i.MX 6ULL Single-Core Processor with Arm® Cortex®-A7 Core

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Overview | Product Details | Documentation | Design Resources | Training | Support

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i.MX 6ULL Applications Processors for Consumer Products

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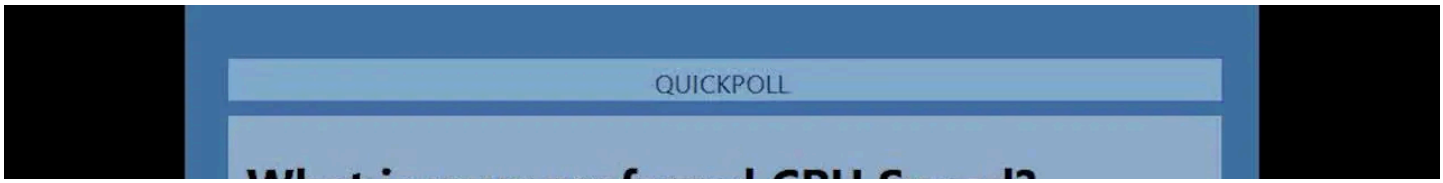

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The i.MX 6ULL is a power efficient and cost-optimized applications processor family featuring an advanced implementation of a single Arm Cortex-A7 core, which operates at speeds up to 900 MHz. The i.MX 6ULL applications processor includes an integrated power management module that reduces the complexity of an external power supply and simplifies power sequencing. Each processor in this family provides various memory interfaces, including 16-bit LPDDR2, DDR3, DDR3L, raw and managed NAND flash, NOR flash, eMMC, Quad SPI and a wide range of other interfaces for connecting peripherals such as WLAN, Bluetooth®, GPS, displays and camera sensors.

DATA SHEET REFERENCE MANUAL

Product Details

Block Diagram | Features | Applications

Block Diagram

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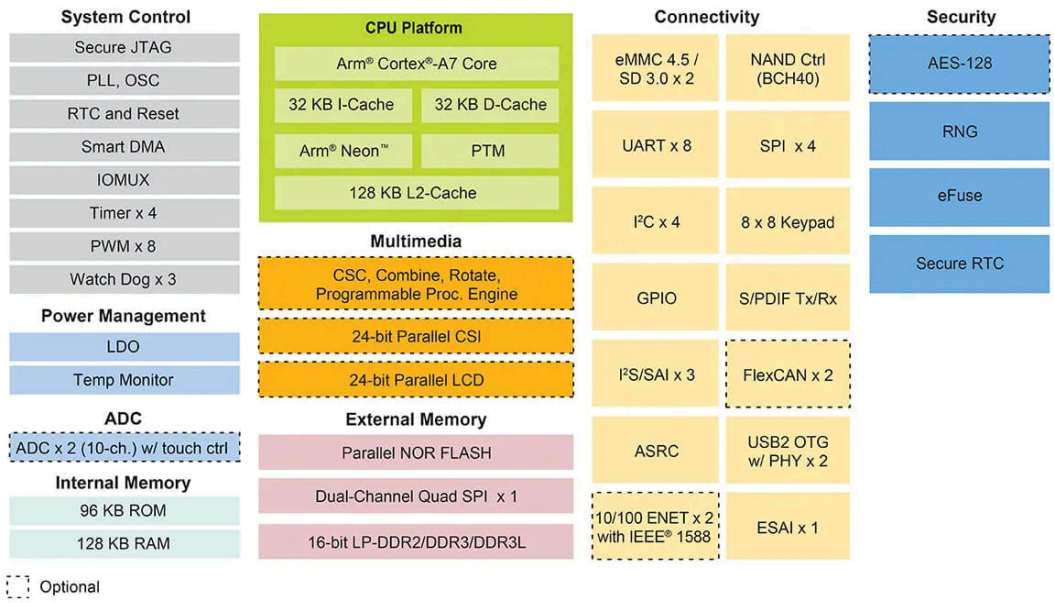
i.MX 6ULL Block Diagram



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Features

CPU Complex	• Cortex-A7 core up to 900 MHz, 128 KB L2 cache
Display	• Parallel LCD Display up to WXGA (1366x768) • 8/10/16/24-bit Parallel Camera Sensor Interface • Electrophoretic display controller support direct-driver for E-Ink EPD panel, with up to 2048x1536 resolution at 106 Hz
Memory	• 16-bit LP-DDR2, DDR3/DDR3L • 8/16-bit Parallel NOR FLASH / PSRAM • Dual-channel Quad-SPI NOR FLASH • 8-bit Raw NAND FLASH with 40-bit ECC
Connectivity	• 2x MMC 4.5/SD 3.0/SDIO Port • 2x USB 2.0 OTG, HS/FS, Device or Host with PHY • Audio Interfaces include 3x I2S/SAI, S/PDIF Tx/Rx • 2x 10/100 Ethernet with IEEE 1588 • 2x 12-bit ADC, up to 10 input channel total, with resistive touch controller (4-wire/5-wire)
Advanced Power Management	• Partial PMU Integration
Security	• Security Block: TRNG, Crypto Engine (AES with DPA, TDES/SHA/RSA), Secure Boot
Package	• 14x14 289 MAPBGA 0.8mm pitch • 9x9 272 MAPBGA 0.5 mm pitch

Less ^

Part numbers include: MCIMX6Y0CVM05AB, MCIMX6Y0DVM05AB, MCIMX6Y1CVK05AB, MCIMX6Y1CVM05AB, MCIMX6Y1DVK05AB, MCIMX6Y1DVM05AB, MCIMX6Y2CVK08AB, MCIMX6Y2CVM05AB, MCIMX6Y2CVM08AB, MCIMX6Y2DVK09AB, MCIMX6Y2DVM05AB,

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Applications

Automotive

Heating Ventilation and Air Conditioning (HVAC) (/applications/automotive/body-and-vehicle-control/hvac:HEATING-VENTILATION-AIR-CONDITIONING)

Motorcycle Engine Control Unit (ECU) and Small Engine Control (/pages/motorcycle-engine-control-unit-ecu-and-small-engine-control:MOTORCYCLE-ECU-SMALL-ENGINE-CONTROL)

V2X Communications (/applications/automotive/adas-and-safe-driving/v2x-communications:V2X-COMMUNICATIONS)

Communication Infrastructure

Broadband Modem and Residential Gateway (/applications/smart-city/transportation/broadband-modem-and-residential-gateway:BROADBAND-GATEWAY)

Industrial

3-Phase AC Induction Motor (/applications/industrial/aerospace/3-phase-ac-induction-motor:AC-MOTORS)

Air Conditioning (AC) (/applications/smart-home/smart-appliance/air-conditioning-ac:AIR-CONDITIONING)

Avionics (/applications/industrial/aerospace/avionics:AVIONICS)

Building Safety (/applications/industrial/building-control/building-safety:BUILDING-SAFETY)

Building Security (/applications/smart-city/access/building-security:BUILDING-SECURITY)

Circuit Breaker (/applications/industrial/power-and-energy/circuit-breaker:CIRCUIT-BREAKER)

Energy Gateway (/applications/smart-city/infrastructure/energy-gateway:METERING-DATA-CONCENTRATOR)

Heat Metering (/applications/industrial/power-and-energy/heat-metering:HEAT-METERING)

Industrial HMI (/applications/industrial/factory-automation/industrial-hmi:INDUSTRIAL-HMI)

Smart Lighting (/applications/smart-city/infrastructure/smart-lighting:SMART-LIGHTING-ASP)

Smart Power Socket and Light Switch (/applications/smart-home/home-control-and-security/smart-power-socket-and-light-switch:SMART-POWER-SOCKET-LIGHT)

Solar Photovoltaic (PV) Energy Generation (/applications/industrial/power-and-energy/solar-photovoltaic-pv-energy-generation:ELECTRICITY-GENERATION)

Mobile

Hearables (/applications/mobile/wearables/hearables:HEARABLES)

Smart Watch (/applications/mobile/wearables/smart-watch:SMARTWATCH)

Wristband (/applications/mobile/wearables/wristband:WRISTBAND)

Smart City

Automatic Vehicle Identification (/applications/smart-city/transportation/automatic-vehicle-identification:AUTOMATIC-VEHICLE-ID)

Fleet Management (/applications/smart-city/retail/fleet-management:FLEET-MANAGEMENT)

Inventory and Supply Chain Management (/applications/smart-city/retail/inventory-and-supply-chain-management:SUPPLY-CHAIN-MGMT)

Transport Ticketing (/applications/smart-city/transportation/transport-ticketing:TRANSPORT-TICKETING)

Smart Home

Home Security and Surveillance (/applications/smart-home/home-control-and-security/home-security-and-surveillance:HOME-SECURITY-SURVEILLANCE)

In-Home Energy Display (/applications/smart-home/home-control-and-security/in-home-energy-display:IN-HOME-ENERGY-DISPLAY)

Major Home Appliances (/applications/smart-home/smart-appliance/major-home-appliances:MAJOR-HOME-APPLIANCE)

Robotic Appliance (/applications/smart-home/smart-appliance/robotic-appliance:ROBOTIC-APPLIANCE)

Small and Medium Appliances (/applications/smart-home/smart-appliance/small-and-medium-appliances:SMALL-MEDIUM-APPLIANCE)

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