

Microchip Technology, Inc. (MCHP)

Overweight

MCHP Data Points Following Management Meetings

CONCLUSION

We recently hosted investor meetings with management from Microchip. Overall, we walked away believing the company is executing very well in the current environment. While the market remains murky due to general uncertainty, management noted distributor inventory levels are at or near the bottom. As a result, management reiterated its call that the March quarter represented the bottom for its semiconductor revenue, with small levels of growth moving forward. It would take macro or trade policy improvements for significant changes from current levels. In addition, Microchip remains focused on using its excess free cash flow to pay down debt. Overall, while macro uncertainty continues to weigh on the stock, we like the set-up from here. If we were to reach stability in the macro/trade landscape, we feel Microchip would likely outperform other semiconductor companies from an operating margin leverage perspective. We reiterate our Overweight rating.

- **Current Environment Is Murky:** Management noted throughout our meetings that the current environment is relatively murky, as most parties are operating on a “tweet-based” narrative. With the cautious environment, customers do not want to start a program or take on inventory. On a broader scale, management noted the weaker automotive market is hurting the German economy, and Brexit uncertainty is creating a weaker environment in Europe. On the other hand, Asia has bounced back a bit lately, and in the September quarter, Asia is likely to be the strongest region again. Europe is likely to be the weakest market in the September quarter, and the company has included this environment as a part of its guidance. Management noted the automotive and industrial markets are the softest, while defense is doing relatively better. Overall, the company sees the worst being behind them, and right now, Microchip is more or less bumping along the bottom.
- **Inventory Levels Near Lows:** At the end of the June quarter, inventory at distributors was 32 days, down from 35 days at the end of the March quarter. Over the last 10 years, distribution inventory days has ranged from 27 to 47, and from current levels, management does not really see it going much lower based on backlog levels and short lead times. Microchip views distributors as an important element of its sales process as it serves roughly 6,000 to 7,000 directly and the remaining ~120,000 customers are served through distribution. In addition, similar to other semi companies, Microchip compensates its distributors more on demand creation than on fulfillment margins. Specifically, management noted that sell-through in the June quarter was \$27 million higher than sell-in. Even without a trade deal, Microchip still feels like it can grow at low levels driven by end market demand rather than a function of inventory clearing through the channel.

RISKS TO ACHIEVEMENT OF PT & RECOMMENDATION

Industry cyclicality, inventory management, customer concentration, technological improvement, and macroeconomic risk.

COMPANY DESCRIPTION

Microchip is a semiconductor company focused on MCUs, analog, and memory.

PRICE: US\$90.05

TARGET: US\$110.00

~17x CY20E EPS of \$6.49

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Changes	Previous	Current
Rating	—	Overweight
Price Tgt	—	US\$110.00
FY20E Rev (mil)	—	US\$5,445.3
FY21E Rev (mil)	—	US\$5,845.4
FY20E EPS	—	US\$5.81
FY21E EPS	—	US\$6.71
52-Week High / Low	US\$101.35 / US\$60.70	
Shares Out (mil)	253.9	
Market Cap. (mil)	US\$22,863.7	
Total Assets (\$mil)	18,246	
Avg Daily Vol (000)	2,407	
Book Value/Share	US\$20.83	
Net Cash Per Share	US\$(32.59)	
Debt to Total Capital	62.2%	
Div (ann)	US\$1.45	
Yield	1.61%	
Fiscal Year End	Mar	

Price Performance - 1 Year



Source: Bloomberg

YEAR	REVENUE (US\$ m)								EARNINGS PER SHARE (US\$)							
	Jun	Sep	Dec	Mar	FY	CY	FY RM	CY RM	Jun	Sep	Dec	Mar	FY	CY	FY P/E	CY P/E
2019A	1,216.8A	1,513.3A	1,416.0A	1,329.8A	5,475.8A	5,378.2E	4.2x	4.3x	1.61A	1.81A	1.66A	1.48A	6.55A	5.78E	13.7x	15.6x
2020E	1,322.6A	1,358.8	1,367.1	1,396.8	5,445.3	5,759.2	4.2x	4.0x	1.41A	1.44	1.45	1.51	5.81	6.49	15.5x	13.9x
2021E	1,433.6	1,473.9	1,454.8	1,483.1	5,845.4	—	3.9x	NA	1.61	1.72	1.65	1.73	6.71	—	13.4x	

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- **Debt Levels Remain a Key Issue:** In order to fund the Microsemi acquisition, Microchip issued roughly \$5 billion of new debt and used roughly \$3 billion from its existing line of credit. The combined effective interest rate at the time of borrowing was just over 4%. As of the June quarter, the net debt ratio was 4.6x, and Microchip has paid down \$1.4 billion of gross debt over the last 12 months. Management reiterated that nearly all of its free cash flow after dividends is going to pay down debt.
- **Update on Microsemi Synergies:** Management believes there are four synergy categories as it relates to Microsemi integration: revenue, gross margin, operating expenses, and taxes. Microchip believes it is running ahead on its tax and operating expense synergies to-date, as both have been internally driven and not necessarily macro-driven. However, management believes its revenue and gross margin synergy opportunities have been challenging, as the macro-environment has provided a headwind. Finally, Microchip sees the remaining cost synergies taking roughly another year, as it continues to combine Microsemi's ~21 ERP systems into Microchip's systems and bring back-end operations in-house.
- **Long-Term Gross Margin Target:** In the June quarter, Microchip delivered non-GAAP gross margins of 62%, which is 100 basis points below its long-term target of 63%. The company also had a \$7.3 million underutilization charge in the quarter, representing a roughly 50 basis point headwind. Management has done an excellent job executing in the current environment, as gross margins had declined 400 to 600 basis points in the previous cycle. We note that pricing has been benign for the last few years, as current players primarily do not compete on pricing today. During the meetings, investors viewed the long-term goal of 63% as highly achievable, as the company is very close to the target today in a down cycle. Management mentioned 1) it would first like to achieve the goal and 2) given its acquisitive nature long term, margins tend to drift down when an acquisition is made.
- **Still Opportunity for Future Acquisitions:** Management noted that they still see opportunities for future acquisitions once Microsemi is fully integrated and debt ratios are at more normal levels. However, management specifically highlighted that the company is still far away from another acquisition, and a future acquisition does not need to be large, as it could be more IP-based. Management does not see any large holes in its portfolio today, as it has a strong position in the microcontroller market and views its connectivity assets positively. We think a future acquisition being in the analog market is more likely, as it currently only has 2% market share of the analog market and does not view memory/licensing as strategic assets.
- **Manufacturing Update:** The company does not believe it needs a 300mm facility, or anything leading-edge, in order to run its business. Microchip has two 8-inch fabs and one 6-inch fab, and with a 12-inch facility, management believes it would have excess product. Last quarter, ~45% of assembly requirements were performed in-house, while ~54% of test requirements were performed in house. These metrics compare to 39% and 52% respectively in the June 2018 quarter, with the increase driven by its recent investments in back-end facilities. In order to push forward to its long-term margin targets, management expects assembly to approach 60% in-house and test to approach 70% in-house. To enhance cash flows, Microchip has recently tightened up capital expenditure requirements given the current environment, where each incremental equipment capital expenditure now requires a 1 year payback period instead of a 2 year return. Once the company reaches its targets, management expects to loosen up on capital expenditure levels.

- **China, Huawei, and Tariffs:** As a reminder, Microchip typically sees changes in the broader environment earlier than other companies do given its customer base. Microchip also has the only non-commissioned sales force in the industry, which makes them less prone to stuffing the channel. Microchip ships roughly 23% of revenue into China today, but we note the ship-in amount does not represent what is consumed in the country.

Huawei only represents roughly 1%-2% of total company revenue, and in mid-May, Microchip completely stopped shipping to this customer. However, the company has resumed shipments to Huawei, but some products cannot be sold because they are made in the US. Management also noted that Huawei quite often could not take additional product because the entire bill of materials is not complete.

Following the 10% tariffs recently being pushed back to December, management has not seen any material changes in the environment. From a product perspective, this round of tariffs does not particularly affect Microchip.

- **MCU Business Dynamics:** Microchip is the third largest MCU supplier in the world today, behind Renesas and NXP. The 32-bit market is the fastest growing, while the 8-bit market is flattish. 16-bit is somewhat growth-oriented. The company is not the leader in 32-bit MCUs, as it got into the market later than other players did. However, Microchip is the only significant 8-bit supplier making research investments in the 8-bit market. Microchip is the fastest growing MCU company across all three categories. The company also has a common platform for supporting MCU programming, which spans across the Atmel products as well.

Within the MCU landscape, there is not much gross margin difference between 8, 16, and 32-bit. It does, however, depend on how long the product has been around, as pricing is stable in the market. Generally, the ASPs are higher for more bits. Once a design is won, a company is locked in, as it takes significant effort to redesign. It is important to note the MCU market is very slow moving, with over 120,000 customers across the globe.

- **FPGA Nearly ~\$100 Million Per Quarter:** In the most recent quarter, Microchip's FPGA business represented nearly \$100 million of revenue. The company's FPGAs are known for its high reliability and high security levels, as the primary end markets are defense, security, and aerospace. Specifically, the PolarFire family continues to grow strongly, specifically targeting the communication and industrial markets. Microchip mentioned the defense business is extremely difficult to enter, and the Microsemi FPGA portfolio was Microchip's primary entry into the market. Management noted that its products are positioned between Xilinx's and Lattice's products from a competitive perspective.
- **Pricing Environment Remains Benign:** Even in the recent downturn, the pricing environment has remained benign. Microchip has been holding pricing relatively flat with customers recently. In previous down cycles, MCU competitors such as STMicro and Renesas were not as disciplined on pricing, but this time around, both have behaved better on pricing. As a result, the industry is not seeing drastic price declines.
- **Auto Weak In Near-term, But Still Positive Long-Term:** Today, the automotive segment is roughly 18% of total revenue for Microchip. Recently, the market has been weak, driven particularly by the Chinese and European markets. In addition, the trade war and inventory clear-out has also impacted the sector. Despite these recent trends, management continues to be positive on the segment longer-term, as it sees its product portfolio well positioned for the secular growth drivers of ADAS and EV.

- **5G An Emerging Opportunity For Microchip:** While 5G is not expected to be a significant growth driver for the company, it does have some emerging opportunities within its portfolio. Specifically, Microchip can target the antennae, oscillator, timing, optical, Ethernet layer, and standard microcontroller market with its portfolio. In addition, there are emerging opportunities from its FPGA product line.
- **Macro/Trade Tensions Putting a Lid on Chinese CAPEX:** Microchip highlighted the capital investment required by customers in order to move some of its manufacturing out of China and into other regions such as Malaysia. Most customers are compelled to wait it out for certainty before making more investments in China. In addition, almost no customer is looking to add additional reliance on the Chinese supply chain.
- **SiC Update:** Microchip recently introduced SiC 700V MOSFETs and 700V/1200V Schottky Barrier Diodes. The company was able to release its SiC power devices due to its acquisition of Microsemi, which had a background in the emerging technology. Today, Microchip only does 15%-20% of its SiC production in house, and management noted the manufacturing process today is still largely inefficient.
- **Valuation:** At a market price of \$90.05, Microchip trades at 13.9x our calendar 2020 EPS estimate of \$6.49. Microchip trades at a discount to its peer group trading at 16.6x. Our \$110 price target is based on a ~17x P/E multiple of our calendar 2020 non-GAAP EPS estimate. We reiterate our Overweight rating.

Exhibit 1

Valuation Table

8/19/2019		Microchip Corporation (MCHP)									
Ticker	Company Name	Price	Market Cap (USD)(M)	Volume (90D Avg.)	Enterprise Value (M)	2020E EPS	2020E Sales	2020E P/E	2020E EV/Sales	2020E Price/Sales	
CY	Cypress Semiconductor Corporation	\$ 22.95	\$ 8,479.47	9,550	8,884.86	\$ 1.23	\$ 2,328.45	18.6	3.8	3.6	
ADI	Analog Devices, Inc.	\$ 111.17	\$ 40,865.98	2,580	46,534.69	\$ 5.60	\$ 6,285.34	19.9	7.4	6.5	
AVGO	Broadcom Inc.	\$ 278.78	\$ 108,984.70	2,984	147,755.16	\$ 24.27	\$ 24,140.73	11.5	6.1	4.5	
NXPI	NXP Semiconductors NV	\$ 103.46	\$ 29,532.72	3,903	35,226.71	\$ 8.78	\$ 9,371.01	11.8	3.8	3.2	
TXN	Texas Instruments Incorporated	\$ 124.60	\$ 114,667.21	4,954	118,636.46	\$ 5.79	\$ 15,444.36	21.5	7.7	7.4	
							Average:	16.6	5.8	5.0	
MCHP	Microchip Technology Incorporated	\$ 90.05	\$ 21,038.33	2,407	32,087.88	\$ 6.49	\$ 5,759.15	13.9	5.6	3.7	
*2020 estimates are calendar or calendar approximations											

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Source: FactSet and Piper Jaffray estimates

Microchip Technology Inc. (MCHP)

Annual Income Statement

Fiscal Year ends March

(Dollars in thousands)

Harsh Kumar, Senior Analyst

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901-302-1646

8/19/2019

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020E	2021E
Net sales	\$1,487,205	\$1,383,216	\$1,606,371	\$1,931,217	\$2,160,606	\$2,213,835	\$3,501,686	\$3,980,765	\$5,475,836	\$5,445,298	5,845,388
Cost of sales	593,057	578,234	687,769	794,772	889,472	927,055	1,486,230	1,546,866	2,077,521	2,063,568	2,169,905
Gross profit	894,148	804,982	918,602	1,136,445	1,271,134	1,286,780	2,015,456	2,433,899	3,398,315	3,381,730	3,675,483
Operating expenses											
Research & dev.	157,733	167,931	232,528	280,489	321,379	340,574	497,684	\$486,759	\$752,900	\$817,500	\$848,500
SG&A	202,075	189,589	226,566	242,731	249,392	260,786	410,039	405,085	578,600	586,100	614,100
Total operating expenses	359,808	357,520	459,094	523,220	570,771	601,360	907,723	891,844	1,331,500	1,403,600	1,462,600
Operating income	534,340	447,462	459,508	613,225	700,363	685,420	1,107,733	1,542,055	2,066,815	1,978,130	2,212,883
Nonoperating income											
Interest income	(6,891)	(7,445)	(18,179)	(19,232)	(34,320)	(29,698)	(83,301)	(57,409)	(379,000)	(399,100)	(385,000)
Total nonoperating inc, net	(6,891)	(7,445)	(18,179)	(19,232)	(34,320)	(29,698)	(83,301)	(57,409)	(379,000)	(399,100)	(385,000)
Pretax income	527,449	440,017	441,329	593,993	666,043	655,722	1,024,432	1,484,646	1,687,815	1,579,030	1,827,883
Income taxes	65,396	56,277	52,854	63,032	72,108	72,242	87,382	128,950	51,200	86,835	91,394
Net income	462,053	383,740	388,475	530,961	593,935	583,312	937,050	1,355,696	1,636,615	1,492,196	1,736,489
EPS (\$)	\$2.38	\$1.89	\$1.89	\$2.45	\$2.66	\$2.68	\$3.99	\$5.48	\$6.55	\$5.81	\$6.71
Diluted shrs out	194,378	203,134	205,483	216,925	223,270	217,388	234,806	247,499	249,875	256,700	258,918
Growth rates											
Net sales	56.9%	-7.0%	16.1%	20.2%	11.9%	2.5%	58.2%	13.7%	37.6%	-0.6%	7.3%
Gross profit	64.4%	-10.0%	14.1%	23.7%	11.9%	1.2%	56.6%	20.8%	39.6%	-0.5%	8.7%
Operating income	85.9%	-16.3%	2.7%	33.5%	14.2%	-2.1%	61.6%	39.2%	34.0%	-4.3%	11.9%
Net income	88.6%	-16.9%	1.2%	36.7%	11.9%	-1.8%	60.6%	44.7%	20.7%	-8.8%	16.4%
EPS (\$)	81.8%	-20.5%	0.1%	29.5%	8.7%	0.9%	48.7%	37.3%	19.6%	-11.2%	15.4%
Profitability ratios											
Gross margin	60.1%	58.2%	57.2%	58.8%	58.8%	58.1%	57.6%	61.1%	62.1%	62.1%	62.9%
Operating margin	35.9%	32.3%	28.6%	31.8%	32.4%	31.0%	31.6%	38.7%	37.7%	36.3%	37.9%
Nonoperating margin	-0.5%	-0.5%	-1.1%	-1.0%	-1.6%	-1.3%	-2.4%	-1.4%	-6.9%	-7.3%	-6.6%
Pretax margin	35.5%	31.8%	27.5%	30.8%	30.8%	29.6%	29.3%	37.3%	30.8%	29.0%	31.3%
Net margin	31.1%	27.7%	24.2%	27.5%	27.5%	26.3%	26.8%	34.1%	29.9%	27.4%	29.7%
Expense ratios											
Cost of sales	39.9%	41.8%	42.8%	41.2%	41.2%	41.9%	42.4%	38.9%	37.9%	37.9%	37.1%
Research & dev.	10.6%	12.1%	14.5%	14.5%	14.9%	15.4%	14.2%	12.2%	13.7%	15.0%	14.5%
SG&A	13.6%	13.7%	14.1%	12.6%	11.5%	11.8%	11.7%	10.2%	10.6%	10.8%	10.5%
Total operating expenses	24.2%	25.8%	28.6%	27.1%	26.4%	27.2%	25.9%	22.4%	24.3%	25.8%	25.0%
Tax rate	12.4%	12.8%	12.0%	10.6%	10.8%	11.0%	8.5%	8.7%	3.0%	5.5%	5.0%

Current disclosure information for this company is located at <http://www.piperjaffray.com/researchdisclosures>

Microchip Technology Inc. (MCHP)

Quarterly Income Statement

Fiscal Year ends March

(Dollars in thousands)

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901-302-1646

8/19/2019

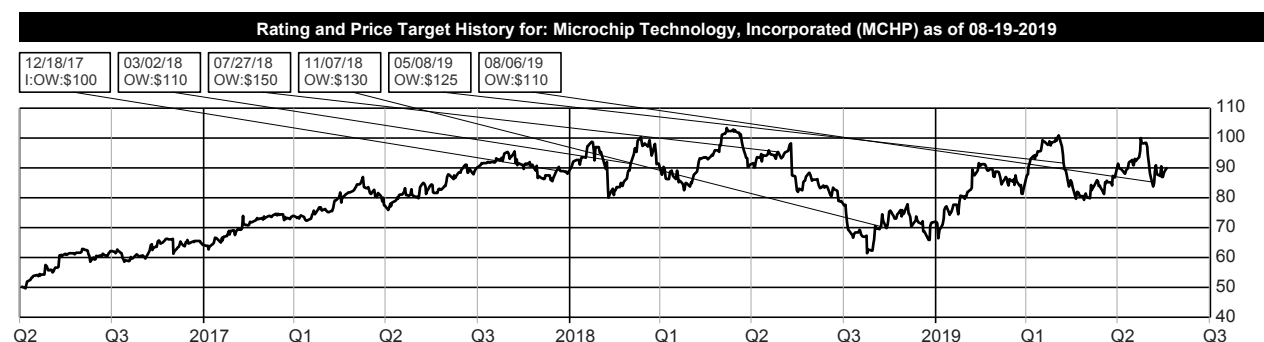
	2018	2019					2020E					2021E				
	YR	1Q	2Q	3Q	4Q	YR	1Q	2QE	3QE	4QE	YRE	1QE	2QE	3QE	4QE	YRE
		Jun-18	Sept-18	Dec-18	Mar-19		Jun-19	Sep-19	Dec-19	Mar-20		Jun-20	Sep-20	Dec-20	Mar-21	
Net sales	\$3,980,765	1,216,759	1,513,278	1,416,021	1,329,778	5,475,836	1,322,600	1,358,789	1,367,082	1,396,827	5,445,298	1,433,584	1,473,906	1,454,833	1,483,065	5,845,388
Cost of sales	1,546,866	460,100	579,600	534,921	502,900	2,077,521	502,500	516,340	518,124	526,604	2,063,568	537,594	545,345	541,198	545,768	2,169,905
Gross profit	2,433,899	756,659	933,678	881,100	826,878	3,398,315	820,100	842,449	848,958	870,223	3,381,730	895,990	928,561	913,635	937,297	3,675,483
Operating expenses																
Research & dev.	\$486,759	\$157,500	\$201,500	\$198,000	\$195,900	\$752,900	\$199,500	\$204,000	\$206,000	\$208,000	\$817,500	\$209,000	\$211,000	\$213,500	\$215,000	\$848,500
SG&A	405,085	125,700	152,900	153,100	146,900	578,600	142,100	146,000	148,000	150,000	586,100	151,500	153,000	154,000	155,600	614,100
Total operating expenses	891,844	283,200	354,400	351,100	\$342,800	1,331,500	341,600	350,000	354,000	\$358,000	1,403,600	360,500	364,000	367,500	\$370,600	1,462,600
Operating income	\$1,542,055	\$473,459	\$579,278	\$530,000	\$484,078	\$2,066,815	\$478,500	\$492,449	\$494,958	\$512,223	\$1,978,130	\$535,490	\$564,561	\$546,135	\$566,697	\$2,212,883
Nonoperating income																
Interest income	(\$57,409)	(\$52,800)	(\$108,100)	(\$109,600)	(\$108,500)	(\$379,000)	(\$100,100)	(\$100,000)	(\$100,000)	(\$99,000)	(\$399,100)	(\$98,000)	(\$97,000)	(\$96,000)	(\$94,000)	(\$385,000)
Total nonoperating inc, net	(57,409)	(52,800)	(108,100)	(109,600)	(108,500)	(379,000)	(100,100)	(100,000)	(100,000)	(99,000)	(399,100)	(98,000)	(97,000)	(96,000)	(94,000)	(385,000)
Pretax income	1,484,646	420,659	471,178	420,400	375,578	1,687,815	378,400	392,449	394,958	413,223	1,579,030	437,490	467,561	450,135	472,697	1,827,883
Income taxes	128,950	14,800	16,500	14,700	5,200	51,200	20,800	21,585	21,723	22,727	86,835	21,875	23,378	22,507	23,635	91,394
Net income	1,355,696	405,859	454,678	405,700	370,378	1,636,615	357,600	370,865	373,235	390,496	1,492,196	415,616	444,182	427,629	449,062	1,736,489
EPS (\$)	\$5.48	\$1.61	\$1.81	\$1.66	\$1.48	\$6.55	\$1.41	\$1.44	\$1.45	\$1.51	\$5.81	\$1.61	\$1.72	\$1.65	\$1.73	\$6.71
Diluted shrs out	247,499	252,200	251,800	244,600	250,900	249,875	253,900	257,000	257,700	258,200	256,700	258,450	258,850	259,050	259,320	258,918
Growth rates																
Net sales	13.7%	25.2%	49.5%	42.4%	32.7%	37.6%	8.7%	-10.2%	-3.5%	5.0%	-0.6%	8.4%	8.5%	6.4%	6.2%	7.3%
Gross profit	20.8%	28.9%	51.1%	44.3%	33.7%	39.6%	8.4%	-9.8%	-3.6%	5.2%	-0.5%	9.3%	10.2%	7.6%	7.7%	8.7%
Operating income	39.2%	30.0%	48.3%	35.3%	22.4%	34.0%	1.1%	-15.0%	-6.6%	5.8%	-4.3%	11.9%	14.6%	10.3%	10.6%	11.9%
Net income	44.7%	27.2%	32.1%	18.9%	5.4%	20.7%	-11.9%	-18.4%	-8.0%	5.4%	-8.8%	16.2%	19.8%	14.6%	15.0%	16.4%
EPS (\$)	37.3%	22.5%	28.4%	21.9%	5.7%	19.6%	-12.5%	-20.1%	-12.7%	2.5%	-11.2%	14.2%	18.9%	14.0%	14.5%	15.4%
Profitability ratios																
Gross margin	61.1%	62.2%	61.7%	62.2%	62.2%	62.1%	62.0%	62.0%	62.1%	62.3%	62.1%	62.5%	63.0%	62.8%	63.2%	62.9%
Operating margin	38.7%	38.9%	38.3%	37.4%	36.4%	37.7%	36.2%	36.2%	36.2%	36.7%	36.3%	37.4%	38.3%	37.5%	38.2%	37.9%
Nonoperating margin	-1.4%	-4.3%	-7.1%	-7.7%	-8.2%	-6.9%	-7.6%	-7.4%	-7.3%	-7.1%	-7.3%	-6.8%	-6.6%	-6.6%	-6.3%	-6.6%
Pretax margin	37.3%	34.6%	31.1%	29.7%	28.2%	30.8%	28.6%	28.9%	28.9%	29.6%	29.0%	30.5%	31.7%	30.9%	31.9%	31.3%
Net margin	34.1%	33.4%	30.0%	28.7%	27.9%	29.9%	27.0%	27.3%	27.3%	28.0%	27.4%	29.0%	30.1%	29.4%	30.3%	29.7%
Expense ratios																
Cost of sales	38.9%	37.8%	38.3%	37.8%	37.8%	37.9%	38.0%	38.0%	37.9%	37.7%	37.9%	37.5%	37.0%	37.2%	36.8%	37.1%
Research & dev.	12.2%	12.9%	13.3%	14.0%	14.7%	13.7%	15.1%	15.0%	15.1%	14.9%	15.0%	14.6%	14.3%	14.7%	14.5%	14.5%
SG&A	10.2%	10.3%	10.1%	10.8%	11.0%	10.6%	10.7%	10.7%	10.8%	10.7%	10.8%	10.6%	10.4%	10.6%	10.5%	10.5%
Total operating expenses	22.4%	23.3%	23.4%	24.8%	25.8%	24.3%	25.8%	25.8%	25.9%	25.6%	25.8%	25.1%	24.7%	25.3%	25.0%	25.0%
Tax rate	8.7%	3.5%	3.5%	3.5%	1.4%	3.0%	5.5%	5.5%	5.5%	5.5%	5.5%	5.0%	5.0%	5.0%	5.0%	5.0%

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	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-19	Mar-19	Jun-19
Assets														
Current assets:														
Cash and equivalents	\$ 1,578,597	\$ 1,344,785	\$ 1,958,869	\$ 2,446,035	\$ 1,302,772	\$ 1,230,246	\$ 1,314,604	\$ 1,099,593	\$ 2,196,600	\$ 649,700	\$ 464,200	\$ 436,200	\$ 430,900	\$ 437,100
Accounts receivable, net	229,955	242,405	273,937	290,183	478,373	528,954	545,416	553,135	563,700	789,400	668,800	544,800	880,600	936,800
Inventories	242,334	262,725	279,456	306,815	417,202	426,843	456,939	487,065	476,200	1,104,800	836,700	702,500	711,700	733,100
Prepaid expenses	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Deferred tax asset	-	-	71,045	-	-	-	-	-	-	-	-	-	-	-
Other current assets	260,396	119,484	81,310	53,680	106,693	112,719	126,463	113,648	119,800	274,500	206,500	194,100	191,600	171,500
Total current assets	2,311,282	1,969,399	2,664,617	3,096,713	2,305,040	2,298,762	2,443,422	2,253,441	3,356,300	2,818,400	2,176,200	1,877,600	2,214,800	2,278,500
Long term investments	257,450	798,712	383,326	118,549	107,457	420,458	529,249	885,392	-	-	-	-	-	-
PPE	514,544	531,967	581,572	609,396	683,338	693,995	722,780	754,780	767,900	1,078,400	1,051,900	1,039,700	996,700	963,900
Other assets	841,962	767,552	1,151,198	1,742,857	4,582,741	4,474,676	4,359,747	4,230,180	4,133,000	15,352,000	15,439,000	15,238,400	15,133,500	15,004,900
Total assets	\$ 3,925,238	\$ 4,067,630	\$ 4,780,713	\$ 5,567,515	\$ 7,678,576	\$ 7,887,891	\$ 8,055,198	\$ 8,123,793	\$ 8,257,200	\$ 19,248,800	\$ 18,667,100	\$ 18,155,700	\$ 18,345,000	\$ 18,246,400
Liabilities and shareholders' equity														
Current liabilities:														
Short term lines of credit	\$ -	\$ 17,500	\$ -	\$ -	\$ 49,952	\$ 11,256	\$ 5,980	\$ -	\$ 1,309,900	\$ 1,329,800	\$ 1,335,000	\$ -	\$ 1,360,800	\$ 1,373,900
Accounts payable	\$ 202,659	\$ 170,781	\$ 187,844	\$ 198,577	\$ 361,683	\$ 416,390	\$ 403,843	\$ 421,127	\$ 373,700	\$ 809,500	\$ 753,100	\$ 643,700	\$ 1,013,700	\$ 1,076,900
Accrued liabilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Deferred income on shipment to distributors	138,952	147,798	166,128	183,432	292,815	308,797	324,363	335,705	333,800	-	-	-	-	-
Total current liabilities	341,611	336,079	353,972	382,009	704,450	736,443	734,186	756,832	2,017,400	2,139,300	2,088,100	643,700	2,374,500	2,450,800
Long-term Income Taxes Payable	182,723	179,966	114,336	111,061	176,640	187,255	194,342	694,777	754,900	836,700	777,100	720,700	751,200	749,500
Long-term borrowings	-	331,385	-	-	-	-	-	-	-	-	-	-	-	-
Convertible Debentures	363,385	371,873	1,364,906	1,431,037	-	-	-	-	-	-	-	-	-	-
Long term line of credit	620,000	300,000	461,952	1,052,000	2,900,524	2,983,908	3,011,852	3,039,623	1,758,400	10,019,800	9,551,100	10,542,300	8,946,200	8,711,400
Pension accrual	21,966	-	-	-	-	-	-	-	-	-	-	-	-	-
Deferred tax liabilities	462,083	375,316	381,192	399,218	409,045	347,216	328,235	208,823	205,800	854,200	815,400	830,500	706,100	690,000
Other long-term Liabilities	-	37,550	43,329	41,271	217,206	220,515	240,459	238,663	240,900	275,000	265,200	257,400	279,500	356,400
Shareholders' equity	1,933,470	2,135,461	2,044,654	2,150,919	3,270,711	3,412,554	3,546,124	3,185,075	3,279,800	5,123,800	5,170,200	5,161,100	5,287,500	5,288,300
Noncontrolling Interest	-	-	16,372	-	-	-	-	-	-	-	-	-	-	-
Total liabilities and shareholders' equity	\$ 3,925,238	\$ 4,067,630	\$ 4,780,713	\$ 5,567,515	\$ 7,678,576	\$ 7,887,891	\$ 8,055,198	\$ 8,123,793	\$ 8,257,200	\$ 19,248,800	\$ 18,667,100	\$ 18,155,700	\$ 18,345,000	\$ 18,246,400
Key balance sheet data														
Cash per share	\$ 8.77	\$ 9.66	\$ 10.63	\$ 11.78	\$ 5.90	\$ 6.80	\$ 7.53	\$ 7.91	\$ 8.73	\$ 2.58	\$ 1.84	\$ 1.78	\$ 1.72	\$ 1.72
Net cash and inv per share	\$ 4.08	\$ 5.14	\$ 2.34	\$ 0.37	\$ (6.23)	\$ (5.49)	\$ (4.77)	\$ (4.20)	\$ 1.74	\$ (37.15)	\$ (36.09)	\$ (41.32)	\$ (33.94)	\$ (32.59)
Book per share	\$ 9.24	\$ 9.62	\$ 9.28	\$ 9.88	\$ 13.68	\$ 14.05	\$ 14.49	\$ 12.70	\$ 13.04	\$ 20.32	\$ 20.53	\$ 21.10	\$ 21.07	\$ 20.83
Long-term debt/total capital	15.8%	14.8%	40.0%	40.0%	47.0%	46.6%	45.9%	48.8%	34.9%	66.2%	64.9%	67.1%	62.9%	62.2%
Return on equity	22.6%	26.5%	29.1%	28.5%	33.9%	37.4%	38.8%	42.9%	42.8%	31.7%	35.2%	31.4%	28.0%	27.0%
Working capital	\$ 1,969,671	\$ 1,633,320	\$ 2,310,645	\$ 2,714,704	\$ 1,600,590	\$ 1,562,319	\$ 1,709,236	\$ 1,496,609	\$ 1,338,900	\$ 679,100	\$ 88,100	\$ 1,233,900	\$ (159,700)	\$ (172,300)
Current ratio	6.8x	5.9x	7.5x	8.1x	3.3x	3.1x	3.3x	3.0x	1.7x	1.3x	1.0x	2.9x	0.9x	0.9x
Inventory turnover	3.1x	3.1x	3.3x	3.1x	3.5x	3.6x	3.5x	3.2x	3.2x	1.7x	2.8x	3.0x	2.8x	2.7x
Days sales out in accts rec	48.8x	44.8x	45.7x	46.6x	48.4x	49.7x	49.2x	50.8x	51.3x	59.2x	40.3x	35.1x	60.4x	64.6x
Net sales	430,144	493,384	547,190	568,438	902,666	972,141	1,012,139	994,205	1,002,280	1,216,759	1,513,278	1,416,021	1,329,778	1,322,600
Cost of goods sold	187,546	200,812	228,230	236,516	367,942	384,968	394,346	383,652	383,900	460,100	579,600	534,921	502,900	502,500
Net income	109,312	141,299	148,795	153,028	276,911	319,108	344,101	341,207	351,280	405,859	454,678	405,700	370,378	357,600
Average shares out	209,237	221,947	220,420	217,711	239,171	242,902	244,767	250,825	251,500	252,200	251,800	244,600	250,900	253,900

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T: Transferring Coverage
D: Discontinuing Coverage
S: Suspending Coverage
OW: Overweight
N: Neutral
UW: Underweight
NA: Not Available
UR: Under Review

Distribution of Ratings/IB Services Piper Jaffray				
Rating	Count	Percent	IB Serv./Past 12 Mos.	
			Count	Percent
BUY [OW]	407	63.49	99	24.32
HOLD [N]	227	35.41	18	7.93
SELL [UW]	7	1.09	0	0.00

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