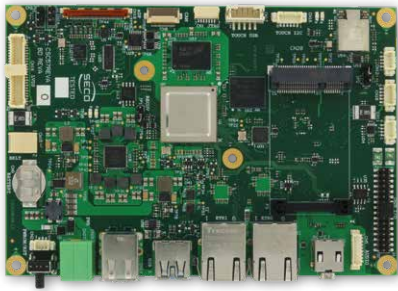## SBC-3.5-MX8X

3.5" SBC with NXP i.MX 8X Applications Processors

# Ideal for certified performance requirements and safety efficient

## HIGHLIGHTS

**CPU**
NXP i.MX 8X family of Processors

**CONNECTIVITY**
2x GbE; miniPCI-e slot; 1x USB3.0; 2x USB 2.0; Expansion header

**GRAPHICS**
GC7000Lite with up to 16 Execution Units

**MEMORY**
Soldered on-board LPDDR4 memory, frequency up to 1200MHz

Available in Industrial Temperature Range

GOLD PARTNER NXP

Linux | HDMI® HIGH-DEFINITION MULTIMEDIA INTERFACE

## MAIN FIELDS OF APPLICATION

Transportation

Industrial Automation

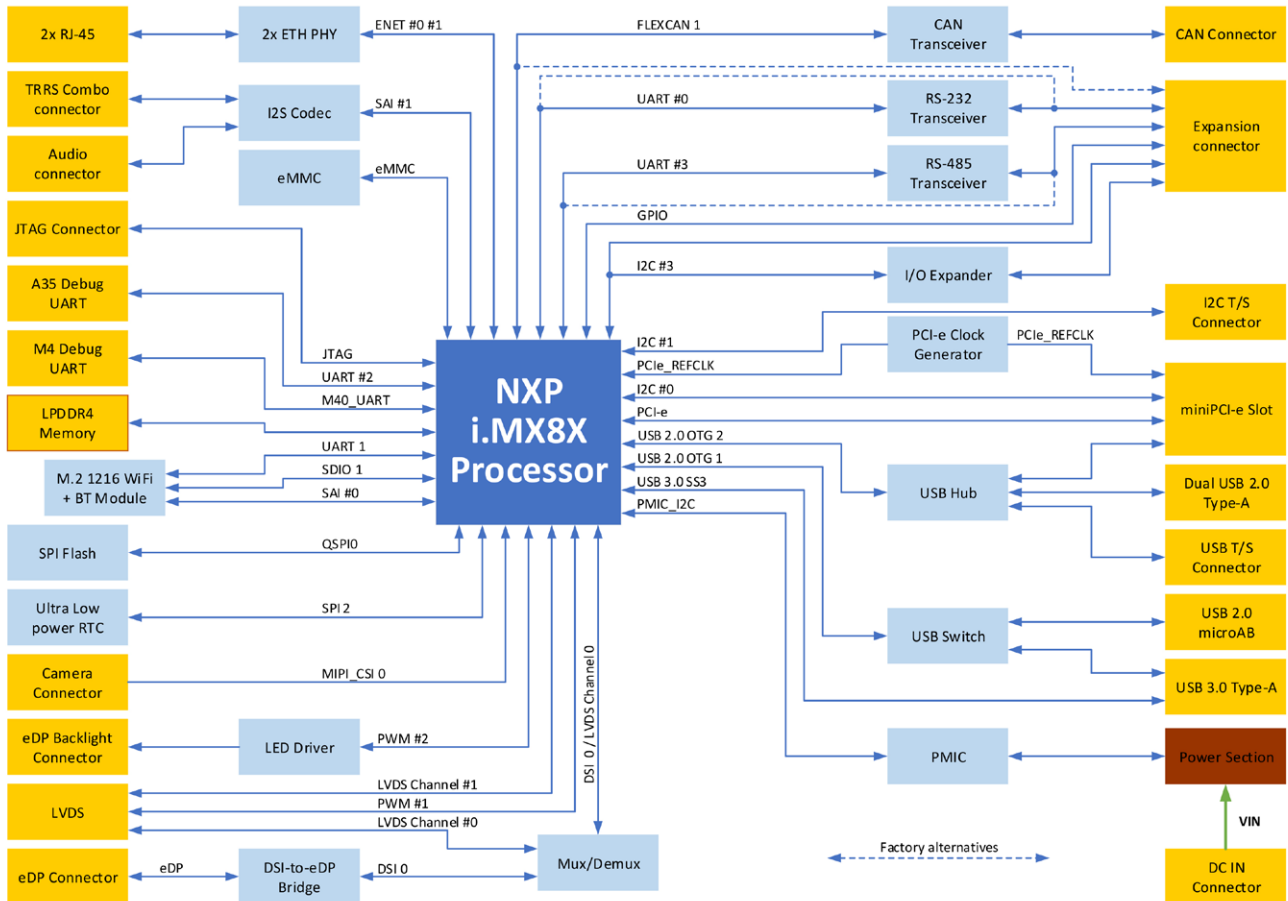Digital Signage

## FEATURES

| | | | |
|---|---|---|---|
| **Processor** | NXP i.MX 8X family SoCs: Dual or Quad Arm® Cortex®-A35 Cores + 1x Cortex® M4F core for real-time processing<br>· NXP i.MX8 QuadXplus, 4x Arm® Cortex®-A35 Cores + 1x Cortex® M4F core for real-time processing<br>· NXP i.MX8 DualXplus, 2x Arm® Cortex®-A35 Cores + 1x Cortex® M4F core for real-time processing | **Audio** | I2S Audio codec<br>Mic In + Hp-Out on TRRS combo connector<br>Line Out + 2x Mic-In interfaces on internal connector |
| | | **PCI-e** | Optional mini PCI-e Slot |
| **Max Cores** | 4+1 | **Serial Ports** | 1x UART on expansion connector, optionally with RS-232 interface<br>1x UART on expansion connector, optionally with RS-485 interface<br>1x CAN port, available at TTL Level on expansion connector or with CAN transceiver on dedicated connector<br>2x Debug UARTs on dedicated connectors |
| **Memory** | Soldered down LPDDR4 memory @ 1200MHz, 32-bit interface, up to 4GB | | |
| **Graphics** | Embedded GC7000Lite GPU<br>Supports OpenGL 3.0, 2.1, OpenGL ES 3.1, OpenCL 1.2 Full Profile and 1.1, OpenVG 1.1, and Vulkan<br>Embedded VPU, supports HW decoding of HEVC/H.265, AVC/H.264, MPEG-2, VC-1, RV10, VP8, H.263 and MPEG4.2t, HW encoding of AVC/H.264<br>2 independent displays supported | **Other Interfaces** | Available on expansion connector:<br>· 16x GPIOs<br>· I2C interface<br>· 2x analog inputs<br>· 1x PWM<br>Power and reset button input on dedicated connector |
| **Video Interfaces** | Factory options:<br>· eDP 4-lane interface + LVDS single Channel 18-/24-bit interface<br>· LVDS Dual Channel / 2 x LVDS Single Channel interface | **Power Supply** | Factory option, +12$V_{DC}$ or +24 $V_{DC}$ input voltage<br>DC power jack or 2-poles PCB terminal block for voltage supply<br>RTC battery |
| **Video Resolution** | Up to 1080p60 | **Operating System** | Linux |
| **Mass Storage** | Soldered onboard eMMC 5.1 Drive, up to 64GB<br>QSPI NOR Flash soldered on-board | **Operating Temperature*** | -40°C ÷ +85°C (Industrial version) |
| **Networking** | Up to 2 x Gigabit Ethernet ports<br>On-board WiFi 802.11 a/b/g/n + BT 5.0 module, optional | **Dimensions** | 146 x 102 mm (3.5" form factor) |
| **USB** | 1x USB 3.0 Host ports on USB 3.0 Type-A socket<br>1x USB OTG Port on micro-AB connector (interface shared with USB 2.0 interface of USB 3.0 Type-A socket)<br>2x USB 2.0 Host ports on Dual Type-A socket<br>1x USB 2.0 Host port on miniPCI-e Slot | | |

*Measured at any point of SECO standard heatspreader for this product, during any and all times (including start-up). Actual temperature will widely depend on application, enclosure and/or environment. Upon customer to consider application-specific cooling solutions for the final system to keep the heatspreader temperature in the range indicated.

Information subject to change. Please visit www.edge.seco.com to find the latest version of this datasheet

## BLOCK DIAGRAM

**NXP i.MX8X Processor**

2x RJ-45 — 2x ETH PHY — ENET #0 #1

TRRS Combo connector — I2S Codec — SAI #1

Audio connector

eMMC — eMMC

JTAG Connector — JTAG

A35 Debug UART — UART #2

M4 Debug UART — M40_UART

LPDDR4 Memory — UART 1

M.2 1216 WiFi + BT Module — SDIO 1 — SAI #0

SPI Flash — QSPI0

Ultra Low power RTC — SPI 2

Camera Connector — MIPI_CSI 0

eDP Backlight Connector — LED Driver — PWM #2

LVDS — LVDS Channel #1 — PWM #1 — LVDS Channel #0

eDP Connector — eDP — DSI-to-eDP Bridge — DSI 0 — Mux/Demux

DSI 0 / LVDS Channel 0

FLEXCAN 1 — CAN Transceiver — CAN Connector

UART #0 — RS-232 Transceiver — Expansion connector

UART #3 — RS-485 Transceiver

GPIO

I2C #3 — I/O Expander

I2C #1 — PCI-e Clock Generator — PCIe_REFCLK

PCIe_REFCLK

I2C #0

PCI-e — miniPCI-e Slot

USB 2.0 OTG 2

USB 2.0 OTG 1

USB 3.0 SS3 — USB Hub — Dual USB 2.0 Type-A

PMIC_I2C — USB T/S Connector

USB Switch — USB 2.0 microAB

USB 3.0 Type-A

PMIC — Power Section

I2C T/S Connector

Factory alternatives

VIN

DC IN Connector

# Streamline and expedite your edge computing implementations

## EDGEHOG OS

A flexible operating system that adapts to your needs, thanks to the customization tool and Docker support. Reliability and security are built-in through a dual-partition system and native integration with Exein's robust AI-based protection.

## DEVICE MANAGER

Update, configure, and manage remote devices. Optimize time and costs to maximize operational efficiency and security without the need for costly field interventions.

## DATA ORCHESTRATION

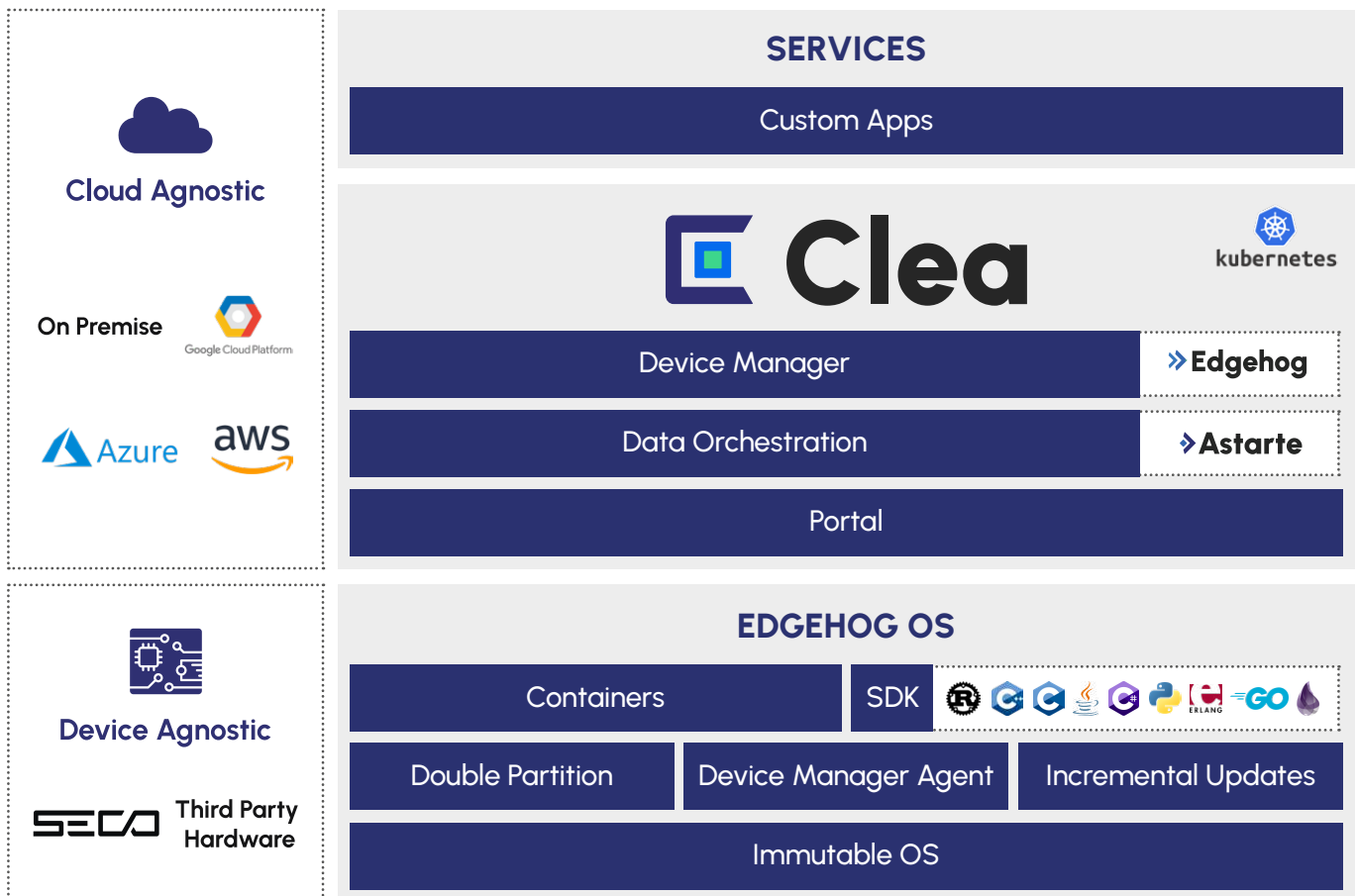Integrate third-party services, simplify data flows and analysis, and enhance business efficiency by enabling easy and fast utilization of AI.

## PORTAL

Analyze data from remote devices, customize the user experience with applications tailored to user needs, and manage user rights, company access, and tenant privileges.



**Cloud Agnostic**

On Premise — Google Cloud Platform

Azure    aws

**Device Agnostic**

SECO — Third Party Hardware

**SERVICES**
Custom Apps

**Clea**    kubernetes

Device Manager    Edgehog
Data Orchestration    Astarte
Portal

**EDGEHOG OS**

Containers    SDK
Double Partition    Device Manager Agent    Incremental Updates
Immutable OS

**Scan to know more about our solution**

EDGEHOG OS    CLEA DOCS