

[TELEMETRY SYSTEMS]

Remote Ground Support Equipment (RGSE)

Remote Avionics & FTS Power Control

[PRODUCT OVERVIEW]

Remote Ground Support Equipment (RGSE)

Invocon's Remote Power Control (RPC) Remote Ground Support Equipment (RGSE) provides power control and monitoring for Avionics or Flight Termination System (FTS) payloads. Capabilities include system monitoring, power switching (internal/external, on/off), battery maintenance, and RS-422 communications through vehicle UMBIs. The rack is controlled remotely via direct Ethernet connection or through a fiber optic converter for extended range. Each rack accommodates up to two independent avionics systems or the two halves of an FTS.



[CAPABILITIES]

Features & Applications

Key Features

◆ Remote Ethernet and Fiber Control

Operated via a configurable GUI over direct Ethernet or single-mode fiber, enabling control from a safe standoff distance during hazardous operations.

◆ Dual Independent Avionics or FTS Support

Each rack controls up to two independent avionics systems or both halves of an FTS, reducing hardware footprint at the launch site.

◆ Integrated Power and Battery Management

Two independent DC supply pairs handle external power/control voltages and battery charging simultaneously, with relay-controlled switching.

◆ Flexible Telemetry Fiber Routing

The -301 Avionics configuration adds multi-mode and single-mode fiber converters for routing telemetry bitstreams between vehicle and ground systems.

◆ Battery Discharge Functionality

The -303 FTS configuration adds passive discharge loads and dedicated relays to safely drain batteries prior to de-servicing.

◆ Configurable GUI Delivered at Rack Delivery

Configurable remote-control software is provided with each rack, pre-configured for the customer's specific relay and monitoring setup.

Typical Applications

- ◆ **Telemetry Bitstream Distribution**
Routes PCM telemetry between vehicle and ground systems over fiber and copper using the -301 configuration.
- ◆ **Remote Hazardous Operations**
Provides fiber-extended remote control during operations requiring personnel standoff from the vehicle.
- ◆ **Launch Vehicle Pre-Launch Avionics Power**
Applies and monitors external power to avionics stacks through the vehicle UMBI during countdown operations.
- ◆ **FTS Power Control and Monitoring**
Controls power state of Flight Termination System payloads and monitors health through launch day safing and arming.
- ◆ **Battery Maintenance and Charging**
Manages battery conditioning and charging cycles for onboard batteries prior to launch.

[TECHNICAL DATA]

Key Specifications

SPECIFICATION	VALUE
ELECTRICAL	
AC Power Input	120 VAC
DC Power Supplies	2x independent 60 VDC / 15 A (external power and control)
Battery Charger Supplies	2x independent 60 VDC / 15 A
ADC Monitoring (per relay module)	8 ADC channels
Control Relays (per relay module)	16 control relays + 2 power relays
RS-422 Links (per relay module)	4 bi-directional links
Remote Control	Ethernet (direct) or Ethernet-to-SM fiber (1310 nm) converter
MECHANICAL	
Rack Dimensions	27" W x 42" L x 24" H
Weight	Based on configuration (Contact Invocon for details)
Enclosure	Rugged, shock and water-resistant rack
Casters	4" removable casters