



**Mark E. Jagiela**  
Chief Executive Officer and President  
Teradyne, Inc.

Fellow Shareholders,

2019 was a strong year for Teradyne. Annual sales grew 9% to \$2.3 billion and non-GAAP earnings per share grew 21% to \$2.86<sup>1</sup>. This extends our track record of growth that has seen our sales and non-GAAP earnings per share grow at a compounded rate of 8% and 18% respectively over the last 6 years.



This performance, and expected future growth, is due in large part to our alignment to two significant global trends. The first trend has been with us for decades – the unrelenting growth in the use of electronics across the global economy and in our daily lives. The second trend is the emerging market for smart, collaborative automation for industry. Taken together, they provide a strong platform for our company both to grow and to improve our society.

Looking at electronics, the world consumed 299 billion semiconductor devices in 2019, up 30% from 2013. Furthermore, the complexity of these devices has increased more than fourfold during that time. Combined, these two factors increased the size of the semiconductor test market 67% over this same period. Semiconductors and electronic systems are fundamental to improving healthcare, education, commerce, communication, entertainment, transportation, human productivity, energy efficiency, and renewable energy supply. Our Test business is at the very core of enabling this trend and we're collaborating with our customers to deliver the innovative test solutions needed in the future.

In advanced automation, our Universal Robots, MiR and AutoGuide products are creating a new market for collaborative automation. In the past, only companies with massive scale could afford the investments required to broadly deploy

automation. However, advances in sensor, gear and drive technologies, combined with easy-to-use software, has enabled a new class of collaborative and autonomous robots. Now, it is practical for companies of all sizes to combine the power of automation and human talent to drive business success. We are at the very early stages of this global trend. These robots are fundamentally changing manufacturing and material handling processes across the world and we're playing a leading role in driving that change.

In 2019, we strengthened our growth prospects across Teradyne with new products, competitive design wins, crisp R&D execution and selective acquisitions. On the new product front in our Test business, the biggest milestone was the introduction of our next-generation system on a chip test platform, the UltraFLEXplus. The UltraFLEXplus extends the industry-leading performance of the UltraFLEX software environment to both existing high-performance digital devices and a growing class of artificial intelligence and 'big data' devices. We also introduced the Magnum-EPIC platform targeted at high speed DRAM devices, a new segment of the memory test market for us and one that is poised to grow rapidly in 2020. Both of these new products scored significant competitive design wins in 2019 and are ramping production in 2020. In addition, earlier in the year, we expanded our analog test portfolio with the purchase of Lemsys, a specialized maker of semiconductor testers for the high power chips used in electric vehicles ranging from automobiles to locomotives.

New products and selective acquisitions were a highlight in our Industrial Automation (IA) business as well. At Universal Robots (UR), we introduced a 16 kg collaborative robot that extends the ease of use and safety of UR to a broader, higher payload market. At MiR, we expanded our market reach with the introduction of the MiR1000, an autonomous mobile robot that doubles our pallet moving payload to 1,000 kg. Furthermore, we extended our product offerings in the mobile robot space by acquiring the technology leader in autonomous forklifts, AutoGuide (AG) in October. Like our other IA products, AG's forklifts and tuggers are safe, easy to train and have a fast payback, often less than 18 months. But, their attractiveness is much more than financial. AG solves two of the biggest operational problems material handling managers face daily – safety and the availability of skilled workers. While AG is small today (less than \$10 million in full year sales in 2019) we expect sales to more than double in 2020. With the benefit of

## Non-GAAP Operating Results<sup>1</sup>

|      | GAAP Revenue (\$M) | Operating Income (\$M) | Operating Margin | Net Income (\$M) | Earnings per Share | Diluted Share Count | # of Employees |
|------|--------------------|------------------------|------------------|------------------|--------------------|---------------------|----------------|
| 2019 | 2,295              | 582                    | 25%              | 494              | \$2.86             | 175                 | 5,400          |
| 2018 | 2,101              | 529                    | 25%              | 449              | \$2.37             | 189                 | 4,900          |
| 2017 | 2,137              | 565                    | 26%              | 469              | \$2.34             | 200                 | 4,500          |

Teradyne's global operational, technical and financial strength behind them, we're planning for many years of growth in the future.

Looking back at the financial results of 2019 in more detail, our Test businesses performed well, growing a combined 9% from 2018. Our IA business grew like sales at a respectable 12%, but below our ambitious plan.

In Semiconductor Test, the 5G infrastructure build out in China, growth in smartphone complexity and Memory Test share gains were especially noteworthy in 2019. In smartphones, complexity growth of legacy handsets drove up test intensity and, therefore, tester demand. The steady increase of features like multiple, high-resolution cameras, enhanced photo and video processing, and new connectivity features powered the test demand.

Our System Test and Wireless Test businesses also delivered solid results. In System Test, each unit – Defense and Aerospace, Production Board Test and Storage Test – delivered strong growth for the full year. Storage Test's performance is especially noteworthy with annual sales growth of over 70%, driven by the increased test intensity of terabyte hard drives and a growing business in system level test of complex semiconductor devices. In Wireless Test, LitePoint delivered the third straight year of double digit revenue growth, driven by new wireless connectivity standards along with early buying for 5G handset test.

While our Test business operated above plan, our IA business results were below our 2019 growth plan. Growth was constrained by powerful economic headwinds in the automotive supply chain and general manufacturing sectors in Europe and North America.

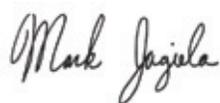
In 2019, our capital allocation strategy, which balances share repurchases, dividends and selective acquisitions, was on full display. We repurchased \$500 million of our shares at an average price of \$45.89, paid \$61 million in dividends and

invested \$80 million for acquisitions and strategic investments. In January 2020, our Board of Directors authorized a \$1 billion share repurchase program with an expected minimum of \$250 million to be purchased in 2020 and increased the dividend 11% to \$0.10 per quarter.

2019 was also a significant year on the Environmental, Social and Governance (ESG) front as we published Teradyne's first comprehensive Corporate Social Responsibility (CSR) report. Teradyne has long supported numerous environmental, social and governance activities including generating solar power at our major facilities, reporting to the Carbon Disclosure Project, providing educational scholarships, aiding in disaster relief and aligning our corporate governance to industry best practices. Our CSR report summarizes all of our activities in one document, making it easier for investors, employees and others to track our progress. Improvement in ESG is an ongoing process and we look forward to reporting on our continued progress in the years ahead.

We enter 2020 with the strongest Test and Industrial Automation portfolio in our history and an organization determined to press our competitive advantage. While the markets we serve can be volatile in any given quarter or year, we're confident that the increasing penetration of electronics and automation in all parts of the global economy, combined with our disciplined operating model and proven growth strategy, will deliver long term value to our customers, employees and shareholders.

On behalf of over 5,400 employees focused on serving the needs of customers worldwide, thank you for your confidence in Teradyne.



Mark E. Jagiela  
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Teradyne, Inc.  
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<sup>1</sup>Non-GAAP financial measures. Please see the "Shareholder Letter Supplement" posted to our Investor Relations website – [investors.teradyne.com](http://investors.teradyne.com) – for explanations of why we use these Non-GAAP measures and the reconciliation to the most comparable GAAP financial measures.

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