Product Overview:

VCL-MX-5010-F is an integrated IEC-61850 compliant ruggedized firewall and router 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-5010-F 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.

FIREWALL
20.4 GBPS

IPSEC VPN
5.2 GBPS

NGFW
4 GBPS

THREAT PROTECTION
2.95 GBPS

Interfaces:

4 x 10/100/1000BaseT RJ-45
8 x 10/100/1000BaseT RJ-45 or 1G Optical (SFP) - Configurable
2 x 10/100BaseT RJ-45
2 x RS-232
2 x USB

Additional features of GUI:

- User controlled GUI
- Logs accessible anytime.
- Live Threat and traffic monitoring tools
- View network Usage
- Change Credentials
- Smart quick search
- QoS, SNMPv2/v3.

Captive Portal in VCL-MX-5010-F

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.
- 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
- Firewall:
    - 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*
- Intrusion Detection and Prevention
- 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 Firewall 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,

Firewall and Security:

- Ruggedized, IEC-61850-3 compliant firewall
- Fanless, 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
- Secure Boot
- 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
- Antivirus, Anti-worm, anti- spam and anti-spyware protection
- Anti-APT (or Anti BOT), Adv Persistent Threat

VCL-MX-5010-F 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.

Routing Features and Capabilities:

- OSPF v2 and V3
- RIP v1, RIP v2
- BGPv4, IS-IS
- 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
- 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.

Typical VCL-MX-5010-F 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, 1.5U High Rack Mount
- D x W x H: 260mm x 477mm x 67mm
- 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
	1 x System Alarm
	1 x Dry Contact Alarm Relay NO/NC
Processor	Quad Core up to 2.5 Ghz per core
RAM (DDR 3L)	8GB
Performance	Ruggedized Fanless System
MTBF (hours)	101292
IP Level Protection	Ip20
Power Consumption @ 48VDC	15 Watts
Power Consumption @ 80~240, 50/60Hz VAC	20 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
Telcordia GR-1089 Surge and Power Contact		

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
- Telcordia GR-1089 Surge and Power Contact

Ordering Information:

Part#	Description
VCL-MX-5010-F-C	VCL-MX-5010-F, Firewall & Router 19 Inch 1.5U High Rack Mount - Graphical User Interface (GUI) - Installation Kit: System Core Cables Add *Power supply options
VCL-MX-5010-F-I	VCL-MX-5010-F, Ruggedized, Industrial Firewall & Router 19 Inch 1.5U 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]
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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