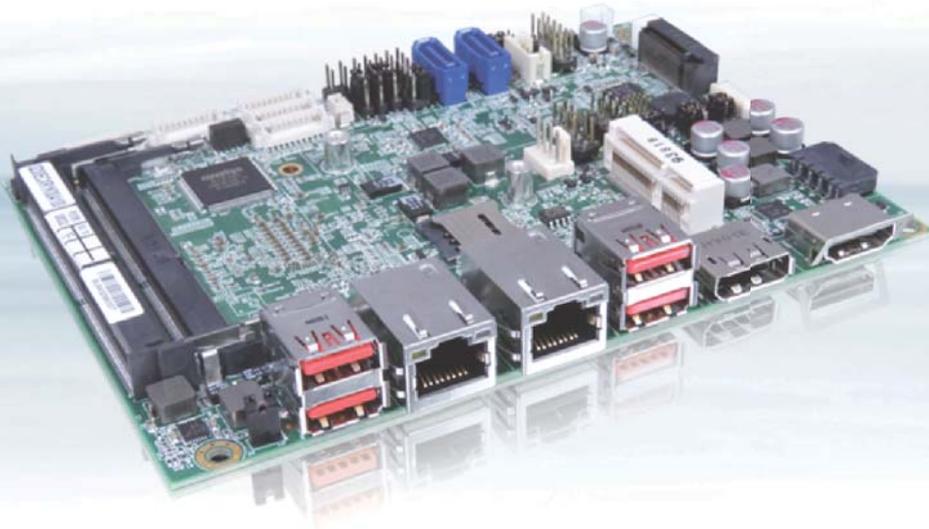# 3.5"–SBC-VR1000
IDEAL FOR GRAPHICS INTENSIVE APPLICATIONS

▼

3.5" SINGLE BOARD COMPUTER WITH
AMD RYZEN™ V1000 / R1000 SERIES PROCESSORS

▶ 1x LVDS, 1x DP, 1x HDMI 2.0 for triple display support
▶ 2x GbE LAN for Ethernet
▶ Up to 4x USB 3.1, up to 6x USB 2.0, 2x RS232/422/485, 2x RS232 for peripherals
▶ 8-bit DIO for device / signal control
▶ 2x SATA 3.0, 1x mPCIe, 1x M.2 Key M for storage & expansion

3.5"-SBC-VR1000
3.5" SINGLE BOARD COMPUTER WITH AMD RYZEN™ V1000 / R1000 SERIES PROCESSORS

This 3.5"-SBC-VR1000 is a 3.5" single board computer powered by AMD Ryzen™ V1000 / R1000 Series processors, which features excellent 4K playback under a fanless and low-power embedded design. It is a power efficient option for a wide range of compute-intensive graphics applications, such as digital signage, digital casino gaming, industrial control & automation, medical imaging, networking and thin clients.
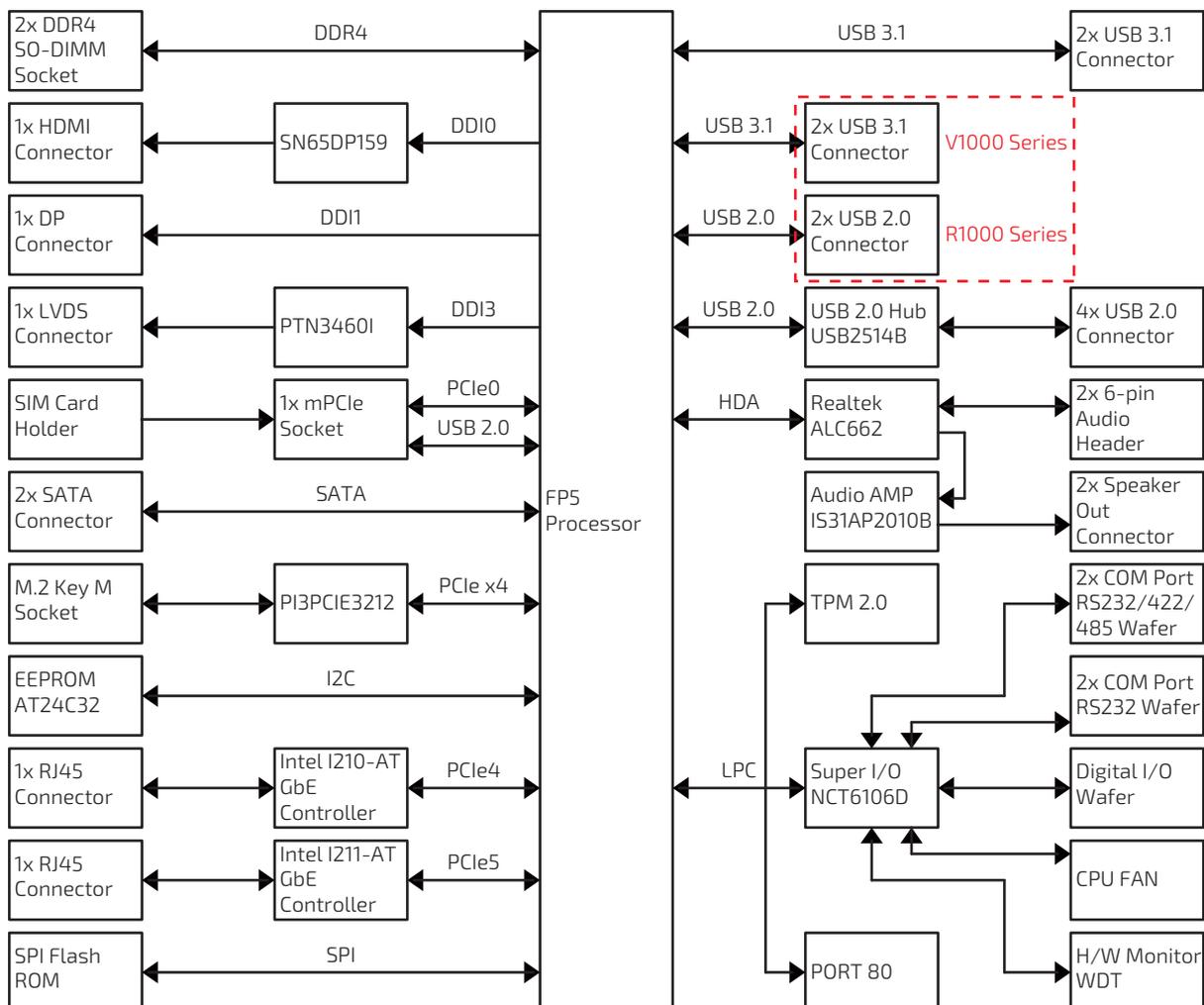
In addition, 3.5"-SBC-VR1000 supports TPM 2.0 security for data protection and M.2 NVMe SSD which features much lower latency, compact form factor and high reliability. It can help integrators to easily develop a securer and smaller edge computing device.

▶ PRODUCT HIGHLIGHTS

- ▶ AMD Ryzen™ V1000 / R1000 Series Processors
- ▶ 2x DDR4 SO-DIMM memory socket
- ▶ 1x LVDS, 1x DP, 1x HDMI 2.0 for triple display support
- ▶ 2x GbE LAN for Ethernet
- ▶ 4x USB 3.1, 4x USB 2.0 for USB device connection (V1000 models)
- ▶ 2x USB 3.1, 6x USB 2.0 for USB device connection (R1000 models)
- ▶ 2x RS232/422/485, 2x RS232 for serial device connection
- ▶ 8-bit DIO for device / signal control
- ▶ 2x SATA 3.0 for storage device
- ▶ 1x mPCIe for WLAN / Bluetooth / WWAN expansion
- ▶ 1x M.2 Key M for NVMe SSD support
- ▶ TPM 2.0 support

USB 3.1   GbE   GbE   DP   HDMI 2.0
USB 3.1

USB 3.1 (V1000) / USB 2.0 (R1000)
USB 3.1 (V1000) / USB 2.0 (R1000)

▶ BLOCK DIAGRAM

▶ TECHNICAL INFORMATION

SYSTEM	PROCESSOR	AMD Ryzen™ V1605B (Quad Core, 4M Cache, up to 3.60 GHz, FP5, 15 W TDP) AMD Ryzen™ V1202B (Dual Core, 4M Cache, up to 3.20 GHz, FP5, 15 W TDP) AMD Ryzen™ R1606G (Dual Core, 4M Cache, up to 3.50 GHz, FP5, 15 W TDP) AMD Ryzen™ R1505G (Dual Core, 4M Cache, up to 3.30 GHz, FP5, 15 W TDP)
	MEMORY	2x DDR4 2400 SO-DIMM up to 32 GByte (ECC support)
VIDEO	GRAPHICS	AMD Radeon™ Vega 8 (V1605B) AMD Radeon™ Vega 3 (V1202B, R1606G & R1505G)
	DISPLAY INTERFACE	1x LVDS (18/24-bit, 2-ch, 1920 x 1200 @ 60 Hz) 1x DP (4096 x 2160 @ 60 Hz, on rear) 1x HDMI 2.0 (3840 x 2160 @ 60 Hz, on rear)
	MULTIPLE DISPLAY	Triple Display
AUDIO	AUDIO CODEC AUDIO INTERFACE	Realtek ALC662 2x Speaker-out (3 W, by header) 1x Line-in (by header) 1x Line-out (by header) 1x Mic-in (by header)
NETWORK CONNECTION	ETHERNET	2x GbE LAN (RJ45 on rear, Intel® I210-AT, Intel® I211-AT)
PERIPHERAL CONNECTION	USB	4x USB 3.1 (Type A on rear, for V1000 models) 2x USB 3.1 (Type A on rear, for R1000 models) 4x USB 2.0 (by header, for V1000 models) 6x USB 2.0 (2x Type A on rear, 4x by header, for R1000 models)
	SERIAL PORT	2x RS232/422/485 (by header) 2x RS232 (by header)
	OTHER I/Os	1x 8-bit DIO (by header)
STORAGE & EXPANSION	SATA mPCIe M.2 SIM CARD HOLDER	2x SATA 3.0 1x mPCIe (half size, mixed w/ PCIe x1 / USB 2.0) 1x M.2 Key M (Type 2280, mixed w/ PCIe x4, NVMe support) 1x SIM Card Holder (Micro type, connected to mPCIe)
POWER	CONNECTOR INPUT VOLTAGE	1x4-pin pitch 3.0 mm Wafer DC 12 V
FIRMWARE	BIOS WATCHDOG H/W MONITOR REAL TIME CLOCK TPM	AMI uEFI BIOS w/ 64 Mb SPI Flash Programmable WDT to generate system reset event Voltages, Temperatures Processor integrated RTC TPM 2.0 support (Infineon SLB 9665)
SYSTEM CONTROL & MONITORING	FP HEADER	1x Header for Reset Button, HDD LED & External Speaker 1x Header for Power Button, Power LED & SM Bus 1x Header for mPCIe activity LED 1x Header for M.2 Key M activity LED
COOLING	FAN	1x Wafer for CPU Smart Fan
SOFTWARE	OS SUPPORT	Windows 10
MECHANICAL	DIMENSION (L x W)	ECX (146 mm x 105 mm / 5.75" x 4.13")
ENVIRONMENTAL	OPERATION TEMPERATURE STORAGE TEMPERATURE HUMIDITY	0 °C ~ 60 °C / 32 °F ~ 140 °F -20 °C ~ 80 °C / -4 °F ~ 176 °F 0 % ~ 95 %
CERTIFICATION	EMC & SAFETY	CE Class A, FCC Class A

▶ ORDERING INFORMATION

ARTICLE	DESCRIPTION
3.5"-SBC-VR1000-V1605B	AMD Ryzen™ V1605B + Radeon™ Vega 8, 4x USB 3.1, 4x USB 2.0
3.5"-SBC-VR1000-V1202B	AMD Ryzen™ V1202B + Radeon™ Vega 3, 4x USB 3.1, 4x USB 2.0
3.5"-SBC-VR1000-R1606G	AMD Ryzen™ R1606G + Radeon™ Vega 3, 2x USB 3.1, 6x USB 2.0
3.5"-SBC-VR1000-R1505G	AMD Ryzen™ R1505G + Radeon™ Vega 3, 2x USB 3.1, 6x USB 2.0

ACCESSORIES

ARTICLE	PART NO.	DESCRIPTION
DC IN CABLE	0C5020000004220L	2.5 mm DC Jack w/ 2 mm nut, 0.5 mm washer to H-300F-XX 1x4P 3.0 pitch, L = 300 mm
COM PORT CABLE*	0C5020000005130L	10-pin pitch = 1.25 mm to DB9 connector, L = 350 mm
DIO CABLE*	0C5020000003360L	D-SUB-9P (Female) to MX51021-10P 1x10P 1.25 pitch, L = 200 mm
USB CABLE (2 PORT)*	0C5040000000110L	2.54 mm 2x5P to 2x USB connectors, L = 340 mm
SATA POWER CABLE*	0C5020000004230L	PH 2.0 HSG 1x4P 2.0 mm pitch to SATA 1x15P Pitch: 1.27 mm, L = 460 mm
SATA CABLE*	0C5020000004240L	1x7-pin connector with lock, pitch = 1.27 mm, L = 460 mm
AUDIO CABLE*	0C5020000002050L	WL6008H 2x6P 2.54 pitch to EAR phone jack x3 pitch: 3.5 mm, L = 350 mm
COOLER*	0H05XX000002370L	CPU Cooler with 22 mm x 14 mm x 0.15 mm Thermal PAD + 5800 RPM 7.0 CFM Fan

(*: Optional)