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Chinese send DVD into orbit

Martin Pipe took a fact-finding trip to Shenzhen, China.
His mission: to investigate AV manufacturing success story Mico

Mico's executive director, Joe Chen, says: 'We will have an affordable DVD recorder with a built-in hard drive soon.' It will follow on from the success of its £199 DVD+RW debut (pictured right)



In recent years, China has emerged as a major global industrial force – and the consumer electronics boom has been a significant contributory factor. A quick look around the back of kit of home cinema gear from well-known manufacturers like Arcam and Harman/Kardon often reveals a 'Made in PRC' (Peoples' Republic of China) label. And the nation's ability to deliver budget kit is legendary.

To witness the extent of China's industrialisation, one need only take a trip to Shenzhen in Guangdong Province. Located on a massive estuary not far from the South China coast, it's an hour by ferry from Hong Kong. Established as a special economic zone back in 1980, Shenzhen's growth has been spectacular. It's now one of China's largest cities, and a key foreign trade port. A drive through the many industrial areas reveals dozens of factories, and everywhere you look the skeletons of new ones are starting to take shape. Indeed, the dusty tracks that surround the buildings amply demonstrate that the road-builders have scarcely had time to catch up.

TRUE ORIGINAL

A fair proportion of these factories (many of which are foreign-owned) churn out the slick, cheap kit now

common in supermarkets and high street retailers around the UK. These factories are high-tech havens, with the latest in Japanese-made automated component-placement, mass-soldering and test equipment. Many have been set up by established Japanese or Korean electronics companies, while others are independent concerns intending to sell their wares under their own name or supply other companies. Mico, registered and headquartered in Hong Kong, is one such concern. It's what's known as an 'Original Developer/Manufacturer', or ODM. In other words, it designs the products that it manufactures.

To find out more about this leading name in the UK's supermarket gear and gadget revolution, I travelled to Mico's factory and design facilities, which are located in different parts of Shenzhen. The company has grown considerably in recent years, and has only recently moved into its current factory – the four floors of which, at the time of writing, accommodated no fewer than 1000





The Mico workforce prepares to produce 10,000 DVD players per month

workers. Mico outgrows factories quickly, and barely spent a year in the last one. The city centre design facility, which currently employs 80 staff including 45 research and development engineers, is so new I could still smell the fresh paint. All of this is perhaps hardly surprising when you consider that it produces DVD players for a long list of retailers and brands dotted around the planet. And what a list it must be; between 2002 and 2003, it reported revenues of \$53.5m.

Although brands like Mico generally produce kit under a non-disclosure arrangement, HCC can reveal that the company does a considerable amount of business with the Alba Group plc, which badges Mico players as Goodmans and Alba models. These players sell by the bucketload through catalogue retailers and chain stores. On top of this are the Mico-branded players currently available in Sainsburys. No surprise then that the company claims to be the UK's number-one manufacturer of DVD players (it estimates its overall market share to be 25 per cent). And then there are its customers in other European countries, most notably Spain and Germany. Mico's currently producing a staggering 10,000 DVD players, 1,500 all-in-one systems and 1,500 DVD recorders every day!

PUT TO THE TEST

Not all factory staff are involved directly in production; 10 per cent are employed to look after quality control. Mico is particularly proud of this figure; the company reckons that the average figure is less than seven per cent for its Chinese competitors. Every product manufactured in the factory is soak-tested to weed out the early

failures – vast racks of DVD players, their fluorescent displays winking away, take up a fair amount of space on one of the factory's four floors. Mico also bakes, freezes and drops products and then tests them to ensure they still work. With such attention to detail, the company has attracted some business from surprising quarters. Some of these ODM customers are so, ahem, controversial that we cannot mention them here. Suffice to say that they include a well-respected hi-fi company and a Japanese blue-chip.

All of which is not bad for a company that only started in 1999, as the offshoot of a VideoCD software designer. Regular readers of HCC will know that despite their low price, Mico products actually perform pretty well. For several years, the WV Tech Labs has recommended Mico DVD players as worthwhile budget buys, or second units for use in other rooms. The company is now beginning to recognise its strength as a brand in its own right, and plans to sell more kit under the Mico name. The first major launch will be its DVD recorder, which I saw being manufactured during my visit. Elsewhere in this issue, you'll find an exclusive review of the Espejo R311 – a DVD+RW format machine that was developed in conjunction with Philips.

There will be two such recorders. At just £200, Espejo R311 is the UK's cheapest DVD recorder at the time of writing. It will be joined shortly by the DVDR310, which adds an i.Link input (for digital camcorder dubbing) for an estimated premium of £30. It has the 'feel' of a Philips recorder, which is hardly surprising, given that it employs much of the same circuitry (notably the Nexperta PNX7100 AV codec and VAE8020 +RW engine) that powers recent Philips recorders like

The Mico operation is based in up-and-coming Shenzhen. Aside from Mico-badged products, the factory also produces goods for other well-known brands



the DVDR70 and DVDR75. The only downside is that there's no RGB Scart – something that Mico's design engineers promised to rectify for the company's next generation of recorders. To be fair, Mico is hardly on its own here. We have lambasted Toshiba, Pioneer and JVC, among others, for failing to provide this valuable connectivity.

RIPE FOR EXPANSION

Expect to see a budget Freeview adaptor for digital terrestrial TV in early 2004. This will be a bare-bones unit designed solely to receive digital broadcasts. It won't have any of the middleware needed to access interactive features. But to some the absence of the feature will be a positive boon – unattended video recordings won't be spoiled by those distracting onscreen graphics. Mico's Joe Chen says: 'We're planning a Freeview box with an integrated DAB tuner for digital radio. By the autumn of 2004, we plan to have launched a combined hard disk and +RW format DVD recorder, expected to be one of the first from a Chinese company.'

And Mico doesn't stop there. In 2005, it will have thrown a digital terrestrial tuner into the mix. An affordable DVD recorder with hard disk and DTT/DAB tuner would undoubtedly go down a storm over here in the UK.

By the end of 2004, Mico is expected to have introduced an all-in-one 5.1 surround home cinema package with DVD recording – in terms of functionality, this will be quite similar to the Philips LX9000R. Mico will also start offering its own DivX-compatible DVD players in the spring. Plus, we will start to see portable players. By the summer of



Mico has made a name for itself with stylish, but affordable DVD players

2004 should see a model with 7in 16:9 screen, to be followed a few months later by a bigger brother sporting a 9in panel. Hopefully, Mico will drive down the cost of these desirable products, which could enliven the journey of any bored commuter stuck on the delayed 8.15 to Fenchurch Street.

But Mico's roadmap goes further still. It's getting heavily involved with LCD and plasma screens, and will use these to make inroads into the US market. For its first flatscreen products, Mico will be sourcing plasma display panels from CMO, the Taiwanese manufacturer backed up by Fujitsu technology. HCC was shown a prototype of a 20in LCD TV with multiple slots for different types of memory card. This 4:3 display could display pictures from a digital camera, PC or inbuilt analogue TV tuner. Popping in the CompactFlash card from my digital camera produced a rather fine picture. But the UK market would, of course, demand a 16:9 display format. Mico's first production flatscreen display, a 20in LCD model, should start shipping early next year.

Within a year, the company plans to have a 27in, 4:3 LCD TV, complete with integral digital tuner, on the market. A 30in widescreen version is also on the cards.

From what we saw in China, Mico is doing some pretty interesting things at the moment and will continue to do so, if all those plans reach fruition. Watch this space! ■



MICO ESPEJO R311 ♦ £200 (APPROX) ♦ +852 2951 4538
♦ www.micoelectric.com

Come the revolution



MICO'S FIRST DVD RECORDER IS FINALLY HERE AND IS SELLING FOR LESS THAN £200. MARTIN PIPE PAYS HOMAGE TO THE ESPEJO R311

Mico makes many of the sub-£100 DVD players that fly off the supermarket shelves under brand names like Bush and Alba. And now it's set to take the DVD recorder market by storm, too. The Espejo (Spanish for 'mirror') R311 is definitely a no-frills machine, but a version with i.Link will be available early next year.

This attractive, £200 deck is supplied with a remote handset not dissimilar to the ones that used to be supplied with Panasonic TVs. The R311 has a menu-driven auto-install system that operates when the machine is plugged in for the first time. It tunes in the channels and sets the clock to the right time. It worked just as well as any other, all channels appearing in the accepted (and VideoPlus-compatible) order. Manual tuning is also possible.

Money has clearly been saved on the front-panel AV inputs, which cater for composite video and stereo audio only. Some front-panel inputs are better than none, though. Round the back are composite/S-video and stereo audio outputs, plus a coaxial digital output for routing DVD soundtracks to an AV system. Next are two Scarts – one for a TV and another for an auxiliary source such as a set-top box.

But while the former will deliver RGB to your TV, the latter won't accept RGB from a set-top box. The Scarts are configured from a pull-down menu system that is obviously Philips in origin. Unfortunately, the input and output settings (found in the 'picture setting' menu) are not independent. Set it to RGB and you get RGB output from the TV Scart, but the auxiliary input will only accept composite. Setting it to S-video, on the other hand, works with both

input and output. Mico will be endowing their next generation of recorders with both RGB input and output.

The R311 offers five recording modes, which can be selected from the remote. The first is HQ, which allows one hour of recording per 4.7GB DVD+RW (rewriteable) or DVD+R (recordable). I think this is overkill, given that the best input is S-video. Next is the two-hour SP mode, which is the best choice for movies and quality material. Like HQ, it works at the full PAL D1 resolution of 720 x 576 – as do pre-recorded DVD and digital TV. The next two modes – the three-hour LP and four-hour EP – both work at around half the horizontal resolution (352 x 576) and offer picture qualities that are respectively slightly better than and roughly equal to VHS. EP+ also works at 352 x 576, and is roughly equivalent to VHS LP.

Another similarity with Philips machines is that you have to press the 'monitor' button to view the tuner or AV input. If the machine is not in monitor mode, the disc menu is displayed.

Before recording onto a DVD+RW, make sure that the 'empty title' is highlighted, or you will end up recording over the first and subsequent titles. Sadly, the R311 doesn't have 'safe record' – a feature, built into second-generation Philips recorders, that ensures that recording only starts on an empty part of the blank disc.

And that's certainly a question that timeshifters will be asking. Recordings triggered by the six-event VideoPlus-equipped timer will overwrite existing material, unless you highlight the empty title prior to putting the R311 into timer standby. Those used to editing tricks will be sorely disappointed. There's no DVD+RW 'split' and that means no partial erasure. Nor can you define new thumbnails on the disc menu. All you can do with DVD+RWs is insert/erase/hide chapters, overwrite existing material (the +RW equivalent of 'insert editing') or erase all contents. For both +Rs and +RWs, you can delete an entire title (recording), and (re)name discs and titles. DVD+Rs need to be

Lab Report

PLAYBACK

	Excellent	Good	Average	Poor
Video jitter (2ns)	✓			
Signal-to-noise ratio		✓		
Composite (-74.2dB)		✓		
S-video (-74.6dB)		✓		
Chroma			✓	
AM (-70.4dB)	✓			
PM (-59.8dB)			✓	
Chroma crosstalk (-55.5dB)		✓		
Frequency response			✓	
Composite (-3.8dB)			✓	
S-Video (-3.8dB)			✓	
Audio jitter (195.7ps)	✓			
RECORDING				
Chroma			✓	
AM (-57.3dB)		✓		
PM (-57.1dB)		✓		
Frequency response@4MHz			✓	
XP (1 hour) (+0.6dB)	✓			
SP (2 hours)(+0.6dB)	✓			
LP (3 hours)(-52.1dB)			✓	
EP (4 hours)(-55.0dB)			✓	
EP (6 hours)(-61.2dB)			✓	✓

Compatibility

DVD-V	●	Video CD	●
DVD-A	●	Super Video CD	●
SACD	●	DivX	●
CD	●	DVD+R	●
MP3	●	DVD-R	●
WMA	●	DVD+RW	●
JPEG	●	DVD-RW (Video mode)	●
HighMAT	●	DVD-RW (VR mode)	●
CD-R	●	DVD-RAM	●
CD-RW	●		

FEATURES

Specifications: DVD+RW/+R formats; five recording modes giving recording times of up to six hours per single-sided disc; recorded discs compatible with most DVD players; 99-channel Nicam tuner; auto audio record levels; name/delete/insert recordings; disc naming; chapter insert/delete; disc protection lock; child lock; six-event timer with VideoPlus and PDC; recording can be triggered by compatible STB timer; DTR; 16:9/4:3 support; virtual surround; dynamic-range compression; multi-angle playback support; picture scan; slow-motion; frame-advance; repeat; shuffle play; intro-scan; zoom; automatic screen-saver (image darkens); autoinstall

Connections: rear: stereo audio out; coaxial digital out; 2x Scart (one composite/S-video; one composite/S-video/RGB out; standby-loopthrough); S-video out; composite video out; aerial in/out; front: composite video in; stereo audio in

Dimensions: 435(w)x76(h)x335mm; **Weight:** 4kg



RATINGS

Highs: The most affordable DVD recorder yet

Lows: Some picture patterning; lack of 'safe recording'; no RGB in

Picture	★★★★½
Sound	★★★★
Features	★★★★
Overall	★★★★

higher power levels during recording) is chucking out noise that the sensitive analogue signal electronics is picking up. Playback is unaffected by this low-level background noise.

In other respects, the picture quality of recordings is superb: far superior to the VHS decks they're destined to replace. HQ benefits from noise-free colour and plenty of subjective detail but is, as I've suggested before, overkill for TV. Stick with SP for your movies: chances are you'll see no loss of quality

There's little subjective difference between LP and EP, except when fast movement and complex random patterns are involved. Under these circumstances, EP can get a bit 'blocky'. EP+, on the other hand, is better than I expected it to be. It's certainly superior to VHS provided that there's little motion. Audio (the R311 uses 256kbps Dolby Digital 2.0 for all modes) sounds spacious and dynamic. What's more, I came across no lip-sync problems. For all its foibles, the R311 is a ground-breaking machine. Any product that gets more people switching to DVD recording certainly gets my vote ■

finalised before they can be played back on other equipment, and this forms another menu option.

SPIN IT

As a DVD player, the R311 fares just as well as a good budget model with crisp and clearly-defined images. Audio is also more than passable, even with CDs and MP3s. Recording, however, is a bag of surprises. In all modes, some faint wisps of background patterning are visible with dark backgrounds.

Yet they're not present in 'monitor' mode, in which the audio and video go through the encoder, decoder and MPEG processing. Until you press the Record button, that is; it would appear, the mechanism or laser (which works at



A smart look for a budget model, we think



The remote is logical and intuitive

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