The Art of Embedded Systems Development – made Easy™

Embedded
Artists

About us

Embedded Artists, based in Malmö Sweden, was founded year 2000. Focus has from the beginning been on NXP® innovative products and simplifying embedded systems development.

Embedded Artists is a **Proven Partner to NXP**, delivering stable and proven platforms to customers, allowing them to focus on their core business and lowering their development risk.

Proven Partner

NXP

Focus on quality and compliance

The goal for Embedded Artists is, since day one, to deliver regulatory compliant products with high quality.

- Our company is ISO 9001:2015 certified
- Our company is ISO 14001:2015 certified
- The products are CE compliant
- The products are RoHS2 / Reach compliant

We care about the environment!

SUSTAINABLE TECHNOLOGY

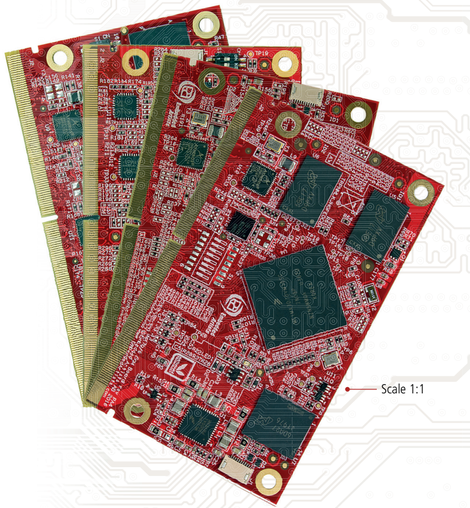
All companies should work with the environmental problems we are facing. Embedded Artists realize that we are part of the problem and have decided to act.

We work with ZeroMission to analyze our carbon footprint and where possible reduce our emissions. Since it is not possible to eliminate all carbon dioxide emissions we plant trees in Malawi as a way to compensate for our production, travels, and shipment of products.

Our value proposition

- Stable and proven platform and lower development risk
- Off-the-shelf component with long term availability
- Shorter time to market – accelerate your development
- A family of boards with a product roadmap
- Access to the latest technology
- Focus on your core business

You get a lower total cost



Embedded Artists

Your development partner!

	iMX8M	iMX8M Mini uCOM	iMX6 Quad / Dual	iMX6 DualLite	iMX6 UL / ULL
					
CPU	Up to 4 x Cortex-A53@1.5 GHz Cortex-M4 @ 200 MHz	Up to 4 x Cortex-A53@1.8 GHz Cortex-M4 @ 400 MHz	Quad: 4 x Cortex-A9 @ 1 GHz Dual: 2 x Cortex-A9 @ 1 GHz	2 x Cortex-A9 @ 1 GHz	UL: Cortex-A7 @ 528 MHz ULL: Cortex-A7 @ 792 MHz
RAM	1 GByte LPDDR4 3200 MT/s 32-bit databus	1 GByte LPDDR4 3000 MT/s 32-bit databus	2 GByte DDR3L 1066 MT/s 64-bit databus	1 GByte DDR3L 800 MT/s 64-bit databus	512 MByte DDR3L 800 MT/s 16-bit databus
Flash	8 GByte eMMC	8 GByte eMMC	4 GByte eMMC	4 GByte eMMC	8 GByte eMMC
Multimedia					
Graphics Output	HDMI, MIPI-DSI	MIPI-DSI	Dual LVDS, Parallel RGB, HDMI	Dual LVDS, Parallel RGB, HDMI	Parallel RGB
Hardware 2D/3D Graphics	GC7000Lite OpenGL ES 1.1/2.0/3.0/3.1 OpenCL 1.2 and Vulkan	GCNanoUltra/GC320 OpenGL ES 1.1 OpenVG 1.1	GC2000/GC355/GC320 OpenGL ES 1.1/2.0/3.0 OpenVG 1.1 / Open CL 1.1	GC880/GC320 OpenGL ES 1.1/2.0/3.0 OpenVG 1.1	Pixel Processing Pipeline
Hardware Video	Decode: 4Kp60	Decode: 1080p60 Encode: 1080p60	Decode: (1080+720)p30 Encode: 1080p30	Decode: (1080+720)p30 Encode: 1080p30	SW only
Graphics Input	2x MIPI CSI	MIPI CSI	Parallel CSI, MIPI CSI	Parallel CSI, MIPI CSI	Parallel CSI
Audio	5x SAI, SPDIF	5x SAI, 8x PDM, SPDIF	3x SSI, S/PDIF, ESAI	3x SSI, S/PDIF, ESAI	3x SAI, S/PDIF
Connectivity					
Ethernet	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	10/100/1000 Mbps	Dual 10/100 Mbps
USB	2x USB 3.0/2.0 OTG	2x USB 2.0 OTG	1x HS USB 2.0 OTG 1x HS USB 2.0 Host	1x HS USB 2.0 OTG 1x HS USB 2.0 Host	2x HS USB 2.0 OTG
PCIe / Serial ATA	2x v2.0 / No	Yes, v2.0 / No	Yes, v2.0 / Yes, SATA II	Yes, v2.0 / No	No / No
Wi-Fi / Bluetooth	No	Optional (Murata 1MW)	No	No	No
Serial	4x UART, 3x SPI, 4x I2C	4x UART, 3x SPI, 4x I2C	5x UART, 5x SPI, 3x I2C, 2x CAN	5x UART, 4x SPI, 4x I2C, 2x CAN	8x UART, 3x SPI, 4x I2C, 2x CAN
ADC / PWM	No / 4 ch	No / 4 ch	No / 4 ch	No / 4 ch	10 ch (12-bit) / 8 ch
SD	1x USDHC	3x USDHC	3x USDHC	3x USDHC	1x USDHC
Temperature	0° - 70° or -40° - 85° Celsius	0° - 70° or -40° - 85° Celsius	0° - 70° or -40° - 85° Celsius	0° - 70° or -40° - 85° Celsius	0° - 70° or -40° - 85° Celsius
Size / Connector	82 x 50 mm / 314 pos MXM3	42 x 45 mm / 2x DF40C-100, 2x DF40C-40	82 x 50 mm / 314 pos MXM3	82 x 50 mm / 314 pos MXM3	82 x 50 mm / 314 pos MXM3

All interfaces may not be available simultaneously due to I/O muxing limitations

iMX6 SoloX	iMX7 Dual	iMX7 Dual uCOM	iMX7ULP uCOM	
				
Cortex-A9 @ 1 GHz, Cortex-M4 @ 227 MHz	2 x Cortex-A7 @ 1 GHz, Cortex-M4 @ 200 MHz	2 x Cortex-A7 @ 1 GHz, Cortex-M4 @ 200 MHz	Cortex-A7 @ 650 MHz, Cortex-M4 @ 200 MHz	**CPU**
1 GByte DDR3L 800 MT/s 32-bit databus	1 GByte DDR3L 1066 MT/s 32-bit databus	1 GByte LPDDR3 1066 MT/s 32-bit databus	1 GByte LPDDR3 760 MT/s 32-bit databus	**RAM**
4 GByte eMMC, 64 MByte QSPI	4 GByte eMMC, 32 MByte QSPI	8 GByte eMMC	8 GByte eMMC, 4 MByte QSPI	**Flash**
				Multimedia
LVDS, Parallel RGB	Parallel RGB	Parallel RGB	MIPI-DSI	**Graphics Output**
GC400T OpenGL ES 1.1/2.0 OpenVG 1.1	Pixel Processing Pipeline	Pixel Processing Pipeline	GCNanoUltra OpenGL ES 1.1/2.0 OpenVG 1.1	**Hardware 2D/3D Graphics**
SW only	SW only	SW only	SW only	**Hardware Video**
Parallel CSI, Analog	Parallel CSI, MIPI CSI	Parallel CSI, MIPI CSI	No	**Graphics Input**
3x I2S, S/PDIF, ESAI	3x SAI	3x SAI	4x I2S	**Audio**
				Connectivity
Dual 10/100/1000 Mbps	Dual 10/100/1000 Mbps[1]	Dual 10/100/1000 Mbps[2]	No	**Ethernet**
1x HS USB 2.0 OTG 1x HS USB 2.0 Host	2x HS USB 2.0 OTG	2x HS USB 2.0 OTG	USB 2.0 OTG USB HSIC	**USB**
Yes, v2.0 / No	Yes, v2.1 / No	Yes, v2.1 / No	No / No	**PCIe**
No	No	No	Optional (Murata 1LV)	**Wi-Fi / Bluetooth**
6x UART, 5x SPI, 4x I2C, 2x CAN	7x UART, 4x SPI, 4x I2C, 2x CAN	7x UART, 4x SPI, 4x I2C, 2x CAN	8x UART, 4x SPI, 8X I2C	**Serial**
8 ch (12-bit) / 8 ch	8 ch (12-bit) / 4 ch	4 ch (12-bit) / 4 ch	Dual 12-bit / mult ch	**ADC / PWM**
3x USDHC	2x USDHC	2x USDHC	1x USDHC	**SD**
0° - 70° or -40° - 85° Celsius	0° - 70° or -20° - 85° Celsius	0° - 70° or -20° - 85° Celsius	-40° - 85° Celsius	**Temperature**
82 x 50 mm / 314 pos MXM3	82 x 50 mm / 314 pos MXM3	27 x 37 mm / 1x70, 2x100 pos	42 x 45 mm / 2x DF40C-100, 2x DF40C-40	**Size / Connector**

[1] Second interface requires external PHY [2] Requires external PHYs

Application processors

	LPC1788	LPC4088	LPC4357	iMX RT1052	iMX RT1062	
						
CPU	Cortex-M3 @ 120 MHz	Cortex-M4 @ 120 MHz	Cortex-M4 @ 204 MHz, Cortex-M0 @ 204 MHz	Cortex-M7 @ 600 MHz	Cortex-M7 @ 528 MHz	**CPU**
RAM	32 MByte SDRAM 96 KByte internal SRAM	32 MByte SDRAM 96 KByte internal SRAM	32 MByte SDRAM 136 KByte internal SRAM	32 MByte SDRAM 512 KByte internal SRAM	32 MByte SDRAM 1 MByte internal SRAM	**RAM**
Flash	128 MByte NAND flash 512 KByte internal flash	128 MByte NAND flash 512 KByte internal flash	128 MByte NAND, 2 MByte QSPI, 1MByte internal	4 MByte OctalSPI EcoXiP flash	4 MByte OctalSPI EcoXiP flash	**Flash**
Graphics Output	Parallel RGB	Parallel RGB	Parallel RGB	Parallel RGB	Parallel RGB	**Graphics Output**
Hardware 2D/3D Graphics	No	No	No	Pixel Processing Pipeline	Pixel Processing Pipeline	**Hardware 2D/3D Graphics**
Hardware Video	SW only	SW only	SW only	SW only	SW only	**Hardware Video**
Graphics Input	No	No	No	Parallel CSI	Parallel CSI	**Graphics Input**
Audio	I2S	I2S	2x I2S	3x SAI, SPDIF	3x SAI, SPDIF	**Audio**
Ethernet	10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps	**Ethernet**
USB	2x FS USB 2.0 OTG	2x FS USB 2.0 OTG	1x HS USB 2.0 OTG 1x FS USB 2.0 Host/Device	2x HS USB 2.0 OTG	2x HS USB 2.0 OTG	**USB**
Wi-Fi	No	No	No	Yes (optional)	Yes (optional)	**Wi-Fi**
FlexIO	No	No	No	2 blocks	2 blocks	**FlexIO**
Serial	5x UART, 3x SPI, 3x I2C, 2x CAN	5x UART, 3x SPI, 3x I2C, 2x CAN	4x UART, 3x SPI, 2x I2C, 2x CAN	8x UART, 4x SPI, 4x I2C, 2x CAN	8x UART, 4x SPI, 4x I2C, 2x CAN	**Serial**
ADC / PWM	8 ch (12-bit) / 2 ch	8 ch (12-bit) / 2 ch	16 ch (10-bit) / 3 ch	8 ch (12-bit) / 16 ch	8 ch (12-bit) / 16 ch	**ADC / PWM**
SD	MCI	MCI	SDIO	2x USDHC	2x USDHC	**SD**
Temperature	-40° to +85° Celsius	-40° - 85° Celsius	0° - 70° Celsius	0° - 70° or -40° - 85° Celsius	-40° - 85° Celsius	**Temperature**
Size / Connector	68 x 50 mm / 200 pos SODIMM	68 x 50 mm / 200 pos SODIMM	68 x 50 mm / 200 pos SODIMM	68 x 30 mm / 200 pos SODIMM	68 x 30 mm / 200 pos SODIMM	**Size / Connector**

Multimedia

Connectivity

All interfaces may not be available simultaneously due to I/O muxing limitations

Microcontrollers

	1DX M.2	1MW M.2	1LV M.2	1CX M.2	1VA M.2
					
Chipset	Cypress CYW4343W	Cypress CYW43455	Cypress CYW43012	Cypress CYW4356	Cypress CYW88359
WLAN standards	802.11 b/g/n	802.11 a/b/g/n/ac	802.11 a/b/g/n 802.11 ac-friendly™	802.11 a/b/g/n/ac (2x2 MIMO)	802.11 a/b/g/n/ac (2x2 MIMO, RSDB)
WLAN interface	SDIO 2.0 (SDR25@50MHz)	SDIO 3.0 (SDR104@200MHz)	SDIO 3.0 (SDR40@80MHz)	PCIe	PCIe or SDIO 3.0 (SDR104@200MHz)
WLAN frequency	2.4 GHz	2.4 GHz and 5 GHz	2.4 GHz and 5 GHz	2.4 GHz and 5 GHz	2.4 GHz and 5 GHz
WLAN data rate	11, 54, 65 Mbps	11, 54, 65, 150, 433 Mbps	11, 54, 65, 78 Mbps	11, 54, 65, 150, 866 Mbps	11, 54, 65, 150, 866 Mbps
Bluetooth standards	BT/BLE 4.2	BT/BLE 5.0	BT/BLE 5.0	BT/BLE 5.0	BT/BLE 5.0
Bluetooth interface	4-wire UART@3MBaud	4-wire UART@3MBaud	4-wire UART@3MBaud	4-wire UART@3MBaud	4-wire UART@3MBaud
Operating temperature	-30 to +70°C	-20 to +75°C	-20 to +70°C	-20 to +75°C	-30 to +85°C
M.2 module size	44 x 22 mm	44 x 22 mm	44 x 22 mm	30 x 22 mm	30 x 22 mm

M.2 module family

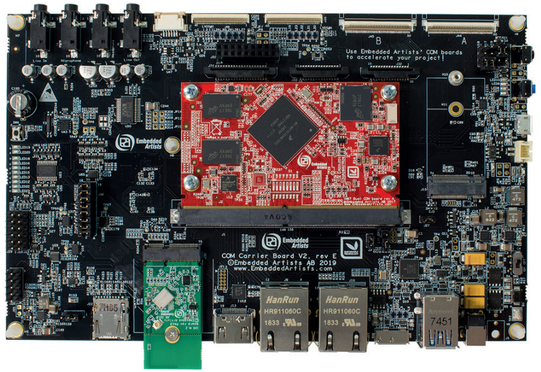
Our M.2 modules, co-developed by Embedded Artists and Murata, are designed for **evaluation**, **integration**, and **ease-of-use**:

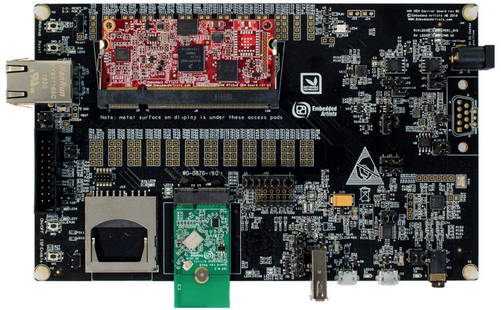
- You lower your risk and cost by using our professionally designed and proven M.2 modules!
- You can easily evaluate different Wi-Fi / Bluetooth solutions - by just switching M.2 module!
- You can focus on your core application and shorten your time to market!

Get up-and-running immediately

Our iMX RT/6/7/8 Developer's Kits supports M.2 modules directly and have advanced debug features.
You get started immediately with the M.2 modules by using our Developer's Kits and our Getting Started guides!

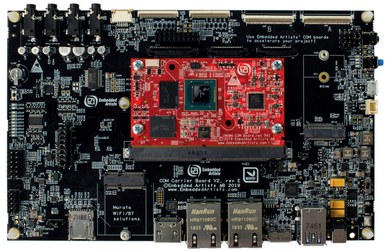
- M.2 Primer Package - M.2 standard, reference schematics, and integration guide.
- Linux kernel with appropriate drivers.
- WICED driver in iMX RT SDK.





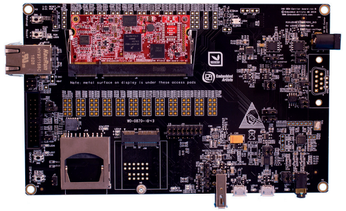
M.2 modules

iMX Developer's Kit



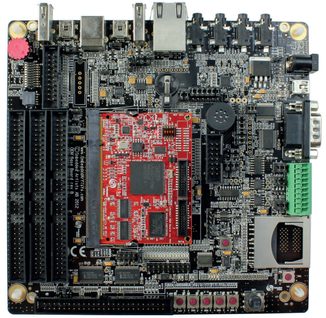
Ethernet	Dual 10/100/1000 Mbps RJ45 connectors
USB	USB 2.0/3.0 OTG interface
Graphics	HDMI connector, Dual LVDS connectors, Parallel RGB connector
Audio	Audio codec with 3.5 audio jack connectors
M.2	Wi-Fi / Bluetooth M.2 module connector
UART	Dual channel UART-to-USB bridge for console
Graphics Input	FPC connectors for serial and parallel camera interface
Other connectors	uSD, M.2 B-Key, SIM Card, Expansion
Dimensions	201 x 126 mm
Powering	12V Power (7 - 15V)

iMX RT Developer's Kit



Ethernet	10/100 Mbps RJ45 connector
USB	USB Host interface, USB OTG interface
Graphics / Display	4.3 inch 480x272 LCD with Capacitive touch (16-bit RGB interface)
Audio	Audio codec with 3.5 mm audio jack connector
CAN	CAN transciever
UART	UART-to-USB FTDI bridge
Other connectors	SD/MMC connector, RS232 expansion connector, Debug interface
M.2	Wi-Fi / Bluetooth M.2 module connector
Dimensions	165 x 104 mm
Powering	5V DC (via USB or external)

LPC Developer's Kit



Ethernet	10/100 Mbps RJ45 connector
USB	USB Host interface, USB OTG interface
Graphics	LCD expansion connector
Audio	I2S audio codec (mic in, line in, line out, headphone out)
CAN	CAN interface and connector
UART	UART-to-USB FTDI bridge
Other connectors	SD/MMC connector, RS422/485, expansion connector
Other	Parallel NOR flash, 5-key joysick, LM75 temperature sensor, 9 LEDs, Trimming potentiometer
Dimensions	160 x 150 mm
Powering	5V DC (via USB or external)

What is included?

When buying a Developer's Kit from Embedded Artists you get

- COM/OEM board and associated Carrier/Base board
- Power supply when needed. Some boards are powered via USB cable
- Access to software packages
- USB cable
- Professional getting started support

Developer's Kits

berotec

Berotec is a consultant company that help clients with a wide range of technology areas such as management, production, and mechanic constructions. Jonas Köhler is a software architect and developer at Berotec.

What was your challenge?

As consultants we were to develop a solution to transport material within a medtech factory for a client. An industry product like that will never be produced in any big volumes, which means it would be costly to develop everything on our own – and it wouldn't be reasonable for us to have all the specific expertise within the project group.

How did you solve it?

Together with the customer we decided to use a modular COM board from Embedded Artists. It gave us a powerful Linux platform to build on.

What was the result?

The difference in time and cost is significant if we would have developed the technology ourselves. It took us 2 people for 6 months to develop the solution with Embedded Artists' board. If we would have developed the electronics from scratch it would have taken us 4 people for 6 months.

The implementation with Embedded Artists' board went frictionless. We first developed a prototype based on Embedded Artists' iMX Developer's Kit. Then we finished the software, and when we built the final hardware, it just worked. We had a thorough test period with great input and support from Embedded Artists.

The only initial concern we had, was to find a supplier that could guarantee a long product lifetime. Embedded Artists have been around for a long time and could give us the guarantees we needed in terms of longevity.

There is nothing I would have done different in this project in terms of Embedded Artists involvement.

"We cut development costs for our client's client!"

Influx TECHNOLOGY

Fiona Keen

Influx Technology develop vehicle data logger solutions for engineers that need to access the range of Engine Control Units (ECU). Fiona Keen is a director at Influx Technology.

What was your challenge?

Previously, we developed the micro boards ourselves. It was a big decision to switch to buying in the technology instead. We simply didn't have the time or resource that was required in developing microprocessor solutions and get the quality we want. Our own people add value elsewhere in the development process.

How did you solve it?

We turned to three different suppliers to find a board that suited our needs. We had some criteria on memory and features. We liked Embedded Artist as we could talk directly to their engineers. In the other companies we had to go through sales or other people that hadn't been involved in developing the board. Embedded Artists' people knew what they were talking about.

What was the result?

We are unique in our field in that we have selected a partner to supply the vital COM/OEM micro board and that is a strength of ours. With the help of Embedded Artists we have been able to gain an advantage over our larger competitors by concentrating our expertise in the development of the key features that make our automotive CAN Bus and FlexRay data loggers a world leader.

"We get the power to compete with larger competitors!"

Partner network

We have partnered with leading companies in the industry, both for software and hardware, to provide high quality solutions to you!

Proven Partner NXP

muRata INNOVATOR IN ELECTRONICS

CYPRESS EMBEDDED IN TOMORROW™

Adesto

ROHM SEMICONDUCTOR

SEGGER www.segger.com

CRANK SOFTWARE

Embedded Wizard

arm KEIL

Technical support

We offer **responsive, professional European support** directly by our engineers.

- Getting started help
- Extensive documentation including multiple guides
- COM Board integration guide
- Carrier board design
- Carrier board design review (if you design the carrier board yourself)
- Display solutions
- Mechanical solutions

Software

Pre-built images are available as well as documentation that describes how you can build the software yourself.

- Linux®
- Android™
- FreeRTOS™

Since year 2000 we have served 20K+ customers in 80 different countries!

If you have any questions or want to know more about how we can help you, don't hesitate to contact us!

Embedded *Artists*

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