Juniclock One

Clock for Jundac Two DAC

The analog sound for your digital system

Technology

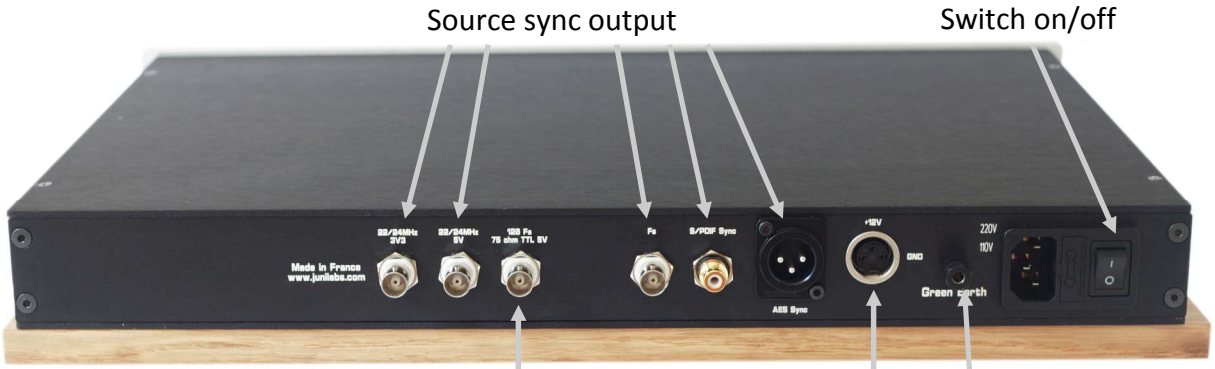
The clock is a stage that greatly improves digital sound reproduction. When using the Juniclock One, you reach all the subtleties of the Jundac Two. This configuration allows to free from sonic degradation due to digital synchronization.

We though Juniclock for analog and human rendering with body, realism end life…

The front panel switches allows to activate only used outputs to minimize high frequency emissions.

The Juniclock One integrates a 12V power supply output to power a firewire sound card M-audio Profire 610© or M2Tech interface HiFace EVO©. This well designed power supply allows reaching the best from this equipment. Added to a good management of vibration, this solution is nice system to work with high definition audio files (24 bit, 96/192Khz).

Juniclock One front panel



Juniclock One rear panel

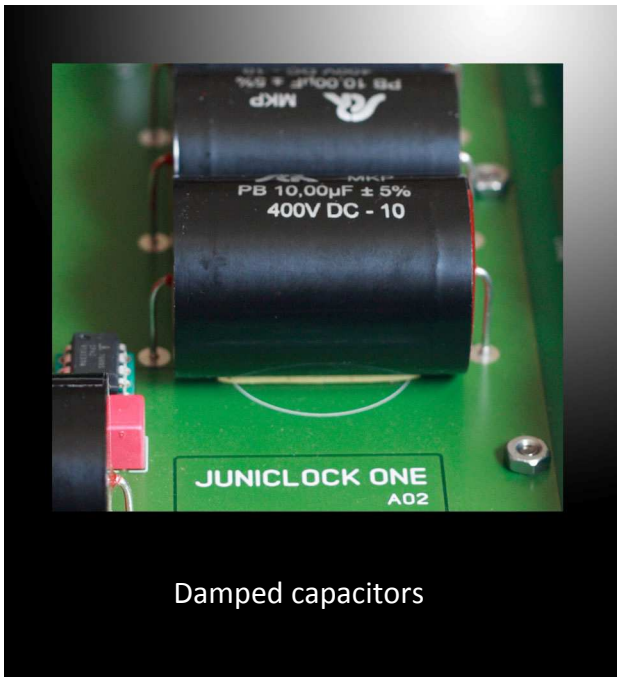
Mechanical

The aluminum chassis box (nonferrous) uses hard and soft material to avoid sound degradations due to mechanical vibrations. It sits on a massive oak support (No feet, no spike).

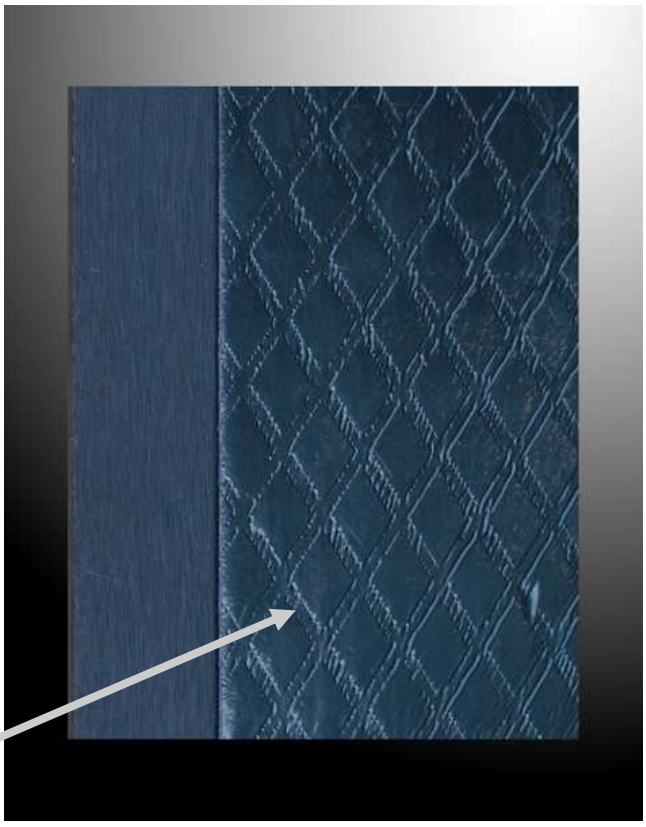
Using of different materials for a better vibration management.

The PCB is fixed with mixed materials (hard and soft); each transformer is damped with sand and absorbers.

Managing vibration allows a high definition level and comfortable bass.



Damped capacitors



Anti-vibratory material fixed on the top chassis box.

Connecting Juniclock One to Jundac Two

Connect a 75 ohm BNC-BNC cable between Juniclock output named “128 fs 75 ohm TTL 5V” and “EXT clokc” input on the Jundac Two. The quality of the cord is important. Whatever the configuration that you choose, this connection is necessary to link the Jundac Two to the Junicloc One.

Selecting the working frequency

The front panel rotary switch allows to choose working frequency (44.1KHz, 48KHz, 88.2KHz,96KHz, 176.4KHz, 192KHz). The Jundac Two DAC doesn’t perform any oversampling. This frequency must be equal to the audio flux coming from the source.

For CD player, the working frequency is 44.1KHz, pour a DVD, the working frequency is 48KHz. With dematerialized source (PC, Mac…), the working frequency depends on the sound card’s SPDIF output and can be different for each file reed. When there is mismatch between working frequency data rate you can hear some scratch.

Figure 1 illustrates this configuration that matches will all type of sources.

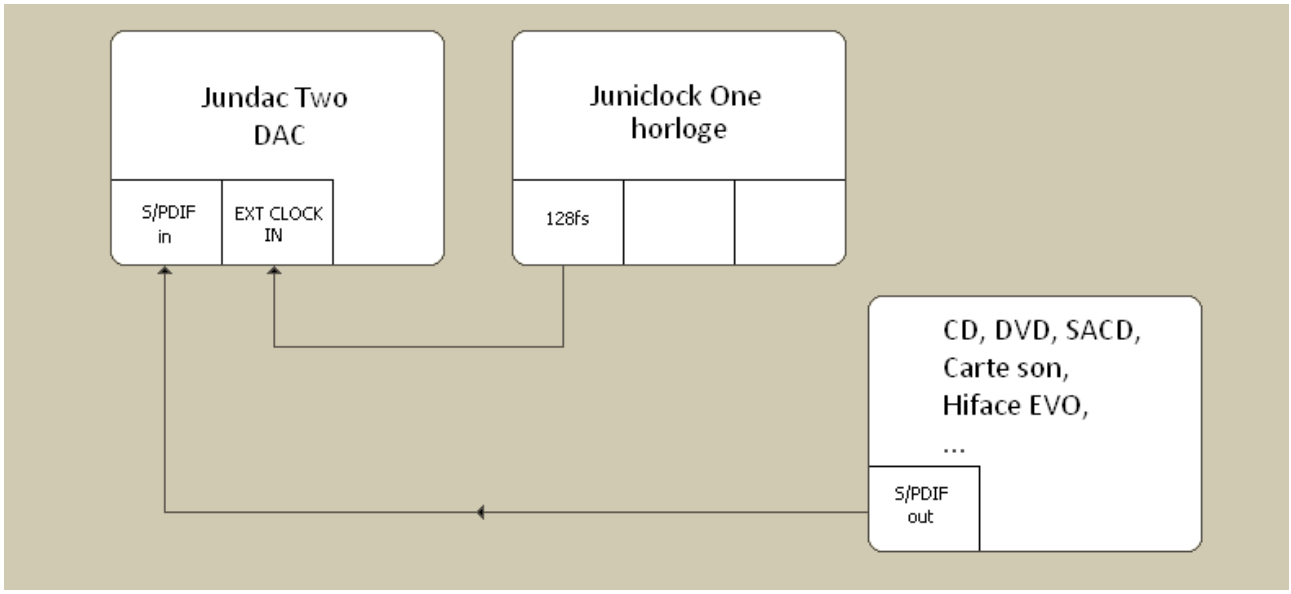


Figure 1 – Connecting a CD player or any other digital source.

Synchro with sound card using slaved clock input

It is possible to use a single master clock to master all digital equipment when each source include digital slaved input clock. This configuration is used in digital studio recording. It solves all problems of jitter and synchronization.

This configuration is illustrated in figure 2,3 and 4.

For this configuration it is necessary to use another digital cord to link slaved input clock from source to the Juniclock. The Juniclock One provides many standards and connectors.

Connecting M-Audio Profire 610

The figure 2 illustrates the connection for M-audio Profire 610©. The Juniclock integrates a 12V power supply output to power the Profire 610.

Read the user manual of the Profire 610 for wiring and configuration details.

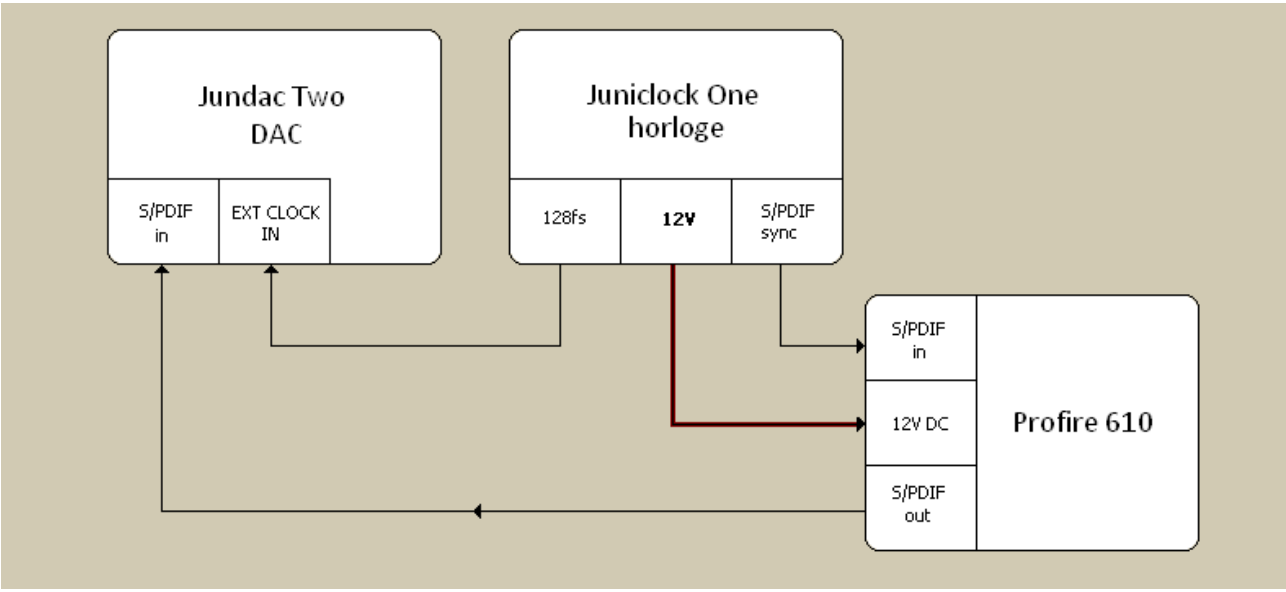


Figure 2— Connecting Profire 610 with clock sync.

Connecting M2Tech Hiface EVO

The figure 3 illustrates the connection for M2Tech HiFace EVO©. The Juniclock integrates a 12V power supply output to power the EVO.

Read the user manual of the M2Tech for wiring and configuration details.

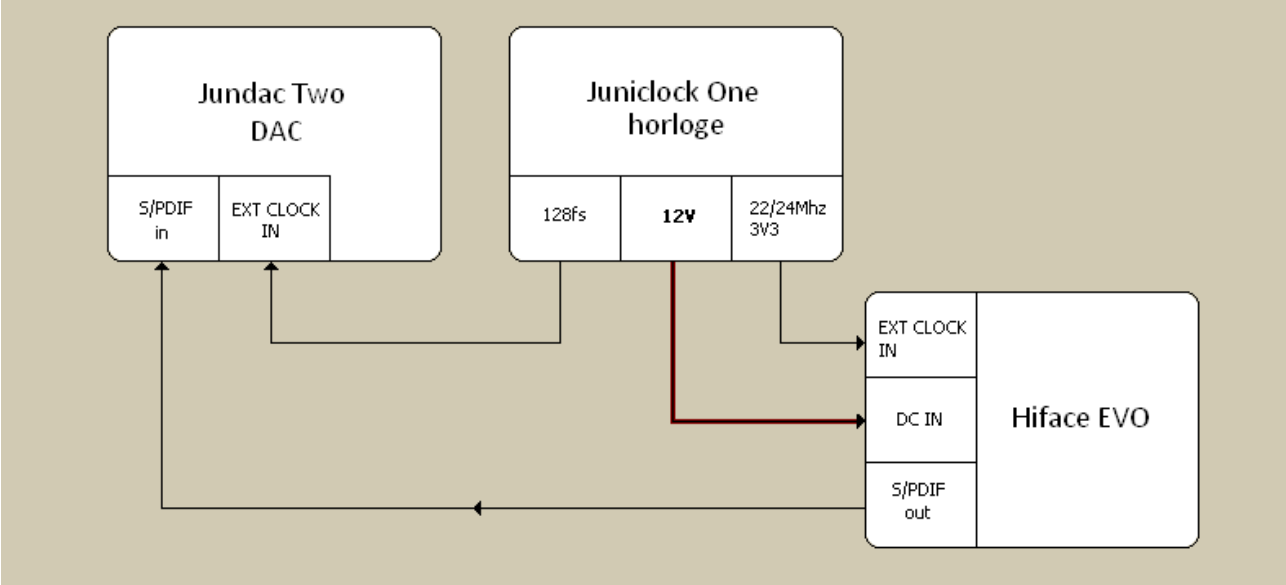


Figure 3— Connecting Hiface EVO avec clock sync.

Connecting a CD player with clock sync input

The figure 4 illustrates connection to a CD player integrating a clock sync input.

Some manufacturers provide this kind of player:

- Marantz SA-7S1
- Marantz SA-11S2
- Esoteric
- ...

Read the user manual of the CD player for wiring and configuration details.

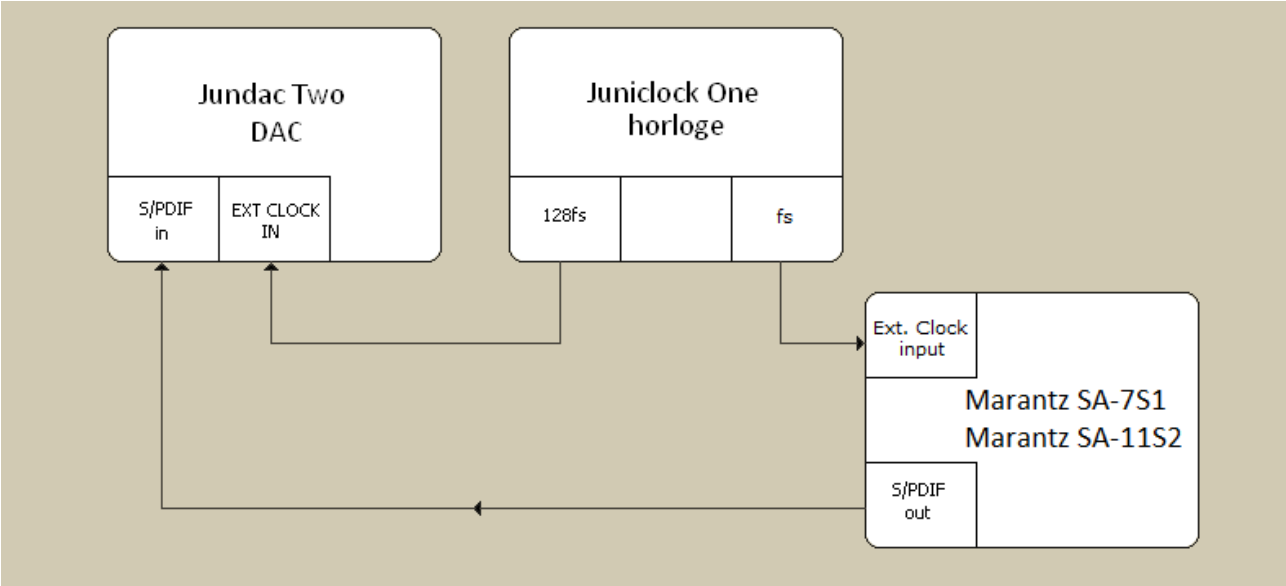


Figure 4— Connecting a CD player with clock sync input.

Technical characteristics

The following table lists rear panel available outputs

	Signal type	Connector	Front switch	Peripheral to connect
AES Sync	S/PDIF[(1)] - 5Vcc 110 ohm	XLR	Yes	Sound card with sync on AES input.
SPDIF Sync	S/PDIF[(1)] 1Vcc 75 ohm	RCA	Yes	Sound card with sync on S/PDIF input.
Fs	5Vcc 75 ohm	BNC	Yes	CD player with sync on «word clock»
128 Fs	5Vcc 75 ohm	BNC	No	Jundac Two DAC
22 24 5V	5Vcc 75 ohm	BNC	Yes	Sound card with sync on 22.5792MHz or 24.576MHz. [(2)]
22 24 3V	3Vcc 75 ohm	BNC	Yes	Sound card with sync on 22.5792MHz or 24.576MHz. [(2)]
+12V		DIN 3 wires	No	12V power supply output for external sound card.

[(1)]The S/PDIF signal integrates no valid audio data. All samples are zero. It is used for sync only.

[(2)] The frequency depends of the working frequency selected bye the front panel rotary switch. This frequency is:
- 22.5792MHz for 44.1KHz, 88.2KHz and 176.4KHz.
- 24.576MHz for 48KHz, 96KHz and 192KHz.

Working frequencies: 44.1KHz, 48KHz, 88.2KHz, 96KHz, 176.4KHz, 192KHz.

Dimensions: 45cm x 5cm x 33cm
Weight: 8Kg
Power consumption: 7W common, 15W max.
The consumption is proportional to the number of enabled outputs and 12V power output delivered.

How to get the best from your clock

Running-in period and heating time

The clock that you buy is new. To reach is optimal quality level, a 600 hours period is necessary. During or after this period, your converter will give the best of itself when it is hot. This heating period is reach at least after 24H00; we recommend a 48H00 or more heating period.

Digital cord

The quality of the digital cord is very important. The Juniclock One is provided without digital cord. Having a high quality digital cable is necessary. We recommend "Sechat" French cable. It is a great cable and we design Jundac Two DAC with this cable. The matching is ideal.

This cable is available only at:
www.hificables.fr

Power cord and fuses

The quality of the power cord will act on audio rendering. The Juniclock One is provided with standard power cord, it is recommended to change and replace it by a high quality cable.

The Juniclock One is provided with audio grade fuses. It is not necessary to replace it.

Managing vibration

Gestion des vibrations

The clock is the most sensitive device to vibration. We recommend to put the clock and its oak support on 3cm granite.
For more details see: **Managing vibration**
http://tech.juaneda.com/fr/articles/managingvibration.html

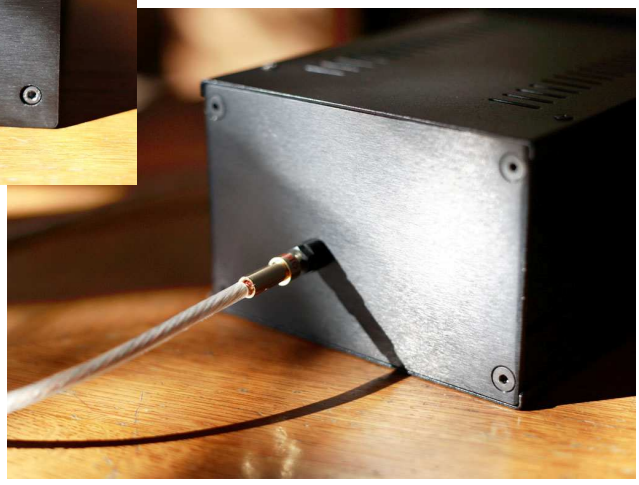
Ground optimization

Green Earth

The Juniclock One's chassis box is linked to Earth via its IEC plug. To optimize sound rendering, a second connector named ***Green Earth*** is available in rear panel. It is internally wired to audio ground.

You can improve Juniclock One's audio rendering by linking the ***Green Earth*** to:

- A virtual ground, (see picture)
- A Main Earth via a big cable,
- The DAC's chassis box.



Here is an example of virtual ground where the ***Green Earth*** can be connected. The link was made by big cable (loudspeaker cable).

For any other questions, do not hesitate to contact us, or goes to our web site.

The Junilabs' team
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