



**TECHWELL  
SECURITY**



## Security Surveillance IC Solutions

### Target Applications

- Embedded DVR
- Video Server
- DVR PCI Card

## TW2865

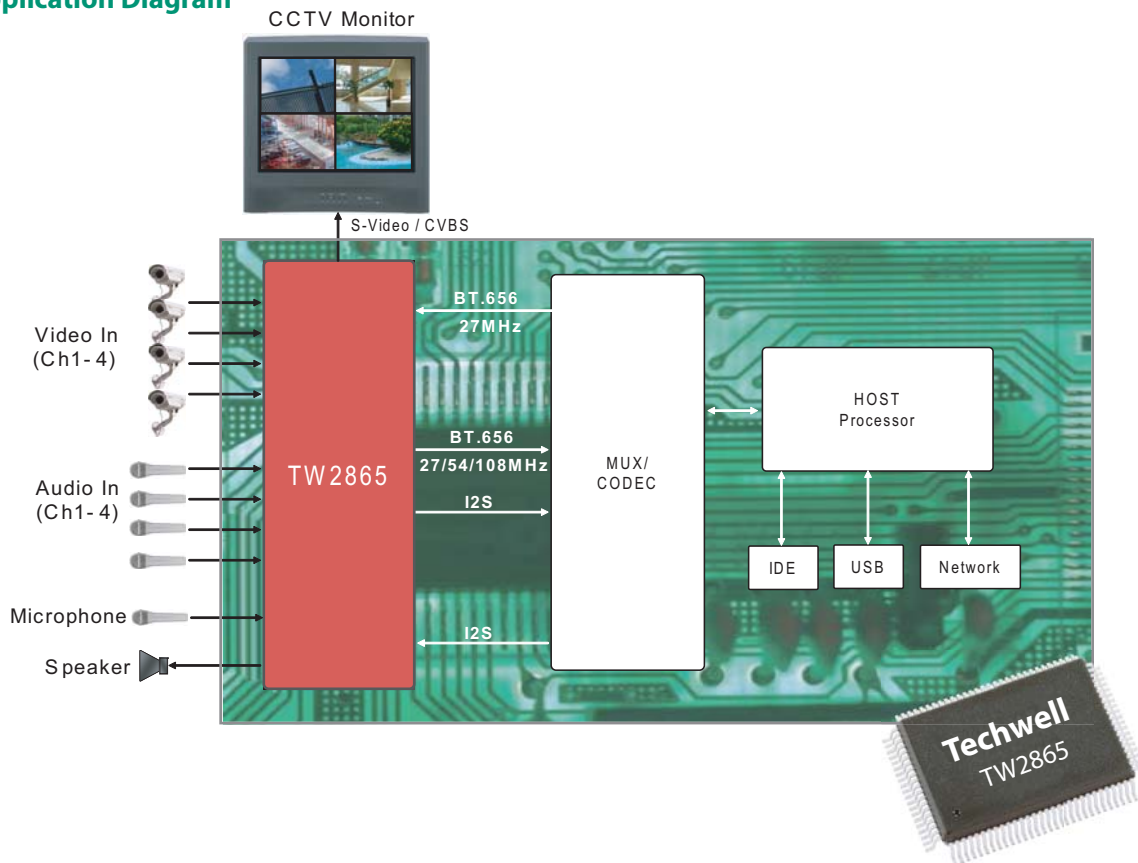
4-Channel Video Decoder and Audio Codec plus  
Video Encoder for Security Applications

The TW2865 is a 4-in-1 video decoder and audio codec plus video encoder for security surveillance applications. The device includes four high quality NTSC/PAL/SECAM video decoders that convert analog composite video signal to digital component YCbCr data. Each channel contains a 10-bit ADC and proprietary clamp/gain controller and utilizes 4H comb filter for separating luminance & chrominance to reduce cross noise artifacts. The TW2865 adopts image enhancement techniques such as IF compensation filter, CTI and programmable peaking. In addition, TW2865 includes one NTSC/PAL video encoder with two 10-bit DACs to support CVBS and YC output. The TW2865 also includes an audio codec which has five audio ADCs and one DAC. A built-in audio controller can generate digital outputs for recording/mixing and accepts digital input for playback.

### New Features

- Integrated one video encoder and two 10-bit video CMOS DACs
- Proprietary fast video locking system for non-realtime application
- Integrated five audio ADCs and one audio DAC
- Low power consumption

### Typical Application Diagram



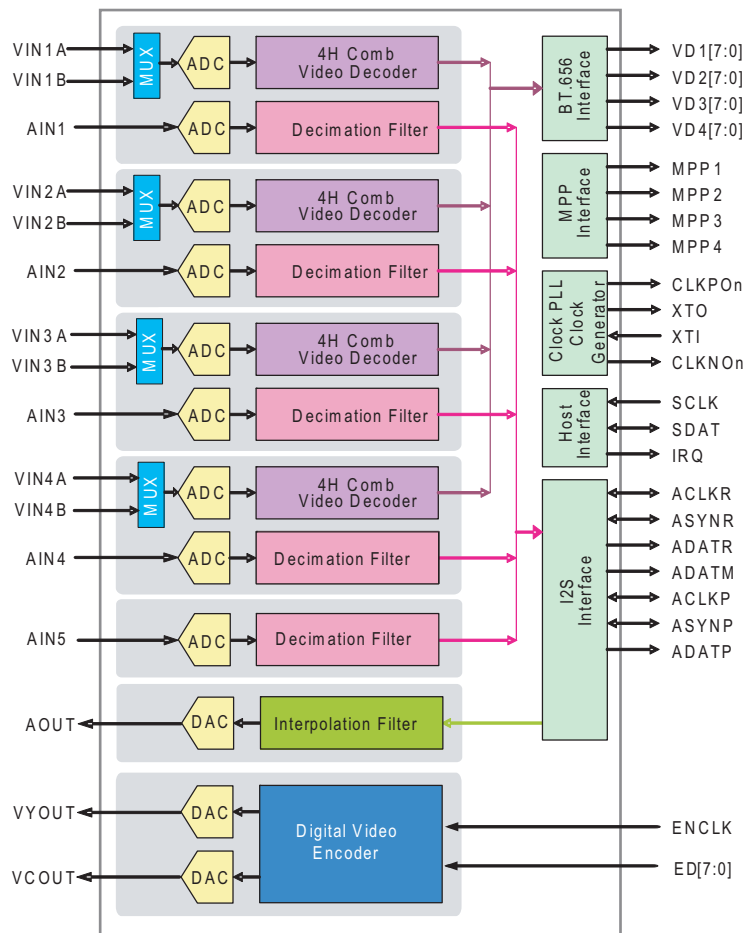
# TW2865

4-Channel Video Decoder and Audio Codec plus  
Video Encoder for Security Applications

## Video Decoders

- Accepts all NTSC(M/4.43) / PAL(B/D/G/H/I/K/L/M/N/60)/SECAM standards with auto detection
- Integrated four video analog anti-aliasing filters and 10-bit ADCs
- High performance adaptive 4H comb filters for all NTSC/PAL standards
- IF compensation filter for improvement of color demodulation
- Color Transient Improvement (CTI) and automatic white peak control
- Programmable hue, saturation, contrast, brightness and sharpness
- Proprietary fast video locking system for non-realtime application
- Supports the standard ITU-R BT.656 format or time multiplexed output with 54/108MHz.
- Provides simultaneous four channel Full D1 and CIF time-multiplexed outputs with 54MHz

## TW2865 Block Diagram



## Audio Codecs

- Integrated five audio ADCs and one audio DAC
- Provides multi-channel audio mixed analog output
- Supports I2S/DSP Master/Slave interface for record output and playback input
- PCM 8/16 bit and u-Law/A-Law 8bit for audio word length
- Programmable audio sample rate that covers popular frequencies of 8/16/32/44.1/48kHz

## Order Information

- Part Number: TW2865
- Package: 128 pin LQFP

## Video Encoder

- NTSC/PAL Video Encoder
- CVBS and S-video Support

## Other Features

- 2x/4x analog clock PLL for 108MHz clock output
- Supports a two-wire serial host interface
- 1.8V Supply
- Low power consumption

## About Techwell

Techwell is a fabless semiconductor company that designs, markets and sells mixed signal integrated circuits in the security surveillance, automotive infotainment, and consumer markets. Founded in 1997, we currently have over 160 employees and are headquartered in San Jose, California, with additional R&D and sales activities in South Korea, Japan, Taiwan and China. NASDAQ:TWLL

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