

USB 3.0 SOLUTIONS

- Initio -



2012. 5. 18

세미솔루션 기술연구소

1. Initio's USB3.0 solutions
2. Technical Core IPs
3. USB3.0 to SATA

1. Initio's USB3.0 solutions

1. Product series

Models	Function	SPECs	PKG	Remark
INIC 1607/08/09	USB2.0 to SATAII Bridge controller	USB:60Mbps SATA:150Mbps	48 LQFP	HDD/CD-RW
INIC 1610/11/15/18	USB2.0 to e/SATAII Bridge controller	USB:60Mbps SATA:150Mbps	64 LQFP	HDD/CD-RW
INIC 3607/08/09	USB 3.0 to SATA Bridge controller	USB : Super speed SATA2.6 compliant	64/48 LQFP	HDD/CD-RW
INIC 1861	USB 2.0 flash disk controller	R : 35Mbps W : 25Mbps	48 LQFP	UFD

1. Initio's USB3.0 solutions

2. Bridge Controller lineup

Bridge IC Controller

Initio Part Number	Type	Interface				Package	#ofGPIO	Memory	RAID
		USB	1394/a	1394/b	eSATA				
USB-SATA									
INIC-1605	SATA	<				64 QFP	9	EXT.SPI Flash	
INIC-1606	SATA	<				64 QFP	9	Int.Mask ROM	
INIC-1608	SATA	<				48 QFP	7	Int.Mask ROM	
Combo-SATA									
INIC-1610	SATA	<			<	64 QFP	11	EXT.SPI Flash	
INIC-1611	SATA	<			<	64 QFP	11	Int.Mask ROM	
INIC-1615	SATA	<	<	<	<	100 QFP	19	EXT.SPI Flash	<

1. Initio's USB3.0 solutions

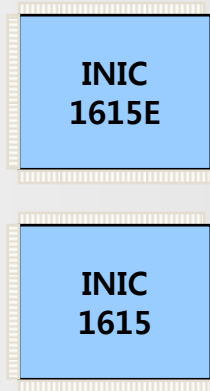
2. Bridge Controller roadmap



1. Initio's USB3.0 solutions

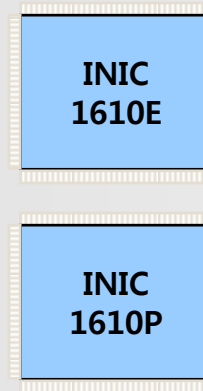
3. Combo-USB Controller roadmap

USB/1394a/b/eSATA-SATA



- 2 port RAID engine
RAID 0,1,Spanning
- 0.153 um
- 100 pin package
- AES 128/256 for 1615E

USB/eSATA-SATA

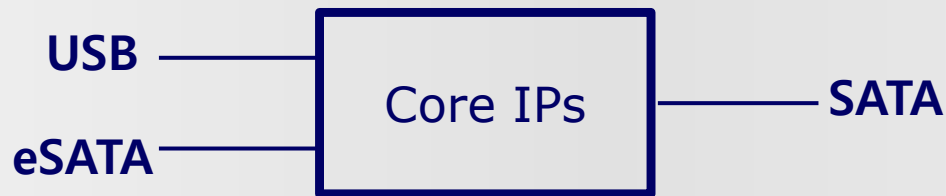


- SATA-II PHY
- Configurable to 2xSATA or SATA +eSATA
-RAID 0,1,Spanning
- 0.11 um
- 100 pin package
- AES 128/256 for 1615E

2. Technical core IPs

1. Strong design team: Initio develops and owns all the key IPs.

- USB 2.0 PHY, USB 3.0 PHY
- SATA 1.5G , 3G PHY, SATA 6G PHY
- Bridge controller logics
- Flash controller logics
- AES module, authentication software, password utilities.



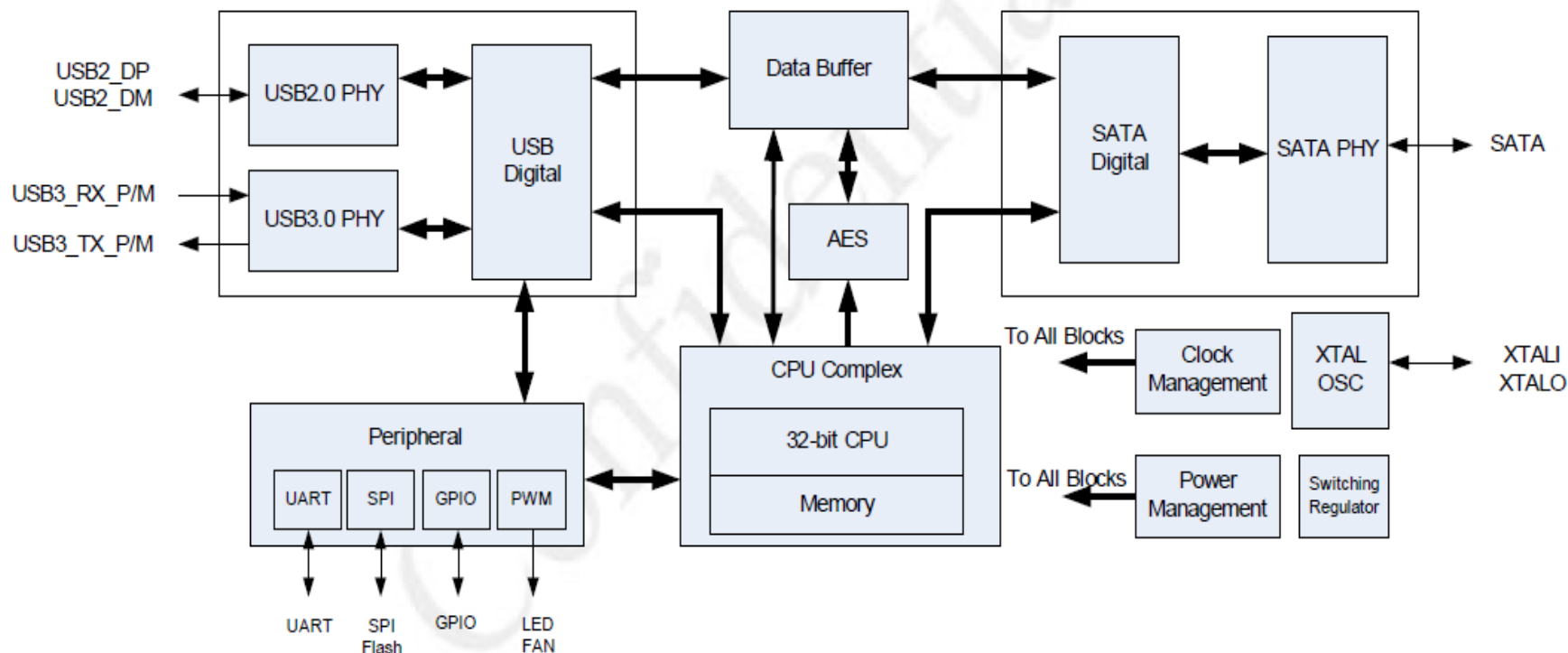
3. USB 3.0 to SATA

1. INIC-3607 / 3607E feature

- USB 3.0 to SATA II bridge controller
 - Backward compatibility to USB 1.0/1.1/2.0.
 - SATA 2.6 compliant.
 - Support Bulk Only Transfer(BOT),
the legacy USB 2.0 mass storage class.
 - Support USB Attached SCSI, the new USB 3.0 mass storage class.
- Supports both NEC and MCCI drivers.
 - Smallest body size (6mm x 6mm) and pin counts
(48pin QFN / 64Pin LQFP)

3. USB 3.0 to SATA

2. INIC-3607 Block diagram

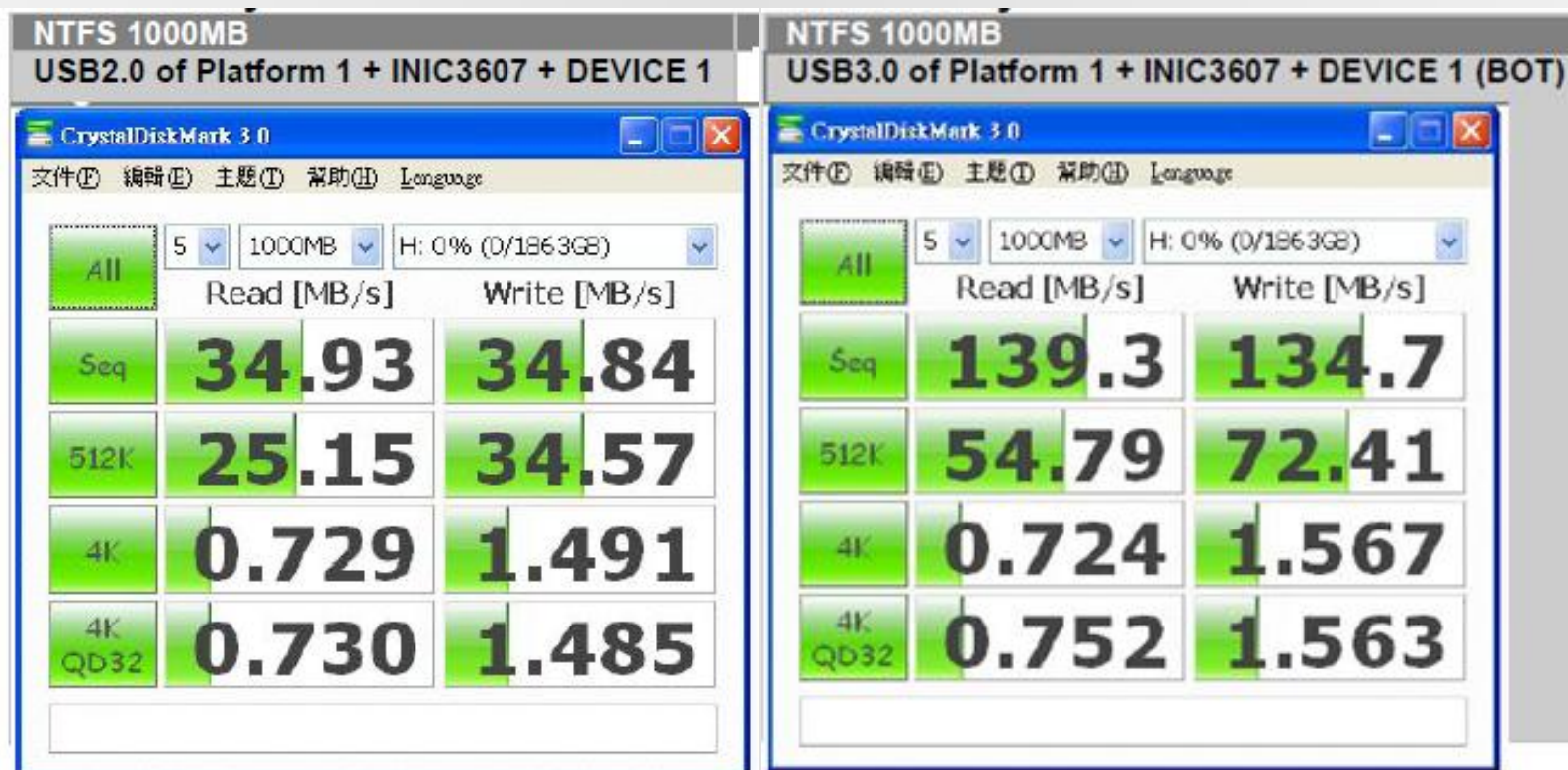


- **Firmware Support**
 - **USB Mass Storage Class Support**
 - Bulk-Only Transport support**
 - USB Attached SCSI Support (UASP)**
- **Software Support**
 - **Firmware Download Utility**

[illegible]

3. USB 3.0 to SATA

4. Bench mark



Platform 1

Item	Content
Main board	Asus-M4A89GTD Pro
North bridge chipset	AMD 890GX
South bridge chipset	AMD SB850
Memory	DDR3-2GB
CPU	AMD AM3
Operating System	Windows XP X86 SP3

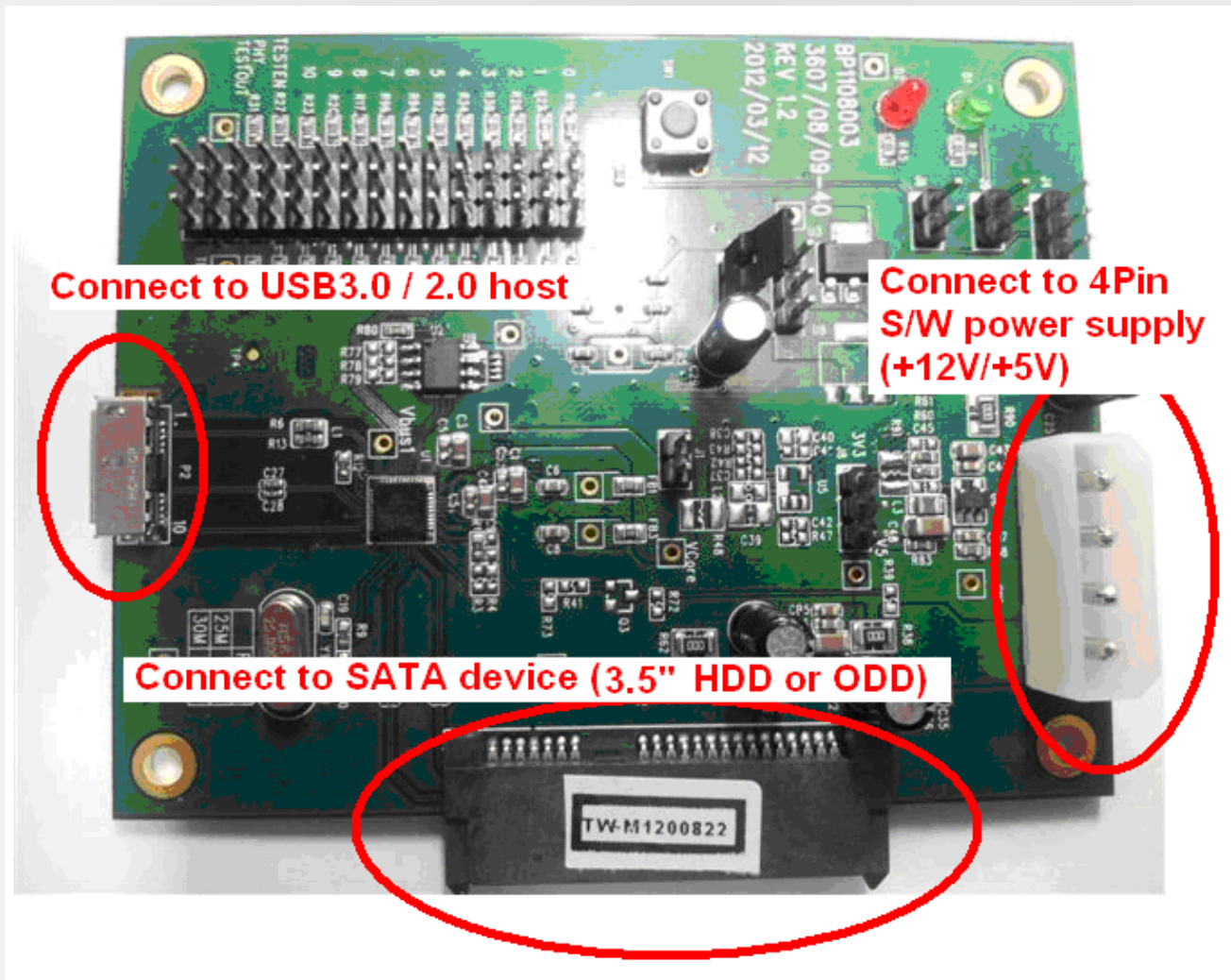
3. USB 3.0 to SATA

2. INIC-3609

- Backward compatibility to USB 1.0/1.1/2.0.
- SATA 2.6 compliant.
- Support Bulk Only Transfer (BOT),
the legacy USB 2.0 ass storage class.
- Support USB Attached SCSI, the new USB 3.0 mass storage class.
- Supports both NEC and MCCI drivers.
- Smallest body size (5mm x 5mm) and pin counts
(40pin QFN)

3. USB 3.0 to SATA

3. INIC-3607/08/09 EVB – self powered



3. USB 3.0 to SATA

3. INIC-3607/08/09 EVB – bus powered



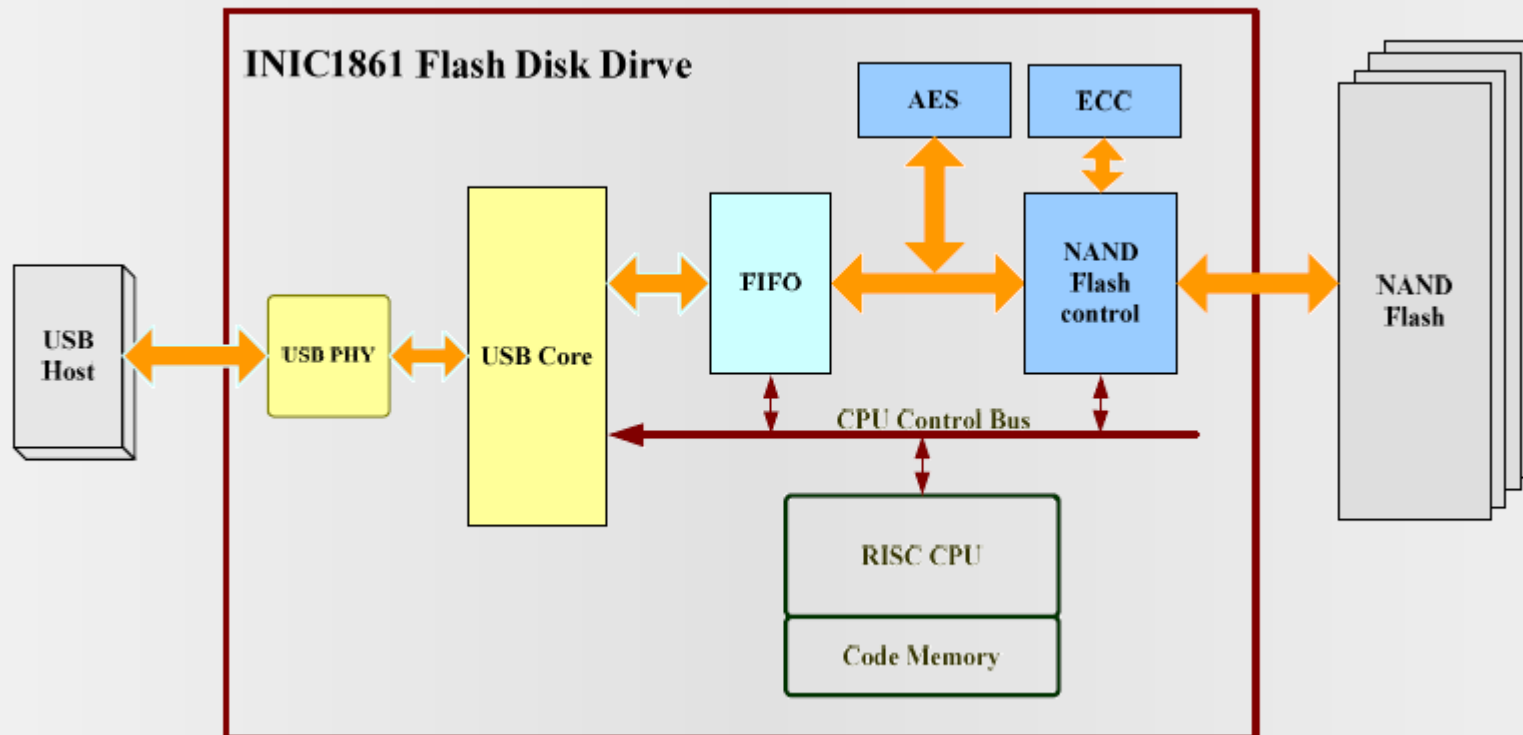
4. USB 2.0 Flash disk controller

1. INIC-1861 Feature

- High Speed interface USB2.0
- Unique Structure : RISC CPU with high performance
- Power Management : Integrated 5V to 3.3V voltage regulator
- Flash Memory
 - . Supports SLC flash or MLC flash or mix.
 - . Supports 2K/4K/8K bytes page size
- Initio Proprietary 5
 - . Supports Interleave operation
 - . Supports both single channel and dual channel flash access
 - . Strong error correction algorithm up to 14/28bit ECC ability
- Performance
 - . Read Speed 35MB/s (Max).
 - . Write Speed exceeds 25MB/s (Max).
- Capacity
 - . LQFP48 package: Total capacity is up to 8 flash chip enable signals.
 - . Die Bonding or LQFP64 package(under request)
Total capacity is up to 16 flash chip enable signals.
- Package : LQFP-48

4. USB 2.0 Flash disk controller

2. INIC-1861 Block diagram



4. USB 2.0 Flash disk controller

3. MP tool(TAURUS)

Taurus

Current Setting

Disk Mode	Pure Disk	MP Mode	Speed Optimize	SN	Default
Bad Block	Bin	Scan Mode	Low Format	Scan Level	Quick Scan 1

initio

Device Count: 0
Version 2.00

☒ English
☐ 简体中文

☐ Auto Manufacture

Setup(S)

Refresh(R)

Start(A)

01		05	
02		06	
03		07	
04		08	
09		13	
10		14	
11		15	
12		16	

Thank you !



Suite 2005, U-tower Heungdeok-dong, Giheung-gu
Youngin-si, Gyeonggi-do, Korea

www.SEMISOLUTION.com

+82-31-627-5300