

## Teradyne Inc. (TER)

**\$76.21** (As of 01/23/20)

Price Target (6-12 Months): **\$88.00**

Long Term: 6-12 Months

**Zacks Recommendation:**

**Outperform**

(Since: 01/22/20)

Prior Recommendation: Neutral

Short Term: 1-3 Months

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

**1-Strong Buy**

Zacks Style Scores:

VGM:C

Value: D

Growth: C

Momentum: A

## Summary

Teradyne reported impressive fourth-quarter results driven by strength in semiconductor test and LitePoint wireless shipments. It continues to benefit from growing memory market exposure, robust Test demand and strong product lineup. The company's lean cost structure and strong balance sheet remain positives. Additionally, management is optimistic about the Universal Robots acquisition and continuous design wins. We believe that the company will take advantage of significant growth opportunities in the high-growth wireless test market in the long-haul. However, Teradyne's HDD business poses a major threat due to slowdown in the PC market. Also, weakness in the mobility test market remains a headwind. Notably, the stock has outperformed the industry it belongs to over a year.

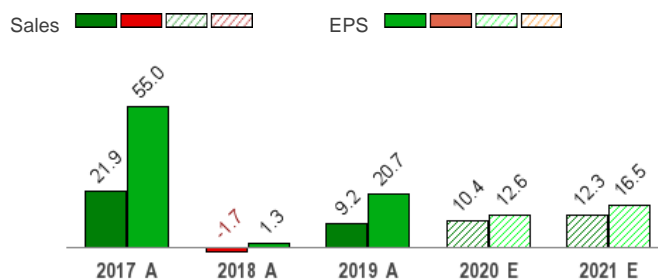
## Price, Consensus & Surprise



## Data Overview

52 Week High-Low	\$81.57 - \$34.05
20 Day Average Volume (sh)	2,228,611
Market Cap	\$12.8 B
YTD Price Change	11.8%
Beta	1.56
Dividend / Div Yld	\$0.36 / 0.5%
Industry	<a href="#">Electronics - Testing Equipment</a>
Zacks Industry Rank	Top 5% (14 out of 255)

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



Last EPS Surprise	11.4%
Last Sales Surprise	6.4%
EPS F1 Est- 4 week change	0.8%
Expected Report Date	04/28/2020
Earnings ESP	21.1%
P/E TTM	26.7
P/E F1	23.7
PEG F1	2.4
P/S TTM	5.6

## Sales Estimates (millions of \$)

	Q1	Q2	Q3	Q4	Annual*
2021	632 E	783 E	735 E	720 E	2,844 E
2020	614 E	693 E	667 E	631 E	2,533 E
2019	494 A	564 A	582 A	655 A	2,295 A

## EPS Estimates

	Q1	Q2	Q3	Q4	Annual*
2021	\$0.74 E	\$1.12 E	\$1.01 E	\$0.96 E	\$3.75 E
2020	\$0.63 E	\$0.97 E	\$0.90 E	\$0.82 E	\$3.22 E
2019	\$0.54 A	\$0.66 A	\$0.77 A	\$0.88 A	\$2.86 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 01/23/2020. The reports text is as of 01/24/2020.

## Overview

Headquartered in North Reading, MA, Teradyne Inc. is a leading provider of automated test equipment. The company is primarily focused on the semiconductor test market, which generates the bulk of its revenues. It also provides specialized system testing equipment for specific end markets.

The semiconductor test product line primarily consists of the FLEX platform (including the IG-XL software operating system enabling single or simultaneous testing of semiconductor devices), the J750 testing system based on the IG-XL software (for very high-volume testing, as required for microprocessors) the Magnum test platform (enabling testing of memory devices produced in very large quantities) and the ETS platform (focused on analog/mixed signal discrete devices that usually have a lower pin count for testing through the proprietary SmartPin technology). Additionally, the company also offers a broad range of services across the world that helps in the deployment and functioning of its testing systems.

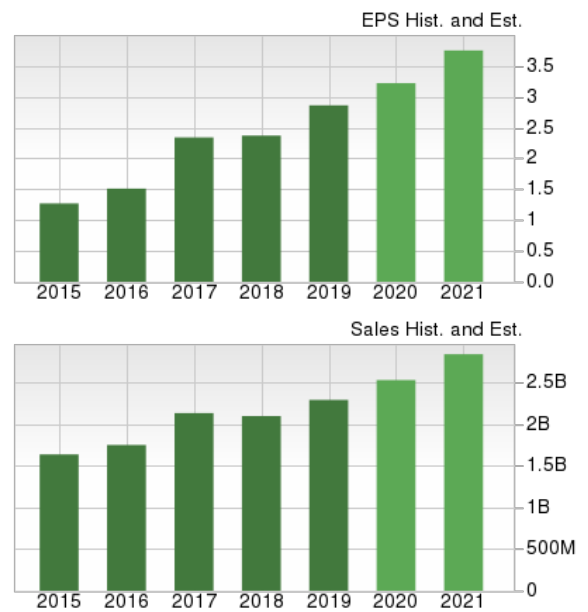
Customers primarily consist of semiconductor manufacturers, including integrated device manufacturers (IDMs) or foundries, as well as outsourced assembly and test subcontractors (OSATs).

The company reports revenues mainly under four segments. These segments are semiconductor Test, Industrial Automation, System Test and Wireless Test business.

For the fourth quarter of 2018, approximately 67% of revenues came from semiconductor testing platforms, 13% from Industrial Automation, 13% from the System Test business and the remaining 7% from the Wireless Test business.

The company has leveraged its expertise in semiconductor testing systems to expand into system testing for military/aerospace instrumentation, hard disk drive (including in-circuit test and x-ray inspection), printed circuit boards and automotive system diagnosis.

Teradyne has a large number of competitors, given its comprehensive product portfolio.



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## Reasons To Buy:

- ▲ A number of factors are expected to drive the **core semiconductor test business**, the most important of which is the growing demand for mobile devices. Teradyne is well positioned at leading players, which should help. Teradyne's strong portfolio and increased production complexities related to CSP will continue to generate some share gains as semiconductors start entering new applications related to the Internet of Things (IoT) market. Analog companies in general are expected to step up production, so demand for testing products should also pick up.
- ▲ The other market segment offering significant growth opportunity is **memory**. While the opportunity is relatively smaller than SoC test, increased complexities related to interface speeds in both NAND and DRAM devices are driving demand for testing devices. The company has been making steady gains here. Management expects Memory Test Market to grown on the back of strong demand in memory test, particularly with respect to new ramps. Teradyne's main advantage is that its products are scalable and the frequency range offered enables very high-speed testing that can be scaled up. Memory manufacturers are likely to grow much faster than others this year, since they are seeing steadier demand, driven by the growing demand for consumer electronic goods incorporating memory chips. Teradyne is clearly benefiting from this trend.
- ▲ The LitePoint acquisition expanded Teradyne's presence in the fast-growing **wireless testing market**. LitePoint opened up opportunities in higher-growth markets such as smartphones and tablets that the company did not serve earlier. This acquisition was particularly positive because it positioned Teradyne with solutions for next generation wireless networking and helped the company expand its footprint in Asia. Newer customers in China and Korea will generate growth in this segment while new products will expand the TAM for TER. Furthermore, LTE, LTE Advanced and 802.11ac adoption is expected to accelerate; and this combined with new standards like NFC testing will provide opportunities for LitePoint. Further, a proliferation of reliable, high-bandwidth connections in vehicles over the next five years will be another driver of test intensity as quality and reliability of these connections will be dominant. The emerging 60 gigahertz band applications in Wi-Fi and automotive radar will expand the need for tester instruments, thereby increasing Teradyne's market share at both Semi Test and LitePoint.

A recovery in the core semiconductor business, long-term opportunities in the wireless test market, growing memory market exposure, strong product lineup, and lean cost structure are positives.

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## Risks

- The **HDD business remains sluggish** due to the weakness in the computing market, which is the primary consumer of HDDs. Teradyne supplies products to both the two big HDD makers, Western Digital and Seagate. Both these companies expect moderate increase in HDD shipments this year, which will therefore be largely satisfied with existing capacity. While SSD demand is also eating into HDD numbers, related capacity has not really taken off yet. The company is securing a growing number of customer wins in SSD, so this is an offsetting factor.
  - The **wireless test business** (LitePoint) remains weak and has been declining over a number of years. The weak demand in the smartphone and tablet markets as well as a slowdown of technology adoption is offsetting the positive impact of increased complexities to a certain extent. Also, there is a danger of oversupply in the particular market segment in which LitePoint plays. Though the management expects the weakness at these large customers to be offset by strength at others in China and Korea, it does not expect this to happen any time soon. The problem of oversupply remains but management is trying to grow the product portfolio to increase the TAM.
  - The **system test business** is very choppy, with high double-digit bookings increases often followed by high double-digit declines. Although revenues are relatively more stable, the typically high values of systems test equipment leads to lumpiness if even a single customer defers a shipment or pulls it forward. The business is therefore hard to track and can only be gauged through general performance in the sector, new product adoption and market share gains/losses.
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## Last Earnings Report

### Teradyne Surpasses Q4 Earnings & Revenue Estimates

Teradyne Inc. reported fourth-quarter 2019 earnings of 88 cents per share, surpassing the Zacks Consensus Estimate by 9 cents. The figure also increased 39.7% year over year.

Moreover, revenues of \$654.7 million increased 26% year over year. Also, the figure surpassed the Zacks Consensus Estimate by 6.4% and came ahead of the guided range of \$590-\$630 million.

Quarter Ending **12/2019**

Report Date	<b>Jan 22, 2020</b>
Sales Surprise	<b>6.42%</b>
EPS Surprise	<b>11.39%</b>
Quarterly EPS	<b>0.88</b>
Annual EPS (TTM)	<b>2.85</b>

### Inside the Headlines

Approximately 67% of revenues came from semiconductor testing platforms, 13% from Industrial Automation, 13% from the System Test business and the remaining 7% from the Wireless Test business.

The increase in total revenues was driven by higher-than-expected memory and wireless test demand. Continued growth in 5G infrastructure test spending, smartphone complexity growth and share gains in the memory test market aided revenue growth in the quarter.

Also, the Teradyne's Industrial Automation segment witnessed growth in the fourth quarter, partially offset by manufacturing sector headwinds in the United States and Europe.

### Margins

Pro-forma gross margin was 58.5%, down 110 basis points (bps) from the prior-year quarter. The decrease was due to favorable product mix.

Total operating expenses (selling and administrative & engineering and development) of \$203.9 million increased 16.3% year over year. As a percentage of sales, both selling & administrative expenses and engineering & development costs decreased from the year-ago quarter.

Operating margin came in at 26.2%, up 460 bps from the year-ago quarter.

### Balance Sheet

At the end of the fourth quarter, Teradyne's cash and cash equivalents were \$773.9 million, higher than \$593.9 million in the prior quarter.

During the quarter, the company repurchased \$131.2 million of its common stock and paid \$15 million as dividends.

### Guidance

Management expects first-quarter 2020 revenues in the band of \$670-\$710 million. Non-GAAP earnings per share from continuing operations are likely to be in the range of 86-96 cents.

## Recent News

On **Dec 20, 2019**, Teradyne announced that the UltraFLEX test system will be used in Enflame's Deep Thinking Unit (DTU). Based on a reconfigurable architecture, DTU is optimized for high-performance computing and power efficiency required for major machine learning frameworks.

On **Nov 14, 2019**, Teradyne had completed the acquisition of AutoGuide Mobile Robots, a leading supplier of high-payload autonomous mobile robots.

## Valuation

Teradyne shares are up 36.4% in the 6-month period and 107.4% over the trailing 12-month period. Stocks in the Zacks sub-industry and the Zacks Computer & Technology sector are up 14.9% and 16.1% in the 6-month period, respectively. Over the past year, the Zacks sub-industry is up 27.9% and the sector is up 31.9%.

The S&P 500 index is up 11.4% in the 6-month period and 23.9% in the past year.

The stock is currently trading at 22.81X forward 12-month earnings, which compares to 24.7X for the Zacks sub-industry, 23.14X for the Zacks sector and 19.14X for the S&P 500 index.

Over the past five years, the stock has traded as high as 25.32X and as low as 11.54X, with a 5-year median of 16.78X. Our Outperform recommendation indicates that the stock will perform better than the market. Our \$88 price target reflects 26.7X forward 12-month earnings.

The table below shows summary valuation data for TER

Valuation Multiples - TER					
		Stock	Sub-Industry	Sector	S&P 500
P/E F 12M	Current	22.81	24.7	23.14	19.14
	5-Year High	25.32	26.26	23.14	19.34
	5-Year Low	11.54	18.3	16.87	15.17
	5-Year Median	16.78	22.02	19.24	17.44
P/S F12M	Current	4.87	4.12	3.75	3.56
	5-Year High	5.18	4.12	3.75	3.56
	5-Year Low	2	2.63	2.3	2.54
	5-Year Median	3.15	3.5	3.01	3
EV/EBITDA TTM	Current	17.83	17.6	12.71	12.38
	5-Year High	19.46	18.66	12.71	12.86
	5-Year Low	4.54	8.52	7.68	8.48
	5-Year Median	7.76	14.54	10.52	10.69

As of 01/23/2019

## Industry Analysis Zacks Industry Rank: Top 5% (14 out of 255)



## Top Peers

Advanced Energy Industries, Inc. (AEIS)	Outperform
Advantest Corp. (ATEYY)	Outperform
Keysight Technologies Inc. (KEYS)	Outperform
Agilent Technologies, Inc. (A)	Neutral
KLA Corporation (KLAC)	Neutral
Lam Research Corporation (LRCX)	Neutral
National Instruments Corporation (NATI)	Neutral
Seagate Technology PLC (STX)	Neutral

Industry Comparison Industry: Electronics - Testing Equipment				Industry Peers		
	TER Outperform	X Industry	S&P 500	ATEYY Outperform	KEYS Outperform	NATI Neutral
<b>VGM Score</b>	<b>C</b>	-	-	<b>B</b>	<b>C</b>	<b>C</b>
Market Cap	12.77 B	11.39 B	24.46 B	11.42 B	19.63 B	6.06 B
# of Analysts	8	5	13	2	5	2
Dividend Yield	0.47%	0.42%	1.75%	1.00%	0.00%	2.16%
<b>Value Score</b>	<b>D</b>	-	-	<b>C</b>	<b>D</b>	<b>D</b>
Cash/Price	0.08	0.04	0.04	0.12	0.08	0.07
EV/EBITDA	20.04	22.78	14.11	15.96	17.97	22.78
PEG Ratio	2.41	2.09	2.04	2.05	2.21	NA
Price/Book (P/B)	8.74	5.22	3.40	5.75	6.50	5.22
Price/Cash Flow (P/CF)	24.32	24.23	13.66	20.32	17.20	24.63
P/E (F1)	23.67	24.18	19.10	31.70	20.06	27.78
Price/Sales (P/S)	5.56	4.50	2.67	4.54	4.56	4.50
Earnings Yield	4.23%	4.13%	5.23%	3.15%	4.98%	3.59%
Debt/Equity	0.30	0.38	0.72	0.03	0.60	0.00
Cash Flow (\$/share)	3.13	3.96	6.94	2.90	6.05	1.88
<b>Growth Score</b>	<b>C</b>	-	-	<b>B</b>	<b>B</b>	<b>C</b>
Hist. EPS Growth (3-5 yrs)	20.49%	12.80%	10.60%	86.48%	14.35%	8.22%
Proj. EPS Growth (F1/F0)	12.59%	10.67%	7.59%	-28.74%	10.00%	5.38%
Curr. Cash Flow Growth	-2.68%	15.50%	13.90%	169.43%	-28.59%	27.53%
Hist. Cash Flow Growth (3-5 yrs)	8.94%	8.83%	9.00%	37.88%	15.69%	9.35%
Current Ratio	3.35	2.05	1.22	4.09	3.21	3.17
Debt/Capital	22.80%	27.39%	42.99%	3.26%	37.31%	0.00%
Net Margin	20.88%	20.74%	11.35%	19.39%	14.43%	11.90%
Return on Equity	33.43%	18.69%	17.10%	26.84%	29.25%	14.73%
Sales/Assets	0.86	0.57	0.55	0.90	0.68	0.81
Proj. Sales Growth (F1/F0)	10.38%	6.33%	4.03%	-8.55%	6.36%	4.83%
<b>Momentum Score</b>	<b>A</b>	-	-	<b>B</b>	<b>B</b>	<b>B</b>
Daily Price Chg	3.56%	0.70%	0.26%	3.60%	-1.28%	1.54%
1 Week Price Chg	3.47%	3.18%	2.29%	-3.38%	4.99%	6.24%
4 Week Price Chg	9.45%	4.40%	2.24%	3.62%	0.49%	8.59%
12 Week Price Chg	24.49%	13.07%	7.79%	28.79%	3.22%	11.77%
52 Week Price Chg	111.46%	31.03%	21.61%	180.76%	47.43%	2.94%
20 Day Average Volume	2,228,611	1,130,896	1,536,379	3,349	1,192,697	591,747
(F1) EPS Est 1 week change	0.78%	0.00%	0.00%	1.09%	0.00%	0.00%
(F1) EPS Est 4 week change	0.78%	0.00%	0.00%	-3.38%	0.00%	0.00%
(F1) EPS Est 12 week change	0.78%	0.63%	-0.23%	13.07%	4.55%	-2.90%
(Q1) EPS Est Mthly Chg	47.37%	0.00%	0.00%	NA	0.00%	0.00%

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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 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.

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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	D
Growth Score	C
Momentum Score	A
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.

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