SPLIT-SECOND DECISIONS

GMSL SerDes delivers 30x faster data rates than Automotive Ethernet for ADAS applications

Advanced drivers assistance systems (ADAS) demand high-speed in-vehicle networks to ensure that information gets from safety cameras to the ADAS processor fast enough to prevent collisions.

The in-vehicle network must transport large amounts of data through a harsh EMI environment, making Automotive Ethernet a poor choice for ADAS applications. Consider that a 1-megapixel camera link needs to carry uncompressed data faster than 1Gbps, which far exceeds the 100-Mbps speed of today's Automotive Ethernet. Such Ethernet links require compression and decompression, adding to system cost and complexity. In addition, compression artifacts raise reliability and safety concerns in high-resolution, multicamera designs.

Maxim's GMSL SerDes solutions provide a compression-free alternative to Automotive Ethernet, achieving 30x faster data rates. Built specifically for the demanding automotive environment, they include features like spread-spectrum clocking to improve electromagnetic immunity and support for either coaxial cable or shielded twisted pair, so you can optimize for cost and weight.

Benefits of GMSL SerDes

Faster Decision Making

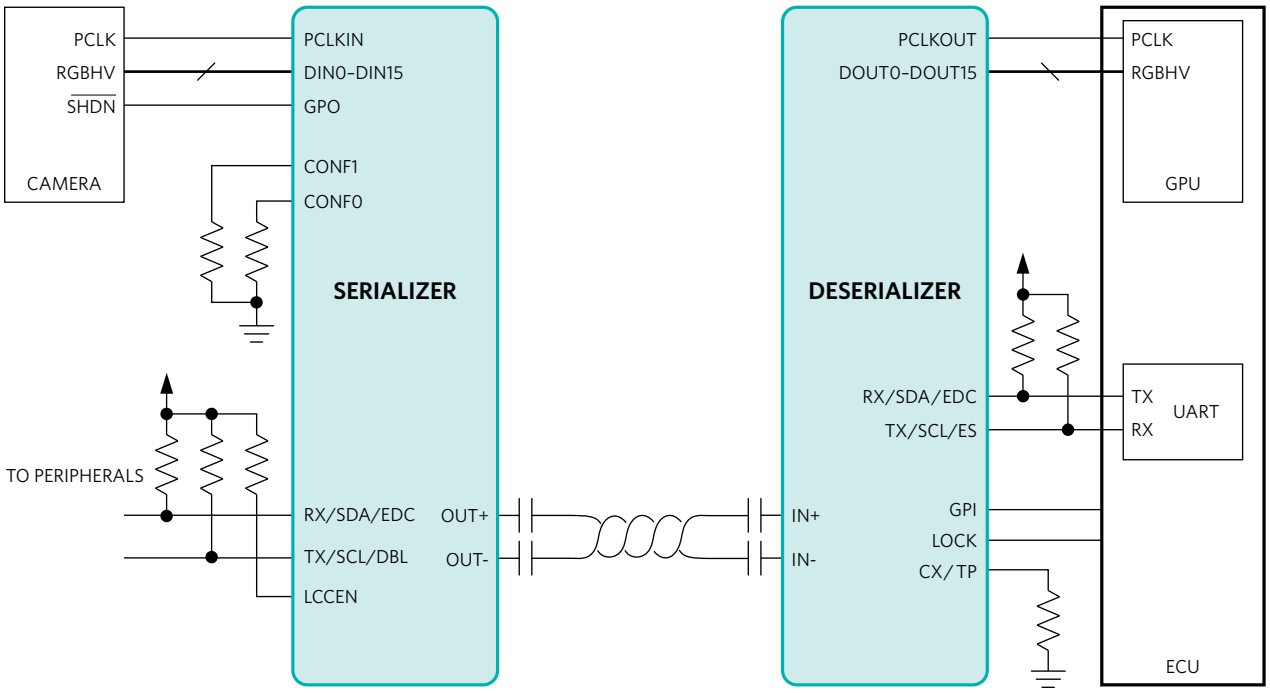
- Delivers 30x faster data rate than Automotive Ethernet
- Supports uncompressed video transmission over single coax cable

Reduced Cost and Complexity

- Power-over-coax capability simplifies installation and lowers system cost
- Alleviates the need for compression/ decompression, filtering, and other components

Superior EMC performance

- Spread-spectrum clocking
- Immunity mode for control channel noise rejection



Note: Not all pullup/down resistors are shown. See data sheet for details.

Serializers

Part	Input	Output	Data Rate (Gbps)	HDCP	Comments
MAX9271	LVCMOS	CML	1.5		Flexibly drives coax or STP cables; very small 5mm x 5mm TQFN
MAX9275	LVCMOS	CML	3.12		Coax or STP cables; support 1920x720p displays with 24-bit color; allow 15m cable at max speed
MAX9279	LVCMOS	CML	3.12	✓	Coax or STP cables; support 1920x720p displays with 24-bit color; allow 15m cable at max speed

Deserializers

Part	Input	Output	Data Rate (Gbps)	HDCP	Comments
MAX9240	Serial	LVCMOS	1.5		Line fault detection
MAX9272	Serial	LVCMOS	1.5		Channel equalizer extends link length and reliability
MAX9276	Serial	LVCMOS	3.12		Coax or STP cables; support 1920x720p displays with 24-bit color; allow 15m cable at max speed
MAX9280	Serial	LVCMOS	3.12	✓	Coax or STP cables; support 1920x720p displays with 24-bit color; allow 15m cable at max speed

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