

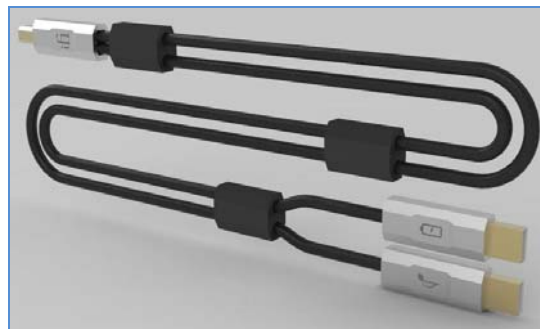
For Immediate Release:

iFi Gemini Dual-Headed USB Cable

One cable to rule them all

London, U.K. – 8th February 2013

The **Gemini Dual-Headed USB cable** is iFi's approach to the highest quality of USB audio and power transmission. Available in March, the 2 lengths are: 1.5m (US\$199 ex-tax) and 0.5m (US\$129 ex-tax).



Features

- Dual-headed (Gemini) connection USB design
- Heavy OFHC copper conductors (up to 5A)
- Custom PE insulation
- Asymmetric Ground return and power line design (3 times more ground area)*
- Adjustable RF Filter to tune cable to environment*
- Double shields with different effective range
- Multiple RF filters*

*: iFi exclusive, world first.

Design

What's wrong with the current USB cable design for audio use?

Many cables combine power and data into a single cable, causing crosstalk between power and data⁽¹⁾.



iFi Solution

The key of course is the “twin connection” design to separate the signal ground from power ground and shields the signal and power connections from each other.

Conductors

What's wrong with the conductors in the common USB cable?

The cables used are thin, grounds have low cross-section causing poor ground connections, generic copper increases resistance and noise. Imperfect impedance matching is found with many cables and this makes operation at high sample rates unreliable ^(1, 2).



iFi Solution

The signal connections use 2 gauge (~150%) heavier OFHC continuous cast copper, with the geometry adjusted to keep the correct impedance.

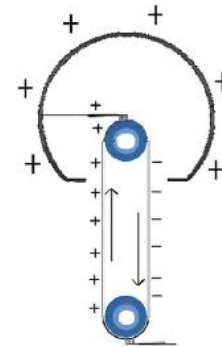
For grounds and power lines we have 5 gauge (~300%) heavier pure copper connections than common.

Insulation

What's wrong with the insulation in the common USB cable?

Common cables use PVC insulation. PVC not only has poor dielectric behavior, the softeners in the plastic can also cause the copper in the cable to oxidise.

Some hold Teflon® insulation as the non plus ultra of isolators. Yet combined with the metal conductors in cables it causes triboelectric discharges often into the tens of millivolts creating HF interference ^(3,4).



iFi Solution

Instead, we combined PE insulation with the copper conductors; PE and copper combine to produce some of the lowest triboelectric discharges in cables available today ⁽³⁾.

Shielding

What's wrong with the shielding on the common USB cable?

Often only one shield is used; aluminum metalized foil is commonly used instead of copper shield.

iFi Solution

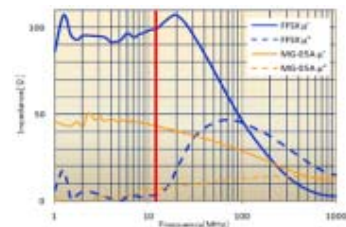
Dual-heavy shielding; aluminum foil and copper braid shields each work for a different frequency range to produce the best shielding ever. We also employed custom-designed metal connectors (not just for looks).



RF filtering

What's wrong with the RF filtering on the common USB cable?

Often RF filtering is non-existent, even if filters are fitted, working over too narrow a range, too few are fitted and common RFI filtering is placed at the ends of the cables, leaving the whole length of the cable to act as effective antennae⁽⁵⁾.



iFi Solution

We fit multiple filters all with a different effective range. Further the middle filter may be adjusted (moved along the length), to “detune” the antennae formed by the cable.

References:

1. Universal Serial Bus Specification (http://www.gaw.ru/pdf/interface/usb/usb_2.0_english.pdf)
2. Sound on Sound - Solving Computer Audio Problems (<http://www.soundonsound.com/sos/nov04/articles/computerproblems.htm>)
3. The TriboElectric Series – AlphaLab Inc. (<http://www.trifield.com/content/tribo-electric-series/>)
4. Micro Discharges of the Interface – Dr. Pierre Henri Raymond Johannet EDF – Presentation Notes (personal archive)
5. RFI, Unintentional Antennas and Ferrites (<http://audiosystemsgroup.com/RFIHamNCCC.pdf>)

Final words

All this means our Gemini Dual-Headed USB Cable objectively produces much improved results for power and data transmission via USB. The proof is in the listening and of course, the benefits are enhanced when partnered with the iUSB Power...



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About iFi

iFi™ is a subsidiary of Abbingdon Global. Abbingdon Global is also the parent company of Abbingdon Music Research (AMR).

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