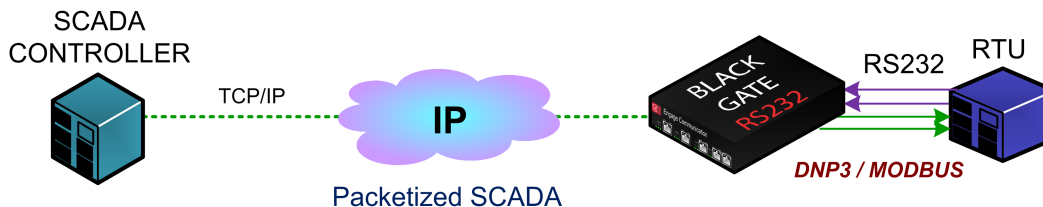


SCADA Serial TCP Gateway



The **Black•Gate RS232** is a secure TCP to Serial Gateway that interconnects Ethernet TCP/IP SCADA Master Controllers to the serial SCADA interface of Remote Terminal Units.

Utilities and Pipeline operators deploy the **Black•Gate RS232** to facilitate SCADA communications to PLC, RTU's, Flow Computers, or Gas Analyzers over IP/MPLS Ethernet based wired or wireless networks. Modbus RTU/ASCII, ROC and DNP3 SCADA protocols are transparently supported.



Black•Gate Security

The **Black•Gate** is designed for highly secure transport and management of SCADA traffic. In fact, the “Black” in the product name is derived from NSA nomenclature for securing classified information. The critical nature of SCADA networks, along with the increasing frequency of cyber attacks, makes protecting these networks paramount.

The BlackGate meets these security challenges with advanced cryptography and security capabilities for both payload data and the management plane.

- Payload Data Security
 - o The BlackGate boots up ready to establish a secure IPsec VPN tunnel;
 - o The PKI cryptographic process, along with Public Key Certificates, ensures Authentication;
 - o AES 256 bit keys are supported for highly secure data encryption.



- Management Security
 - o Management access is limited to encrypted sessions via TLS, SSH and SNMPv3;
 - o AES 256 bit keys & sophisticated NIST password technology keep management data secure;

Black•Gate Management

Management

Black•Gate management access is limited to encrypted sessions via TLS, SSH, or SNMPv3, that employ AES 256 bit keys and sophisticated NIST approved passwords. These sessions may be established after authentication via TACACS+ or Radius.

Administration and User Logs are available with Syslog.

Secure Boot, a combination of hardware and firmware, is employed to ensure that the only code executing on the **Black•Gate** is trusted by Engage.

The signature of each piece of boot software, including firmware drivers, the operating system and applications is validated. Code Signing must be done for upgrades to be implemented.

NERC CIP Compliance

The **Black•Gate** installations achieve NERC CIP compliance with a combination of internal and external functions.

The Management interface has the sophistication to implement comprehensive policies and privileges for administrator and user accounts. Administrator policy includes removal, disabling or renaming.

Interoperability with external functions such as Syslog, Network Timing Protocol, TACACS+ and Radius with its support for RSA SecureID delivers trusted compliance.

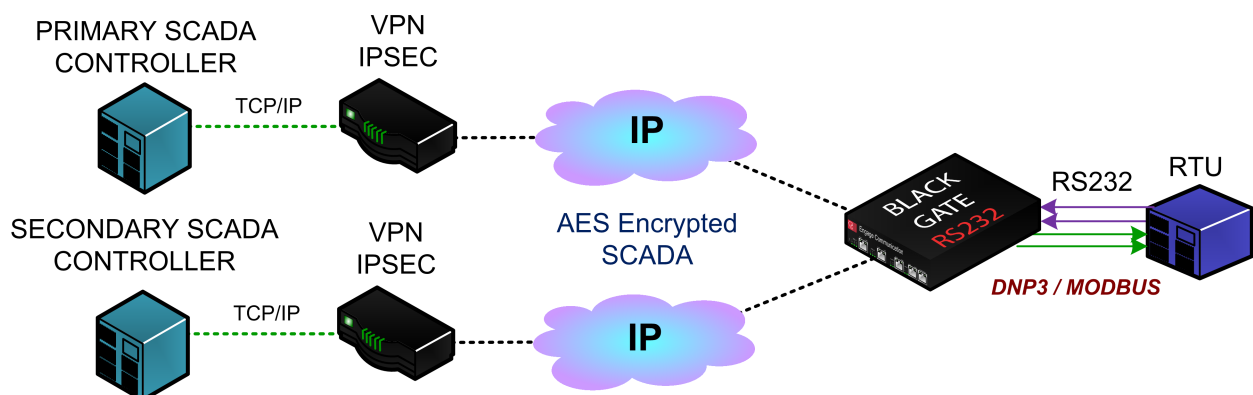
Black•Gate NERC Redundancy

NERC -CIP mandates control center redundancy.

RTUs must be accessible from, and be able to connect to, backup control centers.

Black•Gate continuously monitors connectivity to the active control center and automatically switches to the active backup control center.

- NERC mandates for control center redundancy
- Preserves investment in RTU & Central SCADA
- Control Center redundancy with IP flexibility
- Supports up to four redundant control centers
- Redundant and diverse connectivity



NERC Redundant and Diverse Connectivity

Electronic Security Perimeter

CIP-005 Requirement

BlackGate Solution

The **Black•Gate** in combination with industry standard services meets the Electronic Security Perimeter's NERC CIP-005 specifications.

R2.1 - Deny Access by Default
R2.2 - Enable only needed ports
R2.4 - Strong Technical Controls
R3.2 - Unauthorized Access
R5.3 - Access Logging

- Accounts must be created to allow access
- Each Port may be enabled or disabled
- RSA's SecureID two-factor Authentication
- Alert messages via Syslog or TACACS+
- Syslog of Access and Command interactions

System Security Management

CIP-007 Requirement

BlackGate Solution

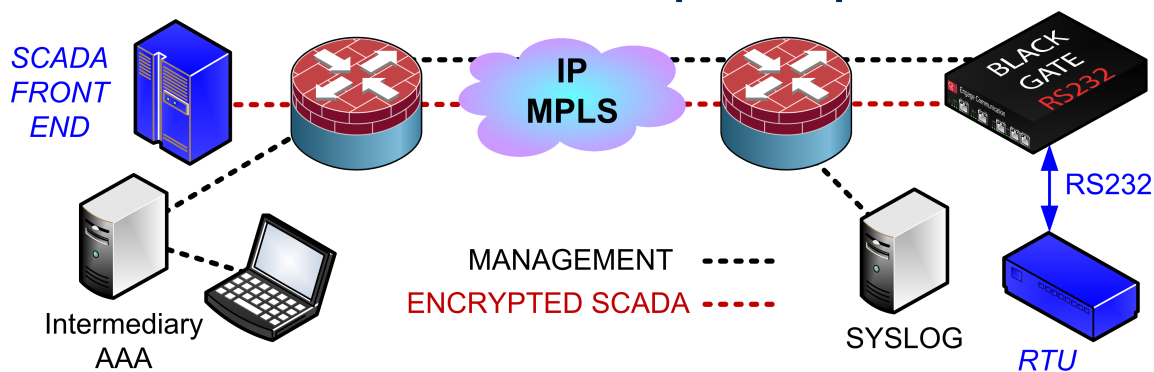
Access control is Authenticated, Authorized and Accounted for with Radius or TACACS+.

R2.1-3 - Ports and Services
R3 - Security Patch Management
R5.3 - Secure Passwords
R6.4 - Security Status Logs

- Unused Serial Ports and Services are disabled
- Kernel and application upgrade alerts
- Require minimum length, strength, frequency
- Syslog and AAA via TACACS+

Security Patches managed proactively.

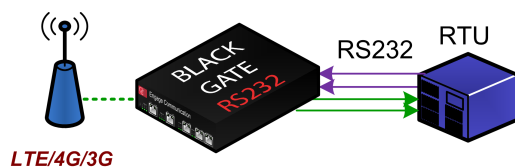
BlackGate NERC CIP Compliant Operation



BlackGate High Availability Options

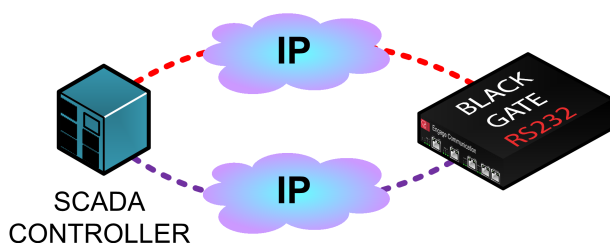
Cellular Modem Option

In order to provide wireless connectivity the **Black•Gate** supports USB LTE/4G/3G Modems with external Antenna connections that are approved for operation on AT&T, Verizon, Sprint and T-Mobile networks.



LAN Protector

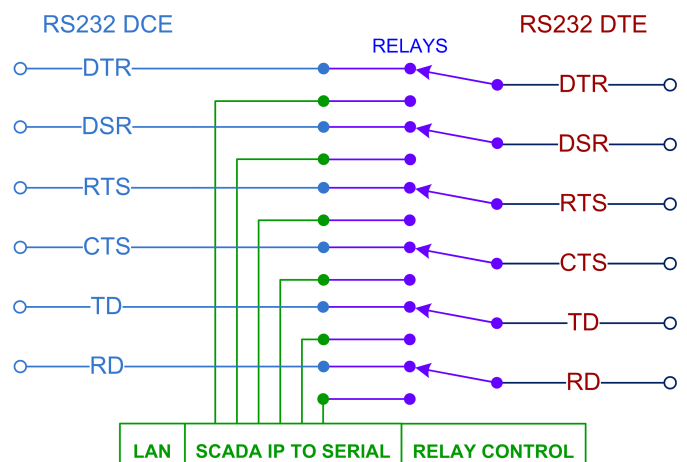
The LAN Protector supports connectivity to a secondary independent LAN interface.



Serial Redundancy Switch Option

The **Black•Gate** has a serial redundancy option that splices into RS232 DCE to DTE connection.

Serial Over IP connection provide an independent connection that can be used as a backup or a reversible migration path.



Technical Specifications

LAN Network Interfaces:

- 2 10/100/1000 Ethernet: Copper &/or SFP

LAN Network Protocols Supported:

- IP, TCP, UDP, ICMP, Telnet, DHCP, DDNS, SSH
- Network Time Protocol - NTP

RS232 Interfaces:

- 1-4 RS232 interfaces (DB25 & DB9)
- Asynchronous: 75 to 230400 bits per second

Protocols Supported:

- DNP3-TCP/IP, ModBus-TCP/IP; ASCII; ROC

SCADA Encryption Algorithm:

- AES 256-bit • Fully Automatic key management

Regulatory:

- CE • Safety -IEC60950 • EMC - CFR 47 Part 15 Sub Part B:2002, EN55022:1994+A1&A2, EN55024, ICES-003 1997, CISPR 22 Level A

Quality of Service Support:

- IP Type of Service (TOS) CLI configured
- 802.1p/q mac level prioritization



Management:

- Secure Socket Shell - SSH V2 Session Encryption
- Authentication, Authorization & Accounting - TACACS+, RADIUS, 2 Factor Authentication
- Syslog with NTP Time Stamping
- Console Port for Out of Band Management
- SNMPV3 Public & Private MIB with traps

Environmental:

- 0° to 132° F (-10° to 50°C) operating
- 90% operating humidity (non-condensing)
- Optional Extended Temperature (-40°C to 70°C)

Dimensions:

- Dimensions: 12" (L) x 5.5" (W) x 1.50" (H)

Power:

- 12-30 VDC, 1.0A. • Screw Locking Connector
- Universal Adapter 100/240 VAC 50/60 Hz
- Optional -48V 0.25 Amp • Hot Standby

How to Order — Black•Gate RS232

Part No.	Description	Notes
GW-007-RS232-0x	Black•Gate RS232	Specify # of RS232 Ports (1 to 4)
Base Option		Specify as suffix
-EXT	Extended Temperature	-40C to 70C
-RED	Redundancy Option	Redundant SCADA Controller
-Pro	LAN Protector	Redundant LAN Connection
-Serial_Relay	Serial Access Redundancy	Migration to IP with Reversal
Power Options	Specify as suffix	Hot Standby: 2nd Power Suffix
-HSPDC	Connector for Dual DC Supply	
-N48VDC	Power Supply Module -48 Volt DC	Isolated Negative 48 Volt Power
Rack Mount Option		Specify as suffix
-RACKMNT	19" Wide Rack Mount Front Bracket	
Wall Mount Option		