

# VPX3-ZU1B-SDR-C-PSDK

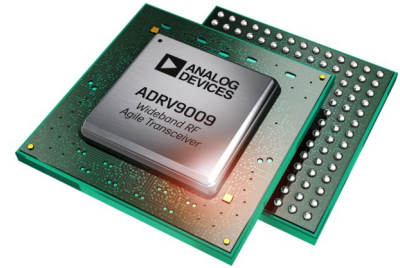
## 3U VPX Zynq Ultrascale+ MPSOC ADRV9009 SDR 2T2R PanaTeQ System Development Kit

### Overview

The **VPX3-ZU1B-SDR-C** is a 3U OpenVPX System Development based on PanaTeQ's VPX3-ZU1B Zynq Ultrascale+ MPSoC and FMC-ZU2RF-A ADRV9009 FMC modules for a broad range of applications such as Software Defined Radio, MILCOM, massive MIMO, Phase Array Radar and Electronic Warfare.

The system includes the following items:

- VPX3-CHASSIS: An air-cooled 4U desktop chassis with 5-slots VPX Full-Mesh backplane with 250W PSU
- VPX3-ZU1B-B1M-AS: 3U OpenVPX Zynq Ultrascale+ MPSoC with FMC Site module
- RTM-ZU1-A: Rear Transition Module for the VPX3-ZU1B
- FMC-ZU2RF-A-W2A-AS: FMC Wideband RF Transceiver **ADRV9009**
- A PetaLinux Linux BSP and associates files



### System Features

#### VPX3-ZU1B-B1M-AS module

- 3U OpenVPX module, Air-Cooled
- AMD Zynq Ultrascale+ MPSoC ZU9G-1FFVC900E
- 4GB PS DDR4-2400 memory 64-bit, 8-bit ECC
- 1GB PL DDR4-2400 memory 16-bit, no ECC
- 64 GB eMMC managed NAND Flash
- FMC HPC site with 10x MGTs @ up to 16.3Gb/s
- For other options, please contact us

#### FMC-ZU2RF-A-W2A-AS module

- ADRV9009 evaluation board compatible
- Dual Transmitter (Tx), Dual Receiver (Rx)
- GPIOs with 2 input
- Reference Clock Input
- RF Coverage 75MHz to 6.0 GHz
- Tx Synthesis Bandwidth (BW) to 450MHz
- Rx Bandwidth: Up to 200MHz
- On-Board VCXO @ 122.88MHz.
- For other options, please contact us

#### RTM-ZU1-A

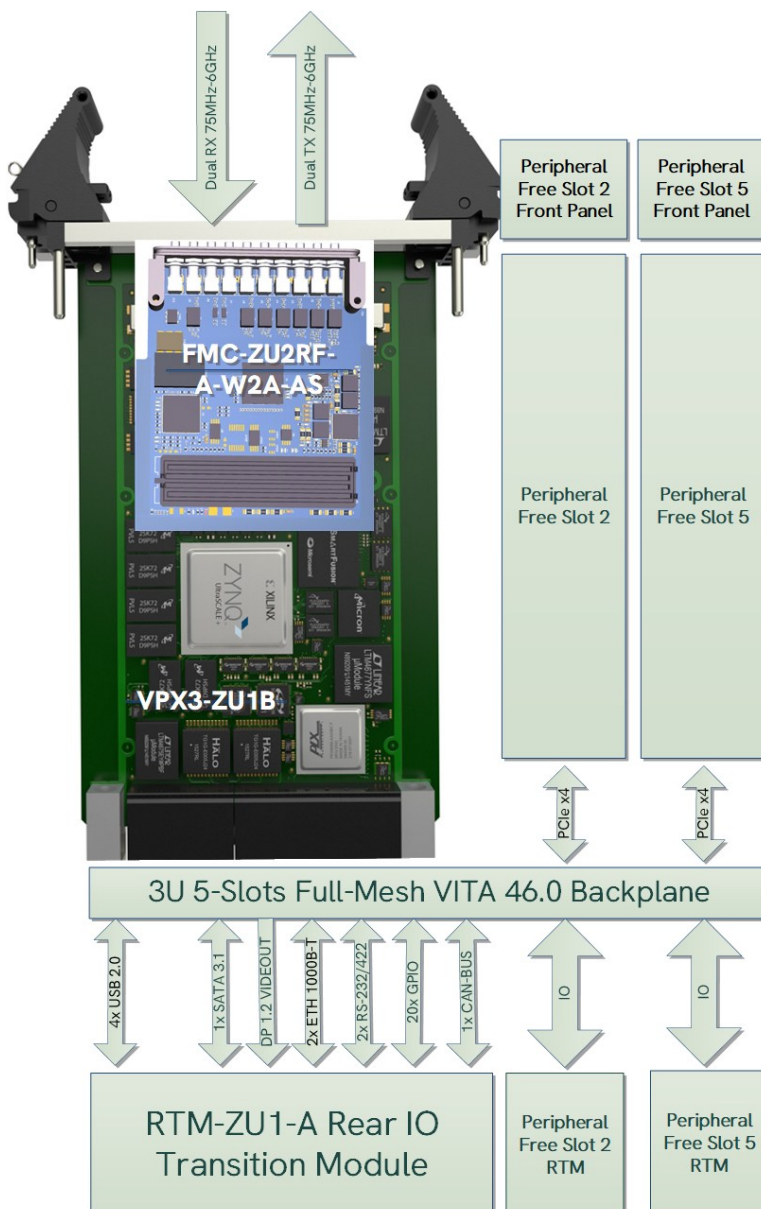
- Rear Transition Module for VPX3-ZU1 module
- 2x 100/1000Base-T RJ-45
- 2x USB 2.0 Type-A, 2x USB 3.0 Type-A
- 1x STATA 3.1, 1x mini DisplayPort

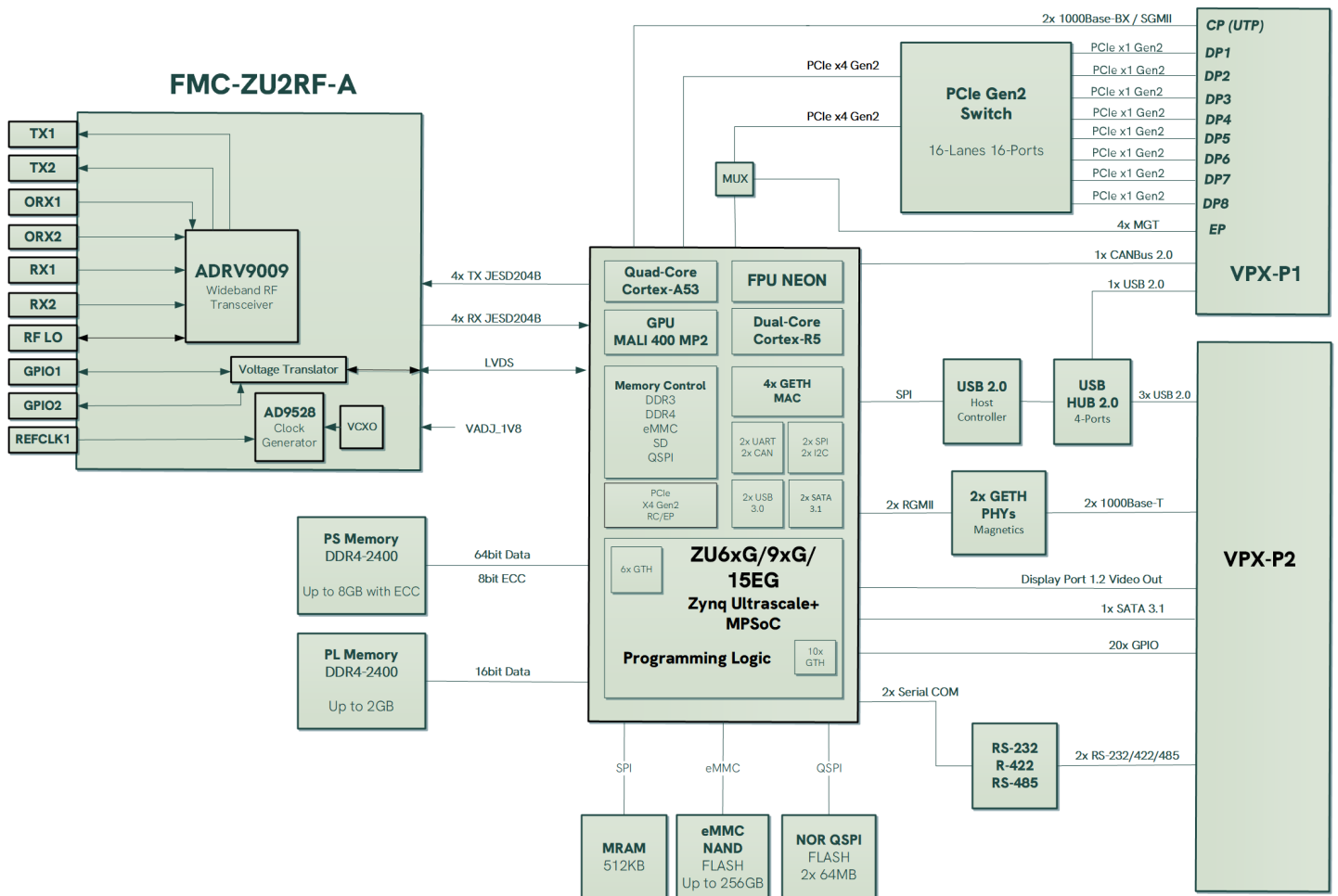
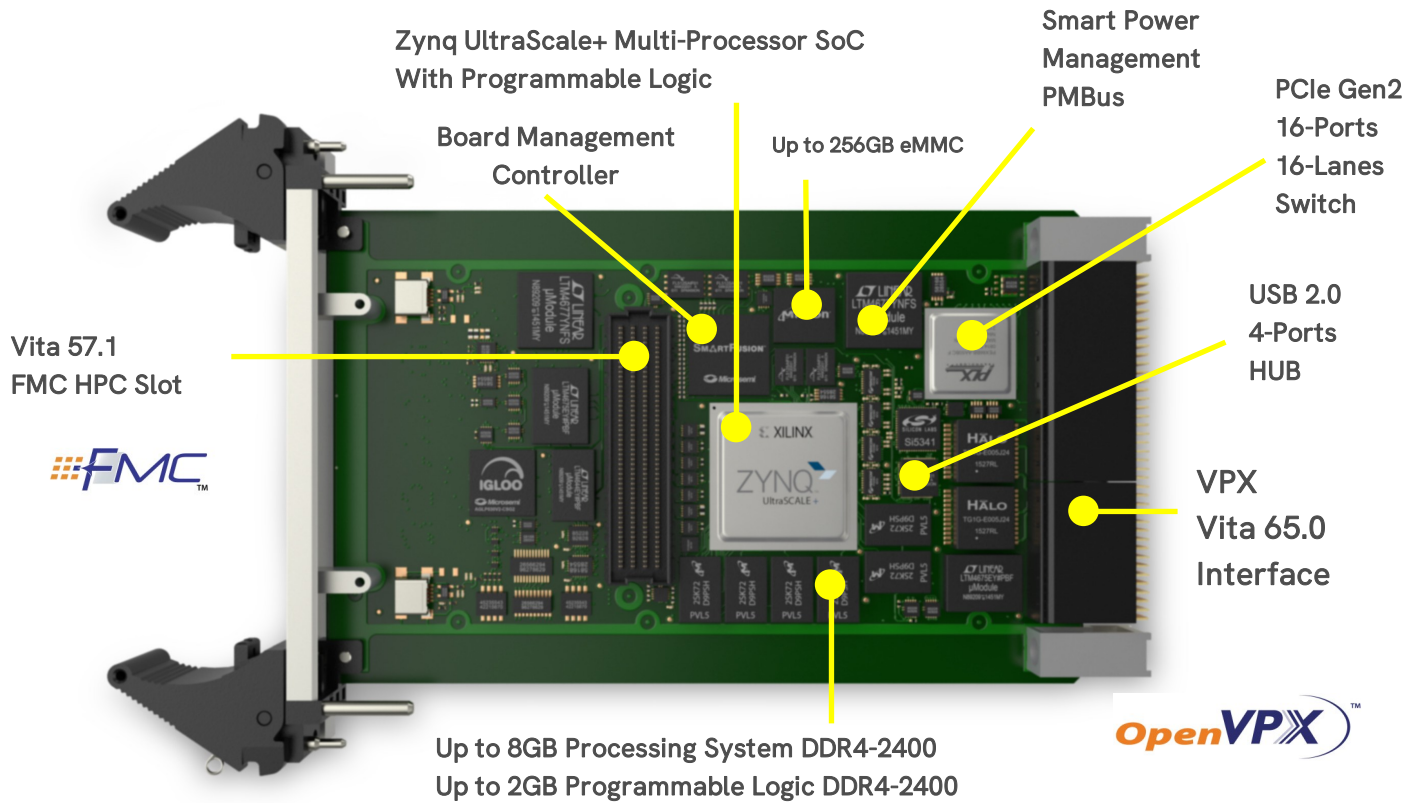
#### VPX3-CHASSIS

- 4U Compact Desktop Chassis
- AC/DC Input PSU 250W, Air Cooled
- 5-Slots VPX Vita 46.0 Full-Mesh backplane.
- 0.8 Inch Slot Pitch
- Support Rear I/O Through RTMs on each Slots
- For other options, please contact us

#### Software & VHDL Support

- PetaLinux BSP
- PanaTeQ Reference documentations and files.

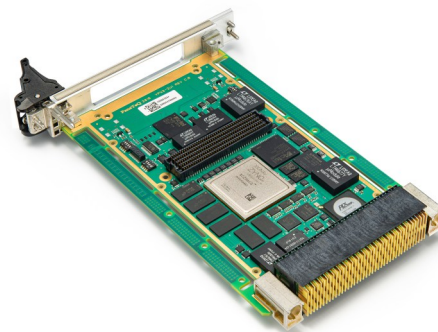




## System Specifications

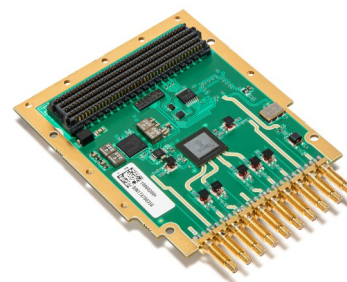
### VPX3-ZU1B-B1M-AS

- VITA 46.0 65.0 VPX/OpenVPX specifications compliant
- AMD Zynq Ultrascale+ MPSoC ZU9G, FFVC900E, Speed Grade -1
- 4GB PS DDR4-2400 memory 64-bit, 8-bit ECC
- 1GB PL DDR4-2400 memory 16-bit, no ECC
- 64GB eMMC managed NAND Flash
- 2x1000BASE-T, 2x RS-232/422/485, 4x USB 2.0 on VPX
- 1x SATA 3.1, 1x CAN 2.0B, 2x RS-232/422/485 on VPX
- 1x Display Port 1.2 Video Out on VPX
- VITA 57.1 FMC HPC site, 10x MGT, 45 Diff Pairs (LA[33:0] + HA[10:0])
- Board Management Controller (BMC) Interface VITA 46.11 Ready



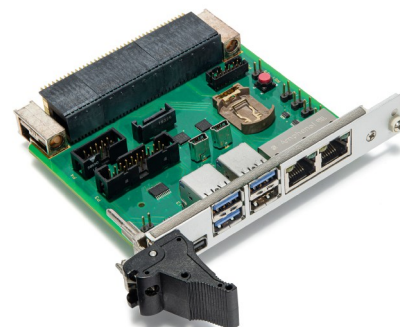
### FMC-ZU2RF-A-W2A-AS

- ADI ADRV9009 RFIC based. Fully compatible with ADRV9009 Evaluation board
- VITA 57.1-2010 specification compliant
- Conduction cooled compatible
- Dual Transmitters (Tx)
- Dual Receivers (Rx)
- GPIOs with 2 input
- RF coverage 75MHz to 6.0GHz
- Tx synthesis bandwidth (BW) to 450MHz
- Rx BW: 8MHz to 200MHz
- Support Time Division Duplex (TDD) operation
- Fully integrated independent fractional-N radio frequency (RF) synthesizers
- FMC High Pin Connector (HPC)
- JESD024B interface up to 6144 Mbps - 2 Tx - 4 Rx Operates with VAdj = 1.8V to 1.5V
- VAdj = 2.5V to 1.8V On-board VCXO : 122.88 MHz



### RTM-ZU1-A

- 1x 100/1000BaseT RJ-45 with Link Activity Leds Rear Panel connectors
- 1x mini Display Rear-Panel connector
- 4x USB 3.0/ 2.0 Type-A dual-stacked Rear-Panel connectors
- 1x SATA 3.1 vertical on-board connector
- 2x CANBus 2.0B pin-header on-board connector
- 20x GPIO 3M flat-cable on-board connector
- 2x RS-232/422/485 pin-header on-board connector



### VPX3-CHASSIS

- Mechanical: W=180mm, H= 4U, D= 275mm
- Cooling: Air Cooled
- 5-Slots Vita 46.0 Full-Mesh 0.8 inch pitch backplane
- RTM support, 250W PSU, Air Cooled
- For other VITA 65.0 Backplane profile and PSU, please contact us



### Software & VHDL

- PetaLinux BSP
- Reference Designs

### Cables

- Video mini DisplayPort to standard HDMI adaptor, SATA, USB, Ethernet, Serial
- Digilent JTAG-HS3 Programming cable

## Product Codification

The **VPX3-ZU1B-SDR-C** can be assembled with different versions of the Zynq Ultrascale+ MPSoC devices and various amounts of memory storage. The cooling technique et ruggedization level are also available options. The following table shows the product coding for all these options.

# VPX3-ZU1B-SDR-C-PSDK- B 1 M – AS

|   | Device   | ARM A53 Cores | GPU | System Logic Cells | DSP Slices | Memory  |
|---|----------|---------------|-----|--------------------|------------|---------|
| A | XCZU6EG  | 4             | Yes | 469K               | 1973       | 25.1 Mb |
| B | XCZU9EG  | 4             | Yes | 600K               | 2530       | 32 Mb   |
| C | XCZU15EG | 4             | Yes | 747K               | 3528       | 57.7 Mb |
| D | XCZU6CG  | 2             | No  | 469K               | 1973       | 25.1 Mb |
| E | XCZU9CG  | 2             | No  | 600K               | 2530       | 32 Mb   |

|   | Device Speed Grade |
|---|--------------------|
| 1 | Standard           |
| 2 | Fast               |

|   | PS / PL Memory Size |
|---|---------------------|
| M | 4GB/1GB             |
| P | 8GB/2GB             |

|    | Ruggedization Level | VITA 47 |
|----|---------------------|---------|
| AS | Air Standard        | EAC4    |
| AR | Air Rugged          | EAC6    |
| CC | Conduction Cooled   | ECC3    |
| CR | Conduction Rugged   | ECC4    |

## Ordering Information

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

| Reference                   | Device   | Temp Grade | Speed Grade | Memory PS/PL | Ruggedization Level |
|-----------------------------|----------|------------|-------------|--------------|---------------------|
| VPX3-ZU1B-SDR-C-PSDK-B1M-AS | ZU9EG-E  | 0 to +100C | -1          | 4GB/1GB      | Air Standard EAC4   |
| VPX3-ZU1B-SDR-C-PSDK-C1M-AS | ZU15EG-E | 0 to +100C | -1          | 4GB/1GB      | Air Standard EAC4   |

PanaTeQ

Available from:

[info@panateq.com](mailto:info@panateq.com)