FS 8ULP OSM-SF

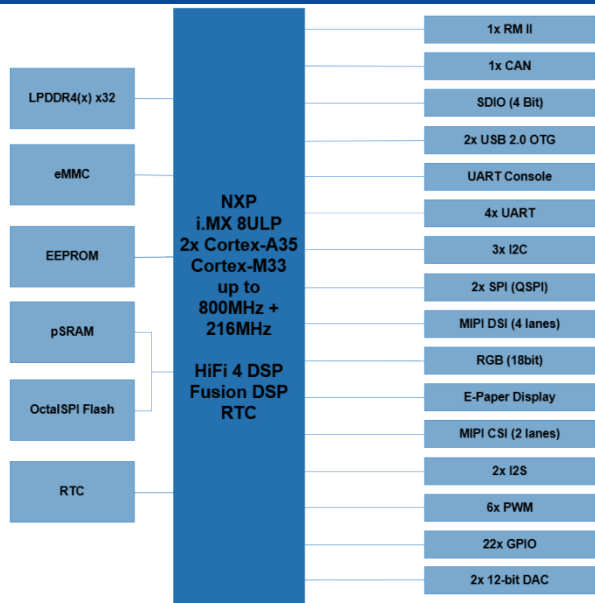*Computer-On-Module with NXP i.MX8ULP*

Characteristics

- NXP i.MX 8ULP Application Processor:
  2x Cortex®-A35 & Cortex®-M33
  Arm®TrustZone® architecture, EdgeLock® secure enclave
  Efficient in sleep and when running at full speed
- 2D GPU, 3D GPU (GCNanoUltra 3.1)
- Tensilica HIFI4 DSP + Fusion DSP
- LPDDR4(x), eMMC, EEPROM
- Real-Time Clock (RTC)
- Minimum availability: 2038

Block Diagramm

Block	
LPDDR4(x) x32	1x RM II
eMMC	1x CAN
EEPROM	SDIO (4 Bit)
pSRAM	2x USB 2.0 OTG
OctalSPI Flash	UART Console
RTC	4x UART

NXP i.MX 8ULP 2x Cortex-A35 Cortex-M33 up to 800MHz + 216MHz

HiFi 4 DSP Fusion DSP RTC

- 1x RM II
- 1x CAN
- SDIO (4 Bit)
- 2x USB 2.0 OTG
- UART Console
- 4x UART
- 3x I2C
- 2x SPI (QSPI)
- MIPI DSI (4 lanes)
- RGB (18bit)
- E-Paper Display
- MIPI CSI (2 lanes)
- 2x I2S
- 6x PWM
- 22x GPIO
- 2x 12-bit DAC

Description

The FS 8ULP OSM-SF, fully compatible with SGET's OSM standard v1.2 (size-S), is a solder on module that offers a variety of interfaces, (i.e. LAN, USB, SDIO, CAN). The i.MX 8ULP processor is designed to deliver both, low power and rich multimedia capabilities. It's not only possible to slow down or switch off the chip, it is also designed to be efficient when running at full speed. EdgleLock Secure Enclave is perfect to meet the upcoming Cyber Resillence Act or U.S. Cyber Trust Mark. Displays can be connected via parallel RGB, MIPI DSI or E-Paper Display interface. Reference schematic is available and part of SKIT.

Due to the small size, the modules are ideal for applications, where space is limited. The single-sided assembly simplifies the implementation and is very robust against shock and vibration.
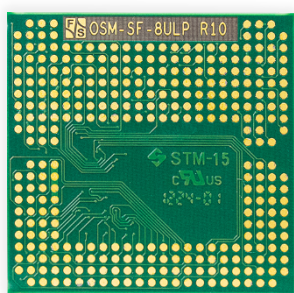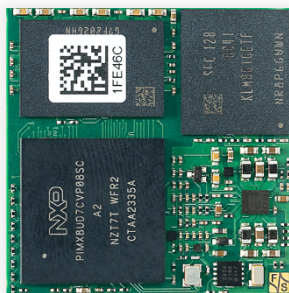
Operating Systems

F&S offers comprehensive software support for the operating system as well as various workshops*.
- Linux Yocto
- FreeRTOS for Cortex-M
- µPower Support
- MIPI DSI display adaption
- Qt workshop
- Secure Boot workshop
- Asymmetric Multiprocessing workshop

Starterkit

To facilitate the implementation of the module in the target application, F&S offers a Starterkit*, including:
- 2x OSM8ULP-V2I**
- Baseboard with MIPI-DSI to LVDS adapter
- 7" LVDS Touch-Display (1024 x 600) px
- Cable Kit
- Cooling Solution

Order Notations

OSM8ULP-V2I
FS 8ULP OSM-SF module, standard, industrial:
i.MX8ULP: 2x Cortex®-A35 @ 800MHz, RTC, noEPDC, 2GB LPDDR4, 16GB eMMC, 18bit RGB, MIPI DSI, EEPROM, -25°C +85°C, Linux

In addition to the standard version(s) which are listed on our homepage, F&S also offers and supports customer-specific configurations***.

OSM8ULP-SKIT-LIN
Starterkit for FS 8ULP OSM-SF.

Technical Data (Quickfacts)

Power Supply:	5 VDC
Power Consumption:	1 W (typ.)
Processor:	NXP i.MX 8ULP
Memory:	LPDDR4(x) x32 **up to 2GB** eMMC **up to 64GB** pSRAM or OctalSPI Flash 64Kb EEPROM
Interfaces:	1x RMII (Ethernet) 1x SDIO (4 bit) 2x USB 2.0 OTG 1x CAN, 5x UART, 22x GPIO, 3x I2C, 2x SPI (QSPI), 2x I2S, 6x PWM, 2x DAC, JTAG
I/O voltage:	1,8 V / 3,3 V (optional, partly)
Display:	18(24)bit RGB + MIPI DSI (4 lane), E-Paper Display
Camera:	MIPI CSI (2 lane)
RTC	PCF85263ATL, i.MX8ULP internal
Temperature Range:	-40°C … +85°C
Size (L x W x H):	(30 x 30 x 2.6) mm
Weight:	≈ 5 g

  * You can find detailed information on our website.
 ** 1x soldered onto an adapter which can be plugged onto the baseboard.
    1x additional mechanical sample.
*** Please contact us for further information.