

Xilinx Inc. (XLNX)

\$100.80 (As of 01/24/20)

Price Target (6-12 Months): **\$106.00**

Long Term: 6-12 Months

Zacks Recommendation:

Neutral

(Since: 12/23/19)

Prior Recommendation: Underperform

Short Term: 1-3 Months

Zacks Rank: (1-5)

3-Hold

Zacks Style Scores:

VGM:C

Value: D

Growth: B

Momentum: D

Summary

Xilinx is benefiting from solid growth in the Wireless market, attributable to early 5G production, pre-5G deployments and LTE upgrades. Growing demand for the company's 60-nanometer UltraScale+ family is a key driver. The company is gaining from strong demand for its Zynq platform, which is boosted by the adoption of MPSoC family in wireless and across core vertical markets. However, the company is hurt by the suspension of shipments to Huawei due to the export ban imposed by the U.S. government, which in turn is denting WWG revenues. In the second half of the fiscal, business restrictions, soft demand for communications products and macro-related weakness will offset strong overall growth in data center and improvement across the company's core vertical market.

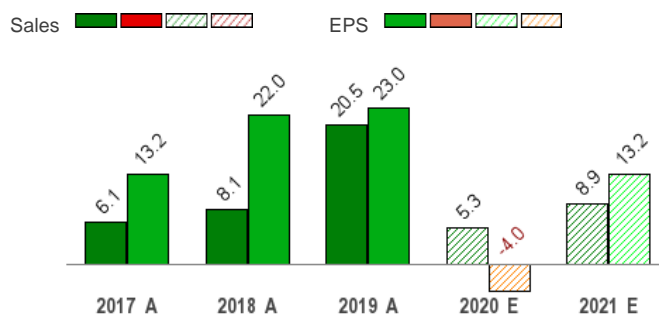
Price, Consensus & Surprise



Data Overview

52 Week High-Low	\$141.60 - \$87.56
20 Day Average Volume (sh)	2,636,617
Market Cap	\$25.3 B
YTD Price Change	3.1%
Beta	1.22
Dividend / Div Yld	\$1.48 / 1.5%
Industry	Semiconductors - Programmable Logic
Zacks Industry Rank	Top 44% (112 out of 255)

Sales and EPS Growth Rates (Y/Y %)



Last EPS Surprise	2.2%
Last Sales Surprise	0.8%
EPS F1 Est- 4 week change	-0.3%
Expected Report Date	01/28/2020
Earnings ESP	0.0%
P/E TTM	26.7
P/E F1	30.2
PEG F1	2.5
P/S TTM	7.7

Sales Estimates (millions of \$)

	Q1	Q2	Q3	Q4	Annual*
2021	833 E	861 E	880 E	909 E	3,508 E
2020	850 A	833 A	726 E	813 E	3,222 E
2019	684 A	746 A	800 A	828 A	3,059 A

EPS Estimates

	Q1	Q2	Q3	Q4	Annual*
2021	\$0.87 E	\$0.92 E	\$0.94 E	\$1.02 E	\$3.78 E
2020	\$0.97 A	\$0.94 A	\$0.64 E	\$0.82 E	\$3.34 E
2019	\$0.74 A	\$0.87 A	\$0.92 A	\$0.94 A	\$3.48 A

*Quarterly figures may not add up to annual.

The data in the charts and tables, including the Zacks Consensus EPS and Sales estimates, is as of 01/24/2020. The reports text is as of 01/27/2020.

Overview

San Jose, CA-based Xilinx Inc., founded in 1984, designs and manufactures a broad range of programmable devices and associated technologies. This includes high-performance, high-density programmable logic devices (PLDs) such as programmable system on chips and three dimensional ICs; adaptive compute acceleration platform (ACAP); software design tools to program the PLDs; software development environments and embedded platforms; targeted reference designs; printed circuit boards and intellectual property (IP) core licenses covering Ethernet, memory controllers, Interlaken and peripheral component interconnect express interfaces as well as domain-specific IP in the areas of embedded, digital signal processing and connectivity plus market-specific IP cores.

In fiscal 2019, the company reported more than \$3 billion of revenues, up 24% over the fiscal 2018 figure.

The company classifies its products into two categories:

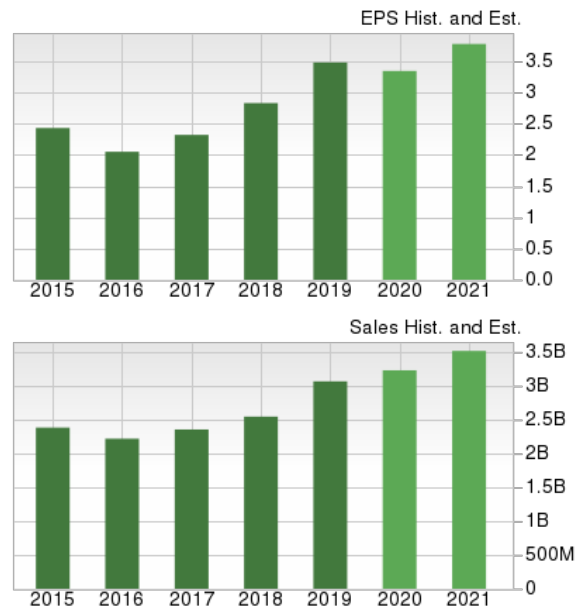
Advanced Products (64% of fiscal 2019 revenues) include Alveo, UltraScale+, Ultrascale and 7-series products.

Core Products (36%) include Virtex-6, Spartan-6, Virtex-5, CoolRunner- II Virtex-4, Virtex-II, Spartan-3, Spartan-2, XC9500 products, configuration solutions, software & support/services.

The company provides solutions for electronic equipment makers in wired and wireless communications, industrial, scientific and medical, aerospace and defense, audio, video and broadcast, consumer, automotive and data processing markets.

The company sells its products and services through independent domestic and foreign distributors and via direct sales to the original equipment manufacturers (OEMs) and its electronic manufacturing service providers (EMS). Sales are generated by these independent distributors, independent sales representative or the company's direct sales organization.

Starting first-quarter fiscal 2020, Xilinx changed its revenue reporting structure. Going forward, Communications is now called Wired and Wireless Group (WWG). Data Center Group is reported separately and include high-performance computing. While Aerospace & Defense, Industrial and Test plus Measurement & Emulation (TME) is called AIT, the Automotive, Broadcast and Consumer group is called ABC.



Reasons To Buy:

- ▲ Xilinx's ongoing transition from a FPGA provider to an all-programmable devices producer has been helping the company gain market share. Its expanding product portfolio, which includes the Zynq RFSoc platform, is assisting it to counter intense competition from the likes of Intel. The company's Zynq portfolio, which is implemented in both the 28-nm and 16-nm node, is delivering sturdy top-line growth. The company has started shipping of the 16-nm RFSoc Silicon In-house family of product, which offers a superior architectural solution to 5G wireless with integrated RF-class analog technology. Moreover, its newly launched 7nm ACAP Versal platform is expected to be a game changer.
- ▲ We are optimistic over the demand of Xilinx's Ultrascale+ FPGAs by data-center operators for providing FPGA-as-a-Service. Amazon was the first to use Xilinx chips and started offering FPGA-as-a-Service in May 2017. The company's leadership position in China market with regard to FPGA-as-a-Service expanded with Alibaba moving from beta to general access.
- ▲ The ever-evolving technology sector has been witnessing a number of new trends over the past couple of years. Of these, the notable ones include artificial intelligence (AI), 5G connectivity, autonomous vehicles and Internet of Things (IoT). This has created a whole new opportunity for hardware and software companies, in turn, increasing demand for programmable chips. We consider that the demand for FPGAs will surge over the long run, backed by its unique feature of the ability to be reprogrammed to the desired application or functionality requirements after manufacturing. Notably, Xilinx is a market leader in the FPGA market, with 58% share and has over one-year technology lead over its closest rival – Intel. Therefore, we believe that Xilinx is well placed to grab the opportunity arising from an increase in adoption of AI technologies, 5G connectivity, autonomous vehicles and IoTs.
- ▲ Xilinx has significant exposure to Telecom & Wireless vertical markets. These markets are strongly co-related with global GDP growth and spending behavior. Most of the emerging economies are seeing unprecedented demand for mobile devices like smartphones and tablets and are also getting increasingly connected via the Internet. This has compelled these countries to heavily invest in Telecom & Wireless infrastructure. Notably, 5G deployments in South Korea and a very early start of ramping up the 5G deployments in China are key drivers. The growing usage of Zynq RFSocs and ACAP products for 5G deployments by both basebands and radios is a positive.
- ▲ The FPGA industry has a high barrier to entry. Bottlenecks such as a unique skill set that combines semiconductor and software expertise; high investment, especially at leading technology nodes; lack of third-party development tools; and intellectual property make this space less attractive. Hence, the FPGA market is operating as a duopoly with two key players, Xilinx and Altera, dominating approximately 80% of the market.
- ▲ We are encouraged by Xilinx's endeavor to return shareholder value through continued share buybacks and dividends. Continuing with its policy of returning cash to shareholders, in fiscal 2019, Xilinx returned \$526 million to its shareholders through a combination of buybacks and dividends. The company repurchased 2.4 million shares worth \$162 million and paid a total of \$364 million in dividends. These investor-friendly initiatives not only boost the company's earnings but also instill investor confidence and loyalty in the stock.

Xilinx is well-positioned to tap the opportunities arising from an increase in the adoption of AI technologies, 5G connectivity, autonomous vehicles and IoTs, which will drive growth in the long run.

Reasons To Sell:

- ▼ Xilinx could face challenges from its biggest competitor, Intel. After acquiring Altera in 2015, Intel has been developing high-end high-performance next-generation 14 nm FPGA chips by using its 14 nm tri-gate transistor technology. To remain competitive, Xilinx is planning a transition to the 16 nm node using Taiwan Semiconductor Company's FinFET technology. However, as Intel's manufacturing process is technologically more advanced, we do not expect Xilinx to outperform Intel in the lower dimension nodes. Apart from this, both the companies are likely to compete in 20 nm products that are still under production.
- ▼ By acquiring Altera, Intel now has a strategic advantage over Xilinx regarding its HardCopy offering (a new type of high performance ASIC for which Xilinx does not have a competing product). HardCopy offers the performance of an ASIC and the flexibility of a PLD. HardCopy devices, therefore, have the potential to drive future revenues due to their low costs and ability to address opportunities beyond the PLD market. As far as development costs are concerned, ASICs are more economical and offer improved chip performance than PLDs when used in high-volume production. Therefore, they are ideal for large-volume, low-cost appliances such as consumer electronics. Customers often opt for PLDs initially for their time-to-market benefits and then shift to ASICs to produce greater volumes at lower costs. With no exposure into ASICs, it will be difficult for Xilinx to outperform Intel.
- ▼ Xilinx keeps on innovating for producing advanced FPGAs of lower geometries to improve performance, density and system-level functionality, integration, and lower cost and power consumption at each manufacturing process node. With each transition to a new process node, there are considerable tape-out costs, the need to navigate the learning curve and limited volume production, which are all significant headwinds for margins and profitability. Xilinx is on the verge of a 20-nm and 16-nm transition, so there will be related pressure on gross margin.
- ▼ Xilinx is hurt by the suspension of shipments to Huawei due to the export ban imposed by the U.S. government. On the earnings call, management mentioned that the company forecasts WWG business to be down significantly in the fiscal third quarter due to removal of revenue expectation from Huawei. The impact of Huawei ban and other trade-related uncertainties forced the company to provide a downbeat outlook for third-quarter fiscal 2020.

5G deployment and a few other product mixes are a threat to gross margin. Stiff competition from peers is another material headwind.

Last Earnings Report

Xilinx Q2 Earnings Top Estimates, Q3 View Disappoints

Xilinx delivered second-quarter fiscal 2020 earnings of 94 cents per share, higher than the Zacks Consensus Estimate of 92 cents as well as the prior-year quarterly figure of 87 cents.

Further, revenues rose 12% year over year to \$833 million and topped the Zacks Consensus Estimate of \$827 million as well.

Rebound in datacenter business was a key driver. Additionally, better-than-anticipated 5G product demand from other global communications OEMs is a tailwind.

However, the suspension of shipments to Huawei due to the export ban imposed by the U.S. government induced weaker-than-anticipated Wired and Wireless Group (WWG) revenues.

Management mentioned that in the second half of the fiscal business restrictions, soft demand for communications products and macro-related weakness will offset strong overall growth in data center and improvement across the company's core vertical market.

The impact of Huawei ban and other trade-related uncertainties forced the company to provide a downbeat outlook for third-quarter fiscal 2020.

Nonetheless, the company expects growth revival in the fiscal fourth quarter, backed by a broad customer base that includes TME, aerospace and defense, automotive plus industrial customers. Computational storage and SmartSSD market is likely to remain a key driver.

Quarter in Detail

Product wise, Advanced product revenues declined 29% year over year, contributing 74% to total revenues. However, the same from core products (26% of total) decreased 19% from the year-ago quarter.

Growing demand for the company's 16-nanometer UltraScale+ family has been the key driver. The company is also benefiting from strong demand for its Zynq platform, boosted by the adoption of MPSoC family in wireless and across core vertical markets. Deployment of RFSoc by multiple wireless customers and in other end markets is a positive.

On the basis of end markets, WWG revenues (38% of total revenues) rose 24% year over year but fell 8% sequentially. Decline in wired business due to shipping restrictions to Huawei and softness of demand from other customers was a dampener.

Automotive, Broadcast and Consumer group (ABC) (16% of total revenues) increased 9% year over year and 6% sequentially, attributable to double-digit growth in automotive business. Deterioration in consumer business was a downside.

A&D, Industrial and TME (AIT) revenues (36% of total revenues) rose 7% on a year-over-year basis, aided by solid growth in A&D. Management mentioned that significant decline in TME was an overhang.

Data Center revenues (10% of total) increased 24% from the year-ago period and 92% on a sequential basis, primarily owing to growth in sales to storage customers. Moreover, additional hyper scale customer demand and limited growth from cryptocurrency customers were an upside. Solarflare contributed \$5 million to revenues in the fiscal second quarter.

Geographically, the company registered year-over-year growth of 29% in Asia Pacific and 12% in North America. While Europe and Japan declined 19% and 8%, respectively.

Margins

Gross margin came in at 66.6%, down 300 bps year over year. Product and customer mix in AIT and customer mix in DCG were dampeners.

The company posted non-GAAP operating income of \$217 million, down 7.9% year over year. However, operating margin contracted 560 bps to 26%.

Balance Sheet and Cash Flow

Xilinx exited the fiscal second quarter with cash, cash equivalents and short-term investments of approximately \$2.52 billion compared with \$2.88 billion sequentially.

The company has total long-term debt of about \$1.25 billion.

Xilinx generated \$224 million of cash from operations compared with \$298 million in the earlier reported quarter.

Outlook

On the earnings call, management mentioned that the company forecasts WWG business to be down significantly in the fiscal third quarter due to removal of revenue expectation from Huawei. While wired is expected to recover in the fiscal fourth quarter, wireless is anticipated to remain bleak. Management expects base band ASIC transition and unexpected program delays with some communication customers to be persistent concerns.

Management expects Solarflare buyout to contribute \$10 million in the December quarter. However, pause in hyper scale customer orders in the fiscal third quarter is likely to dent DCG revenues. Further, macroeconomic headwinds are likely to affect customer demand in both AIT and ABC

Quarter Ending 09/2019

Report Date	Oct 23, 2019
Sales Surprise	0.77%
EPS Surprise	2.17%
Quarterly EPS	0.94
Annual EPS (TTM)	3.77

markets in the fiscal third quarter.

Xilinx projects revenues in the range of \$710-\$740 million. Gross margin is forecast to be 67-69%. Operating expenses are projected to be \$339 million in the third quarter of fiscal 2020.

For fiscal 2020, the company expects total revenues between \$3.21 billion and \$3.28 billion. Non-GAAP gross margin is projected in the range of 66.5-68.5%. Non-GAAP operating expenses are estimated to be around \$1.3 billion for the full fiscal.

Recent News

On Dec 19, 2019, Xilinx announced that its Automotive Zynq UltraScale+ MPSoC is enabling Baidu's BIDU Apollo Computing Unit (ACU)-Advanced platform for Automated Valet Parking (AVP).

On Nov 12, 2019, Xilinx expanded its automotive-qualified 16 nanometer (nm) family with two new devices – the Xilinx Automotive (XA) Zynq UltraScale+ MPSoC 7EV and 11EG. The company also announced that its Vitis unified software platform is available for download.

On Oct 31, 2019, Xilinx and SK Telecom announced that SK Telecom has adopted Xilinx Alveo Datacenter Accelerator cards to power a real-time AI-based physical intrusion and theft detection service.

On Oct 1, 2019, Xilinx introduced a unified software platform, Vitis, that enables software engineers and AI scientists to take advantage of the power of hardware adaptability.

On Aug 6, 2019, Xilinx expanded its Alveo data center accelerator card portfolio with the launch of the Alveo U50.

Valuation

Shares of Xilinx have declined 16.4% in the past six months and 7.8% over the trailing 12-month period. Stocks in the Zacks sub-industry lost 16.4%, while the Zacks Computer & Technology sector rallied 13.6% in the past six months, respectively. Over the past year, while the Zacks sub-industry has lost 7.8%, the sector gained 33%.

The S&P 500 Index has risen 9.5% in the past six months and 23.9% in the past year.

The stock is currently trading at 27.24X forward 12-month earnings, which compares to 27.24X for the Zacks sub-industry, 22.94X for the Zacks sector and 18.94X for the S&P 500 index.

Over the past five years, the stock has traded as high as 37.41X and as low as 16.58X with a 5-year median of 23.98X. Our Neutral recommendation indicates that the stock will perform in-line with the market. Our \$106 price target reflects 28.6X forward 12-month earnings.

The table below shows summary valuation data for XLNX

Valuation Multiples - XLNX					
		Stock	Sub-Industry	Sector	S&P 500
P/E F12M	Current	27.24	27.24	22.94	18.94
	5-Year High	37.41	32.88	22.94	19.34
	5-Year Low	16.58	16.69	16.87	15.17
	5-Year Median	23.98	24.11	19.24	17.44
P/S F12M	Current	7.33	7.33	3.73	3.52
	5-Year High	10.78	9.46	3.73	3.52
	5-Year Low	4.17	4.17	2.3	2.54
	5-Year Median	6.22	6.21	3.01	3
P/B TTM	Current	9.4	9.19	5.6	4.5
	5-Year High	12.78	12.78	5.63	4.55
	5-Year Low	3.82	3.82	3.13	2.85
	5-Year Median	6.45	6.37	4.22	3.62

As of 01/24/2020

Industry Analysis Zacks Industry Rank: Top 44% (112 out of 255)



Top Peers

NVIDIA Corporation (NVDA)	Outperform
Ambarella, Inc. (AMBA)	Neutral
Broadcom Inc. (AVGO)	Neutral
Intel Corporation (INTC)	Neutral
Lattice Semiconductor Corporation (LSCC)	Neutral
Microchip Technology Incorporated (MCHP)	Neutral
Marvell Technology Group Ltd. (MRVL)	Neutral
Texas Instruments Incorporated (TXN)	Neutral

Industry Comparison Industry: Semiconductors - Programmable Logic				Industry Peers		
	XLNX Neutral	X Industry	S&P 500	INTC Neutral	LSCC Neutral	NVDA Outperform
VGM Score	C	-	-	A	C	C
Market Cap	25.35 B	25.35 B	24.13 B	297.84 B	2.90 B	153.29 B
# of Analysts	7	9	13	14	4	11
Dividend Yield	1.47%	1.47%	1.78%	1.84%	0.00%	0.26%
Value Score	D	-	-	C	F	F
Cash/Price	0.10	0.10	0.04	0.05	0.03	0.06
EV/EBITDA	22.67	22.67	14.02	9.55	77.71	34.63
PEG Ratio	2.43	2.51	2.03	1.89	2.45	4.82
Price/Book (P/B)	9.40	9.40	3.30	4.01	9.36	13.67
Price/Cash Flow (P/CF)	25.65	25.65	13.52	10.06	39.45	37.41
P/E (F1)	29.16	30.14	18.92	14.19	30.67	45.08
Price/Sales (P/S)	7.65	7.65	2.65	4.14	7.25	15.30
Earnings Yield	3.31%	3.31%	5.28%	7.04%	3.27%	2.22%
Debt/Equity	0.46	0.46	0.72	0.32	0.52	0.22
Cash Flow (\$/share)	3.93	3.93	6.94	6.81	0.55	6.70
Growth Score	B	-	-	A	A	B
Hist. EPS Growth (3-5 yrs)	11.76%	11.76%	10.60%	19.47%	36.03%	47.42%
Proj. EPS Growth (F1/F0)	-3.90%	-4.35%	7.59%	-0.92%	21.46%	-16.32%
Curr. Cash Flow Growth	20.58%	20.58%	13.90%	23.02%	17.00%	29.72%
Hist. Cash Flow Growth (3-5 yrs)	7.26%	7.26%	9.00%	11.64%	9.92%	41.59%
Current Ratio	6.44	6.44	1.22	1.20	2.94	8.42
Debt/Capital	31.60%	31.60%	42.99%	24.20%	34.31%	17.98%
Net Margin	28.76%	28.76%	11.35%	29.25%	5.60%	24.08%
Return on Equity	35.84%	35.84%	17.10%	29.33%	18.64%	22.02%
Sales/Assets	0.65	0.65	0.55	0.55	0.65	0.69
Proj. Sales Growth (F1/F0)	5.33%	5.33%	4.03%	0.14%	4.76%	-8.07%
Momentum Score	D	-	-	A	C	A
Daily Price Chg	-1.57%	-1.57%	-1.01%	8.13%	-3.47%	-0.94%
1 Week Price Chg	3.44%	3.44%	2.29%	1.12%	9.94%	2.03%
4 Week Price Chg	2.15%	2.15%	1.02%	14.46%	8.61%	4.72%
12 Week Price Chg	11.09%	11.09%	6.85%	21.12%	10.77%	24.60%
52 Week Price Chg	-4.96%	-4.96%	20.39%	37.60%	188.56%	58.69%
20 Day Average Volume	2,636,617	2,636,617	1,536,379	18,349,196	2,032,656	6,001,424
(F1) EPS Est 1 week change	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(F1) EPS Est 4 week change	-0.34%	-0.34%	0.00%	-0.14%	2.16%	0.00%
(F1) EPS Est 12 week change	-0.37%	-0.37%	-0.23%	-0.17%	-1.26%	6.03%
(Q1) EPS Est Mthly Chg	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Zacks Stock Rating System

We offer two rating systems that take into account investors' holding horizons: Zacks Rank and Zacks Recommendation. Each provides valuable insights into the future profitability of the stock and can be used separately or in combination with each other depending on your investment style.

Zacks Recommendation

The Zacks Recommendation aims to predict performance over the next 6 to 12 months. The foundation for the quantitatively determined Zacks Recommendation is trends in the company's estimate revisions and earnings outlook. The Zacks Recommendation is broken down into 3 Levels; Outperform, Neutral and Underperform. Unlike many Wall Street firms, we have an excellent balance between the number of Outperform and Neutral recommendations. Our team of 70 analysts are fully versed in the benefits of earnings estimate revisions and how that is harnessed through the Zacks quantitative rating system. But we have given our analysts the ability to override the Zacks Recommendation for the 1200 stocks that they follow. The reason for the analyst over-rides is that there are often factors such as valuation, industry conditions and management effectiveness that a trained investment professional can spot better than a quantitative model.

Zacks Rank

The Zacks Rank is our short-term rating system that is most effective over the one- to three-month holding horizon. The underlying driver for the quantitatively-determined Zacks Rank is the same as the Zacks Recommendation, and reflects trends in earnings estimate revisions.

Zacks Style Scores

The Zacks Style Score is as a complementary indicator to the Zacks rating system, giving investors a way to focus on the highest rated stocks that best fit their own stock picking preferences.

Academic research has proven that stocks with the best Value, Growth and Momentum characteristics outperform the market. The Zacks Style Scores rate stocks on each of these individual styles and assigns a rating of A, B, C, D and F. We also produce the VGM Score (V for Value, G for Growth and M for Momentum), which combines the weighted average of the individual Style Scores into one score. This is perfectly suited for those who want their stocks to have the best scores across the board.

Value Score	D
Growth Score	B
Momentum Score	D
VGM Score	C

As an investor, you want to buy stocks with the highest probability of success. That means buying stocks with a Zacks Recommendation of Outperform, which also has a Style Score of an A or a B.

Disclosures

This report contains independent commentary to be used for informational purposes only. The analysts contributing to this report do not hold any shares of this stock. The analysts contributing to this report do not serve on the board of the company that issued this stock. The EPS and revenue forecasts are the Zacks Consensus estimates, unless indicated otherwise on the reports first page. Additionally, the analysts contributing to this report certify that the views expressed herein accurately reflect the analysts personal views as to the subject securities and issuers. ZIR certifies that no part of the analysts compensation was, is, or will be, directly or indirectly, related to the specific recommendation or views expressed by the analyst in the report.

Additional information on the securities mentioned in this report is available upon request. This report is based on data obtained from sources we believe to be reliable, but is not guaranteed as to accuracy and does not purport to be complete. Any opinions expressed herein are subject to change.

ZIR is not an investment advisor and the report should not be construed as advice designed to meet the particular investment needs of any investor. Prior to making any investment decision, you are advised to consult with your broker, investment advisor, or other appropriate tax or financial professional to determine the suitability of any investment. This report and others like it are published regularly and not in response to episodic market activity or events affecting the securities industry.

This report is not to be construed as an offer or the solicitation of an offer to buy or sell the securities herein mentioned. ZIR or its officers, employees or customers may have a position long or short in the securities mentioned and buy or sell the securities from time to time. ZIR is not a broker-dealer. ZIR may enter into arms-length agreements with broker-dealers to provide this research to their clients. Zacks and its staff are not involved in investment banking activities for the stock issuer covered in this report.

ZIR uses the following rating system for the securities it covers. **Outperform-** ZIR expects that the subject company will outperform the broader U.S. equities markets over the next six to twelve months. **Neutral-** ZIR expects that the company will perform in line with the broader U.S. equities markets over the next six to twelve months. **Underperform-** ZIR expects the company will underperform the broader U.S. equities markets over the next six to twelve months.

No part of this report can be reprinted, republished or transmitted electronically without the prior written authorization of ZIR.