

## VastLane™ Mobile HD Link Transmitter

**Low pin-count, HD video solution for mobile phones, digital still cameras, portable media players & camcorders**

The Silicon Image SiI9226 is an ultra low-power Mobile HD Link™ (MHL™) transmitter designed for power-sensitive consumer electronics devices such as mobile phones, digital cameras, portable media players, HD camcorders and other portable devices.

Together with its companion MHL HDMI bridge, the SiI9226 delivers a low-cost, low-pin count, HDMI-interoperable HDTV connectivity solution to mobile electronics world.

The SiI9226 transmitter is the world's first low-pin-count digital media transmitter featuring single data lane Transition Minimized Differential Signaling (TMDS), which reduces pin-count for small devices. The SiI9226 transmitter delivers full high-definition video and digital audio through three pins on most mobile connectors.

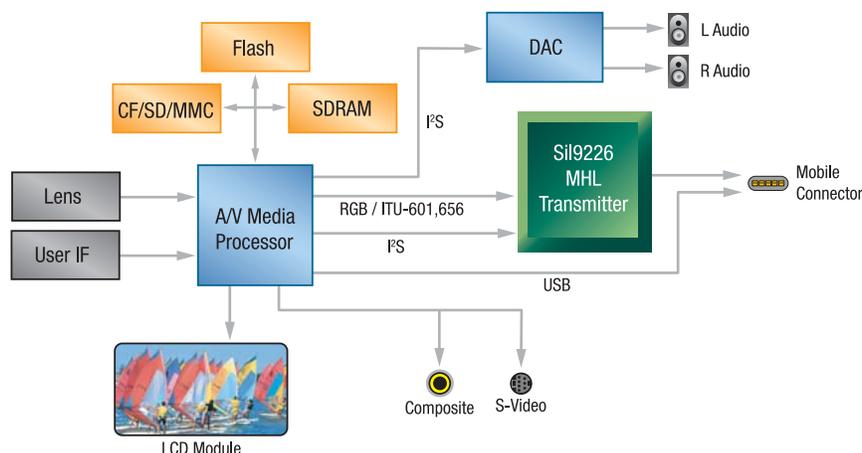
Utilizing only two differential TMDS pairs for audio/video packets and a single-wire control bus, MHL delivers the necessary video bandwidth and replicates all the required control signals that comes with the traditional 19-pin HDMI interface. A low-cost companion MHL bridge chip converts the MHL signaling to HDMI compliant signals for connectivity to HDMI enabled DTVs.

In order to fit into the tight constraints of today's highly integrated mobile electronics, the

SiI9226 transmitter is housed in a tiny 5mm x 5mm, 64-ball chip scale VFBGA package. Even in this diminutive package, the MHL transmitters do not scrimp on performance, supporting resolutions from standard definition 480i/p all the way up to high-definition 720p and 1080i.

Silicon Image MHL products are designed according to the requirements of the market segments. Together with its MHL-to-HDMI bridge, SiI9226 is compliant with the latest version of the industry leading HDMI standard for those market segments. The SiI9226 carries audio/video packets and control signals that are fully interoperable with the HDMI interface. In addition, all Silicon Image hardware and software solutions are developed and verified according to the latest HDMI Compliant Test Specification and Simplay HD™ HDCP interoperability compliance requirements.

### SiI9226 Typical Application



## SiI9226

### Applications

- Mobile Phones
- Digital Still Cameras
- Portable Media Players
- HD Camcorders

### Key Features

- Provides HD video with only three pins
- RGB MPEG decoder interface
- Ultra low active and standby power



# Sil9226 Features

## Sil9226 Software & Documentation

### Software

- Sil9226 Firmware

### Documentation

- Programmer's Reference
- Datasheet

### Compliance

- HDMI\*
  - DVI 1.0\*
  - Simplay HD
- \*With companion MHL to HDMI Bridge

### Digital Video Output

- Integrated TMDS core
  - Two differential pairs, 1 clock and 1 data
- DTV resolution support - 480i/576i/480p/576p/720p/1080i
- PC resolution support - VGA/XGA/SXGA
- Parallel interface to HD MPEG decoders
  - 12/24-bit RGB YCbCr 4:4:4
  - 16/20/24-bit YCbCr 4:2:2
  - 8/10/12-bit YCbCr 4:2:2 (ITU-R BT.601 & BT.656)
- Integrated YCbCr  $\leftrightarrow$  RGB conversion
- 4:2:2  $\rightarrow$  4:4:4 up-converter
- Programmable Data Enable (DE) generator

### Digital Audio Output

- Supports IEC60958 2-ch PCM or IEC61937 compressed audio (Dolby Digital, DTS, etc.)
- Industry-standard S/PDIF input
- Integrated MCLK generator

### Single-Wire Control Bus

- High speed single wire bus carrying all control commands

### System Operation

- Simplified API programming through Transmitter Programming Interface (TPI)
- Flexible interrupt registers with interrupt pin
- Monitor detection supported through hot plug and receiver sense

### Power Management

- Low-power 1.2V and 1.8V cores
- Flexible power-down modes

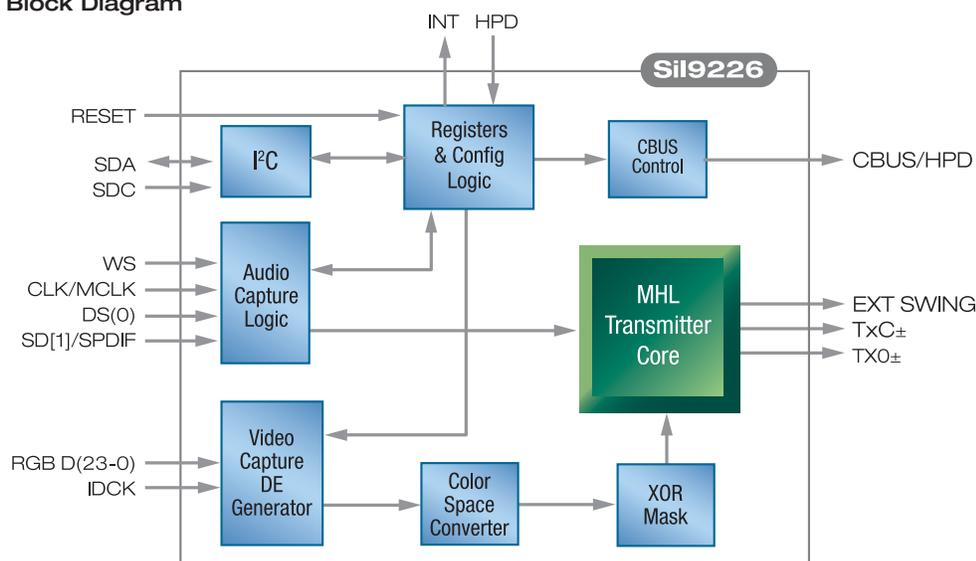
### Package

- 64-ball VFBGA (5mm x 5mm footprint)

### Operating Range

- -20C° to +85C° extended temperature support

Sil9226 Block Diagram



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