USB controlled, FPGA configurable Bit Pattern Generator

- **TTL/CMOS buffered logic inputs/outputs**
- **Altera/Intel Cyclone IV FPGA**
- **Soft configuration via USB**
- **Windows 10, Linux, 32/64 bit**

Features

- **No firmware development required**
- **Toolchains available free of charge**
- **USB-to-FPGA interface IP included**

Applications

- **Digital Stimuli**
- **Digital Data Capture**
- **Closed-loop, real-time functional test**
- **Serial/Parallel to USB Interfaces**

Overview

The FAB-3226 system connects 16 bi-directional I/O ports to an user-defined FPGA logic. As the FPGA is user-programmable all kind of operation can be implemented: input, output, and closed loop operation where input and output are processed in real-time. All this can be controlled by an user-defined application program running on a computer system (PC or embedded).

Due to the flexible architecture of the FAB-3226 a broad range of functions can be implemented: digital stimuli, digital data capture, closed-loop processing, random bit-pattern generators, serial/parallel data communication interfaces, synchronous or asynchronous operation.

In order to communicate with the application, the logic may implement a set of registers. The application exchanges data with these registers by read and write requests. This way the application can control the logic

No firmware development is required as the FAB kit contains all the necessary drivers.

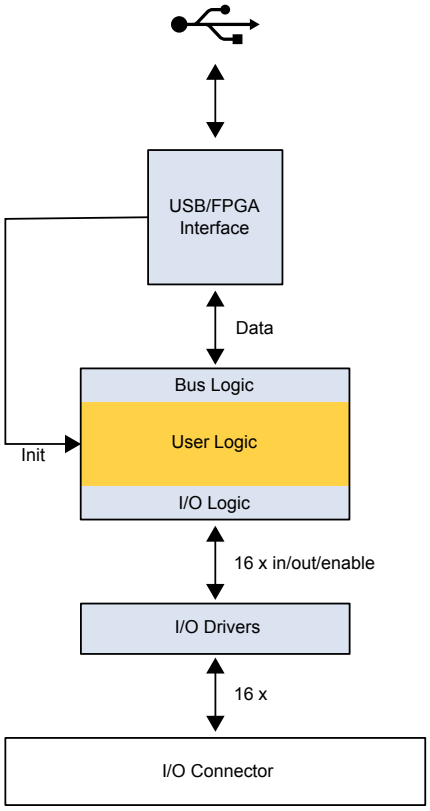
The FPGA logic is soft, i.e. the application initializes the FPGA upon each start. The FPGA is de-initialized (reset) when the application terminates. By use of

an server application the FPGA logic might persist even when a single client terminates.

Hardware

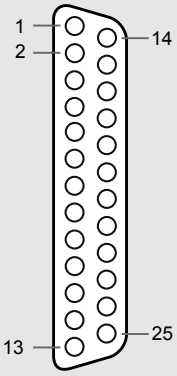
- Altera/Intel Cyclone IV FPGA connected to an USB interface and 16 buffered TTL/CMOS compatible I/O lines
- compact and robust die-cast aluminium housing
- Standard 25-pin D-SUB female connector
- High Retention USB connector allows for 50% more retention force than the standard USB preventing accidental disconnect
- two status LED

FAB Hardware



FAB-3226 Signal by Pin

Signal	Pin	Connector View	Pin	Signal
3,3V	1		14	GND
IO15	2		15	IO14
GND	3		16	IO13
IO12	4		17	GND
IO11	5		18	IO10
GND	6		19	IO09
IO08	7		20	GND
IO07	8		21	IO06
GND	9		22	IO05
IO04	10		23	GND
IO03	11		24	IO02
GND	12		25	IO01
IO00	13			



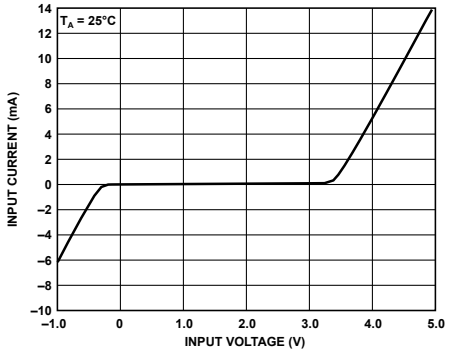
Specifications

Logic

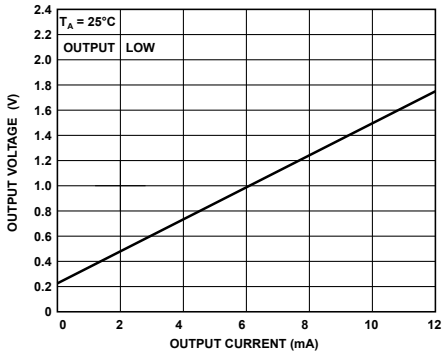
FPGA: EP4CE6F17C8 (Cyclone IV E)

Electrical Data

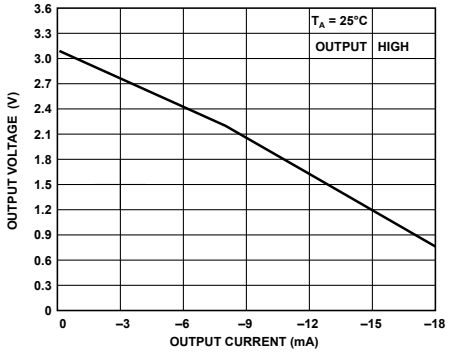
Supply Voltage (USB)**:** 5V ± 5%
Supply Current (USB)**:** 150 mA max.
Overvoltage Protection (permanent, all inputs)**:** -5.0V … +8.7V
Overvoltage Protection (peak, max. 10 ms, 2% duty cycle)**:** ± 20V
Input Characteristics (Pull-down 33kΩ at each input)**:** Logic L ≤ 0.8V, Logic H ≥ 2.0V



Output Characteristics (low)**:**



Output Characteristics (high)**:**



Environmental and Physical

Size (excluding connectors)**:** 111 mm L x 76 mm W x 29 mm H
Weight: 160 g
Operating ambient temperature: 0 … 50°C
Storage temperature: -20 … 80°C
Relative humidity: 5 … 95%, noncondensing
USB connector: Extraction force ≥ 15N, Mating force ≤ 35N

Ordering Information

FAB-3226 - Instrument, USB cable (1m), Software Download Card

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