For over 15 years, Westell has been in the business of Ethernet switches and routers, and for over 30 years, Westell has been designing and building hardened transport delivery equipment. Westell has now combined these areas of expertise to develop the new eSmartAccess™ family of products.

The second platform in the eSmartES™ family is the ES8100 series of Managed Ethernet EdgeSwitches. These managed switches are designed especially for “edge” applications, deploying the latest in reliability and security for harsh environments, on the perimeter of the network where Smart Grid and industrial devices are connected.

The eSmartES’s Westell Edge Operating System (WEOS) features include SiteVu™, Secure Web Management GUI and CLI interfaces, SNMPv3 management, 802.1p QoS Prioritization, Tagbased VLANs, IGMPv3 Snooping and IGMPL2 multicast management, port security, Link OAM (EFM, 802.3ah), and network redundancy options, including STP, RSTP, and MSTP for fault recovery.

From six to eight 10/100Mb ports can be ordered in the ES8100 series. In the 8 port configuration, ports 7 and 8 are 10/100/1000Mb ports. Ports 7 and 8 can also be configured as optical FE-100FX or GigE ports populated with either a pair of STs, SCs, or LCs interfaces.

The ES8100 eSmartES switches are ideal for building a switched, hardened, Ethernet network infrastructure, connecting edge devices such as SCADA telemetry radios, Programmable Logic Controllers, and cameras with upstream switches or routers. Designed for use in industrial and heavy-duty outdoor applications such as power utility substations, video surveillance systems, and traffic control monitoring, the hardened ES8100 handles stressful workloads.

The ES8100 platform’s industrial design features include an extended operating temperature range of -40 to +85°C (-40 to +185°F), redundant DC power of either 24Vdc or -48Vdc power supply inputs for high availability applications requiring dual power inputs, and provides a high level of immunity to electromagnetic interference and heavy electrical surges. The ES8100 is packaged in a rugged, galvanized steel enclosure that allows either backboard, DIN-rail, or wall mounting for efficient use of cabinet space. It can also be rack mounted in the optional 1RU rack mount bracket.

**Product Highlights**

- Featuring SiteVu™ Secure for unprecedented situational awareness of system voltage, temperature, and status of external devices like doors, water detectors, rectifiers, and smoke detectors
- Westell Edge Operating System (WEOS)
- Dual/redundant DC of either 24Vdc or -48Vdc power supply inputs for high availability applications requiring dual or backup power
- Wide DC input voltage range of 20 to 56Vdc
- Extended operating temperature range of -40 to +85°C (-40 to +185°F)
eSmartES™ ES8100 Series Industrial Managed Ethernet Switch with SiteVu™
Westell Edge Operating System (WEOS) Highlights

System Information Screen

- GUI/CLI Interfaces
- SiteVu™ Secure
- E-OAM Diagnostics
- Multi-Level Security
- VLANs
- IGMPv3 Snooping
- Supports Fault-tolerant STP, RSTP, MSTP and Link Aggregation
eSmartES™ ES8100 Series Industrial Managed Ethernet Switch with SiteVu™

Product Specifications

**Westell Edge Operating System (WEOS) Features**
- RSTP (802.1w) and Enhanced Rapid Spanning Tree network fault recovery (<5ms)
- MSTP (802.1Q) Multiple Spanning Tree network fault recovery
- VLAN (802.1Q) with double tagging and GVRP support
- Port Rate Limiting and Broadcast Storm Limiting
- SNMPv3 Snooping for multicast filtering
- Link Aggregation (802.3ad)
- IPv6 traffic switching
- LLDP (802.1AB) Link Layer Discovery Protocol
- Link OAM (EFM, 802.3ah) Ethernet in the First Mile
- Quality of Service (802.1p) for real-time traffic
- Passes all RFC-2544 performance metrics as outlined in MEF-14
- Simple plug-and-play operation - automatic learning, negotiation, and cross-over detection

**Cyber Security Features**
- Multi-level user passwords
- SSH/SSL encryption (RAS 768-bit encryption)
- Enable/disable ports
- Port-based Network, Access & Control (802.1x)
- MAC-based port security with Access Control List
- VLAN (802.1Q) to segregate and secure network traffic
- RADIUS centralized password management
- SNMPv3 encrypted authentication and access security

**SiteVu™ Features**
- Internal temperature
- External temperature probe input (requires SiteVu-enabled mounting)
- Input voltage level monitor
- A/B voltage source status monitor
- 2 external telemetry inputs; for doors, rectifier fail alarms, and other external sources (requires SiteVu-enabled mounting)

**Power Supply Features**
- Voltage range: 20-56 Vdc
- Dual (A/B) low voltage DC inputs
- 380mA max @ 24 Vdc
- Power consumption: 9.36W max
- Isolated power supply

**Management Tools**
- Web-based, Telnet, CLI management interfaces
- SNMP v1/v2/v3 (56-bit encryption)
- Remote Monitoring (RMON)
- Rich set of diagnostics with logging and alarms
- VLAN (802.1Q) to segregate and secure network traffic
- Port-based Network, Access & Control
- Enable/disable ports
- SSH/SSL encryption (RAS 768-bit encryption)
- Multi-level user passwords

**Operation Environment & Physical Specifications**
- Complies with the following:
  - ANSI/UL 60950-1 2nd Edition
  - CAN/CSA C22.2-No. 60950-1-07 2nd Edition
  - FCC Part 15
  - Designed to comply with the following:
  - NEMA TS-2 (traffic control equipment)
  - Designed to comply with the following
  - IGMPv3 Snooping for multicast filtering
  - VLAN (802.1Q) with double tagging and security
  - MSTP (802.1Q) Multiple Spanning Tree
  - RSTP (802.1w) and Enhanced Rapid Spanning Tree
  - Frame buffer memory: 1 Mbit
  - Simultaneous VLANs: 4096
  - VLAN ID Range: 1 to 4094
  - IGMP multicast groups: 256
  - Port rate limiting: From 64Kbps to 900Mbps
  - No head of line blocking

**Switch Properties**
- Switching method: Store & Forward
- Switching latency: 8 us (100Mbps)
- Switching bandwidth: 1.8Gbps
- MAC addresses available: 8k
- Priority Queues: 4
- Frame buffer memory: 1 Mbit
- Simultaneous VLANs: 4096
- VLAN ID Range: 1 to 4094
- IGMP multicast groups: 256
- Port rate limiting: From 64Kbps to 900Mbps
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**Ordering Information**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A90-ES8106</td>
<td>Hardened, 6-Port Managed Switch</td>
</tr>
<tr>
<td>A90-ES8108-LCM</td>
<td>Hardened, 8 Port Managed Switch with 2 LC fiber MM 1310nm, 2km ports</td>
</tr>
<tr>
<td>A90-ES8108-SCM</td>
<td>Hardened, 8 Port Managed Switch with 2 SC fiber MM 1310nm, 2km ports</td>
</tr>
<tr>
<td>A90-ES8108-LC3</td>
<td>Hardened, 8-Port Managed Switch with 2 LC optical FE-100FX SM 1310nm, 30km ports</td>
</tr>
<tr>
<td>A90-ES8108-SC3</td>
<td>Hardened, 8-Port Managed Switch with 2 SC optical FE-100FX SM 1310nm, 30km ports</td>
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<tr>
<td>A90-ES8108G</td>
<td>Hardened, 8 (6+2G) Port Managed Switch with 2 GigE ports</td>
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<tr>
<td>A90-ES8108G-LCM</td>
<td>Hardened, 8 (6+2G) Port Managed Switch with 2 LC fiber GigE MM 850nm, 550m ports</td>
</tr>
<tr>
<td>A90-ES8108G-LC2</td>
<td>Hardened, 8 (6+2G) Port Managed Switch with 2 LC optical GigE SM 1310nm, 20km ports</td>
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<tr>
<td>A90-ES8108G-SC2</td>
<td>Hardened, 8 (6+2G) Port Managed Switch with 2 SC optical GigE SM 1310nm, 20km ports</td>
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<td>A90-ESANC01</td>
<td>19/23” mounting shelf for eSmartES</td>
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<td>A90-ESANC02</td>
<td>Temperature probe for SiteVu Secure</td>
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<tr>
<td>080-000223</td>
<td>24Vdc 20W power supply, DIN mount, medium duty</td>
</tr>
</tbody>
</table>

**Web-based, Telnet, CLI management interfaces**
- SNMP v1/v2/v3 (56-bit encryption)
- Remote Monitoring (RMON)
- Rich set of diagnostics with logging and alarms

**Switching bandwidth:** 1.8Gbps

**Switching latency:** 8 us (100Mbps)

**MAC addresses available:** 8k

**Priority Queues:** 4

**Frame buffer memory:** 1 Mbit

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**VLAN ID Range:** 1 to 4094

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**Port rate limiting:** From 64Kbps to 900Mbps

**No head of line blocking**