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Product Brief

TC9560XBG: Ethernet-AVB Bridge Solution For Automotive Application

Highlights

- PCIe Ver 2.0/1.0 single lane
- USB HSIC (480 Mbps)
- Ethernet (AVB support) 10/100M/1Gbps
- RGMII, RMII, MII interface
- Internal 512KB SRAM
- Low power mode 0.25 mW (estimate)
- I²S/TDM master
- Quad SPI master
- SPI boot
- I²C/SPI
- 187 MHz Cortex®-M3 CPU core for system control
- AECQ-100 Grade 3 Compliant
- LFBGA 10x10 mm 0.65 mm ball pitch
- CAN-FD 2 channel option

Description

TC9560XBG is an automotive-grade bridging device that allows high-speed interface between the host SoC and Ethernet devices on the network.

Connected to an application processor or other SoC host, the TC9560XBG allows the host device to deliver audio, video, and data information through the 10/100/1000 Ethernet network in an automotive environment.

Connection to the host is via PCIe running at 2.5/5.0 GT/s, 480 Mbps HSIC or TDM (Time Division Multiplex)/I²S for audio traffic.

A RGMII/RMII/MII interface connects to the Ethernet switch, and both AVB and legacy traffic are supported.

An on-chip Cortex®-M3 processor running at 187 MHz can perform system control and management.

Security measures include HASH SHA2 and eFUSE.

The device will be qualified at AEC-Q100 Temperature Grade 3 for automotive environments.

TC9560XBG Features

DMA

- 6 channel

Ethernet support

- RGMII/RMII/MII* interface supporting up to 1000 Mbps
- Supports up to 10 downlink devices
- AVB and legacy Ethernet traffic supported

PCIe

- One endpoint, single link, single lane support
- Ver 2.0 (5 GT/s) and ver 1.0 (2.5 GT/s) support

HSIC

- Supports 480 Mbps

TDM/I²S

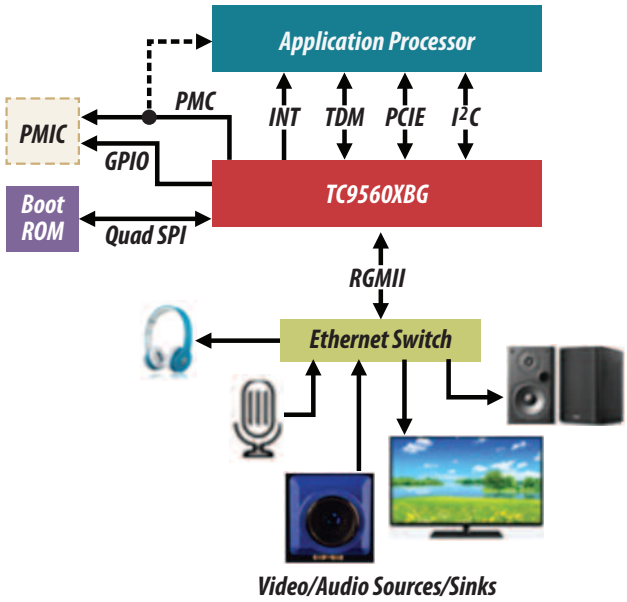
- 192 KHz sample frequency
- Maximum bit clock rate 50 MHz
- Pack/unpack TDM audio into AVB packets
- MBL format support

On-chip memory

- 512 KB SRAM

* In plan

Example System Diagram



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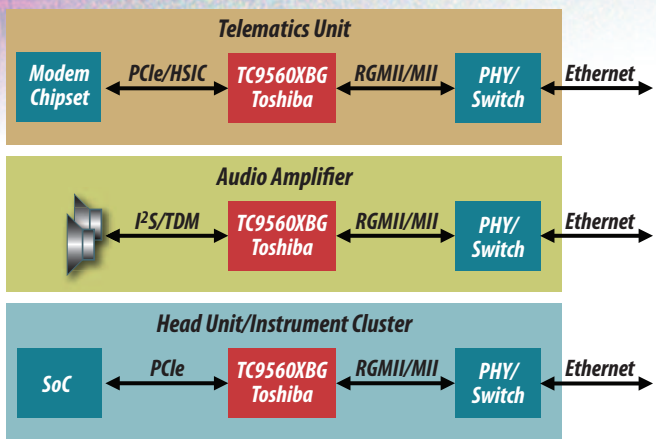
Example System Connection Diagram



qSPI for boot Flash

I²C/SPI interface

- Master/Slave I²C mode
- SPI mode

CAN-FD option (TC9560AXBG)

- 2 channels

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