IOL

APPLICATION NOTE

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WHY Ag CONTACT PLATING WORKS

Conducting audio frequency energy is Silver's forte due to its molecular density. That's what delivers it's superior conductivity and lower resistivity compared to gold.

Metal conductivity (values span based on purity)

1. Silver 105.00 to 108.40
2. Copper 100.00 to 103.6
3. Annealed copper (electrolytic tough pitch) 101.00
4. Annealed copper (deoxidized) 85.00
5. Gold 70.00 to 73.40
6. Aluminum 54.94 (can be as low as 21.00 for aluminum alloy 220)

Resistivity: nano-ohm/m (nΩ), lowest value best

1. Silver 14.71
2. Copper 15.80
3. Gold 20.11
4. Aluminum 25.00

Since the electrons in the audio frequency wave only travel on the surface of the conductor (either a metal pin/socket in a connector or a conductor in a cable) - a phenomenon known as the Skin Effect - then only the top surface of that conductor needs to be plated. This is important because gold is very expensive.

Most low cost economic zone product has 1 to 2µ thick plating on a good day. A SYNTAX contact has 5 to 7µ. Each time a connector is plugged/unplugged, the mated cycle friction removes some of the plating from both male pin and female socket. The thicker the plating, the longer it lasts.

Lower resistance equals a higher velocity of propagation. That means less signal lag. This equates to lower latency.

Silver is superior to gold as a contact plating for audio applications.

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