

MISSION S/PDIF

Mk.I [Rev-A]



AD COPY + SPECIFICATIONS

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ZU AUDIO MISSION S/PDIF Mk.1 [REV-A] INTERCONNECT

Zu Mission interconnecting cables are all about maximum hi-fi value and are designed to challenge the state-of-the-art but at reasonable prices.

Zu Mission S/PDIF, AES3 unbalanced digital audio interconnect cables are engineered and built to provide pristine high bandwidth digital signal transmission. The fact that they have also been refined and developed to help digital to analog conversion sound smoother, more relaxed and dynamic is the Mission S/PDIF trick.

How did we make a digital cable that sounds more analog? Easy, we applied fundamental analog audio signal transmission design to a high bandwidth 75 ohm square wave transmitting line-level interconnect.

The first thing we look at when creating a cable is the electrodynamics of the system, and how we can best transmit the intelligence (and power if applicable) of the signal without external or internal distortion and corruption. And while on paper a simple coax or simple pair plus shield might realize the highest bandwidth and lowest reactance, it can do so at the expense of dynamic drive and reduced presence. We are not sure exactly why this is but there are a lot of great cable designs out there, most of them coming from the U.S. DoD, that measure excellent for S/PDIF application but hinder tone and reduce real fidelity. What we have learned through two decades of designing digital cables is that much of what we know about the audio band and how to handle those very low frequencies can make a significant contribution to sound quality when applied to the higher frequency digital audio model. Mission S/PDIF looks more like an analog audio coaxial interconnect in its design, yet is still able to support very high bandwidth and guard against electromagnetic interference.

The first analog audio trick was to facilitate a ground-plane to signal conductance ratio of about 6:1. The other was to reduce the “compression” effect that complex shields impart on the sound of an interconnect. Another was to use slightly more conductor than would otherwise be necessary. The resulting hex-helical Tesla/Litz ground-plane reduces the heavy-handed compressing nature of big complex shielding and simultaneously gains the ability to increase conductor area without losing critical high frequency performance.

Mission S/PDIF's technological solutions for advancing realistic fidelity are culled from both the analog audio and digital worlds, the best example of which is the selected RCA plug, the classic Switchcraft 3502. This plug features a rolled “hollow” center pin, and this simple design feature changes the game significantly. Rolled pins allow the use of highly conductive metals; the 3502 uses high conductive copper alloy and not brass. Hollow pins also make for very precise solder termination. This feature remarkably improves performance in both the low frequency analog audio domain as well as the high frequency digital.

Conductors of Mission S/PDIF are made as uniform as possible and uses low strand count, twin pitch, 12/7 conductor geometry to ensure uniformity and to help reduce noise—same for all circuits, signal and the return/shield hex-helix. Each strand is made from pure U.S. processed copper and individually pure silver plated. Inner pitch is perfect-lay, and the second pitch is tightly laid over that. FTFE is extruded immediately after the stranded wire come of the twin-deck planetary cabling machine, locking in all that fresh “made in the USA” goodness.

Mission S/PDIF is also very easy to work with. It's small, tough and is super flexible. Mission S/PDIF was developed along side Event S/PDIF and the two are based on the same electrodynamics design. The main difference is Mission throttles back the use of a high cost/small return materials pallet.



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ZU MISSION S/PDIF KEY FEATURES AND BENEFITS

- High conductance, low reactance, high precision design which allows for short or long cable usage without bandwidth or fidelity issues. (Buy the length you need, and shorter is less cash.)
- Large ratio ground to signal cross-sectional area to improve the bass performance and helping to shift the tone-center away from Alvin and the Chipmunks and pushing it closer to Aretha Franklin.
- Very uniform impedance characteristics of Mission S/PDIF reduce standing wave and pinch issues and contribute to the stable propagation of intelligence in short or long runs.
- Low strand count, twin pitch, 12/7 conductor geometry to ensure uniformity and to help reduce noise—same for all circuits, signal and the return/shield Tesla/Litz hex-helix.
- Virgin white PTFE (Teflon®) insulation with identical electrodynamic relationships provide a very low dielectric constant and exceptionally low dissipation factor—features that improve bandwidth, phase relations, and overall musical resolution. Unfortunately it also causes very long burn-in times.
- PTFE is extruded immediately after the stranded wire come of the twin-deck planetary cabling machine, locking in all that fresh “made in the USA” goodness.
- Identical metallurgy and dielectrics for all circuits. While you wouldn't think so, each dielectric, color and pigment has it's own influence on sound which brings about subtle shading and differences in net tone.
- Switchcraft 3502 RCA plug. The rolled pin allows the use of highly conductive metals; the 3502 uses high conductive copper alloy and not brass. Hollow pins also make for very precise solder termination. This feature remarkably improves performance in both the low frequency analog audio domain as well as the high frequency digital.
- Mission S/PDIF is also small, tough and is super flexible. It really is a pleasure to work with and isn't going to lift your DAC or push it off the shelf... no conduit bender required to position.
- It looks cool, and yes looks and design are important. Good design shows you care, and it's more fun to play with pretty things than ugly ones—even if you are the only one playing with it.
- Made by Zu Audio in Ogden, Utah—USA

BURN-IN:

Zu Mission S/PDIF cable require a lot of burn-in before they sound their best, roughly 600 hours—owing to the exclusive use of PTFE insulation. We do not recommend any burn-in devices or special recordings. Just connect it up and go, and while it will likely sound better than the cable it replaces right out of the box, know that after about four weeks of constant play (your amp doesn't need to be on for this, just your digital source and maybe your DAC) your sound is going to be quite a bit better. For the possible hows and whys about burn-in please see our FAQ section.



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Design	Zu Mission S/PDIF 75Ω digital audio coaxial cable is a low reactance coaxial cable with hex-helical high magnitude shielding. Mission S/PDIF has a very relaxed, open and smooth sonic signature, very organic sounding and balances the tone and texture with the transient detail very well. The 6:1 ground-plane conductance ratio is designed to bring the tone and power-center lower in the spectrum.
Device Under Test	Mission S/PDIF 1.7ft [0.5m] RCA or BNC termination
Production	Q4 2012–
Cable Format	AES3 Unbalanced / S/PDIF
Signal Conductor Metallurgy	pure U.S. refined and drawn copper with direct deposit pure silver skin on each conductor
Ground/Shield Conductor Metallurgy	pure U.S. refined and drawn copper with direct deposit pure silver skin on each conductor
Cable Geometry	coaxial hex-helical
Signal Wire Geometry	12/7 strand, twin pitch perfect lay
Ground/Shield Geometry	hex-helical x 12/7 strand, twin pitch perfect lay
Dielectric, Signal	virgin white PTFE extruded
Dielectric, Ground	virgin white PTFE extruded
Cable Sheath	6.6 Nylon, static dissipating
RCA Plug	Switchcraft 3502
Plug Geometry	hollow-pin phono
Connector Metallurgy	copper alloy nickel plated
Connector Termination	4% silver bearing solder, epoxy potted
Directional	indicated on product band
Bandwidth	DC – >1GHz
RF Shielding	high magnitude Tesla/Litz hex-helix
Signal DC Rs	0.07 Ω
Ground DC Rs	0.01 Ω
Cp	46 pF
Signal Ls	1.1 μH
Ground Ls	0.6 μH
Bend Radius	0.5" [13mm]
Cable Diameter	0.2" [5mm]
Tolerance	0.1%
RoHS	compliant
Design	Tesla / Zu
Manufacturer	Zu Cable Inc. Ogden, Utah
Manufacturers Country Of Origin	U.S.A.
Life Expectancy	100 years+
Warranty & Service	limited lifetime, does not cover misuse or abuse



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Zu products are designed and manufactured to the highest quality. However, if something does go wrong Zu will fix or replace the product free of charge. Zu Audio Mission S/Pdif have a limited lifetime warranty to the original owner. If under normal home use you have any problems we will fix or replace the product. If warranty is needed Zu will quickly fix or replacement the suspect cable.

While every effort is made to ensure a perfect finish that will last a lifetime, this warranty does not cover damage from impact and abrasion. Simply, cosmetic damage from use is excluded from warranty.

If in the highly unlikely event that a Zu product arrives to you dead on arrival (D.O.A.), and after discussing it with a Zu tech, we will ship another of the same product at our expense and arrange for the D.O.A. product to be collected.

Warranty does not apply to damage caused by operating the product outside the intended use, accident, another product, misuse, abuse, flood, fire, earthquake or any other external causes. Warranty does not cover damage caused by modification or service performed by anyone other than Zu.

WHAT YOU CAN EXPECT IF WARRANTY SERVICE IS NEEDED

If warranty becomes necessary, you must call or email for a return of material authorization (R.M.A.) number. This provides opportunity to assist in diagnosing the problem and helps us to schedule for rapid turnaround in the event service or repair is needed. Upon factory inspection warranty eligibility will be determined. While service options, parts availability and response times will vary, we do our best to keep you happy. International customers should know that Zu will comply with all applicable export/import laws and regulations, you may be responsible for custom duties, taxes, broker fees, freight, and other charges. When shipping of product or part is required, repackage the complete product, or part, in its original packaging. If you have any questions about packaging please call or email. Until we have the product back in the shop and sign-off that it is eligible, the product is still your property, we recommend you insure or declare the full value when shipping. We also recommend that you only ship with a service that has a good reputation and offers tracking and insurance for the full amount.



ZU AUDIO

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OGDEN, UTAH — U.S.A.

[DESIGNED AND MADE BY US]