The easiest way to tell what kind of cable a client has is by taking an ohm or continuity meter and test the continuity of pins 2 and 3 on each end (you can put a paperclip in each female pin location so that you can get better access to the send/receive pins). A null modem cable will be a crossover of pins 2 and 3, while a straight serial cable will show continuity between pins 2-to-2 and 3-to-3. Below you will find a description of the pin outputs and the wiring of an average null-modem cable.



DB9 serial (RS232) port. Pinout and signals for the PC RS232 connector

Serial (RS232) null modem cable (DB9-DB9). Pinout and signals for building a serial (RS232) nullmodem cable

5 1 DB9 pin D-SUB female to PC1 9 6							
$ \begin{array}{c} 5 \\ $	DB9 pin D-SUB	female to	PC2				
	DB9-1	DB-2					
Receive Data	2	З	Transmit Data				
Transmit Data	3	2	Receive Data				
Data Terminal Ready	4	6+1	Data Set Ready + Carrier Detect				
System Ground	5	5	System Ground				
Data Set Ready + Carrier Detect	6+1	4	Data Terminal Ready				
Request to Send	7	8	Clear to Send				
Clear to Send	8	7	Request to Send				
Note: DSR & CD are jump	ered to fool the	program	s to think that they are online.				

Use this cable between two DTE devices (for instance two computers).

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)



RS232 null modem_with loop back handshaking (Null modem explanation)

RS232 null modem with partial handshaking (Null modem explanation)



Connector 1	Connector 2	Function
1	7 + 8	$RTS_2 \rightarrow CTS_2 + CD_1$
2	3	Rx 🗲 Tx
3	2	Tx 🛶 Rx
4	6	DTR 🛶 DSR
5	5	Signal ground
6	4	DSR 🖛 DTR
7 + 8	1	$RTS_1 \rightarrow CTS_1 + CD_2$

RS232 null modem with full handshaking (Null modem explanation)



2	3	Rx 🔶 Tx	(
3	2	Tx 🛶 R:	<
4	6	DTR 🌙 D	SR
5	5	Signal ground	
6	4	DSR 🔶 D	ΓR
7	8	rts 🚽 C	ГS
8	7	CTS 🚛 R	ГS