

**3Q19 Semiconductor Earnings Summary—Week 3**  
***Blowout 3Q Eases, 4Q Guidance Averages, Chip Sector Rally Continues***

The 3Q earnings season is entering the home stretch with 46 out of 57 companies in my Tokeneke Universe having reported through last week. 3Q results eased a bit once again but remain very strong with revenue growth well above both norms and expectations—as confirmed now by industry statistics. And while 4Q guidance for sequential revenue growth retreated to an average metric, chip sector share prices continued to rally and extend their relative outperformance compared to broader equity markets. While current business conditions are much better than expected, macroeconomic and geopolitical uncertainty persists amid the rally. Stock-picking remains tricky, but see my latest Semiconductor Investment Ideas publication for potential opportunities.

**Memories Disproportionately Affect Growth:** DRAM and NAND memories drove semiconductor industry growth last year, but are expected to drag the industry into a decline this year. According to market researcher IC Insights, DRAM accounted for 21% of total industry sales last year while NAND accounted for 12.7%. For 2019, the Semiconductor Industry Association expects memories to *decline* by -30.6%, thereby dragging otherwise flat-ish non-memory revenue down to an overall industry decline of -12.1%. Recall that three-quarters of the industry’s memory suppliers are *NOT* in my US-equity-based Tokeneke Universe (Samsung, Hynix and Toshiba—but Micron is included), so my Universe will structurally *outperform* 2019 aggregate industry growth this year. I differentiate Intel due to its size and Micron due to its growth rate.

**Blowout 3Q Eases Again:** Chip industry 3Q revenue growth is very strong, but did ease again last week. The weighted average sales across my Tokeneke Universe so far reflects very strong sequential quarterly growth of +10.3%, down by 180 basis points on the week but still well above company guidance centered at +6.0% ranging from +4.1% to +8.0% after only a couple of preannouncements (an increase from SIMO, a decrease from IDCC, and a reiteration from MCHP). SIA/WSTS industry statistics reported a lesser gain of +8.2% earlier in the week. 3Q growth is seasonally the healthiest of

		3Q	4Q	4Q Range
<b>Week 1</b>	Weighted	13.6%	0.8%	-0.4+2.0%
13 co's	excl-Intel	11.4%	1.5%	-0.7+3.7%
\$42.0B	ex-Micron	15.3%	0.6%	-0.2+1.4%
	avg company	7.4%	-4.7%	-7.0-2.3%
<b>Week 2</b>	Weighted	12.1%	1.5%	+0.2+2.8%
30 co's	excl-Intel	9.7%	2.3%	+0.2+4.5%
\$52.0B	ex-Micron	13.2%	1.4%	+0.3+2.4%
	avg company	7.9%	-0.8%	-3.0+1.4%
<b>Week 3</b>	Weighted	10.3%	1.2%	-0.8+3.2%
46 co's	excl-Intel	7.7%	1.7%	-1.2+4.6%
\$59.1B	ex-Micron	11.2%	1.0%	-0.8+2.8%
	avg company	5.3%	2.3%	-0.7+5.2%

the year: the chip industry has averaged 3Q sequential revenue growth of +6.5% with a high of +19.9%, a low of -11.7%, and only two declines in the last 29 years—including none in the last 17, according to industry statistics

**Average 4Q Guidance:** The 4Q revenue outlook based on management guidance across my Tokeneke Universe softened to an average metric last week. The specific weighted average guidance for revenue growth declined by 30 basis points to a gain of +1.2% with the range and variance as reflected in the Table above. It’s even better when Intel is excluded and the company average improved considerably. The chip industry has averaged 4Q sequential revenue growth of +1.2% with a high of +16.0%, a low of -24.2%, and 13 declines in the last 29 years—including nine of the last 12, according to industry statistics.

**Exceeding Expectations:** The Performance to Expectations histogram on Page 2 reflects a persistent majority of companies reporting so far exceeding expectations. Specifically, the category of outperforming companies meeting and/or exceeding expectations is at 53% (down from 63% Week 2 and 54% Week 1), while those reporting ‘mixed’ results simultaneously missing, meeting and exceeding expectations is at 36% (from 27% and 39%). The remaining 11% of underperforming companies missed and/or met expectations (up to five from three and one). Recall this metric compares investor expectations to reported results for 3Q revenue and EPS, as well as 4Q revenue guidance. Note the grading metric Legend on Page 2 and company details on Pages 3-5.

**Chip Sector Share Price Rally Persists:** Semiconductor sector share prices continue to rally and outperform broader equity markets so far this earnings season. Quarter-to-date the Philadelphia Semiconductor Index Option (SOX) has gained +11.4% with 41 out of 57 stocks in my Universe advancing by an average of +6.9% compared to lesser rallies from the NASDAQ, S&P500 and DOW at +6.0%, +3.9%, and +2.8%, respectively.

**Tricky Stock Picking:** Current business conditions are pretty good but macroeconomic and geopolitical uncertainty persists amid the rally. See my latest Investment Ideas publication for potential opportunities.

*CY3Q19 earnings announcements through November 8, 2019. Most earnings and gross margins are non-GAAP. Companies sorted alphabetically by ticker across all compilations in this report.*

3Q19 Earnings Review

\* includes acquisition (and/or divestiture)

Ticker	Revenue			Ticker	Revenue		
	3Q19 (\$ mil)	Qtr-Qtr change	4Q19 Guidance		3Q19 (\$ mil)	Qtr-Qtr change	4Q19 Guidance
*ACIA	119.6	7.6%	no guidance	MXL	80.0	-3.0%	-16-9%
AMD	1,801.0	17.6%	+14+19%	NLST	6.1	11.1%	no guidance
AOSL	117.8	5.3%	-1+3%	NPTN	92.4	13.1%	+2+8%
CEVA	23.5	27.6%	no guidance	NXPI	2,265.0	2.2%	-1+2%
CRUS	388.9	63.2%	-16-6%	OIIM	16.0	12.3%	no guidance
*CY	574.5	7.9%	no guidance	ON	1,381.8	2.5%	-2+1%
DIOD	323.7	0.5%	-9-6%	PI	40.8	6.7%	-9-4%
DSPG	31.0	6.9%	-10-3%	POWI	114.2	11.0%	-3+3%
GSIT	11.7	-9.8%	-17-9%	PXLW	18.1	0.2%	-17-6%
HIMX	164.3	-3.0%	flat	QCOM	4,804.0	-1.8%	-8+8%
IDCC	72.5	-4.1%	no guidance	QRVO	806.7	4.0%	+4+7%
INTC	19,190.0	16.3%	flat	QUIK	2.2	3.3%	+25+53%
IOTS	32.0	6.2%	+0+9%	RMBS	101.1	5.1%	-12+6%
IPHI	94.2	9.2%	+4+8%	SIMO	110.5	11.8%	+20+26%
LSCC	103.5	1.2%	-6-1%	SLAB	223.3	8.0%	-3+2%
MCHP	1,337.8	1.1%	-10-2%	SQNS	7.5	-7.8%	up
*MLNX	335.3	8.1%	no guidance	STM	2,553.0	17.5%	+2+9%
MOSY	1.2	-60.6%	+57+82%	TSM	9,428.4	21.7%	+8+9%
MPWR	168.8	11.8%	-5-2%	TXN	3,771.0	2.8%	-19-12%
MRAM	9.2	6.1%	+1+6%	UMC	1,217.0	4.9%	+10%
MU	4,870.0	1.7%	-1+7%	VSH	628.3	-8.3%	-8-1%
MX	229.7	12.0%	-21-17%	XLNX	833.4	-1.9%	-15-11%
MXIM	533.0	-4.2%	-2+6%	XPER	90.6	-1.8%	+23+27%
<b>Average Company:</b>		5.3%	-0.7+5.2%	<b>Total (weighted):</b>	59,124.6	10.3%	-0.8+3.2%
				<i>excluding INTC:</i>		7.7%	-1.2+4.6%
				<i>excluding MU:</i>		11.2%	-0.8+2.8%
				<i>excluding both:</i>		8.6%	-1.2+4.3%

Note: No guidance from ACIA, CY & MLNX due to pending takeovers.  
 Note: 'no guidance' is calculated as flat revenue for statistical purposes.

LEGEND

	Grade
+++	exceeded the high-end of the range
++	above consensus, within the high-end of the range
+	slightly above consensus
o	met consensus
-	slightly below consensus
--	missed consensus, within the low-end of the range
---	missed the low-end of the range
A	all +++
B	all +
C	all o/+
D	mixed -/o/+
E	all o/-
F	all -

AOSL					
DIOD					
DSPG					
GSIT					
IDCC					
IOTS					
LSCC					
MRAM					
MLX					
ON					
PI					
POWI					
QCOM					
AMD					
MCHP					
PXLW					
CRUS					
MPWR					
MU					
MXIM					
NPTN					
SIMO					
SLAB					
MX					
OIIM					
UMC					
QRVO					
VSH					
RMBS					
4.4%	6.7%	35.6%	11.1%	22.2%	20.0%
<b>F</b>	<b>E</b>	<b>D</b>	<b>C</b>	<b>B</b>	<b>A</b>
<i>missed/met</i>		<i>mixed</i>	<i>met/exceeded</i>		
11.1%		35.6%	53.3%		
Total: 45 companies with estimates or guidance					

Performance to Expectations Skew

<b>ACIA</b>	6 est.	<i>Acia Comm</i>	CY19 rev:	35%	<b>INTC</b>	31 est.	<i>Intel</i>	CY19 rev:	0%
Qtr:	3Q	Grade:	A	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	A	<b>Growth (qtr-qtr)</b>
Rev:	119.6	Rev:	+++	Rev:	7.6%	Rev:	19,190	Rev:	+++
GM:	49.5%	EPS:	+++	Fcst:	na	GM:	60.4%	EPS:	+++
EPS:	\$0.60	Fcst:	na	Div:		EPS:	\$1.42	Fcst:	+++
									Div:
									\$0.315
<b>AMD</b>	30 est.	<i>Advanced Micro</i>	CY19 rev:	5%	<b>IOTS</b>	7 est.	<i>Adesto Tech</i>	CY19 rev:	51%
Qtr:	3Q	Grade:	E	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	D	<b>Growth (qtr-qtr)</b>
Rev:	1,801	Rev:	-	Rev:	17.6%	Rev:	32.03	Rev:	---
GM:	43.0%	EPS:	o	Fcst:	+14+19%	GM:	51.0%	EPS:	++
EPS:	\$0.18	Fcst:	-	Div:		EPS:	\$0.03	Fcst:	---
									Div:
<b>AOSL</b>	3 est.	<i>Alpha &amp; Omega</i>	FY20 rev:	9%	<b>IPHI</b>	14 est.	<i>Inphi</i>	CY19 rev:	20%
Qtr:	F1Q	Grade:	D	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	A	<b>Growth (qtr-qtr)</b>
Rev:	117.8	Rev:	+	Rev:	5.3%	Rev:	94.2	Rev:	+++
GM:	28.3%	EPS:	+	Fcst:	-1+3%	GM:	70.2%	EPS:	+++
EPS:	\$0.26	Fcst:	--	Div:		EPS:	\$0.45	Fcst:	+++
									Div:
<b>CEVA</b>	6 est.	<i>Ceva</i>	CY19 rev:	6%	<b>LSCC</b>	7 est.	<i>Lattice Semi</i>	CY19 rev:	2%
Qtr:	3Q	Grade:	A	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	D	<b>Growth (qtr-qtr)</b>
Rev:	23.47	Rev:	+++	Rev:	27.6%	Rev:	103.5	Rev:	+++
GM:	88.2%	EPS:	+++	Fcst:	na	GM:	59.8%	EPS:	+++
EPS:	\$0.22	Fcst:	na	Div:		EPS:	\$0.17	Fcst:	---
									Div:
<b>CRUS</b>	11 est.	<i>Cirrus Logic</i>	FY20 rev:	-2%	<b>MCHP</b>	19 est.	<i>Microchip Tech</i>	FY20 rev:	-2%
Qtr:	F2Q	Grade:	B	<b>Growth (qtr-qtr)</b>	Qtr:	F2Q	Grade:	E	<b>Growth (qtr-qtr)</b>
Rev:	388.9	Rev:	+++	Rev:	63.2%	Rev:	1,337.8	Rev:	---
GM:	53.5%	EPS:	+++	Fcst:	-16-6%	GM:	62.2%	EPS:	o
EPS:	\$1.55	Fcst:	+	Div:		EPS:	\$1.43	Fcst:	---
									Div:
									\$0.3665
<b>CY</b>	10 est.	<i>Cypress Semi</i>	CY19 rev:	-11%	<b>MLNX</b>	8 est.	<i>Mellanox</i>	CY19 rev:	16%
Qtr:	3Q	Grade:	C	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	A	<b>Growth (qtr-qtr)</b>
Rev:	574.5	Rev:	++	Rev:	7.9%	Rev:	335.3	Rev:	+++
GM:	46.9%	EPS:	o	Fcst:	na	GM:	68.1%	EPS:	+++
EPS:	\$0.30	Fcst:	na	Div:	\$0.11	EPS:	\$1.69	Fcst:	na
									Div:
<b>DIOD</b>	4 est.	<i>Diodes</i>	CY19 rev:	4%	<b>MOSY</b>	0 est.	<i>MoSys</i>	CY19 rev:	-29%
Qtr:	3Q	Grade:	D	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	na	<b>Growth (qtr-qtr)</b>
Rev:	323.7	Rev:	-	Rev:	0.5%	Rev:	1.21	Rev:	na
GM:	37.7%	EPS:	+++	Fcst:	-9-6%	GM:	66.0%	EPS:	na
EPS:	\$0.81	Fcst:	---	Div:		EPS:	(\$0.60)	Fcst:	na
									Div:
<b>DSPG</b>	5 est.	<i>DSP Group</i>	CY19 rev:	1%	<b>MPWR</b>	10 est.	<i>Monolithic Power Sys</i>	CY19 rev:	6%
Qtr:	3Q	Grade:	D	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	B	<b>Growth (qtr-qtr)</b>
Rev:	31.04	Rev:	+	Rev:	6.9%	Rev:	168.8	Rev:	+++
GM:	51.2%	EPS:	++	Fcst:	-10-3%	GM:	55.6%	EPS:	+++
EPS:	\$0.10	Fcst:	--	Div:		EPS:	\$1.08	Fcst:	+
									Div:
									\$0.40
<b>GSIT</b>	1 est.	<i>GSI Technology</i>	FY20 rev:	0%	<b>MRAM</b>	2 est.	<i>Everspin Tech</i>	CY19 rev:	-23%
Qtr:	F2Q	Grade:	D	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	D	<b>Growth (qtr-qtr)</b>
Rev:	11.74	Rev:	--	Rev:	-9.8%	Rev:	9.18	Rev:	+++
GM:	55.9%	EPS:	+	Fcst:	-17-9%	GM:	47.4%	EPS:	--
EPS:	(\$0.08)	Fcst:	---	Div:		EPS:	(\$0.21)	Fcst:	--
									Div:
<b>HIMX</b>	4 est.	<i>Himax</i>	CY19 rev:	-7%	<b>MU</b>	25 est.	<i>Micron Tech</i>	FY20 rev:	-15%
Qtr:	3Q	Grade:	C	<b>Growth (qtr-qtr)</b>	Qtr:	F4Q	Grade:	B	<b>Growth (qtr-qtr)</b>
Rev:	164.3	Rev:	+++	Rev:	-3.0%	Rev:	4,870	Rev:	++
GM:	19.5%	EPS:	o	Fcst:	flat	GM:	30.6%	EPS:	++
EPS:	(\$0.04)	Fcst:	+++	Div:		EPS:	\$0.56	Fcst:	++
									Div:
<b>IDCC</b>	3 est.	<i>InterDigital</i>	CY19 rev:	-5%	<b>MX</b>	3 est.	<i>MagnaChip</i>	CY19 rev:	3%
Qtr:	3Q	Grade:	D	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	A	<b>Growth (qtr-qtr)</b>
Rev:	72.5	Rev:	-	Rev:	-4.1%	Rev:	229.7	Rev:	+++
GM:	52.1%	EPS:	+++	Fcst:	na	GM:	26.5%	EPS:	+++
EPS:	\$0.07	Fcst:	na	Div:	\$0.35	EPS:	\$0.49	Fcst:	+++
									Div:

<b>MXIM</b>	20 est.	Maxim Int Prod	FY20 rev:	-5%	<b>QRVO</b>	22 est.	Qorvo	FY20 rev:	-4%
Qtr:	F1Q	Grade:	B	<b>Growth (qtr-qtr)</b>	Qtr:	F2Q	Grade:	A	<b>Growth (qtr-qtr)</b>
Rev:	533	Rev:	+	Rev:	806.7	Rev:	+++	Rev:	4.0%
GM:	65.0%	EPS:	++	Fcst:	-2+6%	GM:	46.5%	EPS:	+++
EPS:	\$0.52	Fcst:	++	Div:	\$0.48	EPS:	\$1.52	Fcst:	+++
<b>MXL</b>	8 est.	MaxLinear	CY19 rev:	-15%	<b>QUIK</b>	3 est.	QuickLogic	CY19 rev:	4%
Qtr:	3Q	Grade:	D	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	D	<b>Growth (qtr-qtr)</b>
Rev:	80	Rev:	o	Rev:	2.16	Rev:	+	Rev:	3.3%
GM:	63.1%	EPS:	+++	Fcst:	-16-9%	GM:	48.9%	EPS:	+
EPS:	\$0.23	Fcst:	---	Div:		EPS:	(\$0.03)	Fcst:	---
<b>NLST</b>	2 est.	Netlist	CY19 rev:	-29%	<b>RMBS</b>	4 est.	Rambus	CY19 rev:	-6%
Qtr:	3Q	Grade:	C	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	A	<b>Growth (qtr-qtr)</b>
Rev:	6.12	Rev:	o	Rev:	101.1	Rev:	+++	Rev:	5.1%
GM:	7.4%	EPS:	o	Fcst:	na	GM:	78.1%	EPS:	?
EPS:	(\$0.02)	Fcst:	na	Div:		EPS:	(\$0.16)	Fcst:	+++
<b>NPTN</b>	10 est.	NeoPhotonics	CY19 rev:	6%	<b>SIMO</b>	9 est.	Silicon Motion	CY19 rev:	-21%
Qtr:	3Q	Grade:	B	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	B	<b>Growth (qtr-qtr)</b>
Rev:	92.4	Rev:	+++	Rev:	110.5	Rev:	+	Rev:	11.8%
GM:	29.0%	EPS:	+++	Fcst:	+2+8%	GM:	49.8%	EPS:	+++
EPS:	\$0.11	Fcst:	++	Div:		EPS:	\$0.69	Fcst:	+++
<b>NXPI</b>	21 est.	NXP Semi	CY19 rev:	-6%	<b>SLAB</b>	11 est.	Silicon Labs	CY19 rev:	-4%
Qtr:	3Q	Grade:	C	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	B	<b>Growth (qtr-qtr)</b>
Rev:	2,265	Rev:	+++	Rev:	223.3	Rev:	+++	Rev:	8.0%
GM:	53.7%	EPS:	+++	Fcst:	-1+2%	GM:	60.2%	EPS:	+++
EPS:	\$0.38	Fcst:	o	Div:	\$0.375	EPS:	\$0.96	Fcst:	+
<b>OIIM</b>	2 est.	O2Micro Int'l	CY19 rev:	-6%	<b>SQNS</b>	4 est.	Sequans Comm	CY19 rev:	-8%
Qtr:	3Q	Grade:	A	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	F	<b>Growth (qtr-qtr)</b>
Rev:	16.03	Rev:	+++	Rev:	7.47	Rev:	---	Rev:	-7.8%
GM:	51.4%	EPS:	+++	Fcst:	na	GM:	38.0%	EPS:	--
EPS:	(\$0.02)	Fcst:	na	Div:		EPS:	(\$0.08)	Fcst:	na
<b>ON</b>	22 est.	ON Semiconductor	CY19 rev:	-7%	<b>STM</b>	5 est.	STMicroelectronics	CY19 rev:	-2%
Qtr:	3Q	Grade:	D	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	D	<b>Growth (qtr-qtr)</b>
Rev:	1,381.8	Rev:	+	Rev:	2,553	Rev:	+++	Rev:	17.5%
GM:	35.8%	EPS:	--	Fcst:	-2+1%	GM:	37.9%	EPS:	+++
EPS:	\$0.33	Fcst:	+	Div:		EPS:	\$0.34	Fcst:	--
<b>PI</b>	7 est.	Impinj	CY19 rev:	21%	<b>TSM</b>	2 est.	Taiwan Semi/TSMC	CY19 rev:	1%
Qtr:	3Q	Grade:	D	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	B	<b>Growth (qtr-qtr)</b>
Rev:	40.76	Rev:	+++	Rev:	9,396	Rev:	+++	Rev:	21.7%
GM:	50.2%	EPS:	+++	Fcst:	-9-4%	GM:	47.6%	EPS:	+
EPS:	\$0.09	Fcst:	-	Div:		EPS:	\$0.62	Fcst:	+++
<b>POWI</b>	5 est.	Power Integrations	CY19 rev:	2%	<b>TXN</b>	29 est.	Texas Instruments	CY19 rev:	-7%
Qtr:	3Q	Grade:	D	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	F	<b>Growth (qtr-qtr)</b>
Rev:	114.2	Rev:	o	Rev:	3,771	Rev:	---	Rev:	2.8%
GM:	52.0%	EPS:	+++	Fcst:	-3+3%	GM:	64.9%	EPS:	-
EPS:	\$0.78	Fcst:	--	Div:	\$0.19	EPS:	\$1.49	Fcst:	---
<b>PXLW</b>	4 est.	Pixelworks	CY19 rev:	-6%	<b>UMC</b>	1 est.	United Micro	CY19 rev:	-6%
Qtr:	3Q	Grade:	E	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	B	<b>Growth (qtr-qtr)</b>
Rev:	18.06	Rev:	o	Rev:	1,217	Rev:	+	Rev:	4.9%
GM:	53.9%	EPS:	o	Fcst:	-17-6%	GM:	17.1%	EPS:	o
EPS:	(\$0.01)	Fcst:	---	Div:		EPS:	\$0.04	Fcst:	+++
<b>QCOM</b>	20 est.	Qualcomm	FY20 rev:	12%	<b>VSH</b>	5 est.	Vishay Interconnect	CY19 rev:	-12%
Qtr:	F4Q	Grade:	D	<b>Growth (qtr-qtr)</b>	Qtr:	3Q	Grade:	B	<b>Growth (qtr-qtr)</b>
Rev:	4,804	Rev:	+++	Rev:	628.3	Rev:	+++	Rev:	-8.3%
GM:	58.1%	EPS:	+++	Fcst:	-8+8%	GM:	23.9%	EPS:	++
EPS:	\$0.78	Fcst:	-	Div:	\$0.62	EPS:	\$0.26	Fcst:	++

XLNX	20 est.	Xilinx		FY20 rev:	6%
<b>Qtr:</b>	F2Q	<b>Grade:</b>	D	<b>Growth (qtr-qtr)</b>	
<b>Rev:</b>	833.4	<b>Rev:</b>	++	<b>Rev:</b>	-1.9%
<b>GM:</b>	65.7%	<b>EPS:</b>	++	<b>Fcst:</b>	-15-11%
<b>EPS:</b>	\$0.94	<b>Fcst:</b>	- - -	<b>Div:</b>	\$0.37

XPER	4 est.	Xperi		CY19 rev:	-11%
<b>Qtr:</b>	3Q	<b>Grade:</b>	C	<b>Growth (qtr-qtr)</b>	
<b>Rev:</b>	90.6	<b>Rev:</b>	o	<b>Rev:</b>	-1.8%
<b>GM:</b>	97.4%	<b>EPS:</b>	?	<b>Fcst:</b>	+23+27%
<b>EPS:</b>	(\$0.32)	<b>Fcst:</b>	+	<b>Div:</b>	\$0.20

**—Dan K. Scovel**  
Semiconductor Analyst

**Tokeneke Research LLC**  
Rowayton, CT 06853  
[dscovel@tokenekeresearch.com](mailto:dscovel@tokenekeresearch.com)  
[www.tokenekeresearch.com](http://www.tokenekeresearch.com)  
203-554-4621

Copyright © 2019 Tokeneke Research LLC. All rights reserved. This report is for information purposes only and does not constitute a solicitation or an offer to buy or sell any security or to participate in any investment or trading strategy. Opinions expressed in this report reflect the judgment of Tokeneke Research LLC on the topics addressed as of the date of the report, and are subject to change without notice. Tokeneke Research LLC makes every effort to use reliable and comprehensive information but makes no representation that the information in this report is accurate or complete, nor does it undertake to update or revise this report at any time or for any reason. This report contains forward-looking statements that involve risks and uncertainties, both known and unknown, as well as assumptions that, if they do not fully materialize or prove incorrect, could cause actual results to differ materially from those expressed or implied by such forward-looking statements. Actual results and trends may differ materially from historical results or those projected in any such forward-looking statements depending on a variety of factors. This report does not provide individually tailored investment advice and has been prepared without regard to the specific individual financial situation, objectives and needs of those who receive it. Securities discussed in this report may not be suitable for the reader. Tokeneke Research LLC and/or Dan Scovel may have a long or short position in the securities of a company or companies mentioned in this report and, at any time, may change that position. Tokeneke Research LLC accepts no liability whatsoever for any loss or damage of any kind arising out of the use of any part, or all, of this report. All company and product names mentioned in this report may be trademarks or registered trademarks of their respective holders and are used for identification purposes only. Reproduction or distribution of this report, even for internal distribution, is strictly prohibited unless specifically authorized by Tokeneke Research LLC.