



# Produces the ultimate sound from digital music

## Our best ever DAC (Digital to Analogue Converter), CD player and digital pre-amp in one powerful hub

Music is more widely available and enjoyed more than ever before, with access to endless content via computers and the internet. Reproducing digital music as the original artist intended is a complex challenge. Unlike traditional audio sources, the internal digital to analogue process is not a key function of these sources and therefore sound quality is compromised as a result.

Part of the flagship 8 Series, the 851C has been built without compromise to provide a single hub from which digital music can be enjoyed in the best possible quality. Using two Digital to Analogue Converters (DACs) the 851C is our best DAC ever, upgrading all types and qualities of digital music by bypassing inferior internal DACs found in PCs and laptops.

The high performance USB connection means music from a computer, perhaps stored in iTunes, or streamed from services such as Spotify, is improved by no longer being restricted to the computer's sound card and it will support the highest quality studio files. Equally, the 851C's flexibility means devices such as an iPod dock, music streamer, network player or even a TV can be upgraded

to the best possible quality using a host of other digital connections. The original digital format, CD, is supported by a custom-designed CD player and also uses the 851C's DAC for even better sound.

To accommodate for this flexibility, the 851C's display can be customised for an individual system, allowing inputs to be renamed, making it incredibly easy for anyone to use.

Elegant brushed metal finishes complement the solid, all-metal casework for optimum component performance, to deliver the best sound results.

## 851C at a glance:



Our best DAC, Best CD player and digital pre-amp



Toroidal transformers



Audiophile-grade components



Versatile connectivity, inc. USB and XLR



Solid metal construction



User friendly display

## The inside story

### Two audiophile Analog Devices DACs

The 851C features twin Analog Devices 1955 DACs (the Rolls Royce of DACs) used in 'dual differential' mode for the very best digital to analogue conversion. Each stereo channel processes information completely separately for greater accuracy, bringing you far closer to the original recording for a truly amazing experience.

### High performance USB

The 851C features a high quality asynchronous USB audio input for playback of up to 24-bit/192kHz high resolution files from a connected PC. An asynchronous USB audio input allows bit-perfect transfer from the connected PC to the 851C, ensuring all data is delivered in perfect timing for the highest possible sound quality. See our 'Audiophiles Guide to Bit-Perfect USB Audio' at [www.cambridge-audio.com](http://www.cambridge-audio.com).

### ATF2™ Adaptive Time Filtering/ 32-bit Blackfin DSP

The 851C features ATF2 (2nd generation Adaptive Time Filtering), an upsampling process developed in conjunction with Anagram Technologies of Switzerland. This intelligently adapts incoming audio data to 24-bit/384kHz through the use of a 32-bit Blackfin DSP (Digital Signal Processor). The ATF2 system dramatically reduces digital jitter, a form of audible interference which affects all digital music. Jitter is most apparent when music is stored on computer hard drives and is the audio equivalent to a blurred image in a movie. While new data scrambling circuitry maintains signal quality and purity during quiet periods by reducing background noise.



## Toroidal vs EI transformers

We strive for audio perfection which is why the 851C features a powerful toroidal, audiophile-grade transformer. Cambridge Audio was one of the first manufacturers

to use toroidal transformers in the 1970s, and we continue to use them today. Some of the benefits of a toroidal transformer, over the cheaper and inferior EI transformers used by most other manufacturers are:

- ✓ High quality power output to the amplification circuits, with no clipping of the waveform, to provide a consistent signal
- ✓ No transformer noise, buzz or hum
- ✓ Large power reserves, to allow the transformer to deliver high peaks of volume when required
- ✓ Fully shielded against internal and external electrical interference, to maintain quality of power and signal

### A typical cheaper EI transformer:



- ✗ Weak inconsistent signal
- ✗ No shielding
- ✗ Noisy

## 851C application guide



### High quality sound card:

The majority of digital music is provided by a computer, whether stored or streamed. However the audio quality is limited by the computer's own sound card. The 851C will enhance digital music to make it sound better than ever.



### Upgrade sound:

The 851C's twin DACs and upsampling technologies will ensure all digital music is upgraded for great sound from a wide range of sources.



### CD player:

Even CDs, the original digital format, will sound better when played through the 851C, thanks to its upsampling technology.



### Pre-amp for active speakers:

The digital pre-amplifier in the 851C allows you to enjoy the highest quality digital audio with active speakers or direct connection to a power amplifier.

# The best DAC, pre-amp at the

### IR emitter

If placed in a cabinet, simply connect an IR (infra-red) emitter, for full control without 'seeing' the product.

### Digital output – coaxial and optical



### RS-232

Allows integration and control within a whole-house multi-room audio system

### Control Bus

Compatible Cambridge Audio products can be linked and controlled from one remote.

## High-end XLR connectivity

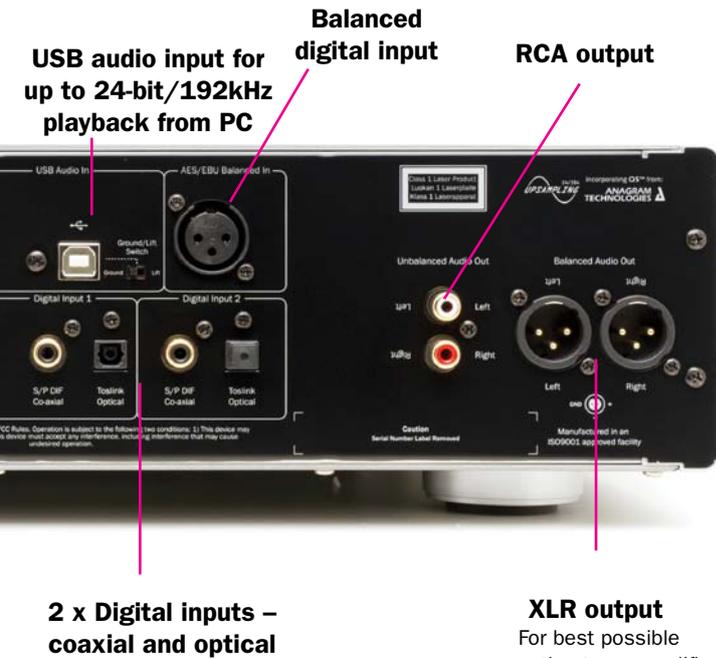
The 851C's balanced XLR connections allow the best connectivity to a high-end amplifier, such as the 851A. XLR features a ground pin which eliminates any ground hum in the positive and negative pins, for true audiophile pleasure.



## User friendly display

While we're obsessed with sound, the user experience is crucial too, especially with a product as flexible as the 851C. That's why the display can be customised to suit individual user systems and preferences. Each digital input can be renamed to the appropriate source, making it incredibly intuitive for anyone to use.

# the best CD player and heart of digital audio



## High performance, custom audio-only CD transport (drive)

While other manufacturers are happy to use a computer derived CD transport (or drive), the 851C takes full advantage of our own, audio-only transport. This coupled with our new S3 Custom CD Servo gives the double benefit of error free data retrieval from CDs. This combined with advanced upsampling and Analog Devices DACs, delivers a truly unsurpassed 'better than CD' audiophile experience.



## Elegant, all-metal design



We believe audiophile components need an environment to operate at their best. That's why we've used an ultra-rigid metal construction to ensure components are isolated to eliminate vibrations for the very best possible performance. What's more, the brushed metal finish is truly elegant.

### Did you know?

The 851C has three selectable filters, (linear, minimum and steep) which allow you to choose the sound that sounds best to your ears.

### LISTENING TIPS

The 851C is an incredibly versatile, high performance digital music hub. We recommend taking the time to note all of its features, some of which may not be immediately obvious.

#### Direct connection to a computer USB

Connect the 851C to a computer with iTunes and Spotify and enjoy the enhanced audio it delivers. Plus remember to show play/pause and track skip etc. using the 851C's remote control. The twin AD1955 DACs will enhance any size digital audio file, but studio master files sound as best they ever can with the 851C's better than CD 24-bit/192kHz processing system.

Please refer to Cambridge Audio's 'Guide to bit perfect USB audio' when configuring this demonstration.

#### iPod/iPhone with iD100

Use the AES/EBU high quality digital audio connection to the iD100 to hear the best sound possible from an iPod or iPhone.

#### CD player

Even CDs are upsampled with the 851C to deliver every last drop of detail, so be sure to choose some great-sounding tracks. Our designers particularly like 'Hurt' by Johnny Cash and 'Tamacun' by Rodrigo y Gabriela.

# Top reasons to buy an azur 851C

The 851C is an uncompromised digital music hub, delivering a true audiophile experience, here are 10 reasons why:

- 1 Complete digital hub:** The 851C is a high performance hub enabling you to enjoy all your digital music in stunning quality without compromise. Whether it's music stored on a computer such as in iTunes, streamed music, CDs, Blu-ray player or a digital iPod dock, audio will be delivered in incredible quality – with upsampling to 24-bit/384khz.
- 2 State-of-the art technologies:** With not one, but two Analog Devices 1955 DACs, the Blackfin 32-bit DSP (Digital Signal Processor), second generation Adaptive Time Filtering (upsampling) and of course driven by the all-important toroidal transformer, the 851C is true audiophile perfection.
- 3 Versatile connectivity:** Direct USB audio connection, 2 digital inputs (coaxial and optical for each), a balanced digital input and a balanced XLR output means you will be able to use your source equipment with ease, whatever your requirements. Plus three filters (linear, minimum and steep) lets you simply select one that sounds best.
- 4 Studio quality USB audio:** A dedicated USB audio input for computer connection, handling up to studio quality 24-bit/192kHz files gives the very best audio performance from a connected PC.
- 5 Advanced 2nd generation upsampling:** The 851C's upsampling technology will enhance all digital audio files, including CDs, to make the lowest quality file sound even better, right up to 24-bit/384khz.
- 6 'Better than CD' sound:** CDs will sound even better with 851C's upsampling technology taking them from 16-bit to 24-bit for sensational audio experience.
- 7 No computer parts:** The 851C takes full advantage of our own audio-only CD transport (drive) for an unsurpassed audiophile experience.
- 8 User friendly display:** Changing input names on the display allow customers to customise their 851C, optimising it for connected devices, making it incredibly easy for anyone to use.



851C (DAC) Digital to Analogue Converter, CD player & pre-amp (bottom) shown with 851A amplifier (top)

- 9 Ultra-rigid construction:** The 851C has an all-metal chassis to isolate all the components ensuring they can work at their very best, plus the brushed metal finish looks great too. There's no point using the finest components if they're put in a flimsy plastic box, that compromises performance.
- 10 Use as digital pre-amplifier too:** While the 851C's natural partner is the 851A integrated stereo amplifier, it can be used as a digital pre-amplifier too when connected to a power amplifier or, alternatively to high quality active speakers.

## Designer's note



"Inside the audible audio band, the 851C produces almost no measurable distortion which is something that really excites me as a designer. It's also the tiny details that make a real difference to the pleasure you get from using it. The simplicity of the user menu system in particular is something we're really proud of!"

Sam Ellenby –  
Electronics Engineer and 851C designer