSA and Elliptic Curve Public Key Accelerator](#)
- [CLP-31: Suite B Elliptic Curve Accelerator](#)

Random Number Generator

- [CLP-21: Pseudo Random Number Generator](#)
- [CLP-27: Pseudo Random Number Generator](#)

IPsec Engine

- [CLP-25: Configurable IPsec Engine](#)
- [CLP-30: High Throughput Pipelined IPsec Core](#)

Embedded Security Module

- [ESM-01 DTCP Embedded Security Module](#)
- [ESM-03 Windows DRM Embedded Security Module](#)
- [ESM-04 HDCP Embedded Security Module](#)

Elliptic uses the 33 MHz clock derived from the PCI interface to clock the Spartan 3 FPGA. As such, the performance of the cores will reflect that clock frequency. The EVAL-01 can also support combinations of certain cores. Please contact Elliptic directly for more information on the specific combination of cores that is required.

Software API

The EVAL-01 includes an API applicable to the core or cores licensed with the card. The API is created and verified in a Linux Fedora environment. Specific details of the release supported for the specific IP licensed are included as part of the documentation package shipped with the card.

Limited Warranty

The EVAL-01 system comes with a limited 90 day warranty. The board is warranted to perform substantially in compliance with this data sheet and the users' manual. Should there be a fault or other non-conformance during this warranty period the board will be replaced upon receipt of the card at Elliptic Semiconductor and confirmation by Elliptic Semiconductor of the reported fault. Please request a Return Material Authorization number (RMA #) from Elliptic Semiconductor by sending an email to RMA@ellipticsemi.com.

During the 90 day warrant period, customers are eligible for email support to assist them in successfully installing and testing the evaluation card. Please send any support request information to support@ellipticsemi.com.

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