DESIGN GATEWAY
COMPANY LIMITED

intel

FPGA Design Solutions Network
Gold

IP core
for Storage and Network Solution

- **dgIF Type S**
  - *One interface for all storage IP*
  - *Simple to use*
- **Ultimate IP core**
  - *High performance*
  - *Compact size*
  - *Simple user interface*
  - *Free! SOF-file for evaluation & various reference designs*
  - *Demonstrations on many evaluation boards are available on Youtube*
- **Adapter Boards for IP core Evaluaion**
  - *Ready to use*
- **MicroSD Supported FPGA Configuration Module**
- **IPLock FPGA Security System**

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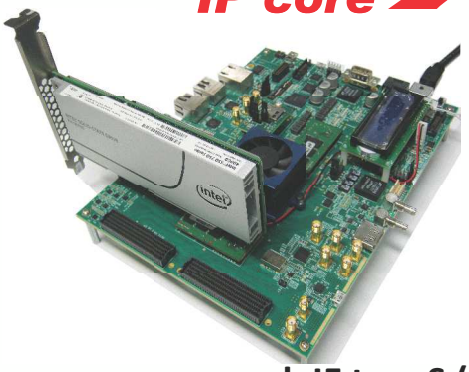
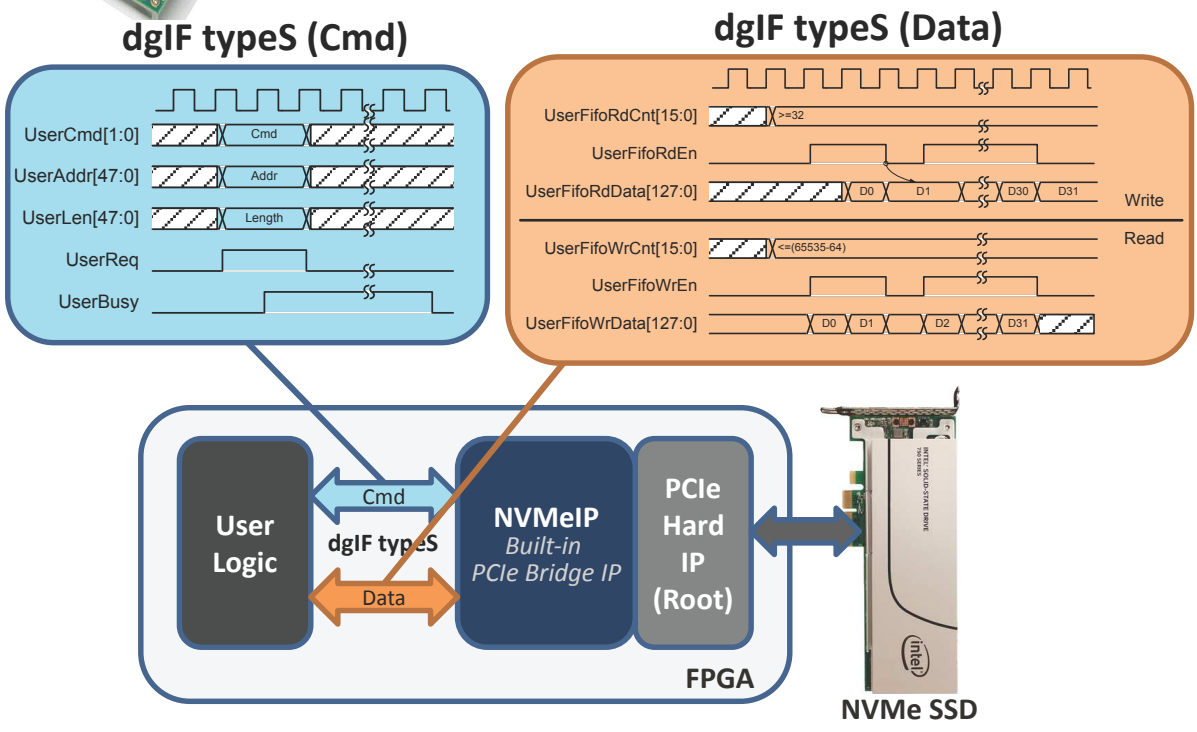
Ultimate IP core

NVMe IP core



THE LATEST! *NVMe Host Controller IP Industrial-leading Ultra low FPGA resources and high performance without need CPU*

NVMe IP is a standalone (without CPU) IP core for the NVMe, which is the best standard for interfacing with PCIe SSD. Suitable for applications which require high capacity storage and small size form factor at very high performance.
More details: http://www.dgway.com/NVMe-IP_A_E.html



	Competitor solution		NVMe-IP	
	Gen2	Gen3	Gen2	Gen3
FPGA Resource	Large		**<1200 ALMs!** (PCIe Bridge included)	
IP interface	Customize standard		Simple by **dgIF typeS**	
Linux driver supported	Yes		**Yes**	
External Memory (DDR)	Required		No	
CPU	Required		No	
NVMe interface knowhow	Yes		No	
File system supported	N/A		No	
RAID0 supported	No		Yes	
Performance	W: 750 MB/s R: 1270 MB/s	W: 1000 MB/s R: 2000 MB/s	**W: 1602 MB/s R: 1681 MB/s**	**W: 2146 MB/s R: 3251 MB/s**

** Ideal solution for Multiple NVMe Host Controller in single FPGA device*

Find more available IP solution on

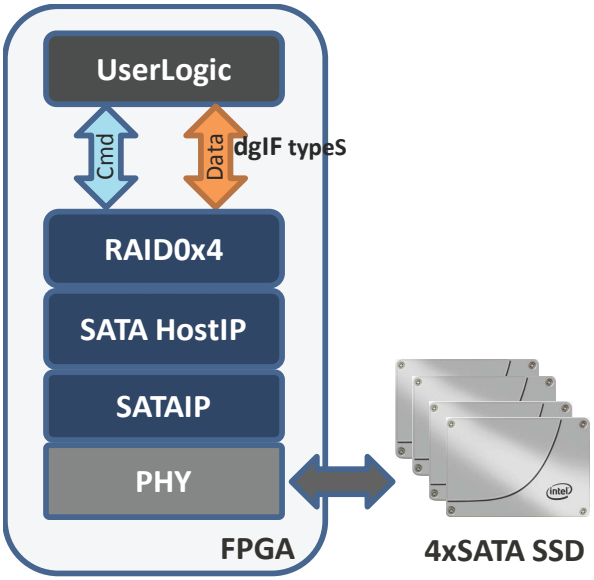
Demonstrations on many evaluation boards are available on YouTube YouTube dgipcore

SATA-IP

Serial ATA Transport&Link Layer IP Core

THE BEST! *for Low-cost & High Capacity Storage, Free! SOF-file for Evaluation & Various Reference Designs*

SATA-IP is a high performance IP core for the SATA standard storage interface. It can connect to SSD/HDD without PHY chip.
More details: http://www.dgway.com/SATA-IP_A_E.html



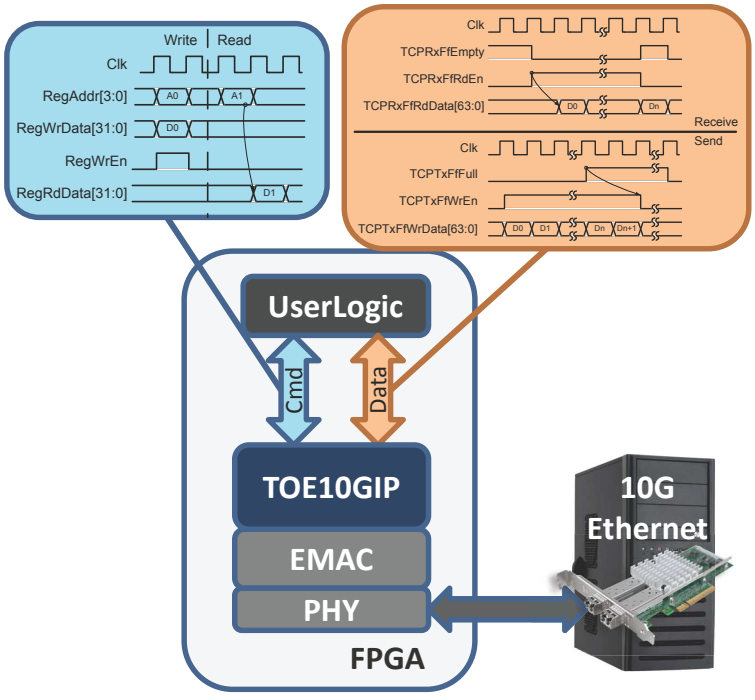
	Competitor solution	SATA-IP+ HostIP	
		1-ch	4-ch
Resource	Big resource	Small (~1200 ALMs)	Small (~5200 ALMs including RAID0 logic)
IP interface	Customize std.	Simple by **dgIF typeS**	
Linux driver	Supported	**Supported**	**Customized**
External Memory (DDR)	Required	No	No
CPU	Required	No	No
ATA cmd knowhow	Required	No need	No need
File system supported	Yes	No	No
Performance Write/Read	No RAID solution	W: 513 MB/s R: 560 MB/s	W: 2040 MB/s R: 2200 MB/s

TOE10G IPcore

TCP Offloading Engine IP Core

THE FASTEST! *Reliable Ethernet IP for Long Distance Connection via Optical Fiber, without CPU*

TOE10G-IP core is a pure hardware logic for the high-speed network standard.
More Details: http://www.dgway.com/TOE10G-IP_A_E.html



	TOE10G-IP
Resource	Small (~2400 ALMs/session)
IP interface	Simple by register and FIFO I/F
External Memory (DDR)	No
CPU	No
TCP/IP stack knowhow	No
Multisession	Customize by using multiple IP
Performance	Send: ~1200 MB/sec Receive: ~1200 MB/sec

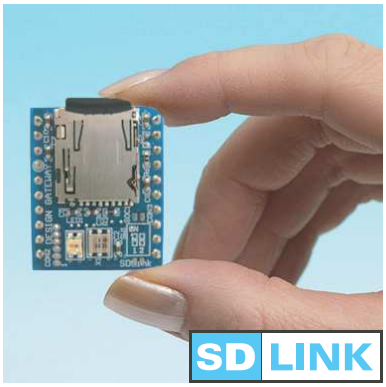
TOE1G IPcore

TCP Offloading Engine IP Core

Optional!! *1Gbps approximated maximum speed*

More Details: http://www.dgway.com/TOE1G-IP_A_E.html

microSD Supported FPGA Configuration Module



READY TO USE! *Convenient and High Speed Configuration Module via microSD*

SDLink is a high speed FPGA configuration module which stores data in microSD card instead of using download cable
More details: http://www.dgway.com/SDLink_E.html

- High compatibility with various FPGA models
- High-speed programming (max: 25 MByte/s)
- Support parallel programming, up to 8 modules

IP Lock

PRODUCTIVE IPs SECURITY! *Reliable AES encryption technology protects IPs illegal duplication*

IP Lock is FPGA logic security system which protects intelligent property (IP) from illegal copying by only including IP Lock
More details: http://www.design-gateway.com/IPLock.html

- Comprehensive security by AES encryption
- Provide easy "Laboratories Pack" and "IP Lock Writer + blank chip"

Adapter Boards for IP core Evaluaion

AB Series EASY TO USE! *Simple and Easy Adapter Boards help Developments to be easier*

AB Series is extension adapter boards for Ultimate IP core evaluation. AB Series support Altera FPGA boards.

Available now on MOUSER ELECTRONICS

Module No.	Details	Product IP core	FPGA Board
 AB16-PCIeXOVR	PCIe crossover adapter board for NVMe-IP, APS-IP evaluation	NVMe IP core	Altera Arria10SoC/Arria10 GX StratixIV GX board ArriaII GX board ArriaV GX board CycloneIV GX board CycloneV GX board
 AB09-FMCRAID	FMC-SATA(10ch) adapter board for SATA-IP with RAID evaluation	SATA IP	
 AB12-HSMCRAID	HSMC-SATA(8ch) adapter board for SATA-IP with RAID evaluation	SATA IP	

More products: http://www.dgway.com/ABseries_E.html

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