

### Characteristics

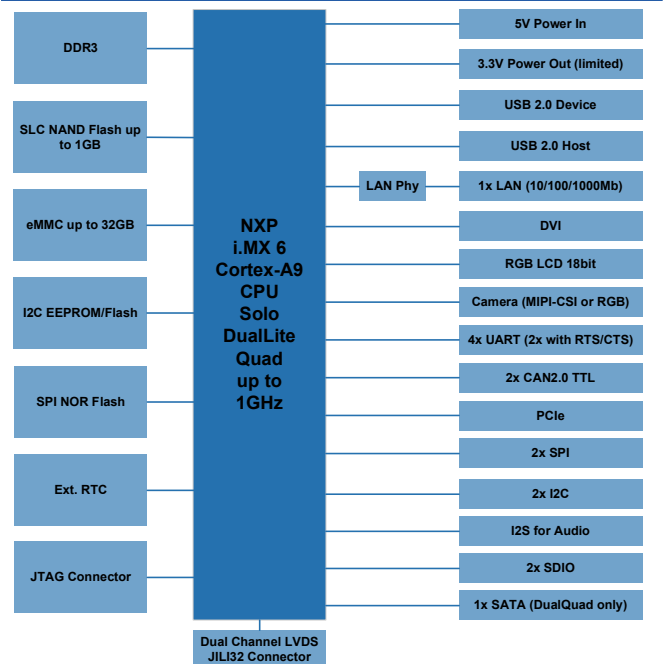
- NXP i.MX 6 ARM Cortex®-A9 with up to 1GHz
- up to 512MB SLC NAND Flash, 32GB eMMC, 2GB RAM
- RGB, 2-Channel TFT LVDS
- DVI Interface
- Ethernet 10/ 100/ 1000MBit
- 1x USB2.0 Device/ Host, 1x USB2.0 Host
- 2x CAN2.0, 2x I²C, 2x SPI
- 2x SD-Card
- 1x I2S Audio
- 1x PCIeexpress (2.0)
- 1x SATA (Quad-Core)
- Digital Camera Interface (MIPI-CSI/ parallel)
- Windows Embedded Compact 7/ 2013, Linux
- 5V Design



### Description

efus™ A9 is a compact and inexpensive module in efus™ form factor. It is perfectly suited for applications with numerous interfaces in the medical and industrial sector. Along with its easy baseboard (EasyLayout), efus™ (47 x 62mm only) also fits in small housings. The i.MX 6 Cortex®-A9 CPU has high processing power and excellent multimedia features (3D graphics, 1080p Decoder, H.264 HP, ARMv7, NEON and VFPv3). NXP's chip design sets special focus on scalability. Other special characteristics are the long-time availability of up to 15 years and a temperature range of up to -20°C - +85°C. The module provides numerous interfaces like USB Host/Device, CAN, UART, I²C, SPI, I²C Audio, Touch Panel, digital Camera, PCIe and SATA. efus™ A9 also has interfaces for RGB, 2x LVDS and DVI.

### Block Diagram



### On-Board Operating System



The customized WEC 7/2013 (bootloader, kernel, interface drivers, Silverlight, Mediaplayer, IE) is a powerful real-time operating system. Along with .NET and XAML it is the ideal base for software development.



The F&S Linux BSP ( uboot, Buildroot, Yocto, QT, GStreamer) contains the customized kernel with all interface drivers, including source. A Cross Compiler Toolchain for the creation of own bootloaders, kernels and further software is available.

### Starterkit

The efus™ A9 starterkit consists of a base board with standard connectors and pin headers for the offered interfaces. It also includes a cable kit, access data to download documentations, current software, drivers and example programs.

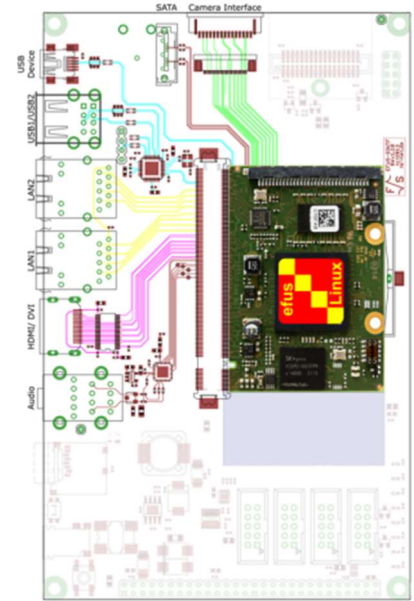
The starterkit is available with or without display kit. For an easy start of development, we offer a four-hour workshop.

Aim is to get an introduction to the efus™ A9 starterkit and the development environment. You will be able to start your own development with a running system (efus™ A9, display and touch panel).

Our support forum with more than 3000 registered customers is always online for help.

efus™ stands for 20 years of experience in the RISC boards sector.

- easy** starterkits  
customized operating systems (Linux, WEC 7/2013)  
F&S Support, free of charge
- functional** many interfaces  
easy base board  
based on "EasyLayout" standard
- universal** visualization  
communication  
control
- small** 47 x 62mm only  
5V supply



### Accessories

#### Failsafe Flash Filesystem (F3S)

Offers transaction safety on file level and therefore guarantees the consistency of the data, even in case of a blackout or other interferences while writing.

#### Displaykit RGB

7" WVGA display with RGB interface and touch panel, connection cable (40poles film cable), display adapter and touch cable

#### Workshop

Four-hour workshop at F&S in Stuttgart. Our workshop will help you start working with Windows CE/ Linux and the F&S products easier.

Detailed information on our accessories is available on our homepage.

### Technical Data

Power Supply:	+5V <sub>DC</sub> / ±5%
Power Consumption:	3W typ.
Interfaces:	1x Ethernet 10/ 100/ 1000 MBit 4x Serial 1x USB2.0 Host 1x USB2.0 Device/ Host 2x CAN2.0 2x I <sup>2</sup> C 2x SPI 1x I2S Audio 1x SATA PCIe (2.0) Camera Interface
TFT LCD-Interface:	18Bit RGB up to XGA 2x 24bit LVDS up to FullHD DVI up to FullHD
RAM:	up to 2GB RAM
Program Memory:	up to 512MB SLC NAND Flash, up to 32GB eMMC
Processor:	ARM Cortex® A9 Solo/ DualLite/ Quad- Core 1GHz
Temperature Range:	0°C - +70°C, (-20°C - +85°C optional)
Size:	47mm x 62.1mm x 11mm (l x b x h)
Weight:	~15g

### Standard Versions / Order Notations

#### efusA9/ 9r2-V2-LIN/ W13/ WEC7

Solo-1GHz, 512MB RAM, 256MB Flash, MIPI-CSI, RGB, LVDS, DVI, Linux or WEC2013 or WEC7

#### efusA9/ 9r2-V3-LIN/ W13/ WEC7

DualLite – 1GHz, 512MB RAM, 256MB Flash, min. 4GB eMMC, MIPI-CSI, RGB, LVDS, DVI, Linux or WEC2013 or WEC7

#### efusA9/ 9r2-V3I-W13-LIN

DualLite – 1GHz, 512MB RAM, 256MB Flash, min. 4GB eMMC, camera parallel, RGB, LVDS, DVI, -20°C +85°C, Linux or Windows Embedded Compact 2013

#### efusA9/ 9r2-V3I-1D- W13-LIN

DualLite – 1GHz, 1GB RAM, 256MB Flash, min. 4GB eMMC, camera parallel, RGB, LVDS, DVI, -20°C +85°C, Linux or Windows Embedded Compact 2013

#### efusA9/ 9r2-V4- W13-LIN

Quad – 1GHz, 1GB RAM, 256MB Flash, min. 4GB eMMC, MIPI-CSI, SATA, RGB, LVDS, DVI, Linux or Windows Embedded Compact 2013

### Standard Versions / Order Notations

#### efusA9/ 9r2-V4I- W13-LIN

Quad – 1GHz, 1GB RAM, 256MB Flash, min. 4GB eMMC, MIPI-CSI, SATA, RGB, LVDS, DVI, -20° + 85°C, Windows Embedded Compact 2013 or Linux

#### efusA9-V3.3-W13/ LIN

DualLite – 1GHz, 512MB RAM, 256MB Flash, min. 4GB eMMC, MIPI-CSI, RGB, LVDS, DVI, **no Ethernet**, Windows Embedded Compact 2013 or Linux

#### efusA9-SKIT-W13/ LIN

efusA9-V3-W13, base board, cable kit, display kit, access to documentation and software

#### efusA9-SKIT2-W13/ LIN

efusA9-V2-W13, base board, cable kit, access to documentation and software

#### Minimum Order Quantity for Special Versions:

Customer-Specific Software:	<b>500 pieces</b>
Assembly Variant:	<b>1000 pieces</b>

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 i.MX 6 is a trademark of NXP Semiconductors Netherlands B.V.  
 Cortex is a registered trademark of ARM.  
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