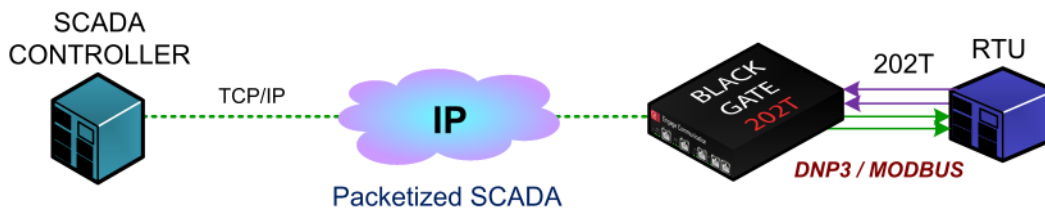


SCADA Serial TCP Gateway with Integrated 202T Modem

The **Black•Gate 202T** is a secure TCP to Serial Gateway, with an integrated Bell 202T modem, that interconnects Ethernet TCP/IP SCADA Master Controllers to the serial SCADA interface of Remote Terminal Units that have 202T modems.

Pipeline operators and Utilities deploy the **Black•Gate 202T** 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.

Telecommunication Service providers have announced their plans to discontinue the leasing of the 4-wire analog circuits that are employed by SCADA systems to provide connectivity to remote facilities. The imminent termination of Telco service coupled with their significant price increases is motivating the transition to IP packetized technology.



The **Black•Gate** utilizes industrial grade hardware components and state of the art secure software.

Black•Gate Security

The **Black** in **Black•Gate** is derived from the nomenclature used by the NSA to indicate that classified information is secure. SCADA connections control the elements that make up Critical Infrastructures and their messages must be secured.

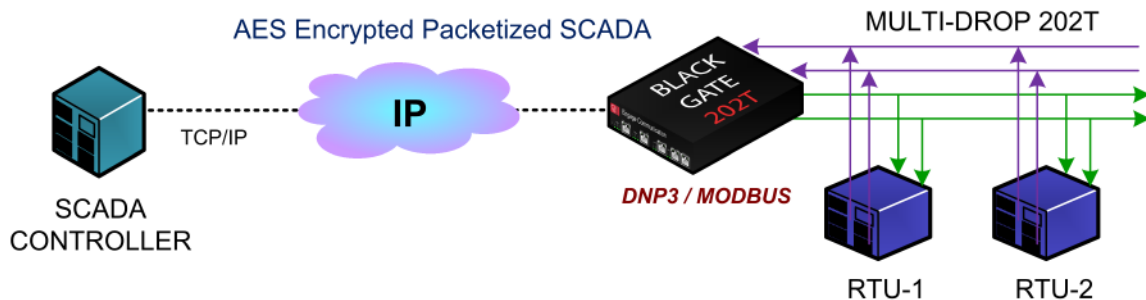
The **Black•Gate** boots up secure, configured to establish an IPSEC AES encrypted VPN connection to the SCADA Controller network. Public Key Certificates provide Authentication of the VPN.



Black•Gate Multi-Drop

In order to minimize the number of telephone circuits required to connect Data Center Front End SCADA controllers to Remote Terminal Units, **Multi-Drop** communication protocol was implemented. The **Multi-Drop** feature allows a SCADA host connection to communicate with Remote Terminal Units that drop off of a common 4-Wire Circuit.

The **Black•Gate** transparently supports **Multi-Drop** 202T. The **Black•Gate** connected to the addressed RTU sends the **SCADA** response back to the originating TCP/IP connection of the SCADA Controller's polling port.

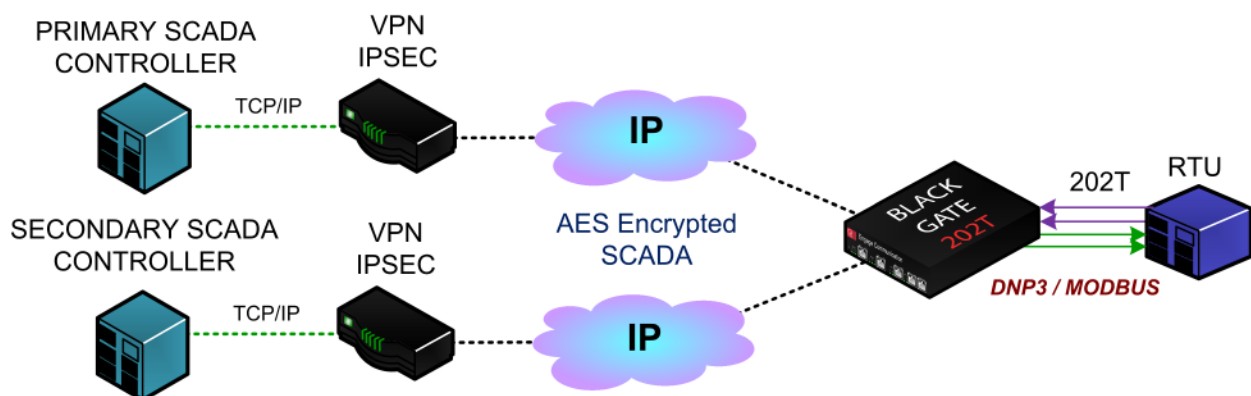


Black•Gate NERC Redundancy

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

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.

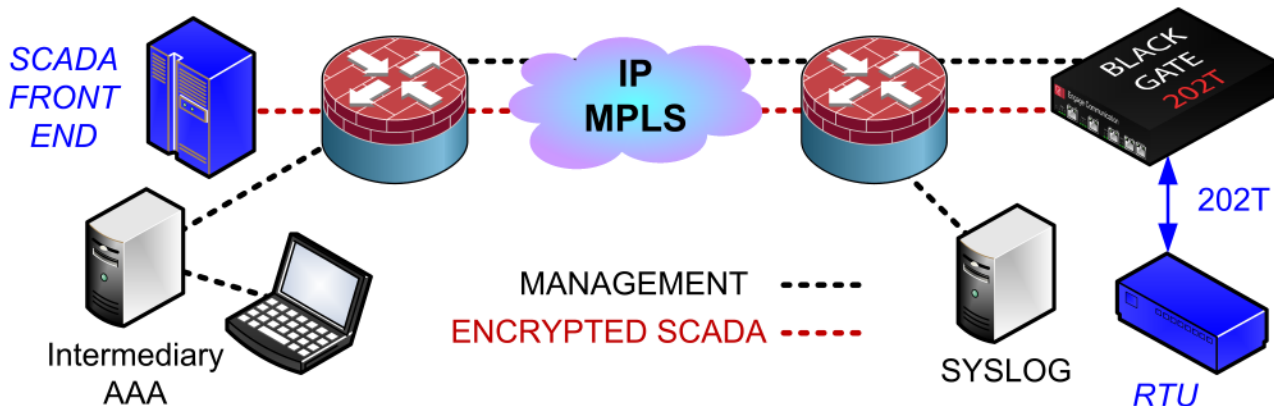
The Management interface has the sophistication to implement comprehensive policies and privileges for administrator and user accounts. Administrator policy includes removal, disabling or renaming.

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

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	• Accounts must be created to allow access
	R2.2 - Enable only needed ports	• Each Port may be enabled or disabled
	R2.4 - Strong Technical Controls	• RSA's SecureID two-factor Authentication
	R3.2 - Unauthorized Access	• Alert messages via Syslog or TACACS+
	R5.3 - Access Logging	• 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	• Unused Serial Ports and Services are disabled
	R3 - Security Patch Management	• Kernel and application upgrade alerts
Security Patches managed proactively.	R5.3 - Secure Passwords	• Require minimum length, strength, frequency
	R6.4 - Security Status Logs	• Syslog and AAA via TACACS+

BlackGate NERC CIP Compliant Operation



Technical Specifications

LAN Network Interface:

- LAN1/LAN2: 10/100 Base T

LAN Network Protocols Supported:

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

202T Interfaces:

- 1-4 Bell 202 T interface

Interface Baud Rate:

- Asynchronous: 1.2 Kilobits per second

Protocols Supported:

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

SCADA Encryption Algorithm:

- AES 256-bit • Fully Automatic key management

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

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

Dimensions:

- Dimensions: 9" (L) x 7.3" (W) x 1.50" (H)

Environmental:

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

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 202T

Part No.	Description	Notes
GW-007-202T-0x	Black•Gate 202T	Specify # of 202T Ports (1 to 4)
Base Option		Specify as suffix
-EXT	Extended Temperature	-40C to 70C
-RED	Redundancy Option	Redundant SCADA Controller
Power Options	Specify as suffix	Hot Standby Configuration 2nd Power Suffix
-HSPDC	Connector for Dual DC Supply	
-WIRED C	Power Supply Module 12/26 VDC Screw Term	
-N48VDC	Power Supply Module Negative 48 Volt DC	Isolated Negative 48 Volt Power