



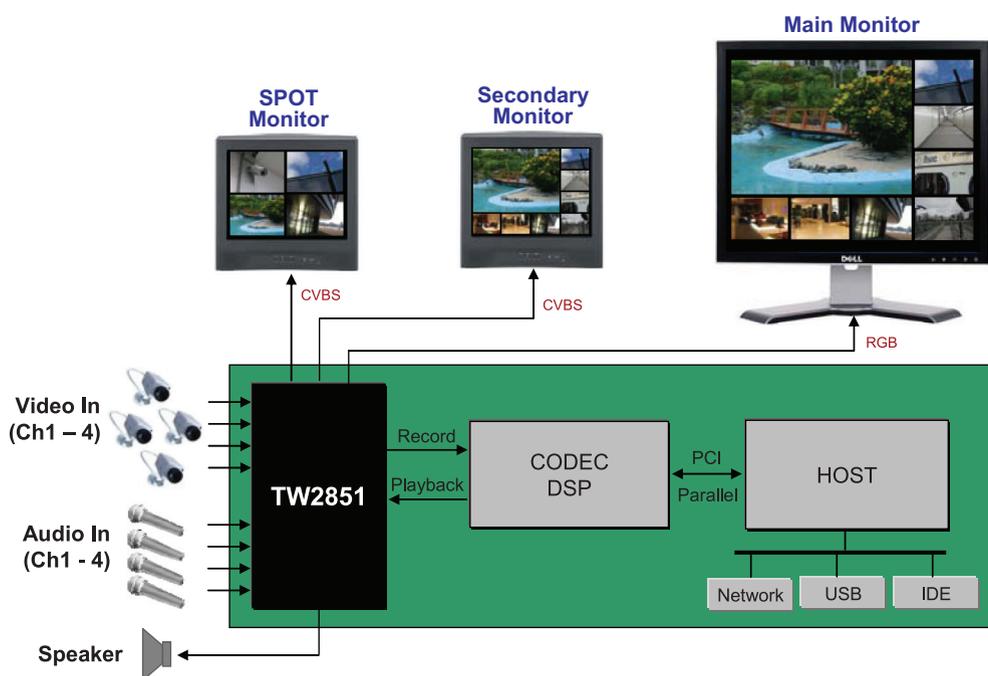
Target Applications

- 4/8/16-Channel Embedded DVR
- Mobile DVR System
- LCD DVR Combo System

TW2851

Advanced 4-Channel A/V Decoder, MUX and Display Processor

The TW2851 is Techwell's 5th generation 4-channel A/V decoder, multiplexer and display processor IC for security surveillance applications. The device has four built-in NTSC/PAL video decoders with high-performance adaptive 4H comb filters, noise reduction algorithm, independent and flexible video scalars for the display and record paths and 16x12 matrix motion/blind/night detectors. The device includes advanced record and display multiplexer functions. The record multiplexer supports multi-channel frame-, field- and byte-interleaved video streams with a total frame rate of up to 120 frames per second. The channel ID and motion/blind/night detection information can be embedded in the video stream for record and playback purposes. The display multiplexer supports up to eight video windows of which the location and size of each window is configurable. The multiplexed output can be displayed via VGA/LVDS and CVBS interfaces. Also included is a SPOT multiplexer that can tile multiple live camera images on an analog output for displaying on SPOT monitor. The TW2851 has an audio CODEC which has four audio ADCs and one DAC. A built-in audio controller can generate digital outputs for recording/mixing and accept digital input for playback. Multiple TW2851 devices can be cascaded to support 8/12/16-channel applications. Up to 32 display windows can be displayed on the PC monitor or LCD panel. Other key features of the TW2851 includes 16-bit bitmap OSG, 2D-deinterlacer, 8-channel non-real time switching inputs, and flexible record and playback ports supporting BT.656, BT.601, BT.1120 and 24-bit RGB formats.



TW2851

Advanced 4-Channel A/V Decoder, MUX and Display Processor

Analog Video Decoder

- Accepts all NTSC(M/N/4.43)/PAL(B/D/G/H/I/K/L/M/N/60) standards with auto detection
- 8 analog CVBS inputs for pseudo 8 channel support
- Integrated analog anti-aliasing filters & 10-bit ADCs
- High performance adaptive 4H comb filters for all NTSC/PAL standards
- Proprietary fast video locking system for non-realtime application
- Noise reduction algorithm to remove impulse noise
- Independent & flexible video scalars for display, record and SPOT path
- Four built-in 16x12 matrix motion/blind/night detectors

Display

- Displays up to 32 windows on PC monitor or LCD panel
 - H/V Scaling & Mirroring for Each Window
 - Live & Playback Video Tiling on Same Display
- Last field/frame image captured when video loss detected
- Live or strobe capture for pseudo 8-ch mode
- Supports dual monitors: Main & Secondary
- Main Display (RGB/LVDS Interface)
 - Up to WXGA+ resolution
 - Built-in Video Scalar & 2D De-interlacer
 - 7-Layer Graphic Overlay including Dual 16-bit Bitmap OSG Layers
- Secondary Display (CVBS Interface)
 - Built-in Video Scalar & NTSC/PAL Encoder
 - 5-Layer Graphic Overlay including Dual 16-bit Bitmap OSG Layers
- SPOT Display (CVBS Interface)
 - Displays up to 16 channels of live camera
 - 6-Layer Graphic Overlay including Dual 16-bit Bitmap OSG Layers

Record

- Supports BT.656, BT.601 & BT.1120 formats
- Record Resolutions: Full D1, Half D1 and CIF
- Programmable Frame Rates: 1 to 30 fps Flexible Record Output Functions
 - Real time & non-real time recording over 27/54MHz clock
 - Field switching record modes support up to 120 fields per second
- Embedded Motion Detection & Channel ID Encoder
- 6-Layer Graphic Overlay with Independent 16-bit Bitmap OSG Window for Each Record
- Optional multiplexed digital video output for network function

Playback

- Flexible playback ports supporting BT.656, BT.601, BT.1120 & 24-bit RGB formats
- Supports up to 16-ch non-realtime playback
- Supports 4-ch D1 or 16-ch CIF realtime playback
- Auto cropping & strobe with channel ID decoder for multi-channel playback input

Other Features

- Integrated Audio Codec
- Single DDR SDRAM Memory Controller
- 8/16-bit Parallel Host Interface
- 8/12/16-channel Cascade Support
- 1.2V, 3.3V Supply
- Package: 352-PBGA, 27x27x2.23 mm

Block Diagram

