ipsolon RESEARCH

Chameleon Radio

Multi-antenna, RF tunable to 6GHz Software Defined Radio

DIGITAL SIGNAL PROCESSING HORSEPOWER

Multi-processor Subsystem

Xilinx Zynq UltraScale+ XCZU9

Quad core 1.2 GHz ARM Cortex-A53 64b with L1/L2, MMU, DMA

Dual 500MHz R5 real time processor, power manager & secure boot

4GB DDR4, Micro SD memory

Range of IO including UARTs, 1G Ethernet, USB3.0

Massive parallel AXI IO between PS and FPGA fabric

Board to board expansion connector with up to 32GB data transfer

FPGA Resources

600+ system logic cells (K)

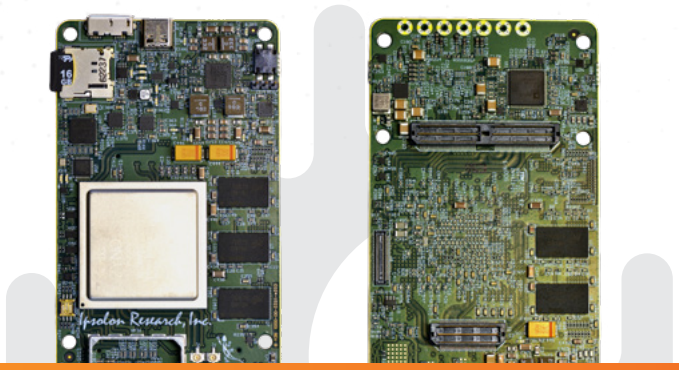
2,520 DSP slices

MADE FOR SMALL FORM FACTOR AIRBORNE RADIO

Small Form Factor 122mm X 62mm x 10mm envelope

6V-16V input voltage

Typical power ~24W, depends on software & DSP work load



RF TRANSCEIVER FRONT END

RF Front End

ADI AD9371 Transceiver

Rx BW: 8 MHz to 100 MHz

Tx synthesis bandwidth (BW) to 250 MHz

Dual differential transmitters (Tx)

Dual differential receivers (Rx)

Observation receiver (ORx) - 200MHx BW

All RF TX/RX tunable range: 300 MHz to 6000 MHz

Supports FDD and TDD

Fractional-N radio frequency (RF) synthesizers for Tx, Rx, ORx

LNA, closed loop Automatic Gain Control

Digital Front End

Multiple DSP filter stages for optimal band pass shaping

Quadrature Error Correction for TX & RX paths

Clock Distribution Subsystem

122.88MHz VCXO, custom reference clocks available

Optional

External Inputs: clock reference & 1PPS & SYSREF (phase sync)

Generates all ADC/DAC/Synth/JESD204B clocks & SYSREF

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Ipsolon Research specializes in ultra-small form factor high performance Software Defined Radios. Our specialty is wideband radios with substantial signal processing resources for demanding SDR application. All radios have at least two TX and RX antennas and have clocking subsystems designed to support high performance phase coherent radio channels and expansion of coherency across multiple radio modules.

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