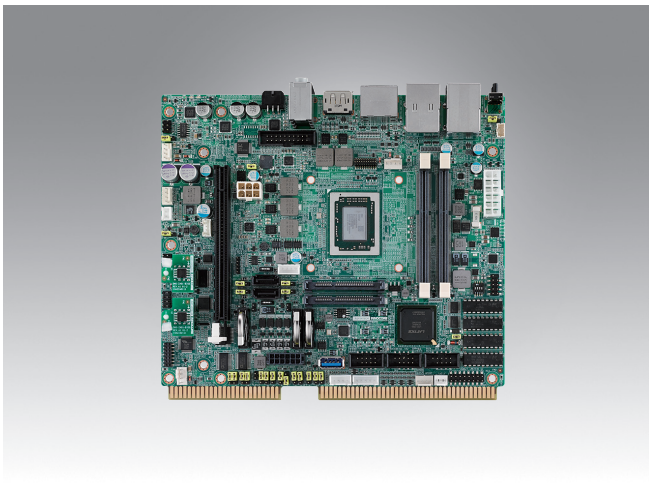
DPX®-S440

AMD® Embedded R-Series SOC Gaming Platform



Features

- Very high performance AMD platform (formerly codenamed "Merlin Falcon", "Brown Falcon")
- Quad and dual core AMD R Series SOC APUs up to 2.8 (3.4) GHz
- Radeon HD10000 series "3rd generation GCN" graphics
- Comprehensive gaming features
- 12V DC single input or ATX power
- Full featured driver API for IO and security

Introduction

The DPX®-S440 is a new addition to the proven DPX-S series of integrated gaming platforms. Based on the 3rd generation of AMD's R Series embedded platform (Merlin Falcon, Brown Falcon), the DPX-S440 uses AMD's latest high performance dual and quad core SOC devices with "Discrete-level Graphics" from the best-in-class integrated HD10000 graphics core. Three independent monitors are supported via three DisplayPort 1.2 DP++ ports (two for Brown Falcon GX-217 APU), and for even higher performance the standard PCI-Express x16 graphics card slot allows the S440 to support todays latest discrete graphics cards for stunning gaming graphics. A full feature set of I/O and COMs designed specifically for gaming devices is also included making the DPX-S440 an ideal high performance integrated platform for many gaming, amusement and kiosk applications.

Specifications

System	AMD Embedded R-Series Dual and Quad Core APUs
	Long life cycle 5 years availability
	DDR3-2133, 2 SODIMMs up to 16GB
Video (Integrated)	Integrated – Radeon HD10000 series graphics engine
	Triple monitor support from APU
	Three DP++ interface support DisplayPort (two for Brown Falcon GX-217 APU)
	Direct X 12, OpenGL 4.2, OpenCL 1.2, DirectCompute support UVD v6, H.265, VCE v3.1
Video (Expansion)	Full speed Gen 3 PCI-E graphics expansion slot x16 slot (x8 PCI-E from APU, x4 with GX-217 APU) Simultaneous operation of integrated and PCI-E card graphics
Security	TPM security device on board
	Intrusion switch inputs (8 dedicated)
	BIOS customization
	iButton® connector and external iButton reader support
	Precision secure Real time clock device
	Protected I²C port
Software	Edge-to-edge drivers and Software API/SDK.
	Code portability through consistent API with other Innocore boards.
	Range of Advantech-Innocore software products for Gaming
CPU/Chipset	AMD Embedded R series (Merlin Falcon) Processing Unit (APU) Dual and Quad Core APUs up to 2.8 (3.4) GHz, up to 2MB L2 cache New "Excavator" APU Quad core technology Low power (up to 35W) APUs

Memory	2 x SODIMM sockets
	Up to 16GB DDR3/DDR3L 2133 MT/s SDRAM system RAM
BIOS	AMI APTIO UEFI BIOS
	BIOS can be write protected
	BIOS expansion ROM module
LAN	2 x Ethernet Gigabit LAN
	Full duplex operation
	Wake-On-LAN capability
Storage	2 x C-Fast™ sockets
	2 x SATA 3 (up to 6Gb/s) headers for HDD, SSD or SATA DOM
Ports	5 x RS232 (2 x fully featured, 3 x Tx/Rx)
	2 x CCTalk/RS232
	1 x TTL/RS232
	1 x ID003/TTL/RS232
	1 x RS485/RS232
	11 x USB (8 x USB 2.0, 3 x USB 3.0/2.0)
	2 x I²C ports (one protected)
iButton/GPIO	Two Bi-Directional GPIO headers for iButton, special purpose device, security module
Discrete I/O	32 ESD protected inputs
	32 OC Outputs (500mA, 50V)
	Of which 8 I/O ports can be configured as meter outputs with disconnect detect
LED drive	2 x 4 channel LED driver 255 brightness levels
Sound	HD 5.1 audio (line level)
	Amplified outputs 15W/ch (FL, FR, LFE) with bass boost
	SPDIF OUT x 2, SPDIF IN, MIC IN

See overleaf for continued specification
Last updated: 29-Jan-2019

Specifications Cont.

SRAM (NVRAM)	Up to 8MB battery backed fast SRAM
	Battery state software readable
TPM	TCPA/TPM 2.0/1.2 compliant security device on board
Watchdog Timer	Programmable time-out
EEPROM	32kByte user EEPROM (option for larger)
Asset Tag	Unique API readable serial number
Intrusion Detection	8x Intrusion detection input lines
	Operates with and without system active
	Logs date/time of last 254 events
	Logs system resets/brownouts as events
	EEPROM backup for 10 years retention

System Health Monitoring	Measurement of CPU core temp. With thermal trip. PWM fan control for system fans.
Power Fail Detect	External sensor input for advanced warning of AC power fail
Expansion	I^2C, PCI-Express x16 Graphics card.
Power	12V DC single input or ATX power supply Intelligent power control
Environment	Operating Temperature: 0 ~ 50° C TBC
	Storage Temperature: -20 ~ 85° C
Approvals	EMC: CE, FCC Class A
	RoHS, WEEE
Dimensions (excluding golden fingers)	200mm (W) x 170 mm (L) (6.7" x 7.9")

Benefits

- Best-in-Class integrated graphics
- Single integrated solution
- Designed for the Gaming Industry
- Backwards compatible with DPX-S series boards
- Small size
- Low power
- Long Lifecycle

Optional Accessories

- CFast™ cards, SATA DOM, SSD storage devices
- iButtons®, iButton reader
- Full system Chassis
- Range of PCI-E graphics cards
- I/O connector breakout board
- Edge card connector set

Software Products

- SecureBoot SDK
- DPX Connector SDK
- DPX Diagnostics
- DPX SAS Engine
- TPM Suite SDK

OEM Customization and Product Development

- Advantech-Innocore is part of the Advantech Co., Ltd. Group of Companies.
- Advantech-Innocore specializes in the fields of PC-based hardware design and software development. Our in-depth knowledge and global resources make us your ideal partner.
- Specifications subject to change. E&OE.
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Front I/O

Rear I/O

DPX-S2440 Integrated Gaming System