

▶ All the high-speed interfaces you need for flexible connectivity

- Two USB 2.0 interfaces with PHY
- Three SDIO interfaces provides boot source, expandable storage, and connectivity options
- PCIe interface with L1 substates for fast wakeup and low power
- MIPI-DSI (4-lane) display interface
- MIPI-CSI (4-lane) camera interface
- Gigabit Ethernet MAC with Audio Video Bridging (AVB) and IEEE capability

ADVANCED VIDEO AND AUDIO FOR MEDIA IOT DEVICES

▶ Full duplex 1080p video

- Independent hardware video encode and decode engines deliver low-power, high-quality 1080p video for a variety of video-enabled applications such as video calling, monitoring and streaming. Supports latest standards such as HEVC (H.265*) and VP9* and H.264 and VP8.

▶ Pro-level audio for embedded applications

- Up to 20 audio channels enabled on a price-competitive embedded applications processor. It brings DSD512 and TDM audio and a game-changing selection of advanced audio streaming interfaces into the next generation of connected speakers, soundbars and AV receivers. Bring pro-level audio to your embedded consumer or industrial design.

* H.265 and VP9 video decode only.

THE NEW HMI: VIDEO, VOICE, MACHINE VISION, AI

▶ Rich display with video capabilities

- Up to 1080p60 resolution on the MIPI-DSI (4-lanes) interface with independent 2D and 3D GPU engines work effectively and efficiently to enable high quality visual user experience.
- Playback the latest video standards up to 1080p resolution using H.264, H.265 and VP9 (for YouTube) codecs, using low-power hardware acceleration.

▶ Bring voice control to the edge

- Your design can leverage the latest voice control capabilities. Software solutions support reliable voice control in noisy environment without a DSP.

▶ Machine vision

- The MIPI-CSI interface allows you to connect a camera and perform imaging based inspection of products and services. This can enable data collection for analysis, learning and automation of commercial or industrial systems.

i.MX 8M MINI—DIFFERENTIATED FEATURES

| Feature | i.MX 8M Mini | i.MX 8M Mini Lite |
|---------------------------|---|-------------------|
| Arm Core | 1x or 2x or 4x Cortex-A53 | |
| Arm Core | 1x Cortex-M4F | |
| DDR Interface | x32 LPDDR4/DDR4/DDR3L | |
| Audio | 20x I ² S, 32-bit up to 384KHz with DSD512 and TDM support, 8-ch PDM microphone inputs | |
| GPU | 2D and 3D Graphics | |
| Video Decode Acceleration | 1080p60 H.265, H.264, VP8, VP9 | n/a |
| Video Encode Acceleration | 1080p60 H.264, VP8 | n/a |
| Display | 1x MIPI-DSI | 1x MIPI-DSI |
| Camera | 1x MIPI-CSI | 1x MIPI-CSI |
| Connectivity | 1x PCIe 2.0, 3x SDIO/eMMC, 2x USB 2.0, 1x GbE | |

SYSTEM SCALABILITY AND DESIGN FOR OPTIMIZATION

▶ Pin compatible package options provide design flexibility

- Scale up and down the product line-up through a pin-compatible package option that enables you to future-proof your design. Design your single PCB platform with build options that use different i.MX 8M Mini applications processors to meet your product needs.
- Build options include choice of quad-, dual-, or single-core Cortex-A53 processors, Cortex-A53 operating frequency, and 1080p video performance.

▶ Expert package design enable system design simplification

- Our expert engineers have defined package options that simplify your hardware design and provide overall system cost benefit depending on the application. Reference hardware designs are available to help get you started fast.

▶ Comprehensive software support

- Android™, Linux®, FreeRTOS and partner commercial operating systems. Benefit from extensive years of BSP development on i.MX applications processors from NXP and its partners.

▶ Industrial and consumer qualified

- Industrial (-40 °C to 105 °C T_j) device options to support always-on applications operating in harsh environments. For more cost-sensitive, higher-performing applications, consumer device options are available (0 °C to 95 °C T_j, faster core operating speeds).

GET STARTED NOW

The i.MX 8M Mini silicon is available for your next design. Get started now with EVKs, samples, software and documentation. Available today at www.nxp.com/iMX8Mmini.

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- ✓ Alternative Solution
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