

# 19"/2<sup>®</sup> RM2139



## Switch and Router in one

RM2139 combines the Cisco ESS3300 Switch and the ESR6300 Router in a single unit. The result is an extremely capable network product, offering high performance levels and a wide range of routing and switching capabilities, all fitted inside a 1U Half Rack unit.

### 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 to a surface and in any angle.

### 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.

### 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.

### Guaranteed performance

MilDef products are designed for the long lifecycles of military programs and come with a lifetime support program to ensure your equipment maintains peak performance for many missions to come.

We also guarantee the availability of spare parts for an additional 5 years after product end-of-life.

### Features

- Based on Cisco ESR6300 & ESS3300
- Cisco IOS XE
- Comprehensive Layer 2/3 switching
- IPv4 and IPv6 unicast and multicast routing
- Unified Communications Manager Express support
- Firewall support

Connector Interfaces	
DC IN (front)	• 1x Power
CONSOLE R (front)	• 1x RS232 Console
CONSOLE S (front)	• 1x RS232 Console
G1/3-G1/10 ETH S (front)	8 connectors which each has: <ul style="list-style-type: none"> <li>• 1x ETH 10/100/1000BASE-T with PoE</li> </ul>
TE1/1-TE1/2 ETH S (back)	2 connectors which each has: <ul style="list-style-type: none"> <li>• 1x ETH 10/100/1000BASE-T</li> </ul>
GEO/0/0-GEO/0/1 WAN R (back)	2 connectors which each has: <ul style="list-style-type: none"> <li>• 1x ETH WAN 10/100/1000BASE-T</li> </ul>
GEO/1/0-GEO/1/3 ETH R (back)	4 connectors which each has: <ul style="list-style-type: none"> <li>• 1x ETH 10/100/1000BASE-T</li> </ul>
SERVICE (back)	• 1x RS232 Service

Other Interfaces	
1x System button (front)	

Technical Specification	
Cisco IOS XE software	ESR6300 Network Essentials or Network Advantage It is available with different throughput licenses: Default (50 Mbps) Performance (250 Mbps) Boost (2 Gbps) Optional licenses for CME, Cisco DNA Center and HSEC is also available. ESS3300 Network Essentials or Network Advantage
Firewall	Zone-based policy firewall Stateful inspection Advanced application inspection and control HTTPS/FTP/Telnet Authentication Proxy Dynamic and static port security Firewall stateful failover VRF-aware firewall
IPv4/IPv6 services features	RIP v1 & v2, OSFP v2 & v3, BGP, EIGRP, IS-IS, IP SLA, NAT, GRE/MGRE, DHCP, DDNS, DNS proxy, DNS spoofing, DLEP, MPLS, Mobile IP, OSPF MANET, L2TP, etc
LAN 1000BASE-T	1000BASE-T standard

LAN POE compatibility	Type 1 (PoE) and 802.3at Type 2 (PoE+) Mode A on all switch Ethernet-ports 1-8 Total PoE power available depending on DC IN: < 14 VDC 90 W ≥ 14 VDC 105 W
Layer 2 switching	Layer 2 switching: IEEE 802.1, 802.3 standard, NTP, CDP, LLDP, unicast MAC filter, VTP, ACLs, EtherChannel, PVST+, MSTP, RSTP, etc
Management	Web UI MIB SmartPort SNMP Syslog DHCP server SPAN session Full Flexible Netflow (FnF) RADIUS HSRP
Multicast services	IGMPv1, v2, v3 snooping, IGMP filtering, IGMP querier. PIM sparse mode (PIM-SM), PIM dense mode (PIM-DM) and PIM Sparse dense mode
Quality of service	Ingress policing, rate limit, egress queuing/shaping, autoQoS, LLQ, WFQ, CBWFQ, CBTS, PBR, Class-Based QoS MIB, CoS, DSCP, CBWRED, RSVP, RTP, cRTP, DiffServ, QoS pre-classify and pre-fragmentation, HCoS, App-aware QoS polices, etc.

<b>Security</b>	SSL VPN NGE PKI support IPSEC IPSEC stateful failover VRF-aware IPSEC Easy VPN DMVPN Flex VPN SSHv2 MACsec Port security 802.1x DHCP snooping Dynamic ARP inspection IP source guard Guest VLAN MAC authentication bypass 802.1x multidomain authentication Storm control SCP SNMPv3 TACACS+ RADIUS server/client Integrated Threat Control (CoPP, etc)
<b>Unified Communications</b>	Unified Communications Manager Express support
<b>Virtualization</b>	VRF-lite
<b>MIL-STD-1275D</b>	5.3.2.2 5.3.2.3 5.3.2.4
<b>Polarity protection</b>	Protected against incorrect polarity connection on the power input within the normal operating voltage range
<b>Power consumption</b>	At 28 VDC: Without PoE: Max 31 W Without PoE: Typ 26 W Without PoE: Idle 24 W With PoE: Max 150 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</b>	220 x 43.4 x 374 mm (8.7 x 1.7 x 14.8 in) (WxHxD)
<b>Earth point</b>	M6 12 mm
<b>Surface treatment chassis</b>	Chromit-Al
<b>Weight</b>	3.8 kg (8.4 lbs)
<b>MTBF</b>	125,000 h

**Environmental Specification**

<b>Functional shock - Operating</b>	MIL-STD-810G, Method 516.6, Procedure I - Functional Shock. Table 516.6-II, Terminal peak sawtooth pulse, Ground equipment 40 g 11 ms
<b>High temperature - Operating</b>	MIL-STD-810G, Method 501.5, Procedure II - Operation 55 °C (131 °F)
<b>High temperature - Storage</b>	MIL-STD-810G, Method 501.5, Procedure I - Storage 71 °C (160 °F)
<b>Humidity</b>	MIL-STD-810G, Method 507.5, Procedure II - Aggravated 95 ± 4 % RH Ten 24 h 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-810G, Method 500.5, Procedure III - Rapid decompression 75.2 kPa, corresponding to 2,438 m (8,000 ft) 17 kPa, corresponding to 12,192 m (40,000 ft)
<b>Low air pressure - Operating</b>	MIL-STD-810G, method 500.5, Procedure II - Operation/Air Carriage 4,572 m (15,000 ft)
<b>Low temperature - Operating</b>	MIL-STD-810G, method 502.5, Procedure II - Operation -40 °C (-40 °F)
<b>Low temperature - Storage</b>	MIL-STD-810G, method 502.5, 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-810G Method: 509.5 5 % ± 1 % (by weight) Two cycles, 24 h wet + 24 h dry / cycle
<b>Temperature shock - Operating</b>	MIL-STD 810G, method 503.5 procedures I - C, - Multi-cycle shocks from constant extreme temperature 55 °C (131 °F) -40 °C (-40 °F)
<b>Transit drop, in shipping package</b>	MIL-STD-810G, method 516.6, Procedure IV - Transit Drop. Table 516.6-VI, Transit drop test, < 45.4 kg (100 lbs), < 91 cm (36 inch), Manpacked or man-portable



**Vibration - Helicopter** MIL-STD-810G, Method 514.6, Procedure I - General vibration, Category 14 - Rotary wing aircraft - helicopter

**Vibration - Loose cargo** MIL-STD-810G, Method 514.6, Procedure II - Loose cargo transportation, Category 5 - Truck/trailer - loose cargo

**Vibration - Tracked vehicles** MIL-STD-810G, Method: 514.6, Procedure 1 - General Vibration, Category 20 - Ground vehicles - ground mobile, tracked vehicles

**Vibration - Wheeled vehicles** MIL-STD-810G, Method: 514.6, Procedure 1 - General Vibration, Category 20 - Ground vehicles - ground mobile, wheeled vehicles

**EMC Specification**

**EMI conducted CE102** MIL-STD-461F, Method CE102, Conducted emissions, power leads BASIC CURVE 10 kHz - 10 MHz

**EMI radiated RE102** MIL-STD-461F, Method RE102, Radiated emissions, electric field Navy Mobile & Army 2 MHz - 18 GHz

**EMS conducted CS101** MIL-STD-461F, Method CS101, Conducted susceptibility, power leads CURVE #1 30 Hz - 150 kHz

**EMS conducted CS114** MIL-STD-461F, Method CS114, Conducted bulk susceptibility Army, Ground 10 kHz - 200 MHz

**EMS conducted CS115** MIL-STD-461F, Method CS115, Conducted susceptibility, bulk cable injection, impulse excitation

**EMS conducted CS116** MIL-STD-461F, Method CS116, Conducted susceptibility, damped sinusoidal transients, cables and power leads 10 kHz - 100 MHz

**EMS radiated RS103** MIL-STD-461F, Method RS103, Radiated susceptibility, electric field Army 2 MHz - 1 GHz