



Eclipse Packet Node

Transforming networks to all-IP

Mobile Network Evolution

Harris Stratex introduces the new Eclipse Packet Node™ solution, the “any-G” transport solution

The explosive demand for next-generation mobile user experiences is forcing operators to quickly deliver data-intensive, packet-based services, while still trying to maintain their existing TDM or mixed-mode operations.

The Eclipse Packet Node can simplify the most difficult network migration hurdles as operators introduce new broadband services using HSPA, WiMAX or eventually LTE onto their existing access or backhaul network.



“Any-G” Transport

Native all-IP, Native Mixed-Mode TDM and IP, and all-TDM traffic all side-by-side across the same transport link

Each transport is processed and protected independently, allowing operators to enable a network migration and optimization strategy that can account for both their current and future transport needs.

- Simplified and seamless migration strategy for “any-G” transport
 - Native all-IP supporting new, multi-media delivery to mobile subscribers
 - Hybrid Native Mixed-Mode TDM + IP, supporting legacy voice and data-based services already in place
 - Native all-TDM supporting carrier-class legacy voice services
- Highest capacity nodal and link capacities on the market
 - Unique combination of co-channel operation with XPIC, 256 QAM Adaptive Modulation and Coding, and Link Aggregation to transport more data than ever before.
 - Bandwidth recovery using Adaptive Optimization™ to maximize 5-9's packet data transport
- Advanced redundant and reliable packet networking, providing end-to-end QoS, enhanced MEF Certified Carrier Ethernet features and OAM support

Packet Node Simplifies IP Network Evolution

Two new, state-of-the art plug-in modules for the Intelligent Node Unit (INU) are at the heart of the Packet Node migration solution.

The next generation DAC GE combines with the most advanced Radio Access Card yet developed, the RAC 6x, to implement a new high capacity Packet Plane™ to support pure native IP, in parallel with native TDM for full Native Mixed-Mode operation over the same RF channel.

Using this incremental plug-in approach, network operators can move towards all-IP at their own pace and, most importantly, without the risk, downtime or expense associated with a complete indoor unit replacement or forced migration to another platform. Packet Node is a fully scalable solution that can meet any future backhaul capacity demand, whenever and wherever in the network they may arise.

Packet Node Delivers Ultra-High Capacity

Packet Node has the horsepower to meet your future backhaul or nodal capacity demands. Gigabit Ethernet interfaces can now operate at full Gigabit speeds, and nodal capacities can be scaled up to 2 Gbit/s. With cross-channel interference cancellation (XPIC), link capacities can be easily doubled without additional bandwidth costs.

When adding additional capacity for 4G broadband services, operators value the flexibility the Packet Node solution offers. Capacity increases can be added incrementally with new plug-ins, or with advanced packet processing, such as header compression, or a mixture of both. The capacity increases can be tailored to specific applications or RF channels.

Eclipse Packet Node

The new Packet Node solution delivers high-speed native IP microwave transport for 4G mobile network migration

Packet Node combines simple architecture innovations and advanced processing algorithms to deliver an unparalleled leap in capacity that can be seamlessly deployed with minimal cost and disruption to service continuity.



Introducing Packet Plane

Ultra-high-capacity native IP transport

Packet Node is powered by the new Packet Plane that enables a single nodal indoor unit to support more than 2 Gbit/s of aggregated IP traffic over multiple radio paths.

The Packet Plane routes IP traffic directly between the intelligent Gigabit Ethernet (Layer 2) switch and the radio modem, avoiding any emulation or encapsulation for true Native IP transport. Native IP transport can deliver maximum payload efficiency and lowest possible latency.

- Smooth migration: Native IP transport is added seamlessly without forced migration
- Supports enhanced MEF-Certified Carrier Ethernet features:
 - Improved QoS, Advanced OAM support
 - Network Synchronous Timing - Synchronous Ethernet and IEEE 1588v2 options



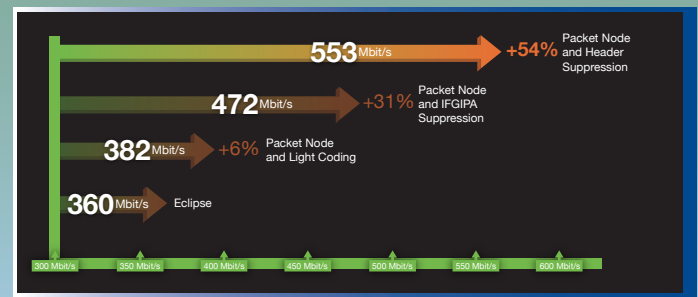
Ultra-High Nodal and Link Capacity

Leap ahead to avoid the 4G backhaul capacity crunch

Network backhaul must keep ahead of the demand of the mobile access network download speeds. HSPA+ is tested at 16 Mbit/s today, with LTE download speeds expected to peak at 70 Mbit/s. The move to IP will provide the lowest cost per Mbit/s transport solution.

Packet Node delivers huge jumps in throughput using the new high-capacity Packet Plane along with Adaptive Coding and Modulation (ACM), advanced payload processing and XPIC.

With the addition of these new features, the Packet Node deploys advanced processing algorithms to deliver the highest link throughputs of any platform in the market.

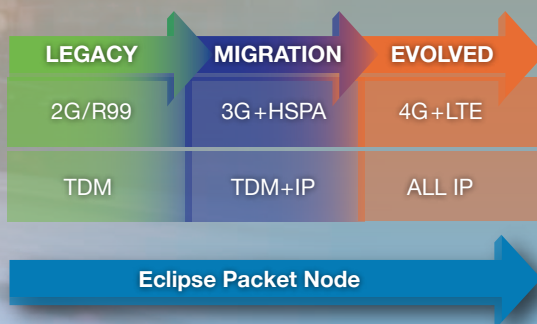


Hybrid Mixed-Mode Supports Network Migration

Lower cost and risk with Mixed-Mode IP-TDM Transport

Packet Node enables an evolved approach to deploying or migrating to all-IP infrastructure. Operators can build upon existing investments in TDM backhaul deployed for legacy 2G and 3G—much of the investment is reused and disruption is minimal. Both IP and TDM traffic are transported side-by-side over each radio path. IP and TDM traffic are processed and protected independently, within the same nodal unit.

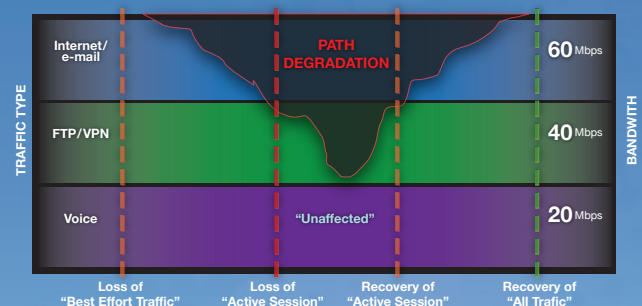
- Link and node capacities up to 100E1s, with support for self-healing Super-PDH™ rings
- Migration to all-IP and 4G/LTE using simple upgrades promotes service continuity



Network Efficiency with Adaptive Optimization

Unlock extra capacity for new IP services

Adaptive Optimization™ is an innovative algorithm that applies Adaptive Modulation to recover underused bandwidth to expand link capacity within the same channel bandwidth. Then, by further optimizing legacy voice traffic using intelligent pseudowire, the newly available bandwidth can be applied for new IP transport—free capacity with no increase in channel bandwidth or license cost!



Eclipse Packet Node Technical Highlights

Packet Node provides a point of convergence to IP, enabling network migration and optimization strategy for operators, regardless of the mixed state of their access network.

Eclipse Packet Node advanced features are upgrades, available when you need it, and independent of one another.

- Packet Plane enables 5x increase in nodal capacity to 2 Gbit/s, and up to 5 Gbit/s at Gigabit Ethernet Interfaces
- Dual polarization with XPIC can double capacity or path protection
- Link aggregation can boost Layer 1 throughput to 150 Mbit/s (7 MHz channel) and 1 Gbit/s (56 MHz channel), using XPIC
- Packet Header processing improves packet throughput at least 50%



Eclipse Packet Node is certified Carrier-Ethernet compliant to MEF 9 and MEF 14. Certification provides an assurance of interoperability, now and into the future.



Advanced network features simplify operational complexities

- Built-in Layer 2 Intelligent switching supports advanced QoS and MEF Certified Carrier Ethernet features
- Simplified large network timing and synchronization with all-packet Synchronous Ethernet and IEEE 1588v2 support
- IEEE 802.3ag/ah enabled on board to provide end-to-end OAM
- ProVision™ and Eclipse Portal for remote and local management

Flexible modular architecture fortifies link and network reliability

- Support for 1+0, 1+1, 2+0, 2+2, 4+0 and 4+4 MHSB and Space & Frequency Diversity
- Up to 2 Gbit/s of native IP traffic over six radio paths can be configured from a single compact unit
- RWPR™ (Resilient Wireless Packet Ring) supports Ethernet ring and mesh network protection, and can be configured over existing TDM radio links
- Super PDH™ is exclusive to the Eclipse, supports protected PDH ring configurations for Nx E1, with traffic switching at the node level

Packet Node Drives Network Convergence



Packet Node drives the convergence of legacy voice and new data-based services by supporting the hybrid transport of both TDM and IP traffic side-by-side over the same radio path.

Some IP-only wireless solutions will support legacy TDM traffic using pseudowires, which are not always efficient in the access portion of the network.

Using Packet Node, operators have a platform that can integrate Gigabit Ethernet with TDM to support all-TDM and mixed-mode TDM + IP transport in parallel. This hybrid solution enables network operators to migrate seamlessly from today's TDM backhaul networks to tomorrow's all-IP infrastructure.

Harris Stratex Networks

Leadership in experience and innovation

With over forty-five years of delivering network solutions around the world, Harris Stratex Networks is renowned for its planning, design and deployment expertise. Our expert engineers bring unparalleled field experience to tackle the toughest and most complex design and deployment challenges.

We specialize in 4G network solutions. We can design intelligent edge solutions coupled with our All-IP RAN. We can enable advanced service delivery, subscriber and service management functions.

Harris Stratex Networks introduced some of telecommunication's most compelling innovations for broadband wireless backhaul, including optimized nodal networking with Super-PDH capacities and RWPR (Resilient Wireless Packet Ring) protection support of high-speed Ethernet rings.

To support the mobile network migration to all-IP, Harris Stratex Networks has developed significant enhancements to wireless Ethernet transport. This includes Adaptive Modulation and Coding, Layer 1 and 2 link aggregation, packet compression and suppression, and a multi-Gigabit switching plane.

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