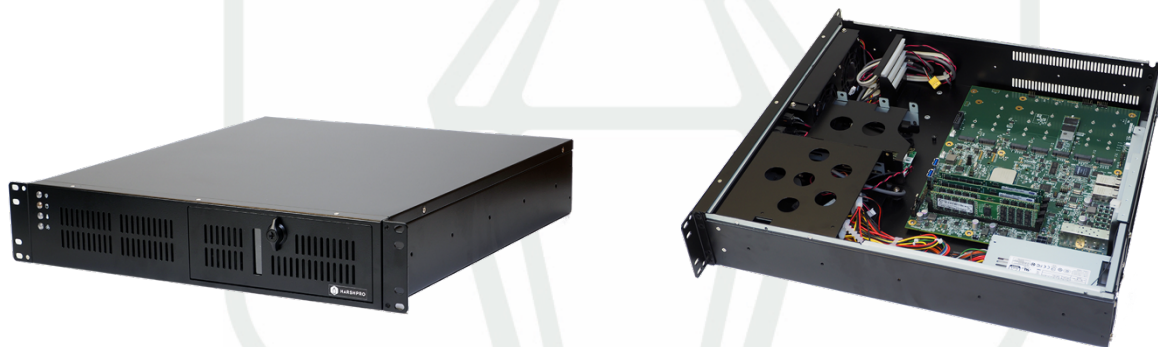# HARSHPRO™ IP20 RACK SERVER

Developed and manufactured in Singapore, the HarshPro IP20 Rack Server is a powerful rugged server built for performance with an Intel® Xeon®[1] processor, multiple memory configurations, and high-capacity, high speed NVMe SSDs, enabling distributed cloud functionality and application containerization wherever you need it. The server has an IP20 rack enclosure designed for industrial environments. The HarshPro IP20 Rack Server is equipped with a Trusted Platform Module to protect the confidentiality, integrity and authenticity of the server.

HarshPro IP20 Rack Server is designed to work standalone or clustered in remote locations. The server supports functionality commonly used in data centers including automated provisioning and remote management. The server can be expanded with multiple M.2 PCIe GPUs allowing for use in machine learning applications. The baseboard management controller (BMC) supports popular remote management technologies like IPMI, PXE, Redfish®, and KVM over IP which allows it to be fully administered remotely down to the BIOS level.

HARSHPRO IP20 RACK SERVER SPECIFICATIONS[2]

System Chipset

CPU:	Intel® Xeon® D-1539
Maximum Speed:	1.6 GHz
Max Turbo Frequency:	2.2 GHz
L3 Cache:	12 MB
Cores:	8

[1] Intel and Xeon are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries
[2] This is a draft datasheet, specifications listed here may be subject to change

Threads:	16
BIOS:	AMI APTIO-V UEFI version 2.4 UEFI Platform Initialization version 1.3

Memory

Technology:	Dual channel 2133 MHz ECC DDR4
Slot:	4 x RDIMM (up to 32 GB per slot) or UDIMM (up to 16 GB per slot), 288 pins
Maximum Capacity:	128 GB (RDIMM), 64 GB (UDIMM)

Trusted Platform Module (TPM) 2.0

TPM Module:	Infineon
Chipset:	OPTIGA™ TPM SLM 9670
Cryptography:	RSA-1024, RSA-2048, SHA-1, SHA-256, ECC NIST P256, ECC BN256
Certifications	CC EAL4+ (moderate) ; FIPS 140-2 level 2

Ethernet

Network Controllers:	1 GbE Intel® i210IT 10 GbE SFP+ Intel® SoC
Interfaces:	2 x PoE++ RJ45 (PoE 802.3bt Type 4) 2 x SFP+

Expansion Slots

M.2 PCIe[3]	6 x M.2 M Key 1 x M.2(2232/2240) E Key (for WiFi)

Storage

Technology:	M.2 NVMe
Slot:	6 x M.2 slots (256 GB/512 GB/1 TB/2 TB)
Maximum Capacity:	12 TB (6 X 2 TB)

[3] *Form Factor supported: 2232/2240/2260/2280/22110*

Display

Interface:	KVM over IP

LED and Switch

Button / LED:	Power switch & Power LED indicator

Power

Power Supply:	110/220VAC input
Input Power:	50/60Hz
Power Consumption:	TBC
POE++4:	PD 71W x 2

Environment

Operating Temperature:	-20°C to 50°C[5]
Non-operating Temperature:	-40°C to 85°C
Humidity:	10-90% RH (operating and non-operating)
Vibration[6]:	5 Grms, 5-500 Hz, 3 Axes
Shock[7]:	50 Grms, half-sine 11 ms duration
IP rating:	IP20
Altitude:	Up to 15,000 ft above sea level

Mechanical

Dimensions:	19" 2U form factor 482 mm (L) x 480mm (W) x 88mm (H)
Weight:	9.6Kg
Cooling:	Fan cooled 19" 2U (includes air filters)

[4] OE++ IEEE802.3bt Type 4 Class 8
[5] Operating temperature band can increase with use of wideband operating temperature PSU & Fans
[6] Subject to change
[7] Subject to change

OS Support:	CentOS v7.4 Red Hat® Enterprise Linux® (RHEL) v7.4/7.5/7.6 Red Hat® Enterprise Linux® (RHEL) Atomic v7.4 Ubuntu v18.04 Windows Server 2012 R2 Windows Server 2016 Windows 10 Pro
Certifications[8]:	EMC, FCC, CE, WEEE, UL, RoHS3, REACH

[8] *Equipment pending certifications*