



Product Data Sheet

FEMTO CORE

AXYOMCORE.AI

Empowering Connectivity for the Modern Enterprise

Axyom.Core Femto Core is an advanced, dual-mode small cell solution crafted for enterprise connectivity and macro cell traffic management. Built with a cloud-native, flexible architecture, Femto Core ensures seamless indoor coverage, enhanced performance, and efficient macro cell offloading. This solution meets the dynamic connectivity needs of service providers and enterprises, enabling high-quality, low-latency communication for both general enterprise operations and mission-critical business applications.

The Challenge

Enterprises and service providers must address the growing demand for robust, high-performance indoor coverage that can handle significant data traffic, especially in densely populated environments. Key challenges include ensuring reliable network performance, facilitating seamless handovers, and optimizing overall capacity. Efficient offloading of macro network traffic is also essential to prevent congestion and guarantee high-quality service. Achieving these objectives while maintaining cost-efficiency and preparing for future network requirements is no small feat.

The Axyom.Core Solution

Axyom.Core Femto Core meets these challenges with its cloud-native, dual-mode design, supporting both enterprise and macro network operations. The solution's architecture facilitates smooth integration with existing network infrastructure, enhancing in-building coverage and effectively offloading macro network traffic. Advanced automation simplifies service deployment and network management, while intelligent network slicing provides tailored solutions for diverse enterprise needs. Robust security features protect user data, and the scalable design accommodates future growth, supporting technologies such as edge computing and private networks.

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Comprehensive Femto Core Solutions

Axyom.Core Femto Core includes a range of products designed to provide comprehensive connectivity solutions:

HeNB-GW (Home eNodeB Gateway)

Functionality:

Integrates small cell networks into carrier infrastructure, ensuring efficient data transfer and optimized network communication.

Rich Feature Set:

- Allows 5G Femtos to connect to the HeNB-GW with EN-DC support
- Logical eNodeB Support (shows all connected HeNBs as aggregated eNBs to the EPC)
- Vendor agnostic – can work with small cells from different vendors
- Handover Support
 - S1 handover (handout, handin, and HeNB to HeNB handover)
 - HeNB to HeNB X2 handover
 - X2 handover between two different HeNB-GWs
- Neutral Host Entity (NHE)
- S1-U relay support
- S1-flex support (MME Pool)
- Location Based and Zonal Presence API Support
- Virtual Gateway support
- IPv6 support for SCTP and GTP-U endpoints
- Adherence to 3GPP standards (Rel 9,10, 11, 13 & 15) for better interoperability

Rich Interface Support:

- S1-MME, S1-U, S1-Flex, SNMP

Enhanced Flexibility & Performance:

- VM based solution that can run on OpenStack, KVM and VMWare
- Mirroring support for enhanced debugging
- Redundancy support

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SeGW (Security Gateway)

Functionality:

Provides strong security protocols, protecting data transmission between the networks, with encrypted communication and secure access.

Rich Feature Set:

- Access SeGW function - secure backhaul of RAN traffic between the base station and core network
- Site-to-Site tunneling (S2S SeGW) function – Protect traffic between two networks
- AAA Support for EAP authentication(Both Radius & Diameter)
- Certificate Support
 - X.509 (v3) certificate support
 - ECDSA certificate (P-256, P-384, and P-521) support
 - CMPv2 support
 - Online Certificate Status Protocol (OCSP) support
- Rich support for encryption algorithms
 - Null
 - DES-CBC
 - 3DES-CBC (RFC 2451)
 - AES-128-CBC, AES-192-CBC, AES-256-CBC (RFC 3602)
- Rich support for hash algorithms
 - Null
 - HMAC-MD5-96
 - HMAC-SHA1-96 (RFC 2404)
 - HMAC-AES-XCBC-96
 - HMAC-SHA256-96
 - HMAC-SHA384-96
 - HMAC-SHA512-96
- SA Re-keying support
- Dynamic Addressing (RFC 7296) support
- IPv6 Support
- Support for fragmentation Before ESP & Inner IP Fragmentation
- G-ARP Support & Periodic G-ARP for Active Interfaces
- Adherence to standards for better interoperability

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Rich Interface Support:

- IPSec, Diameter, Radius, SNMP

Enhanced Flexibility & Performance:

- VM based solution that can run on OpenStack, KVM and VMWare
- Mirroring support for enhanced debugging
- Redundancy support

AeMS (Axyom Element Management System)

Functionality:

Network management system for managing small cells efficiently and conveniently.

Rich Feature Set:

- Rich web-based GUI that supports full FCAPS for managing small cells
- Support for multiple northbound interfaces to integrate with customer's OSS/BSS platforms
- Zero touch PnP provided the femto cells are pre provisioned
- Extensive configuration support customizable to business needs via GUI using profiles, pre provisioning via operator defined files
- Performance/KPI collection from small cells and retrieval via sFTP
- Support for exporting Configuration and Inventory data
- Extensive Alarms and Events supports for real time monitoring
- Alarm Management via GUI and Heat Map
- IPv6 Support
- Logging support including Security, User audit and Operational
- Bulk operations support for software upgrade, basic operations and configuration
- Adherence to standards for better interoperability

Rich Interface Support:

- SouthBound: TR069
- NorthBound : RESTful, sFTP, SNMP

Enhanced Flexibility & Performance:

- VM based solution with support for OpenStack
- Unified Operations Dashboard & Role Based Access Control (RBAC)
- Redundancy Support

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VMC (Virtual Management Controller)

Functionality: A centralized platform for network orchestration and management, enabling automated monitoring, diagnostics, and service management of Axyom.Core's virtual network functions (VNF) on OpenStack.

Rich Feature Set:

- Graphical User interface
- Onboard VNF Package and Package Artifacts
- Instantiate/Terminate VNF
- Configure VNF - bootstrap process (instantiation of the VNF)
- Supports VNFs Monitoring for operational and health related KPIs

Enhanced Flexibility & Performance:

- VM based solution with support for OpenStack
- Role Based Access control
- Redundancy support

Key Benefits

Optimized In-Building Connectivity: Delivers reliable, high-speed coverage, enhancing data-intensive applications within enterprise environments.

Macro Network Offloading: Reduces congestion and operational costs, ensuring consistent performance during peak usage times.

Rapid Deployment: Zero-touch Plug & Play provides seamless integration with existing infrastructure allowing for quick service rollout.

Enhanced User Experience: Supports seamless handovers and continuous connectivity, vital for mobile users and business-critical applications.

Scalable and Future-Ready: Designed for growth, supporting enterprise and operator demands and new technologies as they evolve.

Neutral Host Environments: Delivers superior mobile experience regardless of which operator the users are subscribed to.

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Use Cases

Axyom.Core Femto Core supports a variety of critical use cases that enhance connectivity and network efficiency. It provides reliable coverage for enterprises, enabling applications such as VoIP, video conferencing, and high-speed internet access.

The solution enhances smart office functionality by supporting IoT devices and smart technologies, creating more connected and efficient work environments. For mission-critical business applications, Axyom.Core Femto Core delivers low- latency communication for real-time data transfer, ensuring uninterrupted connectivity. Additionally, it helps service providers offload data traffic during peak periods, reducing congestion and improving overall network efficiency.

Why Axyom.Core Femto Core?

Axyom.Core Femto Core is the ideal solution for enterprises and service providers aiming to strengthen in-building and high-density network connectivity. With a cloud-native design, the solution offers unparalleled flexibility, performance, and scalability.

Advanced automation, intelligent traffic management, and a future-proof architecture ensure service providers can confidently deliver superior connectivity now and in the future. Trust Axyom.Core to support your journey toward a connected, efficient, and future-ready network.

Learn More

Discover how Axyom.Core Femto Core can elevate your network's performance and support your connectivity needs. Visit www.axyomcore.ai for more information and resources to support your path to advanced, reliable network solutions.

Ready to Unlock the Full Potential of Your Network?

Discover how Axyom.Core Femto Core transforms enterprise and macro network connectivity with exceptional scalability, seamless integration, and superior performance.

Transform Tomorrow with Us.
Start the Conversation.



Let's Build the Future Together. Get in Touch!

Visit our website: www.axyomcore.ai

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