

CROSSLINK™

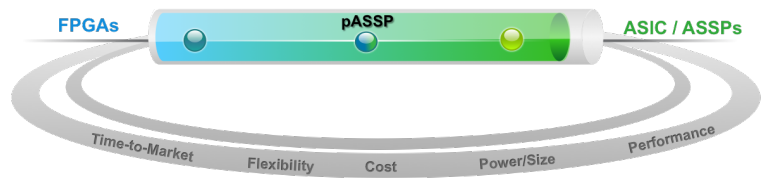
Programmable ASSP (pASSP™) Interface Bridges

Lattice has combined the flexibility and fast time to market advantage of an FPGA with the power and efficiency of an ASSP to create a new product class called programmable ASSP (pASSP). This gives designers the best of both worlds by delivering the most flexible, highest bandwidth, lowest power and smallest footprint solutions for several high-growth market segments.

The CrossLink solution is the industry's first programmable bridging device that resolves interface mismatches between mobile application processors, image sensors, and displays. This makes it the optimal solution for VR headsets, drones, smartphones, tablets, cameras, wearable devices, human machine interfaces (HMIs), and more.

Key Features

- World's fastest MIPI® D-PHY bridging device that delivers up to 4K UHD resolution at 12 Gbps bandwidth
- Supports popular mobile, camera, display and legacy interfaces such as MIPI D-PHY, MIPI CSI-2, MIPI DSI, MIPI DPI, CMOS, and SubLVDS, LVDS, and more
- Industry's smallest package size with a 6 mm² option
- Lowest power programmable bridging solution in active mode. Built-in sleep mode.
- Takes the strongest features from ASSPs and FPGAs to deliver the best solution of both worlds



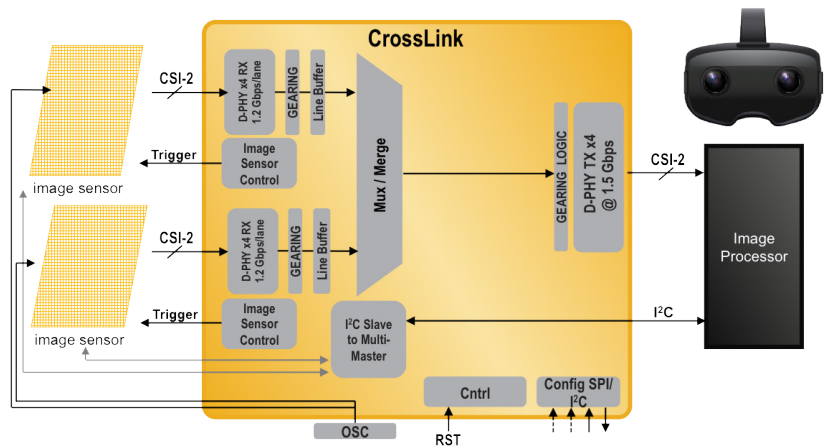
Device	LIF-MD6000-36	LIF-MD6000-64	LIF-MD6000-81	LIF-MD6000-80	LIA-MD6000-80*
LUTs	5936	5936	5936	5936	5936
Embedded Memory	kbits	180	180	180	180
Distrib. RAM	kbits	47	47	47	47
GPLL	1	1	1	1	1
D-PHY PLL	1	2	2	2	2
Embedded I ² C Blocks	2	2	2	2	2
Embedded RX/TX MIPI D-PHY	1 (4 Data + 1 Clock)	2 (8 Data + 2 Clock)	2 (8 Data + 2 Clock)	2 (8 Data + 2 Clock)	2 (8 Data + 2 Clock)
48MHz Oscillator	1	1	1	1	1
10kHz Oscillator	1	1	1	1	1
NVCM	Yes	Yes	Yes	Yes	Yes
Dual Boot	Yes	Yes	Yes	Yes	Yes
Power Management Unit	Yes	Yes	Yes	Yes	Yes
Low Power Sleep Mode	Yes	Yes	Yes	Yes	Yes
Typical Operational Power	5mW – 135mW	5mW – 135mW	5mW – 135mW	5mW – 135mW	5mW – 135mW
Footprint	2.5 mm x 2.5 mm	3.5 mm x 3.5 mm	4.5 mm x 4.5 mm	6.5 mm x 6.5 mm	6.5 mm x 6.5 mm
Package Pitch	0.4 mm	0.4 mm	0.5 mm	0.65 mm	0.65 mm
GPIO	7	8	9	8	8
I/O	17	29	37	36	36

* Automotive grade.

Key Applications

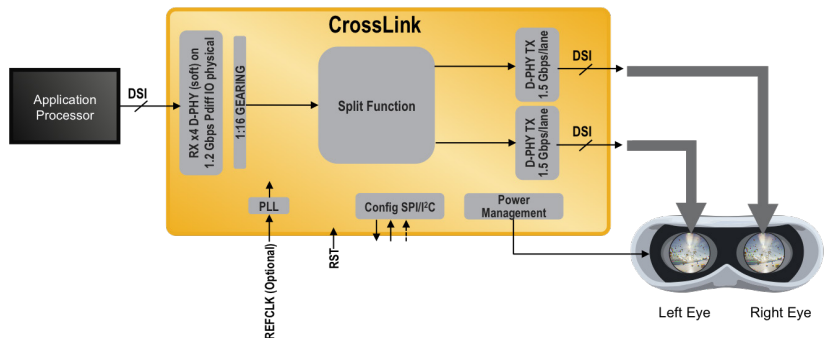
Image Sensor Applications

Lattice's CrossLink device can multiplex, merge and arbitrate between multiple image sensors to a single input. The device can also interface between high-end industrial and popular A/V image sensors with mobile application processors. This is ideal for 360, action, surveillance and DSLR cameras along with drones and augmented reality products.



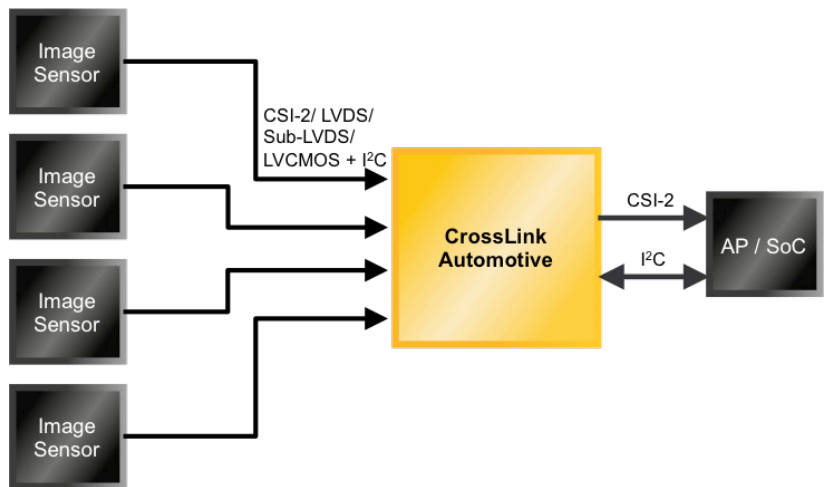
Display Applications

With the CrossLink bridge it's possible to receive video data from one MIPI DSI interface and send it out over two MIPI DSI interfaces at half the bandwidth. The same video stream can be split to two multiple interfaces that's ideal for virtual reality headsets and mobile set top boxes.



ADAS Application

Lattice's CrossLink Automotive device brings bridging capabilities of modern camera sensors and displays to the automotive market. The CrossLink pASSP can aggregate images from multiple cameras onto one display for the driver or support image signal processing (ISP) in ADAS applications for self-driving cars. A variety of camera sensor inputs are supported, including CSI-2, LVDS, Sub-LVDS, and LVCMOS. It can also drive displays over DSI for infotainment applications, like dashboard displays, instrument cluster displays, and rear-seat entertainment.



Applications Support

www.latticesemi.com/support

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