PicoCore™MX7ULP

Computer On Module with NXP i.MX 7ULP

Characteristics

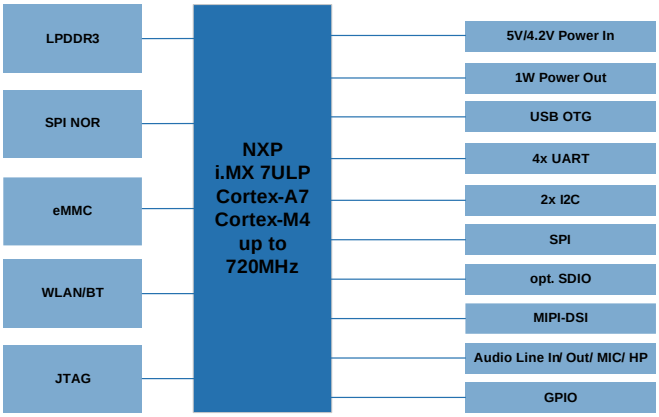
- NXP i.MX 7ULP applications processor Cortex®-A7 & -M4 – up to 800MHz
- 1GB LPDDR3 RAM, 64MB SPI Flash, 32GB eMMC
- LCD Interface for TFT: MIPI-DSI
- USB 2.0 OTG
- 6x UART, 4x I²C, SPI
- Audio LINE IN/ OUT/ MIC/ Headphone
- 33 Digital I/O
- SDIO (SD Card Slot, external)
- Touch (4-wire and PCAP via I²C, external)
- WLAN IEEE802.11b/g/n - BT4.1LE
- Linux (Yocto)
- 5V (1W typ.)/ 4.2V Battery, 2x 80Pin
- 35 x 40mm
- 0°C - +70°C (-20°C - +85°C opt.)

Original Size

Description

The first member of the new and compact PicoCore™ COM product family by F&S Elektronik Systeme is offered with the NXP i.MX 7ULP ARM® based Applications Processor (AP). Further pin compatible PicoCore™ COMs will follow. The module is based on an i.MX 7ULP Applications Processor implementing the Heterogeneous Multi-core Processing architecture with ARM® Cortex®-A7 core and ARM® Cortex®-M4 core.
NXP enables its heterogeneous concept with Linux running on the ARM® Cortex®-A7 core and FreeRTOS running on the ARM® Cortex®-M4 core. The AP offers OpenGL ES 2.0, OpenVG 1.1 3D and 2D Graphics Accelerator for media applications.
Another option is an onboard WLAN/BT4.1 module (pre-certified).The PicoCore™ standard uses two plug connectors (Hirose DF40C) with 80 pins each. This enables a compact shape and short board-to-board distance. The available operating system is Linux (kernel 4.1.15, Yocto); it has already been ported by the experienced software team of F&S Elektronik Systeme. Bootloader, customized interface drivers and all tools needed for development are ready to download.
Several security functions were made available by F&S's customized Linux OS.
PicoCORE™MX7ULP will be available until minimum 2028.

Block Diagram



On-Board Operating System

The F&S Linux BSP (uboot, Buildroot, Yocto, QT, GStreamer) includes the customized kernel and all interface drivers including source.

A Cross Compiler Toolchain for the creation of own bootloaders, kernels and further software is available.

For an easy start of development, F&S offers the following workshops:
Linux on F&S Modules (Standard Workshop)

Additional Workshops:
Linux – Qt5 Workshop
Linux – Asymmetric Multiprocessing
Linux – Secure Boot

Starterkit

PicoCore™MX7ULP-SKIT is available with Linux.
The starterkit (PicoCoreMX7ULP-SKIT-LIN) consists of a base board with plugged-on PicoCoreMX7ULP-V4, a cable kit, access data to the download area (documentation and software).
The base board includes Audio Codec and touch controller.
Schematic and EAGLE data are available for download.
Our support forum with more than 3000 registered customers is always online for help.

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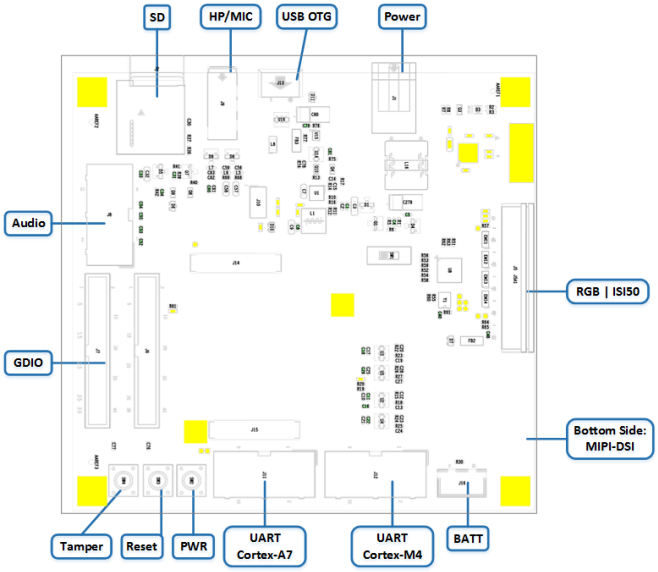
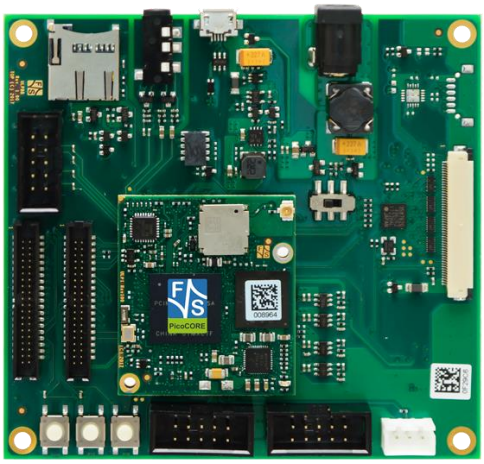
PicoCore™ Form Factor





Workshops

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- Linux on F&S Modules
- Linux – Qt5 Workshop
- Linux – Asymmetric Multiprocessing
- Linux – Secure Boot

Ausführliche Informationen finden Sie auf unserer Webseite.

Technische Daten

Spannungsversorgung:	+5V$_{DC}$/ 4.2V Battery ±5%
Leistungsaufnahme:	1W (typ.)
Schnittstellen:	6x Seriell 1x USB2.0 OTG 4x I^{2}C 1x SPI 1x SDIO (SD-Card, extern) Audio Line In/ Out/ Mic/ Headphone
TFT LCD Schnittstelle:	MIPI DSI 2 lane
RAM:	LPDDR3 bis zu 1GB
Programmspeicher:	QSPI bis zu 64MB eMMC bis zu 32GB
Prozessor:	ARM Cortex®-A7-800MHz & Cortex-M4
WLAN/BT	IEEE802.11b/g/n mit BT4.1LE
Temperaturbereich:	0°C - +70°C , (-20°C - +85°C Opt.)
Abmessungen:	35mm x 40mm x 8mm (LxBxH)
Steckverbinder:	2x 80pol Hirose DF40C
Gewicht:	ca. 10g

Standardversionen/ Bestellbezeichnung

PicoCoreMX7ULP-V2-LIN
tbd

PicoCoreMX7ULP-V4-LIN
Cortex®-A7 – 800MHz, 1GB RAM, 64MB SPI Flash, 4 GB eMMC, WLAN/BT, MIPI DSI, Linux

Mindestbestellmenge für Sonderversionen:
Softwareanpassung ab 500Stk
Bestückvarianten ab 1000Stk

Standardversionen/ Bestellbezeichnung

PicoCore™MX7ULP-SKIT-LIN
Starterkit mit PicoCoreMX7ULP-V4-LIN, Basisboard, Kabelkit, Zugangsdaten zu BSP und Dokumentation

Stand: Februar 2018

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