Building an Arsenal against Counterfeiters

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 The problem with counterfeit parts plaguing the distribution chain is not going away. In fact, it’s getting worse. Counterfeiters are getting more sophisticated, employing new technologies that make their bogus parts even tougher to identify. They’re using ovens to bake recoated parts using material made from the shavings of counterfeit parts, as well as secondhand laser equipment to remark parts from the same companies that end up purchasing them. As a result, large end-user corporations are quickly seeing the need to take more aggressive steps to prevent these parts from entering their stock.

As the technology of counterfeiters progresses, so do the efforts of some of the tier-one distributors to prevent their bad components from entering the market. Gone are the days that a simple visual inspection would be enough to identify a fake. Even lasers and chemicals no longer cut it. Today, distributors are leveraging the latest and greatest equipment including high-powered X-rays that allow inspectors to analyze and photograph die and lead frames, check wire bonds and detect moisture penetration. Only by looking at the skeletal structure on the inside of a part can you tell if it’s the real deal.

Another technology proven to uncover counterfeit parts is decapsulation. With decapping, acid is used to burn through the plastic casing to reveal the silicon inside. Once you’re in, a high-powered (600X magnification) microscope lets you see a product’s markings, an extremely effective measure in distinguishing whether it’s legit or not. XRF photo florescence, which analyzes the material make-up of a part, is also a trustworthy technology. You’ll know if you see lead where there shouldn’t be any, that you’re dealing with a phony part. Looking down the road a bit, RFID technologies may be another way to arm against counterfeiters. But until

manufacturers incorporate it into their parts – which will prove to be very costly – distributors can't follow suit.

While technology is paving the way for greater detection of counterfeit parts, no piece of equipment can replace human experience. Highly trained staff at trustworthy distributors leverage their years in the field to tell if a source is reliable. Further, they know what to look for in the components. For example, one quality manager might find a different die on a part than what's generally used by a manufacture and immediately assume the part counterfeit. While, another, more seasoned manager, will recognize that the manufacturer is subcontracting a different die, and so knows the part is authentic. Relying on a distributor that knows the manufacturer and its products and processes is key. All the technology in the world means nothing if you can't put it into a context.