Product Overview
The ENS-3060 is a remotely managed, multi-port Ethernet node switch that delivers advanced voice, video, and data business services over fiber-based Ethernet networks. Utilizing the appropriate system design and Motorola optical passives and SFPs, cable operators can now add business services customer traffic onto fibers that currently service their residential traffic, providing them with a way to transition seamlessly to MEF-certified Ethernet services. As a result, cable operators can use the ENS-3060 to pursue new revenue opportunities, such as adding Ethernet services onto their current HFC network or by expanding new Ethernet services into Greenfield projects.

Designed to integrate into existing Layer 2 Networks, the ENS-3060 allows cable operators to leverage their Motorola SG4000 optical nodes’ mounting and power assets. The ENS-3060 includes two SFP+ ports operating at up to 10 Gbps speeds, four SFP ports, and two RJ-45 ports operating at up to 1 Gbps speeds. The ENS-3060 supports multiple management options, including standards-based SNMP management, which enables cable operators to assign the device an IP address and manage it as an independent network element.

Features:
- 10 Gbps, fully non-blocking architecture
- Link aggregation up to 20 Gbps
- Node-based module conserves optical fibers and wavelength between the headend and node locations
- Reduces aggregation switch and/or router ports in headend/hub
- Provides a MEF UNI to the customer site directly, eliminating the need for a demarcation unit
- Two combination SFP+ or SFP ports, four SFP ports, and two RJ-45 ports for flexible deployment options
- Deploy up to 22 customer-facing SFP ports per SG4 with full 10 Gbps redundancy
- Managed aggregation for advanced Ethernet business services (voice, video, and data)
- Hot swappable with SG4 units, ensuring service continuity
- Small footprint retains real estate within the SG4 for additional HFC segmentation or advanced modules
- Standards-based proxy management for scalable customer deployments
- Jumbo frame support up to 10056 bytes
- Carrier class resiliency for sub 50 ms protection switching using ITU-T G.8031/G.8032
- Optional redundant uplinks for protected Services and Link Aggregation
- Rich set of standards-based Link and Service OAM features (IEEE 802.1ag CFM, ITU-T.Y.1731, IEEE 802.3ah)
- Clock/Time synchronization using either Synchronous Ethernet or IEEE 1588v2
- Standards-based compliance for multi-vendor interoperability
DATA SHEET  MOTOROLA ENS-3060

Specifications

INTERFACES
2 x 1/10 Gbps SFP/SFP+ Ports
4 x 100/1000 Mbps SFP Ports
Pluggable optics, including CWDM and BiDirectional
2 x 10/100/1000 Mbps RJ-45 ports
1 Console port

ETHERNET FEATURES
Non-blocking switching performance for all supported frame sizes
Port Mirroring
32k MAC addresses
Jumbo frames up to 10056 bytes
IEEE 802.1Q, IEEE 802.1P – Priority Queuing
IEEE 802.1ad – Q-in-Q or Double tagging
Transparent LAN Service (TLS): Q-in-Q-based
4094 system-wide VLAN space
Port-based VLANs
IEEE 802.3u; 802.3z Ethernet
IEEE 802.1ab Link Layer Discovery Protocol (LLDP)*

MULTICAST FEATURES*
IGMP v2 and v3 supported*
Multicast Listener Discovery (MLD v1 and v2)*

CARRIER ETHERNET SERVICES
MEF 9 Ethernet Private Line (EPL)
MEF 9 Ethernet Private LAN (E-LAN)*
MEF 9 Ethernet Virtual Private Line (EVPL)
MEF 14 Traffic Management

OAM FEATURES
Link OAM
IEEE 802.3ah (clause 57)
Remote loopback, Dying gasp
Service OAM
IEEE 802.1ag – Connection Fault Management (CFM)*
ITU-T Y.1731 Performance monitoring*

SECURITY FEATURES
Secure management protocols
HTTPS, SSHv2
Port/MAC based access control (IEEE 802.1X)

TRAFFIC MANAGEMENT FEATURES
Four system-wide traffic classes with strict or weighted fair queuing scheduling
Ingress port
Egress shaper per port
Source and/or destination MAC address
IEEE 802.1ad priority code points (PCP)
IPv4 TOS/DSCP field

PROTECTION FEATURES
ITU-T G.8031/G.8032 — Linear/Ring Protection Switching*
Sub 50 ms service restoration*
IEEE 802.1d/802.1s/802.1w — STP/RSTP/MSTP
IEEE 802.3ad — Link Aggregation Control Protocol

SYNCHRONIZATION FEATURES
IEEE 1588v2 Precision Time Protocol
ITU – G.8261/G.8262 — Synchronous Ethernet*

MANAGEMENT FEATURES
Multiple management access protocols and tools
SNMPv1/v2c/v3
Telnet, SSHv2, TFTP, HTTPS
Remote Authentication via RADIUS/TACACS+
DHCP (client)
Syslog
Supports dual firmware bank
Embedded command line interface (CLI)
Direct IP-based management mode
RFC 2674 VLAN MIB
RFC 1213 MIB II
RFC 4188 MAC Bridge
RFC 3635 Ethernet Like
RFC 2863 Interfaces
RFC 3636 802.3 Interfaces PHY
RFC 4133 Entity MIB
IEEE 802.3ad Link Aggregation MIB

PHYSICAL SPECIFICATIONS
Dimensions: Occupies 2 SG4/MPN Optical Slots
Installation: Installs in SG4 or MPN Optical Node
Power: Up to 24 W with all ports loaded
Operating temp.: −40°C to +60°C (−40°F to +140°F)

*Hardware ready. Features supported in future software release.
Specifications are subject to change without notice or obligation.