An Access to affordable Storage Area Network over Ethernet

- The birth of AoE enabler

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SATA RAID over Ethernet
AoE AoE
enabler
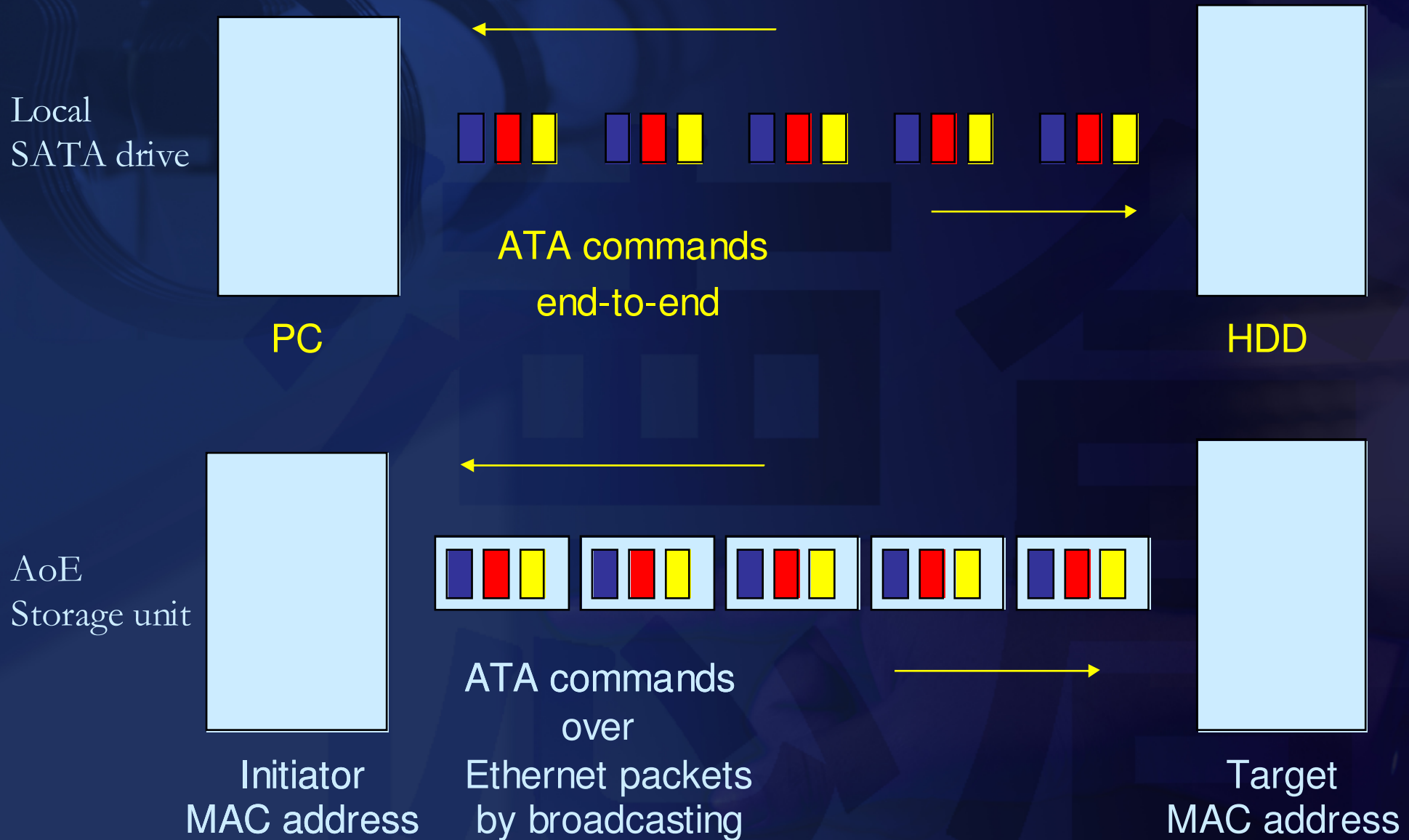http://www.jwe.com.tw

Outlines

- What is AoE all about?
- Advantages vs Disadvantages
- Our approaches and viewpoints
- Introducing AoE enabler
- Why AoE enabler

What is AoE

- ATA over Ethernet protocol
- A SAN technology
- Networked block storage
- CORAID is the pioneer of AoE
- World's first SoC done by Layerwalker
- Utilized standard MAC header of IEEE 802.3 Ethernet frames
- No TCP/IP
- Native in Linux kernel 2.6.11 or later

How AoE works?

Local
SATA drive

ATA commands
end-to-end

PC

HDD

AoE
Storage unit

ATA commands
over
Ethernet packets
by broadcasting

Initiator
MAC address

Target
MAC address

Who wants AoE?

- Consumer/professional
  - AoE enabler + eSATA external hard drives
  - 50Mbps access performance
  - ease of use, like USB or 1394 drives
- SOHO/SMB
  - RAID over Ethernet
  - Shared storage for server pool
  - Shared storage for workstations
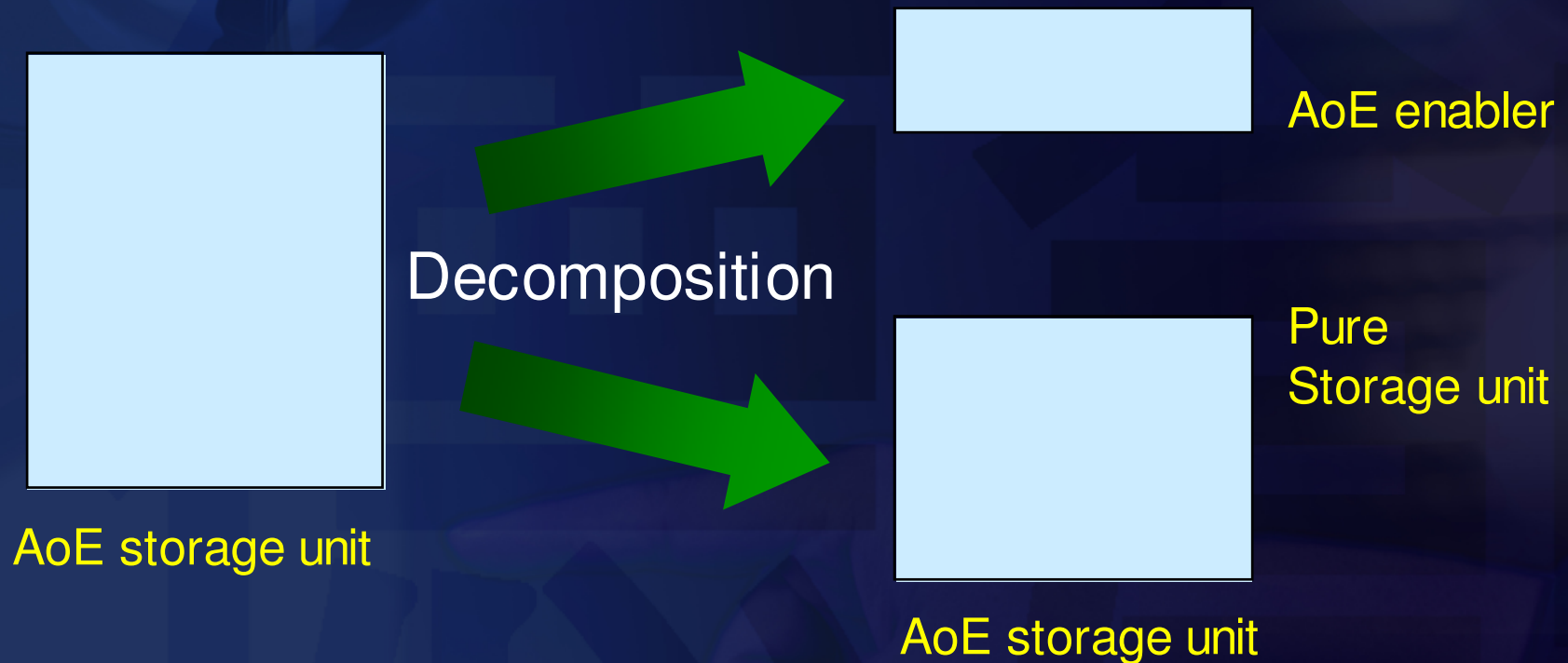 - Nearline storage

Advantages of AoE

- H/W Cost
  - SATA HDD
  - SAN

- Infrastructure cost
  - Extra cost of GbE network is 0

- Efficiency of performance & easy config
  - No TCP/IP
  - Less complex of packets

Disadvantages of AoE

- Very limited H/W solutions available
    - Coraid EtherDrive
    - DIY a Linux machine
- High cost 3rd-party drivers
- Lack of affordable commercial SAN FS
    - Without SAN FS, write access is constrained to single use at a time to avoid conflict
- S/W, H/W Service providers are difficult to enter the market
    - Number of platforms in SMB segment is small
    - Few consumer applications

Concept of AoE enabler

The current major problem is lack of choice
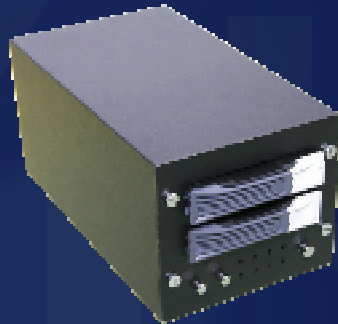Embedded AoE storage means complex and expensive

AoE storage unit

Decomposition

AoE enabler

Pure
Storage unit

AoE storage unit

Concept of AoE enabler

AoE enabler brings down the entrance barrier and brings up competition

Recomposition

Solution A

AoE enabler

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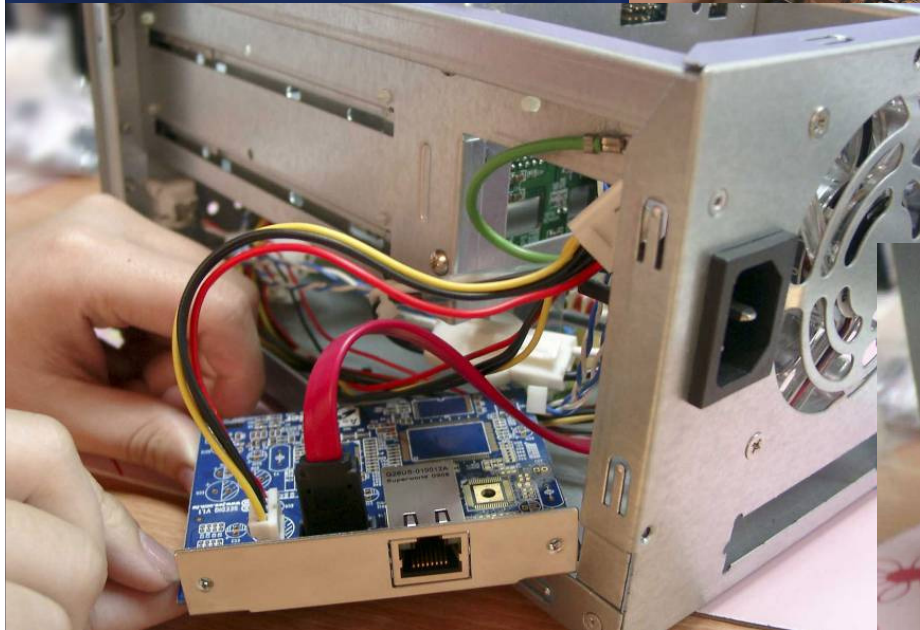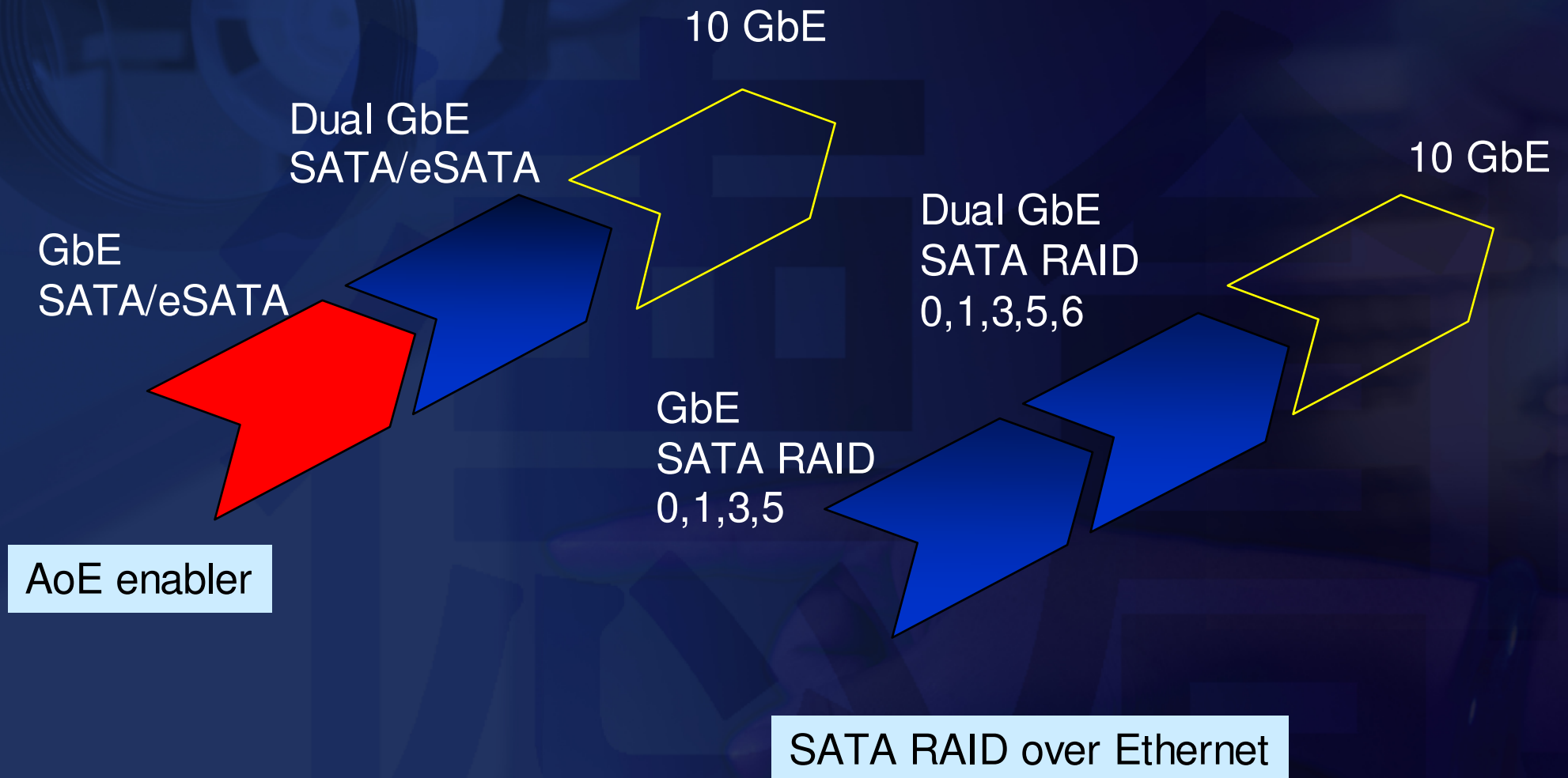
Solution B

Value Added Design

Solution C

New AoE solutions developing

Quick Installation

Roadmap of AoE enabler

10 GbE

Dual GbE
SATA/eSATA

10 GbE

Dual GbE
SATA RAID
0,1,3,5,6

GbE
SATA/eSATA

GbE
SATA RAID
0,1,3,5

AoE enabler
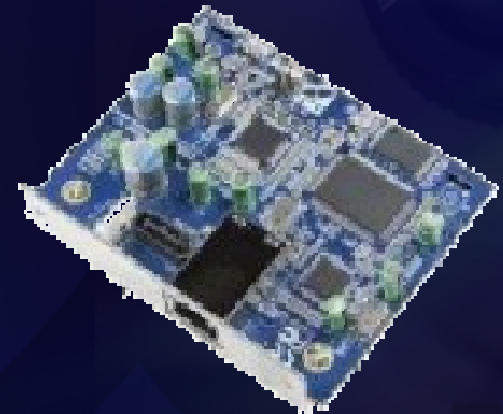
SATA RAID over Ethernet

AoE enabler

- Project code name: SEEDIQ internal, SEEDIQ external
- Function: converting a SATA HDD into a single port AoE storage
- Interface:
  - SATA or eSATA x1
  - Giga Ethernet x 1
- OS supporting: Linux, XP/Vista, Mac OS

SEEDIQ internal

- Compact size with a standard centronic bracket
- Giga Ethernet
- Compatible with SATA I and SATA II
- SATA RAID management tool over Ethernet is possible
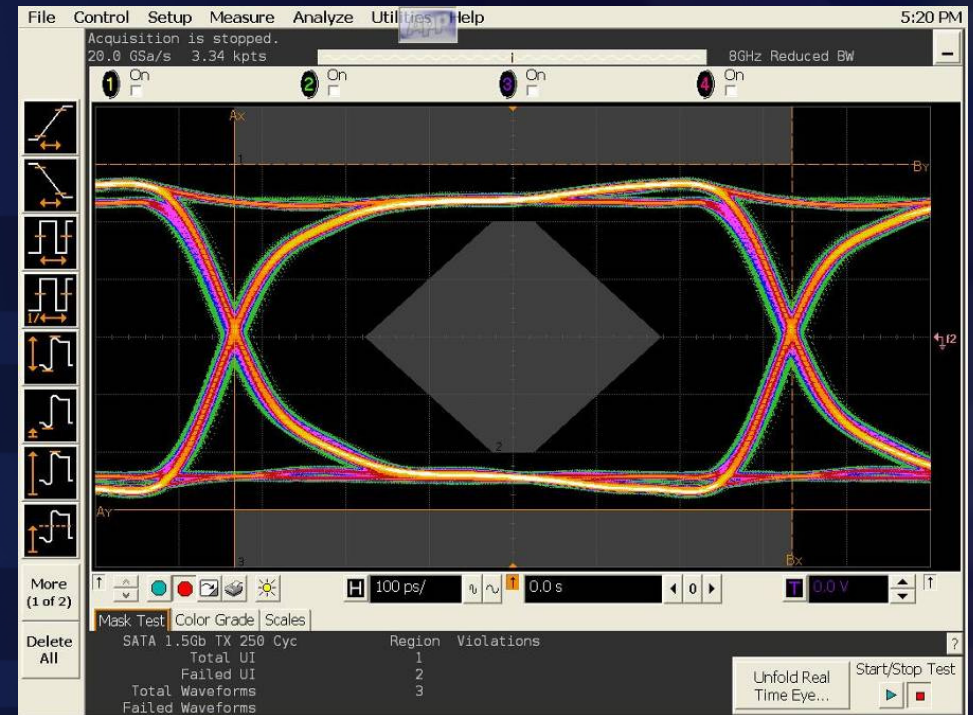- Quick implementation of AoE products by exist enclosures.

SEEDIQ external

- Compact fan-less metal housing
- Giga Ethernet
- Compatible with eSATA HDD or RAID
- SATA RAID management tool over Ethernet is possible
- Upgrade a DAS to an SAN unit in minimum cost
- Running an eSATA portable HDD with a notebook without eSATA port

Why AoE enabler?

- Time to market !!!
- Design Completeness
- Modularized subunit
- Compact and little impact to integration
- High quality of design and build

Why JWE?

- Friendly expert and maniac of AoE storage applications

- Engineering capabilities on H/W and S/W

- Quality management from design to production

- Manufacturing resource in Taiwan and China

Thanks

Thanks for your interested on AoE enabler

For more information,

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