



## emPC-A/iMX6

### Fanless and Compact Multi-Core ARM based Embedded Controller



## PRODUCT DESCRIPTION

The emPC-A/iMX6 is a compact and fanless embedded controller system. It is based on the i.MX6Q ARM Cortex-A9 quad-core processor. The system combines a strong CPU unit with a fanless and robust system design, two Ethernet ports and either two CAN/CANopen or two RS232/RS485 interfaces, which makes it very suitable for machine control or IoT gateway applications.

emPC-A/iMX6 systems can be expanded with additional expansion boards which are connected internally to the CPU board via an 8/16 bit bus (iX-Bus).

On request the system will be equipped with an industrial grade CFast<sup>1</sup> card in the size of your choice which has a pre-installed Debian Linux operating system. Also, a CODESYS V3 PLC or a Java runtime environment can be installed at factory.

Optionally advanced security features are available. The A/iMX6 provides a full verified, signed and encrypted boot during the complete boot sequence and the operating system. The Janz Tec AG grants a full chain of trust.

## FEATURES

### Processor

- NXP i.MX6Q quad-core CPU based on ARM Cortex-A9, 800 MHz
- ARM TrustZone Security Technology
- Fanless cooling concept

### Memory

- 2 GB DDR3 RAM system memory
- 128 kB battery-free NVRAM
- Internal 4Gbyte eMMC flash
- Internal CFast Socket for SATA SSD  
Internal SD card slot

### Interfaces

- 2 x 10/100/1000 Mbit/s Ethernet
- 2 x USB (V 2.0), with 500 mA power supply capability
- 2 x 9-pin D-SUB connectors for CAN or serial ports<sup>2</sup>
- Serial port with RTS/CTS only

- Reset push button
- DVI-D graphic interface (Single Link)

### Power Supply

- Input 9..34 V DC
- Power consumption ca. 6 W

### Expansion

- Internal ix-Bus 8/16 bit interface for I/O and low speed peripherals
- Expansion boards available for additional I/O and other peripherals
- Radio expansion board for LTE and/or Wi-Fi support

### Physical

- Ambient operating temperature -40 °C ... 75 °C (up to 60°C ensured with no CPU clock down)
- Non-operating temperature range -40 °C ... 75 °C

<sup>1</sup> CFast – Compact Flash ATA Serial Transfer, flash based storage medium with SATA interface

<sup>2</sup> optionally with 2 x CAN ports, 2 x serial ports or 1 x CAN port and 1 x serial port

- Humidity 0 % ~ 80 %, non-condensing
- Dimensions (w x h x d): 111 x 62 x 104 mm
- Weight approx. 0.8 kg

- Debian Linux
- other operating systems on request

#### CAN

- SJA 1000 CAN Controller
- Physical Layer ISO/DIS 11898-2, isolated from logic
- Internal 120 Ω resistor for bus termination, switchable by software

#### Options

- CODESYS V3.5 IEC 61131-3 runtime environment
- Java runtime environment
- Security features:
  - Signed and encrypted boot
  - Hardware random generator (NIST certified)
  - Hardware accelerated cryptographic engine

#### Supported Operating Systems

## RELATED PRODUCTS

#### emVIEW and emWEB product families

In the emVIEW product family emPC-A systems were combined with a display to a panel PC solution. emWEB systems have a mainboard based on emPc-A/iMX6 technology. Both are available in different sizes, with resistive or projective capacitive (PCT) touchscreen and in 4:3 or 16:9 aspect ratios.

#### Expansion boards

With help of expansions boards emPC-A systems can be expanded internally. In addition to standard features, the systems can be equipped with additional I/O and bus interfaces.

#### emIOT Expansion

The emPC-A/iMX6Q is also available with the Janz Tec lot expansion board. It extends the embedded system with UMTS/LTE, Wi-Fi and 4 additional digital I/O's

## ORDERING INFORMATION

Ordering No.	Product Name	Description
SY-EPC-64000	emPC-A/iMX6Q/0	Compact and fanless embedded controller system with 2 x RS232/RS485 on front-side D-SUB 9 connector
SY-EPC-64001	emPC-A/iMX6Q/1	Compact and fanless embedded controller system with 1 x CAN/CANopen and 1 x RS232/RS485 on front-side D-SUB 9 connector
SY-EPC-64002	emPC-A/iMX6Q/2	Compact and fanless embedded controller system with 2 x CAN/CANopen on front-side D-SUB 9 connector
SY-EPC-64004	emPC-A/iMX6Q/4	Compact and fanless embedded controller system with 4 x CAN/CANopen on front-side D-SUB 9 connector
CF-CFA-xxxxx	Storage medium	CFast storage medium in sizes of x GB, available are 2, 4, 8 and 16 GB
SO-CDS-	CODESYS V3 Control	Software license for CODESYS control runtime system
SO-CDS-xxxxx	CODESYS V3 TargetVisu	Software license for CODESYS target visualization
SO-CDS-xxxxx	CODESYS V3 WebVisu	Software license for CODESYS web visualization
SO-CDS-xxxxx	CODESYS V3 SoftMotion	Software license for CODESYS SoftMotion package
SO-JVM-EMB01	Java	Oracle Embedded Java SE Runtime license
SO-SOF-xxxxx	CANopen	CANopen protocol stack