

MODULES

SOM/E

High performance LabVIEW-based control module (FPGA, RT Dual Core Processor)



MAIN FEATURES

NI sbRIO-9651 SOM with Xilinx Zynq 7020 (Artix-7 FPGA + Dual-core ARM Cortex A9 with RT NI Linux OS)

LAN, USB

VME J1 format

KEY APPLICATIONS

Real-Time electronics control

Embedded processing

_PRODUCT OVERVIEW

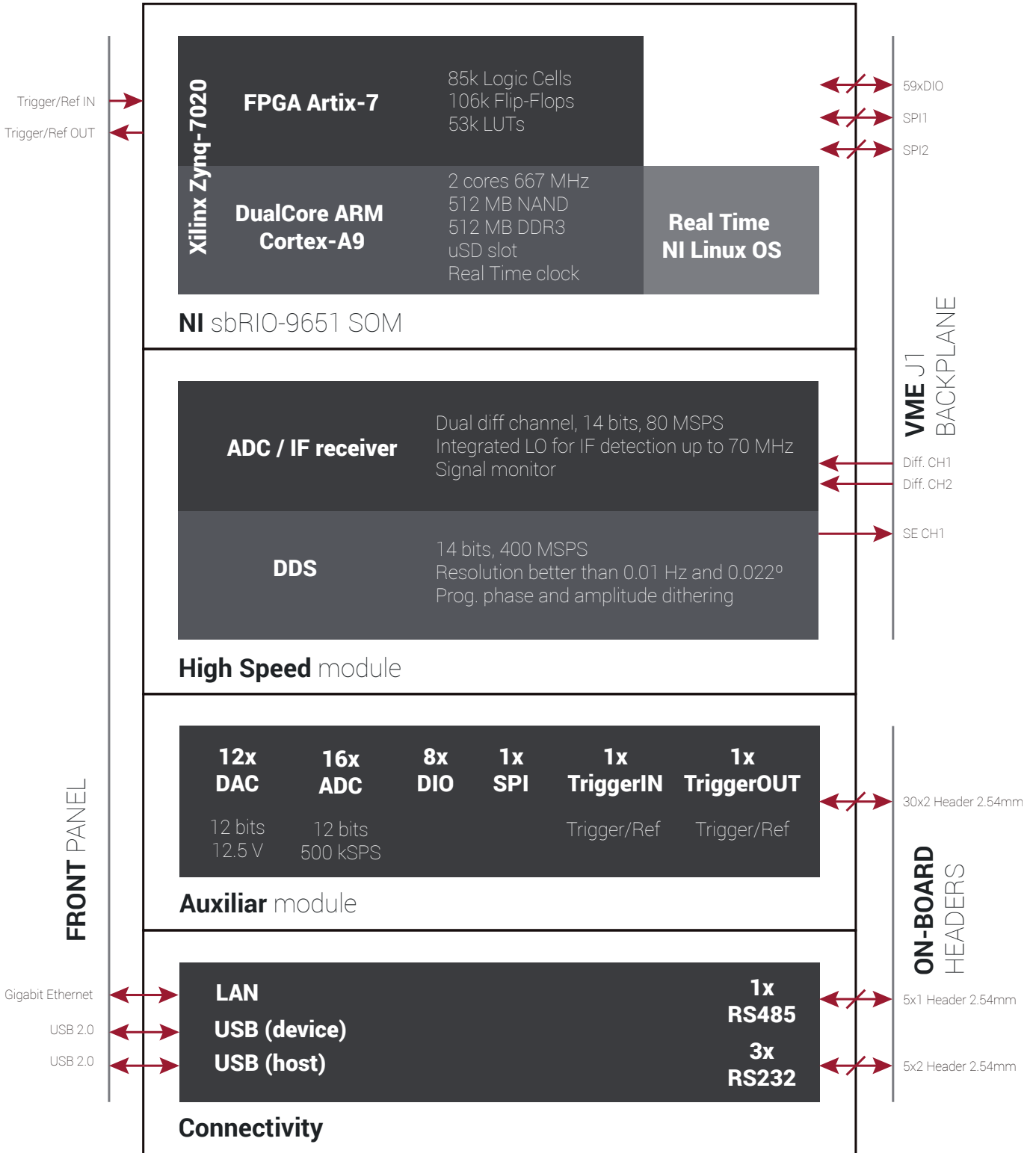
SOM/**E** is a high performance VME J1 control module fully compatible with NI LABVIEW and NI RIO platform (Real-Time, Embedded).

It features a NI sbRIO-9651 System-On-Module that includes a Xilinx Artix-7 FPGA and a Real-Time Dual Core ARM Cortex-A9 (with Real-Time NI Linux OS).

SOM/**E** provides high connectivity, with Gigabit LAN, USB (Host and Device) and internal RS485 (1) and RS232 (3) connectors.

SOM/**E** is the control card for our chassis/**xxHP** series. Together, they make a high performance, powerful and flexible platform for the most demanding needs in a wide variety of applications and markets.

_BLOCK DIAGRAM



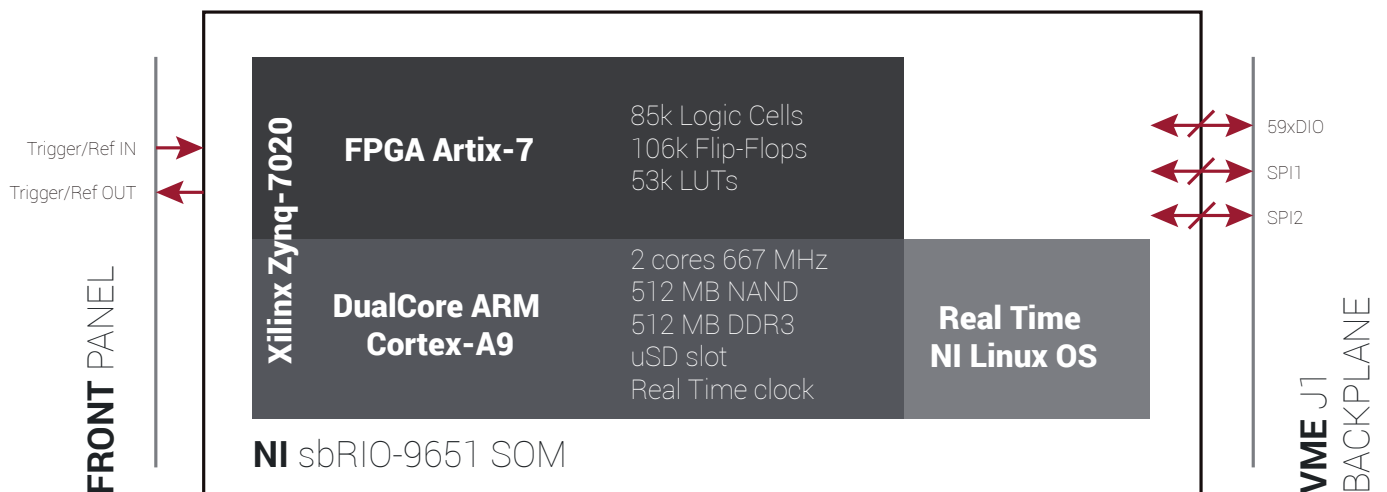
_FUNCTIONAL SPECIFICATIONS

_NI sbRIO-9651 SOM

NI sbRIO-9651 SOM combines a Xilinx Zynq 7020 SoC (System on Chip) with a middleware solution. This offers an embedded development platform that can drastically reduce risks and control time for monitoring applications. NI sbRIO-9651 SOM is fully integrated in the LabVIEW platform, allowing the user to program the microcontroller and FPGA through purely graphical programming and without the need for HDL coding knowledge, greatly simplifying the prototyping procedure.

Xilinx Zynq 7020 includes a reconfigurable Artix-7 FPGA and Dual Core ARM Cortex-A9 processor with Real Time capabilities. A Linux Real-Time OS is programmed in the SOM, allowing the user to program the processor using LabVIEW or C/C++ with Eclipse.

In the SOM/E module, 59 DIOs and two SPI interfaces (3-wire) are connected to the VME J1 backplane. SMA connectors offer two fast lines in from the front panel for use as a Clock Reference (1 In, 1 Out) or Trigger In and Out.



Processor

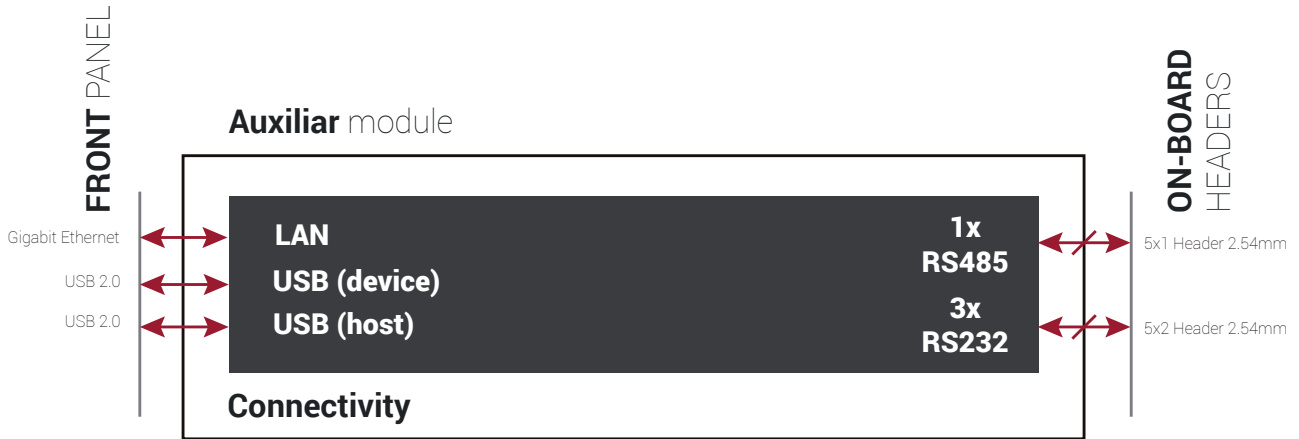
Processor core	Dual ARM Cortex-A9 MPCore with CoreSight
Processor extensions	NEON & Single/Double precision floating point for each processor
Frequency	667 MHz
L1 cache	512 KB
L2 cache	256 KB
Non-volatile memory	512 MB, SLC NAND Flash (integrated) microSD slot (on-board)
Volatile memory (DRAM)	512 MB, DDR3
Real time clock	5 ppm accuracy
Flash reboot endurance	100.000 cycles
OS	NI Real-Time Linux

FPGA

Xilinx 7 Programmable Logic Equivalent	Artix-7 FPGA
Programmable Logic Cells (Approximate ASIC gates)	85k (~1.3M)
Look-Up Tables (LUTs)	53.200
Flip-Flops	106.400
Extensible Block RAM (36 kb blocks)	560 KB (140)
Programmable DSP slices (18x25 MACCs)	220
Peak DSP Performance (Symmetric FIR)	276 GMACs
Number of logical interrupts	32
Number of DMA channels	16
Security	AES and SHA 256b Decryption and Authentication for secure programmable logic configuration

_CONNECTIVITY

SOM/E provides a high level of connectivity through a Gigabit LAN Ethernet connector, USB device and USB host, all accessible through the front panel. Additionally, one general serial interface and three RS232 interfaces are available through on-board-connectors.



_ORDERING INFORMATION

This product is commercialized by Eblana Photonics:

sales@eblanaphotonics.com

+353 1 675 3220

Part number: SOM/E-S

You can acquire this product individually for OEM applications or as part of a MPPI system (see MPPI Brochure for further information and system configuration)

COMMERCIALIZED BY



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_v1.1 datasheet

SOM/**E**

All product specifications are subject to change without prior notice



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