

# Flexible Valve CDP

MARTIN COLLOMS TRIES OUT ABBINGDON MUSIC RESEARCH'S VERY FLEXIBLE VALVE-EQUIPPED CD-777 CD PLAYER

MARTIN COLLOMS

Abbingdon Music Research, a subsidiary of the North London based Abbingdon Global Group (and is essentially unrelated to a similar sounding but differently spelt town near Oxford), has been around for about a decade and is making some headway in upmarket hi-fi, with encouraging reviews and interesting products. Abbingdon has two key designers Thorsten Loesch and Pat Wayne, the former well known as a former reviewer.

I guess the £3,200 CD-777 CD player must be considered mid-price these days, given the cost of some high-end components. A well run-in sample was procured at short notice – run-in because it's said that hundreds of hours are needed for the full sound quality to emerge.

This one-box player is fashionably subdivided into DAC and disc drive sections, while its CD player mode is easily selected *via* a front panel button or the remote control handset. There is also a USB music input as is now the fashion. Manufacture largely takes place in the company's Far East factory, though the UK also takes some responsibility, for designing, sourcing, servicing etc. The big story is that it has a 'NOS' (non-oversampled!) 16-bit linear replay mode, with analogue filters and triode output stages.

The useful remote handset is a universal type, but nicely programmed and with inertially activated LED backlighting. Adjustment is available for controlling DSP 'on-the-fly' (for oversampling and digital filtering), and all the usual facilities including CD player display dimming. The unit also caters for a matching amplifier.

## Technology

At its heart is one from the last series of Philips multi-bit chips, the compact *UDA1305* stereo PCM DAC. (The company's flagship *CD-77* player uses selected Philips TDA1541 DACs.) The disc drive mechanism is by Sony, rebuilt on a special subframe adapted for top loading, and using a lightweight neodymium magnetic clamp. Disc drive control originates from the Philips group, while the player internals are laterally divided, using three transformers and power supplies for digital, disc drive and analogue sections respectively.

There are also three low-jitter crystal controlled clocks: one each for the transport output; for the S/PDIF input; and for the main player (including the USB input, the latter a server type connection housekeep by a computer, not for direct play from a memory stick).

The technology feature list includes a Texas DSP chip that provides comprehensive replay options. 'Digital Master 1' supplies non-oversampled minimally filtered audio, with no processing at all but with some inherent treble roll off (-3dB at

20kHz); Digital Master 2 (default mode) is also non-oversampled, but with the frequency response corrected in the analogue domain. There are two digital filter modes, one with 2x oversampling, and the other with 4x oversampling; these are said to provide extra 'edge definition' if desired. Finally, two up-sampling modes are also available: up-sampling to 96kHz with complete signal number recalculation; and up-sampling to 192kHz, which moves alias artefacts well out of band. Thus a variety of subtle sound 'hues' may be chosen.

The transport is bathed in blue light, said by some to improve tracking performance. Components that influence sound quality have been carefully selected, including silver mica, Audyn and Music Capacitor polypropylenes and OsCon low loss electrolytic capacitors.

Both AMR players are distinguished by triode valve output stages – type *6H1n-EV* is the standard fitted here, while equivalents such as *ECC88*, *E88CC*, *7308*, *6DJ8*, *6922* or *6H23n-EV* are options. While there are both single-ended RCA-phono output sockets and balanced XLR, the latter actually single-ended but with terminating resistors on the negative phase.

## Sound Quality

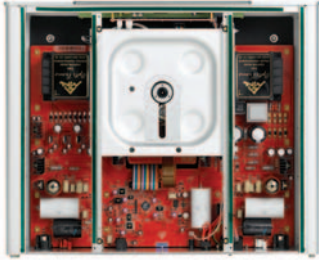
We used the RCA-phono outputs and mounted the player on the usual Finite Elemente Pagode audio platform. The eight replay settings were compared, and while all were actually quite good the default 'Master 2' setting was generally preferred, though with over-bright recordings 'Master 1' was occasionally found optimal. The higher-order filters and oversample settings sounded a little more processed and 'mechanical', rather in the manner of the general criticism of much of today's digital audio replay. This reinforces our own view that the 'digital' bit is not the main issue; rather it is how well the processing and filtering is done.

The player sounded fresh and natural on the 'Master 2' setting, distinctly lacking the sort of plastic, dimensionless and bland aspects of so many modern BitStream and related low-bit technology designs.

While a little reticent in the extreme treble, in the main it sounded lively, open, and even sparkling. The midrange was notably punchy and articulate, balanced by an informative, slightly soft, but tuneful and expressive bass. The timbre is more analogue like than usual and the well focused soundstage had fine depth, sounding clear and spacious. Rhythms were better expressed than average, and the sound was upbeat, involving and entertaining, driving the big reference system without embarrassment. After careful comparison with references, a fine sound quality score of 47 points was awarded.

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**The System**

The CD-777 happily engaged with a reference system that included an Audio Research Reference 5 pre-amp, a Krell 402 power amp, Avalon Eidolon Diamond speakers, referenced Naim CDS3, Naim CDX2 CD players and connected using Transparent and Cardas cable sets.

**Lab Results**

While the specification suggested 2.2volts, output was in fact a nominal 2V (2.04V left, 1.93V right), with a minor channel imbalance of 0.35dB. Capacitor coupled via 2.2uF, the output impedance is a low 210ohms, while the low resistance input (10koms and below) might experience a little extreme bass roll-off. At full level, the usual 16-bit distortion levels were not found. Instead there were higher than usual levels of innocuous analogue distortion from the valve output stage, at -52db or 0.025% for full level – predominantly the second harmonic seen in the 1kHz spectrum analysis. The higher harmonics are very low, better than -100dB; no wonder it sounded rather ‘analogue’.

Distortion was almost 0.1% at -10dB modulation, and continued to improve at lower levels. Channel separation was fine at around 70dB midband, and for -10dB modulation the two tone high frequency intermodulation result was also a fine 0.06%. The spectrum analysis also shows desirably low levels of the higher frequency sidebands, so this is an essentially tidy and well behaved design.

There was some imbalance in A-weighted background noise between channels, though none was heard during the listening tests: the right channel was -90dB the left -77dB.

Frequency responses were flat so there’s no ‘analogue tailoring’ here: 20Hz came in at -0.077dB, 20kHz at -0.5dB for ‘Digital Master 2’. ‘DM1’ was still only -1dB at 20kHz. No significant response errors or distortion variations were seen for any of

the sampling options, so the sonic differences were inherent in the processes.

Gap error correction was fine, tolerating a 1.25 mm gap. Linearity was also very good, showing the extra steps that had been taken to linearise the PCM DAC chip. The errors were small: 0.2dB at -70dB, -0.5dB at -80dB, -1.3dB at -90dB and better than 1dB (including some noise) at -100dB. DC offset was zero. The construction is mildly microphonic mechanically, so a good audio support will be beneficial.

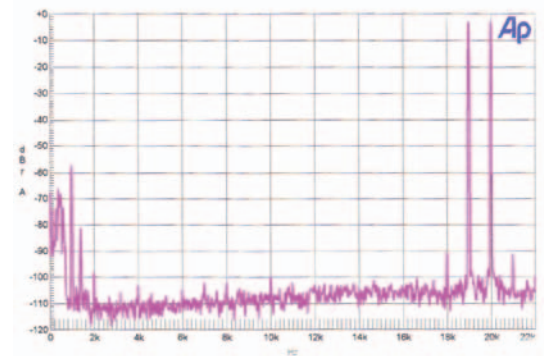
**Conclusions**

The designers have clearly done their homework, and this well finished and clever player offers high performance with very good versatility and compatibility. It manages to include server DAC functionality (not auditioned) with independent CD disc drive and DAC facilities, together with a fine one-box CD player. Enthusiasts can try out favourite NOS (new old stock!) valves if they wish, while the built quality and finish is most professional. On sound quality grounds alone it deserves a firm recommendation, particularly for its combination of neutral ‘analogue’ tonality and upbeat musical expression. I liked it a lot and find it easy to recommend.

**UK Distribution Select Audio Tel: 01900 813064**  
**www.selectaudio.co.uk**  
**Abbingdon Music Research www.amr-audio.co.uk**

| CD PLAYER TEST RESULTS           |                                |                  |          |
|----------------------------------|--------------------------------|------------------|----------|
| Make Abbingdon Music Research    | Date 25/8/2010                 |                  |          |
| Model CD-777                     | Ser.No. 3210012                |                  |          |
| Distortion, THD inc noise 16 bit | 20Hz                           | 1kHz             | 20kHz    |
|                                  | 0db                            | -- dB            | -52.3 dB |
|                                  | -10dB                          | -- dB            | -57.3 dB |
| Channel separation full level    | dB                             | -- dB            |          |
|                                  | >70 dB                         | 72.6 dB          | 89.5 dB  |
| Frequency response               | -0.077 dB                      | 0 dB             | -0.51 dB |
| Intermodulation Distortion       |                                |                  |          |
| 19kHz/20kHz 1:1 dB output        | -55.2dB (1kHz difference tone) |                  |          |
|                                  | -10 dB                         | Average          | L/R      |
| Signal to noise ratios           | A wtd                          | CCIR 1k          | Unwtd    |
| Ref: 0dB                         | 83.7                           | 86.5             | 85.3 dB  |
| Channel Balance R ch reference   | 0.35dB                         |                  |          |
| Error Correction                 | 1.3 mm gap                     | passed           | Good     |
| Linearity ref 0dB                |                                |                  |          |
|                                  | -70dB                          | -0.2 dB          |          |
|                                  | -80dB                          | -0.5 dB          |          |
|                                  | -90dB                          | -1.3 dB          |          |
|                                  | -100dB                         | -100 dB Dithered |          |
| 100k Ohm load                    | 1.93                           | 2.04             | V SE     |
| 600 Ohm load                     | n/a                            | V SE             |          |
| Output impedance                 |                                |                  |          |
| SE                               | 210                            | > 2.2uF          | Ohms     |
| Balanced                         | 210                            | +210             | Ohms     |
| DC offset Left                   | 0 mV                           |                  |          |
| Right                            | 0 mV                           |                  |          |
| Dimensions (w x h x d)           | 45 cm                          | 12 cm            | 37 cm    |
| Price                            | £3,200                         |                  |          |

AMR CD777 I/M 0dB 19/20kHz



AMR CD777 0dB 1kHz

