

# ZeroUno

## The ZeroUno UNIVERSAL i2S<sup>MkII</sup> interface

The i2S interconnection between sources and DAC became popular in the last year mainly because it transports the signal at their original nature and not assembled together so to be transported in an asynchronous connection.

The i2S connection is made of 4 signals:

DATA	data
LRCLK	Left/Right word clock
BCLK	Bit Clock
MCLK	Master Clock

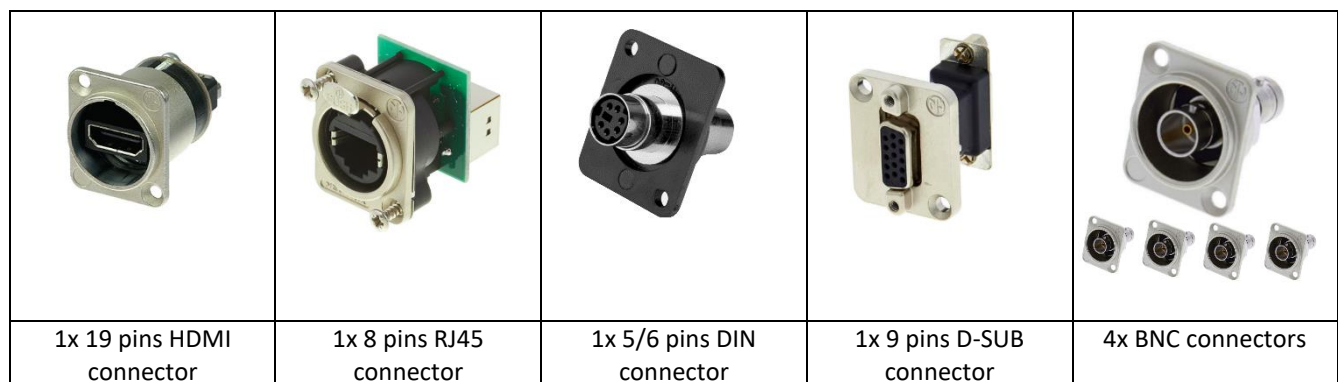
SPDIF, USB, AES/EBU, all of these formats assemble together the 4 signals just named in one signal that at the destination is re-exploded into their original format, i.e.: DATA, LRCLK, BCLK, MCLK.

By the transport of the 4 basic signals the target is to have a transmission with lower troubles to manage. For sure the process is simpler than the transport of an assembled signal. About the less complexity is not true in general that one method is better than the other.

Unfortunately, the i2S interface is not standardized and there are a lot of variants; any brand has its own proposal.

The physical interfaces on the market are 5:

- One 19 pins HDMI connector, balanced signals,
- One 8 pins RJ45 connector, unbalanced signals,
- One 5/6 pins DIN connector, unbalanced signals,
- One 9 pins D-SUB connector, unbalanced signals,
- Four BNC connectors, unbalanced signals.



The pinout is usually different from one brand to another brand.

Anyway, the market is going to a standard the facto:

- The HDMI physical interface, with the signals transmitted balanced
- About the pinout there are 2 big families; at the time of writing is not clear what family will become the standard the facto.

Family #1: Sonore, PS Audio, Mola Mola, M2Tech, Aune, Denafrips, Holo Audio, Empirical Audio, Audio-gd, K&K Audio, Musica Pristina, Channel Islands Audio, Sthal~Tek, DiDiT High-End, Matrix, HiFime, X-Sabre; these units have the same pinout.

Family #2: Pink Faun, Audiobyte, Rockna, Wadia, Singxer, SMSL, LKS, Gustard; these units have the same pinout.

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To do not lose the possibility to interface almost any device present on the market, a universal i2S<sup>MkII</sup> interface is available for the whole ZeroUno family.



Fig.1 The ZeroUno pure-DAC with the standard proposal for the i2S: RCA SPDIF, Optic, USB, i2S HDMI

About the HDMI interface, the most popular one at the time of writing, is possible to switch from the family #1 to the family #2 only changing a patch connector position inside the unit.

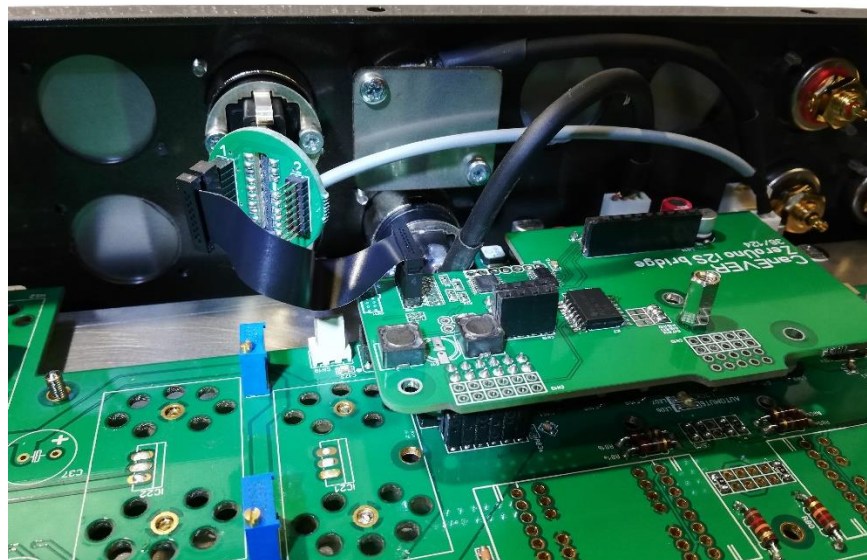


Fig.2 The ZeroUno pure-DAC with the family #1 and family #2 managed only changing the patch position from 1 to 2

The ZeroUno i2S<sup>MkII</sup> can interface HDMI, RJ45, DIN, D-SUB, BNCx4. It is enough to change the connector at the rear panel.



Fig.2 The ZeroUno pure-DAC with an optional proposal for the i2S: Optic, USB, i2S HDMI, i2S RJ45

About the uncommon pinout of any kind of interface on the board is integrated a patch panel for each single wire so the mapping can be easily changed.

The sources with an uncommon pinout must be specified at the time of the order so the patch panel can be setup before shipment. The patch panel configuration can be changed at any time asking for service.

## Appendix

List of the device that the ZeroUno i2S<sup>MkII</sup> interface is able to emulate.

<b>HDMI family #1</b>	Sonore, PS Audio, Mola Mole, M2Tech, Aune, Denafrips, K&K Audio, Empirical Audio, Audio-gd, Musica Pristina, Channel Islands Audio, Holo Audio, Sthal~Tek, DiDiT High-End, Matrix, Hifime, X-Sabre, S.M.S.L.; these units have the same pinout.
<b>HDMI family #2</b>	Wadia, Pink Faun, Audiobyte, Rockna, Singxer, Project, LKS, Gustard; these units have the same pinout.
<b>HDMI custom</b>	Wyred4Sound, JAVS, SMSL, Love Harmony, Astin Trew; all these units are with a different pinout, totally custom.
<b>RJ45 family #1</b>	MHDT, Empirical Audio, Hiface (modified), KingRex; these units have the same pinout.
<b>RJ45 family #2</b>	M2Tech, QLS, Area, Audio-gd; these units have the same pinout.
<b>RJ45 custom</b>	Ayon, Aqua, YBA, Accuphase, Pop Pulse, Teradak, Northstar Design, MSB Technology, Lite Audio, Melodious Audio, Yulong, Soundaware, Zanden Audio, Denafrips, APL HiFi; all these units are with a different pinout, totally custom.
<b>DIN 6 pins family</b>	Camelot, Audio Alchemy, April Music, Perpetual Audio, Channel Islands Audio
<b>4x BNC</b>	BMC Audio, C.E.C.

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Same examples of configuration



The standard ZeroUno pure-DAC: SPDIF RCA, AES/EBU3, USB, OPTIC



The ZeroUno pure-DAC with the i2S capability – standard configuration: SPDIF RCA, i2S HDMI, USB, OPTIC



The ZeroUno pure-DAC with the i2S capability – optional configuration: i2S RJ45, i2S HDMI, USB, OPTIC



The ZeroUno pure-DAC with the i2S capability – custom configuration: i2S RJ45, i2S HDMI, SPDIF RCA, AES/EBU3, USB, OPTIC



The ZeroUno DAC SE with the i2S capability  
custom configuration: i2S 4xBNC, SPDIF RCA, AES/EBU3, USB, OPTIC  
Connection to TL2N C.E.C. CD player

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