

DS-281

Intel Panther Lake SDM Player with 8K output

Preliminary



Introduction

The DS-281 design is based on the Intel SDM specification and is powered by Intel® Panther Lake processors. DS-281 delivers 8K output and smooth content streaming via a card edge connector. DS-281 allows slot-in integration that reduces space requirements and lowers deployment and field maintenance costs. It also features built-in I/O such as DP, HDMI, USB 3.0, and a single LAN (RJ-45). DS-281 enables media playback and display and is ideal for all-in-one signage applications with space constraints.

Specifications

Form Factor	SDM	L (Large)
Processor System	CPU	Intel Panther Lake, Core Ultra 5, H12Xe
	BIOS	AMI uEFI 512 Mbit
Memory	Technology	LPDDR5 8533 MT/s Dual Channel, up to 64GB
	Max. Capacity	64GB, BOM option 32GB
Display	Controller	CPU integrated
	Graphic Engine	Intel® Xe 3 LPG (12Xe Cores)
	Output	DP from front I/O, HDMI 2.1 & DP1.4 from golden finger
	Max. Resolution	7680 x 4320 @60Hz
Expansion	M.2	2242 M-Key (PCIe x2) 2230 E-Key (PCIe & USB2.0)
I/O Interface	Golden Finger	PCIe x8. The pin define follows Intel® SDM 2.3 specifications
	DP 1.4	1
	USB	2 x USB 3.2 Gen1
	Ethernet	1 x Intel i226 (2.5GbE)
	SDM I/O Interface	1 x USB3.2 Gen1, 1 x HDMI 2.1, 1 x Display Port 1.4a, UART, I2C, 12V DC-In
Power Requirement	Management	ACPI 3.0
	Input Type	ATX/AT Mode
	Input Voltage	12V DC-In (± 5%, Via Golden Finger)
Trusted Platform Module	TPM 2.0	fTPM 2.0, Default TPM 2.0 (Infineon_SLB9672), BOM option by project support
Watchdog Timer	Output	Interrupt, system reset
	Interval	255 levels timer interval. By SUSI4.0 API
Physical Characteristics	Dimensions (W x H x D)	175 x 100 x 20 (SDM-L compliant)
	Weight	1 Kg
Environment	Operating Temperature	0 – 55 °C @ Natural Convection Chamber
	Thermal Solution	Cooler with blower FAN
	Relative Humidity	95% @ 40 °C (non-condensing), Operating
Software Development Kit	Operating System	Windows 11/10 IoT LTSC
	Software (Optional)	WISE-PaaS/DeviceOn, WISE-PAAS/SignageCMS
Certification	Electromagnetic	CE/FCC, CB, UKCA,RCM, VCCI, EMC (Class B)

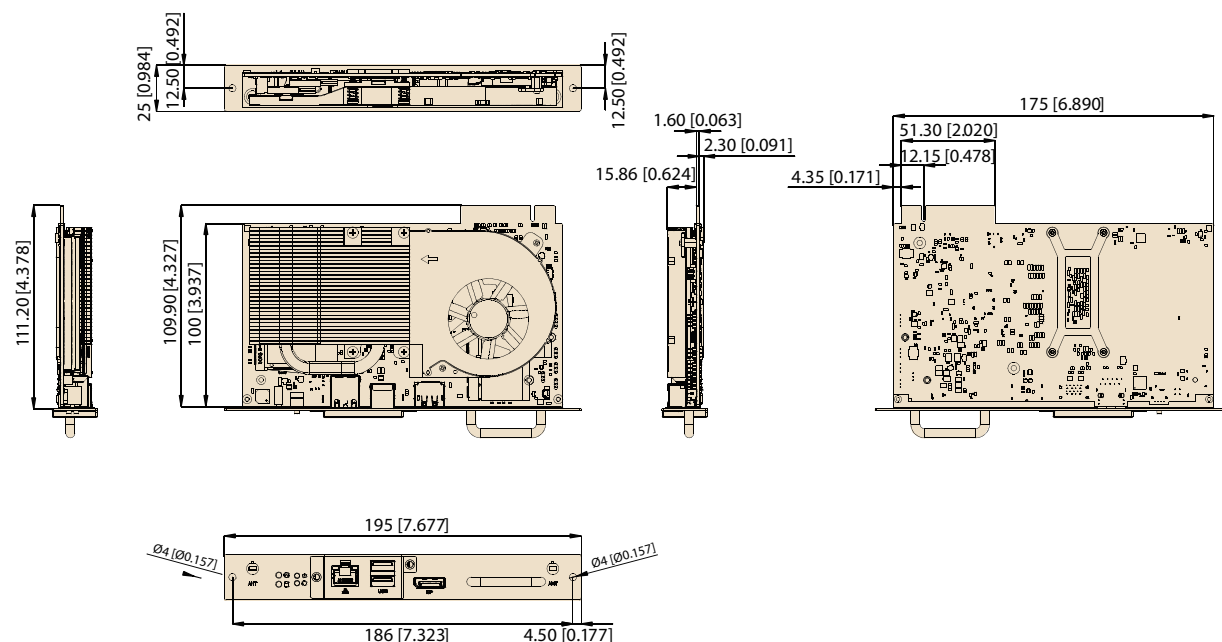
Features

- Intel SDM-L (Smart Display Module - Large) form factor
- Intel® Core™ Ultra Processors
- Support dual channel LPDDR5 8533 MT/s, up to 64GB
- 3 independent displays: 1 x DP1.4 and Golden Finger (1 x HDMI 2.1, 1 x DP1.4)
- Supports Intel® ARC™ GPU with up to 12Xe, 4K resolution and NPU up to 50 TOPS
- Equipped with firmware TPM (fTPM) by default; discrete TPM 2.0 available as a BOM option based on project request
- Easy installation and maintenance with Intel® SDM slot-in design

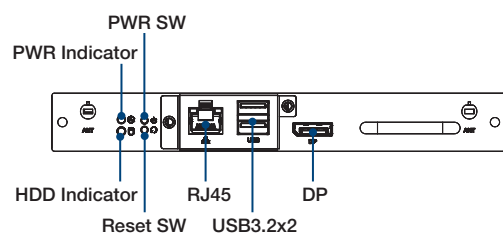
WISE-PaaS/DeviceOn WISE-PaaS/SignageCMS

Dimensions

Unit: mm [inch]



Front View



Ordering Information

Part Number	Description
TBD	DS-281, H12Xe, barebones

Note: RAM / Storage and Operating System bundled by request

Embedded OS

Part Number	Description
TBD	Win11 IoT LTSC EN, 64b Entry
TBD	Win10 IoT LTSC EN, 64b Entry

Storage

Part Number	Description
	Storage M.2 NVMe 2242 TLC 128GB
	Storage M.2 NVMe 2242 TLC 256GB
	Storage M.2 NVMe 2242 TLC 512GB
	Storage M.2 NVMe 2242 TLC 1TB