

# iSEG RF-3180 Secure Gateway

## 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 passive monitoring 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 secure gateways, Industrial IDS and many more.



- ▶ 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.

**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**

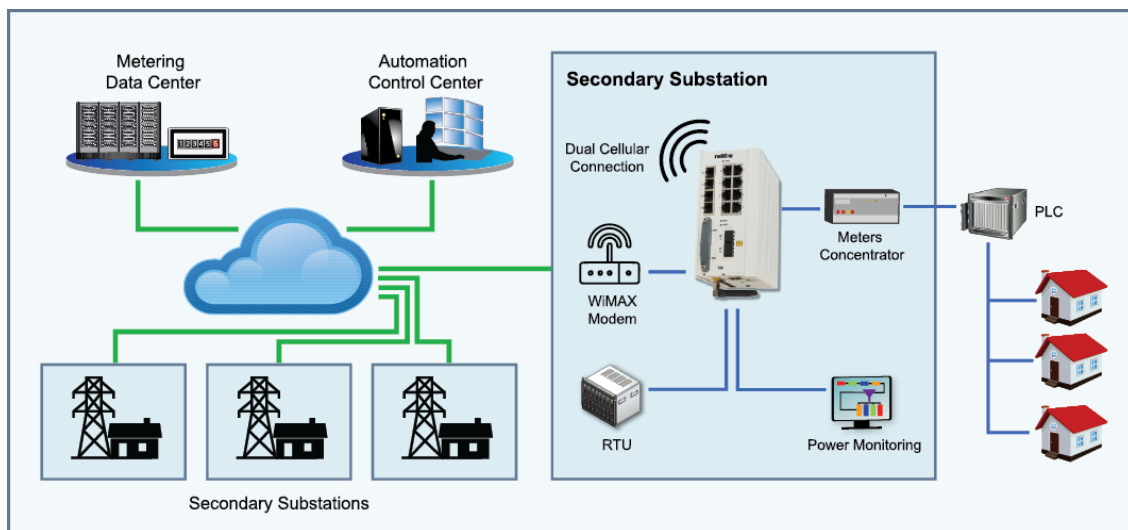
Cellular 2G/3G/4G/LTE modem with 2 x SIM cards

**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