

Category: Cables	Subject: RS232 Signals and DB9 Connections
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Connector Wiring

Pin		Purpose	Signal To	Pin		Purpose	Signal To
1	CD	Carrier Detect	DTE	6	DSR	Data Set Ready	DTE
2	RD	Receive Data	DTE	7	RTS	Request To Send	DCE
3	TD	Transmit Data	DCE	8	CTS	Clear To Send	DTE
4	DTR	Data Terminal Ready	DCE	9	RI	Ringing Indicator	DTE
5	SG	Signal Ground	-	Shell	-	May be connected to shield	-

Notes:

1. The RS232 standard was originally developed in the 1960s as a means of connecting remote data terminal equipment (DTE) to a central mainframe computer via data communications equipment (DCE) and telephone lines. It was renamed EIA232 in the early 1990s. As well as changing its name the EIA (Electronic Industries Association) renamed some signal lines and defined some new ones including the shield.
2. The implementation of RS232 on DB9 connectors (EIA/TIA-574) is a subset of the RS232 implementation used with DB25 connectors. The DB9 connector is the most common RS232 connector now found on desktop and notebook computers.
3. RS232 uses negative, bipolar logic where a negative voltage between -3V and -12V represents logic '1' and a positive voltage between +3v and +12V represents logic '0'. The area from +3V to -3V is intended to mask line noise. Modern equipment often ignores the negative voltage and accepts zero volts as logic '1'.
4. Circuits powered by +5V can drive RS232 circuits directly by using zero volts for logic '1' and +5V for logic '0', however this technique is unreliable over long cables.
5. A normal RS232 cable is wired pin for pin from a male to a female connector. The cable is normally shielded with the shield connected to pin 1.
6. Always check for compatibility of all the equipment that you intend connecting together with RS232 cables because some manufacturers use non-standard pin configurations that could cause malfunction and/or damage to incompatible equipment. For example it is common for some of the pins to be linked together.

Connector Pins Layouts

