

Manufacturing muscle

Flexibility, reliability, an inherent desire to provide the best service possible to your customers and ongoing investment in people, equipment and processes pretty much makes up the basic requirements needed to survive (and thrive) as a CEM in the UK market today. Thankfully many UK CEMs seem to be getting the formula just right and Southampton-based ACW Technology falls squarely into this category as Dave Tudor discovered.

The first thing that hits you when visiting ACW is the sheer size of the organisation. The company occupies a total of 150,000ft² of real estate across three manufacturing sites in Southampton, Tonypany in South Wales and Zhuhai in Southern China. The 68,000ft² Southampton headquarters boasts a vast manufacturing area comprising five surface mount lines; extensive test and inspection facilities, including in-circuit bed-of-nails, flying probe, digital functional test, boundary-scan, AOI, X-ray, environmental stress screening (ESS) and custom-made bespoke test solutions; box build and configuration cells and a substantial repair centre dealing with upgrades and repairs to component level. With a turnover of £42 million predicted for 2007, a net asset value of £9 million and 400 employees on the payroll, 'Fred-in-the-shed' is a description certainly not applicable here and this is ably demonstrated by the company's latest purchases – two Europlacer Vitesse pick-and-place machines costing in excess of £600,000.

Growing the business

Chris Woods, executive chairman at ACW Technology is naturally proud of how the company has developed since its formation in 1989. "We've enjoyed consistent growth from day one and today we ship product to locations all over the world," he enthuses. "The company has made an operational and bottom line profit for over 13 years and its finances compare favourably with its peers. The main advantages that this financial stability can provide are continued re-investment into the company and confidence to our customers that we're in for the long haul and won't disappear overnight."

ACW's three manufacturing sites all operate under a

common IT platform so that information and technology is both interchangeable and accessible. In terms of equipment and capability, the Southampton and Wales factories are similar with the lion's share of the work being with the manufacture of complex products in prototype and small-to-medium volumes. The Tonypany facility however has been audited and accredited to manufacture for several defence and aerospace programmes and is government approved.

Adding value

With many if not all of the larger OEMs leaving UK shores, the role of the CEM has changed in recent years with many companies now undertaking the whole manufacturing process on behalf of their customers. Turnkey manufacturing is the applicable buzzword commonly used for this process in manufacturing circles, but as Chris explains, the concept is nothing new for ACW. "Since the company began it's always been our focus to make complete products," he says. "I've been involved with manufacturing all of my working life and many of ACW's

employees are engineers with a similar background. Consequently, the concept of manufacturing, testing and assembling and shipping products on behalf of our customers is something we've always undertaken since the company's inception and this has enabled us to build some very sound relationships with key customers in the industrial, commercial, defence and aerospace markets. Effectively, in manufacturing and testing terms, we have the capability and resources to take on as much or as little as is required. In fact, we can provide a high quality product fulfilment solution within a three-day leadtime for many complex, configured products."

The Southampton factory is also home to ACW's 'back-to-base' PCB repair facility. With its own dedicated area, staff and equipment within the factory, the department was set-up to service customers with long-term repair requirements. Chris is keen to stress that generally this is not a service intended for isolated 'one-off repairs'. "The main reason why this has been so successful for us is that by only dealing with established, long-term customers with ongoing repair requirements, we've been



able to offer a real focused, value-added service with a fast turnaround," he explains. "Often we're actually repairing or modifying product that we manufactured originally, so we have full traceability on information concerning the product's life-cycle."

The methodical approach

About 18 months ago, to complement its UK-based manufacturing sites, ACW decided to look into setting-up a manufacturing facility in China to initially handle PCB and chassis assembly. As any company already well-versed in this process will tell you, front-end preparation and doing your homework thoroughly is paramount to success. Get it right and all the benefits of low-cost manufacturing can be realised, but get it wrong and it can be a costly and potentially damaging exercise.

ACW, rather than opting for the 'partnership with an existing company' route, decided to rent its own 36,000ft² facility in Zhuhai in the Guangdong Province, headed up by a British general manager. "I was personally heavily involved with this process," Chris reveals. "We looked at sites in Eastern Europe and the Far East and eventually settled on China, but it took until March last year to obtain the required business licence and after kitting the factory out with equipment and recruiting suitable staff, we began manufacturing in January 2007."

I ask Chris about the reasons behind the setting-up of the China facility. Where the driving forces customer-orientated? "No, is the simple answer," Chris replies. "The Zhuhai factory was built purely as a speculative venture. The idea is to attract customers in new markets that previously wouldn't have suited our business model and we believe it will have a positive spin-off into our UK facilities as well. Customers will benefit from the financial advantages of low-cost manufacturing, but will also appreciate the fact that everything the factory produces will be to the same high manufacturing standards we set ourselves here. At the end of the day I'm very happy with the quality of product being produced in China. We invested a lot of time and money in getting it right. We have total control and that's paying dividends now."

Getting it right at source

ACW's involvement in the Far East doesn't end with manufacturing however. As a company that spends £30 million a year on electronic components and mechanical parts, component sourcing is a high profile process for the company.

With this in mind, to complement its UK-based component suppliers and a partnership with a North American procurement company, ACW has set-up a company in China to handle the purchasing of low-cost component parts from Far Eastern sources. "The benefits of this project are now being realised," comments Chris. "Because of our global purchasing power, we can source components at very low prices, take advantage of regionalised, geographic pricing and can pass

these cost savings onto our customers. The setting-up of this facility not only benefits our Far Eastern customers, but also those based in the UK and Europe and again we have total control operationally," he assures.



www.empmag.co.uk/acw

ACW Technology service summary

NPI:

Design for test (DFT)
Design for manufacture (DFM)
Design for cost (DFC)
PCB layout
Rapid prototyping
Design iteration feedback
Process development

PCB assembly:

Low, medium and high volumes
IPC 610 Class 2 and 3
Fine pitch/high density assembly
RoHS compliant
Large BGA (1,800 balls)
CSP/µBGA
24-layer boards
Flexi/flexi-rigid

Product assembly and configuration:

Low, medium and high volumes

Wiring
Final assembly
Soak
SW/HW configuration
Packaging/serial number tracking
Delegated release

Test:

3D X-ray
AOI
Boundary-scan - JTAG
Bed of nails and flying probe
ICT
RF test
Functional and system test (ACW designed or customer supplied)

Repair centre (ARC):

Over 25 engineers
Service level agreements
Product life tracking
Comprehensive test
Product upgrades
Archiving