Introduction of New Scaler IC for In-Vehicle Systems

The S2D13V52 is a Scaler used to upscale/downscale streaming image data from one resolution to another. The S2D13V52 contributes to efficient development of automotive display systems.

Seiko Epson Corporation (TSE: 6724, "Epson") has developed and begun accepting orders for samples of the S2D13V52, a scaler IC for in-vehicle systems that upscales or downscales image data streamed from a host and outputs it on a display.

EPSON
S2D13V52
JAPAN

H4QFP15-100-pin

S2D13V52, which does not need external memory and uses a proven SoC, facilitates rapid development of display systems with the desired resolution.

Vehicle electrification and automation are seen driving future demand for higher resolution displays in in-vehicle systems such as instrument clusters and central information displays. However, high-resolution display systems require high-performance systems on a chip (SoC)*1, memory, and other components, as well as immense development resources for aspects such as software and heat countermeasures.

To address these types of issues in in-vehicle display systems development, Epson developed the S2D13V52, a scaler IC that is compliant with automotive standards. This IC, which does not need external memory and uses a proven SoC, facilitates rapid development of display systems with the desired resolution. The S2D13V52 satisfies the strict quality requirements of the automotive industry. It is

compliant with AEC-Q100*2 and operates at temperatures up to 105℃.

It also supports input cropping, a function for specifying regions of input images to be scaled, and area blanking, a function for displaying a specified color in the display area that remains when scaling was set to a size smaller than the resolution of the panel. Images can be displayed on panels of various resolutions without changing the aspect ratio of images.

Epson is committed to helping its customers improve the performance of their products with solutions that leverage Epson's efficient, compact, and precision technologies.

System Block Daiagram

Up to :
2880 x 1080 @60Hz
2400 x 1400 @60Hz
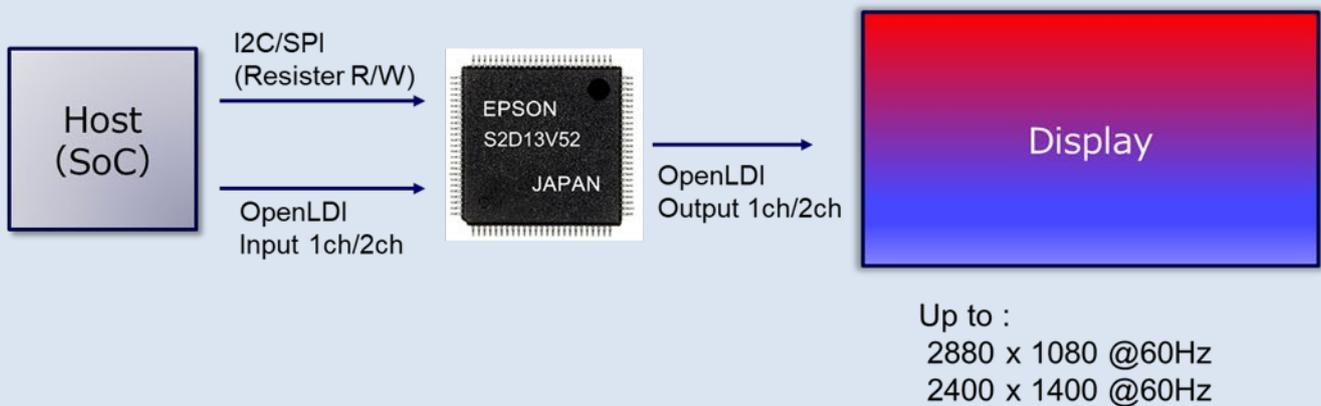
Features

•High Quality 4x4 Upscaler (1x ~ 2x)

•Bi-Linear Downscaler (0.5x ~ 1x)

•Gamma Correction

•Input Crop

•Area Blanking

•Error Detection features

•AEC Q100/IATF16949 compliant

Outline Specifications

Part Number	S2D13V52
Power Supply	3.3V（I/O）
	1.8V（Internal Core）
Input Interface	OpenLDI-Rx x 1ch or 2ch (Even/Odd)
Output Interface	OpenLDI-Tx × 1ch or 2ch (Even/Odd or Left/Right)
Input Resolution	～1920x1080 (full HD)
Output Resolution	～2880x1080 or 2400x1400 @60Hz
Image Correction	Gamma Correction
Error Detection	Input Image CRC
	Hsync/Vsync/DE Watchdog Timer
	OpenLDI Input Clock Check
	Input/output Resolution Check, Other
Automotive Standard Conformance	AEC-Q100
Operating Temperature Range	－40～＋105℃
Other	Built-In SSCG
	Built-In PLL
Package	H4QFP15-100-pin (14mm x 14mm ,t=1.7mm, 0.5mm pitch)

S2D13V52 Information

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*1: System on a chip

A system on a chip (SoC) integrates most or all the functions required for the operation of a system on a single chip. The configuration differs depending on the system, but SoC generally integrate a CPU, memory, and I/O functions.

*2: AEC-Q100

The Automotive Electronics Council (AEC) is an industry group that creates standards for the reliability and qualification of automotive electronics. It was formed by the "Big Three" U.S. automobile manufacturers in partnership with major electronic component manufacturers. The AEC standard is a de facto global standard that has been widely adopted as a standard for automotive electronic components.