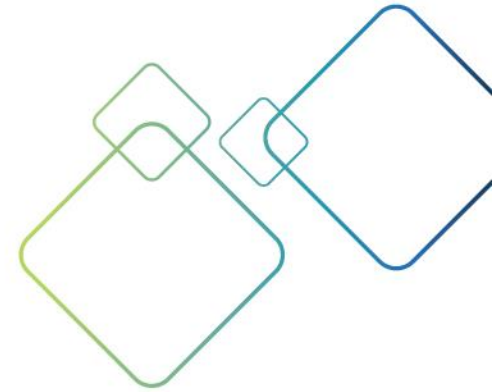


TERADYNE



Financial Results for Q3 2018

October 24, 2018





SAFE HARBOR

This presentation contains forward-looking statements regarding Teradyne's future business prospects, results of operations, market conditions, earnings per share, the payment of a quarterly dividend, the repurchase of Teradyne common stock pursuant to a share repurchase program, use of proceeds and potential dilution from the senior convertible notes offering, potential borrowings under a senior secured credit facility, and the impact of the U.S. tax reform, export and tariff laws. Such statements are based on the current assumptions and expectations of Teradyne's management and are neither promises nor guarantees of future performance, events, earnings per share, use of cash, payment of dividends, repurchases of common stock, payment of the senior convertible notes, availability of, or borrowing under, the credit facility, or the impact of the U.S. tax reform, export and tariff laws. There can be no assurance that management's estimates of Teradyne's future results or other forward looking statements will be achieved. Additionally, the current dividend and share repurchase programs may be modified, suspended or discontinued at any time. Important factors that could cause actual results, earnings per share, use of cash, dividend payments, repurchases of common stock, payment of the senior convertible notes, or borrowings under the credit facility to differ materially from those presently expected include: conditions affecting the markets in which Teradyne operates; decreased or delayed product demand from one of more significant customers; development, delivery and acceptance of new products; the ability to grow the Industrial Automation business; increased research and development spending; deterioration of Teradyne's financial condition; the consummation and success of any mergers or acquisitions; unexpected cash needs; insufficient cash flow to make required payments and pay the principal amount on the senior convertible notes; the business judgment of the board of directors that a declaration of a dividend, the repurchase of common stock or borrowing under the credit facility is not in the Company's best interest; additional U.S. tax regulations or IRS guidance; the impact of any tariffs or export controls imposed in the U.S. or China; and other events, factors and risks disclosed in filings with the SEC, including, but not limited to, the "Risk Factors" section of Teradyne's Annual Report on Form 10-K for the fiscal year ended December 31, 2017 and the Quarterly Report on Form 10-Q for the period ended July 1, 2018. The forward-looking statements provided by Teradyne in this presentation represent management's views as of the date of this presentation. Teradyne anticipates that subsequent events and developments may cause management's views to change. However, while Teradyne may elect to update these forward-looking statements at some point in the future, Teradyne specifically disclaims any obligation to do so. These forward-looking statements should not be relied upon as representing Teradyne's views as of any date subsequent to the date of this presentation.

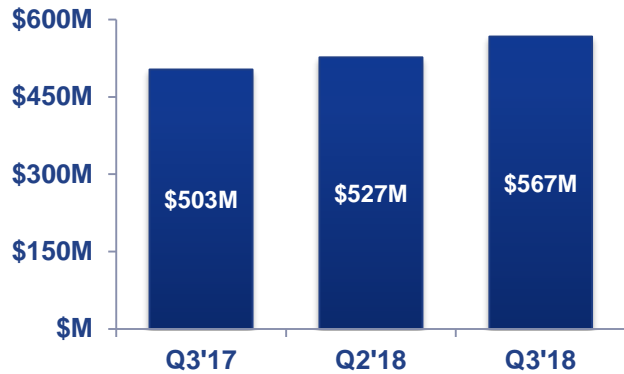
Business Update and Outlook

Mark Jagiela, Teradyne President and CEO



Q3'18 Summary

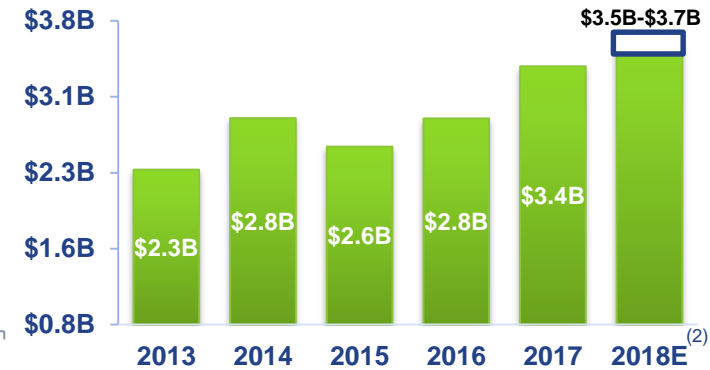
All Business Segments Delivered Strong Q3'18 Results
9mos'18 Sales of \$1,581M, Non-GAAP EPS of \$1.74



Sales



Non-GAAP EPS⁽¹⁾



ATE Test Market

- Semiconductor strength in Memory, Analog and Image Sensor Test
- Universal Robots Q3'18 sales up 46% from Q3'17, Industrial Automation up 64%

- 59% gross margin in Q3'18
- 28% non-GAAP operating margin in Q3'18

- Expect 2018 SOC Test market to be \$2.6B-\$2.7B, above \$2.4B July estimate
- Expect 2018 Memory Test market in the \$0.9B-\$1B range

(1) See appendix for GAAP to Non-GAAP reconciliation

(2) 2018E ATE market size range of \$3.5B-\$3.7B with a mid-point of \$3.6B; market data from SEMI WWSEMS report and internal estimates



Third Quarter 2018 Financial Results and Fourth Quarter Guidance

Greg Beecher, Teradyne Vice President and Chief Financial Officer



Segment Summary

3rd
Quarter
Sales

Semiconductor Test

Industrial Automation

System Test

Wireless Test

Key Highlights

\$417M

Q3'18 Memory Test sales of \$87M

Analog and Image Sensor demand strong

\$66M

Q3'18 UR sales up 46% from Q3'17

UR e-series Next Generation Cobots shipping in volume

MiR Q3'18 sales up ~120% from Q3'17 on a pro forma basis

\$50M

Operated above model profit rate

Strong demand at Defense and Aerospace, Production Board Test, and Storage Test

\$34M

9mos'18 sales up 10% from 9mos'17 on strong Connectivity demand

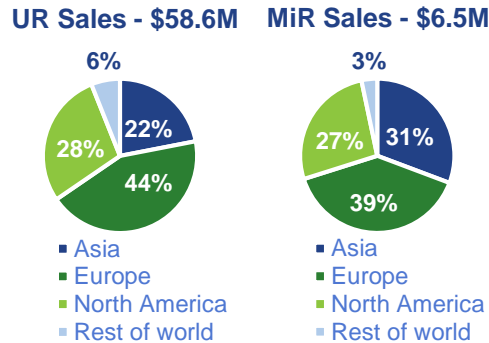
802.11ax rollout expected in 2019

5G cellular volume expected in 2020/2021

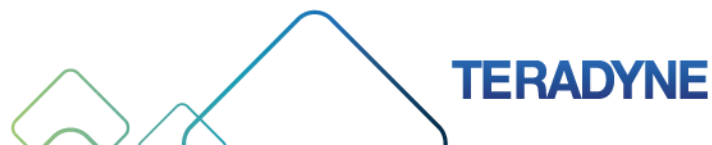
Sales Detail

SemiTest Sales

Semi Product	\$342M
Semi Service	\$75M



Energid Sales - \$0.8M



Balance Sheet & Capital Return

	Q3'17 Actual	Q2'18 Actual	Q3'18 Actual	
Cash and Marketable Securities	\$1,848M	\$1,304M	\$1,324M	
Inventory	\$125M	\$136M	\$155M	
DSO	48 Days	78 Days	57 Days	
Capital Additions	\$27M	\$28M	\$18M	
Depreciation and Amortization ⁽¹⁾	\$35M	\$36M	\$37M	
Free Cash Flow ⁽²⁾	\$283M	\$104M	\$223M	
Capital Return {	Buybacks	\$57M	\$227M	\$201M
	Dividends	\$14M	\$17M	\$17M

(1) Includes depreciation, stock based compensation, amortization of acquired intangible assets and amortization of the non-cash convertible debt discount

(2) Teradyne calculates free cash flow as: GAAP Cash flow from operations, excluding discontinued operations, less property, plant and equipment additions; see GAAP to non-GAAP reconciliations. Q3'18 free cash flow includes proceeds from government subsidy for property, plant and equipment.

Q3'18 Non-GAAP Results

\$s in millions, except EPS		Q3'17 Actual ⁽¹⁾		Q2'18 Actual ⁽¹⁾		Q3'18 Actual ⁽¹⁾
Sales		\$503M		\$527M		\$567M
Gross Margin	58.6%	\$295M	58.4%	\$308M	58.9%	\$334M
R&D	15.3%	\$77M	14.3%	\$75M	13.6%	\$77M
SG&A	17.1%	\$86M	18.9%	\$99M	17.7%	\$100M
OPEX	<u>32.4%</u>	<u>\$163M</u>	<u>33.2%</u>	<u>\$175M</u>	<u>31.3%</u>	<u>\$177M</u>
Operating Profit	26.2%	\$131M	25.2%	\$133M	27.6%	\$156M
Income Taxes (& effective tax rate) ⁽²⁾	19.1%	\$25M	17.0%	\$23M	15.3%	\$24M
EPS		\$0.54		\$0.59		\$0.71
Diluted Shares		200M		192M		187M

(1) See attached appendix for GAAP to non-GAAP reconciliations

(2) Income tax rate in Q3'18 is lower than the full year estimate of 16% due to a cumulative catch up for the year recorded in Q3'18 to bring the YTD rate to 16%

Industrial Automation⁽¹⁾ Growth

Industrial Automation GAAP as Reported Sales⁽²⁾

	<u>Q1'17</u>	<u>Q2'17</u>	<u>Q3'17</u>	<u>9mos'17</u>	<u>Q1'18</u>	<u>Q2'18</u>	<u>Q3'18</u>	<u>9mos'18</u>	<u>Q3'18/ Q3'17</u>	<u>9mos'18/ 9mos'17</u>
Industrial Automation	\$36.3	\$39.3	\$40.1	\$115.7	\$48.8	\$62.1	\$65.9	\$176.8	64%	53%

Industrial Automation Pro Forma Sales⁽³⁾

	<u>Q1'17</u>	<u>Q2'17</u>	<u>Q3'17</u>	<u>9mos'17</u>	<u>Q1'18</u>	<u>Q2'18</u>	<u>Q3'18</u>	<u>9mos'18</u>	<u>Q3'18/ Q3'17</u>	<u>9mos'18/ 9mos'17</u>
Industrial Automation	\$38.7	\$43.6	\$44.0	\$126.4	\$55.4	\$63.3	\$65.9	\$184.6	50%	46%

(1) Industrial Automation includes: Universal Robots acquired June'15, Energid acquired Feb'18 and MiR acquired Apr'18

(2) GAAP as reported sales includes Universal Robots, Energid from time of acquisition (Feb'18) and MiR from time of acquisition (April 2018)

(3) Pro forma sales include results from Universal Robots, MiR and Energid pre and post acquisition dates



Q4'18 Non-GAAP Guidance

\$s in millions, except EPS	Q3'18 Actual ⁽¹⁾	Q4'18 Guidance ⁽¹⁾
Sales	\$567M	\$480M - \$510M
Gross Margin	59%	57%
OPEX	31%	35% - 37%
Operating Profit	28%	21% - 23%
Net Interest & Other Income	\$1M	\$3M
Effective Tax Rate ⁽²⁾	15%	16%
EPS	\$0.71	\$0.46 - \$0.54
Diluted Shares	187M	183M

(1) See attached appendix for GAAP to non-GAAP reconciliations.

(2) Income tax rate in Q3'18 is lower than the full year estimate of 16% due to a cumulative catch up for the year recorded in Q3'18 to bring the YTD rate to 16%

October 2018 Update

- SOC Test market strength continued in Q3'18 on strong Analog and Image Sensor Test demand.
- Memory Test Q3'18 sales up 83% from Q3'17, 9mos'18 sales up 87% from 9mos'17 on strength in Flash Final Test and growing Wafer Test business.
- Universal Robots Q3'18 sales up 46% from Q3'17 and MiR Q3'18 sales up ~120% from Q3'17 on a pro forma basis.
- LitePoint Q3'18 sales up 11% from Q3'17. 9mos'18 sales up 10% from 9mos'17 on smartphone Wireless Test demand.
- Repurchased 5M shares for \$201M in Q3'18 and paid \$17M in dividends. Through 9mos'18, repurchased 13.8M shares for \$562M and paid \$51M in dividends.

Supplemental Information



Teradyne OPEX History and Outlook

Annual Non-GAAP OPEX ⁽¹⁾					
	2015	2016	2017	2018LE	2019LE
Industrial Automation ⁽²⁾	\$14M	\$43M	\$62M	\$118M	↑
Test	\$514M	\$513M	\$510M	\$504M	→
Variable Comp	<u>\$61M</u>	<u>\$53M</u>	<u>\$86M</u>	<u>\$73M</u>	→
Total OPEX	\$589M	\$609M	\$658M	\$695M	↑

Test OPEX ~flat excluding changes in variable compensation tied to profitability levels

(1) See attached appendix for GAAP to non-GAAP reconciliations.

(2) Commencing from date of acquisitions. UR June 12th, 2015 onwards, Energid February 26th, 2018 onwards, MiR April 25th, 2018 onwards

Appendix | GAAP to Non-GAAP Reconciliation

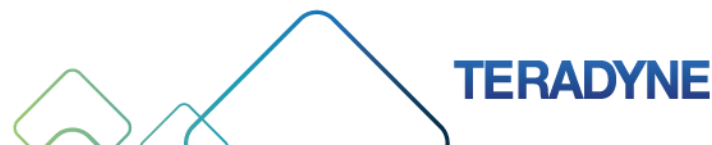
In addition to disclosing results that are determined in accordance with GAAP, Teradyne also discloses in this presentation and on the earnings call non-GAAP results of operations that exclude certain income items and charges. These results are provided as a complement to results provided in accordance with GAAP. These non-GAAP performance measures are used to make operational decisions, to determine employee compensation, to forecast future operational results, and for comparison with the Company's business plan, historical operating results and the operating results of the Company's competitors. Management believes each of these non-GAAP performance measures provides useful supplemental information for investors, allowing greater transparency to the information used by management in its operational decision making and in the review of the Company's financial and operational performance, as well as facilitating meaningful comparisons of the Company's results in the current period compared with those in prior and future periods. A reconciliation of each available GAAP to non-GAAP financial measure discussed in this presentation is contained in the following slides and on the Teradyne website at www.teradyne.com by clicking on "Investors" and then selecting the "GAAP to Non-GAAP Reconciliation" link. The non-GAAP performance measures discussed in this presentation may not be comparable to similarly titled measures used by other companies. The presentation of non-GAAP measures is not meant to be considered in isolation, as a substitute for, or superior to, financial measures or information provided in accordance with GAAP.

Appendix | GAAP to Non-GAAP Reconciliation

GAAP to Non-GAAP Earnings Reconciliation

(In millions, except per share amounts)

	September 30, 2018		Quarter Ended				October 1, 2017 (1)		% of Net Revenues			
	\$	% of Net Revenues	July 1, 2018	% of Net Revenues	Basic	Diluted	\$	% of Net Revenues	Basic	Diluted		
Net revenues	\$ 566.8		\$ 526.9				\$ 503.4					
Gross profit GAAP	\$ 333.7	58.9%	\$ 307.3	58.3%			\$ 294.8	58.6%				
Inventory step-up	-	-	0.4	0.1%			-	-				
Gross profit non-GAAP	\$ 333.7	58.9%	\$ 307.7	58.4%			\$ 294.8	58.6%				
Income from operations - GAAP	\$ 143.6	25.3%	\$ 120.4	22.9%			\$ 129.1	25.6%				
Acquired intangible assets amortization	11.1	2.0%	9.8	1.9%			7.0	1.4%				
Restructuring and other (2)	1.7	0.3%	2.4	0.5%			(4.4)	-0.9%				
Inventory step-up	-	-	0.4	0.1%			-	-				
Income from operations - non-GAAP	\$ 156.4	27.6%	\$ 133.0	25.2%			\$ 131.7	26.2%				
					Net Income per Common Share				Net Income per Common Share			
	September 30, 2018	% of Net Revenues	Basic	Diluted	July 1, 2018	% of Net Revenues	Basic	Diluted	October 1, 2017	% of Net Revenues	Basic	Diluted
Net income - GAAP	\$ 120.0	21.2%	\$ 0.65	\$ 0.63	\$ 101.0	19.2%	\$ 0.53	\$ 0.52	\$ 103.4	20.5%	\$ 0.52	\$ 0.51
Acquired intangible assets amortization	11.1	2.0%	0.06	0.06	9.8	1.9%	0.05	0.05	7.0	1.4%	0.04	0.03
Interest and other (3)	3.3	0.6%	0.02	0.02	3.2	0.6%	0.02	0.02	3.1	0.6%	0.02	0.02
Restructuring and other (2)	1.7	0.3%	0.01	0.01	2.4	0.5%	0.01	0.01	(4.4)	-0.9%	(0.02)	(0.02)
Pension mark-to-market adjustment (3)	0.3	0.1%	0.00	0.00	(0.1)	0.0%	(0.00)	(0.00)	-	-	-	-
Inventory step-up	-	-	-	-	0.4	0.1%	0.00	0.00	-	-	-	-
Exclude discrete tax adjustments (4)	0.3	0.1%	0.00	0.00	(0.5)	-0.1%	(0.00)	(0.00)	0.3	0.1%	0.00	0.00
Non-GAAP tax adjustments	(3.4)	-0.6%	(0.02)	(0.02)	(3.4)	-0.6%	(0.02)	(0.02)	(1.7)	-0.3%	(0.01)	(0.01)
Convertible share adjustment	-	-	-	0.01	-	-	-	0.01	-	-	-	-
Net income - non-GAAP	\$ 133.3	23.5%	\$ 0.72	\$ 0.71	\$ 112.8	21.4%	\$ 0.59	\$ 0.59	\$ 107.7	21.4%	\$ 0.55	\$ 0.54
GAAP and non-GAAP weighted average common shares - basic	185.7				190.7				197.5			
GAAP weighted average common shares - diluted	190.5				194.9				200.8			
Exclude dilutive shares related to convertible note transaction	(3.1)				(2.6)				(1.1)			
Non-GAAP weighted average common shares - diluted	187.4				192.3				199.7			



Appendix | GAAP to Non-GAAP Reconciliation

(1) Certain prior period amounts were reclassified to conform with the first quarter 2018 adoption of new accounting guidance for the presentation of pension and post retirement costs.

(2) Restructuring and other consists of:

	Quarter Ended		
	September 30, 2018	July 1, 2018	October 1, 2017
Employee severance	\$ 1.7	\$ 2.4	\$ 0.6
Acquisition related expenses and compensation	0.8	2.5	-
Contingent consideration fair value adjustment	(0.8)	(3.5)	(0.3)
Other	-	0.9	0.4
Property insurance recovery	-	-	(5.1)
	<u>\$ 1.7</u>	<u>\$ 2.4</u>	<u>\$ (4.4)</u>

(3) For the quarters ended September 30, 2018, July 1, 2018 and October 1, 2017, adjustment to exclude non-cash convertible debt interest expense. For the quarter ended September 30, 2018 and July 1, 2018, adjustments to exclude actuarial losses recognized under GAAP in accordance with Teradyne's mark-to-market pension accounting.

(4) For the quarters ended September 30, 2018, July 1, 2018 and October 1, 2017, adjustment to exclude discrete income tax items.

Appendix | GAAP to Non-GAAP Reconciliation

Nine Months Ended

	September 30, 2018		October 1, 2017 (1)	
		% of Net Revenues		% of Net Revenues
Net Revenues	\$ 1,581.2		\$ 1,657.2	
Gross profit GAAP	\$ 910.9	57.6%	\$ 950.5	57.4%
Inventory step-up	0.4	0.0%	-	-
Gross profit non-GAAP	\$ 911.3	57.6%	\$ 950.5	57.4%
Income from operations - GAAP	\$ 361.5	22.9%	\$ 430.7	26.0%
Acquired intangible assets amortization	28.6	1.8%	23.1	1.4%
Restructuring and other (2)	3.8	0.2%	0.4	0.0%
Inventory step-up	0.4	0.0%	-	-
Income from operations - non-GAAP	\$ 394.3	24.9%	\$ 454.2	27.4%

	September 30, 2018		Net Income per Common Share		October 1, 2017		Net Income per Common Share	
		% of Net Revenues	Basic	Diluted		% of Net Revenues	Basic	Diluted
Net income - GAAP	\$ 308.0	19.5%	\$ 1.62	\$ 1.57	\$ 363.6	21.9%	\$ 1.83	\$ 1.81
Acquired intangible assets amortization	28.6	1.8%	0.15	0.15	23.1	1.4%	0.12	0.11
Interest and other (3)	9.7	0.6%	0.05	0.05	9.3	0.6%	0.05	0.05
Restructuring and other (2)	3.8	0.2%	0.02	0.02	0.4	0.0%	0.00	0.00
Inventory step-up	0.4	0.0%	0.00	0.00	-	-	-	-
Pension mark-to-market adjustment (3)	0.2	0.0%	0.00	0.00	(2.5)	-0.2%	(0.01)	(0.01)
Exclude discrete tax adjustments (4)	(6.5)	-0.4%	(0.03)	(0.03)	(6.1)	-0.4%	(0.03)	(0.03)
Non-GAAP tax adjustments	(8.7)	-0.6%	(0.05)	(0.04)	(9.9)	-0.6%	(0.05)	(0.05)
Convertible share adjustment	-	-	-	0.03	-	-	-	-
Net income - non-GAAP	\$ 335.5	21.2%	\$ 1.76	\$ 1.74	\$ 377.9	22.8%	\$ 1.90	\$ 1.88

GAAP and non-GAAP weighted average common shares - basic	190.6	198.8
GAAP weighted average common shares - diluted	196.3	201.4
Exclude dilutive shares from convertible note	(4.0)	(0.6)
Non-GAAP weighted average common shares - diluted	192.3	200.8

Appendix | GAAP to Non-GAAP Reconciliation

(1) Certain prior period amounts were reclassified to conform with the first quarter 2018 adoption of new accounting guidance for the presentation of pension and post retirement costs.

(2) Restructuring and other consists of:

	Nine Months Ended	
	September 30, 2018	October 1, 2017
Employee severance	\$ 7.9	\$ 2.0
Acquisition related expenses and compensation	4.1	-
Other	0.9	1.7
Contingent consideration fair value adjustment	(9.2)	1.8
Property insurance recovery	-	(5.1)
	<u>\$ 3.8</u>	<u>\$ 0.4</u>

(3) For the nine months ended September 30, 2018 and October 1, 2017, Interest and other included non-cash convertible debt interest expense. For the nine months ended September 30, 2018 and October 1, 2017, adjustments to exclude actuarial gains recognized under GAAP in accordance with Teradyne's mark-to-market pension accounting.

(4) For the nine months ended September 30, 2018 and October 1, 2017, adjustment to exclude discrete income tax items.

Appendix | GAAP to Non-GAAP Reconciliation

GAAP to Non-GAAP Reconciliation of Fourth Quarter 2018 guidance:

GAAP and non-GAAP fourth quarter revenue guidance:

	\$480 million	to	\$510 million
GAAP net income per diluted share	\$ 0.39		\$ 0.46
Exclude acquired intangible assets amortization	0.06		0.06
Exclude non-cash convertible debt interest	0.02		0.02
Exclude restructuring and other	0.01		0.01
Tax effect of non-GAAP adjustments	(0.02)		(0.02)
Convertible share adjustment	0.01		0.01
Non-GAAP net income per diluted share	\$ 0.46		\$ 0.54

For press releases and other information of interest to investors, please visit Teradyne's homepage at <http://www.teradyne.com>.

Contact: Teradyne, Inc.

Andy Blanchard 978-370-2425

Vice President of Corporate Relations

Appendix | GAAP to Non-GAAP Reconciliation

	Q3'17		Q2'18		Q3'18		Q4'18 Low Guidance	Q4'18 High Guidance
	\$'s	% of sales	\$'s	% of sales	\$'s	% of sales	% of sales	% of sales
GAAP Operating Expenses	\$166	33%	\$187	35%	\$190	34%	40%	37%
Intangible Asset Amortization	-\$7	-1%	-\$10	-2%	-\$11	-2%	-3%	-3%
Restructuring and Other	\$4	1%	-\$2	0%	-\$2	0%	0%	0%
Non GAAP Operating Expenses	\$163	32%	\$175	33%	\$177	31%	37%	35%

	Q3'17		Q2'18		Q3'18	
	\$'s	%	\$'s	%	\$'s	%
GAAP Income Tax	\$24	19%	\$19	16%	\$21	15%
Exclude discrete tax adjustments	\$0	0%	\$1	0%	\$0	0%
Tax effect of non-GAAP adjustments	\$2	1%	\$3	3%	\$3	2%
Effect of Higher Non-GAAP PBT		-1%		-2%		-2%
Non GAAP Income Tax	\$25	19%	\$23	17%	\$24	15%

Q3'18:

GAAP net interest and other income	-\$2.7
Exclude non cash convertible debt interest	\$3.6
Non-GAAP net interest and other income	\$0.9

Fourth Quarter Guidance:

	<u>Low End</u>	<u>High End</u>
GAAP Operating Profit as % of Sales	18%	20%
Acquired intangible asset amortization	3%	3%
Non-GAAP Operating Profit as % of Sales	21%	23%

Q4'18 Guidance

GAAP net interest and other income	-\$0.7
Exclude non cash convertible debt interest	\$3.2
Non-GAAP net interest and other income	\$2.5

Q4'18 GAAP Guidance Shares	185
Exclude dilutive shares related to convertible note transaction	-2
Q4'18 Non-GAAP Guidance Shares	183

in M's

Appendix | GAAP to Non-GAAP Reconciliation

- Teradyne determines non-GAAP operating cash flow (“Free Cash Flow”) by adjusting GAAP cash flow from operations excluding discontinued operations, less property, plant and equipment additions. Free cash flow is considered a non-GAAP financial measure. Teradyne believes that free cash flow, which measures our ability to generate cash from our business operations, is an important financial measure for use in evaluating Teradyne’s financial performance. Free cash flow should be considered in addition to, rather than as a substitute for, income (loss) from continuing operations or net income (loss) as a measure of our performance and net cash provided by operating activities as a measure of our liquidity.
- Teradyne believes it is important to view free cash flow as a measure that provides supplemental information to Teradyne’s entire statement of cash flows.
- Although other companies report their free cash flow, numerous methods may exist for calculating a company's free cash flow. As a result, the method used by Teradyne to calculate free cash flow may differ from the methods other companies use to calculate their free cash flow.
- The following table sets forth a reconciliation of free cash flow, a non-GAAP financial measure, to net cash provided by operating activities, a GAAP measure, which we believe to be the GAAP financial measure most directly comparable to free cash flow.

	<u>Q3'17</u>	<u>Q2'18</u>	<u>Q3'18</u>
GAAP Cash Flow From Operations, Excl Disc Ops	\$310	\$132	\$241
Less Property, Plant and Equipment Additions net of Gov't Subsidy	-\$27	-\$28	-\$18
Non-GAAP Operating Cash Flow ("Free Cash Flow")	\$283	\$104	\$223

Appendix | GAAP to Non-GAAP Reconciliation

	<u>2018E</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>
GAAP Operating Expenses	739	694	1,020	673
Less Goodwill Impairment Charge		-	(255)	-
Less Intangible Asset Impairment		-	(83)	-
Less Intangible Asset Amortization	(41)	(31)	(53)	(69)
Less Restructuring and Other	(4)	(9)	(22)	(5)
Pension Mark to Market Adjustment		4	2	(10)
Less Equity Modification Charge	-	-	-	-
Non GAAP Operating Expenses	<u>695</u>	<u>658</u>	<u>609</u>	<u>589</u>

	<u>2018E</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>
IA GAAP Operating Expenses	148	93	84	28
Less Intangible Asset Amortization	(35)	(24)	(25)	(14)
Less Restructuring and Other	<u>5</u>	<u>(7)</u>	<u>(16)</u>	<u>-</u>
IA non GAAP Operating Expenses	118	62	43	14

	<u>2018E</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>
Test GAAP Operating Expenses (1)	591	601	936	645
Less Goodwill Impairment Charge		-	(255)	-
Less Intangible Asset Impairment		-	(83)	-
Less Intangible Asset Amortization	(6)	(7)	(28)	(55)
Less Restructuring and Other	(9)	(2)	(6)	(5)
Pension Mark to Market Adjustment		4	2	(10)
Less Equity Modification Charge	-	-	-	-
Test Non GAAP Operating Expenses (1)	<u>577</u>	<u>596</u>	<u>566</u>	<u>575</u>

(1) = Includes Variable Compensation of \$73M, \$86M, \$53M and \$61M for 2018, 2017, 2016 and 2015 respectively.