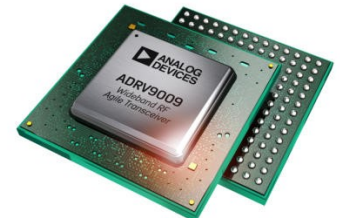


## 3U VPX Zynq MPSOC Conduction Cooled System Development Kit



### Overview

**VPX3-ZU1-CCSDK** is a Conduction Cooled Small Form Factor (SFF) Rugged COTS System based on the **VPX3-ZU1** 3U VPX Zynq Ultrascale+ MPSOC with a FMC HPC site and a user's second VPX slot for a broad range of applications such as Software Defined Radio, MILCOM, Data Link and Electronic Warfare.

The Zynq UltraScale+ MPSOC used is a **ZU6/ZU9/ZU15** that integrates a Quad-core ARM Cortex-A53 based Application Processing Unit (**APU**), a Dual-core ARM Cortex-R5 based Real-Time Processing Unit (**RPU**), an ARM MALI-400 based Graphic Processing Unit (**GPU**), and an UltraScale+ Programmable Logic (**PL**) in a single device. It also includes on-chip memory, external memory interfaces, and a rich set of peripheral connectivity interfaces.

Up to 8GB 64-bit DDR4-2400 Processing Memory with 8-bit ECC and up to 2GB 16-bit of DDR4-2400 as the Programmable Logic Memory, allowing data streaming. 64GB of soldered eMMC managed NAND Flash is available for local data storage.

Front Panel Interfaces Zynq MPSOC Peripherals, Ethernet 1000BaseT, 2x RS-232, SATA, Video Out DisplayPort 1.2, 2x USB 3.0, 1x USB 2.0, GPIOs.

Please contact us for more VPX slots and IO system configurations.

### Typical Ruggedized Applications

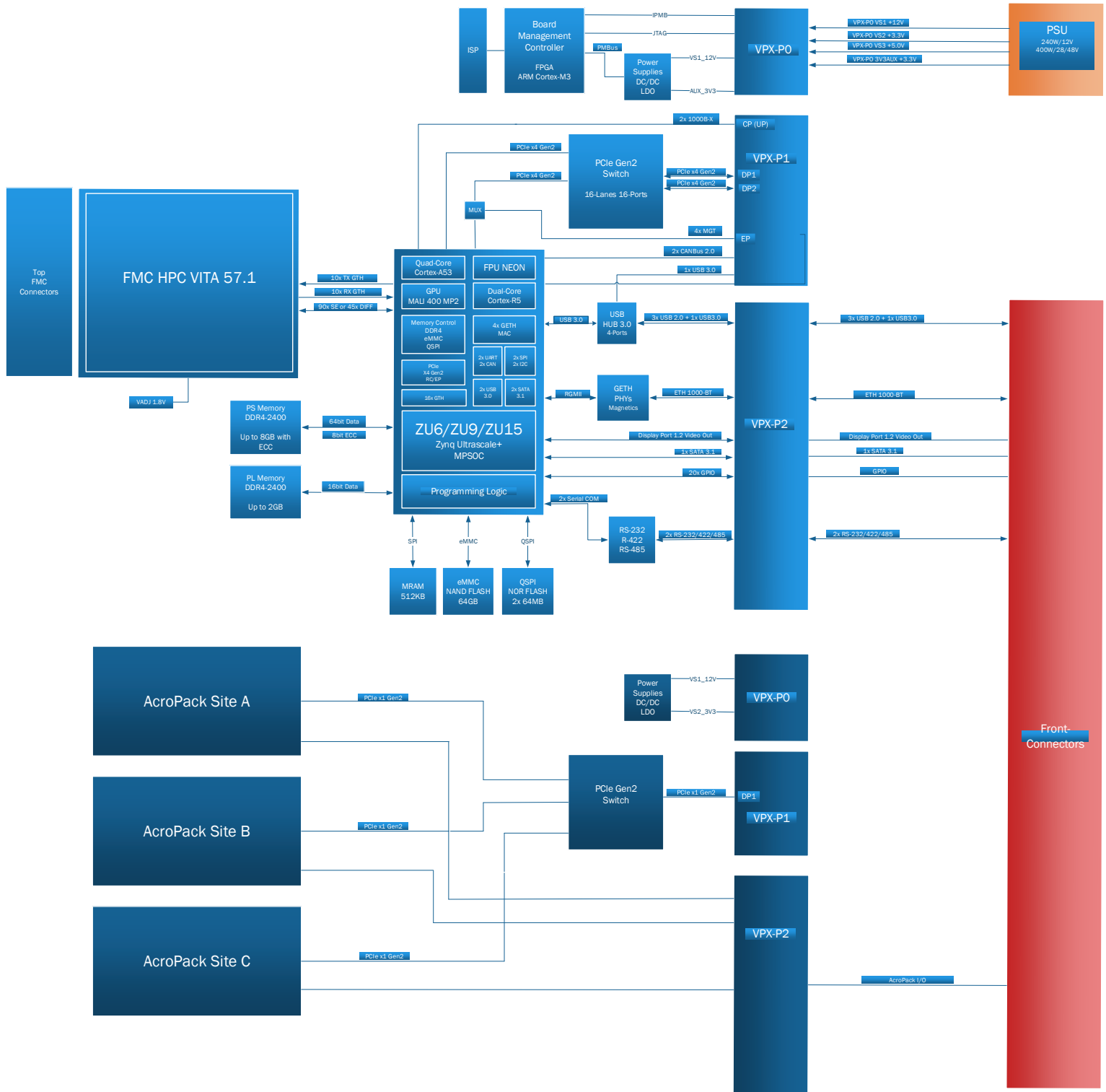
- Software Defined Radio (SDR)
- Military Communication (MILCOM)
- Data Link
- Counter Drones and UAV Systems
- Massive MIMO
- Electronic Warfare (EW)



### Key Features

- VPX3-ZU1 Xilinx Zynq Ultrascale+ MSPOC
  - ZU6CG/EG, ZU9CG/EG or ZU15EG FFVC-9001
  - Up to 8GB DDR4-2400 64-bit PS memory with 8-bit ECC
  - Up to 2GB DDR4-2400 16-bit PL memory
  - eMMC 64GB (V4.51), MRAM 512KB
  - Front Panel IO: 1x 1000BaseT, 3x USB, 1x SATA, 1x Video Out DisplayPort 1.2, 2x RS-232/485/422, GPIO
- FMC Slot
  - VITA 57.1 HPC compliant
  - 10x MGT up to 16.3 Gbps
  - 90x SE or 45x DIFF
  - VADJ = 1.8V
  - FMC I/O to the Top of the chassis
- System I/O Extension VPX Slot
  - PCIe x4 Gen2 Data Fabric
  - VPX-P2 I/O to Front Panel connectors
- System I/O Extension (3x Standard type AcroPak)
  - Discrete & Digital I/O
  - Analog I/O
  - Serial I/O (RS-232, RS-422, RS-485)
  - Counters & Timers
  - MILSTD-1553, ARINC-429, CAN Bus
- Power Supply
  - Input Voltage : 12VDC, 28VDC or 48VDC Nominal
  - Total Maximum Power : 240W @12V Input
  - Total Maximum Power : 400W @28V or 48V Input
  - Isolation Voltage : Input to Output 1500V
- Mechanical
  - 127mm (L) x 153mm (W) x 194mm (H)
  - Weight : 5.5 kg Estimated without FMC/2e VPX board
  - Cooling : Conduction Cooled, no fans
  - Operating Temperature : -40C to +75C
  - Storage Temperature : -40C to +100C

# Block Diagram



## Product Codification

The VPX3-ZU1-CCSDK can be assembled with different versions of the Zynq Ultrascale+ MPSOC devices and various amounts of memory storage. The following table shows the product coding for all these options.

# VPX3-ZU1-CCSDK-A1N-A-A

	Device	ARM A53 Cores	GPU	System Logic Cells	DSP Slices	Memory
A	ZU6EG	4	Yes	469K	1973	25.1 Mb
B	ZU9EG	4	Yes	600K	2530	32.0 Mb
C	ZU15EG	4	Yes	747K	3528	57.7 Mb
A	ZU6CG	2	No	469K	1973	25.1 Mb
B	ZU9CG	2	No	600K	2530	32.0 Mb

	Device Speed Grade
1	Slowest
2	Mid
3	Fastest

	PS / PL Memory Size
N	4GB/1GB
M	8GB/2GB

	FMC Slot	Description
A	Empty	
B	FMC-ZU1RF-A	Wideband RF Transceiver AD9371 2x2
C	FMC-ZU1RF-B	Wideband RF Transceiver AD9375 2x2
D	FMC-ZU2RF-A	Wideband RF Transceiver ADRV9009 2x2
E	FMC-ZU2RF-B	Wideband RF Dual Transceivers ADRV9009 4x4
F	FMC-DAQ2P5	ADC 12-bit 2.7 GSPS, DAC 16-bit 2.8 GSPS

	Expansion VPX Slot
A	Empty
M	AcroPack Carrier

## Ordering Information

The following product references are offered by PanaTeQ as standard products. Other combinations of devices, speed grade, memory, FMC can be specially ordered. Please contact us for details

Reference	Device	Speed	Zynq Memory PS/PL	FMC Slot	VPX Slot
<b>VPX3-ZU1-CCSDK-A1N-A-A</b>	ZU6EG	-1	4GB/1GB	Empty	Empty
<b>VPX3-ZU1-CCSDK-B1N-A-A</b>	ZU9EG	-1	4GB/1GB	Empty	Empty
<b>VPX3-ZU1-CCSDK-C1N-A-A</b>	ZU15EG	-1	4GB/1GB	Empty	Empty

## Related Products

Reference	Description
<b>VPX3-ZU1-PSDK-A</b>	3U OpenVPX Desktop Air-Cooled Zynq Ultrascale+ MSOC System Development Kit
<b>FALCON-SDR-A</b>	Rugged SFF System Dual ADRV9009 RF Trasceivers