STATIC CONTROL UNIVERSAL CHIPS: LAWS ARE BACKING UP QUALITY

Static Control Components, USA

How to protect property from competition encroachments? This question has recently become extremely important for large manufacturers of original consumables for printing devices abroad. It's a common knowledge that popular brands are attracting not only customers but also manufacturers of counterfeit products. It goes without saying that this situation does not satisfy OEMs. First of all counterfeit and clone products as a rule are characterised by low quality, which affects reputation of the brand. Secondly, they very seriously damage OEM profits.

To protect themselves from great threat OEMs have chosen such weapon as patents for their inventions. Thus any violations of intellectual property can be severely punished according to existing laws. During last few years under conditions of fierce competition OEMs in Northern America and Western Europe has sued a lot of companies – manufacturers of compatible and remanufactured cartridges.

So what is a patent? It's a way to protect companies that are spending millions of dollars in research and development in technologies, products and services that are unique and innovative. One great example is the medicine industry: what would happen if the companies do not get protection when they release a new medicine after they invest millions of dollars and not less than 10 years of testing? People would be dying and there would not be cures for diseases. Also patents are important to encourage the innovation in different industries like the technology industry. Google, Microsoft, Apple, etc. would not be the same companies and would not invest money in new technologies if they would not have that protection. Patents are an engine of economic growth for developed countries.

During the past years, OEM companies have been struggling due to the global economical crisis and because of the erosion of margins, as printer and consumables sales are down. At the same time, the increased activity of counterfeit and new built compatible products has arisen and nowadays this situation is affecting the OEM. They are going after the new build compatible/clone manufacturers for one simple reason: they can manufacture as many cartridges as they want as they, unlike the remanufacturers, are not dependent on the number of empties they can collect. The OEMs have chosen the IP path to go after the new build compatibles but could use other means as well (such as technology). **By going after new build compatibles/clones through IP, the genuine remanufacturers are vulnerable to the exact same prosecution by the OEMs. In other words, the bullet that the OEMs use to kill the new compatibles can kill the genuine remanufacturers as well.**

One of many examples is – HP®. In 2006 this company has won in Federal District Court of USA and International Trading Committee of USA over Ninestar Technology Co., Ltd. and other companies, who resell and remanufacture ink cartridges with, chips, violating HP patents.

You also can't overestimate loud lawsuits, where Canon® stood up against several companies, producing new compatible cartridges (Ninestar), remanufactured cartridges (Clover) and also their numerous partners. The subject of lawsuits was drums' gear projections, patented by Canon®.

Also all major foreign manufacturers are protecting the uniqueness of their products: Samsung, Brother, Epson, Lexmark.

In remanufacturing industry the only company, which is not violating OEM patents, respects them and protects its own innovative technologies by its own patents is Static Control. Not only it protects its own business but it stands the corner of all honest remanufacturers, when it comes to fighting OEMs, whose allegations are sometimes not legitimate in their attempts to kill aftermarket. Let's make it clear. Static Control is committed not to sell its products to new build/clone manufacturers. The company sells its products only to genuine remanufacturing industry – companies, whose activities are based on legitimate right to reuse and repair. At the same time **SCC fully supports OEMs and works with them hand in hand to fight counterfeit cartridge production and new builds which kill printing industry as a whole and are illegal.**

Speaking about protecting remanufacturing industry – SCC is the only chip supplier that has fought and won a lawsuit against OEM (Lexmark) and it cost the company $ 30 million and 7 years.

In Russia Intellectual Property Protection problem in the domain of printing business has not reached yet the same scale as abroad. All the same time, there are already a lot of examples of fighting for intellectual property in IT manufacturing.

For example, beginning from 2008 Microsoft Corporation together with law enforcement bodies and legal authorities has been investigating the level of piracy at computer market in 94 cities of Russia. According to the company Press Centre during inspection and raids it was revealed that 17.6% out of 3000 trading spots were offering their customers not licensed OS Windows. Only in Moscow 24% of shops recommend to install counterfeit operational system and 13% of them do it right in the shop...

So Microsoft for 5 years has been struggling with piracy using different methods including law suits. As a result during last 3 years the share of not licensed OS Windows has been reduced twice: from 37% to 17%, and 6%. In some cities piracy was reduced even more significantly. For example, in the Far East the sales of counterfeit OS have been reduced 29%, in Siberia – 33%.

There are many examples like this. Microsoft and other well-known companies – manufacturers are trying to defend their inventions and stop their illegitimate competitors from encroaching on their property. That's why it's quite probable that very soon the legislation will change in this country and patent problem will become very serious for Russia as well. Is it worth risking though you know about the problem or it is better to prevent trouble?

According to «Static Control», security and reliability – are the main drivers of business success. That is why this American leader at the market of components for remanufacturing laser and inkjet cartridges is testing and checking all its inventions against possible violations of patents and also defends its inventions with patents. So when you buy components of this company, you can be sure not only in their quality, but also in legal safety.

According to SCC it is necessary to delouse themselves even now as Intellectual Property protection is a powerful weapon of OEM in their struggle against aftermarket. On the other hand it is a great opportunity for honest private companies. Purchasing patented components, they will be able to win over their competitors and provide for high level of their services.

Static Control Universal Chips as an Alternative to Original Products

One more hurdle, which OEMs have developed to fight illegitimate infringements of their property – is chips with high level of encryption. Today most laser and ink jet printers use cartridges that have a chip installed. These printers have been designed so that the chip stores authentication and life information about the cartridge. For these printers, if the chip is not installed or is spent, the printer will not have full functionality or may not print at all.

The chip stores data written to it by the printer and uses this data during operation.

At a basic level, a chip authenticates the cartridge, stores data about the cartridge such as cartridge type, geographical information, and cartridge yield values. Chips also store data, which the printer firmware interprets as data about OPC drum, primary charge roller, and developer roller. Depending on the printer model, the chip may store page counts, pixel counts, calibration information, development voltage information, and more.

Chips can store information even after the power is turned off. Typically, when a printer detects that a cartridge is low or out, it writes data to the memory and locks it. The data becomes permanent and this prevents the reuse of the chip.

Chips have become more complex through the years. Today cartridge chips are much more advanced and use a combination of customization and encryption to authenticate with the printer. The use of encryptions protects the communication information and memory contents and prevents data from being manipulated. This makes the task of reverse engineering for serious understanding of the design extremely complicated.

The printer firmware controls how often and which data is written to the chip. Firmware is the software that actually controls the operation of the printer. Manufacturers make regular changes to the firmware in the form of updates to adjust how the printer performs. A new firmware can affect the printer and cartridge in many ways. For example, firmware may change how the fonts look in the printer, how toner usage is tracked and may affect status supply pages. Firmware changes can also affect the chip functionality. Printer manufacturers have been known to use firmware changes to lock out aftermarket cartridges from being used in their printers.

For the aftermarket, chips must be designed to provide full functionality. In other words, replacement chips must emulate OEM chip functionality without infringing patents or copyrights. Only by full emulation can an aftermarket chip avoid being locked out by firmware changes.

Creation of compatible chips with a complete functionality is not a trivial task. Majority of aftermarket manufacturers develop and manufacture chips which work on the principle of 'copying data flow between original chip and printing device'… This is the simplest and the cheapest method, but very often it leads to cartridge failure.

In this situation Static Control offers its customers an alternative – fully functional Universal chip of high quality. They perform all functions, which OEM chips do, but simultaneously they do not infringe intellectual property rights.

SCC Universal chips are produced at the company plants using company's own robotic technologies. This allows to control production process and also to be first to market. Massive scale investment into technology and highly qualified engineers allow to obtain quality, which equals

OEM. Static Control developed their own technology to create universal chips and has patented that technology in Russia, US and Western Europe, Mexico, Korea. That makes Static Control the only company whose Universal chips are legitimately sold in these countries.

Why Is It Profitable to Use SCC Universal Chips?

Development of every universal chip starts from thorough research of all particularities of their original prototypes and also printers for various geographies. Then using reverse engineering method there, takes place development of a solution which fully emulate functionality of original chip. But at the same time – SCC chips have unique technological itinerary, which provides for non-violation of patents of other companies. There is proof to it. In December 2011 Static Control obtained European Union Patent for Universal HP chips. For today SCC is the only legitimate and official manufacturer of these chips. SCC has patented the technology of universal chip production for HP cartridges in USA, Israel, Egypt, Mexico, South Korea, and China. In the nearest future the list will be enlarged by Brazil, India, and Hong Kong.

Besides legality SCC universal chips have a number of functional advantages. First, it is convenient to substitute a number of dedicated chips by one universal. This allows to control assortment of chips more efficiently and reduce time of customer service. As the more items you have in warehouse the more difficult it is to maintain their constant availability. So you reduce inventory on chips and finished cartridges, create universal cartridges, increase cash flow, confidence, as you are always sure that the chip will not fail neither during your tests nor at the customer. **Having chosen SCC chips, you can use them for more than 200 cartridges instead of dedicated chips for HP and Canon printers and MFPs as well as for the machines of other brands as SCC has universal chips for many other printer brands.**

SCC uses full emulation method. The difference from other chip manufacturers, who just copy data flows, is that SCC arms its chip with all OEM functionality, including even those functions which are not used by printing device at the moment of chip development. This allows to achieve great SCC chip resistance to *Firmware* changes.

Firmware – is a program which is stored in energy-independent printer or MFD memory, which controls device operation. After new printer/MFD launch, OEMs often corrects it for example, to correct some problems, which emerged after launch or to increase functionality. Compatible chips, which are not geared for such changes, simply stop working. And SCC chips thanks to full emulation method are very resistant to Firmware changes and continue to work correctly even after device manufacturer makes his additions or changes.

SCC guarantees quality of its chips. Buying compatible chip, motivated by lower price, the companies as a rule will be very soon fed up by consequences. The reason for this is that there is certain percentage of faulty chips among the chips of Chinese producers. One chip, which is faulty, causes much more wasted money that you could initially think. First of all it is damaging

to the company's reputation. It's a common knowledge that for a client – poor quality goods are the signal to question reliability of the supplier. Also one poor quality chip causes additional costs. You need to talk to end-user, understand and verify his problem, send your courier to pick up faulty cartridge, check the cartridge to understand and confirm the problem, repair the cartridge – all this demands fast company reaction, additional time and money investments. One of the outstanding peculiarities of SCC chips is unbeatable low rate of faulty chips. That is why you will forget about expenses caused by rework from the field.

False Economy or How Not to Lose Money While Choosing a Chip

When choosing chips, businesses often face an alternative: to buy cheap compatible product and save money or to buy tested quality product at a premium price. Goes without saying, that the last word will be the customer's. But it is worth thinking if saving a bit is really an obvious advantage?! Let's assume that a company is remanufacturing 100 cartridges with Chinese chips and saves $2 per chip. So they reduced expenses by $200. At the first glance – great profit achievement. For end user the price of one remanufactured cartridge is $70. So if at least 3 of these cartridges turn up to be faulty, then there is nothing left of false economy – it will evaporate! And if there are 4 faulty cartridges – then we are talking already about obvious losses.

Also, having saved $ 200 on cheap compatible chips, you are risking to spend a fortune on legal processes and trials, which loom for all customers of illegal products, which infringe intellectual property rights. So the conclusion is obvious: no matter how attractive some compatible products are, when you look at these products more attentively, you see that you could have made a mistake. Isn't it better to choose reliable Universal chips from Static Control which will work in 100% of cases?! In this case your company is getting the most important thing – good reputation and assurance in your well being tomorrow.