

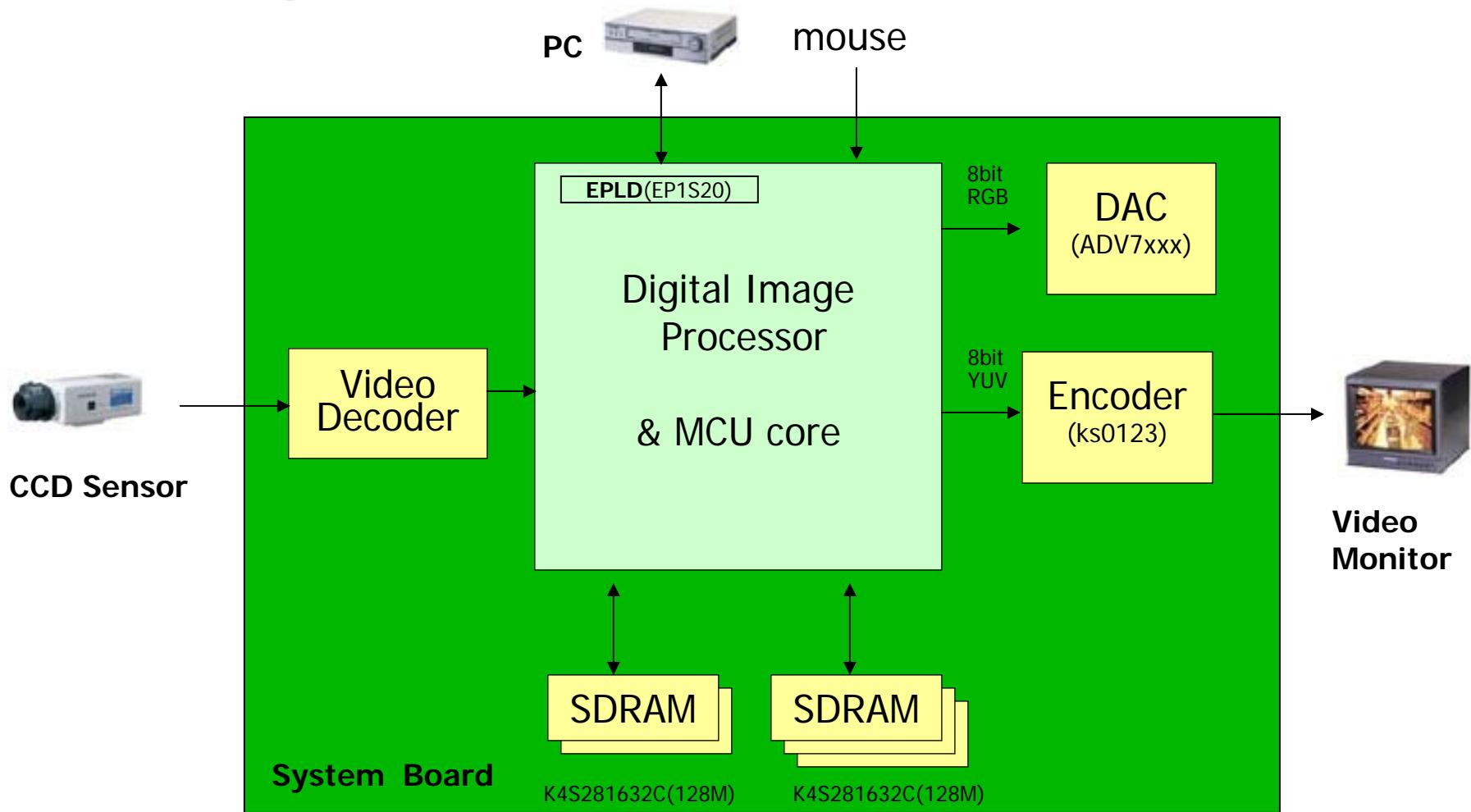


**SOPC**  
**WORLD**  
2004

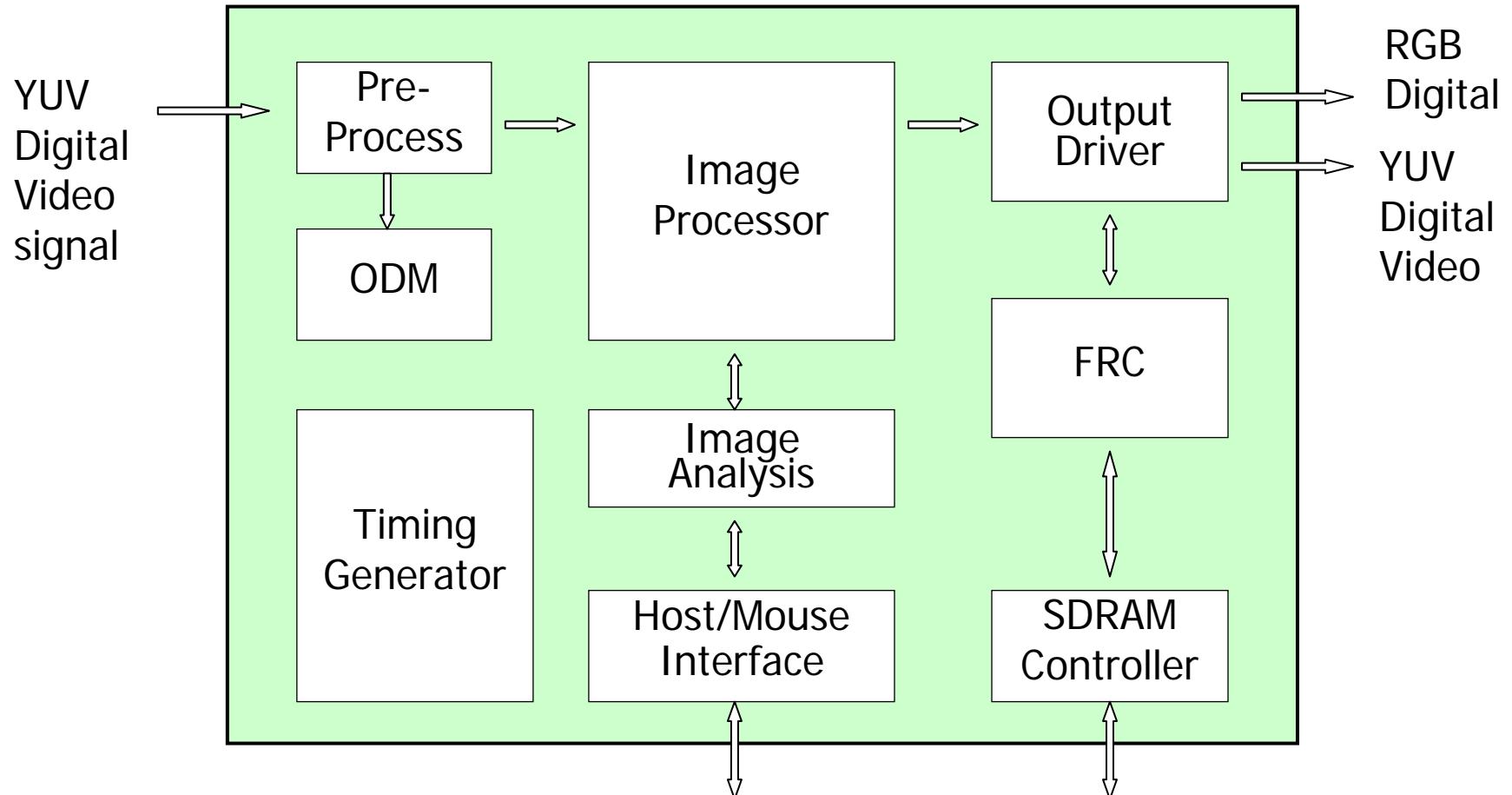
# Digital Video Processor & Applications

- . *Super Noise Reducer*
- . *Digital Image Stabilizer*
- . *Motion Tracer*

# DVP System



# DVP Logic module



# 1. Super Noise Reducer



Noise image (gaussian 0.3)



Restored image

# 1. Super Noise Reducer

- Removing picture noise
  - 3-D Time based processing
  - Adaptive Motion compensation
- Free from Ghost effect
- Effect of Disk Saving in using DVR

## 2. Digital Image Stabilizer



Motion blurred image



Stabilized image

## 2. Digital Image Stabilizer

- Motion Detection from Moving Image
- Image Stabilizing
  - Frame Memory Control
  - Adaptive motion evaluation
- Effect of Anti-Vibration of Video Image
- Effect of Disk Saving in using DVR
- Digital Image Scaling : 256 steps

# 3. Motion Tracer



Original Image (1/2)

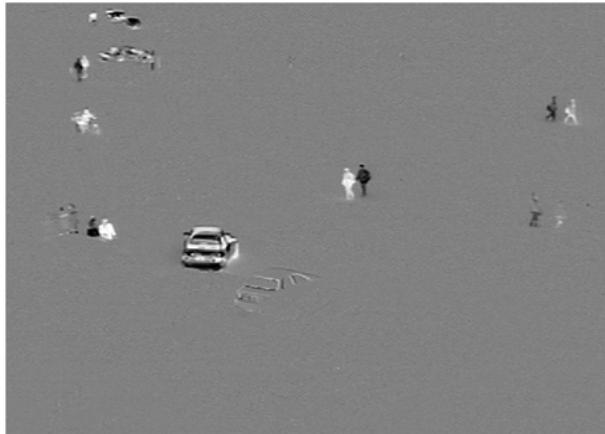
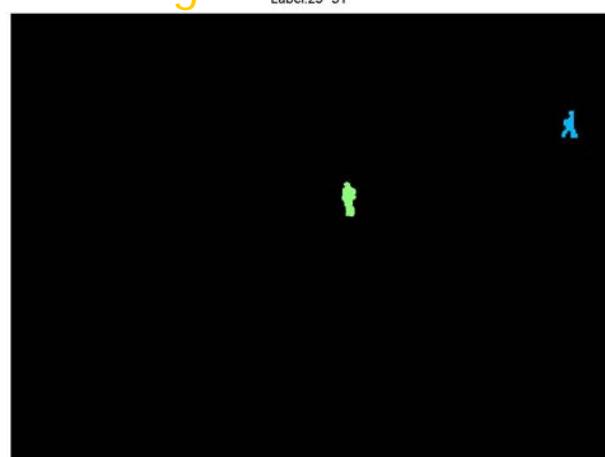


Image Differentiation



Segmentation & Laveling

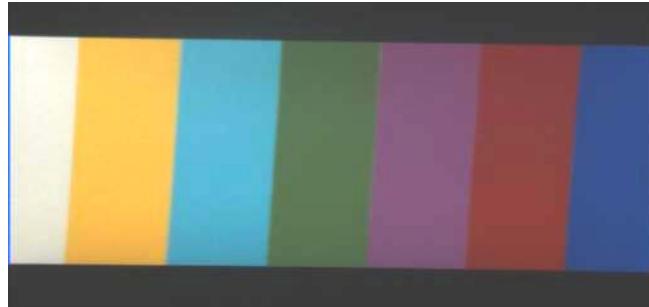


Target Identification

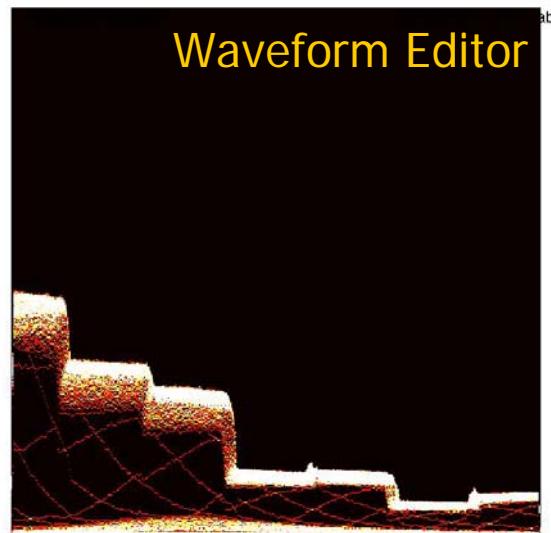
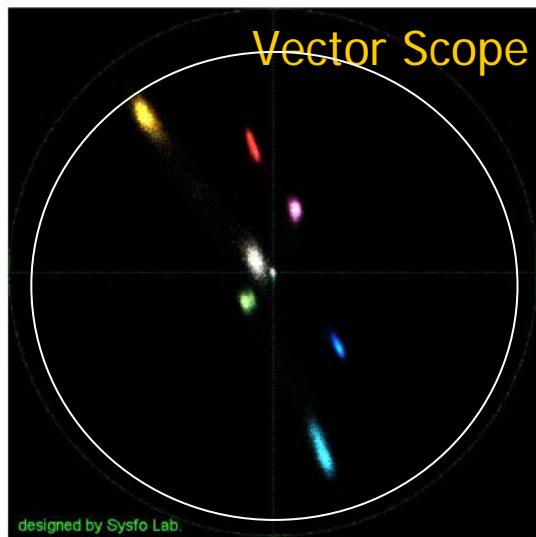
# 3. Motion Tracer

- Moving Object Detection
  - Temporal Difference
  - Image segmentation & Labeling
- Motion Analyzer
- Target Tracking for security application

# 4. Image Analyzer



Input Image



# 4. Image Analyzer

- Function of Waveform Monitor
- Function of Vector Scope
- Function of Histogram Analyzer

# System Configuration

## ■ General I/O

- Input : (NTSC/PAL)
- Output : (NTSC/PAL) / RGB Sync
- Video Decoder : S5D2650
- Video Decoder : AD7170
- Mouse : PS2
- SXGA : 3ch DAC
- Frame buffer : SDRAM (128Mbit x 3ea)

# System Specification (FPGA)

ITEM		etc
Main Processor	<b>1S20F672C7</b>	Stratix
Ext. Frequency	<b>max 80MHz</b>	DAC Output
Int. Frequency	<b>Max 104MHz</b>	TG control
Logic Cell	<b>15K</b>	
Memory	<b>~100Kbit</b>	
Enhanced PLL	<b>2</b>	