



POLYSTACK



STAQ R3

THE NEW GENERATION
EDGE CLOUD ▶▶▶



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FEATURES

Computing Power

Unmatched extreme computing

Up to 64 CPU cores or 4096 GPU cores with Memory of 512GB RAM, and 24GB VRAM.

Inbuilt PoE Switch

Universal Power Management

Built-in switching (L2) and routing (L3) options with PoE and up to QSFP56 (100Gbps) slots

Enhanced Protection

Advanced Security Measures

The robust design with physical lock mechanism offers security against potential vandalism.

Robust Protection

Fully enclosed electronics

Safeguarded against threats such as dust, moisture, EMI, and temperature fluctuations.

Choice of Power

Deploy in remote, off-grid locations

Freedom to choose AC and DC power input options, including solar and fuel cells.

Thermodynamic Efficiency

No overheating concerns

Capable of efficiently dissipating heat loads of up to 610W keeping device cool and reliable.

High-Speed, Expandable Storage

Effortlessly Scale and Access Data

Up to 8 hot-swap NVMe/ SATA drive bays, with interconnect speed of 128Gbps per drive.

IP 69 Rated

Dust and Waterproof

Resistance against dust, water, heat, moisture and effective deployment up to 50C

Versatile Configuration Options

Tailor-Made to Suit Your Needs

Select from range of processors, memory, storage, ports, interfaces, and add-on modules.

REVOLUTIONIZE THE RESOURCE
HUNGRY **AI-DRIVEN**
APPLICATIONS

Rugged Outdoor Applications

Designed for India

The sole product designed to excel in hot & tropical Indian outdoor weather conditions.

Redundant Power Backup Solutions

Extended runtimes with Add-on Battery

Dual-Redundant Micro UPS with integrated high-energy batteries and add-on battery packs.

Safe Usage in EM Environment

Low EMI and High EMC

Thick metal-alloy jacket design ensures compatibility in intense Electromagnetic set-ups.

ESG Compliant

Ethical & Sustainable Future

Complies with SEBI's Environment, Social, Governance mandates, & committing to ethical practices.

BENEFITS

Future Edge Application

Reimagine 3D gaming on 5G & FTTH

Ready for high-speed, real time video processing for edge applications of tomorrow.

Efficient Heat Dissipation

Dependable performance

Throttle-less performance even at high computing load ensuring its dependable always.

Safe Usage in EM Environment

Electromagnetic Pulse shielding

Reliable operations in noisy environments, with options for hardening to EMP proof levels.

Mission-Critical Applications

Rapid and cost-effective solutions

High availability and survivability for mission-critical applications, at fraction of the cost.

Sustained, Low-Maintenance Performance

Extended trouble-free operation

Maintains high performance levels without degradation, requiring minimal maintenance.

Reliability for Critical Application

Ideal choice for mission-critical applications.

Engineered for continuous operation and utmost reliability even in high-stress situations.

Assured performance

No thermal throttling

Consistent performance under extreme condition, ensuring it remains cool and dependable.

Deployment in remote, off-grid locations

Hassle-free installation

Flexible self-contained deployment in remote areas, including industrial and military setups.

Wide-Ranging Application

Versatile for a broad spectrum of Usage

Suitable for demanding conditions of a wet industrial site or the remote military setup.

One-Box Solution

Comprehensive single box solution

Eliminate peripheral devices, extra cables, boxes, power concerns for an easy deployment.

Exceptional Storage Performance

Versatile Data Handling for Edge Applications

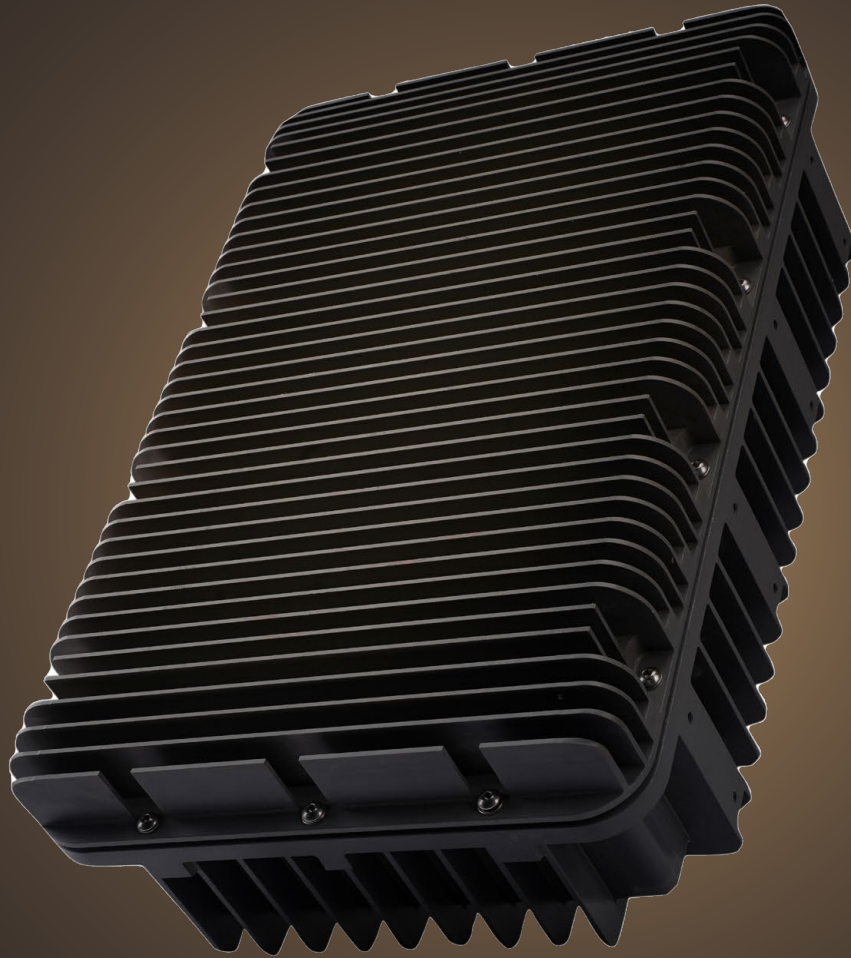
Storage performance that surpasses typical servers and ideal for databases, SANs, or NAS.

Robust Outdoor Applications

Rapid and cost-effective solutions

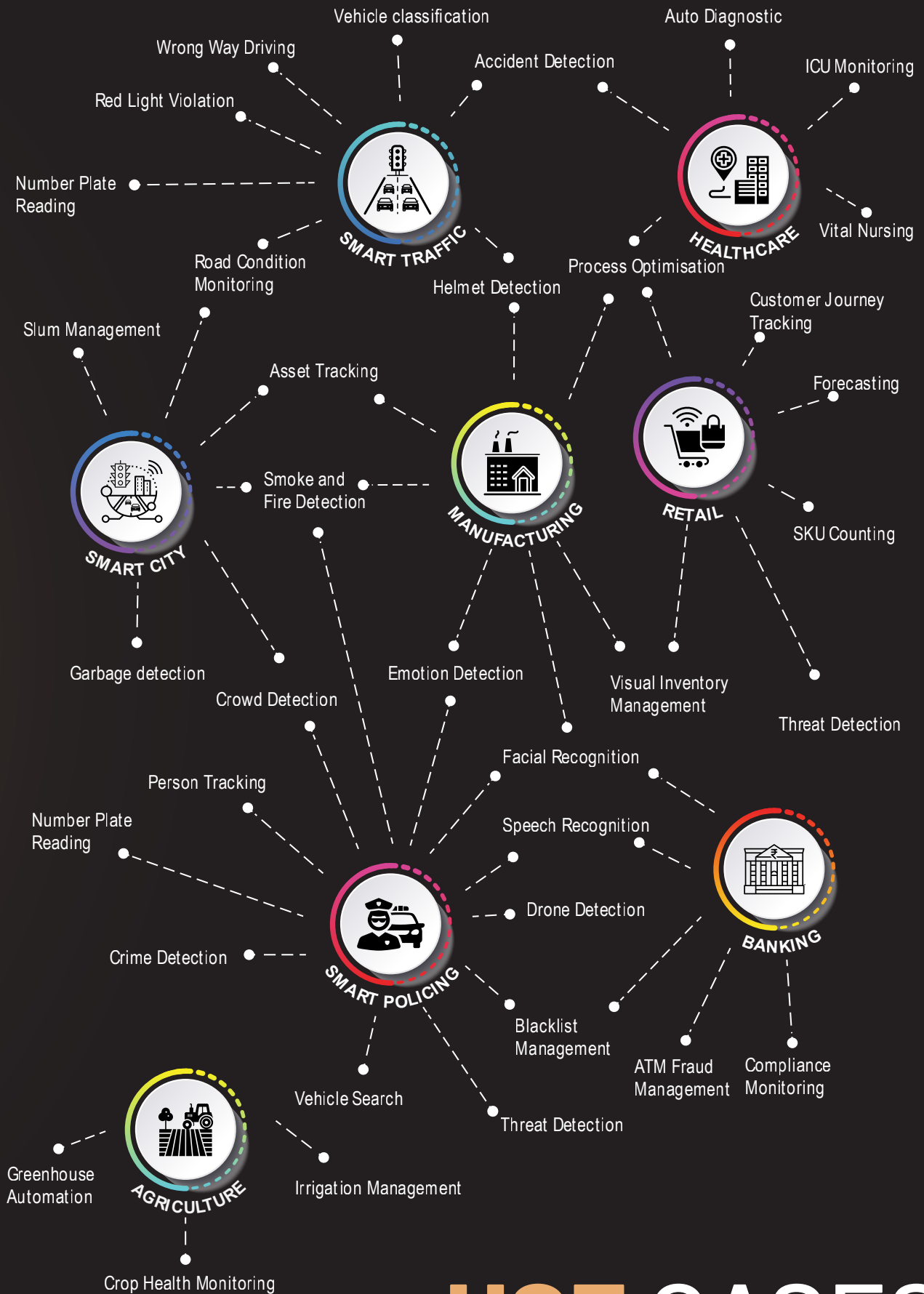
Enhanced security ensures integrity of data and equipment safeguarding against vandalism.

THE POWERHOUSE FOR EXTREME ENVIRONMENTS



Designed to excel in resource-intensive applications, Content Distribution Networks (CDNs), and AI-related fields, Staq R3 revolutionizes industries such as defence, homeland security, telecom and healthcare. Experience unparalleled computational power, optimized content delivery, and advanced AI capabilities in the most demanding environment with temperature upto 50 °C and off-grid remote. locations. Empower your operations with a single solution delivering unmatched performance and efficiency.





USE CASES

DETAILED SPECIFICATIONS

COMMON SPECIFICATIONS ▶▶▶

IP Rating	IP67, with customisation option for up to IP69K
Operating Ambient Temperature	Up to -40°C to +85°C, depending on choice of components and configuration
Enclosure Seal Retention Temperature	-50°C to +220°C
Power Input	Universal AC mains, 90-300V, 50/60Hz, 1-phase
	DC +6V to +72V
	Customisation options, including multi-way redundancy
	Up to dual-redundant built-in micro-UPS with Super Capacitor, or high energy Li-Ion or LiFePO4 batteries
	Direct operation from alternate power sources like Solar Panels and Fuel Cells
Power Rating	120W to 800W
Cable/Antennae Exit Glands	Fully customisable, as per user or deployment requirements
Materials Used	High grade Copper and Aluminium alloys, Steel, Carbon fibre sheets, polymers, composite materials, thermal compounds etc.
Compliance	BEE, extended testing and additional certifications available as customisation options

ADD ON OPTIONS ▶▶▶

Network Switching and Routing

Built-in or dedicated routing (L3) and switching (L2) options with up to quad QSFP56 (100Gbps), eight RJ45 10Gbps Ethernet ports, and quad PoE ports.

Wireless Communication

Wide range of built-in wireless communication options, including cellular 4G, 5G, WiMax, WiFi, BLE, LoRa etc. Multiple radio types can be provided in same node for redundancy. Mesh technology can also be provided for off-grid long-range communication.

Rugged-UPS

IP67 rated (customisable to IP69K) high-reliability device with multiple power input type capability, specifically designed as a seamless addon for STAQ-R1 nodes. Configuration options as follows: -

Battery Options	Internal	Li-Ion	Up to 24 cells for long run-times
		LiFePO4	Momentary backup for changeovers
		Super Capacitor	
	External	Lead-Acid SMF	Up to 8 batteries for extended run-times
Runtime	Few seconds to up to two hours with internal batteries.		
	Several hours or even days with external batteries. Designed for a continuous duty-cycle to be used as an inverter.		
IP Rating	IP67, with customisation option for IP69K		
Power Input	Universal AC mains, 90-300V, 50/60Hz, 1-phase		
	DC +6V to +72V		
	Green sources, including solar panels and fuel cells		
	Customisation options, including multi-way redundancy		
Operating Ambient Temperature	0°C to +70°C, with customisation options for both higher and sub-zero temperatures		
Compliance	BEE, extended testing and additional certifications available as customisation options		

BASE CONFIGURATIONS

Series	Cooling	Processing	Memory	Storage	Networking	Application
STAQ-R3IE	Passive	Embedded or desktop class intel or AMD x86 processor	Up to 64 GB	Up to 16TB Fixed NVMe PCI-e Gen5 SSD and 128TB aggregate NVMe PCI-e x2 Gen5 or SATA SSDs on 8x Hot-swap drive bays with up to 128Gbps link per drive.	Up to 8x native 10G RJ45 Ethernet ports, and quad native 100G QSFP56 slots. ToE (TCP offload Engine) option.	Computing and storage server on the edge. Industrial control, and data collation and processing.
STAQ-R3IS	Dual Redundant IP67 Fans	Server class intel or AMD x86 processor with up to 64 cores & unrestricted TDP	Up to 512 GB with ECC			Full-fledged server workloads in harsh environments. NAS, SAN or Database server on the edge!
STAQ-R3n	Passive	Up to Dual NVIDIA Orin AGX compute modules, designed for HA (High Availability) Configuration	Up to 32 GB aggregate	Up to 128GB eMMC and 32TB NVMe aggregate SSD Capacity.	Up to Dual 10G and Dual 1G RJ45 Ethernet ports, and Dual 10G SPF+ Slots	Vision and AI processing powerhouse on the edge, with HA mode for ultra critical applications like military, safety and medical.
STAQ-R3g	Dual Redundant IP67 Fans	Embedded or desktop class intel or AMD x86 processor and up to NVIDIA Quadro RTX A6000 GPU	Up to 64 GB CPU RAM and 24GB VRAM	Up to 16TB fixed NVMe PCI-e x4 Gen5 SSD	2.5G and 1G RJ45 Ethernet	Gaming server on the edge optimised for gaming as a service on 5G & FTTH architectures. Scientific and AI computing on edge.

STAQ R3

THE NEW GENERATION
EDGE CLOUD

**UNLEASH
UNMATCHED
RESILIENCE**

STAQ - R3



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