

Automotive Infotainment Gateway based on MPC574xB/C/G Series Microcontrollers

Power Architecture®-based MCU for Automotive and Industrial Applications

Application One-Sheet

Overview

The automotive infotainment (IVI) gateway connects multiple audio-video sinks and sources within the IVI domain.

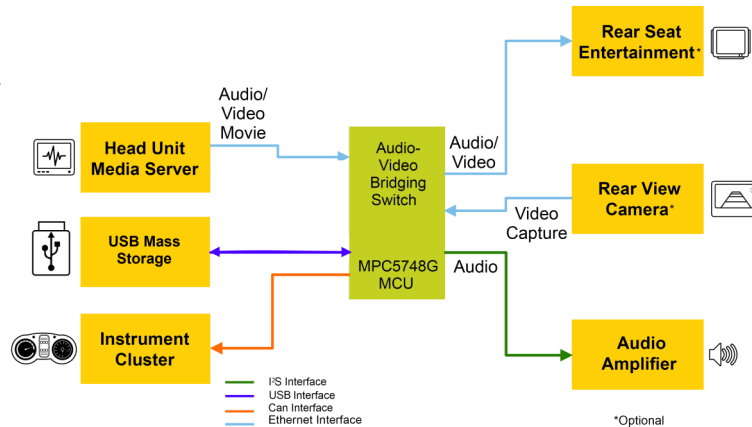
The IVI GW MCU provides the following key functionality:

- ▶ Ethernet AVB support, to transport Audio-Video over an Ethernet network to remote speakers and displays.
- ▶ I2S or USB connectivity to speakers, allowing them to support synchronous playback as part of an Ethernet AVB based IVI network.
- ▶ The audio-video bridging (AVB) stack supports the media clock recovery and time stamping.

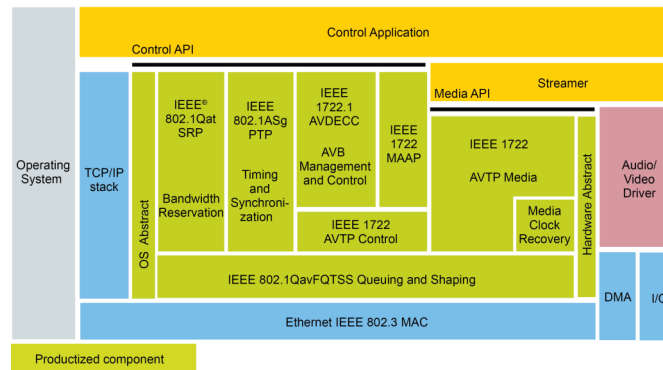
MPC574xB/C/G Specifications

Flash	Up to 6 MB	Timer/PWM	Up to 96 ch., eMIOS
RAM	Up to 768 KB	Other Timer	Up to 16 PIT, 3 STM, 4 SWT
Core	Up to 2 x Z4, 1 x Z2	Analog	Up to 2 ADC (10 & 12 bit), 3 Comparators, CTU
Speed	2 x 160 MHz 1 x 80 MHz	Communications	Up to 4 DSPI, 6 SPI, 18 LIN, 8 CAN FD, 4 I2C, 1xUSB, 2 x ENET, 1xSDHC
Op Range	3.3 to 5.5 V	Safety & Security	HSM, PASS and TDM, FCCU
Temp	-40 to 125 °C		
Package	176LQFP 256/324BGA	Low Power	LPU_SLEEP, LPU_STOP, LPU_STANDBY mode supported

System Block Diagram



AVB Stack Components



Features

- ▶ Multi-core high performance, coupled with hardware Ethernet AVB features for efficient A/V processing
- ▶ Ethernet AVB support:
 - Hardware features for clock recovery and IEEE 1588 time-stamping
 - Software stack available
 - I2S and USB connectivity to speakers
- ▶ Peripherals
 - 2 x Ethernet 10/100 AVB Ports
 - 2-port L2 Ethernet switch
 - Media Local Bus (For MOST)
- ▶ High Flash/SRAM ratio to support buffering needs for the application.

Enablement Tools

- ▶ Development hardware:
 - MPC574XG-MB family motherboard
 - MPC574XG-256DS, MPC574XG-176DS or MPC574XG-324DS daughterboard
 - DEVKIT-MPC5748G
- ▶ Runtime software: Flash and EEPROM driver
- ▶ Compiler: Green Hills®, Wind River®, HighTec®
- ▶ Debugger: Lauterbach®, iSystem®, PLS®, Green Hills®, P&E®
- ▶ Software Enablement:
 - S32 Design Studio with SDK
 - AUTOSAR 4.0 MCAL + OS

www.nxp.com/MPC5748G

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