

VS776 Dual- and Quad-Hub Deserializer Series

Automotive SerDes Alliance Motion Link (ASA-ML) Solution

Summary

Automotive SerDes Alliance Motion Link (ASA-ML) is an open, multi-vendor industry standard optimized for asymmetric connectivity applications. The VS776 series is an ASA-ML-compliant chipset capable of receiving sensor data from up to four VS775S serializers. Its optimized architecture eliminates the need for an external EEPROM or microcontroller (MCU) for device operation.

Well suited for transporting video traffic in automotive sensor applications, the VS776 offers two MIPI® CSI-2® ports for high-speed data transmission and up to two different application processors. It supports a downstream line rate of up to 16 Gbps and an upstream payload data rate of at least 100 Mbps. Multiple control channels can be used to communicate between the SerDes and peripheral devices. The VS776 also supports multiple cable types, including Power over Coax (PoC) with lengths of up to 15m and Shielded Twisted Pair (STP) cables with lengths of up to 10m.

The VS776 features integrated security with support for authentication and data path encryption (ASAssec) to meet automotive cybersecurity requirements. Its configurable ASA transmit/receive ports enable flexible topologies. The device can be configured to support port aggregation (aggregating multiple ASA deserializer ports into a single ASA serializer port) or data replication and/or forwarding from one ASA port to another ASA port. The VS776 is certified for ISO 26262 ASIL-B and is AEC-Q100 Grade 2 compliant to provide a reliable and robust solution for automotive applications.

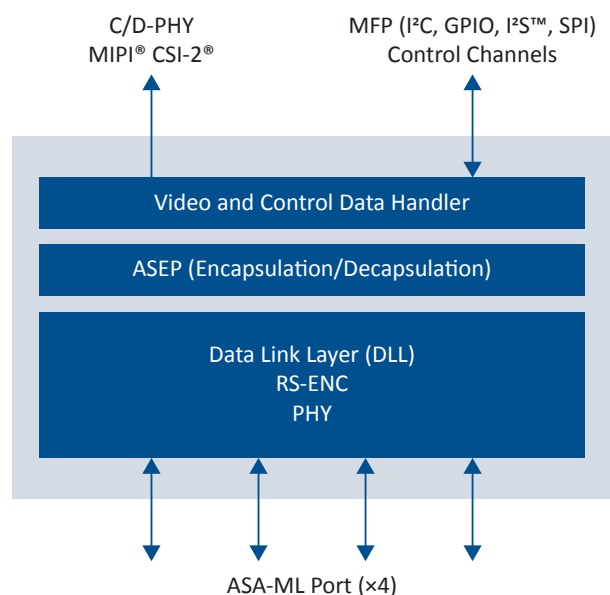
Applications

- Automotive Advanced Driver Assistance Systems (ADAS)
 - Camera, LiDAR and radar systems
- Industrial applications
- Machine vision
- Medical imaging

Key Features and Benefits

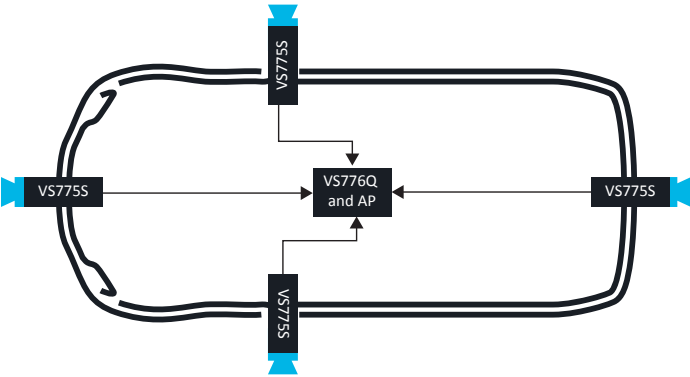
Feature	Benefit
Configurable ASA Tx/Rx port	Supports multiple topologies such as zonal aggregation and daisy chaining
Supports coaxial cables up to 15m and STP cables up to 10m	Enables long cable reach to support different vehicle designs
PAM2/NRZ or PAM4 signaling	Robust to noise interference
Multiple bidirectional control channels (I²C, SPI, GPIO, I²S)	Enables remote sensor configuration
Two MIPI® CSI-2® output ports	Connect to multiple Application Processors (APs)/SoCs
Forward Error Correction (FEC)	Ensures lossless video transmission
ASAssec link layer security	Provides hardware-based authentication and encryption, which minimizes the burden on the AP SoC
Video data and control handler	Enables multiplexing, replication and switching of video channels between ASA and MIPI CSI-2 ports
Automotive QFN package	Cost-effective and thermally optimized package

VS776Q Block Diagram

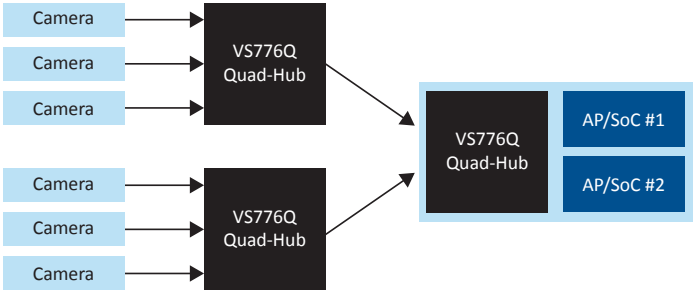


Applications

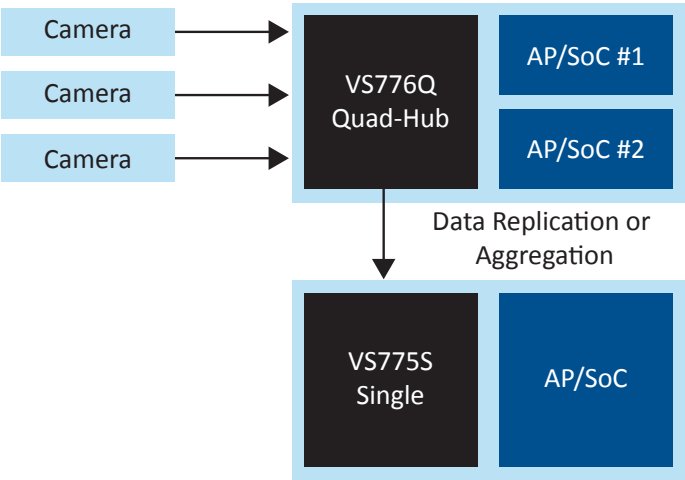
Surround-View/360° Camera



Zonal Aggregator



Daisy-Chaining Applications (Sensing and Viewing ECUs)



Part Numbers

VS776 Dual and Quad-Hub Variant	Number of Ports	Max. Downstream Line Speed Grade	Min. Upstream Payload Data Rate	Package Type and Size (mm)
VS776D-2	Dual Port	2/4 Gbps	50 Mbps/100 Mbps	76-pin QFN, 9 × 9
VS776D-3		2/4/8 Gbps	50 Mbps/100 Mbps	76-pin QFN, 9 × 9
VS776D-4		2/4/8/12 Gbps	50 Mbps/100 Mbps	76-pin QFN, 9 × 9
VS776D-5		2/4/8/12/16 Gbps	50 Mbps/100 Mbps	76-pin QFN, 9 × 9
VS776Q-2	Quad Port	2/4 Gbps	50 Mbps/100 Mbps	76-pin QFN, 9 × 9
VS776Q-3		2/4/8 Gbps	50 Mbps/100 Mbps	76-pin QFN, 9 × 9
VS776Q-4		2/4/8/12 Gbps	50 Mbps/100 Mbps	76-pin QFN, 9 × 9
VS776Q-5		2/4/8/12/16 Gbps	50 Mbps/100 Mbps	76-pin QFN, 9 × 9