

RAPTOR ZYNQ ULTRASCALE+ MPSoC SDR DEVELOPMENT KIT

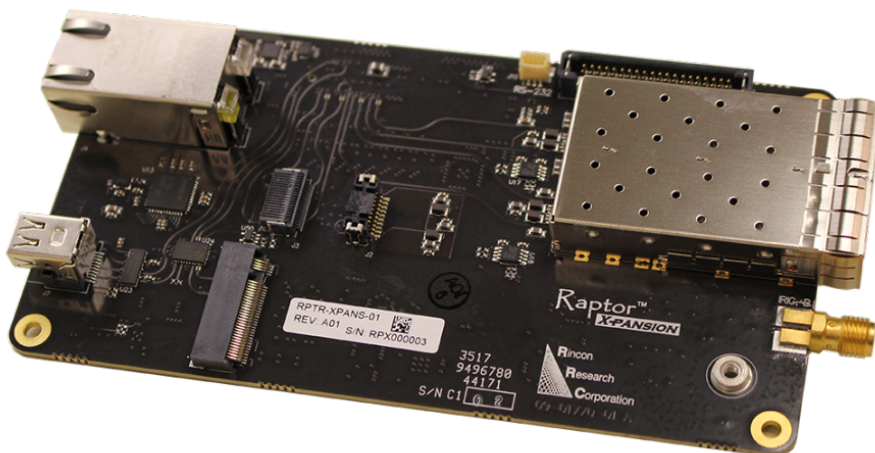
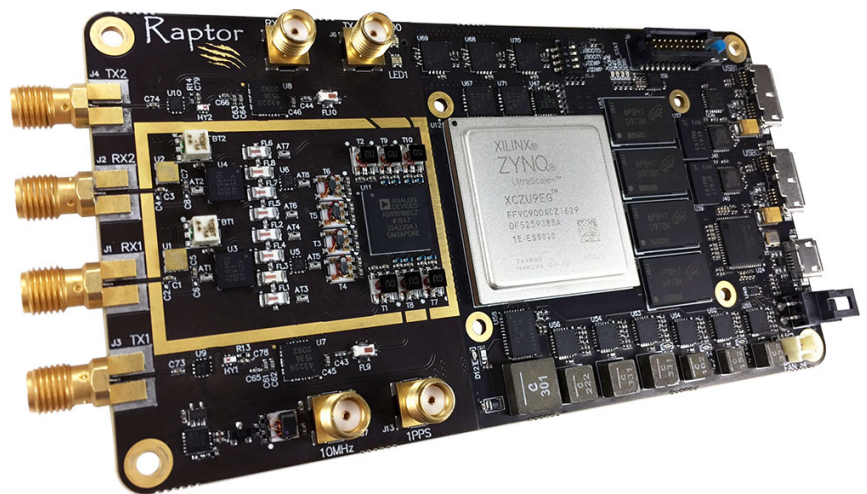
Performance · Flexibility

THE RAPTOR SDR DEVELOPMENT KIT COMBINES THE LATEST-GENERATION FPGA SoC TECHNOLOGY WITH A MIMO-CAPABLE RF TRANSCEIVER. The kit includes an RF shield, heatsinks, USB cables, standoffs, and a power supply to make it easy to get started. The open-source BSP, available on GitLab, includes support for streaming data to Gnu Radio and MATLAB, so you can launch your ideas right out of the box.

THE RAPTOR'S RF TRANSCEIVER IS MIMO-CAPABLE FROM 70 MHz TO 6 GHz. The configurable transmit path supports 70 MHz to 6 GHz and includes a 2.4 GHz, 500 mW power amplifier. Receiver performance is enhanced by a four-band preselector and wideband LNA.

RAPTOR MAIN BOARD

- ◆ Next-generation SDR platform that combines the performance of a Xilinx Zynq UltraScale+ MPSoC FPGA with the flexibility of an Analog Devices RF Agile Transceiver
- ◆ BSP, drivers, and COTS tool support included with purchase
- ◆ 5" x 2.675" form factor
- ◆ 9 V to 16 V supply input
- ◆ Mezzanine board expansion header supports additional high-speed I/O



RAPTOR I/O EXPANSION MEZZANINE *

- ◆ Dual SFP+ 10G Ethernet
- ◆ M.2 SATA interface **
- ◆ Mini DisplayPort interface **
- ◆ 10/100/1000 BASE-T Ethernet **
- ◆ Dual-lane Samtec FireFly connector to GTH interfaces **
- ◆ IRIG-B timecode input
- ◆ I/O header:
 - I²C, SPI, UART
 - AD5593 8-channel ADC/DAC/GPIO
 - 16 GPIOs (FPGA connected)

* Mezzanine Card Sold Separately
** Cables/modules not included



ADDRESS
101 N. Wilmot Rd., Ste. 101
Tucson, Arizona 85711

ORDER LINE
520.519.3131
sales@rincon.com

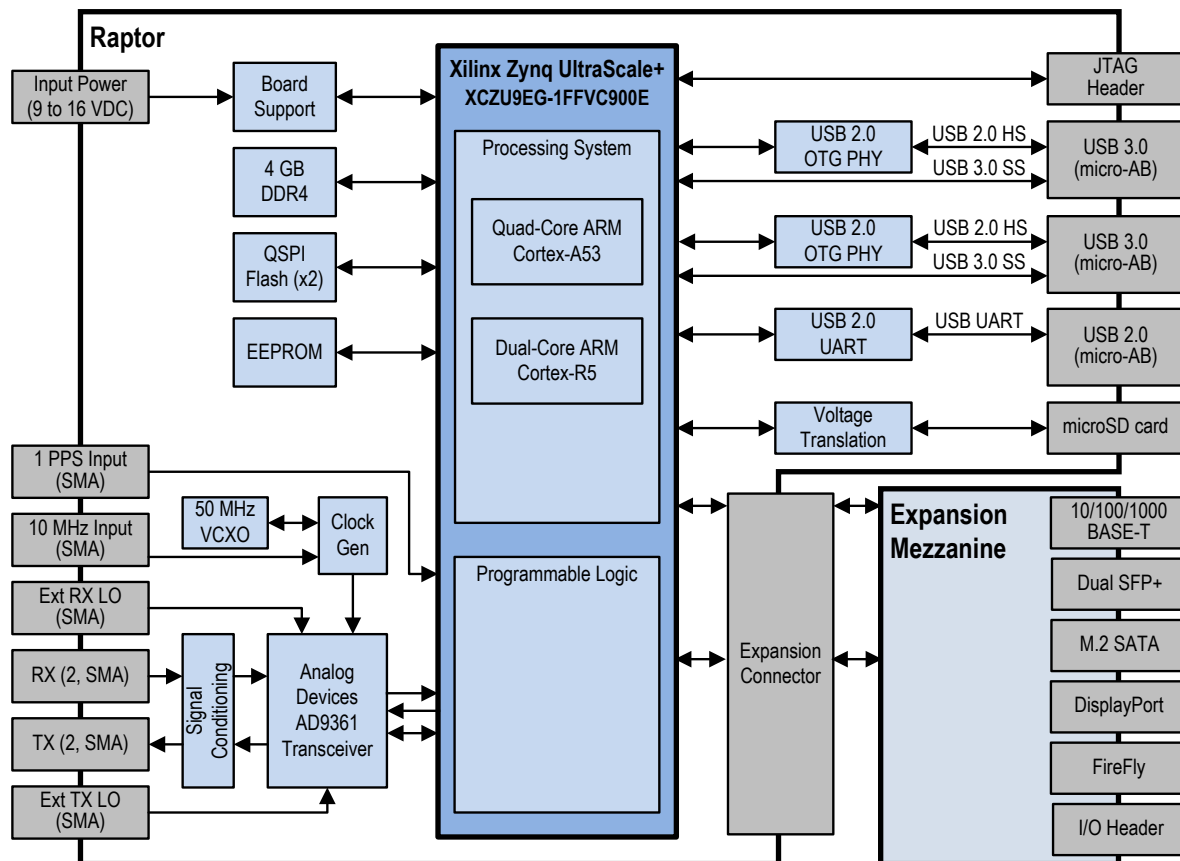
TECH SUPPORT
520.519.3132
tech-line@rincon.com

FAX | WEB
520.519.3120
www.rincon.com

RAPTOR

ZYNQ ULTRASCALE+ MPSoC SDR DEVELOPMENT KIT

BLOCK DIAGRAM



SPECIFICATIONS

PROCESSING

System-on-Chip	Xilinx Zynq UltraScale+ XCZU9EG-1FFVC900E FPGA
FPGA	600 logic cells (K) 2,520 DSP slices
Application Processor	Quad-core ARM Cortex-A53 1.2 GHz, 64 bit
Memory	4 GB of DDR4
USB	2x USB 3.0 micro-AB
Storage	MicroSD card and QSPI flash
Timing Signals	1 PPS, 10 MHz reference, IRIG-B (Requires Expansion Mezzanine)

DOCUMENTATION

User Guide	raptor.rincon.com
GitLab	gitlab.com/rinconresearch/raptor

RF

Transceiver	Analog Devices AD9361
Tuning Range	70 MHz to 6 GHz Accepts optional external LOs
Bandwidth	Up to 56 MHz 61.44 MSPS complex 12 bit resolution
Receive Path	On-board LNA and four-band preselector
Transmit Path	Low-power, full tuning range path and high-power 500 mW 2.4 GHz PA path
Connectors	All RF connectors are SMA

INCLUDED ACCESSORIES

Cables	USB 3.0, USB 2.0 (UART), JTAG adapter cable for Xilinx USB 2.0
Heatsinks	SoC and RF PAs
Power Supply	12 VDC, 36 W, universal AC input, North American cable included

EXPANSION MEZZANINE*

Ethernet	Dual SFP+ 10Gb 10/100/1000 BASE-T
Storage	M.2 SATA connector (80 mm)
Video	Mini DisplayPort interface
SerDes	FireFly connector, 2 GTH pairs
I/O Header	I ² C, SPI, UART GPIO: 16 bits, FPGA attached Analog: 8-channel ADC/DAC/GPIO
IRIG-B	Accepts AM or DC level shift

MECHANICAL

Dimensions	L x W: 5" x 2.675" (127 x 68 mm) H: 0.681" (17.3 mm) (Raptor only) H: 1.5" (38 mm) (with Expansion Mezzanine)
Mass	Raptor with heatsinks: 115 g Raptor, board only: 85 g Raptor, Expansion Mezzanine, heatsinks: 175 g (no SSD, SFP+)

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