iSEG RF-3180
Secure Gateway

HIGHLIGHTS
- Secure access and identity management
- IP and Serial DPI SCADA firewall (DNP3, ModBus, IEC-101/104, S7)
- IPsec VPN over cellular & fiber with X.509 certificates
- Up to 16 x 10/100 and 2 x 100/1000 SFP ports
- RS-232 ports with protocol gateway functionality
- Cellular 2G/3G/4G/LTE modem with two SIM cards for operator redundancy
- Fit for harsh industrial environments

SPECIFICALLY DESIGNED FOR REMOTE SITE ENVIRONMENTS

Radiflow’s iSEG RF-3180 ruggedized gateway was designed to meet the security and environmental challenges of critical infrastructures’ remote sites.

Once connected to the network, the iSEG RF-3180 immediately begins to gather information from across the network (devices, behaviors, etc.) and suggest editable firewall rules. The iSEG RF-3180 secures both M2M (Machine to Machine) and H2M (Human to Machine) traffic by incorporating DPI (Deep-Packet Inspection) capability for analyzing SCADA network traffic. Upon detecting an anomaly the 3180 will automatically generate alerts, block the abnormal activity and isolate any affected sub-networks.

To facilitate NERC CIP V6 compliance, the iSEG RF-3180 includes an APA (Authentication Proxy Access). It grants authenticated users access to predefined devices and functions, all fully logged. Integration with a physical identity server system also allows other authentication methods, e.g. magnetic card.

Radiflow’s whitelist-based, distributed DPI firewall ensures uninterrupted control over the network. Installed at every port for both Serial and Ethernet traffic, meaning that every access point at the remote site is firewalled. Each SCADA protocol packet is validated by the firewall engine not only for its source and destination, but also for its protocol and packet content. The distributed firewall structure enables the creation of a unique firewall at each access point on the network, which is especially important for securing insider attack.

ABOUT RADIFLOW

Radiflow’s team consists of professionals from diverse backgrounds, from cyber-experts from elite military units and automation experts from global cybersecurity vendors.

Founded in 2009, Radiflow’s solutions, are successfully deployed by major industrial enterprises and utilities protecting more than 3,000 critical facilities worldwide. More at www.radiflow.com.
**SPECIFICATIONS**

**SECURITY**
Distributed DPI Firewall
Profile-based firewall
Security rules planning per service group
Modes: Monitoring, Enforcement
IEC 101 DPI Firewall; IEC 104 DPI Firewall
Modbus RTU DPI Firewall, TCP Firewall
DNP3 RTU Firewall, TCP Firewall
S7 RTU Firewall, TCP Firewall

**VPN**
IPsec Certificates X.509
IPsec Dynamic Key Exchange
IPsec encryption AES, 3DES
L3 IPsec VPN: policy based, route based
L3 mGRE DM-VPN
L2 VPN GRE

**ACCESS CONTROL**
Port access filter per MAC/IP addresses
Enable/Disable port
IEEE 802.1x port-based authentication
Local APA (Authentication Proxy Access)
User activity report (under local APA)
Access Lists L2, L3, L4
NAT - traversal

**INTERFACES**
2 x 10/100/1000 SFP ports
8 x 10/100 Base-T ports POE+
8 x 10/100 Base-T Ports (optional)
8 x 100FX SFP Ports (optional)
4 x RS-232 Ports (optional)
Cellular Modem (optional)

**LOCAL OPERATION**
RS-232 Console Port
Local USB Port for Emergency Boot
Discrete outputs for reporting system alarms
Fail safe output relay for reporting critical alarms

**PHYSICAL DESIGN**
Mounting: DIN rail (optional wall mount)
Enclosure: Rugged - IP 30 rated, no fans
Weight: 1.4Kg (DC), 1.8Kg (AC)
Dimensions: (mm) 148h x 72w x 123d
Operating temperature: -40°C to 75°C
Storage temperature: -40°C to 85°C
Operating Humidity: 5%-90%
IEC 61850-3 - Electric Utility Substations
IEEE1613 EMI - Electric Utility Substations
EN50121-4 - Vibration and Shock resistance

**MANAGEMENT**
Console serial port
Remote CLI access using SSH tunnel
Backup/Restore running config
Conditioned/scheduled system reboot
Remote management and upgrade
TFTP/SFTP Client
Safe Mode
Syslog
SNMPv1/v2/v3
iSIM Network Management System

**INPUT POWER RANGES**
12 -12V DC (range: 9-18v DC)
24 - 24V DC (range: 18-32v DC)
48 - 48V DC (range: 36-60v DC)
HD – 125V DC (range : 85-165v DC)
110-230V AC (range: 90-250v AC)
WDC - Wide DC range (range: 18-60v DC)

**OUTPUT POWER CONSUMPTION**
15W without PoE
135W with PoE

**NETWORKING**
Advanced Layer 2 feature-set
ITU-T G.8032v2 Ethernet ring
IEEE 802.1s MSTP
IEEE 802.1w RSTP, enhanced RSTP
IEEE 802.3ad LAG with LACP
IEEE 802.1q VLAN segregation
IEEE 802.1p per-port queues
DHCP Client, Server and Relay
QOS Prioritization, Shaping, Scheduling
OAM EFM IEEE 802.3ah
OAM CFM ITU-T Y.1731/IEEE 802.1ag
Layer 3 feature-set
Static routing; OSPF, RIPv2 Routing
VRP redundant scheme
Serial
Transparent tunneling of serial streams
SCADA gateway for IEC101/104, ModBus
RTU/TCP and DNP3
Terminal Server Byte/Frame mode; TCP/UDP
Cellular Modem
Cellular 2G/3G/4G/LTE modem with 2 x SIM cards

**SYSTEM PERFORMANCE**
Line rate L2/L3 switching throughput
Switching latency < 10μSec
16K MAC addresses; 4K VLANs
Multicast
L2 Multicast
IGMP snooping for traffic optimization

**TYPICAL DEPLOYMENT**

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