

# hi-fi news

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# Musical Fidelity CLiC (£1250)

Designed around the M1 DAC, this easy-to-use control centre streams high-resolution music up to 24-bit/192kHz from a computer and a host of other digital sources

Review: **Dave Berriman** Lab: **Paul Miller**

Companies such as Linn and Naim first seized the opportunity presented by high-resolution digital formats by introducing top-end network players and providing expanding catalogues of downloadable high-resolution, bit-perfect music to support them. Although networks have been associated with convenience and low-resolution compressed data, slowly the audiophile community is waking up to the realisation that there is more than one way to enjoy music. Even more importantly, divorcing the data from that shiny disc is a potential gateway to higher resolution and better sound quality than Red Book CD...

So, a small but growing number of audiophiles are either dipping a toe into this brave new world with USB DACs or taking a larger, more hopeful leap with network-based music servers, which eliminate the need to select music while sitting at the computer. Sadly, the cost of joining this elite club has been high, but in January's news pages we announced the Musical Fidelity M1 CLiC universal music controller, which heralded lower-cost entry into the world of hi-fi network servers.

## SO WHAT DOES IT DO?

But what *is* the CLiC? To describe it as a digital preamp, or a streamer, does not do it full justice. Better to think of it as a comprehensive unit which selects internet radio, and music files from a variety of sources – including wired and wireless networks and data stores, Red Book CD players and even analogue. At its core, the CLiC has the already well-received M1 24-bit/192kHz, re-clocked upsampling DAC, and there's a large clear colour information screen to help navigate menus. It boasts a total of five digital inputs: digital iPod/iPhone, front USB stick, two coaxial S/PDIF (up to 24-bit/192kHz), and one

optical S/PDIF (24-bit/96kHz). There are also three RCA inputs, with purely analogue signal paths all the way to the output. Oh, and there's an IR remote.

But surely, such a versatile unit is bound to be difficult and baffling to set up and use? Actually, all that is required prior to using the CLiC with a computer network is a piece of software called a media server, which manages the music data stored on the computer's hard disc. I've been trying J River's Media Jukebox, and Twonky, which is recommended by Musical Fidelity. Simply download and install the server software on the PC or Mac, add some music ripped from your own CDs or downloaded from the internet and you're ready.

So setting up the CLiC could not be simpler. To connect to a wireless network, just turn on and wait 15 seconds for the display to show a menu list. Select 'Media Server' and the colour screen shows the name of your wireless network. Input your wireless security password and it is remembered by the CLiC – no need to do this again. From now on simply select your Media Server from the menu with

the OK button and the CLiC connects to your computer-stored music collection. Strangely, when selected via J River Media Jukebox, my FLAC files and playlists were excluded, but via Twonky all were displayed on the screen and accessible for replay.

If you have no wireless system, or prefer not to use it, you can bypass it by plugging the CLiC directly into your router using an Ethernet cable, for which no password is required. Once connected, by wired or wireless, you have access to the music stored on your computer, for playing data files at up to a maximum of 24-bit/96kHz, (depending on settings).

Plug an iPod into the rear socket and you'll have all your music collection listed and available. For radio, select Internet Radio from the first menu, and further long lists of stations and podcasts appear. Most stations stream horribly compressed data, but there are a few, such as Linn, Linn Classical, and Jazz, which contain data at higher rates for better sound quality, up to 320kB/s, though still not up to CD standards, of course. The S/PDIF, USB DAC and analogue sources are all selected from



**RIGHT:** Stream Unlimited's internal BridgeCode DM860 processor offers compatibility with all modern file formats including FLAC up to 24-bit/96kHz, WMA, AAC, HE-AAC, Real Audio, LPCM (up to 24-bit/192kHz), and ogg Vorbis 4.0



the Inputs menu, along with the three analogue inputs (pure analogue all the way from inputs to outputs).

### SPOT THE DIFFERENCE

Any network player stands and falls by the quality of its DAC. The one inside the CLiC is the Musical Fidelity M1, so the prospects looked good. Hooked up to a CD player via the coaxial S/PDIF input, and thus used as a pure DAC, with no networking or internet streaming, the CLiC was most impressive. The DAC produced a fresh, open sound, with firm, well-formed bass and clear extended treble. There was no hint of high-frequency softening, edginess, or roughening, taken by the standards of Red Book CD replay. It was a very even-handed performance, neither flattering nor over-analytical, and I liked what I heard. Indeed, it is so good that many CD players might benefit from the unit's internal DAC.

For instance, playing 'On Green Dolphin Street', and 'Thag's Dance' from Oscar Peterson's *The Sound Of The Trio* [Verve V6 8480] via S/PDIF on coaxial, Oscar's piano sounded vibrant in tone, Ray Brown's bass

was rich, deep and resonant, while Ed Thigpen's drums, cymbals and snares were riding crisp and clear. The drum-skin tuning was a model of fidelity.

Because these were recorded 'live', there is a lot going on, with glasses chinking, people talking, applauding, and Oscar (I think) scat-singing quietly to himself. Fortunately, the '20-bit' remastering done for this CD has preserved the atmosphere superbly and here it was both palpable and convincing.

I also had this CD ripped and stored on my laptop, in uncompressed WAV format, so the comparison with the CD was simple – just select it via the menu on the CLiC's screen. Was there is big difference? That would be the acid test. I'll add the caveat that these results were with *my* network, so the outcome could differ under other conditions and settings, but I'm blown if I could hear much difference (S/PDIF versus wireless network). Maybe the S/PDIF

'Those clocks  
were in the room  
with every chime  
and ring'

**ABOVE:** The CLiC's colour display is both easy to read and navigate. The front-mounted USB port supports media loaded on a memory stick

sounded a tad clearer and tidier, but any differences faded into insignificance when the CLiC was hard-wired into the network via Ethernet cable. Once that was done, the sound produced was as fresh, open and

atmospheric as via the S/PDIF – or even perhaps better? (No... that way madness lies.)

In 'Ill Wind' I was transported to the London House, Chicago, which was good enough for me. If a wired

network can be this convincing, that's pretty good going. I could keep on listening (and did) without feeling any inclination to switch back to coaxial.

### GIVING IT STICK

But what of higher resolutions than standard CD? I have cellist Tim Hughes' *Hands On Heart* stored on my laptop as 24-bit 88.2kHz WAV files. This was recorded in 2007 at a British Heart Foundation fund-raising concert in the Wigmore Hall, by Tony Faulkner, for Naim Classical. Via the wired network this sounded pretty darn' good, but I transferred a couple of pieces onto a USB memory stick to test the CLiC's front USB socket, which is claimed to be good up to 24-bits/192kHz.

Surprisingly, I was treated to an even fresher, more open and stimulating reproduction. Tim's cello sounded richer, the strings' rosinny harmonics more realistic and the hall and audience sounds more atmospheric. It was not brighter but a clearer, more 'alive' presentation, especially when the audience laughed at the end ☺

## STREAM UNLIMITED

Musical Fidelity has very cleverly incorporated Austrian company Stream Unlimited's 700 Audio streaming client/internet audio module, colour display and Graphical User Interface (GUI) into the CLiC. By combining them with its own main printed circuit board design, and including its tried, tested and well-regarded M1 DAC, Musical Fidelity has been able to deliver very high levels of audio performance, versatility and functionality in one product and bring it to market much more quickly than would have been possible by developing its own streaming and GUI solutions from scratch. They also help to make the CLiC a virtual 'doddle' to drive, even for those completely uninitiated into the mysteries of streamed audio, because the GUI is so easy to use. None of this would be of interest to *HFN/RR* readers without performance to match, but Musical Fidelity has also achieved very good sonic and technical results from all inputs, including data sent via the network (see Lab Report, p35).

## MEDIA SERVER



**ABOVE:** An input for every occasion – Internet radio, USB for iPod and PC media, two coaxial/one optical S/PDIF, wired and wireless ethernet streaming plus three conventional analogue RCAs – all controlled via one relatively unadventurous-looking IR handset

of 'The Flight Of The Bumble Bee'. Clearly, pulling high-resolution data straight off the USB stick works well.

### AN EMERGING PATTERN

The other big surprise came via the iPod. Bit-perfect non-compressed 16-bit/44.1kHz WAV files ripped from CDs and stored on a 160G iPod Classic were replayed by the CLiC with the kind of unsullied freshness normally associated with very good CD player replay – or better. Frankly, I was astonished!

Returning to CD-based data I tried Pink Floyd's *Dark Side Of The Moon* via S/PDIF from the wired network. The S/PDIF provided a firm rounded bass and good levels of fidelity, but I was again surprised by just how well the data (in uncompressed WAV format) sounded here. That warm bass was replaced by something more dramatic, while depth and clarity were, if anything, better. Take those clocks in 'Time', via the network they were 'in the room' with every chime and ring, and in 'Speak To Me', 'Breathe' and 'On The Run' the laughter, whirling rotors and cavernous footsteps seemed more sinister and real.

So, what about Blondie's classic *Parallel Lines*? Here we have a raw Punk Band, polished up in the studio, but Punk nonetheless. Playing 'Hanging On The Telephone', 'One Thing And Another' and 'Picture This' via the network, Blondie's voice was subtly more guttural but not harsh, the band sounding fresher and more energetic. Bass lines were more urgent, cymbals crisper and they

simply sounded more 'Punkish' and true to their origins. S/PDIF offered a warmer sound; but by comparison it seemed as if the band were not trying quite so hard.

Front USB-stick replay of the same data was a fraction more insightful than the network, and so even better than S/PDIF. Even the rear USB (48kHz max) gave a cracking good sound with CD derived data: almost as good as the wired network.

A pattern was emerging, in which S/PDIF CD replay, while sounding much better than many stand-alone CD players, was itself outflanked by the wired network and the front panel USB socket. This was quite a revelation. So, the Musical Fidelity CLiC has proved to me that it is possible to get superb sound from a convenient networked system without spending a fortune. Thus it more than fulfills its promise. ☺

### HI-FI NEWS VERDICT

The MF CLiC combines outstanding sound quality and ease of use in one well-made package. It is surely a pivotal product, which will bring high-quality digital music streaming through many more audiophile homes, in addition to, or even replacing CD replay. It is not only a superb DAC, but forms the very hub of an audio system, with the colour screen a window on a whole new world of music.

Sound Quality: 85%

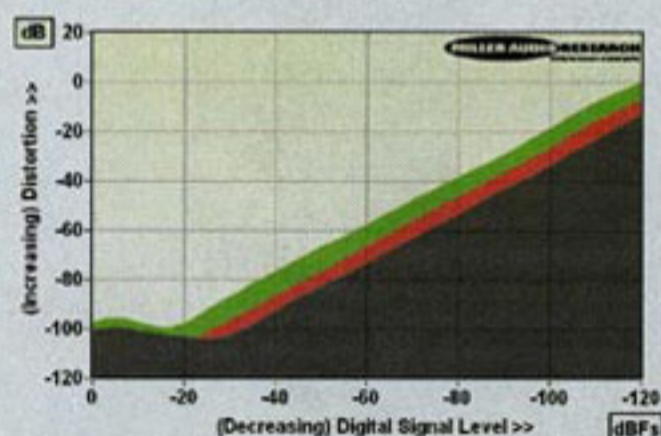


### MUSICAL FIDELITY CLiC (£1250)

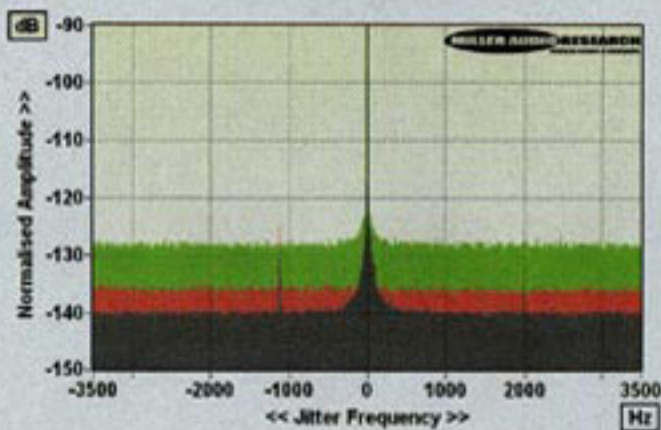
Based on a marriage between MF's proven M1 DAC topology (using Burr-Brown's PCM1796 converter) with Stream Unlimited's multimedia platform [see boxout, p33], the CLiC is almost universally flexible while offering a supremely impressive technical performance. The 'lowest fidelity' is offered by the rear isochronous USB input which forces a 48kHz downsample of any higher rate media, limiting the response to ~20kHz (+0.14dB) and the overall S/N ratio to 96dB (A-wtd, re. 0dBFS). The network and S/PDIF inputs are a league ahead, offering a far wider 107dB S/N ratio and a response that extends out to -4.5dB/45kHz (24-bit/96kHz media) and -19.6dB (24-bit/192kHz media, S/PDIF only). In both cases the response shows a very gentle roll-off of -0.6dB/30kHz and -2.5dB/40kHz so the cut-offs are not as 'brickwall' as first they might appear.

In practice the direct S/PDIF inputs just have the edge over the streamed network connection [compare distortion versus digital level, Graph 1 below] although distortion over the top 20dB of its dynamic range is broadly identical at ~0.001% as they share the same DAC and analogue stages. More importantly, jitter is fabulously low through all inputs and completely free of the phase noise detected over the streamed network connection with Yamaha's NP-S2000 player [HFN Feb 11]. Figures of <10psec with 24-bit data represent the state-of-the-art [see Graph 2, below]. Well done Musical Fidelity!

Readers are invited to view multiple QC Suite reports for Musical Fidelity's CLiC (S/PDIF, USB and network inputs) by navigating to [www.hifinews.co.uk](http://www.hifinews.co.uk) and clicking on the red 'download' button. PM



**ABOVE:** Distortion versus digital signal level over a 120dB dynamic range using 24-bit/1kHz data over S/PDIF (black), network (red) and USB (green)



**ABOVE:** High resolution 24-bit/48kHz jitter plots S/PDIF (black), network (red) and USB (green)

### HI-FI NEWS SPECIFICATIONS

Maximum Output Level/Impedance	8Vrms / 100ohm (Balanced)
A-wtd S/N Ratio (USB/LPCM)	95.5dB / 107.0dB
Distortion (1kHz, 0dBFS/-30dBFS)	0.0015% / 0.0009%
Distortion (20kHz/40kHz, 0dBFS)	0.0028% / 0.045%
Frequency response (20Hz-20kHz)	-0.03dB to +0.13dB (48kHz Fs)
Digital jitter (24-bit/48kHz, USB/LPCM)	<10psec / <10psec
Resolution @ -100dB (USB/LPCM)	±0.1dB
Power consumption	6W
Dimensions (WHD)	220x100x300mm