Data sheet

ET-MSOM-18218 Rev. B0

Module level product

Your partner in automation

Low Power High Performance Real-time Data Processing Unit

Features

- Processor SoC Xilinx Zynq-7020 667 MHz Dual-Core ARM Cortex-A9 Artix-7 FPGA
- Linux Real-Time OS
- LabVIEW programmable
- Non-volatile memory: 512 MB
- DRAM: 512 MB
- 2x Gigabit Ethernet interface (one may be configured as EtherCAT master)
- 1x USB 2.0
- 1x RS-232, optional RS-485/RS-422/CAN
- 22 channel GPS receiver, PPS
- Wireless M2M interface (GPRS/EDGE/HSDPA etc.)
- External accessible microSD card socket
- Operating temperature -25 / +70^{0}C
- Wide input range (8-30V) DC power supply
- Stainless steel enclosure with DIN-rail fastening
- Small size: approx. 12 x 12 x 6 cm

Description

The MSOM module combines the software programmability of a Processor with the hardware programmability of an FPGA, resulting in unrivalled levels of system performance, flexibility, scalability while providing system benefits in terms of power reduction. Unlike traditional processing solutions, the flexible programmable logic of the MSOM module enables optimization and differentiation, allowing to adapt to a broad base of applications.

The MSOM is shipped with NI Linux Real-Time, which combines the performance of a real-time OS with the openness of Linux. This provides two options to program the processor:

- LabVIEW system design software
- C/C++ with Eclipse

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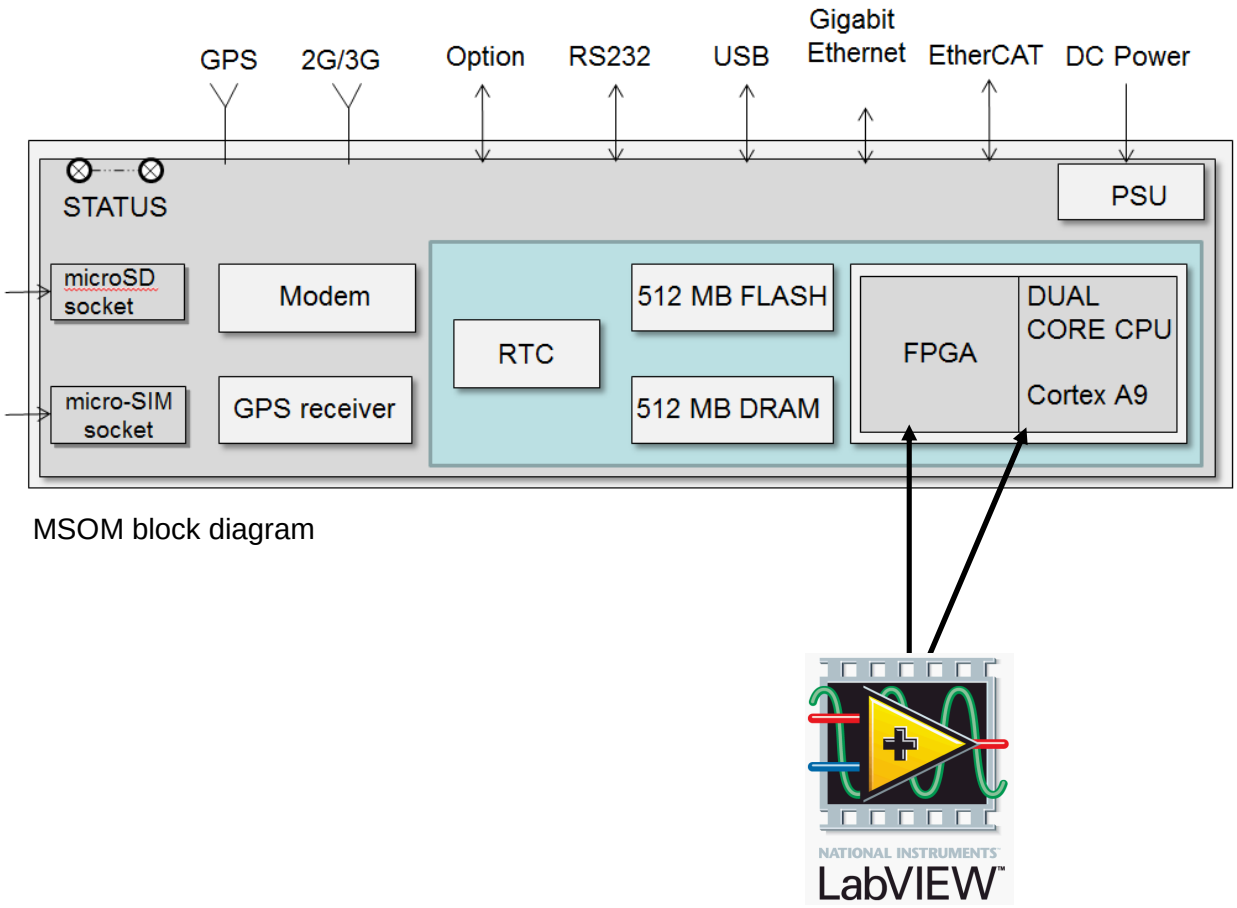
Besides the standard interfaces the MSOM has also one Ethernet port configured as EtherCAT master interface. Through this interface standard EtherCAT slave modules may be connected. For this purpose INCAA Computers can provide multi-channel analog and digital I/O modules.
For wireless M2M connections the MSOM is equipped with a 2G/3G modem. A built in GPS receiver provides accurate timing and location information. A PPS signal is available for the application.

A wide range DC power-input, the low power requirements, the small size and Din-rail fastening ensure easy system integration.



MSOM block diagram

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Specifications

FPGA/Processor	
Type	Xilinx Zynq-7020 Artix-7 series
Logic cells	85K logic cells
BlockRAM	560 KB
Processor	ARM® dual-core Cortex™-A9 MPCore
Clock	667 MHz
Real time clock accuracy	5 ppm
Memory	
Nonvolatile memory	512 MB
DRAM	512 MB
Ethernet	
Number of ports	2
Speed	2x Gb/s, auto-negotiated (One may be configured as EtherCAT master)
Connector	RJ-45
RS-232	
Number of ports	1x Dedicated as Linux console out
Connector	9-pin, Sub-D
USB	
Type	1x USB 2.0, High speed
Wireless data interface	
Type	GSM/GPRS/EDGE/UMTS/WCDMA
Antenna connector	SMA female
GPS	
Channels	22
Data	NMEA 0183
Update rate	Max 5 Hz
Digital output	PPS
Antenna connector	MCX female
Power supply requirements	
Input	8 - 30 VDC
Power consumption	Typ. 400 mA @ 12 V
Protection	Against reverse polarity, under- and overvoltage
Norm conformity	
EMC	EN 50121-3-2, EN50121-4, RLN00007
Mechanical	
Dimensions	120 x 120 x 60 mm (l x w x h)
Material	Stainless steel
Color	Brushed steel
Mounting	DIN-rail fastening
Environmental conditions	
Operating temperature	-25 °C to +70 °C
Max.operating rel. humidity	90%, no condensation
Warranty	
Warranty period	1 year
Identification	
Type number	ET-MSOM-18218 Rev. B0

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