

SOLUTION BRIEF

How Ekinops helps Service Providers to deliver next-generation, sustainable and trusted managed services for branch office

The Digital Network Transformation

The on-going digital network transformation is causing service providers to evolve from traditional service providers to integrated digital service providers, with digital at the heart of everything they do and every service they sell.

Across industries around the world, digital transformation is also transforming the way enterprises do business, leveraging new digital competencies to transform every step of the value chain. To remain competitive, IT must embrace digital transformation and the requisite infrastructure needed to achieve it. Enterprises use a large number of on-demand services based on cloud technologies, so access to the network becomes a critical element of business productivity and business continuity — both of which require highly reliable access and a high level of security.

Increasingly, that infrastructure decision also carries a third requirement: sustainability. As carbon reporting obligations extend to network equipment, service providers need branch office solutions that are reliable, secure and measurably energy-efficient.

Why Ekinops

► Designed, Engineered and Manufactured in Europe

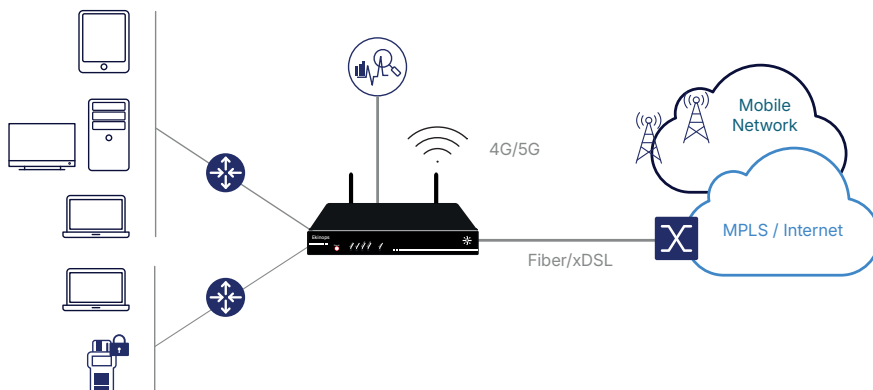
Every Ekinops branch office router is designed, engineered and manufactured in Europe, entirely by Ekinops. Nothing is outsourced to a third party for the parts that matter: the hardware is our own, the OneOS6 software stack running on it is our own, and the production line building it is our own.



For service providers, that translates directly into trust: full visibility into how the product is built, faster and more predictable support when something needs to change, and the confidence that comes from working with a manufacturer who controls, and stands behind, every layer of what they sell.

► Reliable & Always On Services

The Ekinops branded range of branch office routers incorporates several combinations of network access. From link backup to link bonding, application traffic won't be interrupted by a link failure — this resilience makes revenue loss impossible.



Fiber optic, DSL and/or 4G/5G can be combined on routers dedicated to small and medium-sized businesses. This diversity of WAN interfaces is the key to achieving a very high level of availability, whether interfaces are used as back-up links or leveraged as multiple underlays operated using our SD-WAN solution.

► High Performance in a Compact Form Factor

The Ekinops branded branch office routers come in a small and compact form factor. They are power-efficient with an excellent performance/consumption ratio, and all fan-less for a longer lifetime — the Ekinops branch office routers deliver 1 Gbps of bandwidth with intense business services for less than 20 Watts of power consumption.

Low power consumption is more than an engineering detail: it is a tangible business argument service providers can put in front of their enterprise customers. Life-cycle analysis shows that the electrical consumption phase of a device typically accounts for the largest share of its total environmental impact over its lifetime — making the power efficiency built into every Ekinops router a direct lever on the total carbon footprint an operator can report.

► Sustainability by Design

Carbon footprint has become a major criterion in how service providers are evaluated by their enterprise customers. It is not unusual for environmental impact to account for 15 to 25% of the final score in a tender — meaning a weak response on this criterion alone can lose the deal. Telecom operators carry the responsibility of setting their own reduction targets, and naturally look to their equipment vendors to help them meet those commitments.

Ekinops supports operators with a full Life Cycle Analysis (LCA), based on the ISO 14040/14044 “cradle-to-grave” standard, covering seventeen environmental indicators — including the climate change (carbon footprint) indicator — for every stage of a product’s life: bill of materials, factory, packaging, transport, usage and end-of-life. On request, Ekinops provides these indicators for any Ekinops product code, giving operators the data they need to strengthen their own tender responses and sustainability reporting.

Eco-design is built into the Ekinops product strategy from the ground up:

- Smaller footprint by design — a monolithic, single-box structure (rather than a modular chassis) uses fewer resources and materials per unit.
- Power-efficient ARM architecture — over the last decade, ARM-based multicore designs have cut the watts-per-100 Mbps ratio of Ekinops routers by a factor of four.
- Active power-saving features — Energy Efficient Ethernet (green Ethernet), automatic CPU core sleep during off-peak hours, and full Wi-Fi module shutdown outside business hours together can reduce a router’s average carbon footprint by up to 10%.
- Smarter packaging and logistics — pallet and packaging dimensions have been optimized to raise the number of units shipped per pallet, and re-used EuroPalet pallets now account for 40% of Ekinops shipments, cutting waste by close to 18 tons a year.

These measures are already reflected in the numbers: the ONE531 has an ex-works carbon footprint of just 43 kg CO₂ eq — 45% lower than the previous generation ONE420 — while the flagship ONE621 delivers roughly four times the performance for only 12% more ex-works footprint (55 kg CO₂ eq). Operators can leverage these figures directly in their own sustainability ratings and customer commitments.



► Security & Prioritization of Business Apps

Embedded IPsec services make sure business traffic is safely guarded against eavesdropping, on all links, end to end. The advanced technologies used in the Ekinops branded branch office routers are compatible with third-party concentrators, and an open standards-based approach means no vendor lock-in.

The range of branch office routers delivers Quality of Experience (QoE) for critical business applications thanks to application-based Quality of Service mechanisms that prioritize vital applications — especially cloud ones — for SaaS service providers. All Ekinops branch office routers include QoS, visibility and control mechanisms that ensure cost-effective deployment.

► Engineered to Scale: Sessions, Flows and Real World Performance

Headline throughput numbers only tell part of the story. In real enterprise deployments, the parameter that most determines whether a branch office router will keep performing under load is the size of its session and flow tables — the tables the router's data path uses to cache routing decisions for each active flow. As users run more cloud applications, video conferencing and collaboration tools in parallel, the number of concurrent sessions a router must sustain keeps growing, and residential-grade equipment — typically designed for only a few thousand sessions — starts to drop packets or lose sessions under that load.

Ekinops designs and validates every Ekinops router against this real-world requirement rather than a lab-only headline number. The branch office portfolio is explicitly sized and tested for business-grade concurrency:

Segment	Typical Sessions	Typical Flows
Branch office (Ekinops ONE500/600 series)	up to 100,000	up to 200,000
Midsize / large office (Ekinops ONE2500 series)	100,000 – 500,000	up to 1,000,000

Ekinops sizes and validates each product line against sustained concurrent session load — not just a peak throughput figure.

This matters because throughput and session capacity are not independent: as the number of active sessions grows, the router can no longer keep every flow's state in the CPU's fast cache and has to fall back to slower memory, which is exactly where lower-end equipment loses performance first. Ekinops validates each product across this full range — from a handful of sessions up to full sizing — rather than only at the small session counts used in typical marketing benchmarks.

► Value for Service Providers

The Ekinops branch office routers portfolio enables service providers to tailor their offer and match the right product to the size of the enterprise for Capex optimization.



Service providers can offer true managed business services thanks to the feature-rich OneOS6 software, which provides everything an enterprise needs — simple Internet service, differentiated Quality of Service, Firewall, IP VPN and SD-WAN — all within the same router. Enabling built-in services on-demand gives service providers the opportunity to create value-added services and increase revenue per user.

The Ekinops branded branch office routers include support for the NETCONF protocol. It is based on YANG and supports the REST API, removing barriers to introducing next-generation OSS.

The Ekinops Portfolio

The Ekinops branded branch office routers make up a comprehensive range of products ready to help deliver the digital network transformation — combining reliability, security and a measurably lower environmental footprint at every tier.



ONE531

For branch office business services

- Tailored for 350 Mbps business service, and up to 1 Gbps best effort
- DSL, Fiber and 4G/5G in one box
- Embedded full-fledge Wi-Fi ac access point



ONE541

For FTTH branch office business services

- Tailored for 1Gbps business service
- Fiber and 4G/5G in one box
- Embedded full-fledge Wi-Fi 7 access point



ONE621X

When true 1 Gbps business service is expected

- Very high-performance quad-core ARM CPU with best-in-class power consumption
- Powerful Wi-Fi 6 2x2, Fiber and 4G/5G in one box
- Ready for edge computing / containerized applications



ONE641

When true multi Gbps business service is expected

- Very high-performance quad-core ARM CPU with best-in-class power consumption
- Powerful Wi-Fi 6 2x2, Fiber and 4G/5G in one box
- Ready for edge computing / containerized applications

► Related Documentation

- [ONE531 datasheet](#)
- [ONE541 datasheet](#)
- [ONE621 datasheet](#)
- [ONE641 datasheet](#)

About Ekinops

Ekinops is a European leader in optical networking and secured connectivity solutions for service providers, enterprises and public organizations around the world.

Ekinops designs, develops and manufactures high-performance solutions with cutting-edge software used to deliver high-bandwidth connectivity and managed services in over 70 countries worldwide.

Ekinops leads in the areas of:

- Advanced coherent optical networking for all metropolitan, regional, long-distance and datacenter interconnection applications
- Secured connectivity solutions for enterprises, from voice and data routing devices to Secure Access Service Edge (SASE) capabilities, including ZTNA (Zero-Trust Network Access), SD-WAN, and SSE.

Ekinops operates globally and is listed on Euronext Paris (FR0011466069 - EKI).