Counterfeit in the supply chain
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Statistics

- Based on:

- It is estimated that the annual damage caused by counterfeiting and (product) piracy worldwide is more than 100 billion USD [1].

- The Global Semiconductor Alliance (GSA) estimates that in the order of 10% of the worldwide semiconductor sales is based on counterfeited products. Outsourcing and globalization is fueling counterfeiting such that the volume but also the sophistication is increasing. [2]

- Therefore, based on SIA’s annual forecast of global semiconductor sales projecting worldwide sales of $220 billion for 2009, ($249 billion reported in 2008) => the CFT market is around $22-$25 Billion.
  - **STM estimation 3% of the total turnover and therefore $6.6-$7.5 Billion**
  - **Customers “quality” complaints => 100 cases per year for the past 3 years**
  - **US Customs seizures => 70 seizures per year for the past 3 years**
Origin of counterfeit ICs

- **US Customs & Border Protection Agency (CBP)**
  - 2006 – 81% of all counterfeit seizures came from China
- **ST current and historical experience** – 100% sourced and manufactured in China
- Where are the principal IC offenders – ST experience:
  - **Jiangsu Province**
    - Nanjing City - OEM factories
    - Suzhou City - OEM factories
    - Wuxi City and area- OEM factories
  - **Guangdong Province**
    - Shenzhen area - Dealers, warehousing and transshipment
      - Most of the counterfeit ICs found overseas are distributed through dealers in SNZ.
    - Shantou - Refurbishing of obsolete and hard to find product plus some laser remarking
Why does it happen

- China manufactured counterfeits at least 30% cheaper than the genuine product depending on the application and availability.
- Shortages of older obsolescent parts:
  - Reputable suppliers buying from non verifiable sources (primarily in China) when they cannot source a part because of obsolescence or shortages in the market
  - For hard-to-find, obsolete or long-lead-time products, OEMs, for example in the defense-aerospace sector, will go to any available source when they need a part
  - And – if a customer goes to a broker in these circumstances:
    - There is no guaranteed pedigree for the product
    - They should but often don’t conduct the most stringent of engineering/QA tests
- Lack of Visibility for the problem
  - Trade mark owners, suppliers and end users are concerned that their brand equity will be damaged by shining a spotlight on the issue
  - OEMs, and contract suppliers are embarrassed if they admit they have been duped into accepting or dealing with counterfeit
  - Some of the counterfeit is not stress tested over its operating life and, therefore, not identified as counterfeit
- Lack of effective legal and regulatory IPR in China – in particular effective deterrent penalties and sentences.
How does counterfeit get into the supply chains

- OEM product returns
  - Customers mix product returns from their different sources and,
  - they return inventory to authorized distributors and,
  - they send back counterfeit mixed in which is on sold as genuine

- Suppliers and customers are about or don’t question provenance with an order to fill:
  - Some customers don’t test the product and,
  - counterfeit can sometimes pass as genuine - especially with the less sophisticated IC’s - until they fail.
    - Current STM experience of some brokers and traders.
Industry Groups Lobbying

The SC industry has launched a number of anti-counterfeiting task forces (SIA, ESIA, SEMI) in the field of:

- collection of data and sharing of information, setting up common fight strategies and harmonizing best practices,
- legal and law enforcement,
- workshops and trainings among manufacturers, customers, distributors and public authorities,
- logistics (identification of storage and shipping package, tracking of product, storage and shipment, related databases).
- Strengthen & embed resistant & faster checking product authentication technologies.
Who is tackling the Problem (2)

- **Industry Groups Lobbying**
  - National Electronics Distributors Association (NEDA)
    - Working with component makers on re-evaluating the returns process and,
    - A PR project to educate the public and Government of the economic cost and consequences of penetration of counterfeit into the markets.
  - US Chamber of Commerce Coalition Against Piracy working to:
    - Increase the understanding of the negative impact of counterfeiting and piracy.
      - Training
      - Ramping up easier identification of counterfeits.
  - GAMS – Government Authorities Meeting on Semi-Conductors – 6 continents Customs Services

- **Primary Focus is on emerging markets, primarily China:**
  - Better enforcement
  - Tighter regulations
What to do?

- Beware of unusually low pricing.
- Source from reputable, well-established companies with tight internal controls.
- Conduct comprehensive background checks, including checking trade references and past business history, of supply chain partners before conducting business with them.
- Implement site inspections of supply chain partners and find out what systems have been put in place to track quality.
- Conduct ongoing performance reviews of supply chain partners with defined goals and as necessary improvement plans.
- Only source from the authorized supply chain of the trademark owner.
- Be cautious of buying from companies that do not have franchised relationships with distribution partners to avoid a greater potential risk of counterfeit product.
- Manufacturers need to tighten internal controls to avoid anomalies in their supply chains.
- Look for International Organization for Standardization (ISO) or other equivalent, globally recognized certifications in a supply chain partner's operations.
- If it originates with a broker in China
  - Always conduct stringent engineering checks.
  - If the suppliers in China want to do business try for an escrow arrangement until engineering tests have been completed.
  - Investigate and fight back if you find counterfeits.