GENESIS
DISPLAY PERFECTION

FLI8532
Single-Chip LCD TV Controller

APPLICATION

- LCD and PDP TV
- DLP[TM](1), LCD and LCOS Front and Rear Projection
- DVD RW and PVR

FEATURES

- Integrated 3D Video Decoder
- Flexible Digital and Analog Capture
- Faroudja DCDi Cinema[TM] Format Conversion
- VBI Signal Processing
- Flexible x16 or x32 DDR Memory Interface
- Faroudja® TrueLife[TM] Video Enhancer
- Picture-in-Picture (PiP)
- Advanced Color Management
- On-Chip Microprocessor
- Advanced Bitmapped OSD Controller
- LCD Overdrive

PACKAGE

- 416 PBGA

DESCRIPTION

The Genesis Microchip FLI8532 is a fully-integrated single-chip solution for LCD TV. It includes an integrated 3D Digital Video Decoder with Faroudja® DCDi Cinema[TM] video format conversion, video enhancement, and noise reduction. The level of video quality that could previously only be seen on an exclusive Faroudja Home Theater System is now available in a single-chip solution.

The flexible Analog Front End of the FLI8532 ensures simple PCB design with direct connections to TV Tuners and Input Video Connectors. Therefore, the FLI8532 is the only device needed for a single LCD TV chassis supporting worldwide standards. All that is required for regional variations is a connector and software change.
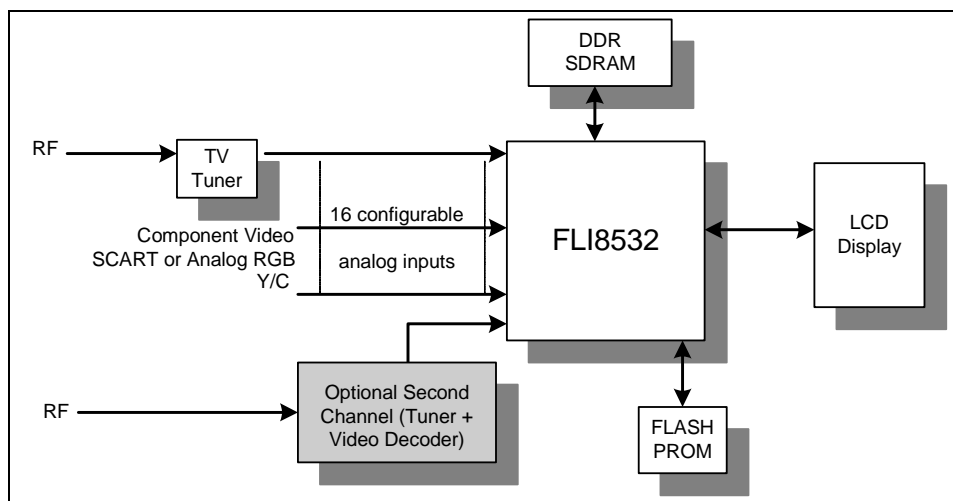
The auto-detection and Faroudja DCDi Cinema[TM] technology allow the FLI8532 to detect, process, and enhance any video or PC graphic format without the need for additional hardware.

The integrated VBI dataslicer and decoder allow for significant cost reduction by removing the need for external VBI dataslicers and decoders. The FLI8532 supports many worldwide VBI standards for applications of Teletext, Closed Captioning, V-Chip, and other VBI services.

An embedded microprocessor and a versatile OSD in a single device will facilitate rapid development of a reliable and attractive product.

FLI8532 SYSTEM DIAGRAM
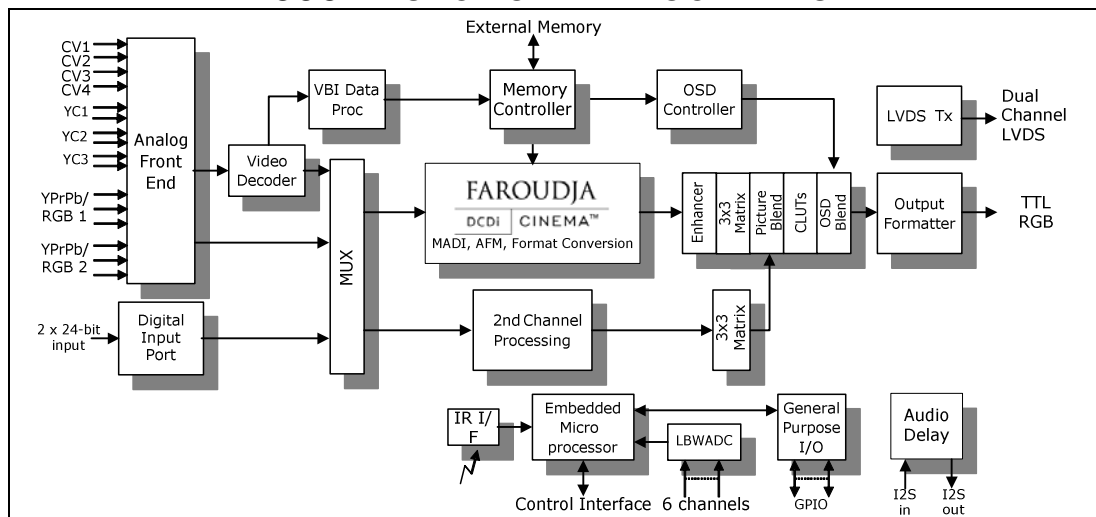

FAROUDJA
DCDi | CINEMA[TM]

www.DataSheet4U.com

GENESIS MICROCHIP INC.   FLI8532 PRELIMINARY PRODUCT BRIEF

FLI8532 FUNCTIONAL BLOCK DIAGRAM

FEATURE ATTRIBUTES

INTEGRATED 3D VIDEO DECODER
- Faroudja® IntelliComb™ Technology
- 3D Adaptive Comb Filter for Luma–Chroma separation
- Supports: Composite, S-Video, and Component (including High Definition) video input signals
- Support all broadcast TV Video standards—NTSC (North America and Japan), PAL (I, B, G, H, M, D, N), SECAM (D, K, L, B, G)
- Macrovision™ [2] and VCR trick mode support

FLEXIBLE DIGITAL AND ANALOG CAPTURE
- 16 Reconfigurable Analog Inputs
- Direct Connection from tuner or connector to analog input pin
- Integrated Anti-Aliasing Filter
- RGB or YUV capture up to 135 MHz
- Full SCART support including RGB Fast Blank
- 4:4:4/4:2:2/CCIR656/601 8/16/24 bit digital input port
- Simple connection to JPEG and MPEG processors

FAROUDJA DCDI CINEMA™ FORMAT CONVERSION
- Low Angle De-interlacing Processing
- Per Pixel Motion Adaptive De-interlacing (MADi) up to 1080i format
- Format conversion up to SXGA resolutions
- Panoramic and Anamorphic Non-linear Scaling
- Adaptive Media Display Processing for 3:2 and 2:2 video content
- Adaptive 3D Noise Reductions
- Media Noise Reduction for MPEG inputs

VBI SIGNAL PROCESSING
- Multi-standard Digital VBI dataslicer
- WST Teletext FastText page support access
- V-chip, VPS, Closed Captioning, XDS, CGMS, and WSS decode

FLEXIBLE X16 OR X32 DDR MEMORY INTERFACE
- DDR400
- Memory Size is flexible up to 512Mbits

LCD OVERDRIVE
- Reduces video smearing artifacts of rapid luminance transition scenes caused by slow LCD panel response

FAROUDJA® TRUELIFE™ VIDEO ENHANCER
- Non-linear Chroma Enhancement
- Non-linear Luma Enhancement
- Removal of the DVD Chroma Upsampling Error (CUE) introduced by some DVD sources

PICTURE-IN-PICTURE (PIP)
- Dynamic Scaling for advanced PiP transitions
- Video PiP over full screen graphics background
- Graphics PiP over full screen video background
- Video PiP over full screen video background
- Side-by-side window support

ADVANCED COLOR MANAGEMENT
- Active Color Management (ACM-II) provides flesh-tone compensation and image enhancement
- Adaptive Contrast and Color (ACC) ensures full dynamic range is used in video content

ON-CHIP MICROPROCESSOR
- Integrated x186 based microprocessor with rich function library
- General-purpose inputs/outputs (GPIOs) available for managing system devices (keypad, backlight, NVRAM, etc)
- Advanced Power Control for low Power Stand-by Mode
- 2-wire serial master bus interface for external device control

ADVANCED BITMAPPED OSD CONTROLLER
- 16 True Color bitmap tiles with 1, 2, 4 and 8-bit per pixel
- Horizontal and vertical stretch of OSD menus
- Blinking, transparency, and blending

OUTPUT FORMAT
- Dual-channel TTL output
- Dual-channel LVDS transmitters for direct connection to LCD modules
- 30-bit LVDS and TTL output available

OTHER FEATURES
- Integrated infrared decoder
- Integrated low bandwidth ADC with 6 channels of input
- 4 integrated PWM outputs for LCD backlight control
- Integrated I2S Audio Delay to exact Audio and Video Synchronization

[1] DLP is a trademark of Texas Instruments Incorporated

[2] Macrovision is a trademark of Macrovision Corporation

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