

nanoSOM nS01

Exor Embedded nS01 is high innovative, high performance very efficient, ultra compact and cost-effective SOM based i.MX 6 UltraLite CPU ARM Cortex-A7 core. The nS01 nanoSOM solution ideal for applications requiring IoT connectivity, multimedia capabilities and high security in connectivity. It is ideal smart SOM for Industry 4.0 embedded solution.

The nS01 is designed for high reliability systems and for ensuring in rugged environments in addition to high performance, low power consumption, optimal MTBF for 24/7 systems working in extreme hostile conditions. The nS01 nanoSOM is extremely compact smart SOM design and makes easier with great flexibility to design a new generation of Smart IoT products, such as modern Human Interfaces , Smart IoT Controllers/Gateway, Cloud edge interface, Web smart product, with a very simple carrier board design.

The nanoSOM includes Production ready Linux RT BSP and optionally it is fully supported Exor XPlatform including Exor JMobile HMI software, Exor xCloud IoT Platform and IEC61131 CODESYS or EXOR xPLC runtime.



Main applications

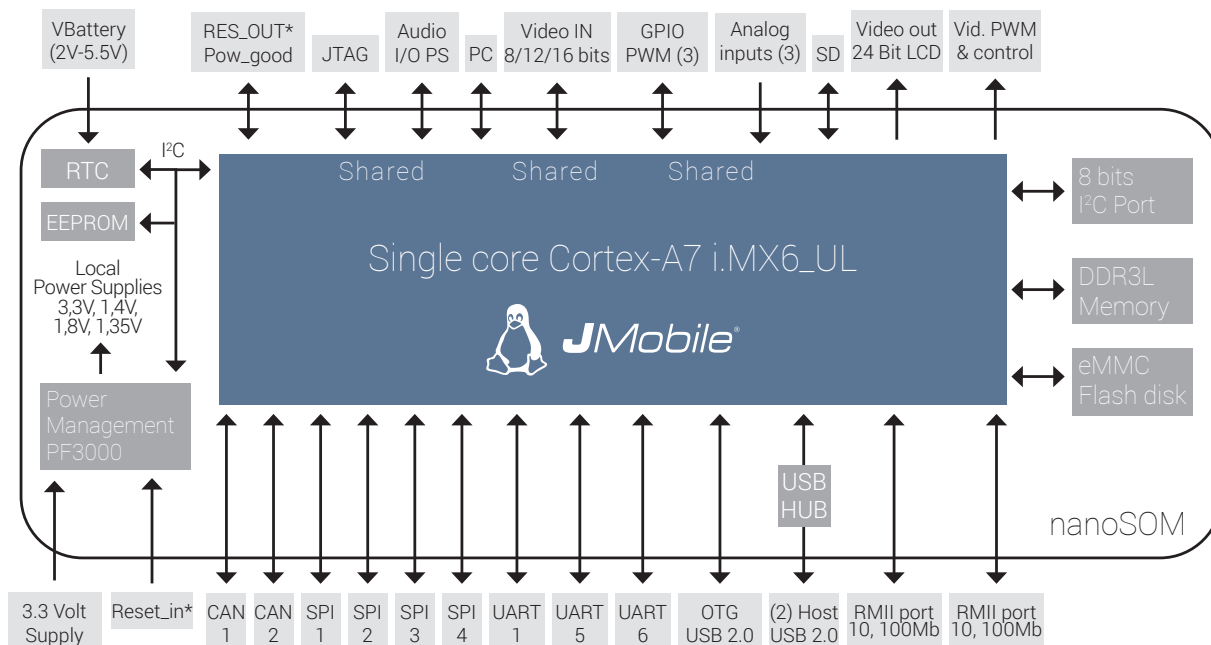
- Factory Automation - Industry 4.0
- Smart HMI – Web server
- Building & Home Automation
- Marine Automation
- Mobile Industry - Transportation e-Vehicle
- Medical devices / Vending Systems & Kiosk
- Telematics
- Secure IoT Smart Systems – Smart Appliance
- Secure IoT Controller / Cloud Edge Interface
- Secure IoT Gateway
- Access Control Panels

Highlights

- The nanoSOM is ultra smart and rugged solution , soldered directly onto the main carrier board, without the use of expensive connectors that will reduce reliability of the system.
- With ONLY 25,4x25,4 mm size and 3 mm thickness, nanoSOM allows you to design products extremely compact and ultra-slim. The nanoSOM requires a single supply of 3.3 V with ultra low power consumption
- Advanced Security option. Hardware enable security features that enable e-commerce, digital rights management, information encryption, secure boot and secure software download. Optional Tamper pads
- Optional JMobile software platform, enable to design a User-friendly and high quality vectorial graphic (SVG) and HTML5 rich-graphical GUI, it assures a device connectivity with suite of +200 communication protocols.
- Optional XCloud , MQTT, OPC-UA interfaces and Cloud connectivity for Telemetry, Remote Assistance using OPEN-VPN standard protocol
- Optional IEC 61131-3 CODESYS 3.x PLC or EXOR xPLC runtime
- Preloaded Linux Yocto BSP with RT OSADL Realtime Preempt patches (SDK, Virtual Machine availability)
- Exor Product Longevity program ensures a stable supply of products. nS01 products are available for a minimum of 10 years from product launch.

Technical Data

Dimensions	25,4x25,4 mm
Temperature Range	Commercial 0:70° c / Industrial -40:+85° c NXP i.MX6 UltraLite 528 Mhz -
CPU	ARM Cortex-A7 MPCore with TrustZone and NEON Media Processor unit.
DDR	Up to 1 GByte high performance DDR3L
Flash Disk	Up to 32 GByte eMMC Flash
EEPROM	512 Bytes x 8
RTC	Yes, Battery or SuperCAP backup
Watchdog/RTC/Voltage monitor/JTAG	Yes
USB	2 (Host V2.0), 1 (OTG)
Ethernet	2 (port 0 - 10/100M MAC IEEE1588, port 1 - 10/100M MAC IEEE1588)
SD	1 (SD Card Slot Memory Stor./ Wireless)
SPI	4 (SPI), 1 (SPI reserved for external FRAM)
I2C	1
CAN	2
UARTs	3
Audio	1 (I2S Channel) 24 bits RGB LCD parallel /
Video	Optional Video Input Port 8/12/16 bits (shared with LCD RGB signals)
Analog Input / GPIO	3 Analog Inputs and several programming GPIO signals with interrupt capability (3 PWM). Reserved Pins for Power-Fail, Power Good, Reset IN, Reset Out functions.
Security	Optional Advanced Security functions ARM TrustZone with optional 10 Tamper pads
Power Supply	Single 3,3 Volt / VBB for RTC Backup



DDR/Flash memory: Up 1GByte DDR3L, Up to 64GByte eMMC

Dimensions: 25.4 mm x 25.4 mm

Deliverables

nS01 nanoSOM with preloaded Linux RT Yocto BSP RTOS OSADL Realtime Preempt patches (SDK, Virtual Machine availability)

nS01 nanoSOM Evaluation kit is including TFT – PCAP several interfaces, pin header connectors .reference carrier board design application notes and BSP. Optional licenses: - JMobile 2.x Runtime (Client/Server HMI - CODESYS 3.x IEC61131 SoftPLC runtime - xPLC IEC61131 SoftPLC runtime - Corvina Cloud v.1.0 runtime license for Cloud IoT and Remote Connectivity Services.

Ordering Information

Model	Description
nS01-0001	i.MX6 UltraLite 528Mhz 256MB 4GB - 0:70 °C
nS01-0002	i.MX6 UltraLite 528Mhz 512MB 4GB - -40:+85°C
nS01-0003	i.MX6 UltraLite 528Mhz 512MB 4GB Advance Security -40:+85°C
nS01-0004	i.MX6 UltraLite 528Mhz 1GB 8GB IND - 40:+85°C
+EE16EK-0005	Demo Kit Master nS01 i.MX6 512MB 4GB - Advance Security

Optionally available with different configurations, with different CPU part number, memory sizes and Operating Temperature grades.

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