

**Product Overview:**

VCL-MX-5050-R-ES is an integrated IEC-61850 compliant ruggedized router with enhanced security equipment with advanced features that may be installed to secure critical infrastructure such as utilities, sub-stations, smart-grid distribution systems, airports and railways as well as IT Networks of financial institutions such as banks and corporate networks.

VCL-MX-5050-R-ES is password protected with capabilities that meet and exceed NERC as well as all mandatory requirements of password protection and control.

**IPSEC VPN**

**Upto 7.8 GBPS**

**ROUTER WITH E-SEC**

**11.4 GBPS**

**NGFW**

**11.4 GBPS**

**THREAT PROTECTION**

**10.8 GBPS**

**Interfaces:**

2 x 1G Optical Port
4 x 10/100/1000BaseT RJ-45
1 x RS-232 (RJ45)
1 x 10/100/1000BaseT RJ45 Secure Management (OAM) Port



**Additional features of GUI:**

- User controlled GUI
- Logs accessible anytime
- Live Threat and traffic monitoring tools
- View network Usage
- Change Credentials
- Smart quick search

**Captive Portal in VCL-MX-5050-R-ES**

Captive Portal allows the customer to force authentication, or redirection to a click through page for network access. This is commonly used in hotspot networks and corporate networks for an additional layer of security on wireless or internet access.

**Routing Features and Capabilities:**

- OSPF v2 and OSPF v3
- RIP
- BGPv4, BGPv6
- ARP, IP Forwarding
- Static routing, VLAN based routing, NATL1, CARP redundancy support tracking
- 802.1Q VLAN
- ACL Layer 2/3 Security
- Layer 2/3 Routing, Dynamic Discovery Routing
- TCP/IP, UDP, DHCP
- SNMPv2/v3
- Remote access authentication via RADIUS
- IEEE 1613
- IEC 61850-3, IEC 60068-2-27, IEC 60068-2-6 compliance
- QoS
- IP Forwarding
- Detailed system logging
- Multiple IP address supported.

**Highlights:**

- Ruggedized, IEC-61850-3 compliant firewall
- High-reliability hardware
- Suitable for 1+0 non-redundant and 1+1 redundant installation with automatic failover
- Designed to be installed in sub-stations, SCADA networks and industrial / harsh environments
- Firewall Security:
  - Inclusion Policy - Access Control based upon White List IP addresses, MAC address and IP Domain
  - Exclusion Policy - Access Control based on Black-List Continuous monitoring of the TLS connection to nullify MitM attacks.
- Brute Force attack mitigation
- Content filtering
- Non-volatile Access Log with capability to "fingerprint" all successful and failed log-in attempts and keep a log of the IP addresses of all successful and failed logins / login attempts.
- Resistance to Denial of Service (DoS) Attack
- Prevention of DDoS & DoS-added
- SSH (Secure Access Control) with encrypted password protection
- SYN cookie protection
- Zone based IP spoofing
- Malformed packet protection
- DNS guard features
- Software and Hardware Token Supported (TOTP)
- Secure Boot
- Antivirus, Anti-worm, Anti-spam and Anti-Spyware protection

VCL-MX-5050-R-ES offers a wide range of VPN technologies ranging from modern SSL VPN's to IPsec. Site-to-Site and road warrior setups are possible and with the integrated OpenVPN client exporter, the client can be configured within minutes.

**Security - Features and Capabilities:**

- Next Generation Firewall (NGFW)
  - Allows firewall rule creation for each port, independently.
  - May be installed in non-redundant 1+0 or redundant 1+1 in an automatic failover\* configuration. Support active-active mode.
  - Deep Packet Inspection (DPI)
  - Point-to-Point and Point-to-Multipoint applications
  - IPv4 & IPv6 support.
  - Unified NMS – Up to 1000 devices may be configured and managed through unified NMS.
  - HTTP based smart GUI for individual nodes
  - Per-frame/packet authentication
  - Support NAT, PAT & Policy based NAT/PAT, Mapped IP (MIP), Virtual IP (VIP), VoIP protocols
  - Authentication protocols: RADIUS, LDAP support
  - Supports IKE, IKEv2, PKI (X.509)
  - Maximum Concurrent Sessions: 8,300,000
  - New Connections per second: 150,000
  - 802.1Q VLANs : 4,094
  - Filtering of protocols like FTP, SMTP, HTTP, HTTPS, SNMP, UDP, ICMP, RPC, DNS, DHCP, ARP, TCP, POP3
  - Security:
    - Port based, MAC based, IP Address based
    - IP Domain based
    - Protocol type
    - URL based
  - Whitelist and blacklist options:
    - Allows traffic based on user configured rules
  - Two-factor Authentication with time-based OTP for secure access
  - Traffic Shaper
  - Forward Caching Proxy (transparent) with Blacklist support
  - Virtual Private Network (OpenVPN site to site and remote VPN client support)
  - Supports upto 500 IPSec Site to Site Tunnels
  - High availability and hardware ethernet failover\*
  - Built-in reporting and monitoring tools including real-time graphs
  - Network Flow Monitoring
  - DNS Server, DNS Forwarder, Dynamic DNS
  - DHCP Server and Relay
  - Stateful inspection firewall
  - Granular control over state table
  - MAC layer filtering
  - VXLAN supported
  - Infrastructure neutral
  - Transparent to network and applications
  - Easy installation and management
  - LDAP user authentication support
  - Export logs locally or on a server.
- \*Redundant device Failover switching with VCL-Ethernet Failover Switch.*

**Encryption Algorithms:**

- AES-128, AES-192, AES-256
- 128 bit AES-GCM with 128 bit ICV
- 192 bit AES-GCM with 192 bit ICV
- 256 bit AES-GCM with 256 bit ICV
- Camellia 128, 192, 256
- Blowfish 128, 192, 256
- 3 DES, CAST 128, DES

**Hash Algorithms:**

- MD5, AES-XCBC
- SHA 1, SHA 256, SHA 384, SHA 512

**Typical VCL-MX-5050-R-ES Deployments:**

- Utilities - Power, Oil and Gas Installations.
- Industrial Applications.
- Campus IP Networks, for all types of data, voice and video over IP applications
- MPLS meshed-networks
- Metro Ethernet and VPLS networks
- Cloud applications

**Physical Dimension:**

- 19 inch, 1U High Rack Mount
- D x W x H: 305mm x 483mm x 44mm
- Net Weight: 2.40 Kgs
- Gross Weight: 5.0 Kgs

**Technical Specifications:**

Integrated Storage Drive	Internal, soldered 16GB High Performance SATA Drive
Power Supply	Dual (1+1) Redundant Power Inputs * (Power Supply Options)
Indicators	2 x Power Supply LED indicator
Processor	Dual Core up to 1.8 GHz per core
RAM (DDR 3L)	4GB
Performance	Ruggedized Industrial
MTBF (hours)	101292
IP Level Protection	IP20
Power Consumption @ 48V DC	30 Watts
Power Consumption @ 80~240, 50/60Hz VAC	35 Watts

**Environmental:**

Operating Temperature	-4°F ~ 149°F (-20°C ~ 65°C)
Storage Temperature	-40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	10%~95% relative humidity, non-condensing
Storage Humidity	10%~95% @40°C; non-condensing

**EMI, EMC, Surge Withstand and other Compliances:**

EN 50081-2	EN 50082-2	IEC 60068-2-29
IEC 61000-4-6 (Conducted Immunity)	IEC 60068-2-6	IEC 60068-2-2
IEC 60068-2-78	IEC 60068-2-1	IEC 60068-2-14
CISPR 32 / EN55032 Class A (Conducted Emission and Radiated Emission)		
IS 9000 (Part II Sec. 1-4, Part III Sec. 1-5, Part IV, Part 14 Sec. 1-3)		
IEC 60870-2-1	IEC 61000-4-5	
IEC 61000-4-3 (Radiated Immunity)	IEC 61000-4-8	
IEC 61000-4-2	IEC 61000-4-11	IEC 61000-4-4

**CE Compliance:**

- Low Voltage Directive 2014/35/EU (48V DC Version)
- Electromagnetic Compatibility 2014/30/EU

**Other Regulatory Compliances:**

- RoHS,
- CE Marking
- Complies with FCC Part 68 and EMC FCC Part 15

**Ordering Information:**

Part#	Description
VCL-MX-5050-R-ES	VCL-MX-5050-R-ES, Router 19 Inch 1U High Rack Mount - Graphical User Interface (GUI) - Installation Kit: System Core Cables <b>Add *Power supply options</b>

**\* Power Supply Options:**

AC088~265R	2 x 88~265V AC Power Supply Inputs [1+1 Redundant Power Supply]
DC090~260R	2 x 90~260V DC Power Supply Inputs [1+1 Redundant Power Supply]

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Technical specifications are subject to changes without notice.

Revision – 1.4, December 21, 2023

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