VAR-SOM-MX8X

Maximized safety and reliability in a power-optimized design

The VAR-SOM-MX8X supports NXP’s i.MX 8X Quad 1.2GHz Cortex™-A35 processor plus Cortex-M4F real-time co-processor and offers built-in safety features, highly integrated multimedia support and efficient power/performance architecture.

VAR-SOM-MX8X is a pin2pin System on Module, compatible with the VAR-SOM-MX8, VAR-SOM-MX6, and VAR-SOM-SOLO/DUAL. It offers Variscite’s customers a high level of scalability, extended lifetime availability and reduced development time, cost and risk.

This highly integrated SoM is designed to support a wide range of high-reliability, power-efficient applications, from industrial automation & control to defense, medical, telematics, building control, failover displays/HMI and robotics. The SoM multimedia features and interfaces options include Vivante GC7000Lite GPU for 2D and 3D graphics acceleration, 4K H.265 Decode, 1080p H.264 Encode/Decode, Camera Interfaces, DSI / LVDS, Parallel LCD, dual GbE, certified Wi-Fi/ BT, CAN/CAN-FD, USB3 and serial interfaces.

The Symphony carrier board complements an attractive full reference kit of the VAR-SOM-MX8X, used by Variscite’s customers for evaluation, development and mass production.

Main Features

**NXP i.MX 8X processor**
- 4 x 1.2GHz ARM Cortex™-A35
- Real-time ARM Cortex™-M4F
- Neon Media Processor Engine (MPE)
- Internal HiFi 4 DSP
- GC7000Lite high performance GPU

**Memory and Storage:**
- Up to 4GB LPDDR4 memory, up to 64GB eMMC storage

**Display and video Support**
- 24-bit parallel LCD up to 720p60
- 4K H.265 Decode, 1080p H.264 Encode/Decode
- MIPI DSI 1920X1080 at 60Hz
- Touch screen
- Dual channel LVDS display 1920X1080 at 60Hz

**Networking**
- 2x 10/100/1000Mbps Ethernet
- Certified WiFi 802.11ac/a/b/g/n and Bluetooth 5.2/BLE

**High Speed interfaces**
- Dual USB 3.0/2.0
- PCIe
- 3x CAN

**Audio**
- Digital audio (ESAI, SAI, SPDIF)
- Analog, digital microphone (stereo)
- Headphone out, line-in

**Camera**
- 1x MIPI-CSI2, 1x parallel CSI

**Other Interfaces:**
- I2C, SPI, PWM, JTAG, UART, SD/MMC, GPIO, timers, keypad, QSPI

**OS Support**
- Linux
- Android

**Power**
- Single 3.3V

**Dimensions (W x L x H):**
- 67.6 mm x 51.6 mm x 5.2 mm

**-40 to 85°C industrial temperature support**

**Low Power consumption:**
- Optimized power consumption in both operational and suspend modes
Complementing the VAR-SOM-MX8X

VAR-SOM-MX8X Evaluation Kit

The VAR-DVK-MX8X allows full performance and capability evaluation, serving as an evaluation, development and production platform for hardware and software teams.

Evaluation Kit content
- Symphony-Board populated with VAR-SOM-MX8X
- 7” LCD + capacitive touch panel
- Power supply and communication cables
- Documentation and design package

Symphony-Board

Symphony-Board - Supporting VAR-SOM-MX8X

The Symphony-Board ensures a scalable and simplified development and reference board to achieve a short time-to-market for customer’s designs and end-products.

<table>
<thead>
<tr>
<th>Display Support</th>
<th>Audio</th>
<th>Debug</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSI, dual LVDS display</td>
<td>Headphone</td>
<td>Micro USB</td>
<td>SD/SDIO/MMC card socket</td>
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<td></td>
<td>Line-in</td>
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<td></td>
<td>Digital mic</td>
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<td>High speed interfaces</td>
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<tr>
<td>2x USB 3.0/2.0 ports</td>
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<tr>
<td>2x 10/100/1000Mbps Ethernet RJ45</td>
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<td>mPCIe</td>
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<tr>
<th>Touch Panel</th>
<th>Camera</th>
<th>RTC backup battery</th>
<th>Size</th>
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</thead>
<tbody>
<tr>
<td>Capacitive touch (6-pin FFC/FPC)</td>
<td>MIPI CSI serial, 1x parallel CSI (extension connector)</td>
<td>CRT225 coin battery socket</td>
<td>16.9cm x 8.9cm</td>
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<tr>
<td>Resistive touch (4-pin FFC/FPC)</td>
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<tr>
<th>Camera</th>
<th>Additional expansion Connectors</th>
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<tr>
<td></td>
<td>SPI, GPIO, UART, I2C, CAN, PWM, SAI</td>
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<table>
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<tr>
<th>Power</th>
<th>Size</th>
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<tr>
<td>12V DC input</td>
<td>16.9cm x 8.9cm</td>
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About Variscite

Variscite is a leading System on Modules (SoM) and Single-Board-Computer (SBC) design and manufacture company. A trusted provider of development and consulting services for a variety of embedded platforms, Variscite transforms clients’ visions into successful products.

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