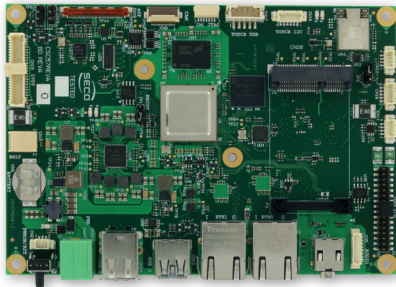# Single Board Computer

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

Ideal for certified performance requirements and safety efficient

AI-ENABLED WITH
((CLEA

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

MAIN FIELDS OF APPLICATION

Automation	Industrial Automation and Control	In-Vehicle Infotainment Systems	Robotics	Transportation

FEATURES

Processor	NXP i.MX 8X family SoCs: Dual or Quad Arm Cortex®-A35 Cores + 1x Cortex® M4F core for real-time processing • NXP i.MX8 QuadXplus, 4x Arm Cortex®-A35 Cores + 1x Cortex® M4F core for real-time processing • NXP i.MX8 DualXplus, 2x Arm Cortex®-A35 Cores + 1x Cortex® M4F core for real-time processing	**Audio**	I2S Audio codec Mic In + Hp-Out on TRRS combo connector 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 1x UART on expansion connector, optionally with RS-485 interface 1x CAN port, available at TTL Level on expansion connector or with CAN transceiver on dedicated connector 2x Debug UARTs on dedicated connectors	
Memory	Soldered down LPDDR4 memory @ 1200MHz, 32-bit interface, up to 4GB			
Graphics	Embedded GC7000Lite GPU Supports OpenGL 3.0, 2.1, OpenGL ES 3.1, OpenCL 1.2 Full Profile and 1.1, OpenVG 1.1, and Vulkan 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 2 independent displays supported	**Other Interfaces**	Available on expansion connector: • 16x GPIOs • I2C interface • 2x analog inputs • 1x PWM Power and reset button input on dedicated connector	
Video Interfaces	Factory options: • eDP 4-lane interface + LVDS single Channel 18-/24-bit interface • LVDS Dual Channel / 2 x LVDS Single Channel interface	**Power Supply**	Factory option, +12VDC or +24 VDC input voltage DC power jack or 2-poles PCB terminal block for voltage supply RTC battery	
Video Resolution	Up to 1080p60	**Operating System**	Linux	
Mass Storage	Soldered onboard eMMC 5.1 Drive, up to 64GB QSPI NOR Flash soldered on-board	**Operating Temperature***	-40°C ÷ +85°C (Industrial version)	
Networking	Up to 2 x Gigabit Ethernet ports 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 1x USB OTG Port on micro-AB connector (interface shared with USB 2.0 interface of USB 3.0 Type-A socket) 2x USB 2.0 Host ports on Dual Type-A socket 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.

SECO

BLOCK DIAGRAM

Block diagram labels:

- 2x RJ-45 — 2x ETH PHY — ENET #0 #1
- FLEXCAN 1 — CAN Transceiver — CAN Connector
- TRRS Combo connector — I2S Codec — SAI #1
- UART #0 — RS-232 Transceiver — Expansion connector
- Audio connector
- eMMC — eMMC
- UART #3 — RS-485 Transceiver
- JTAG Connector
- GPIO
- A35 Debug UART
- I2C #3 — I/O Expander
- I2C T/S Connector
- M4 Debug UART — JTAG — NXP i.MX8X Processor
- I2C #1
- PCIe_REFCLK — PCI-e Clock Generator — PCIe_REFCLK
- UART #2
- M40_UART
- I2C #0
- LPDDR4 Memory — UART 1 — PCI-e — miniPCI-e Slot
- USB 2.0 OTG 2
- M.2 1216 WiFi + BT Module — SDIO 1 — USB 2.0 OTG 1
- SAI #0 — USB 3.0 SS3 — USB Hub — Dual USB 2.0 Type-A
- PMIC_I2C
- SPI Flash — QSPI0 — USB T/S Connector
- Ultra Low power RTC — SPI 2 — USB Switch — USB 2.0 microAB
- Camera Connector — MIPI_CSI 0 — USB 3.0 Type-A
- eDP Backlight Connector — LED Driver — PWM #2 — PMIC — Power Section
- LVDS Channel #1
- LVDS — PWM #1 — DSI 0 / LVDS Channel 0
- LVDS Channel #0 — VIN
- eDP Connector — eDP — DSI-to-eDP Bridge — DSI 0 — Mux/Demux — DC IN Connector
- Factory alternatives