

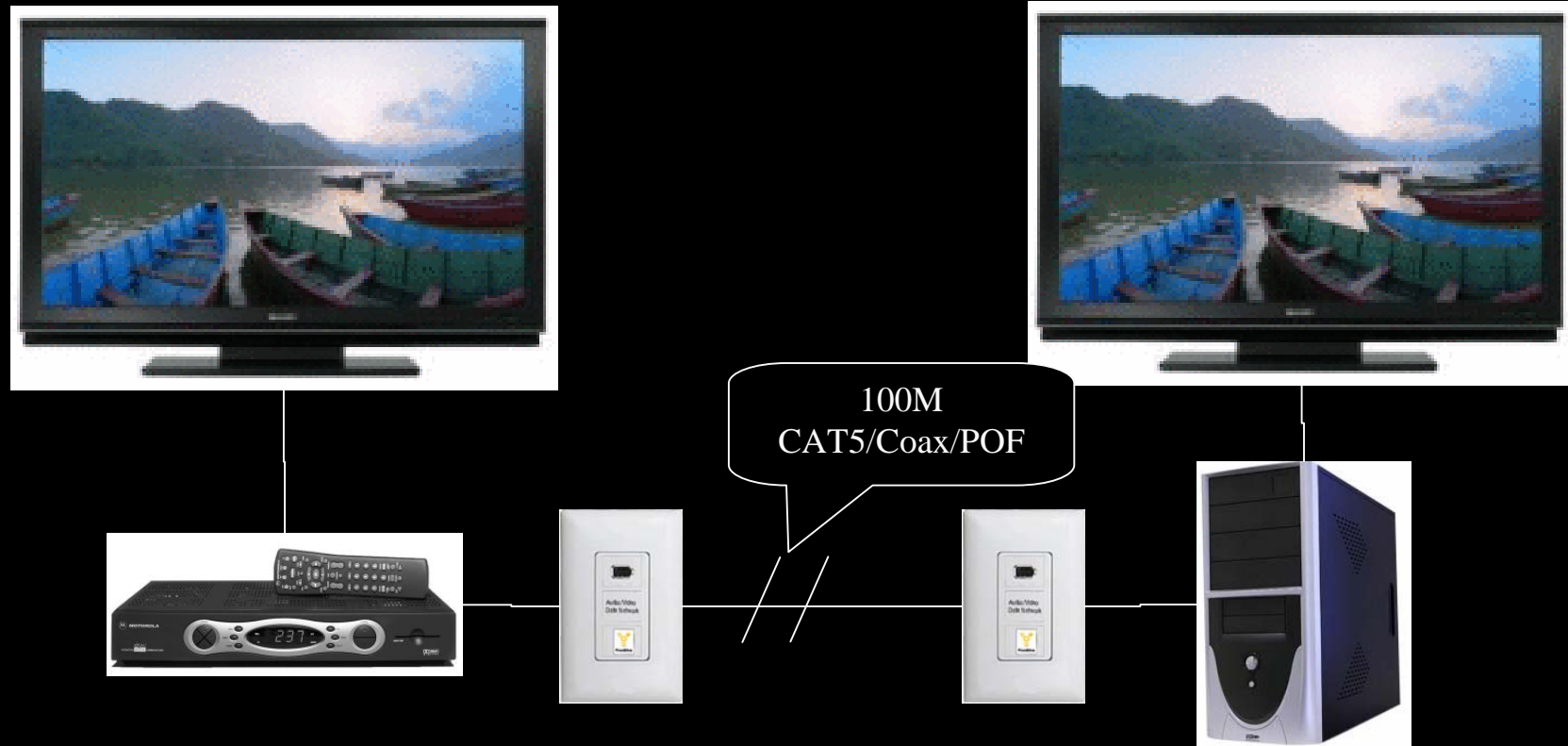
IEEE-1394 Usage Models for AV Content

Shenzhen, China

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Secure Bi-Directional Video with a PC



- Enables PC to access video from STB (including premium content)
- Enables PC to send video to STB / TV
- STB's navigation menus can be sent to PC as HTML
- Low cost 1394 networking components

Sharp BD-HP1: Tuner-less Blu-ray Recorder



HDMI



HD STB



1394

- Leverages the 1394 port that is now available on ALL HD digital cable STBs in the US
- Archive from the PVR or Tuner
- Can play back to the STB for display via HDMI
- Consumers can purchase their DVD or disk based DVRs in the retail channel as opposed to leasing from the cable company

Low cost Client Boxes



STB



100M
CAT5/Coax/PO

F



DVR



Leveraging What's there

- Reuse of existing wiring
 - Coax, CAT5, POF, Power Line
- 400Mbps over 100M CAT5
- 400Mbps over 100M Coax
 - Roadmap to 800Mbps
- Cable Power over CAT5 & Coax



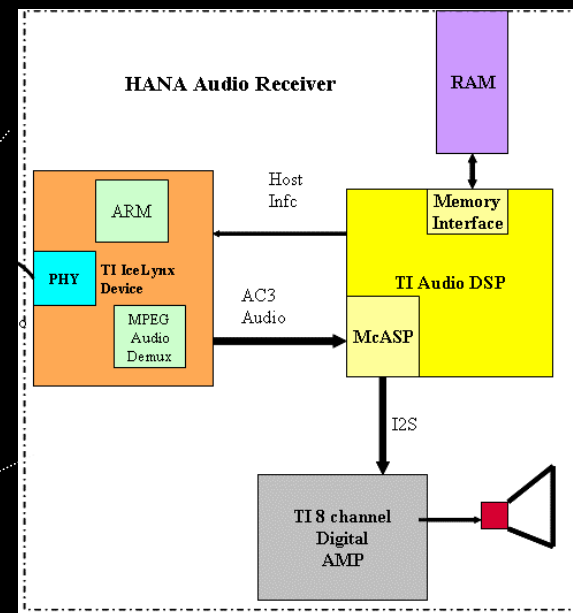
Future

Benefits

- Products on Market Today
- Enables Mix cable topologies for tremendous flexibility
- Single cable for video & data
 - Carries 6-8 HD video streams
 - Capacity will double with S800
 - IP over 1394
- Baseband or UWB over Coax options
 - Base Band = Low cost
 - UWB = share lines with existing cable TV



Simple & Inexpensive 7.1 Channel Surround Sound



Advantages:

- **Audio is demuxed from MPEG stream**
 - No separate audio decoding needed
 - Eliminates Lip-sync
- **No need for a full AV receiver**
- **Simple Installation**
- **Reduces Clutter**
 - Single Connection
 - Single Remote (can use TV remote to configure/control audio receiver)

Security Cameras

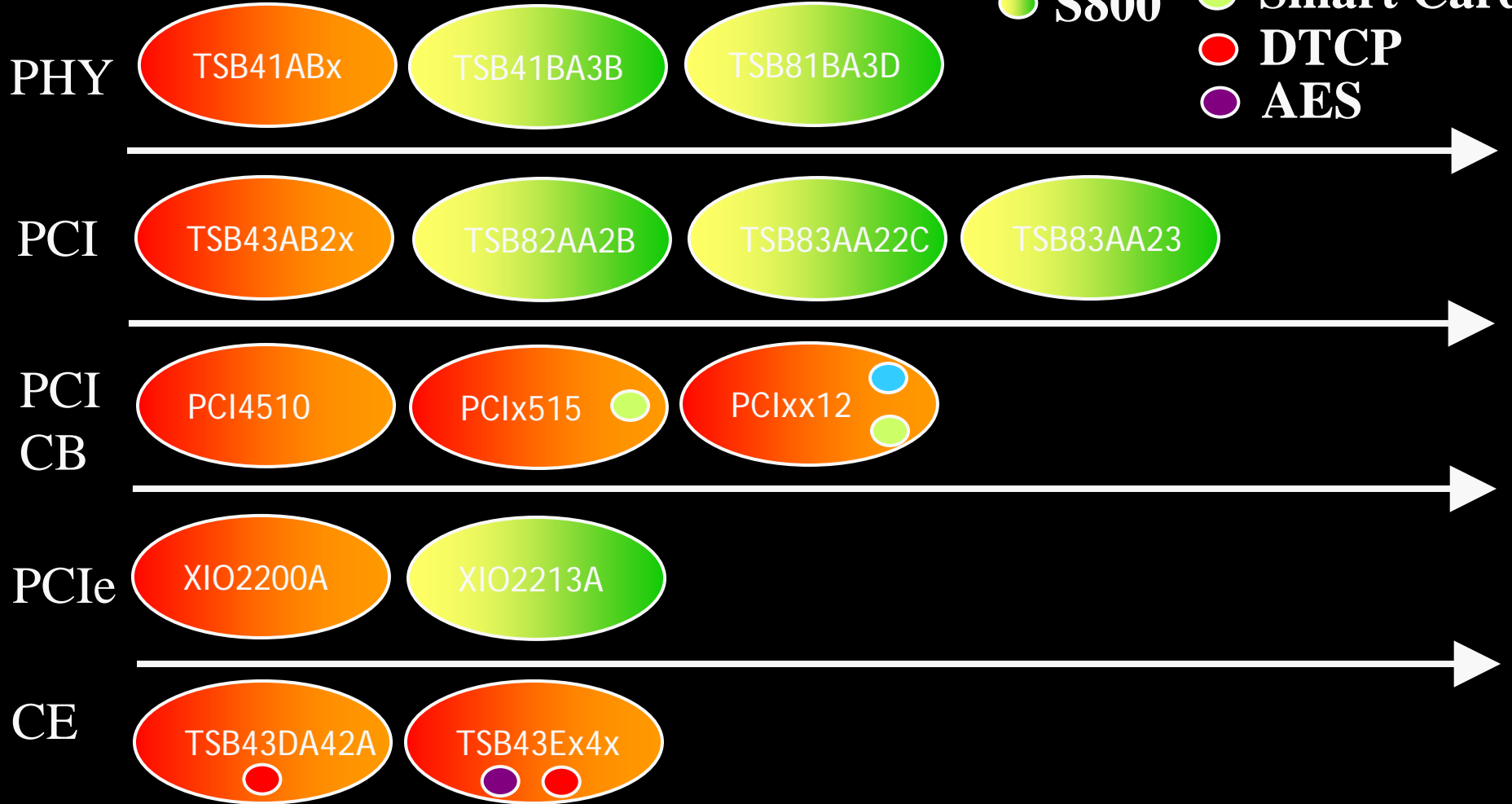


IP over 1394

- Enable web browsing from the TV/STB
- Bridges between DLNA & HANA networks

TI 1394 Portfolio

- S400
- S800
- Flash Media
- Smart Card
- DTCP
- AES



XIO2213

x1 PCI Express 1394B 3-Port OHCI Link Layer

Features

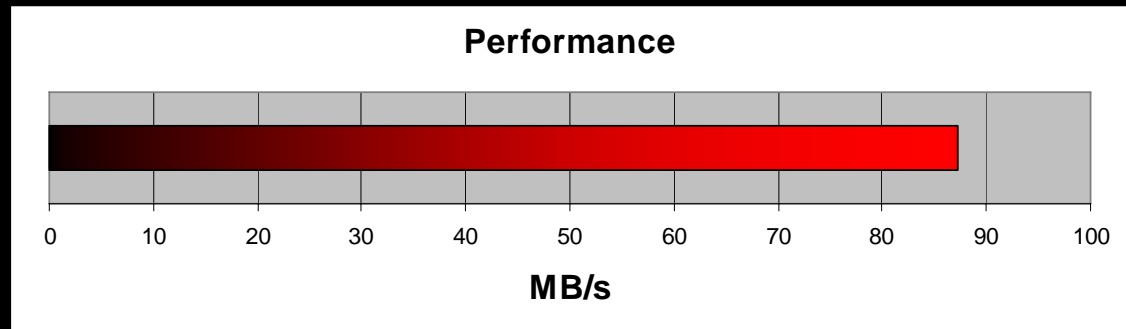
- x1 PCI Express Primary Interface
- Support for 3 bi-lingual 1394A/B ports
- Fully-Compliant with 1394 Open Host Controller Interface Specification, Revision 1.1+
- ExpressCard Reference design supports two 1394a ports.
- Internal dedicated PCI bus operates at 32-bit, 66 MHz
 - Includes intelligent pre-fetch agent to optimize PCIe packets for maximum 1394 performance
- Stacked-die configuration that utilizes existing TSB81BA3 PHY

Benefits

- One-chip solution for 1394A/B ExpressCards or PCI add-in cards
- Built-in adaptive equalizer in receive link allows for flexible board design
- Software-programmable and hardware-autonomous power-management features for lower-power applications such as ExpressCard
- Compact footprint, 176-ball MicroStar BGA
- EEPROM configuration support to load the global unique ID for the 1394 fabric
- Higher performance for real-time data applications

Applications

- PC add-in Card
- ExpressCard
- PC Motherboard
- Docking Station



*Average Read throughput as measured by IOMeter

TSB43Exxx (Jedi-2) Overview



- ❖ Next Generation device in the Jedi (TSB43DA42) Family (5th Generation)
- ❖ Integrated 1394a Phy: 2 port and 3 port device options available
- ❖ AES 128 (HSDI) to 1394 (DTCP 5C) Transcoding (Improved Content Security)
 - ❖ AES 128 encryption/decryption on Transport Stream to protect content on PCB
 - ❖ DTCP 5C encryption/decryption on 1394 Port
 - ❖ DTCP content protection enabled with 2 ciphers and hardware AKE acceleration
- ❖ Integrated Pullup/Pulldown resistors lower system cost and reduce board space
- ❖ System Reset no longer required for Key Binding Process (simplifies manufacturing process)
- ❖ Smaller Package Outline (12x12mm) reduces board space by 1/3 over previous generation