

# HIFI CRITIC



AUDIO REVIEW JOURNAL

£12.50 Vol5/No3 JULY - SEPTEMBER 2011

REVIEWED THIS ISSUE:

FRANCO SERBLIN KTEMA  
HITACHI TRAVELSTAR 7K500  
SEAGATE MOMENTUS 7200.4  
KINGSTON SSDNow  
CORSAIR F120  
SYNOLOGY DS411SLIM  
QNAP TS-439 PRO  
QNAP TS-419P+  
TOWNSHEND GLASTONBURY PRE-1  
MUSIC FIRST AUDIO REFERENCE  
ROBERT KODA TAKUMI K-70  
RAAL 7020XR  
EXPOSURE MCX  
EMINENT LFT-8b  
ABBINGDON MUSIC RESEARCH CD-77  
NEAT ULTIMATUM XLS  
ROKSAN TMS 3  
SYNERGISTIC MIG  
ARCAM rCUBE  
VITA AUDIO R4i

**LISTENING TO STORAGE**

Comparing different hard and solid state drives

**ULTIMATE PASSIVITY**

Top class sound quality from transformer-based control units

**TRADING PLACES**

Patterns, trends and dubious practices in hi-fi marketing

**ULTIMATE EXPOSURE**

Exposure's high end MCX system scrutinised

**THE RHYTHM KING PART 2**

The conclusion of our radical BMR-based DIY speaker

**ABBINGDON'S BEST SHOT**

Trying out AMR's CD-77 CD player/DAC

**MUSIC & MUCH MORE**



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Printed in the UK by  
Premier Print, London

HIFICRITIC is a printed publication available by subscription only.

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## TRK DEMONSTRATIONS

*HIFICRITIC* will be going to the Whittlebury National Audio Show at the end of this month (public days 24<sup>th</sup>, 25<sup>th</sup> Sept). In Syndicate Room 15 we'll be holding demonstrations and lectures about the design of our new *The Rhythm King* DIY loudspeaker, which features the unorthodox BMR planar full range drive unit. The designers and representatives from Wilmslow Audio and DNM will be on hand to answer queries. We'll also have our usual stand in the Brooklands suite, where current and most back issues will be on sale, and we'll be happy to try and answer hi-fi queries.

## UNITIQUOTE STREAMING

Secondly, Naim was very unhappy with JK's statement, during his review of the *Cyrus Streamline* in our last issue (*Vol5 No2*) that: "the *UnitiQuote* cannot stream more than 48kHz". It turns out that JK was wrong, and he confirms that the *UnitiQuote* can indeed stream 24-bit/96kHz files, so I'm happy to apologise on his behalf, and glad we've had the opportunity to put the record straight.

In JK's defence, I suspect that the root of his mistake lay in the miasma of confusion that surrounds the various and sometimes incompatible formats that have turned computer audio into a Tower of Babel. I ranted on about this at some length in my last Editorial, so don't intend to repeat myself here. It is, however, the reason I'm not plunging headfirst into computer audio myself right now. I'll continue to use it as an adequate convenience format, filling a rather similar role to that occupied by my cassette deck in the 1970s, but my prime source will remain vinyl, treasured as much for its refreshing immutability as continually improving sound quality.

While I'll happily bide my time and hope that the technology will settle down and sort itself out, those with a more positive attitude to computer audio consider it's already capable of delivering better-than-CD sound quality. Furthermore they add that its exceptional convenience means that more time is now spent listening to music, and less to watching TV.

## RECOMMENDATION

Martin thought I should maybe apologise that so many of the components he (and others) have reviewed in this edition have been formally Recommended, a situation which is arguably at odds with both our title and our intention to provide serious criticism of today's hi-fi equipment.

I think it's largely coincidental that such a high proportion of this edition's components have turned out to be unusually good. But this still raises some issues about the whole business of 'Recommendation'. To be frank, and despite my long association with *Hi-Fi Choice*, I've never liked the idea of putting flags on some products and not others. To my mind it's a procedure that's altogether too 'digital' – products are either black or white, allowing no shades of grey in between.

And attempting to delineate the shades of grey is what most of my reviewing is about. Take the *Vita Audio R4i* that I write about elsewhere in this issue. It's not perfect, for sure, but it is cheap and comprehensively equipped. Does it warrant a flag? In truth, it all comes down to priorities.

*Paul Messenger*

**Editor**

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# Ultimate Exposure

EXPOSURE ELECTRONICS IS ONE OF HI-FI'S SMALLER PLAYERS, BUT ITS 'HIGH END' MCX SYSTEM IS AN IMPRESSIVE FLAGSHIP, AS CHRIS BRYANT DISCOVERS

Exposure Electronics was founded in 1974 by John Farlow, who successfully steered its eclectic range of unique products until the company was bought by Malaysian investors about 10 years ago. The subsequent injection of capital has led to a plethora of new products, including these costly top-of-the-line *MCX*-series high end components, marketed as 'real hi-fi at real world prices'.

The system consists of a top loading CD player (£4,370), a pre-amplifier (£4,370) with optional vinyl cartridge stage (moving-coil or moving magnet, £330), two massive monoblock power amplifiers (£9,400/pair), and an extravagant infrared system remote control handset (£235). While each may be used as separate components, the rather individual styling and design are aimed towards a unified system. Each is designed to form part of a stack, with the power amplifiers at the bottom and the CD player at the top. As well as being a stackable, complete system control can be implemented through a Cat 5 (RJ45 EXLINK) wire link system, and the widely used 12V trigger 3.5mm jack based system power-up is also provided.

While possibly not the biggest I've seen, the remote handset is probably the thickest, 35mm making one-hand operation a pain for anyone with small hands. All aluminium, it's made in two black extruded halves with styled end caps, and is fairly heavy. The 31 round, silver coloured buttons give tactile feedback and cover all the functions required for CD and pre-amplifier operation while standby also places everything into sleep mode including the power amps.

Unusually, this system is designed with an integrated stand. All the *MCX* components are made with Pac-Man profiled vertical aluminium pillars at each corner, to which the side panels are attached. Heavy machined alloy caps have an indent in the top and a matching foot in the base of each pillar, making the components easy to stack with the pillars carrying the load. The smaller components' pillars are hollow extruded aluminium, and are fitted with rubber feet. The heavy power amps use solid aluminium bars, with hard plastic feet for the upper one, and floor-coupling cones with rounded points for the one at the bottom of the stack.

The enclosures are all made from brushed, machined, anodised panels bolted together using internal strengthening plates. The two 40kg monoblock power amps are located at the bottom of the stack, and the corner pillars of the lower one have rounded cones that interface with the floor. The total structure weighs close to 100kg, and the weight is biased towards the left side (viewed from the front). Placed on my carpeted concrete floor, after a few days I noticed a discernible list to the left. While the base amplifier remained perfectly stable, the next one up wasn't, and this is

always a problem with a four-point mounting system: unless everything is absolutely square then one foot isn't going to settle, so that unit and consequently all above it will not be wholly secure. To ensure a solid structure, some form of adjustment needs to be included and, at the moment, there isn't any, so the only alternative is to carefully shim one foot of each section, a variation which will undoubtedly affect performance.

On the positive side, this concept does create a very neat stack which, considering the size of the individual elements, takes up a relatively small space in the room – the ultimate Exposure stacking system. The fit and finish of all the units is very good, giving an overall effect that is arguably more 1980's science fiction retro than cutting edge modern. Each component was first assessed separately in my reference system before being assembled into the Exposure stack.

## MCX CD Player

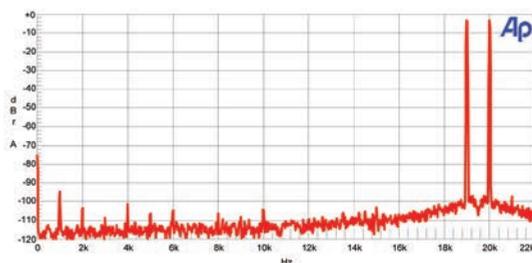
I was particular interested in this CD player because it's one of the few multi-bit DAC players still available. Most manufacturers have moved on to the cheaper low-bit oversampling alternatives that measure amazingly well. With that first introduction of low-bit technology, many designers preferred the sweeter Philips Bitstream example to earlier multi-bit implementations which were often more dynamic but for some also harder and more edgy sounding.

However, with careful implementation, multi-bit technology has shown it can equal or better low-bit even for sweetness, albeit at a higher price. Through successive generations of development, by many different manufacturers using variations on the low-bit theme, DACs have been created which have just about perfect specifications, but just don't sound as interesting as the earlier technology, despite its measurable deficiencies. I believe that the designer must still concentrate on sound quality through careful listening, as measurement perfection, at least as judged by the measurements currently used, do not fully define how a player will sound.

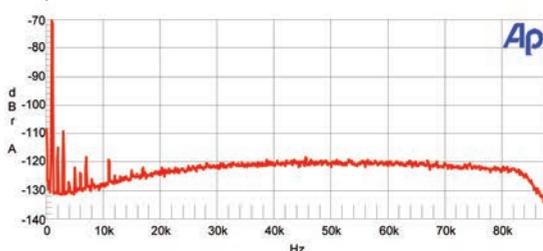
The design of this CD player offers a very comprehensive set of inputs and outputs, which allows connection with a variety of components. Apart from working as a standard 16-bit CD player, it's compatible with material encoded up to a maximum of 24-bit/192kHz using AES/XLR or S/PDIF interfaces. These physical inputs consist of one 110ohms XLR, two 75ohms BNCs, and two optical Toslink connectors (the latter only specified up to 96kHz). There is also a USB input, but this is only capable of a maximum sampling rate of 48kHz. Comprehensive digital and analogue outputs include one BNC, one RCA S/PDIF

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RECOMMENDED PRODUCT  
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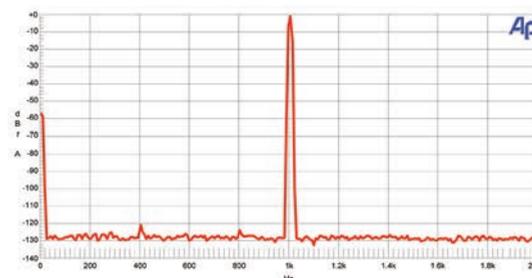
Exposure MCX CD I/M 0dB 19/20kHz



Exposure MCX CD -70dB 1k 24bit



Exposure MCX CD 1kHz full level from AP Dig Gen



it just sounds exceptionally sweet, and has a notably detailed treble. Replacing those aluminium cones with Synergistic Research MIG supports improved the sound still further, giving even better dynamic, focus and stage depth. Thus supported, the *MCX* is definitely one of the finest sounding commercial CD players around and probably the best available under £5000.

I didn't find it quite as convincing in balanced mode; it sounded vaguer, less dynamic, always slightly softer and lacking that ultimate level of definition that the single-ended output provided.

Going back to single-ended operation and using it as a DAC *via* the BNC S/PDIF input with other CD players providing the source, it has slightly slower pace, is not quite as elegant, and it has less definition. The presentation has more obvious sibilants, and the focus wasn't as precise. I played about with a variety of digital cables, but couldn't find an overall performance balance quite as good as the internal transport. However, using high definition source material from both a Naim *UnitiServe* and my own PC the performance improved as expected, giving yet more realism to music reproduction. When properly set up, using good source material, the *MCX* is in fact one of the very best DACs around at this price point.

## MCX Pre-amplifier

Styled to match the CD player, the pre-amplifier has basically the same casework and central oval window, but now with a selector knob on the left and volume on the right. These are rotary encoders which direct a microprocessor that controls reed relays, eliminating hardware switches and potentiometers; the volume level and selected input are shown on the display. These are supplemented by four buttons labelled power, mute, display and menu, which include setting record status. The double mono layout has separate boards for each channel, and two discrete transistor amplifiers on each board provide the balanced facility. Regulated power supplies are shared between the two phases, and selected components include Elna Silmic audio capacitors and the liberal use of close tolerance metal film resistors. The microprocessor control board has its own power supply and the control lines are optically coupled. An oversize multi tapped toroidal transformer is connected to the audio power supply board which, using power diode rectification and high power reservoir capacitors with on-board protection fuses. All the power supplies are wired between board using plugs and sockets for easy servicing and flat ribbon cables are used for digital control signals. Build quality was impressive for all these *MCX* components.

This pre-amplifier majors on RCA/phono socket inputs with three dedicated single-ended pairs. The AV and tape in/out also use phono sockets, and balanced XLR inputs are used for CD and AUX1/phono. Outputs include one pair of phono sockets and two pairs of XLRs, and there's also an earth terminal, a fused, switched IEC mains socket, 'EXLINK' in/out sockets, plus 3.5mm jacks for remote and 12V in/out control lines.

### Lab Report

The measured results show a very well sorted product with low harmonic distortion, good signal-to-noise ratio, very low intermodulation distortion and respectable channel separation. Close tolerance resistors in the relay switched volume control ensures perfect channel balance at all volume settings, the input sensitivity is well chosen, and its loading of 10kohms is on the low side, but fine for solid state sources. The frequency response is flat from 10Hz-10kHz and 0.2dB down at 20 kHz, which is inconsequential (see graph).

### Sound Quality

As with the CD player, the pre-amplifier was inserted into my reference system using the MSB *Platinum Signature* DAC as the source. Without any tweaks (apart from a good platform), and using the single-ended output, the sound resembled the CD player. It obviously had the same characteristics and, like the CD player prior to tuning, sounds very slightly confused, lacking in the ultimate timing and precision.

However, with a finely judged balance, a sweet

midrange and clear treble, there was doubt that it's also a potentially exceptional performer. And, just like the CD player, it benefited from removing the influence of the fitted soft rubber feet by mounting the case on aluminium cones. The timing and resolution improves, the slight confusion disappears, and it sounds dynamic and quick. The bass has great attack, good weight, high definition and articulation and it proves itself to be an exceptional performer, at home on all types of music. The midrange and treble focus are excellent, and with the display switched off it sounds even better with slightly sharper focus, quicker dynamics and improved grip.

In balanced mode it's more of the same. It sounds neutral, understated, and I could easily live with it in my system. Used in either single-ended or balanced operation it is undoubtedly the MCX is clearly a top ranking pre-amplifier.

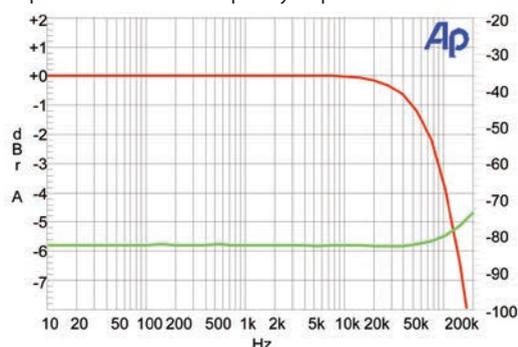
## MCX Monoblock Power Amplifier

Apart from some with switch-mode power supplies, big power amplifiers are necessarily rather heavy. Exposure warns that this unit is a two man lift, each mono-block amplifier weighing 40kg packed, so the company is obviously serious. The specifications claim a 300W/8ohms rating that doubles to 600W/4ohms, so it should certainly drive the vast majority of loudspeakers without problem. The stacking system format predetermines both width and depth, so only the height can be changed compared to the CD player and pre-amp. However, increasing the height from 104mm to 238mm means the finished design still looks well proportioned, unlike some other large power amps around. The styling matches well, and the aesthetics remain perfectly acceptable, both in and out of the stack.

The brushed anodised aluminium casework is strong enough to support the 1.5kVA transformer. All the heat-sinks are internal, so plenty of ventilation slots in the top and bottom panels, and even some in the sides help natural convection carry the heat away. The front panel has that signature oval window with red Exposure logo, normally discreetly lit when the unit is on, though extinguishable.

The fairly busy back panel has in/out EXLINK connectors and 12V trigger switching provision, a switch

Exposure MCX Pre SE frequency response



to select between balanced XLR or single-ended phono inputs, and two sets of good quality binding post/sockets (to assist bi-wiring). The mains input has a 3-pin fused IEC socket; this is unswitched, so it automatically enters standby when plugged in. Sensibly, built in protection covers over-temperature, over-current and DC-sensing on the speaker output; 'shut down' is shown by a flashing LED in the display window – the amp may be switched on again after 30 seconds.

### Lab Report

The mains was 243V during the test which may go some way to explaining why the measured power output was 20% above specification. It produced 360W into 8ohms at 1kHz and 20Hz, falling just slightly to 343W at 20kHz. Output almost doubles to 690W into 4ohms, the pulsed output into 2ohms is 1190W, and protection cuts in at 52amps pulsed output into a 1ohm load, so it will drive just about anything. DC offset was low and the sensitivity is sensible, while input loading is 10kohm, so check on the matching for other pre-amps. The frequency response is nearly 2dB down at 20kHz, but the match with the MCX pre-amp improves this a little. Harmonic distortion is well suppressed at all frequencies, as was the 1 kHz intermodulation distortion resulting from twin 19/20kHz tones tested at 1W. The 96dB (ref. 1W) and 120dB (ref full level output) signal-to-noise ratios are very good with CCIR and A weighed filters, but I couldn't get all the hum out of the system on the test bench, so the unweighed figure of 81dB could have been better.

### Sound Quality

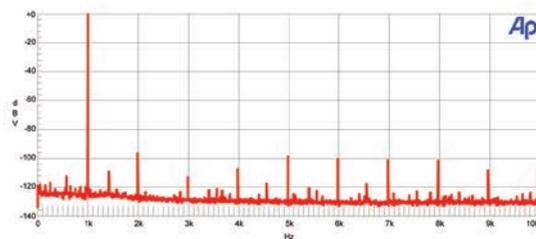
Really good power amplifiers are thin on the ground and I'm often disappointed by those offered by well regarded manufactures. After the magic created by the

### PRE-AMPLIFIER TEST RESULTS

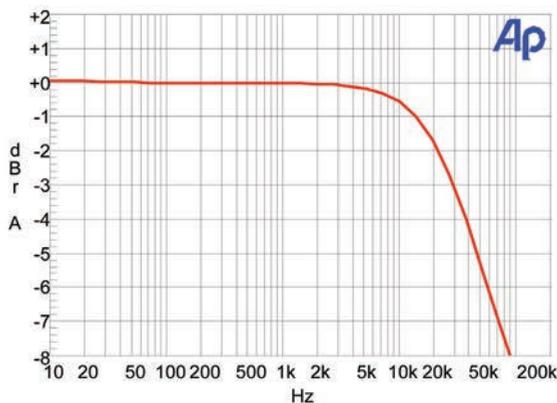
Make Exposure	Date 28/7/11		
Model MCX	Ser. No. 054		
OUTPUT	20Hz	1kHz	20kHz
Distortion, THD inc. noise BAL (4.0V)	-100 dB	-101 dB	-86 dB
Distortion, THD inc. noise SE (2.0)	-100 dB	-101 dB	-90 dB
Channel separation	101 dB	96 dB	72 dB
Intermodulation Distortion 19.5kHz/20.5kHz 1:1 0.5V	-100 dB		
Intermodulation Distortion 19.5kHz/20.5kHz 1:1 2.0V	-109 dB		
Signal to noise ratio (ref. 1W output)	CCIR Weighted	Unweighted	A-weighted
IHF. 0.5V Aux	84 dB	85 dB	88 dB
Channel Balance over volume range	R ch is reference at 0db		
	at -20db	0.012 dB	
	at -40dB	0.008 dB	
	at -60dB	0.014 dB	
		0.036 dB	
Output Impedance	50 ohms		
Absolute Phase	correct		
Input Data	Socket	Sensitivity	Loading
Aux input balanced XLR	72 mV	10k ohms - nF	
Aux input single ended (0.5V) Phono	130 mV	10k ohms pF	
Maximum output Bal XLR	10 V		
Maximum output SE Phono	17 V		
DC offset	Left 0 mV	Right 0 mV	
Size WxHxD	490 mm	104 mm	414 mm
Price	£4,370		



Exposure MCX Power Amplifier 1W distortion



Exposure MCX Power Amp SE frequency response



pre-amp and CD player, I was hopeful that the power amplifiers would be worthy partners and not spoil the fine qualities they had shown. In the event I needn't have worried because the power amplifier proved to be well up to it, so much so that my notes, taken over several listening sessions using these amps in my reference system, were ridiculously similar to those for the other components. Indeed, all the *MCX* products were turning out to be amazingly accomplished. The only real criticism here was of some 50Hz mechanical hum from the transformers, but the overall performance is a real achievement, and the *MCX* power amplifier takes its place among the best amplifiers available.

**Contact:**  
**Exposure Electronics**  
**Tel: 01273 423877**  
**www.exposurehifi.com**

**POWER AMPLIFIER TEST RESULTS**

Make Exposure	Date 28/7/11		
Model MCX Monoblock	Ser. No. 054		
<b>POWER OUTPUT</b>	20Hz	1kHz	20kHz
Continuous 8 ohm 2 channel	360 W	360 W	343 W
Continuous 4 ohm 1 channel (4 ohm tap)	682 W	690 W	650 W
Pulsed 2 ohm 1 channel (4 ohm tap)	1190 W		
Output impedance (4 ohms tap)	0.05 ohms	0.05 ohms	0.12 ohms
Peak Current	52 A		
Distortion, THD inc. noise (1W)	-81 dB	-81 dB	-80 dB
Channel separation	- dB	- dB	- dB
Intermodulation Distortion 19kHz/20kHz 1:1 rated power, 8 ohms	Protection dB*		
Intermodulation Distortion 19kHz/20kHz 1:1 1W, 8 ohms	-80 dB	Unweighted (22Hz-22kHz)	A-weighted
	CCIR Weighted	96 dB	95 dB
Signal to noise ratio (ref. 1W output)	81 db	96 dB	95 dB
Signal to noise ratio ref rated power	105 dB	120 dB	119 dB
Absolute Phase	correct		
Input Data	Socket	Sensitivity	Loading
Aux input Phono	279 mV	10k ohms	- pF
DC offset	Left 4 mV		
Size WxHxD (each Monoblock)	490 mm	238 mm	414 mm
Price	£9,400/pair		



**Complete System**

The final test was to run all four components as a system. They continued to impress and work together exceptionally well, and although very good when stacked as intended on their rubber feet, the performance didn't match up to the system constructed using high quality supports. I discovered that I was able to use the Synergistic Research *MIG* supports on the pre-amplifier and CD player, while also shimming the upper power amplifier so that it didn't rock, and the sound improved greatly. It simply took away a layer of unwanted defocusing from the system sound, and although it didn't quite reach the same level as the best I'd had, the stack really started entertain musically like so few can.

It's been a surprising year, and some excellent products have come into *HIFICRITIC* for test. All these Exposure *MCX* products are so good that it may be very hard to find individual components to beat them at their prices. The only things I really found to complain about were the anaemic rubber feet on the pre-amplifier and CD player, which I really think should be changed. Also the remote control is so bulky it's difficult to handle.

Set up to give its best, the pre-amplifier with Synergistic Research *MIG* feet scored 110 (against 85 with its standard rubber feet). The optimally supported CD player reached 85 (90 with good high resolution material) when best supported, but the rubber feet and the balanced output reduced this to 55. The power amplifiers are among the best I've heard under £10,000, and scored 100.

The high sound quality potential demands that good interconnects and loudspeaker cables are used, because anything less will limit the system's performance. The supplied mains cables were also easily bettered, and each product benefited from better mains connection. As a system they all combine smoothly, efficiently and aesthetically to provide exceptional results. All thoroughly deserve high praise and automatically receive very strong recommendation.