

USB3.0 solutions from ASMedia

Rev 0.1

Tech marketing : Weber Chuang

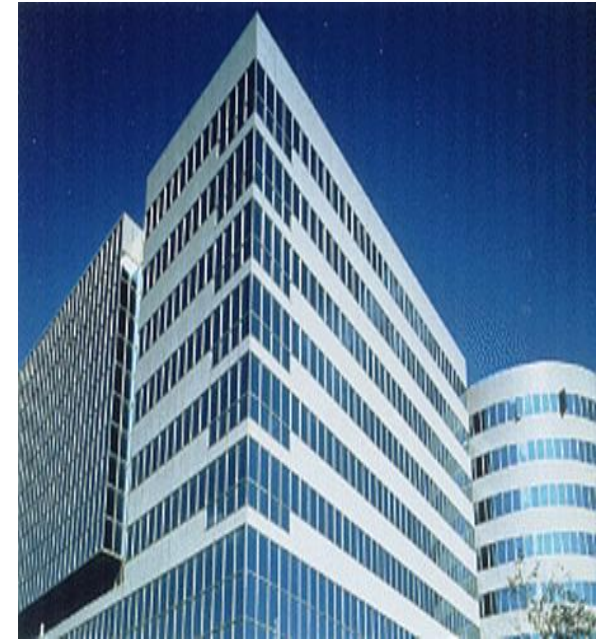
July 15, 2010

Company Profile brief

- **Establishment** : Mar. 2004
- **Capital** : US\$ 12.5 Millions
- **Headquarter** : Taipei, Taiwan
- **Off shore offices** : Shenzhen, Shanghai, China
- **Employees** : 120+ (engineer : 90%)

- **Core Business :**
 - ***Quick Switch and Repeater***
 - PCI Express I/II/III,
 - SATA-I/II/III,
 - USB2.0/USB3.0,
 - Display Port, HDMI, DVI and LVDS
 - ***Storage Controller***
 - SATA, PATA, USB3.0 SSD Controller
 - USB3.0 to SATA II/III,
 - USB3.0 to NAND
 - ***PCI Express Bridge and Controller***
 - USB2.0 / USB3.0,
 - SATA I/II/III
 - PCI

- **2009 Revenue** : *US\$11.5M*
- **2010 Revenue target:** *US\$25M*



www.asmedia.com.tw

Background of ASMedia

- Over decades of design experience, key members are mostly **chipset designers** from Ali, SiS and VIA.
- Proven record and Capability to handle different **IPs**
 - **High speed interface** :
 - AGTL+, HT3, PCI-E I/II, SATA I/II/6G, 1394, USB2.0, PATA
- Experience on **S/W development**
 - includes BIOS, Driver, Firmware and rt-OS coding.
- Production experience on
 - **various Process** (from 0.5um~80nm),
 - **various Package** (including TSOP, QFP, QFN, BGA, Flip-chip, MCM)
 - **over 10 millions/month chipset Business**
- **In house equipment**
 - **JBert and TDR and 90000 series scope from Agilent**
 - **PCIe gen2 and USB3.0 and SATA6G Protocol analyzer and PerT3 from Lecroy**
 - **Scope from Tektronix**

SuperSpeed USB Features

- **Up to 10x performance increase over USB2.0**
- **Fast sync-n-go**
 - Minimizes user wait-time
- **Optimized power efficiency**
 - Provide excellent power characteristics both on the Device and the Platform
 - U0/U1/U2/U3 support
- **Backward Compatible with USB2.0**
 - Legacy devices continue to work in new host connector
 - New devices work in legacy systems albeit at USB2.0 speed
 - Existing class drivers continue to work
- **Same USB Device Model**
 - USB Framework
 - Transfer types



Need for SuperSpeed USB

- ***Your Connectivity is Only As Fast As Your Memory***
- **Flash-based peripherals will require much higher data rates**
 - Digital Cameras and Camcorders
 - Flash Memory Drive (USB thumb sticks, and cards)
 - Flash-based digital MP3 and video players
 - PC, Mobile, Handheld PCs and Mobile phones
- **User wait time requirement, 1.5 min to synchronize**
- **Interface performance sets the requirement**

	Song / Pic	256 Flash	USB Flash	SD-Movie	USB Flash	HD-Movie
	4 MB	256 MB	1 GB	6 GB	16 GB	25 GB
USB 1.0	5.3 sec	5.7 min	22 min	2.2 hr	5.9 hr	9.3 hr
USB 2.0	0.1 sec	8.5 sec	33 sec	3.3 min	8.9 min	13.9 min
USB 3.0	0.01 sec	0.8 sec	3.3 sec	20 sec	53.3 sec	70 sec

comparison on Copy time, U3 v.s. U2 UFD

Module run in
USB3.0 port
copy 1.36GB file

in **27 secs**

7X Faster!



Regular Pen Drive
run in USB2.0 port
copy 1.36GB file

In **3min 45sec**

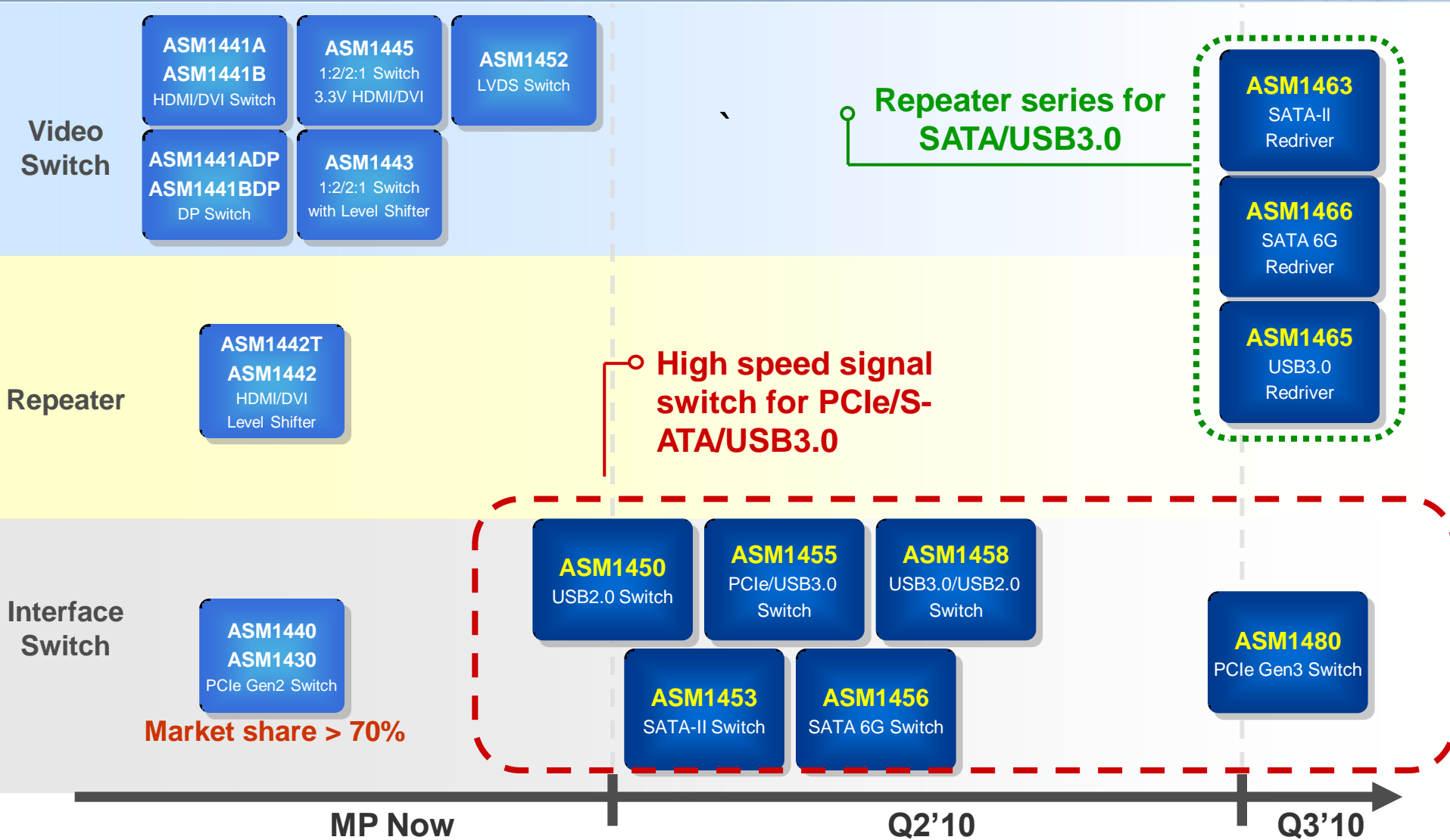


USB3.0 UFD with
ASMedia solution

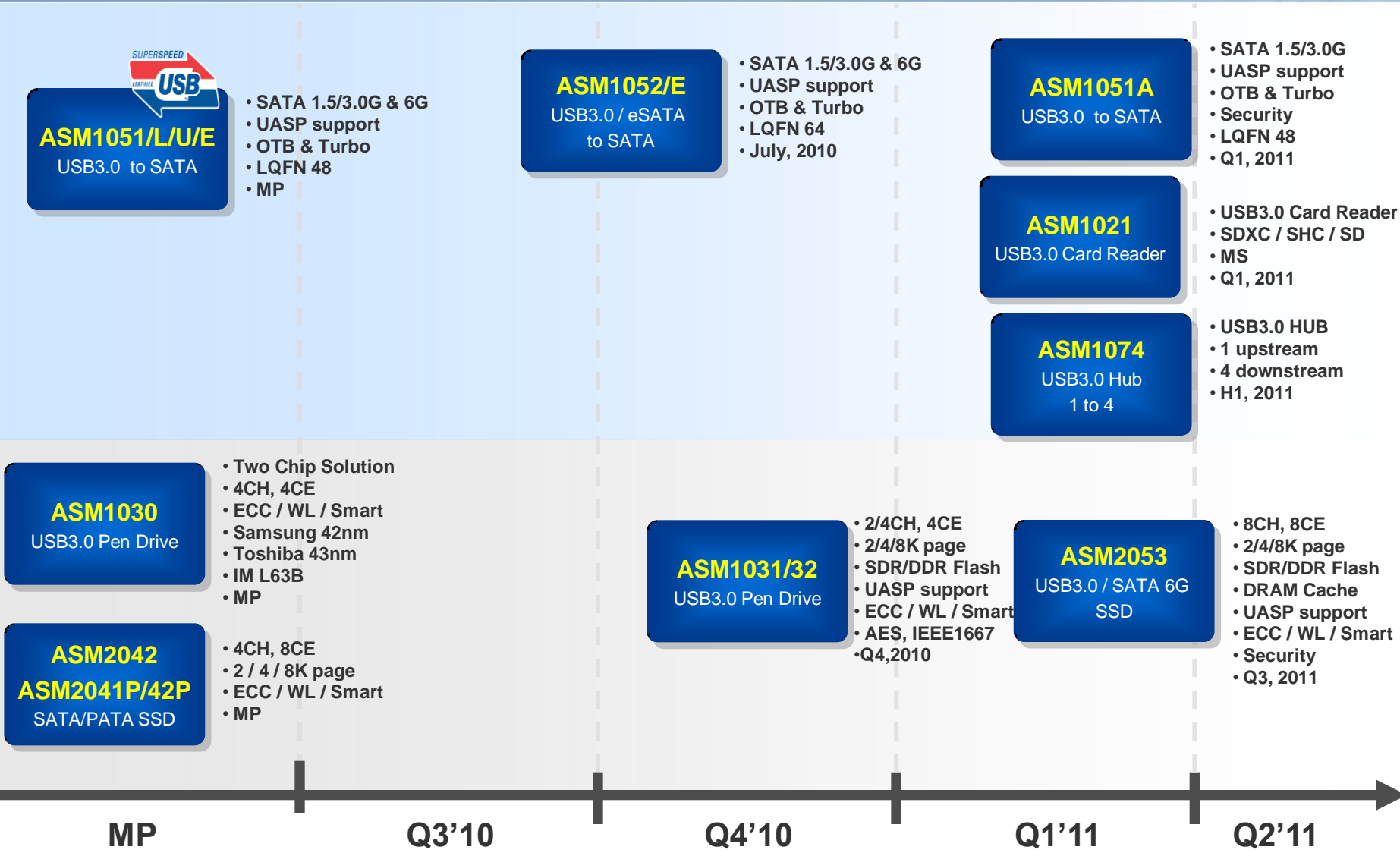


USB2.0 UFD

ASMedia Switch Product Roadmap



ASMedia Storage Product Roadmap



USB3.0 Logo for ASM1051 series product



UNIVERSAL SERIAL BUS

- Search
- My Account
- Wireless USB
- USB 2.0
- Members Only Events
- Compliance Program
- Member Search
- Product Search
- Integrators List

Home About USB-IF Channel Press Developers **Members** Products

Home > Members Area > Product Search > Integrators List > Search Products

Welcome, Chin Chang

Integrators List

Search in SuperSpeed

[New Search](#)

Select a Product

7 total results

Page: 1 Results per page: [10](#) [20](#) [50](#) [100](#) [200](#)

Name	Company	TID	Categories	Added
ASM1051E	ASMedia Technology Inc.	340000004	Development > Peripheral Silicon > SuperSpeed > Other	19 Jan 2010
ASM1051	ASMedia Technology Inc.	340000002	Development > Peripheral Silicon > SuperSpeed > Other	30 Dec 2009
MB86C30	Fujitsu Ltd.	340000003	Development > Peripheral Silicon > SuperSpeed > Other	31 Dec 2009
USB300REV2	LucidPort Technology, Inc.	340000000	Development > Peripheral Silicon > SuperSpeed > Silicon Building Blocks	02 Dec 2009
SW6316	Symwave, Inc.	340000001	Development > Peripheral Silicon > SuperSpeed > Other	21 Dec 2009

Passed USB 2.0 and SATA-IO compliance test

USB-IF COMPLIANCE PROGRAM

USB 2.0 Test Report for High Speed Device

Company Name: ASMedia Technology Inc.

Model Name: ASM1051E

Product Type: Bridge

Product Receive Date: 11/12/2009

Test Start Date: 12/02/2009

Report Date: 12/04/2009

Test Result: **PASS**

SATA-IO INTEROPERABILITY PROGRAM v1.3

Serial ATA Test Report For Host

Company Name: ASMedia Technology Inc.

Model Name: ASM1051

Product Type: **Chipset**

Product Receive Date: 01/04/2010

Test Start Date: 01/04/2010

Report Date: 01/06/2010

Test Result: **PASS**

Product Roadmap (Pin2pin migration)

Pin2pin migration



ASM1051(in MP)

ASM1051L

Performance ~ 210MB/s

ASM1051U(ES sample)
With UAS support
Performance ~ 250MB/s



ASM1051E(in MP)
With UAS+SATA6G support
Performance > 300MB/s



ASM1051A
UAS+AES 256
+ IEEE1667

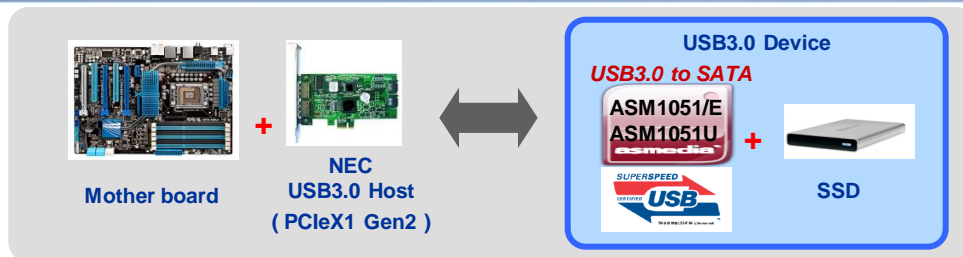
SuperSpeed USB/eSATA Enclosure



ASM1052
With eSATA+USB3.0 support
(Not P2P)



ASM1051 series Performance Test



USB2.0

	Read [MB/s]	Write [MB/s]
All	32.77	30.84
Seq	32.77	30.84
512K	32.77	30.83
4K	8.192	8.189
4K QD32	8.193	8.190

ASM1051 with X-25E SSD
USB3.0 to SATA-II

ASM1051E with SATA6G SSD
USB3.0 to SATA-III

ASM1051U with UAS
4K R/W with Queue

	Read [MB/s]	Write [MB/s]
All	277.8	201.8
Seq	277.8	201.8
512K	220.5	212.9
4K	20.81	51.54
4K QD32	18.51	40.47

	Read [MB/s]	Write [MB/s]
All	347.6	223.7
Seq	347.6	223.7
512K	326.9	220.8
4K	27.35	41.55
4K QD32	25.84	41.57

	Read [MB/s]	Write [MB/s]
All	0.000	0.000
Seq	0.000	0.000
512K	0.000	0.000
4K	15.42	33.64
4K QD32	55.00	63.28

8X Faster!

10X Faster!

200% Better!

Products certified by USB-IF that adopt ASMedia

- My Account
- Wireless USB
- USB 2.0
- My Company
- Members Only Events
- Compliance Program
- Member Search
- Product Search
- Integrators List

Home > Members Area > Product Search > Integrators List > Search Products

Welcome, Weber Chuang

Integrators List

Total 26 products, 9 are using ASMedia

Search in These Results: [New Search](#)

Select a Product

26 total results

Page: 1 Results per page: [10](#) [20](#) [50](#) [100](#) [200](#)

Name	Company	TID	Categories	Added
NH01	A-DATA Technology Co., Ltd.	310720055	Retail > Peripherals > SuperSpeed > Storage	14 May 2010
Q!Play HD2	ASUSTek Computer Inc.	310000033	Retail > Peripherals > SuperSpeed > Other	30 Jun 2010
EH310	ATEN International Co. Ltd.	310000015	Retail > Peripherals > SuperSpeed > Other	08 Jan 2010
So Ready SuperSpeed	Dane-Elec Corp. USA	311000006	Retail > Peripherals > SuperSpeed > Storage	04 Mar 2010
So Mobile SuperSpeed	Dane-Elec Corp. USA	311000005	Retail > Peripherals > SuperSpeed > Storage	04 Mar 2010
So Extreme SuperSpeed	Dane-Elec Corp. USA	312000005	Retail > Peripherals > SuperSpeed > Storage	04 Mar 2010
NU6020	Good Way Technology Co., Ltd. & GWC technology Inc	310000019	Retail > Peripherals > SuperSpeed > Storage	17 Feb 2010
NU6010	Good Way Technology Co., Ltd. & GWC technology Inc	310000021	Retail > Peripherals > SuperSpeed > Storage	22 Feb 2010
USB 3.0 to SATA Enclosure NU6120	Good Way Technology Co., Ltd. & GWC technology Inc	310720058	Retail > Peripherals > SuperSpeed > Storage	14 May 2010
SuperSpeed 2.5" SATA HDD Enclosure / HHU-325	Heisei Electronics Co. Ltd.	310000004	Retail > Peripherals > SuperSpeed > Other	30 Jun 2010
USB3.0 z.e. SATA HDD Enclosure / HHU-325LP	Heisei Electronics Co. Ltd.	310000003	Retail > Peripherals > SuperSpeed > Other	30 Nov 2009
USB3.0 Mass Storage device 2.5" HDD Self powered RS952		310000005	I/O Interconnect	Retail > Peripherals > SuperSpeed > Storage 02 Dec 2009
USB3.0 HDD enclosure 3.5 RS963		310720049	I/O Interconnect	Retail > Peripherals > SuperSpeed > Storage 14 May 2010
USB3.0 Mass Storage device 3.5" HDD Self powered RS954		310000006	I/O Interconnect	Retail > Peripherals > SuperSpeed > Storage 02 Dec 2009
d2 USB 3.0	LaCie	310720091	Retail > Peripherals > SuperSpeed > Hard drives	14 May 2010
USB300Rev 2 Board T	LucidPort Technology, Inc.	310000035	Retail > Peripherals > SuperSpeed > Storage	12 Mar 2010
XTR-S350U3	Power 7 Technologies Corp.	310720021	Retail > Peripherals > SuperSpeed > Storage	30 Jun 2010
USB3.0-SATA 3.5" HDD Case	RATOC System Inc.	310000001	Retail > Peripherals > SuperSpeed > Other	30 Nov 2009
USB3.0-SATA Removable HDD Case	RATOC System Inc.	310000000	Retail > Peripherals > SuperSpeed > Other	30 Nov 2009
STORY Station 3.0	Samsung Electronics Co., Ltd.	310000022	Retail > Peripherals > SuperSpeed > Storage	25 Feb 2010
SuperSpeed USB to SATA 3Gb/s 3.5" Enclosure	SIIG, Inc.	310000007	Retail > Peripherals > SuperSpeed > Other	02 Dec 2009
SuperSpeed USB to SATA 3Gb/s Docking with Fan	SIIG, Inc.	310000010	Retail > Peripherals > SuperSpeed > Other	02 Dec 2009
SJ25D3	Transcend Information, Inc.	310000023	Retail > Peripherals > SuperSpeed > Hard drives	25 Feb 2010
SJ25M3	Transcend Information, Inc.	310000024	Retail > Peripherals > SuperSpeed > Hard drives	25 Feb 2010
My Book 3.0	Western Digital Technologies, Inc.	310000011	Retail > Peripherals > SuperSpeed > Storage	08 Dec 2009
VE679 USB3.0 TO SATA	Wiretek International Investment Ltd.	310720054	Retail > Peripherals > SuperSpeed > Storage	30 Jun 2010

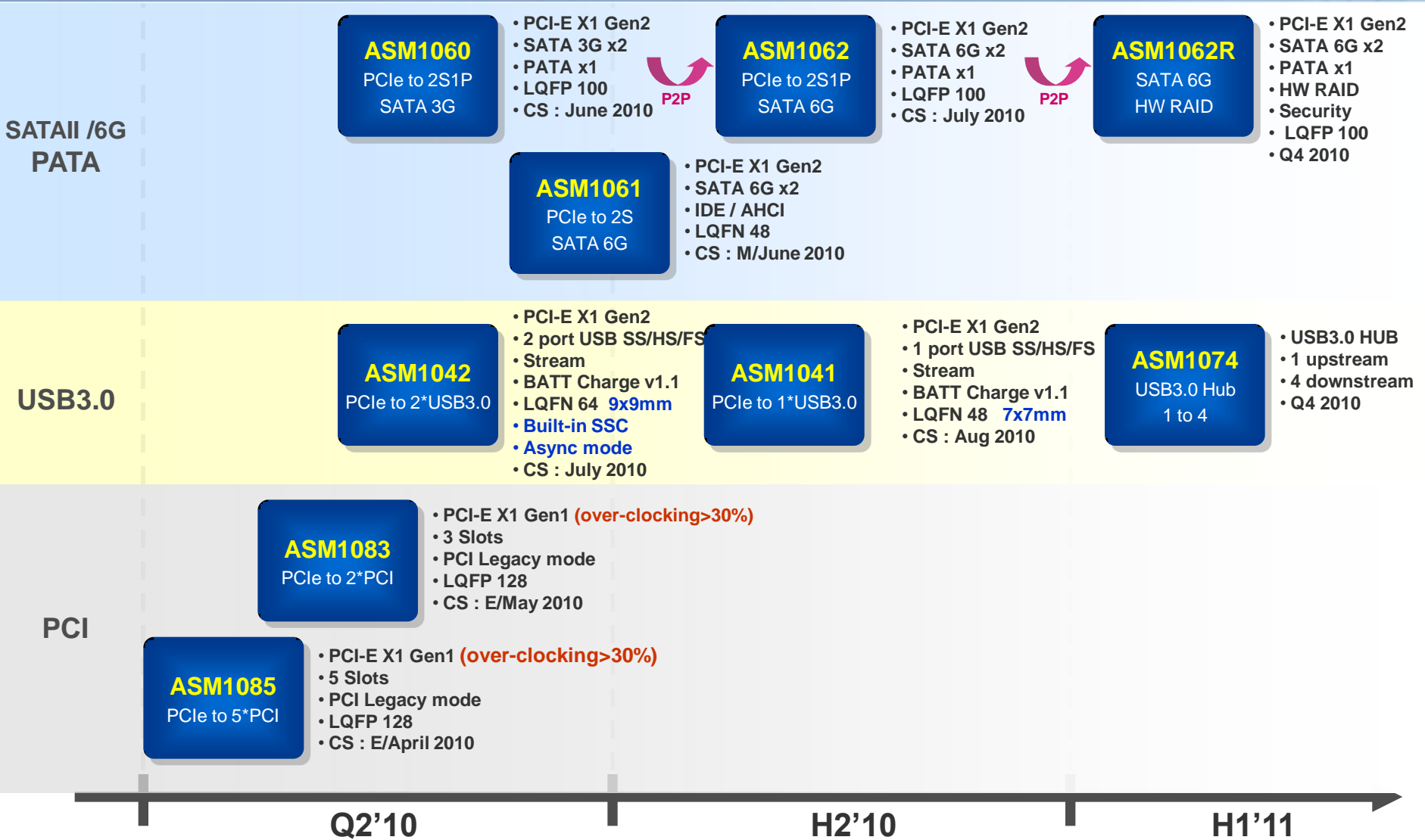
Key Customers for USB3.0 Storage Device



ODD Compatible list of ASM1051

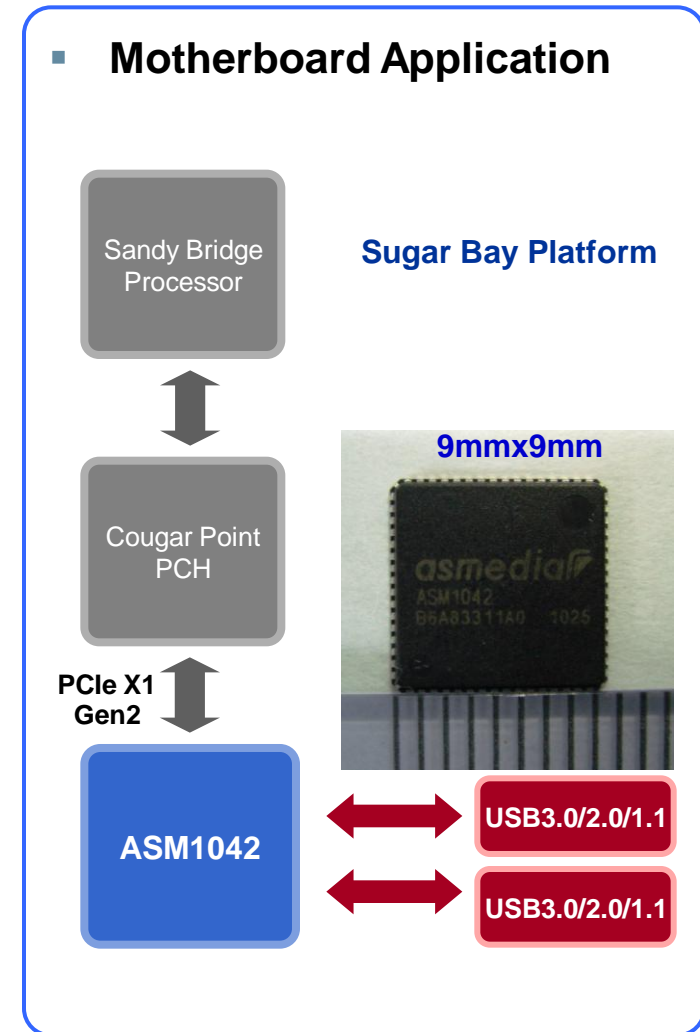
No.	Type	Manufacturer	Model Name	Blu-ray Disc	DVD
				Max. R/W	Max. R/W
1	Half-Height	PLDS	DH1282LH	12X	24X
2	Half-Height	Panasonic	SW-5584	8X	16X
3	Half-Height	Pioneer	BDC-S02BK	5X	12X
4	Half-Height	Pioneer	BDR-S05XLB	5X	12X
5	Slim Drive	Sony	BD-5730S	6X	8X
6	Slim Drive	Panasonic	UJ240	6X	8X
7	Slim Drive	Hitachi-LG	CT21N	4X	8X
8	Half-Height	PLDS	iHAS424	---	24X
9	Half-Height	PHILIPS	SPD2519BD	---	22X
10	Half-Height	ASUS	DRW-20B1LT	---	20X
11	Half-Height	Sony	DRU-V200S	---	20X
12	Slim Drive	Hitachi-LG	GT32N	---	8X

ASMedia PCI Express Controller Roadmap



ASM1042 Product Brief

- **X1 PCI-E Gen2 to USB3.0 Host Controller**
 - Integrated ASMedia PCI Express, USB3.0, USB2.0 **Self-Design PHYs**
 - 3.3V and 1.2V power supply
- **PCI Express Features**
 - x1 PCI Express lane, at 2.5Gbps and 5Gbps signaling
 - **Built-in SSC support**
 - 100-MHz diff. PCIe reference clock in
 - Support Over-Clocking for PCIe I/F (**Asynch mode**)
- **USB Features**
 - Support USB Super-Speed, High-Speed and Full-Speed Operation
 - Support **Remote wake up function**
 - **Power under suspend < 20 mW**
 - Support Streaming
 - Support **BATT Charge v1.1**
 - Smart Power Management for power saving
 - **Per port OC protection**
- **Package**
 - TQFN 64L (outline 9mmx9mm)
 - **Green package with Pb-free & RoHs compliant**



ASM1042 Performance Test



Mother board

+



USB3.0 host
(PCIeX1 Gen2)

+



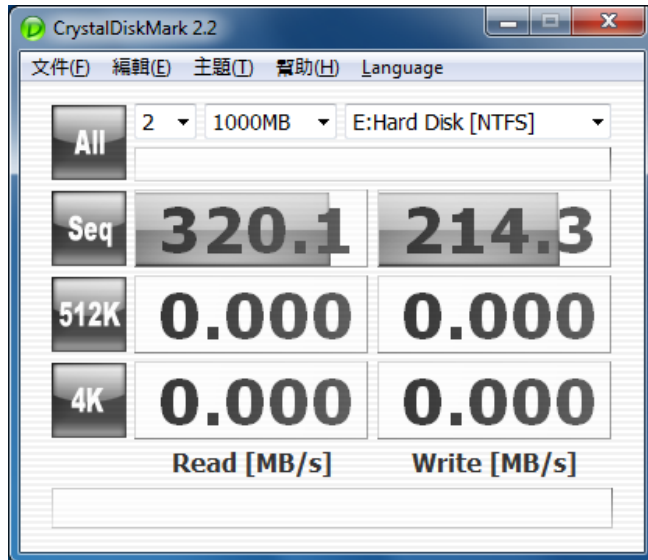
ASM1051E
USB3.0 to SATA 6G

+



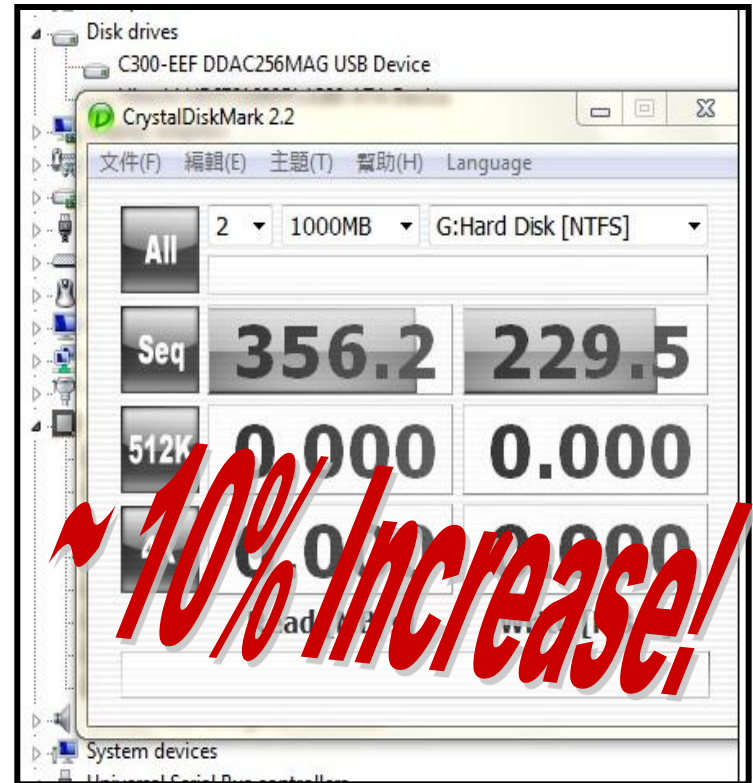
SATA 6G
SSD

RXX Host



ASM1042 USB3.0 Host

356 MB/s for Read
229 MB/s for Write



ASM1042 Product Milestone

■ Sample Schedule

- CS sample : middle of July
- MP sample : End of September

■ Software Schedule (Co-working with MCCI and PIL)

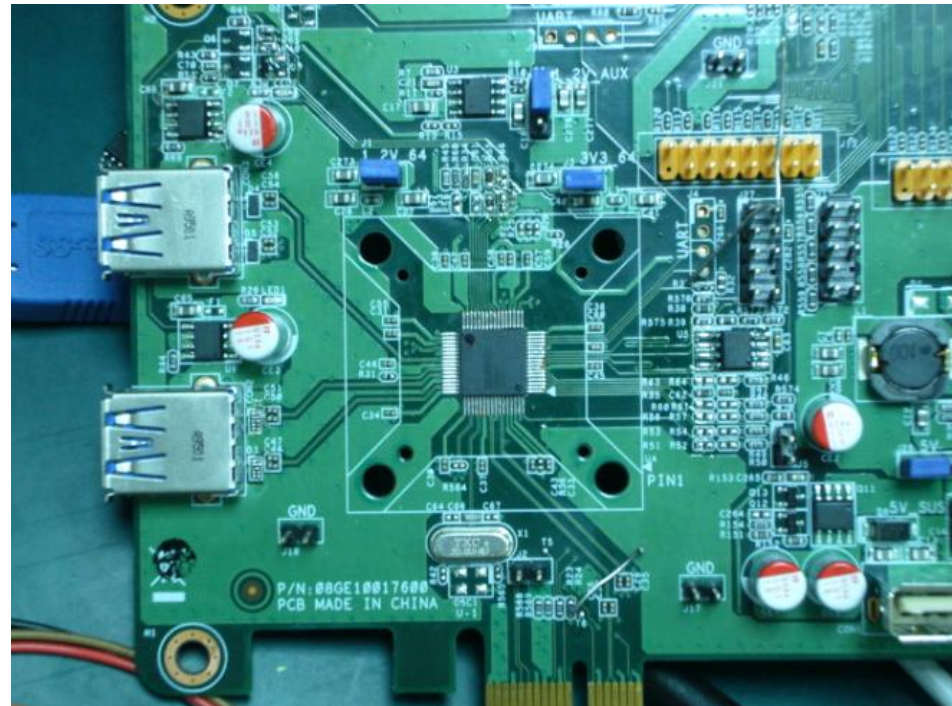
- α Driver : July
- β Driver : August
- WHQL Driver : August ~ Sept
- MP Tool : Early of September

■ Demo Board : Early of July

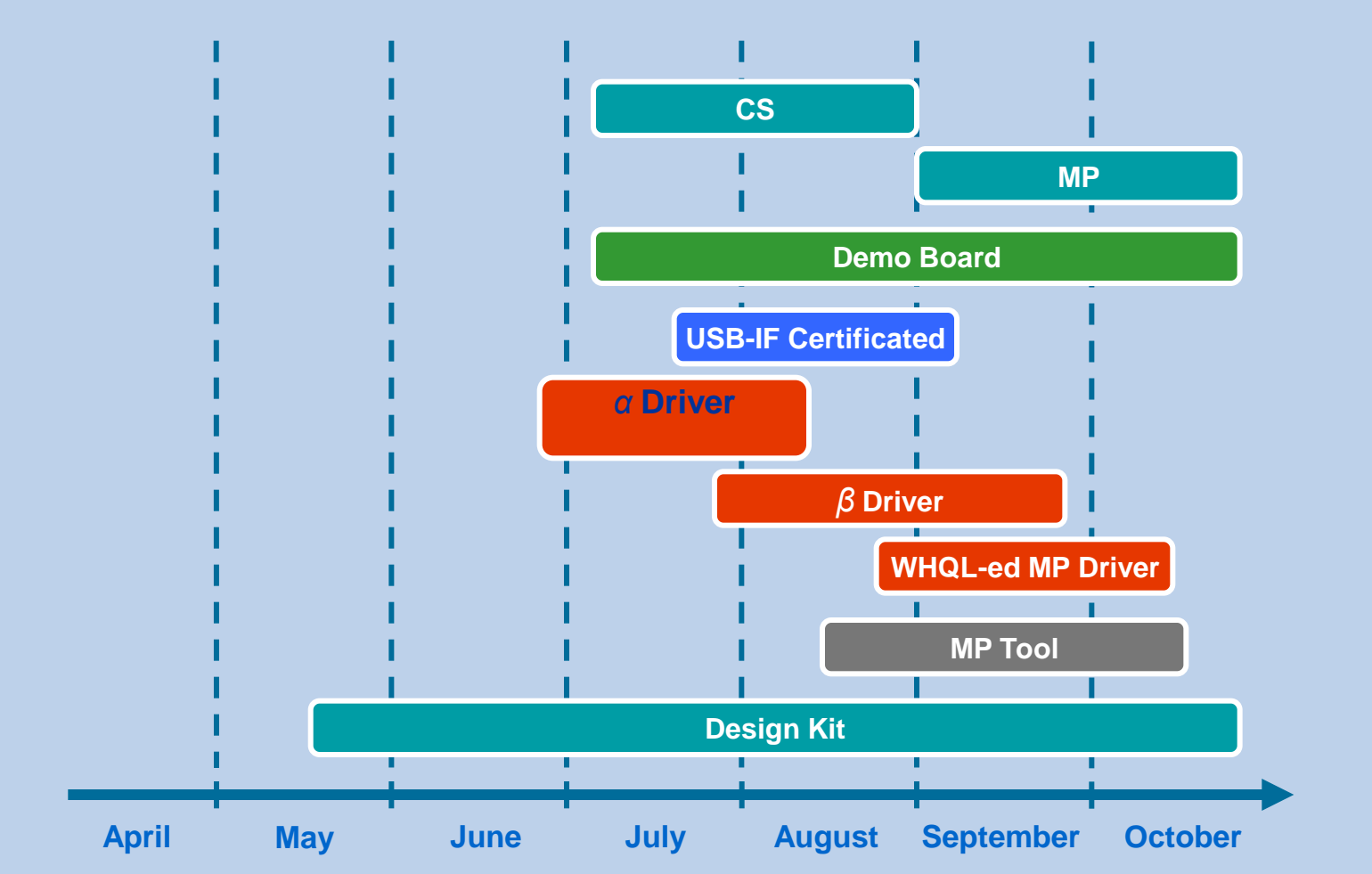
■ USB-IF Certificated : August

■ Design Kit

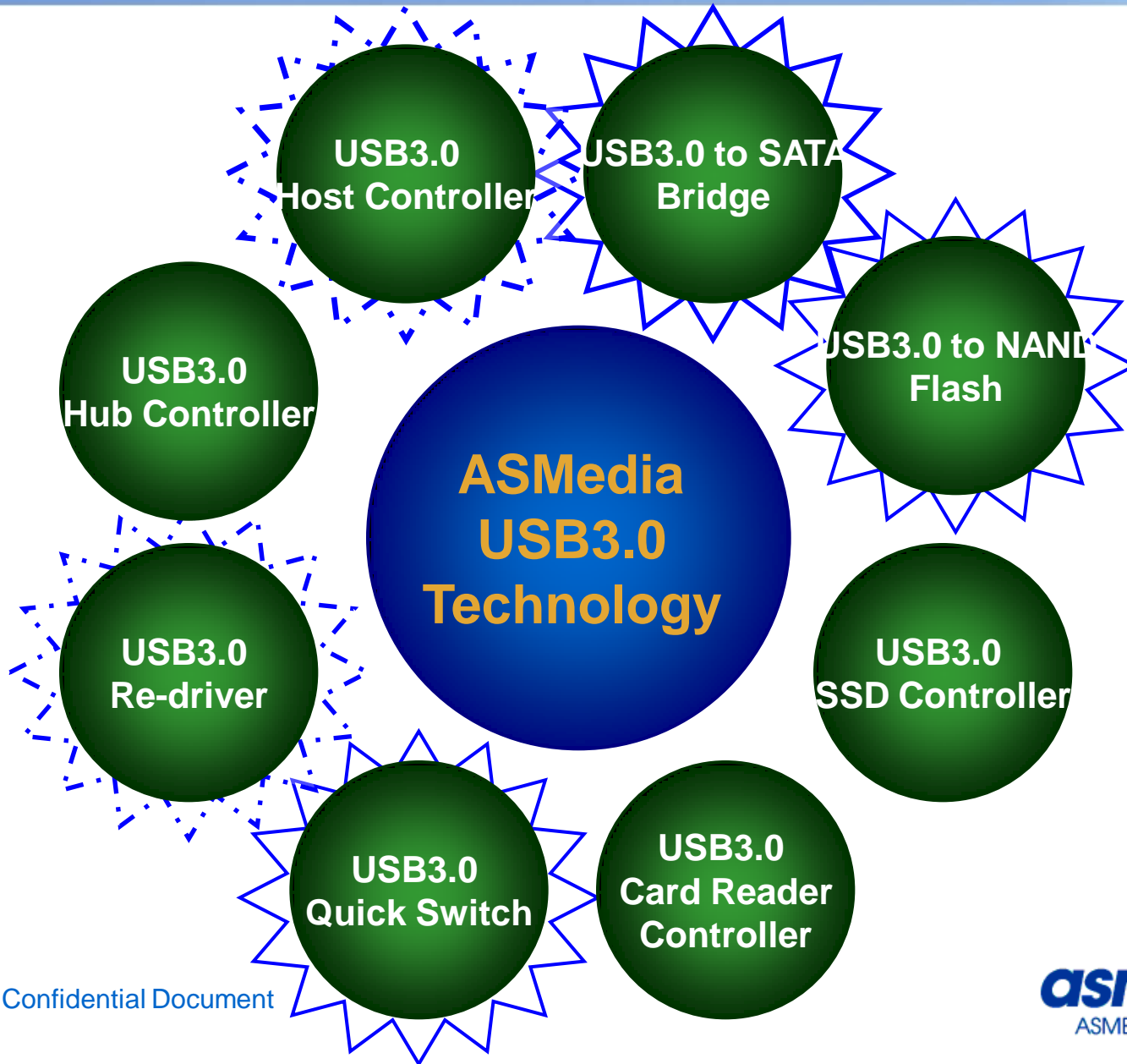
- Product Brief : *Available Now*
- Datasheet : *Available Now*
- Demo Circuit : *Available Now*
- PCB Guideline : *Available Now*



ASM1042 Product Milestone



ASMedia USB3.0 total solution



Summary

- Provide high performance **Signal Switch** for **Interface** and **Video** solution
- Provide **Re-driver** chips for **SATA gen2/3** and **USB 3.0** for Long PCB routing trace and Daughter Card design
- Provide high-Speed **Storage Solution** for **USB 3.0** series
 - Enclosure for **HDD/SSD/ODD**
 - UFD with ONFI and legacy flash support up to **2x nm** process
 - Card reader with **SDXC**
 - Hub up to **4 ports**
 - Video/audio applications
- Provide next generation High-Speed I/O controller solution for PC/NB
 - **ASM1042**: PCIe to x 2 USB3.0 Controller
 - **ASM1062**: PCIe to x 2 SATA 6G and PATA Controller
 - **ASM1085**: PCIe to x 5 PCI Bridge
- **Best Partner** in High-Speed I/O storage solution .. **ASMedia delivers**

Thank You !!

