

Petrov Group provides breakdown of Texas Instruments business model (part 1)

Contributed by the Petrov Group [Monday 24 September 2012]
<http://www.digitimes.com/news/a20120924PR201.html?mod=2>

The Petrov Group has announced a new 333-page/211-figure report titled "Texas Instrument's Power Business - Edition 2012". Texas Instruments (TI), the largest analog IC vendor, is an undisputed market leader (nearly two times larger than its next competitor) and trend-setter in power management. That its products broadly cover all power IC market segments is well known.

This is part 1 of 2. Part 2 will be published on September 26.

Solution Factor

What is less well known is that, unlike most of its competitors, TI makes products but sells system solutions. The difference from its competitors is that TI does this on a grand scale and has created a one-of-a-kind business machine, according to The Petrov Group. For years The Petrov Group has measured the effectiveness of TI's solution strategy by using the S-factor concept. The solution factor is defined as the ratio of revenue or profit contributed by the supporting analog versus strategic system components of a solution.

Market Dominance

TI's power business strategy is supported by its patent strategy and market dominance (a stream of eight new catalog products per day).

TI has a 29% revenue share among the Top-10 analog IC companies - of that 26% in catalog products and 42% in custom products. In catalog products, TI has a 35% revenue share in function-oriented catalog products while only 10% in applications-oriented catalog products - a category dominated by vendors in Europe and Skyworks and frequently also referred to as ASSP products. In functions-oriented catalog products (frequently referred to as general purpose products), TI has a 40% revenue share in power chain and 36% in signal chain products among the Top-10 vendors - these vendors are significantly different from the Top-10 analog IC companies.

In 2011 TI semiconductor revenues, including only fourth-quarter 2012 National acquisition revenues, were US\$11 billion (total TI revenues were US\$13.7 billion). TI's portfolio of catalog products contains about 60,000 products, of which more than 42,000 are analog products - of which more than 20,000 are power products.

Twelve Power Domains

In order to enable a meaningful and useful analysis of power product portfolios Petrov Group developed a model which categorizes them into twelve distinct power domains - TI participates in all twelve power domains.

TI's power business revenues of US\$3 billion in 2011 were from two product types - Catalog US\$1.9 billion and Custom US\$1.1 billion. TI's power products are confined to three out of four business units of TI's Analog business: Power, Silicon Valley Analog (SVA, former National Semiconductor), and High-volume Analog & Logic (HVAL).

The fourth business unit, High-performance analog (HPA), addresses signal chain products.

Two Core Technology and Product Portfolios

Unlike TI's financial reporting of business segments, TI's core technologies and product portfolios should be segmented into only two areas: Analog signal and power management, and Embedded processing.

The Wireless business segment seen in TI's financial reporting focuses on the unique aspects of the cell-phone business supported by the above two core technology areas - it focuses on wireless connectivity RF products and OMAP mobile application processors. The implication is that mixing financial reporting business segments with core technologies and product types leads to misleading conclusions about TI's business.

Although the Wireless business segment is in TI's financial reporting, in terms of technology IP and product portfolio "Wireless" is of limited importance. This business segment is under ever-increasing competitive pressure from IC vendors sharply focusing on handset type mobile applications such as Qualcomm, MediaTek and Broadcom and OEMs with proprietary mobile platforms such as Apple and Samsung.

Leadership in Low-cost processing and packaging technologies

TI leads the industry in advanced packaging technologies used for power products driven by the need for higher power density of power solutions, thermal considerations, and higher switching speeds of higher voltage devices. Higher power density is achieved with higher power devices packaged in a smaller footprint. This, in turn, drives the need for smaller footprint packages featuring superior thermal capability. A representative example is TI's patented PowerStack package housing two synchronous power MOSFETs (TI's NexFETs) used in the power stage of synchronous switching DC/DC buck (step-down) converters.

Petrov group: Top-10 analog IC vendors, 2011		
2011	Analog market (US\$B)	Market share (%)
TI	5.9	14
STM	4.2	10
ADI	2.7	6
Maxim	2.4	6
Infineon	2.2	5
NXP	1.5	4
ON Semi	1.5	3
Skyworks	1.4	3
Linear	1.3	3
National	1.2	3
All Other	18.7	43
Total	43.0	100

Source: Petrov Group, compiled by Digitimes, September 2012

TI has in place all the needed processing and packaging technologies required to successfully compete in all areas of the analog and embedded processing business. In terms of analog business these capabilities include: In-house manufacturing of practically all products. A complete portfolio of processing

technologies required to implement its products. US\$12 billion worth of revenues in additional manufacturing capacity. Significant cost advantage using 300mm wafers (30% lower cost compared to 200mm wafers). Leading edge packaging technologies, especially for power products. Large R&D resources developing the next generation technologies. TI maintains its leadership by a stream of processing, packaging and manufacturing patents.

As a result, TI's competitors are compelled to specialize in areas outside TI's primary market targets, large enough to provide growth, but small enough to be of limited interest to TI. TI could be viewed as the Intel of the analog business; hence, what applies to competing with Intel also applies to competing with TI.

Categories: [Bits + chips](#) [IC design, distribution](#)

Tags: [analog IC](#) [Broadcom IC](#) [IP](#) [Petrov Group](#) [power IC](#) [Qualcomm](#) [Skyworks](#) [Texas Instruments](#) [TI](#)

RELATED STORIES

- [RF transceiver market for mobile devices to reach 1.5 billion by 2015, says Petrov Group \(part 2\) \(Oct 28\)](#)
- [Standalone transceiver chips to dominate the smartphone market, says Petrov Group \(part 1\) \(Oct 21\)](#)
- [Baseband processors still essential, says Petrov Group \(May 3\)](#)
- [Integrated mobile processors to challenge standalone application processors, says Petrov Group \(part 2\) \(Mar 16\)](#)
- [Standalone application processors are winning in mobility markets, says Petrov Group \(part 1\) \(Mar 8\)](#)
- [Adoption by Intel makes digital controllers mainstream technology, says Petrov Group \(Oct 29\)](#)
- [Li-Ion/Poly batteries drive high growth of battery management ICs from headsets to electric vehicles, says Petrov Group \(Oct 21\)](#)
- [Explosive growth of LED driver ICs truly unparalleled, says Petrov Group \(Sep 23\)](#)
- [Thirty billion power conversion ICs enable power management applications, says Petrov Group \(Aug 24\)](#)
- [Power management ICs in portable devices represent nearly 40% of total analog IC revenues, says Petrov Group \(Aug 10\)](#)