



TECHWELL  
SECURITY



## Security Surveillance IC Solutions

# TW2835

4 Channel Video and Audio Controller  
For Security Applications

### Features

#### Target Applications

- Analog QUAD/MUX System
- 4/8/16 Channel DVR System
- Car Rear Vision System
- Hair Shop System
- Dental Care System

#### Features

##### Four Video Decoders

- Accepts all NTSC(M/N/4.43) / PAL(B/D/G/H/I/K/L/M/N/60) standards with auto detection
- Integrated four video analog anti-aliasing filters and 10 bit CMOS ADCs
- High performance adaptive 4H comb filters for all NTSC/PAL standards
- IF compensation filter for improvement of color demodulation
- Color Transient Improvement (CTI)
- Automatic white peak control
- Programmable hue, saturation, contrast, brightness and sharpness
- High performance horizontal and vertical scaler for each path including playback input
- Fast video locking system for non-realtime application
- Four built-in motion detectors with 16X12 cells and blind and night detectors
- Additional digital input for playback with ITU-R BT.656 standard
- Auto cropping / strobe for playback input with Channel ID decoder
- Supports four channel full D1 record mode

##### Dual Video Encoders

- Dual path digital outputs with ITU-R BT.656 standard
- Dual path analog outputs with all analog NTSC/PAL standards
- Programmable bandwidth of luminance and chrominance signal for each path
- Three 10bit video CMOS DACs

The TW2835 has four high quality NTSC/PAL video decoders, dual color display controllers and dual video encoders. The TW2835 contains four built-in analog anti-aliasing filters, four 10bit Analog-to-Digital converters, and proprietary digital gain/clamp controller, high quality Y/C separator to reduce cross-noise and high performance free scaler. Four built-in motion, blind and night detectors can increase the feature of security system. The TW2835 has flexible video display/record/playback controller including basic display and MUX functions. The TW2835 also has excellent graphic overlay function that displays bitmap for OSD, single box, 2D array box, and mouse pointer. The built-in channel ID CODEC allows auto decoding and displaying during playback and the additional scaler on the playback supports multi-cropping function of the same field or frame image. The TW2835 contains two video encoders with three 10bit Digital-to-Analog converters to provide 2 composite or S-video. The TW2835 also includes audio CODEC that has four audio Analog-to-Digital converters and one Digital-to-Analog converter. A built-in audio controller can generate digital outputs for recording/mixing and accepts digital input for playback. The TW2835 can be extended up to 8/16 channel video controller using chip to-chip cascade connection.

#### Dual Video Controllers

- Support full triplex function with 4ch live, 4ch playback display and 4ch record output
- Analog/Digital channel ID CODEC for record and playback application
- Support adaptive median filter for Record
- Supports pseudo 8 channel and/or dual page mode
- Horizontal/Vertical mirroring for each channel
- Last image captured when video-loss detected
- Auto sequence switch with 128 queues and/or manual switch by interrupt for record path
- Channel skip in auto sequence switch for record path when video-loss detected
- Image enhancement for zoomed or still image in display path
- High performance 2X zoom to horizontal and vertical direction for display path
- Extendable up to 8/16 channel video controller using cascade connection
- Quad MUX switch with 32 queues and/or manual control by interrupt for record path
- 64 color bitmap OSD overlay with 720x480 in NTSC / 720x588 resolution in PAL
- Four programmable single boxes and four 2D arrayed boxes overlay
- Mouse pointer overlay

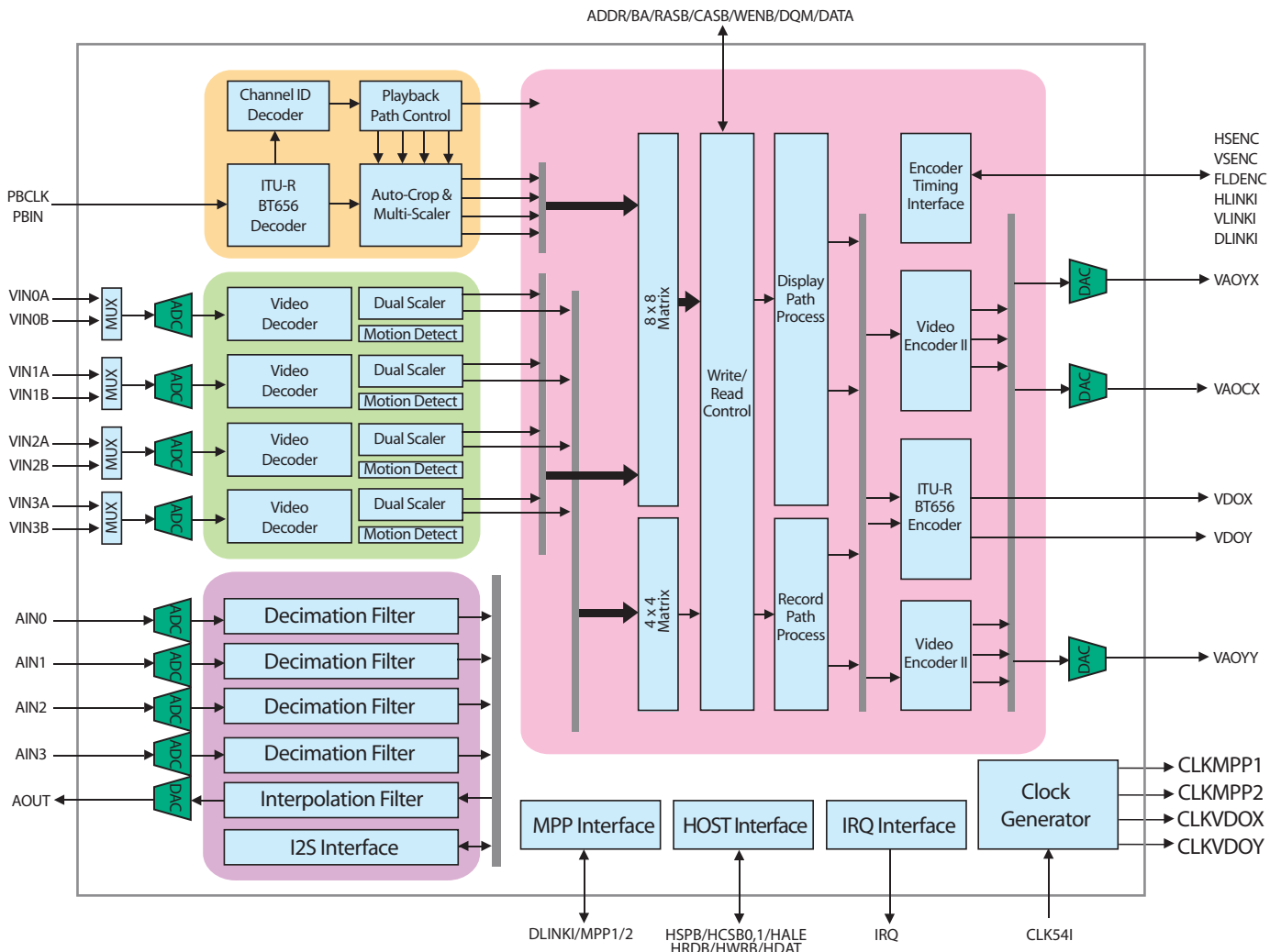
#### Audio CODEC

- Integrated four audio ADCs and one audio DAC
- Provides multi-channel audio mixed analog output
- Supports a standard I2S interface for record output and playback input
- 8/16 bit audio word length
- Sample audio with 8/16KHz

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TW2835 Block Diagram



## About Techwell

Techwell is a fabless semiconductor company that designs, markets and sells mixed signal integrated circuits for multiple digital video applications in the consumer, security surveillance and automotive markets, including advanced TVs, multifunction LCD monitors, DVD Recorders, security surveillance systems and in-car LCD displays. Founded in 1997, we currently have over 80 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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