

METRONOME TECHNOLOGIE

PREMIUM D/A CONVERTER



C8 / C8 + User Manual

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1 – Important Safety Instructions

1-1 Warnings

- In order to avoid any risk of fire or electrical shock, maintain the unit in a dry place. Do not expose to humidity.
- Before connecting and operating the product, please attentively and fully read the present manual.
- The power supply generates dangerous voltages for the human body:
- Do not introduce any metallic object by the casket airing neither on the connectors.
- Never dismantle the upper hood if the unit is not unplugged. For any intervention, please contact your retailer
- Install the product securely on a stable surface.
- During operation do not touch the vacuum tubes (if any): they may be hot.
- Product characteristics, specifications and conception can be subject to modifications without prior notice.

1-2 Safety Instructions

- ALWAYS disconnect your entire system from the AC mains before connecting or disconnecting any cables, or when cleaning any component.
- A three-conductor AC mains power cable which includes an earth ground connection must be used. To prevent shock hazard, all three connections must ALWAYS be used.
- Original AC main power cable is recommended to use this product.
- NEVER use flammable or combustible chemicals for cleaning.
- NEVER operate this product with removed cover.
- NEVER wet the inside of this product with any kind of liquid.
- NEVER pour or spill liquids directly onto this unit.
- NEVER block air flow through ventilation slots or heat-sinks.
- NEVER bypass any fuse.
- NEVER replace any fuse with a value or type other than those specified.
- NEVER attempt to repair this product: contact your retailer.
- NEVER expose this product to extremely high or low temperatures.
- ALWAYS unplug sensitive electronic equipment during lightning storms.

2 – Company Profile

METRONOME TECHNOLOGIE Ltd. is a French company founded in 1987, designer and manufacturer of High-end audio systems.

Métronome Technologie

750 route de Bardazou

FR-81800 Roquemaure

Phone number:+33 (0)5 34 26 11 33

Email: contact@metronome-technologie.fr

METRONOME TECHNOLOGIE has developed different ranges of products:

- CD players,
- Digital to Analog Converters,
- CD transports,
- Amplifiers/Preamplifiers/Power Amplifiers.

The company aims to achieve two main objectives:

- Get the best sound that digital and analog components can provide, by applying the most advanced technology available;
- Give a pure design to its products to combine aesthetic and technology.

Therefore, the C8 / C8 + Converters are the result of many months of technical research and countless hours of listening. This converter was developed to satisfy the largest number of users.

3 – Introduction



Congratulations for acquiring the METRONOME TECHNOLOGIE C8 Converter !

METRONOME TECHNOLOGIE designs and hand manufactures audio high-end sources.

The development of a METRONOME TECHNOLOGIE product is animated by a philosophy which aims to reproduce the sound with all nuances and original emotion without altering the recorded signal.

In order to ask METRONOME TECHNOLOGIE any purchase or technical detail information, please contact the company by connecting yourself to the website:

www.metronome-technologie.com

4 – Design Specificities

- Elektra Power supply with amazing specific AC filter, individual power transformers and complete independent lines power, providing an inter-stage EMI/RFI radiation protection.
- Simple High Quality DIR on the DAC unit eliminating TTL components for signal reconstruction.
- Two to four DACs providing a deeper, faster and more detailed sound.
- Up-sampler & DACs units on an independent PCB plugged onto the main board.
- Asynchronous USB input compatible with PC & MAC to read PCM files up to 192 KHz / 24bits on C8 Reference or PCM 384 KHz / 32 bits eq. DSD 64 to 512 on C8+.
- Analog stage line with 2 operational modes:
 - Mode 1: Solid-state stage line;
 - Mode 2: Tube stage line.
- Balanced output with High-end shield transformers.

5 – Unpacking

Your C8 / C8 + Converter has been packed in two specially-designed boxes. One contains the Elektra Power Supply unit and the second contains the C8 Reference converter.

1. Carefully unpack the machine: be careful when lifting the unit; you may need a second person's help.
2. Please carefully preserve packages and protections, they will be useful for the unit shipment in case of maintenance. Please note that the warranty will be considered as cancelled if the units are dispatched incorrectly packed.
3. Please make sure to read the "Important Safety Instructions" chapter before continuing.

The boxes contain:

- C8 / C8 + unit;
- Elektra Power Supply;
- Power supply cable (High Quality 16 wires connector);
- Main electrical cord;
- 2 sets of 3 cones.

6 – Elektra Power Supply

6-1 Installation

- Install the converter Elektra power supply on the hi-fi unit or on a stable and strong support.
- Make sure not to obstruct the upper of the top cover. For optimum operation and correct ventilation, keep a free area of 5 centimeters (2 inches) above the power supply. Please note that after a few minutes of operation, the top cover warms up: this is normal.
- Connect the main cable to the socket.
- Connect the link cable to the power supply connector.

6-2 Front View



- 1 Power switch ON/OFF: push up to switch the power supply on and push down to switch it off.
- 2 Led lighting: the led is only lighting to indicate when the power supply is running.
- 3 Ground switch: you can choose to disconnect the electrical ground reference by pushing the switch down.

6-3 Rear View



- 4 Power Supply Connector to the power supply of the C8 Reference Converter (Top Quality 16 wires cable).
- 5 Power entry connector: to plug the electrical network cable and change fuses if they are broken.

6-4 Utilization

The switch on the front panel allows turning the converter power supply on or off. The unit state can also be easily seen : if the display is alight, the power supply is ON. During the power on, the unit takes some seconds to be fully activated.

The C8 / C8 + power supply can be switched on during a long period. However, for a prolonged absence, it is advised to turn it off, with the switch on the machine front panel.

The power supply is protected by internal electronic circuits and by a general fuse situated into the metal box. To change the fuse, it is imperative to firstly unplug the main cable, also unscrew all screws and open the fuse compartment. Finally, replace the fuse by an identical model: 1 Ampere slow blow.

WARNING: Never modify the value of the fuse.

Nota: after a long period without functioning, the fuse may burn out when the power supply is switched on. Indeed, when the power supply is completely discharged while it is switched on, there is a very important current consumption during a brief instant.

7 – Converter

7-1 Installation

- Install the converter unit on top of the Elektra or on a stable and strong support.
- Make sure not to obstruct the top cover. For optimum operation and correct ventilation, keep a free area of 5 cm (2 inches) above the converter. Please note that after a few minutes of operation, the top cover warms up: this is normal.
- Connect the power supply link cable to the converter.
- Connect the inputs on their respective drive(s).

7-2 Front View



- ⑥ Input selection switch: push down/up each time you wish to change the selected input.
- ⑦ Input display selected: shows you the selected input.
- ⑧ PLL status: when the converter is locked by a signal on any inputs, the frequency will be mentioned. If there is no signal, "NONE" will be displayed.
- ⑨ Output stage selector switch:
 - Down position: AOP are activated (Solid-state);
 - Up position: tubes are activated.
- ⑩ Tubes output stage indicator: "TUBES" is only alight when the tubes output stage is selected.

7-3 Rear View



- ①① Power Supply connector: to connect the C8 converter to the power supply (High Quality 16 wires cable).
- ①② OPTICAL: Toslink digital input.
- ①③ AES/EBU: XLR digital input.
- ①④ S/PDIF: RCA digital input.
- ①⑤ USB: Type B USB digital input.
- ①⑥ SYMETRICAL RIGHT: Analog right balanced output.
- ①⑦ ASYMETRICAL RIGHT: Analog right unbalanced output.
- ①⑧ ASYMETRICAL LEFT: Analog left unbalanced output.
- ①⑨ SYMETRICAL LEFT: Analog left balanced output.

7-4 Utilization

7-4-1 Input selection

The converter has 4 inputs which can be selected by the switch "6" on the front panel.

At power on, the converter automatically pre-sets the last used input.

To change the input and select another one, please press switch "6". Each action on the switch changes the input as follows:

AES/EBU - S/PDIF - USB - TOSLINK - AES/EBU... etc.

7-4-2 Inputs Characteristics

- Input 1 - AES/EBU: This input decodes all frequencies until 192 KHz.
- Input 2 - S/PDIF: This input decodes all frequencies until 192 KHz.
- Input 3 - Asynchronous USB: (PC or MAC drivers included into the CDROM provided with this manual) This input decodes all frequencies until : 192 KHz on C8 , 384 KHz on C8+.
- Input 4 - TOSLINK: This input decodes all frequencies until 192 KHz.

Nota: when the converter is locked (signal detected), the display on the front panel indicates the value of the digital signal received by the converter. As soon as you choose a non-connected input, "NO SIGNAL" will appear during some seconds and, immediately after, the converter will automatically be put in STANDBY MODE.

7-4-3 Output Stage Switch

With C8 and the new C8 + Converters, you can easily choose your favourite output stage sound. By pushing up or down the switch "9", you can use solid-state or tubes output stage. This new characteristic can help you to obtain the best sound depending on the listened music style.

7-5 Analog Outputs

The converter has balanced outputs: if your pre-amplifier has balanced inputs, you can connect the plugs "18" and "21" to the correct plugs of the pre-amplifier. Otherwise, connect plugs "19" and "20" on a LINE INPUT of your pre-amplifier. The balanced outputs correspond to a professional standard used in the case of high radio-electrical perturbations.

7-6 Technology

- Digital inputs: All inputs of the converter have the same independent decoding circuit without any TTL interface. These 4 inputs can decode digital signal from 44.1 KHz to 192 KHz.
- Sample Rate Converter: The Sample Rate Converter or SRC receives original signal and converts it on 24 Bit - 96 KHz frame with the internal clock.
- The DACs: The C8 digital to analog chips use a conversion technology "delta-Sigma" 24 bit/192 KHz, and convert digital information to analog voltage. The C8 Reference uses four chips in parallel, for both channels. The C8 + uses a dual mono conversion technology, 1 chip per channel, treating native signals.
- Analog stage: The C8 / C8 + uses two different analog stages:
 - The first is developed with 2 triodes JAN6922 (Philips) in parallel configuration polarized in class A.
 - The second uses 4 operational amplifiers polarized in class A, specially chosen after many hours of listening.

The DAC chips signal only crosses very little passive components (no active components), so signal purity is improved.

The choice of using the triode was taken because this is a much more musical amplification mode than transistors or integrated circuits, even if the sound speed is lower. Therefore, if you prefer faster transitions, it is advised to use solid-state output stage.

The converter uses a special circuit of triodes pre-heating, which are in standby mode when there is no signal received, so the tubes performances are preserved.

The balanced outputs do not use any active components but a specific shield transformer, like the ones used in High-end professional studio consoles.

8 – USB Driver Installation

WARNING

Before installing drivers for MAC OS or WINDOWS
Check your system version !

To obtain your Apple OS, please read below:

- First click on “apple icon”, then on “about this Mac”.



- Once you clicked on “about this Mac”, a new windows is opened.
You should be able to read your current system version.



- Once you know your MAC OS version, please install the correct driver version as explained below:
 - For MAC OS version 10.4.XX: (TIGER)
 - For MAC OS version 10.5.XX: (LEOPARD)
 - For MAC OS version 10.6.XX and 10.7.XX: (Snow Leopard & Lion)
 - For MAC OS version 10.8.XX (Mountain Lion)
 - For MAC OS version 10.9.XX (Mavericks)
 - For MAC OS version 10.10.XX (Yosemite)

Please use the driver in the corresponding file

*X:\ the letter could be different on your system, corresponding to your local CDROM reader.

If you installed wrong drivers, please uninstall them by following instructions below:

- Open a console, and then type the following commands – the console is located into Finder/Applications/Utilities:
 - `sudo mv /System/Library/Extensions/Hiface.kext /tmp`
 - `sudo touch /System/Library/Extensions`
 - `sudo pkgutil --forget com.m2tech.driver`

Then, restart the Mac.

To obtain your Windows version, please read below:

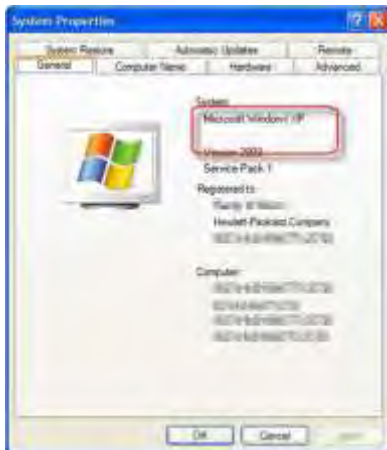
Click on “start”, then “control panel” and finally on “system” icon.

- With Windows 7/8, you should be able to see similar windows as below :



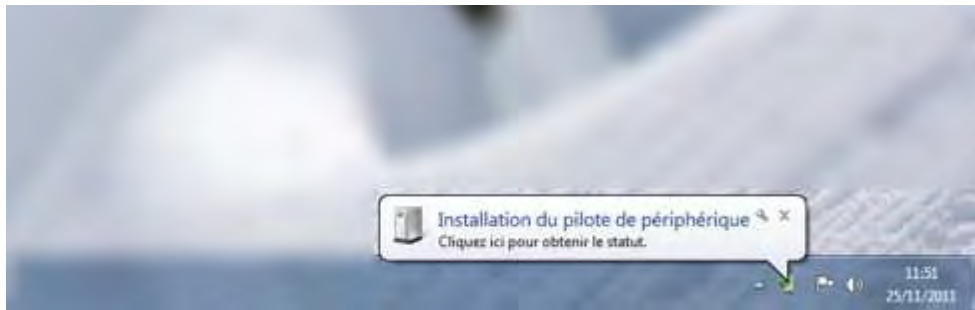
To install your Metronome Async USB interface, please use drivers called “metronome_249c_9002_windows_7/8” provided into the CDROM attached on the last page of you user manual.

- On Windows XP, you should be able to see similar windows as shown in the picture opposite.



To install your Metronome Async USB 24/192 interface please use drivers called “metronome_249c_9002_windows_XP” provided into the CDROM attached on the last page of you user manual.

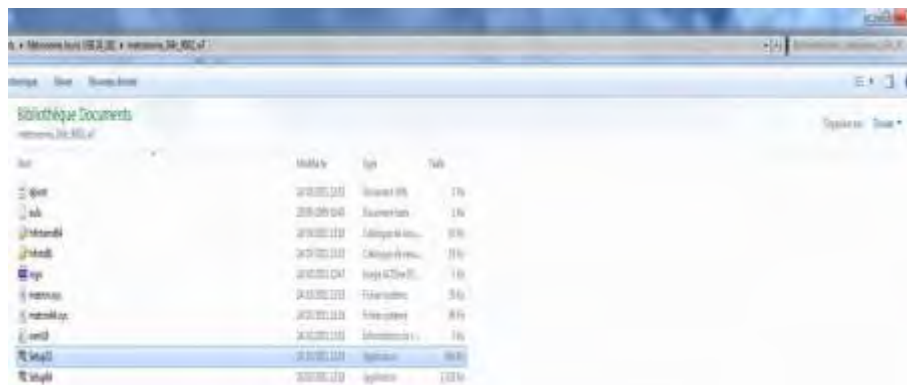
- Step 1: Connection with USB module ...



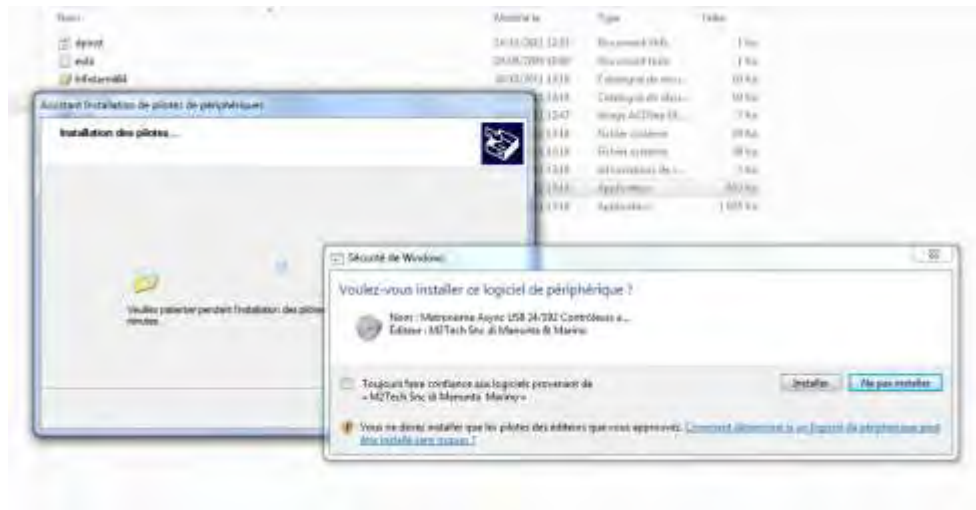
- Step 2: Search the driver on the CD Rom provided ...



- Step 3: Click on the application file corresponding with your OS ... (Windows 32/64 bits or Mac OS)



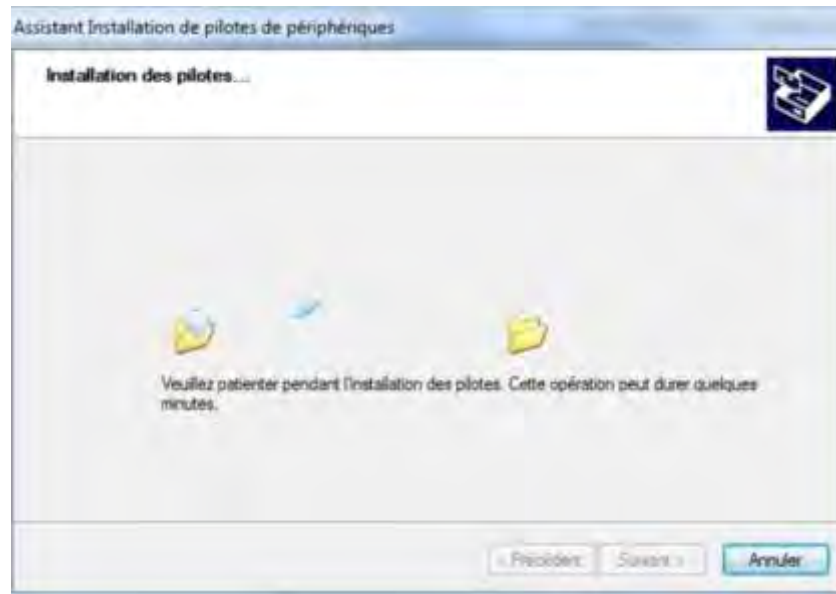
- Step 4: Check the box and click on "install".



- Step 5: Click on "next".



- Step 6: Installing



- Step 7: Congratulations, installation complete....



9 – Technical Characteristics

▪ INPUTS:

TOSLINK - Optical - 44,1 to 192 KHz - Connector AT&T-ST
AES/EBU - 110 Ohms - 44,1 to 192 KHz - Connector XLR
S/PDIF - 75 Ohms - 44,1 to 192 KHz - Connector RCA
USB – PCM 44.1 to 384 KHz - DSD 64 to 512 *
USB connector : Type B

▪ OUTPUTS:

No balanced - 2.5 V RMS @ 0dB - 47K Ohms - Connector RCA
Balanced -2.5 V RMS @ 0 dB - 600 Ohms -Connector XLR

▪ AUDIO DATA:

Frequency bandwidth: 10 Hz 20 KHz +/- 0.15 dB
Signal/Noise Ratio: more than 123 dB
Dynamic range: 117dB
Inter Channel isolation: 115 dB
Inter channel gain mismatch: 0.15dB
Phase rotation: +/- 1°
Digital filter ripple: +/- 0.0005 dB
Digital filter Stoppband attenuation: 100dB Min.

Distorsion DAC: (Fs = 44.1 KHz)

105 dB @ 0dB

53dB @ -60dB

Distorsion DAC + LINE: (Fs = 44.1 KHz) 0 dB 1 kHz

97 dB @ 0dB

50 dB @ -60dB

Resolution 32 BIT

Conversion technology: Dual Mono

▪ POWER SUPPLY:

Voltage: 100 VAC +/- 10% - 50/60 Hz – Japan

Voltage: 120 / 240 VAC +/- 10% - 50/60 Hz – Other countries

Consumption: 90 VA Max

▪ OTHER CHARACTERISTICS:

Elektra Power supply dimensions: WxHxD: 450 x 105 x 435 (mm)

Power supply weight: 15 Kg

C8 / C8 + Converter dimensions: WxHxD: 450 x 105 x 435 (mm)

Converter weight: 14 Kg

* specific characteristics of C8 +

10 – Warranty

METRONOME TECHNOLOGIE Ltd. warrants the components of your METRONOME TECHNOLOGIE product for two years from the date of purchase.

In the event of a product failure, METRONOME TECHNOLOGIE will repair, readjust and, should the occasion arise, replace the units providing that all the clauses contained in the warranty are met.

In order to initiate service of any kind, it is necessary to firstly obtain distributor or dealer authorization and then, ship the prepaid unit.

Any of the following conditions shall void the warranty:

1. Operations not in accordance with this manual.
2. Abuse, accident or unauthorized modifications as determined by METRONOME TECHNOLOGIE Ltd. exclusively.
3. Serial numbers removal, defacing or falsifying.
4. Shipping without the complete factory cartons.

METRONOME TECHNOLOGIE Ltd. shall not be liable for any accidental damages regarding operation, failure, troubleshooting or repair of your C8 / C8 + Converter.

