The New Form Factor **efus™**

Our latest product family represents 20 years of experience in RISC Boards

efus Windows CE

efus Linux

easy
- starter kits
- customized operating systems (Linux, WEC 2013)
- free support from F&S

Original Size

functional
- various interfaces
- expandable with wireless modules
- easy base board based on "EasyLayout" standard

universal
- visualization
- communication
- control

small
- 47 x 62mm only
- 5V Single Supply

The **efus™** project guarantee stands for free support. We are always at your side during your development. To start your project optimally, we offer starter kits and workshops.
The **efus™A9** Computer-On-Module price (per 1000) also offers the lowest baseboard costs for YOUR development and production!

Why?

Our answer is **EASYMOUNT**! No need for screws to fix the module in high vibration surroundings, just click the module on your baseboard and the unit is resistant for shocks up to 50G!

EASYLAYOUT: Only 4 layers are needed to cause a minimum of crossing wires and a minimum count of vias for your baseboard. We developed our new form factor **efus™** with focus on minimizing your development time.
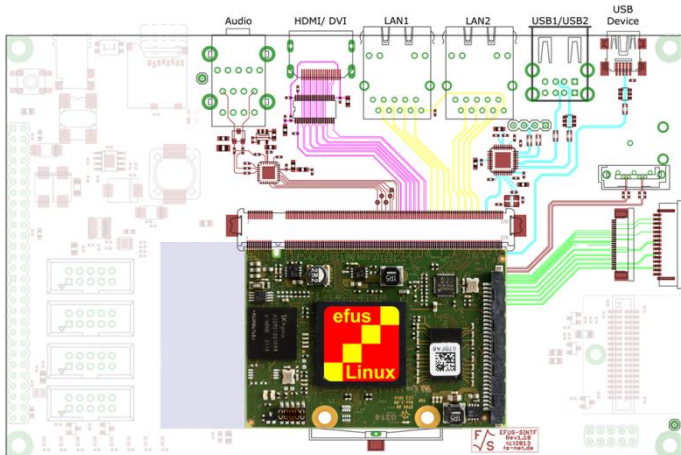
You can start directly - just in time – you only need to download the EAGLE Source board design and libraries! Just put your needs on the baseboard and place your prototype order!

You want to have a special **custom chip ON MODULE**?
We have the solution: We will develop a special interface opposite the LVDS connector.
We offer inexpensive expandable areas, so the custom chip (e.g. WLAN, ZigBee, etc.) can be placed on module – only the software drivers need to be adjusted.
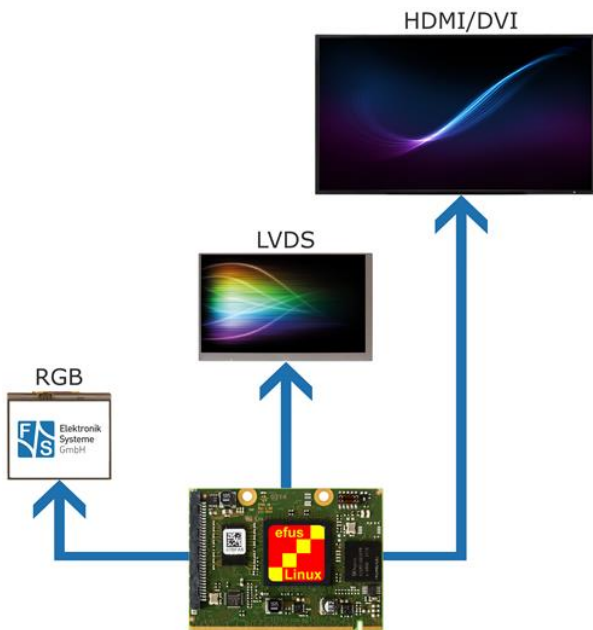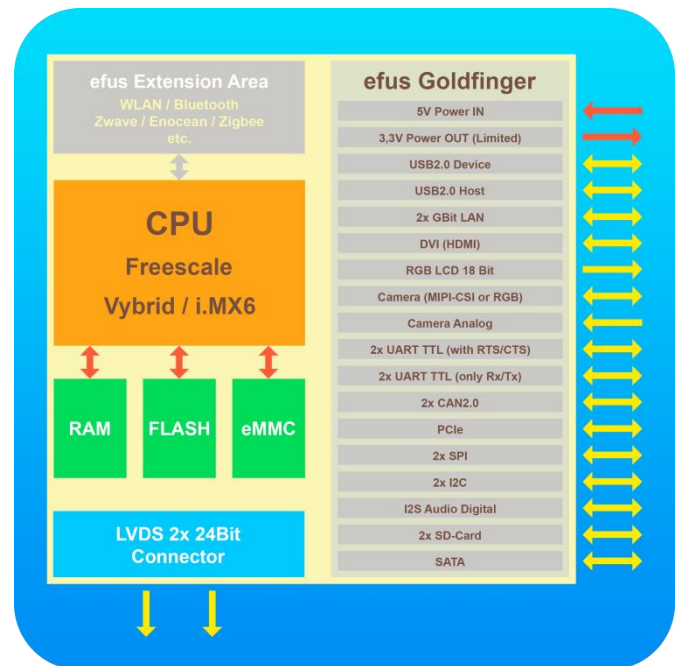
Our customers trust us: more than 60 % of our generated revenues come from the medical device industry.

F&S Elektronik Systeme

efus™ A9

with Freescale i.MX6 Cortex-A9 Single- and Dual-Core CPU

Description

The applied i.MX6 Cortex-A9 CPU comes with high performance, excellent multimedia features like 3D graphics (100MTri/s, 1000Mpx/s), Hardware Decoder/Encoder with a resolution up to 1080p, H.264 HP, HDMI v1.4. , ARMv7™, NEON and VFPv3. Freescale's focus on chip design was low power consumption.

When using the ARM Cortex-A9 CPU, you definitely constitute the right compromise between performance/MHz and power consumption/MHz (0.35mW/MHz). ARM Cortex-A15 does indeed offer a higher performance (about 70% more at equal frequency), but it also has a much higher power consumption (about 100% more at equal frequency). Other important features are the long-time availability of up to 15 years and the temperature range of -40°C - +85°C.

Additionally, the module offers various interfaces. It also enables the possibility to control a RGB display, a LVDS display and a DVI screen simultaneously.

efus Extension Area — WLAN / Bluetooth Zwave / Enocean / Zigbee etc.

CPU Freescale Vybrid / i.MX6

RAM FLASH eMMC

LVDS 2x 24Bit Connector

efus Goldfinger
- 5V Power IN
- 3,3V Power OUT (Limited)
- USB2.0 Device
- USB2.0 Host
- 2x GBit LAN
- DVI (HDMI)
- RGB LCD 18 Bit
- Camera (MIPI-CSI or RGB)
- Camera Analog
- 2x UART TTL (with RTS/CTS)
- 2x UART TTL (only Rx/Tx)
- 2x CAN2.0
- PCIe
- 2x SPI
- 2x I2C
- I2S Audio Digital
- 2x SD-Card
- SATA

HDMI/DVI

LVDS

RGB

simultaneous displaying

Support

Linux, WEC 7, as well as Windows Compact 2013 are available for efus™A9. All starter kits are shipped with 7" TFT and pre-installed operating system. Optionally one has the opportunity to book a four-hour workshop in the short term (Windows Embedded CE or Linux). The customer can choose from additional hard- and software extensions (camera kit, Update program, safe file system, etc.).We are looking forward to your questions via forum, phone, e-mail or in person.

Technical Data

Power Supply:	+5V$_{DC}$/ $\pm$5%
Power Consumption:	tbd
Interfaces:	1x Ethernet 10/100/1000MB
	4x Serial
	1x USB2.0 Host
	1x USB2.0 Device
	2x CAN2.0
	2x I^{2}C
	2x SPI
	1x I2S (Audio Codec)
	2x SDIO (SD-Card)
	1x SATA
	PCIe (2.0)
	Camera Interface /YUV4:2:2 CCIR-656
TFT LCD-Interface:	18bit RGB & 1-2x 24bit LVDS & DVI
RAM:	up to 1GB DDR3-RAM
Program Memory:	up to 1GB Flash + 32GB eMMC
Processor:	ARM Cortex-A9 Single-/Dual-Core 800MHz/1GHz
Temperature Range:	0°C - +70°C , (-20°C - +85°C/ -40°C - +85°C optional)
Size:	47mm x 62.1mm x 11mm (l x b x d)
Weight:	tbd