

MAX96701

14-Bit GMSL Serializer with High-Immunity/Bandwidth Mode and Coax/STP Cable Drive

Compact 1.6Gbps Serializer with Crosspoint and CRC Protection of Video and Control Data for ADAS Applications

Description

The MAX96701 is a compact serializer in a 4mm x 4mm TQFN package especially suited for automotive camera applications. In high-bandwidth mode, the parallel-clock maximum is 116MHz for 12-bit linear or combined HDR data types.

The embedded control channel operates at 9.6kbps to 1Mbps in I²C mode, allowing programming of serializer, deserializer (SerDes), and camera registers independent of video timing.

For driving longer cables, the IC has programmable pre/deemphasis. Programmable spread spectrum is available on the serial output. The serial output meets ISO 10605 and IEC 61000-4-2 ESD standards. The supply range is 1.7V to 1.9V.

The MAX96701 is available in a 24-pin TQFN package with 0.5mm lead pitch, and operates over the -40°C to +115°C temperature range.

Key Features

- Ideal for Safety Camera Applications
 - Works with Low-Cost 50Ω Coax (100Ω STP) Cables
 - Error Detection of Video/Control Data
 - High-Immunity Mode for Robust Control-Channel EMC Tolerance
 - Retransmission of Control Data Upon Error Detection
 - Best-in-Class Supply Current: 88mA (max)
 - Pre/Deemphasis Allows 15m Cable at Full Speed

- o 24-Pin (4mm × 4mm) TQFN Package with 0.5mm Lead Pitch
- High-Speed Data Serialization for Megapixel Cameras
 - o Up to 1.74Gbps Serial-Bit Rate
 - o 12.5MHz to 87MHz × 14 Bit + H/V Data
- Multiple Modes for System Flexibility
 - o 9.6kbps to 1Mbps Control Channel in I²C Mode (with Clock Stretch)
 - o Crosspoint Switch Accepts Any Input Bitmap
 - o Modes for Encoded VSYNC and HSYNC
- Reduces EMI and Shielding Requirements
 - o Programmable Output Spread Spectrum
 - o Tracks Spread Spectrum Applied at the Parallel Input
 - o 1.7V to 1.9V I/O Supply
- Peripheral Features for Camera Power-Up and Verification
 - o Built-In PRBS Generator for BER Testing
 - o Dedicated GPO for Camera Frame-Sync Trigger and Other Uses
 - o Remote/Local Wake-Up from Sleep Mode
- Meets AEC-Q100 Automotive Specification
 - o -40°C to +115°C Operating Temperature
 - o >±8kV Contact and >±15kV Air IEC 61000-4-2 and ISO 10605 ESD Protection

Applications/Uses

- Automotive Camera Applications