

## The Most Advanced Tactical Switch

HSL's TSW4800 series switch is by far the most advanced tactical TEMPEST fiber switch in the market today. Unlike switches that designed as commercial products (COTS) this switch designed as a military product.

This 48 ports switch provides any combination of fiber or copper SFP modules with advanced per-port management features.

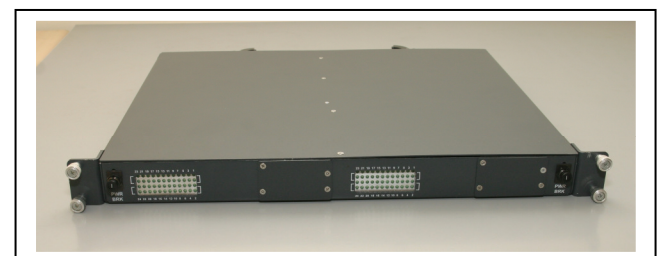
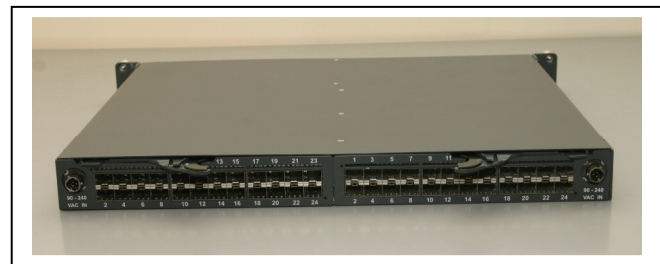
The TSW4800 is a managed Layer-3 Giga stacked switch with two similar field-replaceable hot-swap modules and dual power supplies. Modules are "Red-Black" separated.

## Product Highlights

- 🔍 **Highest Performance** • Designed as a backbone switch for large combat ships and submarines. 2 x 24 Giga non-blocking ports with 4 x 5 Giga fiber stacking.
- 🔍 **Modular Design** • Two independent modular bays with redundant power supplies for Red-Black separation. Different modules available (copper and fiber).
- 🔍 **Dynamic Stacking Topology** • Designed for rapid disaster recovery in seaborne and airborne applications.
- 🔍 **Highest Security** • Designed as a TEMPEST switch for very high security applications. Wide set of features and options including anti-tampering with logging, port encryption, fiber intrusion detection and secured management protocols.
- 🔍 **Smallest form-factor** • Only 1U rack-mountable.
- 🔍 **Robust** • Heavy duty stainless-steel enclosure.
- 🔍 **Very low power** • Only 30W per module. No air cooling needed.
- 🔍 **Wide support for SFP modules** • Many fiber-optic, serial and copper modules supported.
- 🔍 **Highest security by design** • Designed by an agency for Common-Criteria EAL-6 requirements.
- 🔍 **TEMPEST** • NATO AMSG 720B. TEMPEST Power filters.
- 🔍 **Airborne derivative** • Available for large early warning aircraft applications. RTCA-DO-160E certified. 28VDC or 115VAC power option.

## Disaster Recovery by Design

The TSW4800 series switch designed to operate on board battle-ships and submarines in a highly dynamic topology. In case of combat damage multiple switches can change stacking topology and port mapping without reset or learning delays. Essential VoIP and sensors communications can



TSW480 Specification	
<b>General</b>	<ul style="list-style-type: none"> <li>▪ Type – Layer 3 Managed Stackable Ethernet LAN switch</li> <li>▪ Modular – 2 x 24 Giga ports modules. Modules are fully isolated (Red-Black)</li> <li>▪ Different modules can be mixed in one chassis</li> <li>▪ Non-blocking wire-speed switching performance for all packet sizes</li> </ul>
<b>Applications</b>	<ul style="list-style-type: none"> <li>▪ Submarines</li> <li>▪ Ships</li> <li>▪ Aircraft</li> <li>▪ Mobile C4I, Tactical land networks</li> <li>▪ Building infrastructure</li> </ul>
<b>Stacking</b>	<ul style="list-style-type: none"> <li>▪ 2 x 5 Gbps Stacking ports per module</li> <li>▪ Fibre Optic (SFP) interface</li> <li>▪ Up to 32 stacked switches</li> <li>▪ Ring topology stacking supported</li> <li>▪ Fast response to disaster and new topologies (no reset)</li> </ul>
<b>Supported standards and protocols</b>	<ul style="list-style-type: none"> <li>▪ IEEE 802.1w Rapid Spanning tree – RSTP</li> <li>▪ IEEE 802.1p LAN Layer 2 QoS/CoS Protocol for Traffic Prioritization</li> <li>▪ IEEE 802.1Q Virtual LANs (VLAN)</li> <li>▪ IEEE 802.3ad Link aggregation</li> <li>▪ IEEE 802.3at Power over Ethernet +</li> <li>▪ IEEE 802.1 ab Link Layer Discovery Protocol</li> <li>▪ IEEE 802.1x Port and MAC Access Control</li> <li>▪ Protocols - ACL, ARP, IGMP, IP, IPv6, RADIUS, TCP, UDP, TFTP</li> </ul>
<b>Performance</b>	<ul style="list-style-type: none"> <li>▪ Switch Fabric Capacity - 34Gbps</li> <li>▪ MAC Address Entries – 8196, VLANs - 4095</li> <li>▪ Link Aggregations - 13 local + 2 across stack</li> </ul>
<b>Remote Management Protocols</b>	<ul style="list-style-type: none"> <li>▪ SNMP</li> <li>▪ HTTP</li> <li>▪ Telnet</li> <li>▪ RMON</li> <li>▪ DHCP</li> </ul>
<b>Type of supported SFP modules</b>	<ul style="list-style-type: none"> <li>▪ Widest variety of commercial and military fiber-optic modules</li> <li>▪ Copper Giga modules</li> <li>▪ Ask customer support for updated compatibility list</li> </ul>
<b>Regulatory Compliance</b>	<ul style="list-style-type: none"> <li>▪ Safety: UL/cUL60950, EN60 950</li> <li>▪ EMI/EMC: FCC Class B, CE Mark, EN55022B, VCCI</li> </ul>
<b>Security Accreditations</b>	<ul style="list-style-type: none"> <li>▪ Common Criteria EAL-6 evaluated</li> <li>▪ TEMPEST NATO AMSG 720B passed</li> </ul>
<b>Warranty</b>	2 years. Extension and Premium programs available.
<b>Physical Characteristics</b>	<ul style="list-style-type: none"> <li>▪ Dimensions: 482(W )x406(D)x44(H) mm / 19.0 (W )x16.0 (D)x1.75(H) inch</li> <li>▪ Device weight: 7.5 Kg. (16.5 lbs.)</li> <li>▪ Shipping Weight: 10.0 Kg. (22.0 lbs.)</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>▪ MIL-STD-810</li> <li>▪ Temperature range: Operating – 0°C to 40°C (32°F to 104°F); Storage - -20°C to 60°C (-4°F to 140°F)</li> <li>▪ Humidity: Operating - 20 to 80% non condensing; Storage – 10 to 90% non condensing</li> <li>▪ Altitude: 0 to 20,000 ft</li> <li>▪ EMI – MIL-STD-461E</li> </ul>
<b>Enclosure</b>	<ul style="list-style-type: none"> <li>▪ 1U Rack mountable form-factor, stainless steel anti-tampering enclosure</li> <li>▪ Aluminium enclosure for airborne applications available</li> <li>▪ Forced cooling air not needed</li> </ul>
<b>Power</b>	<ul style="list-style-type: none"> <li>▪ 90 – 240 VAC DC to 400 Hz, 1A maximum (other options available)</li> <li>▪ Typical power consumption – 30W per module</li> </ul>

- Specifications are subjected to change without prior notice
- Multiple patents pending