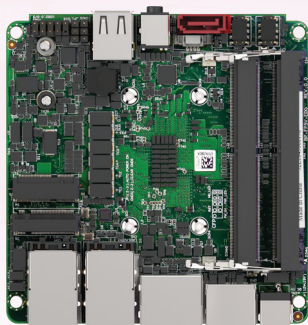# SAPPHIRE

Embedded Solutions

SAPPHIRE BP-FP5
Embedded 4x4 Platform

Highest Performance at Lowest Cost in Small Form Factor

The SAPPHIRE BP-FP is a 4"x4" form factor board based on the latest AMD Ryzen™ Embedded V/R Series Family APUs which features the industry leading Vega GPU graphics combined with the quad/dual-core high-performance "Zen" CPU for embedded markets. Three 4K displays can be supported in addition to dual-channel DDR4-2400 memory, and M.2 for WiFi and SSD expansion. The SAPPHIRE BP-FP5 is an ideal solution for small form factor IPC, signage, kiosk, robotics, POS, thin clients, medical imaging, industrial control. SAPPHIRE again proves the ability to offer cost effective, small form factor, low power, embedded solutions.
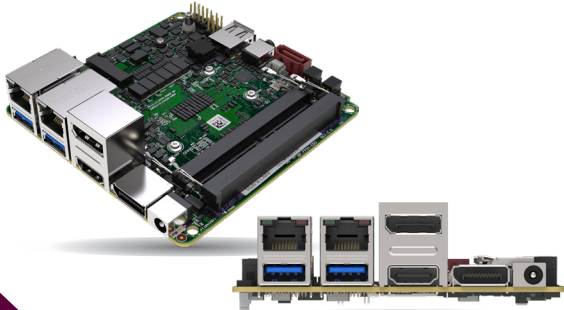
AMD Ryzen™ Embedded processors

▶ "Zen" Architecture with 14nm FinFET
▶ Four/Dual CPU cores four/eight threads
▶ Vega GPU up to 8 Compute Units
▶ Dual-channel DDR4 Up to 2400 MT/s

Features

▶ Three displays support
▶ Dual Gigabit Ethernet ports
▶ Three USB 3.1 ports
▶ TPM Security
▶ One COM port (RS232/422/485)
▶ One (2 x 4) header supports 2 USB2.0
▶ 12-19V DC power input

Expansion Slots

▶ M.2 2260 M Key slot (PCIe x 4 or SATA III)
▶ M.2 2230 E Key slot (PCIe x 1)
▶ One SATA3

SKU		V/R1000
Form Factor		4" x 4"
CPU		AMD Ryzen™ Embedded V/R1000
TDP		Max. 25W
Cooler		Active
System Memory		2x DDR4-Up to 2400, Max. 32GB
		DDR4 SO-DIMM (ECC/Non ECC)
External I/O Edge Connectors	Displays	2 x DP1.4 + 1 x HDMI 2.0
	Ethernet	2x RJ-45, 1GbE
	COM	N/A
	Audio	Combo Mic In/Line out Jack (Front)
	USB	1 x USB3.1(Front) + 2 x USB3.1
Internal I/O Headers	COM	1 x (2 x 5) header -- RS232/422/485 (Jumperless)
	Front Panel	1 x (2 x5) header
	Audio	N/A
	USB	1x (2 x 5) header supports 2 xUSB2.0
	Others	SATA PWR 1 x 4 pins
Security	TPM	Infineon SLB9670 TPM2.0 on board
	Chassis	N/A
Power		12 ~ 19V DC power jack
		N/A
Expansion Slots		1x M.2 (Key M, 2242/2260) with PCIe x4 and SATA for SSD
		1x M.2 (Key E, 2230) with PCIe x1 and USB2.0 for Wireless
		1 x SATA3 (6.0 Gb/s) + 1 x SATA Power

HDMI
HIGH DEFINITION MULTIMEDIA INTERFACE

https://www.sapphiretech.com/embedded