Preview of i.MX 8M Plus Applications Processor Reference Manual

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Contents

Chapter 5
Clocks and Power Management

Chapter 6
SNVS, Reset, Fuse, and Boot

Chapter 7
Interrupts and DMA

Chapter 8
Chip IO and Pinmux

Chapter 9
External Memory

Chapter 10
Mass Storage

Chapter 11
Connectivity

Chapter 12
Timers

Chapter 13
Display, Imaging, and Camera

Chapter 14
Audio

Chapter 15
Graphics Processing Unit (GPU)

Chapter 16
Video Processing Unit (VPU)

Chapter 17
Low Speed Communication and Interconnects

Chapter 1
Introduction

1.1 Product Overview

This chapter introduces the architecture of the i.MX 8M Plus Applications Processor.

The i.MX 8M Plus family is a set of NXP products focused on machine learning applications, combining state-of-art multimedia features with high-performance processing optimized for low-power consumption.

The i.MX 8M Plus Applications Processor relies on a powerful fully coherent core complex based on a quad Cortex-A53 cluster, a Cortex-M7 coprocessor, audio digital signal processor, machine learning and graphics accelerators.

The i.MX 8M Plus provides additional computing resources and peripherals:

- Advanced security modules for secure boot, cipher acceleration and DRM support
- A wide range of audio interfaces
- Large set of peripherals that are commonly used in consumer/industrial markets including USB , PCIe, Ethernet, and CAN

1.2 Target Applications

The i.MX 8M Plus Media Applications Processor targets applications on:

- Smart Homes, Buildings and Cities
- Machine Learning and Industrial Automation
- Consumer and Pro Audio/Voice Systems

1.3 Acronyms and Abbreviations

The table below contains acronyms and abbreviations used in this document.

Acronyms and Abbreviated Terms

Term	Meaning
ADC	Analog-to-Digital Converter
AHB	Advanced High-performance Bus
AIPS	Arm IP Bus
ALU	Arithmetic Logic Unit
AMBA	Advanced Microcontroller Bus Architecture
APB	Advanced Peripheral Bus
ASRC	Asynchronous Sample Rate Converter
AXI	Advanced eXtensible Interface
CA/CM	Arm Cortex-A/Cortex-M
CAAM	Cryptographic Acceleration and Assurance Module
CA53	Arm Cortex A53 Core
CAN	Controller Area Network
CM7	Arm Cortex M7 Core
CPU	Central Processing Unit
CSI	CMOS Sensor Interface
CSU	Central Security Unit
CTI	Cross Trigger Interface
D-cache	Data cache
DAP	Debug Access Port
DDR	Double data rate
DMA	Direct memory access
DPLL	Digital phase-locked loop
DRAM	Dynamic random access memory
ECC	Error correcting codes
ECSPI	Enhanced Configurable SPI
LPSPI	Low-power SPI
EDMA	Enhanced Direct Memory Access
EIM	External Interface Module
ENET	Ethernet
EPIT	Enhanced Periodic Interrupt Timer
EPROM	Erasable Programmable Read-Only Memory
ETF	Embedded Trace FIFO
ETM	Embedded Trace Macrocell
FIFO	First-In-First-Out
GIC	General Interrupt Controller
GPC	General Power Controller
GPIO	General-Purpose I/O
GPR	General-Purpose Register
GPS	Global Positioning System

Table continues on the next page...

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