VALIANT COMMUNICATIONS

VCL-MX-5010-R-ES

Router with Enhanced Security

Product Overview:

VCL-MX-5010-R-ES is an integrated IEC-61850 compliant industrial router with firewall equipment which has 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-5010-R-ES is password protected with capabilities that meet and exceed NERC as well as all mandatory requirements of password protection and control as provided in the GR-815-CORE-2 specifications.

Router with E-SEC
21.60 Gbit/s

Network Firewall
21.10 Gbit/s

IPSEC Throughput / port
120 Mbit/s

Routing Features and Capabilities:

- GUI and CLI based
- Static and Dynamic IP addressing for physical and logical interfaces
- IPv4 and IPv6 IP addressing format supported
- Support for multiple IP address
- ARP, IP forwarding
- Static routing, Default routing, VLAN based routing, CARP redundancy
- Routing Protocols: RIPv1, RIPv2, OSPFv2 and OSPFv3, BGPv4
- Layer 2, Layer 3 routing
- Link Aggregation, SPAN mirror port
- Supports frame size from 64 to 9216 bytes
- TCP/IP, UDP, DHCPv4, DHCPv6
- SNMPv2, SNMPv3
- ACL Layer 2, Layer 3 Security
- QoS, Traffic Shaper
- Supports 802.1Q VLAN
- System Authentication and remote access via RADIUS
- SSH (Secure Access Control) with encrypted password protection.

Additional features of GUI:

- Comprehensive Dashboard for centralized overview of diagnostics, monitoring, device health, system status, and key metrics
- Smart quick and efficient search functionality for streamlined user experience
- Detailed system information, Interface status and monitoring, and network overview
- Granular user management with role-based access control for secure system access
- Real-time surveillance for identifying and responding to live threat and network fluctuations.
- Comprehensive functionality for tracking and logging system, network and user activities and events.

Interfaces:

Configuration # 1:

8 x 1G Optical SFP
4 x 10/100/1000BaseT RJ-45
2 x 10/100BaseT RJ-45
1 x RS-232
1 x GE RJ45 Secure Management Port

Configuration # 2:

4 x 1G Optical SFP
8 x 10/100/1000BaseT RJ-45
2 x 10/100BaseT RJ-45
1 x RS-232
1 x GE RJ45 Secure Management Port

Configuration # 3:

12 x 10/100/1000BaseT RJ-45	2 x 10/100BaseT RJ-45
1 x GE RJ45 Secure Management Port	1 x RS-232

Highlights:

- High-reliability hardware
- Easy installation and management
- Suitable for installation in sub-stations, SCADA and industrial networks / harsh environments
- Supports for Fast Ethernet, Gigabit Ethernet, Optical Ports
- Detailed system logging, built-in reporting and monitoring tools including real-time graphs
- Export logs locally or on a Syslog server
- Network Flow Monitoring
- Suitable for 1+0 non-redundant and 1+1 redundant installation with automatic failover*. Support Active-Active mode.
- High availability functionality with Active-Active and Active- Passive features
- 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.
- Secure Boot
- Secure Web Gateway (SWG)
- Data Loss Prevention (DLP)
- Resistance to Denial of Service (DoS) Attack
- Prevention of DDoS & DoS-added
- Content filtering and Brute Force attack mitigation
- 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.
- Integrated threat control includes prevention of network attacks
- Intelligent protection of endpoints includes authentication, authorization and control
- Support out of band management through management port / console
- In service / remote software upgrade
- SYN cookie protection
- Zone based IP spoofing
- Malformed packet protection
- Software and Hardware Token Supported (TOTP)
- IEEE 1613
- IEC 61850-3, IEC 60068-2-27, IEC 60068-2-6 compliance

VCL-MX-5010-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.
*Redundant device Failover switching with VCL-Ethernet Failover Switch.

Captive Portal in VCL-MX-5010-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.

Firewall - Features and Capabilities:

- Next Generation Firewall (NGFW)
- Allows firewall rule creation for each port, independently
- High availability functionality with Active-Active and Active-Passive features
- Stateful inspection firewall
- Deep Packet Inspection (DPI)
- Point-to-Point and Point-to-Multipoint applications
- 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
- Intrusion Detection System (IDS) and Intrusion Prevention System (IPS)
- Support NAT, PAT, Policy based NAT/PAT, Mapped IP (MIP), Virtual IP(VIP),VoIP protocols
- Authentication protocols: RADIUS, LDAP
- Supports IKE, IKEv2, PKI (X.509)
- 802.1Q VLANs : 4,094
- Virtual Private Network (OpenVPN site to site and remote VPN client support)
- Supports up to 500 IPSec Site to Site Tunnels
- Filtering of protocols like FTP, SMTP, HTTP, HTTPS, SNMP, UDP, ICMP, RPC, DNS,DHCP,ARP, TCP,POP3
- Security and traffic filtering:
  - 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
- MAC layer filtering
- Two-factor Authentication with time-based OTP for secure access
- Forward Caching Proxy (transparent) with Blacklist support
- Antivirus, Anti-worm, Anti-spam and Anti-Spyware protection, Anti-APT(or Anti-BOT), Advanced Persistent Threat
- DNS Server, DNS Forwarder, Dynamic DNS, DNS guard features
- DHCP Server and Relay
- Granular control over state table
- VXLAN supported
- Transparent to network and applications
- LDAP user authentication support

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
- RSA, ECDSA
- 3 DES, CAST 128, DES

Hash Algorithms:

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

Typical VCL-MX-5010-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
- Metro Ethernet and VPLS networks
- Secure Web Gateway
- Cloud applications

Physical Dimension:

- 19 inch, 2U High Rack Mount
- D x W x H: 340mm x 484mm x 88mm
- Net Weight: 5.0 Kgs
- Gross Weight: 10.7 Kgs

Technical Specifications:

Integrated Storage Drive	Internal, soldered 16GB High Performance SATA Drive
Additional Storage	M.2 SATA - 120GB, 240GB, 500GB and 1TB SSD Options
Power Supply	Dual (1+1) Redundant Power Inputs * (Power Supply Options)
Indicators and Alarms	2 x Power Supply LED indicator
Processor	Quad Core up to 2.4 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	34 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-5010 -R-ES	VCL-MX-5010-R-ES, Router with Enhanced Security 19 Inch 2U High Rack Mount - Graphical User Interface (GUI) - Installation Kit: System Core Cables **Add *Power supply options**

*** Power Supply Options:**

AC088~265R	2 x 88~265V AC Power Supply Inputs [1+1 Redundant Power Supply]
DC018~060R	2 x 18~60V DC Power Supply Input [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.
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