

Lattice Semiconductor

Product ramps ahead but inventory digestion ongoing, visibility limited

Reiterate Rating: NEUTRAL | PO: 75.00 USD | Price: 71.00 USD

'24 expectations reset, but visibility into recovery limited

Slight Q4 miss, Q1 rev guide of \$140mn at midpoint (-18% QoQ) well below Street's flattish \$174mn outlook and BofA's lowered \$161mn outlook ahead of the print. Digestion of auto/industrial inventory (~60% of sales) combined with telco headwinds likely to cap model upside through at least 1H24. Assuming in line Q1, LSCC peak-to-trough sales decline will be ~28%, in line with industrial focused peers ranging from 20%-40%+. While estimates have been reset, we remain cautious on visibility, with uncertainty around length of digestion creating risk to JunQ (implied flattish QoQ) and expectations on a 2H recovery (we note past 2 rev guides 10%/20% below Street). Net-net, our CY24 outlook of ~\$595mn is down -19% YoY vs. -9% prior and in line with consensus views on AMD's embedded business (-20% YoY) and Intel's PSG group (-25% YoY). We cut CY24-26 sales 9%-12%, eps 12%-18%, though reiterate Neutral with cyclical weakness now largely factored into the model. Our new \$75 PO (from \$65) is based on 43x CY25 PE (33x prior), placing LSCC's 3yr average multiple on potentially trough estimates as LSCC begins to accelerate EPS growth starting 2H.

Likes: 2H product drivers, data center, FCF/buyback

1) Inventory corrections persisting a risk to recovery, but we like idiosyncratic product drivers (Avant-E ramp, additional Nexus products ramping) that can provide further support/catalyze a rebound; 2) Despite comms/compute down -14% QoQ, data center strength continued (up QoQ, compute remains larger part of the segment), a testament to LSCC's content penetration in next gen servers (up 50% vs. prior); 3) We expect LSCC to maintain near-30% FCF even in a downturn, and with no debt on the balance sheet, cash can be used for buybacks, providing share price support (LSCC repurchased \$50mn shares in Q4 vs. \$30mn combined Q1-Q3, approved \$250mn buyback program).

Risks: Inventory digestion, disty/visibility, competition

1) Auto/industrial digestion driving Q1 rev guide (\$140mn) back to late CY21 levels, with headwinds likely lasting through at least JunQ (our CY24 outlook of -19% YoY below auto/industrial peers down 10%-15% on average); 2) Historically 90%+ of sales through disty which limits visibility, suggesting view around 2H recovery (2-3qtrs out) has risk; 3) INTC spinout of its FPGA business could result in intensifying competition, and we highlight their FPGA Vision Webcast (2/29) as possible catalyst to showcase a stronger competitive position.

Estimates (Dec) (US\$)	2022A	2023A	2024E	2025E	2026E
EPS	1.75	2.01	1.31	1.74	2.07
GAAP EPS	1.28	1.85	0.78	1.14	1.37
EPS Change (YoY)	63.6%	14.9%	-34.8%	32.8%	19.0%
Consensus EPS (Bloomberg)			1.93	2.42	2.49
DPS	0	0	0	0	0
Valuation (Dec)					
P/E	40.6x	35.3x	54.2x	40.8x	34.3x
GAAP P/E	55.5x	38.4x	91.0x	62.3x	51.8x
EV / EBITDA*	33.9x	29.4x	46.1x	36.8x	NA
Free Cash Flow Yield*	2.2%	2.5%	1.8%	2.4%	2.7%

* For full definitions of *IQmethod*SM measures, see page 11.

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Equity

Key Changes

(US\$)	Previous	Current
Price Obj.	65.00	75.00
2024E Rev (m)	673.1	595.3
2025E Rev (m)	764.8	697.2
2026E Rev (m)	855.2	779.6
2024E EPS	1.59	1.31
2025E EPS	1.98	1.74
2026E EPS	2.35	2.07

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Stock Data

Price	71.00 USD
Price Objective	75.00 USD
Date Established	12-Feb-2024
Investment Opinion	C-2-9
52-Week Range	51.96 USD - 98.30 USD
Mrkt Val (mn) / Shares Out (mn)	9,794 USD / 137.9
Free Float	98.8%
Average Daily Value (mn)	155.08 USD
BofA Ticker / Exchange	LSCC / NAS
Bloomberg / Reuters	LSCC US / LSCC.OQ
ROE (2024E)	24.8%
Net Dbt to Eqty (Dec-2023A)	-18.5%
ESGMeter TM	Medium

ESGMeter is not indicative of a company's future stock price performance and is not an investment recommendation or rating. ESGMeter is independent of BofA Global Research's equity investment rating, volatility risk rating, income rating, and price objective for that company. For full details, refer to "BofA ESGMeter Methodology".

See page 9 for glossary

iQprofileSM Lattice Semiconductor

iQmethodSM – Bus Performance*

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Return on Capital Employed	35.1%	37.6%	22.1%	26.5%	27.9%
Return on Equity	54.7%	47.6%	24.8%	29.8%	31.5%
Operating Margin	38.7%	39.8%	31.1%	35.0%	36.6%
Free Cash Flow	215	248	174	237	268

iQmethodSM – Quality of Earnings*

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash Realization Ratio	1.0x	1.0x	1.0x	1.1x	1.0x
Asset Replacement Ratio	0.8x	0.6x	0.5x	0.9x	0.9x
Tax Rate	1.8%	NM	7.0%	6.0%	6.0%
Net Debt-to-Equity Ratio	-3.5%	-18.5%	-26.5%	-33.6%	-41.3%
Interest Cover	NM	NA	NA	NA	NA

Income Statement Data (Dec)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Sales	660	737	595	697	780
% Change	28.1%	11.6%	-19.2%	17.1%	11.8%
Gross Profit	456	519	413	492	555
% Change	40.1%	13.8%	-20.4%	19.1%	12.8%
EBITDA	285	328	209	262	0
% Change	58.0%	15.2%	-36.2%	25.1%	NM
Net Interest & Other Income	(5)	3	9	9	9
Net Income (Adjusted)	246	281	181	238	280
% Change	63.0%	14.1%	-35.6%	31.7%	17.4%

Free Cash Flow Data (Dec)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Net Income from Cont Operations (GAAP)	179	259	108	159	190
Depreciation & Amortization	29	34	24	17	19
Change in Working Capital	(33)	(43)	(8)	6	(2)
Deferred Taxation Charge	0	(59)	0	0	0
Other Adjustments, Net	64	76	64	70	78
Capital Expenditure	(23)	(20)	(13)	(15)	(17)
Free Cash Flow	215	248	174	237	268
% Change	36.5%	15.2%	-29.8%	36.1%	13.2%
Share / Issue Repurchase	(110)	(80)	(100)	(160)	(160)
Cost of Dividends Paid	0	0	0	0	0
Change in Debt	(179)	(130)	0	0	0

Balance Sheet Data (Dec)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash & Equivalents	146	128	203	280	388
Trade Receivables	94	104	99	105	111
Other Current Assets	139	135	133	126	127
Property, Plant & Equipment	73	71	60	58	55
Other Non-Current Assets	347	402	402	402	402
Total Assets	799	841	898	971	1,084
Short-Term Debt	0	0	0	0	0
Other Current Liabilities	127	97	82	87	92
Long-Term Debt	129	0	0	0	0
Other Non-Current Liabilities	55	51	51	51	51
Total Liabilities	312	149	134	138	143
Total Equity	487	692	764	833	941
Total Equity & Liabilities	799	841	898	971	1,084

* For full definitions of iQmethodSM measures, see page 11.

Company Sector

Semiconductors

Company Description

Lattice Semiconductor is a supplier of field programmable gate arrays (FPGA) servicing data center, automotive, industrial, communications, and consumer markets. Unlike other semiconductor devices, FPGAs allow end customers to reconfigure the hardware after the manufacturing process to support specific requirements and use cases. Lattice was founded in 1983, shortly going public thereafter (1989), and is headquartered in Hillsboro, Oregon.

Investment Rationale

We rate Lattice Neutral. We certainly acknowledge the company's impressive turnaround, now supporting a leading profitability profile and strong double-digit growth rate. While the company continues to ramp new, innovative hardware and software solutions, we remain cautious on valuation, and highlight risks to estimates (above peer group) as LSCC's key markets (industrial/auto) see potential weakness late cycle

Stock Data

Average Daily Volume 2,312,490

Quarterly Earnings Estimates

	2023	2024
Q1	0.51A	0.29E
Q2	0.52A	0.28E
Q3	0.53A	0.34E
Q4	0.45A	0.40E

Model Changes

Exhibit 1: Summary of sales and EPS changes

We lower CY24/25 sales estimates another ~12%/9%, EPS estimates by 18%/12%

	Sales (\$mn)			Non-GAAP EPS		
	Old	NEW	delta	Old	NEW	delta
Mar-24E	\$161	\$140	(\$21)	\$0.36	\$0.29	(\$0.06)
Jun-24E	\$163	\$139	(\$25)	\$0.37	\$0.28	(\$0.09)
Sep-24E	\$171	\$152	(\$20)	\$0.42	\$0.34	(\$0.08)
Dec-24E	\$177	\$165	(\$12)	\$0.44	\$0.40	(\$0.05)
FY24E	\$673	\$595	(\$78)	\$1.59	\$1.31	(\$0.28)
YoY%	-9.3%	-19.2%	-11.6%	-20.3%	-35.0%	-17.8%
Mar-25E	\$181	\$166	(\$14)	\$0.45	\$0.40	(\$0.05)
Jun-25E	\$188	\$169	(\$19)	\$0.48	\$0.41	(\$0.07)
Sep-25E	\$195	\$178	(\$17)	\$0.51	\$0.45	(\$0.06)
Dec-25E	\$201	\$184	(\$17)	\$0.53	\$0.48	(\$0.06)
FY25E	\$765	\$697	(\$68)	\$1.98	\$1.74	(\$0.24)
YoY%	13.6%	17.1%	-8.8%	24.5%	33.3%	-12.0%
Mar-26E	\$204	\$186	(\$19)	\$0.55	\$0.48	(\$0.07)
Jun-26E	\$213	\$194	(\$19)	\$0.58	\$0.51	(\$0.07)
Sep-26E	\$216	\$198	(\$19)	\$0.60	\$0.53	(\$0.07)
Dec-26E	\$222	\$202	(\$19)	\$0.62	\$0.55	(\$0.07)
FY26E	\$855	\$780	(\$76)	\$2.35	\$2.07	(\$0.27)
YoY%	11.8%	11.8%	-8.8%	18.5%	19.0%	-11.6%

Source: BofA Global Research estimates, company reports

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Summary of Q4 results

Exhibit 2: Summary of DecQ results

LSCC reported sales/EPS slightly below/inline with consensus

	Dec-22	Sep-23	Dec-23						
			Guidance	Consensus	BofA	Reported	Delta	QoQ	YoY
Sales (\$mn, Non-GAAP)	\$176	\$192	\$166-\$186	\$176	\$176	\$171	-3.1%	-11.2%	-3.0%
QoQ%	2.0%	1.1%		-8.4%	-8.4%	-11.2%			
Communications and Computing	71	68		67	68	59	-12.0%	-14.1%	-17.4%
Consumer	11	14		13	14	12	-4.8%	-13.1%	11.9%
Industrial and Automotive	90	110		97	95	100	3.2%	-9.2%	11.4%
Gross Margin % (Non-GAAP)	70.0%	70.6%	70.5% +/- 1%	70.5%	70.5%	70.4%	(9)	(19)	40
Gross Profit (Non-GAAP)	123	136			124	120	-11.5%	-2.5%	
R&D	30	35			35	32	-8.6%	8.3%	
SG&A	23	23			23	24	1.3%	2.5%	
Opex Total (Non-GAAP)	52	58	57-59	\$58	58	55.5	-4.1%	-4.7%	5.8%
Op Inc (Non-GAAP)	71	77		\$66	66	65	-2.4%	-16.6%	-8.6%
Op Margin % (Non-GAAP)	40.2%	40.3%		37.6%	37.5%	37.8%	26	(244)	(231)
Financial Income (Non-GAAP)	(1)	1			(0)	2			
Pretax Income (Non-GAAP)	69	78			66	67	-14.7%	-3.6%	
Tax expense (Non-GAAP)	1	5			4	4	-16.3%	307.4%	
Tax rate (Non-GAAP)	1.4%	6.1%			6.8%	6.0%	(11)	459	
Net Income (Non-GAAP)	68	74			61	63	-14.6%	-8.1%	
Diluted EPS (Non-GAAP)	\$0.49	\$0.53		\$0.45	\$0.44	\$0.45	0.5%	-14.2%	-7.8%
Diluted Shares	140	140			140	139	-0.5%	-0.4%	

Source: BofA Global Research, Bloomberg, company reports

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Summary of Q1 outlook

Exhibit 3: Summary of MarQ guidance

LSCC sales/implied pf-EPS outlook 20%/33% below Street

	Dec-23	Mar-24E				Delta	QoQ	YoY
	Reported	BofA	Cons	Guidance	New BofA			
Sales (\$mn)	\$171	\$161	\$174	\$140 (\$130-\$150)	\$140	-19.8%	-18.0%	-24.1%
QoQ%	-11.2%	-8.4%	-0.9%		-18.0%			
Communications and Computing	59	66	69		53	-22.9%	-10.0%	-20.4%
Consumer	12	13	12		11	-10.0%	-10.0%	12.3%
Industrial and Automotive	100	82	98		76	-22.3%	-23.6%	-29.6%
Gross Margin % (Non-GAAP)	70.4%	69.0%	70.3%	69% +/- 1%	69.0%	(134)	(138)	(133)
Gross Profit (Non-GAAP)	120	111			97		-19.6%	-25.5%
R&D	32	36			32		1.0%	5.9%
SG&A	24	22			23		-3.5%	-3.7%
Opex Total (Non-GAAP)	55	58	\$58.9	54-56	55.0	-6.6%	-0.9%	1.9%
Op Inc (Non-GAAP)	65	53	\$64		42	-34.8%	-35.6%	-45.0%
Op Margin % (Non-GAAP)	37.8%	33.1%	36.6%		29.7%	(687)	(815)	(1134)
Financial Income (Non-GAAP)	2	(0)			2			
Pretax Income (Non-GAAP)	67	53			44		-34.4%	-41.6%
Tax expense (Non-GAAP)	4	3			3		-23.6%	-4.7%
Tax rate (Non-GAAP)	6.0%	6.5%			7.0%		99	271
Net Income (Non-GAAP)	63	50			41		-35.1%	-43.2%
Diluted EPS (Non-GAAP)	\$0.45	\$0.36	\$0.44		\$0.29	-33.7%	-35.0%	-42.7%
Diluted Shares	139	139			139		-0.2%	-0.9%

Source: BofA Global Research estimates, Bloomberg, company reports

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Balance Sheet, Cash Flow Metrics

Exhibit 4: Summary of balance sheet and cash flow metrics

LSCC FCF margin 40% in Q4

	Dec-22	Mar-23	Jun-23	Sep-23	Dec-23	QoQ%	YoY%
Total Cash	\$146	\$112	\$104	\$114	\$128	12.2%	-11.9%
ST Debt	\$0	\$0	\$0	\$0	\$0		
LT Debt	\$129	\$104	\$44	\$0	\$0		
Total Debt	\$129	\$104	\$44	\$0	\$0		
Net Cash	\$17	\$8	\$60	\$114	\$128		
Net Cash/Share	\$0.12	\$0.06	\$0.43	\$0.82	\$0.92		
DSO	48.6	44.8	46.2	50.2	55.7		
DPO	152.8	133.1	117.3	115.6	124.3		
Inventory \$	\$110	\$117	\$111	\$104	\$99	-5.0%	-10.5%
Inventory Turns	2.0	1.9	2.1	2.2	2.1		
Inventory Days	186.4	191.2	176.4	164.3	174.1	9.8	(12.2)
Cash Conversion days	82.2	103.0	105.3	98.8	105.5		
Cash Flow from Ops	\$82	\$45	\$71	\$82	\$72	-12.4%	-12.2%
Capex	(\$10)	(\$8)	(\$4)	(\$4)	(\$4)		
Free cash flow	\$72	\$36	\$67	\$78	\$68	-12.2%	-4.9%
FCF as % of sales (ttm)	40.8%	19.8%	35.3%	40.5%	40.0%		

Source: BofA Global Research, company reports

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Exhibit 5: LSCC – Income Statement (\$mn)

We see LSCC generating just \$1.31 in EPS in CY24

	Q1	Q2	Q3	Q4	Q1E	Q2E	Q3E	Q4E	Q1E	Q2E	Q3E	Q4E	FY23	FY24E	FY25E	FY26E
FY (Dec)	Mar-23	Jun-23	Sep-23	Dec-23	Mar-24E	Jun-24E	Sep-24E	Dec-24E	Mar-25E	Jun-25E	Sep-25E	Dec-25E	Dec-23	Dec-24	Dec-25	Dec-26
Revenues	\$184	\$190	\$192	\$171	\$140	\$139	\$152	\$165	\$166	\$169	\$178	\$184	\$737	\$595	\$697	\$780
QoQ	5%	3%	1%	-11%	-18%	-1%	9%	9%	1%	2%	5%	4%				
YoY	22%	18%	11%	-3%	-24%	-27%	-21%	-3%	19%	22%	17%	11%	12%	-19%	17%	12%
Cost of Sales	56	58	58	52	44	44	47	51	51	51	53	55	222	186	209	229
Gross Profit (GAAP)	129	133	135	119	96	95	104	115	116	118	125	129	515	409	488	550
Gross Profit (Non-GAAP)	130	134	136	120	97	96	105	116	117	119	126	130	519	413	492	555
R&D Expense	36	42	42	40	40	40	41	42	43	44	46	47	160	162	179	200
SG&A Expense	33	37	33	35	33	33	33	35	35	35	36	36	137	134	142	151
Other Opex Expenses																
Total Opex (GAAP)	69	79	78	76	74	74	76	78	79	81	83	85	302	302	327	357
Total Opex (Non-GAAP)	54	58	58	55	55	56	58	59	60	61	63	64	226	228	248	270
Operating Income (GAAP)	59	53	57	43	21	21	29	36	37	37	42	45	212	107	160	193
Operating Income (Non-GAAP)	76	76	77	65	42	40	48	56	57	58	63	67	294	185	244	285
Interest/other Income (GAAP)	(1)	0	1	2	2	2	2	2	2	2	2	2	3	9	9	9
Interest/other Income (Non-GAAP)	(1)	0	1	2	2	2	2	2	2	2	2	2	3	9	9	9
Pretax Income (GAAP)	58	53	58	45	23	23	31	39	39	40	44	47	215	116	169	202
Pretax Income (Non-GAAP)	75	76	78	67	44	42	50	59	59	60	65	69	296	194	253	294
Net Income (GAAP)	56	51	54	99	22	22	29	36	36	37	41	44	259	108	159	190
Net Income (Non-GAAP)	72	73	74	63	41	39	46	55	55	56	62	65	281	181	238	280
Diluted EPS (GAAP)	\$0.40	\$0.36	\$0.38	\$0.71	\$0.16	\$0.16	\$0.21	\$0.26	\$0.26	\$0.27	\$0.30	\$0.32	\$1.85	\$0.78	\$1.14	\$1.37
Diluted EPS (Non-GAAP)	\$0.51	\$0.52	\$0.53	\$0.45	\$0.29	\$0.28	\$0.34	\$0.40	\$0.40	\$0.41	\$0.45	\$0.48	\$2.01	\$1.31	\$1.74	\$2.07
Diluted Shares (GAAP)	140	140	140	139	139	139	139	139	139	139	139	139	140	139	139	139
Diluted Shares (Non-GAAP)	140	140	140	139	139	139	138	138	137	137	137	136	140	138	137	135
Margin Analysis (Non-GAAP)																
Gross Margin	70.3%	70.5%	70.6%	70.4%	69.0%	69.0%	69.5%	70.0%	70.3%	70.5%	70.7%	70.9%	70.4%	69.4%	70.6%	71.2%
R&D (GAAP)	16.5%	18.0%	18.2%	18.7%	23.0%	23.7%	22.6%	21.1%	21.4%	21.9%	21.2%	20.9%	17.8%	22.6%	21.4%	21.3%
SG&A (GAAP)	12.8%	12.4%	12.1%	13.8%	16.3%	16.6%	15.5%	14.7%	14.7%	14.4%	13.9%	13.7%	12.8%	15.7%	14.2%	13.3%
Opex	29.3%	30.5%	30.3%	32.5%	39.3%	40.3%	38.1%	35.8%	36.1%	36.3%	35.2%	34.6%	30.6%	38.3%	35.5%	34.6%
Operating Income	41.0%	40.0%	40.3%	37.8%	29.7%	28.7%	31.4%	34.2%	34.1%	34.2%	35.5%	36.2%	39.8%	31.1%	35.0%	36.6%
Tax rate	4.3%	4.6%	6.1%	6.0%	7.0%	7.0%	7.0%	7.0%	6.0%	6.0%	6.0%	6.0%	5.2%	7.0%	6.0%	5.0%
Net Income	38.9%	38.1%	38.3%	36.8%	29.1%	28.2%	30.6%	33.0%	33.3%	33.4%	34.6%	35.2%	38.1%	30.4%	34.2%	35.9%

Source: BofA Global Research estimates, company reports

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Exhibit 6: LSCC – Segment Model (\$mn)

Auto/Industrial markets account for >50% of company revenue

Segment Model (\$mn)	Q1	Q2	Q3	Q4	Q1E	Q2E	Q3E	Q4E	Q1E	Q2E	Q3E	Q4E	FY23	FY24E	FY25E	FY26E
FY (Dec)	Mar-23	Jun-23	Sep-23	Dec-23	Mar-24E	Jun-24E	Sep-24E	Dec-24E	Mar-25E	Jun-25E	Sep-25E	Dec-25E	Dec-23	Dec-24	Dec-25	Dec-26
Communications and Computing	66	64	68	59	53	52	55	59	60	62	65	68	258	220	255	285
Consumer	10	10	14	12	11	11	12	12	12	12	12	13	46	45	48	51
Industrial and Automotive	108	115	110	100	76	75	85	94	95	96	100	103	434	330	394	444
Licensing and Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Revenue	184	190	192	171	140	139	152	165	166	169	178	184	737	595	697	780
QoQ Change %																
Communications and Computing	-7%	-3%	6%	-14%	-10%	-1%	6%	7%	1%	3%	6%	4%				
Consumer	-10%	7%	34%	-13%	-10%	1%	5%	3%	-2%	-1%	7%	5%				
Industrial and Automotive	21%	7%	-5%	-9%	-24%	-1%	12%	11%	1%	1%	5%	3%				
Licensing and Services	-	-	-	-	-	-	-	-	-	-	-	-				
Total Revenue	5%	3%	1%	-11%	-18%	-1%	9%	9%	1%	2%	5%	4%				
YoY Change %																
Communications and Computing	6%	-9%	-3%	-17%	-20%	-19%	-19%	1%	13%	18%	18%	15%	-6%	-15%	16%	12%
Consumer	-35%	-16%	27%	12%	12%	6%	-17%	-2%	7%	5%	7%	9%	-6%	-2%	7%	6%
Industrial and Automotive	55%	55%	28%	11%	-30%	-35%	-23%	-6%	24%	27%	18%	10%	36%	-24%	19%	13%
Licensing and Services	-100%	-100%	-100%	-100%									-	-	-	-
Total Revenue	22%	18%	11%	-3%	-24%	-27%	-21%	-3%	19%	22%	17%	11%	12%	-19%	17%	12%
% of Sales																
Communications and Computing	36%	34%	36%	34%	38%	38%	37%	36%	36%	37%	37%	37%	35%	37%	37%	37%
Consumer	5%	5%	7%	7%	8%	8%	8%	7%	7%	7%	7%	7%	6%	8%	7%	7%
Industrial and Automotive	59%	61%	57%	59%	54%	54%	56%	57%	57%	57%	56%	56%	59%	55%	56%	57%
Licensing and Services	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	-	-
Total Revenue	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: BofA Global Research estimates, company reports

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**Exhibit 7: LSCC – Balance Sheet (\$mn)**

We model positive net cash, with no debt on the balance sheet

Balance Sheet (\$mn)	Q1	Q2	Q3	Q4	Q1E	Q2E	Q3E	Q4E	Q1E	Q2E	Q3E	Q4E	FY23	FY24E	FY25E	FY26E
FY (Dec)	Mar-23	Jun-23	Sep-23	Dec-23	Mar-24E	Jun-24E	Sep-24E	Dec-24E	Mar-25E	Jun-25E	Sep-25E	Dec-25E	Dec-23	Dec-24	Dec-25	Dec-26
Assets																
Cash & Equivalents	112	104	114	128	159	174	183	203	235	248	261	280	128	203	280	388
Accounts receivable	91	97	106	104	84	84	91	99	95	96	101	105	104	99	105	111
Inventory	117	111	104	99	88	87	90	97	83	84	87	90	99	97	90	91
Total current assets	349	345	361	368	367	381	401	435	449	464	486	511	368	435	511	626
PP&E	51	50	50	50	48	47	45	43	44	44	45	45	50	43	45	47
Intangible Assets	24	23	22	21	20	19	18	17	16	15	13	12	21	17	12	8
Goodwill	315	315	315	315	315	315	315	315	315	315	315	315	315	315	315	315
Total Assets	768	759	780	841	837	849	867	898	911	925	947	971	841	898	971	1,084
Liabilities & Equity																
Accounts payable/Accrued liabilities	82	74	73	71	54	53	52	55	55	56	58	60	71	55	60	65
Deferred Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Current portion of l-t debt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total current liabilities	97	92	101	97	80	80	79	82	82	83	85	87	97	82	87	92
LT debt	104	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other long-term liabilities	52	48	53	51	51	51	51	51	51	51	51	51	51	51	51	51
Total shareholders' equity	515	575	626	692	706	717	737	764	777	791	810	833	692	764	833	941
Total Liab. & Stock Equity	768	759	780	841	837	849	867	898	911	925	947	971	841	898	971	1,084
Cash and Liquidity Ratios																
Total Cash	112	104	114	128	159	174	183	203	235	248	261	280	128	203	280	388
Short-term debt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Long-term debt	104	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total debt	104	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Cash	8	60	114	128	159	174	183	203	235	248	261	280	128	203	280	388
Net Cash/dil. share	\$0.06	\$0.43	\$0.82	\$0.92	\$1.14	\$1.26	\$1.33	\$1.47	\$1.71	\$1.81	\$1.91	\$2.06	\$0.92	\$1.46	\$2.05	\$2.88
Cash conversion ratios																
Days Sales Outstanding (DSO)	44.8	46.2	50.2	55.7	55.0	55.0	55.0	55.0	52.0	52.0	52.0	52.0				
Payable Days (DPO)	133.1	117.3	115.6	124.3	110.0	110.0	100.0	100.0	100.0	100.0	100.0	100.0				
Inventory Turns	1.9	2.1	2.2	2.1	2.0	2.0	2.1	2.1	2.4	2.4	2.4	2.4				
Inventory Days (DIO)	191.2	176.4	164.3	174.1	180.0	180.0	175.0	175.0	150.0	150.0	150.0	150.0				
Cash Conversion Days	103.0	105.3	98.8	105.5	125.0	125.0	130.0	130.0	102.0	102.0	102.0	102.0				

Source: BofA Global Research estimates, company reports

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Exhibit 8: LSCC – Statement of Cash Flow (\$mn)

LSCC should generate strong mid-30s FCF margin long-term

	Q1	Q2	Q3	Q4	Q1E	Q2E	Q3E	Q4E	Q1E	Q2E	Q3E	Q4E	FY23	FY24E	FY25E	FY26E
FY (Dec)	Mar-23	Jun-23	Sep-23	Dec-23	Mar-24E	Jun-24E	Sep-24E	Dec-24E	Mar-25E	Jun-25E	Sep-25E	Dec-25E	Dec-23	Dec-24	Dec-25	Dec-26
Operating Activities																
Net income	56	51	54	99	22	22	29	36	36	37	41	44	259	108	159	190
Depreciation and Amortization	8	8	9	9	6	6	6	7	4	4	4	5	34	24	17	19
Stock Compensation Expenses	14	21	17	18	17	15	15	17	17	17	18	18	70	64	70	78
Change In Working Capital:	(35)	(12)	1	3	14	1	(13)	(11)	19	(2)	(6)	(4)				
Cash From Operations	45	71	82	72	58	44	37	48	76	57	57	63	268	187	252	285
Investing Activities																
Capex	(8)	(4)	(4)	(4)	(3)	(3)	(3)	(4)	(4)	(4)	(4)	(4)	(20)	(13)	(15)	(17)
Security purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Security sales	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	(3)	(3)	(3)	(4)	0	0	0	0	0	0	0	0	(13)	0	0	0
Cash From Investing	(11)	(7)	(8)	(8)	(3)	(3)	(3)	(4)	(4)	(4)	(4)	(4)	(33)	(13)	(15)	(17)
Financing Activities																
Stock Repurchases	(10)	(10)	(10)	(50)	(25)	(25)	(25)	(25)	(40)	(40)	(40)	(40)	(80)	(100)	(160)	(160)
Restricted stock unit withholding	(34)	(5)	(4)	(1)	0	0	0	0	0	0	0	0	(44)	0	0	0
Common stock issuance	1	4	(5)	0	0	0	0	0	0	0	0	0	0	0	0	0
Debt Repayments	(25)	(60)	(45)	0	0	0	0	0	0	0	0	0	(130)	0	0	0
Cash From Financing	(68)	(72)	(64)	(51)	(25)	(25)	(25)	(25)	(40)	(40)	(40)	(40)	(254)	(100)	(160)	(160)
Net Change in Cash/Eqv.	(34)	(8)	11	14	30	15	9	19	32	13	14	19	(19)	74	77	108
Cash/Eqv. at beginning of period	146	112	104	114	128	159	174	183	203	235	248	261	146	127	201	279
Cash/Eqv. at end of period	112	104	114	128	159	174	183	203	235	248	261	280	127	201	279	387
Free Cash Flow	36	67	78	68	55	40	34	44	72	53	54	59	248	174	237	268
TTM FCF	213	235	253	249	268	242	198	174	191	203	223	237				
TTM FCF/Dil Share	\$1.52	\$1.68	\$1.81	\$1.79	\$1.93	\$1.75	\$1.43	\$1.26	\$1.39	\$1.49	\$1.63	\$1.74				

Source: BofA Global Research, company reports

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Glossary

AMD: Advanced Micro Devices

FPGA: Field Programmable Gate Array

INTC: Intel

LSCC: Lattice Semiconductor

DISTY: Distribution



Price objective basis & risk

Lattice Semiconductor (LSCC)

Our \$75 PO is based on 43x CY25E P/E, in line with the company's historical 14x-71x range and 3-year average, justified by new product launches, but offset by near-term risks related to inventory adjustments.

Upside risks to our PO include 1) Faster than expected share gains in mid-range FPGA market, 2) Resiliency in cycle, 3) Faster than expected adoption by customers, replacing legacy ASIC and/or MCU solutions, expanding overall FPGA TAM, 4) Continued margin expansion as product software attach rates rise

Downside risks to our PO include: 1) Limited traction in mid-range FPGA market due to rising competition, 2) Sudden onset of industrial/FPGA inventory correction, 3) Share gains by larger competitors in small FPGA market, 4) gross margin deceleration

Analyst Certification

I, Blake Friedman, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

US - Semiconductors and Semiconductor Capital Equipment Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Advanced Micro Devices, Inc	AMD	AMD US	Vivek Arya
	Analog Devices Inc.	ADI	ADI US	Vivek Arya
	Applied Materials, Inc.	AMAT	AMAT US	Vivek Arya
	Arm Holdings	ARM	ARM US	Vivek Arya
	Broadcom Inc	AVGO	AVGO US	Vivek Arya
	Cadence	CDNS	CDNS US	Vivek Arya
	Camtek	CAMT	CAMT US	Vivek Arya
	KLA Corporation	KLAC	KLAC US	Vivek Arya
	Lam Research Corp.	LRCX	LRCX US	Vivek Arya
	M/A-Com	MTSI	MTSI US	Vivek Arya
	Marvell Technology Group Ltd.	MRVL	MRVL US	Vivek Arya
	Microchip	MCHP	MCHP US	Vivek Arya
	Micron Technology, Inc	MU	MU US	Vivek Arya
	Nova	NVMI	NVMI US	Vivek Arya
	NVIDIA Corporation	NVDA	NVDA US	Vivek Arya
	NXP Semiconductors NV	NXPI	NXPI US	Vivek Arya
	onsemi	ON	ON US	Vivek Arya
	Synopsys	SNPS	SNPS US	Vivek Arya
NEUTRAL				
	Advanced Energy Industries	AEIS	AEIS US	Duksan Jang
	Allegro MicroSystems	ALGM	ALGM US	Blake Friedman
	Axcelis Technologies	ACLS	ACLS US	Duksan Jang
	Coherent Corp	COHR	COHR US	Vivek Arya
	GlobalFoundries	GFS	GFS US	Vivek Arya
	Intel	INTC	INTC US	Vivek Arya
	Lattice Semiconductor	LSCC	LSCC US	Blake Friedman
	Texas Instruments Inc.	TXN	TXN US	Vivek Arya
UNDERPERFORM				
	Ambarella	AMBA	AMBA US	Vivek Arya
	Credo Technology	CRDO	CRDO US	Vivek Arya
	Lumentum Holdings	LITE	LITE US	Vivek Arya
	Qorvo Inc.	QRVO	QRVO US	Vivek Arya
	Skyworks Solutions, Inc.	SWKS	SWKS US	Vivek Arya
	Teradyne	TER	TER US	Vivek Arya
	Wolfspeed Inc	WOLF	WOLF US	Vivek Arya

iQmethodSM Measures Definitions

Business Performance

Return On Capital Employed

Return On Equity

Operating Margin

Earnings Growth

Free Cash Flow

Numerator

NOPAT = (EBIT + Interest Income) × (1 – Tax Rate) + Goodwill Amortization

Net Income

Operating Profit

Expected 5 Year CAGR From Latest Actual

Cash Flow From Operations – Total Capex

Denominator

Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill

Amortization

Shareholders' Equity

Sales

N/A

N/A

Quality of Earnings

Cash Realization Ratio

Asset Replacement Ratio

Tax Rate

Net Debt-To-Equity Ratio

Interest Cover

Numerator

Cash Flow From Operations

Capex

Tax Charge

Net Debt = Total Debt – Cash & Equivalents

EBIT

Denominator

Net Income

Depreciation

Pre-Tax Income

Total Equity

Interest Expense

Valuation Toolkit

Price / Earnings Ratio

Price / Book Value

Dividend Yield

Free Cash Flow Yield

Enterprise Value / Sales

Numerator

Current Share Price

Current Share Price

Annualised Declared Cash Dividend

Cash Flow From Operations – Total Capex

EV = Current Share Price × Current Shares + Minority Equity + Net Debt +

Other LT Liabilities

Enterprise Value

Denominator

Diluted Earnings Per Share (Basis As Specified)

Shareholders' Equity / Current Basic Shares

Current Share Price

Market Cap = Current Share Price × Current Basic Shares

Sales

Basic EBIT + Depreciation + Amortization

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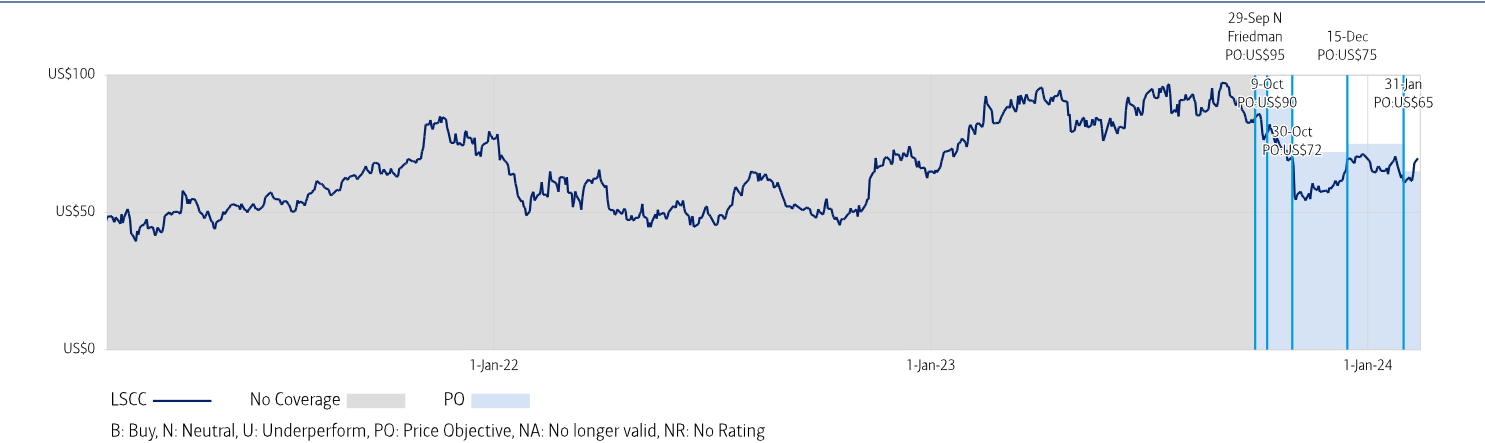
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Disclosures

Important Disclosures

Lattice Semicond (LSCC) Price Chart



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Equity Investment Rating Distribution: Technology Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	215	53.09%	Buy	111	51.63%
Hold	97	23.95%	Hold	45	46.39%
Sell	93	22.96%	Sell	24	25.81%

Equity Investment Rating Distribution: Global Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	1895	53.62%	Buy	1083	57.15%
Hold	832	23.54%	Hold	454	54.57%
Sell	807	22.84%	Sell	383	47.46%

^{R1} Issuers that were investment banking clients of BofA Securities or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster ^{R2}
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

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