Security and Surveillance Solution Utilizing DaVinci™ Technology

Benefits

- Eliminates need for external host processor

- Lower bill of materials (BOM) cost compared to other solutions

- Multi-format recording support

- Local and remote recording facility

- Triplex operation

eInfochips

Target Applications

- **Video server for security and surveillance cameras**

- **Network security camera**

DAVINCI™
TEXAS INSTRUMENTS

TI Third Party Network Member
DSP™
TEXAS INSTRUMENTS

Authorized Software Provider

ObjectVideo OnBoard™
INTELLIGENT VIDEO

eInfochips' video surveillance solution is based on TI DaVinci™ technology and is designed to address single as well as multi-channel security systems. It supports multiple cameras by adding additional TMS320DM64x™ digital media processor-based video input modules over an HPI interface. By utilizing ObjectVideo OnBoard™ DSP-based intelligent video analysis algorithms, the solution is targeted for applications such as smart network security cameras and video servers used in surveillance systems.

In addition to DaVinci technology, the design uses a video decoder, WLAN chipset (for wireless), audio codec, MSP430 microcontroller and power supply components from TI.

The solution also features advanced software including a Web-based client application, advanced encryption and alarm and event management.
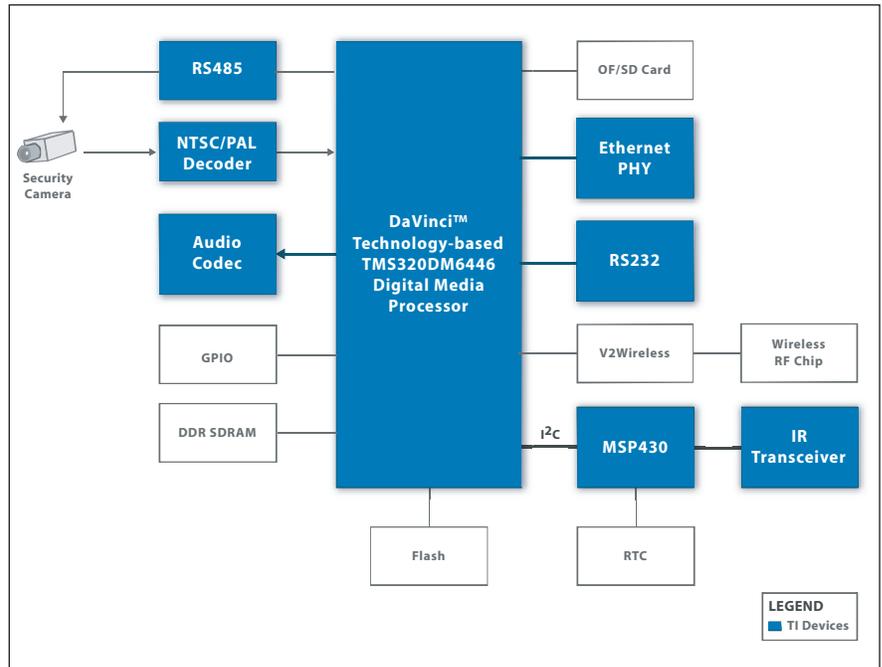
System Example: DaVinci™ Technology-Based Surveillance System

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Functional Description

Video Input

- Video capture directly from CCD or CMOS image sensors
- Standard NTSC / PAL inputs in QCIF, CIF, VGA and D1 resolutions
- Remote PTZ control for camera
- Auto focus, scaling, lens shading correction and pre-processing for CCD camera inputs
- Matrix switchers support

Audio/Video Processing

- H.264 encoding for BP, L3 supporting up to D1 resolutions
- Selectable frame rate for different resolutions based on application
- AV Sync with G.711 speech codec

Software Features

- Built-in web server
- Web-based client application
- Email alerts for various events
- Pre and post alarm recording buffer
- Network time synchronization with NTP server
- Content watermarking
- Mimic panel to show camera location and other OSD information

Recording

- Local recording on SD/CF card with auto sync and transfer to network storage
- Time lapse recording at selected frame rate
- 128-bit AES encryption on recorded content

Host Software

- Full remote configuration of the unit
- Host software for consolidating inputs from multiple systems and analysis of recorded data
- Multi-level password for configuration, viewing and storage management

Component Selection
Hardware

- Video input:
  - NTSC/PAL/CCD Input
  - One main input
  - Additional inputs through an add-on card using DM641
  - Selectable frame rate depending on the resolution and storage settings
- Video resolutions:
  - NTSC – 704 x 480, 704 x 240, 352 x 240, 176 x 120
  - PAL – 704 x 576, 704 x 288, 352 x 288, 176 x 144
  - VGA – 640 x 480
  - Selectable video bit-rate and quality
- PTZ controls:
  - Pan/tilt/zoom control – RS-422/RS-485
  - Supports standard PTZ protocols
- Video output: S-video or composite video output for spot viewing and playback of local storage
- Audio:
  - Input: External mic-in
  - Output: Stereo output jack
  - Compression: G.711 speech compression for input
- Communications:
  - Ethernet 10/100 Mbps
  - Wireless - 802.11b/g (Optional)
  - USB 2.0 host and device modes
- Storage:
  - SD card
  - ATA hard disk (optional)
  - USB hard disk

- Alarm and events management:
  - Alarm and events as digital inputs – number depending on channels supported
  - Relay output
  - RS-232 serial interface
- Other specifications:
  - RTC for time and date
  - Power and activity LEDs
  - Alarm LED
  - Buttons for spot display and local viewing with OSD navigation
- Power:
  - 12VDC from standard camera power supplies
  - From AC adapter (optional)

Getting Started
Tools

- Digital Video Evaluation Module (DVEVM) from TI
- Code Composer Studio™ Development Tools

Documentation

- All relevant technical documentation available from eInfochips

Contact Information for Questions/Support

To purchase this solution or for more information, please contact eInfochips at: ajat.dhawal@einfochips.com

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