NTT Electronics' H.264 for Consumer Applications

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MACNICA Company Profile

- Established: 1972
- Net Sales: US$ 1.31B (FY2008)
- Employees: 1400+ (March, 2009)
- The 1st Section of Tokyo Stock Exchange
- One of the leading semiconductor distributors with its own sales channels in Japan, APC, Europe and USA.
NTT Electronics Company Profile

- Established: June 1982
- Net Capital: US$ 63 Million
- Net Sales: US$ 224 Million (FY 2007)
- Employees: 765 (March, 2008)
- 100% Subsidiary of NTT (*)
  (*): Biggest Communication Service Company in Japan
- Business: Digital Video / Photonics / B.B. Network

NEL America Inc.
New Jersey
San Jose

China
Japan
U.S.A.
NTT Electronics Roadmap of Codec LSIs

- **1998**: Single chip MPEG-2 ENC
- **SuperENC**
- **SuperENC III**
- **VASA**
- **2000**: Pro/Consumer HD MPEG-2 CODEC
- **2002**: Professional HD MPEG-2 CODEC
- **2006**: Consumer MPEG-2 to H.264 Transcoder
- **Matiz**
- **2007**: Single chip H.264 ENC/DEC
- **2008**: Pro/Consumer HD H.264 CODEC
- **SARAENC/SARADEC**
- **PINEA**

Creator of Real High Definition
NTT Electronics Covers Entire Broadcast Market

1st Stage: “Contribution” at a studio or sporting event

2nd Stage: “Production” or editing station

3rd Stage: “Headend”, local carrier exchange

4th Stage: Home

Microwave Transmitter/Receiver
Professional Camera

Video Server, Ingest/Playout Server
Real-time Encoder
NTT Electronics Relied on World Sports Event

- Beijing Olympic 2008
- EURO2008
- Tour de France
- MLB Network
NTT Electronics’ Broadcast Strength Drives Push into Consumer Market

Broadcast Quality

- High Video Quality
- Low Latency
- High Reliability

- Personal Video Recorder
- Video Capture Board
- Wireless TV
- Digital Signage
- Digital Cinema
- Video Surveillance
- Remote Monitoring
- Video Conference
- Remote Monitoring

Creator of Real High Definition
Worldwide Demand for 'full HD' TVs Growing

Source: Display Bank
Worldwide Number of HD channels
Compression Technology Immerse
More Video Products in HD

Family room
Digital Video Recording

Home Office
Computer

Outside
Wireless Video

A/V rack

Video Server

MPEG-2
AVC/H.264

Video Surveillance
Video camera

NTT Electronics
Creator of Real High Definition
## Demand Cases: Consumer/Professional

| Wireless TV | HD encoding with low latency, compact LSI chip needed | LIBRAENC |
| HD Video Server | Transcode from MPEG-2 to AVC/H.264 | Matiz |
| STB with PVR | Digital Signage | LIBRAENC |
| PC video editing | Taking SD/HD video & encoding in digital AVC/H.264 format | PINEA |
| Onboard cameras | Fast product dev. cycle demands easy-to-integrate module | SC3000 Module |
| Wireless cameras | | |
| Monitoring systems | | |
| High-end video camera | Encoding in MPEG-2 Full HD Professional format | SuperENCV |
NTT Electronics Key Products

HDTV Transcoder LSI

“Matiz”
HDTV Transcoder LSI “Matiz”

Matiz Main Features
- Transcoding from MPEG-2 to AVC/H.264 halves the bit rate.
- Doubles the compression ratio while retaining excellent video quality.
- Supports HDTV and SDTV formats.
- Small package size (17 mm x 17 mm)

Recorder Application

Target Applications
- AV personal computer
- PVR (Personal Video Recorder)
- Home server system
**Case Study**: TV with HDD DVR

The AVC recording function can be easily realized by connecting Matiz with the TV processor as companion LSI.
NTT Electronics Key Products

H.264 HDTV Real-Time Codec LSI
Supporting PCI-e

“PINEA”
PINEA Main Features
- Full HDTV H.264 support / Integrated Motion JPEG decoder
- SiP with integrated DDR
- Low Power consumption: 1W
- Package size: 15mm x 15mm

Target Applications
- Videoconferencing or surveillance systems based on PCI Express
- Video compression processor for personal computers
H.264 HDTV Real-Time Codec LSI
Supporting PCI-e “PINEA”

Case Study: Video Editing & Streaming System

PC + PINEA offers strong streaming environment.
Full-HD MPEG-2 Single-Chip A/V Codec LSI

“SuperENC V”
SuperENC V Main Features
- Supports multiple formats
- Video encoding: 480i, 576i, 480p, 576p, 720p, 1080i
- Low latency (100msec)
- Audio: MPEG-1 Layer II (sampling frequency: 48 KHz)

Target Applications
- Wireless TVs
- Digital video cameras
- Wireless monitoring cameras
- Home server systems
- Video capture cards
- AV personal computers
- Hard disk recorders
**Case Study**: Digital Signage, Multi-location video distribution

- **Large Video Displays**
  - Conference room
  - Retail store
  - Sports stadium

- RF cable TV channel network
- Video “Head End” device with SuperENC V LSI

*Image of diagram showing connections between conference room, retail store, and sports stadium, with the video “Head End” device indicated.*
Thank you!


http://www.macnica.co.jp/english/