

# 19"/2<sup>®</sup> ESW4101



## NGVA Switch in a 19"/2<sup>®</sup> form factor

The 19"/2<sup>®</sup> ESW4100 Series switch gives you reliable, high performance switching on TWELVE GigE and FOUR 10GigE Multimode Fibre Ethernet ports in a compact rugged form factor that is optimized for low Size, Weight and Power (SWaP) to meet military requirements without sacrificing reliability, ruggedness or performance.

### Small form factor

The MilDef 19"/2 form factor is optimized for reduced size, weight, and power (SWaP) to meet industry and military requirements without sacrificing reliability, ruggedness or performance.

### Flexible mounting

The 19"/2 standard enables flexible mounting options for a wide array of integration scenarios. The unit can be mounted in a standard 19" rack, half racks, or directly on to a surface and at any angle.

### Customizable

Are you looking for additional features and functions? MilDef specializes in customized solutions, to include change of connectors, chassis modifications, mounting solutions, etc. Contact your nearest MilDef Sales Office

and we will help you tailor a solution to meet your exact requirements.

### Military-relevant rugged design

MilDef products are designed to operate in extreme environmental conditions and challenging electromagnetic operational scenarios. Operationally proven, MilDef products are actively employed in military operations in over 60 countries.

### Features

- 10GBASE-SR, MM 850nm
- Based on the Microchip SparX-5i
- Management through Serial and Web
- IGMP and MLD support
- RSTP and MSTP support
- Layer 3 capabilities
- 12-36 VDC
- Passively cooled

## Connector Interfaces

<b>SERVICE</b> (back)	• 1x RS232 Service
<b>X1 DC IN</b> (front)	• 1x Power
<b>X2</b> (front)	• 1x Console RS232
<b>X3-X5</b> (front)	3 connectors which each has: <ul style="list-style-type: none"> <li>• 2x ETH 1000BASE-T</li> </ul>
<b>X6-X7</b> (back)	2 connectors which each has: <ul style="list-style-type: none"> <li>• 2x ETH 10GBASE-SR</li> </ul>
<b>X8-X10</b> (back)	3 connectors which each has: <ul style="list-style-type: none"> <li>• 2x ETH 1000BASE-T</li> </ul>

## Other Interfaces

10x LAN indicator (back)
6x LAN indicator (front)
1x System button (front)

## Technical Specification

<b>Blanking</b>	Enable/disable all externally visible indicators from emitting light via the "blinking command"
<b>Blanking</b>	Double-pressing the System button
<b>Fiber characteristics</b>	MM 850 nm 50/125
<b>Forwarding rate</b>	Nonblocking wire-speed switching performance for all frame size
<b>High availability</b>	VRRP
<b>LAN 1000BASE-T</b>	1000BASE-T standard
<b>LAN 10GBASE-SR</b>	10GBASE-SR, MM 850nm
<b>Layer 2 switching</b>	IEEE 802.1 + 802.3 standard, LLDP, Link Aggregation, Trunking, Mirroring, MSTP, RSTP
<b>Management</b>	ICLI, Web UI, MIB, SNMP, Syslog, DHCP server
<b>Multicast</b>	IGMP snooping, IGMP filtering, IGMP querier, MLD snooping
<b>Power over Ethernet</b>	PoE, PoE+
<b>Quality of service</b>	Policing, shaping and autoQoS
<b>Reference design</b>	Based on the Microchip SparX-5i
<b>Routing</b>	IPv4/IPv6 Layer 3 static and dynamic routing (IPv4 only is supported)
<b>Security</b>	802.1x, DHCP snooping, dynamic ARP inspection, IP source guard, SSH, RADIUS, BPDU guard, MACSec*, ARP Snooping
<b>Timing and synchronization</b>	NTP
<b>Virtualization (Network Advantage only)</b>	VRF-lite

<b>MIL-STD-1275E</b>	Fully compliant
<b>Polarity protection</b>	Protected against polarization failure on the power input in the voltage range of normal operation
<b>Power consumption</b>	35 W
<b>Power input</b>	12-36 VDC
<b>Chassis material</b>	Aluminum
<b>Coating and color</b>	Dupont AE0305-6603120 (RAL6031)
<b>Cooling</b>	Passively cooled
<b>Dimensions depth</b>	300 mm (11.8 in)
<b>Dimensions width and height</b>	220 x 43.4 mm (8.66 x 1.71 in) (WxH)
<b>Earth point</b>	M6 12 mm
<b>Rack mounting depth</b>	400 mm (15.8 in)
<b>Surface treatment chassis</b>	Chromit-Al
<b>Weight</b>	4 kg (8.9 lbs)
<b>MTBF</b>	Greater than 25,000 h
<b>CE</b>	Compliant

## Environmental Specification

<b>Functional shock - Operating</b>	MIL-STD-810H, Method 516.8, Procedure I - Functional Shock. Table 516.8-IV, Terminal peak sawtooth pulse, Ground Material 40 g 11 ms
<b>High temperature - Operating</b>	MIL-STD-810H, Method 501.7, Procedure II - Operation 55 °C (131 °F)
<b>High temperature - Storage</b>	MIL-STD-810H, Method 501.7, Procedure I - Storage 71 °C (160 °F)
<b>Humidity</b>	MIL-STD-810H, Method 507.6, Procedure II - Aggravated 95 ± 4% RH Ten 24-hour cycles
<b>IP Class (Solid Particle Protection)</b>	IP Class 6X
<b>IP Class (Water)</b>	IP Class X5
<b>Low air pressure - Rapid decompression</b>	MIL-STD-810H, Method 500.6, Procedure III - Rapid Decompression 2,438 m (8,000 ft) 12,192 m (40,000 ft)
<b>Low air pressure - Operating</b>	MIL-STD-810H, Method 500.6, Procedure II - Operation/Air Carriage 4,572 m (15,000 ft)
<b>Low temperature - Operating</b>	MIL-STD-810H, Method 502.7, Procedure II - Operation -40 °C (-40 °F)

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<b>Low temperature - Storage</b>	MIL-STD-810H, Method 502.7, Procedure I - Storage -40 °C (-40 °F)
<b>Noise level</b>	Maximum noise level of 40 dB SPL A-weighting at 1 m (3.3 ft) distance
<b>Salt fog</b>	MIL-STD-810H, Method 509.7 5 ± 1% (by weight) Two cycles, 24 h wet + 24h dry / cycle
<b>Temperature shock - Operating</b>	MIL-STD 810H, Method 503.7, Procedure I-C, - Multi-Cycle Shocks from Constant Extreme Temperature 55 °C (131 °F) -40 °C (-40 °F)
<b>Vibration - Helicopter</b>	MIL-STD-810H, Method 514.8, Procedure I - General vibration, Category 14 - Rotary wing aircraft - helicopter
<b>Vibration - Loose Cargo</b>	MIL-STD-810H, Method 514.8, Procedure II - Loose cargo transportation, Category 5 - Truck/trailer - loose cargo
<b>Vibration - Tracked Vehicles</b>	MIL-STD-810H, Method 514.8, Procedure I - General Vibration, Category 20 - Ground vehicles - ground mobile, Tracked vehicles
<b>Vibration - Wheeled Vehicle</b>	MIL-STD-810H, Method 514.8, Procedure I - General Vibration, Category 20 - Ground vehicles - ground mobile, Wheeled vehicles

## EMS radiated RS103

MIL-STD-461F  
Army  
2 MHz - 1 GHz

## EMC Specification

<b>EMI conducted CE102</b>	MIL-STD-461F, Method CE102 BASIC CURVE 10 kHz to 10 MHz
<b>EMI radiated RE102</b>	MIL-STD-461F Navy Mobile & Army 2 MHz - 18 GHz
<b>EMS conducted CS101</b>	MIL-STD-461F, Method CS101, conducted susceptibility, power leads. CURVE #1 30 Hz to 150 kHz
<b>EMS conducted CS114</b>	MIL-STD-461F Army, Ground 10 kHz - 200 MHz
<b>EMS conducted CS115</b>	MIL-STD-461F Conducted susceptibility, bulk cable injection, impulse excitation
<b>EMS conducted CS116</b>	MIL-STD-461F 10 kHz - 100 MHz