

DPX[®]-S2451

High Performance AMD Ryzen™ Embedded R2000 Multi-Screen Gaming Platform



Features

- Rugged logic box design
- Security and access to meet the requirement of the gaming industry
- Quad and dual core APUs up to 3.35 (3.7) GHz
- Full gaming features set
- High performance Radeon™ VEGA GPU or PCI-Express graphics
- Support for up to 150W ¾ length double-width graphics cards
- 12VDC or ATX power supply compatible
- "Futureproof" removable I/O shield design allow upgrade to future DPX-S motherboards, Easy service SSD/HDD module



Introduction

The DPX-S2451 is a complete gaming system combining the unrivalled performance of Advantech-Innocore's DPX-S451 motherboard with the convenience of the proven DPX-S2000 enclosure. The DPX-S2451 system has a card slot bay for a PCI-Express graphics card that is wide enough for today's high powered double-width graphics cards giving the customer the ability to upgrade from the integrated graphics or add more monitors (up to 7 or more). For mass storage the system includes a quick release carrier with shock mounting for solid state disk or hard drive.

Specifications

System	AMD Ryzen Embedded R2000 APUs
	Long lifecycle 5-7 years availability
	Dual channel RAM up to DDR4-3200, ECC and non-ECC, 2 SODIMMs up to 32GB
	2 x Gigabit Ethernet LAN
	2 x C-Fast™ / SATA (SATA 3.0, 6Gbps)
Video (integrated)	Audio (on-board 3 channel amp)
	8192 kB SRAM (NVRAM), 1MB ROM, 32kB EEPROM
	Integrated – Radeon VEGA graphics engine
	Direct X 12, OpenGL 4.6, EGL 1.5
Video (expansion)	Four monitor support from APU
	Four DisplayPort DP++ interfaces
Security	Full speed Gen 3 PCIe graphics expansion slot x16 slot (x8 PCIe)
	Simultaneous operation of integrated and PCIe card graphics
	TPM security device on board
	Intrusion switch inputs (8 dedicated)
Software	BIOS customization
	iButton® interface (2 x 1-wire ports) support for external iButton reader)
	Precision secure Real time clock device
CPU/Chipset	Protected I²C port
	Edge-to-edge drivers and API/SDK
Memory	Code portability through consistent API with other Advantech-Innocore boards
	Range of Innocore software products for Gaming
Memory	AMD Ryzen Embedded R2000 series Accelerated Processing Unit (APU)
	R2000 series Dual and Quad Core APUs up to 3.35 (3.7) GHz, up to 2MB L2 cache, 54W
Memory	2 x SODIMM sockets
	Up to 32GB DDR4 -2400 MT/s SDRAM ECC and non-ECC

BIOS	AMI APTIO UEFI BIOS
	BIOS can be write protected
LAN	BIOS / Expansion ROM module – field removable / verifiable
	2 x Ethernet Gigabit LAN
Storage	Full duplex operation
	Wake-On-LAN capability
	2 x C-Fast™ / SATA 3 (jumper select)
Ports	SATA 3 (up to 6Gb/s) header for HDD, SSD or SATA DOM
	1 x M.2 form factor for 2280 size module, 2 lane PCIe interface. NVME support
	5 x RS232 Serial, 16550 compatible
	2 x CcTalk/RS232
iButton/GPIO	1 x RS232/TTL
	1 x ID003/TTL/RS232
	1 x RS232/485
	11 x USB (3 x USB 3.0/ 2.0)
	2 x I²C on board header (one protected)
Discretel/O	Audio out - SPKR (left, right and LF), line out 5.1 channels
	Two Bi-Directional, programmable GPIO header for iButton, special purpose device or security module
Audio (line level)	32 ESD protected inputs
	32 OC Outputs (500mA, 50V)
Audio (amplified)	of which 8 I/O ports can be configured as meter outputs with disconnect detect
	HD 5.1 audio (line level)
Watchdog Timer	Front I/O panel jack connectors for: FL, FR, CE, LFE, RL, RR. On-board header for: Line In L & R, MIC In, SPDIF In, SPDIF Out (x2), Jack detect. Headphone connector
	On board 15W + 15W + 15W (FL, FR, LF) Class D audio amps with bass boost
SRAM (NVRAM)	8192 KByte fast SRAM (2 banks) on PCIe bus
	Battery state software readable
TPM	TCPA/TPM 2.0 compliant security device on board
	Programmable time-out

Specifications Cont.

EEPROM	32kByte user EEPROM (option for larger)
Asset Tag	Unique API readable serial number
Intrusion Detection	8x Intrusion detection input lines (one used for enclosure)
	Operates with and without system active
	Logs date/time of last 254 events
	Logs system resets/brownouts as events
System Health Monitoring	EEPROM backup for 10 years retention
	Measurement of CPU core temp. with thermal trip. Configurable smart fan PWM control for System fans
Power Fail Detect	External sensor input for advanced warning of AC power fail
Expansion	I ² C, PCI-Express x16 Graphics card (x8 lanes)

Power	12V _{DC} single input or ATX v2.3 power input
	Intelligent power control
Environment	Operating Temperature: 0 ~ 40 °C
	Storage Temperature: -20 ~ 85 °C
Approvals	EMC: CE & FCC (Class A) RoHS, WEEE
Dimensions	260 (W) x 214 (L) x 124 (H) mm (10.2" x 8.4" x 4.9")

Benefits

Best-in-Class integrated graphics and PCIe x16 for discrete graphics card
 Single integrated solution
 Designed for the Gaming Industry
 Backwards compatible with DPX-S series systems
 Small size
 Low power
 Long Lifecycle

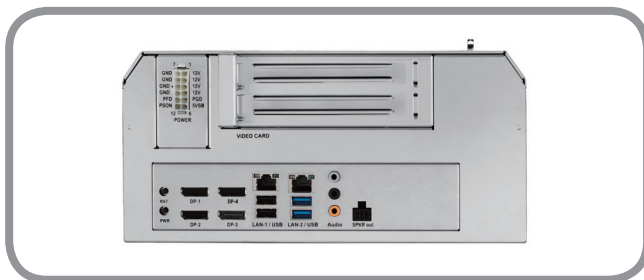
Optional Accessories

Range of PCIe graphics cards
 I/O connector breakout boards
 Edge card connector set
 SATA DOM, SSD storage devices
 iButtons®, iButton carrier

OEM Customization and Product Development

- Advantech-Innocore is part of the Advantech Co., Ltd. Group of Companies.
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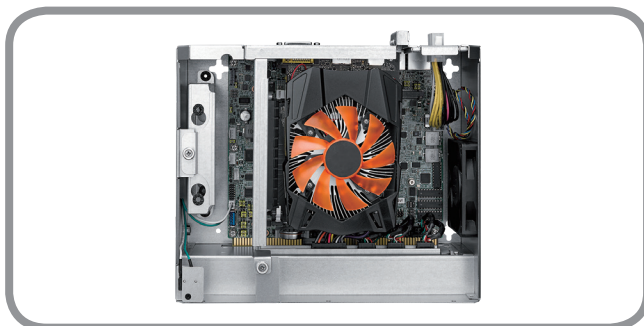
Front View



Rear View



Inside View (optional PCIe graphics card installed)



Rear View (optional vertical connector board installed)

