

## ANTI-COUNTERFEIT ELECTRONICS

Economic and production demands often place excess semiconductor materials in an uncontrolled environment. As a result, the electronics industry has experienced a dramatic increase in the volume of counterfeit devices sold into the aftermarket over the past five years. To combat this trend, Xilinx has taken aggressive actions to protect our authorized supply chain and our customers from counterfeit materials. Using unique traceability tools, Xilinx is able to ensure that material is procured through authorized channels. In addition, Xilinx continues to invest in new capabilities with each generation, protecting our latest device families with a programmed internal code utilized in conjunction with device markings.

Like many global semiconductor companies, Xilinx protects customers and trademarks in the United States and internationally. Only authorized partners are allowed to use Xilinx trademarks. Authorized distributors are trained and audited to ensure they distribute fully compliant, original Xilinx products. They also are the only sources authorized to provide parts with support and warranty services. Customers can protect themselves and be confident they have received fully compliant, original Xilinx products by purchasing only from Xilinx authorized distributors. The list of Xilinx authorized distributors and sales resources is available at [http://www.xilinx.com/company/sales/ww\\_disti.htm](http://www.xilinx.com/company/sales/ww_disti.htm).

U.S. Customs and Border Protection (CBP), in conjunction with trademark holders, identifies counterfeit materials coming into the United States through various points of entry. The highlighted sections of the table below, published by U.S. Customs, show a 43 percent increase in seizures related to consumer electronics/electrical articles since 2007. This category has historically included devices like those produced by Xilinx. There are fewer seizures in computers and technology components, a category that also contains technology related to Xilinx trademarks.

COMMODITY FY 2008	DOMESTIC VALUE FY 2008	VALUE % OF TOTAL	DOMESTIC VALUE FY 2007	FY 08 vs. FY 07 DIFF.	% INCREASE or DECREASE
Footwear	\$ 102,316,577	38%	\$ 77,781,415	\$ 24,535,162	31%
Handbags/Wallets/ Backpacks	\$ 29,609,053	11%	\$ 14,214,304	\$ 15,394,749	108%
Pharmaceuticals	\$ 28,106,578	10%	\$ 11,137,578	\$ 16,969,000	152%
Wearing Apparel	\$ 25,119,580	9%	\$ 27,005,914	\$ (1,886,334)	-7%
Consumer Electronics/ Electrical Articles	\$ 22,997,685	8%	\$ 16,041,694	\$ 6,955,991	43%
Sunglasses/Parts	\$ 7,919,385	3%	\$ 3,951,758	\$ 3,967,627	100%
Computers/Technology Components	\$ 7,589,534	3%	\$ 9,336,893	\$ (1,747,359)	-18%
Perfumes/Colognes	\$ 6,716,735	2%	\$ 1,201,193	\$ 5,515,542	459%
Cigarettes	\$ 6,444,649	2%	\$ 583,349	\$ 5,861,300	1004%
Media	\$ 5,967,332	2%	\$ 7,884,152	\$ (1,916,820)	-24%
All Other Commodities	\$ 29,941,771	11%	\$ 27,616,127	\$ 2,325,644	8%
<b>Total Domestic Value of All IPR Seizures</b>	<b>\$ 272,728,879</b>		<b>\$ 196,754,377</b>	<b>\$ 75,974,502</b>	<b>38%</b>
<b>Total Number of Seizures</b>	<b>14,992</b>		<b>13,657</b>	<b>1,335</b>	<b>9%</b>

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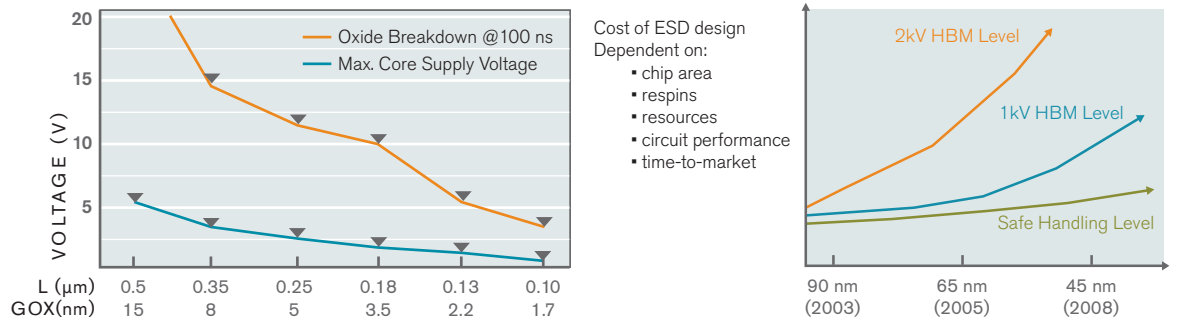
The U.S. Department of Homeland Security's CBP arm has recategorized Critical Technology Components, previously named Computer Network Hardware/Integrated Circuits, as including networking equipment and semiconductor devices. The Transportation/Parts category was previously named Automotive, another market in which Xilinx products are used.

This table illustrates the increases in seizures in the Critical Technology Component category according to published U.S. Customs metrics. The changes made in classification of this category have led to more concise tracking of semiconductors as electrical articles. Xilinx sees the trend of counterfeit electronics seizures by U.S. Customs increasing year to year, reinforcing our recommendation to buy devices only from Xilinx authorized channels.

COMMODITY FY 2008	DOMESTIC VALUE FY 2008	VALUE % OF TOTAL	DOMESTIC VALUE FY 2007	FY 08 vs. FY 07 DIFF.	% INCREASE or DECREASE
Pharmaceuticals	\$ 28,106,578	45%	\$ 11,137,578	\$ 16,969,000	152%
Sunglasses	\$ 7,919,375	13%	\$ 3,951,758	\$ 3,967,617	100%
Perfumes/Colognes	\$ 6,716,735	11%	\$ 1,201,193	\$ 5,515,542	459%
Cigarettes	\$ 6,444,649	10%	\$ 583,349	\$ 5,861,300	1005%
Electrical Articles	\$ 5,020,361	8%	\$ 4,087,060	\$ 933,301	23%
Critical Technology Components	\$ 4,742,175	8%	\$ 4,491,316	\$ 250,859	6%
Batteries	\$ 1,806,821	3%	\$ 913,428	\$ 893,393	98%
Transportation/Parts	\$ 621,242	1%	\$ 845,094	\$ (223,852)	-26%
All Others	\$ 1,157,536	2%	\$ 681,848	\$ 475,688	70%
<b>Total Domestic Value</b>	<b>\$ 62,535,472</b>		<b>\$ 27,892,624</b>	<b>\$ 34,642,848</b>	<b>124%</b>
<b>Total Number of Seizures</b>	<b>1,950</b>		<b>1,295</b>	<b>655</b>	<b>51%</b>

## INDUSTRY ESD TRENDS

Electrostatic discharge (ESD) is not a new concern. Over the last 40 years, ESD requirements have become a standard and routine consideration in the operation of electronics. As device geometries shrink, however, the need to assess the impact of ESD becomes more critical.



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New technologies bring improved speed and power. The design changes required to improve performance make protecting the devices more difficult given the continuous drive toward smaller features, thinner oxides, lower breakdown voltages, and high-performance I/O. As a result, breakdown voltages are reduced, leaving devices more susceptible to ESD damage. All of these elements combine to make maintaining existing ESD levels a significant challenge.

In 1995, 2kV Human Body Model (HBM) and 500V Charge Device Model (CDM) were the standard. Today, the ESDA, JEDEC, and AEC organizations are all evaluating lowering ESD limits to keep pace with current semiconductor trends.

PACKAGE DESIGN	DIP	QFP TQFP		BGA		BGA	LGA	BGA
	1	10	100	1000	10,000			
	25		250		2500			
DIGITAL	Digital Designs: Stress Voltage @8A	750V	500V	400V	300V	250V		
	Advanced Digital Designs: Stress Voltage @6A	750V	500V	400V	300V	250V	<200V	
HSS	High Speed Designs: Stress Voltage @4A	500V	400V	300V	250V	<200V		
	RF Designs: Stress Voltage @2A	500V	400V	300V	250V	<200V		

The vertical dashed line represents the state-of-the-art in high pin count packages.

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The associated costs with protecting devices have been rising. But, the benefits of minimizing field risk come through pursuit of controls around CDM as opposed to HBM. Many ESD experts have concluded that HBM has been overspecified since the failure rate due to electrical stress is independent of the achieved HBM level > 500V.



## ESD INDUSTRY TRENDS

CDM is now evolving to become the key parameter for ESD-related investments, particularly in view of CDM-related drivers, such as large packages and pin counts, thinner metal and higher current density, and higher-speed pins.

Investing in factory controls for CDM protection through standards like ANSI/ESDA S20.20 or IEC 61340-5-1 enables companies to prevent device damage in the factory before it is discovered in the field. Fortunately, these standards have already received broad acceptance by many OEMs and contract manufacturers. However, Xilinx is continuing its efforts to help educate companies to understand the risks and to adopt new approaches to managing ESD.

## SCALABLE DEVELOPMENT KITS

In 2009 Xilinx delivered the foundation for a new generation of Targeted Design Platforms that enable system designers to increase productivity and minimize development costs. These programmable platforms provide simpler, smarter methodologies for creating system-on-chip solutions. Software and hardware designers alike can now leverage open standards, common design methodologies, development tools, and run-time platforms to spend less time developing the infrastructure of an application and more time building differentiating features.

To ensure the best possible customer experience, Xilinx Targeted Design Platforms are tuned to base-level FPGA, domain-specific and market-specific requirements with scalable development kits that provide all the hardware, software, IP and Targeted Reference Designs needed to design right out of the box. These fully integrated kits simplify evaluation and development with the latest-generation Virtex<sup>®</sup>-6 FPGA and Spartan<sup>®</sup>-6 FPGA families to deliver value-added productivity gains not possible from a la carte development system assemblies.

Xilinx evaluation and development kits provide a flexible, comprehensive environment for higher-level system design. Base development boards with industry-standard FMC (FPGA Mezzanine Card) connectors enable scaling and customization to specific applications and markets. Integrated tool suites streamline creation of systems solutions that adhere to complex design requirements. Preverified Targeted Reference Designs help to jump-start application development. Multiple design examples offer best practices for implementing system IP to optimize your unique application.

For a comprehensive list and the latest information on Xilinx and third-party development kits as they become available, visit: [http://www.xilinx.com/products/boards\\_kits/index.htm](http://www.xilinx.com/products/boards_kits/index.htm).

### XILINX RESOURCES FOR VIRTEX-6 FPGA DEVELOPMENT KITS

- Virtex-6 FPGA ML605 Evaluation Kit
- Virtex-6 FPGA Connectivity Kit
- Virtex-6 DSP Development Kit
- Virtex-6 FPGA Embedded Kit
- Virtex-6 FPGA ML623 Transceiver Characterization Kit
- Virtex-6 FPGA Broadcast Connectivity Kit

### XILINX RESOURCES FOR SPARTAN-6 FPGA DEVELOPMENT KITS

- Spartan-6 FPGA SP601 Evaluation Kit
- Spartan-6 FPGA SP605 Evaluation Kit
- Spartan-6 FPGA Connectivity Kit
- Spartan-6 FPGA DSP Kit
- Spartan-6 FPGA Embedded Kit
- Spartan-6 SP623 Transceiver Characterization Kit
- Spartan-6 FPGA Consumer Video Kit

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