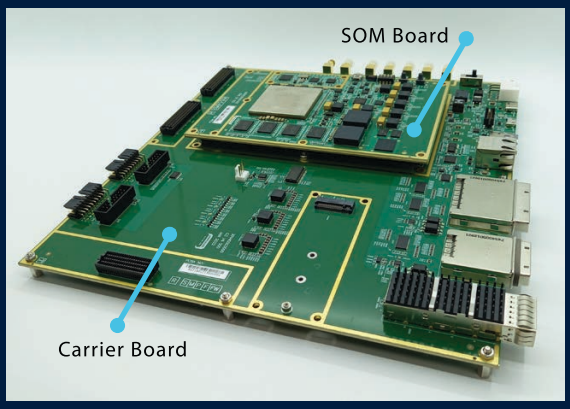
ADRS1000™

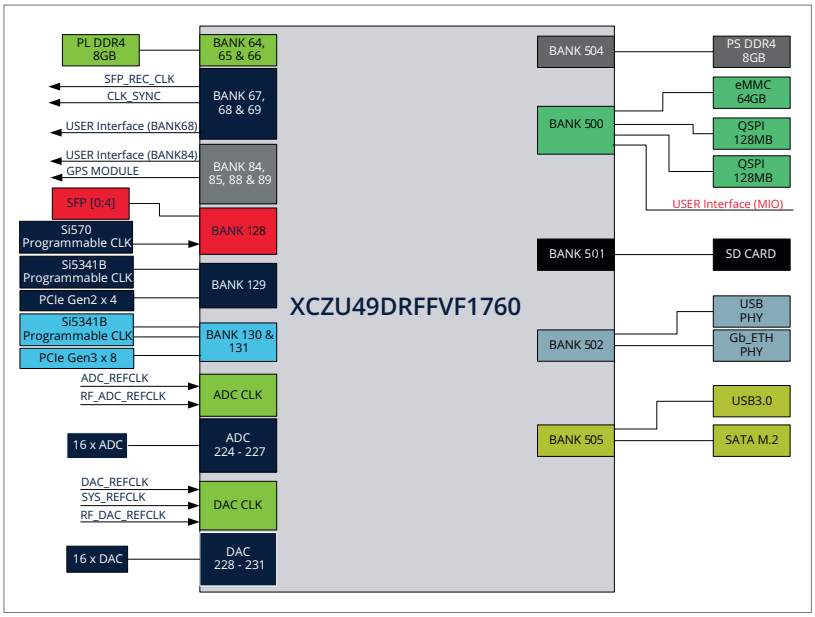
AN ULTRA-HIGH PERFORMANCE RE-CONFIGURABLE DIGITAL RADIO MODULE

Addvalue's ADRS1000™ is an ultra-high performance re-configurable digital radio module specifically designed to accelerate the development and deployment of highly complex wireless systems that are going to be the mainstays across many industries in the 5G era and beyond.



RECONFIGURABLE HARDWARE

At the core of ADRS1000™ is the latest Xilinx Zynq® UltraScale+™ RFSoC, a single chip design that is packed with built-in adaptive digital radio front-end, an Arm® Cortex®-A53 processing subsystem and UltraScale+ programmable logic with ample computing resources. Developed on the back of the Addvalue's rich heritage in the development of RF modules and FPGA-SoC embedded systems for bespoke wireless applications in defence and other industries, ADRS1000™ is set to meet most demanding digital signal processing jobs required of in today's increasingly complex digital radio applications, particularly in 5G satellite-based or terrestrial-based network, unmanned vehicles (aerial or surface), anti-drone system, new generation of mobile satellite systems, radar systems and high-performance test and measurement instrumentation. To facilitate ease of testing and development based on ADRS1000™, a Carrier Board, ADRS1000™-1, is also made available to the system developers along with the required development support packages. .



APPLICATIONS

- Anti-Drone & Unmanned Aerial System
- Phased Array Radar in Aerospace & Defense
- Complex Test and Measurement Instruments
- 5G New Radio (NR) NTN/TN Wireless Infrastructure
- Next Generation Mobile Satellite Network

OVERVIEW

- Compact single chip adaptable radio platform based on Xilinx Zynq Ultrascale+ RFSoC Gen3 ZU49DR
  - Quad-core Arm Cortex-A53 (APU) @1.33GHz and Dual-core Arm Cortex-R5F (RPU) @533MHz
  - 16 channels, 14-bit ADC/DAC Sampling @2.5Gsps/9.85Gsps with RF Bandwidth up to 6GHz
  - Programmable logics with 930K System Logic Cells, 425K CLB LUTs, 4272 DSP Slices
- Low jittering clock synchronization
- High efficiency power management and distribution
- High Bandwidth DDR4 Memory and eMMC/QSPI/SD 3.0 Storage
- High Speed Connectivity with QSFP+ 100G Ethernet,
- RJ45 1G Ethernet, PCIe Gen2/3, SATA M.2, USB-C USB3.0 and UART
- Companion board provided for RF SOM integration test
- Development Support Package with Linux kernel, drivers and HDL project source
- Ready-to-Market with options for commercial grade and industrial grade

AVNET®

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ADDVALUE

ADDVALUETECH.COM

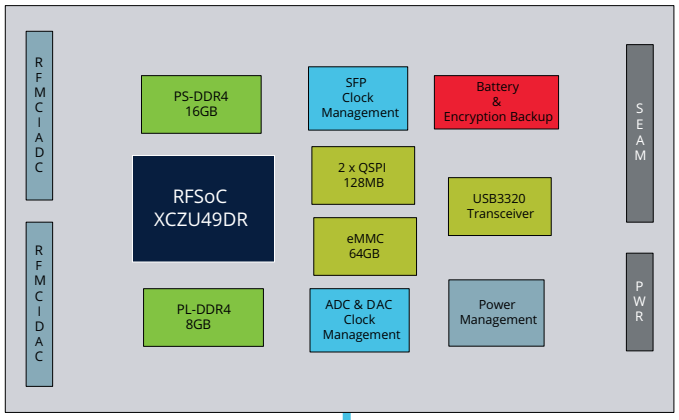
ADRS1000™
TECHNICAL SPECIFICATIONS

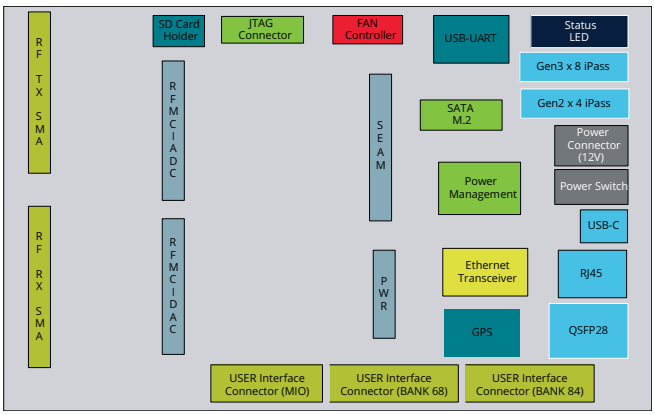
ADRS1000™ RF-SOM

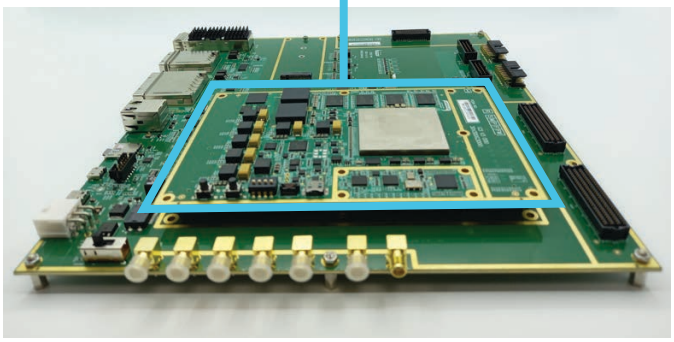
- Single board design: 165x 110mm
  - XCZU49DR-FFVF1760
  - 2 x 128MB QSPI
  - 8GB DDR4 for PS
  - 8GB DDR4 for PL
  - 64GB eMMC
- Power Input: 12V, 10A max
- Operating Temperature:
  - Commercial grade: 0 °C to +70 °C
  - Industrial grade: -40 °C to +85 °C
- Conformal coating: Optional

ADRS1000™-1 CARRIER BOARD

- Single Design Board: 265mm x 245mm
- 1 x 100GbE QSFP28
- 1 x 1GbE Ethernet
- 1 x USB Type C
- 1 x 12V power supply input
- 1 x M.2 interface
- 1 x PCIe Gen 3 x 8
- 1 x PCIe Gen 2 x 4
- 1 x UART to USB

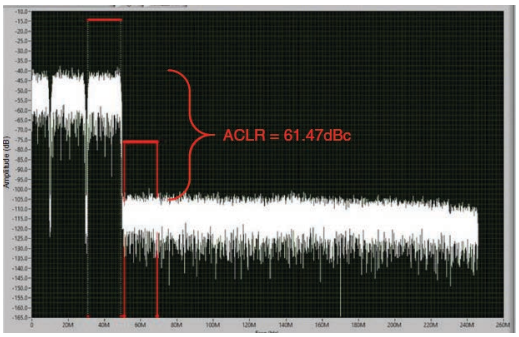


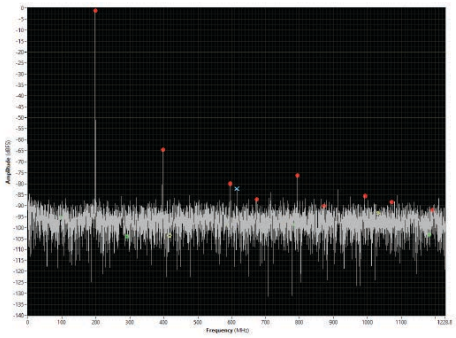




WHY XILINX ZYNQ ULTRASCALE+ RFSoC ?

- Single Chip Solution
  - Offer best balance of technologies by combining hardened digital front-end and adaptable logics
- Digital RF Sampling Architecture
  - Multi-channel High Speed Data Converters
  - Scalable architecture for digital beamforming realization
- Compact integration at low power operation





PERFORMANCE

- SNDR > 56dBc
- SFDR > 60dBc
- IM3 < -60dBc
- ACLR < -60dBc
- NSD < -148 dBFS/Hz

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