POLYSTACK

MAKE IN INDIA

STAQ-R1

Rugged Edge Computing Device for Video Surveillance

polystack.tech

Features

Artificial Intelligence

Real-time Video Incident Detection

High-Speed real-time video processing capabilities using x86 or Nvidia GPUs for AI based video analysis and automated incident alerts.

Rugged

Designed for India

Staq-R1 devices are designed for Indian ambient temperatures that reach up to 50°C. It can withstand high degrees of shock, vibrations and are ready to be deployed in harsh environments.

High Storage Capacity

Immune to Network Disruptions

Scalable on-device storage permits local storage of up to 4 HD camera-feeds running 24x7 for more than 240 days.

Computing Power

Unmatched Processing Power

Quad Core x86 / Nvidia processor, delivers lightning-fast data analysis, making complex computations easy. It runs intensive video analytics and make real-time decisions.

ESG Compliant

Ethical & Sustainable Future

Staq R1 complies with SEBI's Environment, Social, and Governance mandates, meeting sustainability standards and committing to ethical practices. Embrace technology aligned with your values and contribute to the community.

IP-67 Rated

Dust and Water-proof

Compliant with one of the highest Ingress Proofing standards, the STAQ R1 devices are specially designed for outdoor usage in Indian conditions and can withstand rain and dust-storms with equal ease.

Inbuilt PoE Switch

Universal Power Management

Staq-R1 devices have an inbuilt PoE Switch that can power four cameras simultaneously. This feature simplifies camera installation and feed integration for large scale deployment in difficult environments.

IoT and Edge Computing

Designed for Industry 4.0

Staq R1 embeds significant computing capabilities for running resource-intensive applications on the edge and can be integrated with any type of sensor for enabling Industry 4.0 solutions.

Compact Design

Engineered for Powerful Performance

The power of unique, compact design comes with a small form factor and lightweight build. It provides high-performance capabilities without compromising on space.

Flexible Selection

Versatile Customization Options

A broad range of choices for processors, memory, storage, ports, interfaces, and add-on modules, catering to diverse requirements and applications.

Enhanced Protection

Advanced Security Measures

The robust physical lock mechanism offers enhanced security by safeguarding against unauthorized access and potential vandalism. This ensures integrity of data and equipment in various environments.

Safe Usage in EM Environment

Operational Resilience

The robust shielding and its advanced system for electromagnetic interference (EMI) makes its operation resilient in highly sensitive installations with intense EMI.

Seamless EMC

Electromagnetic Compatibility Excellence

Engineered with advanced electromagnetic compatibility measures, it ensures optimal performance even in challenging electromagnetic environments.

Versatile Power Options

Diversity in Power Sources

Staq R1 offers a wide range of power input options, from standard AC and DC sources to innovative choices like solar panels and fuel cells ensuring reliable operation in diverse power conditions.

Benefits

Customization for Unique Needs

Tailored Solution

The in-house design and manufacturing cater to unique use-cases and niche requirements.

Versatile Connectivity

Diverse Options

Experience seamless networking with Ethernet, OFC, WiFi, and GSM connectivity options.

Uninterrupted Power Supply

Reliability

Continuous operations and reliability even during power failures with optional built-in UPS.

Easy and Hassle-free Installation

Effortless Setup

Flexible deployment in remote areas, ensuring convenience and seamless integration.

Mission-Critical Applications

No Compromise Operations

High availability and survivability for mission-critical applications, supporting essential ops.

Electromagnetic Resilience

Safe usage in EMI fields

Exceptional tolerance to interference in electromagnetic environment and other equipment.

Cloud Ready

Enhanced Scalability

Cloud compatibility ensures a smooth integration into your existing cloud infrastructure.

One-Box Solution

Comprehensive Solution

Eliminating peripheral devices, extra cables, boxes, power adaptors etc. for an easy deployment.

Efficient Mounting

Minimize Time and Expenses

Cost-effective and swift mounting processes, reducing both expenses and setup duration.

Challenging Indian Environment

Protection Against Heat & Dust

Built to withstand freezing -40°C to scorching +50°C without throttling of Internal Processors.

Robust Outdoor Applications

Rapid and Cost-Effective

Excels in outdoor deployments, without any protective shelters or enclosures.

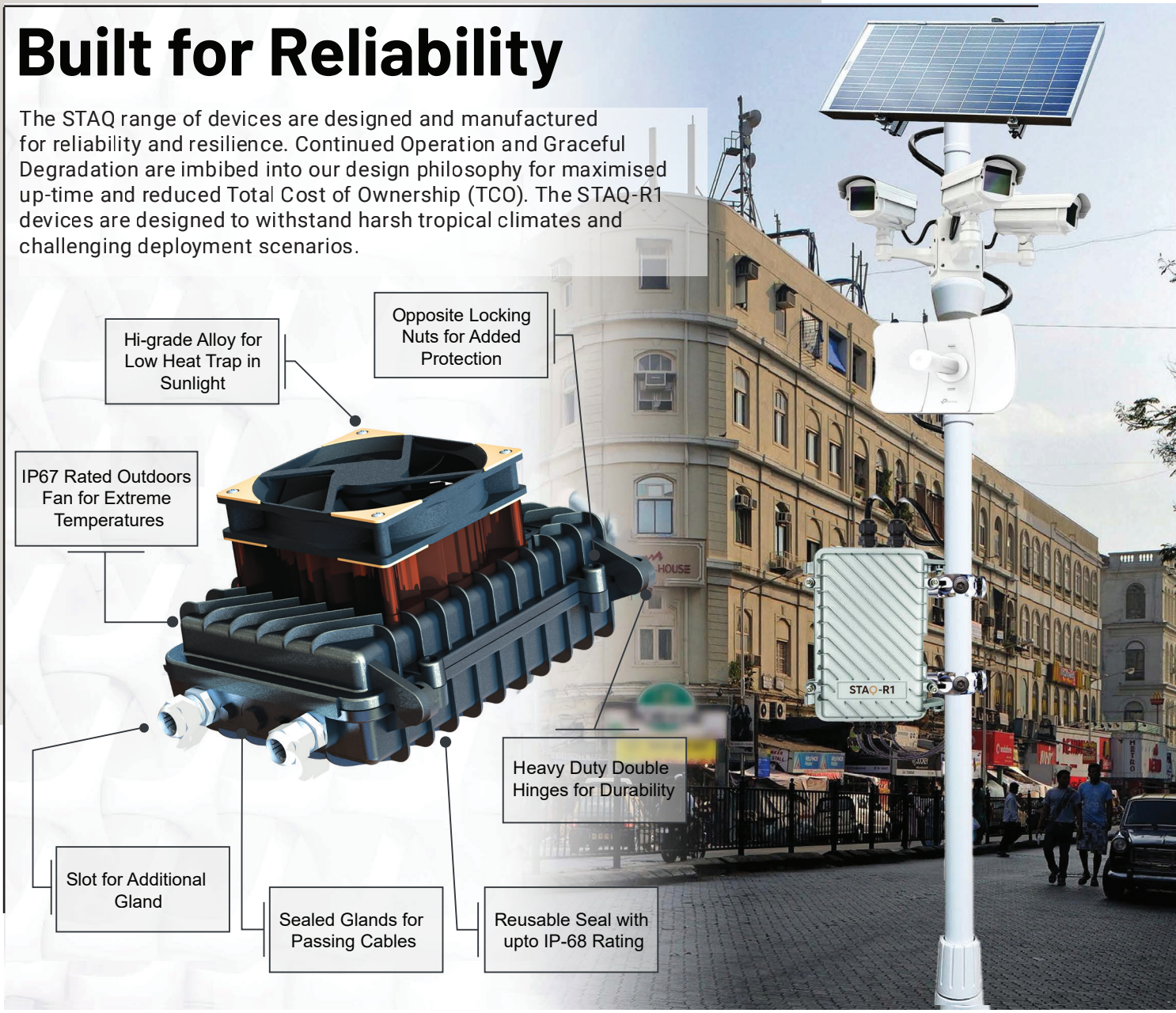
Sustained, Low-Maintenance Performance

Extended Trouble-Free Operation

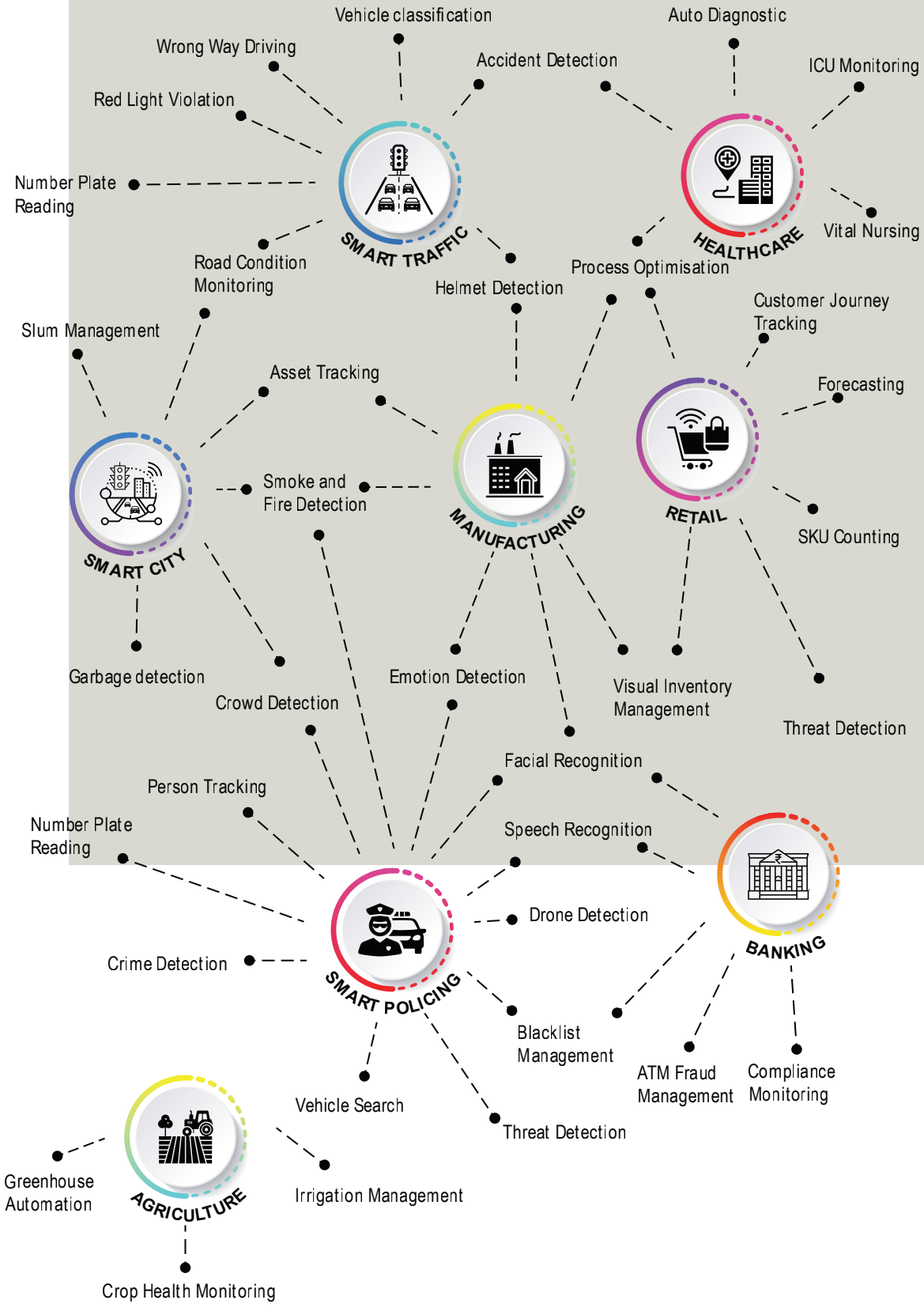
Maintains high performance levels without degradation, requiring minimal maintenance.

Built for Reliability

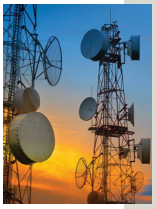
The STAQ range of devices are designed and manufactured for reliability and resilience. Continued Operation and Graceful Degradation are imbibed into our design philosophy for maximised up-time and reduced Total Cost of Ownership (TCO). The STAQ-R1 devices are designed to withstand harsh tropical climates and challenging deployment scenarios.



Use Cases


SMART TRAFFIC
Vehicle classification
Wrong Way Driving
Accident Detection
Red Light Violation
Number Plate Reading
Road Condition Monitoring
Helmet Detection
HEALTHCARE
Auto Diagnostic
ICU Monitoring
Vital Nursing
Process Optimisation
SMART CITY
Slum Management
Asset Tracking
Smoke and Fire Detection
Garbage detection
Crowd Detection
MANUFACTURING
Emotion Detection
RETAIL
Customer Journey Tracking
Forecasting
SKU Counting
Visual Inventory Management
Threat Detection
SMART POLICING
Person Tracking
Number Plate Reading
Facial Recognition
Speech Recognition
Drone Detection
Crime Detection
Vehicle Search
Threat Detection
BANKING
Blacklist Management
ATM Fraud Management
Compliance Monitoring
AGRICULTURE
Greenhouse Automation
Irrigation Management
Crop Health Monitoring

Sectors




SPECIAL OFFER
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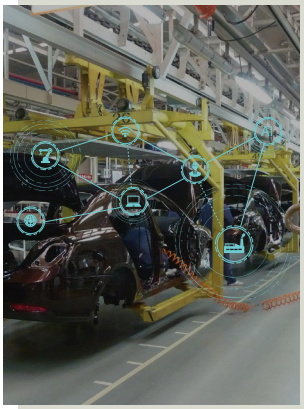
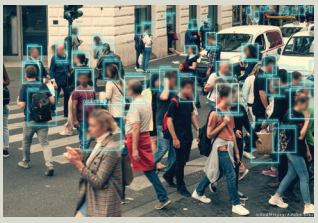
BREAD 20% OFF
BREAD 20% OFF
MILK 70% OFF
SUGAR 50% OFF
SUGAR 50% OFF



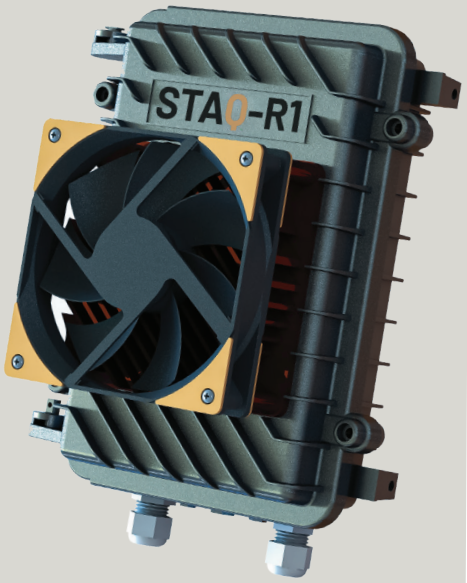



Defence
Content
Speech-Recognition
Agriculture
Automation
Automation
Compliance
Speech-Recognition
Agriculture
Security
Healthcare
Power
Healthcare
Travel
Travel
Traffic-Management
Telecommunication
Insurance
Process-Optimization
Retail
Homeland-Security
Aerospace
Sentiment-Analysis
Research
HR
Governance
Quality-Control
Manufacturing
Banking
Sentiment-Analysis
Product-Development
Process-Optimization
Audit
Compliance
Security
Power
Governance
Computer-Vision
Defence
Aerospace
Product-Development
Supply-Chain
Quality-Control
Audit
Predictive-Maintenance
Healthcare
Banking
Incidence-Detection
Incidence-Detection
Insurance
Manufacturing
Telecommunication
Fraud-Detection
Homeland-Security
Computer-Vision
Safety
Supply-Chain
HR
Content
Retail
Safety
Research
Fraud-Detection
Speech-Recognition

Detailed Specifications

Common Specifications

IP Rating	IP67, with customisation option for IP68
Operating Ambient Temperature	0°C to +70°C, with customisation options for both higher and sub-zero temperatures
Enclosure Seal Retention Temperature	-50°C to +220°C
Power Input	Universal AC mains, 100-260V, 50/60Hz, 1-phase
	DC +6V to +72V
	Customisation options, including multi-way redundancy
Power Rating	60W to 180W
Cable/Antennae Exit Glands	1*M20x1.5 supporting cable with diameter of 5 to 10mm
	5*M20x1.5 supporting cable with diameter of 4 to 8mm
	4*M20x1.5 supporting cable with diameter of 4 to 6mm
Materials Used	High grade Copper and Aluminium alloys, Steel, Carbon fibre sheets, polymers, composite materials.
Compliance	BEE, extended testing and additional certifications available as customisation options.



Base Configurations

Series	Processing	Memory	Storage	Networking	Cooling	Application
R1-A-1000	Intel Atom or Pentium or Core i3 or Raspberry Pi.	4GB to 16GB DDR4	128GB to 8TB SATA DOM or SSD	1Gbps Ethernet port expendable to up to six ports	Chassis Fanless	Moderate edge computing workloads
R1-A-1100	NVIDIA Jetson Xavier or Orin NX	16GB LPDDR4	16GB eMMC	1Gbps Ethernet port expandable to dual ports		Moderate AI-ML workloads
R1-B-1000	Intel Core i3 to i5	4GB to 32GB	128GB to 16TB SSD M.2 SSD	1Gbps Ethernet port expendable to up to six ports	Add-on Fanless	Mainstream edge computing or moderate AL-ML workloads
R1-B-1100	NVIDIA Jetson Xavier or Orin NX	16GB LPDDR4	16GB eMMC	1Gbps Ethernet port expandable to dual ports		Mainstream AI-ML workloads
R1-C-1000	Intel Core i5 to i7	4GB to 64GB DDR4 or DDR5	128GB to 16TB SSD M.2 SSD, including high performance NVMe	1Gbps Ethernet port expendable to up to six ports. Option of 2.5Gbps and 10Gbps Ethernet, including SFP	Augmented Add-on Fanless	High edge-computing and mainstream AI-ML workloads
R1-B-2000	Intel Core i7 to i9 or AMD Ryzen 7 to 9	4GB to 96GB DDR4 or DDR5			Add-on With IP67 Fan	Very high edge-computing and high AL-ML workloads
R1-C-2000	Intel Core i7 to i9 or AMD Ryzen 7 to 9				Augmented Add-on With IP67 Fan	Extreme edge-computing and very high AL-ML workloads

ADD-ON OPTIONS

Micro-UPS

IP67 rated 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	
		Super Capacitor	Momentary backup for changeovers
	External	Lead-Acid SMF	Up to 8 batteries for extended run-times
Runtime	Few seconds to up to an hour 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 IP68		
Operating Ambient Temperature	0°C to +70°C, with customisation options for both higher and sub-zero temperatures		
Power Input	Universal AC mains, 100-260V, 50/60Hz, 1-phase		
	DC +6V to +72V		
	Green sources, including solar panels and fuel cells		
	Customisation options, including multi-way redundancy		
Compliance	BEE, extended testing and additional certifications available as customisation options		

Network Switching and Routing

Built-in router (L3) and switch (L2) options with RJ-45 1Gbps Ethernet (up to eight ports), PoE (up to 4 ports) and SFP (1Gbps and 10Gbps) support.

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.

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