ME10 SoC

IPMX Transceiver SoC

PRODUCT BRIEF

IPMX IP MEDIA EXPERIENCE™

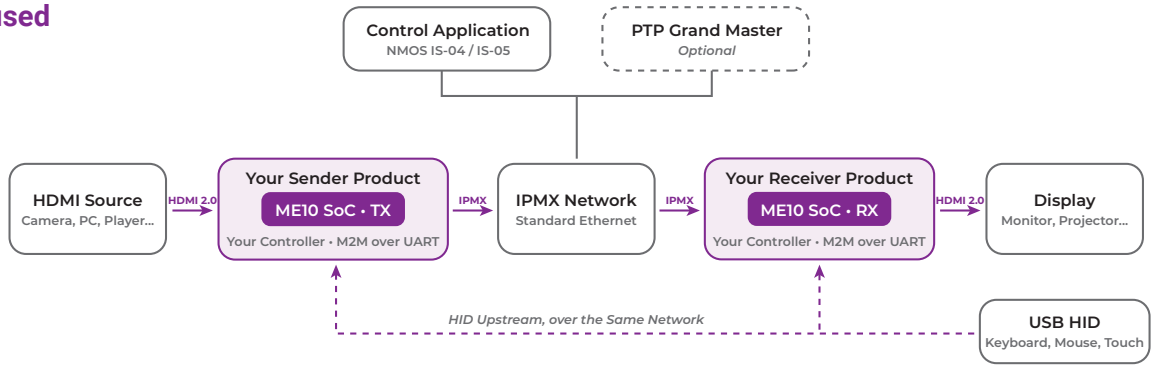
An IPMX transceiver SoC for HDMI 2.0 products.
Get to market fast, with the standard in silicon.



Your customers are asking for IPMX by name, and the first wave of products is being designed now. Every quarter spent building your own transport layer is a quarter a competitor spends shipping.

The ME10 is the entire IPMX transport layer in one SoC, in silicon and in firmware Macnica maintains. The ME10 Gateway Kit built on it is already IPMX certified.

How it is used



Fast to Market

The transport layer is finished: media, timing and JPEG-XS run in hardware, the NMOS control plane in firmware Macnica maintains. Design in one chip, or start from the IPMX certified ME10 Gateway Kit, and ship.

Right the First Time

Macnica has been in the IPMX standards community since the start, and the ME10 was designed to the specifications from the silicon up. The Gateway Kit built on it is IPMX certified.

One Chip for Send and Receive

One part configures as a sender or a receiver, so the same chip serves both ends of the link. Your processor drives it over UART, and NMOS IS-04 and IS-05 make your product a discoverable network endpoint.

Features

- HDMI 2.0 to IPMX transceiver, configurable as sender or receiver
- Up to 4K60p: RGB and YUV 4:4:4 at 8-bit, YUV 4:2:2 at 8 and 10-bit
- JPEG-XS compression from intoPIX, in hardware
- Sub-frame latency for live presentation and KVM
- IPMX VSF TR-10 compliant: timing, PCM audio, HDCP/HKEP, compressed video
- AMWA NMOS IS-04 / IS-05 over a RESTful API
- Machine to Machine (M2M) control interface over UART
- L-PCM audio to 7.1 channels, 48 kHz / 24-bit
- USB HID+ for KVM keyboard, mouse and touch
- HDCP with HKEP, supported through an OEM-supplied companion chip
- Media and control share one standard Ethernet connection
- 23 x 23 mm, 484-BGA package with dual ARM processors

Example Applications

PTZ and Production Camera
Live Production



The camera joins an IPMX network as a standard source, discovered and routed over IS-04 and IS-05.

Gateways and Extenders
Pro AV and Broadcast Facilities



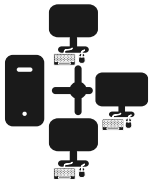
A sender and a receiver carry HDMI across the facility's IP network in place of a point-to-point cable.

Displays and Projectors
Signage, Education, IMAG



A receive-configured ME10 drives the display directly from the network.

KVM and Interactive Spaces
Corporate, Control Rooms



Sub-frame latency and USB HID keep a networked operator position responsive.

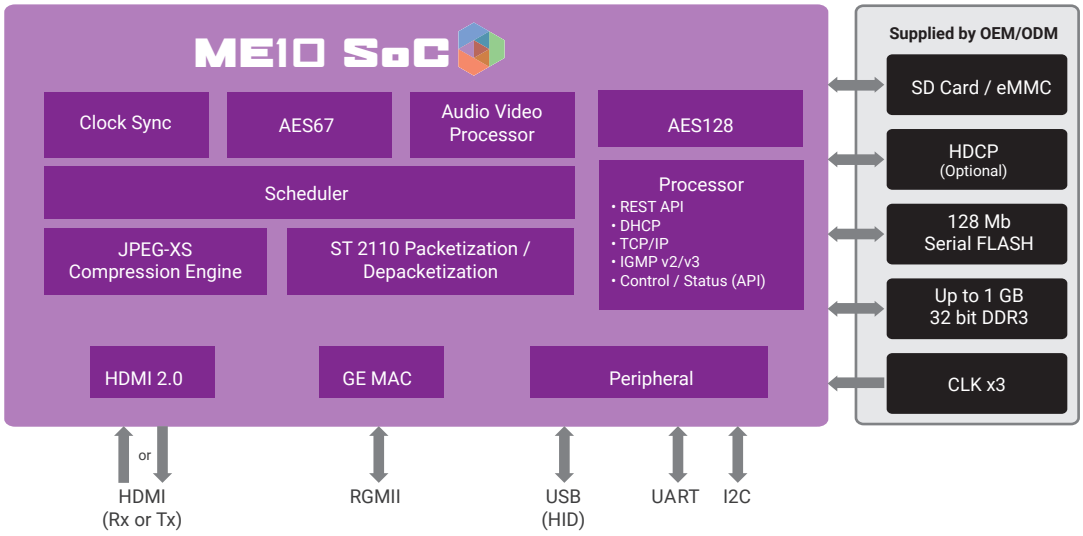
ME10 SoC

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Evaluate and Develop

The ME10 Gateway Kit is a working IPMX gateway built on the ME10, configurable as a sender or a receiver. Evaluate against running hardware, develop over its UART, microSD and JTAG interfaces, and carry the design into your own product with support from Macnica's engineering team.

High-level ME10 Block Diagram



Technical Specifications

Feature	Specification	Note
General		
Function	IPMX to or from HDMI 2.0, configurable as sender (TX) or receiver (RX)	One chip covers both roles
Package	23 x 23 mm, 484-BGA; dual ARM processors; hardware-accelerated media path (JPEG-XS, ST 2110)	
Interfaces	HDMI 2.0 TX or RX (unidirectional); RGMII for gigabit Ethernet, media and control; 32-bit DDR3, 256 MB typical, up to 1 GB; 3 x UART, 2 x I2C, SDIO (SD Card), QSPI; ULPI USB 2.0; multiple clock input references	USB is HID+ class, for KVM keyboard, mouse and touch; USB validation pending
Networking		
Streaming	UDP, RTP, RTCP; multicast and unicast; IGMP v2 and v3; up to 882 Mb/s streaming traffic	
Standards compliance		
IPMX VSF TR-10	TR-10-1 Timing; TR-10-2 PCM Audio; TR-10-5 HDCP/HKEP; TR-10-11 Compressed Video; TR-10-8 NMOS	HDCP requires an OEM/ODM-supplied Explore companion chip
Media		
Video modes	TV (CV): 8-bit RGB/YUV 4:4:4, 8/10-bit YUV 4:2:2; 720p60, 1080p60, 2160p at 23.97 / 30 / 59.94 / 60 FPS. PC (IT): 8-bit RGB/YUV 4:4:4; 1024 x 768 at 60 FPS	Additional modes are delivered through firmware updates
Audio modes	L-PCM 2.0, 5.1 and 7.1; 48 kHz / 24-bit	
Control Plane		
Control	External: NMOS IS-04 / IS-05 over a RESTful API. Internal: Machine to Machine (M2M) interface over UART	REST API, DHCP, TCP/IP and IGMP on the network side

The seeds of tomorrow. MACNICA

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