

iSEG RF-3180 Secure Gateway



- ▶ 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

WHY RADIFLOW?

Radiflow is a recognized leader in industrial cybersecurity, offering dedicated solutions designed to meet the unique requirements of industrial infrastructures:

EXPERIENCE

Over 10 years' experience discovering and analyzing advanced persistent threats and targeted attacks, including attacks on critical and industrial infrastructure

UNIQUE METHODOLOGY

Radiflow offers a unique scan methodology to detect industrial attack vectors that can cause downtime.

EXPERTISE

Dedicated team of industrial cybersecurity experts who understand the colliding worlds of automation and security.

END-TO-END PORTFOLIO

Radiflow offers a holistic portfolio of services and technologies, including SCADA gateways, routers and firewalls, industrial network IDS and many more.

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 iSEG RF-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.

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 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
 Failsafe 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
 IEC 61000-4

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/v2C/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)

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
 VRRP redundancy 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

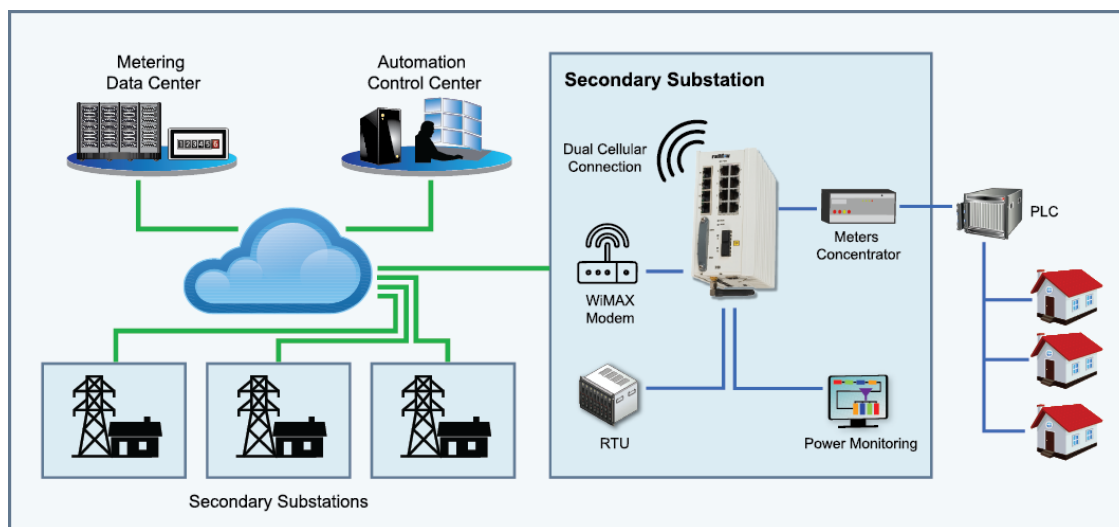
Cellular 2G/3G/4G/LTE modem with 2 x SIM cards

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 diagram

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