

# Cellular Modem vs. Digi Cellular Gateways

**White Paper**



## *What Are the Differences Between Cellular Modems and Digi Connect® Cellular Products?*

Although the Digi Connect® WAN and Digi Connect® Remote Gateway (RG) are able to perform most functions of a cellular modem, they actually do much more. Digi Connect WAN and Digi Connect RG are intelligent gateways with a full TCP/IP stack and embedded Real Time Operating System (RTOS) which allow remote devices and networks to be natively integrated with IP devices and applications across high-speed digital cellular networks.

Cellular modems operate in the voice channel. This means throughput is slow and airtime is expensive. In addition, cellular modems typically require a one-to-one connection to an analog (POTS) modem connection at the opposite end of the connection. Multiple connections require modem banks to which remote sites dial in.

Digi Connect WAN and Digi Connect RG devices operate as true TCP/IP devices. They connect seamlessly to the cellular provider's IP network where only one WAN access point is required to connect thousands of devices.

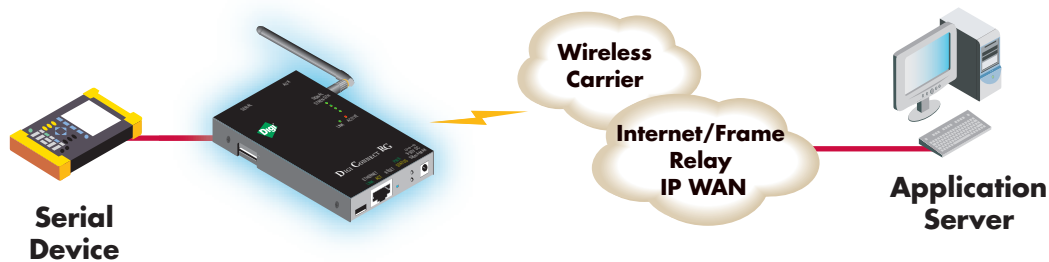
One of the key differences is that applications can natively connect to remote devices using TCP/IP without having to use a standard analog modem at both ends.

| <b>Features</b>                              | <b>Cellular Modems</b>  | <b>Digi Connect RG</b>  | <b>Digi Connect WAN</b>   |
|--|---|---|---|
| What does it do?                             | Dial in/out to other analog (POTS) modems                       | Serial-to-IP cellular gateway   | Ethernet-to-IP cellular gateway/router  |
| Network architecture                         | Circuit Switched  | Packet switched   | Packet switched   |
| Air interface                                | CDPD (analog)<br>GSM (voice circuit)<br>CDMA (Circuit Switched) | GPRS/EDGE/UMTS/HSDPA<br>CDMA/EVDO   | GPRS/EDGE/UMTS/HSDPA<br>CDMA/EVDO   |
| Bandwidth                                    | Low speed (14.4 max)  | High speed (up to 230 Kbps)   | High speed (up to 230 Kbps)   |
| Connection                                   | Dial in/out   | Always on   | Always on   |
| Carrier charge                               | Per minute (expensive voice plan)                               | Per packet (inexpensive data plan)  | Per packet (inexpensive data plan)  |
| TCP/IP stack                                 | No  | Yes   | Yes   |
| Local intelligence/memory                    | No  | 8 MB RAM/2 MB Flash   | 8 MB RAM/2 MB Flash   |
| Requires analog (POTS) modem at opposite end | Yes (except CDMA QNC)   | No  | No  |
| Supported applications                       | Low bandwidth SCADA   | High bandwidth SCADA  | High bandwidth SCADA & remote network bridging  |
| Network bridging                             | No (except via serial PPP)                                      | No (except via PPP)   | Yes   |
| Special features                             | Can dial in to RAS server for low speed IP connection           | Digi SureLink™ persistent connection<br><br>RealPort® COM port redirection<br><br>Integration with Digi Connectware® Manager enterprise software<br><br>Modem emulation | Digi SureLink persistent connection<br><br>Routing/firewall features<br><br>Integration with Digi Connectware Manager enterprise software |

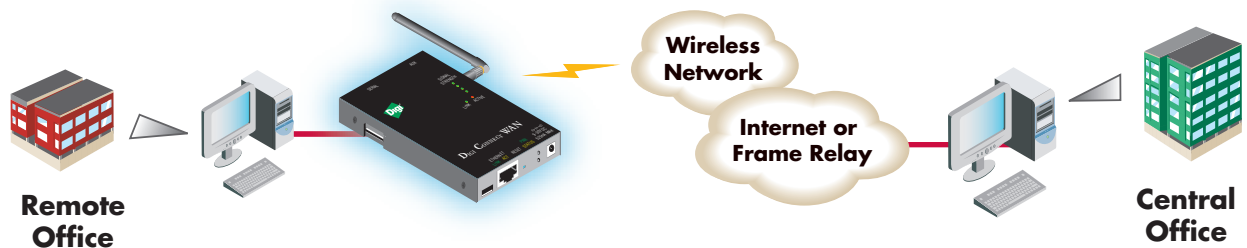
## Serial device connection using standard cellular modem (modem required at each end)



## Serial device connection over IP network using Digi Connect RG



## Remote LAN network connected across wireless WAN to central office using Digi Connect WAN



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