

# TC-7534 Caiman MKII GFU Instruction Manual

## Stereo Audio Digital-to-Analogue Converter

### Overview

The TC-7534 Caiman MKII is a reference-quality digital-to-analogue audio converter featuring the latest DAC Audio technology, Direct Coupled output stage, and Class-AB headphone stage. The Caiman is designed for maximum transparency and critical playback in professional audiophile applications.

### Burn in

Many users report that the sound output develops in quality after a few days of use. The Caiman can be left powered on and playing a music stream with the volume turned down for a few days to speed up the burn in process.

### Fixed Output Level connection

The Caiman Fixed Output is designed to connect to the CD or AUX input of an amplifier.

### Variable Output Level connection

The Caiman Variable Output is designed to connect to the input of a power amplifier or active speakers.



## Front Panel

### Digital Inputs

Four digital input connectors (1 x coaxial, 1 x USB, and 2 x optical).

### Input Status Display

Five LED's on the front panel indicate which digital input is selected and when the Caiman is in AUTO or MANUAL mode.

### Select Switch

The Select switch allows you to select between input signals.

### Function Switch

The Function switch allows you to select between AUTO input signal detect, Manual input channel selection, and LED sleep mode.

### Stereo Headphone Socket

The stereo headphone socket mutes the fixed RCA/PHONO output when a headphone plug is inserted

### Headphone Amplifier

The Caiman headphone output is driven by a high-end headphone amplifier. It is designed to drive loads between 12 to 600 Ohms.

### Volume Control

The front-panel Volume Control sets the output level of the headphone.

## Rear Panel



### Digital Inputs

Four digital inputs, selected from the front-panel toggle switches.

The *Caiman* will not decode DSD, AC3, DTS, or ADAT signals. 176.4kHz sampling rate is not supported.

#### Input 1 – Optical

The optical input 1 is a TOSLINK connector.  
Input up to 24Bit/192kHz

#### Input 2 – Optical

The optical input 2 is a TOSLINK connector..  
Input up to 24Bit/192kHz

#### Input 3 - SPDIF

The coaxial input uses a RCA connector.  
Input up to 24Bit/192kHz

#### Input 4 – USB

The USB input uses a USB B connector.  
Input up to 24Bit/192kHz in shared mode  
Input up to 24Bit/96kHz in exclusive mode

### I2C input

The Caiman has an I2C input that is designed for future expansion. Further information on this will be available on our website at [www.beresford.me](http://www.beresford.me)

### Analogue Output

The Caiman has a Left and Right Fixed/Variable Line output, terminated into a pair of RCA/PHONO sockets.

The output is disconnected when a headphone is plugged into the headphone socket. In this condition the Caiman can be used as a headphone amplifier.

### DC power supply socket

The supplied external AC-DC power supply is 15Volts. The Caiman can however work with regulated power supplies down to 12Volts. The Caiman also supports the use of 12V rechargeable batteries or battery packs. The centre pin is the Positive power supply terminal.

A country specific AC-DC power cord is included with each Caiman converter shipped to most countries. Plug adapters for less well known configurations are otherwise available locally.

The Caiman can operate from as little as 200mA, and withstand external DC power drop out conditions for up to 2 seconds..

### Ground Terminal

The Caiman has a ground terminal. This should be used for connection to your amplifier if you are experiencing ground loop problems.

#### **NOTICE:**

*The Caiman does not have a sound muting output relay.*

*So when using the Caiman as preamplifier, switch the Caiman ON before your power amplifier, and switch your power amplifier OFF before the Caiman. This is to prevent the switch off signal pulse from the Caiman passing to your speakers.*

## Important Specification Notes

1. The audio output on the RCA/PHONO socket can be set to a fixed or variable output via the Fixed/Variable switch on the front panel. The variable output can be adjusted with the volume control.
2. The USB circuit is only able to play back signals up to 24 Bit/96kHz bitrate.
3. Playback of 176.4kHz is not supported
4. The first 3mm of travel of the volume control is used to bias the headphone amplifier circuit. So some differences in channel balance might be noticeable within that space.

## Installation

1. Connect the DC plug from the Caiman power supply to the DC socket on the DAC.
2. Connect the power cord figure of 8 end to the Caiman power supply.
3. Connect the DAC input sockets to your audio and video equipment with suitable optical or digital coaxial cables. See our website for our own list of suitable cables and conversion adapters.
4. Connect the RCA stereo output via RCA/PHONO cables to the CD or AUX input of your amplifier via stereo RCA/PHONO cables of a suitable length.
5. Plug the mains plug end of the Caiman power supply power cord into a mains socket.
6. Press the Power button to switch ON the DAC.

## AUTO/MANUAL Mode (experimental)

Press the FUNCTION button for about 1 second and let go of it as soon as the RED STATUS LED light up. The DAC will scan each input one by one till it finds a digital input signal. The STATUS LED and the operating input LED will now both light up. When the input signal is removed, or the external equipment plugged into that input is switched OFF, the DAC will start to scan the inputs again till it finds a new valid input signal.

### **IMPORTANT:**

The basic Auto function won't operate with incoming digital signals that do not switch OFF when no audio is present. Examples of this are some satellite and cable boxes. In those cases you can try the Advanced AUTO Mode.

## MANUAL MODE

If the STATUS LED is lit and the DAC is either scanning for a new input signal or playing music, you can switch to manual mode by pressing the FUNCTION button once. The STATUS LED should now be OFF.

To select an input, press and release the SELECT button.

## SOUND SIGNATURE MODE

The Caiman MKII with the GFU firmware is capable of three different modes of audio data processing, which in turn also happen to produce a different sound signature. To change between sound signatures and modes, press and hold down the SELECT button for about two seconds. Release the SELECT button as soon as the RED STATUS LED lights up. The firmware will now automatically switch to the next data processing option.

One LED blinks = Mode-1 = optimized XTAL processing

Two LED blinks = Mode-2 = PLL clock processing mode

Three LED blinks = Mode-3 = DATA recovered clock processing mode

**NOTE:** In mode 2 & 3 the clock might not be able to find the exact beginning of an audio track when you first switch on the DAC or change to playing files of a different sampling rate. You can correct that by temporarily selecting mode 1 or 2 so that the clock gets back its bearings.

## **SLEEP MODE**

*Make sure that the STATUS LED is OFF when setting the SLEEP mode function. If the STATUS LED is not OFF, press and release the FUNCTION button once to switch the STATUS LED OFF.*

Press and hold down the FUNCTION button until the STATUS LED blinks. This will activate the SLEEP MODE function. To cancel the SLEEP mode, repeat the same procedure.

In SLEEP MODE each LED will be off when a valid audio stream is detected. The selected input LED will light up again if no audio is detected.

## **Program Backup**

When you switch the DAC OFF your settings will be saved. So next time you switch the DAC back ON your DAC will start using your saved settings.

## **RESET MODE**

The DAC's operating system might get confused on occasions and refuse to operate correctly when the buttons are pressed. If that happens you need to reboot the MCU (Micro Control Unit) to restore the DAC to the factory default mode.

1. Switch the DAC OFF via the Power button.
2. Wait at least twenty seconds.
3. Switch the DAC back ON via the Power button.
4. Whilst the LEDs are each lighting up one by one, press and hold down the SELECT button.
5. When all the LEDs are lit up, let go of the SELECT button.

## **Fuse Holder**

The fuse holder is inside the case close to the DC power connector socket. The fuse rating is 2 Amps.

## **Safety Information**

The factory supplied AC/DC adapter is suitable for 90 to 270 Volts AC operation.

## **Repairs**

Do not service or repair this product unless properly qualified.

## **Fuses**

For continued fire hazard protection always replace the internal fuse with the correct size and type.

## **Modifications**

Do not substitute parts or make any modifications that may create safety hazards and void the warranty.

## **Notes on Warranty Repairs**

An RN (Returns Number) is required when sending products back. Goods for repair must be shipped to Beresford ME prepaid and preferably in their original shipping carton with the RN clearly visible on the exterior of the packaging. A note should be included giving detailed reasons for the return.

