

December 20, 2010

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Semiconductor Weekly

Moderating Chip Equipment Spending Is Good For Chips In 2011

- November North American semiconductor equipment billings were down 3.4% month-over-month, the first month-over-month drop in semiconductor equipment shipments since March 2009. Broadcom raising its December quarter revenue guidance to \$1.9 billion (up 5% sequentially), at the top end of original guidance for revenues to be \$1.8-1.9 billion. Best Buy reported November quarter sales were up 5% sequentially and down 1% yr/yr, due to weaker industry demand in key categories (low double-digit comparable store sales decline in TVs and entertainment hardware and software) and changes in market share.
- The North American fab semiconductor equipment book-to-bill ratio fell to 0.96 in November from 0.98 in October and 1.06 a year ago. November North American semiconductor equipment manufacturer bookings of \$1.51 billion were down 5.9% month-over-month and up 90.6% year-over-year. November North American billings of \$1.57 billion were down 3.4% month-over-month and up 110.7% year-over-year. This is the first month-over-month drop in semiconductor equipment shipments since March 2009.
- Broadcom raising its December quarter revenue guidance to \$1.9 billion (up 5% sequentially), at the top end of original guidance for revenues to be \$1.8-1.9 billion. The upside in revenue was driven by stronger-than-expected demand for Broadcom's mobile and wireless products.
- Research In Motion reported November quarter sales of \$5.49 billion (+19% sequentially and +40% yr/yr) on shipment of 14.2 million devices (+17% sequentially and +40% yr/yr) at an ASP of \$315 during the quarter. Channel inventory increased on an absolute level and on a weeks basis on timing of shipments during the quarter. For the February quarter, Research In Motion guided to \$5.5-5.7 billion in sales (midpoint= +2% sequentially) and shipments of 14.5-15.5 million units (midpoint= +5.6% sequentially).
- Best Buy reported November quarter sales of \$11.89 billion (+5% sequentially and down 1% yr/yr). The domestic segment's comparable store sales fell 5% (versus expectations of flat to modest growth) due to weaker industry demand in key categories (low double-digit comparable store sales decline in TVs and entertainment hardware and software) and changes in market share. The decline in TVs was due to a low double-digit unit sale decline and a mid-single digit price decline. Offsetting these declines were mobile phones improving low double-digits on a comparable store sales basis (due to strong demand for smartphones) and a mid single digit increase in mobile computing driven by tablet PC strength. The notebook market was weaker-than-expected.
- In the coming week we expect Micron's November quarter results will likely show the impact of memory pricing declines. We are hopeful that technology-related durable goods numbers should show signs of stabilization (though probably not much strength) in November.

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David Wong, CFA, PhD, Senior Analyst
(212) 214-5007 /
david.wong@wachovia.com
Amit Chanda, Associate Analyst
(314) 955-3326 /
amit.chanda@wachovia.com

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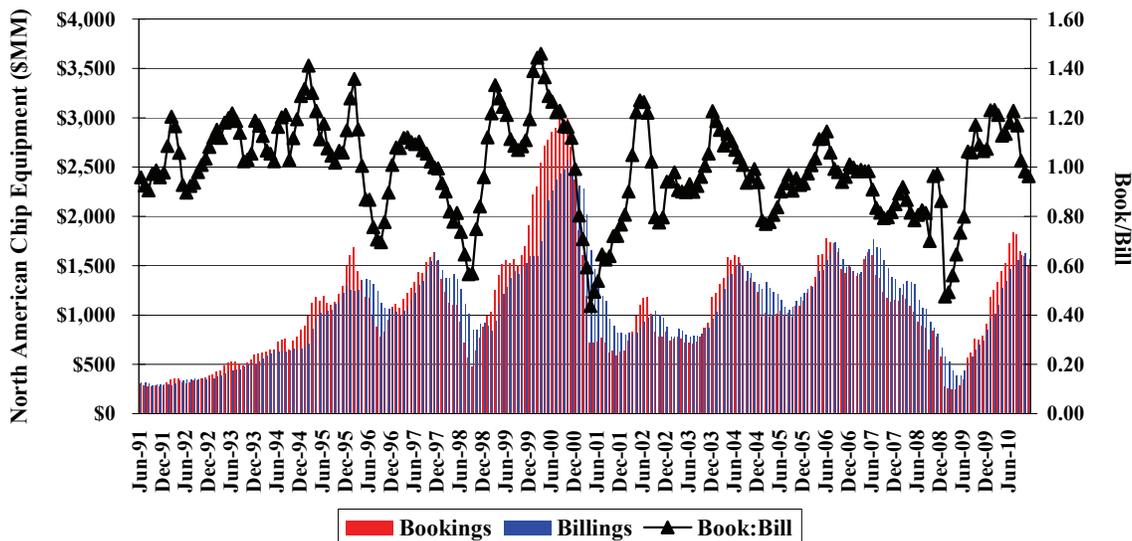
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Our View: Moderating Semiconductor Equipment Demand Is Positive For 2011, In Our View

The North American semiconductor equipment book-to-bill ratio fell to 0.96 in November from 0.98 in October and 1.06 a year ago. November North American semiconductor equipment manufacturer bookings of \$1.51 billion were down 5.9% month-over-month and up 90.6% year-over-year. November North American billings of \$1.57 billion were down 3.4% month-over-month and up 110.7% year-over-year. This is the first month-over-month drop in semiconductor equipment shipments since March 2009 (see figure 1). We think that the softening in chip demand that we have seen over the last few months will likely result in relatively conservative 2011 capital spending plans for many chip companies, muting semiconductor capacity expansion in 2011 even as chip shipments grow. We see this as a very healthy situation, which will likely result in high semiconductor capacity utilization and solid profitability for chip companies through 2011.

Figure 1. North American Semiconductor Equipment Bookings And Billings Data
(Three-Month Rolling Average)



Source: Semiconductor Equipment and Materials Institute, and Wells Fargo Securities, LLC

I on Intel

December 16, 2010. Sandy Bridge processors on sale in Malaysia. PC perspective reported that certain shops in Malaysia have begun selling Intel’s yet to be launched Sandy Bridge Core i5 and Core i7 processors and motherboards.

December 13, 2010. Intel cuts Huron River discounts. DigiTimes reported that Intel is cutting the discounts it is giving on Huron River products in an effort to help it digest its remaining Calpella inventory. The move is expected to cause top tier vendors to push the Calpella parts as their main sales driver for the next three months.

Upcoming Microprocessor Price Cuts And Product Introductions. The following is a list of price cuts and new product introductions that we have seen suggested in press and web articles. Intel and AMD in general, do not publicly announce future pricing plans, though they do sometimes indicate when product introductions are scheduled. In many cases, where price cuts are indicated, we suspect that these are “waterfall” price adjustments in which Intel introduces new products into the upper price points and reduces prices of older products while keeping the overall price range unchanged.

- **Q4 2010.** Intel possibly launching:
 - 2.26GHz Core i7 660LV with 1066MHz DDR3 memory and 4MB cache
 - 3.2 GHz 45nm Pentium E6700 Wolfdale (Penryn) chip for \$100.
 - Intel possibly phasing out Celeron E3200 and Core 2 Quad Q8300.
- **Q4 2010.** AMD possibly launching:
 - Athlon II X2 270u - 25W TDP 2.0GHz dual-core w/ 2MB of cache and DDR3 1333 support
 - Athlon II X4 650 with 95W TDP 3.2GHz frequency

- 2.9GHz single-core Sempron 150 with a Sargas 45nm processor and 1MB cache memory
- Phenom II X4 975 - 3.60GHz
- **Q1 2011.** AMD possibly launching:
 - Ontario and Zacate low cost processors. We expect Ontario and Zacate to launch at the 2011 CES in Q1 although shipments are expected to begin in Q4'10.
 - AMD E-350 2 1.6GHz Radeon HD 6310 80 500MHz 18W
 - E-240 1 1.5GHz Radeon HD 6310 80 500MHz 18W
 - AMD C-50 2 1.0GHz Radeon HD 6250 80 280MHz 9W
 - AMD C-30 1 1.2GHz Radeon HD 6250 80 280MHz 9W
- **Q1 2011.** Intel possibly launching:
 - **January 2011.** Intel possibly launching:
 - First Sandy Bridge products (Sugar Bay desktop platform featuring a quad-core processor, integrated GPU, and P67 chipset-based motherboard, Huron Bay notebook platform, Sandy-Bridge 1-way server products) at the CES trade in early January, building out the product lines through the first quarter.
 - Core i5 2510E – dual core, 2.5GHz, 3MB L3 cache, 35W TDP
 - Core i5 2515E – dual core, 2.5GHz, 3MB L3 cache, 35W TDP, ECC memory support
 - Core i5-2520M - QS67/QM67 chipset, WiDi
 - Core i5-2540M - QS67/QM67 chipset, WiDi
 - Core i5-2530UM - QS67/QM67 chipset, WiDi
 - Core i7 990X - 6-core, 3.46GHz, 130W, 32nm with 12MB of cache
 - Core i7-2610LM - QS67/QM67 chipset, WiDi
 - Core i7-2620M - QS67/QM67 chipset, WiDi
 - Core i7-2620LM - QS67/QM67 chipset, WiDi
 - Core i7-2630UM - QS67/QM67 chipset, WiDi
 - Core i7-2640LM - QS67/QM67 chipset, WiDi
 - Core i7 2655LE – dual core, 25W TDP, ECC memory support
 - Core i7 2610UE – dual core, 17W TDP, ECC memory support
 - Core i7 2710QE – quad core, 2.1GHz, 6MB, 45W TDP
 - Core i7 2715QE – quad core, 2.1GHz, 6MB, 45W TDP, ECC memory support
 - Core i7-2720QM - QS67/QM67 chipset, WiDi
 - Core i7-2820QM - QS67/QM67 chipset, WiDi
 - Core i7-2920XM - QS67/QM67 chipset, WiDi
 - Celeron B801 - entry-level notebook market
 - Xeon E3-1220L - 2.2GHz dual-core, 3MB of L3 cache, 20W TDP
 - Xeon E3-1260L - quad-core, 8MB L3 cache, HD Graphics 100, 45W TDP
 - Xeon E3-1220 - 3.1GHz quad-core, no Hyper Threading, 8MB of L3 cache, 80W TDP
 - Xeon E3-1230 - 3.2GHz, 8MB of L3 cache, 80W TDP
 - Xeon E3-1240 - 3.3GHz, 8MB of L3 cache, 80W TDP
 - Xeon E3-1270 - 3.4GHz, 8MB of L3 cache, 80W TDP
 - Xeon E3-1280 - 3.5GHz, 8MB of L3 cache, 95W TDP
 - Xeon E3-1225 - 3.1GHz quad-core, no Hyper Threading, 6MB L3 cache, HD Graphics 200, 95W TDP
 - Xeon E3-1235 - 3.2GHz, 8MB of L3 cache, HD Graphics 200, 95W TDP
 - Xeon E3-1245 - 3.3GHz, 8MB of L3 cache, HD Graphics 200, 95W TDP
 - Xeon E3-1275 - 3.4GHz, 8MB of L3 cache, HD Graphics 200, 95W TDP
 - **January 9, 2011.** Intel possibly launching:
 - Core i5 2300 – quad-core, 2.8GHz, 6MB L3 cache, 95W TDP, \$177
 - Core i5 2400 – quad-core, 3.1GHz, 6MB L3 cache, 95W TDP, Intel HD Graphics 100, \$184
 - Core i5 2400S – quad-core, 2.5GHz, 6MB L3 cache, 65W TDP, \$195
 - Core i5 2500 – quad-core, 3.3GHz, 6MB L3 cache, 95W TDP, Intel HD Graphics 200, \$205
 - Core i5 2500K - quad-core, 3.3GHz, 6MB L3 cache, 95W TDP, Intel HD Graphics 200, \$216
 - Core i5 2500S – quad-core, 2.7GHz, 6MB L3 cache, 65W TDP, \$216
 - Core i5 2500T – quad-core, 2.3GHz, 6MB L3 cache, 45W TDP \$216
 - Core i7 2600 - quad-core, eight thread, 3.4GHz, 8MB L3 cache, 95W TDP Intel HD Graphics 200, \$294
 - Core i7 2600K - quad-core, eight thread, 3.4GHz, 8MB L3 cache, 95W TDP unlocked, Intel HD Graphics 200, \$317

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- Core i7 2600S – quad-core, eight thread, 2.8GHz, 8MB L3 cache, 65W TDP, \$306
 - **February 20, 2011.** Intel possibly launching:
 - Core i3 2100 – dual-core, 3.1GHz, 3MB L3 cache, 65W TDP, Intel HD Graphics 100, \$117
 - Core i3 2100T - dual-core, 2.5GHz, 3MB L3 cache, 35W TDP for all-in-ones, \$127
 - Core i3 2120 - dual-core, 3.3GHz, 3MB L3 cache, 65W TDP, Intel HD Graphics 100, \$138
 - Core i5 2390T – dual-core, 2.7GHz, 3MB L3 cache, 35W TDP, \$195
 - **February 27, 2011.** Intel possibly launching:
 - Pentium G620T – dual core, 2.2GHz, 3MB L3 cache, 35W TDP, \$70
- **Q2 2011.** Intel possibly launching:
 - Westmere-EX family for 4-way servers
 - Pentium G620 – dual core, 2.6GHz, 3MB L3 cache, 65W TDP, \$64
 - Pentium G840 – dual core, 2.8GHz, 3MB L3 cache, 65W TDP, \$75
 - Pentium G850 – dual core, 2.9GHz, 3MB L3 cache, 65W TDP, \$86
- **Q2/Q3 2011.** AMD possibly launching:
 - AMD Llano Fusion. 7 chips - Beavercreek quad-core and triple-core, Winterpark dual-core, Hudson southbridge chipset.
 - 32nm 95W 8-core Zambezi processors with 8MB of L3 cache and turbo
 - 32nm 125W 8-core Zambezi processors with 8MB of L3 cache and turbo
 - 32nm 95W 4-core Zambezi processors with 4MB of L3 cache and turbo
 - 32nm 95W 6-core Zambezi processors with 8MB L3 cache and turbo
- **Q3 2011.** Intel possibly launching:
 - Dual core Sandy Bridge Celeron processors
- **Q4 2011.** Intel possibly launching:
 - Cedar Trail Atom – Cedarview-D platform
- **H2 2011.** AMD possibly launching:
 - Next generation server chips (Interlagos and Valencia) with Bulldozer core, having sampled these products in H2 2010.
 - Next generation desktop chips (Zambezi) with Bulldozer core, having sampled these products in H2 2010. Zambezi does not have integrated graphics. The product, with integrated graphics, is also scheduled for a 2011 launch but we believe that this could be in H2 2011.
- **H2 2011.** Intel possibly launching:
 - Sandy Bridge family for 2-way servers
- **H1 2012.** Intel possibly launching:
 - Chief River – 22nm Ivy Bridge w/ USB 3.0

Data Roundup

November 2010 Industrial Production--US High Technology Production Up Slightly In November. The Federal Reserve released US Industrial Production (IP) data for November. Month-over-month, aggregate high tech industrial production increased 0.9%, and aggregate total industrial production increased 0.4%. Year-over-year the high tech aggregate increased 10.6%, and the overall aggregate increased 5.9%. Please see Table 1 below. This is a little better than we expected, and we think indicates stability in technology end market demand, which has positive implications for semiconductor growth in 2011. Within the high tech aggregate, the semiconductor sub-segment increased 0.8% month-over-month in November after having declined 1.7% in October and having declined 1.4% in September. The communications sub-segment increased 0.7% month-over-month in November after having increased 0.5% in October and having increased 0.5% in September. The computer and peripheral sub-segment increased 1% month-over-month in November after having increased 1% in October and having increased 1.2% in September. Year-over-year, production in November increased 10.6% for the Semiconductor related sub-segment, increased 11.7% for the communications sub-segment and increased 9.6% for the computer and peripheral sub-segment. Month-over-month capacity utilization was flattish at 71.7% in November for the high technology aggregate. For the computer and peripheral sub-segment utilization increased to 81% from 80.9% in October, while semiconductor and related utilization was flattish at 65.4% and communications equipment utilization was flattish at 80.2%. For additional details, please see our note dated December 15.

Table 1: Industrial Production—Selected High-Tech Aggregate & Sub-Segments									
	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10
High-Tech Agg.	112.4	115.1	116.5	116.7	117.6	118.3	117.9	117.2	118.2
MoM % Chg	1.1%	2.4%	1.2%	0.2%	0.8%	0.6%	-0.3%	-0.6%	0.9%
YoY % Chg	20.7%	20.1%	21.5%	20.9%	20.4%	17.3%	14.5%	11.1%	10.6%
Comp & Off Equip.	103.2	104.1	105.8	107.7	110.6	112.6	114.0	115.1	116.2
MoM % Chg	-0.9%	0.8%	1.7%	1.7%	2.7%	1.8%	1.2%	1.0%	1.0%
YoY % Chg	7.2%	11.9%	13.8%	18.6%	22.5%	22.7%	19.3%	13.9%	9.6%
Comm Equip.	101.5	106.6	109.7	111.0	110.1	110.1	110.6	111.1	111.9
MoM % Chg	-0.3%	5.0%	2.9%	1.2%	-0.8%	0.0%	0.5%	0.5%	0.7%
YoY % Chg	17.7%	16.8%	20.2%	15.4%	11.7%	11.4%	12.1%	12.1%	11.7%
Semis & Related	122.3	124.6	124.9	123.7	124.7	125.0	123.3	121.2	122.2
MoM % Chg	2.5%	1.9%	0.2%	-1.0%	0.8%	0.2%	-1.4%	-1.7%	0.8%
YoY % Chg	28.8%	25.3%	25.6%	24.8%	24.1%	17.9%	13.5%	9.5%	10.6%

Source: Federal Reserve Industrial Production Release, Wells Fargo Securities, LLC

Memory Pricing. DDR3 prices were flat to down last week while NAND prices were flat (see Figure 2). The spot price for a 1Gb DDR3 chip was \$1.16, flat with the prior week. The spot price of a 2Gb DDR3 chip was \$1.95, down \$0.08 from \$2.03 in the prior week. The 32Gb NAND spot price was \$5.81, flat with the prior week.

Figure 2: Memory Chip Prices

Date	1Gb DDR3		2Gb DDR3		32Gb NAND MLC	
	Spot	Contract	Spot	Contract	Spot	Contract
12/17/10	\$1.16		\$1.95		\$5.81	
12/10/10	\$1.16	\$1.09	\$2.03		\$5.81	\$5.22
12/03/10	\$1.20		\$2.09		\$5.46	
11/26/10	\$1.32	\$1.22	\$2.30		\$5.22	\$4.98
11/19/10	\$1.34		\$2.40		\$4.85	
11/12/10	\$1.41	\$1.41	\$2.55		\$4.87	\$4.93
11/05/10	\$1.62		\$2.80		\$4.86	
10/29/10	\$1.79	\$1.53	\$3.26		\$4.95	\$5.17
10/22/10	\$1.90		\$3.83		\$5.35	
10/15/10	\$1.96	\$1.81	\$3.87		\$5.72	\$5.23
10/08/10	\$2.03		\$3.89		\$5.87	
10/01/10	\$2.04	\$1.97	\$4.09		\$6.19	\$5.27
09/24/10	\$2.08		\$4.20		\$6.28	
09/17/10	\$2.10	\$2.09	\$4.26		\$6.32	\$5.57
09/10/10	\$2.24		\$4.49		\$6.42	
09/03/10	\$2.32	\$2.34	\$4.72		\$6.43	\$5.92
08/27/10	\$2.36				\$6.76	
08/20/10	\$2.45				\$6.99	
08/13/10	\$2.49	\$2.47			\$7.02	\$6.44
08/06/10	\$2.42				\$7.29	
07/30/10	\$2.42	\$2.56			\$7.35	\$6.44
07/23/10	\$2.50				\$7.04	
07/16/10	\$2.56				\$7.05	
07/09/10	\$2.57	\$2.56			\$6.98	\$6.58
07/02/10	\$2.49				\$6.98	
06/25/10	\$2.58				\$7.03	
06/18/10	\$2.59	\$2.63			\$7.11	\$6.67
06/11/10	\$2.60				\$7.18	
06/04/10	\$2.63	\$2.69			\$7.14	\$7.07
05/28/10	\$2.59				\$7.19	
05/21/10	\$2.78	\$2.72			\$7.22	\$7.29

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Figure 2: Memory Chip Prices (continued)

Date	1Gb DDR3		2Gb DDR3		32Gb NAND MLC	
	Spot	Contract	Spot	Contract	Spot	Contract
05/14/10	\$2.85				\$7.32	
05/07/10	\$2.91	\$2.72			\$7.36	\$7.29
04/30/10	\$2.92				\$7.42	
04/23/10	\$2.99				\$7.50	
04/16/10	\$3.03	\$2.69			\$7.59	\$7.42
04/09/10	\$3.01				\$7.68	
04/02/10	\$3.04	\$2.69			\$7.55	\$7.54

Source: DRAMeXchange, Wells Fargo Securities, LLC

Date	DDR3	NAND
H1 Dec 10	Down 5%	Down 2%
H2 Nov 10	Down 5-10%	
H1 Nov 10	Down 6-8%	Down 2%
H2 Oct 10	Down 5-6%	
H1 Oct 10	Down 2-4%	Down 1-2%
H2 Sept 10	Down 2-4%	
H1 Sept 10	Down 3-4%	Down 2%
H2 Aug 10	Down 2%	
H1 Aug 10	Down 2-4%	Down 2-4%
H2 Jul 10	Down 2%	Down 1-2%
H1 Jul 10	Flat	Flat
H2 Jun 10	Flat	
H1 Jun 10	Flat	Down 2%
H2 May 10	Up 2%	
H1 May 10	Up 3%	Flat
H2 Apr 10	Up 2-5%	
H1 Apr 10	Up 4-6%	Flat
H2 Mar 10	Up 1-3%	
H1 Mar 10	Flat to up	Flat
H2 Feb 10	Up 2-5%	
H1 Feb 10	Down Slightly	Up 2%
H2 Jan 10	Up 2%	
H1 Jan 10	Flat to Down	Down 4-5%
H2 Dec 09	Flat	
H1 Dec 09	Up 5%	Down 5%

* The NAND changes are not really "contract" prices but rather our estimate of how Micron's average selling price may have changed.

Source: Micron and Wells Fargo Securities, LLC estimates

Other News Items:

December 17, 2010. MediaTek/MStar TV chips in emerging markets. According to a *DigiTimes* article, MediaTek has strengthened its penetration of chips for high end connected and 3D TVs in emerging markets. This has placed pressure on MStar Semiconductor. MediaTek's TV chips target models that are 42 inches and above in the emerging markets from high end to entry level TVs.

December 17, 2010. Windbond set to lower capex for 2011 and 2012. According to a *DigiTimes* article, Winbond Electronics is expected to spend NT\$2.9 billion in capex for 2011 and NT\$936 million in 2012. Capital expenditure levels for the next two years will likely be allocated to process technology transitions, including the migration from 65nm to 46nm for DRAM and the 90nm to 58nm transition for NOR flash chips in 2011.

December 17, 2010. MSI expected to debut 10 inch Wintel based tablet PCs early next year. According to a *DigiTimes* article, MSI plans to introduce its first 10 inch Wintel based tablet PC in January or February 2011 prior to introducing ARM based models in April or May. The ARM based models are supported by Nvidia's Tegra 2 processor and support Android 3.0. At CES, MSI will feature tablet PCs based on Intel's Oak Trail platform. In addition, MSI will display Intel Huron River based notebooks and a notebook based on AMD's Fusion E-350 APU.

December 17, 2010. Micron NAND fab expected to ramp in Q2 2011. DigiTimes reported that a Micron NAND fab in Singapore is scheduled to begin production in Q2 2011. The facility was initially expected to ramp in H2 2008. Micron is targeting a capacity of 100,000 wafers per month at the new facility.

December 17, 2010. Worldwide semiconductor sales numbers from iSuppli. DigiTimes reported iSuppli estimates worldwide semiconductor sales will likely amount to \$304 billion in 2010, representing 32.5% year-over-year growth. Within the semiconductor market, the automotive segment is predicted to see the most growth with a 41.1% growth rate. The data processing segment is expected to see 36.7% growth and the wireless segment is expected to see 24.4% growth. In 2011 iSuppli predicts the semiconductor market will see additional annual growth of 5%.

December 16, 2010. AMD launches Radeon HD 6900 graphics card. AMD announced the launch of its HD 6900 series graphics. This features a second generation Microsoft Direct X 11 architecture, AMD Power Tune power management technology, Eyefinity multi-display technology, HD3D technology for 3D entertainment, 2GB video memory and dual tessellation units, and is available from retailers immediately starting at \$299.

December 16, 2010. Research In Motion reports November quarter results. Research In Motion reported November quarter sales of \$5.49 billion (+19% sequentially and +40% yr/yr) on shipment of 14.2 million devices (+17% sequentially and +40% yr/yr) at an ASP of \$315 during the quarter. Channel inventory increased on an absolute level and on a weeks basis on timing of shipments during the quarter. For the February quarter, Research in Motion guided to \$5.5-\$5.7 billion in sales (midpoint=+2% sequentially) and shipments of 14.5-15.5 million units (midpoint= +5.6% sequentially).

December 16, 2010. Asustek announces 2011 shipment goals. According to a *DigiTimes* article, Asustek outlined its shipment targets for 2011. Asustek expects to ship 22.7 million motherboards (up from 21.6 million units in 2010, 14 million notebooks (up from 10.9 million units in 2009) and six million Eee PCs (up from 5.4 million units). Sales are expected to reach \$NT380 billion (+19% yr/yr). Gigabyte expects to ship 20 million motherboards in 2011 compared to 18 million motherboard units in 2010.

December 16, 2010. HTC's November Sales reach new high. According to *Taiwan Economic News*, HTC's month of November sales reached a new historic high of NT\$38.48 billion (+19% month to month and +168% yr/yr), which was ahead of initial expectations. HTC issued December quarter sales guidance of NT\$100 billion. Much of the recent growth has been driven by the introduction of new products including the Android Desire HD and Desire Z and five new models of Windows WP7 smartphones.

December 16, 2010. AMD eBrazos to launch in Q1 2011. Fudzilla reported that AMD is planning to launch its dual core 9W TDP G-Series eBrazos APU for the embedded market on January 19, 2011.

December 16, 2010. AMD and Intel maintain market share in Q3. DigiTimes reported that Intel and AMD managed to essentially maintain their worldwide revenue market shares in the September quarter based on iSuppli data. According to iSuppli Intel's market share of 80.1% declined 0.3% sequentially and AMD's market share of 11.3% declined 0.2% sequentially.

December 15, 2010. Cheng Uei's November sales reach new high. According to *Taiwan Economic News*, Cheng Uei's month of November sales reached a historic high of NT\$6.58 billion (+6% month to month and 56% yr/yr) on expanding orders from Apple and Microsoft. The Taiwanese electronic component manufacturer supplies Apple earphones and battery chargers and micro projectors.

December 15, 2010. Foundries to increase headcount in 2011. DigiTimes reported that TSMC is expected to hire 3,000 new employees in 2011 for its Taiwanese operations and UMC is expected to hire an additional 2,000 employees. At the end of 2010 headcounts at TSMC and UMC are expected to be at 36,000 and 15,000 respectively. In 2010 UMC hired 3,000 employees; TSMC hired 3,000 employees and converted 2,000 part-time employees to full-time.

December 15, 2010. Rising Taiwanese dollar to hurt DRAM profits. DigiTimes reported that each dollar of appreciation in the NT dollar is expected to erode total profits at Taiwanese DRAM makers by NT\$50 million to NT\$60 million.

December 15, 2010. Details on notebook shipments. DigiTimes reported that notebook shipments at the top five manufacturers are expected to decline 1.6-17% sequentially in the March quarter to 40.2-40.5 million units, while shipments at the top six manufacturers are expected to increase 1-2% sequentially to 44.8-45.1 million units. The difference between the rates in the two figures comes as a result of Foxconn (the 6th

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largest manufacturer) increasing its shipments from 3-3.3 million units in the December quarter to 4-4.2 million units in the March quarter, partially as a result of having secured HP orders from Quanta.

December 14, 2010. Nvidia seeing tablet market strength. DigiTimes reported that Nvidia's Tegra 2 processor is expected to see usage in Acer, Asustek, Toshiba and Samsung tablet models and could come to account for 50% of ARM based tablet shipments in 2011.

December 14, 2010. Best Buy reports November quarter results. Best Buy reported November quarter sales of \$11.89 billion (+5% sequentially and down 1% yr/yr). The domestic segment's comparable store sales fell 5% (versus expectations of flat to modest growth) due to weaker industry demand in key categories (low double-digit comparable store sales decline in TVs and entertainment hardware and software) and changes in market share. The decline in TVs was due to a low double-digit unit sale decline and a mid-single digit price decline. Offsetting these declines were mobile phones improving low double digits on a comparable store sales basis (due to strong demand for smartphones) and a mid single digit increase in mobile computing driven by tablet PC strength. The notebook market was weaker-than-expected and Best Buy estimates notebooks fell on a year over year basis.

December 14, 2010. Rexchip reduces capex spending level for 2011. According to a *DigiTimes* article, DRAM manufacturer Rexchip Electronics plans to lower its capex level for 2011 to NT\$4 billion (compared to NT\$12.8 billion in 2010).

December 14, 2010. Tier 2 notebook manufacturers see orders return. According to a *DigiTimes* article, Taiwanese second tier notebook manufacturers recently noticed the return of some orders from prior clients as China white box notebook makers turned to manufacturing tablet PCs. Manufacturers including Clevo and ECS have reportedly benefited. ECS shipped roughly 760,000 notebooks in the September quarter (+25% sequentially) and shipments in the December quarter are expected to remain flattish.

December 14, 2010. Broadcom Gie business update. In a presentation at its analysts' day, Broadcom provided an update of December quarter expectations. Revenue for the December quarter is now expected to be about \$1.9 billion. Product gross margin is now expected to be down slightly sequentially due to warranty and excess and obsolete charges. This guidance excludes inventory adjustment charges related to Q4 acquisitions. R&D plus SG&A expenses are estimated to be up \$20-30 million on a GAAP basis, unchanged from original guidance. However this guidance excludes about \$25 million associated with acquisition and stock plan charges. The upside in revenue was driven by stronger-than-expected demand for Broadcom's mobile and wireless products. Broadcom continues to expect that infrastructure and networking revenues will likely be flat sequentially and Broadband communications revenues should be flat to up sequentially. Product gross margin is now expected to be down slightly sequentially due to warranty and excess and obsolete charges. This compares with original guidance for product gross margin to be flat sequentially. This guidance excludes inventory adjustment charges and amortization related to Q4 acquisitions. For additional details, please see our note dated December 14.

Running List Of Mid Quarter Updates:

December 14, 2010. Broadcom raised December quarter guidance. Revenue for the December quarter is now expected to be about \$1.9 billion, at the top end of original guidance for revenues to be \$1.8-1.9 billion. The upside in revenue was driven by stronger-than-expected demand for Broadcom's mobile and wireless products.

December 9, 2010. Diodes maintained December quarter guidance. Diodes maintained its revenue guidance of \$160-168 million (down 2% to up 3% sequentially).

December 9, 2010. Lattice Semiconductor maintained its December quarter guidance. Lattice Semiconductor maintained its December quarter sales guidance of down 2% to 7% sequentially.

December 9, 2010. ASML lifts December quarter bookings guidance. ASML increased its December quarter order forecast with December quarter bookings expected to reach above EUR 2 billion, up 54% sequentially (versus prior expectations of EUR 1.3 billion, flat sequentially).

December 7, 2010. Texas Instruments reaffirmed guidance midpoint. Texas Instruments narrowed its guidance for the December quarter to a decline of 5-8%, maintaining its guidance midpoint and also the midpoint of its EPS guidance.

November 29, 2010. Altera reaffirmed guidance. The company reaffirmed its previous December quarter guidance for sales growth of 3-6%.

Upcoming Events:

December 22, 2010. Micron reports November quarter results. At its August quarter earnings report in early October, Micron expects DRAM bit production to increase in the mid single digit percent. NAND bit production is expected to be up by a mid-to-high-teen digit percent while NAND production costs are expected to be down. The company expects to sell a large amount of its current NAND inventory in the coming quarter. Micron said that it expects DRAM bit demand growth in the calendar December quarter will likely be in the mid-teens percent range. We are forecasting November quarter sales of \$2.35 billion (down 6% sequentially), having lowered our estimates in late November due to declining memory pricing.

December 23, 2010. November high tech durable goods shipments. We are hopeful that technology-related durable goods numbers will show signs of stabilization (though probably not much strength) in November. Shipments were down 2% month-over-month in October for the computers and electronics aggregate, with communications equipment down 3% month-over-month and the computer and related products down 2.7% month-over-month. Year over year shipments were up 14% for the computers and electronics aggregate driven by 28% year-over-year growth for computers and related products, with communications equipment down 10.7% year-over-year. Orders declined 7.7% month-over-month for the computer and electronics aggregate in October, with computers and related products down 6.8% and communications equipment down 12.3%.

Stocks We Cover/Dividend Monitor:

Company Name	Ticker	Closing Price (Dec. 17)	Annual Dividend	Annualized Dividend Yield	Rating
Altera	ALTR	\$36.61	\$0.24	0.7%	Outperform
Advanced Micro Devices	AMD	\$8.07	-	-	Market Perform
Analog Devices	ADI	\$37.49	\$0.88	2.3%	Outperform
Broadcom	BRCM	\$43.82	\$0.32	0.7%	Market Perform
Intel	INTC	\$21.46	\$0.72	3.4%	Outperform
Linear Technology	LLTC	\$34.92	\$0.92	2.6%	Outperform
Maxim Integrated Products	MXIM	\$23.83	\$0.84	3.5%	Market Perform
Micron Technology	MU	\$8.21	-	-	Outperform
Microsemi	MSCC	\$23.59	-	-	Outperform
Qualcomm	QCOM	\$49.46	\$0.76	1.5%	Outperform
Texas Instruments	TXN	\$32.53	\$0.52	1.6%	Market Perform
Xilinx	XLNX	\$28.21	\$0.64	2.3%	Outperform

Source: FactSet, Wells Fargo Securities, LLC

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ADI: Company-specific risks include gross margin pressures and the possibility that ADI might find it does not have sufficient scale to compete effectively in the DSP market. Sector risks include inventory risk and pricing pressures.

ALTR: Company-specific risks include inventory risk and competition, chiefly from Xilinx. Sector risks include possible slowing in end-market demand, especially in communications.

AMD: Company-specific risks include the possibility of market-share losses, a potential inability to keep pace with Intel on microprocessor innovation, potential delays in manufacturing transitions or new product introductions, and a weak balance sheet. Sector risks include the likelihood of decelerating PC growth in the current economic environment.

BRCM: Company-specific risks include low GAAP operating margin, low GAAP tax rate, the possibility that Broadcom might show a slowing of growth in the future, and the possibility Broadcom might make large, dilutive acquisitions in the future. Sector risks include our belief that some of Broadcom's end markets have relatively low growth prospects.

INTC: Company-specific risks include competition from Advanced Micro Devices (AMD), and outstanding legal actions. Sector risks include the possibility of decelerating growth in PC shipments.

LLTC: Company-specific risks include the possibility Linear may face a margin/growth trade-off in the future. Sector risks include cycle and inventory risk.

MSCC: Company-specific risks include a high concentration of revenue in the defense/aerospace and medical markets, and a highly competitive environment in various integrated circuit segments. Sector risks include potential slowing in the semiconductor cycle.

MU: Risks include highly volatile pricing for DRAM and NAND flash, the need for relatively high levels of capital investment, and large swings in Micron's profitability that have occurred in the past and which we think are likely in the future.

MXIM: Company-specific risks include the possibility Maxim may not be able to effectively balance both healthy margins and growth in the future, and that its high proportion of consumer-related revenue could lead to revenue fluctuations. Sector risks include semiconductor cycle and inventory risks.

QCOM: Company-specific risks include legal and licensing disputes, and technology transitions that could impact Qualcomm's royalty rate. Sector risks include pricing pressures and slowing growth in the handset market.

TXN: Company-specific risks include TI's ongoing exit from the wireless baseband business and a number of other segments of TI which we consider to have the risk of declining sales or low growth. Sector risks include the possibility of disruptions in the semiconductor market, including inventory corrections, slowing growth, and pricing pressures.

XLNX: Company-specific risks include inventory risk and competition, chiefly from Altera. Sector risks include possible slowing in end-market demand, especially in communications.

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3=Underperform: The stock appears overvalued, and we believe the stock's total return will be below the market over the next 12 months. SELL

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