

# ATOMBEAM BOOSTS BANDWIDTH 4X IN REAL TIME FOR FASTER, MORE EFFICIENT DATA TRANSMISSION



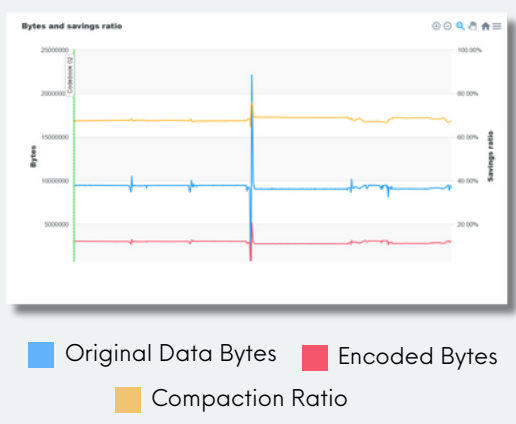
NEURPAC DATA SHEET FOR MULTI-SITE CONNECTIVITY SOLUTIONS

The Atombeam Neurpac Platform boosts data throughput up to 4X in real time on existing infrastructure. Powered by advanced AI and Machine Learning, it compacts data before transmission, slashing bandwidth use by up to 85% while maximizing efficiency and lowering costs.

## Neurpac Overview

Neurpac offers total flexibility and can be deployed on any protocol, including proprietary ones, with no integration or code changes. It provides real-time, lossless data compaction through point-to-point links, VPNs, or as a lightweight virtual appliance. By replacing repetitive patterns with efficient code generated on the fly by advanced machine learning modules, Neurpac reduces bandwidth use, accelerates transmission, and keeps data fully intact.

## Bytes & Savings



**In today's era of surging compute demand and unprecedented data volumes, traditional approaches and legacy infrastructures are being seriously challenged. Atombeam's Neurpac offers a revolutionary way to address these challenges by compacting data before transmission, saving bandwidth, storage, and compute power.**



### 75% Message Size Reduction

Individual messages as small as 4 bytes are compacted and transmitted in real-time.



### 4x Effective Bandwidth

Ultra-fast encode/decode with Neurpac translates to 4X more bandwidth.



### Cost Reduction

Extend the usefulness of existing infrastructure and reduce congestion on contended networks such as SATCOM, LPWANs, and for very large data transfers over a WAN.

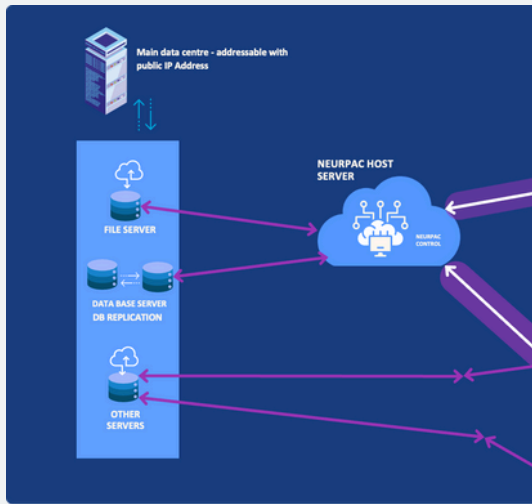


### Data as Codewords

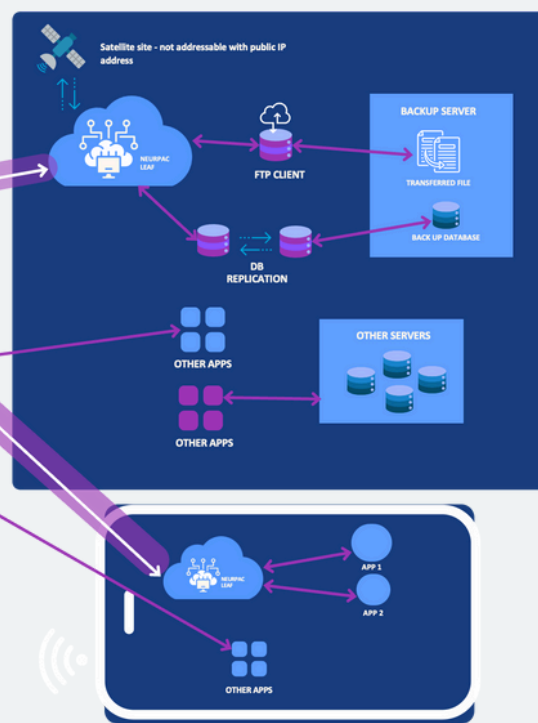
Uses machine learning and AI to automatically build/deploy codewords at the edge which replaces data with a more efficient searchable and randomly accessible representation.

# EXPECTED TYPICAL NEURPAC DEPLOYMENT

## Host Side



## Client Side



## Applications

Multi-site Connectivity enabling the ability to connect multiple sites to a centralized network is critical for businesses, service providers, or organizations with operations spread across different geographic areas because it ensures seamless communication and data transfer between them. The Internet of Things (IoT) and remote management/monitoring has significantly impacted multi-site connectivity by improving efficiency and real-time data sharing across distributed locations.

### Some of these key applications include:

- Enterprise Networking and Collaboration
  - SD-WAN
  - Cloud-Based Communications
  - Centralized IT Management
- Retail and Supply Chain Management
- Healthcare and Telemedicine
- Manufacturing and Industry 4.0
- Smart Cities and Public Services
- Banking and Financial Services
- Hospitality and Tourism

Although Cloud and IoT has revolutionized multi-site connectivity customers must address some key challenges such as real-time data transmission and privacy concerns, as well as integration complexities. These challenges may impact the ability to efficiently provide ubiquitous connectivity.

## Challenges

- Low Latency and Real time Delivery
- Data integration and Interoperability
- Cost-Effective Data Transmission
- Data Optimization

Neurpac enables application data transmission increases without the need to commission or rebuild networking environments which can be costly and disruptive especially in 24x7 environments, like manufacturing, trading, cyber security monitoring, and many more. Neurpac enables businesses to move from daily batched process to realtime updates because it is as effective on individual updates as it would be on a larger dataset, providing the following key benefits:

## Neurpac Multi-site connectivity

### Key Benefits:

#### Low Latency and Real-Time Delivery

**Neurpac** minimizes latency for communications across dispersed sites, enabling timely data transmission for fleet management, predictive maintenance, and remote monitoring. It dynamically scales for demand spikes, like emergencies, and transmits large data in smaller payloads to support more devices without major network upgrades.

#### Data Integration and Interoperability

**Neurpac** enables seamless data flow and interoperability across devices and multiple locations, it is agnostic to data formats and protocols. Neurpac is deployed without the need to change the applications it enhances. Neurpac automatically captures and compacts data streams to make inter and intra application communications 4 times more efficient.

#### Cost-Effective Transmission

For multi-site deployments, Neurpac reduces both initial investment and ongoing maintenance costs. By cutting bandwidth usage by up to 75%, it significantly lowers network infrastructure requirements and associated expenses, particularly for high-frequency or large volume data streams.

#### Real-Time Data Processing and Analytics

**Neurpac** enhances throughput from edge devices, reducing latency and enabling real-time processing of critical data, such as traffic conditions, air quality, cyber security intrusion, or emergency alerts. With 75% of bandwidth freed up, the platform facilitates advanced analytics, allowing for immediate, data-driven actions.



## Technical Information

### Edge Gateway Compute Requirements

- Neurpac leaf nodes: 17MB Disk and 15MB