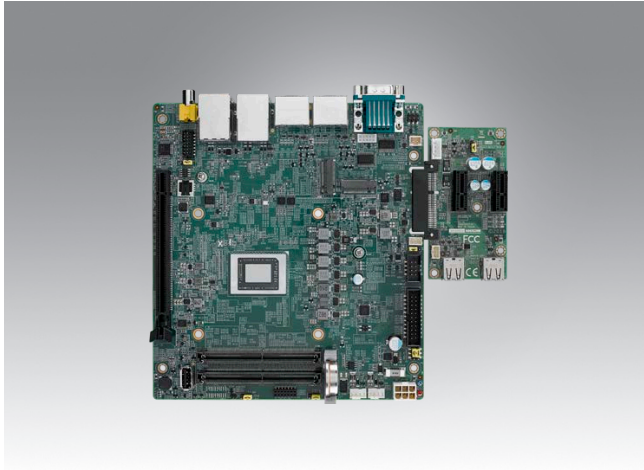


DPX[®]-M280

AMD Ryzen™ Embedded 8000 Series Multi-media Gaming Platform



Features

- Very high-performance AMD multi-core SoC's
- Class leading Radeon RDNA3 Integrated Graphics core
- Four independent monitors (DisplayPort 1.4)
- PCIe x16 graphics card slot
- Modular Expansion Port - Edge connector
- Fully featured driver API for IO and security
- Intrusion detection, hardware monitoring, precision RTC
- Industry leading GPSA (Gaming Platform Security Architecture)



Introduction

The DPX[®]-M280 is the latest addition to the highly successful DPX-M series multi-media gaming platform range. Based on the AMD Ryzen Embedded 8000 'Hawk Point' SoC platform, the DPX-M280 offers the latest high-performance multi-core technology. Four independent DisplayPort 1.4 outputs plus standard PCI-Express x16 graphics interface supporting today's latest graphics cards, allow the M280 to create stunning games. The modular expansion architecture allows cost effective modules to be tailored to the specific application, adding features such as I/O, COMs, NVRAM, security and specialised interfaces. The mainboard includes an ARM TrustZone™ based GPSA security sub-system to ensure a secure operating environment. DPX-M280 is also available with two turn-key enclosure solutions.

Specifications

System	AMD Ryzen Embedded 8000 Series SoC's
	6 and 8-core up to 54W TDP
Video (Integrated)	Long life cycle 10 years availability
	RAM up to DDR5-5600 MT/s, ECC & Non-ECC, 2 SODIMM up to 96 GB
Video (Expansion)	Radeon RDNA3 Graphics core
	Four monitor support from SoC
Security	Four DP++ v1.4a interfaces
	Direct X12
Software	PCIe x16 Gen.4 graphics expansion slot (x16 lanes). Supports simultaneous operation of integrated and PCIe graphics for higher screen count applications
	Gaming Platform Security Architecture (GPSA)
Memory	Secure Media Transfer and Initialisation Schema (SMITS)
	TPM2.0 security device on board
System Health Monitoring	Secure Precision Real Time Clock (Optional)
	Intrusion switch inputs (up to 6) with battery backed logging
LAN	Range of Advantech software products for gaming
	Code portability through consistent API with other Advantech gaming boards
LAN	Edge-to-edge drivers and Software API/SDK
	2 x SoDIMM socket up to 94GB total
LAN	DDR5-5600 MT/s, ECC & Non-ECC
	Run-time accessible voltage and temperature measurements
LAN	PWM fan control for CPU and system fan
	Configurable thermal response
LAN	2 x Ethernet Gigabit LAN
	Full duplex operation
LAN	Wake-On-LAN capability

BIOS	AMI APTIO UEFI BIOS
	Expansion ROM Support
Storage	Fully write protectable / Immutable BIOS customisation
	Two M.2 'M-Key' PCIe NVME ports.
Expansion	1x 2280 (4-lane), 1x 2242 (4-lane)
	I ² C, PCIe, USB, PCI-Express x16
Power	12V DC single input
Asset Tag	Unique ID, API readable serial number
Interfaces	6 x Serial ports: x RS232 (2 x fully featured, 4 x Tx/Rx)
	Configurable 1x CCTalk/RS232, 1x ID003/TTL/RS232
Discrete I/O	Cabinet mounted PWR & RST button header
	10 x USB (8 x USB 2.0, 2 x USB 3.2/2.0)
Audio	2 x I ² C ports (one protected)
	PORT80 Debug
Watchdog Timer	5 individually configurable signals. Options are: digital input, digital output or logged intrusion inputs
	7.1 Surround Sound
Battery	Internal connector for: Line level FL/FR/SBL/SBR/RL/RR/CE and LFE. Line In L & R, MIC In, SPDIF In
	External RCA phono for: SPDIF Out
Software (OS)	Programmable time-out
	BR2477 (holder) with solder terminals
Software (OS)	Battery state software readable
	Windows 11, Linux

Specifications Cont.

Intrusion Detection	Dedicated logic box intrusion header
	Up to 6x Intrusion detection inputs
	Operates with and without system active
	Logs date/time of last 254 events
	Logs system resets/brownouts as events
	Logged with 10 years+ retention

Benefits

AMD Radeon RDNA3 architecture and PCIe x16 for discrete graphics cards.
Single board integrated solution
Wide expansion capabilities
Backwards compatible with DPX-M series boards
Small size
Low power
Long Lifecycle

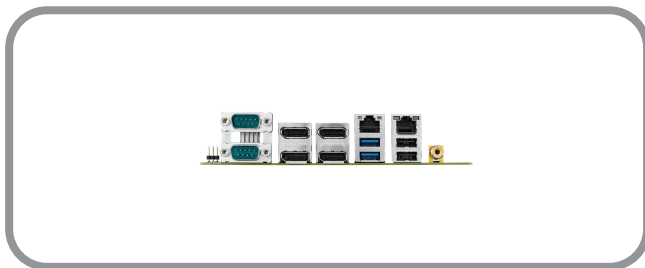
Optional Accessories

M.2 modules, M.2 -> SATA adapter (SATA DoM, SSD storage)
Expansion port breakout boards (standard or custom)
Full system Chassis
Range of PCIe graphics cards

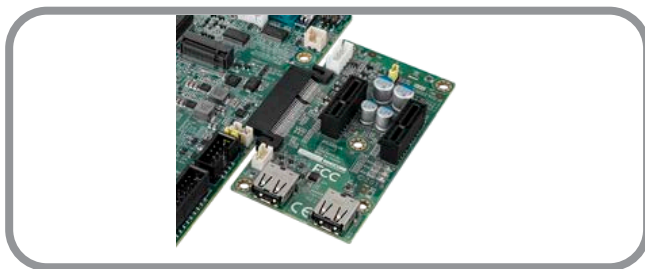
DPX Security Architecture

SESI3/PSA ARM TrustZone™ based Gaming Platform Security Architecture (GPSA)
Support for OPAL2.0 media with pre boot authentication
Pre and post boot BIOS integrity checking
Immutable BIOS with secure update capability
Tamper protected GPSA inter-component communications with API support
RSA & AES Secure Media Transfer and Initialisation Schema (SMITS)

Front I/O



Modular Expansion



Environment	Operating Temperature: 0 ~ 60 °C (Typical), -5 ~ 65 °C (Max.)
	Storage Temperature: -20 ~ 85 °C
Approvals	EMC: UKCA, CE, FCC Class A RoHS, WEEE
Dimensions	Extended Mini-ITX: 170 mm (W) x 185mm (L) (6.69" x 7.28")
Embedded Controller	Uptime counters for licensing, event logging, hardware monitoring (system voltages, fans & battery), intrusion detection and logging, secure I²C, RTC, Precision RTC

Software Products

Media Validation SDK
DPX Connector SDK
DPX Diagnostics
DPX SAS Connector
MS Windows Embedded licenses
EC Dashboard

OEM Customization and Product Development

- Advantech Gaming Solutions specialize 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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System Products

