

## Keysight Technologies (KEYS)

**\$118.12** (As of 11/24/20)

Price Target (6-12 Months): **\$125.00**

Long Term: 6-12 Months

**Zacks Recommendation:**

**Neutral**

(Since: 10/19/20)

Prior Recommendation: Outperform

Short Term: 1-3 Months

**Zacks Rank:** (1-5)

**3-Hold**

Zacks Style Scores:

VGM:A

Value: C

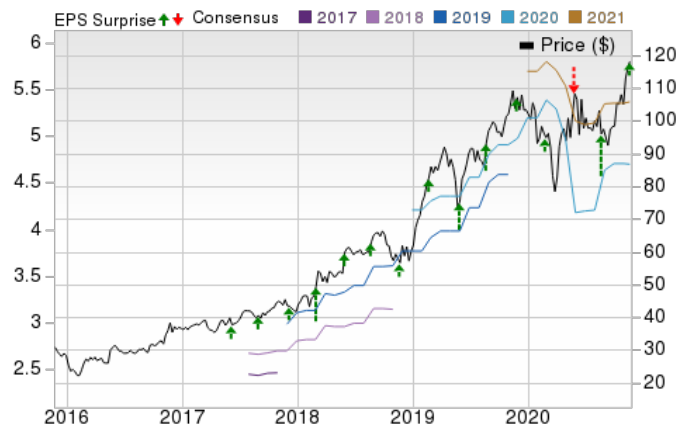
Growth: A

Momentum: A

## Summary

Keysight's Q4 results reflect solid demand of its semiconductor measurement solutions as semiconductor companies are developing chips based on next-generation process technologies. Also, higher government spending and momentum in investments aimed at technology modernization across the United States bode well along with demand recovery across Asia Pacific. The company's impressive guidance for fiscal first quarter reflect uptick in 5G test solutions and strong backlog. Nevertheless, coronavirus crisis-induced weakness in automotive and general electronics sectors and sluggish spending across Europe and Huawei-related headwinds are major woes. The uncertainty over the trade war with China is likely to remain an overhang on the company's performance. Notably, shares of Keysight have underperformed the industry on a year-to-date basis.

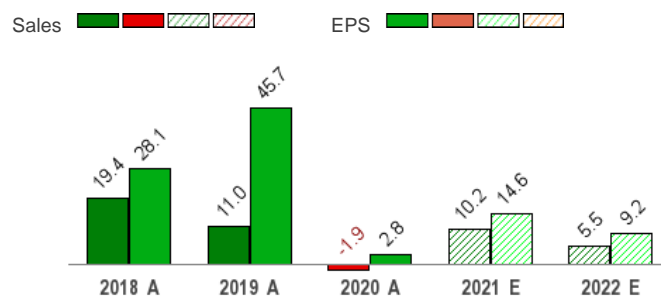
## Price, Consensus & Surprise



## Data Overview

52-Week High-Low	<b>\$119.17 - \$77.93</b>
20-Day Average Volume (Shares)	<b>1,273,275</b>
Market Cap	<b>\$22.1 B</b>
Year-To-Date Price Change	<b>15.1%</b>
Beta	<b>1.04</b>
Dividend / Dividend Yield	<b>\$0.00 / 0.0%</b>
Industry	<b>Electronics - Measuring Instruments</b>
Zacks Industry Rank	<b>Top 22% (55 out of 254)</b>

## Sales and EPS Growth Rates (Y/Y %)



Last EPS Surprise	<b>11.0%</b>
Last Sales Surprise	<b>3.2%</b>
EPS F1 Estimate 4-Week Change	<b>3.8%</b>
Expected Report Date	<b>02/22/2021</b>
Earnings ESP	<b>0.4%</b>
P/E TTM	<b>24.4</b>
P/E F1	<b>21.2</b>
PEG F1	<b>2.1</b>
P/S TTM	<b>5.2</b>

## Sales Estimates (millions of \$)

	Q1	Q2	Q3	Q4	Annual*
2022	1,182 E	1,209 E	1,220 E	1,274 E	4,911 E
2021	1,157 E	1,148 E	1,145 E	1,204 E	4,653 E
2020	1,095 A	895 A	1,011 A	1,220 A	4,221 A

## EPS Estimates

	Q1	Q2	Q3	Q4	Annual*
2022	\$1.38 E	\$1.51 E	\$1.56 E	\$1.71 E	\$6.07 E
2021	\$1.36 E	\$1.31 E	\$1.36 E	\$1.48 E	\$5.56 E
2020	\$1.26 A	\$0.78 A	\$1.19 A	\$1.62 A	\$4.85 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 11/24/2020. The reports text is as of 11/25/2020.

## Overview

Based in Santa Rosa, CA, Keysight Technologies, Inc. is a provider of electronic design and test instrumentation systems. In 2013, Agilent Technologies announced that it will split into two independent companies. One of the companies was named Keysight Technologies, which became a fully independent electronic measurement company on Nov 1, 2014 and got listed on the New York Stock Exchange on Nov 3, 2014, with ticker symbol KEYS.

Keysight's suite of connected car test solutions include Virtual Drive Test Toolset, which facilitates automakers to build virtual test routes in the lab by integrating network and channel emulation capabilities, and combining data captured in the field. Moreover, the company is evolving its expertise in software test automation capabilities.

Meanwhile, KeysightCare aids customers with end-to-end scalable support model solution loaded with robust test and measurement know-how to reduce time-to-market and enhance efficiency in a cost-effective manner.

Beginning first-quarter fiscal 2020, the company's financial reporting comprises two segments — Electronic Industrial Solutions Group (EISG) and Communications Solutions Group (CSG). In fiscal 2020, the company generated non-GAAP revenues of \$4.221 billion.

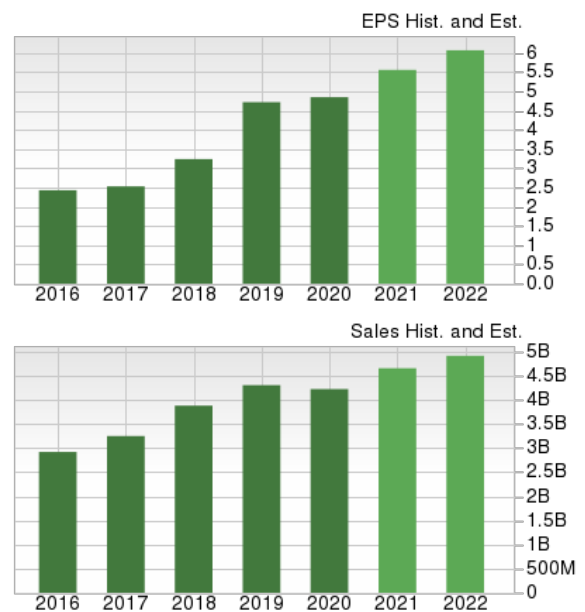
Under CSG segment (74% of the non-GAAP revenues in fiscal 2020), the company offers radio frequency (RF) and microwave test instruments and allied software, and electronic design automation (EDA) software instruments, laser source products, optical amplifiers, and other software solutions.

Notably, Ixia Solutions Group (ISG) segment reporting has been aligned with the CSG segment. ISG was formed after conclusion of Ixia buyout in Apr 18, 2017. Keysight's test and visibility solutions, and software maintenance services, were formerly under ISG.

CSG includes commercial communications (CC) and aerospace, defense & government (ADG) end markets.

EISG (26%) accounts for design verification devices; general purpose test and measurement equipment; end-to-end manufacturing systems, and material analysis devices.

The company generated 39% of non-GAAP revenues from Americas in fiscal 2020. Meanwhile, revenues from Europe and Asia Pacific came in at 16% and 45%, respectively.



Source: Zacks Investment Research

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## Reasons To Buy:

- ▲ Electronic devices form the very fulcrum of Internet of Things (IoT) services, wireless devices, data centers and 5G technologies. The rapid adoption of these devices is increasing demand for electronics testing equipment. Further, ongoing technical advancement in mobile communications, semiconductors and automotive markets are likely to drive growth. Moreover, rising demand for power management applications is a key catalyst. Sturdy efforts toward the ongoing modification of the Internet infrastructure, evolution of smart cars & autonomous-driving vehicles bode well. Additionally, medical devices and pharmaceutical markets hold immense potential, thanks to growing usage of electronics-based testing equipment in these markets. In fact, per MarketsandMarkets data, test and measurement equipment market is projected to be \$32.3 billion by 2024 at a CAGR of 3.9% from the estimated valuation of approximately \$25.7 billion in 2018.
- ▲ Keysight is gaining from strong industry wide growth. The company is witnessing solid adoption of its electronic design and test solutions. Strong demand for its solutions has been a key catalyst behind robust top-line growth. The company boasts a solid clientele comprising Alphabet, Amazon, Boeing, Facebook, MediaTek, Microsoft, Nvidia, Samsung, TSMC, and Tesla, to mention a few. Moreover, the company has a strong pipeline of new business bookings.
- ▲ Keysight boasts of a robust 5G portfolio. The company's 5G product design validation solutions ranging from Layer 1 to 7 enable telecom and semiconductor companies to accelerate their 5G initiatives. Further, Keysight's 5G network emulation solutions facilitate end-to-end processes from development to deployment, accelerating the 5G device architecture. The solutions offer cost-efficient test techniques with high flexibility and control capabilities, reducing time-to-market. Notably, over past three years, Keysight witnessed CAGR of more than 60% in order growth in 5G domain. Intensive infrastructure investments in 5G deployment and positive trial testing results hold promise. In fact, per ResearchAndMarkets data, global 5G market is expected to reach \$277 billion by 2025, witnessing a CAGR of around 111% between 2019 and 2025. Based on its portfolio strength, we believe that the company is well poised to gain from this robust growth prospect.
- ▲ Apart from strength in 5G domain, Keysight's efforts in other emerging growth markets like Internet of Things (IoT) and high-speed data centers, bodes well for the top line. Particularly, management's focus on Automotive and Energy, and Aerospace and Defense domains augur well in the long haul. In fact, growth in revenues from Aerospace, Defense and Government end-market deserves a special mention. Moreover, estimated higher spending on aerospace and defense as reflected in the fiscal 2021 defense budget proposal bodes well. If approved, such a stupendous budgetary amendment will reflect massive growth prospects. The company is expected to benefit from the growing proliferation of electronic content in vehicles, momentum in space and satellite applications, and rising adoption of driver-assistance systems globally.
- ▲ The company has been active on the acquisition front. Keysight recently acquired Thales Calibration Services, a subsidiary of Thales Group. The buyout is likely to expand the company's current electrical portfolio, aiding Keysight in gaining foothold in the defense and security space. Similarly, buyouts like Ixia (January 2017), Electroservices Enterprises and Anite (August 2015), and Eagleware-Elanix (August 2005) have aided growth by expanding product portfolio at various levels and adding competence and domain expertise.
- ▲ Keysight is also expanding its business through collaborations with established sector players. Notably, the company is extending Ixia's CloudLens visibility platform capabilities, enabling it to offer access to packet data in leading cloud platforms including Amazon Web Services ("AWS"), Microsoft Azure, Google Cloud Platform, Alibaba Cloud, among others. This move is expected to augment adoption of CloudLens, which in turn favors top-line growth. Furthermore, Keysight's collaborations with the likes of Softbank, OPPO, ASUS, Motorola, Verizon Communications and Qualcomm Technologies, are enabling it to achieve 5G commercialization related milestones. Additionally, tie-ups with fabless semiconductor companies engaged in providing 5G chipsets, like UNISOC, MediaTek, among others, enhances Keysight's prospects in the 5G domain, favoring top-line growth. Moreover, the company is also part of China-based Phase I Step 3 5G trials led by IMT-2020 Promotion Group. The extended collaborations augur well for the company in the long haul.
- ▲ Management execution has been good amid the coronavirus-induced crisis scenario. As of Oct 31, 2020, Keysight had cash & cash equivalents of \$1.756 billion, up from \$1.697 billion as of Jul 31, 2020. As on Oct 31, 2020, the company reported long-term debt of \$1.789 billion, unchanged as of Jul 31, 2020. Solid near-term liquidity position provides the company with the flexibility required to pursue any growth strategy, whether by way of acquisitions or otherwise. Moreover, cash flow from operations during the fourth quarter of fiscal 2020 came in at \$338 million compared with \$183 million reported in the prior quarter. Free cash flow was \$308 million compared with the previous quarter's \$151 million. The strong cash flows are expected to help Keysight to continue shareholder-friendly initiatives of share repurchase. In fiscal 2020, the company made total share repurchases worth \$411 million. The company acquired approximately 2.2 million shares on the open market, at an average price of \$96.55, totaling \$215 million. Also, the company has exhausted \$500 million share repurchase authorization from May 2019. Notably, Keysight's board of directors approved a new share purchase authorization worth \$750 million, in effect immediately.

Robust adoption driven by high demand for 5G design and test solutions primarily from telecom vendors, and a strong pipeline for new business bookings are key catalysts.

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## Reasons To Sell:

- ▼ Keysight derives a significant proportion of its revenues from outside the United States (61% of total non-GAAP revenues in fiscal 2020), subjecting the company to exchange rate volatility. Unfavorable movement in exchange rates of foreign currencies like renminbi, euro, pound sterling, Costa Rican colon, and yen related to the U.S. dollar can adversely impact results and undermine its growth potential to some extent.
- ▼ Keysight is considerably exposed particularly to the demand environment in China, which is at present quite sluggish. Further, imposition of tariffs owing to trade war between the United States and China is anticipated to negatively impact growth prospects. The uncertainty over the trade war truce has impacted investors' confidence and is likely to remain an overhang on the company's performance.
- ▼ Moreover, the coronavirus outbreak led global supply chain disruptions and shutdown of production facilities and associated macroeconomic challenges are expected to impede Keysight's near-term growth prospects. The coronavirus crisis-induced weakness in automotive and general electronics sectors, and sluggish spending across Europe, remain major headwinds.
- ▼ Keysight's frequent acquisitions have escalated integration risks. Moreover, we note that the buyouts negatively impacted the company's balance sheet in the form of high level of goodwill and net intangible assets, which comprised of 26.3% of total assets as of Oct 31, 2020.
- ▼ Keysight is trading at premium in terms of Price/Sales (P/S). Keysight currently has a trailing 12-month P/S ratio of 5.26X. This level compares unfavorably with what the industry witnessed in the prior year. Additionally, the ratio is higher than the average level of 4.51 and is near the high end of the valuation range in this period. Consequently, the valuation looks slightly stretched from P/S perspective.

Exposure to foreign currency fluctuations, integration risks and a leveraged balance sheet remain major concerns.

## Last Earnings Report

### Keysight Q4 Earnings & Revenues Top Estimates

Keysight Technologies, Inc. reported fourth-quarter fiscal 2020 non-GAAP earnings of \$1.62 per share, outpacing the Zacks Consensus Estimate by 10.96%. Moreover, the bottom line improved 21.8% from the year-ago quarter.

Non-GAAP revenues grew 9% year over year to \$1.22 billion surpassing the Zacks Consensus Estimate by 3.17%.

Non-GAAP core revenues (excluding the impact of currency and revenues from acquisitions in a year's time) improved 7% on a year-over-year basis to \$1.20 billion.

Improving aerospace and defense vertical, uptick in 5G test solutions on accelerated 5G deployment, and demand recovery in general electronics domain across Asia Pacific led to better-than-expected performance.

Keysight improved production capacity and services operations, which contributed to the fiscal fourth-quarter performance.

### Quarter in Detail

Orders improved 3% on a year-over-year basis to \$1.231 billion during the reported quarter. Notably, core orders inched up 1%.

Beginning first-quarter fiscal 2020, the company's financial reporting comprises two segments — Electronic Industrial Solutions Group (EISG) and Communications Solutions Group (CSG). Ixia Solutions Group (ISG) segment reporting has been aligned with the CGS segment.

CSG includes commercial communications (CC) and aerospace, defense & government (ADG) end markets. CSG revenues of \$901 million improved 8% year over year and 7% on a core basis. CSG contributed 74% to total non-GAAP revenues in the fiscal fourth quarter.

CC revenues of \$605 million were up 5% year over year courtesy of robust 5G order growth primarily fueled by 5G investments.

5G commercial deployment led to improvement in orders from 5G device and design developers. Moreover, expansion of investments in O-RAN (or Open Radio Access Network) and virtualization technologies contributed to recovery.

Management is optimistic regarding incremental adoption of latest high performance PXie modular 5G base station test solution. The offering aids network equipment manufacturers and small cell vendors to reduce time-to-market. The solution also leverages PathWave software platform's expertise to facilitate automation of workflows.

ADG revenues of \$296 million improved 13% year over year, on higher government spending and momentum in investments aimed at defense technology modernization across the Americas and Asia. Keysight is poised to gain as economies increasingly focus on electro-magnetic spectrum operations, space, and advanced commercial technologies including 5G.

EISG revenues improved 12% year over year and 7% on a core basis to \$319 million. Solid demand for the company's solutions in next-generation process node technology testing in semiconductor end-market and strength in general electronics sector aided growth. However, macroeconomic challenges pertaining to coronavirus crisis induced softness in automotive domain weighed on revenues.

Nevertheless, increasing investment in advanced automotive technology led to double-digit growth in orders on a sequential basis across all regions. The company is witnessing uptick in ScienLab EV test solutions in Asia and Europe on government mandate-led electrification of vehicles. In a bid to capitalize on growing investments, the company rolled out a new radar target simulator for ADAS, and another solution for testing Automotive Ethernet standards compliance for in-vehicle networks during the fiscal fourth quarter. The company has also announced collaborations with SGS and Qualcomm to advance testing of Cellular Vehicle-to-Everything, or C-V2X, technology.

EISG contributed 26% to total non-GAAP revenues in fourth-quarter fiscal 2020.

Also, robust software test automation capabilities are fueling growth in Software and services revenues. This, in turn, is providing buoyancy to Keysight's business model, which is driving recurring revenue growth and leading to expansion in gross margins.

### Revenue Breakup by Geography

Americas, Europe and Asia Pacific contributed 41%, 15% and 44%, respectively, to total non-GAAP revenues in the reported quarter.

Non-GAAP revenues from Americas were \$499 million, up 10% (up 8% on a core basis) year over year on robust order demand in ADG, CC and EISG domains.

Non-GAAP revenues from Europe of \$185 million improved 7% (up 1% on a core basis) on a year-over-year basis. Solid order demand in CC and EISG vertical drove growth. Notably, revenues from ADG domain remained flat on a year-over-year basis.

Non-GAAP revenues from Asia Pacific of \$536 million increased 8% (up 8% on a core basis) on a year-over-year basis. Strength in order demand across ADG, CC and EISG domains drove growth.

### Margin Highlights

Quarter Ending	10/2020
Report Date	Nov 18, 2020
Sales Surprise	3.17%
EPS Surprise	10.96%
Quarterly EPS	1.62
Annual EPS (TTM)	4.85

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Non-GAAP gross margin expanded 210 basis points (bps) to 65.9% during the reported quarter. CSG gross margin of 66.3% expanded 200 bps, while EISG's gross margin of 64.7% expanded 230 bps on a year-over-year basis.

Non-GAAP operating expenses climbed 4.7% to \$446 million. As a percentage of revenues, the figure contracted 140 bps to 36.6%.

Non-GAAP operating margin expanded 350 bps to 29.3%.

#### **Balance Sheet & Cash Flow**

As of Oct 31, 2020, Keysight had cash & cash equivalents of \$1.756 billion, compared with \$1.697 billion as of Jul 31, 2020.

As on Oct 31, 2020, the company reported long-term debt of \$1.789 billion, unchanged as of Jul 31, 2020.

Cash flow from operations during the quarter was \$338 million compared with \$183 million reported in the prior quarter.

Free cash flow was \$308 million compared with the previous quarter's \$151 million.

In fiscal 2020, the company made total share repurchases worth \$411 million. The company acquired approximately 2.2 million shares on the open market, at an average price of \$96.55, totaling \$215 million. Also, the company has exhausted \$500 million share repurchase authorization from May 2019.

Notably, Keysight's board of directors approved a new share purchase authorization worth \$750 million, in effect immediately.

#### **Q1 Guidance**

For first-quarter fiscal 2021, Keysight anticipates revenues to be \$1.14-\$1.16 billion. Non-GAAP earnings per share are projected to be \$1.32-\$1.38.

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## Recent News

On Nov 24, Keysight announced expansion of its Europe-based partner channel with two new partner channels - Batronix and Batter Fly.

On Nov 17, Keysight unveiled Performance Benchmarking Solution for Lab Networks. The new solution enables mobile operators to evaluate the performance of 5G devices and 5G base stations in a live 5G NR network environment, in a cost-effective manner.

On Nov 12, Keysight announced that its 5G user equipment emulation (UEE) solution platform, UeSIM, has been adopted by Innogence in a bid to validate the performance of its 5G base stations' based on open radio access network (O-RAN) compliant small cell infrastructure.

On Nov 9, Keysight announced that its Cloud Peak cloud infrastructure testing software has been selected by Finland-based service provider, Elisa, in a bid to accelerate the design and deployment of 5G virtualized networks.

On Nov 5, Keysight announced that its 5G universal subscriber identity module (USIM) application toolkit test solutions received approval from Global Certification Forum (GCF).

On Oct 29, Keysight stated that GCF activated the certification of 5G NR frequency range 2 (FR2) devices, making it easier for 5G device manufacturers to conduct 3GPP-based 5G NR FR2 requirements by utilizing a single solution.

On Oct 27, Keysight's 5G device test solutions were deployed by China-based State Radio Monitoring Center Testing Center (SRTC) to provide certification for 5G devices.

On Oct 22, Keysight's Nemo Handy (handheld measurement software) is deploying Android-based commercial off-the-shelf smartphone devices to verify 5G NR quality-of-experience (QoE) and quality-of-service (QoS).

On Oct 20, Keysight unveiled its 5D Virtual Test Drive toolset. The latest offerings will help 5G device manufacturers to set up a test environment for validating 5G devices taking into consideration various network signals and radio channel conditions.

On Oct 15, Keysight rolled out a new 5G base station test solution that will ramp up validation of mmWave products per 3GPP specifications for small cell vendors and network equipment manufacturers.

On Oct 14, Keysight presented 3GPP protocol test cases for 5G new radio devices' verification that work with IP Multimedia Subsystem. The test cases are based on smartphone form factor mobile test device (based on latest Snapdragon Mobile Platform) and Keysight's Conformance Toolset.

On Sep 28, Keysight announced that its PathWave Signal Generation software has been utilized by MediaTek, which is a Taiwan-based notable fabless semiconductor company. The aim was to accomplish physical layer interoperability development testing (IODT) based on 3GPP release 16 5G new radio (NR) criteria.

MediaTek's Dimensity 5G-integrated chip platform leveraged Keysight's PathWave Signal Generation for 5G NR software to develop a physical layer algorithm pertaining to 3GPP Release 16 specifications.

On Sep 23, Keysight announced that it is working with Qualcomm Technologies, Inc., a subsidiary of QUALCOMM Incorporated and SGS in a bid to accelerate the testing of cellular vehicle-to-everything (C-V2X) technology. The test cases, compliant with 3rd generation partnership projects' (3GPP) Release 14 requirements, are based on C-V2X test plans as specified by the OmniAir Consortium and the Global Certification Forum (GCF).

On Sep 22, Keysight introduced two new automotive test solutions to enable car designers and manufacturers to enhance safety levels of autonomous vehicles. Keysight's Radar Target Simulator ("RTS") utilizes radar test technology and enables multi-target, multi-angle testing for radar modules within a lab. RTS provides results that balance the required throughput while ensuring quality performance.

On Sep 15, Keysight unveiled cloud-based distributed network performance and security test software — CyPerf. CyPerf identifies loopholes in security and network performance, and offers enhanced visibility into the comprehensive application delivery process across hybrid networks. This enables network security tool vendors to replicate their customers' architecture to reduce time-to-market and boost business.

On Sep 1, Keysight announced that its Radio Frequency Automation Toolset has been adopted by China-based device maker Meizu, to validate enhanced mobile broadband (eMBB) performance vital in delivering multi-media applications in 5G smartphones.

On Sep 1, Keysight announced that its CX3300 Device Current Waveform Analyzer along with anomalous waveform analytics (AWA) software has been implemented by Waseda University with an aim to conduct research on hardware Trojan detection technology. Notably, machine learning (ML) capabilities of the analytics software accelerates detection of security threats hidden in electronic circuits.

On Aug 27, Keysight announced that its 5G device test solutions have been selected by Taiwan-based leading original design manufacturer (ODM), Compal, in a bid to validate 5G devices in form factors across 3GPP-compliant frequency band for implementation across both standalone (SA) and non-standalone (NSA) modes.

On Aug 26, Keysight announced that its 5G device test solutions have been adopted by Jabil for 5G product validation in manufacturing and design.

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## Valuation

Keysight's shares are up 15.3% in the year-to-date period and 11.9% over the trailing 12-month period. Stocks in the Zacks sub-industry and the

Zacks Computer & Technology sector are up 13.7% and 31.9%, respectively, in the year-to-date period. Over the past year, the Zacks sub-industry and the sector are up 11.1% and 36.1%, respectively.

The S&P 500 index is up 13.1% in the year-to-date period and 16.1% in the past year.

The stock is currently trading at 21.61X forward 12-month earnings compared with 27.54X for the Zacks sub-industry, 27.18X for the Zacks sector and 22.7X for the S&P 500 index.

In the past five years, the stock has traded as high as 25.86X and as low as 8.96X, with a five-year median of 18.37X. Our Neutral recommendation indicates that the stock will perform in line with the market. Our \$125 price target reflects 22.87X forward 12-month earnings.

The table below shows summary valuation data for KEYS

Valuation Multiples - KEYS					
		Stock	Sub-Industry	Sector	S&P 500
P/E F12M	Current	21.61	27.54	27.18	22.7
	5-Year High	25.86	31.58	28.01	23.47
	5-Year Low	8.96	12.94	16.95	15.27
	5-Year Median	18.37	23.44	19.94	17.72
P/S F12M	Current	4.74	3.15	4.32	4.25
	5-Year High	4.96	3.71	4.48	4.3
	5-Year Low	1.19	0.98	2.77	3.17
	5-Year Median	2.65	1.72	3.44	3.67
EV/Sales TTM	Current	5.25	4.13	5.07	4.23
	5-Year High	5.25	4.13	5.23	4.23
	5-Year Low	1.44	1.1	2.85	2.62
	5-Year Median	3.15	2.16	3.86	3.58

As of 11/24/2020

Source: Zacks Investment Research



## Industry Analysis Zacks Industry Rank: Top 22% (55 out of 254)



## Top Peers

Company (Ticker)	Rec	Rank
AAON, Inc. (AAON)	Neutral	3
ASML Holding N.V. (ASML)	Neutral	3
Canon, Inc. (CAJ)	Neutral	2
Cadence Design Systems, Inc. (CDNS)	Neutral	2
Garmin Ltd. (GRMN)	Neutral	2
Lam Research Corporation (LRCX)	Neutral	2
Nova Measuring Instruments Ltd. (NVMI)	Neutral	2
Amtech Systems, Inc. (ASYS)	Underperform	5

The positions listed should not be deemed a recommendation to buy, hold or sell.

Industry Comparison Industry: Electronics - Measuring Instruments				Industry Peers		
	KEYS	X Industry	S&P 500	ASML	ASYS	CAJ
Zacks Recommendation (Long Term)	Neutral	-	-	Neutral	Underperform	Neutral
Zacks Rank (Short Term)	3	-	-	3	5	2
VGM Score	A	-	-	F	-	B
Market Cap	22.10 B	81.86 M	26.32 B	178.11 B	79.46 M	19.84 B
# of Analysts	7	1.5	14	3	2	3
Dividend Yield	0.00%	0.00%	1.46%	0.56%	0.00%	3.95%
Value Score	C	-	-	D	D	B
Cash/Price	0.08	0.16	0.07	0.03	0.55	0.24
EV/EBITDA	19.00	7.33	14.86	49.16	-21.09	4.63
PEG F1	2.13	2.09	2.79	2.12	NA	42.07
P/B	6.70	4.51	3.68	11.09	0.97	0.78
P/CF	19.19	22.19	13.94	52.29	NA	5.97
P/E F1	21.33	30.42	21.92	46.62	NA	42.07
P/S TTM	5.24	1.25	2.87	11.53	1.21	0.92
Earnings Yield	4.71%	3.18%	4.33%	2.14%	-3.19%	2.36%
Debt/Equity	0.54	0.02	0.70	0.34	0.06	0.13
Cash Flow (\$/share)	6.16	0.50	6.93	8.11	-0.03	3.12
Growth Score	A	-	-	D	D	D
Historical EPS Growth (3-5 Years)	19.79%	19.74%	9.72%	24.06%	-46.92%	-12.96%
Projected EPS Growth (F1/F0)	14.64%	0.21%	0.45%	32.08%	35.71%	-58.18%
Current Cash Flow Growth	1.44%	-14.12%	5.29%	-4.32%	-107.75%	-27.71%
Historical Cash Flow Growth (3-5 Years)	18.39%	19.59%	8.33%	14.58%	14.37%	-6.35%
Current Ratio	3.12	3.04	1.38	2.92	10.24	1.68
Debt/Capital	35.17%	2.10%	41.99%	25.19%	5.56%	11.71%
Net Margin	14.85%	-1.56%	10.44%	24.30%	-24.02%	2.58%
Return on Equity	25.76%	0.99%	14.99%	25.91%	-2.03%	2.18%
Sales/Assets	0.60	0.86	0.50	0.57	0.61	0.50
Projected Sales Growth (F1/F0)	10.24%	0.00%	0.23%	18.55%	14.57%	-9.10%
Momentum Score	A	-	-	C	-	A
Daily Price Change	0.83%	0.07%	1.91%	-0.67%	2.36%	-0.21%
1-Week Price Change	0.06%	0.03%	0.21%	0.95%	0.00%	2.78%
4-Week Price Change	10.50%	11.20%	11.71%	15.80%	4.63%	1.80%
12-Week Price Change	18.43%	10.85%	11.69%	9.66%	-3.25%	13.17%
52-Week Price Change	11.72%	5.83%	6.61%	56.29%	-5.52%	-32.60%
20-Day Average Volume (Shares)	1,273,275	60,620	2,311,168	885,649	30,924	520,790
EPS F1 Estimate 1-Week Change	3.52%	0.00%	0.00%	0.00%	NA	0.00%
EPS F1 Estimate 4-Week Change	3.76%	3.76%	0.98%	0.00%	NA	29.13%
EPS F1 Estimate 12-Week Change	3.76%	1.88%	3.48%	5.65%	NA	28.50%
EPS Q1 Estimate Monthly Change	10.73%	22.86%	0.00%	0.00%	NA	3.85%

Source: Zacks Investment Research

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## 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 maintain a 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.

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### 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	C
Growth Score	A
Momentum Score	A
VGM Score	A

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.

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## Disclosures

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**Returns quoted represent past performance which is no guarantee of future results.** Investment returns and principal value will fluctuate so that when shares are redeemed, they may be worth more or less than their original cost. Current performance may be higher or lower than the performance shown.

Investing involves risk; principal loss is possible. There is no guarantee that companies that can issue dividends will declare, continue to pay or increase dividends.

## Glossary of Terms and Definitions

**52-Week High-Low:** The range of the highest and lowest prices at which a stock has traded during the past year. This range is determined based on the stock's daily closing price which may differ from the intra-day high or low. Many investors use it as a technical indicator to determine a stock's current value and future price movement. The idea here is that if price breaks out from the 52-week range, in either direction, the momentum may continue in the same direction.

**20-Day Average Volume (Shares):** The average number of shares of a company traded in a day over the last 20 days. It is a direct indication of a security's overall liquidity. The higher the average daily trading volume, the easier it is to enter or exit the stock at a desired price with more buyers and sellers being available.

**Daily Price Change:** This is the percentage difference between a trading day's closing price and the prior trading day's closing price. This item is updated at 9 p.m. EST each day.

**1-Week Price Change:** This is the percentage change in a stock's closing price over the last 5 trading days. This change reflects the collective buying and selling sentiment over the 1-week period.

A strong weekly price increase for the stock, especially when accompanied by increased volume, is an indication of it gaining momentum.

**4-Week Price Change:** This is the percentage change in a stock's closing price over the last 20 trading days or past 4 weeks. This is a medium-term price change metric and an indication of the stock gaining momentum.

**12-Week Price Change:** This is the percentage change of a stock's closing price over the last 60 trading days or past 12 weeks. Similar to 4-week price change, this is a medium-term price change metric. It shows whether a stock has been enjoying strong investor demand, or if it has been in consolidation, or distress over this period.

**52-Week Price Change:** This is the percentage change in a stock's closing price over the last 260 trading days or past 52 weeks. This long-term price change metric is a good reference point for investors. Some investors seek stocks with the best percentage price change over the last 52 weeks, expecting the momentum to continue.

**Market Cap:** The number of outstanding common shares of a company times its latest price per share. This figure represents a company's size, which indicates various characteristics, including price stability and risk, in which investors could be interested.

**Year-To-Date Price Change:** Change in a stock's daily closing price in the period of time beginning the first day of the current calendar year through to the previous trading day.

**# of Analysts:** Number of EPS estimates used in calculating the current-quarter consensus. These estimates come from the brokerage analysts tracking this stock. However, the number of such analysts tracking this stock may not match the number of estimates, as all brokerage analysts may not come up with an estimate or provide it to us.

**Beta:** A measure of risk commonly used to compare the volatility of a stock to the overall market. The S&P 500 Index is the base for calculating beta and carries a value of 1. A stock with beta below 1 is less risky than the market as a whole. And a stock with beta above 1 is riskier.

**Dividend:** The portion of earnings a company is expected to distribute to its common shareholders in the next 12 months for each share they own. Dividends are usually paid quarterly. Dividend payments reflect positively on a company and help maintain investors' trust. Investors typically find dividend-paying stocks appealing because the dividend adds to any market price appreciation to result in higher return on investment (ROI). Moreover, a steady or increasing dividend payment provides investors a cushion in a down market.

**Dividend Yield:** The ratio of a company's annual dividend to its share price. The annual dividend used in the ratio is calculated based on the most recent dividend paid by the company. Dividend yield is an estimate of the dividend-only return from a stock in the next 12 months. Since dividend itself doesn't change frequently, dividend yield usually changes with a stock's price movement. As a result, often an unusually high dividend yield is a result of weak stock price.

**S&P 500 Index:** The Standard & Poor's 500 (S&P 500) Index is an unmanaged group of securities considered to be representative of the stock market in general. It is a market-capitalization-weighted index of stocks of the 500 largest U.S. companies. Each stock's weight in the index is proportionate to its market value.

**Industry:** One of the 250+ groups that Zacks classifies all stocks into based on the nature of business. These groups are termed as expanded (aka "X") industries and map to their respective (economic) sectors; Zacks has 16 sectors.

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**Zacks Industry Rank:** The Zacks Industry Rank is determined by calculating the average Zacks Rank for all stocks in the industry and then assigning an ordinal rank to it. For example, an industry with an average Zacks Rank of 1.6 is better than an industry with an average Zacks Rank of 2.3. So, the industry with the better average Zacks Rank would get a better Zacks Industry Rank. If an industry has the best average Zacks Rank, it would be considered the top industry (1 out of 250+), which would place it at the top 1% of Zacks-ranked industries. Studies have shown that roughly half of a stock's price movement can be attributed to the industry group it belongs to. In fact, the top 50% of Zacks-ranked industries outperforms the bottom 50% by a factor of more than 2 to 1.

**Last EPS Surprise:** The percentage deviation of a company's last reported earnings per share from the Zacks Consensus Estimate. Companies with a positive earnings surprise are more likely to surprise again in the future (or miss again if they recently missed).

**Last Sales Surprise:** The percentage deviation of a company's last reported sales from the Zacks Consensus Estimate.

**Expected Report Date:** This is an estimated date of a company's next earnings release. The information originated or gathered by Zacks Investment Research from its information providers or publicly available sources is the basis of this estimate.

**Earnings ESP:** The Zacks Earnings ESP compares the Most Accurate Estimate to the Zacks Consensus Estimate for the yet-to-be reported quarter. The Most Accurate Estimate is the most recent version of the Zacks Consensus EPS Estimate. The idea here is that analysts revising their estimates closer to an earnings release have the latest information, which could potentially be more accurate than what they and others contributing to the consensus had predicted earlier. Thus, a positive or negative Earnings ESP reading theoretically indicates the likely deviation of the actual earnings from the consensus estimate. However, the model's predictive power is significant for positive ESP readings only. A positive Earnings ESP is a strong predictor of an earnings beat, particularly when combined with a Zacks Rank #1 (Strong Buy), #2 (Buy) or #3 (Hold). Our research shows that stocks with this combination produce a positive surprise nearly 70% of the time.

**Periods:**

**TTM:** Trailing 12 months. Using TTM figures is an effective way of analyzing the most-recent financial data in an annualized format that helps neutralize the effects of seasonality and other quarter-to-quarter variation.

**F1:** Current fiscal year. This period is used to analyze the estimates for the ongoing full fiscal year.

**F2:** Next fiscal year. This period is used to analyze the estimates for the next full fiscal year.

**F12M:** Forward 12 months. Using F12M figures is an effective way of analyzing the near-term (the following four unreported quarters) estimates in an annualized manner. Instead of typically representing estimates for the full fiscal year, which may not represent the nitty-gritty of each quarter, F12M figures suggest an all-inclusive annualized estimate for the following four quarters. The annualization helps neutralize the potential effects of seasonality and other quarter-to-quarter variations.

**P/E Ratio:** The price-to-earnings ratio measures a company's current market price per share relative to its earnings per share (EPS). Usually, the trailing-12-month (TTM) EPS, current-fiscal-year (F1) EPS estimate, or forward-12-month (F12M) EPS estimate is used as the denominator. In essence, this ratio shows what the market is willing to pay today for each dollar of EPS. In other words, this ratio gives a sense of what the relative value of the company is at the already reported level of earnings or at a future level of earnings.

It is one of the most widely-used multiples for determining the value of a company and helps comparing its valuation with that of a competitor, the industry group or a benchmark.

**PEG Ratio:** The price/earnings to growth ratio is a stock's P/E ratio using current fiscal year (F1) EPS estimate divided by its expected EPS growth rate over the coming 3 to 5 years. This ratio essentially determines a stock's value by factoring in the company's expected earnings growth and is thus believed to provide a more complete picture than just the P/E ratio, particularly for faster-growing companies.

**P/S Ratio:** The price-to-sales ratio is calculated as a company's current price per share divided by trailing 12 months (TTM) sales or revenues per share. This ratio shows what the market is willing to pay today for each dollar of TTM sales per share. The P/S ratio is at times the only valuation metric when the company has yet to become profitable.

**Cash/Price Ratio:** The cash-to-price ratio or Cash Yield is calculated as cash and marketable securities per share divided by the company's current share price. Like the earnings yield, which shows the anticipated yield (or return) on a stock from earnings for each dollar invested, the cash yield does the same, with cash being the source of return instead of earnings. For example, a cash/price ratio of 0.08 suggests a return of 8% or 8 cents for every \$1 investment.

**EV/EBITDA Ratio:** The EV/EBITDA ratio, also known as Enterprise Multiple, is calculated as a company's enterprise value (market capitalization + value of total long-term debt + book value of preferred shares - cash and marketable securities) divided by EBITDA (earnings before interest, taxes, depreciation and amortization). Usually, trailing-12-month (TTM) or forward-12-month (F12M) EBITDA is used as the denominator.

**EV/Sales Ratio:** The enterprise value-to-sales ratio is calculated as a company's enterprise value (market capitalization + value of total long-term debt + book value of preferred shares - cash and marketable securities) divided by annual sales. It is an expansion of the P/S valuation, which uses market value instead of enterprise value. The EV/Sales ratio is perceived as more accurate than P/S, in part, because the market capitalization does not take a company's debt into account when valuing it.

**EV/CF Ratio:** The enterprise value-to-cash flow ratio is calculated as a company's enterprise value (market capitalization + value of total long-term debt + book value of preferred shares - cash and marketable securities) divided by the trailing-12-month (TTM) operating cash flow. It's a measure of how long it would take to buy the entire business if you were able to use all the company's operating cash flow.

The EV/CF ratio is perceived as more accurate than the P/CF ratio, in part, because the market price does not take a company's debt into account when valuing it.

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**EV/FCF Ratio:** The enterprise value-to-free cash flow metric compares a company's enterprise value to its trailing-12-month (TTM) free cash flow (FCF). This metric is very similar to the EV/CF ratio, but is considered a more exact measure owing to the fact that it uses free cash flow, which subtracts capital expenditures (CAPEX) from a company's total operating cash flow, thereby reflecting the actual cash flow available for funding growth activities and payments to shareholders.

**P/EBITDA Ratio:** The P/EBITDA ratio is calculated as a company's per share market value divided by EBITDA (earnings before interest, taxes, depreciation, and amortization). This metric is very similar to the EV/EBITDA ratio, but is considered a little less exact measure as it uses market price, which does not take a company's debt into account. However, since EBITDA is often considered a proxy for cash income, the metric is used as a measure of what the market is willing to pay today for each dollar of the company's cash profitability in the trailing 12 months (TTM) or forward 12 months (F12M).

**P/B Ratio:** The price-to-book ratio is calculated as a company's current price per share divided by its book value (total assets – liabilities – preferred stocks) per share. In short, the book value is how much a company is worth. In other words, it reflects the total value of a company's assets that its common shareholders would receive if it were to be liquidated. So, the P/B ratio indicates whether you're paying higher or lower than what would remain if the company went bankrupt immediately. Investors typically use this metric to determine how a company's stock price stacks up to its intrinsic value.

**P/TB Ratio:** The price-to-tangible-book value ratio is calculated as a the per share market value of a company divided by the value of its tangible assets (total assets – liabilities – preferred stocks – intangible assets) per share. Tangible book value is the same thing as book value except it excludes the value of intangible assets to get a step closer to the baseline value of the company.

**P/CF Ratio:** The price-to-cash flow ratio measures a company's per share market price relative to its trailing-12-month (TTM) operating cash flow per share. This metric is used to determine whether a company is undervalued or overvalued relative to another stock, industry or sector. And like the P/E ratio, a lower number is typically considered better from the value perspective.

One of the reasons why P/CF ratio is often preferred over P/E ratio is the fact that operating cash flow adds back non-cash expenses such as depreciation and amortization to net income. This feature helps valuing stocks that have positive cash flow but are not profitable because of large noncash charges.

**P/FCF Ratio:** The price-to-free cash flow ratio is an extension of P/CF ratio, which uses trailing-12-month (TTM) free cash flow per share instead of operating cash flow per share. This metric is considered a more exact measure than P/CF ratio, as free cash flow subtracts capital expenditures (CAPEX) from a company's total operating cash flow, thereby reflecting the actual cash flow available for funding activities that generate additional revenues.

**Earnings Yield:** The earnings yield is calculated as current fiscal year (F1) EPS estimate divided by the company's current share price. The ratio, which is the inverse of the P/E ratio, measures the anticipated yield (or return) from earnings for each dollar invested in a stock today.

For example, earnings yield for a stock, which is trading at \$35 and expected to earn \$3 per share in the current fiscal year (F1), would be 0.0857 ( $3/35 = 0.0857$ ) or 8.57%. In other words, for \$1 invested in the stock today, the yield from earnings is anticipated to be 8.57 cents.

Investors most commonly compare the earnings yield of a stock to that of a broad market index (such as the S&P 500) and prevailing interest rates, such as the current 10-year Treasury yield. Since bonds and stocks compete for investors' dollars, stock investors typically demand a higher yield for the extra risk they assume compared to investors of U.S. Treasury-backed securities that offer virtually risk-free returns. This additional return is referred to as the risk premium.

**Debt/Equity Ratio:** The debt-to-equity ratio is calculated as a company's total liabilities divided by its shareholder equity. This metric is used to gauge a company's financial leverage. In other words, it is a measure of the degree to which a company is financing its operations through debt versus its own funds. The higher the ratio, the higher the risk for shareholders.

However, this ratio is difficult to compare across industry groups where ideal amounts of debt vary. Some businesses are more capital intensive than others and typically require higher debt to finance their operations. So, a company's debt-to-equity ratio should be compared with other companies in the same industry.

**Cash Flow (\$/share):** Cash flow per share is calculated as operating cash flow (after-tax earnings + depreciation + other non-cash charges) divided by common shares outstanding. It is used by many investors as a measure of a company's financial strength. Since cash flow per share takes into consideration a company's ability to generate cash by adding back non-cash expenses, it is regarded by some as a more accurate measure of a company's financial situation than earnings per share, which could be artificially deflated.

**Current Ratio:** The current ratio or liquidity ratio is a company's current assets divided by its current liabilities. It measures a company's ability to pay short-term obligations. A current ratio that is in line with the industry average or slightly higher is generally considered acceptable. A current ratio that is lower than the industry average would indicate a higher risk of distress or default. A higher number is usually better. However, a very high current ratio compared to the industry average could be an indication of inefficient use of assets by management.

**Debt/Capital Ratio:** Debt-to-capital ratio is a company's total debt (interest-bearing debt + both short- and long-term liabilities) divided its total capital (interest-bearing debt + shareholders' equity). It is a measure of a company's financial leverage. All else being equal, the higher the debt-to-capital ratio, the riskier the stock.

However, this ratio can vary widely from industry to industry, the ideal amount of required debt being different. Some businesses are more capital intensive than others and typically require higher debt to finance their operations. So, a company's debt-to-capital ratio should be compared with the same for its industry.

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**Net Margin:** Net margin is calculated as net income divided by sales. It shows how much of each dollar in sales generated by a company translates into profit. For example, if a company's net margin is 15%, its net income is 15 cents for every \$1 of sales it makes.

A change in margin can reflect either a change in business conditions, or a company's cost controls, or both. If a company's expenses are growing faster than sales, its net margin will decline. However, different net margin rates are considered good for different industries, so it's better to compare net margin rates of companies in the same industry group.

**Return on Equity:** Return on equity (ROE) is calculated as trailing-12-month net income divided by trailing-12-month average shareholder equity (including reinvested earnings). This metric is considered a measure of how effectively management is using a company's assets to generate profits. For example, if a company's ROE is 10%, it creates 10 cents profits for every \$1 shareholder equity, which is basically the company's assets minus debt. A company's ROE deemed good or bad depends on what's normal for its peers or industry group.

**Sales/Assets Ratio:** The sales-to-assets ratio or asset utilization ratio or asset turnover ratio is calculated as a company's annual sales divided by average assets (average of assets at the beginning of the year and at the year's end). This metric helps investors understand how effectively a company is using its assets to generate sales. For example, a sales-to-assets ratio of 2.5 indicates that the company generated \$2.50 in sales for every \$1 of assets on its books.

The higher the sales-to-assets ratio, the better the company is performing. However, similar to many other ratios, the asset turnover ratio tends to be higher for companies in certain industries/sectors than in others. So, a company's sales-to-assets ratio should be compared with the same for its industry/sector.

**Historical EPS Growth (3-5 Years):** This is the average annual (trailing-12-month) EPS growth rate over the last 3-5 years. This metric helps investors see how a company's EPS has grown from a long-term perspective.

Note: There are many factors that can influence short-term numbers — a recession will reduce this number, while a recovery will inflate it. The longterm perspective helps smooth out short-term events.

**Projected EPS Growth (F1/F0):** This is the estimated EPS growth rate for the current financial year. It is calculated as the consensus estimate for the current fiscal year (F1) divided by the reported EPS for the last completed fiscal year (F0).

**Current Cash Flow Growth:** It measures the latest year-over-year change in operating cash flow. Cash flow growth tells an investor how quickly a company is generating inflows of cash from operations. A positive change in the cash flow is desired and shows that more 'cash' is coming in than going out.

**Historical Cash Flow Growth (3-5 Years):** This is the annualized change in cash flow over the last 3-5 years. The change in a longer period helps put the current reading into proper perspective. By looking at the rate, rather than the actual dollar value, the comparison across the industry and peers becomes easier.

**Projected Sales Growth (F1/F0):** This metric looks at the estimated sales growth for the current year. It is calculated as sales estimate for the current fiscal year (F1) divided by the reported sales for the last completed fiscal year (F0).

Like EPS growth, a higher rate is better for sales growth. A look at a company's projected sales growth instantly tells you what the outlook is for their products and services. However, different sales growth rates are considered good for different industries, so it's better to compare sales growth rates of companies in the same industry group.

**EPS F1 Estimate 1-Week Change:** The percentage change in the Zacks Consensus EPS estimate for the current fiscal year over the past week. The change in a company's consensus EPS estimate (or earnings estimate revision) has proven to be strongly correlated with the near-term price movement of its shares. It is an integral part of the Zacks Rank.

If a stock's consensus EPS estimate is \$1.10 now versus \$1.00 a week ago, that will be reflected as a 10% upward revision. If, on the other hand, it went from \$1.00 to 90 cents, that would be a 10% downward revision.

**EPS F1 Estimate 4-Week Change:** The percentage change in the Zacks Consensus EPS estimate for the current fiscal year over the past four weeks.

A stock's earnings estimate revision in a 1-week period is important. But it's more meaningful to look at the longer-term revision. And, of course, the 4-week change helps put the 1-week change into proper perspective.

**EPS F1 Estimate 12-Week Change:** The percentage change in the Zacks Consensus EPS estimate for the current fiscal year over the past 12 weeks.

This metric essentially shows how the consensus EPS estimate has changed over a period longer than 1 week or 4 weeks.

**EPS Q1 Estimate Monthly Change:** The percentage change in the Zacks Consensus EPS estimate for the current fiscal quarter over the past four weeks.

While the revision in consensus EPS estimate for the current fiscal year is strongly correlated with the near-term price movement of its shares, the estimate revision for the current fiscal quarter is an important metric as well, especially over the short term, and particularly as a stock approaches its earnings date. If a stock's Q1 EPS estimate decreases ahead of its earnings release, it's usually a negative sign, whereas an increase is a positive sign.