Cabling

Cabling is defined here as the process of physically connecting the PBX with the call accounting computer. To connect these systems, connect the cable between the PBX and the call accounting PC as well as from the Property Management System (if applicable) to the call accounting PC. Either a null-modem converter (available at most electronics stores) may be used with a straight-through serial cable, or use a cross-over cable. Usually, cabling is already in place or will be installed by a technician, but for do-it-yourself users, these topics are discussed below.

Serial Cables

Serial cables are manufactured with one of two possible connector sizes: DB-25 or DB-9. The DB-25 connector has 25 pins and a DB-9 has 9 pins. DB-25 and DB-9 connectors do not use the same pin configurations to transmit data, as shown in the brief table below.

Signal Name	DB-9 Pin #	DB-25 Pin #
Transmit	3	2
Receive	2	3
Ground	5	7

If the computer in use has a different connector than what is required on the cable, a simple adapter or converter may be purchased from an electronics supply store. The converter is often called a "DB-25 to DB-9 adapter" and performs the necessary pin translations.

Serial cables are usually manufactured as "straight-through" cables meaning that each pin on one end of the cable is directly connected to the corresponding pin on the opposite end. These cables also contain a male connector on one end and a female connector on the opposite end.

Null Modem Connectors

Computers with DB-25 connectors should transmit on pin 2 and receive on pin 3. A null modem cable is used to connect one computer's transmit pin to the other's receive pin and vice versa. The null modem also has male connectors at both ends to allow the cable to attach to each computer. A null modem is often used with a straight-through serial cable to connect two computers, instead of using a cross-over cable, which is usually custom built by a technician. Null modems also perform other features, but those features are not relevant here.
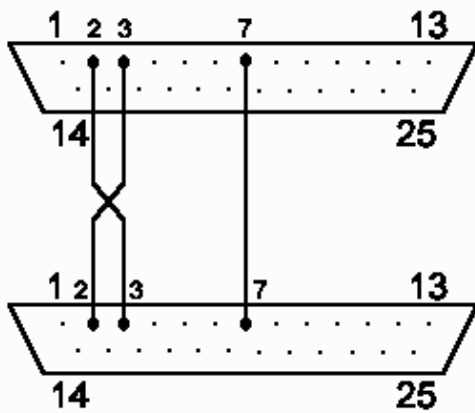
Cross-Over Cable

A cross-over cable simply has the transmit and receive wires crossed so that the transmit pin on one device is connected to the receive pin on the opposite device. The signal ground wire is not crossed and connects to the ground on the opposite device. If the wires were not crossed, neither device would be able to communicate with the other. The cross-over cable is usually custom built and has male connectors on each end.

NOTE: *A straight-through cable paired with a null modem connector performs the same function as a cross-over cable.*

A diagram of a standard cross-over cable follows:

DB25 - DB25 standard cross-over

DB25 - DB9 standard cross-over