RFL™ GARD 8000®
GE® MDS ORBIT™

LTE Cellular Direct Transfer Trip

HPS/RFL is proud to announce a new communications solution for Direct Transfer Trip (DTT) applications. This solution was developed primarily for the Distributed Energy Resource (DER) and Distributed Generation (DG) market, where communications facilitating anti-islanding and islanding detection are challenging. This joint solution between HPS/RFL and GE Industrial Communications provides a communications alternative to traditional means with significantly lower operating cost, while maintaining critical performance requirements including latency, security, and dependability. Integral to the solution is the RFL GARD 8000® equipped with the Ethernet Teleprotection System (ETPS) module and the GE® MDS Orbit™ LTE Cellular router. These two devices work simultaneously to securely deliver DTT signals from electric utility substations and line reclosers to generation facilities utilizing public or private LTE networks. Since the primary communications protocol is IEC 61850 GOOSE, multipoint communications are efficiently utilized, limiting the amount of communications equipment required. Several redundancy options are also possible, including dual SIM and parallel path communications, seamlessly leveraging multiple carrier networks as well as legacy communications methods. For cybersecurity, GRE tunneling, VPN and 256-bit encryption are employed.

FEATURES AND BENEFITS

Diverse Cellular Options

Support for a variety of cellular technologies including 4G with 3G fallback. Supports Public and Private cellular networks including CBRS and FirstNet.

Cellular & Legacy Hybrid Communications

Provides the possibility of operating dual communications channels in parallel for seamless redundancy. Legacy options include audio tone and various TDM digital networks.

Reduced Operating Cost

In contrast to leased audio tone and wired digital networks, M2M cellular plans include significant cost savings by as much as eight times.

Cybersecurity

Where security is a concern, 256-bit encrypted communications and point-to-point VPNs adds an additional layer of security for packet-based traffic to and from the station while keeping latency at a minimum. In addition, a firewall access control list to limit access from the network.

LTE Dual SIM

Dual SIM functionality provides redundancy across multiple carriers. Includes configurable failure detection and switching logic.

Multipoint Communications

Receive DTT signals from multiple locations and devices. Reduces the number of individual point-to-point connections and communications devices.

HUBBELL

hubbellpowersystems.com

For product inquiries, please contact your local sales representative, or visit the RFL™ brand website at www.rflelect.com

TECHNICAL SPECIFICATIONS

Physical Ports

- Ethernet 10/100 - RJ45
- Cellular – SMA
- Serial RS-232/RS-485 – RJ45

Power

- Input Voltage: 38-150VDC/120VAC, 24VDC, or 250VDC
- Consumption: less than 50W (typical)

Environmental

- Operating Temp: -20° to +70°C (-4° to +158°F)
- Storage Temp: -40° to +85°C (-40° to +185°F)

Cellular Networks

- 4G LTE-A: AT&T®, Verizon, UScellular™, Bell, Telus, Rogers, Vodafone
- 4G LTE-A Pro: AT&T, Verizon, CBRS, FirstNet Ready™

Networking

- Routing IPv4 Static Routing with Failover, OSPF, RIPv2, VRRP
- Ethernet IEEE 802.3, 802.1Q/VLANs, IGMP, STP, 64 VLANs Concurrent Bridging & Routing
- Tunneling Layer 2 (Ethernet) and Layer 3 GRE
- High Availability Failover between any two wireless/ Ethernet interfaces, performance-based failover (latency and packet loss)
- Quality of Service 16 egress queues, Priority Queuing, Fair Queuing, Traffic Shaping, Classification based on DSCP, 802.1p and Layer 2-4 classifiers
- IP Protocols TCP, UDP, ARP, DHCP, ICMP, NTP, FTP, SFTP, TFTP, DNS, configurable HTTP and HTTPS, SSH
- Serial TCP server, Modbus/TCP, Modbus RTU, TCP client, UDP Unicast and Multicast, BSAP, and DNP3

Cybersecurity

- IPSec VPN Server (responder) and Client (initiator)
- Authentication Public Key, EAP TLS, Pre-Shared, Ike 1-2
- Encryption: 3DES, AES 128/192/256, CBC, CTR, CCM, GCM, SHA 256/384/512 HMAC
- Firewall: Stateful L3-4 Access Control List, Layer 2 MAC Filtering, NAT, Source NAT (Masquerading), Static NAT, Port Forwarding

EXAMPLE SYSTEMS