

# What is the Difference Between a Cellular Modem and a Cellular IP Modem?

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Cellular modems and cellular IP modems are vital components in industrial cellular machine-to-machine (M2M) networking. However, it may be difficult to differentiate between these two devices based on their names alone. This white paper will explain the key differences between a cellular modem and a cellular IP modem to help you decide which device is most appropriate for your application.

	<b>Cellular Modem</b>	<b>Cellular IP Modem</b>
<b>How you connect</b>	AT command	TCP/IP
<b>Serial devices connected</b>	Require dial-up ability	Do not require dial-up ability
<b>What you need to know</b>	Good knowledge of AT command protocol	Easy to use
<b>TCP/IP stack</b>	No	Yes
<b>Operation types</b>	Dial in/out	RealCOM, Reverse RealCOM, TCP Client, TCP Server, UDP
<b>Connection type</b>	Dial in/out	Always on, inactivity time
<b>Modems on both ends</b>	Required (except GPRS)	Not required
<b>Local memory</b>	No	Yes
<b>Bandwidth</b>	Low speed (14.4 max)	High speed (up to 921 Kbps)
<b>Integration cost</b>	High	Low

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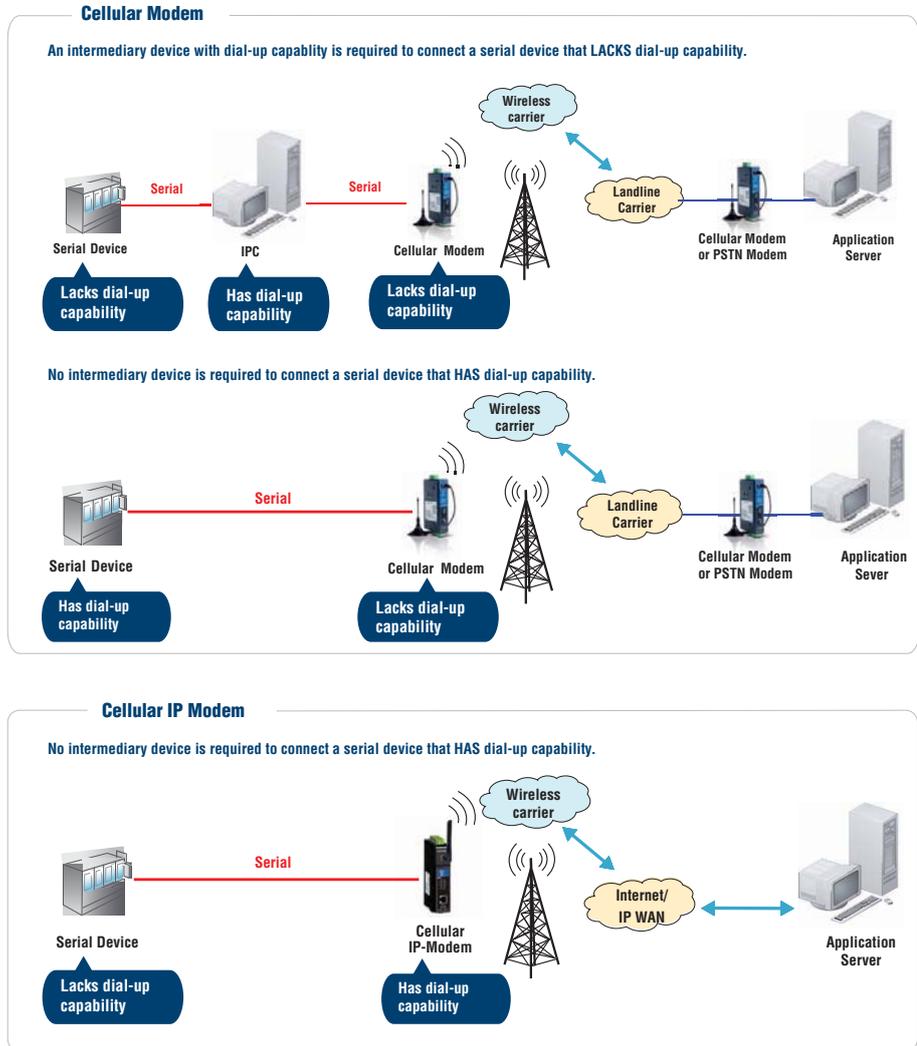
### **What is a Cellular Modem?**

In industrial networking applications, cellular modems are used to enable communication with serial devices over a cellular network. Cellular modems only run AT command protocol and lack dial-up capability. Since most serial devices used in industrial applications today also lack dial-up capability, cellular modems must use an intermediary device with dial-up capability, such as an IPC, embedded computer, PLC, etc., in order to connect serial devices to a cellular network. If you are using a serial device that has dial-up capability, then you do not need an intermediary device and can connect it to the cellular modem directly. In addition, you must also possess strong knowledge of AT command protocol in order to program a cellular modem and construct the network architecture. This requirement also contributes to the higher integration costs associated with using cellular modems compared to IP modems.

### **What is a Cellular IP Modem?**

A cellular IP modem also allows you to connect serial devices over a cellular network. However, IP modems are equipped with dial-up capability, which means you no longer need to worry about installing an IPC or limiting yourself to serial devices that have dial-up capability. Instead, you can connect your serial devices directly to the cellular IP modem. This not only eliminates the additional cost associated with deploying an IPC, but it also saves room if your application is bound by tight space constraints. In addition, a cellular IP modem is an "intelligent" device with a built-in memory and a ready-to-use TCP/IP operation mode, which allows it to connect over the Internet and be accessed via a simple web browser. This feature makes cellular IP modems easier to use than cellular modems since no knowledge of AT command protocol is required.

Network Architecture



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