efus™A7UL

Computer On Module with NXP i.MX 6UltraLite

Characteristics

- NXP i.MX 6UltraLite applications processor Cortex®-A7 – 696MHz
- 1GB SLC NAND Flash, 1GB RAM, 32GB eMMC
- LCD Interface for TFT: RGB up to WXGA resolution, 18 Bit
- 2x Ethernet 10/ 100Mbit
- 2x USB 2.0
- 4x UART, 2x CAN, 2x I^2C, 2x SPI
- 2x SD Card Slot (external), Audio (via I2S external)
- Touch (4-wire and PCAP via I^2C, external)
- WLAN IEEE802.11b/g/n, Bluetooth BT3.0
- Linux (Buildroot/ Yocto), Windows Embedded Compact 2013
- 5V (2W typ.), 230Pin MXM2, 47 x 62mm
- 0°C - +70°C (-20°C - +85°C opt.)

Description

efus™A7UL is another compact and inexpensive module in efus™ form factor. It is perfectly suited for applications with numerous interfaces in medical and industrial engineering.
Along with the attribute of an easy baseboard (EasyLayout), efus™ has a size of 47x62mm only and is therefore suitable for compact housings. The low power loss of only 2 Watt (typ.) makes it easy to cool the module.

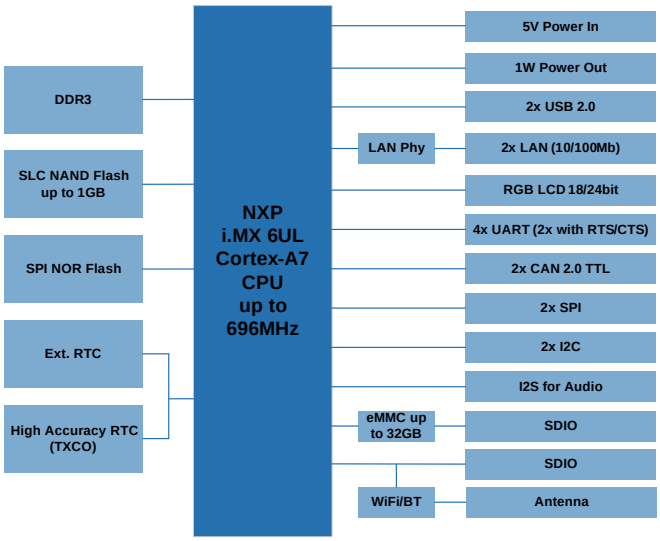
efus™A7UL is based on a NXP single-core applications processor from the very successful i.MX 6 series and has a Cortex®-A7 core with 696MHz.
This very inexpensive CPU consumes far less power compared to i.MX 6 CPUs with Cortex®-A9 core.
The processor has 930DMIPS (2400DMIPS on Cortex®-A9) and NEON Security, but no OpenGL or Video Decode.

Just like every other efus™ module, efus™A7UL comes with adequate RAM, NAND Flash and eMMC.
efus™A9X and efus™A7UL both offer 2x Ethernet and optional WLAN/BT.
It has an 18bit RGB interface but no LVDS or HDMI/DVI.

Software compatibility to the other i.MX 6 applications processors is assured.
Another feature is the long availability to at least 2030.

The customized operating system (Windows Embedded Compact 2013 or Linux) supports all interfaces, guaranteeing an easy software development without a deeper understanding of hardware.
Audio Codec as well as touch controller are found on the base board.
Of course, efus™7UL is pin compatible to efus™A9 and efus™A9X.

Block Diagram



On-Board Operating System

Windows Embedded Partner

The customized WEC 2013 (Bootloader, Kernel, interface drivers, XAML, Mediaplayer, IE) is a real-time operating system. Together with .NET Compact Framework it is ideal for software development. With Compact 2013 you can use Visual Studio 2013 for development.

The F&S Linux BSP (uboot, Yocto, QT, GStreamer) contains the customized kernel and all interface drivers, including Source.
A Cross Compiler Toolchain is offered to create own boot-loaders, kernels or other software. Android is also available.

Starterkit

efus™A7UL-SKIT is available in a WEC 2013 (WEC 7 can be installed subsequently) and a Linux version. The SKIT includes a base board with a plugged on efus™A7UL-V4, a cable kit, access data to the download section (documentation and software) and a 7“ WVGA display with 4-wire touch panel. Audio Codec and touch controller are available on the base board. Schematic and EAGLE data are ready to download.
Our forum with 2000+ registered customers offers example programs and it is always online for your support requests. For a fast and easy start of development, you also have the possibility to book a workshop.

F&S Elektronik Systeme GmbH · Untere Waldplätze 23 · 70569 Stuttgart · Germany
☎ +49 (0) 711 123 722 0 · 🖷 +49 (0) 711 123 722 99
www.fsembedded.com · info@fsembedded.com

efus™ Form Factor

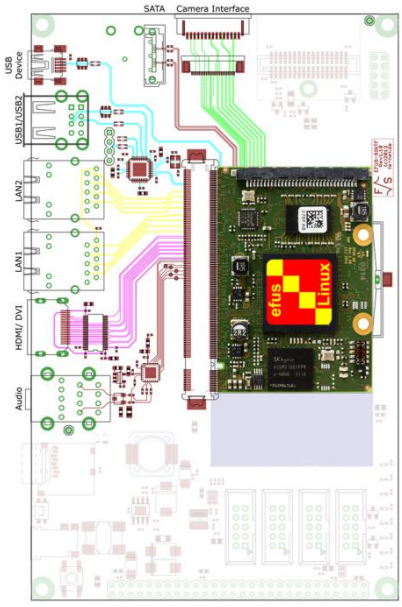
efus™ stands for 20 years of experience in the RISC boards sector.

easy
starterkits
customized operating systems
(Linux, Android, WEC 7, WEC 2013)
F&S Support, free of charge

functional
many interfaces
expandable with wireless modules (ReDesign)
easy base board
based on "EasyLayout" standard

universal
visualization
communication
control

small
47 x 62mm only
5V supply



Accessories

Failsafe Flash Filesystem (F3S)
Order no. WCE-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
Order no. aSt-RGBKIT
7“ WVGA display with RGB interface and touch panel, connection cable (40poles film cable), display adapter and touch cable

Workshop
Order no. NDCU-WS1
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.

Technical Data

Power Supply:	+5V$_{DC}$/ ±5%
Power Consumption:	1W (typ.)
Interfaces:	2x Ethernet 10/100Mb 4x Serial 1x USB2.0 Host 1x USB2.0 Host/ Device 2x CAN2.0 2x I^{2}C 2x SPI 1x I2S (Audio Codec, external) 2x SDIO (SD-Card, external)
TFT LCD Interface:	18bit RGB
RAM:	256MB up to 1GB
Program Memory:	SLC NAND 256MB up to 1GB (opt. eMMC 2GB up to 32GB) (opt. SPI NOR)
Processor:	ARM Cortex®-A7 Single-Core 528MHz
WLAN/BT	IEEE802.11b/g/n (opt.) BT3.0 (opt.)
Temperature Range:	0°C - +70°C , (-20°C - +85°C Option)
Size:	47mm x 62.1mm x 11mm (lxbxd)
Weight:	about 15g

Standard Versions/ Order Notations

efusA7UL-V2-W13
Cortex®-A7 – 528MHz, 256MB DDR RAM, 256MB Flash,
1x Ethernet, 2x CAN2.0, RGB, WEC 2013

efusA7UL-V2-LIN
Cortex®-A7 – 528MHz, 256MB DDR RAM, 256MB Flash,
1x Ethernet, 2x CAN2.0, RGB, Linux

efusA7UL-V4-W13
Cortex®-A7 – 528MHz, 512MB DDR RAM, 256MB Flash, 4 GB eMMC,
WLAN/BT, 2x Ethernet, 2x CAN, RGB, WEC 2013

efusA7UL-V4-LIN
Cortex®-A7 – 528MHz, 512MB DDR RAM, 256MB Flash, 4 GB eMMC,
WLAN/BT, 2x Ethernet, 2x CAN, RGB, Linux

efusA7UL-V1-W13
Cortex®-A7 – 528MHz, 256MB DDR RAM, 128MB Flash,
1x Ethernet, 2x CAN, ~~RGB~~, WEC 2013

efusA7UL-V1-LIN
Cortex®-A7 – 528MHz, 256MB DDR RAM, 128MB Flash,
1x Ethernet, 2x CAN, ~~RGB~~, Linux

Minimum Order Quantity for Custom Versions: 500pcs

Standard Versions/ Order Notations

efusA7UL-SKIT-WCE
Starterkit with efusA7UL-V4-W13, base board, cable kit, 7“ TFT-LCD, access data to SDK and documentation

efusA7UL-SKIT-LIN
Starterkit with efusA7UL-V4-LIN, base board, cable kit, 7“ TFT-LCD, access data to BSP and documentation

F&S Elektronik Systeme GmbH · Untere Waldplätze 23 · 70569 Stuttgart · Germany
☎ +49 (0) 711 123 722 0 · 🖷 +49 (0) 711 123 722 99
www.fsembedded.com · info@fsembedded.com