

SV-3210 Raptor SDR



Summary

The SV-3210 Raptor Software-Defined Radio (SDR) is a SOSA[®]-aligned 3U OpenVPX card that combines the latest-generation AMD[®] FPGA SoC technology with a MIMO-capable RF transceiver. The Raptor transceiver includes dual-channel, independent Tx and Rx channels, which are MIMO-capable from 70 MHz to 6 GHz, and a 2.4 GHz, 500 mV power amplifier. Receiver performance is enhanced by a four-band preselector and wideband Low-Noise Amplifier (LNA).

The Raptor SDR can take in external frequency and phase references that can be used to perform precise In-phase and Quadrature (I/Q) data time tagging and top-of-second-aligned transmission.

Key Features

- 3U VPX form factor
- SOSA profile 14.6.11
- AMD Zynq™ UltraScale+™ SoC
- Analog Devices[®] dual Tx and Rx MIMO[®] RF transceiver (70 MHz to 6 GHz)
- Wideband LNA and selectable filter bank per receiver
- Bypassable 2.4 GHz 29 dBm power amplifier per transmitter
- External timing inputs (10 MHz, 1 PPS, IRIG, NTP)
- 4 GB, 64-bit DDR4-2400 attached to processor subsystem

Specifications

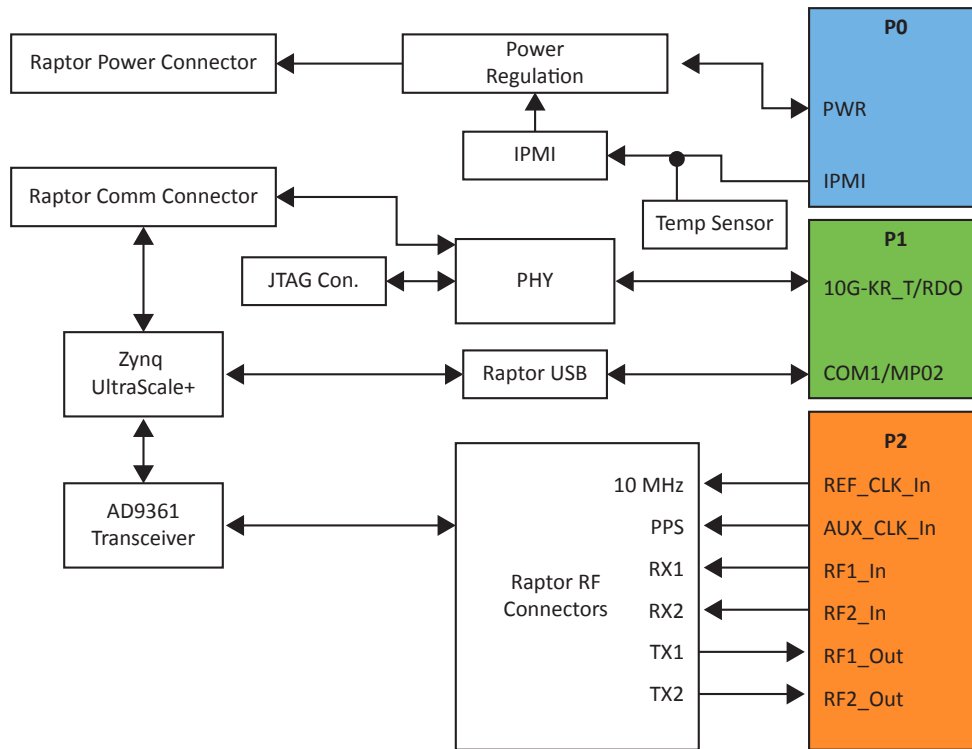
Processing

- **SoC:** AMD Zynq UltraScale+ XCZU9EG-1FFVC900E
- **FPGA:** 600 logic cells (K); 2,520 DSP slides
- **Application:** Quad-core Arm[®] Cortex[®]-A53 core
- **Processor:** 1.2 GHz, 64 bits
- **Memory:** 4 GB DDR4
- **Storage:** microSD card and Quad Serial Peripheral Interface (QSPI) Flash
- **Timing Signals:** 1 PPS, 10 MHz, IRIG, NTP, NMEA-0183

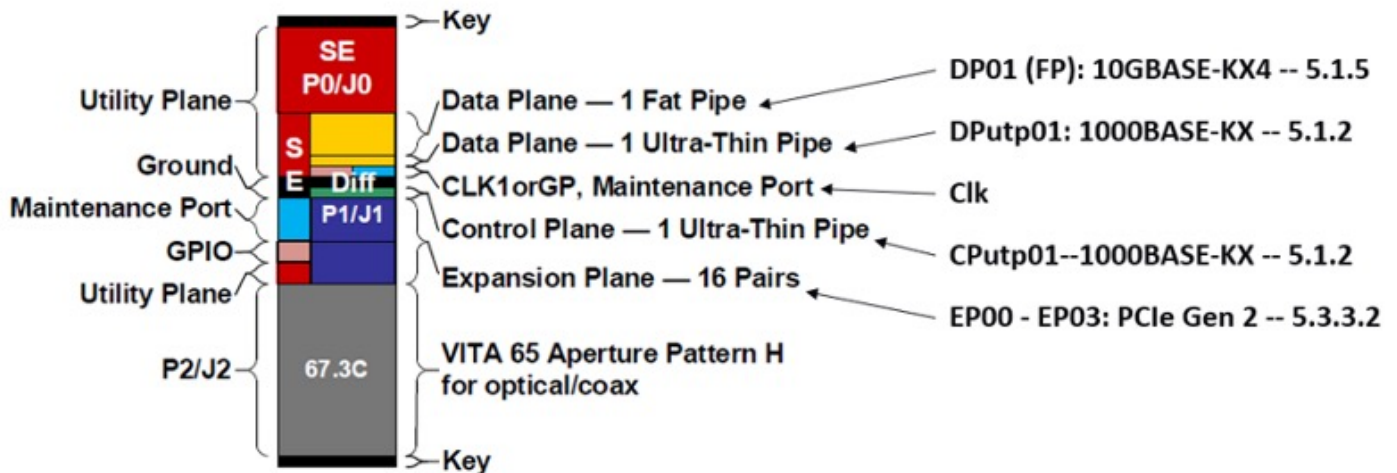
Radio Frequency (RF)

- **Transceiver:** Analog Devices AD9361
- **Tuning:** 70 MHz to 6 GHz
- **Range:** Accepts optional external local oscillators
- **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
- **Development Interface:** Open-source Board Support Package (BSP), available on GitLab, which includes support for streaming data to GNU Radio and MATLAB[®]

System Block Diagram



Raptor SDR Card Slot Profile and P2 Connector Layout



Ordering Options

Part Number	Description
SV-3210-C00	Raptor SDR Card