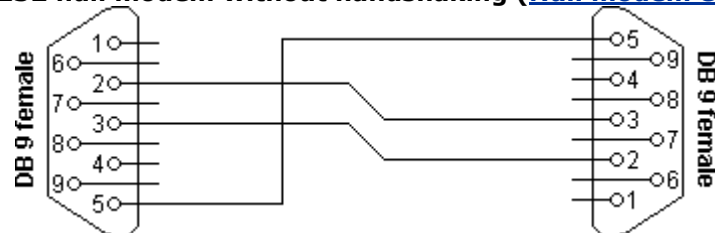# RS232 null modem cables

The easiest way to connect two PC's is using an RS232 null modem cable. The only problem is the large variety of RS232 null modem cables available. For simple connections, a three line RS232 cable connecting the signal ground and receive and transmit lines is sufficient. Depending of the software used, some sort of handshaking may however be necessary. Use the RS232 null modem selection table to find the right null modem cable for each purpose. For a Windows 95/98/ME Direct Cable Connection, the RS232 null modem cable with loop back handshaking is a good choice.

RS232 null modem cables with handshaking can be defined in numerous ways, with loopback handshaking to each PC, or complete handshaking between the two systems. The most common null modem cable types are shown here.

### Simple RS232 null modem without handshaking (Null modem explanation)

Connector 1	Connector 2	Function		
2	3	Rx	←	Tx
3	2	Tx	→	Rx
5	5	Signal ground		

RS232 null modem with loop back handshaking (Null modem explanation)
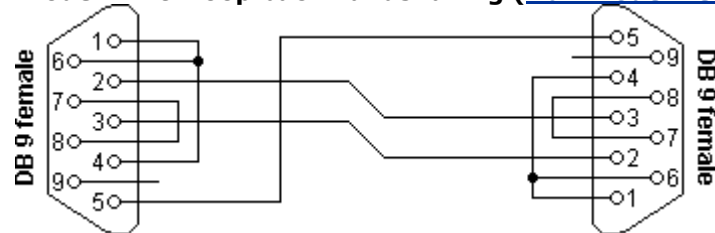
Connector 1	Connector 2	Function		
2	3	Rx	←	Tx
3	2	Tx	→	Rx
5	5	Signal ground		
1 + 4 + 6	-	DTR	→	CD + DTR
-	1 + 4 + 6	DTR	→	CD + DTR
7 + 8	-	RTS	→	CTS
-	7 + 8	RTS	→	CTS

RS232 null modem with partial handshaking ([Null modem explanation](#))
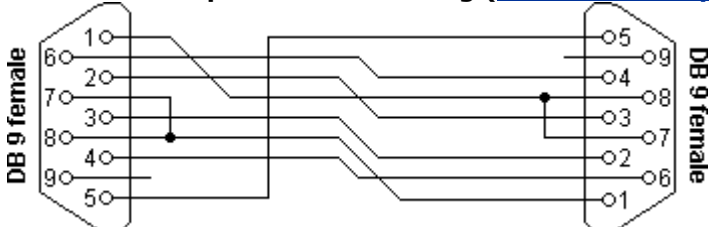
Connector 1	Connector 2	Function		
1	7 + 8	RTS_2	→	$CTS_2 + CD_1$
2	3	Rx	←	Tx
3	2	Tx	→	Rx
4	6	DTR	→	DSR
5	5	Signal ground		
6	4	DSR	←	DTR
7 + 8	1	RTS_1	→	$CTS_1 + CD_2$

RS232 null modem with full handshaking ([Null modem explanation](#))
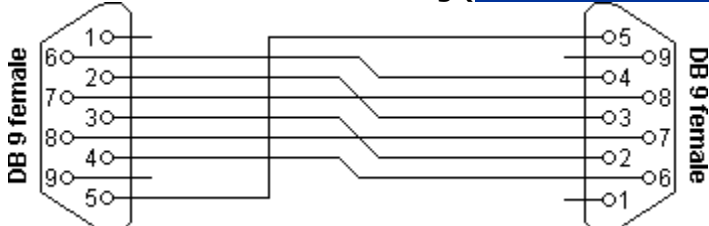
Connector 1	Connector 2	Function		
2	3	Rx	←	Tx
3	2	Tx	→	Rx
4	6	DTR	→	DSR
5	5	Signal ground		
6	4	DSR	←	DTR
7	8	RTS	→	CTS
8	7	CTS	←	RTS