

Jack Plugs & Sockets

By Chris Bray

The Jack Plug (also called an audio jack, phone plug, stereo plug, mini-jack), is a common audio connector. It is cylindrical in shape with two, three, or four contact points separated by insulating material.



Officially the Jack is the socket, but in common parlance the word has come to be used for both types – so make sure that you choose the right one! In the UK, the terms jack plug and jack socket are commonly used for the respectively male and female connectors in order to avoid confusion.

The Jack plug was invented for use in telephone switchboards in the 19th century and is still widely used, both in its original 6.3 mm (1/4") size and in miniaturized versions 3.5 mm (1/8") and 2.5 mm (3/32").

Common uses are:

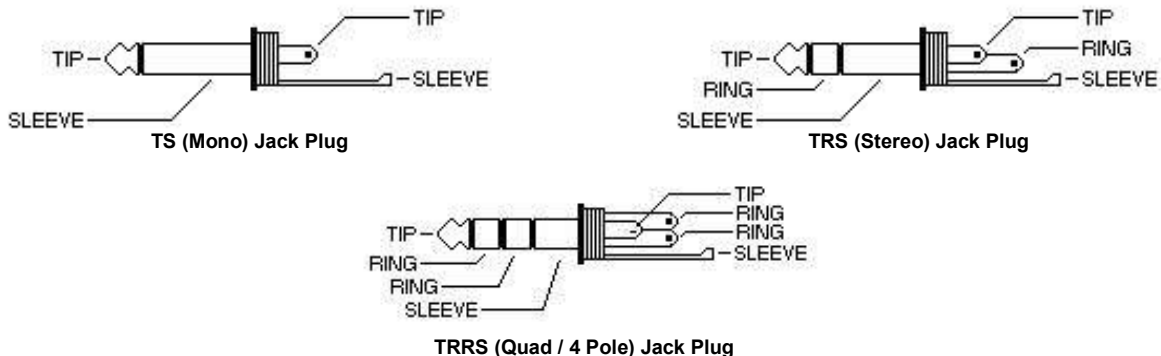
6.3mm	Guitars, Microphones, Keyboards, Effects Pedals, Professional Headphones, Mixing Consoles, Patch Bays, etc.
3.5mm	Headphones, Computer Audio, AV connections
2.5mm	Mobile and Cordless Telephone Headsets

Plug Type Names

The plug types are known by various names. The common descriptive names are derived from the names of the three possible conducting parts of the plug: Tip, Ring, and Sleeve.

Number of Contacts	Descriptive Name	Alternative Names
2	TS	Mono jack, guitar jack
3	TRS	Stereo jack, headphone jack
4	TRRS	4 pole jack, quad jack, AV jack

The differences between these types are clearly shown in the diagrams below:



Jack Wiring

The modern profile three-conductor jack plug was originally designed for stereo signal connections, with the left channel on the tip, right channel on the ring and common return on the body or sleeve.

The **tip ring sleeve** descriptive names are more common in some English speaking countries than others. In the UK the term *stereo jack plug* is probably the most common, even for connectors not used to carry stereo signals. The

term **TRS** is particularly appropriate to distinguish these three-conductor (stereo) plugs used in other than stereo applications. Examples are shown in the table below:

	Unbalanced Output	Unbalanced Input	Unbalanced Insert	Balanced	Stereo
Tip	Signal	Signal	Send or Return signal	Positive/"Hot"	Left channel
Ring	Ground or <i>No Connection</i>	Ground or <i>No Connection</i>	Return or Send signal	Negative/"Cold"	Right channel
Sleeve	Ground	Ground	Ground	Ground	Ground

Colour Codes

Moulded connectors for computer audio are often colour coded. These colour codes were standardised by Microsoft and Intel in 1999 for computers as part of the PC99 standard:

Colour	Connector	Function
Green	TRS 3.5mm	stereo output, front channels or headphones
Black	TRS 3.5mm	stereo output, rear channels
Grey	TRS 3.5mm	stereo output, side channels
Gold	TRS 3.5mm	dual output, center and subwoofer
Blue	TRS 3.5mm	stereo input, line level
Pink	TRS 3.5mm	mono or stereo microphone input

Jack Sockets

There are two main types of Jack Socket, Chassis or Panel mounting and Line sockets. Line sockets are mounted on a cable whilst chassis sockets are mounted directly into equipment.



Open and Closed 3.5mm Line Sockets



D type Locking 6.35mm Chassis Socket



Open 6.35mm Chassis Socket



Closed 6.35mm Plastic Chassis Socket



HQ Gold Line sockets

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