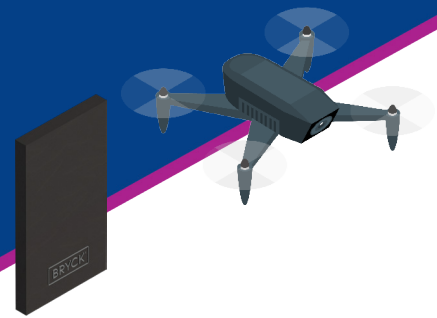


BRYCK AI® Block

Revolutionary AI & Storage Performance, Scalability, Efficiency & Security for Tiny EDGES



Meet BRYCK AI Block, an Order-of-Magnitude Leap in Accelerated Edge AI Computing

Introducing the future of Edge AI, TSECOND's state-of-the-art hardware and software solution: BRYCK AI Block is an ultra-compact, rugged & high-performance AI inferencing platform that integrates compute and storage for edge use cases such as drones, robots, autonomous vehicles, video cameras etc. that require a small form factor.

BRYCK AI® Block – The only AI Solution for Drones and UAVs

■ Unmatched Edge AI Performance

Perform AI inferencing at the Edge, where data is generated, removing data transmission, data center and Cloud dependencies. Advanced processing units are powered by the latest AI accelerators, delivering superior performance/Watt, and lightning-fast inference times for real-time applications.

■ Integrated High-Speed Data Storage

Capture, process, move and store large amounts of data. High-capacity NVMe SSDs are integrated directly with compute, delivering seamless data handling and fast data read/write speeds, reducing latency and enhancing overall performance of Edge AI applications.

■ Scalable & Flexible

BRYCK AI Block's U.2 format easily integrates with existing edge deployments and scales up to meet growing processing and data requirements.

■ Comprehensive Software Suite

Fully compatible with popular AI frameworks, BRYCK AI software includes pretrained models and algorithms optimized for edge performance.

■ Robust Security

Eliminate data security, privacy, governance, and compliance risks associated with traversing a network. Advanced encryption ensures data security and privacy, and protects devices and software from unauthorized access.

■ Energy Efficiency

Designed to deliver high performance while maintaining energy efficiency, BRYCK Mini AI delivers sustainable operation that is ideal for environments with power, cooling and space constraints.

Technical Specification

AI

- Performance: 104 TOPS
- Frame rate: Up to 9,750 FPS
- Latency: Less than 4.7 ms
- Energy Efficiency: 10.4 TOPS/W
- Model Precision: INT8
- AI SDK: Pre-trained Models, Compiler
- Frameworks: TensorFlow, TensorFlow Lite, Keras, PyTorch & ONNX

COMPUTE

- 6 A78 cores
- Ethernet RJ45 1x GbE

DATA STORAGE

- 64 TB
- Up to 1 GB/s data access throughput
- Up to 8x storage with data de-duplication

PORTABILITY

- Rugged and portable
- Shock-resistant
- Lightweight: 1 pound
- Compact: 3.5" x 4.5" x 1.5"
- Temperature:
Operating: 0°C to 85°C
Non-operating: -40°C to 85°C
- Power consumption:
50-64W

DATA SECURITY

- AES 256-bit data encryption
- Tamper-resistant
- Hardware encryption
- Automated key management

DATA ACCESS

- NFS | SMB | BRYCKCP | SRT
- Direct attached I/O
- Fast data transfer
- Data Protection
- Self-healing
- Auto data corruption recovery
- Data protection from hardware component failure

MANAGEMENT

- Web Dashboards
- REST API for orchestration

BRYCK AI® Block

Conquering the Edge Inferencing Challenge



BRYCK AI® Block Platform

BRYCK AI Block seamlessly integrates cutting-edge AI processing capabilities with high-speed data storage, providing an all-in one solution and component that caters to the demands of modern applications, whether in healthcare, smart cities, or retail. Delivering top-tier performance, reliability and efficiency, this Edge AI hardware and software solution leads the market, providing superior performance, flexibility and integrated highspeed storage in a compact form factor. Experience the next level of edge AI with BRYCK AI Block.

BRYCK AI® Block Platform Features

- **UNIQUE EDGE AI PLATFORM WITH INTEGRATED COMPUTE, STORAGE AND AI COMPUTING**
AI chips, ARM compute and software are integrated in a single, all-in-one device offering all the features of the BRYCK platform.
- **BRYCK AI BLOCK HARDWARE**
A transparent extension to BRYCK hardware, BRYCK AI Block contains storage and AI chips, connected to the same PCIe bus.
- **BRYCK AI SOFTWARE**
Delivered with an advanced software stack, including inferencing and model compiling SDKs. Runs on ARM cores, accessing and processing data directly and automatically.
- **FLEXIBLE AI COMPUTE TOPS CONFIGURATION FOR DIFFERENT USE CASES**
Configurable ratio of AI computing & storage. BRYCK AI Block TOPS are configurable at build time.
- **REAL-TIME, HIGH-SPEED AI PROCESSING OF LARGE DATA**
Data and AI processors connect to the same PCIe Bus within the BRYCK AI BLOCK, accelerating the AI processors' access to data through high-speed BRYCK storage APIs. No network traffic is required for AI processing and data access.
- **CAPTURES DATA AND PERFORMS AI PROCESSING WITHIN A SINGLE SYSTEM**
AI processing is performed locally without traversing a network to access or relocate data.
- **PROVIDES AI CAPABILITIES TO ALL TYPES OF EDGES**
Deployable at disconnected Edges, static or mobile, even in the most stringent or challenging environments.
- **HIGH-PERFORMANCE RUGGED AND PORTABLE**
Small form factor, shockproof, transportable, plug and play.
- **SUPPORTED RAW BRYCK STORAGE CAPACITY**
64 TB
- **PHYSICAL DATA PORTABILITY**
Enables customers to transport data physically using common shipping methods.
- **SELF-HEALING BRYCK FILE SYSTEM**
BRYCK's self-healing file system automatically detects and corrects errors and provides end-to-end data consistency.
- **DATA STORAGE EFFICIENCY**
Provided advanced data de-duplication algorithm can enable storing up to 8x more data than the raw capacity of the BRYCK AI Block.
- **AUTOMATED ENCRYPTION KEY MANAGEMENT WITH AWS KEY MANAGEMENT SERVICE (KMS)**
Manage the encryption keys of all BRYCK AI Blocks in a deployment automatically.
- **ALERTS AND LOGS**
BRYCK software monitors the state of the device, delivering clear alert and event logging
- **DATA PROTOCOL**
Data can be accessed over NFS, SMB and S3

BRYCK AI® Block



BRYCK AI® Block Features

BRYCK AI Block Platform	BRYCK AI Block
AI Performance (TOPS)	104
FPS	9,750
Storage Capacity	64TB
Latency	4.7 ms
Precision	INT8
AI Data Processing	1GB/s
Energy Efficiency	10.4 TOPS/W 1128 FPS/W
AI Software	Inferencing, Model Compilation
AI Frameworks	TensorFlow, TensorFlow Lite, Keras, PyTorch, ONNX ML formats supported

Technical Specification

Compute	6 A78 cores
Connector Interface	Ethernet RJ45 1x GbE
Dimensions (L x D x H)	3.5" x 4.5" x 1.5"
Weight	1 lb
Power Consumption	64 W (Max)
Encryption	AES 256 Bit
System Monitoring	Default – Internal module board temperature monitoring Dynamic Health monitoring of the internal Flash drives

■ ENVIRONMENTAL SPECIFICATIONS

Operating

Temperature: 0°C to 85°C

Humidity: 10-90% Relative Humidity

Altitude: 0-10,000 Feet Above Sea Level

Non-Operating (Storage)

Temperature: -40°C to 85°C

■ DESIGNED TO CONFORM AGENCY REGULATIONS

MIL-STD: 810G, MIL-STD-461E

FCC Class A

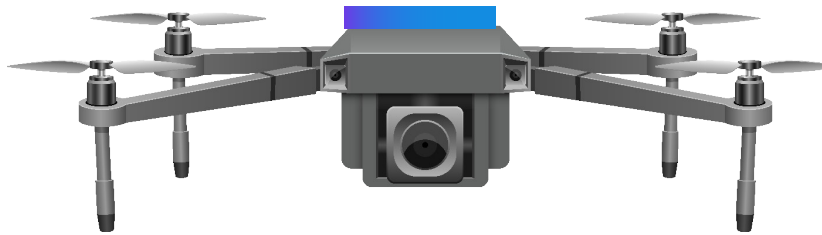
CE Safety & Emissions

UL, cUL

RoHS3

BIS

BRYCK AI® Block Use Cases: Drones & UAVs



Drone installed with BRYCK AI Block

Benefits

- Lightweight
- Compute & AI Acceleration
- Realtime Inferencing
- Outlier Storage
- Time-saving
- Targeted Action
- Accessibility (Remote Operations)
- Sustainable (Reduced Carbon Footprint)



Construction

- Site Survey
- Safety Monitoring



Agriculture

- Crop Monitoring
- Precision Agriculture



Infrastructure Inspection

- Pipeline
- Powerline



Delivery Service

- Parcel
- Medical



Media & Entertainment

- Aerial Photography
- Remote Event Coverage



Surveillance & Security

- Perimeter Patrol
- Crowd Surveillance



Disaster Management

- Search & Rescue
- Damage Assessment



Urban Planning

- Smart Cities
- Terrain Management



Environment Monitoring

- Pollution Monitoring
- Conservation



Defense & Military

- Combat Support
- Reconnaissance