

DTE vs. DCE

This is one of the most misunderstood areas of RS-232. DTE stands for Data Terminal Equipment, and DCE stands for Data Communications Equipment. DTE is typically either a dumb terminal or the serial port on a computer/workstation. DCE is typically a modem, DSU/CSU, or other piece of data communications equipment, hence the names. This is all most people really need to know about these terms.

Where it gets confusing is when you start to talk about signal definitions and direction. For example, it's easy for someone to understand that when you transmit data, you send it out. However, when you talk in terms of DCE, it becomes an input signal. This is because the specification was written from the perspective of the DTE end of the link. Another example is the Receive Data signal is an input to DTE, but an output from DCE.

Therefore, a straight through "one to one" cable is all that is necessary between a modem and a standard DTE serial port. However, if you want to connect two DTE ports together, you have to simulate the existence of the pair of DCE devices, typically modems that would normally be between the two DTE devices. This is where the null-modem device or cable comes in.