IRG7000 5G Routers

Enterprise-Class Edge 5G Router & Gateway

- 5G Router for Primary or Failover Connectivity
- Cellular Band Operation Certified Worldwide over 5G NR with fallback to 4G CAT20 LTE & 3G
- Out of band management for remote troubleshooting
- Cloud Hosting -- Deploy and manage your network from the cloud
- 4-port 10/100/1000 Ethernet
- Network connectivity via 5G, Ethernet, USB, and Serial
- RS232, RS485, Alarm Relay, and multiple I/O to connect equipment
- **Advanced feature set with NO Annual Fees**

Perle IRG7000 5G Routers and Gateways have the most comprehensive set of features, functionality, and performance to provide **primary or back-up 5G connectivity** to remote infrastructure and assets. These ultra-low-power, rugged, high-performance Cellular Routers can be quickly and easily deployed using an intuitive web GUI. For advanced admin scrips, RESTFul API and CLI commands are also available.

Perle IRG7000 5G Routers provide **fast, secure, and reliable managed 5G network connectivity** where wired options are impossible to deploy or require a backup. This is crucial for enabling a wide range of applications while ensuring the highest degree of security to protect the integrity of critical services. Reduce the cost of downtime and service calls, and bringing distributed sites online faster. With support for **Data, SMS, Voice, and Video**, an IRG7000 and can be integrated into any enterprise cloud, building, industrial, or mobile location network infrastructure.

- Building and process automation controllers, Internet of Things (IoT)
- Smart grid assets (meters, switches, controllers), Telco infrastructure controllers
- SCADA, Distribution management systems, Remote data loggers, flow meters, sensing equipment
- Digital signage, ATMs, POS, Kiosks, Temporary "pop-up" stores
- Video surveillance controllers, IP cameras, Mobile hotspots
- Fleet management, GPS/GNSS Location tracking, Taxis, Public Service Vehicles, vehicle area networking (VAN)
- Public Service Vehicles, First responders, Command Centers
- Transit systems, Buses, Metro Subways, Railways

Edge Routers with Enterprise-Grade Routing Capabilities

Perle does not charge any annual subscription or license fees to maintain operation, download software updates, or access features. IRG7000 routers have all the of the routing functionality found in the most advanced enterprise routers included in the base price of the product. Extensive routing protocol support means they can be easily deployed in hierarchical or large mesh network structures. A fast CPU and lots of memory ensure the router can handle a consistent and heavy workload all day long.

- RIP, RIPv2, RIPng, OSPFv1/2/3, BGP-4, VRRP
- When BGP peering with multiple ISPs, the IRG5500 delivers carrier-grade routing performance capable of handling the full Internet routing table
- IPv4 & IPv6
- OpenVPN & IPSec VPN
- DHCP & DHCPv6
- IP Passthrough for deployments requiring the router to operate in Gateway or Bridge mode
- Route between any interface (Cellular, Ethernet, USB, or serial RS232)
- Reduce unwanted network traffic by creating collision and/or broadcast domains

Integrated Zone-Based Policy Firewall

The IRG7000 built-in firewall offers intuitive policies for multiple-interface routers to **protect inside networks from unauthorized access** by users on an outside network. The firewall also protects inside networks from each other, for example, by keeping a human resources network separate from a user network. If there are network resources that need to be available to an outside user, such as a web or FTP server, these resources can be placed on a separate network behind the firewall, in a demilitarized zone (DMZ). The firewall will allow limited access to the DMZ, but because the DMZ only includes the public servers, any attacks there will not affect the inside network. The firewall controls when inside users access outside networks (for example, access to the Internet), by allowing only certain addresses out, by requiring authentication or authorization, or by coordinating with an external URL filtering server. A deny-all (blacklist) policy can be used to prohibit traffic between firewall security zones until an explicit policy is applied to allow desirable traffic. Router ports are assigned to zones and firewall inspection policies are applied to traffic moving between the zones. Firewall inter-zone policies come with considerable flexibility and granularity so that different firewall inspection policies can be applied to the same router port.

High Availability Access and Enhanced Security with 2 Factor Authentication

With multiple concurrent VPN sessions and 2 Factor Authentication, Perle IRG7000 Routers enable secure communications to multiple back-end systems.

- Remote authentication (RADIUS, TACACS+, LDAP) management, integrates with enterprise-grade systems to control access to devices in the field.

- Software image CRC control protects the software upgrade process against unwanted software corruption and malware
- High-speed OpenVPN, IP Security (IPsec), Triple Data Encryption Standard (3DES), and Advanced Encryption Standard (AES) encryption for data privacy over the Internet.
- Intrusion prevention enforces security policies in a large enterprise or service provider networks.
- Perle's cloud-based centralized management solution puts all your network and IT infrastructure into a single application and provides secure reliable access and visibility during normal operations and critical network failures. Scalable to suit any business requirement, Cloud Centralized Management reduces human error and guarantees repeatability.
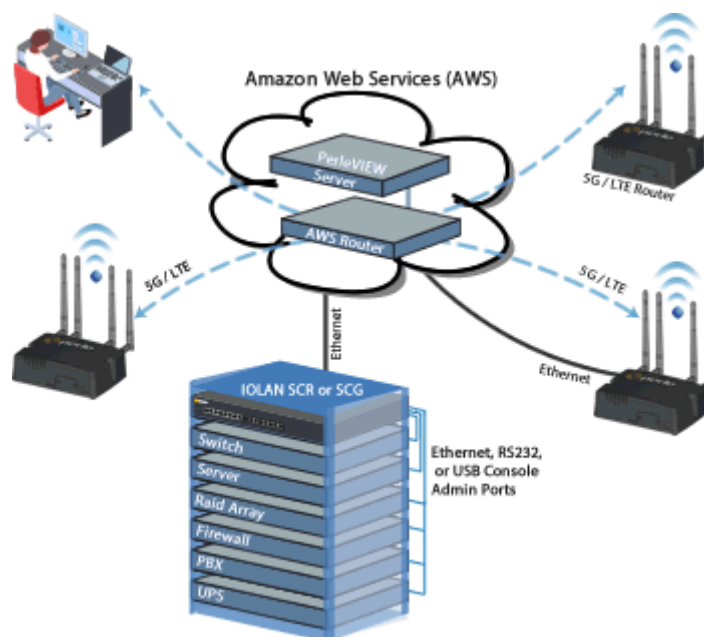
GPS / Global Navigation Satellite System (GNSS) Included

GNSS (GPS, Galileo, and Glonass) are included by default in all IRG7000 Routers and Gateways. This enables **real-time location tracking** of remote assets. Also, you can get **real-time network clock updates** in the router, or any attached equipment, for accurate time-stamp usage in time-sensitive applications.

Cutting-edge design certified for a wide range of deployment scenarios

High-performance components and features enable customers to take advantage of broadband network speeds while running **secure concurrent data, voice, and video services**. All IRG7000 routers have **high MTBF rates** because they are developed with certified high-end components to provide superior reliability and uninterrupted operation.

Primary or failover back-up connectivity	Perle is the only company to offer 5G edge routers with all of the enterprise-grade features and protocols needed to be a fully functional primary or failover back-up 5G Router. If the main network connection goes down for any reason, Perle IRG7000 5G routers provide an always-on, cost-effective redundant connection. As a failover solution, wireless speeds are fast enough to keep your network humming and distributed enterprises can enjoy the same reliability and competitive advantage as large enterprises. The relatively low cost of 5G for branch continuity means a greater return on investment and scalability for multiple locations. Simply put, an IRG7000 5G Router ensures maximum uptime, cost-effective scalability, and ease of deployment and management with limited IT resources.

Compact light-weight design	Deploy in many different environments where space, heat dissipation, and low power consumption are critical factors. The optional DIN-Rail mounting brackets or wall-mount brackets ensure easy installation.

Ultra-Low-Power	IRG7000 5G Routers are designed to operate on limited power sources by consuming less than 1 Watt in idle mode. This makes them ideal for battery and solar applications. In addition, Standby Mode can be used to protect power sources by dropping power consumption to a target of 52 mW. This can be triggered by timers, low voltage detection, or I/O. IRG7000 Routers also work with the existing power infrastructure in 4G/3G deployments that are migrating to 5G thus, eliminating the need to invest in replacement equipment.
Rugged Environment Certifications	• Rugged die-cast aluminum IP54 enclosure for dust & water ingress • Shock and vibration resistance certified to MIL-STD-810G • 40°C to 70°C / -40°F to 158°F operating temperature
Mobility Support	• Cellular tower connectivity can be established and maintained at up to 100 meters per second (360km/224mi per hour) • Built-in battery charge protection, with no requirement for external power conditioning • Ignition Power Management can schedule a delayed shutdown or start-up of the IRG7000 based on the vehicle ignition status

More Features and Benefits

WAN Connectivity	5G and 10/100/1000 Ethernet
Central Management Configuration	Perle IRG7000 Routers and Gateways use **PerleView**, a web-based server configuration tool that simplifies setup and deployment. Centralized management capabilities give network managers visibility and control over network configurations at remote sites. Other Perle IRG7000 management capabilities include: • Fast Setup - Available when the router is in factory default (initial) configuration • Web Manager - Available using a browser • CLI - Command Line Interface • RESTFul API - a standard for interactive Web services • SNMP - Using a Network Management System • **No ongoing monthly or yearly licensing fees.**

Serial Port	Perle IRG7000 Routers come with an IOLAN Secure Device Server built-in for a secure serial to IP (Ethernet/Cellular) connectivity applications. This makes it ideal for applications that require remote device console management, data capture, or monitoring. Some of the supported applications are:

- TrueSerial® packet technology delivers the most authentic serial connections across Ethernet for serial protocol integrity.
- Serial Port Access: connect directly using Telnet / SSH
- Terminal Server: Telnet, SSH, Rlogin, LPD, RCP printer
- Serial machine to IP (Ethernet)
- Raw serial data over Ethernet/Cellular/TCP/IP/UDP
- Virtual modem simulation
- TruePort redirector
- ModBus, DNP3 and IEC-870-5-101 encapsulation
- Line access permissions via TACACS+ and RADIUS servers
- Dial direct serial: PPP, PAP/CHAP, SLIP

Software Feature Set: IRG7000 Cellular LTE Routers

All features and functionality are included in the base price of the product. There are no additional costs or fees.

Functionality

Gateway (IP Passthrough Bridging), Switching, Routing

Routing / Switching Protocols

IPv4/IPv6, Static Routing, RIP/RIPNg, NAT, OSPFv3, BGP-4, IPv6 Encapsulations (GRE, 6in4), VRRP, Port Routing, STP, MSTP, PPPoE V6, LLDP

IP Applications

DDNS, DNS Proxy / Spoofing, relay, client, Opt. 82,

NTP & SNTP (versions 1, 2, 3, 4) with support from GPS, GNSS & Network Carrier timing

DHCP / DHCPv6 server & BOOTP for automated network-based setup

VLAN & VPN

VLAN, IPSec, OpenVPN, VPN Failover (16 concurrent VPN tunnels)

GPS & GNSS Reports

GPS for tracking equipment over RS232, USB, and Ethernet

NMEA 0183 v3.0, TAIP, CSV

LTE Applications

Private LTE / CBRS - ability to select a specific band for LTE connection

Firewall & Security

Built in Zone-Based Policy Firewall

Access Control Lists (list & ranges & time)

Filter based on MAC Address, IP, Port, Protocol, User

AAA, LDAP, Radius, TACACS+

802.1x

Layer 2 MAC address filtering

Certificate Support (X.509)

Port Forwarding

BGP Communities

Security Features

Security via remote authentication (LDAP, Radius and TACACS+)

Trusted host filtering (IP filtering), allowing only those hosts that have been configured in the host table access to the router.

Idle LTE port timers, which close a connection that has not been active for a specified period of time

Ability to disable services (for example, Telnet, TruePort, Syslog, SNMP, Modbus, HTTP) for additional security

Ability to individually disable network services that won't be used by the SSH client/server connections (SSH 1 and SSH 2)

Logging via syslog

Ability to disable Ping responses

Ability to setup Access Lists (ACL's) to restrict traffic

Ability to set up firewalls to restrict incoming and outgoing packets

SSH client/server connections (SSH 1 and SSH 2)

SSL/TLS client/server data encryption (TLSv1/1.1/1.2 and SSLv2)

Ability to setup Virtual Private Networks (VPNs)

Wireless cellular security using PAP or CHAP authentication

Dynamic DNS with DYNDNS.org

Domain Name Server (DNS) support

Email alert notification
SSH connections (supported ciphers are Blowfish, 3DES, AES-CBC, AES-CTR, AES-GMC, CAST, Arcfour and ChaCha20-Poly1305)
SSL/TLS connections
RIP authentication (via password or MD5)
OSPF
2F Authentication
Management Access Control
SNMPv3
DMZ
FIPS 140-2
Secure HTTP/HTTPS/FTP/Telnet Authentication Proxy

Logging, Reporting & Alerts

Sys Log, Event Type, Report Type, Alerts & Monitoring, Triggers Status Screen Report, Data Usage, Diagnostic

Management

PerleVIEW Management, WEB (HTTP/HTTPS), SNMPv1/v2/v3, RESTful API, SMS Control, Load Balancing, CLI/Piping, Login Banner, E-mail, Ping, Telnet, FTP, Connection on Demand
Automatic check for software updates.
Software updates available over FTP, HTTP, HTTPS, SCP, SFTP, and TFTP

Power Management (General)

Power Processor Saving Mode – this feature optimizes idle power consumption, saving energy by reducing performance where possible.
Power Saving Features including; LED power saving mode, Smart Standby Mode, Power saving strategies such as turning off unused interfaces (USB, Serial, Ethernet), turning off GPS and adjusting the Ethernet rate.
Operating Power Modes • Standard – When power is applied to the router, it will power up. All inputs are ignored (from a power up and Smart Standby perspective). This is the default. • Smart Standby Mode – you can configure a combination of one or two user defined conditions to determine when the router is powered up and when it goes into Smart Standby Mode.

Power Management (Ignition Sense)

Configurable time delay for shutdown / start based on vehicle ignition status

Low Voltage Standby function to prevent battery drain

Operating Power Mode (Ignition mode) – this mode monitors the ignition input and goes in and out of Smart Standby based on the voltage of the ignition input. When the voltage on the ignition input goes below a user pre-defined threshold, the router will be powered down into Smart Standby Mode. When the voltage on the ignition input goes above the Perle Wireless LTE Router pre-defined value the power will be restored. You can configure a combination of inputs and schedule to control Smart Standby Mode.

GPIO Capabilities

One GPIO configurable as high side pull-up / dry contact, analog input, digital input, low side current sink output, digital output/open drain, or Pulse Counter.

One GPIO configurable as Vehicle ignition sense or analog input

Two Digital Inputs configurable as high side pull-up / dry contact, digital input, or Pulse Counter

One normally open (NO) relay contact

Serial Port Capabilities

Access: connect directly using Telnet / SSH

Terminal Server: Telnet, SSH v1 and v2, Rlogin, Auto session login, LPD, RCP printer

Serial to Ethernet: Tunnel raw serial data across Ethernet - clear or encrypted, RAW serial data over TCP/IP/UDP, packetized data, virtual modem, TruePort com/tty redirector, TrueSerial packet technology, RFC2217 transport & RS232 control signals

Industrial Protocols Encapsulations: ModBus, DNP3 and IEC-870-5-101, ModBus TCP Gateway

Remote Access: PPP, PAP/CHAP, SLIP

Hardware Specifications: IRG7000 Cellular LTE Routers

Products can be purchased with or without antennas and with or without power cords. All functionality is included in the base price of the product. Additional accessories are sold separately.

Cellular

LTE	5G: 4.5Gbps downlink and 660Mbps uplink speeds 4G/LTE (Cat-20), 3G fallback

Frequency Bands	**5G Sub-6 GHz:** n1, n2, n3, n5, n28, n41, n66, n71, n77, n78, n79 **4G LTE:** B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B18, B19, B20, B21, B25, B26, B28, B29, B30, B32, B34, B38, B39, B40, B41, B42, B43, B46, B48, B66, B71 **3G HSPA/HSPA+ Bands:**B1, B2, B3, B4, B5, B6, B8, B9, B19 Data & SMS Operation over 5G with fallback networks 4G/LTE, 3G HSPA+ / HSPA+ / HSPA / UMTS (WCDMA)
5G/LTE Antenna	• Frequency Range: 704-960 / 1710-2700 / 3300 / 5150-5850 MHz • Peak Gain: 3.07 dBi • Impedance: 50 ohm • Voltage Standing Wave Ratio: < 3.0 (typical) • Radiation: Omni-Directional • Connector: SMA Male (Swivel) • Dimensions: 144 x 13 mm / 5.67 x 0.51 in
SIM	Mini-SIM 15 x 25mm (or 2FF)

GPS / GNSS

GPS / GNSS	• Wide-band GNSS: 1559-1606 MHz • GPS: 1575.42 MHz / GLONASS: 1602 MHz / BeiDou: 1561.098 MHz / Galileo: 1575.42 MHz / QZSS: 1575.42 MHz • Simultaneous tracking: Up to 30 channels • Reports: NMEA 0183 V3.0, TAIP
GPS / GNSS Passive Antenna	• GNSS Applications: GPS, Glonass, Galileo • Frequency Range: 1561MHz~1606 MHz • Gain: 4 dBi (typical) • Impedance: 50 Ohm • Voltage Standing Wave Ratio: 2.0 (typical) • Polarization: RHCP • SMA (M) straight • Dimensions: 41.9 x 47.3 x 16.3 mm / 1.65 x 1.86 x 0.64 in • RG-174 Cable Lenght: 5 m / 16.4 ft

Ethernet Ports

Type	4 x 10/100/1000 Ethernet RJ45 Copper
Speed	Software selectable 10/100/1000 Ethernet, Auto Software selectable Half/Full/Auto duplex
Ethernet Isolation	1.5Kv Magnetic

Standards	- IEEE 802.3 for 10Base-T - IEEE 802.3u for 100Base-TX and 100Base-FX - IEEE 802.3ab for 1000Base-T - IEEE 802.3x for Flow Control
Processing Type	Store and Forward
MAC Address Table Size	8K
VLAN ID range	1 to 4000

USB-C Port

Type	1 x USB Type-C Configurable for Console over USB, GNSS streaming

Serial Port

RS232 Serial	1 x DB9 female connector - Serial Port Speeds: 300bps to 230Kbps with customizable baud rate support - Data Bits: 5,6,7,8-bit protocol support - Parity: Odd, Even, Mark, Space, None - Flow Control: Hardware, Software, Both, None - Serial Port Protection: 15Kv Electrostatic Discharge Protection (ESD) - Processing Type - Store and Forward
RS485 Serial	half-duplex

Power and Auxillary Connectors

One GPIO Input	Digital Input & Pulse Counting VDC: 0 for ≤ 1V, 1 for ≥ 2.7V Dry Contact Max Current range: min 0.6mA @ 7V and max 3.5mA @ 36V Current Sink Output: 0.5A @ 12v
Ignition Sense	Analog Input: 0.5V to 36V
Two Digital Inputs	Digital Input & Pulse Counting VDC: 0 for ≤ 1V, 1 for ≥ 2.7V
One Alarm Relay	Normally Open (NO) dry contact: 1A @ 24VDC

Platform Specifications

Microprocessor	Dual Core ARM 1.2GHz

RAM	1GB DDR4
Flash	4GB MMC
LED Indicators	- Power: indicates power status - Serial: indicates serial RS232 connection status and Tx data 5G WWAN: indicates Wireless Wide Area Network status 4G/3G WWAN: indicates Wireless Wide Area Network status - GNSS: indicates Global Navigation Systems for GPS, Galileo, Glonas and Beidou status - Internet: indicates Internet connectivity
Environmental Specifications	- Operating Temperature: -40°C to 70°C / -40°F to 158°F - Storage Temperature: -40°C to 85°C / -40°F to 185°F - Operating Humidity: 0% to 95% non-condensing - Storage Humidity: 0% to 95% non-condensing - Operating Altitude: 3048 m / 10,000 ft - MTBF: 203,020 (Calculation model based on MIL-HDBK-217-FN2 @ 30°C/86°F) - Heat Ouput (BTU/HR): 22.2
Enclosure	Die-Cast Aluminium
Mounting	DIN Rail (Mounts to standard 35 mm DIN rail in accordance with DIN EN 60175 vertically or horizontally) Panel / wall mount attachement bracket is optional
Ingress Protection Rating	IP54
Power	
Power Input	12/24 VDC Nominal (7 to 36 VDC Range)
Power/Current Consumption	- Standby (no activity / all ports shutdown): 4.3mA / 52mW - Idle Mode (connected/no Activity): 0.41A / 5W - Typical Use (connected/with Activity): 0.54A / 6.5W - Note: up to 0.08A / 1W more in power savings can be achieved through shutting down the USB port, LEDs, GPS, as well as turning down router processor speed
Ignition Sense	VDC voltage variation with On/Off and timer
Power Connector	

External Power Supply (optional)	110 / 220 VAC Power supply
Power Line Protection	Surge: 8KV (EN61000-4-5 common mode), 2KV (EN61000-4-5 differential and common modes)
Vehicle Transient voltage protection	Built-in protection against voltage transient including 5 VDC engine cranking and +200 VDC load dump
Reverse polarity protection	YES

Weight & Dimensions

Product Weight & Dimensions	Weight: 0.58kg / 1.28lbs Dimensions: 146 x 99 x 45 mm / 5.75 x 3.89 x 1.77 in
Shipping Weight & Dimensions	- Weight **(with Antenna):**1.03 Kg / 2.27 lb - Weight **(without Antenna):** 0.97 Kg /2.14 lb - Dimensions: 270 x 170 x 70 mm / 10.63 x 6.70 x 2.75 in

Regulatory Approvals

Cellular/Telecom Regulatory Approvals	FCC/ICES, RED, PTCRB/CTIA, CE
Carrier Certifications	AT&T, Verizon
Shock & Vibration	MIL-STD-810G (Shock: test method 516.6. Operational Vibration: test method 514.6)
Emissions	- FCC 47 Part 15 Subpart B, Class A - ICES-003 Issue 6 Class A (Canada) - ANSI C63.4 Class A (Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz) - EN61000-3-2: 2014 (Limits for Harmonic Current Emissions) - EN61000-3-3: 2013 (Limits of Voltage Fluctuations and Flicker) - EN 61000-6-4: 2007 + A1: 2011 - CISPR 32:2015/EN 55032:2015 Class A (Electromagnetic compatibility of multimedia equipment - Emission requirements)

Immunity	- CISPR 35:2016/EN 55035:2017 (IR) - EN 61000-4-2:2009 (ESD) +/-8 kV (Contact), +/-15 kV (Air) Operating mode: powered on - EN 61000-4-3: 2006 + A1:2007 + A2:2010(RS) - EN 61000-4-4:2012 (EFT) 2 KV (Criteria A) - EN 61000-4-5:2014+AMD1:2017 (Surge) 2KV (line to earth), 1.5KV (line to line) - EN 61000-4-6: 2013 (CS) - EN 61000-4-8: 2009 (PFMF) - EN 61000-4-9: 2016 (PMF) - EN 61000-4-11: 2004 + A1:2017 - EN 61000-4-16 - EN 61000-6-2 (General Immunity for Industrial Environments)
Safety	- CE Mark - UL/EN/IEC 62368-1 (including CB) - CAN/CSA C22.2 No. 62368-1-14
Cellular / Radio Standards	- EN 301 489-1:2019 Ed2.2.3 - EN 301 908-25 (Imt Cellular Network: Essential requirements) - EN 62311:2020 (Human exposure restrictions for radio frequency electromagnetic fields)
Environmental Specifications	Reach, RoHS3 and WEEE Compliant

M2M / IoT Cellular Connectivity

Perle IRG7000 5G Routers offer always-on M2M connectivity that is secure, reliable, cost-effective, and easy to deploy. Featuring an industrial-grade ruggedized housing, Perle IRG7000 Routers are a versatile and compact solution that provides 5G connectivity with built-in GPS capabilities. Perle IRG7000 Routers are ideal for solving wireless connectivity challenges in a variety of vertical markets including video surveillance, digital signage, home security, oil and gas exploration, kiosks, smart grid, telematics and many more.
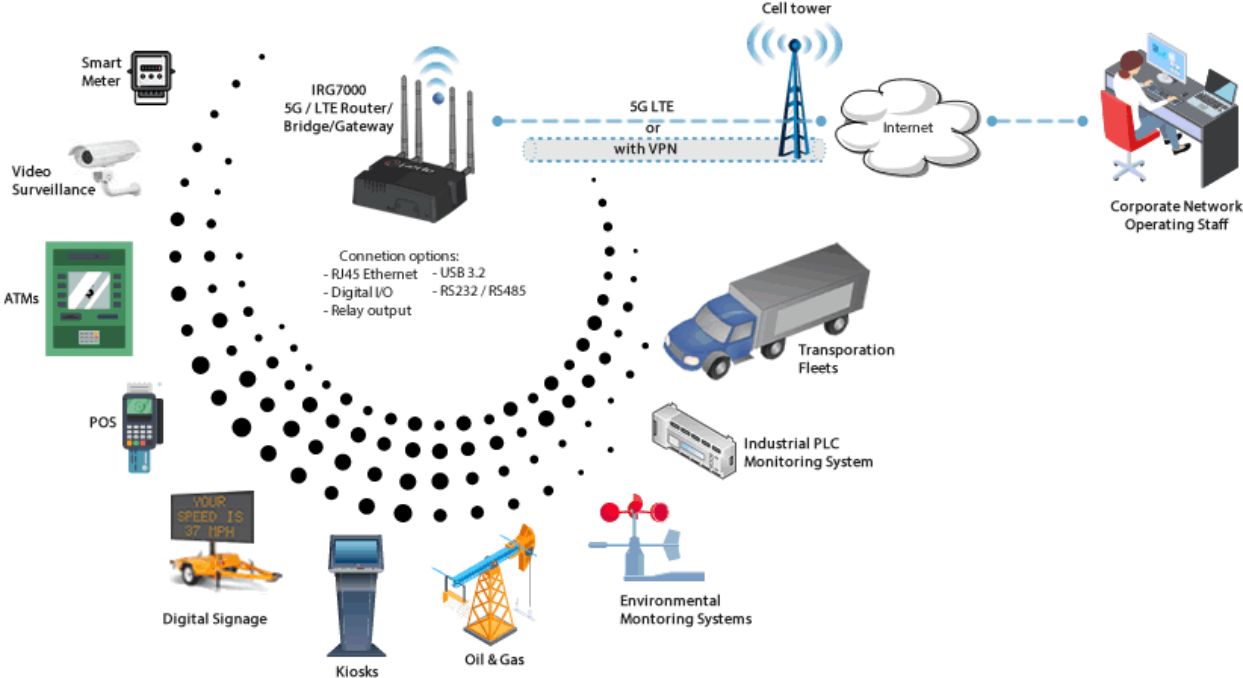
Cellular Failover & Out of Band Management with "Four-Nines" (99.99%Up-time)

When the wired link is down, network access can be maintained with automatic failover to 5G. There are several ways to determine when the Primary WAN is down. One example, is to use the **Health Monitoring** function where IRG7000 will ping a destination IP through the primary route. If there is no response, the IR7000 router will initiate a direct connection using the back-up 5G route. The relatively low cost of 5G for business continuity means a greater return on investment and scalability for multiple locations that have limited IT resources. By deploying Perle IRG7000 5G Routers, businesses will have on-demand network connectivity that is quick to deploy, simple to manage, and ensures maximum uptime.

Primary Router Deployments

For pop-up stores, or branch locations with limited IT resources, the IRG7000 Routers are an easy to deploy solution. This single box will function as a 5G Router and four-port 10/100/1000 Ethernet Switch.**IPv4 and IPv6** is supported on both the WAN and LAN sides.
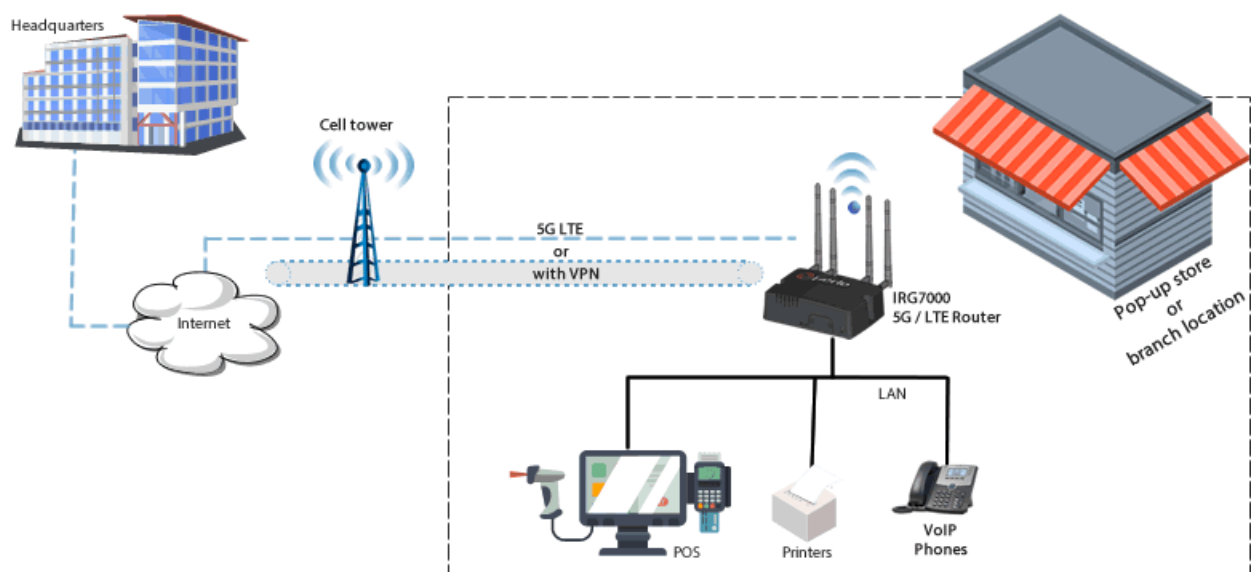
PCI Compliant Cellular Failover

The credit card industry requires retailers to comply with Payment Card Industry (PCI) standard to maintain a secure environment when processing payment card transactions. For these transactions, a Perle IRG7000 Router acts as a wireless data conduit (Gateway) for routers and POS (point-of-sale-terminals) that have been configured for PCI compliance. The USBnet is on a different subnet from the point-of-sale-terminal. All security protocols must be established from the point-of-sale terminal to the payment processor. Payment card terminals must be on a dedicated LAN or VLAN. The Perle IRG7000 Router configured on gateway mode must be connected to a router that is configured for PCI compliance.
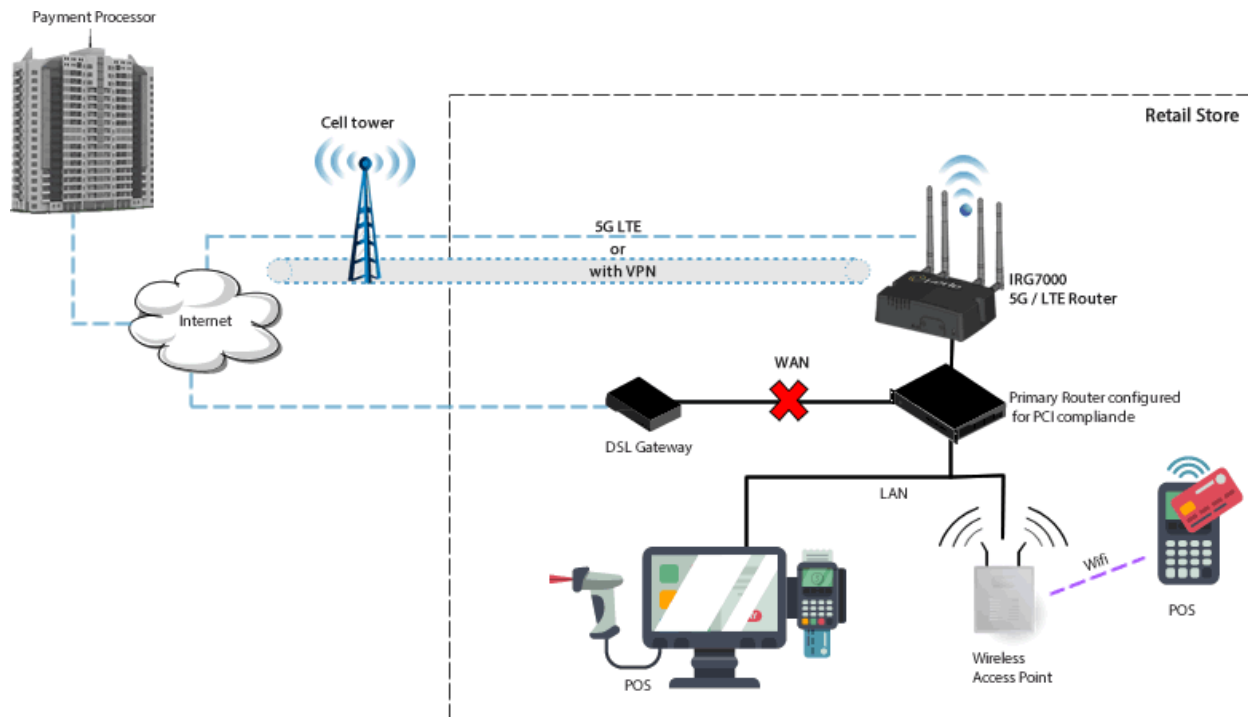
Mobility Support

With GPS and GNSS (Galileo and Glonass) included by default, an IRG7000 5G Router serves as the main connectivity hub in creating a VAN. This enables real-time location tracking of remote assets. In addition, real-time network clock updates for the router, or any attached equipment, ensures accurate time-stamp usage in time-sensitive applications. In-vehicle telemetry, sensors, surveillance cameras, ticketing, and other devices are connected to transmit data to the cloud or headquarters over 5G. With the ability to establish and maintain cellular tower connectivity at up to 100 meters per second (360km/224mi per hour), the IRG7000 provides reliable 5G access in any moving vehicle application. Ignition Power Management can be used to schedule a delayed shutdown or start-up of the IRG7000 based on the vehicle ignition status to ensure all data is safely transmitted.
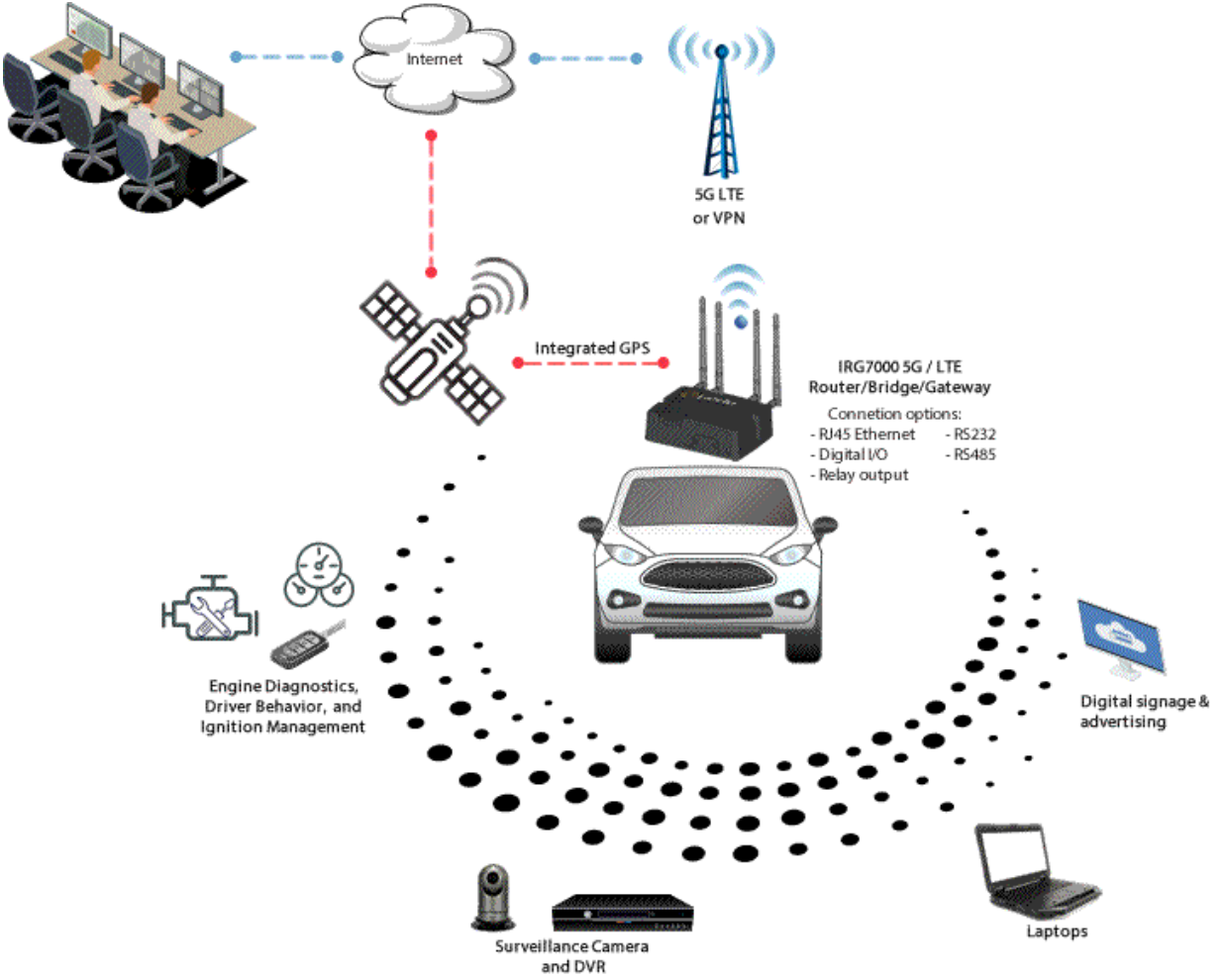

Roadway Smart Work Zones (SWZ)

Intelligent Transportation Systems (ITS) and Smart Work Zones (SWZ) are used to monitor and improve roadway construction zones. A 5G Router enables the communication between the components of the system. Real-time information can be transmitted to Portable Changeable Message Signs (PCMS) to display traffic conditions, travel times, incident information, and advisory messages. Data can be collected from cameras and sensors near the work zone and sent to the central processing system.
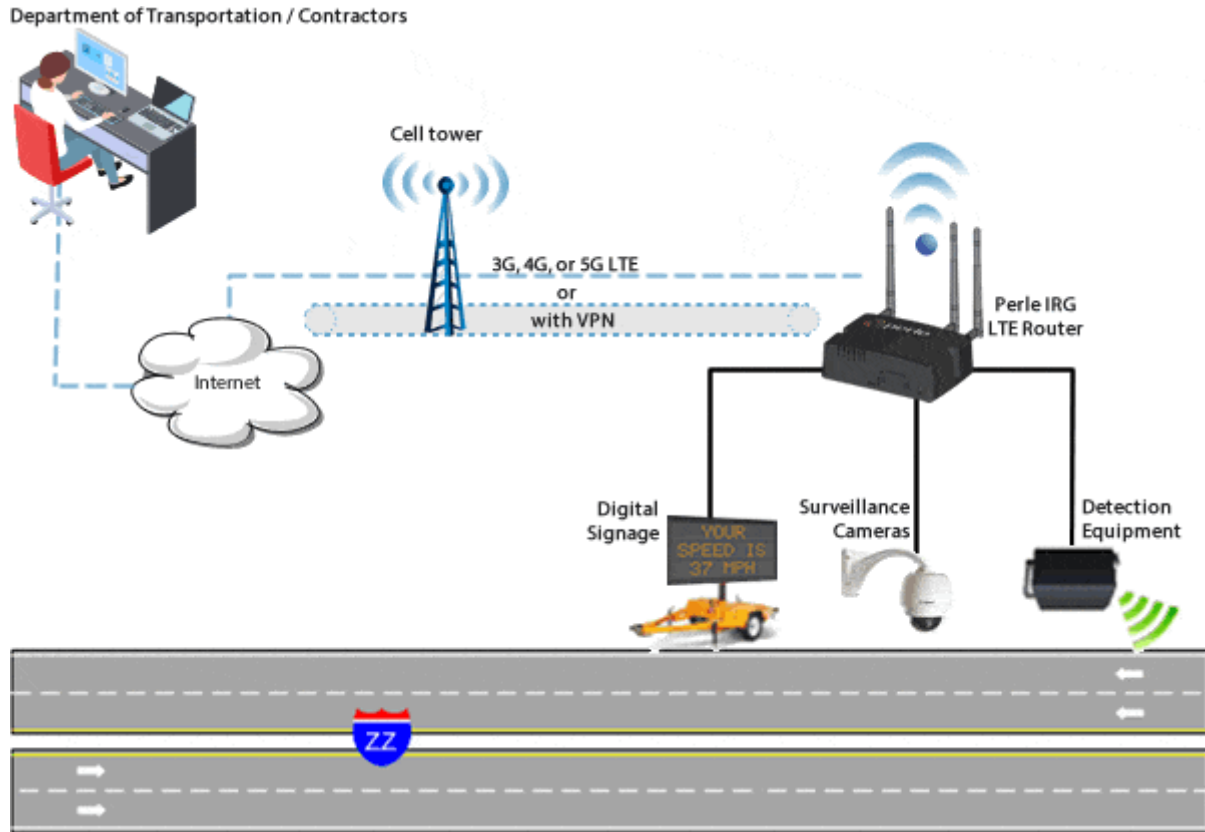

Failover with Static Routing

Force specified traffic to use different routing rules to direct specified traffic from the IRG7000 Router, or a connected device, to a designated primary router. If the primary route fails the specified traffic uses a backup route.
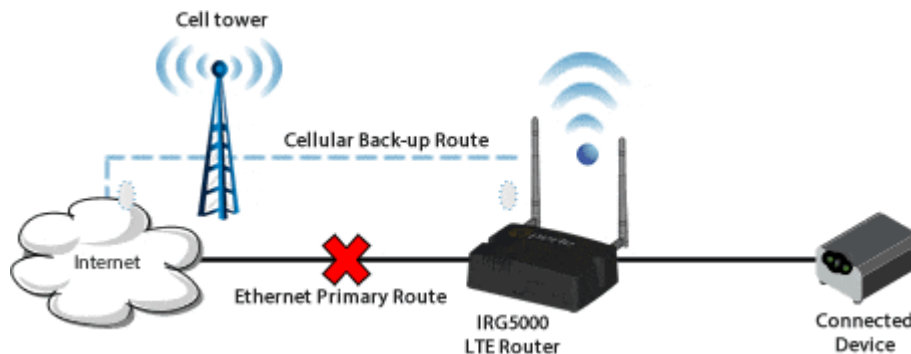
VPN Failover

With DPD and VPN Failover configured in the IRG7000 Router, two VPN tunnels are configured but only one is active at a time. If DPD detects that the destination is not responding through the Primary VPN, traffic is automatically switched to the Secondary/Backup VPN. The VPN Failover feature will continue to ping the desintation through the primary tunnel and, if configured to do so, will automatically revert back to the primary once it up again. Status fields can be viewed to see the current status of both VPNs.
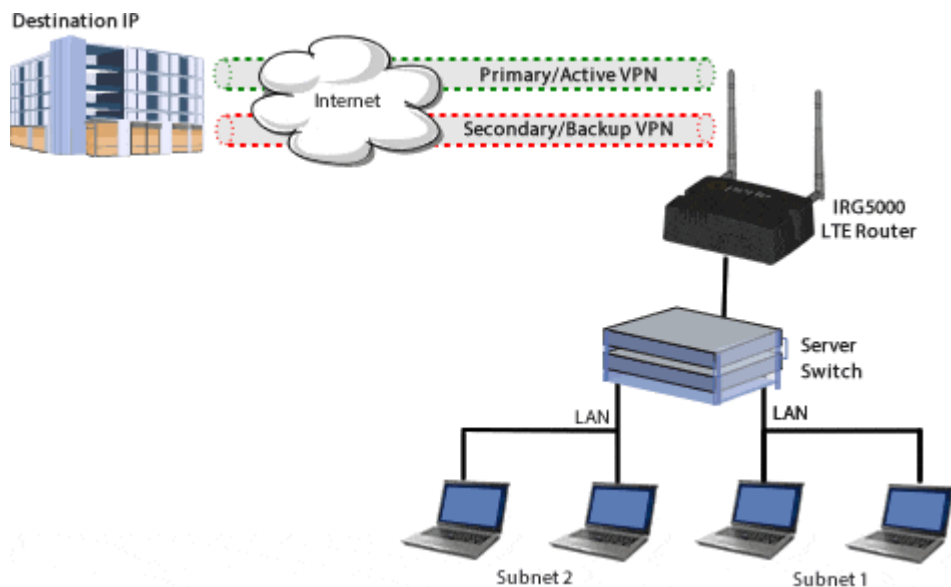
Non-NATed Networks

The Perle IRG7000 Cellular Router can handle multiple non-NATed networks behind a connected router or switch.


VLAN Support

The Perle IRG7000 Router supports up to 4000 VLANs on its Ethernet ports. VLANS are logical groupings of network devices that share the same broadcast domain. All devices on the same VLAN can ping each other without routing. There is no routing between VLANs.
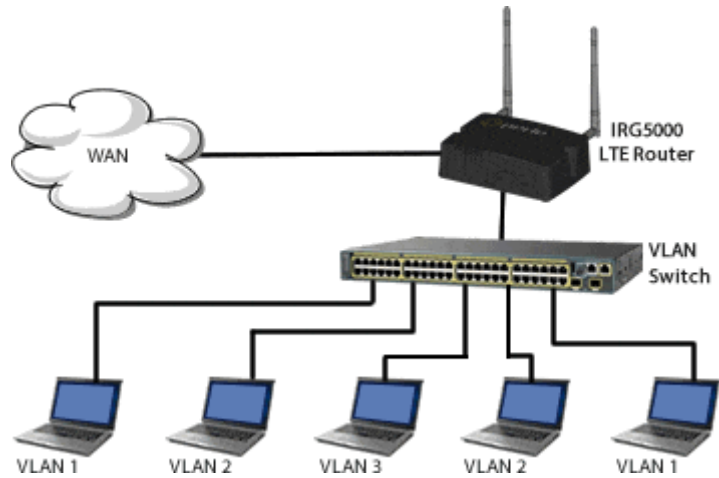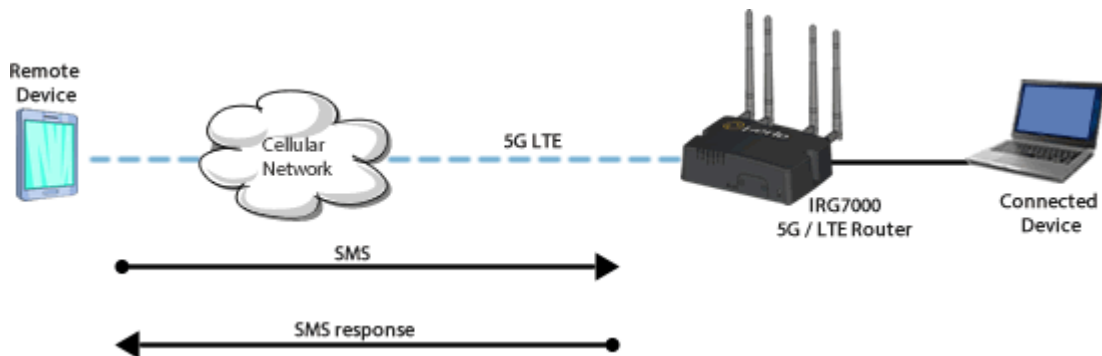

Port Forwarding

Any unsolicited data coming in on a defined Pulic Port is routed to the corresponding private port and IP of a host connected on the LAN.
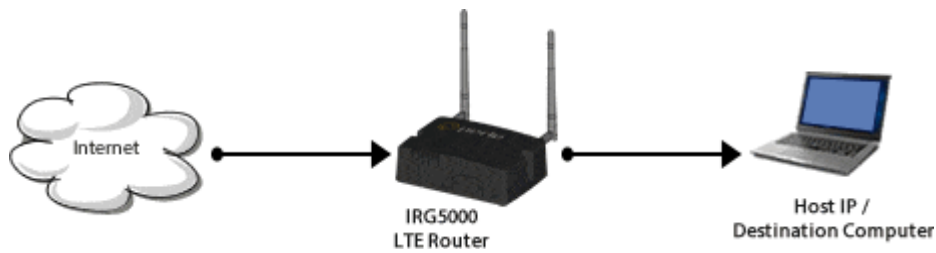

SMS support

The IRG7000 Router accepts SMS commands for basic actions and status. The IRG7000 Cellular Router will send back an acknowledgement that the SMS command was received every time.

Event Reporting

The IRG7000 Router can be configured to generate reports, or initiate actions, based on specified events. These events can be generated internally, or externally by devices attached to the IRG7000 Serial RS232, RS485, or digital inputs.
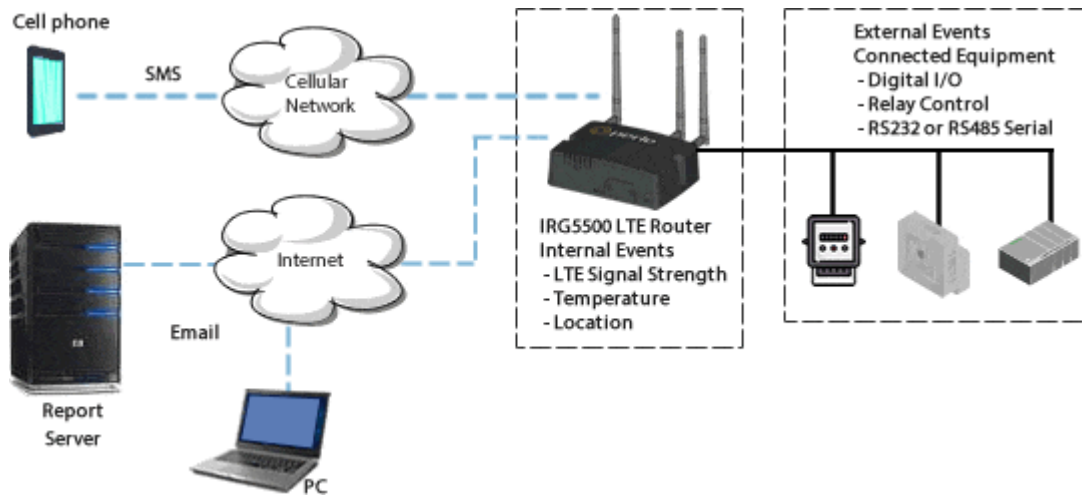
Serial Gateway

The Serial Port on the IRG7000 Router can be used to establish Serial to IP communications. Connect PLCs, RTUs, Card Readers, or any device with a serial COM port and transmit data over 5G.

PPP / SLIP / DUN Support

The Perle IRG7000 supports Point-to-Point (PPP) to establish a connection to a host PC serial port. The IRG7000 supports Windows Dial-up Networking when PPP is enabled to establish a connection to a host PC serial port.