

## Unshielded and intersection-free

The Achilles heel of LAN-cables is the plug. A novel RJ45-construction is supposed to remove the weak spots. Does it also audibly give the network cables a boost?

When we reported about audible differences of network cables, reactions were fierce: "Hogwash" came from the IT-corner – "Exactly right" streaming-experienced audiophiles wrote. Among the attentive readers there were also two engineers who professionally deal with network technique and who wanted to take a metrological look into the subject. We sent them our test cords and they clipped them to a professional measuring system by Fluke to determine two decisive parameters: the crosstalk attenuation between the wire pairs and the reflection loss. Both data should be as high as possible, so that the wire pairs interfere as little as possible and the reflection at the cable ends is low.

Monster is measurement winner

LAN-cables are classified in categories that determine certain limiting values for crosstalk and reflection loss as well as other parameters. "Cat.5"- cables have to stick to these limiting values, while stricter limits up to 250 MHz apply to Cat.6-cables. The surprising result of the measurements: not one cable met the Cat.6-standards, although most of them are sold as "Cat.6-cables". What's more: Even the Cat.5-standard is met by only one test participant – and that of all things is the leader of the audio test, the "Advanced High Speed Cat.6" by Monstercable. With regard to crosstalk this cable even offered the best data of all tested cables. So, do crosstalk attenuation and reflection loss have a direct influence on the sound?

When you analyze the results more closely and with regard to the aspect of audio-appliance, the judgment does not turn out quite as dramatically. We are not dealing with "Gigabit Ethernet" here, but with "Fast Ethernet", that is bitrates up to 100 Mbit/s, which are absolutely sufficient for audio purposes. But Fast Ethernet only uses two of the four wire pairs of the LAN-cable. And all of the measurement values for these two pairs fall into the Cat.5-limits. Only the Hama-cords still fail (cp.table).

None fulfills Cat.6

How can these discrepancies come about? The pure cables that Hama uses probably keep to the limiting values of their category. But it becomes critical as soon as they are equipped with plugs: because then the wire pairs come into close contact, often the wires are inadmissibly squeezed by the cord grip and it becomes especially precarious when two wire pairs are crossed within the plug. A well-defined impedance level is out of the question here – but the impedance level is important as we are dealing with frequencies in the VHF-range. On top of that mistakes during patching often occur – the plugs are ideally attached only with the help of specialized machines.

So, as the plug is of eminent importance, our two engineers – Friedrich Müller and ... - looked for and found a plug construction with an integrated "cable manager" at its core: It leads the single wires with a well-defined separation distance to the contacts. And as it has a different shape at the end of each wire, it avoids intersections (cp. foto with details). Another specialty of this plug: An efficient bend protection avoids a too small bending radius of the cord, a releasing-device-extension and the

especially slender shape make the plugging in and unplugging easier, even if there is little space at the router. Meanwhile a company was founded that offers completely equipped patchcords with the brand name "MeiCord".

How does "MeiCord" sound?

You can speculate a lot about construction features and measuring values – what counts is the end result. Do the new cords sound better than the ones we have tested so far? We listened to the MeiCord-cables – one shielded and one unshielded, each 3 meters long, in comparisons to the test winner from STEREO 12/2008. As a music source we used the Olive-server, from there we used a "Mercator Pur Cat.6"-cable by Sommercable to the router, which we connected with the cord in testing to the Olive-network-player. The dark-blue, unshielded MeiCord-cable indeed played considerably more naturally and homogenous, well-balanced and stereoscopic than the reference-model from Monster, even with more chest at male voices. In comparison, the shielded MeiCord-version lags behind: It seemed to make the stereoscopic sound more flat, had only little aura and air, revealed fewer subtleties.

Is the shield the answer?

So, is the shielding the crux of the matter in the end? Do unshielded patchcords generally sound better than shielded ones? After all, the Monster Advanced High Speed also was the only one in our former test that was unshielded. Or is it simply about potential problems that arise because of the ground connection of the components at the shielded cord? Control test: We established a ground connection between router and network-player in addition to the unshielded MeiCord-cable – but the excellent sound did not change. However: The shielding seems to play an important role, but the plug obviously is also essential.

Where do you get the cord?

Although shielded network-cables actually are state of the art, MeiCord will offer only the unshielded version as a consequence of our test results. It fulfills the Cat.6-standard and it will be called "Opal". It is available in specialist shops and directly in their web shop at [www.meicord.de](http://www.meicord.de) or by phone at +49 441 9251787. Different lengths of one, two, three and five meters at prices between 72 and 96 Euros are on offer. Special lengths are available by request. As the icing on the cake each cable is accompanied by an individual measuring protocol according to the Cat.6-standard. So: The battle for patchcords has been opened – and with it a new tuning-field for audiophile streaming.

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