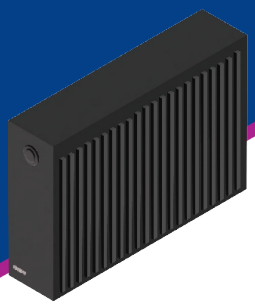
BRYCK AI® Mini

Revolutionary Compute AI & Storage Performance, Scalability, Efficiency & Security for every EDGE



Meet BRYCK AI Mini, 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 Mini, a small form factor, rugged & high-performance AI inferencing platform with integrated compute and storage, fit for various edge and data center applications. It delivers exceptional AI and storage performance, scalability, efficiency and security for every edge AI workload.

BRYCK AI® Mini Solves Edge Inferencing Challenges

- **Unmatched Edge AI Performance**
  AI inferencing at the data's source eliminates data center and Cloud dependencies. Advanced processing units are powered by the latest AI accelerators, delivering superior performance/Watt, lightning-fast inference times for real-time applications.
- **Integrated High-Speed Data Storage, Compute & AI**
  Capture, process and move large amounts of data with built in ARM cores and NVMe SSDs, accelerating data read/write speeds, reducing latency and enhancing overall performance of Edge AI applications.
- **Composable AI**
  BRYCK's modular design, easily scales up to meet your processing and storage needs. No changes are needed to existing edge deployments.
- **Comprehensive Software Stack**
  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: Up to 832 TOPS
- Frame rate: Up to 78,000 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
- 16 ARM v8.2 + A78 Hercules cores
- Ethernet RJ45 / SFP28 / QSFP28

DATA STORAGE
- 128 TB
- Up to 20 GB/s data access throughput
- Up to 8x storage with data de-duplication

PORTABILITY
- Rugged and portable
- Shock-resistant
- Compact: 3" x 6" x 13.5"
- Lightweight: 10lbs
- Temperature:
  Operating: 0°C to 85°C
  Non-operating: -40°C to 85°C
- Power consumption:
  260W (Max)

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

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BRYCK AI® Mini

Conquering the Edge Inferencing Challenge

BRYCK AI® Mini Platform

BRYCK AI Mini seamlessly integrates cutting-edge AI processing capabilities with high-speed data storage, providing an all-in one package 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. Experience the next level of edge AI with BRYCK AI Mini.

BRYCK AI® Mini 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 MINI HARDWARE**
  BRYCK AI Mini's integrated compute, storage and AI chips are connected to the same PCIe bus.
- **BRYCK AI SOFTWARE**
  BRYCK AI is delivered with an advanced AI software stack, including inferencing and model compiling SDKs. Runs on ARM cores, accessing data directly from BRYCK storage. Edge data written to the BRYCK storage can be processed by AI software immediately and automatically.
- **COMPOSABLE AI FOR VARIED USE CASES**
  Configurable ratio of AI computing & storage. BRYCK AI Mini TOPS is configurable at build time or in the field.
- **REAL-TIME, HIGH-SPEED AI PROCESSING OF LARGE DATA**
  Data and AI processors connect to the same PCIe Bus within the BRYCK AI MINI, accelerating the AI processors' access to data through high-speed BRYCK storage APIs. No network traffic is required for AI processing and data access.
- **AIR GAPPED AI**
  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.
- **RUGGED AND PORTABLE**
  Small form factor, shockproof, transportable, plug and play.
- **SELF-HEALING BRYCK FILE SYSTEM**
  BRYCK's self-healing file system automatically detects, corrects errors and provides end-to-end data consistency.
- **DATA STORAGE EFFICIENCY**
  Provided advanced data de-duplication algorithms can enable storing up to 8x the raw storage capacity of the BRYCK AI Mini.
- **AUTOMATED ENCRYPTION KEY MANAGEMENT WITH AWS KEY MANAGEMENT SERVICE (KMS)**
  Manage the encryption keys of all BRYCKAI 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® Mini

BRYCK AI® Mini Variants

BRYCK AI Mini Platform	BRYCK AI Mini+	BRYCK AI Mini
AI Performance (TOPS)	832	416
FPS	78,000	39,000
Storage Capacity	-	128TB
Latency	4.7 ms	
Precision	INT8	
AI Data Processing	20GB/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	16 ARM v8.2 + A78 Hercules cores
Connector Interface	SFP28 / QSFP28 2x 100Gbe or 8x 25Gbe RJ45 1x 1Gbe IPMI Micro USB – serial/Mgmt console
Dimensions (L x D x H)	13.5" x 6.0" x 3.0"
Weight	10 lbs
Power Consumption	260 W (Max)
Encryption	AES 256 Bit
System Monitoring	**Default** – Internal module board temperature monitoring **Optional** - IPMI System 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 TO AGENCY REGULATIONS

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

FCC Class A

CE Safety & Emissions

UL, cUL

RoHS3

BIS

BRYCK® | BRYCK AI® Mini

Capture and Move large data with ease. Process data with high speed AI at the Edge

Tsecond

Tsecond is an emerging leader in EDGE data and EDGE AI space. Our compact form factor, lightweight, high performance and rugged petabyte scale data and AI at the EDGE solutions are unmatched in the industry

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