



Product Portfolio

Detailed Description

Rev 1.2

Rack Mounted Switches

iES26GF IEC 61850

26 Port Combo Gigabit Fiber-IEC61850 Switch



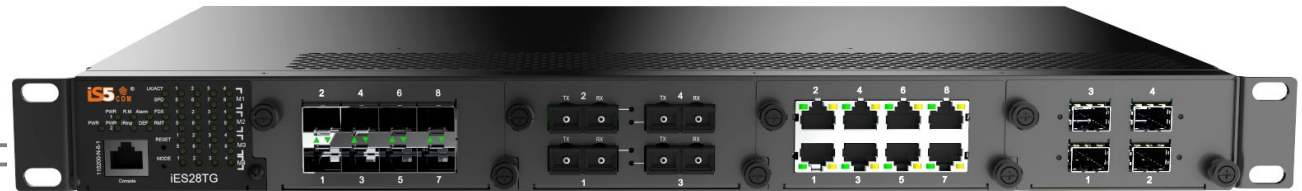
iES28GF IEC 61850

28 Port Gigabit-IEC61850 L2 Switch



iES28TG IEC 61850

28 Port Gigabit Modular L2 Switch w/ 10GB SFP



DIN Rail Ethernet Switches

uES4F iES6-S iES8-S iES8G iES10G-S **IEC 61850** iES10GF iES12G iES12GP **IEC 61850** iES20GF **IEC 61850** iES22GF



Unmanaged 4 Port 6 Port 8 Port FE 8 Port GB 10 Port 10 12 Gig Gigabit Combo **POE** Gigabit 4 SFP Ports Gigabit 12 SFP

Specialized Products

iSG4F iSG18GFP **POE**

Secure Gateway Appliance(s) Products iRBX6GF -S **IEC 61850** Module **Development**



Hardened PC & HSR/PRP Switch Zero m/s Recovery



DIN Rail Media Convertors

iSC2F



1 Port IEC 61850

iMC2S



2 Port

iMC2G



2 Port GB

iMC2F



2 Port Ethernet to Fiber

iMC4



4 Port

Serial Servers & PoE Products

iPI2G



1 Port PoE injector

iDS3-S



2 RJ45 + 1 Serial Port

iDS6



4 Port Serial

iDS6P-S



4 Port Serial + 2 RJ45 ports

POE

iDS24GF



24 Port

6 Port Switch



- The **iES6-S** has 6 available Ports
 - Up to **6** x 10/100Base-T(X) RJ45 Ports **or**
 - **2** x 100Base-X SFP Ports **or**
 - **2** x 100Base-FX Fiber Ports
- Multimode or Singlemode (SC or ST) 2km – 100km
- iRing – 20ms ring recovery up to 250 switches
- **LV** - Dual DC Inputs 10-48VDC **or**
- **MV** - Dual DC Inputs 36-75VDC with additional 10-48VDC backup **or**
- **HV** - Mixed power, single input 88-370VDC or 85-264VAC with additional 10 - 48VDC backup
- Operating temperature from -40⁰C to +85⁰C (Fanless)



iES8-S/ 8G

8 Port / Combo Gigabit Switch



iES8-S has 8 available Ports

- **6** x 10/100Base-T(X) RJ45 + **2** x 100Base-FX Fiber Ports **or**
- **8** x 10/100Base-T(X) RJ45 Ports
- Multimode or Singlemode (SC or ST) 2km – 100km

The **iES8G** / **iES8G-S** has 8 available ports

- **8** x 10/100/1000Base-T(X) RJ45 Ports (iES8G) **or**
- **4** x 10/100/1000Base-T(X) RJ45 Ports and 4 X 100/1000Base-X SFP (iES8G) **or**
- **4** x 10/100/1000Base-T(X) RJ45 Ports and **4** x Combo 10/100/1000Base-T(X) RJ45 and 100/1000Base-X SFP Ports (iES8G) **or**
- **6** x 10/100Base-T(X) RJ45 Ports and **2** x 1000Base-LX/SX Fiber Ports (iES8G-S)

Both products incorporate:

- iRing – 20ms ring recovery up to 250 switches
- **LV** - Dual DC Inputs 10-48VDC **or MV** - Dual DC Inputs 36-75VDC with additional 10-48VDC backup **or HV** - Mixed power, single input 110-370VDC or 90-264VAC with additional 10-48VDC backup

iES10G-S / 10GF

10 Port Gigabit / Gigabit-IEC61850 Switch



iES10G-S and **iES10GF** are available with up to 10 Ports

- **7** x 10/100Base-T(X) RJ45 + **1** x 10/100/1000Base-T(X) RJ45 +
- **1** x 100/1000Base-X SFP Ports and
- **2** x 10/100/1000Base-T(X) RJ45 Ports **or** **2** x 100/1000Base-X SFP Ports **or**
- **2** x Combo 10/100/1000Base-T(X) RJ45 and 100/1000Base-X SFP Ports

10G-S Slim Version

- iRing – 20ms ring recovery up to 250 switches
- **LV** - Dual DC Inputs 10-48VDC **or**
- **MV** - Dual DC Inputs 36-75VDC with additional 10-48VDC backup **or**
- **HV** - Mixed power, single input 110-370VDC or 90-264VAC with additional 10-48VDC backup

The **iES10GF** also supports **Redundant Power Supplies**

- **LV** - Dual DC Inputs 9-36VDC; (**Dual Power Supplies** – Option) **or**
- **MV** - Dual DC Inputs 36-75VDC; (**Dual Power Supplies** – Option) **or**
- **HV** - Mixed power, single input 110-370VDC or 90-264VAC ; (**Dual Power Supplies** – Option)
- Operating temperature from -40°C to +85°C (Fanless)

iES12G / 12GP

12 Port Gigabit / Gigabit PoE Switch



iES12G has up to 12 available Ports

- Combo **8** x 10/100/1000Base-T(X) RJ45 and/or, **8** x 100/1000Base-X SFP Ports and
- **4** x 100/1000Base-X SFP Ports
- iRing – 20ms ring recovery up to 250 switches
- **LV** - Dual DC Inputs 10-48VDC **or**
- **MV** - Dual DC Inputs 36-75VDC with additional 10-48VDC backup **or**
- **HV** - Mixed power, single input 110-370VDC or 90-264VAC with additional 10-48VDC backup



iES12GP also supports **Redundant Power Supplies**

- **8** x 10/100/1000Base-T(X) RJ45 **PoE** Ports (**4** x Max at **30W**, or **8** x at **15W** Max. **PoE** Ports)
- **4** x 100/1000Base-X SFP Ports
- **MV** - Dual DC Inputs 50-57VDC; (**Dual Power Supplies** – Option) **or**
- **HV** - Mixed power, **HV (External)** single input 90-350VDC or 100-240VAC (External); **HV (Internal)** Input 141-373VDC or 100-264VAC (Internal) (**Dual Power Supplies** – Option)
- Support for combination of **mixed voltage** power supplies, i.e. Medium + High Voltage

20 Port Gigabit-IEC61850 Switch



iES20GF has up to 20 available Ports

- **20** x 10/100/1000Base-T(X) RJ45 Ports **or**
- **16** x 10/100/1000Base-T(X) RJ45 and **4** x 100Base-FX Fiber **or 4** x 1000Base-LX/SX Fiber Ports
- **16** x 10/100/1000Base-T(X) RJ45 and Combo **4** x 10/100/1000Base-T(X) RJ45 and **4** x 100/1000Base-X SFP Ports
- Multimode or Singlemode (SC or ST) 2km – 100km
- iRing – 20ms ring recovery up to 250 switches
- **LV** - Dual DC Inputs 10-48VDC; (**Dual Power Supplies** – Option) **or**
- **MV** - Dual DC Inputs 36-75VDC with additional 10-48VDC backup; (**Dual Power Supplies** – Option) **or**
- **HV** - Dual single input 110-370VDC or 90-264VAC; (**Dual Power Supplies** – Option)
- Support for combination of **mixed voltage** power supplies, i.e. Medium + High Voltage
- Operating temperature from -40⁰C to +85⁰C (Fanless)

20 Port Gigabit-IEC61850 Switch



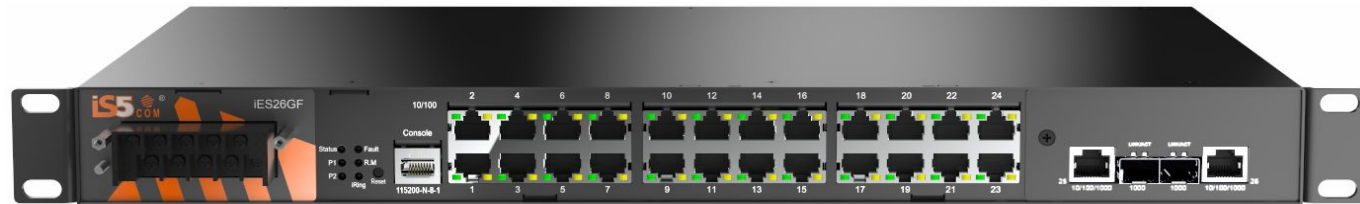
iES22GF is available with up to 20 Ports

- **8** x 10/100/1000Base-T(X) RJ45 and **12** x 100/1000Base-X SFP Ports
- iRing – 20ms ring recovery up to 250 switches
- **LV** - Dual DC Inputs 9-36VDC; (**Dual Power Supplies** – Option) **or**
- **MV** - Dual DC Inputs 36-75VDC; (**Dual Power Supplies** – Option) **or**
- **HV** - Dual single input 110-370VDC or 90-264VAC Power Supplies; (**Dual Power Supplies** – Option)
- Support for combination of **mixed voltage** power supplies, i.e. Low, Medium + High Voltage
- Operating temperature from -40⁰C to +85⁰C (Fanless)



26 Port / Gigabit-IEC61850 Switch

iES26GF is available with 26 Ports



**IEC
61850**

- **24** x 10/100Base-T(X) RJ45 and **2** x 100Base-FX Fiber Ports
- **24** x 10/100Base-T(X) RJ45 and **2** x 1000Base-LX/SX Fiber Ports **or**
- **24** x 10/100Base-T(X) RJ45 and **2** x 1000Base-X SFP Ports **or**
- **24** x 10/100Base-T(X) RJ45 and **2** x 10/100/1000Base-T(X) RJ45 Ports **or**
- **24** x 10/100Base-T(X) RJ45 and Combo **2** x 10/100/1000Base-T(X) RJ45 and **2** x 1000Base-X SFP Ports
- Multimode or Singlemode (SC or ST) 550m – 70km
- iRing – 20ms ring recovery up to 250 switches
- **LV** - Dual DC Inputs 18-48VDC; (**Dual Power Supplies** – Option) **or**
- **MV** - Dual DC Inputs 36-75VDC; (**Dual Power Supplies** – Option) **or**
- **HV** - Dual single input 110-370VDC or 90-264VAC Power Supplies; (**Dual Power Supplies** – Option)
- Support for combination of **mixed voltage** power supplies, i.e. Low, Medium + High Voltage
- Operating temperature from -40⁰C to +85⁰C (Fanless)

28 Port Gigabit-IEC61850 Switch



IEC
61850

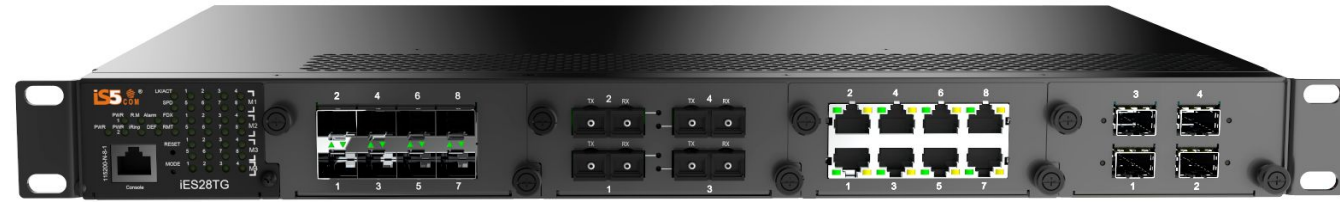
iES28GF is available with 28 Ports

- **24** x 10/100/1000Base-T(X) and **4** x 1000Base-T(X) RJ45 Ports **or**
- **24** x 100/1000Base-X SFP and **4** x 1000Base-X SFP Ports **or**
- **16** x 100Base-FX **or** **12** x 1000Base-LX/SX Fiber Ports **or**
- **Fixed Module** - **16** x 10/100/1000Base-T(X) RJ45 and 100/1000Base-X SFP **or** 100Base-FX **or** 1000Base-LX/SX Fiber Ports
- **12** x **10Base-FL** Fiber Ports and up to **4** x 1000Base-LX/SX Fiber Ports **or** 4 X 1000 LX/SX Fiber Ports
- iRing – 20ms ring recovery up to 250 switches
- **LV** - Dual DC Inputs 9-36VDC; (**Dual Power Supplies** – Option) **or**
- **MV** - Dual DC Inputs 36-75VDC; (**Dual Power Supplies** – Option) **or**
- **HV** - Dual single input 110-370VDC or 90-264VAC Power Supplies; (**Dual Power Supplies** – Option)
- Support for combination of **mixed voltage** power supplies, i.e. Low, Medium + High Voltage
- Operating temperature from -40°C to +85°C (Fanless)



iES28TG (L2)

28 Port Gigabit-IEC61850 Switch



iES28TG is available with 28 Ports

- **24** x 10/100/1000Base-T(X) and **4** x 1000Base-T(X) RJ45 Ports **or**
- **24** x 100/1000Base-X SFP and **4** x 1000Base-X SFP Ports **or**
- **16** x 100Base-FX **or** **16** x 1000Base-LX/SX Fiber Ports **or**
- **12** x **10Base-FL** Fiber and **2/4** x **10GBase-X** SFP Ports
- Certified by **KEMA - 2nd Edition IEC 61850-3 Ed 2.0 (2013) and IEEE 1613 (2009/2013)**
- **Swappable Module Ports + Dual hot swappable power supplies**
 - **LV-** 9-36VDC, **MV-** 36-75VDC, **HV-** 110-370VDC or 90-264VAC
- iRing – 20ms ring recovery up to 250 switches
- VLAN (802.1Q) for segregating and securing network traffic; Basic routing: Static Routing, RIPv2, VRRP
- HTTPS / SSH v2 enhanced network security, IEEE 1588v2 PTP, QoS, IGMP, ACL, AAA (RADIUS), and NAS 802.1x (Use Authentication)
- Operating temperature from -40⁰C to +85⁰C (Fanless)



Hardware Product Portfolio

Device Servers
Media Converters

1 Port RS232/422/485 to Ethernet Serial Device Server

iDS3-S is available with 3 Ports

- **2** x 10/100Base-T(X) RJ45 Ports and
- **1** x RS-232/422/485 DB9 Serial Port
- **Operating Modes:** Virtual Com, TCP Server, TCP Client, UDP, Modbus RTU Slave, Modbus RTU Master, Modbus ASCII Slave, and Modbus ASCII Master
- NAT-pass through: User can manage IDS2 through NAT router
- Secure Management by HTTPS and SSH; SSL Data Encryption
- Event alarms via Syslog, Email, SNMP trap, and Beeper
- Power Input:
 - **LV** - Input 12-48VDC
- Operating temperature from -40⁰C to +85⁰C (Fanless)



6 Port Serial Device Server



iDS6 is available with 6 ports

- **2** x 10/100Base-T(X) RJ45 Ports
- **4** x RS-232/422/485 DB9 Serial Ports
- **Operating Modes:** Virtual Com, TCP Server, TCP Client, UDP
- **LV** - Dual DC Inputs 10-48VDC **or**
- **MV** - Dual DC Inputs 36-75VDC with additional 10-48VDC backup **or**
- **HV** - Single Input 110-370VDC or 90-264VAC with additional 10 – 48VDC backup
- Operating temperature from -40⁰C to +85⁰C (Fanless)

6 Port PoE Serial Device Server



iDS6P-S is available with 6 ports

- 4 x RS-422/485 Phoenix 5 Pin Connector Serial Ports
- 1 x **PoE** RJ45 Port w/ Isolation and 1 x 10/100Base-T(X) RJ45 Port
- **Operating Modes:** Virtual Com, TCP Server, TCP Client, UDP, Modbus RTU Slave, Modbus RTU Master, Modbus ASCII Slave, and Modbus ASCII Master
- Can be PoE Powered (802.3at – 15W)
- **LV** - Dual DC Inputs 10-48VDC **or**
- **MV** - Dual DC Inputs 36-75VDC with additional 10-48VDC backup **or**
- **HV** - Single Input 110-370VDC or 90-264VAC with additional 10 – 48VDC backup
- Operating temperature from -40⁰C to +85⁰C (Fanless)



16 + 6 Port Device Server/Switch-IEC61850 Rack Switch



iDS24GF is available with 24 Ports

- **16** x RS-232/422/485 Serial **RJ45** or **DB9** Ports with protocol gateway functionality w/ enhanced 1kV isolation
- **4** x 10/100/1000Base-T(X) RJ45 and **2** x 100/1000Base-X SFP Ports **or**
- **8** x IRIG-B Inputs/Outputs (Option)
- **Operating Modes:** Virtual Com, TCP Server, TCP Client, UDP, Modbus RTU Slave, Modbus RTU Master, Modbus ASCII Slave, and Modbus ASCII Master
- Supports IEEE 1588 v2 PTP clock synchronization & Layer 2 Multicast
- Supports QoS Prioritization, Shaping, and Scheduling
- **LV** - Dual DC Inputs 9-36VDC; (**Dual Power Supplies** – Option) **or**
- **MV** - Dual DC Inputs 36-75VDC; (**Dual Power Supplies** – Option) **or**
- **HV** - Single Input 110-370VDC or 90-264VAC (**Dual Power Supplies** – Option)
- Operating temperature from -40⁰C to +85⁰C (Fanless)

1 Port Serial to Fiber Media Converter



iSC2F - 1 Port Media Converter

- **1** x RS232/422/485 (RS485, 2&4 wire) Serial Port to **1** x 10FL Multimode ST Fiber Port
- Supports FULL/HALF Duplex operation
- Supports Multiple Baud Rates
- **LV** - Dual DC Inputs 10-36VDC **or**
- **MV** - Dual DC Inputs 36-75VDC
- **HV** - Single Input 110-370VDC or 90-264VAC
- Operating temperature from -40⁰C to +85⁰C (Fanless)

2 Port Media Converter – Slim Line



iMC2S - 2 Port Media Converter

- **1** x 10/100Base-T(X) RJ45 and **1** x 100Base-FX Fiber Ports **or**
- **1** x 10/100Base-T(X) RJ45 and **1** x 100Base-X SFP Ports
- Multimode or Singlemode (SC or ST) 2km – 100km
- Copper to Fiber Media Conversion
- Supports MDI/MDIX auto-negotiation and detection
- Link Fault Pass-Through Function
- LFP DIP-Switch for forced link shutdown feature
- Small form factor 1" (W) x 3.64" (H)
- Multimode or Singlemode (SC or ST) 2km – 100km
- **LV** – Dual DC Inputs 10-48VDC
- Operating temperature from -40⁰C to +85⁰C (Fanless)

2 Port-IEC61850 Media Converter / 2 Port Gigabit Media Converter

iMC2F - 2 Port Media Converter

- **1** x 10/100Base-T(X) RJ45, and **1** x 100Base-FX Fiber Ports **or**
- **1** x 10/100Base-T(X) RJ45 and **1** x 100Base-X SFP Ports

iMC2G - 2 Port Gigabit Media Converter

- **1** x 10/100/1000Base-T(X) RJ45 and **1** x 1000Base-X SFP Ports



- Link Fault Pass-Through Function
- Copper to Fiber Media Conversion - Fiber options on both models - SFP, SC/ST
- Multimode or Singlemode (SC or ST) 2km - 100km
- **LV** - Dual DC Inputs 10-48VDC **or**
- **MV** - Dual DC Inputs 36-75VDC with additional 10-48VDC backup **or**
- **HV** - Single Input 110-370VDC or 90-264VAC with Single 10-48VDC Backup
- Operating temperature from -40°C to +85°C (Fanless)

4 Port Media Converter



iMC4 - 4 Port Media Converter

- **2** x 10/100Base-T(X) RJ45 and **2** x 100Base-X SFP Ports
- Copper to Fiber Media Conversion
- Far End Fault Indication (FEFI) function for 100Base-FX interface
- **LV** - Dual DC Inputs 10-48VDC; **or**
- **MV** - Dual DC Inputs 36-75VDC with additional 10-48VDC backup **or**
- **HV** - Input 110-370VDC or 90-264VAC
- Operating temperature from -40⁰C to +85⁰C (Fanless)



Supports:

1 port 10/100/1000Base

- T(X) ports for power and data output
- Auto protection for over voltage power input and over current output
- Power output up to **60Watts at 50VDC**
- Fully compliant with IEEE802.3 af /802.3at
- Auto protection for over voltage power input and over current output
- IP 40 Galvanized Steel Housing
- Operating Temperature -40°C to +85°C
- DIN rail and wall mount



- Hardware Product Portfolio

- HSR/PRP Switch
- Secure Gateways
- Hardened Computer

iRBX6GF & iRBX6GF-S

6 Port IEC62439-3 HSR/PRP Redundancy Switch



6 Port Gigabit Switch

- Fully compliant with IEC 62439-3 HSR **“High-availability Seamless Redundancy”** & PRP **“Parallel Redundancy Protocol”** is available with 6 Ports
 - **4** x 100/1000Base-X SFP and Combo **2** x 10/100/1000Base-T(X) and 100/1000Base-X Ports **or**
 - **6** x 100Base-FX **or** **6** x 1000Base-LX/SX Fiber Ports
- Wi-Fi IEEE 802.11 B/G/N management port
- Multimode or Singlemode (SC or ST) 2km – 100km
- Supports **Single HSR/PRP Redundancy Box (RedBox), (single QuadBox configuration—future implementation)**
- Supports IEEE 1588v2 one-step transparent clocks
- Provides PPS and IRIG-B Outputs (future implementation)
- Provides redundancy with **no single point of failure + Zero time to recovery** in case of failure
- Single network faults in the ring result in **zero frame loss**
- Redundancy is supervised continuously for network and device management
- **LV** - Dual DC Inputs 9-36VDC; (**Dual Power Supplies** – Option) **or**
- **MV** - Dual DC Inputs 36-75VDC; (**Dual Power Supplies** – Option) **or**
- **HV** - Single Input 110-370VDC or 90-264VAC (**Dual Power Supplies** – Option)

Operating temperature from -40°C to +85°C (Fanless)

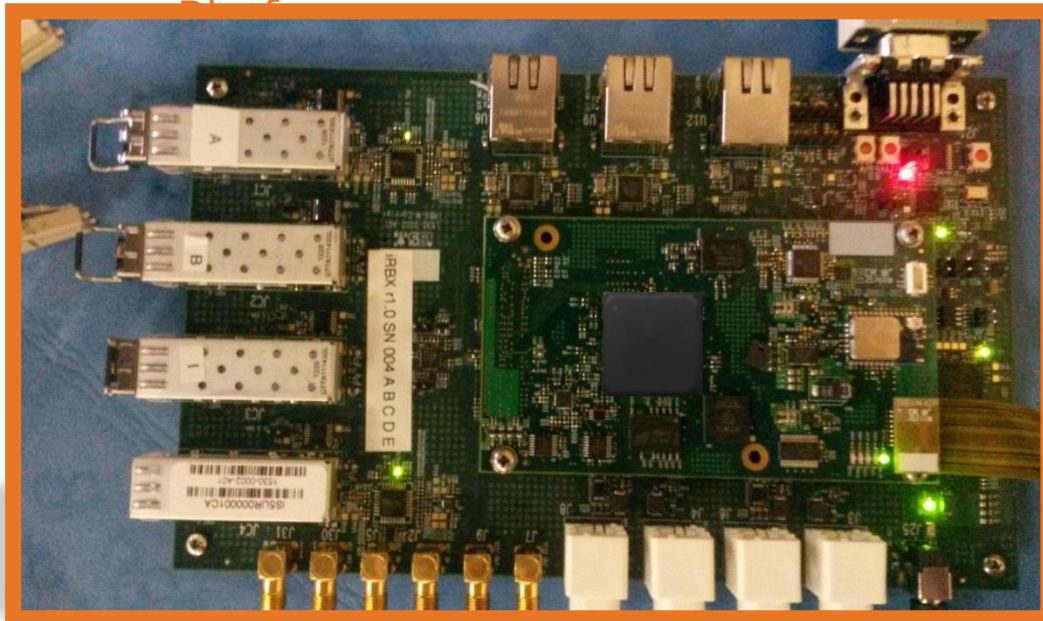


iRBX-M Embedded HSR/PRP Module

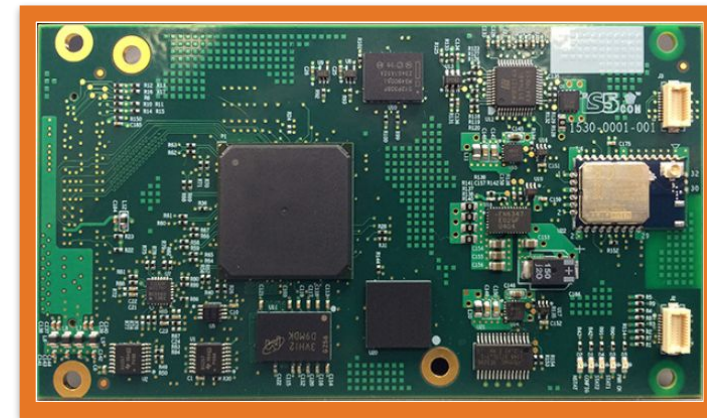
Our **HSR/PRP Development Platform** provides the flexibility and rapid time-to-market for any OEM to design and implement each of the redundancy protocols into to any end customer product.

- **Latest Redundancy Technology**
- **Scalable Design – Quad Box**
- **First to Market**
- **Eliminate Development Time**
- **Cost Savings in Engineering Resources**
- **iS5 Support and Expertise**

iRBX-M Development



iRBX-M HSR/PRP



Our **HSR/PRP** module, provides the flexibility to be embedded in any design.

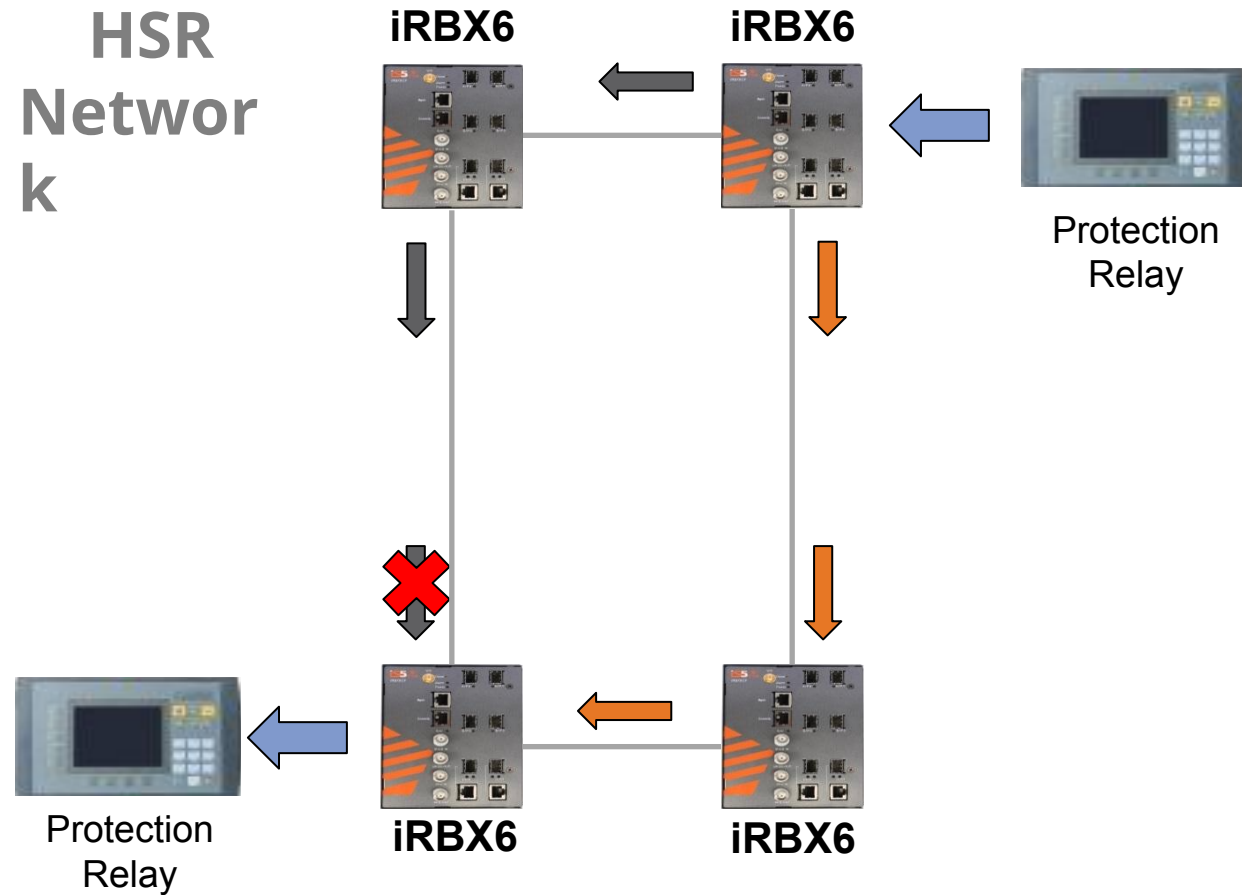
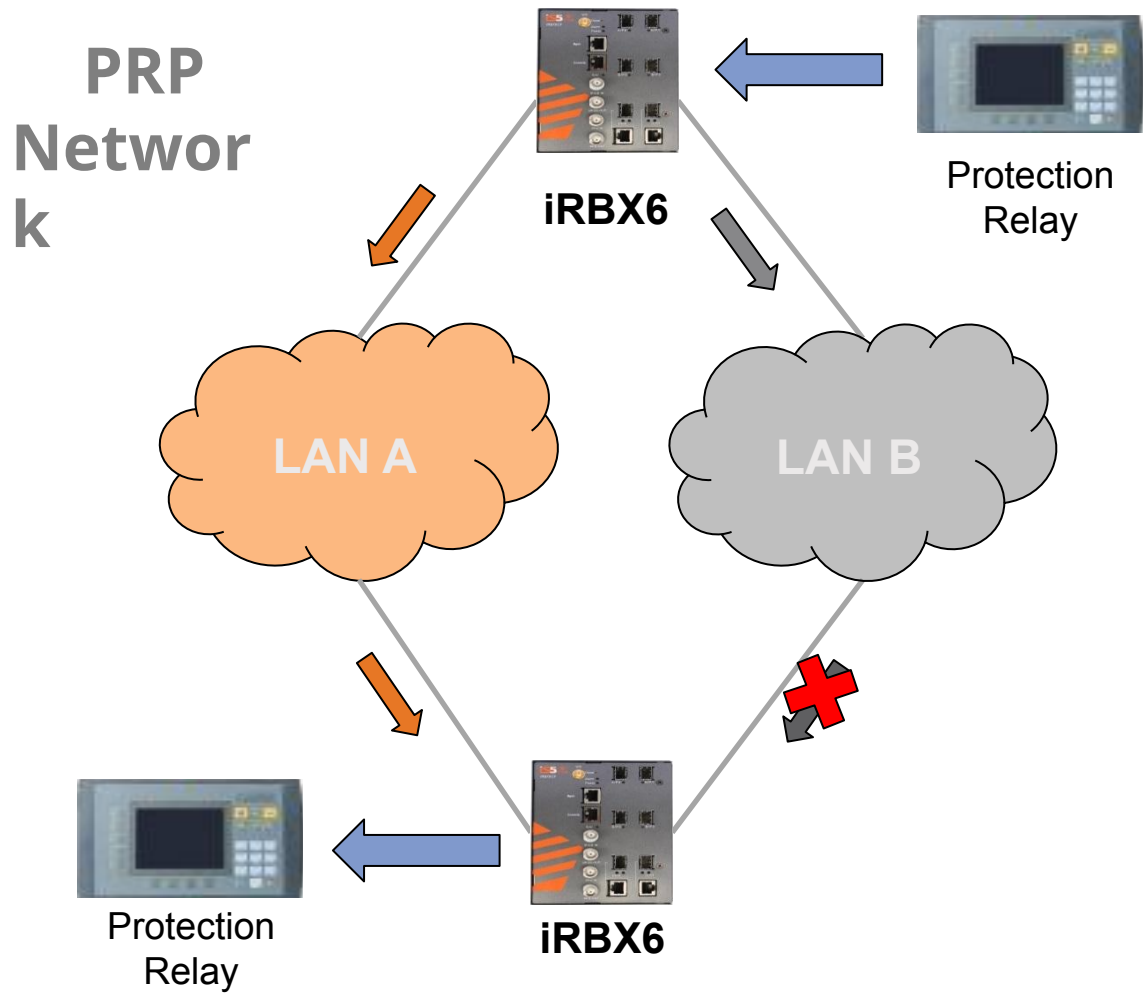
IEC62439-3 HSR/PRP Overview & Benefits

iRBX6GF



- Seamless failover & Hitless vs other Redundancy Architectures
 - Zero-Loss redundancy & Zero-time recovery
 - Hitless Switchover & No single point of failure
 - No packets loss (min latency)
 - IEEE 1588 clock synchronization
 - Flexible topology: ability to combine multiple redundancy rings
- Increases Maximum Network Uptime
- Real-time monitoring of events
- Increases Network Reliability & Performance
- Reduce Network Outage & Maintenance Downtime
- Ease of network maintenance
- Better ROI (Return on Investment), Fewer Truck Rolls
- Reduce Technician Engineering labor and material costs
- Reduced procurement costs & overhead - fewer switches, cables etc.

iRBX - PRP/HSR Network Topologies



Parallel Redundancy Protocol (PRP) Architecture (IEC 62439)
Duplicate packets are sent over two independent LANs to the receiving node to ensure a zero packet loss redundancy network

High-availability Seamless Redundancy (HSR) Architecture (IEC 62439)
Duplicate packets are sent in opposing directions over multiple devices to the receiving node to ensure a zero packet loss redundancy

4 Port Gigabit Secure Gateway-IEC61850

iSG4F is available with 4 Ports



Designed for secure remote connections over public networks

- **1** x 10/100/1000Base-T(X) RJ45 and **1** x 100/1000Base-X SFP Ports
- **2** x RS-232 Serial RJ45 **or** **1** x RS-232 Serial RJ45 and **1** x RS-485 RJ45 Serial Ports
- **1** x Dual SIM 2G/3G (GPRS/UMTS) Slots
- **SCADA** gateway for IEC101/104, Modbus TCP and DNP3 TCP
- DPI Firewall -IEC 101/104 /61850 mm, Modbus TCP, DNP3 TCP, S7 TCP
- APA (Authentication Proxy Access) and Access Control
- VPN Tunneling - Layer 2/3 (**DM-VPN, iPSec-VPN**)
- Supports **Layer 3 protection** using Routing- Static routing & OSPF v2; IPv4
- Supports **SCADA Protocol Gateway Translation** for IEC101- IEC104, Modbus RTU-TCP, and DNP3 IP-RTU
- Network Uplink via Ethernet/Cellular + SIM interfaces to connect remote isolated sites (w/ VPN)
 - **LV** - Dual DC Inputs 9-36VDC; (**Dual Power Supplies** – Option not available with LTE) **or**
 - **MV** - Dual DC Inputs 36-75VDC; (**Dual Power Supplies** – Option) **or**
 - **HV** - Single Input 110-370VDC or 90-264VAC (**Dual Power Supplies** – Option)
- Operating temperature from -40°C to +85°C (Fanless)

18 Port Secure Gateway PoE-IEC61850

iSG18GFP is available with 18 Ports



Designed for secure remote connections over public networks

- **8/16** x 10/100Base-T(X) RJ45 Ports – **8** x **PoE** 30W/Ports (Option)
- **2** x 100/1000Base-X SFP Ports + **8** x 100Base-X SFP Ports **or** **8** x 10/100Base-T(X) RJ45 Ports **or**
- **4** x RS-232 Serial RJ45 Ports w/ 2KV Isolation – **1** x 2G/3G GPRS/UMTS Modem w/ Dual SIM Card Slots + **1** x 4G LTE Advanced (Options)
- DPI Firewall (**Modbus, T104, DNP3**) + V
- VPN Tunneling - Layer 2/Layer 3 (**DM-VPN, iPSec-VPN**)
- **APA (Authentication Proxy Access)** and Routing (RIPv2, OSPF, VRRP)
- **802.1x Authentication** (Port Enable/Disable) and User activity report (under local APA)
- 1588v2 PTP Transparent Clock
- Supports standard protocols **LAG, MSTP, RSTP & G.8032; IEEE 802.1q VLAN segregation**
- Supports **SCADA Protocol Gateway Translation** for IEC101- IEC104, Modbus RTU-TCP, DNP3 IP-RTU
- Network Uplink via Ethernet/Cellular + SIM interfaces to connect remote isolated sites (w/ VPN)
- **Dual Power Supply** (Option) **LV** – 9-36VDC, **MV** - 36-75VDC, **HV** - Input 110-370VDC or 90-264VAC
- Operating temperature from -40°C to +85°C (Fanless)

Intelligent Robust On-site Commander-IEC61850



Software-Defined Protection (SDP)

- Fully Featured x86 based Computing Device
- 64 bit CPU, AMD G-Series Fusion **Dual-Core 1.00Ghz**
 - **2** x 10/100/1000Base-T(X) RJ45 Ports + Serial Console Port
- 4GB DDR3 RAM
- Up to **512 Gigabyte SSD** (8GB standard)
- IRIG-B TTL Input with Sync LED Indication (Option)
- **Dual USB 2.0 HS** Ports
- **HDMI 1.4 Interface**, supports 1920 x 1200 resolution
- Supports Linux & Windows 7
- Fully compliant with IEC 61850 and IEEE 1613
- **LV** - Dual DC Inputs 9-36VDC; (**Dual Power Supplies** – Option) **or**
- **MV** - Dual DC Inputs 36-75VDC; (**Dual Power Supplies** – Option) **or**
- **HV** - Single Input 110-370VDC or 90-264VAC (**Dual Power Supplies** – Option)
- Operating temperature from -40⁰C to +85⁰C (Fanless)

iROC with SpyGoose

Advanced ICS Network Security Monitoring Software



IEC
61850



**Software-Defined
Protection (SDP)**

- Integrated SCADA Network Security Monitoring software with iS5Com
- iROC hardened Computer
- Supports IES61850 GOOSE, DNP3, Modbus, All Layer 2 traffic
- Supports Alert format, Syslog or UDP
- Supports Inbound Ports (at least one): stop/scup/sash (TCP 22)
- Supports Outbound Ports: Syslog (TCP/UDP 514)

According to NERC CIP Version 5, systems communications must be audited. Any changes to the network must be run through change management and must be appropriately documented. SpyGoose will monitor for new devices added to the network and will automatically detect what ports they are using or serving. This documentation could be critical to providing NERC CIP compliance.