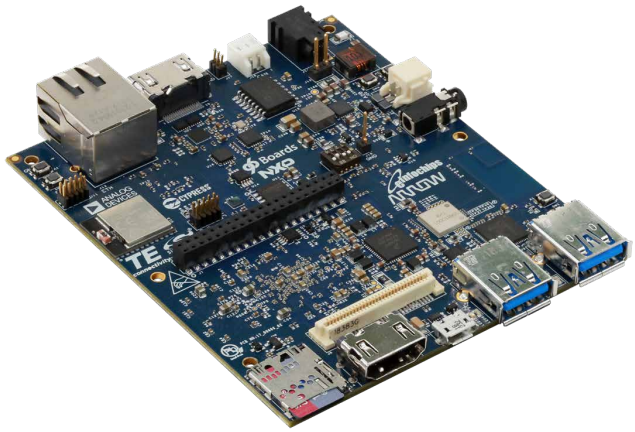
Thor96 Board



The Thor96 Board is a single-board computer powered by the NXP i.MX 8M SoC, incorporating a quad-core 64-bit Arm-A53, dedicated GPU and VPU, 4K support, Wi-Fi, Bluetooth and a wide range of I/O. 96Boards is a 32-bit and 64-bit ARM® Open Platform hosted by Linaro™ with the intention to serve the software/ maker and embedded OEM communities.

Do More with i.MX 8M SoC

The iMX 8M SoC is a feature-rich system containing a quad-core, 64-bit Arm A53 processor, Vulkan GPU with four shader cores and VPU capable of decoding 4K video at 60 fps. These features alone make the Thor96 board highly capable in a wide range of applications involving video and high processor requirements, including robotics, local AI systems, monitoring and drones.

Low-Power Processing

The iMX 8M SoC integrates a secondary generic Arm Cortex-M4 that can run firmware when in low-power mode as well as for real-time processing of I/O. Unlike other competitor single-board computers, the Thor96 can process I/O at a superior speed without affecting normal operation or performance.

Superior Graphics and Video Performance

Integrated into the Thor96 is a high-performance GPU with four shader processors that are capable of processing 267 million triangles/second, 1.6 Gpixels/second and 32 GFLOPs for 32-bit calculations, all while supporting OpenGL 1.1, 2.0, 3.0, 3.1 and Open CL1.2. The on-board VPU can decode 4K video at 60 fps, making it highly ideal for billboards and other large displays including control centers and even home cinema centers. 4K video capabilities also significantly future-proofs the Thor96, keeping it relevant for the coming years.

Low-latency multi-node Digital Audio

The Thor96 supports low latency digital audio to multiple microphone arrays and speakers using A²B® technology by Analog Devices. Running both power and multi-channel digital audio over a single unshielded twisted pair of cables reduces weight, cost and complexity while enabling advanced voice recognition and active noise cancelation applications.

Connect to the World with the Thor96

While Wi-Fi and Ethernet are now commonplace in single-board computers, the Thor96 takes the lead with the Cypress' WICED Wi-Fi + Bluetooth combos solution which integrates IEEE 802.11a/b/g/n/ac WLAN and Bluetooth in a single-chip solution to enable small-form-factor IoT designs, 1,000-Mbps Ethernet support, CAN bus, Zigbee, Thread, and a debug UART port. Along with the wide range of communication ports, the Thor96 also has two expansion ports: a 40-pin low-speed port and a 60-pin high-speed port.

Partner Information

AVX is the premier passive supplier on these platforms and provides solutions for transient protection, decoupling and signal integrity optimization. TE Connectivity is our comprehensive connector solution provider for these platforms as well.

FEATURES

- Arm A53 Quad-Core 64-bit @ 1.5 GHz
- Cortex-M4F Core @ 266MHz
- 2-GB LPDDR4 @ 1,600 MHz Industrial Temp by Micron
- H.265 — 4K @ 60 fps Decode
- H.264 — 1,080 @ 60 fps Encode
- HDMI Output and DSI to HDMI
- Cypress' industry-leading 802.11ac Wi-Fi and Dual-Mode Bluetooth wireless connectivity
- Silicon Labs MGM111 Thread / Zigbee Module
- Dual MIPI Display support
- Multi-channel digital audio enabled by A²B® from Analog Devices
- 2 USB (2× 3.0 and 1× Micro-USB B)
- 40-Pin Low-Speed Connector
- 60-Pin High-Speed Connector
- Dimensions: 85 mm by 54 mm meeting 96Boards™ Consumer Edition Extended specifications

APPLICATIONS

- Robotics
- Building Automation
- Drones
- Wireless Monitoring
- AI Execution and Subsystems
- Automotive Cabin Electronics
- Visual Machine Learning
- Home Cinema
- Advertisement Billboards