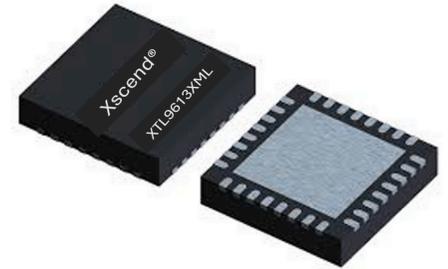# XTL9600 Series - Video Serializer/Deserializer Products

## Product Line Overview

The XTL9600 series products comprise a set of solutions for transporting MIPI standard camera data and other high bandwidth sensor data across coaxial and shielded differential pair (SDP) cabling at 8 Gbps for distances up to 15 meters. Lower-speed versions are available that can support data transmission of up to 4 Gbps across unshielded twisted pair (UTP) cabling.

The XTL961x features a single CSI-2 MIPI D-PHY input port and a single A-PHY v 1.0+ compatible output port. The XTL964x features four A-PHY input ports and dual CSI-2 MIPI D-PHY output ports. The XTL962x features two A-PHY input ports and a single CSI-2 D-PHY output port, allowing connectivity for 1-4 input sensors.

The SerDes products also provide advanced timing synchronization services, fault diagnostics, and data retransmission capabilities, adhering to ISO 26262 ASIL-B functional safety requirements. The products are designed to handle harsh automotive EMC environments support low error rates with a packet error probability of less than $10^{-19}$.
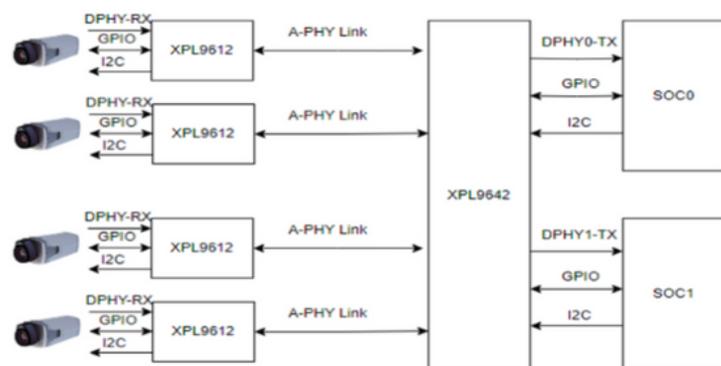
## Applications

- Automotive ADAS
- Driver monitoring
- Public infrastucture
- Train safety cameras
- Bus safety cameras
- Industrial safety
- Medical
- Video conferencing

## Key Features

- Interface: MIPI CSI-2 (D-PHY)
- 2 x 4 Lane D-PHY @2.5Gbps/Lane
- Modulation: PAM4/4GHz
- Reach: 15m, over Coax or SDP
- Uplink: Up to 8 Gbps
- Downlink: 100Mbps
- Adaptive Equalization: EQ, FFE
- Resolution: 8MP Raw, 30fps resolution
- Safety: ASIL-B
- Qualification: AEC Q100 Grade2
- Temp Range: -40 to 125 C

## Usage Example

# Product Line Details

The XTL9600 product line is composed of serializer and deserializer devices. The serialization devices support a single interface (MIPI camera via D-PHPY). The serialization devices are available in two SKUs. Supporting G2 (4Gbps) and G3 (8Gbps) speeds. The deseralization devices support 2 or 4 lanes at either the 4Gbps or 8 Gbps speeds.

| Part # | Type | Protocol | Video IF | Bandwidth | Package Type | GPIO | Reach | Features |
|--------|------|----------|----------|-----------|--------------|------|-------|----------|
| XTL9613 | Serialize | A-PHY G3 | CSI 2 | 8Gbps | TQFN-32 | 8 | 15m | - |
| XTL9612 | Serialize | A-PHY G2 | CSI 2 | 4Gbps | TQFN-32 | 8 | 15m | - |
| XTL9623 | Deserialize | 2xA-PHY G3 | CSI 2 | 2x8Gbps | TQFN-64 | 16 | 15m | Superframe, FSYNC |
| XTL9622 | Deserialize | 2xA-PHY G2 | 2xCSI 2 | 2x4Gbps | TQFN-64 | 16 | 15m | Superframe, FSYNC |
| XTL9643 | Deserialize | 2xA-PHY G3 | 2xCSI 2 | 4x8Gbps | TQFN-64 | 16 | 15m | Superframe, FSYNC |
| XTL9642 | Deserialize | 2xA-PHY G2 | 2xCSI 2 | 4x4Gbps | TQFN-64 | 16 | 15m | Superframe, FSYNC |

# Device Package Details

XTL961x - TQFN-32 5mm x 5 mm
XTL962x - TQFN-64 9mm x 9mm
XTL964x - TQFN-64 9mm x 9mm

ESD 4KV HBM

**Why Choose Xscend SerDes Solutions?**

**Automotive & Industrial Focus:** Our products are tailored to meet the specific needs of automotive and industrial applications, including high data transfer speeds, power efficiency, and rugged reliability.

**Cutting-Edge Innovation:** With a strong emphasis on high-speed connectivity, low-power and sensor integration, Xscend delivers advanced solutions that support the latest industry standards.

**Cost-Efficiency:** Our solutions reduce BOM costs and increase integration flexibility, helping customers achieve optimal performance at lower cost.

Discover more about Xscend's innovative semiconductor solutions at xscend.com.

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